AGRICULTURAL IMPACT STATEMENT

Creekview Interconnection Project

July 24, 2015

**Wisconsin Department of Agriculture,
Trade and Consumer Protection
DATCP #4048**

Agricultural Impact Statement

Wisconsin Department of Agriculture, Trade and Consumer Protection

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Acronyms

AIS	Agricultural Impact Statement
AEA	Agricultural Enterprise Area
ATC	American Transmission Company
BPA	Bonneville Power Administration
CAFO	Confined Animal Feeding Operation
CPCN	Certificate of Public Convenience and Necessity
CREP	Conservation Reserve and Enhancement Program
CRP	Conservation Reserve Program
DATCP	Department of Agriculture, Trade, and Consumer Protection
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Field
FERC	Federal Energy Regulatory Commission
FPP	Farmland Preservation Program
FSA	Farm Service Agency
GIS	Geogrpahic Information System
MFL	Managed Forest Law
NCCPI	National Commodity Crop Productivity Index
NEV	Neutral to Earth Voltage
NRCS	Natural Resources Conservation Service
OPGW	Optical Ground Wire
PSCW	Public Service Commission of Wisconsin
REPS	Rural Electric Power Service
ROW	Right-of-Way
USDA	U.S. Department of Agriculture
WDNR	Wisconsin Department of Natural Resources

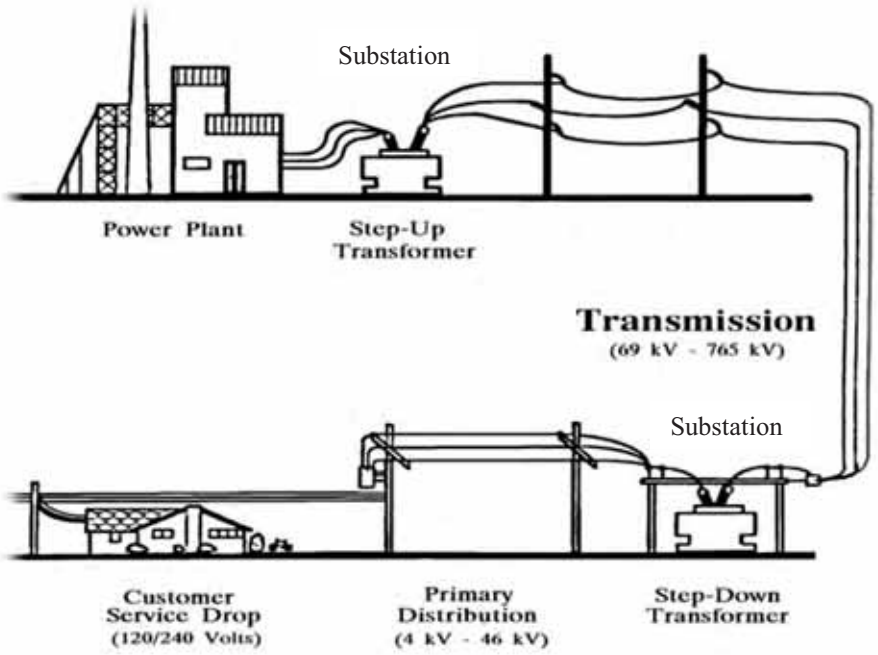
Terms

Angle structure: A type of transmission line structure that is used where conductors change direction. These structures are designed to withstand the forces placed on them by the change in direction of the transmission line.

Applicant: The utility company proposing the project to the PSCW.

Acquisition: Private property that is purchased either for a permanent easement or in fee-simple (outright purchase).

Circuit: A continuous electrical path along which electricity can flow from a source, like a power plant, to where it is used, like a home. A simplified example is shown in the figure below. A typical transmission circuit consists of three phases, with each phase on a separate set of conductors.



Co-locate: Two or more utilities sharing all or part of the same right-of-way. For example, a transmission line right-of-way sharing right-of-way with other transmission lines, roads or highways, pipelines, and/or railroad corridors. This is sometimes also referred to as corridor sharing.

Conductor: A wire composed of multiple aluminum strands supported by a steel core that together carry electricity. A transmission line is constructed with three conductors, one for each phase of the circuit generated by a power plant.

Current: The movement or flow of electricity.

Dead-end structure: A type of transmission line structure that is used where conductors turn at a wide angle or end. These structures are designed to resist the full tension that would occur if all conductors were removed from one face of the structure.

Double-circuit: Electric lines with two sets of three conductors, totaling six conductors on one structure. These two circuits are independent of one another. A transmission line may be double circuited with another transmission line or with a distribution line.

Electric distribution: An interconnected group of lines and associated equipment for the local delivery of low voltage electricity between the transmission network and end users. Distribution lines deliver electricity for household use.

Electric transmission: An interconnected group of lines and equipment for transporting electric energy on a high voltage power line between power plants and substations. Transmission is considered at an end where the transmission line connects to a distribution station.

Foundation: A constructed unit, typically made of concrete, that is used to support a utility structure by transmitting the load directly to the underlying soil or rock.

Kilovolt (kV): A unit of electricity equal to 1,000 volts.

Laydown yards: Temporary equipment staging and storage areas.

Mitigation: Measures that can be taken to either avoid the impact altogether by no taking a certain action, minimizing the impact by limiting the degree of action, or rectifying the impact by repairing or restoring the affected environment.

Neutral-to-earth voltage: A difference in potential between a locally grounded object and the grounded return conductor, or neutral, of an electrical system.

Right-of-way: The geographic boundaries of the physical path that linear infrastructure, such as a power line or pipeline, follows.

Route Alternative: a physical path under consideration within a route corridor that potentially meets the purpose and need for the proposed project.

Routing and siting: The process used to identify preliminary corridors within the study area, identify route corridors and route alternatives, and evaluate the route alternatives to determine an proposed route.

Shield wire: A wire connected to the top of the structure to protect the conductors from lightning strikes, minimizing the risk of power outages. The shield wire may also contain fiber optic communication cables.

Single-circuit: Electric lines with one set of three conductors.

Span: Distance between structures.

Study area: The broad geographical area evaluated for routing of a project. The route alternatives are located within the study area.

Stray voltage: The occurrence of electrical potential between two objects that ideally should not have any voltage difference between them.

Structures: Towers or poles that support transmission lines. Structures can be constructed of wood or metal and can be single-poled or multi-poled.

Substation: Interface between different voltage transmission lines and the distribution system. It is a facility that monitors and controls electrical power flows, uses high voltage circuit breakers to protect power lines, and transforms voltage levels for safe and reliable delivery of electricity.

Tangent structure: A type of transmission line structure that is used on relatively straight portions of the transmission line. These structures are characterized by vertical insulators which support and insulate the conductors and transfer wind and weight loads to the structure.

Tap structure: A type of transmission line structure used to connect a new transmission line to an existing transmission line by tapping into the existing transmission line feed.

Transformers: Devices, located within substations, which change voltage levels. Transformers decrease voltages from the high voltage transmission lines to low voltage distribution lines. Transformers located along distribution lines further step down the voltage for safe household use.

Underbuild: To place a lower voltage distribution circuit underneath a higher voltage transmission circuit, thereby using a single structure for both transmission and distribution lines.

Voltage: The pressure that drives the electrical charge through a circuit. Higher voltage transmission lines carry power longer distances. Voltage is typically measured in volts (V) or kv.

AGRICULTURAL IMPACT STATEMENT
Creekview Interconnection 138 kV Transmission Line
Fond du Lac County
American Transmission Company; PSC Docket #137-CE-177

1. Introduction

The Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) has prepared this Agricultural Impact Statement (AIS) in accordance with *Wisconsin Statute §*32.035. DATCP is required to prepare an AIS when the actual or potential exercise of eminent domain powers involves an **acquisition** of interest in more than 5 acres of land from any farm operation. The term farm operation includes all owned and rented parcels of land, buildings, equipment, livestock, and personnel used by an individual, partnership, or corporation under single management to produce agricultural commodities. DATCP may choose to prepare an AIS if an acquisition of 5 or fewer acres will have a significant impact on a farm operation.

The AIS is an informational and advisory document that describes and analyzes the potential effects of the proposed project on farm operations and agricultural resources. The AIS provides information that will help affected landowners understand the potential effects of a proposed project on their land and their rights in the review and construction processes. The AIS also aids the Public Service Commission of Wisconsin (PSCW) in making decisions regarding project approval and **route alternatives** by identifying the potential impacts and the concerns of landowners affected by the proposed project; offers the **Applicant** practices and techniques to avoid or mitigate damages to farmland and farmland operations; and gives the general public a better understanding of the impacts the proposed project could have on agriculture and the rural economy.

DATCP is not a regulatory agency in this instance; it can take no action against a utility or a proposed project. DATCP is also not involved in determining who receive condemnation authority or the amount of compensation to be paid for the acquisition of any property.

The Applicant may not negotiate with or make a jurisdictional offer to a landowner until 30 days after the AIS is published (*Wisconsin Statute §*32.035).

2. Description of the Project

2.1 Project Description

American Transmission Company LLC and its corporate manager, ATC Management Inc. (collectively, "ATC"), or the "Applicant", proposes to construct the Creekview Interconnection Project (Project).

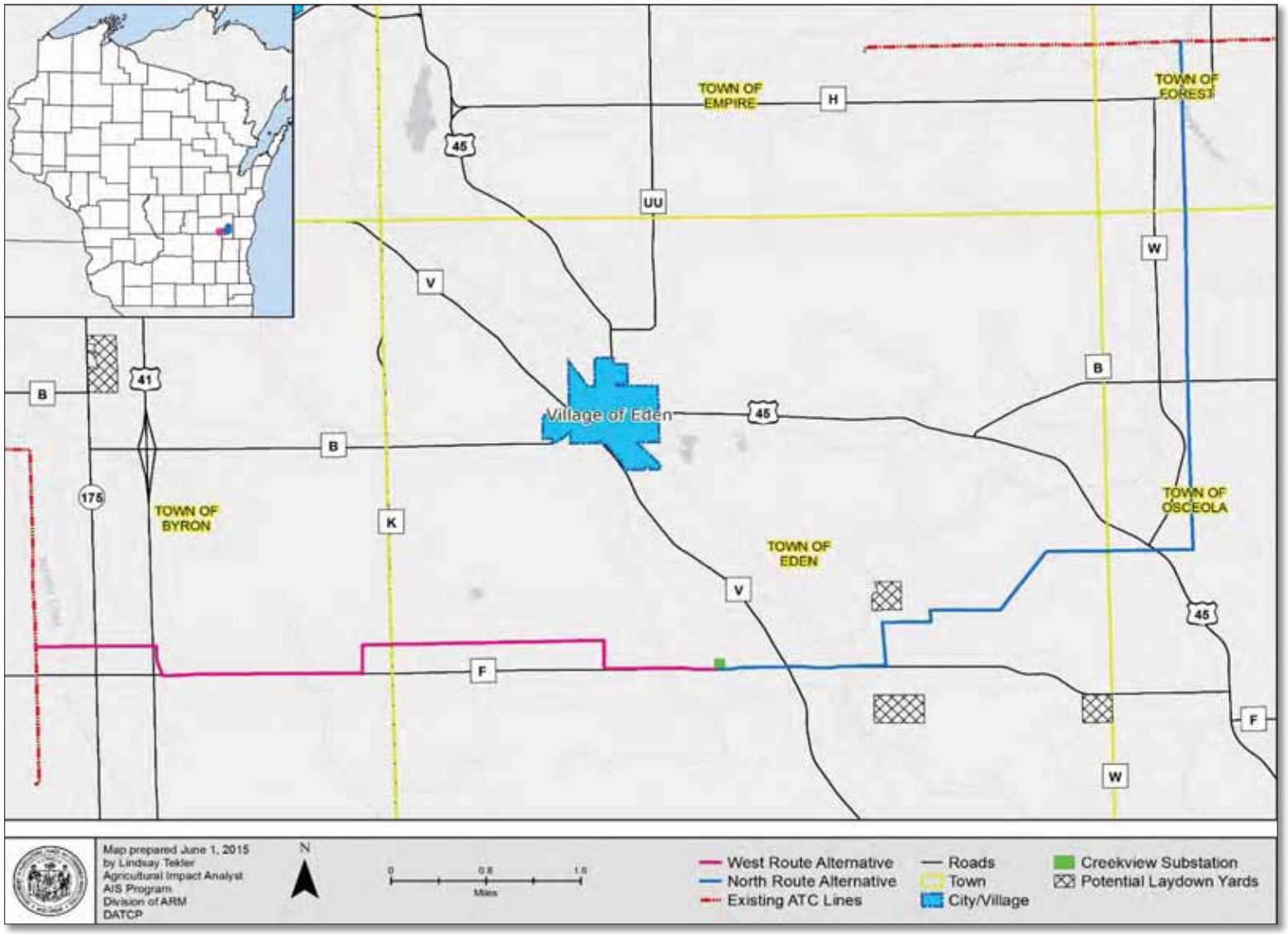
The Project consists of a **double-circuited** 138 **kilovolt** (kV) **electric transmission** line. This transmission line would provide service to a new proposed **substation,** owned and operated by We Energies, to be named the Creekview Substation. Two Route Alternatives are proposed by ATC to construct this Project, the West Route Alternative and the North Route Alternative (Figure 1). The West Route Alternative would run from the Creekview Substation west for 6.5 miles, where it would then connect to an existing ATC transmission line named X-96. The North Route Alternative would run from the Creekview Substation east and north for 9.3 miles, where it would then connect to an existing ATC transmission line named X-97. A more detailed description of the proposed Route Alternatives and their associated **right-of-way** (ROW) can be found in Section 3 of this AIS and in ATC's Certificate of Public Convenience and Necessity (CPCN) application to the PSCW (http://psc.wi.gov/apps35/ERF_view/viewdoc.aspx?docid=231711).

If the Project is approved, construction of the transmission line and substation would start in the fall of 2016 and would be in-service by June 2017 or January 2018, depending on the Route Alternative chosen. The total estimated cost is between $17,000,000 and $26,000,000 depending on the selected Route Alternative.

2.2 Project Location

The Project is located near the village of Eden in Fond du Lac County, Wisconsin (Figure 1). The West Route Alternative is located within the towns of Eden and Byron, while the North Route Alternative is located within the towns of Eden, Osceola, and Forest.

Figure 1. Project Overview and Location Map.



2.3 Project Need

ATC has proposed the Project to address growing reliability concerns in the area. The We Energies Creekview Substation is needed to support the **electric distribution** system and improve overall electric system reliability in the region. According to ATC, the area's transmission system is vulnerable to low **voltages** and power outages and will no longer sufficiently support the lower voltage distribution system. More information detailing the need for the Project can be found in ATC's CPCN application.

2.4 Routing and Siting

The **routing and siting** process for the Project began in 2011 when We Energies notified ATC of a need for a new electric load interconnection. The Project **study area** was developed to meet the configuration requirements of connecting the Creekview transmission line to existing ATC transmission lines. ATC reviewed over 30 miles of linear features within the approximately 5,850-acre Project study area for numerous possibilities for siting the transmission line.

ATC used many qualitative methods to solicit and gather stakeholder comments and collect and analyze data and impacts. These methods included two open houses, a thorough review of available geographic information system (GIS) data and aerial photography, and environmental and utility surveys and inspections. More information on the factors considered and reviewed in the routing and siting process for the Project can be found in Sections 5 and 7 of ATC's CPCN application to the PSCW.

ATC states that the Route Alternatives proposed are the most promising to balance community input with environmental impacts, constructability, current and future land use, project costs, and specific electric system needs. More information on other route alternatives that were reviewed and dismissed can be found in Section 2 of ATC's CPCN application to the PSCW.

3. Description of the Route Alternatives and ROW

3.1 West Route Alternative

The West Route Alternative is comprised of segments 1-7. The West Route Alternative would run from the Creekview Substation west for 6.5 miles, where it would then connect to an existing ATC transmission line named X-96, a 138 kV line (Figure 2).

3.1.1 Structure Design

This Route Alternative would use double-circuited, self-supporting tubular steel monopole **structures** (Appendix A). If the Project is approved, variations of these structure types may be used depending on final engineering analysis that determines the angle or tension of the transmission line facilities. The types of monopole structures expected to be used include:

- **Tangent structures** would utilize double-circuit braced post construction with vertical framing and would have direct-embedded steel **foundations**.
- **Angle structures** and **dead-end structures** would utilize davit arm construction with vertical framing and would have reinforced concrete caisson foundations.
- **Tap structure(s)** would be designed to create two new **circuits** from one existing circuit and ultimately loop through the Creekview Substation.

3.1.2 ROW Requirements

Wisconsin Statute §1.12 identifies the order of priority in which various corridors must be considered when utilities develop potential routes for projects: a) existing utility corridors, b) highway and railroad corridors, c) recreational trails with limitations, and d) new corridors. This encourages corridor sharing, resulting in minimized amount of new easement acreage to be acquired.

The ROW width needed for the West Route Alternative would be 100 feet. For this Project, ATC is proposing to **co-locate** the Project transmission facilities with other infrastructure ROW where possible. For the West Route Alternative, portions of the ROW would be shared with County Highway F and other local roadway ROW (Figure 2). By proposing to share the ROW in these locations, new easements on private land along these roads would be decreased to approximately 55 feet. Where ROW sharing cannot occur along the West Route Alternative, new 100-foot wide easements would need to be acquired from private landowners. The amount of existing ROW versus new ROW that would need to be acquired is shown in Table 1.

Table 1. New Versus Existing ROW for the West Route Alternative.

Segment	ROW Acres		
	Shared ROW	**New ROW**	**Total**
X96 OPGW	8.8	0.0	8.8
1	0.0	12.4	12.4
2a	0.7	0.9	1.6
2b	0.0	1.7	1.7
3	9.2	11.3	20.5
4	0.0	3.0	3.0
5	0.0	24.7	24.7
6	1.4	1.7	3.0
7	5.4	6.6	12.0
Total Acres	**25.5**	**62.2**	**87.7**
Percentage	**29%**	**71%**	**100%**

The West Route Alternative ROW also crosses other infrastructure ROW, including an active railroad on segment 1 and a Guardian gas pipeline on segment 5 (Figure 2). As these crossings are perpendicular to the West Route Alternative ROW, no ROW sharing at these locations is anticipated. ATC stated in their CPCN application that if the Project is approved and the West Route Alternative is selected, no transmission structures would be placed within the existing Guardian gas pipeline ROW.

3.1.3 Associated Work on Existing Transmission Lines

This Route Alternative would also include some optical ground wire (OPGW) maintenance work on the existing X-96 transmission line. OPGW is the overhead wire on a transmission line and it provides ATC with communication capabilities to operate its substations. This work would involve construction crews replacing approximately 1.2 miles of the **shield wire** with new OPGW in the existing X-96 easement corridor at each individual transmission line structure. An existing tangent structure on the X-96 transmission line would also be replaced with a tap structure in order for the Creekview transmission line to connect to the X-96 transmission line circuit (segment 1). The two structures on either side of the tap structure would also need to be reconfigured to account for the new transmission line connection.

ATC has stated that there should be only limited disruptions to farming activities in the X-96 easement area where this work would occur, and ATC would compensate any landowner if any crop damages or losses occur in this area.

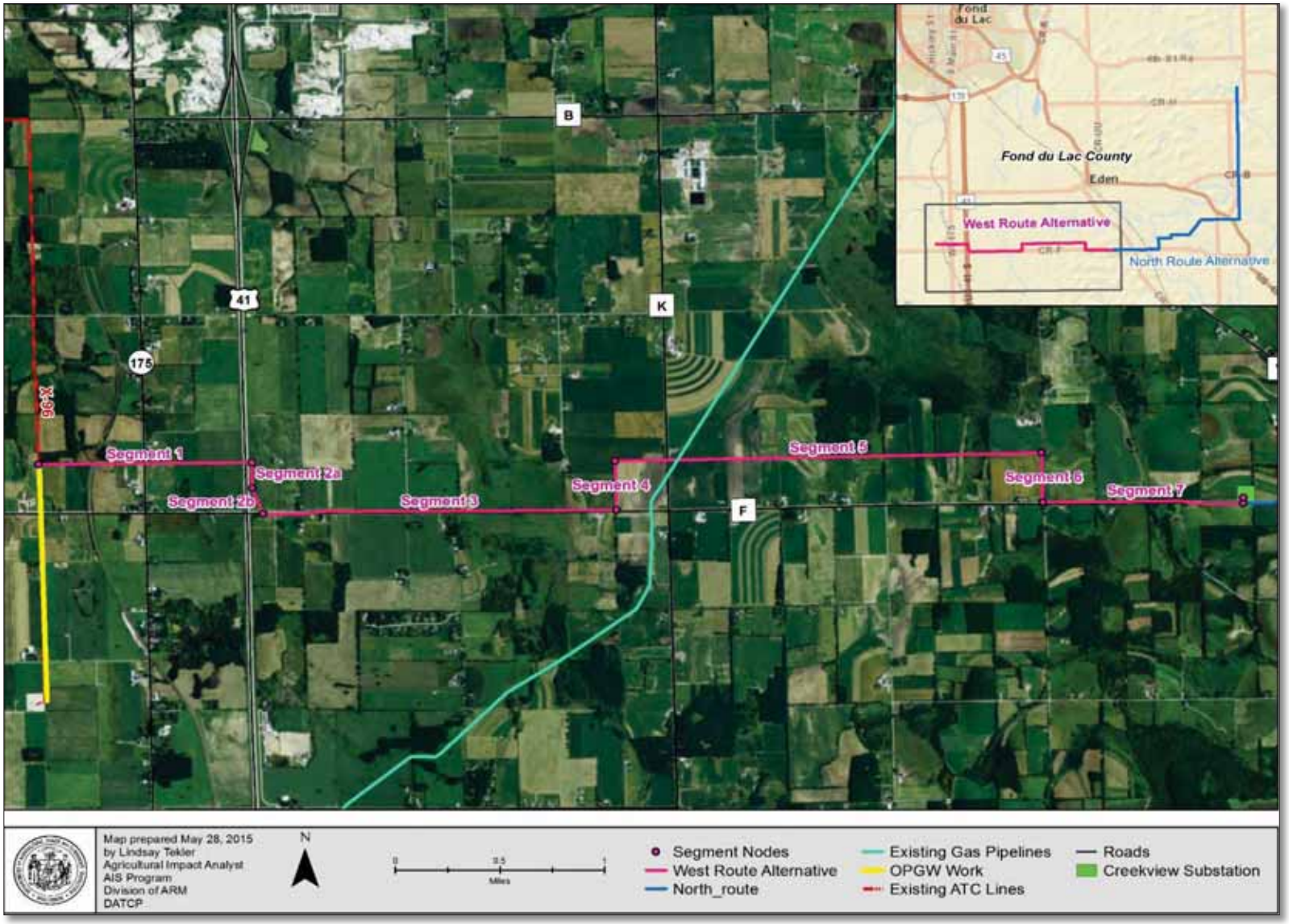
3.1.4 Associated Work on Existing Distribution Lines

Several existing distribution lines along the West Route Alternative may require removal or relocation to accommodate the proposed Creekview transmission line. Three distribution lines, owned and operated by We Energies, exist within the West Route Alternative ROW and may need to be relocated or **underbuilt**:

- Along County Highway F on segment 3 – approximately 8,800 feet
- Along Timberlane Drive on segment 6 – approximately 1,400 feet
- Along County Highway F on segment 7 – approximately 3,500 feet

Several existing distribution lines also cross the West Route Alternative. For these crossings, ATC stated they would incorporate the necessary height adjustments into the design of the Creekview transmission line structures.

Figure 2. West Route Alternative Overview.



3.2 North Route Alternative

The North Route Alternative is comprised of segments 8-12. The North Route Alternative would run from the Creekview Substation east and north for 9.3 miles, where it would then connect to an existing ATC transmission line named X-97, a 138 kV line (Figure 3).

3.2.1 Structure Design

This Route Alternative would use double-circuited, self-supporting tubular steel monopole structures (Appendix A). If the Project is approved, variations of these structure types may be used depending on final engineering analysis that determines the angle or tension of the transmission line facilities. The types of monopole structures expected to be used include:

- Tangent structures either would utilize double-circuit braced post construction with vertical framing or would utilize davit arm construction with vertical framing, depending on their location in the Route Alternative, and all tangent structures would have direct-embedded steel foundations.
- Angle structures and dead-end structures would utilize davit arm construction with vertical framing and would have reinforced concrete caisson foundations.
- The tap structure(s) would be designed to create two new circuits from one existing circuit and ultimately loop through the Creekview Substation.

3.2.2 ROW Requirements

The ROW width needed for this Route Alternative would also be 100 feet. For the North Route Alternative, some portions of the ROW would also be shared with County Highway F and other local roadway ROW (Figure 3). By proposing to share the ROW in these locations, new easements on private land along these roads would be decreased to approximately 55 feet. This Route Alternative's ROW requirements differ from the West Route Alternative's ROW requirements in that the majority of the North Route Alternative ROW (segments 11 and 12) would be located entirely within an existing 220-foot wide easement for ATC's L-CYP31 345 kV transmission line (Figure 3).

The easements for the existing L-CYP31 ROW were purchased in 1970 and included the necessary ROW acreage to accommodate an additional transmission line in the future, but those rights were never utilized. The required ROW for the proposed North Route Alternative would fit entirely within the existing 220-foot wide L-CYP31 ROW corridor and would therefore utilize the existing rights laid forth in the 1970 easement. The existing L-CYP31 and the proposed Creekview North Route Alternative line would run side-by-side on separate support structures, but within the same 220-foot wide ROW.

Where ROW sharing cannot occur along the North Route Alternative, new 100 foot wide easements would need to be acquired from private landowners. The amount of existing versus new ROW that would need to be acquired is shown in Table 2.

Table 2. New Versus Existing ROW for the North Route Alternative.

Segment	ROW Acres		
	Shared ROW	**New ROW**	**Total**
8	7.9	9.7	17.6
9	2.1	2.6	4.7
10	0.0	13.5	13.5
11	22.9	0.0	22.9
12	54.7	0.0	54.7
Total Acres	**87.6**	**25.7**	**113.3**
Percentage	**77%**	**23%**	**100%**

The North Route Alternative ROW also crosses other infrastructure ROW, including an existing ATC 345 kV transmission line named W-1. Although ATC stated in the CPCN application that the North Route Alternative does not cross any gas pipelines, current available GIS data (2010) provided by PSCW shows that an ANR gas pipeline crosses the North Route Alternative ROW near the end of segment 11 (Figure 3). As these crossings are perpendicular to the North Route Alternative ROW, no ROW sharing at these locations is anticipated.

3.2.3 Associated Work on Existing Transmission Lines

This Route Alternative would also include some work on the existing transmission lines in the area where the Creekview transmission line is co-located with the L-CYP31 transmission line (segments 11 and 12). This work would include:

- Where the Creekview transmission line and the L-CYP31 transmission line would intersect (segments 10 and 11), three L-CYP31 H-frame wood structures would need to be replaced with taller structures to accommodate the Creekview transmission line crossing.
- Where the Creekview transmission line and the W-1 transmission line would intersect (segment 12), three W-1 H-frame wood structures and one L-CYP31 steel lattice structure would need to be replaced so that the W-1 transmission line crosses over the L-CYP31 and Creekview transmission lines.
- Where the Creekview transmission line and the X-97 transmission line meet, a tap structure would need to be installed in order for the Creekview transmission line to connect to the X-97 transmission line circuit (segment 12).

If any crop damages or losses occur in areas with existing transmission line easements, ATC has stated that it would compensate the landowners for these impacts.

