

March 11, 2022

**VIA E-MAIL AND FEDERAL EXPRESS**

Mr. Patrick Fahn  
Director, Public Utilities Division  
North Dakota Public Service Commission  
600 E. Boulevard, Dept. 408  
Bismarck, ND 58505-0480

**Re: Aurora Wind Project, LLC  
345 kV Transmission Line – Williams & Mountrail Counties  
Siting Application  
Case No. PU-18-351**

Dear Mr. Fahn:

In accordance with Certification Provision No. 33 of the North Dakota Public Service Commission's May 29, 2019 Findings of Fact, Conclusions of Law and Order issuing a Certificate of Corridor Compatibility and Route Permit for the Aurora Wind Transmission Line Project ("Project"), Aurora Wind Project, LLC hereby submits the following:

1. Two (2) hard copies of the approved corridor and as-builts for the Project; and
2. A USB containing GIS as-built data.

An electronic copy of this letter and a PDF copy of the approved corridor and as-builts for the Project are being filed with the Commission today via e-mail, with two (2) hard copies and a USB containing GIS as-built data following via Federal Express.

170 PU-18-351 Filed 03/11/2022 Pages: 25  
As-Built Maps  
Aurora Wind Project, LLC  
Mollie Smith, Fredrickson&Byron, P.A.

Attorneys & Advisors  
Main 612.492.7000  
Fax 612.492.7077

Fredrikson & Byron, P.A.  
200 South Sixth Street, Suite 4000  
Minneapolis, Minnesota 55402-1425

USA / China / Mexico  
Minnesota, Iowa, North Dakota  
fredlaw.com

Mr. Patrick Fahn  
March 11, 2022  
Page 2

If you have any questions, please let me know.

Sincerely,

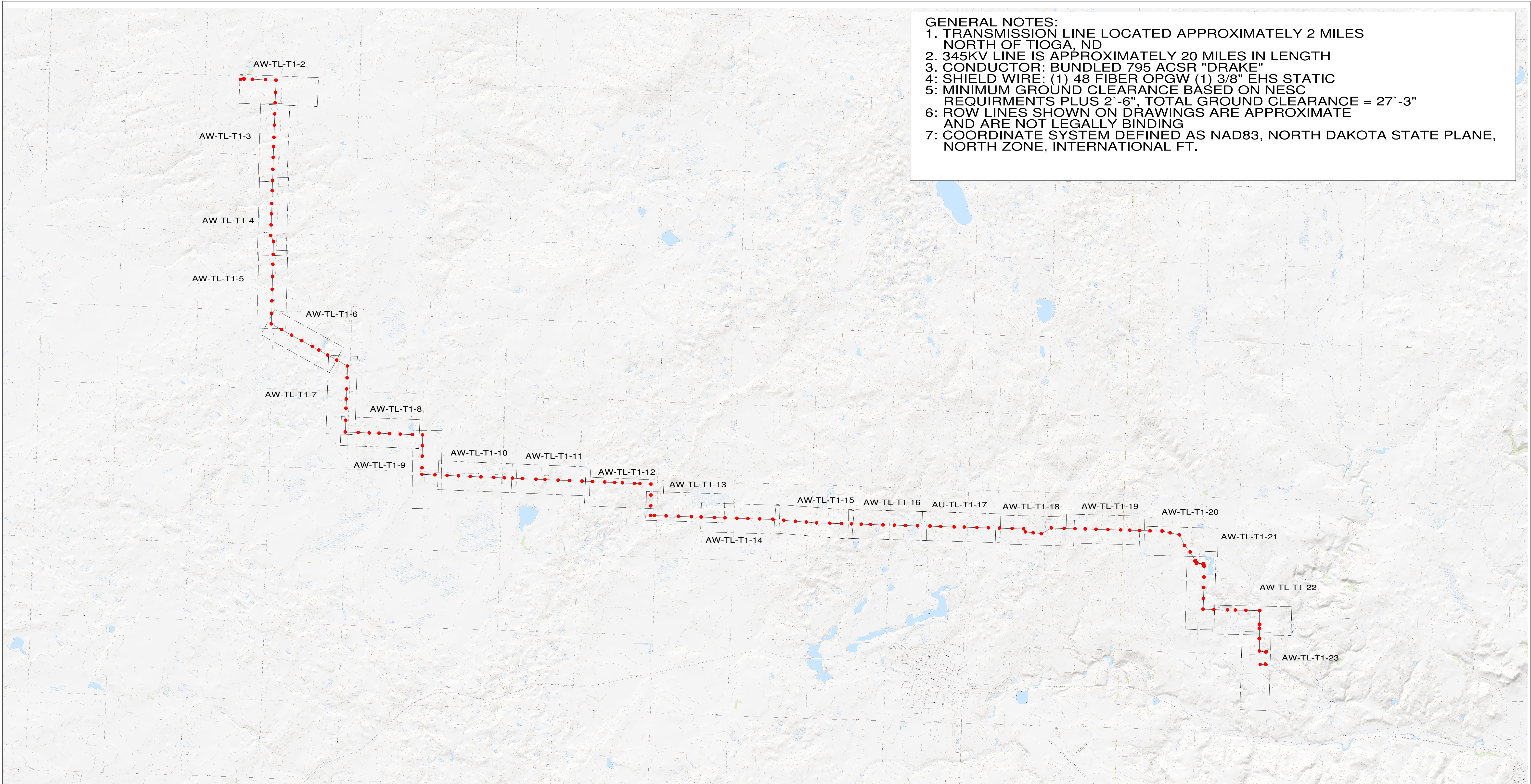
A handwritten signature in cursive script that reads "Mollie M. Smith".

MOLLIE M. SMITH

MMS/bd/75443407

cc: Steven Kahl, North Dakota Public Service Commission (via e-mail and Federal Express)  
Joe Carroll (via e-mail)

**GENERAL NOTES:**  
 1. TRANSMISSION LINE LOCATED APPROXIMATELY 2 MILES NORTH OF TIOGA, ND  
 2. 345KV LINE IS APPROXIMATELY 20 MILES IN LENGTH  
 3. CONDUCTOR: BUNDLED 795 ACSR "DRAKE"  
 4. SHIELD WIRE: (1) 48 FIBER OPGW (1) 3/8" EHS STATIC  
 5. MINIMUM GROUND CLEARANCE BASED ON NESC REQUIREMENTS PLUS 2'-6", TOTAL GROUND CLEARANCE = 27'-3"  
 6. ROW LINES SHOWN ON DRAWINGS ARE APPROXIMATE AND ARE NOT LEGALLY BINDING  
 7. COORDINATE SYSTEM DEFINED AS NAD83, NORTH DAKOTA STATE PLANE, NORTH ZONE, INTERNATIONAL FT.



# AURORA WIND FARM PROJECT

## 345KV TRANSMISSION LINE

### WILLIAMS AND MONTRAIL COUNTY, ND

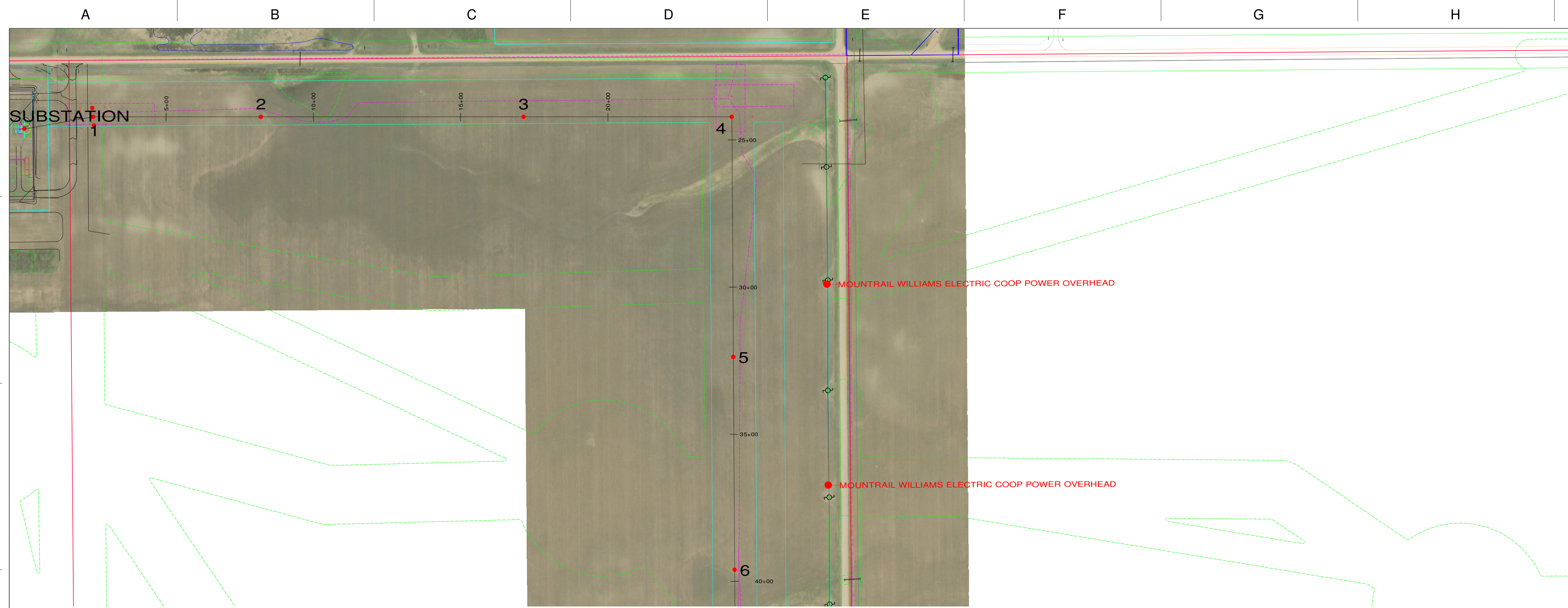


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APP'VD
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3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

345 KV TRANSMISSION LINE  
 OVERALL STRUCTURE LOCATION  
 & PNP SHEET INDEX MAP

AURORA WIND PROJECT  
 ENEL GREEN POWER

PROJ. NO: 3348.001	SCALE: AS NOTED	DWG. NO.: AW-TL-T1-01	SHEET: 1	REV.: 4
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**PLAN LEGEND:**

- STRUCTURE
- 12 STRUCTURE NUMBER
- CENTERLINE
- - - LIMITS OF DISTURBANCE
- - - WETLAND BOUNDARY
- - - CROSSING EASEMENT
- - - CROSSING UTILITY CENTERLINE
- - - FENCE
- - - ACCESS ROADS AND STRINGING EASEMENTS
- - - HYDROLOGIC LOW AREA
- - - FORESTED AREA
- - - DAKOTA SKIPPER HABITAT
- ▨ NONPARTICIPATING PROPERTY

**PROFILE LEGEND:**

- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
- SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
- CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
- - - CLEARANCE LINE
- GROUND LINE
- ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
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9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D

**P&P NOTES:**

1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

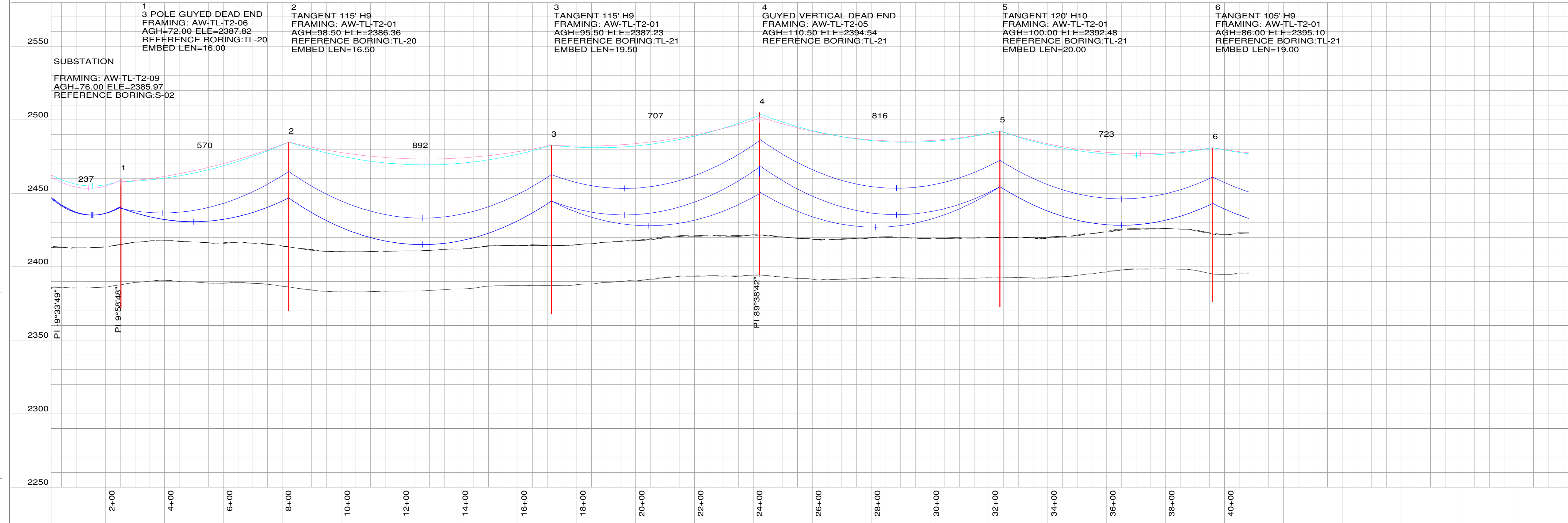
TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**

NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

**DESIGN NOTES:**

1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION



200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

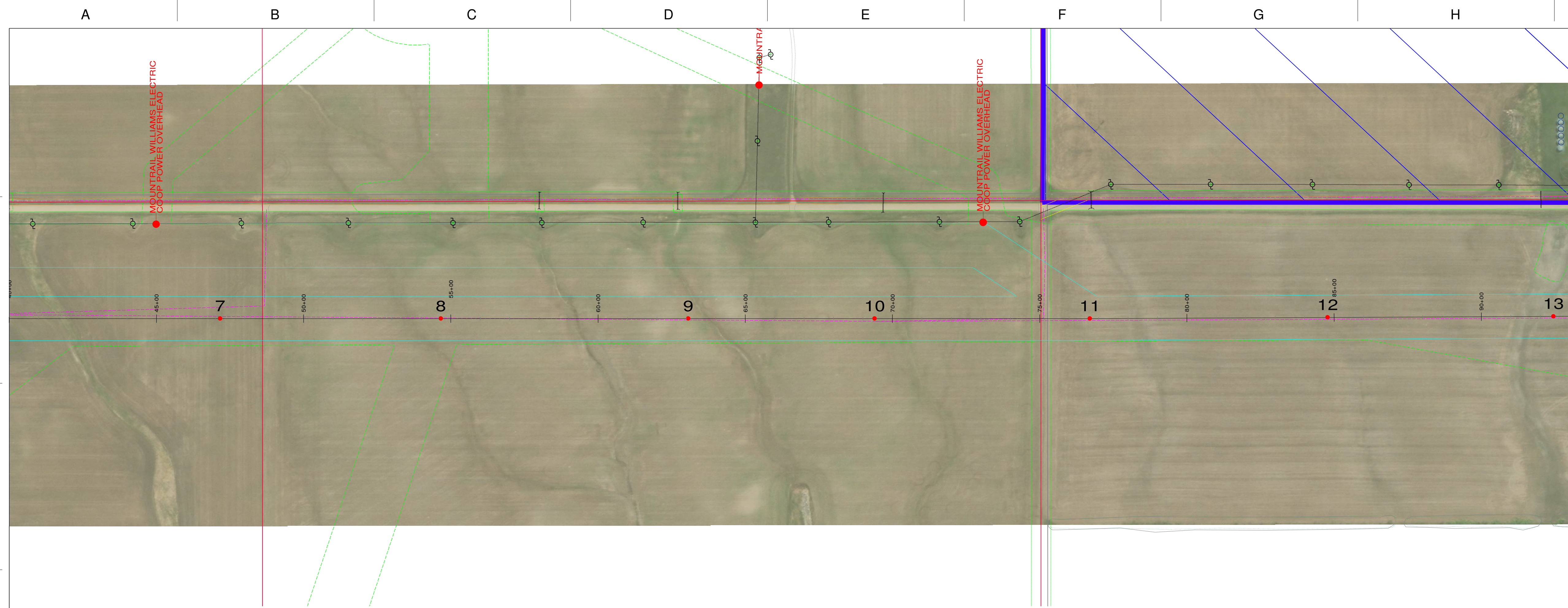


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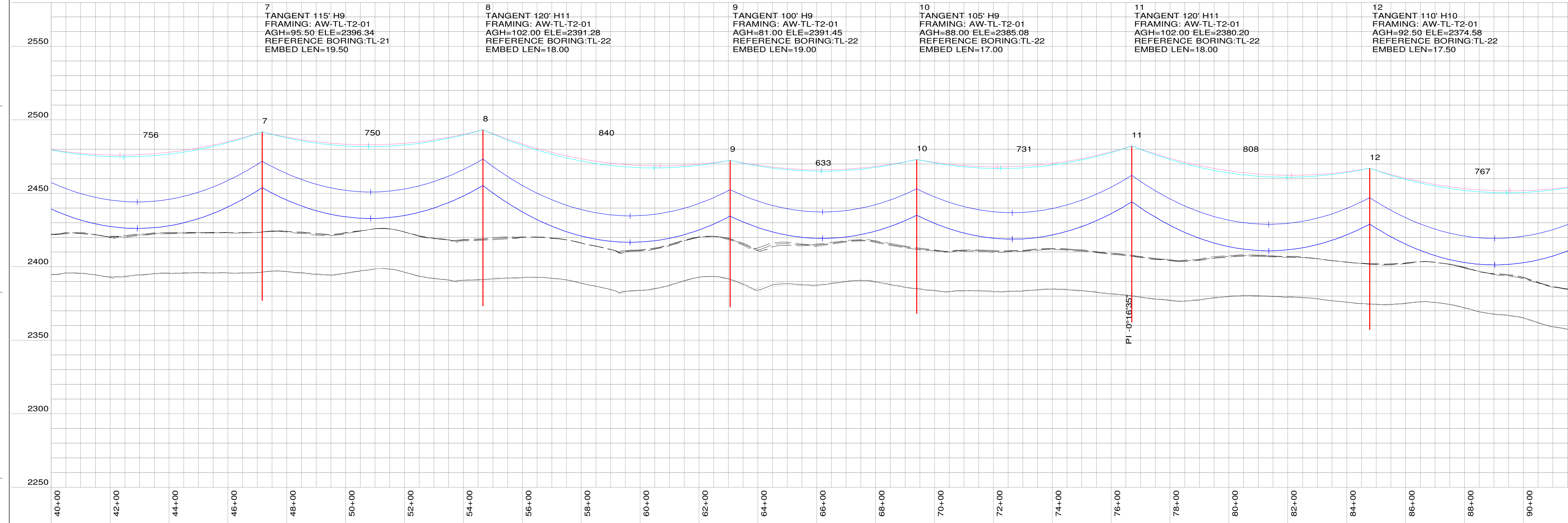
**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #SUBSTATION TO 6)

