ELECTRIC AND MAGNETIC FIELD (EMF) STUDY

Baron Winds

34.5kV Collection System
(Underground & Overhead)

MLEC Project #: AHV-16-004
MSE PO: 2016013-01
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Prepared For:
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4	10/12/17	Client Updates	TN	DB	EP

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1. INTRODUCTION

The proposed Baron Winds wind farm, and associated collection lines are located in Steuben County, NY, approximately 10 miles south-east of Dansville, NY. The collection system design is preliminary, and has been shown to be a mix of 34.5kV overhead and underground layouts with cross-sections as found in each of the nine circuit profiles analyzed herein.

An evaluation was performed of the power-frequency (60-Hertz) electric and magnetic fields associated with the proposed Baron Winds 34.5kV collection system. The purpose of this study was to perform computer modeling of the lines associated with the project and prepare a technical report of the calculation results, which are presented herein. The study took a cross-section at typical locations which contain unique EMF characteristics, and then provided results for those sections which can be used as representative examples for the lines with similar framing or layout.

2. GENERAL DESCRIPTION OF ELECTRIC AND MAGNETIC FIELDS

A. BACKGROUND INFORMATION

The generation, delivery and use of electricity produce electric and magnetic fields. Electric and magnetic fields are created by electrical voltage and electrical current respectively. Electrical facilities, such as power lines associated with the Baron Winds Project, produce electric and magnetic fields during operation. The exposure to electric and magnetic fields is complex and comes from multiple sources in the home and workplace in addition to power lines.

B. UNITS OF MEASURE

Electric field values are reported using units of Volts per meter (V/m). Often the electric field is reported using thousands of Volts per meter (or kV/m).

Magnetic field values are reported using units of gauss (G). However, it is usually more convenient to report magnetic field using milliGauss (mG) which is equal to one-thousandth of a gauss (i.e., 1 mG = 0.001 G). Some technical reports also use the unit Tesla (T) or microTesla (μT; 1 μT = 0.000001 T) for magnetic fields. The conversion between these two units is 1 mG = 0.1 μT and 1 μT = 10mG.

C. ELECTRIC FIELDS

The potential or voltage (electrical pressure) on an object, causes and electric field. Any object with an electric charge on it has a voltage (potential) at its surface, caused by the accumulation of more electrons on that surface as compared with another object or surface. The voltage effect is not limited to the surface of the object but exists in the space surrounding the object in diminishing intensity. Electric fields can exert a force on the other electric charges at a distance. The change in voltage over distance is known as the electric field. The electric field becomes stronger near a charged object and decreases with distance away from the object. Electric fields are found in everyday life with typical values of electric field measured 1-foot away from common appliances shown in Table 2-1:

Appliance	Electric Field (kV/m)
Electric Blanket	0.25*
Broiler	0.13
Refrigerator	0.06
Iron	0.06
Hand Mixer	0.05
Coffee Pot	0.03

* Note: 1 to 10 kV/m next to blanket wires
Source: Carstensen 1985; Enertech Consultants 1985

TABLE 2-1 – TYPICAL ELECTRIC FIELD VALUES FOR APPLIANCES, AT 12 INCHES

In the United States, electric power transmission lines create 60 Hz electric fields. These fields result from the voltage of the transmission line phase conductors with respect to the ground.

Electric field strengths from a transmission line decrease with distance away from the outermost conductor, typically at a rate of approximately one divided by the distance squared ($1/d^2$). As an example, in an unperturbed field, if the electric strength is 10 kV/m at a distance of 1 meter away, it will be approximately 2.5 kV/m at 2 meters away, and 0.625 kV/m at 4 meters away. Electric field strengths for a transmission line remain relatively constant over time because the voltage of the line is kept within bounds of about ± 5 percent of its rated voltage.

Transmission line electric fields are affected by the presence of grounded and conductive objects as demonstrated by Figure 2-1. Trees and buildings, for example can significantly reduce ground level electric fields by shielding the area nearby.

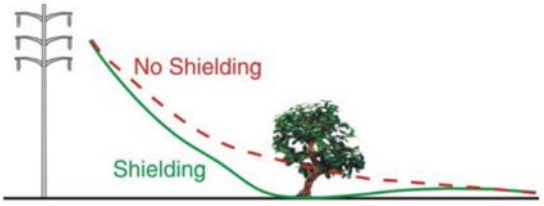


FIGURE 2-1 – ELECTRIC FIELD MEASUREMENTS DEMONSTRATE SHIELDING DUE TO THE PRESENCE OF A TREE

D. MAGNETIC FIELDS

An electric current flowing in a conductor (electric equipment, household appliance, power circuits, etc.) creates a magnetic field. The most commonly used magnetic field intensity unit of measure is the milligauss (mG).

Since the magnetic field is caused by the flow of an electric current, a device must be operated to create a magnetic field. Magnetic field strengths of a large number of common household appliances were measure and typical magnetic field values for some appliances have been measured as low as 0.3 mG to as high as 20,000 mG as shown in Table 2-2:

Appliance	Magnetic Field at 12 inches Away (mG)	Maximum Magnetic Field (mG)
Electric Range	3 to 30	100 to 1,200
Electric Oven	2 to 25	10 to 50
Garbage Disposal	10 to 20	850 to 1,250
Refrigerator	0.3 to 3	4 to 15
Clothes Washer	2 to 30	10 to 400
Clothes Dryer	1 to 3	3 to 80
Coffee Maker	0.8 to 1	15 to 250
Toaster	0.6 to 8	70 to 150
Crock Pot	0.8 to 1	15 to 80
Iron	1 to 3	90 to 300
Can Opener	35 to 250	10,000 to 20,000
Blender, Popper, Processor	6 to 20	250 to 1,050
Vacuum Cleaner	20 to 200	2,000 to 8,000
Portable Heater	1 to 40	100 to 1,100
Fans/Blowers	0.4 to 40	20 to 300
Hair Dryer	1 to 70	60 to 20,000
Electric Shaver	1 to 100	150 to 15,000
Fluorescent Light Fixture	2 to 40	140 to 2,000
Fluorescent Desk Lamp	6 to 20	400 to 3,500
Circular Saws	10 to 250	2,000 to 10,000
Electric Drill	25 to 35	4,000 to 8,000

Source: IITRI 1984; Silva 1989

TABLE 2-2 – MAGNETIC FIELDS FROM HOUSEHOLD APPLIANCES

Electric power transmission lines also create magnetic fields. These fields are typically generated by the current (amperes) flowing on the phase conductors. The magnetic field is a vector quantity having magnitude and direction.

Similar to the electric field, magnetic field strengths decrease with the inverse square of the distance away from the power line. Unlike electric fields that vary little over time, magnetic fields are not constant overtime because the current on any power line changes in response to increasing and decreasing electrical load. Magnetic fields are not easily shielded.

E. EMF STANDARD DESIGN LIMITS

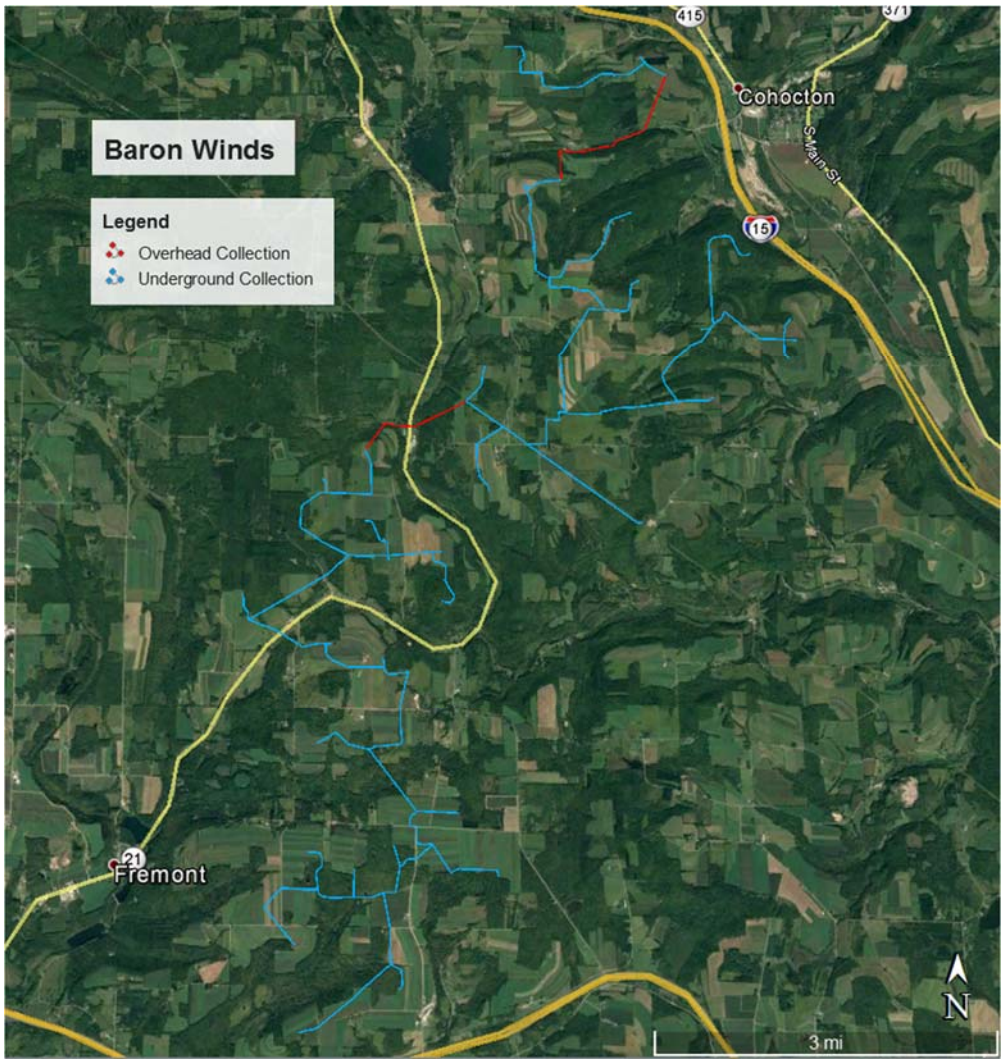
Although there are no federal standards limiting occupational or residential exposure to 60-Hz EMF in the United States, several states have set standards for transmission line EMF. Below is data taken from NIEHS outlining various states and their acceptable limits on EMF. Also included are the calculated maximum EMF values for the proposed Baron Winds Collector System. As shown in the table below, the design of the proposed Baron Winds Collector System will not exceed values set by any of the below state limits.

General State Transmission Line Standards (for lines operating up to 230kv)				
	Electric Field		Magnetic Field	
State	On Right of Way	Edge of Right of Way	On Right of Way	Edge of Right of Way
New York	**11.8 kV/m 11.0 kV/m (highway) 7.0 kV/m (private rd.)**	**1.6 kV/m**	**No limit set**	**200 mG (max load)**
Calculated maximum levels for Proposed Baron Winds (Worst Case)				
	Electric Field		Magnetic Field	
	On Right of Way	Edge of Right of Way	On Right of Way	Edge of Right of Way
Quadruple OH 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution	0.425 kV/m	0.062 kV/m	143.469 mG	77.081 mG
Double UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution	NA	NA	187.044 mG	50.230 mG
Typical Overhead 34.5kV Collection – Up to 4 Parallel Lines	0.437 kV/m	0.111 kV/m	65.802 mG	40.375 mG
*For complete results, see conclusion on page 28 of this report.				

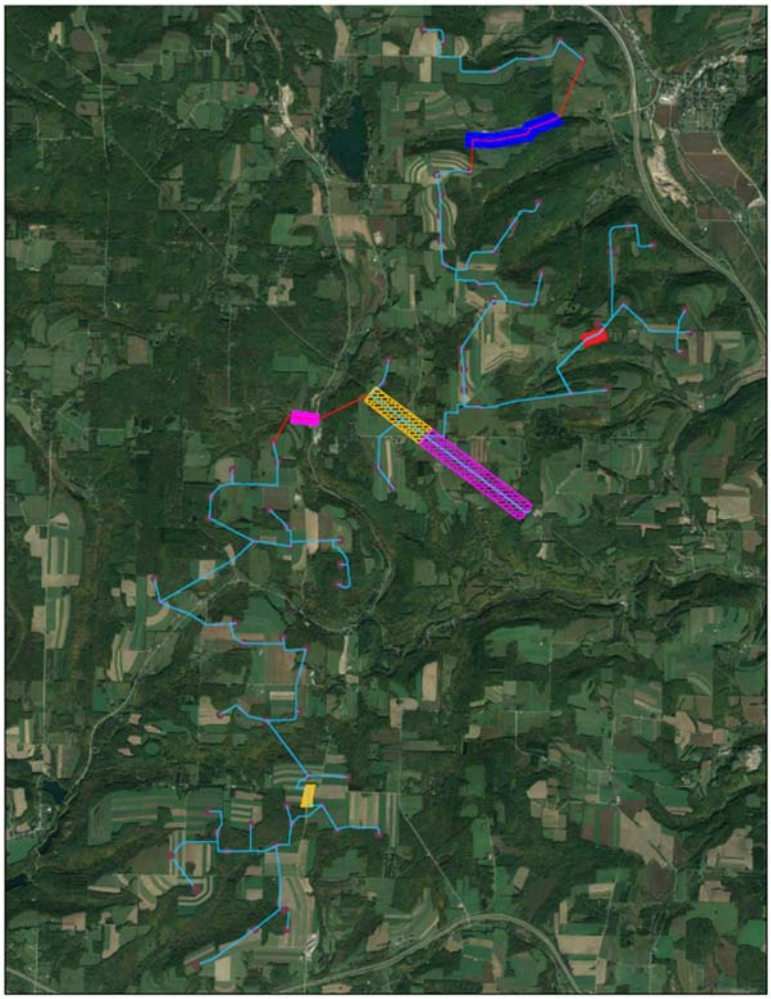
TABLE 2-3 – EMF LIMITS

3. PROJECT DESCRIPTION

The proposed Baron Winds wind farm, and associated collection lines are located in Steuben County, NY, approximately 10 miles south-east of Dansville, NY. The proposed configurations contain a mix of 34.5kV overhead and underground collection system. The project will primarily consist of new construction with little contact on inhabited structures. The collection system design is preliminary, and has been shown to be a mix of overhead and underground layouts with varying number of circuits present. For the purposes of calculations, the right of way is assumed to be 100 ft. in width (50ft from centerline) for overhead collection lines, and 60 ft. in width (30 ft. from centerline) for underground collection lines. EMF calculations are performed using a cross section width of 1000 ft. (500 ft. on each side of centerline) at a point interval of 5 ft. for data reporting. Perpendicular crossing locations do not contribute to the overall EMF characteristics, and therefore are excluded from the calculations.



The proposed Baron Winds 34.5kV collection system can be broken into eight (8) unique right-of-way sections, as defined below.



Baron Winds ROW CALC

- Turbine
- 01 - (1) Overhead 34.5 kV Collection - 3-PH with Neutral Distribution
- 02 - N/A - Not Used
- 03 - (1) Underground 34.5 kV Collection - 2-PH without Neutral Distribution
- 04 - (2) Underground 34.5 kV Collection - 2-PH without Neutral Distribution
- 05 - (4) Overhead 34.5 kV Collection - 2-PH without Neutral Distribution
- 06 - (4) Underground 34.5 kV Collection - 3-PH 230 kV Transmission
- 07 - (8) Underground 34.5 kV Collection - 3-PH 230 kV Transmission
- 08 - Typical Underground 34.5 kV Collection - Up To 9 Parallel Lines
- 09 - Typical Overhead 34.5 kV Collections - Up To 4 Parallel Lines

Calculation	Title
ROW CALC 1	Single OH 34.5kV Collection Line Paralleling 3-PH W/N OH Distribution
ROW CALC 2	NA – Not Used
ROW CALC 3	Single UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution
ROW CALC 4	Double UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution
ROW CALC 5	Quadruple OH 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution
ROW CALC 6	Quadruple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission
ROW CALC 7	Octuple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission
ROW CALC 8	Typical Underground 34.5kV Collection – Up to 9 Parallel Lines
ROW CALC 9	Typical Overhead 34.5kV Collection – Up to 4 Parallel Lines

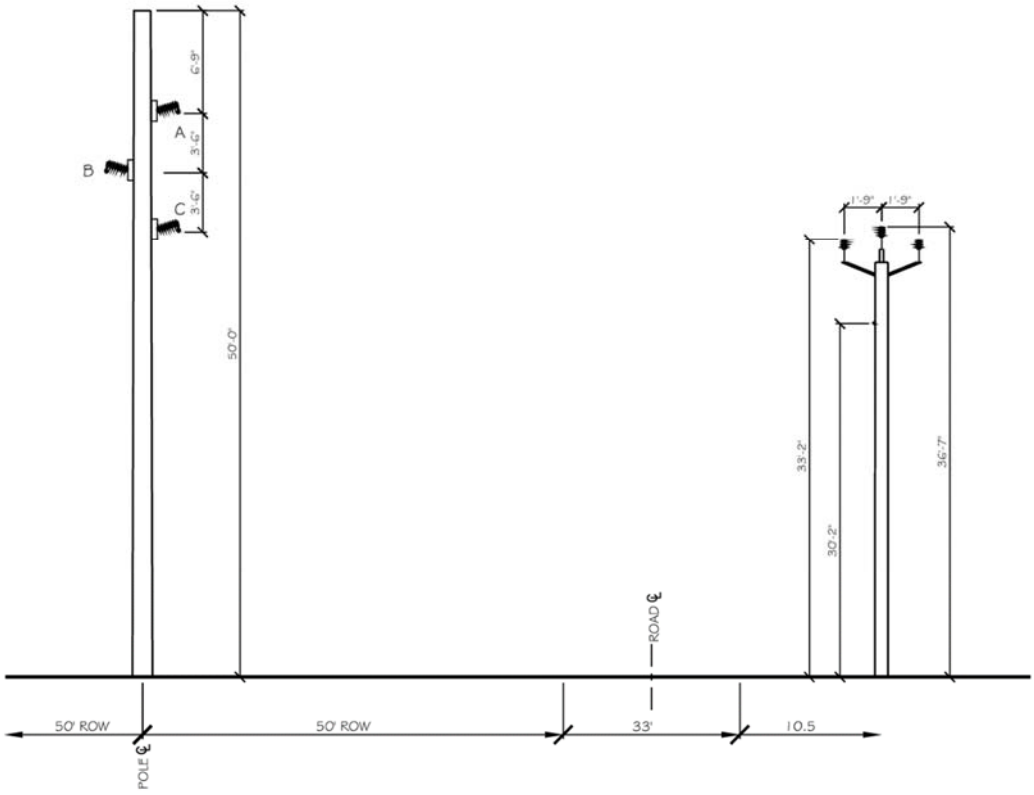
4. CALCULATIONS

A. PARAMETERS FOR CALCULATIONS

Right of Way	100 ft. for Overhead Construction / 60 ft. for Underground Construction
OH Conductor	795 kcmil ACSR "Drake"
UG Conductor	1500 kcmil Aluminum Cable
Shield Wire	7no8 Alumoweld
Collection Operating Load OH	827.5 A @ 34.5kV
Collection Operating Load UG	827.5A @ 34.5kV
Distribution Operating Load 3-PH	610 A @ 18kV (conservatively assumed)
Distribution Operating Load 1-PH	310 A @ 18kV (conservatively assumed)
Distribution Operating Load 2-PH	310 A @ 18kV (conservatively assumed)
Frequency	60 Hz
Additional Load	No expected change in amperage for the following conditions: -Summer Normal -Summer Emergency -Winter Normal -Winter Emergency -Max average annual load initially -Max average annual load @ 10 yrs. out
Wire Location	Assumed mid-span sag of 10 ft.
Measurement Location	3.28 ft. (1m) above grade
Cross Section Width	1000 ft. (500 ft. on each side of centerline)
Point Interval	5 ft.
Software Used	PLS-CADD v14.20x64