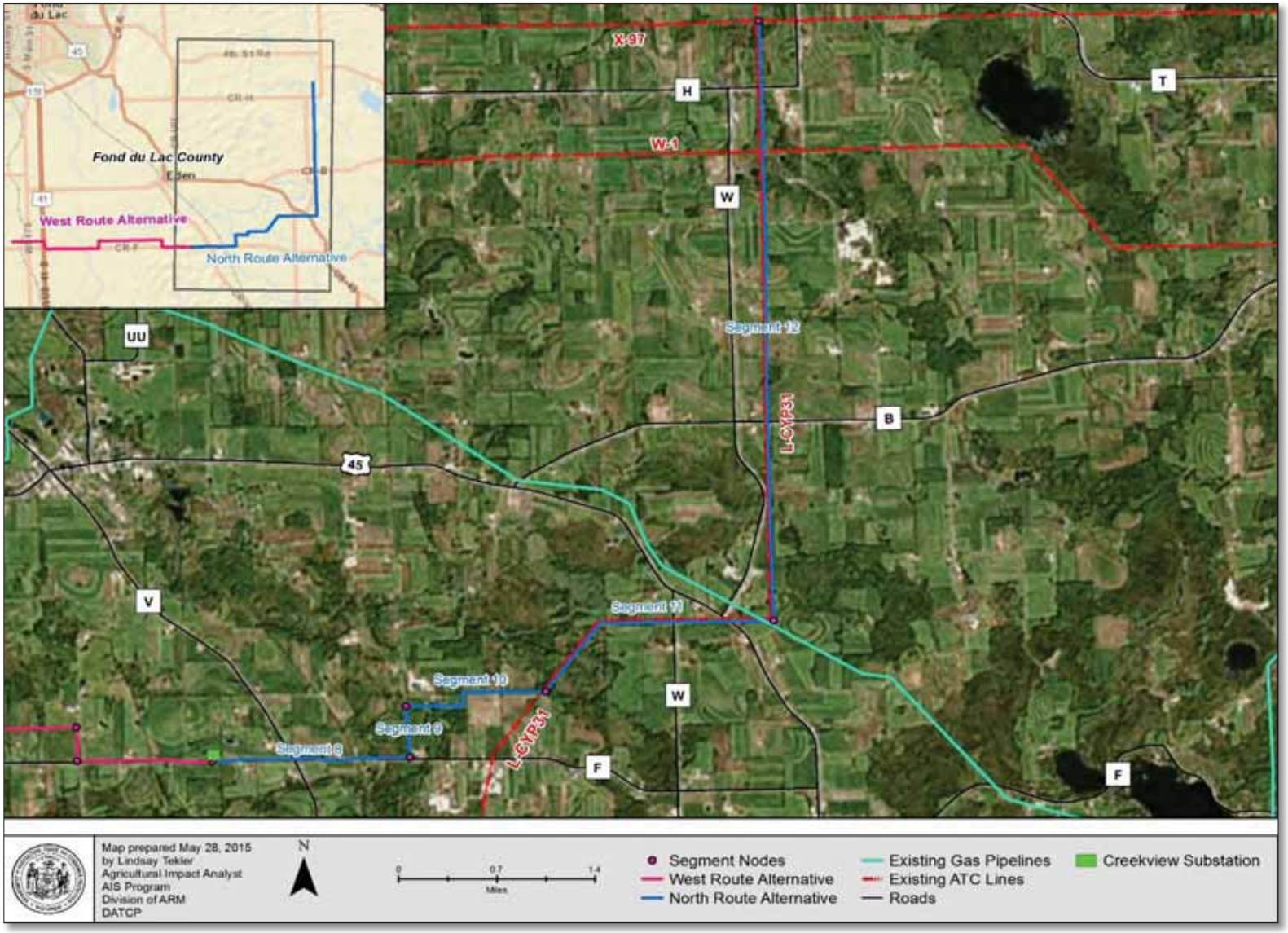
3.2.4 Associated Work on Existing Distribution Lines

Several existing distribution lines along the North Route Alternative may require removal or relocation to accommodate the proposed Creekview transmission line. Two distribution lines, owned and operated by We Energies, exist within the North Route Alternative ROW and may need to be relocated or underbuilt:

- Along County Highway F on segment 8 – approximately 7,600 feet
- Along Eagle Road on segment 9 – approximately 2,100 feet

Several existing distribution lines also cross the North Route Alternative. For these crossings, ATC stated they would incorporate the necessary height adjustments into the design of the Creekview transmission line structures. At these intersections, the crossing transmission lines would not be double-circuited, but would be on separate structures.

Figure 3. North Route Alternative Overview.



3.3 Laydown Yards

Four potential **laydown yards** are proposed for this Project (Figure 1, Section 2). All four potential sites are barren lands occupied by mining operations. ATC states that they would only lease compacted, non-productive land areas for project laydown yards. The laydown yard(s) to be used for the Project would depend upon the chosen Route Alternative if the Project is approved. If additional laydown yards are needed, ATC will notify the PSCW of these locations and will submit the necessary information prior to establishing these new laydown yard locations.

3.4 Deciding Between Route Alternatives

The PSCW is the agency that regulates public utilities in Wisconsin. Public utility companies must obtain PSCW approval before setting new utility rates and undertaking major construction projects, such as electric transmission lines or substations. The proposing utility company must submit an application to the PSCW to obtain approval of the proposed project. PSCW staff review the application and then prepare an Environmental Impact Statement (EIS) or an Environmental Assessment (EA) to evaluate the need, alternatives, cost, and environmental and social impacts of the proposed project.

The three Commissioners at the PSCW are responsible for reviewing all of the documents and reports submitted to the case record and ultimately deciding to approve, modify, or deny the project. If the PSCW determines that the Project is needed and feasible, the PSCW Commissioners will consider the social, economic, and environmental impacts when approving a route. The Applicant must adhere to the PSCW ruling and will work with the affected landowners to minimize the impacts.

DATCP expects the PSCW to utilize the information contained in this AIS, the EIS or EA, the CPCN application, and testimony from the public to determine the degree of impacts each option will have on the agricultural landscape and economy.

4. Agricultural Analysis of the Route Alternatives

This section summarizes DATCP's analysis of the agricultural land within both Route Alternatives ROW's. This analysis is based on the materials provided by ATC, the most current available GIS data, and aerial imagery.

4.1 Farm Programs and Conservation Easements within the Project Area

4.1.1 Farmland Preservation

The state of Wisconsin Farmland Preservation Program (FPP) provides counties, towns, and landowners with tools to aid in protecting agricultural land for continued agricultural use and to promote activities that support the larger agricultural economy. Through this program, counties adopt state-certified farmland preservation plans, which map areas identified as important for farmland preservation and agricultural development based upon reasonable criteria.

The Fond du Lac County Farmland Preservation Plan was certified by DATCP in 2012 and identifies farmland preservation areas in the county. Land that is identified in a county's farmland preservation plan is eligible to participate in other aspects of the FPP, described in the following paragraphs. Both the West and North Route Alternative ROW's are located within preservation areas identified in Fond du Lac County's Farmland Preservation Plan.

Within these farmland preservation areas designated in the county farmland preservation plan, local governments and farmland owners can petition for designation by the state as an Agricultural Enterprise Area (AEA). This designation highlights the importance of the area for agriculture and further supports local farmland preservation and agricultural development goals. Neither of the Project Route Alternatives passes through any AEA's.

Designation as an AEA also enables eligible landowners to enter into farmland preservation agreements. Through an agreement, a landowner agrees to voluntarily restrict the use of his or her land for agriculture for fifteen years and to follow the state soil and water conservation standards to protect water quality and soil health. Neither of the Project Route Alternatives passes through any FPP agreements.

In addition, local governments may choose to adopt and have certified a farmland preservation zoning ordinance to ensure that landowners covered by the ordinance are eligible to claim farmland preservation tax credits. Farmland preservation zoning standards restrict non-farm development in farmland preservation zoning districts, which fall under FPP. The entire West Route Alternative is located within farmland preservation zoning districts, and the North Route Alternative is almost completely within farmland preservation zoning districts (Figure 4):

- West Route Alternative: Town of Byron and Town of Eden Farmland Preservation District zoning.
- North Route Alternative: Town of Eden and Town of Osceola Farmland Preservation District zoning.

4.1.2 Drainage Districts

Drainage districts are local governmental districts that are organized for the purpose of draining land for agricultural use. Landowners who are part of a drainage district must contribute to the cost of constructing, maintaining, and repairing the district's drains. Drainage districts are organized under Chapter 88 of the Wisconsin Statutes and are governed by county drainage boards. Approximately 176 active districts exist within 31 Wisconsin counties. Neither of the Project Route Alternatives pass through any drainage districts.

4.1.3 Conservation Reserve Enhancement Program (CREP)

CREP is a joint effort between the Federal, State, and County governments that pays landowners who currently till or graze land along a stream, lake, or wetland to set aside small strips of adjacent land for soil conservation and water quality protection. Land eligible for CREP is located in one of 50 designated CREP counties, has a history of crops or pasture, and is within 150 feet of a stream, lake, or wetland. The typical CREP site consists of buffers ranging from 30 to 150 feet wide along a stream and covers an area of about 10 acres or a wetland less than 40 acres. Conservation practice options in CREP include filter strips, riparian buffers, grassed waterways, wetland restorations, marginal pastureland habitat buffers, permanent introduced grasses, permanent native grasses, grass prairie ecosystem restorations, and established legumes and grasses.

Currently, there are approximately 400 Perpetual Easements and 3,500 15 year Agreements, enrolling approximately 40,000 acres into CREP statewide. Landowners with land enrolled in CREP agree to install and maintain the conservation practice for the duration of the CREP contract.

The most current available GIS data (2014) provided by the Farm Service Agency (FSA), shows that one landowner has an active CREP agreement across 3 parcels within the Project ROW (Figure 4):

- West Route Alternative: A 15-year agreement, set to expire in September of 2017, is in place for approximately 15 acres of grass filter strips, owned by Mark Albert on segment 5.

Under a CREP agreement with grass filter strips, it is permissible for transmission lines to cross over enrolled land, but transmission line structures cannot be placed on this land. The 15 year CREP agreements require a partial buyout of areas where a structure would be placed within the CREP area. Temporary access routes are allowed in CREP areas during maintenance or construction of utilities with the landowner being responsible for re-establishing the conservation practice to the disturbed area when the utility work is completed.

ATC indicated in the CPCN application that they would provide compensation to any affected landowners with CREP easements who have to remove portions of their land from a CREP agreement. If the Project is approved and the West Route Alternative is selected, DATCP recommends that ATC reimburse the landowner for repairing any damage to the grass filter strips caused by access disturbance, in addition to compensation for the removal of any land from a CREP easement. Any requests for additional information should be directed to the FSA, the CREP

program's administrator.

4.1.4 Managed Forest Law (MFL)

Many of the state's farmers also own forested land that may be enrolled in the Wisconsin Department of Natural Resources (WDNR) MFL program, a program that offers tax incentives to landowners who manage their forests using sound practices.

According to the most recent available GIS data (2012) provided by WDNR, the Project passes through MFL land listed below and shown in Figure 4. If any impacted landowners, however, have obtained MFL contracts since then, they should contact their local WDNR MFL representative and ATC to determine if the contracted land is within the Project's ROW.

- West Route Alternative: Thomas and Patricia Murphy and Steven and Lori Reilly each own one parcel with an MFL agreement. Both parcels are located on segment 5.
- North Route Alternative: Seven total parcels, located within segments 8-10, contain MFL agreements. These landowners are James Zielicke, Charles and Virginia Ketter, Jeff Zimdahl, and Richard and Rose Carey.

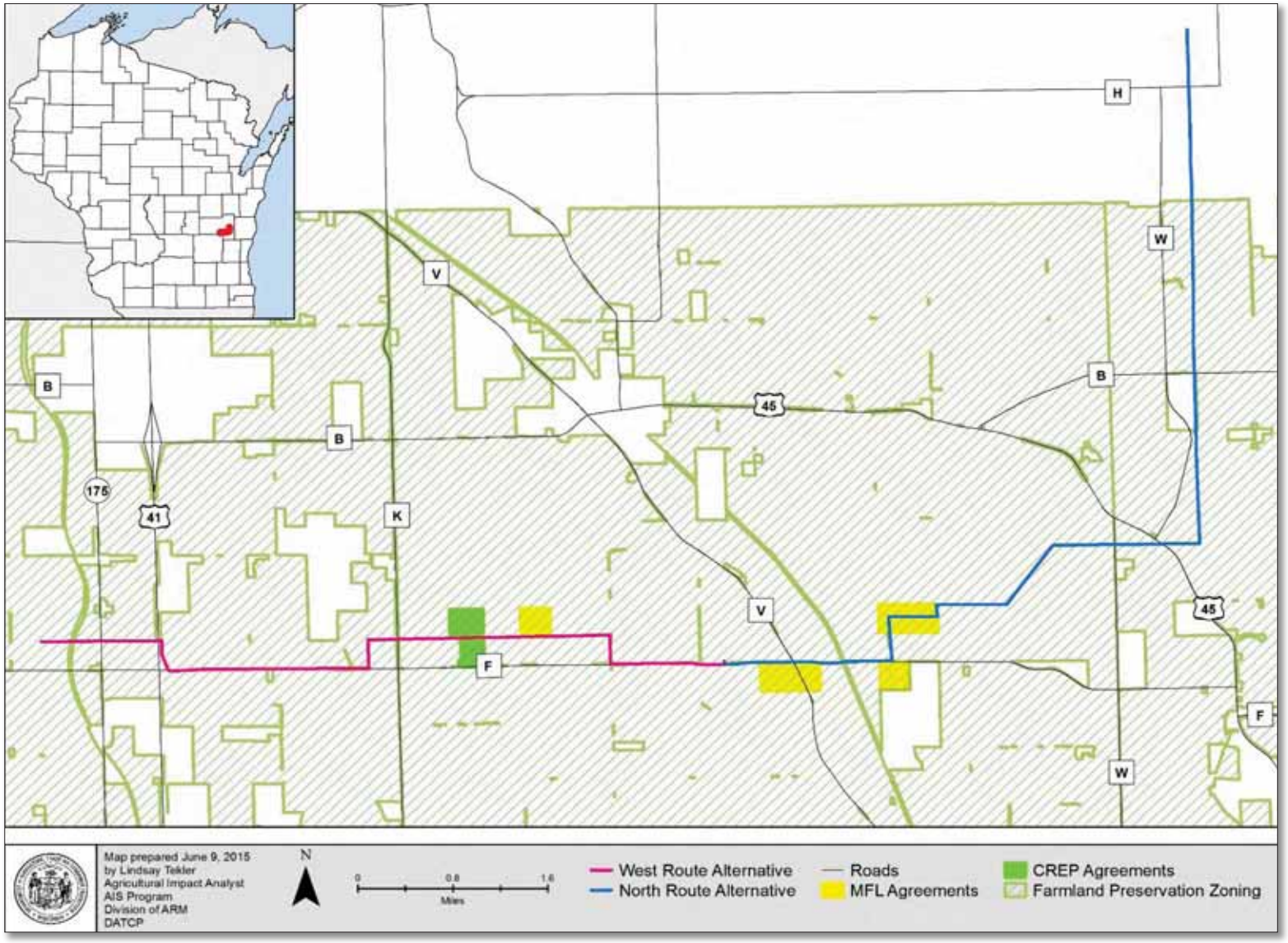
If the Project is approved and a route is chosen that includes MFL contracts, those impacted landowners should consult with WDNR MFL officials to determine if any prior approval or payment is needed before tree clearing occurs. DATCP recommends that ATC reimburse the landowner for any fees charged for tree clearing on MFL contracted land.

4.1.5 Removing Enrolled Farmland from Farm Programs or Conservation Easements

A repayment of past payments, damages, and/or interest on enrolled farmland in any of the programs listed above may be required. This could happen if land enrolled in one of these programs becomes ineligible due to the Project construction. Additionally, if a program requires the presence of trees, such as Conservation Reserve Program (CRP) or CREP, and trees within this land need to be removed for the transmission line, this deforested land would need to be removed from the contract. This removal of deforested land could possibly trigger the need for repayments by the landowner, or it could require the landowner to change to a non-conflicting conservation practice at the cost of the landowner.

DATCP recommends that affected landowners consult with the farm program's agency or provider to determine the implications of the Project on their participation in any of these programs. Although ATC has stated that they will compensate any affected CREP landowners, DATCP recommends that ATC work with all affected landowners currently enrolled in all farm conservation programs or easements and compensate them additionally if the landowner is charged any fees or penalties for the removal or alteration of their land.

Figure 4. Farmland Preservation Zoning and Conservation Easements within the ROW.



4.2 Soil Analysis

The Natural Resources Conservation Service (NRCS) *Soil Survey of Fond du Lac County* identified multiple soil types that occur within the Project ROW. Thirty different soil types exist within the ROW for the West Route Alternative, nearly all of which are silt loam soils. The North Route Alternative ROW contains 46 different soil types, including silt loam and mucky peat soils. DATCP recommends that the Fond du Lac County Conservationist be consulted to ensure that construction proceeds in a manner that minimizes impacts to drainage and soils.

4.2.1 Farmland Soil Classification

The NRCS farmland soil classification system rates the major physical and chemical soil properties affecting agricultural use. Approximately half of the soils within the ROW of both Route Alternatives are characterized as prime farmland, meaning it has the best combination of physical and chemical characteristics for the production of crops (Table 3). Please refer to Appendix B for a more detailed description of the farmland soil classification system.

Table 3. Farmland Soil Classifications within the ROW.

Route	Prime Farmland		Farmland of Statewide Importance		Prime Farmland if Drained		Not Prime Farmland	
	Acres	Perc.	Acres	Perc.	Acres	Perc.	Acres	Perc.
West	41	52%	16	20%	16	20%	6	8%
North	53	47%	33	29%	12	11%	15	13%

4.2.2 Land Capability Classification

The NRCS land capability classification system rates the risk of environmental damage (i.e. soil erosion, nutrient leaching, off-site damage from sediment, etc.) and the degree of management concerns and limitation for the production of crops. All of the impacted soils within the ROW for both Route Alternatives are class 2, meaning the soils have some limitations that reduce the choice of crops or require moderate conservation practices. The limitations for these soils are susceptibility to erosion and excess water. Please refer to Appendix B for a more detailed description of the land capability classification system.

4.2.3 Crop Productivity Index

The NRCS National Commodity Crop Productivity Index (NCCPI) rates the potential common crop productivity of each soil type relative to all other soils in Wisconsin. The NCCPI values are based on crop yield data and range from 0 to 100, with lower NCCPI values representing proportionately lower productivity for common crops. The majority of affected soils within the ROW of both Route Alternatives have relatively high county NCCPI values, ranging from 65 to 93.

4.2.4 Drainage Classification

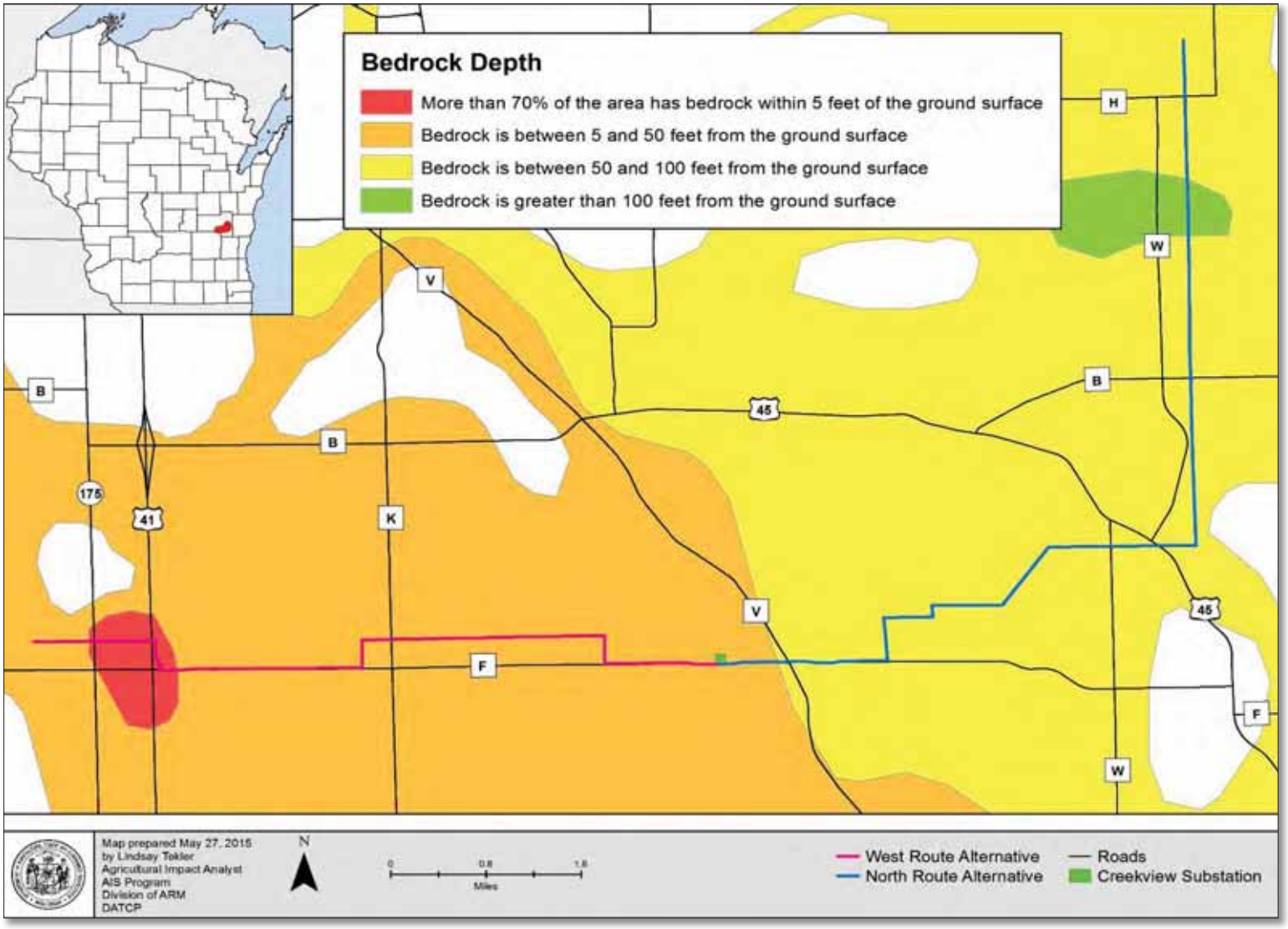
Several of the agricultural soils within the Project ROW for both Route Alternatives are characterized as poorly drained and contain a shallow water table. Wet soils can be more susceptible to soil compaction and require **mitigation** measures to protect them, particularly if

construction work would be occurring on wet agricultural soils in the spring and summer. Agricultural drainage tiles may also be present in these wetter soils. The potential impacts associated with construction activities in wet soils is discussed further in Section 6 of this AIS.

4.2.5 Bedrock Type and Depth

The bedrock type mapped within the Project area is carbonate bedrock (WGNHS 2005). Carbonate is a type of sedimentary rock and is comprised of limestone and dolomite type rock. According to current available GIS data provided by WGNHS, the depth to bedrock distance varies throughout the Project ROW (Figure 5). The North Route Alternative ROW contains bedrock between 50 and 100 feet below the ground surface, while the West Route Alternative ROW contains more shallow bedrock, including some depths within 5 feet of the ground surface. These areas with shallow bedrock may need to be blasted to install the structure foundation. Please see Section 6 for more information on the potential impacts associated with bedrock blasting.

Figure 5. Bedrock Depths within the Project ROW.



4.3 Summary of Impacts

Summarized in the table below is DATCP's analysis of the potential impacts to agricultural operations within the ROW for both Route Alternatives. Agricultural land includes cropland, pasture, land for specialty crops, and old fields. Forested areas or other areas with no evidence of recent tillage were not included as agricultural land.

Table 4. Comparison of Agricultural Impacts for Both Route Alternatives.

Item or Impact	Route Alternative	
	West	North
Amount of Shared ROW	29%	77%
Amount of ROW in Agricultural Use	62%	55%
No. Homes Within 300 feet of ROW Centerline	9	10
No. Agricultural Buildings Within 300 feet of ROW Centerline	14	15
No. Dairy Operations Within 300 feet of ROW Centerline*	4	7
No. CAFO's Within 300 feet of ROW Centerline*	1	1
No. Structures Placed Within Agricultural ROW**	61	44
No. Agricultural Landowners With New Easements	27	14
No. Agricultural Landowners With Existing Easements	1	10
No. Agricultural Landowners Impacted	28	24
No. Specialty Farms Within ROW*	0	1
No. Landowners With Conservation Agreements in ROW*	3	4
Approximate Amount of Agricultural ROW in FPP	100%	75%

* Identified through available GIS data, landowner responses to DATCP survey, and/or from field surveys where survey permission was granted; more could be identified through field surveys and landowner communication following PSCW approval and ordered route.
** Number of structures is based upon preliminary engineering data and is subject to change based on final engineering and landowner modifications where possible.

Both Route Alternatives would have a significant impact on agricultural landowners and agricultural resources within the ROW. If the Commission determines that the Project is needed and feasible, DATCP recommends the PSCW select the North Route Alternative.

Several of the items identified in Table 4 are very similar on both Route Alternatives, such as the number of homes, agricultural buildings, CAFO's, and dairy farms within 300 feet of the ROW centerline. Therefore, DATCP is basing its reasoning for the preference of the North Route Alternative over the West Route Alternative based on the North Route Alternative's:

- Much higher amount of shared ROW
- Lower amount of agricultural land cover within the ROW

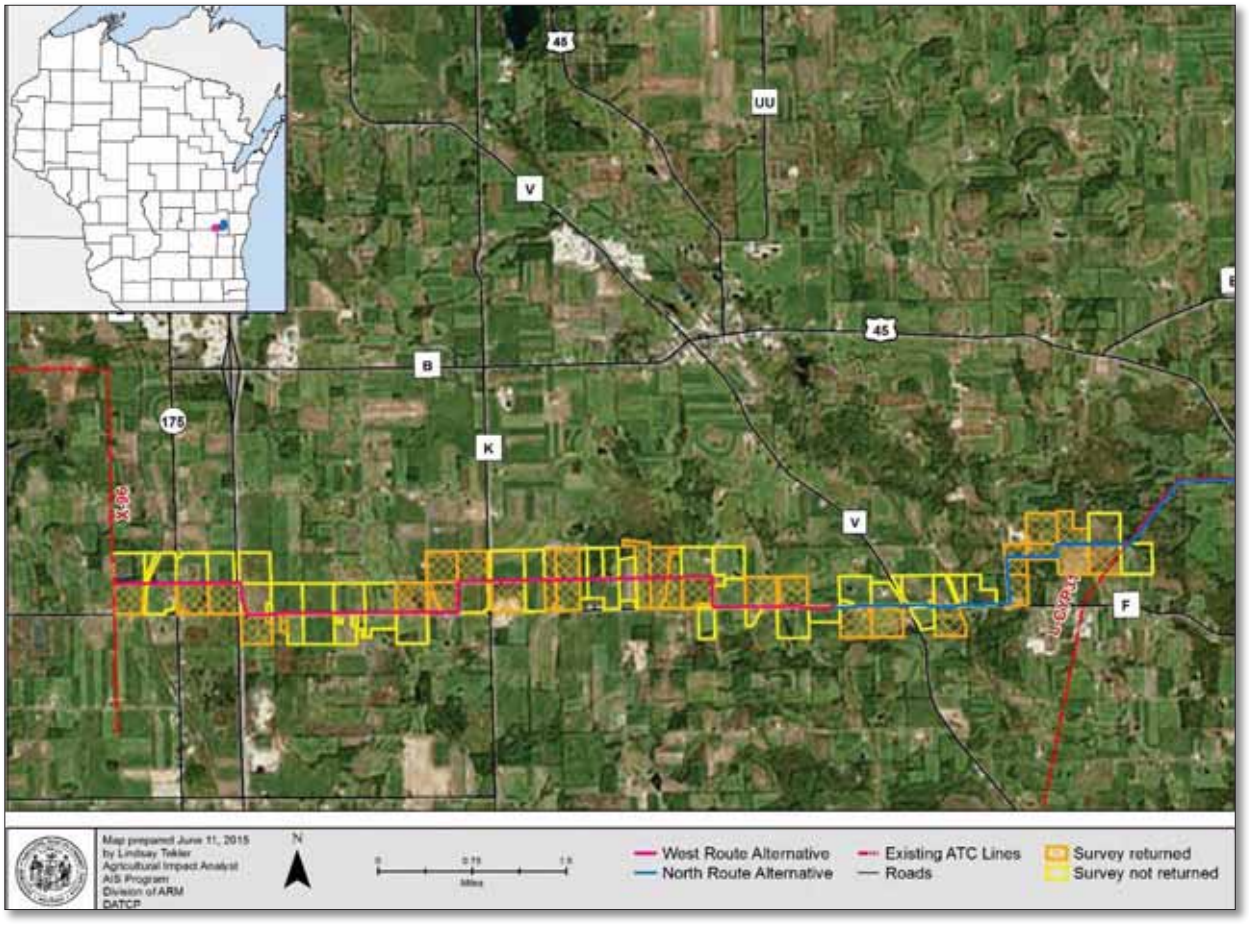
- Lower number of structures to be placed within ROW with agricultural land cover
- Much lower number of new easements to be obtained from agricultural landowners
- Lower overall number of agricultural landowners that would be affected
- Lower amount of the ROW acreage within farmland preservation zoning

5. Agricultural Landowner Concerns

5.1 Summary of Landowner Responses

To gather further information on how the Project could affect farmland and individual farm operations, DATCP mailed surveys to all landowners that would have new acquisitions of agricultural land. The survey was mailed to all landowners with new easements of agricultural land within and immediately adjacent to the ROW for both Route Alternatives, for a total of 41 mailed surveys. Surveys were not sent to landowner with existing ATC easements or to landowners with new easements where contact information was unavailable. The response rate was 51 percent, with the majority of the surveys returned by agricultural landowners on the West Route Alternative (Figure 6).

