Appendix F

Great River Energy Responses to EA Questions

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Great River Energy

March 11, 2016

Via Electronic Mail

Suzanne Steinhauer
Environmental Review Manager
Energy Environmental Review and Analysis
Minnesota Department of Commerce
85 7th Place East, Suite 500
Saint Paul, MN 55101

Re: **Responses of Great River Energy to Energy Environmental Review and Analysis Questions for Development of Environmental Review, Questions 1-9**

In the Matter of the Application of Great River Energy for a Route Permit for the Palisade 115 kV Project in Aitkin County, Minnesota

Docket No. ET2/TL-15-423

Dear Ms. Steinhauer:

Great River Energy is in receipt of the March 3, 2016 and March 7, 2016 requests for information of the Minnesota Department of Commerce Energy, Environmental Review, and Analysis ("EERA"), in connection with EERA's development of an environmental review document in the above-captioned matter. Great River Energy hereby submits the attached responses to EERA Questions 1-9 contained in EERA's March 3 and March 7, 2016 requests.

Thank you for your attention to this matter.

Sincerely,

GREAT RIVER ENERGY

Carole L. Schmidt

Carole L. Schmidt
Supervisor, Transmission Permitting and Compliance

Attachment

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of the Application	**)**	
of Great River Energy for a	**)**	
Route Permit for the Palisade 115 kV	**)**	
Project and Associated Facilities	**)**	**Docket No. ET2/TL-15-423**
in Aitkin County, Minnesota	**)**	

RESPONSES OF GREAT RIVER ENERGY
TO
ENERGY ENVIRONMENTAL REVIEW AND ANALYSIS QUESTIONS FOR
DEVELOPMENT OF ENVIRONMENTAL REVIEW,
QUESTIONS 1-9

Great River Energy respectfully submits the following responses to Questions 1-9 from the Minnesota Department of Commerce, Energy Environmental Review and Analysis ("EERA") staff in connection with EERA's development of an environmental review document in the above-captioned matter. Questions 1-9 are repeated below, with Great River Energy's response immediately following.

1. Rice River Breaker Station

Question:

Other than the description of the fenced area of the proposed Rice River Breaker Station on p. 7-8 of the Application, there is little indication of what the breaker station will contain or look like. Please provide additional description including:

- **Description of the current land use at the proposed breaker station location**
- **Description of equipment (type of equipment, relative height of major equipment) at the breaker station**
- **Description of lighting**
- **Description of fence including height and provisions for ingress/egress to the facility.**
- **Description of any cleared area to be maintained outside of the fenced area, such as for parking.**
- **Description of construction**
- **Description of operations and maintenance procedures**
- **Photo or illustration of a similar breaker station**

Response:

- This property is presently being used for agriculture.
- The equipment at this site will consist of steel structures, high voltage circuit breakers, aluminum buswork and an electrical equipment enclosure. The steel structures will be galvanized and range in heights from 7'-0" to 100'-0". There will be one 100'-0" shield mast which will protect the breaker station from lightning stokes that would have an adverse effect on the electrical delivery system. There will be three two-legged 70'-0" tower structures to tie the transmission lines into the breaker station. There will be three circuit breakers to protect the system and provide a means for switching. The energized aluminum buswork will be 14'0" and 22'-0" tall as required. There will be one 24' x 36' x 12' electrical equipment enclosure which will house the relaying and controls for the site.
- The lighting at this site will be limited to entryway illumination above the doors on the electrical equipment enclosure.
- The fence will be chain link construction with a security wire cap. The chain link will be 7'-0" tall with a 1'-0" security wire top. There will be one 30'-0' gate for dive access to the site. Personnel access will be through the electrical equipment enclosure.
- This site will have a 260'-0" maintained drive with an approximately 2,000 ft^2 parking area near the breaker station fence. Surfacing will be gravel.
- Site construction will consist of a metal clad neutral painted equipment enclosure with galvanized structural steel members making up the breaker station yard. The yard surfacing will be crushed granite stone. The equipment required for construction will be service trucks, bucket trucks, man lifts, and a crane for one day to set the electrical equipment enclosure.
- This site will be unmanned with no permanent occupancy. The standard maintenance schedule for a breaker station is an annual check of the major components, including the batteries. In addition, there is a maintenance check done every 5-6 years where all of the components are tested to make sure they are performing according to specifications. General site maintenance, such as cutting grass, weed control, fence inspection etc. will be performed as needed throughout the year.
- See site examples attached.