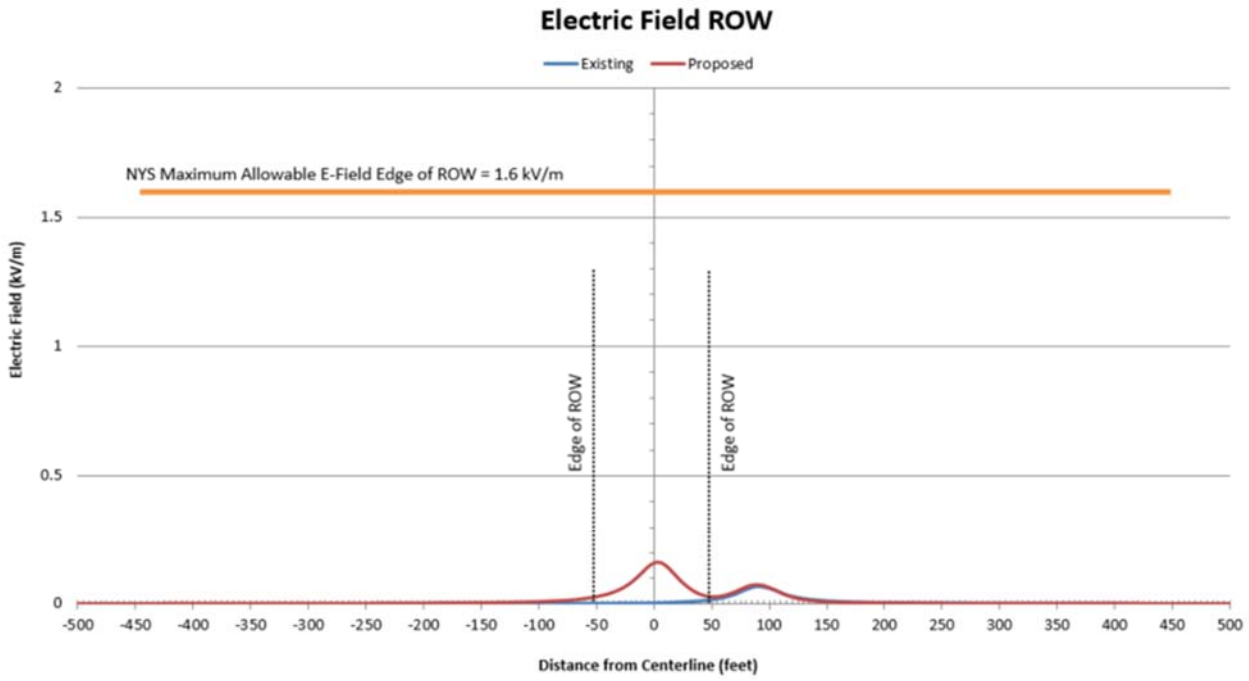
B. ROW CALC 1

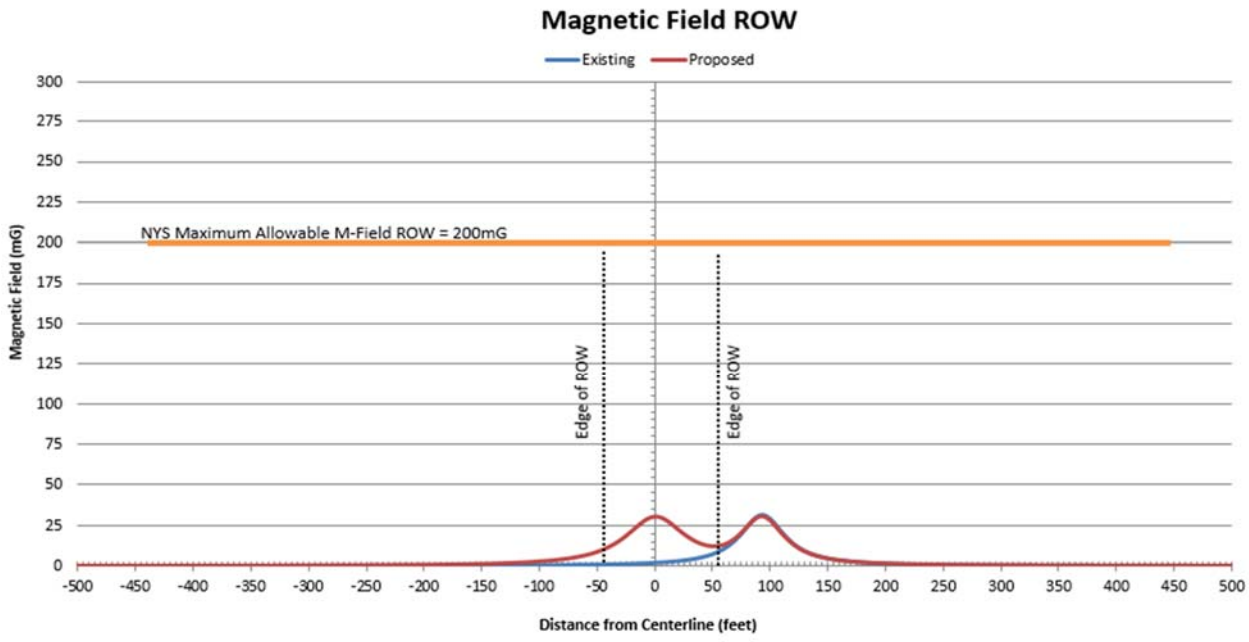
"Typical Single OH 34.5kV Collection Line Paralleling 3-PH W/N OH Distribution"



TYPICAL SINGLE OH COLLECTION LINE
PARALLELING 3-PH W/N DISTRIBUTION

Typical Single OH 34.5kV Collection Line Paralleling 3-PH W/N OH Distribution



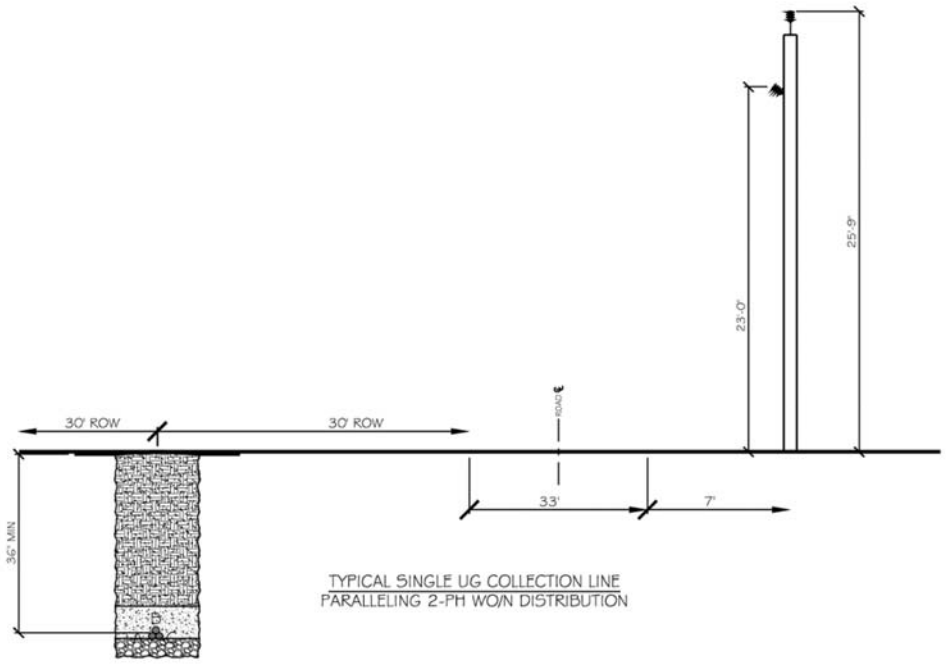


C. ROW CALC 2

"This Calculation number is not used in this project."

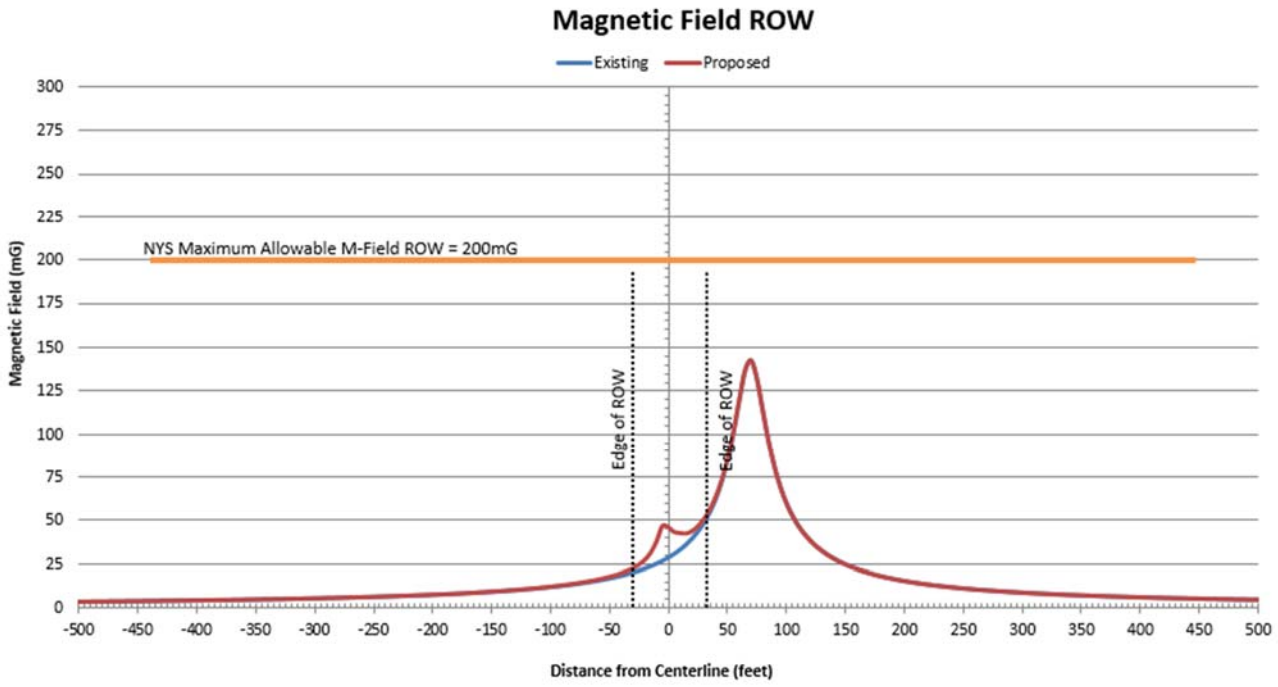
D. ROW CALC 3

"Typical Single UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution"



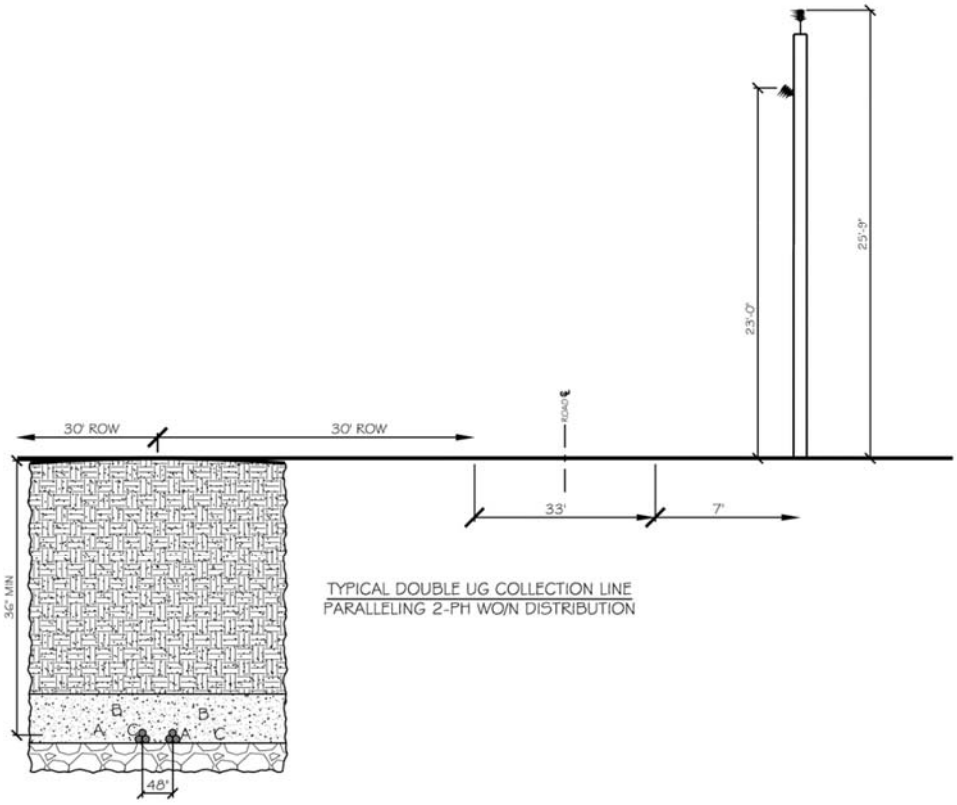
Typical Single UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution

Underground cable is effectively shielded from producing an above grade electrical field due to the properties of the grounded neutral shield wire, and the earth cover above the cable. Only magnetic field calculations will be ran for this configuration. For the underground design, the trench will contain conductor in a triplex configuration. This configuration minimizes EMF, and will produce smaller values than a horizontal configuration. The triplex configuration was selected as, and is shown as the analysis condition. Values will be at those shown for "worst case" triplex configurations.



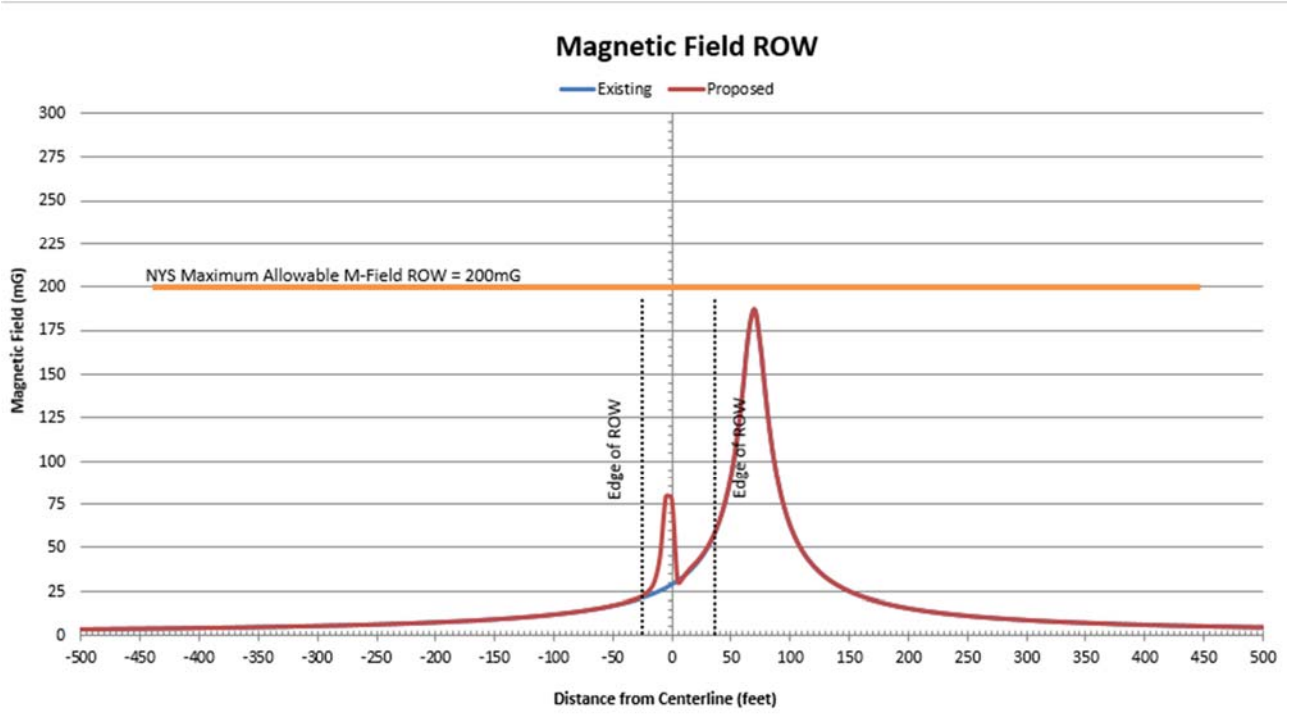
E. ROW CALC 4

"Typical Double UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution"



