



MONTANA-DAKOTA
UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
701-222-7900

February 4, 2022

Executive Secretary
North Dakota Public Service Commission
600 East Boulevard Ave. Department 408
Bismarck, ND 58505-0480

Re: Case Nos. PU-11-601, PU-15-592 and PU-17-192
Thunder Spirit Wind Project

Montana-Dakota Utilities Co. (Montana-Dakota) herewith submits to the North Dakota Public Service Commission (Commission) the As-built Facility Design and electronic GIS data files (downloaded separately) for the above referenced Project.

The Certification Relating to Order Provisions, paragraph 35, which was attached to and made part of the October 9, 2013 Order in Case No. PU-11-601, states the “Company agrees to provide the Commission with both an electronic and a paper copy of the site approved by the Commission and the facility design specifications for the construction of the energy conversion facility showing the location of the energy conversion facility as built, and will provide this information within 3 months of the completion of the construction. Company also agrees to provide an electronic version of the site approved by the Commission and the facility design specifications for the construction of the energy conversion facility showing the location of the energy conversion facility as built that can be imported into ESRI GIS mapping software within 3 months of the completion of the construction.”

Pursuant to this Order Provision, Montana-Dakota now submits the As-built Facility Design paper drawings as Attachment A. An electronic version has been provided to the Commission separately on February 4, 2022. The Company acknowledges the Commission’s January 27, 2022 Notice of Noncompliance in the above noted Cases and apologizes for this oversight and requests the

49 PU-15-592 Filed 02/04/2022 Pages: 13
As-Built Drawings
Montana-Dakota Utilities Co.
Travis Jacobson, Director Reg. Affairs

75 PU-17-192 Filed 02/04/2022 Pages: 13
As-Built Drawings
Montana-Dakota Utilities Co.
Travis Jacobson, Director Reg. Affairs

174 PU-11-601 Filed 02/04/2022 Pages: 13
As-Built Drawings
Montana-Dakota Utilities Co.
Travis Jacobson, Director Reg. Affairs

Commissions accept this filing as being in full compliance with the above noted Order Provision.

Please contact me at 701.222.7855 or travis.jacobson@mdu.com if you have questions.

Sincerely,



Travis R. Jacobson
Director of Regulatory Affairs

Record Civil Plans

for
**Wind Turbines, Access Roads,
 and Drainage**

Thunder Spirit II Wind Project
 Adams County, North Dakota

RECORD CIVIL PLANS
 CONFORMING TO FIELD SURVEY PROVIDED BY
 WESTWOOD PROFESSIONAL SERVICES, COMPLETED
 OCTOBER, 2018.

| Sheet List Table | |
|------------------|-------------------------------|
| Sheet Number | Sheet Title |
| 1 | Cover |
| 2 | Overall Site Plan |
| 3 | Delivery Flow Plan |
| 4 | Construction Details |
| 5 | Construction Details |
| 6 | Construction Details |
| 7 | Construction Details |
| 8 | Construction Details |
| 9 | Construction Details |
| 10 | Construction Details |
| 11 | Site Plan T-57 T-58 T-59 |
| 12 | Site Plan T-54 T-55 T-56 |
| 13 | Site Plan T-49 T-50 T-53 |
| 14 | Site Plan T-51 T-52 |
| 15 | Site Plan |
| 16 | Site Plan T-44 |
| 17 | Site Plan T-45 T-46 T-47 T-48 |
| 18 | Profiles - Roads 44, 48 |
| 19 | Profiles - Roads 48, 52 |
| 20 | Profiles - Road 52 |
| 21 | Profiles - Roads 52, 53, 54 |
| 22 | Profiles - Road 54 |
| 23 | Profiles - Roads 54, 57 |

Designed: DJF
Checked: DJF
Drawn: SNK

As-Built Drawing:

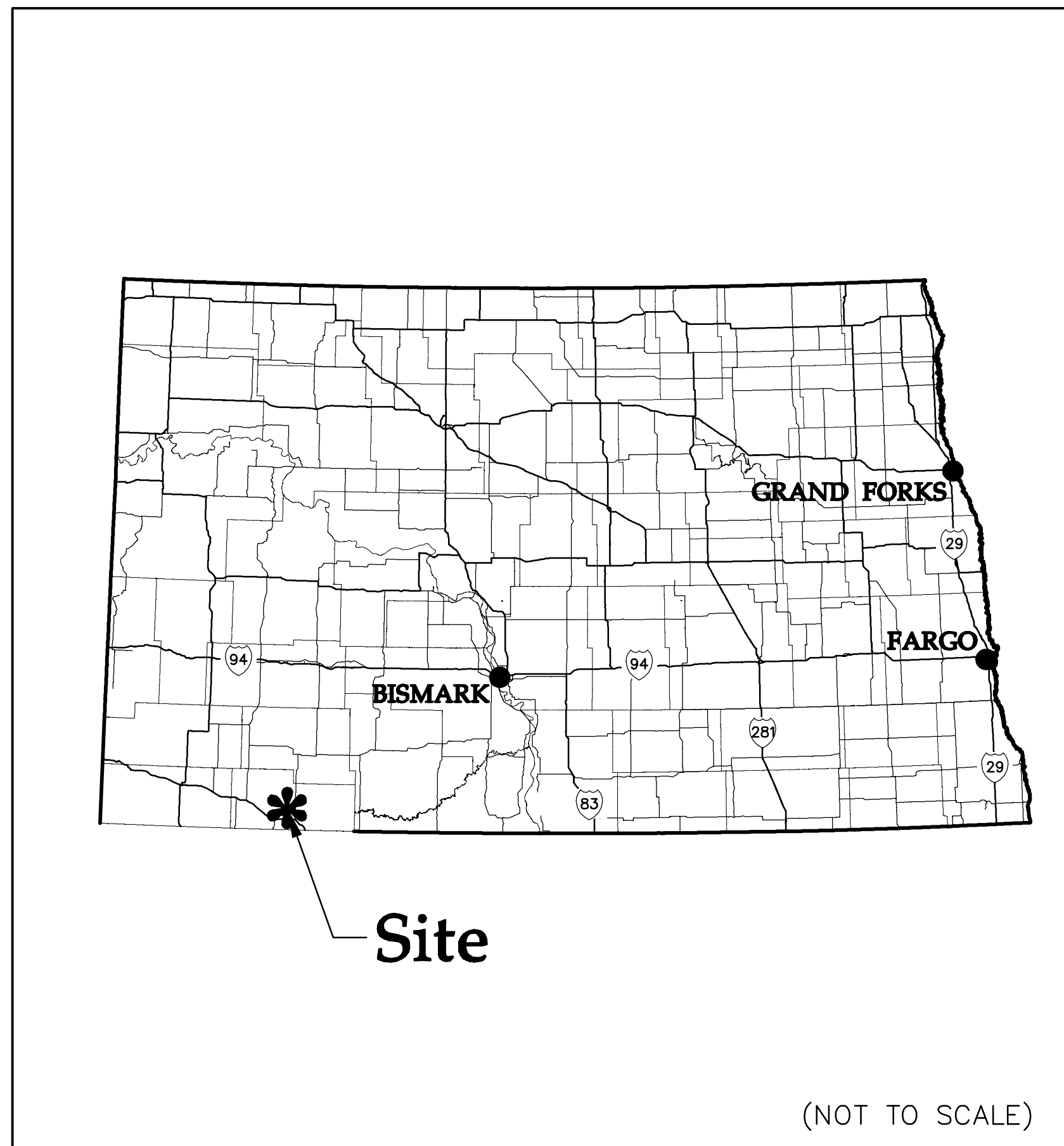
| Revisions # | DATE | DESCRIPTION |
|-------------|----------|---------------------|
| 0 | 05/11/18 | IFC CIVIL PLANS |
| 1 | 05/18/18 | CULVERT REVISIONS |
| 2 | 07/17/18 | COLLECTION REVISION |
| 3 | 11/15/18 | RECORD PLANS |