Figure 6. Geographic Represensation of Landowner Survey Responses.

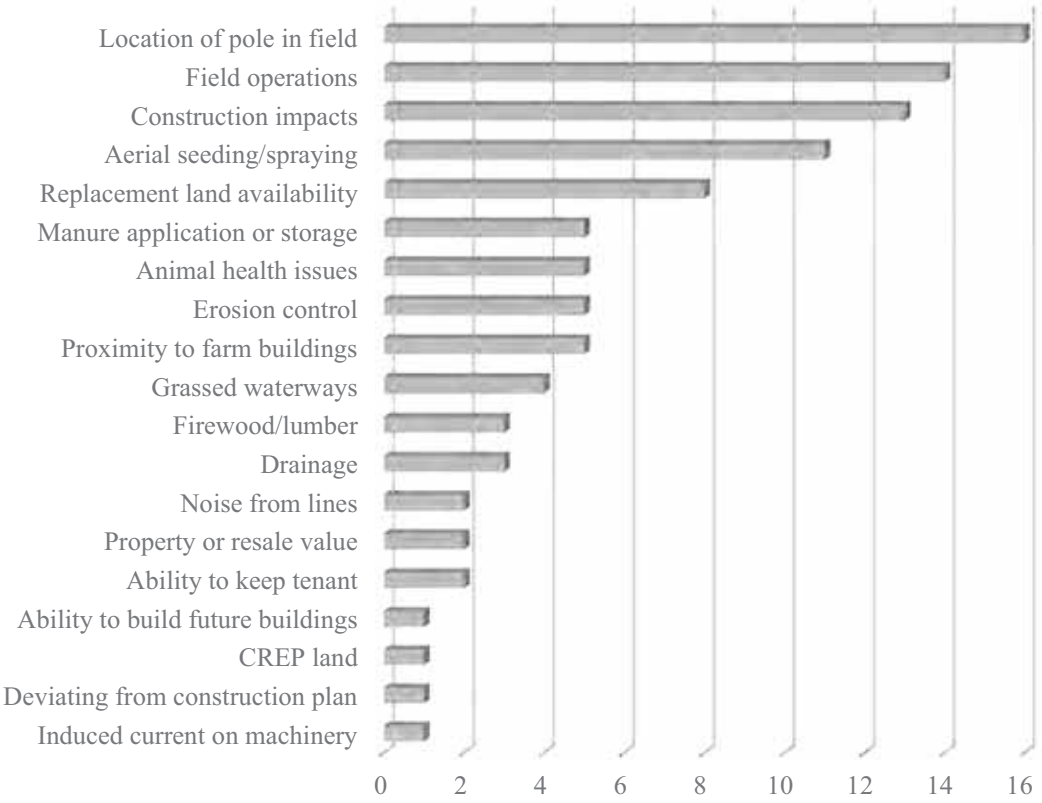


Twenty one agricultural landowners responded to the survey, 15 from the West Route Alternative and 6 from the North Route Alternative. The majority of farmers that responded to the survey farm land that they own, while approximately one third of the farmland owners also rented their land to other farmers. All of these farmers have cropland, with corn being the most commonly grown crop,

followed by soybeans and then hay. A wide variety of farm animals are owned by these farmers, including 6 landowners with beef cattle, 5 with dairy cows, 3 with horses, 1 with pigs, and 1 with chickens.

These 21 agricultural landowners who completed the survey expressed a variety of concerns about how the Project could impact their farm operation and land located within the ROW (Figure 7). The most commonly expressed concern was the location of the transmission structures in their field. The second most common concern was Project's impact on normal field operations such as planting, harvesting, and tilling, while the third most common concern was damage made to fields as a result of Project construction. This includes damages such as soil compaction, rutting, and soil mixing. These and other potential impacts are further discussed in Section 6. Complete individual landowner survey responses are provided in Appendix C of this AIS.

Figure 7. Landowner Concerns Identified in DATCP Survey.



5.2 Landowner Guide to Easements

5.3.1 What is an Easement

If the proposed Project is approved, ATC will obtain the needed ROW by purchasing permanent and/or temporary easements. An easement is a contract between ATC and the landowner which specifies the rights and restrictions on both the utility company and the landowner's use of the land. The contract is binding upon the utilities, the landowner, and any future owners of the land until the contract is dissolved. A sample ATC easement is included in Appendix D.

Permanent easements restrict certain activities on the ROW and allow the utilities access for construction and future maintenance of the line. Temporary easements may also be needed for access routes to reach the ROW during initial construction of the line, as well as for the use of the selected laydown yard(s) during construction.

5.3.2 Easement Process

If ATC receives approval for the Project, the PSCW will issue the order that will identify the selected route and authorize construction of the Project. ATC would then begin contacting landowners to begin the easement negotiations.

Landowners should review their easement contract carefully and should consult an attorney if they are unsure about what they are signing. If an attorney is hired, landowners should make sure that person has expertise in the eminent domain process. The utility is required to provide landowners with information about their rights in this process before negotiations begin. Included in Appendix E is a list of guidance points to consider when easement contract negotiations begin.

The amount of compensation for the easement is established during the negotiation process between the utility and individual landowners. The utility's original offer of compensation is based on a market analysis. Landowners have the option to negotiate more favorable easement conditions and compensation. Although most crops can be grown under transmission lines, other land uses and activities may be restricted such as constructing buildings or growing trees on the ROW. Part of the compensation provided by ATC is intended to compensate the landowner for the lost opportunities associated with these restrictions.

According to *Wisconsin Statute §32.09 (6r),* for transmission lines 100 kV or greater and at least 1 mile in length, where the easement area is within land zoned or used for agricultural purposes, the utility's compensation offer must be in one of two forms: a one-time lump sum payment or an annual payment. The landowner has the right to choose which form of compensation they prefer. If annual payments are chosen, the payments will continue only as long as the easement land remains in agricultural use (PSCW 2014).

The easements can be customized to address some of the concerns or preferences of the landowner. Any specific items or stipulations agreed upon between ATC and the landowner, such as specific clearing or restoration obligations, notifications, timing of activities, or payment should be documented in the easement or another appropriate type of legal document. The easement will also specify the number, height, and type of structures in the ROW, the length and width of the ROW,

the minimum height of the **conductors** above the ground, and the number and maximum voltage of the line. Landowners can negotiate with the Applicant regarding pole placement within their fields at this point in time as well.

5.3.3 Modifications to Existing and New Easements

In some locations where the Project ROW overlaps existing ATC transmission line ROW easements, ATC would purchase new rights for the new permanent easements in these locations. The West Route Alternative would not share ROW with any existing ATC transmission easements, with the minor exception where the West Route Alternative intersects the X-96 line (Figure 2, Section 3). For this small area, ATC has stated that they would purchase new rights because there would be new facilities.

The North Route Alternative, in contrast, would share much of its ROW with an existing ATC easement, the L-CYP31 transmission line ROW (Figure 3, Section 3). The majority of these existing easements, acquired in 1970, included the rights and needed ROW acreage for an additional transmission line in the future and therefore ATC would not be re-negotiating these easements. However, ROW on three of these existing easements was obtained through condemnation. These condemnation judgements included specific language which limits the structure heights and types allowed within the ROW. If the Project is approved and the North Route Alternative is selected, ATC must offer to purchase easements at these locations to remove those limitations. If the landowner and ATC are unable to reach an agreement, ATC would then proceed with condemnation.

Where distribution **underbuild** occurs on transmission structures, ATC may need to include electrical distribution rights, assignable to We Energies, in its easement for the Creekview transmission line. This would be applicable to only new easements on both Route Alternatives, as transmission structures within existing ATC easements would not have distribution underbuilt.

5.3.4 Eminent Domain Law

If a landowner is unwilling to engage in the easement negotiation, or other impediments make negotiation not possible, the Applicant can seek condemnation of the needed easements. Condemnation is possible through eminent domain. Eminent domain is the government's ability, under Chapter 32 of the Wisconsin statutes, to condemn or take private property for public use.

If property rights are acquired through condemnation, the court assigns the legal obligations to the Applicant. Under a court ordered condemnation settlement, the Applicant may not have the capability or flexibility to address individual landowner concerns. If condemnation is used, it does not result in an easement contract, but a court order. Please consult *Wis. Stats* chapter 32 for more information pertaining to eminent domain, property acquisitions, and compensation.

5.3.5 Landowner Bill of Rights

Wisconsin Statutes §182.017 (7), also referred to as the Landowner Bill of Rights, describes the rights that landowners have, and the requirements the utility must adhere to, when a transmission line will be constructed on private property. The Applicant must comply, and require its contractors to comply, with all aspects of this statute. The Applicant may request landowners to

waive some of their rights during the negotiation process, but landowners are not required to do so. The Landowner Bill of Rights is still applicable to condemned land. DATCP recommends that each affected landowner review the Landowners Bill of Rights in its entirety prior to the start of easement negotiations.

6. Agricultural Impacts and Mitigation

Transmission line impacts to farmland can be categorized as temporary or permanent. Temporary impacts could become permanent if mitigating practices are not followed. This section discusses the potential temporary and permanent impacts to agricultural land associated with transmission line construction and the potential mitigation practices ATC should use to lessen those impacts.

It is important for ATC and its contractors to maintain respectful and cooperative working relationships with property owners and renters. Good communication between ATC and each affected landowner throughout the duration of the Project should be strived for to avoid problems and misunderstandings.

ATC has indicated that upon receipt of the Commission's Order, they will coordinate with each agricultural landowner to obtain detailed information about each agricultural operation including, but not limited to, the use of irrigation systems or drainage tiles, locations of farm animals and crops, current farm biological security practices, landowner concerns, and use of access routes. If the Project is approved, ATC will send an Agriculture Inventory Questionnaire (Appendix F) prior to the start of easement negotiations to all impacted agricultural landowners. This is how ATC will collect information on each farm operation and this information will be used to identify concerns farmland owners have and potential ways to mitigate for those concerns. **The completion of ATC's Agriculture Inventory Questionnaire is voluntary, but DATCP strongly recommends that each affected farmland owner complete the questionnaire so his or her concerns can be specifically addressed.**

Potential impacts to each farm property along the ordered route will be identified and where practicable, construction impact minimization measures will be implemented. Site-specific practices will vary according to the activities of the farm operator, the type of agricultural operation, the susceptibility of soils to compaction, the degree of construction occurring on the parcel, and the ability to avoid areas of potential concern.

DATCP recommends that any landowner concerned about the potential impacts to their agricultural land should keep records of the conditions of the ROW before, during, and after construction. Records could include keeping crop yield records, beginning once the ROW is known, and photographs taken every season. These measures can all help a landowner should damages caused by Project construction occur.

If you observe work that is not acceptable, or violates the terms of your easement contract, immediately bring it to ATC's attention by contacting their land or real estate agent. It is generally easier to have the corrections made while the contractor is still in the immediate vicinity. The damage may not be able to be corrected at that time and will need to be scheduled in the near future. An example would be not being able to correct soil compaction until the ground is no longer frozen. Even if repairs cannot be made at the time that the damage occurs, it is still important to report the damage to ATC as soon as possible and to document the conditions with photos.

6.1 Temporary Impacts and Mitigation

6.1.1 Soil Compaction

Equipment used to construct transmission lines has the potential to compact soil and thereby reduce soil productivity on the farmland traversed during construction. Soil compaction reduces pore space between soil particles, restricting the movement of water and gases through the soil. This can affect the rooting depth of crops and the uptake of soil nutrients and water. In addition, soil compaction can decrease soil temperature, decomposition of organic matter, and a plant's ability to access required nutrients found lower in the rooting zone. It can also increase the likelihood of water erosion on farm fields.

Several factors influence whether a soil becomes compacted. An important influence is soil moisture: the wetter the soil, the more likely it is to be compacted from traffic. The potential for compaction also depends on the soil texture. Coarser textured soils, like sand or sandy loam, are less likely to become compacted than are clay or silty clay loams. Finally, the axle weight of the construction equipment affects compaction. The expected compaction depth increases as the axle load increases and as soil moisture content increases.

To mitigate the potential for soil compaction, the Applicant is required, under the Landowners Bill of Rights (*Wisconsin Statute §182.017 (7c))* to schedule any construction work in agricultural land at times when the ground is frozen, to the extent practicable and at the landowner's request.

DATCP recommends that ATC and its construction contractors implement the following mitigation measures to reduce the potential for soil compaction: use low-ground pressure and/or wide tracked equipment to reduce the amount of axel weight applied to soils; use construction mats to spread out ground pressure; whenever possible, conduct all work during the winter when the ground is frozen; and avoid working on recently saturated soils.

DATCP also recommends that ATC perform post-construction monitoring and test for soil compaction. Topsoil compaction is tested by sampling soil the ROW with a penetrometer and comparing those findings to readings for soils sampled outside of the ROW. If the soils within the ROW indicate compaction has occurred, ATC should either compensate the landowner for all costs associated with de-compacting the soil or hire a crew to perform the decompaction.

6.1.2 Soil Rutting

Rutting can occur when soils become saturated or in areas with soils sensitive to rutting. Although the amount of damage to soils from rutting depends on the depth of the ruts, rutting can lead to the inability of farm equipment to traverse the ROW and increase chances for soil mixing, erosion of topsoil during rain events, and compaction of soils.

Rutting can create an erosion problem, because silty soils in the Project ROW are very susceptible to sheet flow water when rutted. Rutting can also mix the topsoil with the subsoil, resulting in a less productive topsoil layer.

DATCP recommends that ATC and its construction contractors implement the following mitigation measures to reduce the potential for soil rutting: use low-ground pressure and/or wide tracked equipment to distribute the axle weight applied to soils; use construction mats to spread out ground pressure; whenever possible, conduct all work during the winter when the ground is frozen; and avoid working on recently saturated soils. Any ruts that occur should be given sufficient amount of time to dry before they are fixed, or additional damage to the soil may result. Ruts should be backbladed as soon as site conditions allow so they do not impede the movement of farm equipment.

6.1.3 Soil Mixing

Soils have the potential to be mixed during excavation for the structure foundations and if deep ruts occur. Spoils that are intermixed with topsoil and subsoil should never be spread on the surface of the ROW where the ROW is used for cropland or pasture.

The Applicant is required under the Landowners Bill of Rights to strip the topsoil around a structure foundation hole, pile it, and replace the topsoil upon completion of excavation. The soil piles, or spoils, should be placed in an area designated by the landowner. ATC prefers the landowner waive this right, and in its place, ATC will import clean topsoil, where needed, during the restoration phase. The landowner does not have to waive this right, but if they choose to do so, ATC's obligation to import clean topsoil should be written in the terms of the easement contract. If the landowner chooses to waive this right, ATC should spread excavated soil in a location designated by the landowner or the soils should be hauled off-site.

DATCP recommends that ATC and its construction contractors implement the following mitigation measures to reduce the potential for soil mixing: use low-ground pressure and/or wide tracked equipment to distribute the axel weight applied to soils; use construction mats to spread out ground pressure; avoid working on recently saturated soils; segregate and stockpile any removed topsoil; and never spread mixed soil on cropland or pasture.

6.1.4 Excess Rock Content of Soil

ATC stated in the CPCN application that depending on the structure foundation type, the excavated foundation holes will range from 15 to 40 feet deep. Some areas of the West Route Alternative contain shallow bedrock which may need to be excavated to allow the necessary depth for the installation of the structure foundations. This could potentially require blasting, or the controlled use of explosives, to excavate the bedrock.

Blasting bedrock could potentially cause a higher rock content in the soil than conditions prior to construction. The Applicant is required, under the Landowners Bill of Rights, to remove any rocks or stones from the soil that resulted from construction activity. DATCP recommends that in areas where bedrock blasting has occurred, all rocks with a diameter of 3 inches or more be removed from the upper 24 inches of soil. Segregated or imported topsoil should not be spread on the ROW before rock removal has occurred. Excess rocks should be disposed of off-site and should never be spread across the ROW. ATC should discuss with farmland owners if blasting will occur on their property and how the rock removal will be carried out.

6.1.5 Drainage

Proper field drainage is vital to a successful farm operation. Construction of a transmission line can disrupt improvements such as drainage tiles, grassed waterways, and drainage ditches, which regulate the drainage of farm fields. If drainage is impaired, water can settle in fields and cause substantial damage, such as harming or killing crops and other vegetation, concentrating mineral salts, flooding farm buildings, or causing hoof rot and other diseases that affect livestock.

If the Project is approved, ATC will consult with individual landowners to determine if drainage structures exist within the ROW and document existing drainage problems that could affect the construction easement area. The Applicant is required, under the Landowners Bill of Rights, to repair any drainage tile lines within the ROW that are damaged during construction or maintenance of the transmission line. ATC has stated that in the event of any damage to drainage structures, ATC would either restore the facility or make payment directly to the landowner.

ATC's environmental field surveys identified several constructed agricultural drainage ditches along field edges near County Road K in segment 5 of the West Route Alternative. Several landowners use these drainage ditches as part of the drainage system for their fields:

- West Route Alternative: K-View Farms, Kevin Batterman, Steven Reilly, and Richard and Lisa Beder

In addition, the following landowners stated in their response to DATCP's Agricultural Impact Questionnaire that they have drainage tiling that could be impacted by the Project:

- West Route Alternative: Steven Reilly, Janzer Revocable Trust, Richard and Lisa Beder, and James Majerus.

DATCP recommends that landowners with wetter soils or with drainage tiling discuss specific mitigation measures with ATC during the easement negotiations process to ensure protection of these soils during construction activities, if the Project is approved.

DATCP recommends that any affected landowners with a map of their drainage tile share this map with ATC real estate/land agent representatives during the easement negotiations to plan around the existing tile where feasible. During construction, DATCP recommends that ATC's construction contractors use low-ground pressure and/or wide tracked equipment to reduce the potential for damaging subsurface drainage structures; use construction mats to spread out ground pressure; and whenever possible, conduct all work during the winter when the ground is frozen.

6.1.6 Damage to Sloped Areas

Farmland owners often install or shape conservation practices to protect soil and water quality and reduce erosion of their farmland. The Applicant is required, under the Landowners Bill of Rights, to restore any slope, terrace, or waterway to its original condition if it is damaged during construction or maintenance of the transmission line.

The following landowners stated in their response to DATCP's Agricultural Impact Questionnaire that they have grassed waterways that could be impacted by the Project:

- West Route Alternative: Steven Reilly, Kevin Batterman, and Maureen Betz
- North Route Alternative: Richard and Rose Carey

DATCP recommends that landowners with conservation practices, such as grassed waterways or terraces, discuss specific mitigation measures with ATC during the easement negotiations process to ensure protection of these practices during construction activities, if the Project is approved.

6.1.7 Fencing and Livestock

Before construction begins, one of the issues that ATC should ask landowners about is whether there are animals on their farm operations and the type of operation (i.e. feedlot, managed grazing, etc.).

Construction access to a confined animal area could be needed by the Applicant. ATC should notify these landowners when access will be needed to their confined area so the animals can be housed or put to pasture elsewhere. If transmission line construction divides a pasture, access between the divided parcels could be restricted. ATC will need to work with the farmer to either develop an access plan for the livestock or compensate the farmer for the cost related to restrictions on grazing. ATC should fence off the construction area to prevent livestock from wandering onto the ROW.

Existing fences within the ROW may need to be removed or cut to allow full access to the ROW during construction. If ATC needs to cut any fences during construction, ATC will see that a temporary gate is installed, per required in the Landowners Bill of Rights. Such gates may be left in place at the request of the landowner. ATC has stated that all damaged fences will be replaced with a fence of equal or greater quality once construction is complete. Following initial construction of the line, fences are allowed within the ROW.

6.1.8 Manure and Nutrient Management

During the real estate acquisition process, ATC or its representatives should consult with farmland owners on their manure and nutrient application practices and timing to ensure these crop management activities are not negatively impacted by the Project. Special measures should be discussed and implemented to ensure that diseases are not spread between farms. To avoid the movement of manure from one farm to another by construction equipment, it is recommended that manure not be spread on the ROW from the time that tree clearing begins until restoration is completed.

6.1.9 Crop Damage

The Applicant is required, under the Landowners Bill of Rights to pay for any damage to crops caused during the initial construction and/or future routine maintenance of the transmission line. Further questions about crop damage payments should be addressed to the ATC real estate representative during easement negotiations.

6.1.10 Access to the ROW

For both Route Alternatives, public roadways would be utilized to access the ROW. Based on ATC's preliminary field review, the ROW would be accessed from where public roads intersect the ROW and that no access to the ROW outside of public roads will be required.

ATC has stated that other access to the ROW would be considered if it minimizes cost, environmental impacts, or landowner impacts. These would be off-ROW, temporary roads that would be created to access the ROW from private roadways or across private land. In these cases, the landowner would be notified and can choose to grant permission to access outside of the ROW. Any access or use beyond the easement area will require the written consent of the landowner, usually in the form of a temporary easement. ATC is responsible to the affected landowner for damage incurred within the temporary access route.

6.1.11 Surveying and Staking the ROW

Surveying and staking would be used throughout the duration of the Project for marking areas such as the ROW, boundaries of environmentally sensitive areas, structure locations, property lines, and underground utilities.

If surveying or construction crews leave wire surveying flags, equipment, or other debris behind after their work is completed, these items can pose a hazard to livestock. When livestock ingest such material, they can develop what is known as "hardware disease". Ingested wires or other objects can damage the animal's viscera and may lead to death. Any livestock owners who are concerned about the potential for this impact should discuss their concerns with ATC real estate representatives during the easement negotiation process.

6.1.2 Noise and Dust during Construction

Dust and noise due to transmission line construction can affect landowners and farm animals. Fur animals and poultry are particularly sensitive to noise. Any livestock owners who are concerned about the potential for this impact should discuss their concerns with ATC real estate representatives during the easement negotiation process.

ATC has stated that they would take steps to minimize noise where possible, including being conscious of landowner requests, working between the preferred hours of 7:00 am and 6:00 pm Monday through Friday, and turning equipment off when it is not in use. ATC has also stated that they will take steps to minimize the amount of dust and dirt where possible, including cleaning off roads daily where mud has been tracked from equipment, using tracking pads at frequently used access points, wet sweeping of roads, and having a water truck on site to spray the ROW and laydown yards with water.

6.1.13 Dewatering of the Foundation Hole

In areas where the groundwater is close to the ground surface, dewatering facilities may need to be used during the excavation and installation of the structure foundations. Proper dewatering of the foundation hole requires pre-construction identification by ATC's contractors of low areas and saturated soils that are likely to collect water during construction.

Depending on site conditions, the water may be de-silted and discharged to an upland area where it is allowed to infiltrate, or it may be removed from the site via a tank truck. Dewatering will proceed in accordance with applicable regulations and permit requirements. Discharge locations must be well-vegetated areas that prevent the water from returning to the ROW, be as far from backfilling activities as possible, and avoid deposition of gravel or sediment onto fields, pastures, or watercourses.

Silt or sediment extraction from the excavation site is minimized by preventing the intake from touching the bottom or sides of the hole. Erosion control measures must be used to divert the flow of pumped water and prevent erosion. When dewatering activities cause damage that cannot be avoided, ATC should reasonably compensate the landowner for such damages and restore the land and crops to pre-construction conditions.

6.2 Permanent Impacts and Mitigation

6.2.1 Organic Farms

Construction of a transmission line can jeopardize a farm's organic certification if prohibited chemicals used on neighboring non-organic farms drift onto certified organic land from the loss of a windbreak or from construction equipment entering organic farmland. Construction machinery can leak hydraulic fluid and could be contaminated with soil borne diseases, endangering certification of organic farmland.

A review of current available GIS data (2013) provided by the National Organic Program does not show any certified organic farms within the ROW for either Route Alternative. However, organic farms could exist within the Project ROW that have been certified since that time or that are in the process of obtaining organic certification.

If organic farms are discovered during Project construction, ATC and its contractors should work with organic farm operators within the Project's ROW to determine the most effective techniques to minimize the impact to those farms. Potential mitigation techniques could include offsetting structures to preserve windbreaks separating organic and non-organic farms, cleaning construction vehicles prior to entering organic land, prohibiting the application of herbicide in organic ROW when the landowner has not consented to it, and displaying signs within the ROW at the boundaries of organic farms to help visually alert oncoming construction crews and vehicles of the presence of an organic farm operation.

6.2.2 Specialty Crop Production

Although ATC stated in their CPCN application that there are no specialty farms within the ROW for either Route Alternative, current available GIS data (2014) provided by the U.S. Department of Agriculture (USDA) shows that several landowners have specialty farm operations within the ROW:

- North Route Alternative: Joel and Craig Narges and Douglas and Linda Hodorff both grow approximately 9 acres of peas within the ROW of segment 11.

DATCP recommends that ATC work with specialty farm operators within the Project's ROW to determine the most effective techniques to minimize the impact to their specific type of specialty crop.

6.2.3 Aerial Spraying

The location of transmission line structures in cropland can restrict aerial application of chemicals or seed and can increase the danger of making applications. When agricultural pilots have to maneuver to avoid transmission lines, uneven or imprecise aerial spraying may result in: 1) cropped areas being missed, resulting in weed growth and or pest infestations that reduce yields; 2) increased cost from hand application of pesticides in non-applied areas; and 3) increased risk of liability from pesticide drift on neighboring properties.

The following landowners stated in their response to DATCP's Agricultural Impact Questionnaire that their aerial seeding and/or spraying operations could be impacted by the Project:

- West Route Alternative: Douglas and Cynthia Decker, Robert and Marianne Geiger, Kevin Batterman, Steve and Lori Reilly, Anthony and Joanne Albert, Mark and Karen Albert, Richard and Lisa Beder, and James Majerus.
- North Route Alternative: Allen and Judith Straub, James Zielicke, Richard and Rose Carey, Thomas and Florence Flood, and Maureen Betz.

The Applicant is required, under the Landowners Bill of Rights, to include compensation associated with the inability to adequately aerial spray or seed. DATCP recommends that ATC and its contractors work with farm operators to determine the most effective techniques to minimize the impact to their aerial spraying applications. Potential mitigation measures could include minimizing structure heights where feasible and installing markers on **shield wire** where aerial seeding and spraying occurs.

6.2.4 Irrigation

Center pivot systems located along the Project route could be significantly affected by placement of the proposed transmission line structures if the new line bisects the field rather than following a field edge. Existing and planned underground piping for central pivot and nutrient application and transfer could also be highly impacted. Depending on the placement of the transmission structures within the irrigation path, a farmland operator could potentially not be able to use or build an irrigation system.