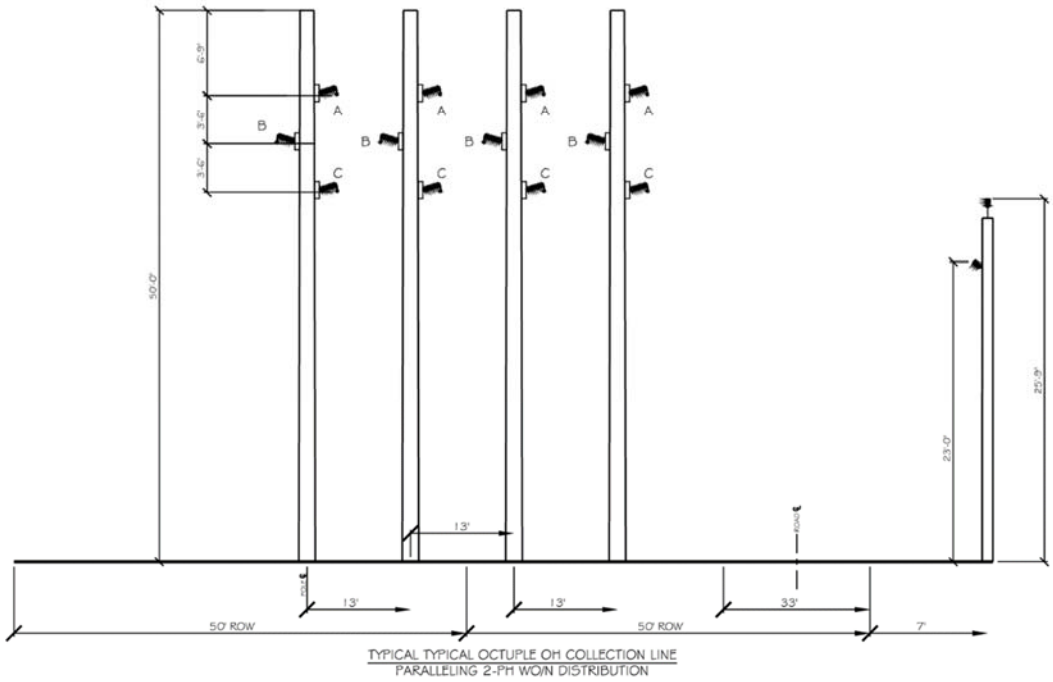
Typical Double UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution

Underground cable is effectively shielded from producing an above grade electrical field due to the properties of the grounded neutral shield wire, and the earth cover above the cable. Only magnetic field calculations will be ran for this configuration. For the underground design, the trench will contain conductor in a triplex configuration. This configuration minimizes EMF, and will produce smaller values than a horizontal configuration. The triplex configuration was selected as, and is shown as the analysis condition. Values will be at those shown for "worst case" triplex configurations.

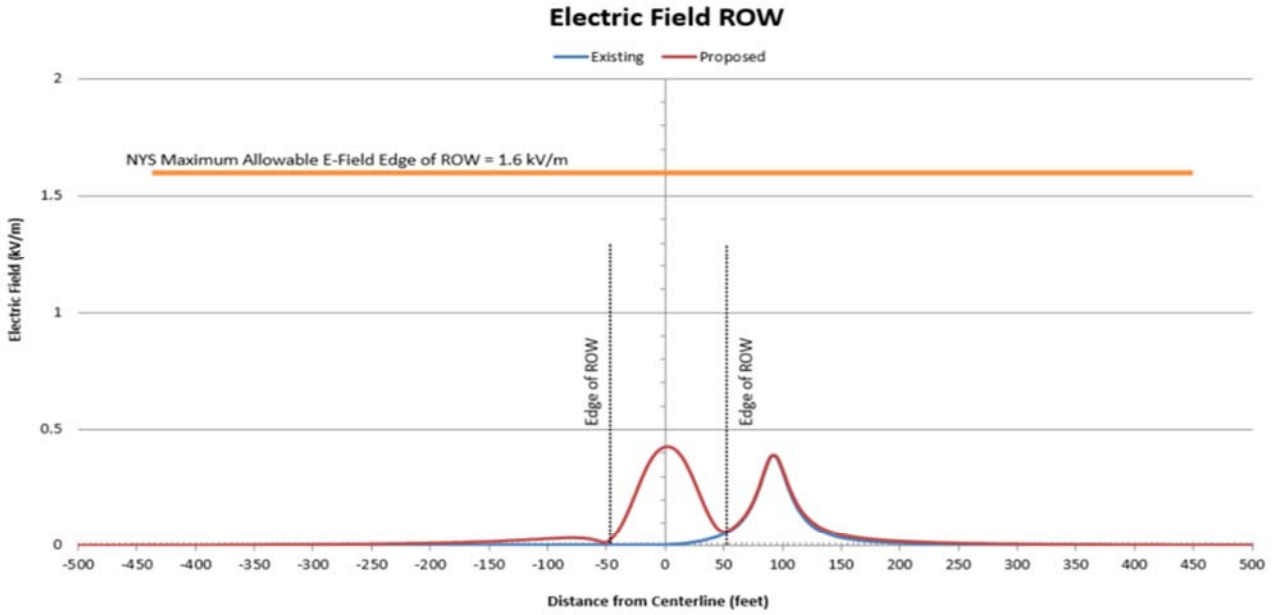


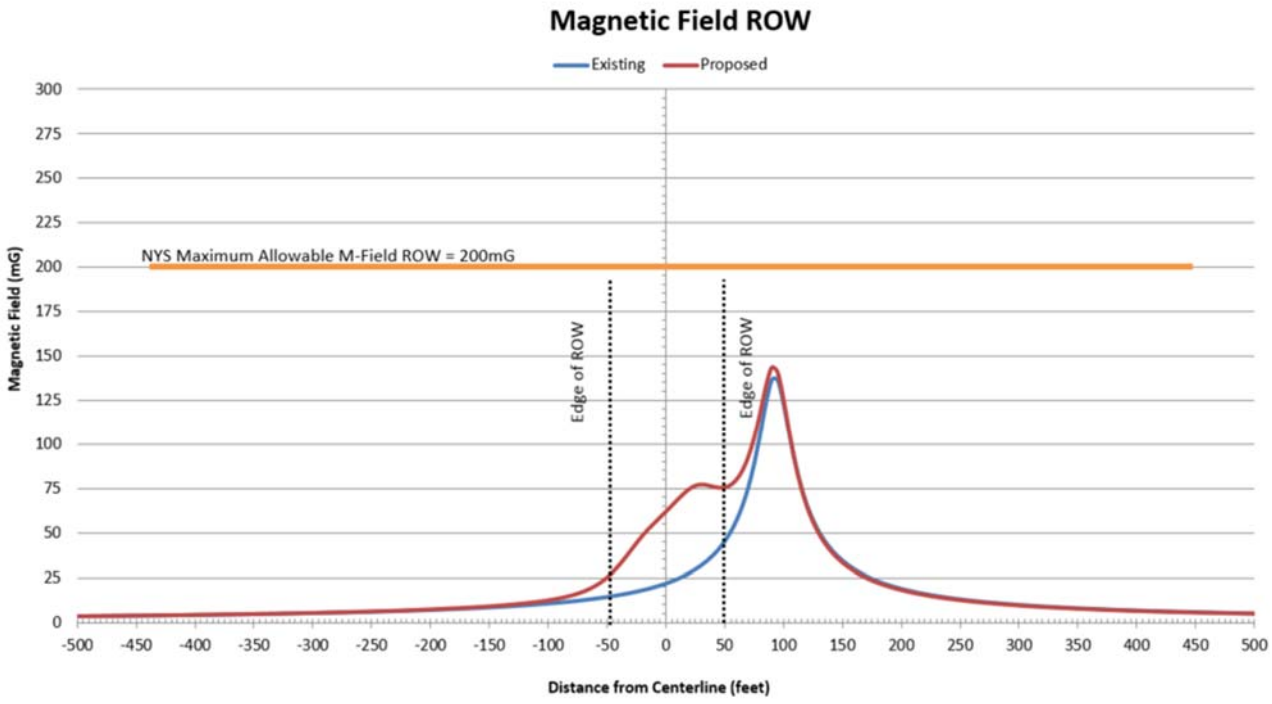
F. ROW CALC 5

"Typical Quadruple OH 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution"



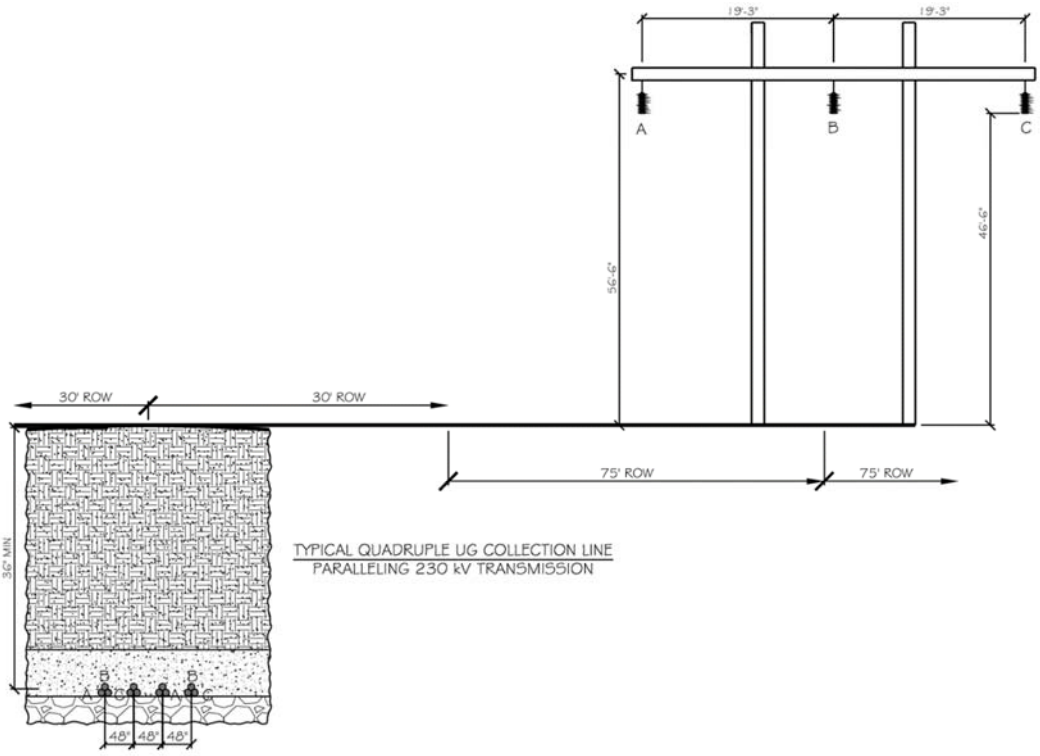
Typical Quadruple OH 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution





G. ROW CALC 6

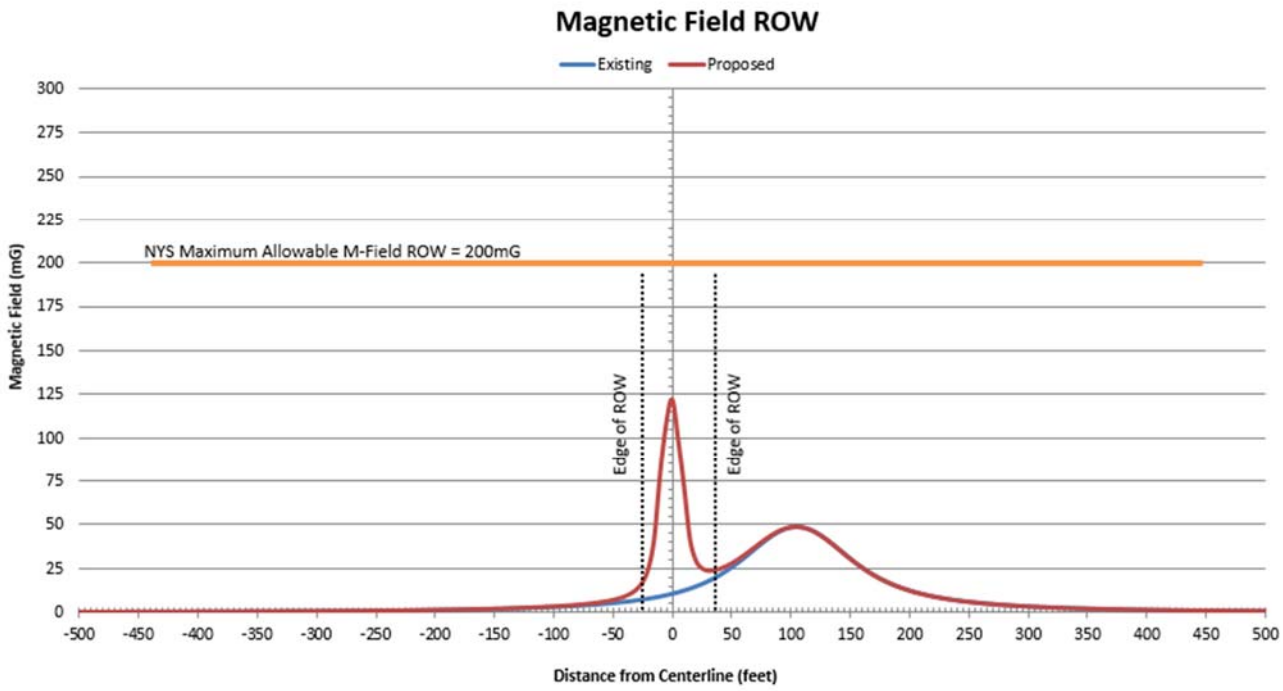
"Typical Quadruple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission"



TYPICAL QUADRUPLE UG COLLECTION LINE
PARALLELING 230 kV TRANSMISSION

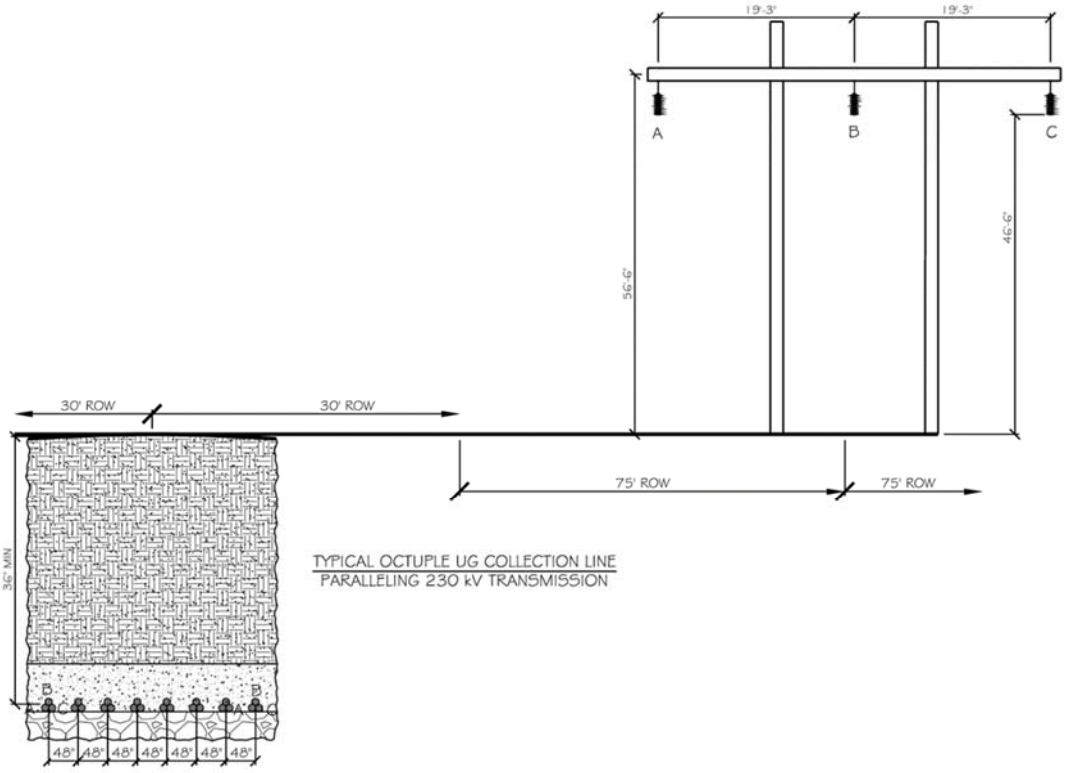
Typical Quadruple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission

Underground cable is effectively shielded from producing an above grade electrical field due to the properties of the grounded neutral shield wire, and the earth cover above the cable. Only magnetic field calculations will be ran for this configuration. For the underground design, the trench will contain conductor in a triplex configuration. This configuration minimizes EMF, and will produce smaller values than a horizontal configuration. The triplex configuration was selected as, and is shown as the analysis condition. Values will be at those shown for "worst case" triplex configurations.