Prepared for:

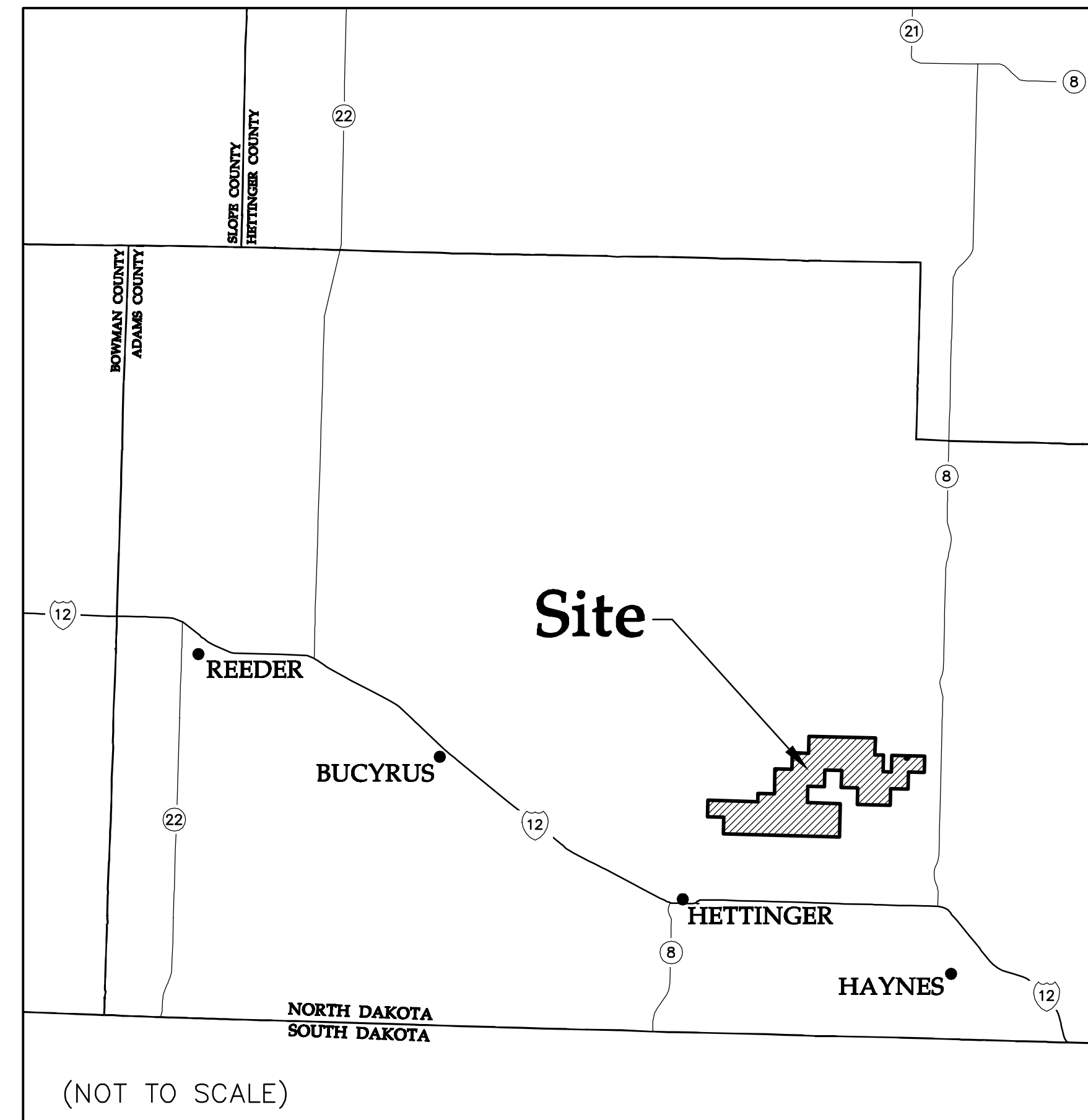


2028 2nd Avenue NW
 West Fargo, ND 58078

State Map



Vicinity Map



| NO. | DATE | REVISION | SHEETS |
|-----|----------|-------------------------|----------|
| 0 | 5/11/18 | ISSUED FOR CONSTRUCTION | ALL |
| 1 | 5/18/18 | CULVERT REVISIONS | 9, 11-17 |
| 2 | 7/17/18 | COLLECTION REVISION | 11-17 |
| 3 | 11/15/18 | RECORD PLANS | ALL |