DATCP recommends that ATC work with the operators of irrigation systems in the Project's ROW to avoid impacts on the operation of their systems to the extent practicable. If structure locations cannot be moved to where they would not impact the irrigation system, the landowner should be compensated accordingly for the loss of the use of their irrigation system.

6.2.5 Woodlands and Windbreaks

If the transmission line is approved, the initial construction of the line will require the removal of all trees and tall-growing vegetation from the entire width of the ROW to allow crews and equipment safe access. Vegetation removal is required to stay in compliance with Federal Energy

Regulatory Commission (FERC) safety standards, an independent agency that regulates the interstate transmission of electricity, oil, and natural gas.

Vegetation will be cut at or slightly above the ground surface using mechanized equipment or by hand. Tree stumps will generally be left in place, except in areas where stump removal is necessary to facilitate the movement of construction vehicles, or required by the landowner. The entire width of the ROW will be cleared to take into account such factors as line sagging and blowing. Line sagging is when the conductor droops closer to the ground due to its increased heat from carrying extra electric load during periods of high usage. Dead, dying, diseased, or leaning trees (hazard trees) outside ROW may need to be cut or trimmed due to the risk of them falling within the ROW.

In addition to the tree clearing of the entire width of the ROW where new easements would be acquired, further clearing would need to occur within the existing L-CYP31 easements if the North Route Alternative is selected. As stated in Section 3.2.2, the existing L-CYP31 easements were purchased with an extra-wide ROW to accommodate a future second transmission line. As only one transmission line, the L-CYP31 line, currently exists in this 220-foot wide ROW, approximately 75 percent of the 220-foot wide ROW has been cleared to maintain necessary clearances. If the Project is approved and the North Route Alternative is selected, the other 25% of this ROW would need to be cleared to allow the necessary clearance for the Creekview transmission line.

ATC real estate representatives will discuss the necessary vegetation management work with each affected landowner during the easement negotiation process. At that time, a Tree Disposition Report (Appendix G) will be completed, stating the necessary vegetation removal and site clean-up. After the easement has been acquired, ATC's vegetation removal contractor will contact the landowner when tree removal is scheduled to begin. If hazard trees found during the initial ROW clearing were not previously identified in the Tree Disposition Report, they will be discussed with the landowner followed by the removal of the hazard tree per the terms of the easement.

During easement negotiations, ATC real estate representatives will also discuss the use of herbicides on the cleared ROW. ATC's vegetation management program commonly uses selective herbicides following the initial tree clearing to discourage the re-growth of tall-growing tree and shrub species. The Landowners Bill of Rights requires that permission from each landowner be granted prior to the use of any herbicides on the ROW. If the landowner does not grant permission, ATC must refrain from the use of herbicides on their property within the ROW. If the landowner grants permission, they will sign ATC's agreement for the use of herbicide on the easement area (Appendix H). **During the easement negotiations, the landowner can request a one-time payment for the use of herbicides.**

Affected forest landowners will maintain ownership of any trees that need to be cut as a result of the Project, as stated in the Landowners Bill of Rights. The manner in which these trees are handled should be negotiated between ATC and the affected landowner before clearing begins. Typically, any timber or saw logs are stacked on the edge of the ROW in upland locations for the landowner's disposition. Smaller diameter trees and limbs, often referred to as slash, are usually chipped and disposed of according to the landowner's wishes: spread on the ROW, piled on the edge of the

ROW for the landowner's use, or disposed of according to other agreed-upon arrangements. Slash may also be disposed of by burning, but local permits may be required for this.

Windbreaks are linear plantations of trees that help to maintain soil quality by providing a barrier on the windward side of a field, which reduces erosion from the wind. If trees that are part of a windbreak are removed because of the Project, the adjacent soils could be more susceptible to erosion. Depending on soil conditions and supporting practices, a single row of trees protects for a distance downwind of approximately 10 to 12 times the height of the windbreak.

DATCP recommends that the PSCW require ATC to avoid woodlands and windbreaks or, where wooded areas cannot entirely be avoided, route the line toward the edge of the wooded area to keep the windbreak in place as much as possible.

After the line has been constructed, the deforested land could now be used for farming, if the tree stumps are removed. Landowners who wish to farm the cleared land or incorporate that area into their residential yard should discuss tree stump removal with ATC real estate representatives during the easement negotiation process. When the landowner chooses not to incorporate the cleared area into their farm operation or yard, ATC will continue to conduct their vegetation management program to maintain the cleared ROW free of trees for the life of the transmission line. The vegetation management will typically be conducted on a 5 year maintenance cycle and affected landowners will be notified before any planned maintenance activities occur. If any crop damage occurs as a result of the line maintenance activities, the landowner will be compensated. For more detailed information on ATC line vegetation maintenance activities, consult the ATC real estate representative during easement negotiations.

A hazard to livestock that can occur during ROW clearing or maintenance is the disturbance of black walnut trees. The roots of these trees produce a toxin known as juglone that causes an allergic reaction in horses and may also affect other livestock. Care should be taken when clearing any black walnut trees to make sure that all roots, wood, bark, leaves, hulls, and sawdust are removed from any area to which livestock may have access. Even the ash from trees that have been burned may still contain the toxin. Relatively small amounts of juglone are also found in Persian (English or Carpathian) walnut trees as well as butternut, pecan, and hickory trees.

6.2.6 Biosecurity

Farm biosecurity is the implementation of measures designed to protect a farm operation from the entry and spread of diseases and pests. DATCP recommends that ATC work with farmers to develop biosecurity protocols specific to a landowner's farm operation. These protocols could include cleaning the equipment between parcels; avoid spreading manure in the ROW prior to construction; avoiding contact with livestock and manure during construction; and collecting information about individual farm activities (planting, tillage, crop rotations, etc.) so construction methods and timing can be adapted to the timing of crop work. Please consult DATCP's Division of Animal Health for more information on biosecurity, located here: http://datcp.wi.gov/Programs/Animal_Health/index.aspx.

6.2.7 Stray Voltage

Electrical systems, including those on farms and electric distribution systems, are grounded to the earth to ensure safety and reliability. Because they are grounded to the earth, some **current** flows through the earth at each point where the electrical system is grounded, developing a small voltage called **neutral-to-earth voltage** (NEV).

When an animal comes into contact with NEV charged objects, a current will flow through the animal, called **stray voltage**. The PSCW defines stray voltage as a natural phenomenon that can be found at low levels between two contact points in an animal confinement area where electricity is used.

Stray voltage often goes unnoticed by humans, but can affect animals on farms. Small stray voltage shocks are created when an animal makes contact between an energized point, such as a feeder, and the earth or concrete floor at a different voltage. Animals can show changes in behavior or milk production if a level of stray voltage above a few volts is present. An animal may experience a variety of effects, depending on the level of stray voltage.

NEV is only associated with the distribution system, as the transmission system does not have a neutral conductor for the return current. However, if a transmission line parallels or crosses a distribution line, the transmission line can affect the amount of NEV on the distribution system, thus contributing to potential stray voltage problems (Black 2015).

DATCP and the PSCW Rural Electrical Power Service (REPS) program suggest that all livestock farms routinely (every year or two) have their electrical systems tested for NEV and other electrical safety concerns. According to the PSCW docket 05-EI-106 (the case that defines stray voltage), the response level for stray voltage is 1.0 volt at animal contact from all sources. This level of stray voltage is considered to be below the level at which most animals would react. If an investigation determines that the utility is contributing 0.5 volts or more to the animal contact voltage, the utility will take immediate action to lower its contribution.

Free investigative services are available to landowners who have livestock containment facilities through their electric distribution service provider. Farmers with confined livestock facilities in the vicinity of the proposed power line can request their electricity provider test for NEV before the Project is constructed and then repeat the test after Project construction is complete and the transmission line is energized. It is important to perform both rounds of testing, to ensure that the final post-construction test result has a baseline NEV level to compare to (the before construction test). This will create the documentation to begin to address any problems that were created by the Project.

DATCP recommends that all concerned landowners contact their local distribution company to arrange for free NEV testing on their farm, both before and after the construction and energization of the transmission line. Once the Route Alternative is selected, should the Project be approved, DATCP also recommends that ATC inform each landowner with confined animals within 300 feet of the transmission line of their ability to request free NEV testing by the local distribution utility prior to construction and again after the Project is energized. To facilitate communication and

minimize conflicts, ATC should be made aware of the results in a timely manner for both rounds of testing at each confined animal facility.

Based on a review of available GIS data, the following landowners have confined animal feeding operations (CAFO) within 300 feet of the transmission centerline:

- West Route Alternative: Adam Delude has confined horses on segment 6.
- North Route Alternative: Jeff Zimdahl has confined beef cattle on segment 9.

6.2.8 Structure Location in the Farm Field

Structures constructed in cropland will act as obstacles to fieldwork and affect more cropland than just the area used for the structure foundation. The impact will be different for each farm operation and potentially for each field crossed by the Project. In addition, some of the impacted farm operations could have the added impacts of two new transmission lines in fields it crosses rather than just one, making all of the impacts described below twice as burdensome.

Maneuvering around transmission line structures can be difficult, particularly when larger farm equipment is used. Farmers may attempt to reduce the area that cannot be cropped around the structure by planting as close as possible to the transmission line structure; however, doing so increases the likelihood of hitting the structure with farm implements. It is unlikely that the transmission line structures proposed for this Project would be damaged in such a collision; however, the farm implements may be damaged significantly, requiring expensive repairs and delayed field operations during planting and harvesting when time is most critical.

The farmland owner will also lose additional land adjacent to the foundation because farm machinery will not be able to work the land immediately adjacent to those structures. The actual amount of farmland lost due to inaccessibility will vary depending on the location of the support structure in the field, the size and maneuverability of the equipment the farmer operates, and the distance the farmer is willing to leave between farm equipment and support structures when moving around them. This inaccessible area can become a haven for weeds and other pests, which can spread to adjacent croplands and potentially reduce yields and/or necessitate the application of additional pesticides.

In the existing 220-foot wide ROW on the North Route Alternative, the Creekview transmission structures would be placed in line with the existing L-CYP31 transmission structures to minimize the impacts to field operations. ATC states that for a majority of the landowners on both Route Alternatives, the impact from the location of the structures will be minimized to the extent practicable by having the ROW follow property lines, field edges, and road ROW where possible.

DATCP recommends that ATC work with farmers to determine optimal structure locations on their cropland, and make minor location adjustments where feasible. Potential location adjustments could include locating the structure along fence or field lines, using longer **spans** to clear fields, or orienting the structures with the plowing pattern.

6.2.9 Safety Issues when Farming Near Transmission Lines

Many safety issues exist related to the location of farm fields, buildings, and the use of farm equipment near and/or under transmission lines. Safety concerns that landowners should be particularly aware of include:

Direct Contact and Arcing

The most significant risk of injury from a transmission line is the danger of electrical contact. Unlike the wiring in a home, the conductors of overhead transmission lines are not enclosed by an insulating material. Electrical contact between an object on the ground and an energized conductor can occur even if the two do not actually touch. In the case of high voltage lines, electricity will arc across an air gap if the object on the ground comes close enough to a conductor. The distance between an object and a transmission line needed for arcing varies with the voltage at which the line is operated.

In general, the arcing distance for a 345 kV line is two to three feet and for a 115 kV line it is one to one and one half feet. However, it is recommended that objects on the ground not be raised more than 14 feet above the ground in the vicinity of any power line. In some instances, it can be exceeded without causing problems. Farmers should contact ATC if they need to deviate from this recommendation to be sure that their situation is safe for anticipated farming activities.

Farmers must be careful where transmission lines sag due to high air temperatures or high use. In areas where the soil shifts significantly with wind, the resulting dunes can elevate the earth under a line. If the safety limit needs to be exceeded or equipment close to the height limit is routinely used under a line (such as bale wagons, bale elevators, grain augers, cranes, large combines, or antennas on equipment), farmers should check with ATC to confirm the necessary clearance requirements. This may include confirming that the earth-to-line distances have not changed since the line was constructed.

Injuries are more likely to occur with lower voltage power lines (12.5 kV to 115 kV) than with higher voltage lines because contact with the lower voltage lines is more likely. The electrical conductors for lower voltage lines are closer to the ground, smaller, and less noticeable. An injury from contact with a 12.5 kV line can be just as serious as that from a 345 kV line. Some general safety tips for farmers working near any power line include the following:

- Always lower portable augers or elevators to their lowest possible level (under 14 feet) before moving or transporting and be aware of your surroundings when raising them.
- When moving large equipment or high loads near a power line, always use a spotter, someone to help make certain that no contact is made with a power line.
- Be aware of increased height when loading and transporting larger modern tractors with higher antennas.
- Never attempt to raise or move a power line to help clear a path.
- Never raise ladders, pipes, or rods near power lines. Remember that nonmetallic material such as lumber, tree limbs, and hay can conduct electricity depending on moisture and dirt contamination.

Transmission circuits are built to automatically de-energize upon contact with the ground or if phase conductors are severed. Therefore, the danger of electric shock from a downed transmission line is minimal.

Farm Electrical Safety Resources

The following websites provide additional information about electrical safety on farms.

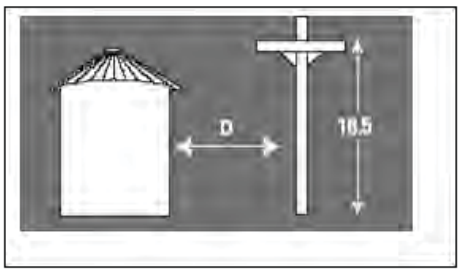
- Wisconsin Public Service Corporation's Brochures and Fact Sheets webpage http://www.wisconsinpublicservice.com/business/farm_brochures.aspx
- Safe Electricity, an Illinois project http://www.safeelectricity.org/
- Living and Working Safely around High-Voltage Power Lines, a publication of Bonneville Power Administration
- http://www.bpa.gov/news/pubs/GeneralPublications/lusi-Living-and-working-safely-around-high-voltage-power-lines.pdf

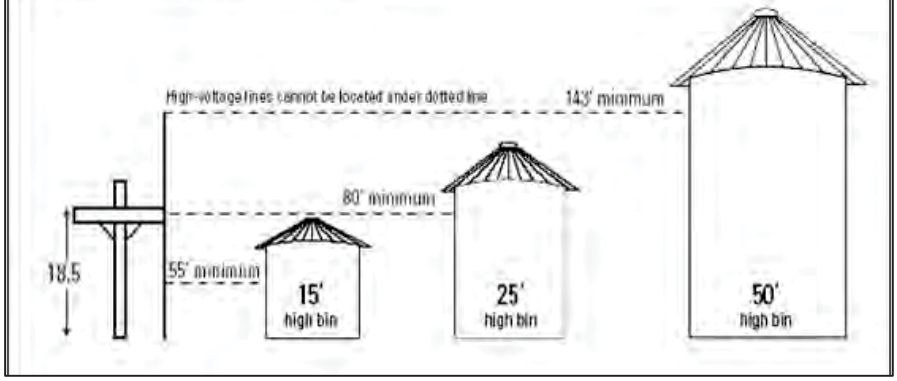
Power Line Proximity to Grain Bins

The National Electric Safety Code requires power lines to be at least 19 feet above the highest point on any grain bin with portable augers and other portable filling equipment. The recommended distances that grain bins should be from transmission lines is illustrated in Figure 8. A 19 foot clearance should be maintained from the grain bin's highest fill port and the transmission line.

Figure 8. Minimum Distances between Grain Bins and Transmission Lines.

Height of Grain Storage Structure	D= Minimum distance from line* to bin wall
15 feet	55 feet
20 feet	68 feet
25 feet	80 feet
30 feet	93 feet
35 feet	104 feet
40 feet	118 feet
50 feet	143 feet
60 feet	168 feet
70 feet	193 feet
80 feet	218 feet





Irrigation Systems Proximity to Power Lines

According to the Bonneville Power Administration (BPA) located in the northwestern United States, irrigation systems can be operated safely on a power line ROW. However, irrigators should avoid spraying a solid stream of water on a conductor. Caution should also be used when storing and handling irrigation piping by moving irrigation equipment in a horizontal position relative to the ground when passing under or near all power lines to keep away from conductors overhead. BPA also contends that center-pivot systems near transmission lines can develop hazardous shock potentials during operation and maintenance. Farmers should ground the pivot point to avoid these hazards. In addition, they should not touch the sprinkler pipe or its supporting structures when the system is operating near a transmission line and should only repair the system when the sprinkler pipe is perpendicular to the transmission line.

Refueling Near Power Lines

Although there has been no report of the accidental ignition of fuel caused by spark discharges induced from transmission line fields, it is recommended that vehicles be refueled at least fifty feet from the centerline of a transmission line corridor that is 345 kV or greater.

Static Discharge

Under certain conditions, a perceptible electrostatic voltage can be induced on such objects as large vehicles, permanent and temporary fences, metal buildings, shade cloth support structures used in ginseng gardens, or irrigation systems. This can happen when the object is near a high-voltage transmission line and is insulated from the ground. When a person or animal touches the object, a shock will be felt similar to what you may receive when you cross a carpet and then touch a doorknob. The static discharge is momentary, but can be painful. The magnitude of the static discharge depends on the voltage of the transmission line, distance from the conductors, size, or length of the object, its orientation to the line, and the extent of grounding of the object to the earth.

This condition can be corrected by effectively grounding the object to the earth. Sometimes this can simply be done by dragging a chain behind a tractor. Irrigation systems, metal buildings, and long wire fences may require additional assistance from ATC to remove the nuisance static discharges if they are close to the ROW.

Induced Voltage

Electric and magnetic fields (EMF) are produced when an electric current runs through any wire and are dependent on the voltage and current carried by a transmission line. An internal electric voltage and current is induced in any conductive object such as a metal building or equipment that is within an EMF.

Some of the many factors that influence the induced current densities are the strength of the electric field, the shape of the body in the field, the cross-sectional areas at any point between the line and the earth, the extent of grounding of the object to earth, and the nature of the internal structures of the object.

Induction and its potential impacts can be mitigated through implementation of appropriate design measures and techniques, including:

- Arranging transmission line conductors and shield wires to lower electric and magnetic field levels.
- Increasing the distance between the transmission line and other conductors or conductive objects.
- Grounding of non-energized conductors or conductive objects.
- Burying distribution lines underground.

6.2.10 Removal of Old Structures

There may be instances where the construction of a new transmission line will replace an existing aging transmission line and thus the old line's structures will need to be removed. When these old structures are removed from farmland, it is important that the structure be removed to a depth to not interfere with normal farming activities such as tilling. Any farmland owners that will also have old structures removed should consult with ATC real estate representatives during the easement negotiation process to determine the procedure and timing for their removal. DATCP recommends that the old structures be removed at a minimum of four feet below the ground surface to be below the normal plow level. DATCP also recommends that clean topsoil be imported and placed within the hole left by the removed structure to the level of the ground.

6.3 Role of the Agricultural Specialist and Environmental Monitor

Some key staff roles that are important to the protection of agricultural lands from pre-construction through post-construction phases are the agricultural specialist and environmental monitor. A description of their roles and responsibilities follows in the proceeding paragraphs.

6.3.1 Agricultural Specialist

The agricultural specialist is an independent individual, hired by and reporting to the Applicant, to serve as a liaison between ATC and farmland owners. If employed, the agricultural specialist would be involved from the time real estate acquisitions begin through construction of the transmission line and restoration of the ROW. The need for an agricultural specialist is determined by ATC on a project-by-project basis, and typically depends on the amount of agricultural land involved; questions ATC staff, landowners, and construction contractors have; and the questions and concerns raised through ATC's Agriculture Inventory Questionnaire.

If this Project is approved by the PSCW, DATCP recommends that ATC be required to employ an agricultural specialist. If an agricultural specialist is employed for this Project, the specialist's services will be offered to each farmland owner during easement negotiations. The specialist does not routinely participate in the negotiations, but can be brought in upon request by the landowner or ATC real estate staff to respond to any specific agricultural questions or concerns. DATCP recommends that any impacted farmland owner with specific agricultural questions or concerns request to meet with the agricultural specialist prior to signing the easement contract.

Following easement acquisitions, the agricultural specialist will still be available to: assist ATC staff, construction contractors, and landowners with questions or concerns; attend the weekly construction meetings; observe construction activities; assist with matters that arise during construction of the transmission line and restoration of the ROW; and assist ATC real estate representatives in settling final damage payments to agricultural landowners.

6.3.2 Environmental Monitor

The environmental monitor is an individual, or set of individuals, hired by the Applicant, to conduct daily inspections of the construction activities to ensure compliance with all environmental permits issued for the Project, site-specific construction and mitigation plans, site restoration standards, and PSCW order points. The environmental monitor will monitor construction activities on farmland as well as environmentally sensitive areas such as waterways, wetlands, uplands, endangered species habitat areas, and invasive species locations.

In order for DATCP to have an informational role and to be kept in constant communication regarding the construction activity occurring on agricultural land, DATCP requests that ATC's environmental monitor complete DATCP's Agricultural Monitoring Form for Transmission Line Projects (Appendix I). This form documents daily observations of construction activities on agricultural land only, and would be completed in addition to any inspection form used by ATC. DATCP also requests to be involved in the selection of ATC's environmental monitor to ensure that the monitor has expertise in agricultural issues as well as environmental issues.

DATCP requests these specific items because there is a relatively large amount of agricultural land within the ROW for both Route Alternatives, nearly all of this agricultural land is in farmland preservation, and to ensure that the construction activities on agricultural land are held to the same standard as construction activities on permitted land (i.e. wetlands, waterways).

6.4 Restoration of the ROW

Upon completion of construction, cleanup and site restoration of the ROW will occur. During this phase, soils will be graded to pre-existing conditions, rutting will be repaired, spoils will be put back in place, new topsoil will be brought in and spread where it was lost or mixed with the subsoil, decompaction will occur, fences will be repaired, all construction matting and temporary bridges will be removed, seedbed preparation and seeding will occur, all material and debris will be removed from the ROW, and payments for any outstanding damages will be made. Any outstanding issues that could not be repaired at the time they occurred, due to site or ground conditions or because work was still actively occurring, will be completed during this phase. Typical equipment for restoration activities include mat trucks, bobcats, pickup trucks, and other light duty vehicles. The environmental monitor will continue to inspect restoration activities during this phase to ensure stabilization and revegetation has been completed.

In addition, DATCP recommends that ATC conduct post-restoration monitoring to ensure that no long-term effects to agricultural land within the ROW has occurred. This monitoring should be conducted for a minimum of two years after construction and restoration is completed. DATCP

AIS staff should be informed of the monitoring results and provided with a monitoring report in a timely manner after the monitoring inspection(s) have been performed.

7. Summary of Recommendations

7.1 Recommendations to Impacted Landowners

If the Project is approved, DATCP recommends the following to landowners who will have easements acquired on their property:

1) All landowners should review *Wis. Stat. §182.017,* also known as the Landowners Bill of Rights, to be fully versed on their rights prior to the start of easement negotiations.
2) Concerned landowners should testify at the PSCW public involvement meetings and technical hearings for the Project. Please consult the PSCW website (http://www.psc.wi.gov/) for further information on public involvement and the schedule for hearings.
3) Landowners with conservation easements within the ROW should consult with the conservation program provider to determine if any effects will occur due to the land's alteration or removal from the contract. If the landowner is charged a fee for removing or altering the land within the conservation easement, ATC should compensate the landowner the cost of such fee.
4) Complete the Agriculture Inventory Questionnaire sent by ATC following the PSCW order to inform ATC and construction contractors of each landowner's specific concerns and information about their farm operation so specific mitigation measures can be put into place.
5) Any landowner with specific agricultural questions or concerns should request for consultation with the agricultural specialist prior to or during the easement negotiations to discuss those concerns and to address possible mitigation measures before the easement is signed.
6) Landowners should keep records of the condition of their land within the ROW before, during, and after construction to document any impacts or damage that occurs due to the Project. Records could include crop yield records and photographs taken every season.
7) DATCP recommends that all landowners with confined animals within 300 feet of the transmission line contact their local distribution company to arrange for free NEV testing on their farm, and have the test conducted both before and after construction and energization of the transmission line.

7.2 Recommendations to the PSCW

DATCP recommends the following as ways to mitigate the potentially adverse impacts associated with the Project, if approved by the PSCW:

1) If the Project is approved, to reduce the impacts to the area's strong agricultural industry, DATCP recommends the PSCW select the North Route Alternative as this route: has a much higher amount of shared ROW, has a lower amount of agricultural land cover within the ROW; has the lowest number of structures to be placed within agricultural ROW; has a much lower number of agricultural landowners with new easements to be obtained; has a lower overall number of agricultural landowners that would be affected; and has a lower

amount of ROW acreage within farmland preservation zoning, compared to the West Route Alternative.

2) ATC should hire an agricultural specialist to assist ATC staff, the construction contractor, and agricultural landowners on agricultural issues as needed or requested beginning from the time easement negotiations begin until restoration of the Project ROW is completed.
3) ATC's environmental monitor should complete DATCP's Agricultural Monitoring Form for Transmission Line Projects. This form would be completed in addition to any inspection form used by ATC.
4) DATCP should be involved in the selection of ATC's environmental monitor to ensure that the monitor has expertise in agricultural issues as well as environmental expertise. This is due to the fact that there is a relatively large amount of agricultural land within the ROW for both Route Alternatives, nearly all of which is in farmland preservation, and to ensure that the construction activities on agricultural land are held to the same standard as construction activities on permitted land (i.e. wetlands, waterways).
5) All farmland owners and operators should be given advance notice (at least 1 growing season) of acquisition and construction schedules so that farm activities can be adjusted accordingly. To the extent feasible, the timing of ROW acquisitions and construction by ATC and its contractors should be coordinated with farmers to minimize crop damage and disruption of farm operations.
6) Landowners, especially those with livestock, should be notified in advance when helicopters will be used in their area, including a range of dates and times when the use of a helicopter is expected.
7) Landowners should be given phone and email information for whom to contact within ATC's organization or contractors should impacts from the Project on their farmland arise or continue after Project completion.
8) DATCP recommends that ATC work with farmers to determine optimal structure locations on their farm operation, and make those minor location adjustments where feasible.
9) ATC and its contractors should work with organic farm operators to determine the most effective techniques to minimize the impact to organic farms, if any are found within the boundaries of the ROW of the selected route.
10) DATCP recommends that in areas where bedrock blasting will occurred, all rocks with a diameter of 3 inches or more be removed from the upper 24 inches of soil. Segregated or imported topsoil should not be spread on the ROW before rock removal has occurred. Excess rocks should be disposed of off-site and should never be spread across the ROW. ATC should discuss with farmland owners if blasting will occur on their property and how the rock removal will be carried out. Landowners should also be given advance notice of when blasting will occur on their property.
11) If the transmission line construction divides a pasture and access between the divided parcels is restricted, ATC should work with the farmer to develop an access plan for the livestock or compensate the farmer for the cost related to restrictions on grazing.
12) ATC should work with the operators of irrigation, underground drainage, and aerial seeding/spraying systems and operations to avoid impacts to their systems and operations to the extent practicable. If structure locations cannot be moved to eliminate impacting the operation or system, the landowner should be compensated accordingly for the loss of the use of or damage to their system or operation.