H. ROW CALC 7

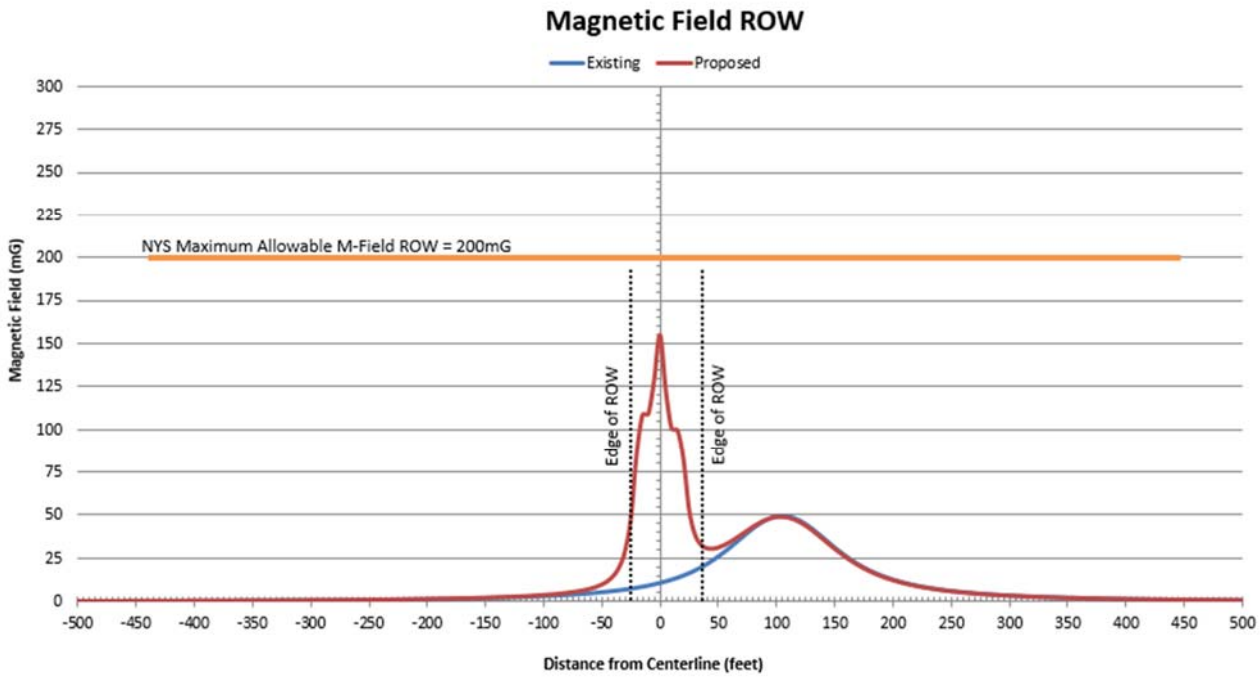
"Typical Octuple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission"



TYPICAL OCTUPLE UG COLLECTION LINE
PARALLELING 230 kV TRANSMISSION

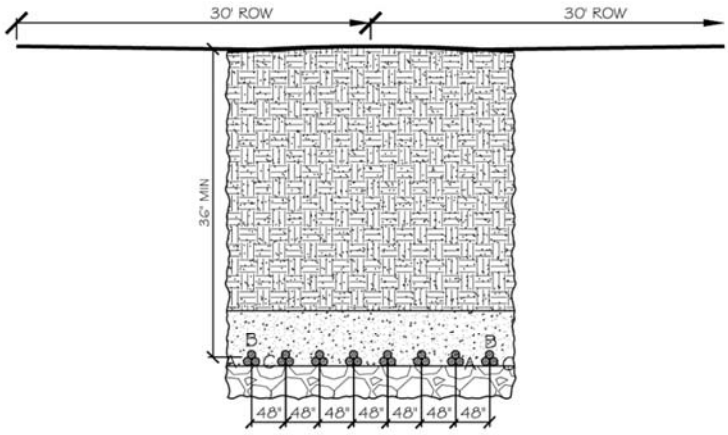
Typical Octuple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission

Underground cable is effectively shielded from producing an above grade electrical field due to the properties of the grounded neutral shield wire, and the earth cover above the cable. Only magnetic field calculations will be ran for this configuration. For the underground design, the trench will contain conductor in a triplex configuration. This configuration minimizes EMF, and will produce smaller values than a horizontal configuration. The triplex configuration was selected as, and is shown as the analysis condition. Values will be at those shown for "worst case" triplex configurations.



I. ROW CALC 8

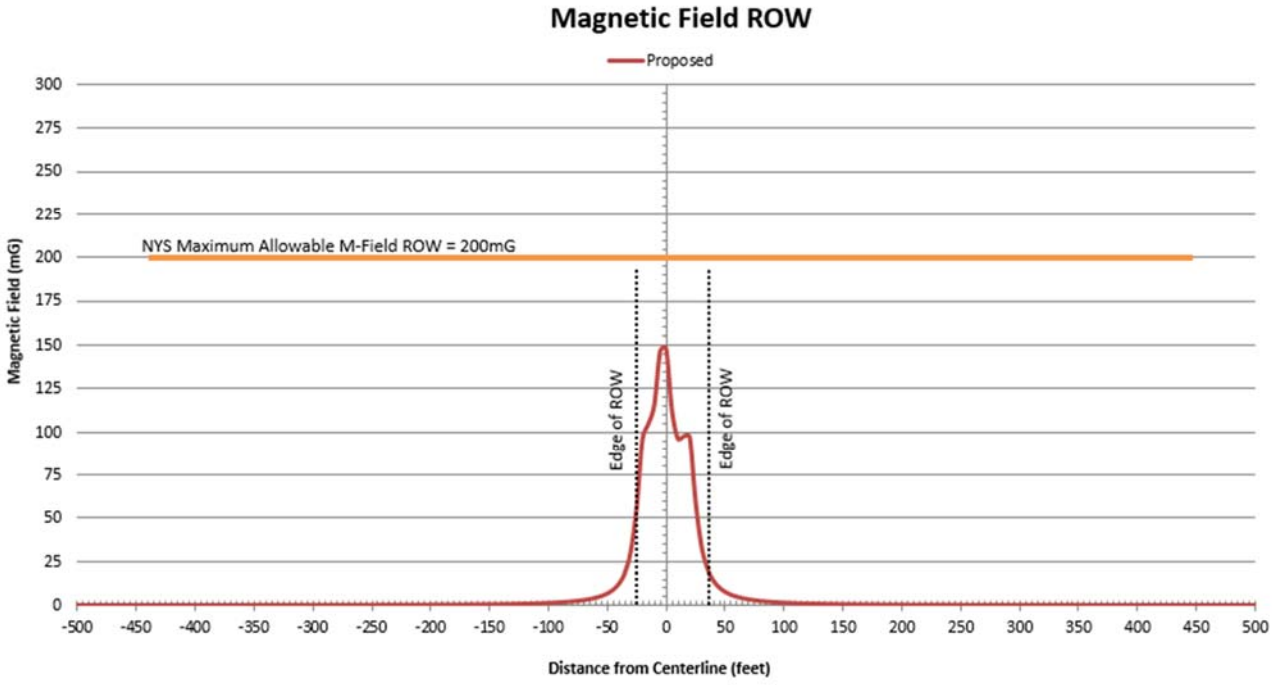
"Typical Underground 34.5kV Collection – Up to 9 Parallel Lines"



MAXIMUM UG COLLECTION LINE
NONUPLE

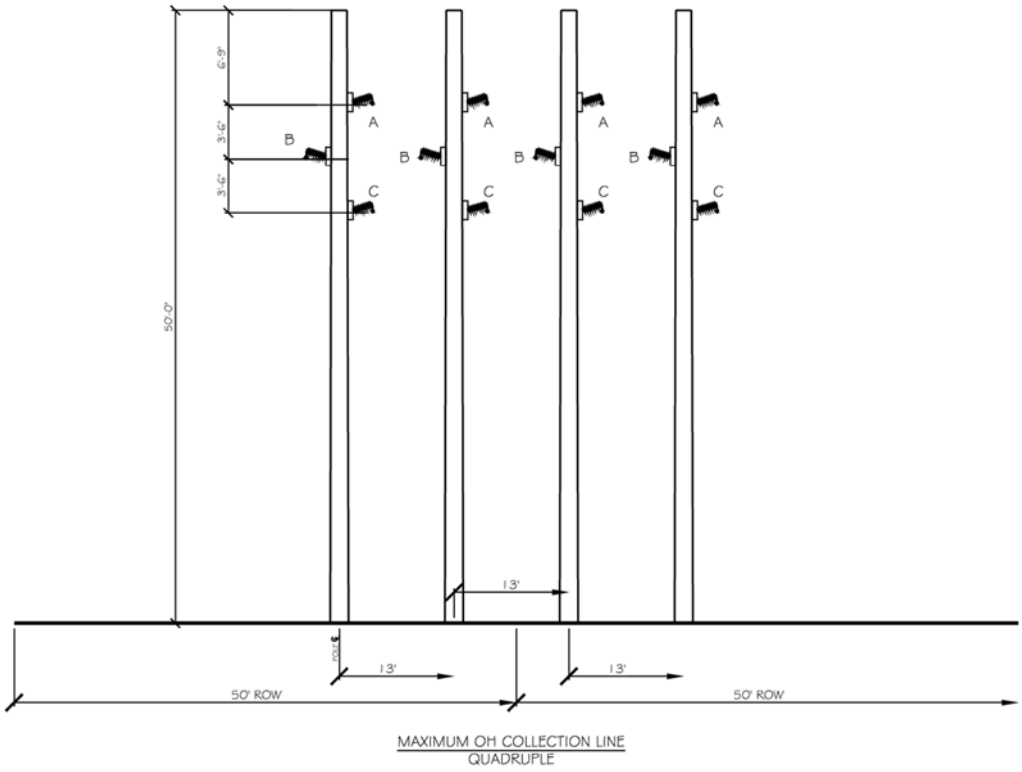
Typical Underground 34.5kV Collection – Up to 9 Parallel Lines

Underground cable is effectively shielded from producing an above grade electrical field due to the properties of the grounded neutral shield wire, and the earth cover above the cable. Only magnetic field calculations will be ran for this configuration. For the underground design, the trench will contain conductor in a triplex configuration. This configuration minimizes EMF, and will produce smaller values than a horizontal configuration. The triplex configuration was selected as, and is shown as the analysis condition. Values will be at those shown for "worst case" triplex configurations.



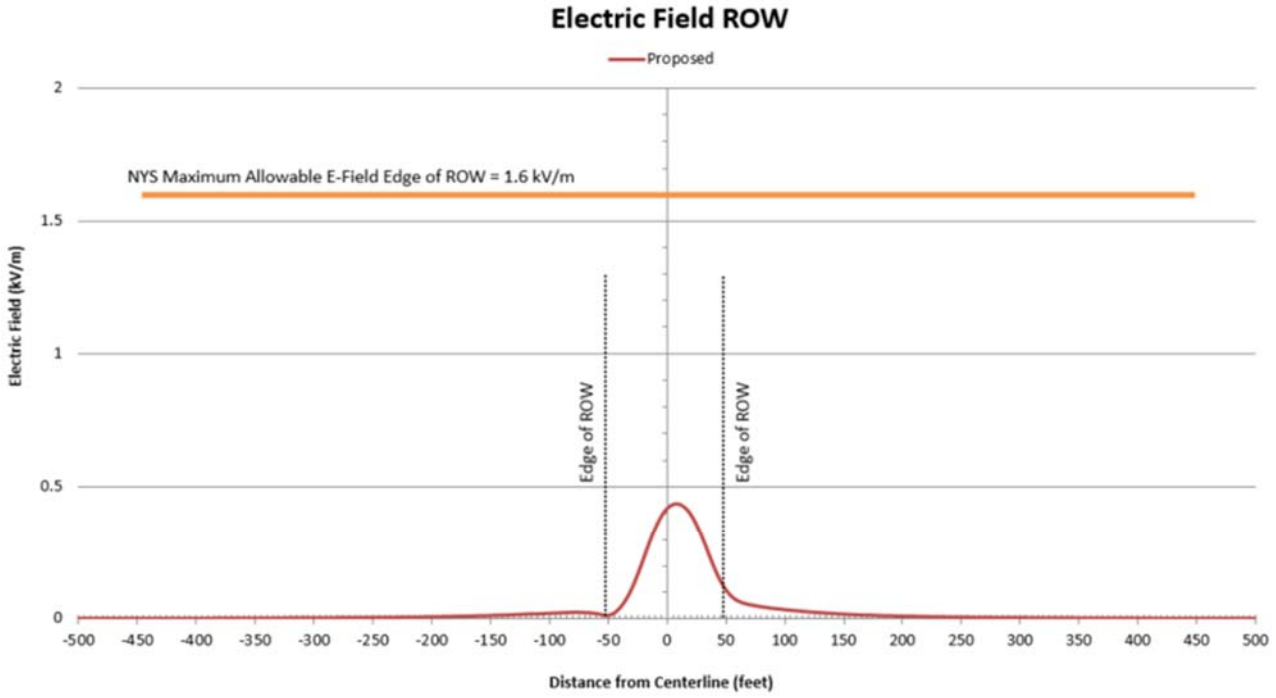
J. ROW CALC 9

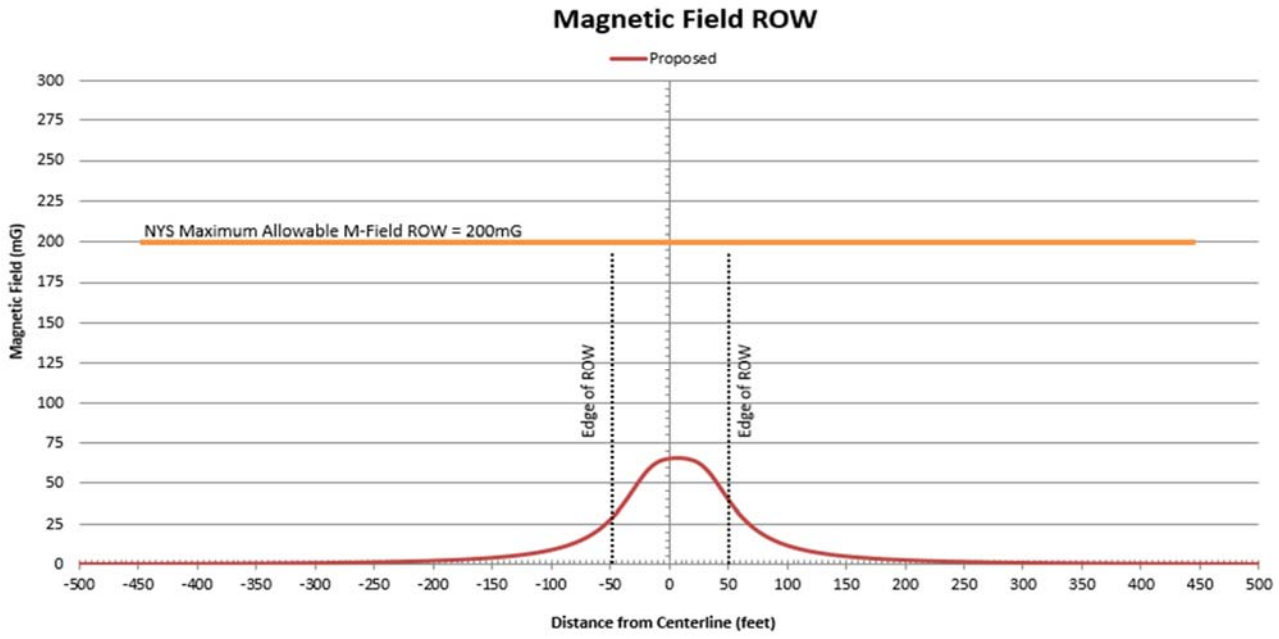
"Typical Overhead 34.5kV Collection – Up to 4 Parallel Lines"



MAXIMUM OH COLLECTION LINE
QUADRUPLE

Typical Overhead 34.5kV Collection – Up to 4 Parallel Lines





5. CONCLUSION

Calculated field strengths are below any Federal or New York, standard or guideline both at maximum value, and at the edge of the overhead 100 ft. right of way and the underground 60 ft. right of way. The loading conditions used in this evaluation are expected to be consistent, and should not fluctuate with season.

The calculated maximum electric field was 0.437 kV/m, and occurred on the right of way segment which contained a typical overhead 34.5kV collection configuration for up to (4) parallel lines.

The calculated maximum magnetic field was 187.044 mG in the center of the right of way segment consisting of a double underground 34.5kV collection line paralleling a 2-phase overhead distribution without a neutral. The additional configurations of underground systems had magnetic field values less than this due to the configuration of phasing to minimize or counteract the additional fields.

The calculated maximum value for each unique segment evaluated is summarized below:

Calculated Maximum levels for Proposed Baron Winds

ROW Calculation #	Description	Electric Field		Magnetic Field	
		On Right of Way	Edge of Right of Way	On Right of Way	Edge of Right of Way
ROW Calc 1	Single OH 34.5kV Collection Line Paralleling 3-PH W/N OH Distribution	0.161 kV/m	0.027 kV/m	30.724 mG	12.283 mG
ROW Calc 2	NA – Not Used	NA	NA	NA	NA
ROW Calc 3	Single UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution	NA	NA	142.876 mG	50.744 mG
ROW Calc 4	Double UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution	NA	NA	**187.044 mG**	50.230 mG
ROW Calc 5	Quadruple OH 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution	0.425 kV/m	0.062 kV/m	143.469 mG	**77.081 mG**
ROW Calc 6	Quadruple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission	NA	NA	122.249 mG	24.023 mG
ROW Calc 7	Octuple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission	NA	NA	154.914 mG	38.967 mG
ROW Calc 8	Typical Underground 34.5kV Collection – Up to 9 Parallel Lines	NA	NA	148.382 mG	34.009 mG
ROW Calc 9	Typical Overhead 34.5kV Collection – Up to 4 Parallel Lines	**0.437 kV/m**	**0.111 kV/m**	65.802 mG	40.375 mG

APPENDIX A – CALCULATION OUTPUT DATA

Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

ROW CALC 1 – Typical Single OH 34.5kV Collection Line Paralleling 3-PH W/N OH Distribution

EMF Output

```
Meter height above centerline ground:   3.28 (ft)
Cross section offset for graph +/-:   500.00 (ft)
Result interval for graph:              5.00 (ft)
Electric field limit:                   0.00 (kV/m)
Magnetic field limit:                   0.00 (mG)

EMF calculation includes only wires going from structure 1 to structure 2
```

EMF Circuit Data:

Set #	Phase #	Conductors Per Phase	Voltage Ph-Ph (kV)	Current (Amps)	Phase Angle (deg)	Bundle Diameter (in)
1	1	1	0	0.000	0	0.000
3	1	1	34.5	827.500	0	0.000
3	2	1	34.5	827.500	120	0.000
3	3	1	34.5	827.500	-120	0.000
6	1	1	18	610.000	0	0.000
6	2	1	18	610.000	120	0.000
6	3	1	18	610.000	-120	0.000

Calculated EMF Circuit Data For Last Point:

Wire station and offset are based on alignment closest to point on wire.
In the case of wires that are not parallel, this may result in different stations for the wires and centerline.