**Thunder Spirit II
 Wind Project**
 Adams County, North Dakota

Cover

Record Civil Plans

Date: 11/15/18

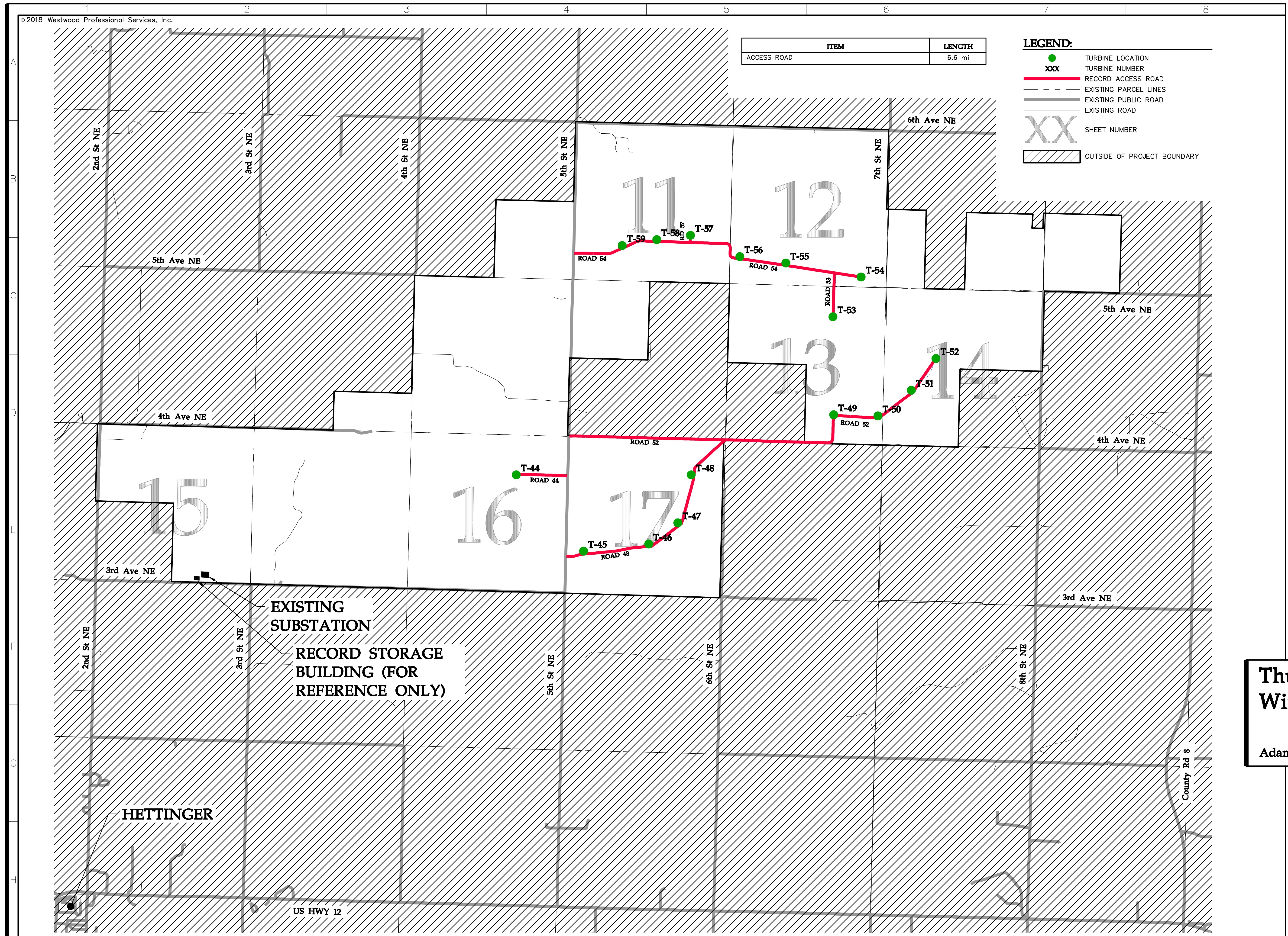
Sheet: 1 OF 23

| DATA SET INFORMATION | | | |
|-------------------------------|--------------------------|-------------------------------------|------------|
| BASE FILE | FILE NAME / NOTES | PROVIDER | DATE |
| AERIAL IMAGE | AERIAL-NAIP-GM.jp2 | NAIP | 1/11/2018 |
| ALTA SURVEY | 3614110-Topo.dwg | Wanzek/KLJ | 2/21/2018 |
| RECORD SURVEY | 0004985-01RECO.dwg | Westwood | 10/11/2018 |
| TOPOGRAPHY | MKP_Lidar_2018_01_25.txt | North Dakota State Water Commission | 1/25/2018 |
| RECORD TURBINE ARRAY | 0004985-01TURB.dwg | Westwood | 10/18/2018 |
| RECORD UNDERGROUND COLLECTION | 0004985-01RECO.dwg | Westwood | 10/11/2018 |
| STREAMS/WETLANDS | 3614110-Topo.dwg | Wanzek/KLJ | 2/21/2018 |

| ITEM | LENGTH |
|-------------|--------|
| ACCESS ROAD | 6.6 mi |

LEGEND:

- TURBINE LOCATION
- XXX TURBINE NUMBER
- RECORD ACCESS ROAD
- - - EXISTING PARCEL LINES
- EXISTING PUBLIC ROAD
- EXISTING ROAD
- XX SHEET NUMBER
- OUTSIDE OF PROJECT BOUNDARY