2. **Project Cost**

Question:

a. At this time, is GRE aware of any changes to the estimate project costs identified in Table 4-1 of the Application?

b. Please explain the difference in estimated costs for the Planning/State Permitting phase between the "East Route Option" and the "West Route Option" of the Proposed Project detained in Table 4-1.

Response:

a. There are no changes to the estimate at this time.

b. The estimates are based on cost per mile; the west route option is approximately one mile longer than the east route option.

3. **Planned Outages**

Question:

Would any outages of Minnesota Power's Line 13 or any other transmission lines be required for the Palisade Project to become operational?

Response:

Minnesota Power's Line 13 will need to be rerouted into the proposed Rice River Breaker Station to be connected to 115 kV circuit breaker sectionalizing plan. Great River Energy will coordinate with Minnesota Power on this activity.

4. **Switch Structures**

Question:

Illustrations of switch structures are shown in Figures 4-2 and 4-3 of the Application, but there is no discussion of where these structures would be used. If switch structures will be used in the Proposed Project, please provide additional information on where they would be used and structure dimensions.

Response:

No switch structure is planned as part of the proposed Palisade 115 kV transmission line. All switching associated with this Project will be part of the Rice River Breaker Station.

5. **Clearances/ROW**

Question:

It is unclear from the Application (see p. 4-4) the relationship between NESC clearance requirements and Great River Energy's standard 100-foot ROW for 115 kV transmission lines.

a. Please describe the relationship between NESC clearances and ROW requirements.

i. Do the NESC clearances apply to objects and structures generally, or only those within the ROW?

ii. Does the NESC establish ROWs for various voltages and line configurations or does Great River Energy take the NESC recommendations into account in establishing its own ROW requirements?

Response:

i. NESC clearances apply to objects and structures as a minimum required safety clearance. Great River Energy establishes an easement width through the use of an easement that establishes a change in property rights to enforce clearance requirements from objects and structures. The ROW also takes into account the movement (blowout) of the conductor.

ii. Great River Energy takes NESC clearance requirements into account in establishing our ROW requirements. Great River Energy has standard ROW widths for the specific voltage of line.

In its discussion of ROW, the Application (at p. 4-4) indicates that the transmission line ROW may be reduced to 35 feet on one or both sides of the transmission centerline. Table 7-1 indicates that there are two buildings within 50 feet of the anticipated centerline.

b. At this time can Great River Energy identify any areas where a reduced ROW appears to be necessary?

Response:

At this point we have not completed any detailed engineering plans; however, we have reviewed the existing structures along the line segments and are confident that we can work around any areas of concern with engineering modifications (taller structures, alternate structure design (H-frame vs. single pole), conductor/insulator placement) or a reduction in easement width.

c. At this time is Great River Energy aware of any areas where the required ROW may include existing structures? If so, would existing structures need to be removed? Are there design modifications to the transmission line that would allow NESC clearances to be met even with structures within a ROW?

Response:

We are not aware of any properties where the ROW may include homes. Great River Energy will not allow any homes to be located within the easement ROW. As we review our survey data we may become aware of other structures such as sheds or propane tanks that may require relocation. In those cases we will work with the property owner.

6. **Tax-forfeited Land**

Question:

Is Great River Energy aware of any tax forfeited land along any of the proposed route segments?

Response:

Great River Energy is not aware of any tax-forfeited land along any of the proposed route segments.