13) ATC should avoid structure placement in woodlands and windbreaks or, where wooded areas cannot entirely be avoided, route the line toward the edge of the wooded area to keep the windbreak in place as much as possible.
14) ATC should inform each landowner with confined animals within 300 feet of the transmission line of their ability to request free NEV testing by the local distribution utility prior to construction and again after the Project is energized. To facilitate communication and minimize conflicts, ATC should be made aware of the results in a timely manner for both rounds of testing at each confined animal operation.
15) The Fond du Lac County Conservationist should be consulted to ensure that construction proceeds in a manner that minimizes impacts to drainage and soils.
16) ATC should provide appropriate compensation to all landowners with land enrolled in a conservation easement or farm program if the landowner must reimburse the administering agency for the lands removal or alteration. These conservation or farm programs could include, but are not limited to, CRP, CREP, FPP, or MFL.
17) Information provided by the farmland owner in the Applicant's Agriculture Inventory Questionnaire, from any pre-construction landowner communication, from the landowner comments in the AIS, and/or from the easement negotiations should be incorporated into the request for proposals and the construction and/or environmental plans used by the contractors, inspectors, and monitors on-site.
18) ATC should implement training for all construction supervisors, inspectors, and crews to ensure that they understand the steps needed to protect the integrity of agricultural lands and operations during Project construction and restoration.
19) ATC and its construction contractors should implement the following mitigation measures to reduce the potential of soil compaction, rutting, and mixing: use low-ground pressure and/or wide tracked equipment to distribute the axel weight applied to soils; use construction mats to spread out ground pressure; whenever possible, conduct all work during the winter when the ground is frozen; and avoid working on recently saturated soils.
20) If ATC removes any existing power line support structures within or immediately adjacent to cropland, remove the old structure at a minimum of four feet below the ground surface to be below the normal plow level. DATCP also recommends that clean topsoil be imported and placed within the hole left by the removed structure to the level of the ground.
21) After construction of the line is complete, ATC should test the soil profile to determine whether the soils in the ROW have been compacted by construction or other equipment. This is done by comparing the compaction levels of soils on the portion of the ROW that carried the traffic to comparable soils off the ROW. If soils are compacted, ATC should either compensate the landowner to de-compact the soils or hire a crew to perform the decompaction.
22) ATC should conduct post-restoration monitoring to ensure that no long-term effects to agricultural land within the ROW has occurred. This monitoring should be conducted for a minimum of two years after construction and restoration is completed. DATCP AIS staff should be informed of the monitoring results and provided with a monitoring report in a timely manner after the monitoring inspection(s) have been performed.

Sources

American Transmission Company. "A Guide to Agricultural Use of American Transmission Co. Rights-of-Way." http://www.atc-projects.com/wp-content/uploads/2012/11/AgriUseROW_web.pdf.

American Transmission Company. "Creekview Interconnection Project." http://www.atc-projects.com/projects/creekview-interconnection-project/.

American Transmission Company. 2015. Application for PSCW Certificate of Public Convenience and Necessity and WDNR Utility Permit Application – Creekview Interconnection Project.

Alliant Energy. Overhead Power Lines and Underground Pipelines. http://www.alliantenergy.com/SafetyAndReliability/ElectricSafety/Farm/029931

Black, Brian. 2015. Rebuttal Testimony of Brian Black on Behalf of American Transmission Company LLC and ATC Management Inc. PSC Reference Number 236608 for Docket Number 137-CE-176.

Energy Education Council. Preparation and Awareness Keys to a Safe Harvest. http://www.safeelectricity.org/

Fond du Lac County. 2012. Farmland Preservation Plan, Fond du Lac County, 2012. http://www.fdlco.wi.gov/home/showdocument?id=4748.

Morbidity and Mortality Weekly Report. 2004. "Work-Related Pilot Fatalities in Agriculture – United States, 1992-2001". *MMWR Weekly*. Centers for Disease Control. Vol. 53 No. 15: 318-320

Osborn, C. Tim, et. al. 1982. "Overhead Electric Transmission Line and Support Structures: Cost and Yield Effects in the Production of Cotton and Soybeans." *Journal of the American Society of Farm Managers and Rural Appraisers.* Vol. 46, No. 2.

Public Service Commission of Wisconsin. 2014. "Right-of-Ways and Easements for Electric Facility Construction." http://www.psc.wi.gov/thelibrary/publications/electric/electric02.pdf.

Purdue University. Purdue Agronomy. Soils, Agriculture, and Environment. http://www.agry.purdue.edu/soils_judging/new_manual/ch3-potentials.html#sub2

Town of Byron. 2014. Town of Byron Zoning Ordinance. http://www.fdlco.wi.gov/home/showdocument?id=5662.

Town of Eden. 2011. Town of Eden Zoning Ordinance. http://www.fdlco.wi.gov/home/showdocument?id=5999.

Town of Osceola. 2014. Town of Osceola Chapter 3 Zoning Ordinance. http://www.fdlco.wi.gov/home/showdocument?id=5966.

United States Department of Agriculture, Natural Resource Conservation Service (NRCS). Web Soil Survey. *Soil Survey of Fond du Lac County, WI*.

Wisconsin Department of Agriculture, Trade, and Consumer Protection. Wisconsin Farm Center. Stray Voltage and Power Quality Issues. http://datcp.wi.gov/Farms/Wisconsin_Farm_Center/Farm_Rewiring/Stray_Voltage/index.aspx?AspxAutoDetectCookieSupport=1

Wisconsin Geological and Natural History Survey. 2005. Bedrock Geology of Wisconsin. Map. http://wgnhs.uwex.edu/wp-content/uploads/2014/11/M067.jpg.

Wisconsin Legislature. Statute 32.09. Rules Governing Determination of Just Compensation. http://docs.legis.wisconsin.gov/statutes/statutes/32/I/09.

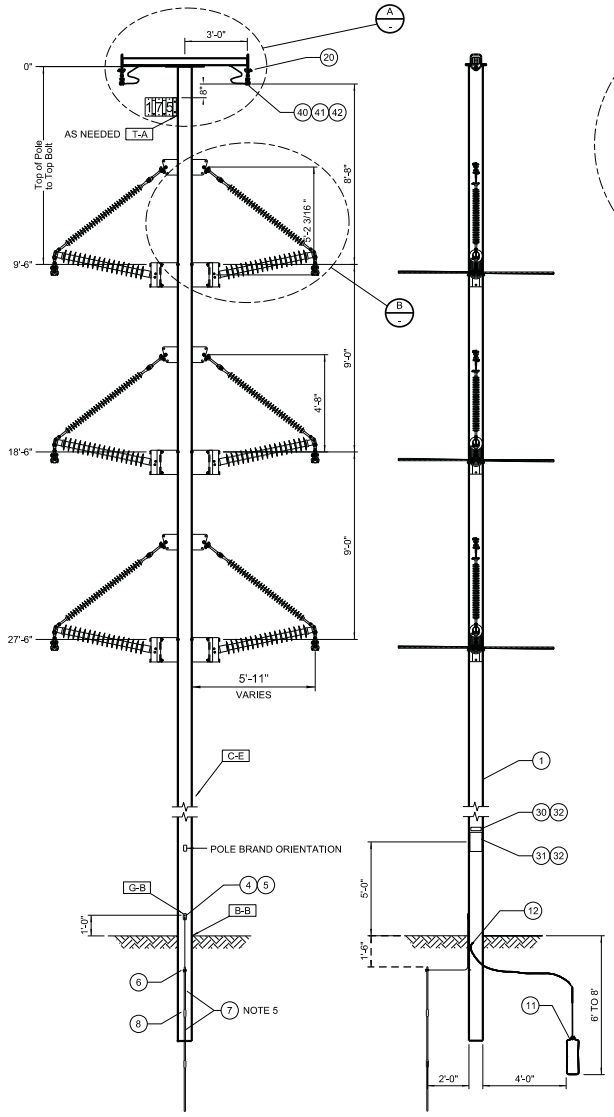
Wisconsin Legislature. Statute 182.071. Transmission Lines, Privileges, Damages. http://docs.legis.wisconsin.gov/statutes/statutes/182/017.

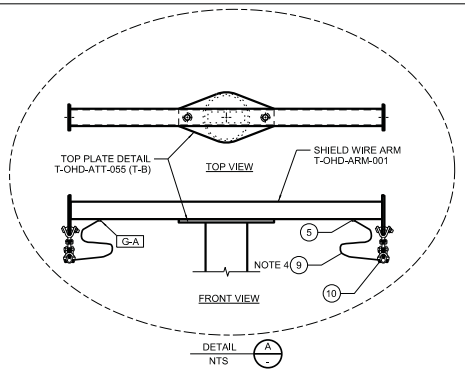
Creekview Interconnection Project
AIS Appendices

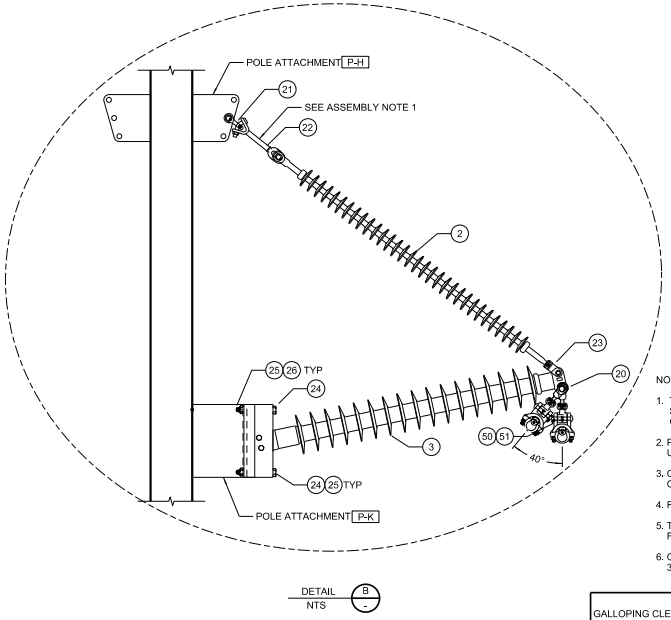
A

Structure Detail Drawings

APPENDIX C - FIGURE 1
TANGENT POLE BRACED POST







CATEGORY	ITEM	STOCK #	DESCRIPTION	QTY
POLE	1		STEEL POLE SEE PLAN AND PROFILE	1
INSULATOR	2	502-6130	INSUL-SUSP 138KV COMP 25K ~60IN, Y-BALL	6
	3	502-3802	INSUL-LINEPOST 138KV HORZ COMP, 2H BLADE	6
GROUNDING	4	503-6201	CONDUCTOR-COPPER 4 SOL BARE HD	8
	5	513-6100	LUG-CA SE GROUND 1/2"D STUD 8SOL-2/0 STR	3
	6	513-4010	CLAMP-GROUND ROD 5/8" 8-1/0STR	1
	7	504-6461	ROD-GROUND THREADLESS 5/8"X 8'CU CLAD	3
	8	513-5590	COUPLING-GROUND ROD 5/8" CU CLAD	2
	9	503-5550	LEAD-#4 FLEX CU SHLD WIRE GRD, 1/2IN LUG	2
	10	513-9061	WASHER-RND 1-3/8IN 9/16IN H GALV	2
	11	529-0211	ANODE-MAGNESIUM 17LB STD 30FT 8AWG LEAD	1
	12	513-4439	CONN-CU CMPR 6SOL-4SOL/8SOL-8STR (BURNDY YC4C8)	1
HARDWARE	20	504-3366	CLEVIS-Y BALL 30KLB BOLT, NUT, COTTER	8
	21	504-7561	SHACKLE-ANCHOR 7/8 IN WD 7/8, 30KLB, GALV	6
	22	504-3375	CLEVIS-HOT LINE Y, OVAL EYE, 11", 30KLB	6
	23	504-3373	CLEVIS-SOCKET 30KLB	6
	24	513-2783	BOLT-MACH 7/8X12" GALV SQ HD W/NUT	12
	25	513-9072	WASHER-RND 2" X 15/16"H X 1/4" THK GALV	18
	26	513-6304	NUT-LOCK SQ M-F 7/8" GALV	12
SIGNS	30	529-4411	TAG-POLE NUMBER, PE, 2X6 W/AL TRAY, NUM & ATC	1
	31	513-6760	SIGN-WARNING H V ABOVE KEEP OFF, 7X11 ALUM	1
	32	529-6943	TAPE-DBL SIDED ADHESIVE, 2"W X 1/8" THICK	3 FT
SHIELD WIRE	40	A	CLAMP-SUSP W/SKT-EYE B-N-C	2
	41	A	ROD-ARMOR	2
	42	A	DAMPER-SPIRAL OR STOCKBRIDGE	
CONDUCTOR	50	A	CLAMP-SUSP W/SKT-EYE B-N-C	6
	51	A	ROD-ARMOR (ROUND ACSR ONLY)	
	52	A	DAMPER-STOCKBRIDGE (PLACE PER TABLE 2 OF CONST SPEC)	

A	SELECT MATERIAL FROM APPROPRIATE T-OHD-CND DRAWINGS

NOTES

1. TIGHTEN BOTTOM BOLT ON POST INSULATOR LAST POSITIONING SUSPENSION ASSEMBLY IN TENSION. USE APPLICABLE HOLE BASED ON INSULATOR LENGTH. USE ADDITIONAL SHACKLE IF REQUIRED.
2. PROVIDE STEP CLIPS ON LONGITUDINAL FACE AND WORKING CLIPS UNDER INSULATOR POSITIONS.
3. OFFSET WORK RING CLIP BY ONE FLAT FROM CONFLICTING ATTACHMENT, TOWARD CLIMBING FACE.
4. FOR GROUND CONNECTION DETAIL SEE T-OHD-GND-013, ASS'Y GND013A.
5. THREE GROUND RODS IS BASIC SCHEME, REFER TO SPECIFIED T-OHD-GND DRAWING FOR ALTERNATE ROD PLACEMENT SCHEMES TO ACHIEVE RESISTANCE LEVEL REQUIRED.
6. CRUSHED STONE BACKFILL AS REQUIRED PER CONSTRUCTION SPECIFICATION SECTION 33 71 16.23 STEEL TRANSMISSION STRUCTURE ERECTION.

SPAN LENGTH LIMITS (FT)

GALLOPING CLEARANCE	T2	ROUND	T2 WITH U/B
R-S LIMIT	700	350	
MAX SPAN	735	380	
INSULATOR STRENGTH (MCL)=			
WEIGHT SPAN LIMIT			

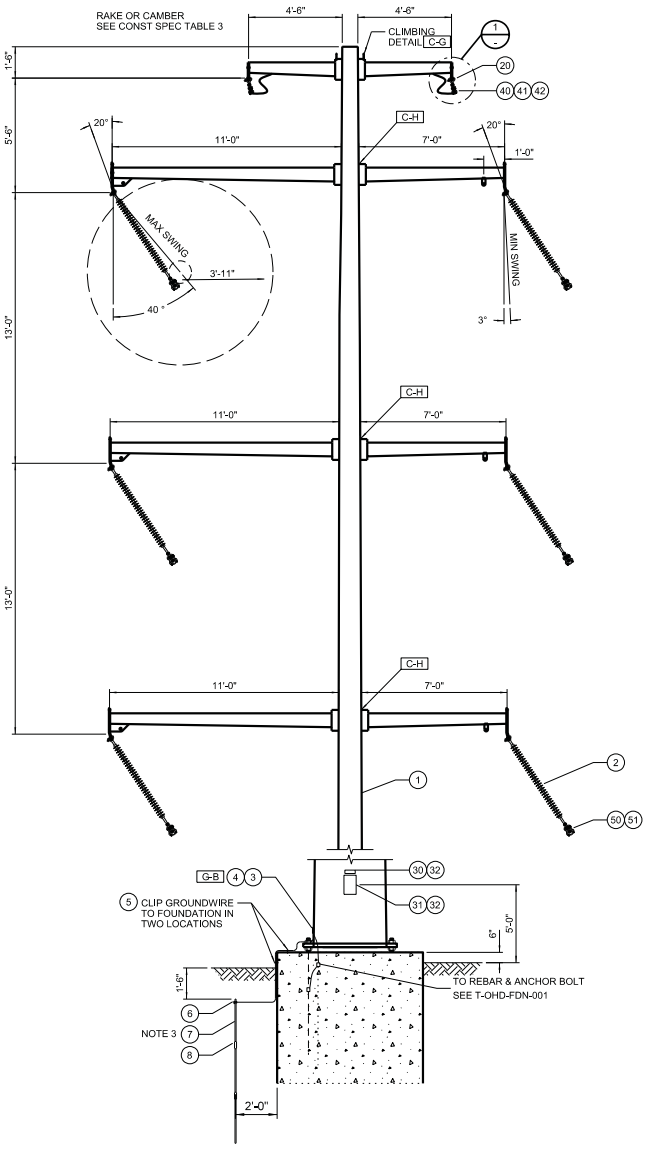
REV	DATE	DESCRIPTION	DRAWN	CHKD	APP'D	CMPY
09	04/20/09	REVISED BORDER TO 09 STANDARD, ADDED NOTES 2-I, ADDED ATTACHMENT DETAILS, UPDATED BOM, ADDED TABLE	JWS	WLW	NJG	ATC
08	06/09/08	REVISED SHIELD WIRE ARM PLATE DETAIL REFERENCES	LAK	WLW	NJG	ATC
07	06/28/07	ADDED ITEM BALLOON TO IDENTIFY LINEPOST INSULATOR	LAK	WLW	ROK	ATC
12	04/12/13	ITEM 40 WAS QTY 6	ADM	WLW	MDL	ATC
11	01/22/13	FLEXIBLE SHIELD WIRE GROUND LEAD	ADM	WLW	MDL	ATC
10	08/03/10	CHANGED ITEM 22	JWS	WLW	NJG	ATC

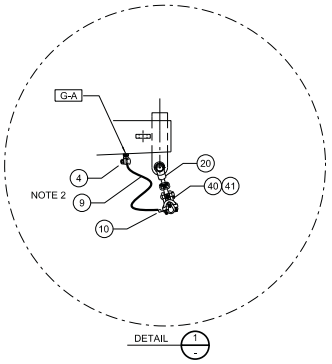
DRAWN: DJW 08/15/06 | CHECKED: WLW 08/15/06 | APPROVED: ROK 08/15/06 | SCALE: 3/16" =1'-0"

138KV STEEL DOUBLE CIRCUIT TANGENT BRACED POST
DIRECT BURY 0°-3°

STANDARDS | 138s2tnvb | T - OHD - STR - 250.000 | v 12

APPENDIX C - FIGURE 1
TANGENT POLE BRACED POST





CATEGORY	ITEM	STOCK #	DESCRIPTION	QTY
POLE	1		STEEL POLE: SEE PLAN AND PROFILE	1
INSULATOR	2	502-6130	INSUL-SUSP 138KV COMP 25K -60IN, Y-BALL	6
GROUNDING	3	503-6201	CONDUCTOR-COPPER 4 SOL BARE HD	20
	4	513-6100	LUG-CASE GROUND 1/2"D STUD 8SOL-2/0 STR	3
	5	504-3421	CLIP-GROUND WIRE, FOUNDATION	2
	6	513-4010	CLAMP-GROUND ROD 5/8" 8-1/0STR	2
	7	504-6461	ROD-GROUND THREADLESS 5/8"X 8'CU CLAD	3
	8	513-5590	COUPLING-GROUND ROD 5/8" CU CLAD	2
	9	503-5550	LEAD-#4 FLEX CU SHLD WIRE GRD, 1/2IN LUG	2
	10	513-9061	WASHER-RND 1-3/8IN 9/16IN H GALV	2
HARDWARE	20	504-3366	CLEVIS-Y BALL 30KLB BOLT, NUT, COTTER	2
SIGNS	30	529-4411	TAG-POLE NUMBER, PE, 2X6 W/AL TRAY, NUM & ATC	1
	31	513-6760	SIGN-WARNING H V ABOVE KEEP OFF, 7X11 ALUM	1
	32	529-6943	TAPE-DBL SIDED ADHESIVE, 2"W X 1/8" THICK	3 FT
SHIELD WIRE	40	A	CLAMP-SUSP W/SKT-EYE B-N-C	6
	41	A	ROD-ARMOR	2
	42	A	DAMPER-SPIRAL OR STOCKBRIDGE	
CONDUCTOR	50	A	CLAMP-SUSP W/SKT-EYE B-N-C	6
	51	A	ROD-ARMOR	
	52	A	DAMPER-STOCKBRIDGE (PLACE PER TABLE 2 OF CONST SPEC)	

A	SELECT MATERIAL FROM APPROPRIATE T-OHD-CND DRAWINGS

NOTES

1. SWING ANGLES SHOWN ARE BASE ON ATC STRUCTURE LOAD CASE NO. 1.
2. FOR GROUND CONNECTION DETAIL SEE T-OHD-GND-013, ASS'Y GND013A.
3. THREE GROUND RODS IS BASIC SCHEME. REFER TO SPECIFIED T-OHD-GND DRAWING FOR ALTERNATE ROD PLACEMENT SCHEMES TO ACHIEVE RESISTANCE LEVEL REQUIRED.

SPAN LENGTH LIMITS (FT)

GALLOPING CLEARANCE	T2	ROUND	T2 WITH U/B DIST
R-S LIMIT	>700	350	
MAX SPAN	>735	380	
INSULATOR STRENGTH (MCL)=			
WEIGHT SPAN LIMIT			

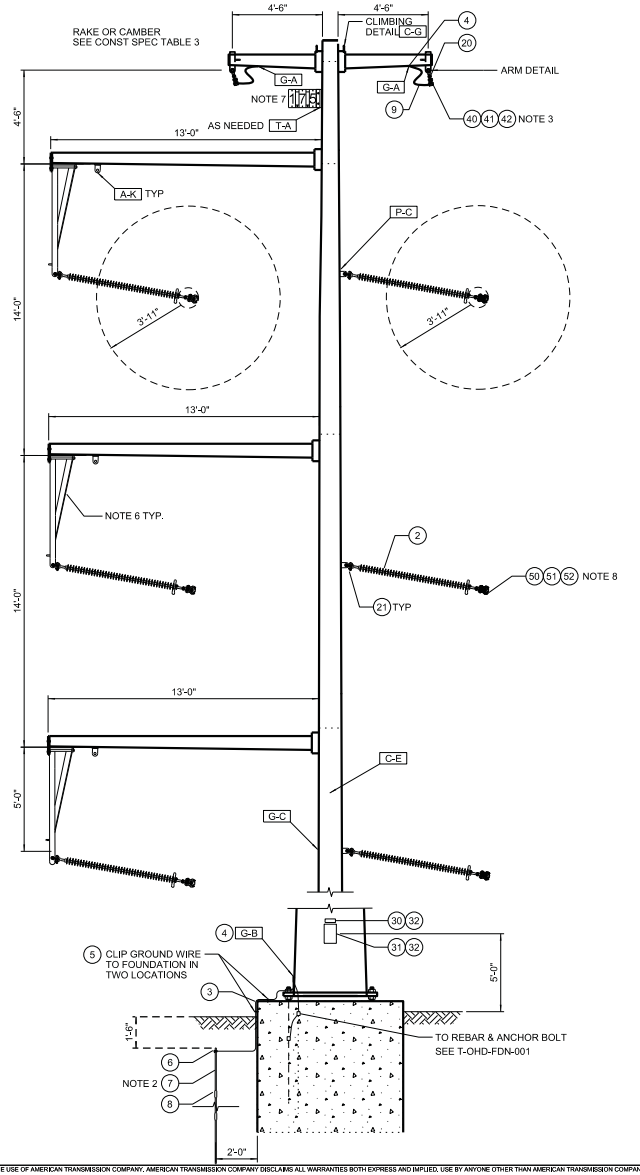
REV	DATE	DESCRIPTION	DRAWN	CHKD	APP'D	CMPY
06	01/28/09	REVISED BORDER TO 09 STANDARDS, ADDED NOTES 2 AND 3, ATTACHMENT TABLE, DETAIL 1, AND UPDATED BOM	JWS	WLW	NJG	ATC
05	01/17/07	ADDED GROUNDING CLIP	LAK	WLW	ROK	ATC
04	08/15/05	GRAPHICS CLEANUP	DJW	WLW	ROK	ATC
03	08/15/05	UPDATED MATERIAL LIST, REFORMAT DRAWING	DJW	WLW	ROK	ATC
09	01/22/13	FLEXIBLE SHIELD WIRE GROUND LEAD	ADM	WLW	MDL	ATC
07	02/19/11	CORRECTED CLEARANCE CIRCLE	JWS	WLW	NJG	ATC

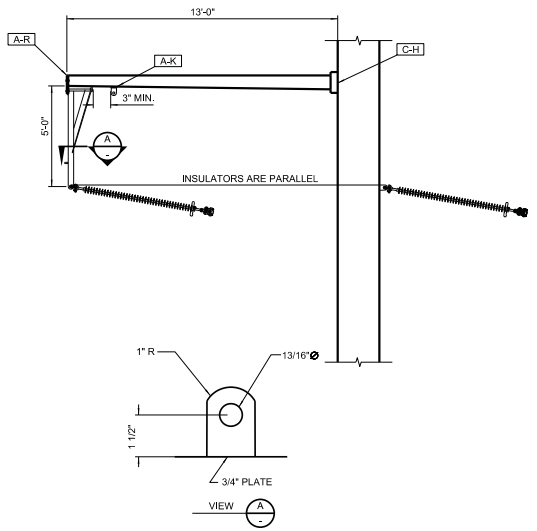
DRAWN: DJW DATE: 08/15/05
CHECKED: WLW DATE: 08/15/05
APPROVED: ROK DATE: 08/15/05
SCALE: 3/16" =1'-0"

138KV STEEL DOUBLE CIRCUIT SMALL ANGLE SUSPENSION
3°-45° SWING ANGLE, +/- 3°-9° LINE ANGLE

STANDARDS | 138s2asv2 | T - OHD - STR - 255.000 | v 08

APPENDIX C - FIGURE 1
TANGENT POLE BRACED POST





CATEGORY	ITEM	STOCK #	DESCRIPTION	QTY
POLE	1		STEEL POLE SEE PLAN AND PROFILE	1
INSULATOR	2	5026135	INSUL-SUSP 138KV COMP DE 30K, -68IN, Y-BALL	6
GROUNDING	3	5036841	COND-COMPOSITE GALV STL&CU 16X3STR	10
	4	5136100	LUG-CASE GROUND 1/2"D STUD 8SOL-2/0 STR	4
	5	5043421	CLIP-GROUND WIRE, FOUNDATION	2
	6	5140674	CONN-GRD ROD, HAMMER-ON 5/8 TO 1/0-2/0 CU	1
	7	5046460	ROD-GROUND THREADLESS 5/8"X 5'CU CLAD	3
	8	5135590	COUPLNG-GROUND ROD 5/8" CU CLAD	2
	9	5035550	LEAD-#4 FLEX CU SHLD WIRE GRD, 1/2IN LUG	2
HARDWARE	20	5043366	CLEVIS-Y BALL, 30KLB BOLT, NUT, COTTER	2
	21	5047561	SHACKLE-ANCHOR 7/8 IN WD, 30KLB, GALV	6
SIGNS	30	5294411	TAG-POLE NUMBER, PE, 2X6 WHITE TRAY, NUM & ATC	1
	31	5136760	SIGN-WARNING H.V. ABOVE KEEP OFF, 7X11 ALUM	1
	32	5296943	TAPE-DBL SIDED ADHESIVE, 2"W X 1/8" THICK	3 FT
SHIELD WIRE	40	A	CLAMP-SUSP W/SKT-EYE B-N-C	2
	41	A	ROD-ARMOR (ROUND ACSR ONLY)	2
	42	A	DAMPER-SPIRAL OR STOCKBRIDGE	
CONDUCTOR	50	A	CLAMP-SUSP W/SKT-EYE B-N-C	6
	51	A	ROD-ARMOR (ROUND ACSR ONLY)	6
	52	A	DAMPER-STOCKBRIDGE (PLACE PER TABLE 2 OF CONST SPEC)	

A	SELECT MATERIAL FROM APPROPRIATE T-OHD-CND DRAWINGS

NOTES:

1. CHECK CLEARANCE TO ARM. IF THERE IS UPLIFT, USE T-OHD-STR-258 OR T-OHD-STR-259.
2. THREE GROUND RODS IS BASIC SCHEME. REFER TO SPECIFIED T-OHD-GND DRAWING FOR ALTERNATE ROD PLACEMENT SCHEMES TO ACHIEVE RESISTANCE LEVEL REQUIRED.
3. FOR GROUND CONNECTION DETAIL SEE T-OHD-GND-013, ASS'Y GND013A.
4. PROVIDE STEP CLIPS ON LONGITUDINAL FACE AND WORKING CLIPS UNDER INSULATOR POSITIONS.
5. OFFSET WORK RING CLIP BY ONE FLAT FROM CONFLICTING ATTACHMENT, TOWARD CLIMBING FACE.
6. DROP BRACKETS SHALL BE GALVANIZED.
7. SEE DRAWING T-OHD-SGN-001 FOR AERIAL AND GROUND LINE SIGN INSTALLATION.
8. SEE TABLE 2 OF CONSTRUCTION SPECIFICATION FOR DAMPER REQUIREMENTS.
9. CRUSHED STONE BACKFILL AS REQUIRED PER CONSTRUCTION SPECIFICATION SECTION 33 71 16.23 STEEL TRANSMISSION STRUCTURE ERECTION.