Designed: DJF
 Checked: DJF
 Drawn: SNK

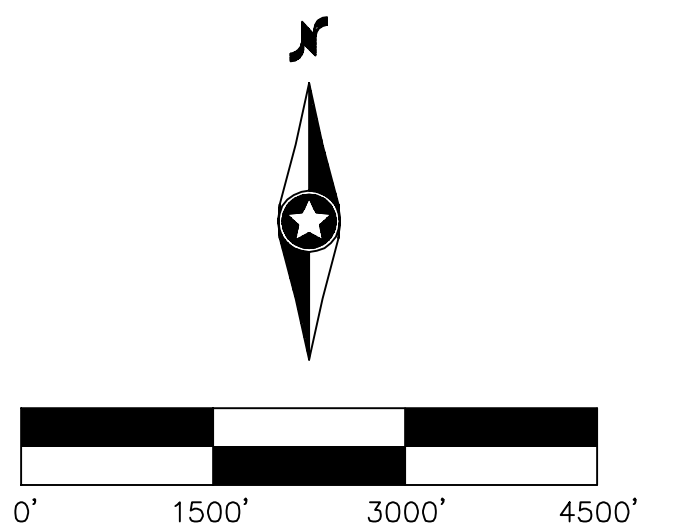
As-Built Drawing:

| Revisions # | DATE | DESCRIPTION |
|-------------|----------|---------------------|
| 0 | 05/11/18 | IFC CIVIL PLANS |
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| 2 | 07/17/18 | COLLECTION REVISION |
| 3 | 11/15/18 | RECORD PLANS |

Prepared for:



2028 2nd Avenue NW
 West Fargo, ND 58078



Thunder Spirit II Wind Project

Adams County, North Dakota

Overall Site Plan

Record Civil Plans

Date: 11/15/18
 Sheet: 2 OF 23

TURBINE COORDINATES
(HARN/NORTH DAKOTA STATE PLANE - INTERNATIONAL FOOT)

| Turbine | Northing | Easting |
|---------|-------------|--------------|
| T-44 | 144041.7131 | 1443790.9160 |
| T-45 | 141472.7806 | 1446058.2050 |
| T-46 | 141713.9910 | 1448251.2910 |
| T-47 | 142425.9302 | 1449230.1190 |
| T-48 | 144042.4239 | 1449680.6410 |
| T-49 | 146065.3842 | 1454477.6380 |
| T-50 | 146027.6106 | 1455966.3520 |
| T-51 | 146890.3341 | 1457091.0690 |
| T-52 | 147960.3108 | 1457919.2930 |
| T-53 | 149366.7142 | 1454451.8420 |
| T-54 | 150705.4726 | 1455398.8900 |
| T-55 | 151177.3104 | 1452867.3220 |
| T-56 | 151390.6196 | 1451317.8330 |
| T-57 | 152108.6762 | 1449654.1510 |
| T-58 | 151964.2408 | 1448521.8690 |
| T-59 | 151764.6386 | 1447358.1630 |

CULVERT AND LOW WATER CROSSING SCHEDULE

| Culvert Number | Record Type | Record Culvert Size | Design 10-year Size | Plan Sheet | Access Road | Notes |
|----------------|-------------|---------------------|---------------------|------------|-------------|--|
| 1 | HDPE | 3 - 42" | 3 - 42" | 11 | Road 54 | |
| 2 | HDPE | 3 - 18" | 3 - 18" | 11 | Road 54 | |
| 3 | HDPE | 2 - 30" | 2 - 30" | 11 | Road 54 | |
| 4 | HDPE | 2 - 18" | 2 - 18" | 13 | Road 52 | |
| 5 | HDPE | 3 - 18" | 3 - 18" | 13 | Road 52 | |
| 6 | HDPE | 2 - 18" | 2 - 18" | 13 | Road 52 | |
| 7 | HDPE | 3 - 18" | 3 - 18" | 13 | Road 52 | |
| 8 | HDPE | 2 - 18" | 2 - 18" | 14 | Road 52 | |
| 9 | - | - | 2 - 30" | 17 | Road 48 | Installed swale provides drainage to crossing #10. |
| 10 | HDPE | 2 - 30" | 3 - 30" | 17 | Road 48 | |
| 11 | HDPE | 2 - 18" | 2 - 18" | 17 | Road 48 | |
| 12 | HDPE | 1 - 18" | 1 - 18" | 17 | Road 48 | |
| 13 | HDPE | 3 - 18" | 3 - 18" | 17 | Road 48 | |
| 14 | HDPE | 1 - 24" | - | 17 | Road 52 | |
| 15 | HDPE | 1 - 18" | - | 17 | Road 52 | |

PUBLIC ROAD ENTRANCE CULVERTS SCHEDULE

| Record Type | Record Culvert Size | Designed Size | Plan Sheet | Public/Access Road Intersection |
|-------------|---------------------|---------------|------------|---------------------------------|
| HDPE | 3 - 18" | 3 - 24" | 16 | 5th St NE/Road 44 |

Designed: DJF
Checked: DJF
Drawn: SNK

As-Built Drawing:

| Revisions # | DATE | DESCRIPTION |
|-------------|----------|---------------------|
| 0 | 05/11/18 | IFC CIVIL PLANS |
| 1 | 05/18/18 | CULVERT REVISIONS |
| 2 | 07/17/18 | COLLECTION REVISION |
| 3 | 11/15/18 | RECORD PLANS |

Prepared for:



2028 2nd Avenue NW
 West Fargo, ND 58078

**Thunder Spirit II
 Wind Project**

Adams County, North Dakota

Construction Details

Record Civil Plans

Date: 11/15/18
 Sheet: 9 OF 23

THUNDER SPIRIT WIND PROJECT

| Rev. | Date | Description | By |
|------|------------|-------------------------|-----|
| A | 02/04/2015 | ISSUED FOR REVIEW | JLH |
| B | 03/20/2015 | ISSUED FOR REVIEW | BAG |
| C | 05/04/2015 | 90% SUBMITTAL | BAG |
| D | 05/15/2015 | 95% SUBMITTAL | BAG |
| 0 | 06/11/2015 | ISSUED FOR CONSTRUCTION | BAG |
| 1 | 12/08/2015 | FOR RECORD | BAG |
| 2 | 12/11/2015 | REVISED FOR RECORD | BAG |

RECORD DRAWINGS ARE BASED UPON CONSTRUCTION CONTRACTOR REDLINES AND HAVE NOT BEEN INDEPENDENTLY CONFIRMED BY THE ENGINEER.