**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-2	1	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - - - LIMITS OF DISTURBANCE
  - - - WETLAND BOUNDARY
  - - - CROSSING EASEMENT
  - - - CROSSING UTILITY CENTERLINE
  - - - FENCE
  - - - ACCESS ROADS AND STRINGING EASEMENTS
  - - - HYDROLOGIC LOW AREA
  - - - FORESTED AREA
  - - - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY
- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
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DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
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OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
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  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

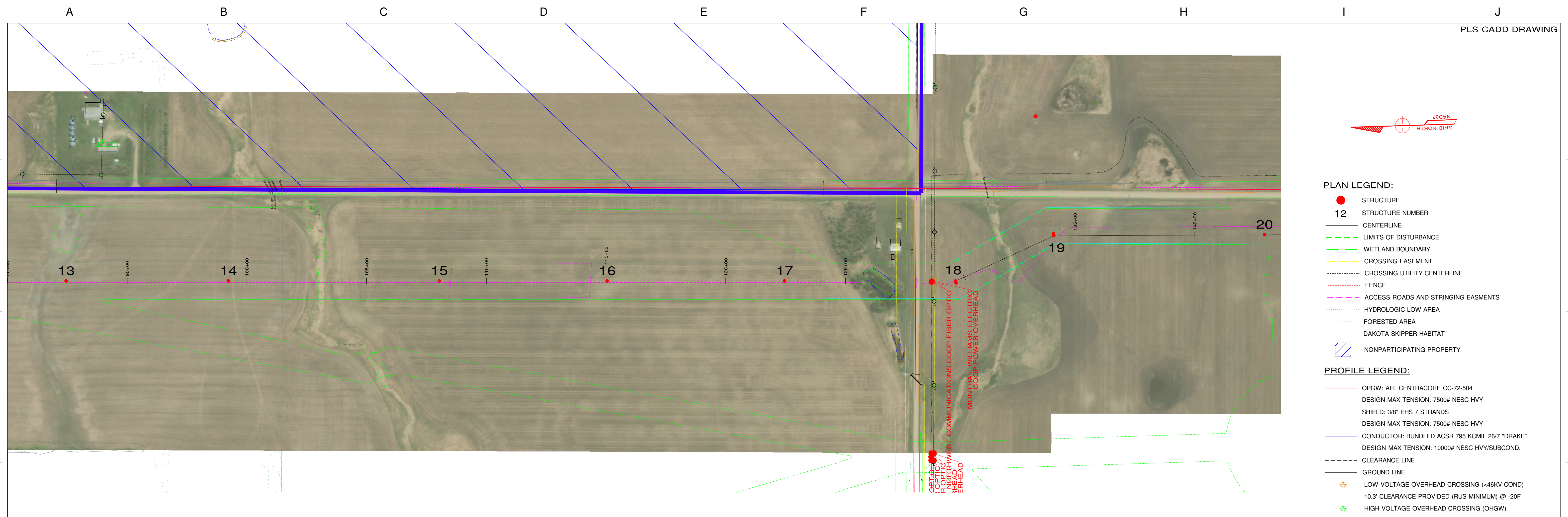


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3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #7 TO 12)

**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-3	2	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - - - LIMITS OF DISTURBANCE
  - - - WETLAND BOUNDARY
  - - - CROSSING EASEMENT
  - - - CROSSING UTILITY CENTERLINE
  - - - FENCE
  - - - ACCESS ROADS AND STRINGING EASEMENTS
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OHGW CLEARANCE CONTROLS CLEARANCE REQ'D

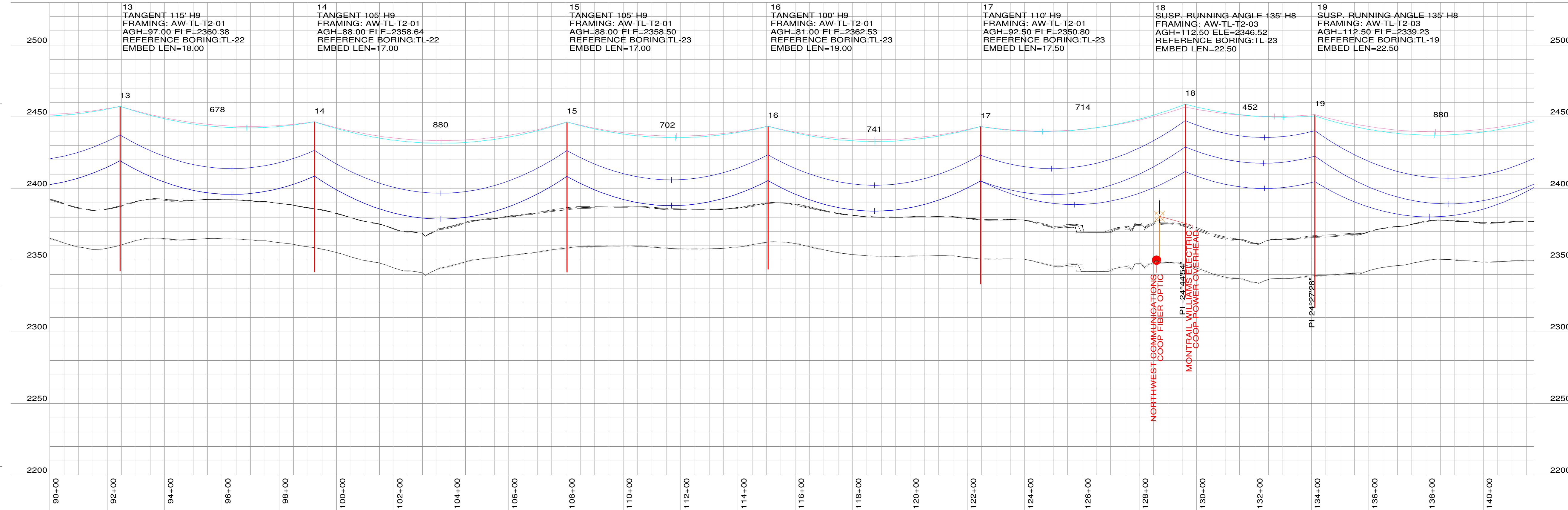
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 MAXIMUM OPERATING TEMPERATURE OF 176 F  
 GRADE B CONSTRUCTION



200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

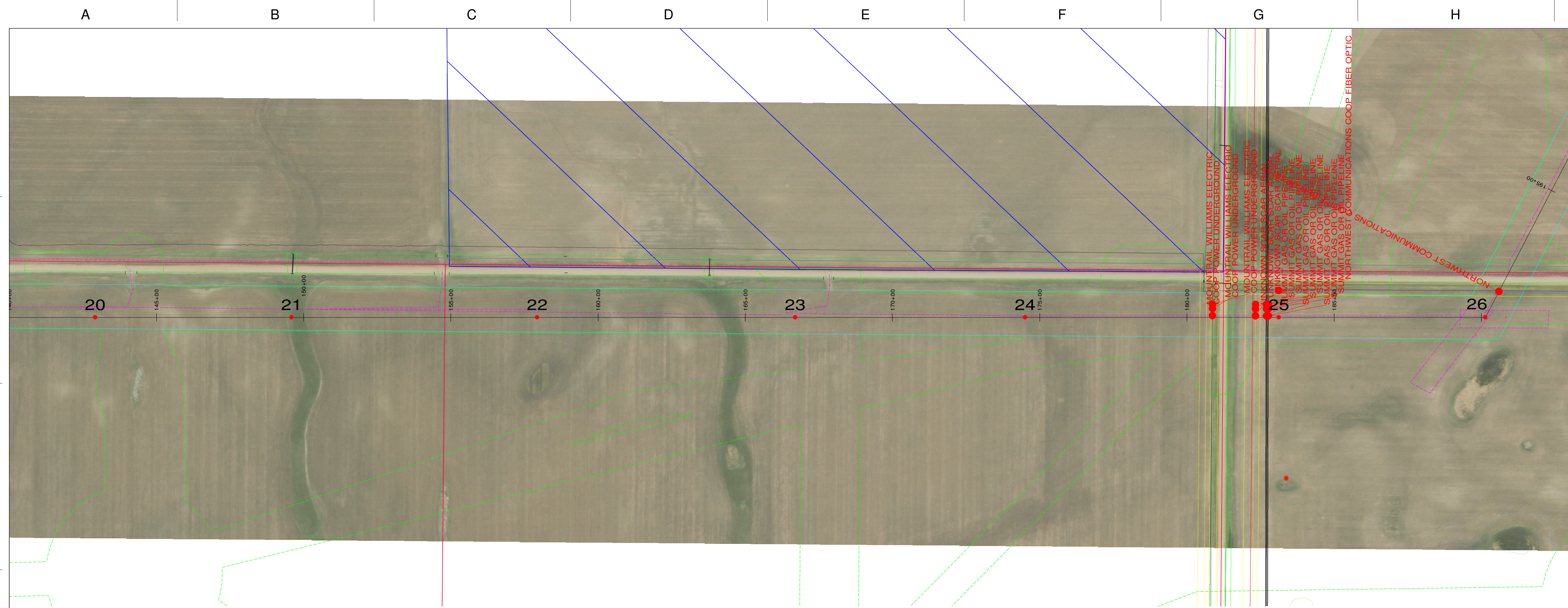


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345 KV TRANSMISSION LINE  
 PLAN & PROFILE DRAWING  
 (STRUCTURE: FR #13 TO 19)

AURORA WIND PROJECT  
 ENEL GREEN POWER

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-4	3	4



PLAN LEGEND:

- STRUCTURE
- 12 STRUCTURE NUMBER
- CENTERLINE
- LIMITS OF DISTURBANCE
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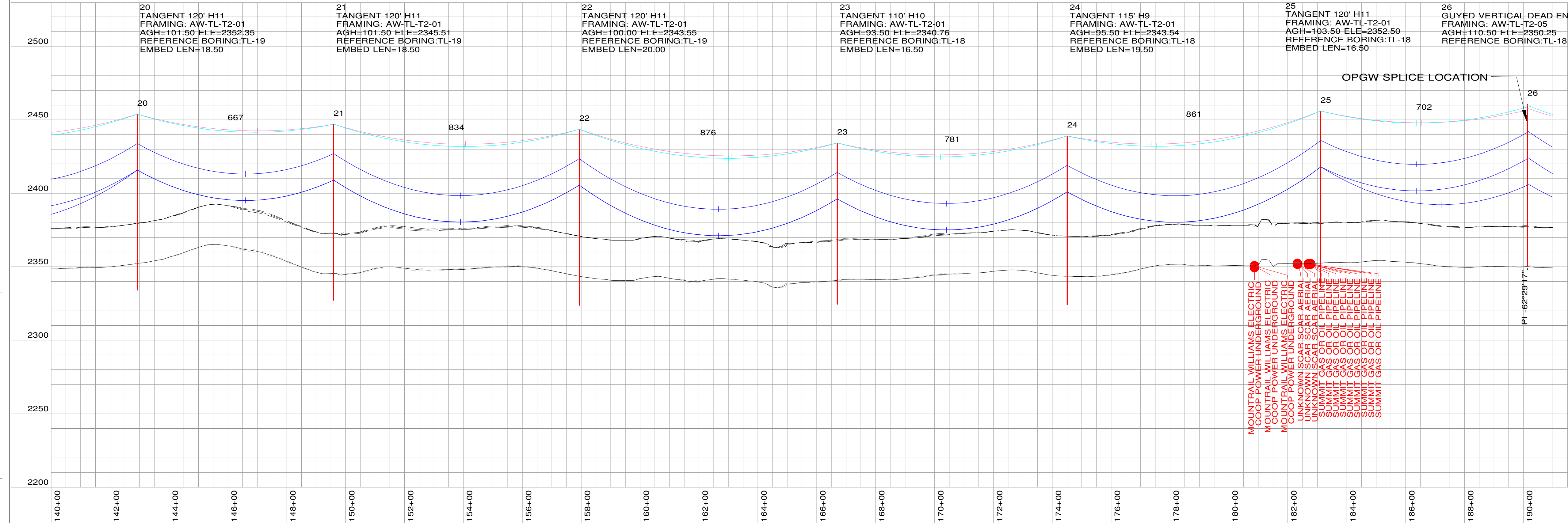
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COORDINATE SYSTEM:

NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

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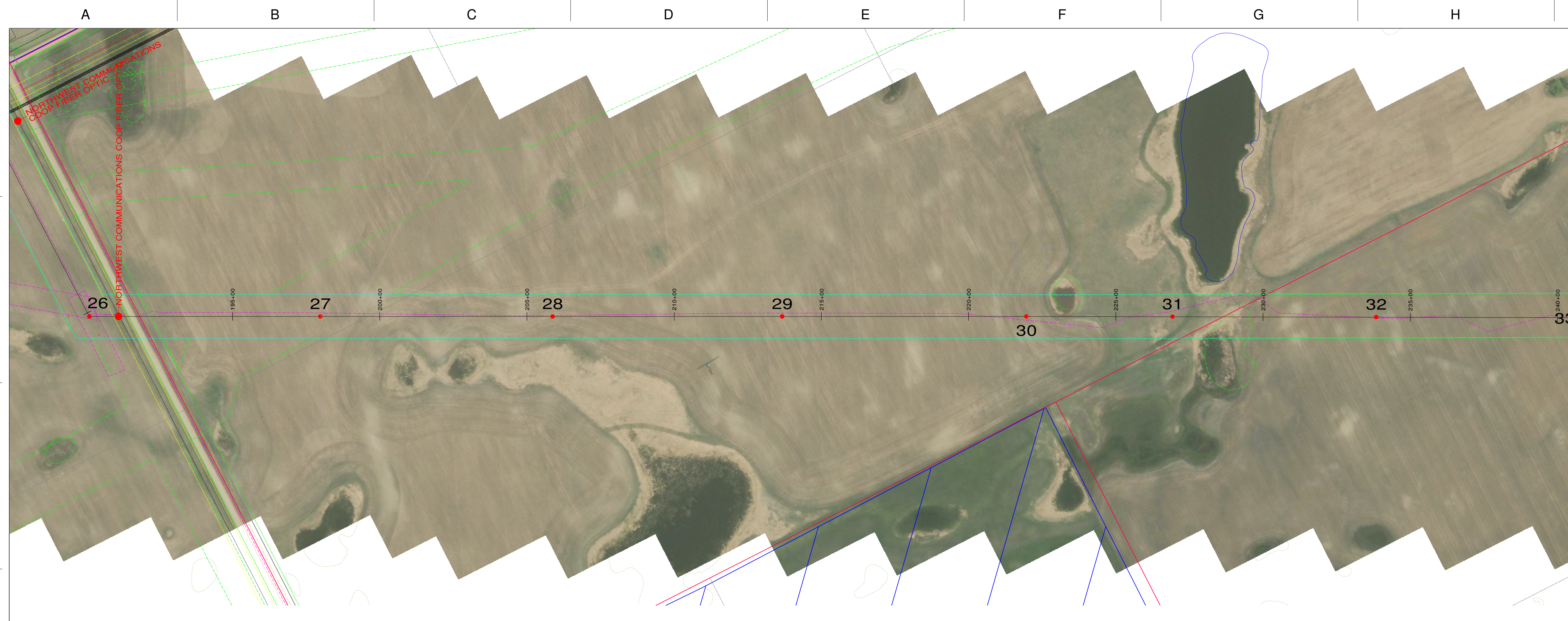


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345 KV TRANSMISSION LINE  
 PLAN & PROFILE DRAWING  
 (STRUCTURE: FR #20 TO 26)