Set #	Phase #	Weather Case	Cable Condition	Wind From	Wire X (ft)	Wire Y (ft)	Wire Z (ft)	Wire Station (ft)	Wire Offset (ft)	Eqv. Wire Diameter (in)	Voltage To Gnd. (kV)
1	1	0 Deg F	Creep FE	Left	0.42	125.60	548.70	125.67	0.25	0.360	0
3	1	212 Deg F	Creep FE	Left	2.17	125.60	538.96	125.67	2.00	1.108	19.92
3	2	212 Deg F	Creep FE	Left	-1.83	125.60	535.46	125.67	-2.00	1.108	19.92
3	3	212 Deg F	Creep FE	Left	2.17	125.60	531.96	125.67	2.00	1.108	19.92
6	1	212 Deg F	Creep FE	Left	91.92	125.65	525.55	125.67	91.75	0.921	10.39
6	2	212 Deg F	Creep FE	Left	93.67	125.65	528.96	125.67	93.50	0.921	10.39
6	3	212 Deg F	Creep FE	Left	94.92	125.65	525.55	125.67	94.75	0.921	10.39

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Maximum magnetic field of 30.74 (mG) found at station 125.67, offset 95.00 (ft)
Maximum electric field of 0.161 (kV/m) found at station 125.67, offset 5.00 (ft)
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EMF Calculation Results:

Station (ft)	Offset (ft)	X (ft)	Y (ft)	Z (ft)	B Real (mG)	B Img. (mG)	B Phase Angle (deg)	B rms Res. (mG)	E Real (kV/m)	E Img. (kV/m)	E Phase Angle (deg)	E Axis Angle (deg)	E rms Res. (kV/m)
125.67	-500.00	-499.83	125.35	500.00	0.070	0.11271	58.2	0.133	0.000	0.00030	53.5	269.3	0.000
125.67	-495.00	-494.83	125.36	500.00	0.071	0.11488	58.2	0.135	0.000	0.00030	53.5	269.2	0.000
125.67	-490.00	-489.83	125.36	500.00	0.073	0.11713	58.1	0.138	0.000	0.00031	53.5	269.2	0.000
125.67	-485.00	-484.83	125.36	500.00	0.074	0.11943	58.1	0.141	0.000	0.00031	53.6	269.2	0.000
125.67	-480.00	-479.83	125.36	500.00	0.076	0.12181	58.0	0.144	0.000	0.00032	53.6	269.2	0.000
125.67	-475.00	-474.83	125.37	500.00	0.078	0.12426	58.0	0.147	0.000	0.00033	53.6	269.2	0.000
125.67	-470.00	-469.83	125.37	500.00	0.079	0.12679	57.9	0.150	0.000	0.00034	53.7	269.2	0.000
125.67	-465.00	-464.83	125.37	500.00	0.081	0.12939	57.9	0.153	0.000	0.00034	53.7	269.2	0.000
125.67	-460.00	-459.83	125.37	500.00	0.083	0.13207	57.8	0.156	0.000	0.00035	53.7	269.2	0.000
125.67	-455.00	-454.83	125.38	500.00	0.085	0.13484	57.8	0.159	0.000	0.00036	53.8	269.2	0.000
125.67	-450.00	-449.83	125.38	500.00	0.087	0.13770	57.7	0.163	0.000	0.00037	53.8	269.2	0.000
125.67	-445.00	-444.83	125.38	500.00	0.089	0.14065	57.7	0.166	0.000	0.00037	53.9	269.2	0.000
125.67	-440.00	-439.83	125.38	500.00	0.091	0.14369	57.6	0.170	0.000	0.00038	53.9	269.2	0.000
125.67	-435.00	-434.83	125.39	500.00	0.093	0.14684	57.6	0.174	0.000	0.00039	53.9	269.1	0.000
125.67	-430.00	-429.83	125.39	500.00	0.095	0.15009	57.5	0.178	0.000	0.00040	54.0	269.1	0.000
125.67	-425.00	-424.83	125.39	500.00	0.098	0.15345	57.5	0.182	0.000	0.00041	54.0	269.1	0.001
125.67	-420.00	-419.83	125.39	500.00	0.100	0.15693	57.4	0.186	0.000	0.00042	54.1	269.1	0.001
125.67	-415.00	-414.83	125.40	500.00	0.103	0.16053	57.4	0.191	0.000	0.00043	54.1	269.1	0.001
125.67	-410.00	-409.83	125.40	500.00	0.105	0.16425	57.3	0.195	0.000	0.00044	54.2	269.1	0.001
125.67	-405.00	-404.83	125.40	500.00	0.108	0.16810	57.3	0.200	0.000	0.00045	54.2	269.1	0.001
125.67	-400.00	-399.83	125.40	500.00	0.111	0.17210	57.2	0.205	0.000	0.00046	54.3	269.1	0.001
125.67	-395.00	-394.83	125.41	500.00	0.114	0.17624	57.2	0.210	0.000	0.00048	54.3	269.1	0.001
125.67	-390.00	-389.83	125.41	500.00	0.117	0.18053	57.1	0.215	0.000	0.00049	54.4	269.0	0.001
125.67	-385.00	-384.83	125.41	500.00	0.120	0.18497	57.0	0.220	0.000	0.00050	54.5	269.0	0.001
125.67	-380.00	-379.83	125.41	500.00	0.123	0.18959	57.0	0.226	0.000	0.00052	54.5	269.0	0.001
125.67	-375.00	-374.83	125.42	500.00	0.127	0.19439	56.9	0.232	0.000	0.00053	54.6	269.0	0.001
125.67	-370.00	-369.83	125.42	500.00	0.130	0.19936	56.8	0.238	0.000	0.00054	54.7	269.0	0.001
125.67	-365.00	-364.83	125.42	500.00	0.134	0.20454	56.8	0.245	0.000	0.00056	54.8	269.0	0.001
125.67	-360.00	-359.83	125.42	500.00	0.138	0.20992	56.7	0.251	0.000	0.00058	54.8	269.0	0.001
125.67	-355.00	-354.83	125.43	500.00	0.142	0.21551	56.6	0.258	0.000	0.00059	54.9	269.0	0.001
125.67	-350.00	-349.83	125.43	500.00	0.146	0.22134	56.6	0.265	0.000	0.00061	55.0	268.9	0.001
125.67	-345.00	-344.83	125.43	500.00	0.151	0.22741	56.5	0.273	0.000	0.00063	55.1	268.9	0.001
125.67	-340.00	-339.83	125.43	500.00	0.155	0.23373	56.4	0.281	0.000	0.00065	55.2	268.9	0.001
125.67	-335.00	-334.83	125.44	500.00	0.160	0.24032	56.3	0.289	0.000	0.00067	55.3	268.9	0.001
125.67	-330.00	-329.83	125.44	500.00	0.165	0.24719	56.3	0.297	0.000	0.00069	55.4	268.9	0.001
125.67	-325.00	-324.83	125.44	500.00	0.170	0.25437	56.2	0.306	0.000	0.00071	55.5	268.9	0.001
125.67	-320.00	-319.83	125.44	500.00	0.176	0.26187	56.1	0.315	0.001	0.00073	55.6	268.8	0.001
125.67	-315.00	-314.83	125.45	500.00	0.182	0.26971	56.0	0.325	0.001	0.00076	55.7	268.8	0.001
125.67	-310.00	-309.83	125.45	500.00	0.188	0.27790	55.9	0.335	0.001	0.00078	55.9	268.8	0.001
125.67	-305.00	-304.83	125.45	500.00	0.194	0.28648	55.9	0.346	0.001	0.00081	56.0	268.8	0.001
125.67	-300.00	-299.83	125.45	500.00	0.201	0.29547	55.8	0.357	0.001	0.00084	56.1	268.8	0.001
125.67	-295.00	-294.83	125.46	500.00	0.208	0.30489	55.7	0.369	0.001	0.00087	56.3	268.8	0.001
125.67	-290.00	-289.83	125.46	500.00	0.216	0.31477	55.6	0.382	0.001	0.00090	56.4	268.7	0.001
125.67	-285.00	-284.83	125.46	500.00	0.224	0.32515	55.5	0.395	0.001	0.00093	56.6	268.7	0.001
125.67	-280.00	-279.83	125.46	500.00	0.232	0.33605	55.4	0.408	0.001	0.00096	56.7	268.7	0.001
125.67	-275.00	-274.83	125.47	500.00	0.241	0.34752	55.3	0.423	0.001	0.00100	56.9	268.7	0.001
125.67	-270.00	-269.83	125.47	500.00	0.250	0.35959	55.2	0.438	0.001	0.00104	57.1	268.6	0.001
125.67	-265.00	-264.83	125.47	500.00	0.260	0.37230	55.1	0.454	0.001	0.00108	57.3	268.6	0.001
125.67	-260.00	-259.83	125.47	500.00	0.270	0.38571	55.0	0.471	0.001	0.00112	57.5	268.6	0.001
125.67	-255.00	-254.83	125.48	500.00	0.281	0.39986	54.9	0.489	0.001	0.00117	57.7	268.6	0.001
125.67	-250.00	-249.83	125.48	500.00	0.293	0.41481	54.8	0.508	0.001	0.00122	57.9	268.5	0.001
125.67	-245.00	-244.83	125.48	500.00	0.305	0.43063	54.7	0.528	0.001	0.00127	58.2	268.5	0.001
125.67	-240.00	-239.83	125.48	500.00	0.319	0.44738	54.5	0.549	0.001	0.00132	58.4	268.5	0.002
125.67	-235.00	-234.83	125.49	500.00	0.333	0.46514	54.4	0.572	0.001	0.00138	58.7	268.5	0.002