ISSUED FOR RECORD



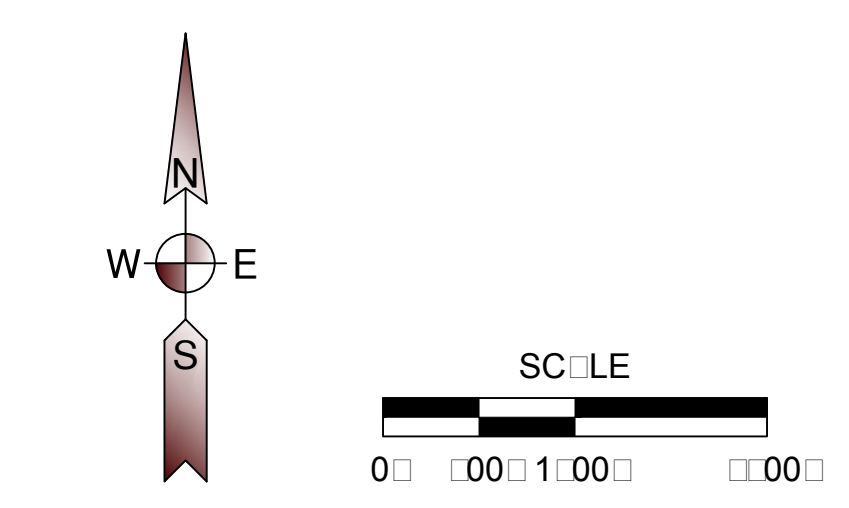
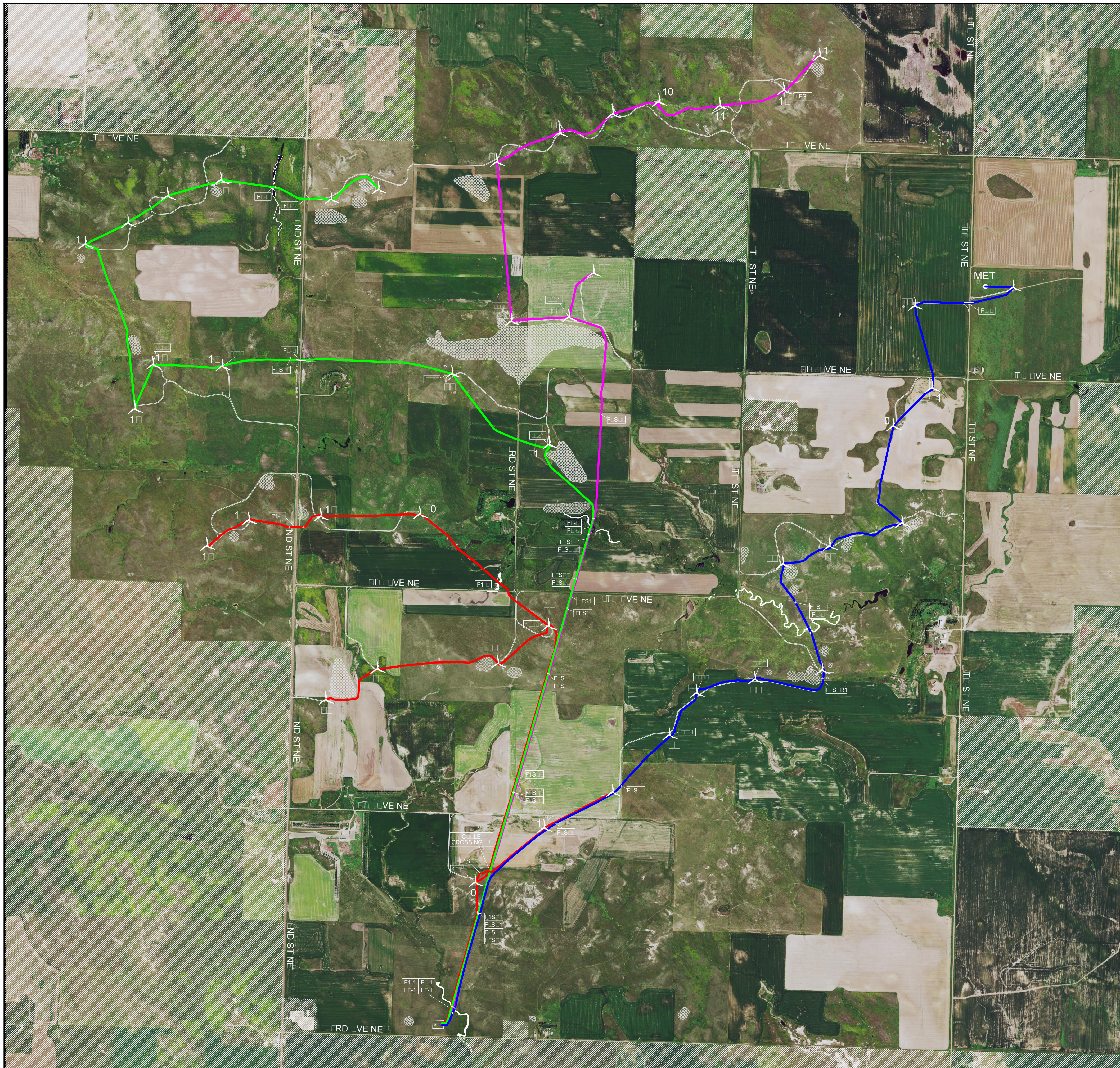
Bismarck-Denver-Detroit Lakes-Fargo-Sioux Falls-St. Paul
3350 38th Avenue South
Fargo, North Dakota 58104
Phone: 701-280.8500 Fax: 701.237.3191
Web: www.ulteig.com

Design By: J. HERMANSON
Drawn By: J. HERMANSON
Approved By: B. GOLTZ
Project Number: 13.02204