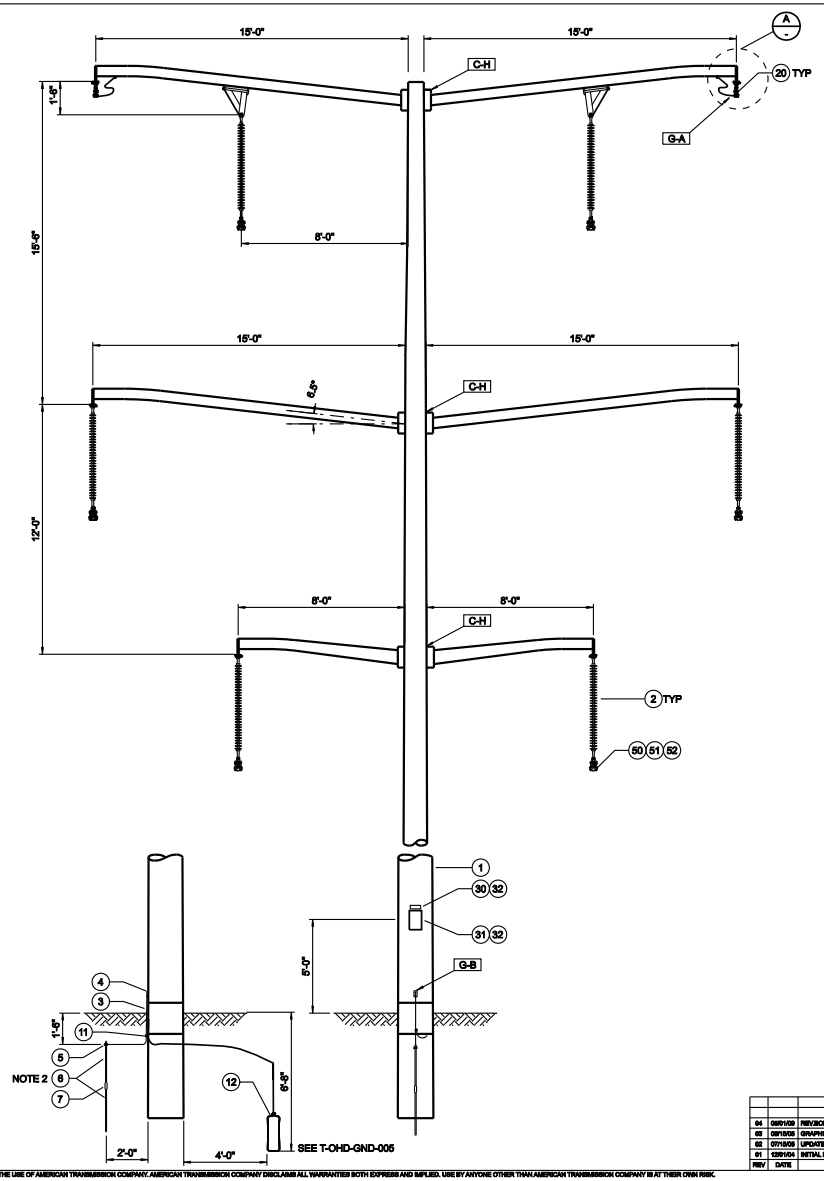
REV	DATE	DESCRIPTION	DRAWN	CHKD	APP'D	CMPY
04	07/16/14	UPDATED TO INCLUDE TDCC GROUNDING	SJR	WLW	MDL	ATC
03	01/22/13	FLEXIBLE SHIELD WIRE GROUND LEAD	ADM	WLW	MDL	ATC
02	06/16/11	FIXED SPREADSHEET	JWS	WLW	MDL	ATC
01	04/08/11	ADDED RAKE NOTE	JWS	WLW	ROK	ATC

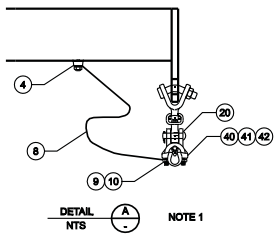
DRAWN: JWS DATE: 03/16/09
CHECKED: WLW DATE: 03/16/09
APPROVED: NJG DATE: 12/23/09
SCALE: 3/16" =1'-0"

138KV STEEL DOUBLE CIRCUIT MEDIUM ANGLE V-STRING
SWING ANGLE, +/- 20° - 30° LINE ANGLE

STANDARDS | 138s2amv3 | T - OHD - STR - 254.000 | v04

APPENDIX C - FIGURE 1
TANGENT POLE BRACED POST





CATEGORY	ITEM	STOCK #	DESCRIPTION	QTY
POLE	1		STEEL POLE SEE PLAN AND PROFILE	1
INSULATOR	2	502-6130	INSUL-SUSP 138KV COMP 25K ~60IN, Y-BALL	6
GROUNDING	3	503-6201	CONDUCTOR-COPPER 4 SOL BARE HD	8
	4	513-6100	LUG-CASE GROUND 1/2"D STUD 8SOL-2/0 STR	3
	5	513-4010	CLAMP-GROUND ROD 5/8" 8-1/0STR	1
	6	504-6461	ROD-GROUND THREADLESS 5/8"X 8'CU CLAD	2
	7	513-5590	COUPLING-GROUND ROD 5/8" CU CLAD	1
	8	503-6403	CONDUCTOR-COPPER 4 BARE 7STR SD	10 FT
	9	513-6115	LUG-COMP 1H 4CU 1/2IN BOLT	2
	10	513-9061	WASHER-RND 1-3/8IN 9/16IN H GALV	2
	11	513-4439	CONN-CU CMPR 6SOL-4SOL/8SOL-8STR (BURNDY YC4C8)	1
	12	529-0211	ANODE-MAGNESIUM 17LB STD 30FT 8AWG LEAD	1
HARDWARE	20	504-3366	CLEVIS-Y BALL 30KLB BOLT, NUT, COTTER	2
SIGNS	30	529-4411	TAG-POLE NUMBER, PE, 2X6 WIAL TRAY, NUM & ATC	1
	31	513-6760	SIGN-WARNING H V ABOVE KEEP OFF, 7X11 ALUM	1
	32	529-6943	TAPE-DBL SIDED ADHESIVE, 2"W X 1/8" THICK	3 FT
SHIELD WIRE	40	A	CLAMP-SUSP W/SKT-EYE 8-N-C	2
	41	A	ROD-ARMOR	2
	42	A	DAMPER-SPIRAL OR STOCKBRIDGE	
CONDUCTOR	50	A	CLAMP-SUSP W/SKT-EYE 8-N-C	6
	51	A	ROD-ARMOR (ROUND ACSR ONLY)	
	52	A	DAMPER-STOCKBRIDGE (PLACE PER TABLE 2 OF CONST SPEC)	

A	SELECT MATERIAL FROM APPROPRIATE T-OHD-CND DRAWINGS

NOTE:

1. EHS STEEL SHIELD WIRE & OPGW GROUNDING PER T-OHD-GND-011, DETAIL B.
2. TWO GROUND RODS IS BASIC SCHEME. REFER TO APPROPRIATE T-OHD-GND DRAWING FOR ALTERNATE ROD PLACEMENT SCHEMES.

REV	DATE	DESCRIPTION	DRAWN	CHKD	APPD	CMPY
04	09/01/09	REVISIONS#, ADDED NOTE 1 & 2, ADDED ATTACHMENT DETAILS & TABLE, UPDATED BOM, ADDED DETAIL A	JWS	WJW	NJS	ATC
03	08/10/05	GRAPHICS CLEANUP	DJW	WJW	ROK	ATC
02	07/18/05	UPDATED TO CADD STANDARDS	RS	DJW	ROK	ATC
01	12/01/04	INITIAL DRAWING CREATION - STRUCTURE ONLY	RS		ROK	ATC

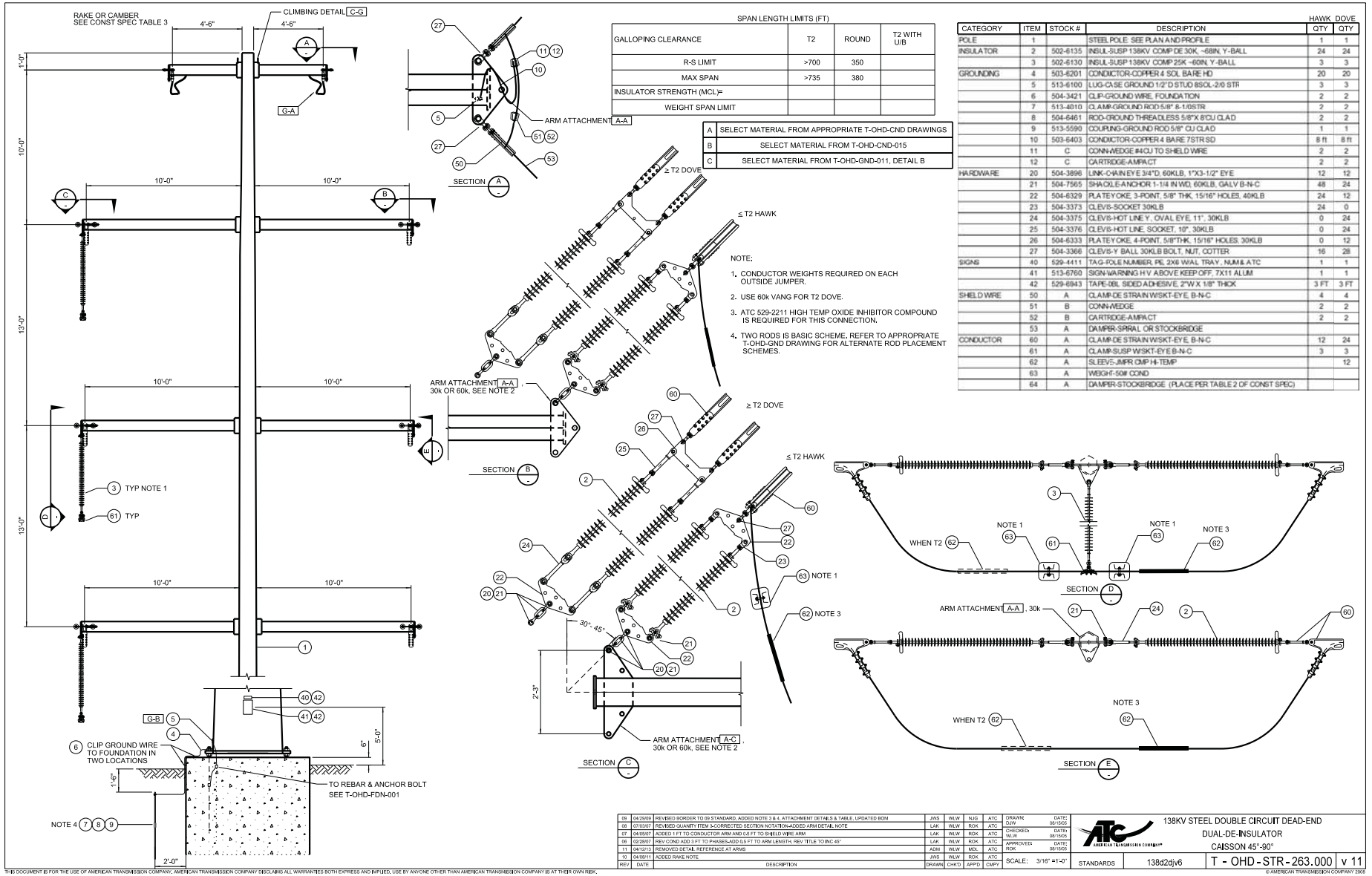
DRAWN: DJW DATE: 08/18/05
CHECKED: WJW DATE: 08/18/05
APPROVED: ROK DATE: 08/18/05
SCALE: 3/16" =1'-0"

AMERICAN TRANSMISSION COMPANY

138KV STEEL DOUBLE CIRCUIT TANGENT SUSPENSION
DIRECT BURY 0"-0.5"

STANDARDS | 138s2tns3 | T - OHD - STR - 270.000 | v 04

APPENDIX C - FIGURE 1
TANGENT POLE BRACED POST



SPAN LENGTH LIMITS (FT)

GALLOPING CLEARANCE	T2	ROUND	T2 WITH U/B
R-S LIMIT	>700	350	
MAX SPAN	>735	380	
INSULATOR STRENGTH (MCL)=			
WEIGHT SPAN LIMIT			

A	SELECT MATERIAL FROM APPROPRIATE T-OHD-CND DRAWINGS
B	SELECT MATERIAL FROM T-OHD-CND-015
C	SELECT MATERIAL FROM T-OHD-GND-011, DETAIL B

NOTE:

1. CONDUCTOR WEIGHTS REQUIRED ON EACH OUTSIDE JUMPER.
2. USE 60k VANG FOR T2 DOVE.
3. ATC 529-2211 HIGH TEMP OXIDE INHIBITOR COMPOUND IS REQUIRED FOR THIS CONNECTION.
4. TWO RODS IS BASIC SCHEME, REFER TO APPROPRIATE T-OHD-GND DRAWING FOR ALTERNATE ROD PLACEMENT SCHEMES.

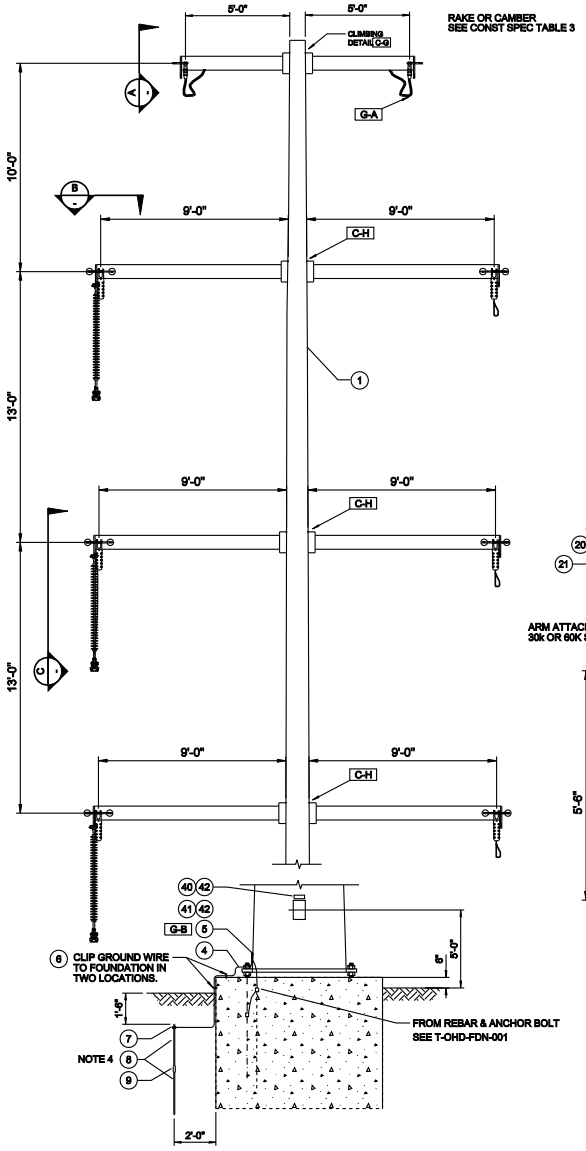
CATEGORY	ITEM	STOCK #	DESCRIPTION	HAWK QTY	DOVE QTY
POLE	1		STEEL POLE, SEE PLAN AND PROFILE	1	1
INSULATOR	2	502-6135	INSUL-SUSP 138KV COMP DE 30K, ~68IN, Y-BALL	24	24
	3	502-6130	INSUL-SUSP 138KV COMP 25K ~60IN, Y-BALL	3	3
GROUNDING	4	503-6201	CONDICTOR-COPPER 4 SOL BARE HD	20	20
	5	513-6100	LUG-CASE GROUND 1/2" D STUD 8SOL-2/0 STR	3	3
	6	504-3421	CLIP-GROUND WIRE, FOUNDATION	2	2
	7	513-4010	CLAMP-GROUND ROD 5/8" 8-1/0STR	2	2
	8	504-6461	ROD-GROUND THREADLESS 5/8"X 8'CU CLAD	2	2
	9	513-5590	COUPLING-GROUND ROD 5/8" CU CLAD	1	1
	10	503-6403	CONDICTOR-COPPER 4 BARE 7STR SD	8 ft	8 ft
	11	C	CONN-WEDGE #4CU TO SHIELD WIRE	2	2
	12	C	CARTRIDGE-AMPACT	2	2
HARDWARE	20	504-3896	LINK-CHAIN EYE 3/4"D, 60KLB, 1"X3-1/2" EYE	12	12
	21	504-7565	SHACKLE-ANCHOR 1-1/4 IN WD, 60KLB, GALV B-N-C	48	24
	22	504-6329	PLATE YOKE, 3-POINT, 5/8" THK, 15/16" HOLES, 40KLB	24	12
	23	504-3373	CLEVIS-SOCKET 30KLB	24	0
	24	504-3375	CLEVIS-HOT LINE Y, OVAL EYE, 11", 30KLB	0	24
	25	504-3376	CLEVIS-HOT LINE, SOCKET, 10", 30KLB	0	24
	26	504-6333	PLATE YOKE, 4-POINT, 5/8"THK, 15/16" HOLES, 30KLB	0	12
	27	504-3366	CLEVIS-Y BALL 30KLB BOLT, NUT, COTTER	16	28
SIGNS	40	529-4411	TAG-POLE NUMBER, PE, 2X6 WAL TRAY, NUM & ATC	1	1
	41	513-6760	SIGN-WARNING H V ABOVE KEEP OFF, 7X11 ALUM	1	1
	42	529-8943	TAPE-DBL SIDED ADHESIVE, 2"W X 1/8" THICK	3 FT	3 FT
SHIELD WIRE	50	A	CLAMP-DE STRAIN WSKT-EYE, B-N-C	4	4
	51	B	CONN-WEDGE	2	2
	52	B	CARTRIDGE-AMPACT	2	2
	53	A	DAMPER-SPIRAL OR STOCKBRIDGE		
CONDUCTOR	60	A	CLAMP-DE STRAIN WSKT-EYE, B-N-C	12	24
	61	A	CLAMP-SUSP WSKT-EYE B-N-C	3	3
	62	A	SLEEVS-JMPR CMP HI-TEMP		12
	63	A	WEIGHT-50# COND		
	64	A	DAMPER-STOCKBRIDGE (PLACE PER TABLE 2 OF CONST SPEC)		

REV	DATE	DESCRIPTION	DRAWN	CHKD	APP'D	CMPY
09	04/29/09	REVISED BORDER TO 09 STANDARD, ADDED NOTE 3 & 4, ATTACHMENT DETAILS & TABLE, UPDATED BOM	JWS	WLW	NJG	ATC
08	07/03/07	REVISED QUANTITY ITEM 3-CORRECTED SECTION NOTATION-ADDED ARM DETAIL NOTE	LAK	WLW	ROK	ATC
07	04/05/07	ADDED 1 FT TO CONDUCTOR ARM AND 0.5 FT TO SHIELD WIRE ARM	LAK	WLW	ROK	ATC
06	02/28/07	REV COND ADD 3 FT TO PHASES-ADD 0.5 FT TO ARM LENGTH, REV TITLE TO INC 45°	LAK	WLW	ROK	ATC
11	04/12/13	REMOVED DETAIL REFERENCE AT ARMS	ADM	WLW	MDL	ATC
10	04/08/11	ADDED RAKE NOTE	JWS	WLW	ROK	ATC

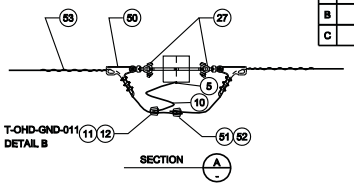
DRAWN: DJW DATE: 08/15/05
CHECKED: WLW DATE: 08/15/05
APPROVED: ROK DATE: 08/15/05
SCALE: 3/16" =1'-0"

138KV STEEL DOUBLE CIRCUIT DEAD-END
DUAL-DE-INSULATOR
CAISSON 45°-90°

STANDARDS | 138d2djv6 | T - OHD - STR - 263.000 | v 11



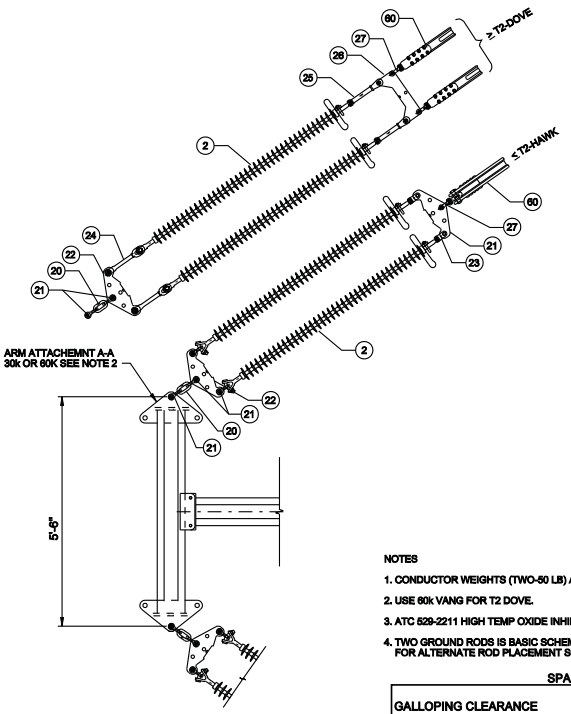
RAKE OR CAMBER
SEE CONST SPEC TABLE 3

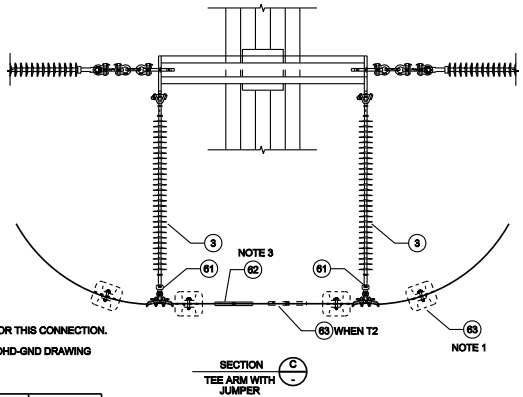


A	SELECT MATERIAL FROM APPROPRIATE T-OHD-CND DRAWINGS
B	SELECT MATERIAL FROM T-OHD-CND-015
C	SELECT MATERIAL FROM T-OHD-GND-011, DETAIL B

HAWK DOVE

CATEGORY	ITEM	STOCK #	DESCRIPTION	QTY	QTY
POLE	1		STEEL POLE SEE PLAN AND PROFILE	1	1
INSULATOR	2	502-6135	INSUL-SUSP 138KV COMP DE 30K, ~68IN, Y-BALL	24	24
	3	502-6130	INSUL-SUSP 138KV COMP 25K ~60IN, Y-BALL	6	6
GROUNDING	4	503-5201	CONDUCTOR-COPPER 4 SOL BARE HD	20	20
	5	513-6100	LUG-CASE GROUND 1/2"D STUD 8SOL-2/0 STR	1	1
	6	504-3421	CLIP-GROUND WIRE, FOUNDATION	2	2
	7	513-4010	CLAMP-GROUND ROD 5/8" 8-1/0STR	2	2
	8	504-6461	ROD-GROUND THREADLESS 5/8"X 8'CU CLAD	2	2
	9	513-5590	COUPLING-GROUND ROD 5/8" CU CLAD	1	1
	10	503-6403	CONDUCTOR-COPPER 4 BARE 7STR SD	8 FT	8 FT
	11	C	CONN-WEDGE #4CU TO SHIELD WIRE	2	2
	12	C	CARTRIDGE-AMPACT	2	2
HARDWARE	20	504-3896	LINK-CHAIN EYE 3/4"ID, 60KLB, 1"X3-1/2" EYE	12	12
	21	504-7565	SHACKLE-ANCHOR 1-1/4 IN WD, 60KLB, GALV B-N-C	48	24
	22	504-6329	PLATE-YOKE, 3-POINT, 5/8" THK, 15/16" HOLES, 40KLB	24	12
	23	504-3373	CLEVIS-SOCKET 30KLB	24	0
	24	504-3375	CLEVIS-HOT LINE Y, OVAL EYE, 11", 30KLB	0	24
	25	504-3376	CLEVIS-HOT LINE, SOCKET, 10", 30KLB	0	24
	26	504-6333	PLATE-YOKE, 4-POINT, 5/8"THK, 15/16" HOLES, 30KLB	0	12
	27	504-3366	CLEVIS-Y BALL 30KLB BOLT, NUT, COTTER	16	28
SIGNS	40	529-4411	TAG-POLE NUMBER, PE, 2X6 WAL TRAY, NUM & ATC	1	1
	41	513-6760	SIGN-WARNING H V ABOVE KEEP OFF, 7X11 ALUM	1	1
	42	529-6943	TAPE-DBL SIDED ADHESIVE, 2"W X 1/8" THICK	3 FT	3 FT
SHIELD WIRE	50	A	CLAMP-DE STRAIN W/SKT-EYE, B-N-C	4	4
	51	B	CONN-WEDGE	2	2
	52	B	CARTRIDGE-AMPACT	2	2
	53	A	DAMPER-SPIRAL OR STOCKBRIDGE		
CONDUCTOR	60	A	CLAMP-DE STRAIN W/SKT-EYE, B-N-C	12	24
	61	A	CLAMP-SUSP W/SKT-EYE B-N-C	6	6
	62	A	SLEEVE-JMPR CMP HI-TEMP		
	63	A	WEIGHT-50# COND		
	64	A	DAMPER-STOCKBRIDGE (PLACE PER TABLE 2 OF CONST SPEC)		





NOTES

1. CONDUCTOR WEIGHTS (TWO-50 LB) AS REQUIRED FOR JUMPER.
2. USE 60k VANG FOR T2 DOVE.
3. ATC 529-2211 HIGH TEMP OXIDE INHIBITOR COMPOUND REQUIRED FOR THIS CONNECTION.
4. TWO GROUND RODS IS BASIC SCHEME. REFER TO APPROPRIATE T-OHD-GND DRAWING FOR ALTERNATE ROD PLACEMENT SCHEMES.