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125.67 -230.00 -229.83 125.49 500.00  0.348  0.48399    54.3  0.596 0.001 0.00145    59.0   268.4 0.002
125.67 -225.00 -224.83 125.49 500.00  0.364  0.50402    54.2  0.622 0.001 0.00151    59.3   268.4 0.002
125.67 -220.00 -219.83 125.49 500.00  0.381  0.52533    54.0  0.649 0.001 0.00159    59.6   268.4 0.002
125.67 -215.00 -214.83 125.50 500.00  0.400  0.54804    53.9  0.678 0.001 0.00166    60.0   268.3 0.002
125.67 -210.00 -209.83 125.50 500.00  0.419  0.57227    53.8  0.709 0.001 0.00175    60.3   268.3 0.002
125.67 -205.00 -204.83 125.50 500.00  0.440  0.59816    53.6  0.743 0.001 0.00184    60.7   268.2 0.002
125.67 -200.00 -199.83 125.50 500.00  0.463  0.62586    53.5  0.779 0.001 0.00193    61.1   268.2 0.002
125.67 -195.00 -194.83 125.51 500.00  0.488  0.65556    53.3  0.817 0.001 0.00204    61.6   268.2 0.002
125.67 -190.00 -189.83 125.51 500.00  0.514  0.68745    53.2  0.859 0.001 0.00215    62.0   268.1 0.002
125.67 -185.00 -184.83 125.51 500.00  0.543  0.72175    53.0  0.903 0.001 0.00227    62.5   268.1 0.003
125.67 -180.00 -179.83 125.51 500.00  0.574  0.75871    52.9  0.952 0.001 0.00240    63.1   268.0 0.003
125.67 -175.00 -174.83 125.52 500.00  0.608  0.79862    52.7  1.004 0.001 0.00255    63.7   268.0 0.003
125.67 -170.00 -169.83 125.52 500.00  0.645  0.84179    52.5  1.060 0.001 0.00271    64.3   267.9 0.003
125.67 -165.00 -164.83 125.52 500.00  0.685  0.88860    52.4  1.122 0.001 0.00288    65.0   267.9 0.003
125.67 -160.00 -159.83 125.52 500.00  0.729  0.93946    52.2  1.189 0.001 0.00307    65.7   267.8 0.003
125.67 -155.00 -154.83 125.53 500.00  0.777  0.99485    52.0  1.262 0.001 0.00328    66.5   267.7 0.004
125.67 -150.00 -149.83 125.53 500.00  0.830  1.05534    51.8  1.342 0.001 0.00351    67.3   267.7 0.004
125.67 -145.00 -144.83 125.53 500.00  0.888  1.12157    51.6  1.430 0.002 0.00376    68.2   267.6 0.004
125.67 -140.00 -139.83 125.53 500.00  0.952  1.19428    51.4  1.527 0.002 0.00405    69.2   267.5 0.004
125.67 -135.00 -134.83 125.54 500.00  1.023  1.27434    51.2  1.634 0.002 0.00436    70.3   267.4 0.005
125.67 -130.00 -129.83 125.54 500.00  1.102  1.36278    51.0  1.753 0.002 0.00471    71.4   267.3 0.005
125.67 -125.00 -124.83 125.54 500.00  1.191  1.46080    50.8  1.885 0.002 0.00510    72.7   267.2 0.005
125.67 -120.00 -119.83 125.54 500.00  1.290  1.56982    50.6  2.032 0.002 0.00554    74.1   267.1 0.006
125.67 -115.00 -114.83 125.55 500.00  1.401  1.69153    50.4  2.196 0.002 0.00603    75.6   267.0 0.006
125.67 -110.00 -109.83 125.55 500.00  1.526  1.82795    50.1  2.381 0.001 0.00659    77.3   266.9 0.007
125.67 -105.00 -104.83 125.55 500.00  1.668  1.98152    49.9  2.590 0.001 0.00722    79.1   266.7 0.007
125.67 -100.00  -99.83 125.55 500.00  1.829  2.15515    49.7  2.827 0.001 0.00794    81.1   266.6 0.008
125.67  -95.00  -94.83 125.56 500.00  2.014  2.35242    49.4  3.097 0.001 0.00877    83.2   266.4 0.009
125.67  -90.00  -89.83 125.56 500.00  2.226  2.57769    49.2  3.406 0.001 0.00970    85.6   266.2 0.010
125.67  -85.00  -84.83 125.56 500.00  2.470  2.83629    48.9  3.761 0.000 0.01078    87.7   266.0 0.011
125.67  -80.00  -79.83 125.56 500.00  2.755  3.13485    48.7  4.173 0.001 0.01201    87.3   265.8 0.012
125.67  -75.00  -74.83 125.57 500.00  3.086  3.48157    48.4  4.653 0.001 0.01342    84.5   265.6 0.013
125.67  -70.00  -69.83 125.57 500.00  3.476  3.88666    48.2  5.214 0.002 0.01504    80.9   265.3 0.015
125.67  -65.00  -64.83 125.57 500.00  3.935  4.36289    47.9  5.875 0.004 0.01687    76.8   265.0 0.017
125.67  -60.00  -59.83 125.57 500.00  4.481  4.92616    47.7  6.659 0.006 0.01892    72.2   264.7 0.020
125.67  -55.00  -54.83 125.58 500.00  5.133  5.59623    47.5  7.594 0.009 0.02117    67.1   264.4 0.023
125.67  -50.00  -49.83 125.58 500.00  5.914  6.39727    47.2  8.712 0.013 0.02354    61.3   264.0 0.027
125.67  -45.00  -44.83 125.58 500.00  6.854  7.35813    47.0 10.056 0.018 0.02585    54.8   263.7 0.032
125.67  -40.00  -39.83 125.58 500.00  7.984  8.51145    46.8 11.670 0.025 0.02777    47.6   263.4 0.037
125.67  -35.00  -34.83 125.59 500.00  9.341  9.89031    46.6 13.604 0.035 0.02867    39.4   263.1 0.045
125.67  -30.00  -29.83 125.59 500.00 10.953 11.51981    46.4 15.896 0.047 0.02759    30.3   262.8 0.054
125.67  -25.00  -24.83 125.59 500.00 12.836 13.39957    46.2 18.556 0.063 0.02323    20.4   262.5 0.066
125.67  -20.00  -19.83 125.59 500.00 14.963 15.47312    46.0 21.524 0.081 0.01534    10.8   262.3 0.081
125.67  -15.00  -14.83 125.60 500.00 17.238 17.58558    45.6 24.625 0.099 0.01642     9.4   262.4 0.100
125.67  -10.00   -9.83 125.60 500.00 19.463 19.45013    45.0 27.516 0.116 0.03912    18.6   263.2 0.121
125.67   -5.00   -4.83 125.60 500.00 21.338 20.67281    44.1 29.710 0.126 0.06961    28.9   265.0 0.143
125.67    0.00    0.17 125.60 500.00 22.520 20.88670    42.8 30.715 0.125 0.09844    38.3   267.7 0.158
125.67    5.00    5.17 125.61 500.00 22.769 19.95395    41.2 30.275 0.111 0.11727    46.6    90.9 0.161
125.67   10.00   10.17 125.61 500.00 22.078 18.06747    39.3 28.528 0.088 0.12190    54.1    94.1 0.150
125.67   15.00   15.17 125.61 500.00 20.674 15.63768    37.1 25.922 0.062 0.11392    61.3    96.7 0.129
125.67   20.00   20.17 125.61 500.00 18.899 13.07575    34.7 22.981 0.038 0.09833    68.8    98.6 0.105
125.67   25.00   25.17 125.62 500.00 17.061 10.65683    32.0 20.116 0.019 0.08012    76.5    99.8 0.082
125.67   30.00   30.17 125.62 500.00 15.375  8.50808    29.0 17.572 0.008 0.06253    82.8   100.3 0.063
125.67   35.00   35.17 125.62 500.00 13.964  6.65976    25.5 15.470 0.010 0.04706    78.5   100.2 0.048
125.67   40.00   40.17 125.62 500.00 12.890  5.10551    21.6 13.865 0.015 0.03410    66.4    99.1 0.037
125.67   45.00   45.17 125.63 500.00 12.191  3.86435    17.6 12.789 0.019 0.02349    50.8    96.2 0.030
125.67   50.00   50.17 125.63 500.00 11.894  3.07133    14.5 12.284 0.023 0.01494    33.3    91.4 0.027
125.67   55.00   55.17 125.63 500.00 12.034  3.02877    14.1 12.410 0.026 0.00825    17.3    86.6 0.027
125.67   60.00   60.17 125.63 500.00 12.656  3.87811    17.0 13.237 0.031 0.00346     6.3    83.9 0.031
125.67   65.00   65.17 125.64 500.00 13.808  5.43916    21.5 14.840 0.037 0.00108     1.7    82.9 0.037
125.67   70.00   70.17 125.64 500.00 15.518  7.59103    26.1 17.275 0.045 0.00157     2.0    82.8 0.045
125.67   75.00   75.17 125.64 500.00 17.738 10.31791    30.2 20.520 0.055 0.00645     6.7    83.4 0.055
125.67   80.00   80.17 125.64 500.00 20.219 13.55037    33.8 24.340 0.063 0.01732    15.4    85.0 0.065
125.67   85.00   85.17 125.65 500.00 22.356 16.96804    37.2 28.066 0.065 0.03386    27.6    87.7 0.072
125.67   90.00   90.17 125.65 500.00 23.233 19.85544    40.5 30.561 0.055 0.05191    43.2    90.7 0.074
125.67   95.00   95.17 125.65 500.00 22.163 21.30076    43.9 30.740 0.035 0.06358    61.1    93.0 0.071
125.67  100.00  100.17 125.65 500.00 19.377 20.84360    47.1 28.459 0.016 0.06314    76.2    95.1 0.064
125.67  105.00  105.17 125.66 500.00 15.846 18.87820    50.0 24.647 0.015 0.05238    73.8    97.3 0.054
125.67  110.00  110.17 125.66 500.00 12.469 16.24129    52.5 20.476 0.022 0.03775    60.3    98.9 0.043
125.67  115.00  115.17 125.66 500.00  9.665 13.60602    54.6 16.690 0.023 0.02439    46.3    99.4 0.033
125.67  120.00  120.17 125.66 500.00  7.490 11.29655    56.5 13.554 0.022 0.01429    33.1   279.1 0.026
125.67  125.00  125.17 125.67 500.00  5.849  9.39296    58.1 11.065 0.019 0.00742    21.1   278.4 0.020
125.67  130.00  130.17 125.67 500.00  4.620  7.86420    59.6  9.121 0.016 0.00316    11.0   277.7 0.016
125.67  135.00  135.17 125.67 500.00  3.695  6.64576    60.9  7.604 0.013 0.00144     6.1   277.1 0.013
125.67  140.00  140.17 125.67 500.00  2.993  5.67277    62.2  6.414 0.011 0.00217    11.1   276.5 0.011
125.67  145.00  145.17 125.68 500.00  2.455  4.89053    63.3  5.472 0.009 0.00294    18.0   276.1 0.009
125.67  150.00  150.17 125.68 500.00  2.037  4.25596    64.4  4.718 0.007 0.00338    24.5   275.6 0.008
125.67  155.00  155.17 125.68 500.00  1.709  3.73611    65.4  4.108 0.006 0.00357    30.5   275.3 0.007
125.67  160.00  160.17 125.68 500.00  1.448  3.30597    66.3  3.609 0.005 0.00361    36.0   274.9 0.006
125.67  165.00  165.17 125.69 500.00  1.239  2.94662    67.2  3.196 0.004 0.00356    41.1   274.6 0.005
125.67  170.00  170.17 125.69 500.00  1.070  2.64364    68.0  2.852 0.003 0.00345    45.8   274.3 0.005
125.67  175.00  175.17 125.69 500.00  0.931  2.38598    68.7  2.561 0.003 0.00331    50.2   274.0 0.004
125.67  180.00  180.17 125.69 500.00  0.817  2.16510    69.3  2.314 0.002 0.00316    54.3   273.7 0.004
125.67  185.00  185.17 125.70 500.00  0.723  1.97434    69.9  2.102 0.002 0.00300    58.2   273.5 0.004
125.67  190.00  190.17 125.70 500.00  0.644  1.80845    70.4  1.920 0.002 0.00284    61.8   273.3 0.003
125.67  195.00  195.17 125.70 500.00  0.577  1.66327    70.9  1.761 0.001 0.00269    65.2   273.1 0.003
125.67  200.00  200.17 125.70 500.00  0.521  1.53546    71.3  1.621 0.001 0.00254    68.3   272.9 0.003
125.67  205.00  205.17 125.71 500.00  0.473  1.42234    71.6  1.499 0.001 0.00241    71.3   272.7 0.003
125.67  210.00  210.17 125.71 500.00  0.432  1.32170    71.9  1.390 0.001 0.00228    74.1   272.6 0.002
125.67  215.00  215.17 125.71 500.00  0.396  1.23176    72.2  1.294 0.001 0.00216    76.7   272.4 0.002
125.67  220.00  220.17 125.71 500.00  0.365  1.15102    72.4  1.208 0.000 0.00204    79.1   272.3 0.002
125.67  225.00  225.17 125.72 500.00  0.339  1.07825    72.6  1.130 0.000 0.00194    81.3   272.2 0.002
125.67  230.00  230.17 125.72 500.00  0.315  1.01242    72.7  1.060 0.000 0.00184    83.4   272.1 0.002
125.67  235.00  235.17 125.72 500.00  0.294  0.95264    72.8  0.997 0.000 0.00175    85.4   272.0 0.002
125.67  240.00  240.17 125.72 500.00  0.276  0.89820    72.9  0.940 0.000 0.00166    87.2   271.9 0.002
125.67  245.00  245.17 125.73 500.00  0.260  0.84846    73.0  0.887 0.000 0.00158    88.6   271.8 0.002
125.67  250.00  250.17 125.73 500.00  0.245  0.80288    73.0  0.839 0.000 0.00151    88.7   271.8 0.002
125.67  255.00  255.17 125.73 500.00  0.232  0.76100    73.1  0.796 0.000 0.00144    87.5   271.7 0.001
125.67  260.00  260.17 125.73 500.00  0.220  0.72242    73.1  0.755 0.000 0.00138    86.1   271.6 0.001
125.67  265.00  265.17 125.74 500.00  0.209  0.68680    73.0  0.718 0.000 0.00132    84.8   271.6 0.001
125.67  270.00  270.17 125.74 500.00  0.200  0.65384    73.0  0.684 0.000 0.00126    83.6   271.5 0.001
125.67  275.00  275.17 125.74 500.00  0.191  0.62326    73.0  0.652 0.000 0.00121    82.4   271.5 0.001
125.67  280.00  280.17 125.74 500.00  0.182  0.59485    73.0  0.622 0.000 0.00116    81.3   271.5 0.001
125.67  285.00  285.17 125.75 500.00  0.175  0.56840    72.9  0.595 0.000 0.00111    80.2   271.4 0.001
125.67  290.00  290.17 125.75 500.00  0.168  0.54372    72.8  0.569 0.000 0.00107    79.3   271.4 0.001
125.67  295.00  295.17 125.75 500.00  0.161  0.52067    72.8  0.545 0.000 0.00102    78.3   271.3 0.001
125.67  300.00  300.17 125.75 500.00  0.155  0.49909    72.7  0.523 0.000 0.00099    77.4   271.3 0.001
125.67  305.00  305.17 125.76 500.00  0.150  0.47886    72.6  0.502 0.000 0.00095    76.6   271.3 0.001
125.67  310.00  310.17 125.76 500.00  0.145  0.45987    72.5  0.482 0.000 0.00091    75.8   271.3 0.001
125.67  315.00  315.17 125.76 500.00  0.140  0.44202    72.5  0.464 0.000 0.00088    75.1   271.2 0.001
125.67  320.00  320.17 125.76 500.00  0.135  0.42521    72.4  0.446 0.000 0.00085    74.4   271.2 0.001
125.67  325.00  325.17 125.77 500.00  0.131  0.40937    72.3  0.430 0.000 0.00082    73.7   271.2 0.001
125.67  330.00  330.17 125.77 500.00  0.127  0.39442    72.2  0.414 0.000 0.00079    73.1   271.2 0.001
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125.67  335.00  335.17 125.77 500.00  0.123  0.38029    72.1  0.400 0.000 0.00077    72.5   271.1 0.001
125.67  340.00  340.17 125.77 500.00  0.119  0.36692    72.0  0.386 0.000 0.00074    71.9   271.1 0.001
125.67  345.00  345.17 125.78 500.00  0.116  0.35427    71.9  0.373 0.000 0.00072    71.3   271.1 0.001
125.67  350.00  350.17 125.78 500.00  0.112  0.34227    71.8  0.360 0.000 0.00069    70.8   271.1 0.001
125.67  355.00  355.17 125.78 500.00  0.109  0.33088    71.7  0.348 0.000 0.00067    70.3   271.1 0.001
125.67  360.00  360.17 125.78 500.00  0.106  0.32007    71.7  0.337 0.000 0.00065    69.8   271.1 0.001
125.67  365.00  365.17 125.79 500.00  0.103  0.30978    71.6  0.327 0.000 0.00063    69.4   271.0 0.001
125.67  370.00  370.17 125.79 500.00  0.101  0.30000    71.5  0.316 0.000 0.00061    69.0   271.0 0.001
125.67  375.00  375.17 125.79 500.00  0.098  0.29068    71.4  0.307 0.000 0.00060    68.5   271.0 0.001
125.67  380.00  380.17 125.79 500.00  0.095  0.28179    71.3  0.298 0.000 0.00058    68.2   271.0 0.001
125.67  385.00  385.17 125.80 500.00  0.093  0.27332    71.2  0.289 0.000 0.00056    67.8   271.0 0.001
125.67  390.00  390.17 125.80 500.00  0.091  0.26523    71.1  0.280 0.000 0.00055    67.4   271.0 0.001
125.67  395.00  395.17 125.80 500.00  0.089  0.25750    71.0  0.272 0.000 0.00053    67.1   270.9 0.001
125.67  400.00  400.17 125.80 500.00  0.086  0.25010    70.9  0.265 0.000 0.00052    66.7   270.9 0.001
125.67  405.00  405.17 125.81 500.00  0.084  0.24303    70.9  0.257 0.000 0.00050    66.4   270.9 0.001
125.67  410.00  410.17 125.81 500.00  0.082  0.23626    70.8  0.250 0.000 0.00049    66.1   270.9 0.001
125.67  415.00  415.17 125.81 500.00  0.081  0.22977    70.7  0.243 0.000 0.00048    65.8   270.9 0.001
125.67  420.00  420.17 125.81 500.00  0.079  0.22355    70.6  0.237 0.000 0.00046    65.5   270.9 0.001
125.67  425.00  425.17 125.82 500.00  0.077  0.21758    70.5  0.231 0.000 0.00045    65.3   270.9 0.000
125.67  430.00  430.17 125.82 500.00  0.075  0.21185    70.4  0.225 0.000 0.00044    65.0   270.9 0.000
125.67  435.00  435.17 125.82 500.00  0.074  0.20635    70.4  0.219 0.000 0.00043    64.7   270.9 0.000
125.67  440.00  440.17 125.82 500.00  0.072  0.20106    70.3  0.214 0.000 0.00042    64.5   270.8 0.000
125.67  445.00  445.17 125.83 500.00  0.070  0.19598    70.2  0.208 0.000 0.00041    64.3   270.8 0.000
125.67  450.00  450.17 125.83 500.00  0.069  0.19109    70.1  0.203 0.000 0.00040    64.0   270.8 0.000
125.67  455.00  455.17 125.83 500.00  0.068  0.18638    70.1  0.198 0.000 0.00039    63.8   270.8 0.000
125.67  460.00  460.17 125.83 500.00  0.066  0.18185    70.0  0.194 0.000 0.00038    63.6   270.8 0.000
125.67  465.00  465.17 125.84 500.00  0.065  0.17748    69.9  0.189 0.000 0.00037    63.4   270.8 0.000
125.67  470.00  470.17 125.84 500.00  0.064  0.17327    69.9  0.185 0.000 0.00036    63.2   270.8 0.000
125.67  475.00  475.17 125.84 500.00  0.062  0.16921    69.8  0.180 0.000 0.00036    63.0   270.8 0.000
125.67  480.00  480.17 125.84 500.00  0.061  0.16529    69.7  0.176 0.000 0.00035    62.8   270.8 0.000
125.67  485.00  485.17 125.85 500.00  0.060  0.16151    69.7  0.172 0.000 0.00034    62.7   270.8 0.000
125.67  490.00  490.17 125.85 500.00  0.059  0.15786    69.6  0.168 0.000 0.00033    62.5   270.8 0.000
125.67  495.00  495.17 125.85 500.00  0.058  0.15433    69.5  0.165 0.000 0.00033    62.3   270.8 0.000
125.67  500.00  500.17 125.85 500.00  0.057  0.15092    69.5  0.161 0.000 0.00032    62.2   270.7 0.000
```

Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

ROW CALC 2 –

EMF Output

NA – Not Used

ROW CALC 3 - Typical Single UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution

EMF Output

```
Meter height above centerline ground:   3.28 (ft)
Cross section offset for graph +/-:   500.00 (ft)
Result interval for graph:              5.00 (ft)
Electric field limit:                   0.00 (kV/m)
Magnetic field limit:                   0.00 (mG)

EMF calculation includes only wires going from structure 25 to structure 26
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EMF Circuit Data:

Set #	Phase #	Conductors Per Phase	Voltage Ph-Ph (kV)	Current (Amps)	Phase Angle (deg)	Bundle Diameter (in)
3	1	1	18	310.000	0	0.000
3	2	1	18	310.000	120	0.000
13	1	1	34.5	870.000	0	0.000
13	2	1	34.5	870.000	120	0.000
13	3	1	34.5	870.000	-120	0.000

Calculated EMF Circuit Data For Last Point:

Wire station and offset are based on alignment closest to point on wire.
In the case of wires that are not parallel, this may result in different stations for the wires and centerline.

Set #	Phase #	Weather Case	Cable Condition	Wind From	Wire X (ft)	Wire Y (ft)	Wire Z (ft)	Wire Station (ft)	Wire Offset (ft)	Eqv. Wire Diameter (in)	Voltage To Gnd. (kV)
3	1	212 Deg F	Creep FE	Left	603.23	124.48	519.22	5649.97	70.00	0.368	10.39
3	2	212 Deg F	Creep FE	Left	602.23	124.48	516.47	5649.97	69.00	0.368	10.39
13	1	212 Deg F	Creep FE	Left	533.23	124.51	496.87	5649.97	-0.00	1.417	19.92
13	2	212 Deg F	Creep FE	Left	532.98	124.51	496.62	5649.97	-0.25	1.417	19.92
13	3	212 Deg F	Creep FE	Left	533.48	124.51	496.62	5649.97	0.25	1.417	19.92

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Maximum magnetic field of 142.88 (mG) found at station 5649.97, offset 70.00 (ft)
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EMF Calculation Results:

Station (ft)	Offset (ft)	X (ft)	Y (ft)	Z (ft)	B Real (mG)	B Img. (mG)	B Phase Angle (deg)	B rms Res. (mG)
5649.97	-500.00	33.23	124.72	500.00	1.781	3.10500	60.2	3.579
5649.97	-495.00	38.23	124.72	500.00	1.796	3.13263	60.2	3.611
5649.97	-490.00	43.23	124.72	500.00	1.812	3.16075	60.2	3.643
5649.97	-485.00	48.23	124.72	500.00	1.829	3.18938	60.2	3.676
5649.97	-480.00	53.23	124.71	500.00	1.845	3.21853	60.2	3.710
5649.97	-475.00	58.23	124.71	500.00	1.862	3.24822	60.2	3.744
5649.97	-470.00	63.23	124.71	500.00	1.879	3.27847	60.2	3.779
5649.97	-465.00	68.23	124.71	500.00	1.897	3.30929	60.2	3.814
5649.97	-460.00	73.23	124.71	500.00	1.915	3.34069	60.2	3.850
5649.97	-455.00	78.23	124.70	500.00	1.933	3.37269	60.2	3.887
5649.97	-450.00	83.23	124.70	500.00	1.951	3.40531	60.2	3.925
5649.97	-445.00	88.23	124.70	500.00	1.970	3.43857	60.2	3.963
5649.97	-440.00	93.23	124.70	500.00	1.990	3.47249	60.2	4.002
5649.97	-435.00	98.23	124.70	500.00	2.009	3.50708	60.2	4.042
5649.97	-430.00	103.23	124.69	500.00	2.029	3.54237	60.2	4.082
5649.97	-425.00	108.23	124.69	500.00	2.050	3.57838	60.2	4.124
5649.97	-420.00	113.23	124.69	500.00	2.071	3.61513	60.2	4.166
5649.97	-415.00	118.23	124.69	500.00	2.092	3.65264	60.2	4.209
5649.97	-410.00	123.23	124.68	500.00	2.114	3.69094	60.2	4.253
5649.97	-405.00	128.23	124.68	500.00	2.136	3.73006	60.2	4.298
5649.97	-400.00	133.23	124.68	500.00	2.158	3.77001	60.2	4.344
5649.97	-395.00	138.23	124.68	500.00	2.182	3.81083	60.2	4.391
5649.97	-390.00	143.23	124.68	500.00	2.205	3.85254	60.2	4.439
5649.97	-385.00	148.23	124.67	500.00	2.229	3.89518	60.2	4.488
5649.97	-380.00	153.23	124.67	500.00	2.254	3.93877	60.2	4.538
5649.97	-375.00	158.23	124.67	500.00	2.279	3.98335	60.2	4.589
5649.97	-370.00	163.23	124.67	500.00	2.305	4.02896	60.2	4.642
5649.97	-365.00	168.23	124.67	500.00	2.332	4.07562	60.2	4.695
5649.97	-360.00	173.23	124.66	500.00	2.359	4.12338	60.2	4.750
5649.97	-355.00	178.23	124.66	500.00	2.386	4.17227	60.2	4.806
5649.97	-350.00	183.23	124.66	500.00	2.415	4.22234	60.2	4.864
5649.97	-345.00	188.23	124.66	500.00	2.444	4.27363	60.2	4.923
5649.97	-340.00	193.23	124.66	500.00	2.473	4.32617	60.2	4.983
5649.97	-335.00	198.23	124.65	500.00	2.504	4.38004	60.2	5.045
5649.97	-330.00	203.23	124.65	500.00	2.535	4.43526	60.3	5.109
5649.97	-325.00	208.23	124.65	500.00	2.567	4.49189	60.3	5.174
5649.97	-320.00	213.23	124.65	500.00	2.600	4.55000	60.3	5.240
5649.97	-315.00	218.23	124.64	500.00	2.633	4.60963	60.3	5.309
5649.97	-310.00	223.23	124.64	500.00	2.668	4.67084	60.3	5.379
5649.97	-305.00	228.23	124.64	500.00	2.703	4.73371	60.3	5.451
5649.97	-300.00	233.23	124.64	500.00	2.740	4.79830	60.3	5.525
5649.97	-295.00	238.23	124.64	500.00	2.777	4.86469	60.3	5.602
5649.97	-290.00	243.23	124.63	500.00	2.816	4.93293	60.3	5.680
5649.97	-285.00	248.23	124.63	500.00	2.855	5.00313	60.3	5.760
5649.97	-280.00	253.23	124.63	500.00	2.896	5.07536	60.3	5.843
5649.97	-275.00	258.23	124.63	500.00	2.937	5.14972	60.3	5.929
5649.97	-270.00	263.23	124.63	500.00	2.980	5.22629	60.3	6.016
5649.97	-265.00	268.23	124.62	500.00	3.025	5.30518	60.3	6.107
5649.97	-260.00	273.23	124.62	500.00	3.070	5.38650	60.3	6.200
5649.97	-255.00	278.23	124.62	500.00	3.117	5.47037	60.3	6.296
5649.97	-250.00	283.23	124.62	500.00	3.166	5.55689	60.3	6.396
5649.97	-245.00	288.23	124.62	500.00	3.216	5.64621	60.3	6.498
5649.97	-240.00	293.23	124.61	500.00	3.268	5.73846	60.3	6.604
5649.97	-235.00	298.23	124.61	500.00	3.321	5.83380	60.3	6.713
5649.97	-230.00	303.23	124.61	500.00	3.376	5.93237	60.4	6.826
5649.97	-225.00	308.23	124.61	500.00	3.433	6.03434	60.4	6.943
5649.97	-220.00	313.23	124.61	500.00	3.492	6.13991	60.4	7.064
5649.97	-215.00	318.23	124.60	500.00	3.553	6.24926	60.4	7.189
5649.97	-210.00	323.23	124.60	500.00	3.616	6.36259	60.4	7.318