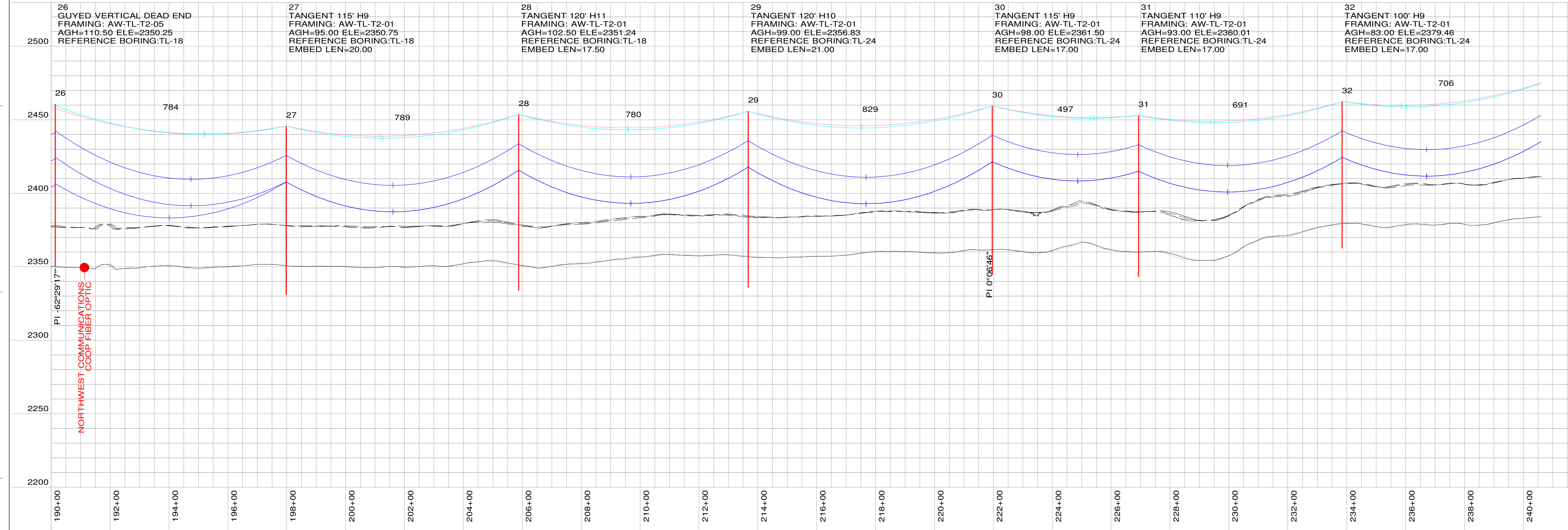
AURORA WIND PROJECT  
 ENEL GREEN POWER

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-5	4	4



- PLAN LEGEND:**
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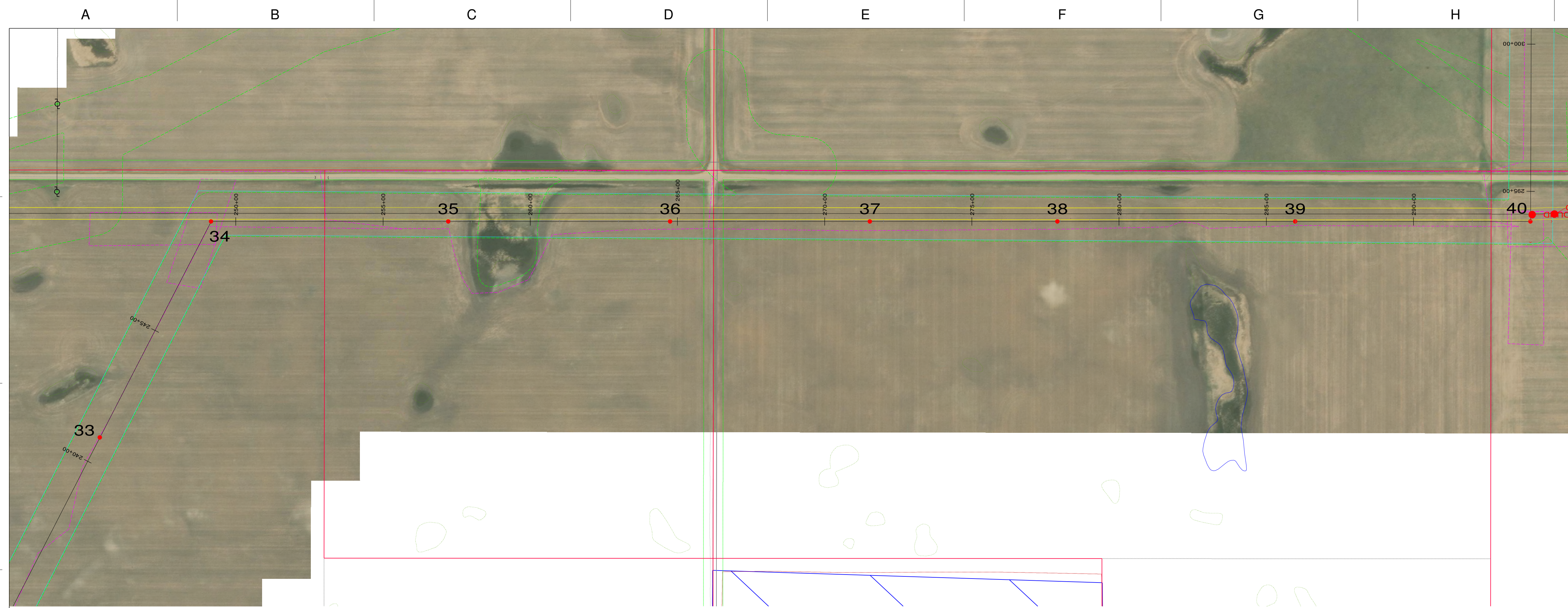


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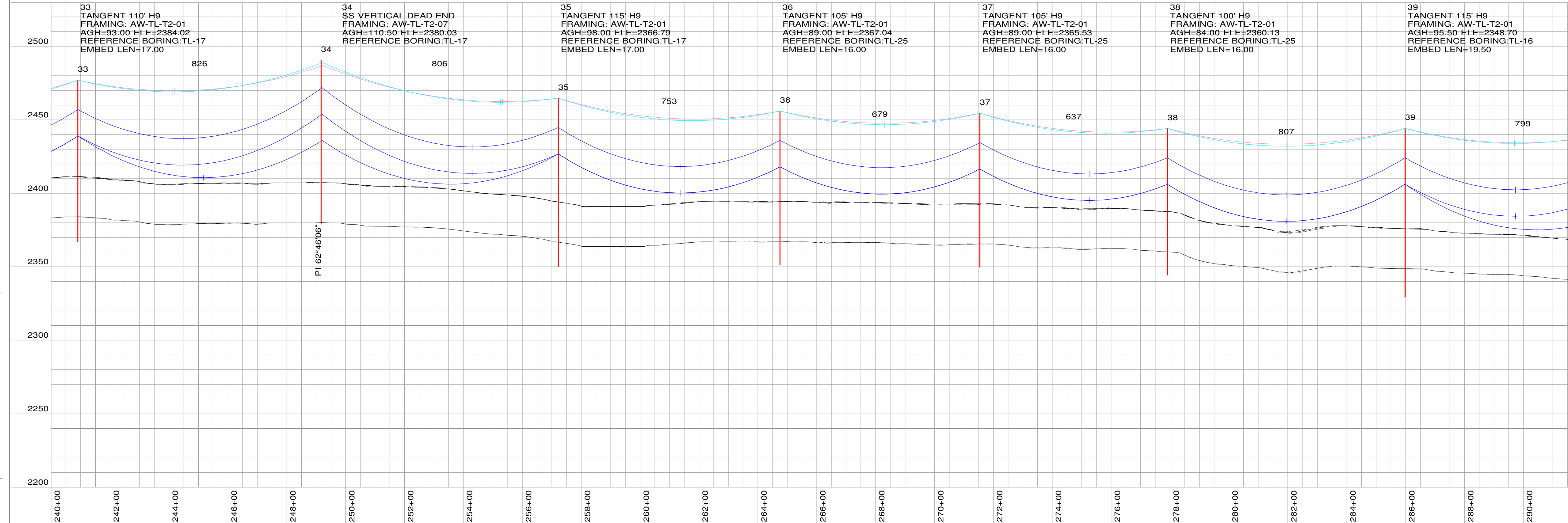
**345 KV TRANSMISSION LINE  
PLAN & PROFILE DRAWING  
(STRUCTURE: FR #26 TO 32)**

**AURORA WIND PROJECT  
ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-6	5	4



- PLAN LEGEND:**
- STRUCTURE
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  - WETLAND BOUNDARY
  - - - CROSSING EASEMENT
  - - - CROSSING UTILITY CENTERLINE
  - - - FENCE
  - - - ACCESS ROADS AND STRINGING EASEMENTS
  - - - HYDROLOGIC LOW AREA
  - - - FORESTED AREA
  - - - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY
- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - - - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
- DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  - MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  - SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  - STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  - LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
- 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  - THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  - ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

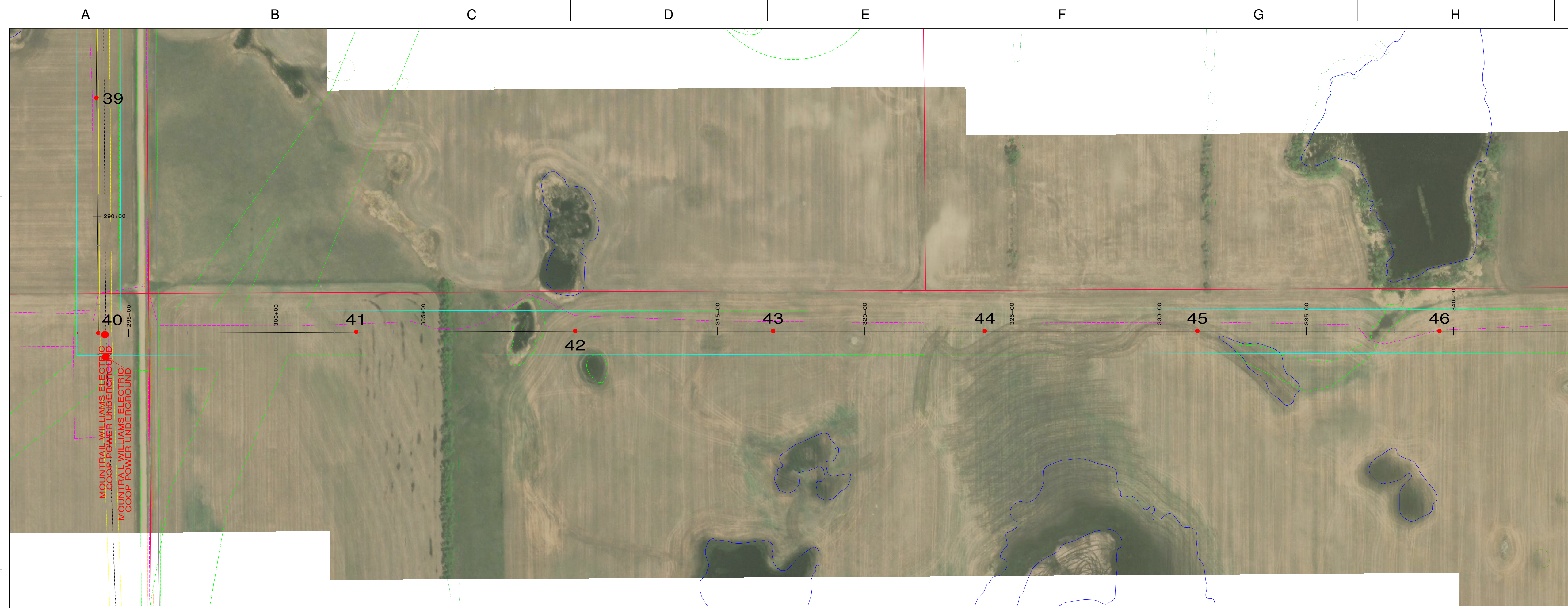


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #33 TO 39)

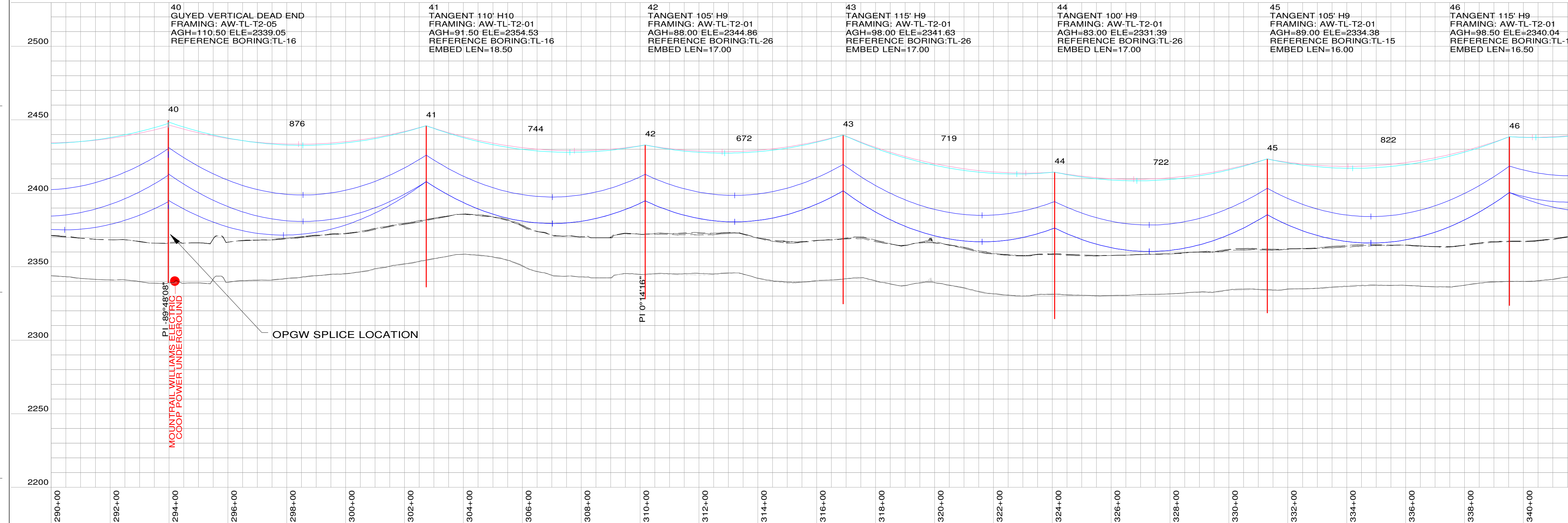
**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-7	6	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - LIMITS OF DISTURBANCE
  - WETLAND BOUNDARY
  - CROSSING EASEMENT
  - CROSSING UTILITY CENTERLINE
  - FENCE
  - ACCESS ROADS AND STRINGING EASEMENTS
  - HYDROLOGIC LOW AREA
  - FORESTED AREA
  - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504
  - DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS
  - DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"
  - DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)
  - 10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)
  - 9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)
  - OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

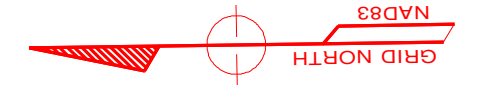
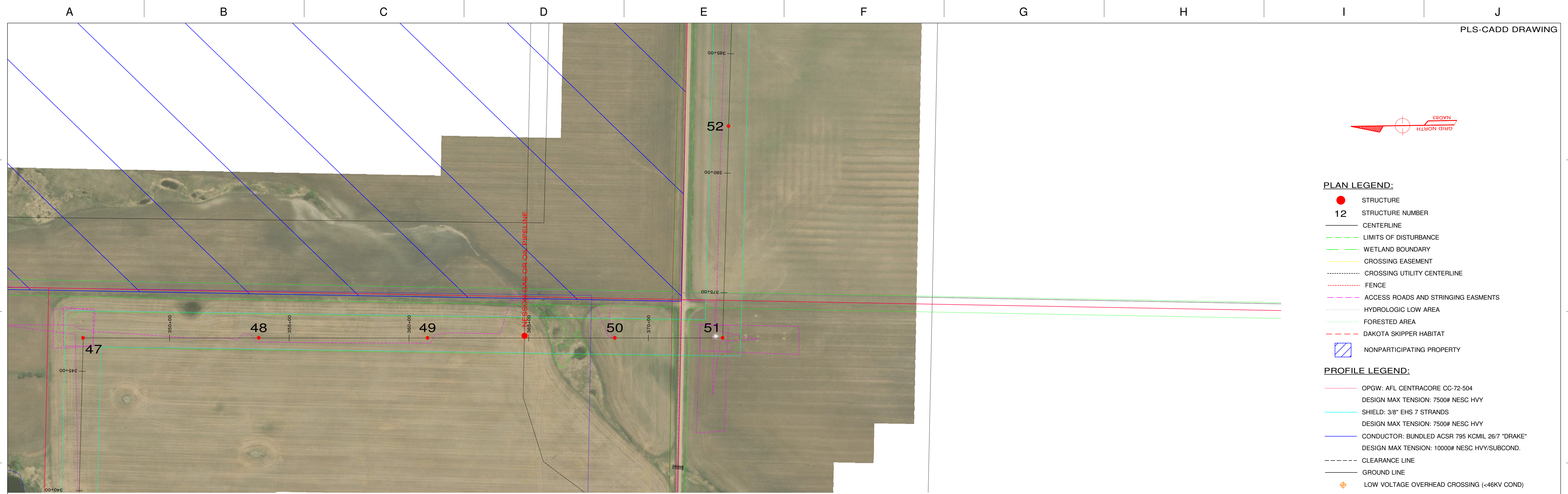


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #40 TO 46)

**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-8	7	4



PLAN LEGEND:

- STRUCTURE
- 12 STRUCTURE NUMBER
- CENTERLINE
- - - LIMITS OF DISTURBANCE
- - - WETLAND BOUNDARY
- - - CROSSING EASEMENT
- - - CROSSING UTILITY CENTERLINE
- - - FENCE
- - - ACCESS ROADS AND STRINGING EASEMENTS
- - - HYDROLOGIC LOW AREA
- - - FORESTED AREA
- - - DAKOTA SKIPPER HABITAT
- ▨ NONPARTICIPATING PROPERTY

PROFILE LEGEND:

- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
- SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
- CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
- - - CLEARANCE LINE
- GROUND LINE
- ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D

P&P NOTES:

1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

SUMMARY:

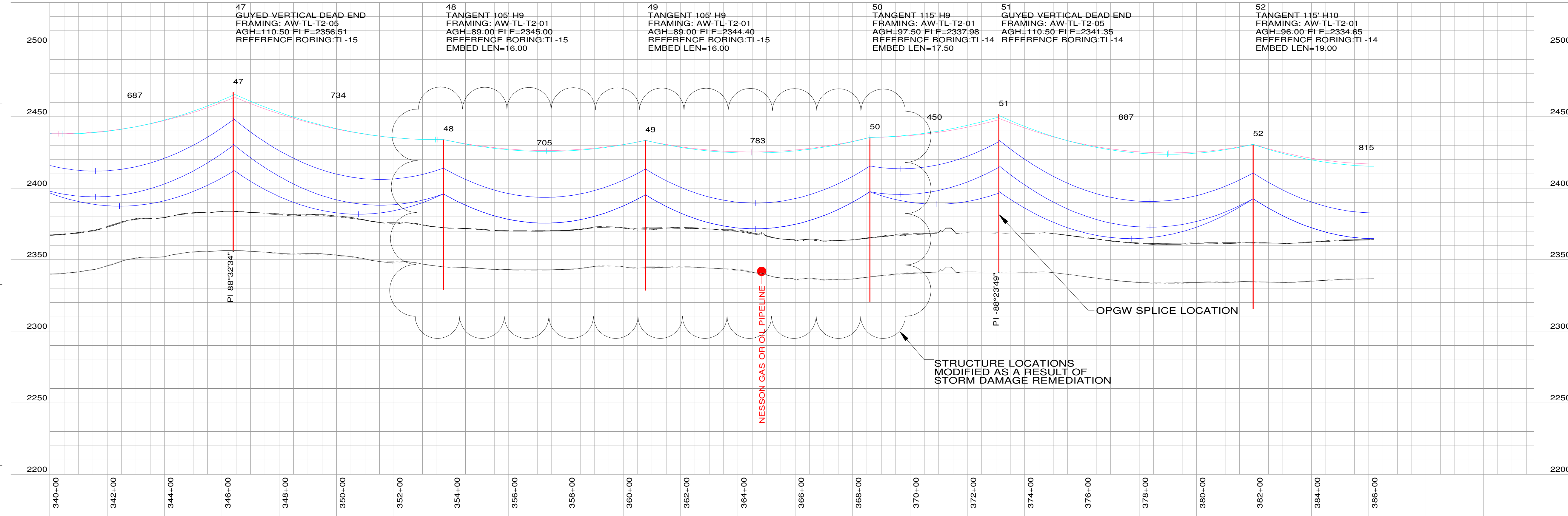
TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

COORDINATE SYSTEM:

NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

DESIGN NOTES:

1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION



47 GUYED VERTICAL DEAD END  
FRAMING: AW-TL-T2-05  
AGH=110.50 ELE=2356.51  
REFERENCE BORING: TL-15

48 TANGENT 105' H9  
FRAMING: AW-TL-T2-01  
AGH=89.00 ELE=2345.00  
REFERENCE BORING: TL-15  
EMBED LEN=16.00

49 TANGENT 105' H9  
FRAMING: AW-TL-T2-01  
AGH=89.00 ELE=2344.40  
REFERENCE BORING: TL-15  
EMBED LEN=16.00

50 TANGENT 115' H9  
FRAMING: AW-TL-T2-01  
AGH=97.50 ELE=2337.98  
REFERENCE BORING: TL-14  
EMBED LEN=17.50

51 GUYED VERTICAL DEAD END  
FRAMING: AW-TL-T2-05  
AGH=110.50 ELE=2341.35  
REFERENCE BORING: TL-14

52 TANGENT 115' H10  
FRAMING: AW-TL-T2-01  
AGH=96.00 ELE=2334.65  
REFERENCE BORING: TL-14  
EMBED LEN=19.00

STRUCTURE LOCATIONS MODIFIED AS A RESULT OF STORM DAMAGE REMEDIATION

OPGW SPLICE LOCATION

200.0 FT. HORIZ. SCALE  
40.0 FT. VERT. SCALE

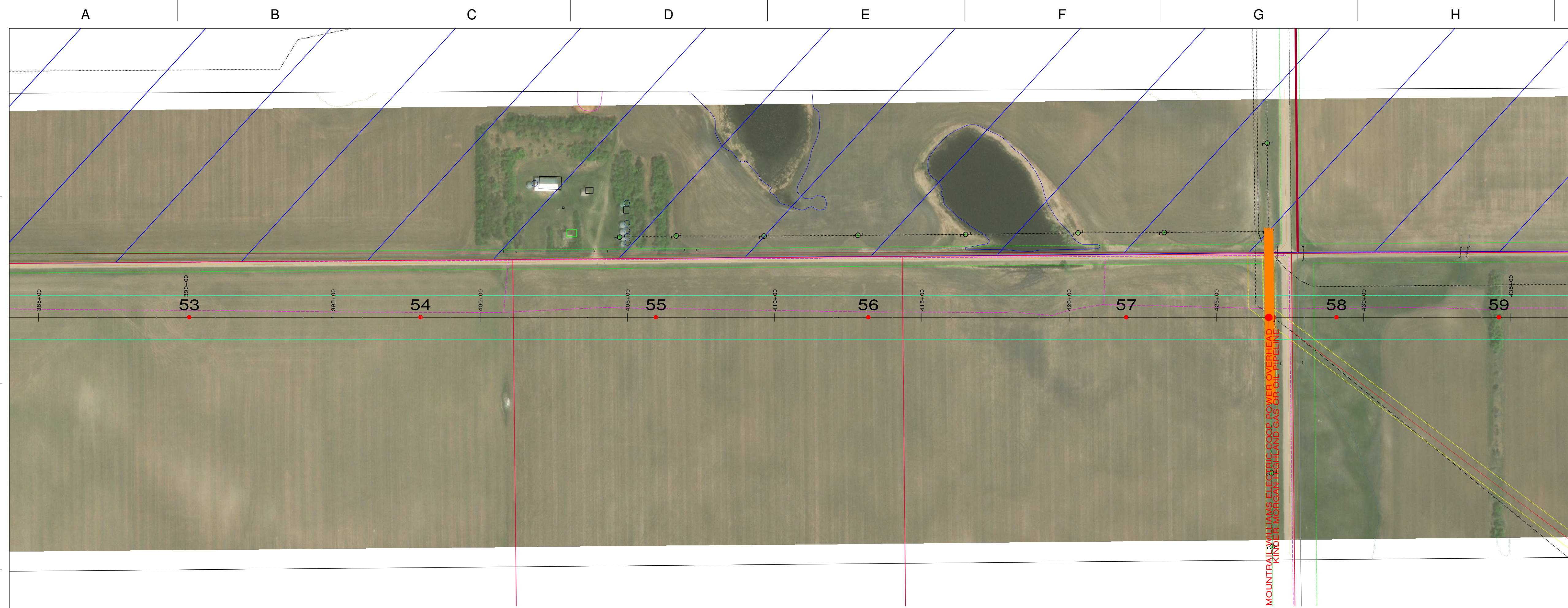


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

345 KV TRANSMISSION LINE  
PLAN & PROFILE DRAWING  
(STRUCTURE: FR #47 TO 52)

AURORA WIND PROJECT  
ENEL GREEN POWER

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-9	8	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - LIMITS OF DISTURBANCE
  - WETLAND BOUNDARY
  - CROSSING EASEMENT
  - CROSSING UTILITY CENTERLINE
  - FENCE
  - ACCESS ROADS AND STRINGING EASEMENTS
  - HYDROLOGIC LOW AREA
  - FORESTED AREA
  - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVV
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVV
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVV/SUBCOND.
  - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D

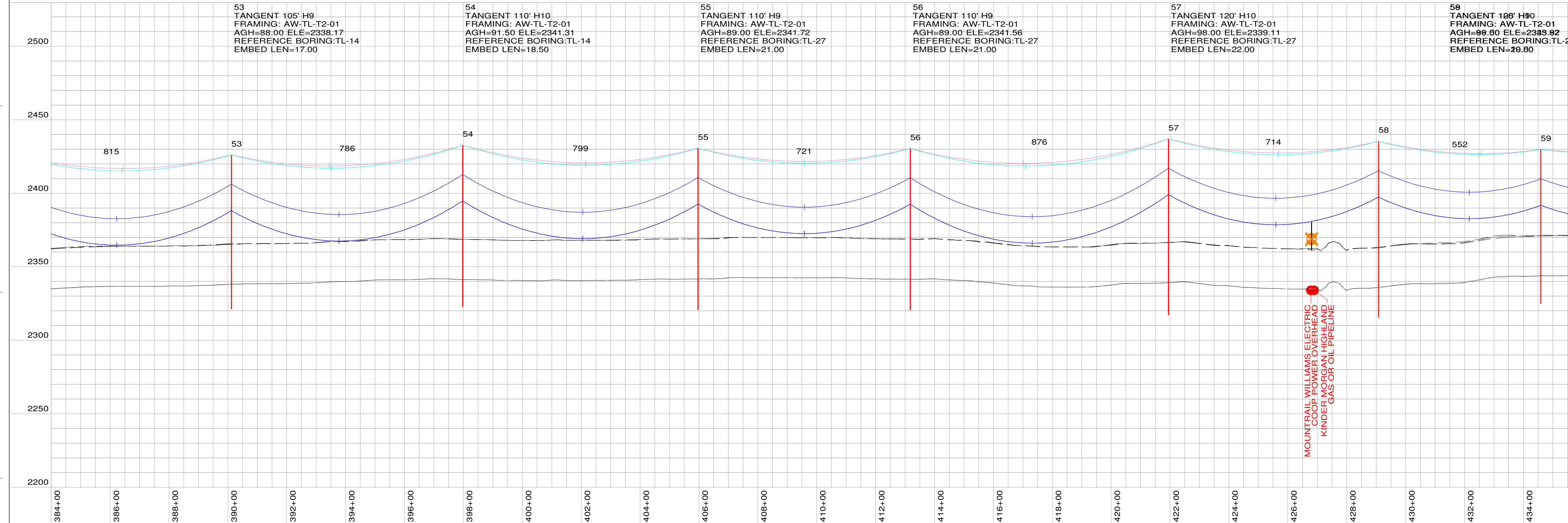
- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION



53 TANGENT 105' H9 FRAMING: AW-TL-T2-01 AGH=88.00 ELE=2338.17 REFERENCE BORING:TL-14 EMBED LEN=17.00	54 TANGENT 110' H10 FRAMING: AW-TL-T2-01 AGH=91.50 ELE=2341.31 REFERENCE BORING:TL-14 EMBED LEN=18.50	55 TANGENT 110' H9 FRAMING: AW-TL-T2-01 AGH=89.00 ELE=2341.72 REFERENCE BORING:TL-27 EMBED LEN=21.00	56 TANGENT 110' H9 FRAMING: AW-TL-T2-01 AGH=89.00 ELE=2341.56 REFERENCE BORING:TL-27 EMBED LEN=21.00	57 TANGENT 120' H10 FRAMING: AW-TL-T2-01 AGH=98.00 ELE=2339.11 REFERENCE BORING:TL-27 EMBED LEN=22.00	59 TANGENT 100' H90 FRAMING: AW-TL-T2-01 AGH=86.00 ELE=2388.82 REFERENCE BORING:TL-27 EMBED LEN=20.80
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200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE



REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #53 TO 59)

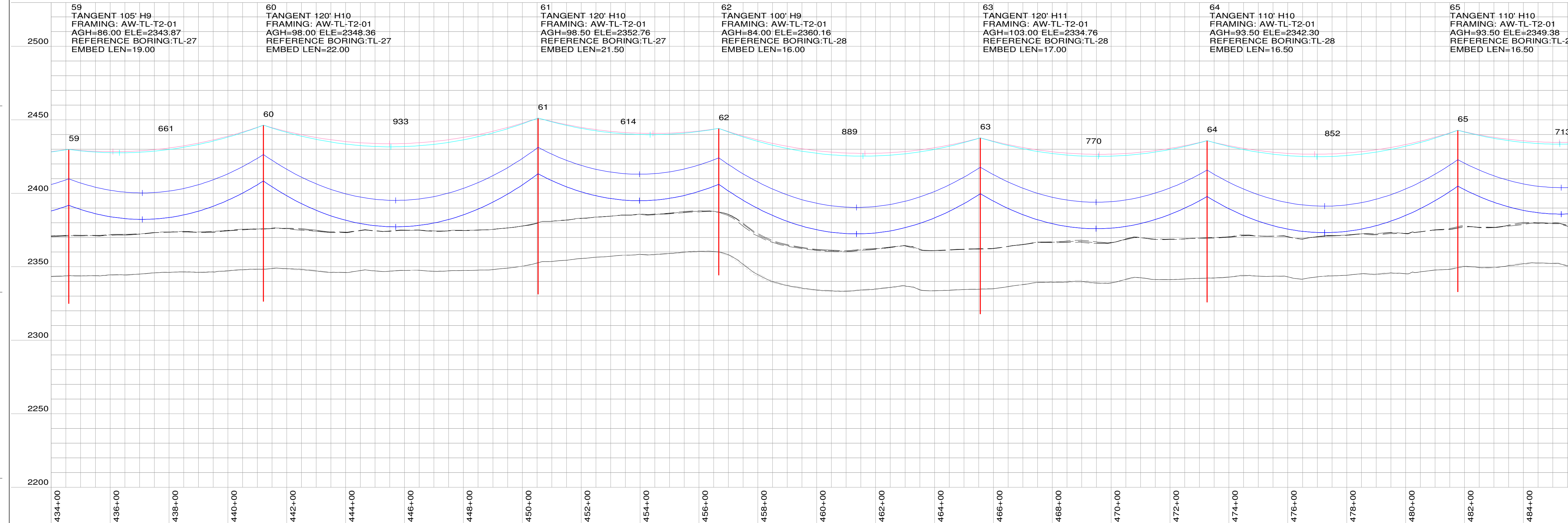
**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-10	9	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - LIMITS OF DISTURBANCE
  - WETLAND BOUNDARY
  - CROSSING EASEMENT
  - CROSSING UTILITY CENTERLINE
  - FENCE
  - ACCESS ROADS AND STRINGING EASEMENTS
  - HYDROLOGIC LOW AREA
  - FORESTED AREA
  - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED:  
 ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B)  
 90 MPH EXTREME WIND LOADING (RULE 250C)  
 .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D)  
 MAXIMUM OPERATING TEMPERATURE OF 176 F  
 GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

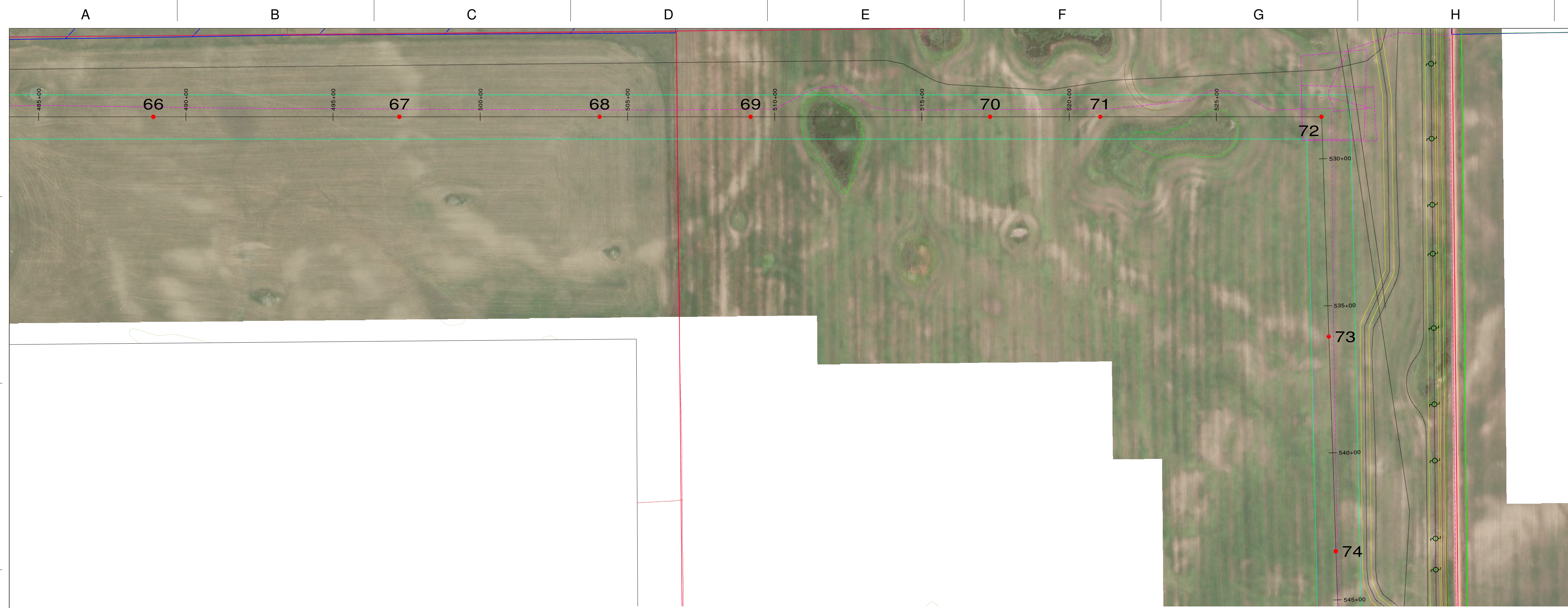


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #59 TO 65)

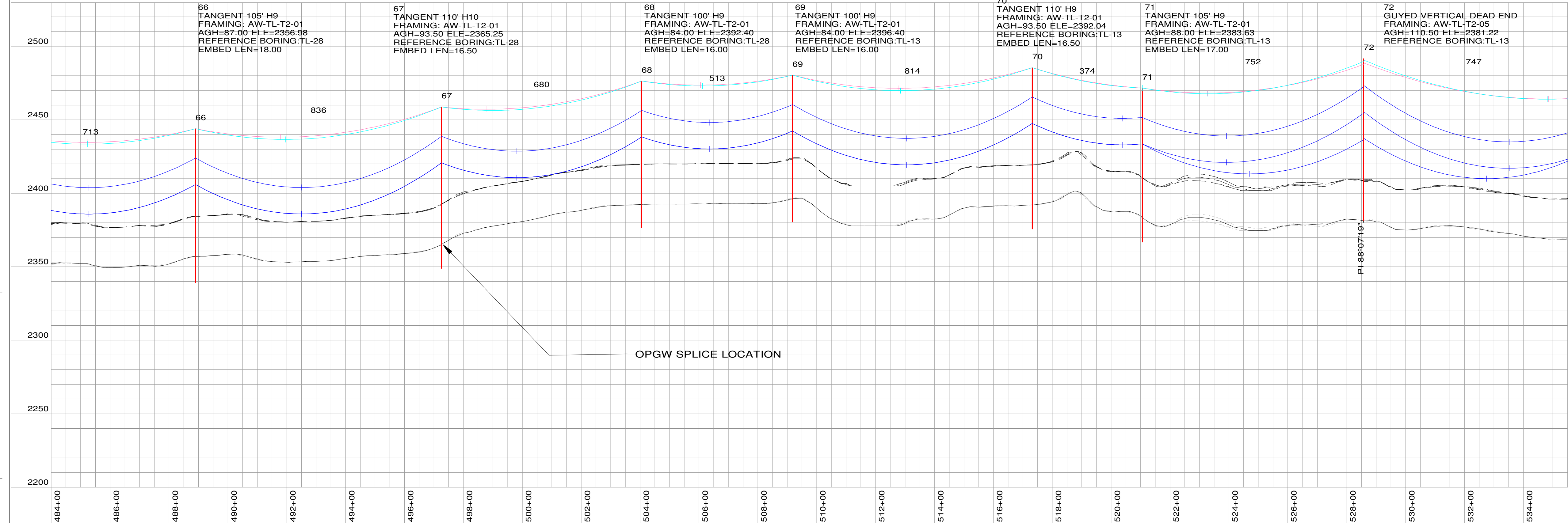
**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO: 3348.001	SCALE: AS NOTED	DWG. NO.:	AW-TL-T1-11	SHEET: 10	REV.:	4
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- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - - - LIMITS OF DISTURBANCE
  - - - WETLAND BOUNDARY
  - - - CROSSING EASEMENT
  - - - CROSSING UTILITY CENTERLINE
  - - - FENCE
  - - - ACCESS ROADS AND STRINGING EASEMENTS
  - - - HYDROLOGIC LOW AREA
  - - - FORESTED AREA
  - - - DAKOTA SKIPPER HABITAT
  - ▭ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - - - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
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9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
- DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  - MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  - SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  - STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  - LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
- 1.345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  - THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  - ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