SPAN LENGTH LIMITS (FT)

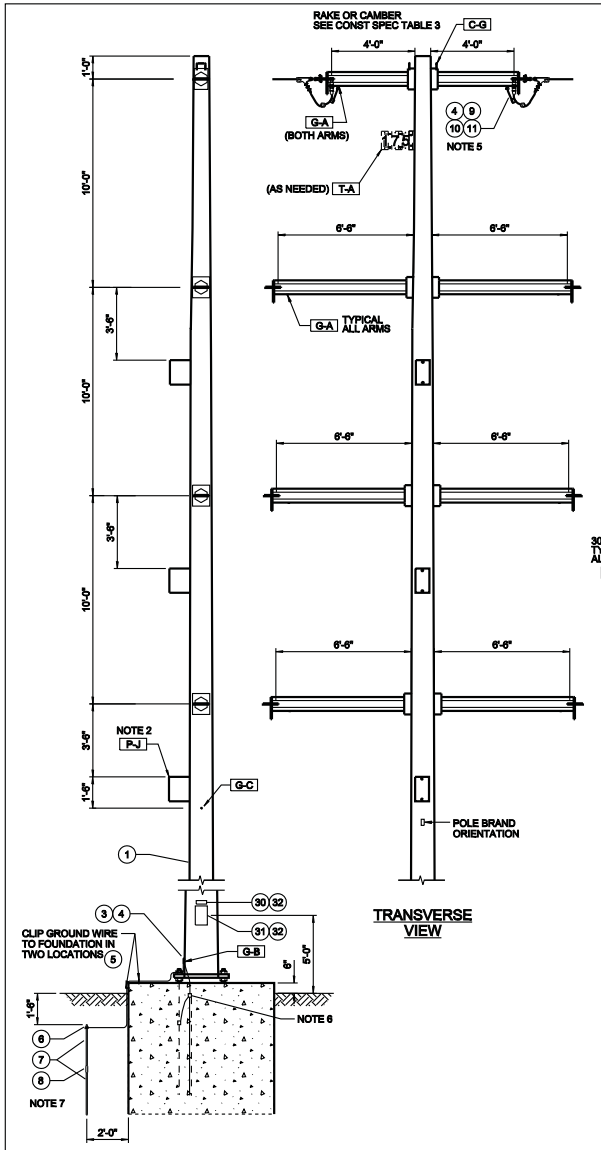
GALLOPING CLEARANCE	T2	ROUND	T2 WITH U/B
R-S LIMIT	>700	350	
MAX SPAN	>735	380	
INSULATOR STRENGTH (MCL)=			
WEIGHT SPAN LIMIT			

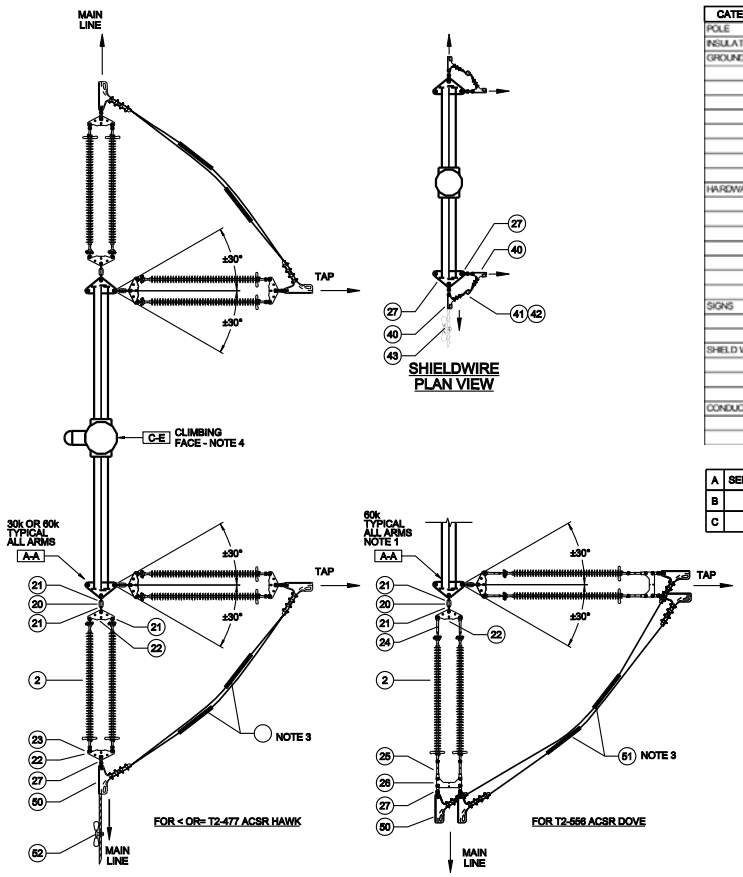
REV	DATE	DESCRIPTION	DRAWN	CHKD	APPD	CMPY
04	04/08/11	ADDED RAKE NOTE	JWS	WLW	ROK	ATC
03	01/25/07	REVISED SCHEMA TO CB STANDARDS, ADDED NOTE 5 & 6, ATTACHMENT DETAILS & TABLE, UPDATED BOM	JWS	WLW	NJS	ATC
02	02/28/07	ADD 1 PT TO PHASE SPAC - ADD 6.6 FT TO ARM - DIM T-ARM - REV TITLE TO 100 D	LAK	WLW	ROK	ATC
01	12/29/06	INITIAL DRAWING CREATION	LAK	WLW	ROK	ATC

DRAWN: DJW DATE: 01/01/06
CHECKED: WLW DATE: 01/01/06
APPROVED: ROK DATE: 01/01/06
SCALE: 3/16" =1'-0"

138KV STEEL DOUBLE CIRCUIT DEAD-END
DE-INSULATOR
CAISSON 90°-100°

STANDARDS | 138s2d3v6 | T - OHD - STR - 265.000 | v 04





CATEGORY	ITEM	STOCK #	DESCRIPTION	HAWK QTY	DOVE QTY
POLE	1		STEEL POLE: SEE PLAN AND PROFILE	1	1
INSULATOR	2	502-6135	INSUL-SUSP 138KV COMP DE 30K, -68IN, Y-BALL	24	24
GROUNDING	3	503-6201	CONDUCTOR-COPPER 4 SOL BARE HD	20	20
	4	513-6100	LUG-CASE GROUND 1/2"D STUD 8SOL-2/0 STR	3	3
	5	504-3421	CLIP-GROUND WIRE, FOUNDATION	2	2
	6	513-4010	CLAMP-GROUND ROD 5/8" 8-1/0STR	1	1
	7	504-6461	ROD-GROUND THREADLESS 5/8"X 8'CU CLAD	2	2
	8	513-5590	COUPLING-GROUND ROD 5/8" CU CLAD	1	1
	9	503-6403	CONDUCTOR-COPPER 4 BARE 7STR SD	8	8
	10	C	CONN-WEDGE	2	2
	11	C	CARTRIDGE-AMPACT	2	2
HARDWARE	20	504-3896	LINK-CHAIN EYE 3/4"D, 60KLB, 1"X3-1/2" EYE	12	12
	21	504-7565	SHACKLE-ANCHOR 1-1/4 IN WD, 60KLB, GALV B-N-C	48	24
	22	504-6329	PLATE-YOKE, 3-POINT, 5/8" THK, 15/16" HOLES, 40KLB	24	12
	23	504-3373	CLEVIS-SOCKET 30KLB	24	0
	24	504-3375	CLEVIS-HOT LINE Y, OVAL EYE, 11", 30KLB	0	24
	25	504-3376	CLEVIS-HOT LINE, SOCKET, 10", 30KLB	0	24
	26	504-6333	PLATE-YOKE, 4-POINT, 5/8"THK, 15/16" HOLES, 30KLB	0	12
	27	504-3366	CLEVIS-Y BALL 30KLB BOLT, NUT, COTTER	16	28
SIGNS	30	529-4411	TAG-POLE NUMBER, PE, 2X6 W/AL TRAY, NUM & ATC	1	1
	31	513-6760	SIGN-WARNING H V ABOVE KEEP OFF, 7X11 ALUM	1	1
	32	529-6943	TAPE-DBL SIDED ADHESIVE, 2"W X 1/8" THICK	3 FT	3 FT
SHIELD WIRE	40	A	CLAMP-DE STRAIN WISKT-EYE, B-N-C	4	4
	41	B	CONN-WEDGE	2	2
	42	B	CARTRIDGE-AMPACT	2	2
	43	A	DAMPER-SPIRAL OR STOCKBRIDGE		
CONDUCTOR	50	A	CLAMP-DE STRAIN WISKT-EYE, B-N-C	12	24
	51	A	SLEEVE-JMPR CMP HI-TEMP		12
	52	A	DAMPER-STOCKBRIDGE (PLACE PER TABLE 2 OF CONST SPEC)		0

A	SELECT MATERIAL FROM APPROPRIATE T-OHD-CND DRAWINGS
B	SELECT MATERIAL FROM T-OHD-CND-015
C	SELECT MATERIAL FROM T-OHD-GND-011, DETAIL B

SPAN LENGTH LIMITS (FT)

GALLOPING CLEARANCE	T2	ROUND	T2 WITH U/B
R-S LIMIT	>700	350	
MAX SPAN	>735	380	
INSULATOR STRENGTH (MCL)=			
WEIGHT SPAN LIMIT			

NOTES

1. USE 60k VANG FOR T-2 DOVE.
2. PROVISION FOR CONDUCTOR BYPASS.
3. ATC #529-2211 HIGH TEMP OXIDE INHIBITOR COMPOUND REQUIRED FOR THIS CONNECTION.
4. PROVIDE STEP CLIPS ON CLIMBING FACE ONLY.
5. SEE CONNECTION DETAIL B ON DRAWING T-OHD-GND-011.
6. SEE T-OHD-FDN-001 FOR GROUND CONNECTIONS TO REBAR AND ANCHOR BOLT.
7. TWO GROUND RODS IS BASIC SCHEME. REFER TO APPROPRIATE T-OHD-GND DRAWING FOR ALTERNATE ROD PLACEMENT SCHEMES.

REV	DATE	DESCRIPTION	DRAWN	CHKD	APPD	CMPY
08	01/23/09	ADDED ATTACHMENT DETAILS, NOTES, REVISED BORDER, UPDATED BOM, AND ADDED CORONA RINGS	JWB	WLW	NJB	ATC
07	01/09/07	REV COMP SLEEVES, COND FRAME DIST, ADD COND VANG SIZE & POST INS MOUNT	LAK	WLW	ROK	ATC
06	11/28/06	CHANGED TITLE FROM 60°-105° TO 60°-120° TAP	RS	WLW	ROK	ATC
05	09/15/06	GRAPHICS CLEANUP	DJW	WLW	ROK	ATC
10	08/19/11	FIXED SPREADSHEET	JWB	WLW	MDL	ATC
09	04/07/11	ADDED RAKE NOTE	JWB	WLW	ROK	ATC

DRAWN: DJW DATE: 11/28/06
CHECKED: WLW DATE: 11/28/06
APPROVED: ROK DATE: 11/28/06
SCALE: 3/16" = 1'-0"

138KV STEEL SINGLE/DOUBLE CIRCUIT TAP
DUAL-DE-INSULATOR
CAISSON 60°-120° TAP

STANDARDS | 138s1d3v6 | T - OHD - STR - 193.000 | v 10

Creekview Interconnection Project
AIS Appendices

B

NRCS Soil Classification Systems

Appendix B: NRCS Soil Classification Systems

Farmland Soil Classifications:

Prime Farmland

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses (the land could be cropland, pastureland, rangeland, forestland, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, few or no rocks, permeability is not restricted, and there are no serious erosion problems. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods, but is not considered prime farmland. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables.

Additional Farmland of Statewide Importance

This is land, in addition to prime and unique farmland, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. Criteria for defining and delineating this land are to be determined by the appropriate state agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods, but are not considered prime farmland. Some may produce as high a yield as prime farmlands if conditions are favorable. In some states, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by state law.

Additional Farmland of Local Importance

In some local areas, there is concern for certain additional farmland for the production of food, feed, fiber, forage, and oilseed crops, even though these lands are not identified as having national or statewide importance. Where appropriate, these lands are to be identified by the local agency or agencies concerned. In places, additional farmlands of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Land Capability Classification:

Land suited to Cultivation and Other Uses:

Class I soils have few limitations that restrict their use.

Class II soils have some limitations that reduce the choice of plants or require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.

Class IV soils have very severe limitations that restrict the choice of plants , require very careful management, or both.

Land Limited in Use-Generally Not Suited to Cultivation

Class V soils have little or no erosion hazard but have other limitations impractical to remove that limit their use largely to pasture, range, woodland, or wildlife food and cover.

Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife food and cover.

Class VII soils have severe limitations that make them unsuited to cultivation and that restrict their use largely to grazing, woodland, or wildlife.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to grazing, woodland, or wildlife.

Class VIII soils and landforms have limitations that preclude their use for commercial plant production.

Soil Capability Subclasses

A subclass is a group of capability units within a class which has the dominant soil or climatic limitations for agricultural use. Capability Class I has no subclasses. There are four subclasses, designated by letter symbols and defined as follows:

- **e** Erosion susceptibility is the dominant problem or hazard. Both erosion susceptibility and past erosion damage are major soil factors for placement in this subclass.
- **s** Soil limitations within the rooting zone, such as shallowness of rooting zones, stones, low moisture-holding capacity, low fertility that is difficult to correct, and salinity or sodium, are dominant.
- **w** Excess water is the dominant hazard or limitation. Poor soil drainage, wetness, high water table, and overflow are the criteria for placing soils in this subclass.

Creekview Interconnection Project
AIS Appendices

C

Landowner Responses to DATCP Questionnaire

Landowner Responses to DATCP Survey

Farmland Owner: Robert and Marianne Geiger (Geiger Revocable Trust)
Route Alternative: West
Approximate Size of Acquisition: 3.2 acres
Number of Parcels Affected: 2

Mr. and Mrs. Geiger's farm operation consists of 75 acres of cropland on which they grow corn and soybeans. The Geiger's also have 3 buildings on their property. In the Geiger's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: the location of the structures in their fields; the impact to their aerial seeding/spraying use; and the impacts to their normal field operations (i.e. tillage, planting, harvesting).

Farmland Owner: Michael Schill Jr.
Route Alternative: West
Approximate Size of Acquisition: 0.2 acres
Number of Parcels Affected: 1

Mr. Schill's farm operation consists of 3 acres of cropland on which he grows hay. He also has 1 building on his property. He also has 3 horses on his land. In Mr. Schill's response to the questionnaire, he identified the following concerns about how the Project could impact his farm operation: the transmission lines proximity to his farm buildings; the location of the structure in his field; animal health concerns; the affect the Project may have on the resale of his property; and the impacts to their normal field operations (i.e. tillage, planting, harvesting).

Mr. Schill is concerned about how the Project will affect the small pasture area he has for his horses. He also prefers the North Route Alternative be selected as there is already the needed easements and access for maintenance in place.

Farmland Owner: Thomas and Florence Flood
Route Alternative: West
Approximate Size of Acquisition: 2.8 acres
Number of Parcels Affected: 1

Mr. and Mrs. Flood's farm operation consists of 412 acres of cropland, 11 acres of pasture, and 55 acres of woodland. They also have 5 buildings on their property. The Flood's farm land that they own and also rent farmland from James Flood, another agricultural landowner near the Project area. Their cropland is used to grow corn, hay, wheat, and soybeans. They also have 30 beef cattle on their farm operation. The Flood's were unsure of how the Project would affect their farm operation until a final route is chosen.

Farmland Owner: James and Judith Flood
Route Alternative: West
Approximate Size of Acquisition: 1.0 acres
Number of Parcels Affected: 2

Mr. and Mrs. Flood's farm operation consists of 45 acres of cropland and 40 acres of woodland which they rent to Thomas and Florence Flood. In the Flood's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: construction impacts such as soil compaction, rutting, and topsoil mixing; the location of the structures in their fields; and the impacts to their normal field operations (i.e. tillage, planting).

Farmland Owner: Douglas and Cynthia Decker
Route Alternative: West
Approximate Size of Acquisition: 1.4 acres
Number of Parcels Affected: 1

Mr. and Mrs. Decker's farm operation consists of 70 acres of cropland, 23 acres of woodland, and 5 buildings. They rent their farmland to a tenant, Mark Ryan. All of their cropland is within farmland preservation zoning and is used to grow corn, hay, and oats. Two horses are also present on their farm operation.

In the Decker's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: the impact to their grassed waterways; construction impacts such as soil compaction, rutting, and topsoil mixing; replacement land availability; the location of the structures in their fields; the impact to their aerial seeding/spraying use; animal health concerns; impacts to their manure and/or fertilizer storage and application; the impacts to their normal field operations (i.e. tillage, planting, harvesting); and concerns about how their property value will be affected.

The Decker's are concerned that the Project could affect their ability to keep their tenant, who has voiced his concerns to the Decker's. They are also very concerned on how the transmission line would affect their horses. Their horse pasture is very close to the ROW and they are concerned that their horses could experience stray voltage or electrical shocks.

The Decker's prefer the North Route Alternative because there is an existing transmission line and ROW already in that location; this new proposed transmission line would blend in better with that taller existing line; the access for maintenance already exists; and fewer local residents would be affected along the North Route Alternative.

Farmland Owner: Randall Luckow
Route Alternative: West
Approximate Size of Acquisition: 1.5 acres
Number of Parcels Affected: 1

Mr. Luckow's farm operation consists of 40 acres of cropland in which he grows corn, hay, and oats. He also has 48 dairy cattle on his operations. He did not identify any specific concerns regarding the potential impacts from the Project.

Farmland Owner: Kevin Batterman
Route Alternative: West
Approximate Size of Acquisition: 6.6 acres
Number of Parcels Affected: 5

Mr. Batterman's farm operation consists of 180 acres of cropland, 35 acres of pasture, and 10 acres of woodland. This is comprised of farmland Mr. Batterman owns in addition to farmland he rents from Arnold Baumhardt. He also has 8 buildings on his property. Mr. Batterman grows corn, hay, wheat, and soybeans and also has 40 beef cattle.

In Mr. Batterman's response to the questionnaire, he identified the following concerns about how the Project could impact his farm operation: construction impacts such as soil compaction, rutting, and topsoil mixing; the location of the structures in their fields; and impact to his firewood or lumber.

Mr. Batterman is also concerned about the construction crews adhering to the construction and access plans during construction. He has a pipeline currently running through his property and states that the pipeline construction crew did not follow the construction plan.

Farmland Owner: Steve and Lori Reilly (Reilly Revocable Trust)
Route Alternative: West
Approximate Size of Acquisition: 2.2 acres
Number of Parcels Affected: 3

Mr. and Mrs. Reilly's farm operation consists of 340 acres of cropland and 21 acres of woodland. This includes land that they own as well as land they rent from Mark and Tony Albert and Rick and Lisa Beder. The Reilly's grow corn, wheat, and soybeans as well as have 5 pigs on their operation.

In the Reilly's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: the impact to their drainage tile and drainage ditches; erosion control; impact to their grassed waterways; construction impacts such as soil compaction, rutting, and topsoil mixing; replacement land availability; the location of the structures in their fields; the impact to their aerial seeding/spraying use; impacts to their manure and/or fertilizer storage and application; and the impacts to their normal field operations (i.e. tillage, planting,

harvesting).

The Reilly's are very concerned about the potential for soil compaction and request that timber mats be used on their property. They are also very concerned about the potential damage to their drainage tile. The Reilly's have a pipeline running through their property, and their drainage tiles were damaged at that time and still do not drain properly. The Reilly's are also concerned that once the transmission line is constructed, they will not be able to clean out their drainage ditch. Therefore, he is requesting that the ditch be clean prior to construction of the line.

The Reilly's also aerial spray fungicide on their property. They are worried that they will no longer be able to spray the fungicide after the line is constructed and that would result in lost income in the thousands of dollars each year.

Farmland Owner: Janzer Revocable Trust
Route Alternative: West
Approximate Size of Acquisition: 2.2 acres
Number of Parcels Affected: 1

The Janzer farm operation consists of 8 acres of cropland, 17 acres of idle agricultural land, and 3 buildings. In the Janzer farm's response to the questionnaire, the following concerns about how the Project could impact their farm operation were identified: the impact to drainage; erosion control; the transmission lines proximity to farm buildings; construction impacts such as soil compaction, rutting, and topsoil mixing; replacement land availability; and the location of the structures in the fields.

Farmland Owner: Maureen Betz
Route Alternative: West
Approximate Size of Acquisition: 1.9 acres
Number of Parcels Affected: 2

Ms. Betz's farm operation consists of 64 acres of cropland and 6 buildings. She rents her farmland to Mary Ryan who grows corn, hay, and soybeans. In Ms. Betz's response to the questionnaire, the following concerns about how the Project could impact her farm operation were identified: the impact to grassed waterways; construction impacts such as soil compaction, rutting, and topsoil mixing; replacement land availability; the location of the structures in the fields; the impacts to firewood and lumber; the impacts to her aerial seeding/spraying use; and the impact to her normal field operations (i.e. tiling, planting, harvesting).

Ms. Betz also expressed concern regarding the designated wetlands on her farm, the loss of trees along the fenceline, and the impacts to aesthetics on her property.

Farmland Owner: Anthony and Joanne Albert
Route Alternative: West
Approximate Size of Acquisition: 1.0 acres
Number of Parcels Affected: 1

Mr. and Mrs. Albert's farm operation consists of 11 acres of cropland which they rent to Steve Reilly. In the Albert's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: construction impacts such as soil compaction, rutting, and topsoil mixing; the location of the structures in their fields; and the impact to their aerial seeding/spraying use.

Farmland Owner: Mark and Karen Albert
Route Alternative: West
Approximate Size of Acquisition: 2.4 acres
Number of Parcels Affected: 3

Mr. and Mrs. Albert's farm operation consists of 55 acres of cropland, 15 acres of CREP enrolled land, and 6 buildings and lanes. The Albert's rent their cropland to Steve Reilly. In the Albert's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: construction impacts such as soil compaction, rutting, and topsoil mixing; the location of the structures in their fields; the impact to their aerial seeding/spraying use; the impacts to their normal field operations; and the impact to their CREP enrolled land.

The Albert's are very concerned about their CREP land within the West Route Alternative's ROW. The Albert's have cover crops within their enrolled land, and any damage that is done to these crops must be repaired and reestablished per the Albert's FSA agreement. In addition, per the Albert's agreement, any acreage that would be taken by the transmission line structures will have to be removed and the initial cost share money that was used to establish the cover crops and all the CREP payments over the years must be repaid for those areas with structures. The Albert's request that ATC pay both for any reestablishment of the damaged cover crops due to damage during construction and for the repayment of any removed land due to the presence of a structure.

Farmland Owner: Richard and Lisa Beder
Route Alternative: West
Approximate Size of Acquisition: 1.7 acres
Number of Parcels Affected: 2

Mr. and Mrs. Beder's farm operation consists of 30 acres of cropland, 5 acres of pasture, 10 acres of woodland, and 2 buildings. They also rent farmland to Steve Reilly. They also have 6 horses and 4 chickens on their farm operation.

In the Beder's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: damage to their drainage ditches; erosion control; the transmission lines proximity to their farm buildings; construction impacts such as soil compaction,

rutting, and topsoil mixing; replacement land availability; the location of the structures in their fields; the impacts to firewood and lumber; the impact to their aerial seeding/spraying use; animal health concerns; manure or fertilizer application and storage; the impacts to their normal field operations; the ability to keep their tenant; and the ability to build more buildings in the future.

The Beder's run a horse rescue operation on their land. They currently have several horses on their farm, 2 of which are blind. They are concerned for the potential for their horses to be injured if the structures are placed in their pasture. The Beder's would also like to build additional pole sheds on their land to accommodate more rescue horses but are concerned that they cannot build them near the transmission line. The Beder's are also concerned that the noise from the transmission line, stray voltage, and the line's sagging could affect the horses' health and safety.

Farmland Owner: James Majerus
Route Alternative: West
Approximate Size of Acquisition: 2.4 acres
Number of Parcels Affected: 2

Mr. Majerus' farm operation consists of 196 acres of cropland, 3 acres of pasture, 125 acres of woodland, and 6 buildings. They also rent farmland to Steve Reilly. They also have 6 horses and 4 chickens on their farm operation. Mr. Majerus grows corn, soybeans, hay, and wheat on his farmland.

In Mr. Majerus' response to the questionnaire, he identified the following concerns about how the Project could impact his farm operation: the transmission lines proximity to his farm buildings; the location of the structures in his fields; the impact to his aerial seeding/spraying use; and the impacts to his normal field operations.

Farmland Owner: Jeff Zimdahl
Route Alternative: North
Approximate Size of Acquisition: 4.25 acres
Number of Parcels Affected: 3

Mr. Zimdahl's farm operation consists of 400 acres of cropland, 15 acres of pasture, and 100 acres of woodland. He also has 12 buildings on his property. All 400 acres are within farmland preservation zoning and on those acres he grows corn, hay, wheat, soybeans, and peas. He also has 125 dairy cattle and 18 beef cattle on his operation.

In Mr. Zimdahl's response to the questionnaire, he identified the following concerns about how the Project could impact his farm operation: the transmission lines proximity to his farm buildings; construction impacts such as soil compaction, rutting, and topsoil mixing; replacement land availability; the location of the structures in his fields; animal health concerns; and impacts to his normal field operations (i.e. tillage, planting, harvesting).
Farmland Owner: Paul and Karen Waldschmidt (Waldschmidt Trust)
Route Alternative: North

Approximate Size of Acquisition: 1.90 acres
Number of Parcels Affected: 1

Mr. and Mrs. Waldschmidt's farm operation consists of 210 acres of cropland, 10 acres of pasture, and 25 acres of woodland. They also have 8 buildings on their property. Their cropland is used to grow corn, hay, and soybeans. They also have 150 dairy cattle on their operation. Mr. and Mrs. Waldschmidt did not identify any potential concerns on the questionnaire as they felt they could not identify any potential concerns until the selected route is chosen.

Farmland Owner: Allen and Judith Straub
Route Alternative: North
Approximate Size of Acquisition: 0.41 acres
Number of Parcels Affected: 2

Mr. and Mrs. Straub's agricultural parcel on the east side of Eagle Road consists of 73 acres of cropland on which they grow corn, hay, and oats. They also own a gravel pit, 25 acres of idle agricultural land, 117 dairy cattle, and 3 beef cattle on their operation.

In the Straub's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: erosion control; replacement land availability; the location of the structures in their fields; the impact to their aerial seeding/spraying use; impacts to their manure and/or fertilizer storage and application; and impacts to his normal field operations (i.e. tillage, planting, harvesting).

Farmland Owner: James Zielicke
Route Alternative: North
Approximate Size of Acquisition: 0.47 acres
Number of Parcels Affected: 1

Mr. Zielicke's farm operation consists of 225 acres of cropland on which he grows corn, hay, wheat, and soybeans. He also has 6 buildings on his property. He also has 80 beef cattle and 75 acres of idle agricultural land on his operation.

In Mr. Zielicke's response to the questionnaire, he identified the following concerns about how the Project could impact his farm operation: construction impacts such as soil compaction, rutting, and topsoil mixing; impact to his aerial seeding/spraying use; and impacts to his normal field operations (i.e. tillage, planting, harvesting).

Farmland Owner: Richard and Rose Carey
Route Alternative: North
Approximate Size of Acquisition: 1.92 acres
Number of Parcels Affected: 2

Mr. and Mrs. Carey's farm operation consists of 25 acres of cropland, 5 acres of pasture, and 3 acres of woodland. They grow a rotation of corn, wheat, and soybeans on their cropland. They also have 6 beef cattle and 4 horses on their operation.

In the Carey's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: erosion control; damage to grassed waterways; construction impacts such as soil compaction, rutting, and topsoil mixing; replacement land availability; the location of the structures in their fields; the impact to their aerial seeding/spraying use; animal health concerns; impacts to their manure and/or fertilizer storage and application; impacts to his normal field operations (i.e. tillage, planting, harvesting); and concerns about how their property value will be affected. The Carey's are also concerned about the aesthetic impacts of the transmission line and the noise caused by high voltage transmission lines.

Farmland Owner: Edward and Janice Koffman
Route Alternative: North
Approximate Size of Acquisition: 1.33 acres
Number of Parcels Affected: 1

Mr. and Mrs. Koffman's farm operation consists of 252 acres of cropland, 2 acres of pasture, 6 acres of woodland, and 10 acres of idle agricultural land. They also have 2 buildings on their property and grow corn and hay on their cropland. In addition, they have 265 dairy cattle on their operation.

In the Koffman's response to the questionnaire, they identified the following concerns about how the Project could impact their farm operation: construction impacts such as soil compaction, rutting, and topsoil mixing; replacement land availability; and impacts to his normal field operations (i.e. tillage, planting, harvesting).

The Koffman's currently have a transmission line running through their property, where they currently experience impacts from that transmission line, including their machinery becoming charged when parked near the line, which causes shocks when touched, as well as a crackling sensation that they can hear and feel underneath the line.

Creekview Interconnection Project
AIS Appendices

D

Sample Easement (ATC)

ELECTRIC TRANSMISSION LINE EASEMENT
CERTIFICATE OF COMPENSATION
NOTICE OF RIGHT OF APPEAL
Wis. Stat. Sec. 182.017(7)

Document Number

The undersigned grantor(s), for themselves and their respective heirs, successors and assigns **(hereinafter cumulatively referred to as "Grantor")**, in consideration of the sum of one dollar ($1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, does hereby grant, convey and warrant unto **American Transmission Company LLC, a Wisconsin limited liability company, and its manager ATC Management Inc., a Wisconsin Corporation (hereinafter jointly referred to as "Grantee")**, the perpetual right and easement to construct, install, operate, maintain, repair, replace, rebuild, remove, relocate, inspect and patrol a line of structures, comprised of wood, concrete, steel or of such material as Grantee may select, and wires, including associated appurtenances for the transmission of electric current, communication facilities and signals appurtenant thereto (hereinafter referred to as the Electric Transmission Facilities), upon, in, over and across property owned by the Grantor in the **of , County of , State of Wisconsin, described as follows:**

Recording Area

Name and Return Address

Parcel Identification Number(s)

A parcel of land being part of 1/4 section town range or lot/block etc.