COLLECTION SYSTEM OVERALL LAYOUT

DWG #: TSW-COL-C1

REVISION: 2

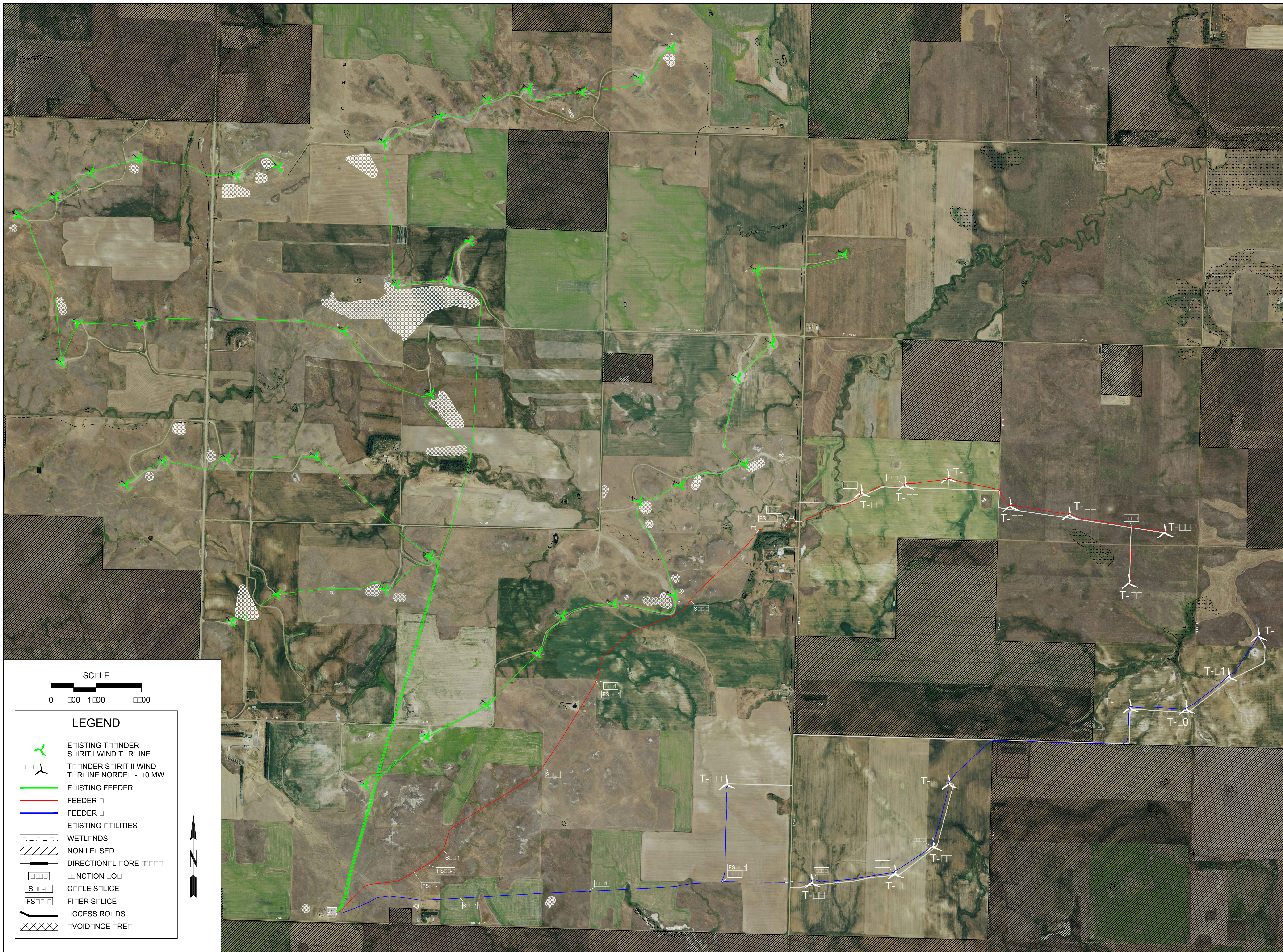


| LEGEND | |
|--------|------------------|
| | WIND TOWER |
| | FEEDER 1 |
| | FEEDER 2 |
| | FEEDER 3 |
| | FEEDER 4 |
| | MET TOWER |
| | NON LEASED |
| | AVOIDANCE BUFFER |
| | ACCESS ROADS |
| | FUNCTION POLE |
| | COLLECTOR SLICE |
| | FEEDER SLICE |

**THUNDER SPIRIT II
WIND PROJECT**

206 3RD AVE NE
HETTINGER, ND 58639

| Rev. | Date | Description | By |
|------|------------|-------------------------|----|
| A | 01/22/2018 | 30% SUBMITTAL | BG |
| B | 03/05/2018 | 60% SUBMITTAL | BG |
| C | 03/06/2018 | UPDATED 60% ROUTING | BG |
| D | 04/17/2018 | 90% SUBMITTAL | BG |
| E | 05/15/2018 | 95% SUBMITTAL | BG |
| 0 | 05/30/2018 | ISSUED FOR CONSTRUCTION | BG |
| 1 | 10/26/2018 | FOR RECORD | BG |



RECORD DRAWING

THIS RECORD DRAWING CONFORMS TO THE FINAL AS-BUILT CONSTRUCTION RECORDS PROVIDED BY THE CONTRACTOR AND/OR OWNER. THE INFORMATION PROVIDED BY THE CONTRACTOR OR OTHERS NOT ASSOCIATED WITH THE DESIGN ENGINEER WERE NOT FIELD VERIFIED BY THE ENGINEER OF RECORD FOR ACCURACY OR COMPLETENESS.