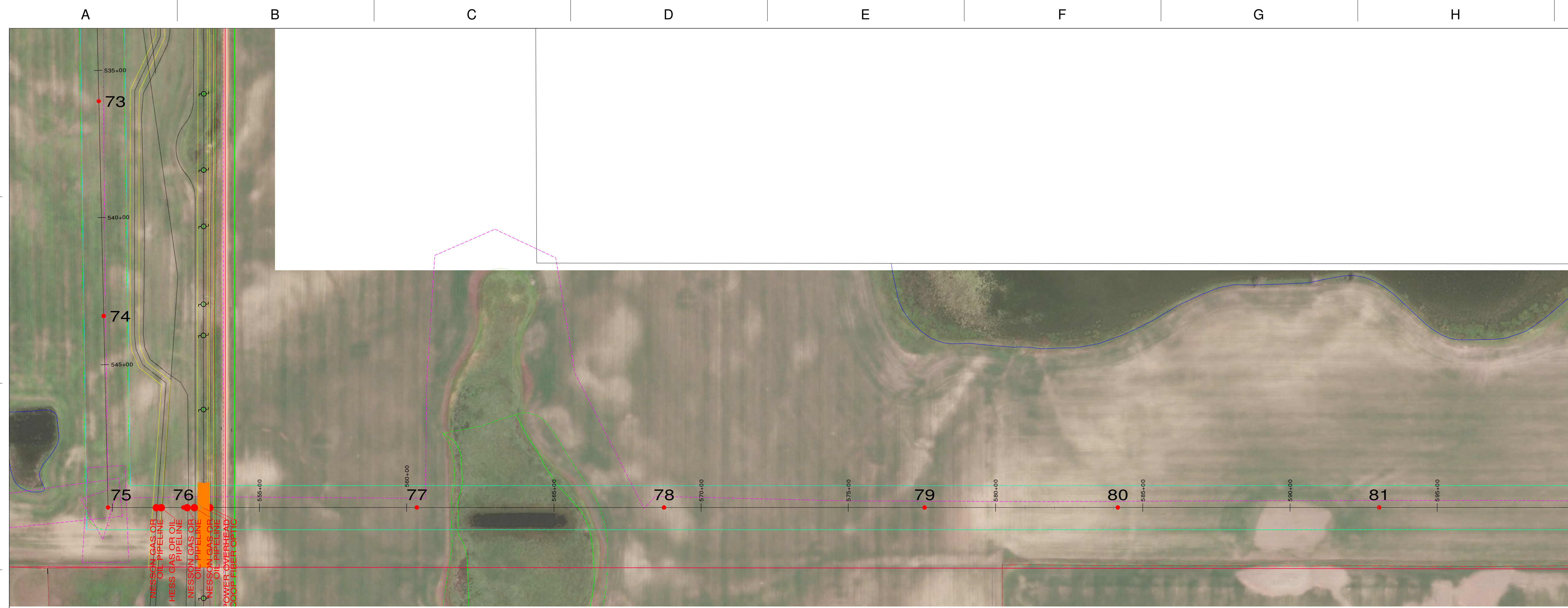


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

345 KV TRANSMISSION LINE  
 PLAN & PROFILE DRAWING  
 (STRUCTURE: FR #66 TO 72)

AURORA WIND PROJECT  
 ENEL GREEN POWER

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-12	11	4

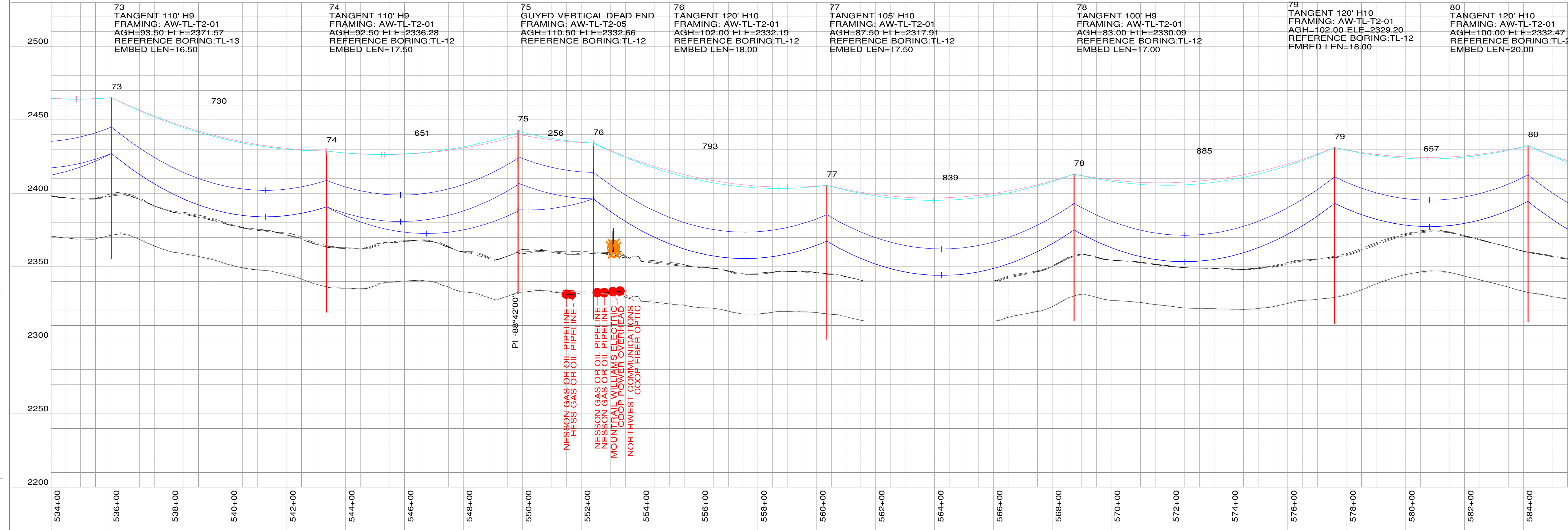


**PLAN LEGEND:**

- STRUCTURE
- 12 STRUCTURE NUMBER
- CENTERLINE
- - - LIMITS OF DISTURBANCE
- - - WETLAND BOUNDARY
- - - CROSSING EASEMENT
- - - CROSSING UTILITY CENTERLINE
- - - FENCE
- - - ACCESS ROADS AND STRINGING EASEMENTS
- - - HYDROLOGIC LOW AREA
- - - FORESTED AREA
- - - DAKOTA SKIPPER HABITAT
- ▨ NONPARTICIPATING PROPERTY

**PROFILE LEGEND:**

- OPGW: AFL CENTRACORE CC-72-504
- DESIGN MAX TENSION: 7500# NESC HVY
- SHIELD: 3/8" EHS 7 STRANDS
- DESIGN MAX TENSION: 7500# NESC HVY
- CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"
- DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
- - - CLEARANCE LINE
- GROUND LINE
- ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)
- 10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)
- 9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)
- OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



**P&P NOTES:**

1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**

NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

**DESIGN NOTES:**

1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

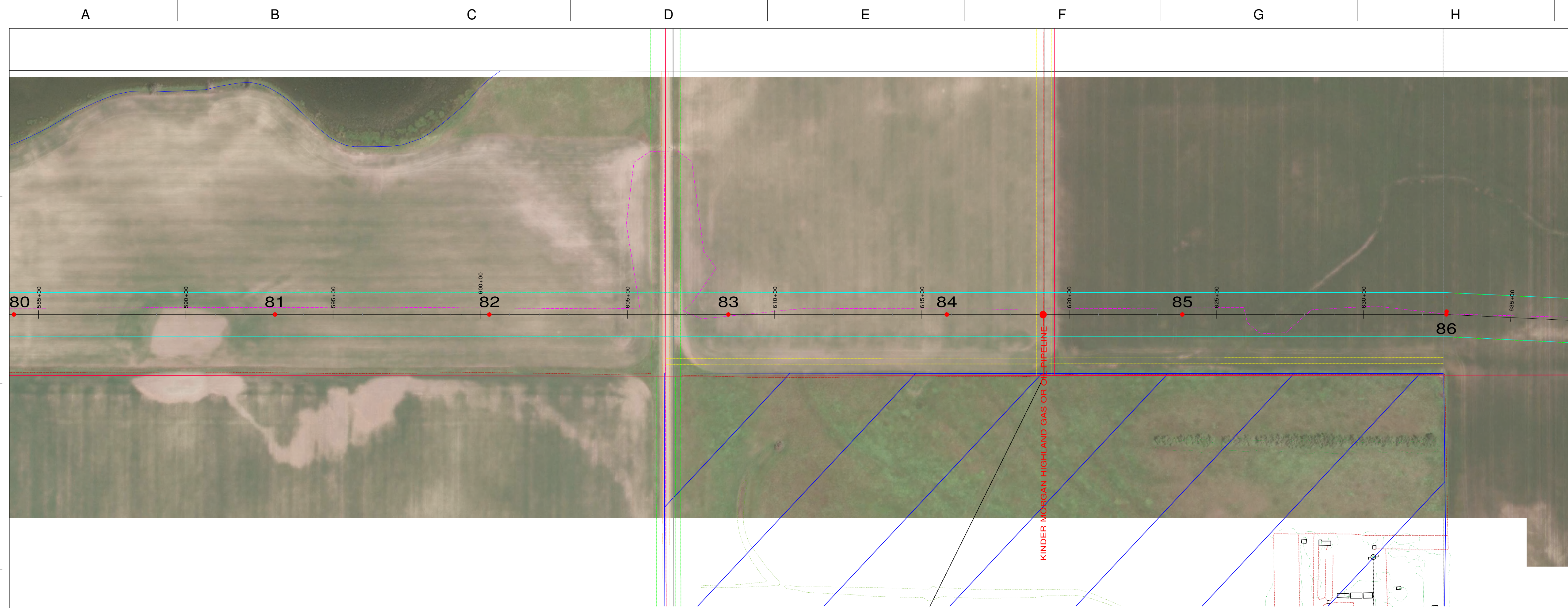


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

345 KV TRANSMISSION LINE  
 PLAN & PROFILE DRAWING  
 (STRUCTURE: FR #73 TO 80)

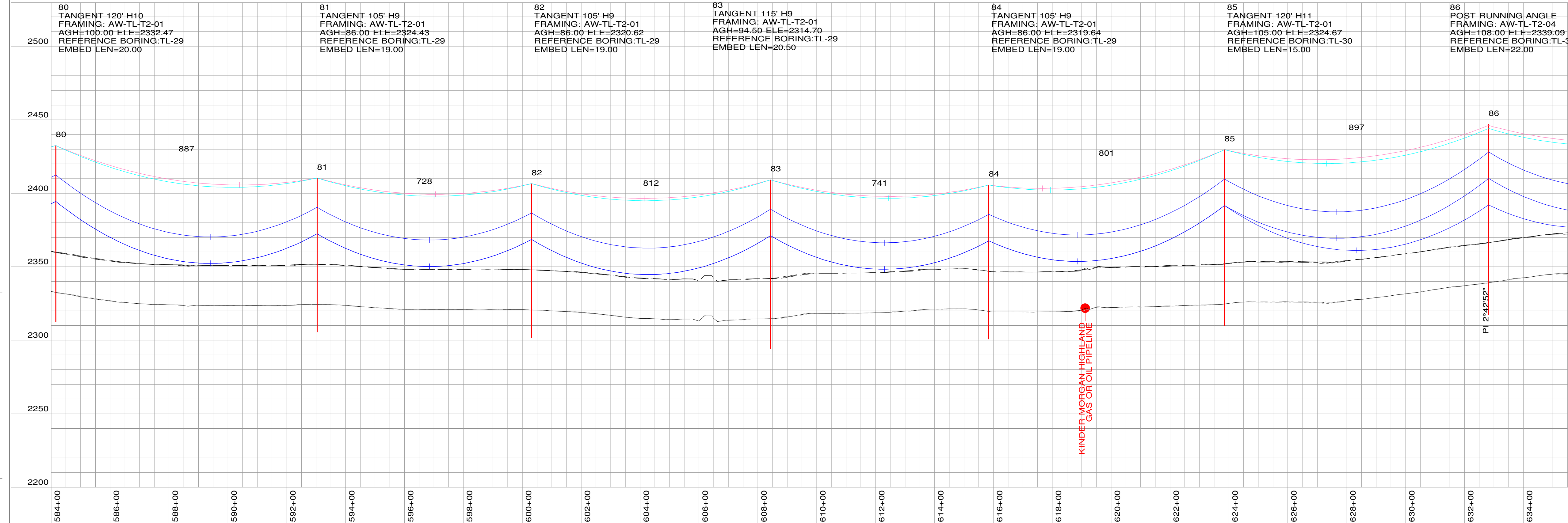
AURORA WIND PROJECT  
 ENEL GREEN POWER

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-13	12	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - LIMITS OF DISTURBANCE
  - WETLAND BOUNDARY
  - CROSSING EASEMENT
  - CROSSING UTILITY CENTERLINE
  - FENCE
  - ACCESS ROADS AND STRINGING EASEMENTS
  - HYDROLOGIC LOW AREA
  - FORESTED AREA
  - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

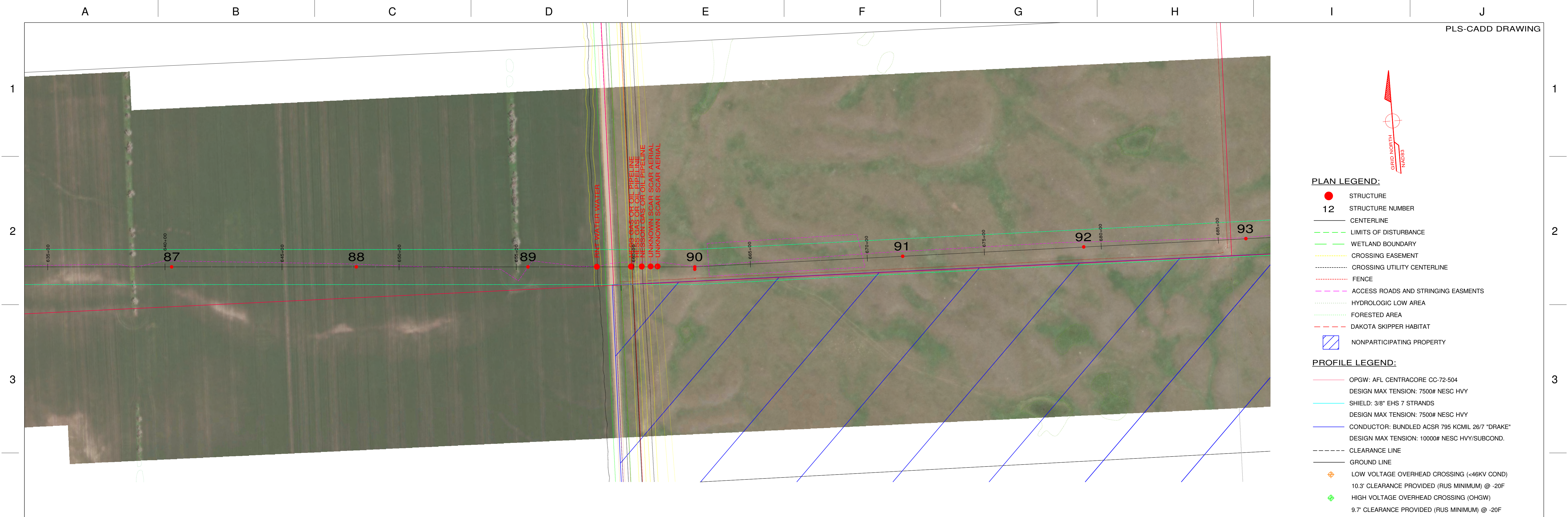


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #80 TO 86)

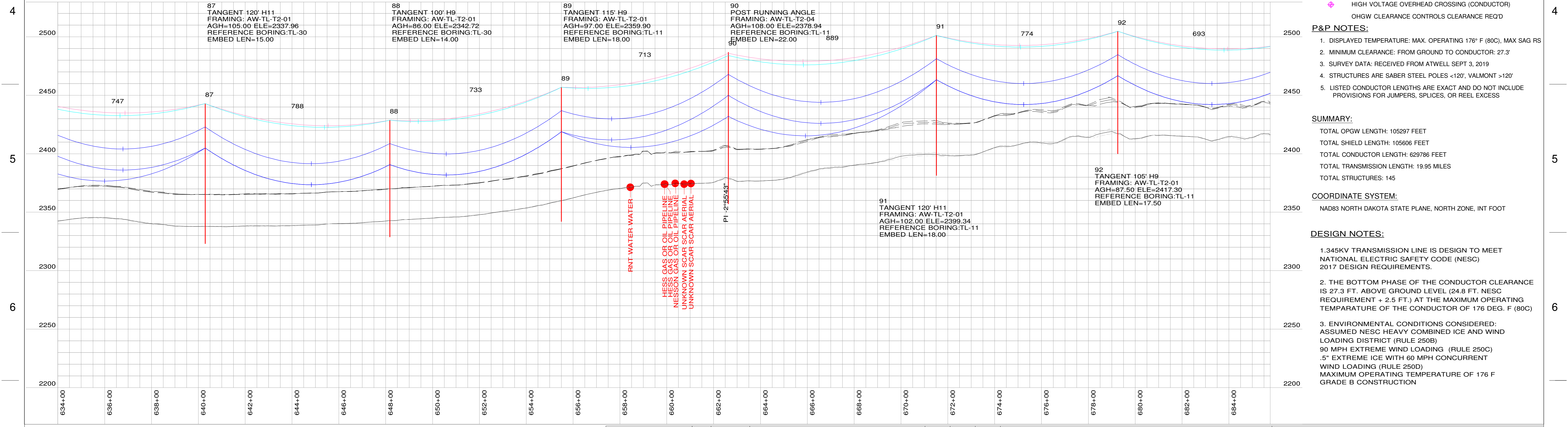
**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-14	13	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - - - LIMITS OF DISTURBANCE
  - - - WETLAND BOUNDARY
  - - - CROSSING EASEMENT
  - - - CROSSING UTILITY CENTERLINE
  - - - FENCE
  - - - ACCESS ROADS AND STRINGING EASEMENTS
  - - - HYDROLOGIC LOW AREA
  - - - FORESTED AREA
  - - - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - - - CLEARANCE LINE
  - - - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
- DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  - MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  - SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  - STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  - LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

- TOTAL OPGW LENGTH: 105297 FEET
- TOTAL SHIELD LENGTH: 105606 FEET
- TOTAL CONDUCTOR LENGTH: 629786 FEET
- TOTAL TRANSMISSION LENGTH: 19.95 MILES
- TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
- 1.345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  - THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  - ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
40.0 FT. VERT. SCALE