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5649.97 -205.00  328.23 124.60 500.00  3.682   6.48015    60.4   7.453
5649.97 -200.00  333.23 124.60 500.00  3.750   6.60217    60.4   7.593
5649.97 -195.00  338.23 124.59 500.00  3.820   6.72890    60.4   7.738
5649.97 -190.00  343.23 124.59 500.00  3.893   6.86064    60.4   7.888
5649.97 -185.00  348.23 124.59 500.00  3.969   6.99769    60.4   8.045
5649.97 -180.00  353.23 124.59 500.00  4.048   7.14038    60.4   8.208
5649.97 -175.00  358.23 124.59 500.00  4.130   7.28908    60.5   8.378
5649.97 -170.00  363.23 124.58 500.00  4.216   7.44417    60.5   8.555
5649.97 -165.00  368.23 124.58 500.00  4.306   7.60609    60.5   8.740
5649.97 -160.00  373.23 124.58 500.00  4.399   7.77530    60.5   8.933
5649.97 -155.00  378.23 124.58 500.00  4.496   7.95233    60.5   9.135
5649.97 -150.00  383.23 124.58 500.00  4.598   8.13774    60.5   9.347
5649.97 -145.00  388.23 124.57 500.00  4.705   8.33216    60.5   9.569
5649.97 -140.00  393.23 124.57 500.00  4.816   8.53627    60.6   9.801
5649.97 -135.00  398.23 124.57 500.00  4.933   8.75084    60.6  10.046
5649.97 -130.00  403.23 124.57 500.00  5.056   8.97674    60.6  10.303
5649.97 -125.00  408.23 124.57 500.00  5.186   9.21491    60.6  10.574
5649.97 -120.00  413.23 124.56 500.00  5.322   9.46643    60.7  10.860
5649.97 -115.00  418.23 124.56 500.00  5.466   9.73251    60.7  11.162
5649.97 -110.00  423.23 124.56 500.00  5.618  10.01453    60.7  11.483
5649.97 -105.00  428.23 124.56 500.00  5.779  10.31404    60.7  11.823
5649.97 -100.00  433.23 124.55 500.00  5.950  10.63285    60.8  12.184
5649.97  -95.00  438.23 124.55 500.00  6.131  10.97304    60.8  12.570
5649.97  -90.00  443.23 124.55 500.00  6.325  11.33703    60.8  12.982
5649.97  -85.00  448.23 124.55 500.00  6.531  11.72768    60.9  13.424
5649.97  -80.00  453.23 124.55 500.00  6.753  12.14839    60.9  13.899
5649.97  -75.00  458.23 124.54 500.00  6.992  12.60327    61.0  14.413
5649.97  -70.00  463.23 124.54 500.00  7.249  13.09734    61.0  14.970
5649.97  -65.00  468.23 124.54 500.00  7.529  13.63687    61.1  15.577
5649.97  -60.00  473.23 124.54 500.00  7.836  14.22984    61.2  16.245
5649.97  -55.00  478.23 124.54 500.00  8.174  14.88664    61.2  16.983
5649.97  -50.00  483.23 124.53 500.00  8.552  15.62124    61.3  17.809
5649.97  -45.00  488.23 124.53 500.00  8.981  16.45305    61.4  18.745
5649.97  -40.00  493.23 124.53 500.00  9.480  17.41003    61.4  19.824
5649.97  -35.00  498.23 124.53 500.00 10.082  18.53436    61.5  21.099
5649.97  -30.00  503.23 124.53 500.00 10.846  19.89258    61.4  22.657
5649.97  -25.00  508.23 124.52 500.00 11.898  21.59430    61.1  24.655
5649.97  -20.00  513.23 124.52 500.00 13.517  23.82342    60.4  27.391
5649.97  -15.00  518.23 124.52 500.00 16.392  26.85920    58.6  31.466
5649.97  -10.00  523.23 124.52 500.00 22.255  30.79072    54.1  37.991
5649.97   -5.00  528.23 124.51 500.00 33.604  32.78843    44.3  46.950
5649.97    0.00  533.23 124.51 500.00 33.793  31.30840    42.8  46.067
5649.97    5.00  538.23 124.51 500.00  6.739  42.88318    81.1  43.409
5649.97   10.00  543.23 124.51 500.00 10.807  41.44299    75.4  42.829
5649.97   15.00  548.23 124.51 500.00 15.523  39.61842    68.6  42.551
5649.97   20.00  553.23 124.50 500.00 18.189  39.93435    65.5  43.881
5649.97   25.00  558.23 124.50 500.00 20.402  41.95523    64.1  46.653
5649.97   30.00  563.23 124.50 500.00 22.685  45.39162    63.4  50.744
5649.97   35.00  568.23 124.50 500.00 25.269  50.25292    63.3  56.248
5649.97   40.00  573.23 124.50 500.00 28.302  56.79260    63.5  63.454
5649.97   45.00  578.23 124.49 500.00 31.891  65.49782    64.0  72.849
5649.97   50.00  583.23 124.49 500.00 36.052  77.08348    64.9  85.097
5649.97   55.00  588.23 124.49 500.00 40.570  92.29510    66.3 100.818
5649.97   60.00  593.23 124.49 500.00 44.821 110.83335    68.0 119.553
5649.97   65.00  598.23 124.49 500.00 48.276 128.11014    69.4 136.904
5649.97   70.00  603.23 124.48 500.00 51.557 133.25879    68.8 142.885
5649.97   75.00  608.23 124.48 500.00 53.069 121.48267    66.4 132.568
5649.97   80.00  613.23 124.48 500.00 50.278 102.38794    63.8 114.066
5649.97   85.00  618.23 124.48 500.00 44.885  84.73626    62.1  95.890
5649.97   90.00  623.23 124.47 500.00 39.194  70.80993    61.0  80.934
5649.97   95.00  628.23 124.47 500.00 34.176  60.20251    60.4  69.227
5649.97  100.00  633.23 124.47 500.00 30.006  52.07957    60.1  60.105
5649.97  105.00  638.23 124.47 500.00 26.594  45.74942    59.8  52.917
5649.97  110.00  643.23 124.47 500.00 23.798  40.71746    59.7  47.162
5649.97  115.00  648.23 124.46 500.00 21.488  36.64091    59.6  42.477
5649.97  120.00  653.23 124.46 500.00 19.558  33.28145    59.6  38.603
5649.97  125.00  658.23 124.46 500.00 17.928  30.47081    59.5  35.354
5649.97  130.00  663.23 124.46 500.00 16.538  28.08797    59.5  32.595
5649.97  135.00  668.23 124.46 500.00 15.340  26.04417    59.5  30.226
5649.97  140.00  673.23 124.45 500.00 14.298  24.27311    59.5  28.171
5649.97  145.00  678.23 124.45 500.00 13.385  22.72445    59.5  26.373
5649.97  150.00  683.23 124.45 500.00 12.579  21.35932    59.5  24.788
5649.97  155.00  688.23 124.45 500.00 11.862  20.14728    59.5  23.380
5649.97  160.00  693.23 124.45 500.00 11.221  19.06422    59.5  22.121
5649.97  165.00  698.23 124.44 500.00 10.644  18.09078    59.5  20.990
5649.97  170.00  703.23 124.44 500.00 10.123  17.21124    59.5  19.968
5649.97  175.00  708.23 124.44 500.00  9.650  16.41275    59.5  19.040
5649.97  180.00  713.23 124.44 500.00  9.219  15.68467    59.6  18.193
5649.97  185.00  718.23 124.43 500.00  8.824  15.01812    59.6  17.418
5649.97  190.00  723.23 124.43 500.00  8.461  14.40568    59.6  16.707
5649.97  195.00  728.23 124.43 500.00  8.126  13.84104    59.6  16.050
5649.97  200.00  733.23 124.43 500.00  7.817  13.31884    59.6  15.443
5649.97  205.00  738.23 124.43 500.00  7.530  12.83449    59.6  14.880
5649.97  210.00  743.23 124.42 500.00  7.264  12.38402    59.6  14.357
5649.97  215.00  748.23 124.42 500.00  7.015  11.96403    59.6  13.869
5649.97  220.00  753.23 124.42 500.00  6.783  11.57152    59.6  13.413
5649.97  225.00  758.23 124.42 500.00  6.565  11.20390    59.6  12.986
5649.97  230.00  763.23 124.42 500.00  6.361  10.85886    59.6  12.585
5649.97  235.00  768.23 124.41 500.00  6.169  10.53441    59.6  12.208
5649.97  240.00  773.23 124.41 500.00  5.989  10.22875    59.7  11.853
5649.97  245.00  778.23 124.41 500.00  5.818   9.94031    59.7  11.518
5649.97  250.00  783.23 124.41 500.00  5.657   9.66766    59.7  11.201
5649.97  255.00  788.23 124.41 500.00  5.505   9.40955    59.7  10.902
5649.97  260.00  793.23 124.40 500.00  5.360   9.16485    59.7  10.617
5649.97  265.00  798.23 124.40 500.00  5.223   8.93255    59.7  10.348
5649.97  270.00  803.23 124.40 500.00  5.093   8.71171    59.7  10.091
5649.97  275.00  808.23 124.40 500.00  4.969   8.50153    59.7   9.847
5649.97  280.00  813.23 124.39 500.00  4.851   8.30124    59.7   9.615
5649.97  285.00  818.23 124.39 500.00  4.738   8.11016    59.7   9.393
5649.97  290.00  823.23 124.39 500.00  4.631   7.92768    59.7   9.181
5649.97  295.00  828.23 124.39 500.00  4.528   7.75322    59.7   8.979
5649.97  300.00  833.23 124.39 500.00  4.430   7.58627    59.7   8.785
5649.97  305.00  838.23 124.38 500.00  4.336   7.42635    59.7   8.599
5649.97  310.00  843.23 124.38 500.00  4.245   7.27304    59.7   8.421
5649.97  315.00  848.23 124.38 500.00  4.159   7.12592    59.7   8.251
5649.97  320.00  853.23 124.38 500.00  4.076   6.98464    59.7   8.087
5649.97  325.00  858.23 124.38 500.00  3.996   6.84885    59.7   7.929
5649.97  330.00  863.23 124.37 500.00  3.919   6.71823    59.7   7.778
5649.97  335.00  868.23 124.37 500.00  3.845   6.59250    59.7   7.632
5649.97  340.00  873.23 124.37 500.00  3.774   6.47139    59.8   7.491
5649.97  345.00  878.23 124.37 500.00  3.705   6.35465    59.8   7.356
5649.97  350.00  883.23 124.37 500.00  3.639   6.24205    59.8   7.225
5649.97  355.00  888.23 124.36 500.00  3.575   6.13337    59.8   7.099
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5649.97  360.00  893.23 124.36 500.00  3.514   6.02840    59.8   6.978
5649.97  365.00  898.23 124.36 500.00  3.454   5.92697    59.8   6.860
5649.97  370.00  903.23 124.36 500.00  3.396   5.82889    59.8   6.746
5649.97  375.00  908.23 124.35 500.00  3.341   5.73401    59.8   6.636
5649.97  380.00  913.23 124.35 500.00  3.287   5.64216    59.8   6.530
5649.97  385.00  918.23 124.35 500.00  3.235   5.55321    59.8   6.427
5649.97  390.00  923.23 124.35 500.00  3.184   5.46702    59.8   6.327
5649.97  395.00  928.23 124.35 500.00  3.135   5.38347    59.8   6.230
5649.97  400.00  933.23 124.34 500.00  3.088   5.30243    59.8   6.136
5649.97  405.00  938.23 124.34 500.00  3.041   5.22380    59.8   6.045
5649.97  410.00  943.23 124.34 500.00  2.997   5.14746    59.8   5.956
5649.97  415.00  948.23 124.34 500.00  2.953   5.07332    59.8   5.870
5649.97  420.00  953.23 124.34 500.00  2.911   5.00129    59.8   5.787
5649.97  425.00  958.23 124.33 500.00  2.870   4.93127    59.8   5.706
5649.97  430.00  963.23 124.33 500.00  2.830   4.86319    59.8   5.627
5649.97  435.00  968.23 124.33 500.00  2.791   4.79696    59.8   5.550
5649.97  440.00  973.23 124.33 500.00  2.754   4.73251    59.8   5.475
5649.97  445.00  978.23 124.33 500.00  2.717   4.66977    59.8   5.403
5649.97  450.00  983.23 124.32 500.00  2.681   4.60868    59.8   5.332
5649.97  455.00  988.23 124.32 500.00  2.646   4.54916    59.8   5.263
5649.97  460.00  993.23 124.32 500.00  2.612   4.49115    59.8   5.196
5649.97  465.00  998.23 124.32 500.00  2.579   4.43461    59.8   5.130
5649.97  470.00 1003.23 124.31 500.00  2.547   4.37948    59.8   5.066
5649.97  475.00 1008.23 124.31 500.00  2.515   4.32570    59.8   5.004
5649.97  480.00 1013.23 124.31 500.00  2.485   4.27322    59.8   4.943
5649.97  485.00 1018.23 124.31 500.00  2.455   4.22200    59.8   4.884
5649.97  490.00 1023.23 124.31 500.00  2.426   4.17200    59.8   4.826
5649.97  495.00 1028.23 124.30 500.00  2.397   4.12316    59.8   4.769
5649.97  500.00 1033.23 124.30 500.00  2.369   4.07546    59.8   4.714
```

Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

ROW CALC 4 - Typical Double UG 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution

EMF Output

```
Meter height above centerline ground:   3.28 (ft)
Cross section offset for graph +/-:   500.00 (ft)
Result interval for graph:              5.00 (ft)
Electric field limit:                   0.00 (kV/m)
Magnetic field limit:                   0.00 (mG)

EMF calculation includes only wires going from structure 29 to structure 30
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EMF Circuit Data:

Set #	Phase #	Conductors Per Phase	Voltage Ph-Ph (kV)	Current (Amps)	Phase Angle (deg)	Bundle Diameter (in)
3	1	1	18	310.000	0	0.000
3	2	1	18	310.000	120	0.000
13	1	1	34.5	870.000	0	0.000
13	2	1	34.5	870.000	120	0.000
13	3	1	34.5	870.000	-120	0.000
14	1	1	34.5	870.000	0	0.000
14	2	1	34.5	870.000	120	0.000
14	3	1	34.5	870.000	-120	0.000

Calculated EMF Circuit Data For Last Point:

**Wire station and offset are based on alignment closest to point on wire.
In the case of wires that are not parallel, this may result in different stations for the wires and centerline.**