7. **Construction Schedule**

Question:

The Application (at p. 4-9) anticipates route clearing in late 2016 and energization of the Palisade 115 kV Project in late 2017. The timing of the ultimate permit decision for Enbridge's proposed Line 3 Pipeline Replacement Project is unknown at this time, but is not anticipated before mid-2017.

a. Please describe the sequence of events related to design, construction and operation of the Palisade 115 kV Project and relative timeframe of those events.

b. Please describe how the schedule for the Palisade 115 kV Project would be related to the Commission's route decision on the proposed Line 3 Pipeline Replacement Project (e.g. at what point would landowners be approached for easements, when would detailed transmission line design begin, what is the relationship between the timing of construction for the proposed Palisade Pump Station, should it be permitted, and the Palisade 115 kV Project?)

Response:

a. When Great River Energy submitted the application for a route permit, the dates provided (construction start in late 2016 and energization in late 2017) were based on the best information we had at that time for the Line 3 Project. With the current uncertainty in the permitting process schedule for the Line 3 Project, Great River plans only to complete the route permit process through the PUC at this time. Easement acquisition and design will be put on hold for an unknown amount of time, as Great River Energy monitors the progression of the Line 3 docket. We understand that the

Route Permit for the Palisade Project will be contingent on the Enbridge Line 3 permits and no construction activities will occur on our Project prior to approval of the Enbridge permits by the PUC.

b. Easement acquisition would start when there is more certainty on the timing of the permit decision for the Line 3 Project. The intent is to be ready for construction at the time (or shortly thereafter) Enbridge receives their Line 3 permits. We assume the timing of the construction of the Palisade Pump Station would be concurrent with construction of our Project.

8. Road Crossings

Question:

Great River Energy's proposed alignment includes several crossings of US Highway 169.

a. Please describe the primary objective(s) of the road crossings as the alignment changes side of the road (e.g. avoiding homes within a certain distance of the proposed alignment, engineering concerns).

b. At this time has Great River Energy's preliminary planning identified any areas where the alignment changes address specific conditions (e.g. clearance issues associated with certain land uses, lining poles up properly for turning, topographic conditions)?

Response:

a. The reasons for the road crossings proposed on the Project are:

- Shifting the alignment to avoid homes and other structures.
- Shifting the alignment to avoid landscaped trees. When looking at trees, we tend to differentiate between trees that grow naturally in a wooded setting versus trees that are planted for a specific purpose, such as front yard landscaping, wind breaks, screening etc. The latter is typically referred to as landscaped trees and they tend to have a much greater use/value to a landowner.
- Shifting the alignment to avoid a major intersection – U.S. Highway 169 and Highway 210.

b. At this time there are no areas identified where alignment changes will be needed for other reasons.

9. Route Width

Question:

On p. 4-1 of the Application, Great River Energy requests a "general route width" of 400 feet, 200 feet each side of the road centerline or proposed alignment. That paragraph also notes that a wider, but unspecified, route width is requested in certain areas:

Wider route widths are requested in some areas where alignment options are limited due to the proximity of homes and other features. For example, a 400-foot route is requested south of the Mississippi River where it crosses U.S. Highway 169. Larger route areas are also requested where the pump station and breaker station will be located to accommodate design flexibility. Detailed maps in Appendix C depict the requested route.

a. Please provide GIS shapefiles showing the requested route width.

b. Is the characterization of a "general route width" of 400 feet, 200 feet each side of either a road centerline or proposed alignment still accurate?

c. Please provide a short written description, including the feature or issue leading to the desire for more flexibility, and requested route width, of areas where a wider route width is requested.

Response:

a. The shapefiles were sent to Andrew Levi at DOC-EERA on March 8, 2016.

b. The route width is primarily 400' wide, 200' on either side of the road centerline. In some cases where we do not follow a road, such as the pipeline route alternative, we are centered on the anticipated pipeline centerline.

c. There are currently four locations on the Project where we are proposing a wider route width for increased flexibility:

- Enbridge pump station – At the terminus of the Project we are proposing a route width of approximately 825' to account for the uncertainty of the final location of the Enbridge Palisade Pump Station. The wider route gives us the flexibility to modify our alignment to match up with the final pump station location.

- Mississippi River crossing – At the Mississippi river crossing along U.S. Highway 169, a wider route width is requested from approximately 435th Lane north to the Great River Road/CR 21. The width of the route on the south end is approximately 850' and tapers down to approximately 650' on the north end. The wider route is requested to account for the challenges of existing residential structures located along the bridge. In addition, the MnDOT permitting requirements for crossing the river in this location are unknown.