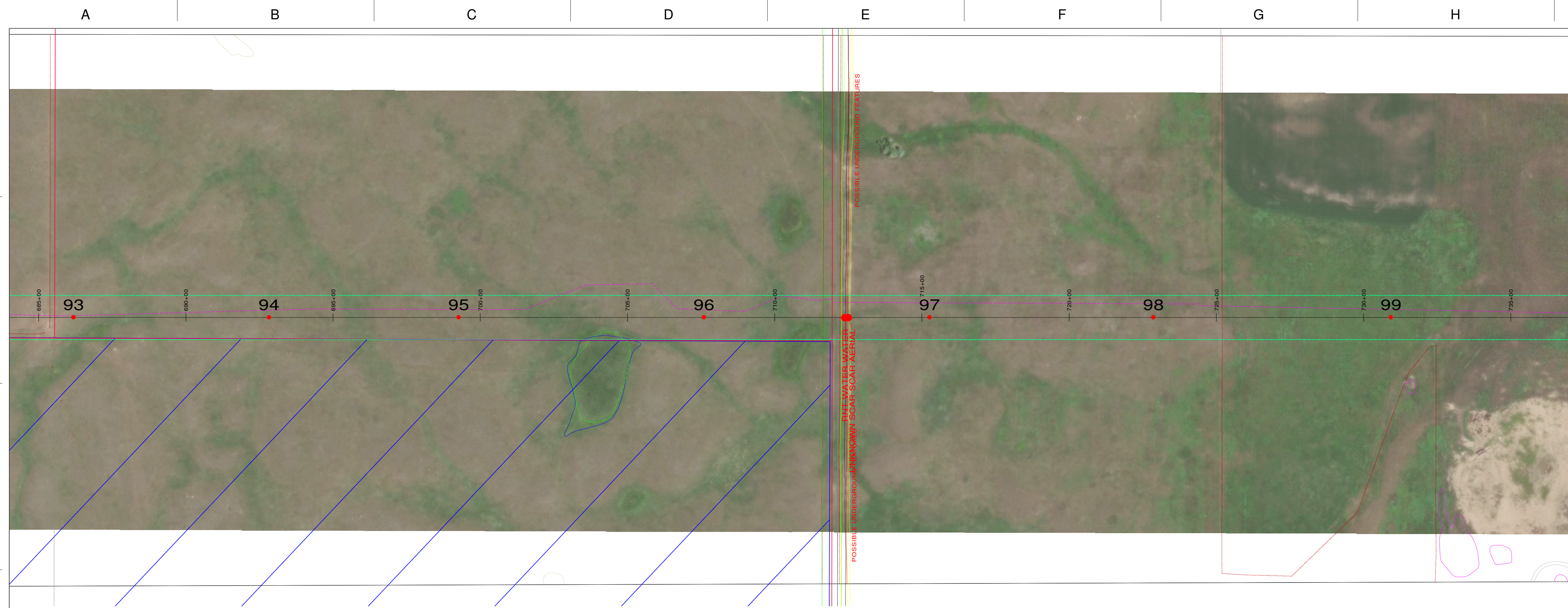


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
(STRUCTURE: FR #87 TO 92)

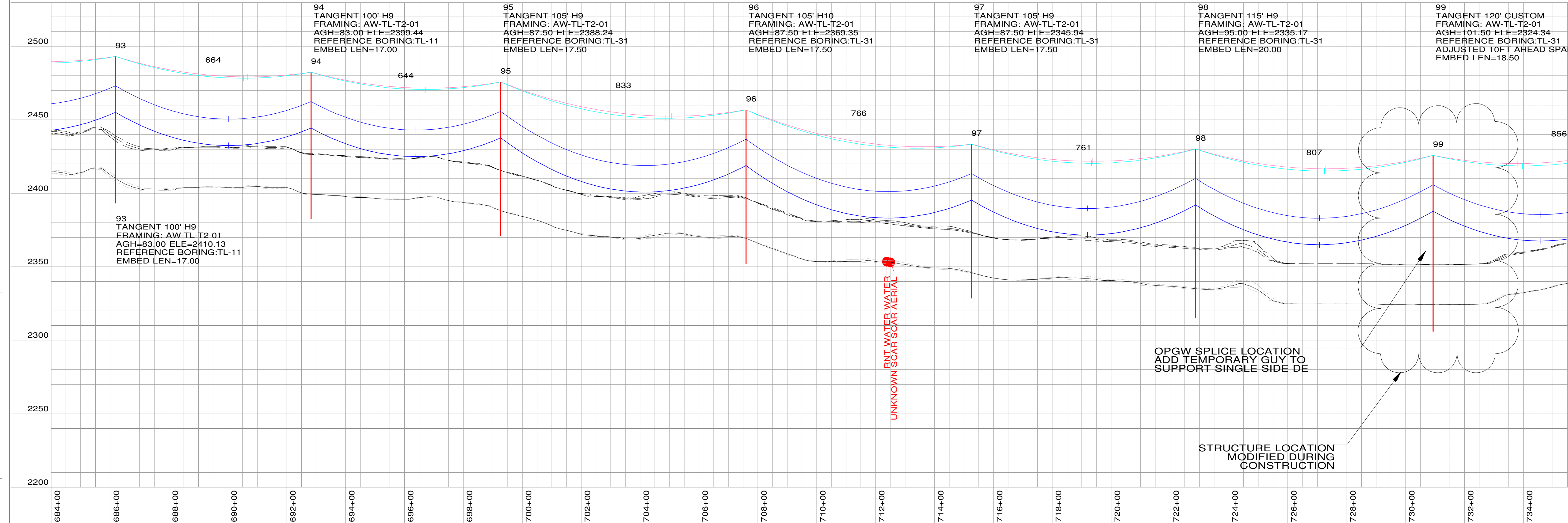
**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-15	14	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - LIMITS OF DISTURBANCE
  - WETLAND BOUNDARY
  - CROSSING EASEMENT
  - CROSSING UTILITY CENTERLINE
  - FENCE
  - ACCESS ROADS AND STRINGING EASEMENTS
  - HYDROLOGIC LOW AREA
  - FORESTED AREA
  - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

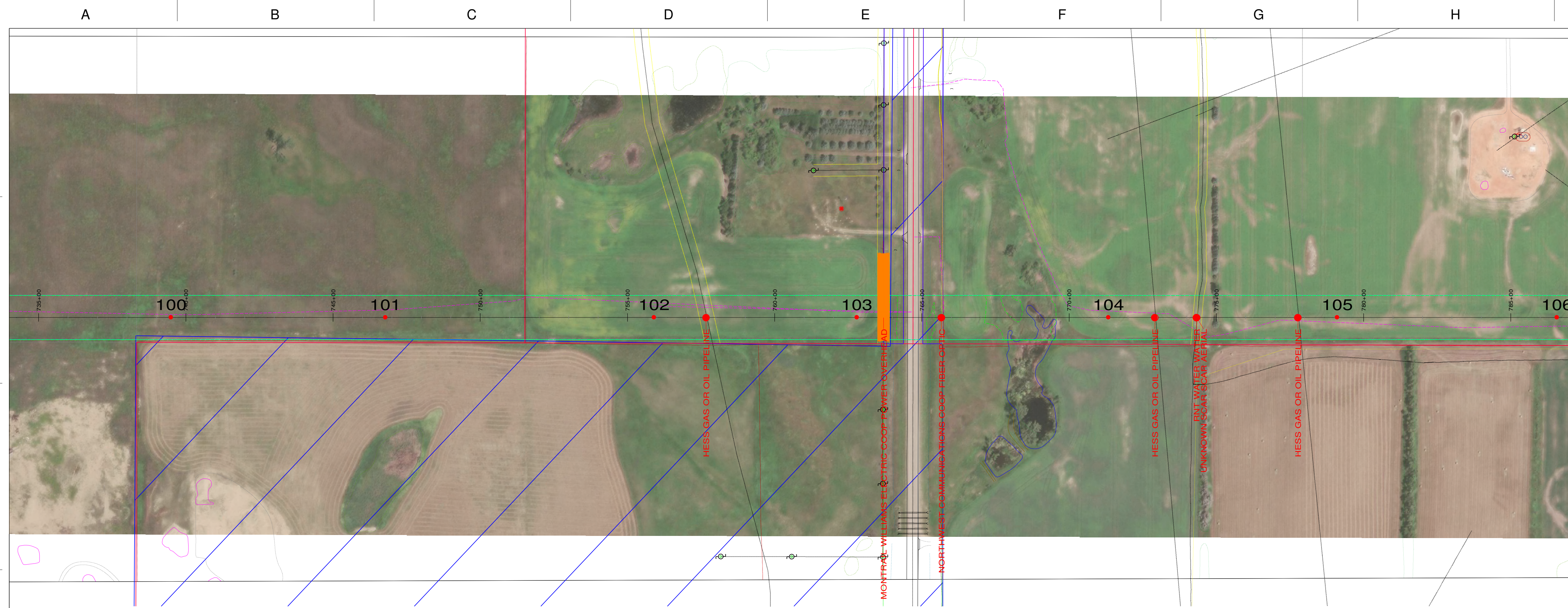


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APP'VD
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #93 TO 99)

**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-16	15	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - - - LIMITS OF DISTURBANCE
  - - - WETLAND BOUNDARY
  - - - CROSSING EASEMENT
  - - - CROSSING UTILITY CENTERLINE
  - - - FENCE
  - - - ACCESS ROADS AND STRINGING EASEMENTS
  - - - HYDROLOGIC LOW AREA
  - - - FORESTED AREA
  - - - DAKOTA SKIPPER HABITAT
  - ▭ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504
  - DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS
  - DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"
  - DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - - - CLEARANCE LINE
  - - - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)
  - ⊕ 10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)
  - ⊕ 9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)
  - ⊕ OHGW CLEARANCE CONTROLS CLEARANCE REQ'D

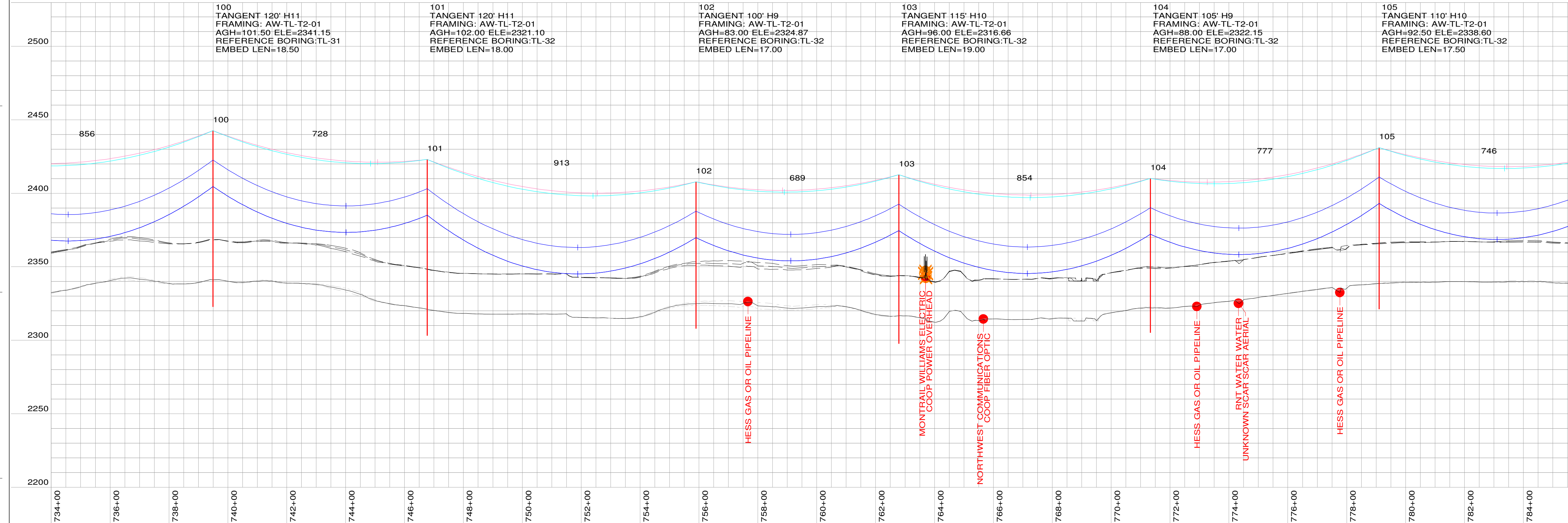
- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION



100 TANGENT 120' H11 FRAMING: AW-TL-T2-01 AGH=101.50 ELE=2341.15 REFERENCE BORING: TL-31 EMBED LEN=18.50	101 TANGENT 120' H11 FRAMING: AW-TL-T2-01 AGH=102.00 ELE=2321.10 REFERENCE BORING: TL-32 EMBED LEN=18.00	102 TANGENT 100' H9 FRAMING: AW-TL-T2-01 AGH=89.00 ELE=2324.87 REFERENCE BORING: TL-32 EMBED LEN=17.00	103 TANGENT 115' H10 FRAMING: AW-TL-T2-01 AGH=96.00 ELE=2316.66 REFERENCE BORING: TL-32 EMBED LEN=19.00	104 TANGENT 105' H9 FRAMING: AW-TL-T2-01 AGH=88.00 ELE=2322.15 REFERENCE BORING: TL-32 EMBED LEN=17.00	105 TANGENT 110' H10 FRAMING: AW-TL-T2-01 AGH=92.50 ELE=2338.60 REFERENCE BORING: TL-32 EMBED LEN=17.50
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200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

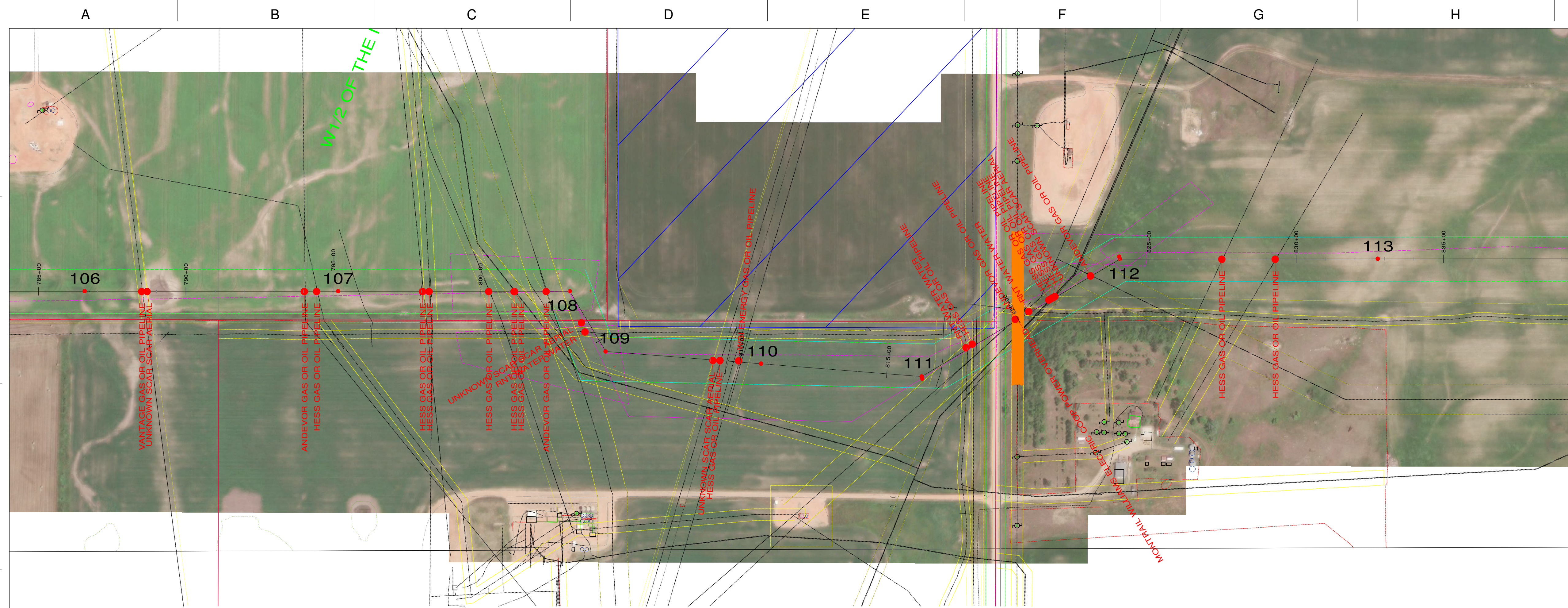


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #100 TO 105)

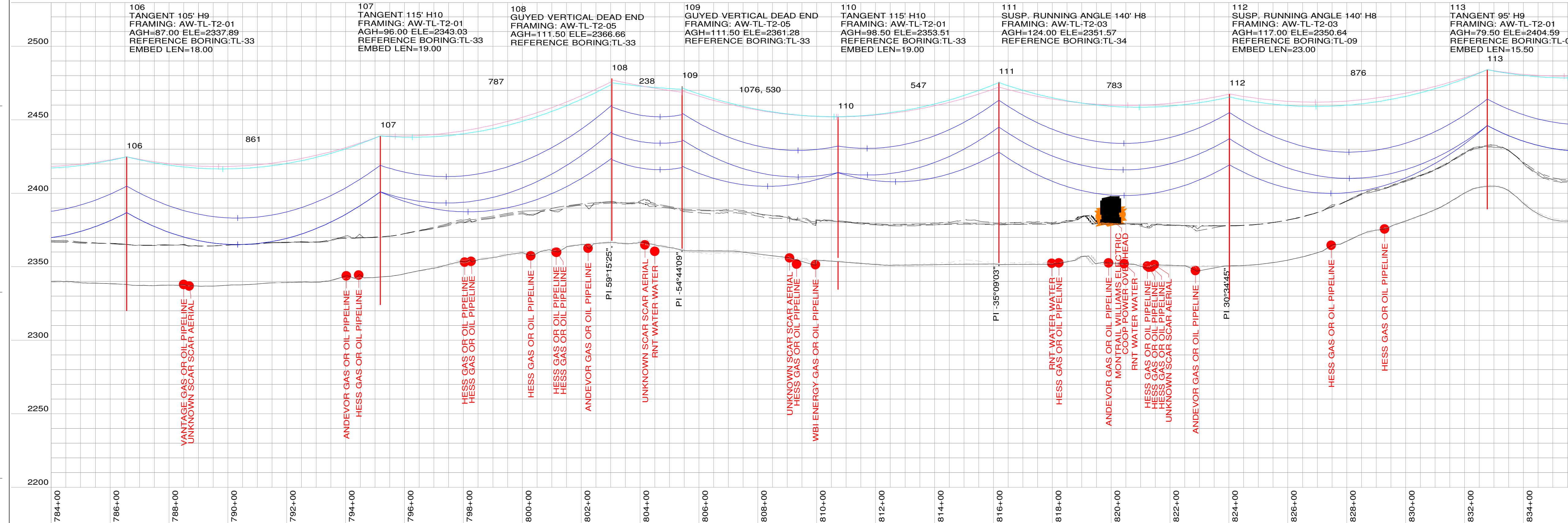
**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-17	16	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - LIMITS OF DISTURBANCE
  - WETLAND BOUNDARY
  - CROSSING EASEMENT
  - CROSSING UTILITY CENTERLINE
  - FENCE
  - ACCESS ROADS AND STRINGING EASEMENTS
  - HYDROLOGIC LOW AREA
  - FORESTED AREA
  - DAKOTA SKIPPER HABITAT
  - ▭ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY  
SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