The legal description and location of the Perpetual Easement Strip is as shown on the Exhibit B, attached hereto and incorporated by reference in this easement document.

The perpetual easement has the following specifications:

PERPETUAL EASEMENT STRIP:

Length: Approximately _____ feet

Width: Approximately _____ feet

TRANSMISSION STRUCTURES:

Type: _____

Number: __

Maximum height above existing ground level: _____ feet

TRANSMISSION LINES:

Maximum nominal voltage: _____ volts

Number of circuits: __

Number of conductors: __

Number of static wires: __

Minimum height above existing landscape (ground level): ____ feet

Distribution Facilities: The right, permission and authority is also granted to Grantee to string, install, operate, maintain and replace other electric lines consisting of wires and cables on said transmission line structure(s) and poles reasonably necessary therefore supported by the necessary crossarms, transformers, anchors, guy wires and other appliances necessary and usual in the conduct of its business and to construct, install, operate, maintain and replace conduit and cables underground, together with riser equipment, electric pad-mounted transformers, electric pad-mounted switch-fuse units, concrete slabs, secondary power pedestals, terminals, markers and other necessary and usual appurtenant equipment above ground, for the purpose of transmitting electric energy and communications and signals appurtenant thereto, upon, over and across within and beneath said strip of land.

The Grantee is also granted the associated perpetual and necessary rights to:

1) Enter upon the Perpetual Easement Strip for the purposes of fully exercising and enjoying the rights conferred by this perpetual easement; and
2) Trim, cut down and remove any or all brush, trees and overhanging branches now or hereafter existing in, on and over the Perpetual Easement Strip; and
3) Cut down and remove such dead, dying, diseased, decayed, leaning trees or tree parts now or hereafter existing on the property of the Grantor located outside of said Perpetual Easement Strip that in Grantee's judgment, may interfere with Grantee's full use of the Perpetual Easement Strip for the purposes stated herein or that pose a threat to the safe and reliable operation of the Electric Transmission Facilities; together with the right, permission and authority to enter in a reasonable manner upon the property of the Grantor adjacent to said Perpetual Easement Strip for such purpose.

The Grantee shall pay a reasonable sum for all damages to property, crops, fences, livestock, lawns, roads, fields and field tile (other than brush, trees and overhanging branches trimmed or cut down and removed from the Perpetual Easement Strip), caused by the construction, installation, operation, maintenance, repair, replacement rebuilding, relocation, inspection, patrol or removal of said Electric Transmission Facilities.

Within the Perpetual Easement Strip, and without first securing the prior written consent of the Grantee, **Grantor** agrees that they will not:

1) Locate any dwelling or mobile home intended for residential occupancy; or
2) Construct, install or erect any structures or fixtures, including but not limited to swimming pools; or
3) Construct any non-residential type building; or
4) Store flammable goods or products; or
5) Plant trees or shrubs; or
6) Place water, sewer or drainage facilities; or
7) Change the grade more than one (1) foot.

The parties hereto do hereby agree to the terms and conditions set forth in Exhibit “A”, “B” and “C”, attached hereto and incorporated by reference herein. The term “utility” in Exhibit “A” shall mean Grantee.

This perpetual easement agreement is binding, in its entirety, upon the heirs, successors and assigns of the parties hereto, and shall run with the lands described herein.

As provided by PSC 113, the Grantor shall have a minimum period of five days to examine materials approved or provided by the Public Service Commission of Wisconsin describing the Grantor’s rights and options in the easement negotiating process. The Grantor hereby voluntarily waives the five-day review period, or acknowledges that they have had at least five (5) days to review such materials.

Grantor warrants and represents that Grantor has good title to the property described herein, free and clear from all liens and encumbrances, except: _____

The Grantor hereby accepts a lump sum payment in consideration of the grant of this perpetual easement.

WITNESS the signature(s) of the Grantor this _____ day of _____, 20___.

_____(SEAL)
Signature

_____
Printed Name

_____(SEAL)
Signature

_____
Printed Name

_____(SEAL)
Signature

_____
Printed Name

_____(SEAL)
Signature

_____
Printed Name

Grantor

ACKNOWLEDGEMENT

STATE OF WISCONSIN)
) SS
COUNTY OF)

Personally came before me this _____ day of _____, 20___, the above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

_____
Signature of Notary

_____
Printed Name of Notary

Notary Public, State of Wisconsin

My Commission expires (is) _____

This instrument was drafted by on behalf of American Transmission Company, PO Box 47, Waukesha, WI 53187-0047.

EXHIBIT "A"
[WI Sta. 182.017(7)]

1. In constructing and maintaining high-voltage transmission lines on the property covered by the easement, the utility shall:

   a) If excavation is necessary, ensure that the topsoil is stripped, piled and replaced upon completion of the operation.

   b) Restore to its original condition any slope, terrace, or waterway, which is disturbed by the construction or maintenance.

   c) Insofar as is practicable and when the Grantor requests, schedule any construction work in an area used for agricultural production at times when the ground is frozen in order to prevent or reduce soil compaction.

   d) Clear all debris and remove all stones and rocks resulting from construction activity upon completion of construction.

   e) Satisfactorily repair to its original condition any fence damaged as a result of construction or maintenance operations. If cutting a fence is necessary, a temporary gate shall be installed. Any such gate shall be left in place at the Grantor's request.

   f) Repair any drainage tile line within the easement damaged by such construction or maintenance.

   g) Pay for any crop damage caused by such construction or maintenance.

   h) Supply and install any necessary grounding of a Grantor's fences, machinery or buildings.

2. The utility shall control weeds and brush around the transmission line facilities. No herbicidal chemicals may be used for weed and brush control without the express written consent of the Grantor. If weed and brush control is undertaken by the Grantor under an agreement with the utility, the Grantor shall receive from the utility a reasonable amount for such services.

3. The Grantor shall be afforded a reasonable time prior to commencement of construction to harvest any trees located within the easement boundaries, and if the Grantor fails to do so, the Grantor shall nevertheless retain title to all trees cut by the utility.

4. The Grantor shall not be responsible for any injury to persons or property caused by the design, construction or upkeep of the high-voltage transmission lines or towers.

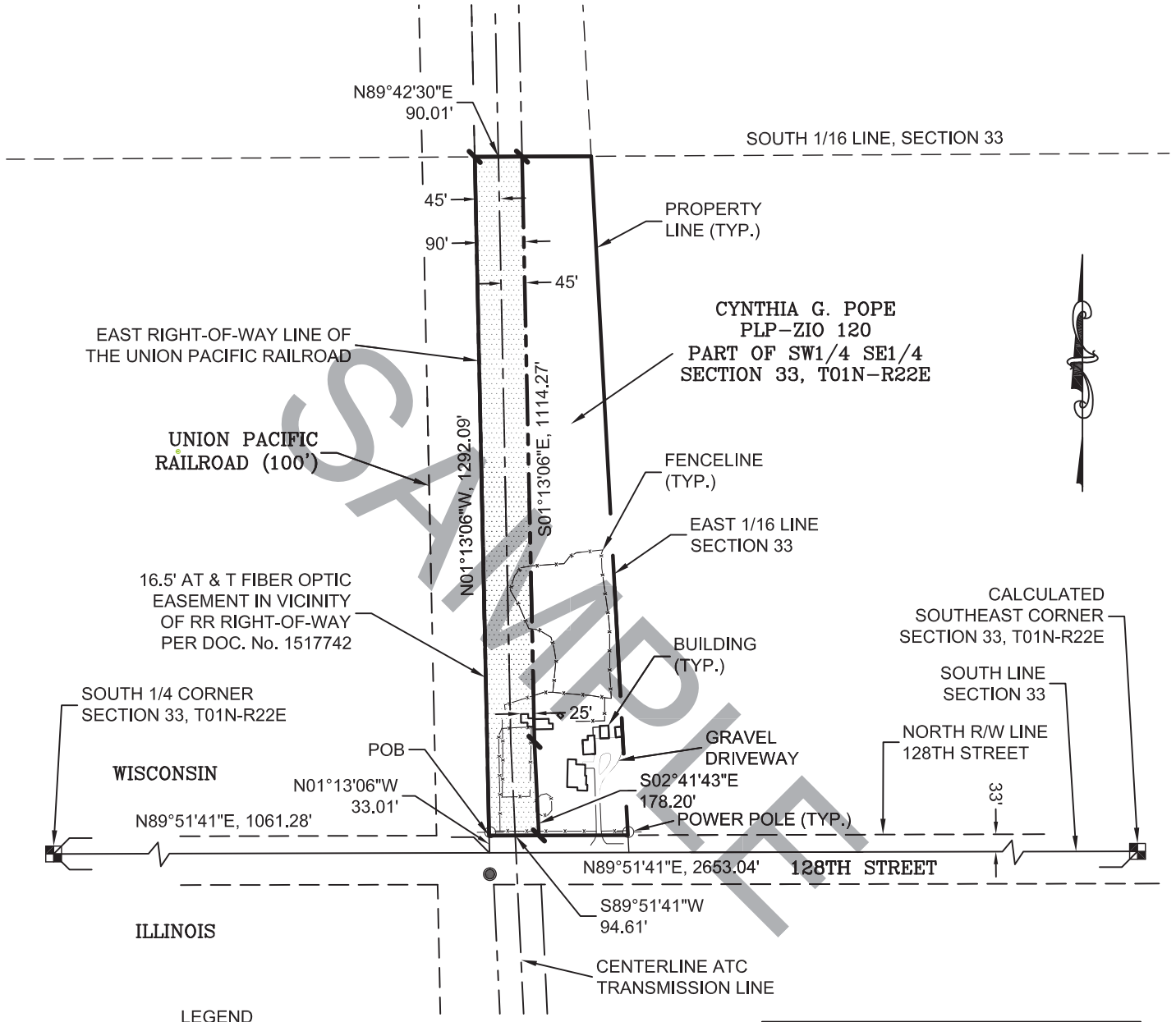
5. The utility shall employ all reasonable measures to ensure that the Grantor's television and radio reception is not adversely affected by the high-voltage transmission lines.

6. The utility may not use any lands beyond the boundaries of the easement for any purpose, including ingress to and egress from the right-of-way, without the written consent of the Grantor.

EASEMENT DESCRIPTION MAP (EXHIBIT B)

GRANTEE: AMERICAN TRANSMISSION COMPANY LLC
W234 N2000 RIDGEVIEW PARKWAY COURT
WAUKESHA, WI 53188

GRANTOR: CYNTHIA G. POPE
7606 128TH ST.
PLEASANT PRAIRIE, WI 53158
TAX PARCEL NO. 92-4-122-334-0250



LEGEND
- TRANSMISSION EASEMENT
- TRANSMISSION RIGHT OF WAY LINE
- TRANSMISSION CENTERLINE
- SECTION LINE
- PROPERTY LINE
- ROAD RIGHT OF WAY LINE
- PLP-ZIO 120 — ATC NUMBER

MAP KEY

ATC TRANSMISSION LINE EASEMENT
= 116,706 SQ. FT. +/-
= 2.679 ACRES +/-

NOTE: BEARINGS BASED UPON THE WISCONSIN STATE PLANE COORDINATE SYSTEM NAD 83/2007, SOUTH ZONE.

AECOM
906.228.2333
www.aecom.com

AMERICAN TRANSMISSION COMPANY

LEGEND
- Found Iron
- Set 5/8" Iron W/P.S. Cap #: S-1704
- Found Concrete Monument
- Set Concrete Monument
- R - RECORDED
- M - MEASURED

REVISIONS		
SDK 03/13/2012	SDK 05/31/2012	
SDK 04/25/2012	SJB 06/06/2012	

Drawn :	SDK
Date:	03/12/2012
Scale:	1" = 300'
PROJECT NUMBER	60241863
SHEET NUMBER	1 OF 2

\\usmqt1vfp001\02surveys\GPS\ATC\60241863 PLEASANT PRAIRIE-ZION ENERGY CENTER\Exhibit B (Wisconsin)\CYNTHIA POPE 120\CYNTHIA POPE 120 R06-06-2012.dwg; 6/6/2012 7:32:02 AM; BLUSE, STACEY

EASEMENT DESCRIPTION MAP (EXHIBIT B)

GRANTEE: AMERICAN TRANSMISSION COMPANY LLC
W234 N2000 RIDGEVIEW PARKWAY COURT
WAUKESHA, WI 53188

GRANTOR: CYNTHIA G. POPE
7606 128TH ST.
PLEASANT PRAIRIE, WI 53158
TAX PARCEL NO. 92-4-122-334-0250

A variable width easement which crosses a part of the grantor's premises across part the Southwest Quarter (SW 1/4) of the Southeast Quarter (SE 1/4) of Section 33, T01N-R22E, Village of Pleasant Prairie, Kenosha County, Wisconsin, described as:

Commencing at the South 1/4 corner of Section 33; thence N89°51'41"E, 1061.28' along the South line of Section 33 to the East right-of-way line of the Union Pacific Railroad; thence N01°13'06"W, 33.01' along the East right-of-way line of the Union Pacific Railroad to a point on this easement, the North right-of-way line of 128th Street, the grantor's Southwest property corner and the **Point of Beginning**; thence continuing **N01°13'06"W, 1292.09'** along the East right-of-way line of the Union Pacific Railroad and the grantor's West property line to the South 1/16 line of Section 33 and the grantor's Northwest property corner; thence **N89°42'30"E, 90.01'** along the South 1/16 line of Section 33 and the grantor's North property line; thence **S01°13'06"E, 1114.27'**; thence **S02°41'43"E, 178.20'** to the North right-of-way line of 128th Street and the grantor's South property line; thence **S89°51'41"W, 94.61'** along the North right-of-way line of 128th Street and the grantor's South property line to the East right-of-way line of the Union Pacific Railroad, the grantor's Southwest corner and the **Point of Beginning** being more particularly described as shown on sheet 1 containing **116,706** Square Feet +/- or **2.679** Acres +/- and subject to restrictions, reservations, rights of way, and easements of record.

NOTE: BEARINGS BASED UPON THE WISCONSIN STATE PLANE COORDINATE SYSTEM NAD 83/2007, SOUTH ZONE.

AECOM
906.228.2333
www.aecom.com

AMERICAN TRANSMISSION COMPANY

LEGEND
- ● - Found Iron
- ○ - Set 5/8" Iron W/P.S. Cap #: S-1704
- ■ - Found Concrete Monument
- □ - Set Concrete Monument
- R - RECORDED
- M - MEASURED

REVISIONS		
	SDK 03/13/2012	SDK 05/31/2012
	SDK 04/25/2012	SJB 06/06/2012

Drawn :	SDK
Date:	03/12/2012
Scale:	N/A
PROJECT NUMBER	60241863
SHEET NUMBER	2 OF 2

EXHIBIT "C"

CERTIFICATE OF COMPENSATION

SECTION 32.06 (2a) WISCONSIN STATS.

DATED THIS _____ DAY OF _____ , 20___ .

Pursuant to Section 32.06(2a) notice is hereby given of the acquisition of a certain Perpetual Easement attached hereto and made a part hereof by this reference. The names of all persons or parties having an interest of record in the property affected by such Perpetual Easement immediately prior to the acquisition of the Perpetual Easement are the following:

Grantor: _____

Mortgagee(s): _____

Land Contract Vendor(s): _____

Others: _____

Such Perpetual Easement grants unto Grantee, its successors and assigns, licensees and manager the right, permission and authority to construct, install, operate, maintain, repair, replace, rebuild, remove, relocate, inspect and patrol (an) electric transmission line(s) for the purpose of transmitting electric energy, communications and signals upon, in, over and across the Perpetual Easement Strip as described on the instrument to which this exhibit is attached.

The total consideration paid for such Perpetual Easement was $ _____.

NOTICE OF RIGHT OF APPEAL

In accordance with Section 32.06(2a) Wisconsin Stats., any of the above named persons or parties shall have six (6) months from the date of the recording of this certificate to appeal the amount of compensation herein stated by filing a petition with the Judge of the Circuit Court of _____ County, Wisconsin, who shall assign the matter to the Chairperson of the County Condemnation Commissioners for hearing under Sec. 32.06(8). Notification of such petition shall be made to all persons or parties having an interest of record in the above property, and the procedures prescribed under Secs. 32.06(9)(a) and (b), 32.06(10), 32.06(12); and Chs. 808 and 809 shall govern such appeals.

Creekview Interconnection Project
AIS Appendices

E

Guidance for Easement Negotiations

Appendix E: Guidance for Easement Negotiations

- The easement contract that is presented to you is the starting point for your negotiations. You do not have to sign the contract that is first presented to you. You are free to negotiate changes in the contract that will address the issue(s) that concern you.
- If you want to make changes in or additions to the easement contract, that can be done in a variety of ways: you or your representative may do the writing, your personal attorney may do the writing, or the ROW agent may do the writing which you can review before signing.
- If something is important to you, be sure to get it in the language of your easement contract. Verbal agreements are hard to enforce.
- Contract provisions should be worded specifically enough to minimize the potential for different interpretations of what is written.
- Do not sign the contract too quickly. Before you sign the contract, be sure that you are comfortable with all of its provisions and that it will serve to protect the integrity and farmability of your land.
- Try not to get frustrated if negotiations do not go as well as you hoped. It is common for landowners to have numerous meeting with ROW agents before easement contracts are finalized.
- Arrange to meet with your ROW agent at a time that is convenient for you, when you do not feel rushed or pressured. Most agents have flexible schedules and can meet with you beyond normal work hours.
- Keep written records of your meetings with ROW agents. This is especially important in the event that you cannot negotiate an acceptable easement contract with the utility company and the company begins the process of acquiring your land through the eminent domain process. Your records should include: the dates on which you met, with whom you met, issues that were discussed, and specifics such as dollar amounts, distances, heights, specific materials to be used, offers made, counter offers, etc.
- Do not hesitate to seek legal assistance. The easement contract is a legal document.

Creekview Interconnection Project
AIS Appendices

F

Agriculture Inventory Questionnaire (ATC)

ATC AGRICULTURAL INVENTORY/ISSUE IDENTIFICATION

ATC File Number: _____ **Line Designation:** _____ **Date:** _____

LANDOWNER INFORMATION:

OWNER: _____

Address: _____

_____

Phone #: _____

TENANT INFORMATION:

TENANT: _____

Address: _____

_____

Phone #: _____

P&P Sheet(s): Page ____ of P&P Dated: _____ **Structure(s):** _____

Legal Description: _____

_____

Farm Type (Dairy, Hobby, etc.) _____ Size of Farm (Acres) _____

THE FOLLOWING OPERATIONS/ACTIVITIES OCCUR WITHIN THIS FARM:

Livestock:

Dairy _____ Pastured in easement area? Yes _____ No _____

Beef _____ Pastured in easement area? Yes _____ No _____

Other (please specify):_____ Pastured in easement area? Yes _____ No _____

Is it your current practice to spread manure on the fields? Yes _____ No _____

Crop Type(s) (please specify): _____

_____

Organic operation? Yes _____ No _____ Specify type: _____

Bio-security Plan? Yes _____ No _____

Other Conservation Practice and/or Enrollment in Federal or State Program: _____

May ATC restrict livestock access from the work area with temporary fencing? Yes _____ No _____

Is there existing fencing in or near the proposed easement area? Yes ___ No _____

If yes, please specify type of fence and attach location map, if available. _____

Do you currently conduct aerial spraying on your fields? Yes ____ No _____ If yes, firm name: _____

Are there drain tile, drainage ditches, or culverts in or near the easement area? Yes _____ No _____
If yes, please provide copy of map or sketch of the approximate location.

Is there an irrigation system in or near the easement area? Yes _____ No _____
If yes, please provide a copy of map or sketch of the approximate location.

Soil Notes (well-drained vs. wet, etc.):_____

Would you like to meet with an Agricultural Specialist? Yes ____ No ____

ATC AGRICULTURAL INVENTORY/ISSUE IDENTIFICATION

Other agricultural concerns or issues to be addressed during construction:

_____

_____

_____

_____

_____

_____

_____ _____

ATC Contractor/Representative (signature) Landowner/Tenant (signature)

Date_____ Date_____

Creekview Interconnection Project
AIS Appendices

G

Tree Disposition Report (ATC)

TREE AND BRUSH DISPOSITION REPORT
RIGHT-OF-WAY CLEARING

ATC File Number: _____ Line Designation: _ _ _ _ _ _ _ _ _ _ _ Date: _____

LANDOWNER INFORMATION:

OWNER: _____

Address: _____

Phone#: _____ Contact: _____

P&P Sheet(s): Page _ _ _ _ _ _ of P&P Dated: _____ Structure(s): _____

Legal Description: _____

AMERICAN TRANSMISSION COMPANY LLC, its agents, successors, assigns and manager, are hereby instructed to dispose of all trees and brush in the easement strip and danger timber outside of the easement strip, as said strip is described in that certain easement signed by:

_____

Dense, woody vegetation, including trees that are five (5) inches or less in diameter, within the easement strip shall be removed with brush mowing equipment. Mowing material (mulch and stumps) will remain. See attached ATC pamphlet *"What to expect following right-of-way maintenance and vegetation management"*, dated 5/12 for further description of mowing procedure.

1) Trees shall be cut down and left in full tree lengths (suitable for logs) with limbs removed and piled neatly on the edge of the easement strip. These trees shall be marked by the landowner (spray painted with a highly visible orange "X") prior to the forestry clearing work starting in the field.

2) Trees and limb wood five (5) inches in diameter and larger shall be cut into approximate 100-inch lengths and piled neatly on the edge of the easement strip.

3) Limb wood less than five (5) inches in diameter and brush shall be cleared from the easement strip and disposed of by one of the following methods (choose one of the following):

Stack brush on the edge of the easement strip*
Chip brush and blow chips into easement strip-ONLY if easement area is a maintained setting*
Burn brush within easement area (if permitting allows)
Remove all tree and brush debris from premises, if easement area is a maintained setting**

*If the area where the trees, brush, or chips are to be placed is determined to be a delineated wetland, ATC will work with the landowner to determine appropriate disposition methods and area for placement prior to clearing.

**If the trees, brush, or chips to be removed are state-listed invasive species, ATC will discuss proper handling and management practices with the landowner prior to clearing.

Other: _____

_____

_____

Dated this ____ day of _____, 20____.

_____ _____ (SEAL)
Witness Owner

_____ _____ (SEAL)
Witness Owner

Creekview Interconnection Project
AIS Appendices

H

Agreement for the Use of Herbicide (ATC)

TEMPORARY AGREEMENT FOR CHEMICAL TREATMENT
Initial Clearing and Construction

AMERICAN TRANSMISSION COMPANY LLC, its agents, successors, assigns and manager, are hereby granted express written consent to use herbicidal chemicals for tree, weed and brush control following the initial clearing of the easement strip.

This permission is for initial vegetation management purposes only and will terminate after two (2) years following the initial tree, weed and brush clearing work.

Comments:---------- ----------

_____

_____

_____

_____

Dated this_____day of_____, 20____.

_____ _____ (SEAL)
Witness Owner

_____ _____ (SEAL)
Witness Owner

Creekview Interconnection Project
AIS Appendices

I

Agricultural Monitoring Form for Transmission Line Projects (DATCP)

ARM-LWR-543 rev 06/15

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management
PO Box 8911, Madison, WI 53708-8911
Phone: (608) 224-4646 Fax (608) 224-4615

Agricultural Monitoring Form for Transmission Line Projects

s. 32.035, Wis. Stats.

Please complete this form at the end of the week for the duration of the transmission line construction project, summarizing the daily construction activities and inspection observations on agricultural land for that week. This form should be submitted to DATCP electronically at DATCPAgImpactStatements@wisconsin.gov, unless another electronic project document storage location is specified.

Personal information you provide may be used for purposes other than that for which it was originally collected (s. 15.04 (i)(m), Wis. Stats).

Section 1: Project/Site Information.	
INSPECTION DATES:	DATCP PROJECT # AND NAME:
MONITOR NAME:	MONITOR PHONE # AND EMAIL:
LOCATION OF WORK CONDUCTED THIS WEEK (AGRICULTURAL PARCEL NUMBERS OR STRUCTURE NUMBERS):	
WEEKLY WEATHER/ SITE CONDITIONS:	

Section 2: Summary of Daily Construction Activities for the Week.

Section 3: Landowner Communication - Complete for each landowner correspondence that week. Add additional rows as necessary.	
NAME OF LANDOWNER:	DESCRIBE COMMUNICATION:
LOCATION (PARCEL NO. OR STRUCTURE NO.):	
DATE:	

Section 4: Inspection Summary - Indicate the status of each inspection item on agricultural land, summarized for the week. If an item was observed as not acceptable but was corrected later in that week, make note in the comments section that the item was already corrected.

Items Inspected On Agricultural Land	Acceptable	Not Acceptable	Follow Up Required	N/A	Comments
Clearing Practices	☐	☐	☐	☐	
Dewatering Facilities	☐	☐	☐	☐	
Erosion Control Practices	☐	☐	☐	☐	
Soil Segregation and Storage of Topsoil Spoils	☐	☐	☐	☐	
Soil Mixing	☐	☐	☐	☐	
Soil Compaction	☐	☐	☐	☐	
Excess Rock Content in Soil	☐	☐	☐	☐	
Rutting	☐	☐	☐	☐	
Crop Damage	☐	☐	☐	☐	
Damage to Drainage Improvements (tile, ditches, etc.)	☐	☐	☐	☐	
Unnatural Field Flooding or Ponding of Water	☐	☐	☐	☐	
Biosecurity Concern	☐	☐	☐	☐	
Organic Farms	☐	☐	☐	☐	
Damage to Conservation Techniques (grassed waterways, terraces, contour strips, etc.)	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	
Other:	☐	☐	☐	☐	

Section 5: Outstanding Ag Impact Items to Date – Complete for all locations requiring follow-up actions as identified in Section 4. Previously identified issues should remain in this table on each weekly report until they are corrected. Add additional rows as necessary.

ISSUE LOCATION	ISSUE	DATE OBSERVED	ACTION/RESOLUTION NEEDEDED	DATE CORRECTED

Section 6: Photos of Construction Observations - Include at least one photo for each item inspected in Section 4. The photo(s) of each inspection item should be representative of the daily observations that week. Add rows as needed.	
INSERT PHOTO	**PHOTO 1** DATE: LOCATION: DESCRIPTION: FOLLOW-UP REQUIRED:
INSERT PHOTO	**PHOTO 2** DATE: LOCATION: DESCRIPTION: FOLLOW-UP REQUIRED:
INSERT PHOTO	**PHOTO 3** DATE: LOCATION: DESCRIPTION: FOLLOW-UP REQUIRED:
INSERT PHOTO	**PHOTO 4** DATE: LOCATION: DESCRIPTION: FOLLOW-UP REQUIRED:

INSERT PHOTO	**PHOTO 5** DATE: LOCATION: DESCRIPTION: FOLLOW-UP REQUIRED:
INSERT PHOTO	**PHOTO 6** DATE: LOCATION: DESCRIPTION: FOLLOW-UP REQUIRED:
INSERT PHOTO	**PHOTO 7** DATE: LOCATION: DESCRIPTION: FOLLOW-UP REQUIRED:
INSERT PHOTO	**PHOTO 8** DATE: LOCATION: DESCRIPTION: FOLLOW-UP REQUIRED:

State of Wisconsin
Department of Agriculture,
Trade & Consumer Protection

Agricultural Resource Management

For additional copies, contact:

DATCP
Agricultural Impact Program
P.O. Box 8911
Madison, WI 53708-8911

Phone: 608/224-4650
608/224-4646
Fax: 608/224-4615