- Chute Alternative – This alternative provided an additional option for crossing the Mississippi River. In discussions with the Chute family, we felt that having a route width of approximately 700’ provided the flexibility to have an alignment on either side of the buildings that are located on the property.

- Rice River Breaker Station – We are proposing a route width of approximately 1,200’ to account for the uncertainty of the final location of the Rice River Breaker Station within the parcel. The wider route gives us the flexibility to be able to modify our alignment to match up with the final breaker station layout.

N

SCALE: 1"=50'-0"
0 10' 20' 30' 40' 50'

CR 54 / 390TH ST

1040.00

R50.0'

R50.0'

Gravel Driveway

Parking

30.0'

115KV LINE TO RIVERTON

115KV LINE TO PALISADE

115KV LINE TO CROMWELL

143.0'

70.0'

70.0'

44.5'

25.6'

36.5'

Deadend Structures (Approx. 70'-0" Tall)

PP

OHE

257.0'±

632.00

525.99

Electrical Equipment Enclosure

Substation Fence

Energized Bus Work

Lightning Mast (Approx. 100'-0" Tall)

High Voltage Circuit Breaker

61.0'

40.0'

74.0'

33.0'

67.0'

175.0' FENCE FOOTPRINT

FENCE

FUTURE FENCE

285.0'

275.0'

100.0'

GRAVEL

5.0'

166.0'

100.0'

CENTERLINE 115KV LINE FUTURE

CENTERLINE

CENTERLINE 69KV LINE FUTURE

143.0'

70.0'

24.0'

48.0'

105.0'

5.0'

390.0' FENCE

400.0' GRAVEL

963.52

130.91

US HWY 169 / MN 210

E.C. 1901 229.26 SECTION CORNER FD 1

N

SUB. SITE

Rice River Substation
Aitkin County, Minnesota
Section 9, Township 47N, Range 26W

Vicinity Map
Scale: None

Street Address:
xxx 390th Street
Aitkin, MN 56431

1'-0

7'-0 TO TOP OF FENCE FABRIC

TYPICAL SUBSTATION FENCE DETAIL

LEGEND

- REFERENCE LINE
- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- PP — EXISTING TRANSMISSION POLE
- PP — PROPOSED TRANSMISSION POLE
- OHE — EXISTING OVERHEAD TRANSMISSION LINE
- T — EXISTING TELEPHONE PEDESTAL
- EXISTING COMMUNICATION LINE
- EXISTING EDGE GRAVEL ROAD
- PROPOSED EDGE GRAVEL
- PROPOSED SUBSTATION FENCE
- PROPOSED STORM CULVERT

REFERENCE DRAWINGS:

ELECTRICAL PLAN_____S334-04D, SH. 1
FENCE & FOUNDATION PLAN_____S334-05D, SH. 1
CONDUIT PLAN_____S334-07D, SH. 1
GROUNDING PLAN_____S334-09D, SH. 1
ARCHITECTURAL PLAN_____S334-11D, SH. 1
STRUCTURAL PLAN_____S334-35D, SH. 1
GRADING PLAN_____S334-40D, SH. 1
EROSION CONTROL DETAILS_____S334-40D, SH. 3
SOIL BORING PLAN_____S334-42D, SH. 1
CERTIFICATE OF SURVEY (UEI)_____NO DWG NO. SH. 1

GREAT RIVER ENERGY.