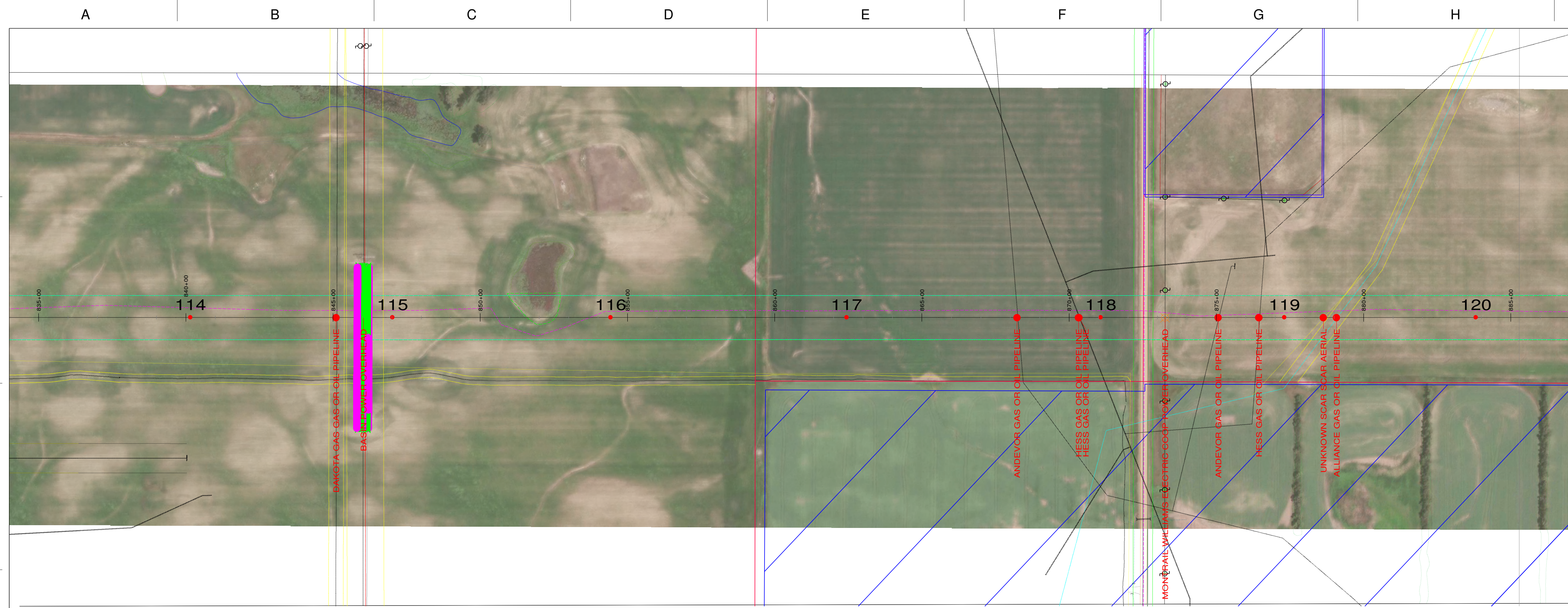


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

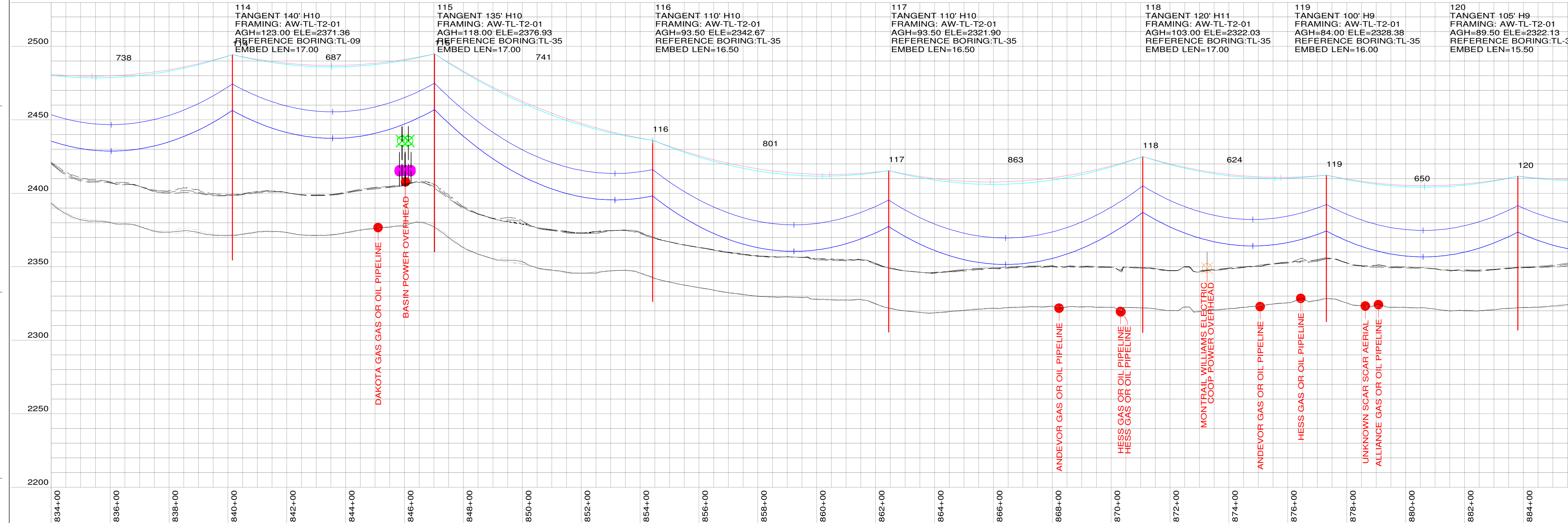
**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #106 TO 113)

**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-18	17	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - LIMITS OF DISTURBANCE
  - WETLAND BOUNDARY
  - CROSSING EASEMENT
  - CROSSING UTILITY CENTERLINE
  - FENCE
  - ACCESS ROADS AND STRINGING EASMENTS
  - HYDROLOGIC LOW AREA
  - FORESTED AREA
  - DAKOTA SKIPPER HABITAT
  - ▭ NONPARTICIPATING PROPERTY
- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504
  - DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS
  - DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"
  - DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)
  - 10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)
  - 9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)
  - OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS
- SUMMARY:**
- TOTAL OPGW LENGTH: 105297 FEET
  - TOTAL SHIELD LENGTH: 105606 FEET
  - TOTAL CONDUCTOR LENGTH: 629786 FEET
  - TOTAL TRANSMISSION LENGTH: 19.95 MILES
  - TOTAL STRUCTURES: 145
- COORDINATE SYSTEM:**
- NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT
- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
40.0 FT. VERT. SCALE

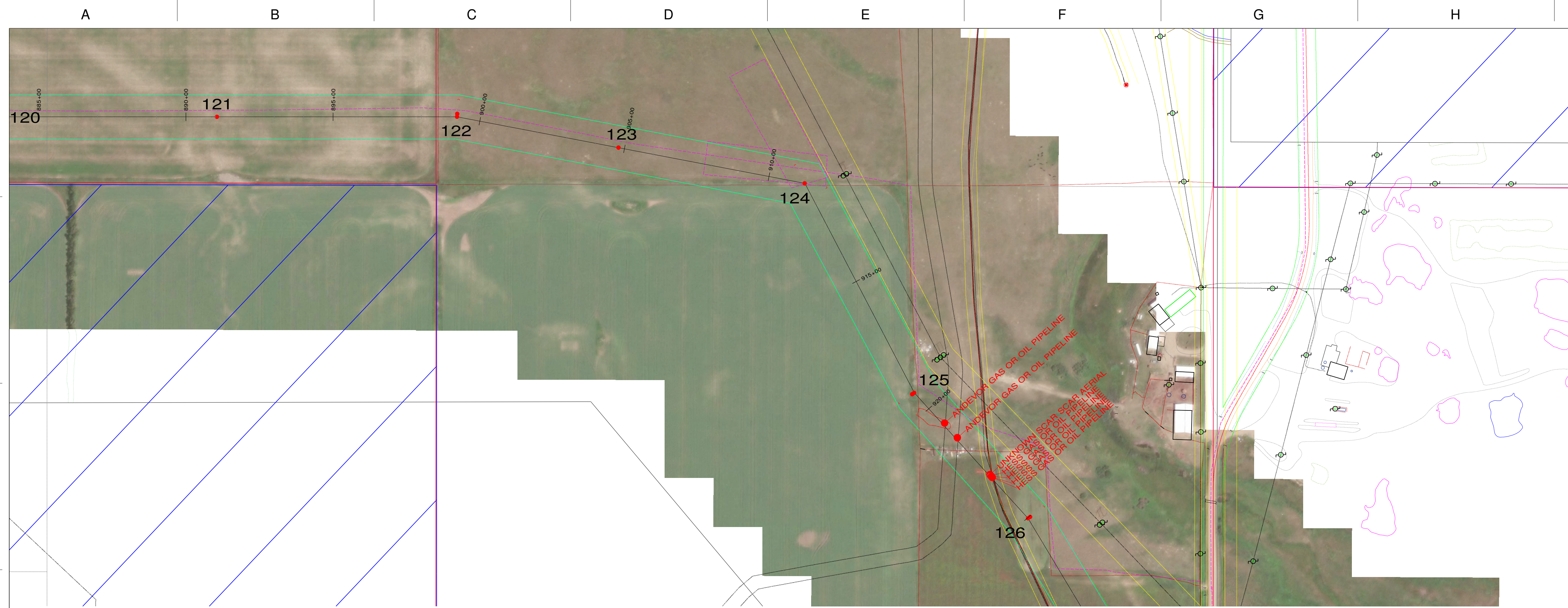


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
(STRUCTURE: FR #114 TO 120)

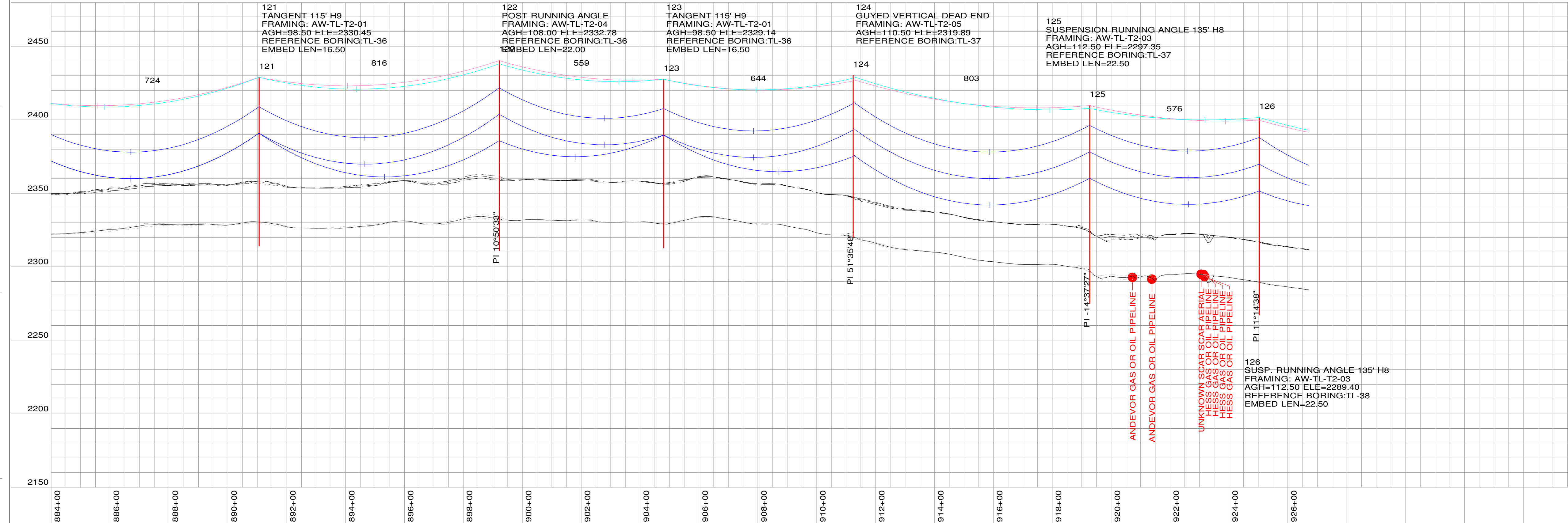
**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-19	18	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - LIMITS OF DISTURBANCE
  - WETLAND BOUNDARY
  - CROSSING EASEMENT
  - CROSSING UTILITY CENTERLINE
  - FENCE
  - ACCESS ROADS AND STRINGING EASEMENTS
  - HYDROLOGIC LOW AREA
  - FORESTED AREA
  - DAKOTA SKIPPER HABITAT
  - ▭ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVV
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVV
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVV/SUBCOND.
  - CLEARANCE LINE
  - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

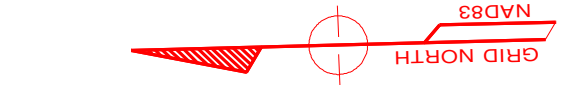
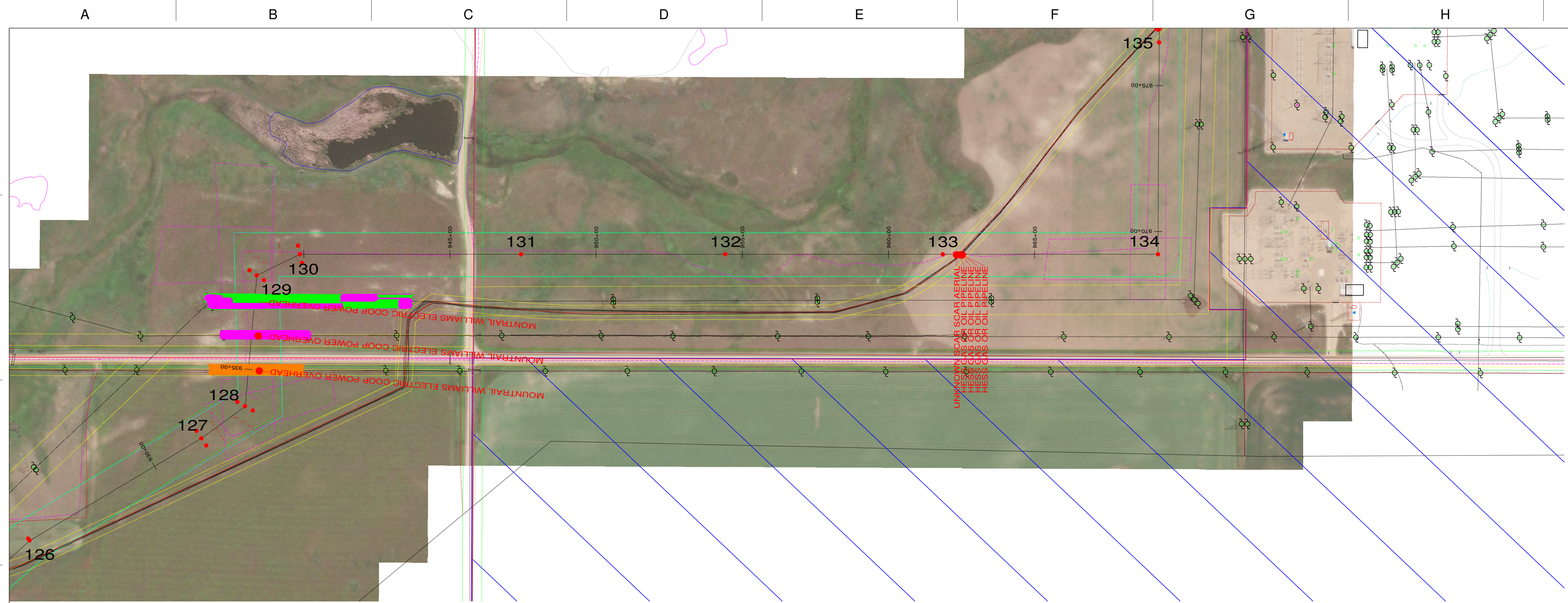


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APP'VD
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #121 TO 126)

**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-20	19	4



PLAN LEGEND:

- STRUCTURE
- 12 STRUCTURE NUMBER
- CENTERLINE
- - - LIMITS OF DISTURBANCE
- - - WETLAND BOUNDARY
- - - CROSSING EASEMENT
- - - CROSSING UTILITY CENTERLINE
- - - FENCE
- - - ACCESS ROADS AND STRINGING EASMENTS
- - - HYDROLOGIC LOW AREA
- - - FORESTED AREA
- - - DAKOTA SKIPPER HABITAT
- ▭ NONPARTICIPATING PROPERTY

PROFILE LEGEND:

- OPGW: AFL CENTRACORE CC-72-504
- DESIGN MAX TENSION: 7500# NESC HVY
- SHIELD: 3/8" EHS 7 STRANDS
- DESIGN MAX TENSION: 7500# NESC HVY
- CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"
- DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
- - - CLEARANCE LINE
- GROUND LINE
- ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)
- 10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)
- 9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)
- OHGW CLEARANCE CONTROLS CLEARANCE REQ'D

P&P NOTES:

1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

SUMMARY:

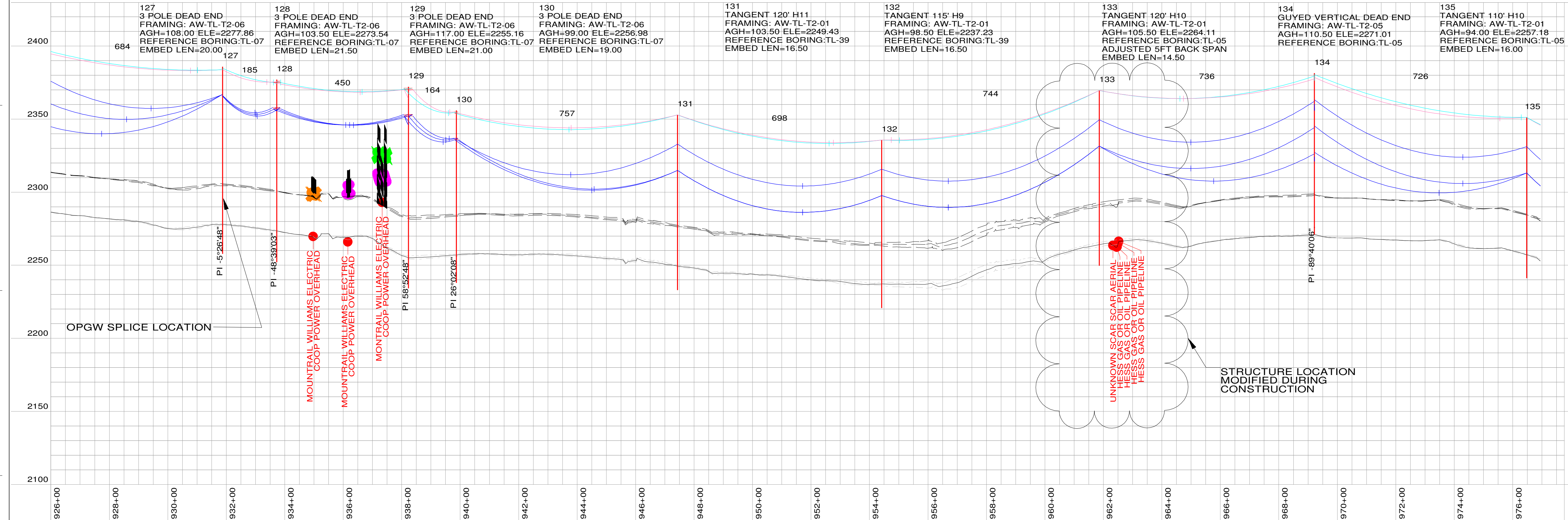
TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

COORDINATE SYSTEM:

NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

DESIGN NOTES:

1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION



200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

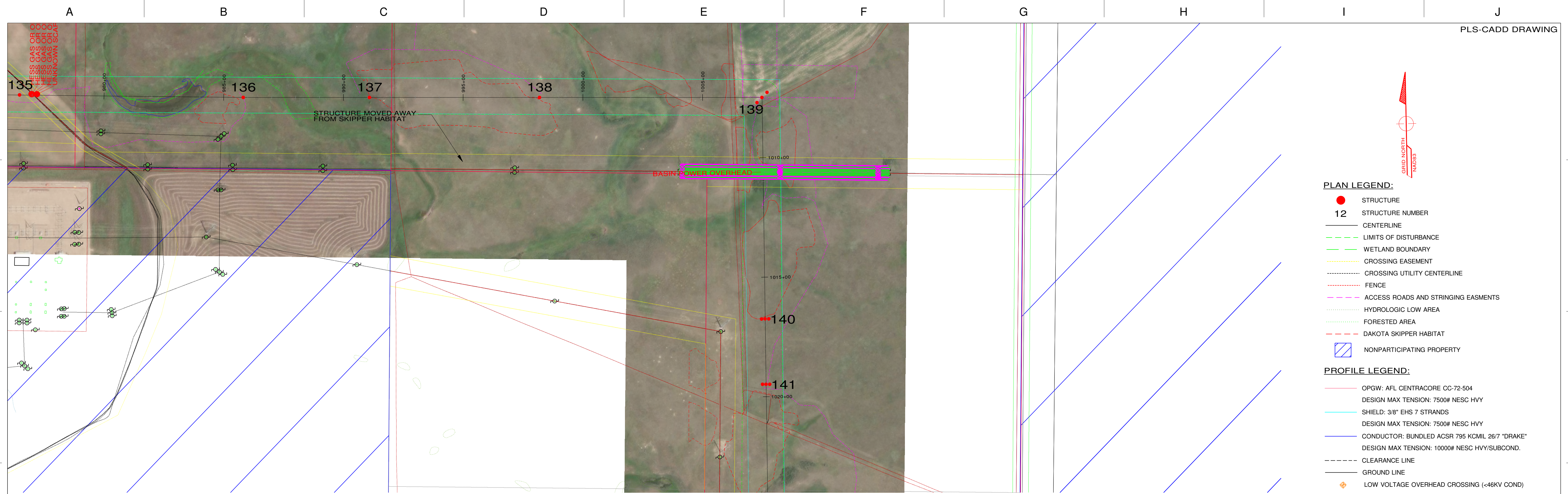


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

345 KV TRANSMISSION LINE  
 PLAN & PROFILE DRAWING  
 (STRUCTURE: FR #127 TO 135)

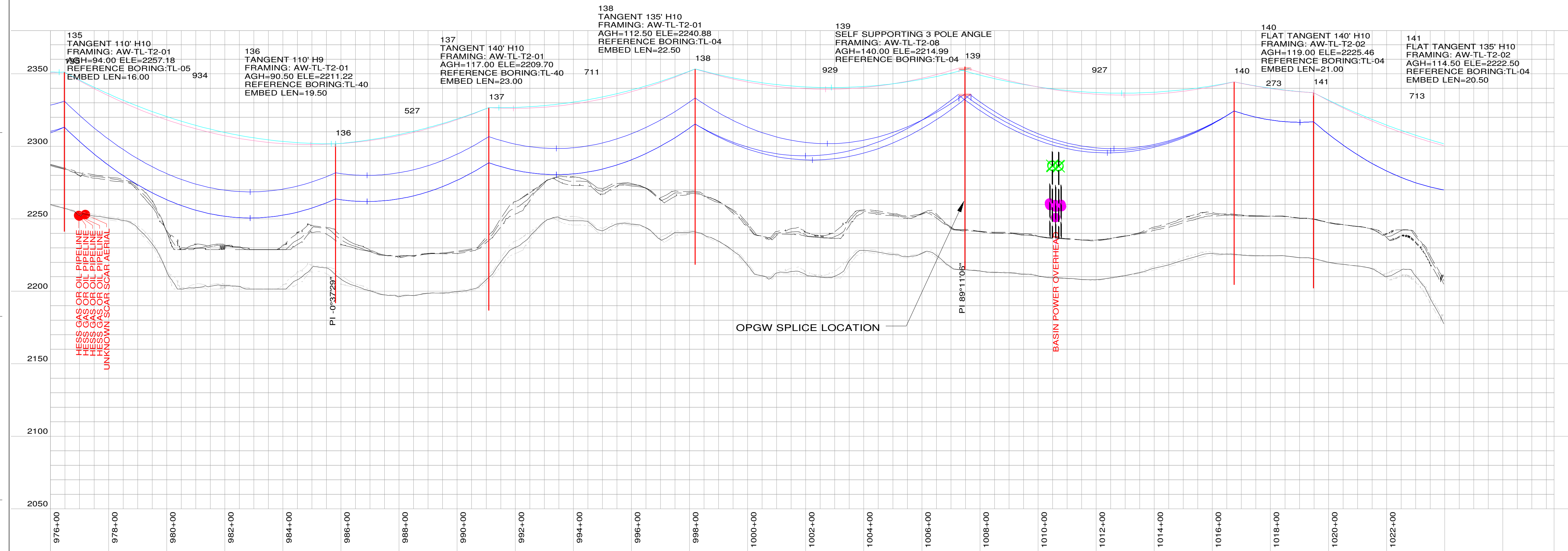
AURORA WIND PROJECT  
 ENEL GREEN POWER

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-21	20	4



- PLAN LEGEND:**
- STRUCTURE
  - 12 STRUCTURE NUMBER
  - CENTERLINE
  - - - LIMITS OF DISTURBANCE
  - - - WETLAND BOUNDARY
  - - - CROSSING EASEMENT
  - - - CROSSING UTILITY CENTERLINE
  - - - FENCE
  - - - ACCESS ROADS AND STRINGING EASEMENTS
  - - - HYDROLOGIC LOW AREA
  - - - FORESTED AREA
  - - - DAKOTA SKIPPER HABITAT
  - ▨ NONPARTICIPATING PROPERTY

- PROFILE LEGEND:**
- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
  - SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
  - CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
  - - - CLEARANCE LINE
  - - - GROUND LINE
  - ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
  - ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



- P&P NOTES:**
1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
  2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
  3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
  4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
  5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**  
 NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

- DESIGN NOTES:**
1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
  2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
  3. ENVIRONMENTAL CONDITIONS CONSIDERED: ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B) 90 MPH EXTREME WIND LOADING (RULE 250C) .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D) MAXIMUM OPERATING TEMPERATURE OF 176 F GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE

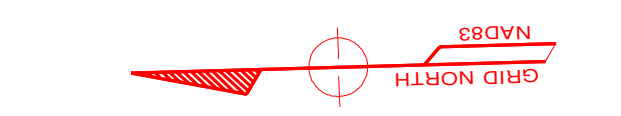
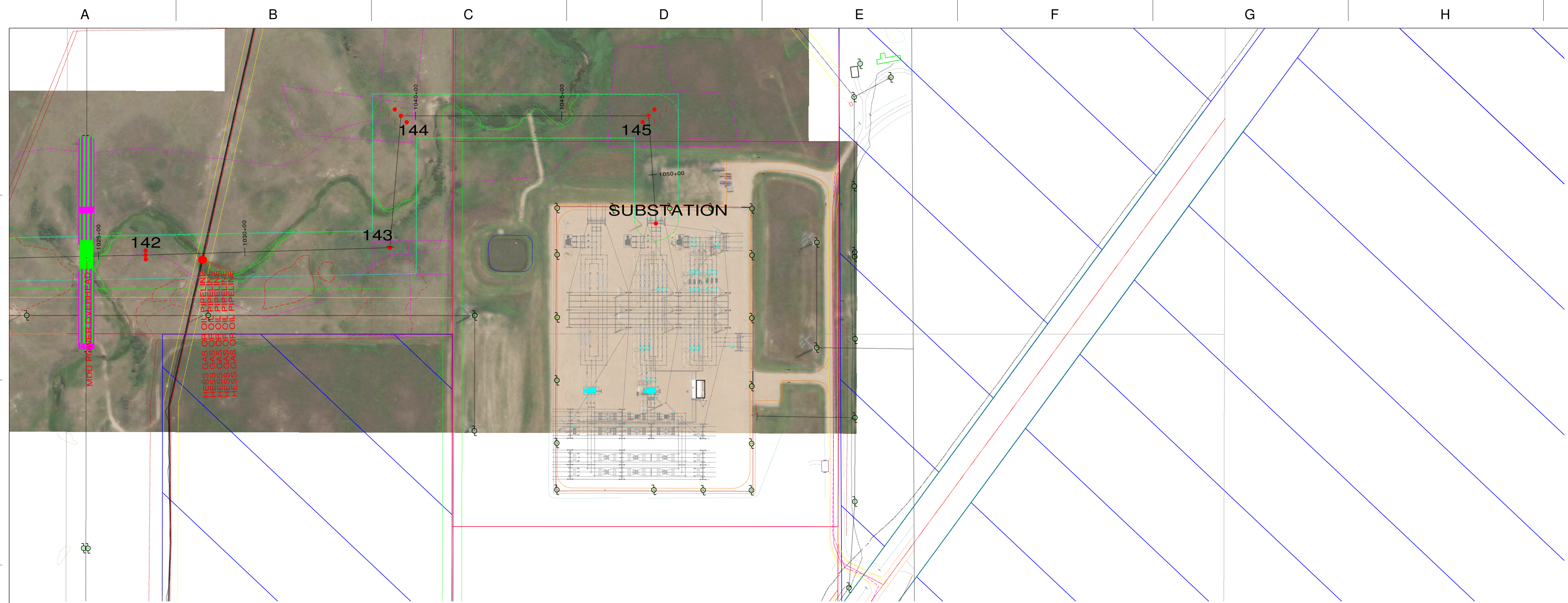


REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

**345 KV TRANSMISSION LINE**  
**PLAN & PROFILE DRAWING**  
 (STRUCTURE: FR #135 TO 141)

**AURORA WIND PROJECT**  
**ENEL GREEN POWER**

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-22	21	4

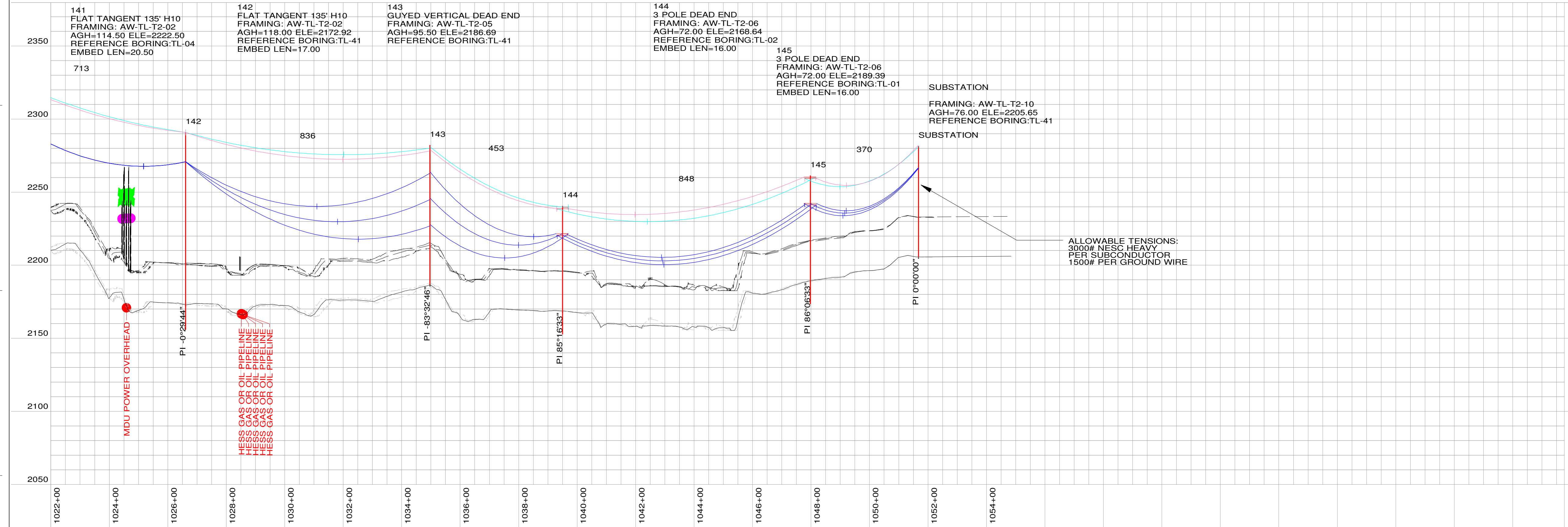


**PLAN LEGEND:**

- STRUCTURE
- 12 STRUCTURE NUMBER
- CENTERLINE
- - - LIMITS OF DISTURBANCE
- - - WETLAND BOUNDARY
- - - CROSSING EASEMENT
- - - CROSSING UTILITY CENTERLINE
- - - FENCE
- - - ACCESS ROADS AND STRINGING EASEMENTS
- - - HYDROLOGIC LOW AREA
- - - FORESTED AREA
- - - DAKOTA SKIPPER HABITAT
- ▨ NONPARTICIPATING PROPERTY

**PROFILE LEGEND:**

- OPGW: AFL CENTRACORE CC-72-504  
DESIGN MAX TENSION: 7500# NESC HVY
- SHIELD: 3/8" EHS 7 STRANDS  
DESIGN MAX TENSION: 7500# NESC HVY
- CONDUCTOR: BUNDLED ACSR 795 KCMIL 26/7 "DRAKE"  
DESIGN MAX TENSION: 10000# NESC HVY/SUBCOND.
- - - CLEARANCE LINE
- - - GROUND LINE
- ⊕ LOW VOLTAGE OVERHEAD CROSSING (<46KV COND)  
10.3' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (OHGW)  
9.7' CLEARANCE PROVIDED (RUS MINIMUM) @ -20F
- ⊕ HIGH VOLTAGE OVERHEAD CROSSING (CONDUCTOR)  
OHGW CLEARANCE CONTROLS CLEARANCE REQ'D



**P&P NOTES:**

1. DISPLAYED TEMPERATURE: MAX. OPERATING 176° F (80C), MAX SAG RS
2. MINIMUM CLEARANCE: FROM GROUND TO CONDUCTOR: 27.3'
3. SURVEY DATA: RECEIVED FROM ATWELL SEPT 3, 2019
4. STRUCTURES ARE SABER STEEL POLES <120', VALMONT >120'
5. LISTED CONDUCTOR LENGTHS ARE EXACT AND DO NOT INCLUDE PROVISIONS FOR JUMPERS, SPLICES, OR REEL EXCESS

**SUMMARY:**

TOTAL OPGW LENGTH: 105297 FEET  
 TOTAL SHIELD LENGTH: 105606 FEET  
 TOTAL CONDUCTOR LENGTH: 629786 FEET  
 TOTAL TRANSMISSION LENGTH: 19.95 MILES  
 TOTAL STRUCTURES: 145

**COORDINATE SYSTEM:**

NAD83 NORTH DAKOTA STATE PLANE, NORTH ZONE, INT FOOT

**DESIGN NOTES:**

1. 345KV TRANSMISSION LINE IS DESIGN TO MEET NATIONAL ELECTRIC SAFETY CODE (NESC) 2017 DESIGN REQUIREMENTS.
2. THE BOTTOM PHASE OF THE CONDUCTOR CLEARANCE IS 27.3 FT. ABOVE GROUND LEVEL (24.8 FT. NESC REQUIREMENT + 2.5 FT.) AT THE MAXIMUM OPERATING TEMPERATURE OF THE CONDUCTOR OF 176 DEG. F (80C)
3. ENVIRONMENTAL CONDITIONS CONSIDERED:  
 ASSUMED NESC HEAVY COMBINED ICE AND WIND LOADING DISTRICT (RULE 250B)  
 90 MPH EXTREME WIND LOADING (RULE 250C)  
 .5" EXTREME ICE WITH 60 MPH CONCURRENT WIND LOADING (RULE 250D)  
 MAXIMUM OPERATING TEMPERATURE OF 176 F  
 GRADE B CONSTRUCTION

200.0 FT. HORIZ. SCALE  
 40.0 FT. VERT. SCALE



REV.	DATE	DESCRIPTION	DRAWN	CHK'D	APPR'D
1	01/03/20	REVISED FOR SETBACK COMPLIANCE	TJS	JWW	JWW
2	03/06/20	111 CHANGED TO SELF SUPPORTING	TJS	JWW	JWW
3	11/06/20	RECORD	TJS	JWW	JWW
4	03/10/22	RECORD SET STORM REMEDIATION	TJS	JWW	JWW

345 KV TRANSMISSION LINE  
 PLAN & PROFILE DRAWING  
 (STRUCTURE: FR #142 TO SUBSTATION)

AURORA WIND PROJECT  
 ENEL GREEN POWER

PROJ. NO:	SCALE:	DWG. NO.:	SHEET:	REV.:
3348.001	AS NOTED	AW-TL-T1-23	22	4