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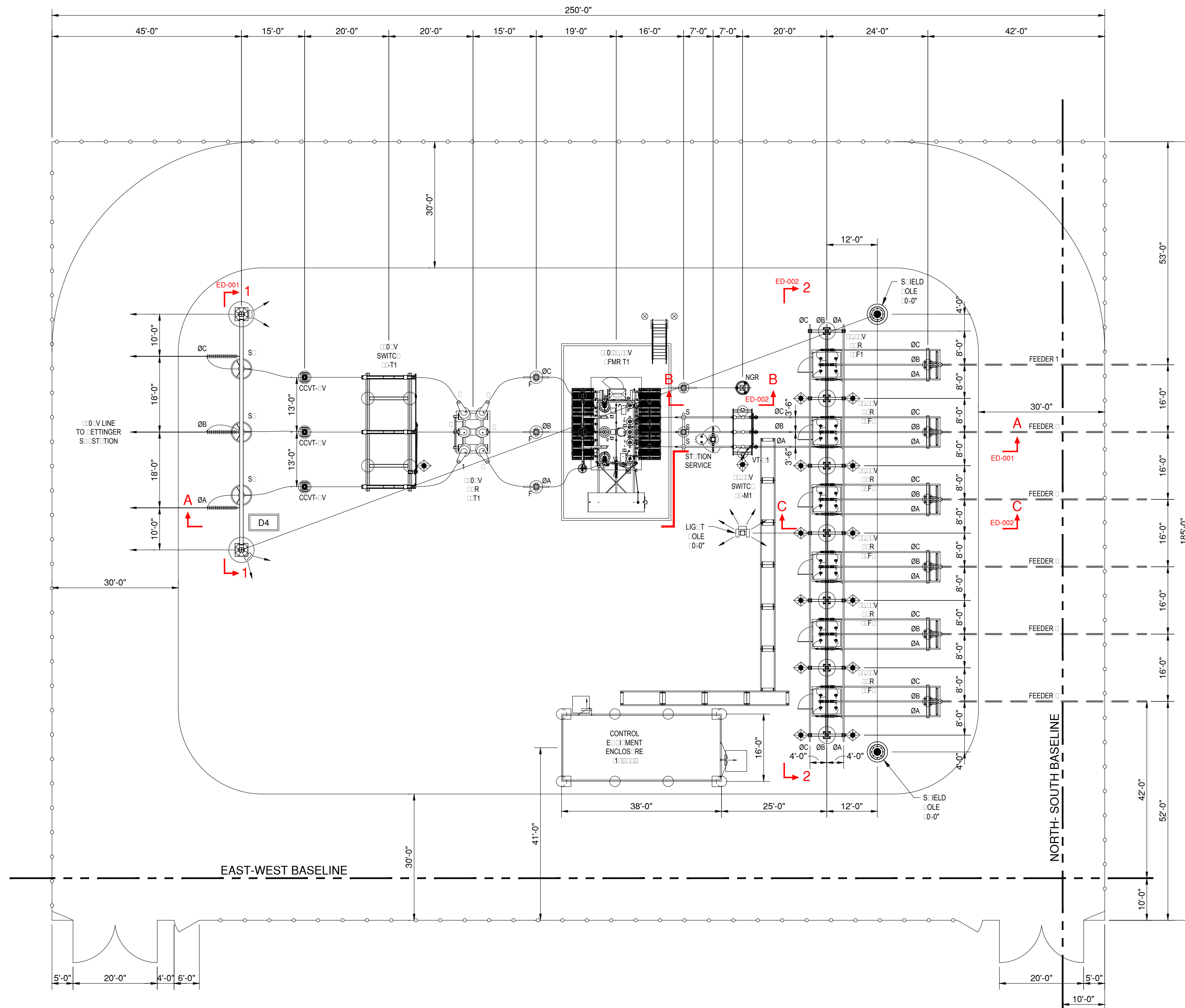
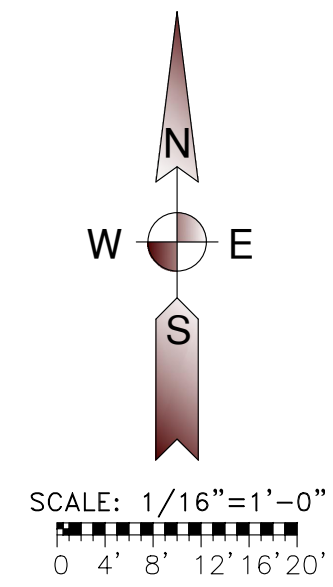
Design By: P. LOY
Drawn By: D. ELLINGSON
Approved By: B. GOLTZ
Project Number: 17.00707

**COLLECTION SYSTEM
OVERALL LAYOUT**

THUNDER SPIRIT WIND PROJECT

206 3RD AVE NE
HETTINGER, ND 58639

| Rev. | Date | Description | By |
|------|----------|------------------|-----|
| 0 | 6/5/15 | FOR CONSTRUCTION | PDD |
| 1 | 7/29/15 | FOR CONSTRUCTION | PDD |
| 2 | 12/8/15 | FOR RECORD | MCB |
| 3 | 05/15/18 | CONSTRUCTION | UEI |
| 4 | 10/05/18 | FOR RECORD | KLS |



LEGEND:

- F FIXED FITTING
- S SLIP FITTING
- E EXPANSION FITTING
- N.S. NEAR SIDE
- F.S. FAR SIDE
- D# DETAIL, SEE DWG. ED-005 THRU ED-006
- ◊ OPERATOR PLATFORM
- ⊗ BOLLARD
- A INDICATES SECTION VIEW "A-A"
- ED-001 DRAWING ON WHICH SECTION APPEARS
- ☏ AREA LIGHT
- SPOT LIGHT

ISSUED FOR RECORD



Bismarck-Denver-Detroit Lakes-Fargo-Sioux Falls-St. Paul
3350 38th Avenue South
Fargo, North Dakota 58104
Phone: 701-280.8500 Fax: 701.237.3191
Web: www.ulteig.com

Design By: P. DEIBEL
Drawn By: R. WESTBURY
Approved By: E. SWENSON
Project Number: 13.02204