PLOT PLAN

RICE RIVER SUBSTATION

S334

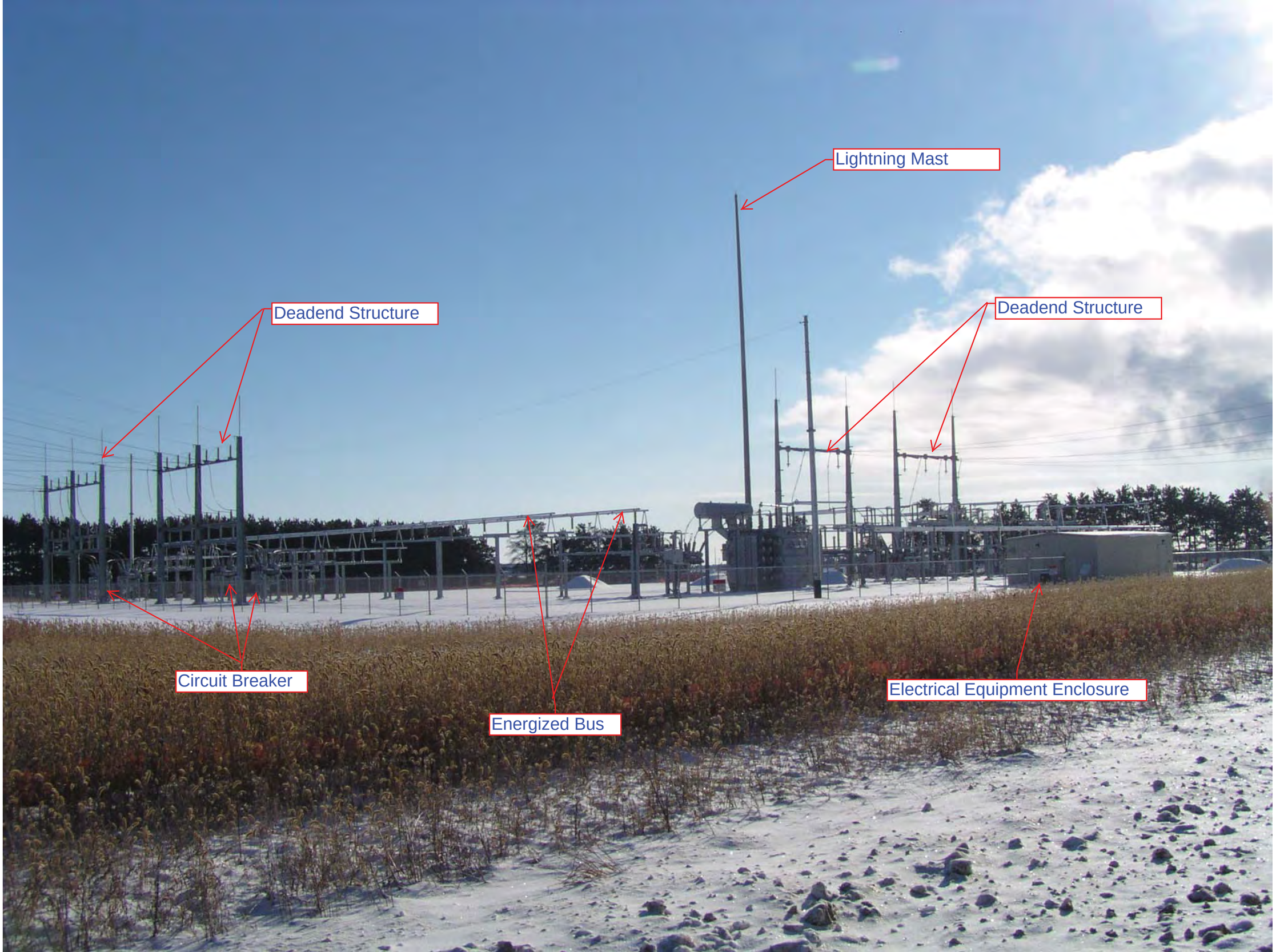
REV NO	DATE	REVISION	REV BY	APPD BY
6				
5				
4				
3				
2				
1				

DATE: 7-14-15
SCALE: 1/16" = 1'-0"
DWN BY: SWL
CKD BY: MCB
CKD BY:
APPD BY:

PROJECT NO 203646
REVISION 0
DRAWING NUMBER S334-10D
SHEET 1

PRELIMINARY


Deadend Structure
Energized Bus
Electrical Equipment Enclosure
Circuit Breakers


Lightning Mast
Deadend Structure
Deadend Structure
Circuit Breaker
Energized Bus
Electrical Equipment Enclosure