**230/34.5KV SUBSTATION
GENERAL ARRANGEMENT**

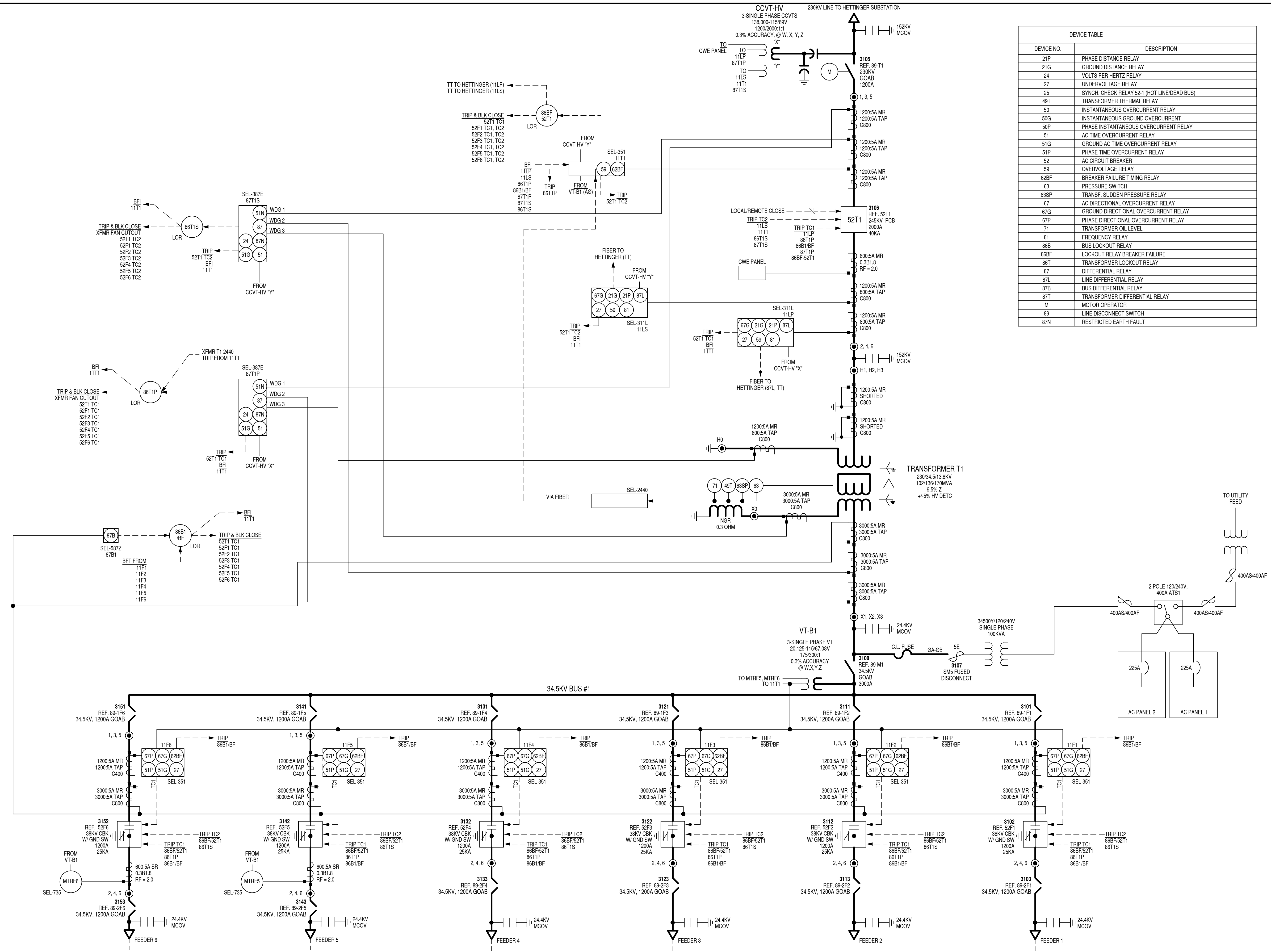
THUNDER SPIRIT WIND PROJECT

206 3RD AVE NE
HETTINGER, ND 58639

| Rev. | Date | Description | By |
|------|----------|-----------------|-----|
| 0 | 07/08/15 | CONSTRUCTION | DRS |
| 1 | 09/15/15 | SW. NAME CHANGE | DRS |
| 2 | 09/21/15 | SW. NAME CHANGE | DRS |
| 3 | 12/08/15 | FOR RECORD | DRS |
| 4 | 04/02/18 | CONSTRUCTION | KLS |
| 5 | 10/05/18 | FOR RECORD | KLS |

NOTES:
1. REFER TO DWG. DL1-001 FOR DEVICE LEGEND.

| DEVICE NO. | DESCRIPTION |
|------------|---|
| 21P | PHASE DISTANCE RELAY |
| 21G | GROUND DISTANCE RELAY |
| 24 | VOLTS PER HERTZ RELAY |
| 27 | UNDERVOLTAGE RELAY |
| 25 | SYNCH. CHECK RELAY 52-1 (HOT LINE/DEAD BUS) |
| 49T | TRANSFORMER THERMAL RELAY |
| 50 | INSTANTANEOUS OVERCURRENT RELAY |
| 50G | INSTANTANEOUS GROUND OVERCURRENT |
| 50P | PHASE INSTANTANEOUS OVERCURRENT RELAY |
| 51 | AC TIME OVERCURRENT RELAY |
| 51G | GROUND AC TIME OVERCURRENT RELAY |
| 51P | PHASE TIME OVERCURRENT RELAY |
| 52 | AC CIRCUIT BREAKER |
| 59 | OVERVOLTAGE RELAY |
| 62BF | BREAKER FAILURE TIMING RELAY |
| 63 | PRESSURE SWITCH |
| 63SP | TRANSF. SUDDEN PRESSURE RELAY |
| 67 | AC DIRECTIONAL OVERCURRENT RELAY |
| 67G | GROUND DIRECTIONAL OVERCURRENT RELAY |
| 67P | PHASE DIRECTIONAL OVERCURRENT RELAY |
| 71 | TRANSFORMER OIL LEVEL |
| 81 | FREQUENCY RELAY |
| 86B | BUS LOCKOUT RELAY |
| 86BF | LOCKOUT RELAY BREAKER FAILURE |
| 86T | TRANSFORMER LOCKOUT RELAY |
| 87 | DIFFERENTIAL RELAY |
| 87L | LINE DIFFERENTIAL RELAY |
| 87B | BUS DIFFERENTIAL RELAY |
| 87T | TRANSFORMER DIFFERENTIAL RELAY |
| M | MOTOR OPERATOR |
| 89 | LINE DISCONNECT SWITCH |
| 87N | RESTRICTED EARTH FAULT |



ISSUED FOR RECORD



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Web: www.ulteig.com
Design By: A. DIEMERT
Drawn By: M. MILLER
Approved By: J. HEINEMANN
Project Number: 13.02204

230/34.5KV SUBSTATION SINGLE LINE DIAGRAM