Set #	Phase #	Weather Case	Cable Condition	Wind From	Wire X (ft)	Wire Y (ft)	Wire Z (ft)	Wire Station (ft)	Wire Offset (ft)	Eqv. Wire Diameter (in)	Voltage To Gnd. (kV)
3	1	212 Deg F	Creep FE	Left	603.88	1375.14	515.93	6699.13	70.00	0.368	10.39
3	2	212 Deg F	Creep FE	Left	602.88	1375.14	513.18	6699.13	69.00	0.368	10.39
13	1	212 Deg F	Creep FE	Left	531.63	1375.00	496.86	6699.13	-2.25	1.417	19.92
13	2	212 Deg F	Creep FE	Left	531.88	1375.00	496.61	6699.13	-2.00	1.417	19.92
13	3	212 Deg F	Creep FE	Left	531.38	1375.00	496.61	6699.13	-2.50	1.417	19.92
14	1	212 Deg F	Creep FE	Left	536.13	1375.01	496.86	6699.13	2.25	1.417	19.92
14	2	212 Deg F	Creep FE	Left	535.88	1375.01	496.61	6699.13	2.00	1.417	19.92
14	3	212 Deg F	Creep FE	Left	536.38	1375.01	496.61	6699.13	2.50	1.417	19.92

```
Maximum magnetic field of 187.04 (mG) found at station 6699.13, offset 70.00 (ft)
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EMF Calculation Results:

Station (ft)	Offset (ft)	X (ft)	Y (ft)	Z (ft)	B Real (mG)	B Img. (mG)	B Phase Angle (deg)	B rms Res. (mG)
6699.13	-500.00	33.88	1373.99	500.00	1.781	3.09531	60.1	3.571
6699.13	-495.00	38.88	1374.00	500.00	1.797	3.12274	60.1	3.603
6699.13	-490.00	43.88	1374.01	500.00	1.813	3.15066	60.1	3.635
6699.13	-485.00	48.88	1374.02	500.00	1.829	3.17908	60.1	3.668
6699.13	-480.00	53.88	1374.03	500.00	1.846	3.20802	60.1	3.701
6699.13	-475.00	58.88	1374.04	500.00	1.863	3.23749	60.1	3.735
6699.13	-470.00	63.88	1374.05	500.00	1.880	3.26751	60.1	3.770
6699.13	-465.00	68.88	1374.06	500.00	1.898	3.29809	60.1	3.805
6699.13	-460.00	73.88	1374.07	500.00	1.915	3.32925	60.1	3.841
6699.13	-455.00	78.88	1374.09	500.00	1.934	3.36100	60.1	3.878
6699.13	-450.00	83.88	1374.10	500.00	1.952	3.39336	60.1	3.915
6699.13	-445.00	88.88	1374.11	500.00	1.971	3.42635	60.1	3.953
6699.13	-440.00	93.88	1374.12	500.00	1.990	3.45999	60.1	3.992
6699.13	-435.00	98.88	1374.13	500.00	2.010	3.49429	60.1	4.031
6699.13	-430.00	103.88	1374.14	500.00	2.030	3.52929	60.1	4.072
6699.13	-425.00	108.88	1374.15	500.00	2.051	3.56499	60.1	4.113
6699.13	-420.00	113.88	1374.16	500.00	2.072	3.60142	60.1	4.155
6699.13	-415.00	118.88	1374.17	500.00	2.093	3.63860	60.1	4.198
6699.13	-410.00	123.88	1374.18	500.00	2.115	3.67655	60.1	4.241
6699.13	-405.00	128.88	1374.19	500.00	2.137	3.71531	60.1	4.286
6699.13	-400.00	133.88	1374.20	500.00	2.160	3.75489	60.1	4.332
6699.13	-395.00	138.88	1374.21	500.00	2.183	3.79533	60.1	4.378
6699.13	-390.00	143.88	1374.22	500.00	2.206	3.83664	60.1	4.426
6699.13	-385.00	148.88	1374.23	500.00	2.231	3.87887	60.1	4.475
6699.13	-380.00	153.88	1374.24	500.00	2.255	3.92203	60.1	4.524
6699.13	-375.00	158.88	1374.25	500.00	2.281	3.96616	60.1	4.575
6699.13	-370.00	163.88	1374.26	500.00	2.307	4.01130	60.1	4.627
6699.13	-365.00	168.88	1374.27	500.00	2.333	4.05747	60.1	4.680
6699.13	-360.00	173.88	1374.28	500.00	2.360	4.10473	60.1	4.735
6699.13	-355.00	178.88	1374.29	500.00	2.388	4.15309	60.1	4.791
6699.13	-350.00	183.88	1374.30	500.00	2.416	4.20261	60.1	4.848
6699.13	-345.00	188.88	1374.31	500.00	2.445	4.25332	60.1	4.906
6699.13	-340.00	193.88	1374.32	500.00	2.475	4.30526	60.1	4.966
6699.13	-335.00	198.88	1374.33	500.00	2.506	4.35850	60.1	5.027
6699.13	-330.00	203.88	1374.34	500.00	2.537	4.41306	60.1	5.090
6699.13	-325.00	208.88	1374.35	500.00	2.569	4.46901	60.1	5.155
6699.13	-320.00	213.88	1374.36	500.00	2.602	4.52639	60.1	5.221
6699.13	-315.00	218.88	1374.37	500.00	2.635	4.58527	60.1	5.289
6699.13	-310.00	223.88	1374.38	500.00	2.670	4.64569	60.1	5.358
6699.13	-305.00	228.88	1374.39	500.00	2.706	4.70773	60.1	5.430
6699.13	-300.00	233.88	1374.40	500.00	2.742	4.77145	60.1	5.503
6699.13	-295.00	238.88	1374.41	500.00	2.780	4.83691	60.1	5.579
6699.13	-290.00	243.88	1374.42	500.00	2.818	4.90419	60.1	5.656
6699.13	-285.00	248.88	1374.43	500.00	2.858	4.97337	60.1	5.736
6699.13	-280.00	253.88	1374.44	500.00	2.899	5.04453	60.1	5.818
6699.13	-275.00	258.88	1374.45	500.00	2.941	5.11775	60.1	5.902
6699.13	-270.00	263.88	1374.46	500.00	2.984	5.19312	60.1	5.989
6699.13	-265.00	268.88	1374.47	500.00	3.028	5.27075	60.1	6.079
6699.13	-260.00	273.88	1374.48	500.00	3.074	5.35073	60.1	6.171
6699.13	-255.00	278.88	1374.49	500.00	3.121	5.43317	60.1	6.266
6699.13	-250.00	283.88	1374.50	500.00	3.170	5.51818	60.1	6.364
6699.13	-245.00	288.88	1374.51	500.00	3.220	5.60590	60.1	6.465

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6699.13 -240.00  293.88 1374.52 500.00  3.272   5.69645    60.1   6.569
6699.13 -235.00  298.88 1374.53 500.00  3.326   5.78996    60.1   6.677
6699.13 -230.00  303.88 1374.54 500.00  3.381   5.88660    60.1   6.789
6699.13 -225.00  308.88 1374.55 500.00  3.438   5.98650    60.1   6.904
6699.13 -220.00  313.88 1374.56 500.00  3.498   6.08986    60.1   7.023
6699.13 -215.00  318.88 1374.57 500.00  3.559   6.19683    60.1   7.146
6699.13 -210.00  323.88 1374.58 500.00  3.623   6.30763    60.1   7.274
6699.13 -205.00  328.88 1374.59 500.00  3.689   6.42245    60.1   7.406
6699.13 -200.00  333.88 1374.60 500.00  3.757   6.54151    60.1   7.544
6699.13 -195.00  338.88 1374.61 500.00  3.828   6.66507    60.1   7.686
6699.13 -190.00  343.88 1374.62 500.00  3.901   6.79337    60.1   7.834
6699.13 -185.00  348.88 1374.63 500.00  3.978   6.92670    60.1   7.988
6699.13 -180.00  353.88 1374.64 500.00  4.058   7.06535    60.1   8.148
6699.13 -175.00  358.88 1374.65 500.00  4.141   7.20964    60.1   8.314
6699.13 -170.00  363.88 1374.66 500.00  4.227   7.35993    60.1   8.488
6699.13 -165.00  368.88 1374.67 500.00  4.318   7.51660    60.1   8.668
6699.13 -160.00  373.88 1374.68 500.00  4.412   7.68005    60.1   8.857
6699.13 -155.00  378.88 1374.69 500.00  4.510   7.85074    60.1   9.054
6699.13 -150.00  383.88 1374.70 500.00  4.613   8.02915    60.1   9.260
6699.13 -145.00  388.88 1374.71 500.00  4.721   8.21582    60.1   9.476
6699.13 -140.00  393.88 1374.72 500.00  4.835   8.41132    60.1   9.702
6699.13 -135.00  398.88 1374.73 500.00  4.954   8.61630    60.1   9.939
6699.13 -130.00  403.88 1374.74 500.00  5.079   8.83144    60.1  10.188
6699.13 -125.00  408.88 1374.75 500.00  5.211   9.05751    60.1  10.449
6699.13 -120.00  413.88 1374.76 500.00  5.350   9.29535    60.1  10.725
6699.13 -115.00  418.88 1374.77 500.00  5.497   9.54589    60.1  11.015
6699.13 -110.00  423.88 1374.78 500.00  5.653   9.81014    60.0  11.322
6699.13 -105.00  428.88 1374.79 500.00  5.818  10.08924    60.0  11.647
6699.13 -100.00  433.88 1374.80 500.00  5.994  10.38443    60.0  11.990
6699.13  -95.00  438.88 1374.81 500.00  6.182  10.69709    60.0  12.355
6699.13  -90.00  443.88 1374.82 500.00  6.383  11.02873    59.9  12.743
6699.13  -85.00  448.88 1374.83 500.00  6.600  11.38104    59.9  13.156
6699.13  -80.00  453.88 1374.84 500.00  6.833  11.75586    59.8  13.597
6699.13  -75.00  458.88 1374.85 500.00  7.086  12.15521    59.8  14.070
6699.13  -70.00  463.88 1374.86 500.00  7.363  12.58127    59.7  14.577
6699.13  -65.00  468.88 1374.87 500.00  7.668  13.03634    59.5  15.124
6699.13  -60.00  473.88 1374.88 500.00  8.007  13.52279    59.4  15.715
6699.13  -55.00  478.88 1374.89 500.00  8.390  14.04287    59.1  16.358
6699.13  -50.00  483.88 1374.90 500.00  8.831  14.59840    58.8  17.061
6699.13  -45.00  488.88 1374.91 500.00  9.351  15.19021    58.4  17.838
6699.13  -40.00  493.88 1374.92 500.00  9.988  15.81711    57.7  18.706
6699.13  -35.00  498.88 1374.93 500.00 10.807  16.47440    56.7  19.703
6699.13  -30.00  503.88 1374.94 500.00 11.935  17.15320    55.2  20.897
6699.13  -25.00  508.88 1374.95 500.00 13.637  17.85197    52.6  22.465
6699.13  -20.00  513.88 1374.96 500.00 16.507  18.67824    48.5  24.927
6699.13  -15.00  518.88 1374.97 500.00 21.983  20.59461    43.1  30.123
6699.13  -10.00  523.88 1374.98 500.00 33.408  29.68270    41.6  44.689
6699.13   -5.00  528.88 1374.99 500.00 51.539  60.21529    49.4  79.260
6699.13    0.00  533.88 1375.00 500.00 47.158  61.98101    52.7  77.881
6699.13    5.00  538.88 1375.01 500.00 26.224  15.09089    29.9  30.256
6699.13   10.00  543.88 1375.02 500.00 11.697  31.09925    69.4  33.226
6699.13   15.00  548.88 1375.03 500.00 14.793  34.72135    66.9  37.741
6699.13   20.00  553.88 1375.04 500.00 18.035  36.99614    64.0  41.158
6699.13   25.00  558.88 1375.05 500.00 20.684  40.16192    62.8  45.175
6699.13   30.00  563.88 1375.06 500.00 23.317  44.48979    62.3  50.230
6699.13   35.00  568.88 1375.07 500.00 26.269  50.22002    62.4  56.676
6699.13   40.00  573.88 1375.08 500.00 29.783  57.81562    62.7  65.036
6699.13   45.00  578.88 1375.09 500.00 34.076  68.08670    63.4  76.138
6699.13   50.00  583.88 1375.10 500.00 39.312  82.38948    64.5  91.288
6699.13   55.00  588.88 1375.11 500.00 45.362 102.84929    66.2 112.409
6699.13   60.00  593.88 1375.12 500.00 51.134 131.72265    68.8 141.300
6699.13   65.00  598.88 1375.13 500.00 54.859 164.97206    71.6 173.854
6699.13   70.00  603.88 1375.14 500.00 60.521 176.97541    71.1 187.038
6699.13   75.00  608.88 1375.15 500.00 65.115 152.11148    66.8 165.463
6699.13   80.00  613.88 1375.16 500.00 59.942 118.98853    63.3 133.234
6699.13   85.00  618.88 1375.17 500.00 51.131  93.59028    61.4 106.647
6699.13   90.00  623.88 1375.18 500.00 43.078  75.84700    60.4  87.227
6699.13   95.00  628.88 1375.19 500.00 36.646  63.29393    59.9  73.137
6699.13  100.00  633.88 1375.20 500.00 31.639  54.11095    59.7  62.682
6699.13  105.00  638.88 1375.21 500.00 27.717  47.16323    59.6  54.705
6699.13  110.00  643.88 1375.22 500.00 24.599  41.74936    59.5  48.457
6699.13  115.00  648.88 1375.23 500.00 22.077  37.42422    59.5  43.451
6699.13  120.00  653.88 1375.24 500.00 20.003  33.89569    59.5  39.358
6699.13  125.00  658.88 1375.25 500.00 18.273  30.96569    59.5  35.955
6699.13  130.00  663.88 1375.26 500.00 16.810  28.49581    59.5  33.084
6699.13  135.00  668.88 1375.27 500.00 15.558  26.38675    59.5  30.632
6699.13  140.00  673.88 1375.28 500.00 14.476  24.56557    59.5  28.513
6699.13  145.00  678.88 1375.29 500.00 13.532  22.97758    59.5  26.666
6699.13  150.00  683.88 1375.30 500.00 12.701  21.58101    59.5  25.041
6699.13  155.00  688.88 1375.31 500.00 11.966  20.34344    59.5  23.601
6699.13  160.00  693.88 1375.32 500.00 11.309  19.23932    59.6  22.317
6699.13  165.00  698.88 1375.33 500.00 10.720  18.24830    59.6  21.164
6699.13  170.00  703.88 1375.34 500.00 10.189  17.35391    59.6  20.124
6699.13  175.00  708.88 1375.35 500.00  9.708  16.54274    59.6  19.181
6699.13  180.00  713.88 1375.36 500.00  9.269  15.80374    59.6  18.321
6699.13  185.00  718.88 1375.37 500.00  8.868  15.12771    59.6  17.536
6699.13  190.00  723.88 1375.38 500.00  8.500  14.50697    59.6  16.814
6699.13  195.00  728.88 1375.39 500.00  8.162  13.93501    59.6  16.149
6699.13  200.00  733.88 1375.40 500.00  7.849  13.40633    59.7  15.535
6699.13  205.00  738.88 1375.41 500.00  7.559  12.91619    59.7  14.965
6699.13  210.00  743.88 1375.42 500.00  7.289  12.46054    59.7  14.436
6699.13  215.00  748.88 1375.43 500.00  7.038  12.03588    59.7  13.943
6699.13  220.00  753.88 1375.44 500.00  6.804  11.63915    59.7  13.482
6699.13  225.00  758.88 1375.45 500.00  6.584  11.26769    59.7  13.051
6699.13  230.00  763.88 1375.47 500.00  6.379  10.91917    59.7  12.646
6699.13  235.00  768.88 1375.48 500.00  6.185  10.59152    59.7  12.265
6699.13  240.00  773.88 1375.49 500.00  6.004  10.28293    59.7  11.907
6699.13  245.00  778.88 1375.50 500.00  5.832   9.99178    59.7  11.569
6699.13  250.00  783.88 1375.51 500.00  5.670   9.71665    59.7  11.250
6699.13  255.00  788.88 1375.52 500.00  5.517   9.45624    59.7  10.948
6699.13  260.00  793.88 1375.53 500.00  5.371   9.20941    59.7  10.661
6699.13  265.00  798.88 1375.54 500.00  5.233   8.97512    59.8  10.389
6699.13  270.00  803.88 1375.55 500.00  5.102   8.75244    59.8  10.131
6699.13  275.00  808.88 1375.56 500.00  4.978   8.54053    59.8   9.885
6699.13  280.00  813.88 1375.57 500.00  4.859   8.33863    59.8   9.651
6699.13  285.00  818.88 1375.58 500.00  4.746   8.14604    59.8   9.428
6699.13  290.00  823.88 1375.59 500.00  4.638   7.96214    59.8   9.214
6699.13  295.00  828.88 1375.60 500.00  4.535   7.78636    59.8   9.011
6699.13  300.00  833.88 1375.61 500.00  4.436   7.61816    59.8   8.816
6699.13  305.00  838.88 1375.62 500.00  4.342   7.45706    59.8   8.629
6699.13  310.00  843.88 1375.63 500.00  4.251   7.30264    59.8   8.450
6699.13  315.00  848.88 1375.64 500.00  4.164   7.15447    59.8   8.278
6699.13  320.00  853.88 1375.65 500.00  4.081   7.01220    59.8   8.113
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6699.13  325.00  858.88 1375.66 500.00  4.000   6.87546    59.8   7.955
6699.13  330.00  863.88 1375.67 500.00  3.923   6.74396    59.8   7.802
6699.13  335.00  868.88 1375.68 500.00  3.849   6.61738    59.8   7.655
6699.13  340.00  873.87 1375.69 500.00  3.778   6.49547    59.8   7.514
6699.13  345.00  878.87 1375.70 500.00  3.709   6.37796    59.8   7.378
6699.13  350.00  883.87 1375.71 500.00  3.643   6.26463    59.8   7.247
6699.13  355.00  888.87 1375.72 500.00  3.579   6.15526    59.8   7.120
6699.13  360.00  893.87 1375.73 500.00  3.517   6.04963    59.8   6.998
6699.13  365.00  898.87 1375.74 500.00  3.457   5.94757    59.8   6.879
6699.13  370.00  903.87 1375.75 500.00  3.399   5.84889    59.8   6.765
6699.13  375.00  908.87 1375.76 500.00  3.344   5.75343    59.8   6.654
6699.13  380.00  913.87 1375.77 500.00  3.290   5.66104    59.8   6.547
6699.13  385.00  918.87 1375.78 500.00  3.237   5.57156    59.8   6.444
6699.13  390.00  923.87 1375.79 500.00  3.187   5.48487    59.8   6.343
6699.13  395.00  928.87 1375.80 500.00  3.137   5.40083    59.8   6.246
6699.13  400.00  933.87 1375.81 500.00  3.090   5.31933    59.8   6.152
6699.13  405.00  938.87 1375.82 500.00  3.044   5.24025    59.9   6.060
6699.13  410.00  943.87 1375.83 500.00  2.999   5.16348    59.9   5.971
6699.13  415.00  948.87 1375.84 500.00  2.955   5.08894    59.9   5.885
6699.13  420.00  953.87 1375.85 500.00  2.913   5.01651    59.9   5.801
6699.13  425.00  958.87 1375.86 500.00  2.872   4.94611    59.9   5.719
6699.13  430.00  963.87 1375.87 500.00  2.832   4.87766    59.9   5.640
6699.13  435.00  968.87 1375.88 500.00  2.793   4.81108    59.9   5.563
6699.13  440.00  973.87 1375.89 500.00  2.755   4.74630    59.9   5.488
6699.13  445.00  978.87 1375.90 500.00  2.718   4.68323    59.9   5.415
6699.13  450.00  983.87 1375.91 500.00  2.683   4.62182    59.9   5.344
6699.13  455.00  988.87 1375.92 500.00  2.648   4.56199    59.9   5.275
6699.13  460.00  993.87 1375.93 500.00  2.614   4.50370    59.9   5.207
6699.13  465.00  998.87 1375.94 500.00  2.581   4.44687    59.9   5.141
6699.13  470.00 1003.87 1375.95 500.00  2.548   4.39146    59.9   5.077
6699.13  475.00 1008.87 1375.96 500.00  2.517   4.33742    59.9   5.015
6699.13  480.00 1013.87 1375.97 500.00  2.486   4.28469    59.9   4.954
6699.13  485.00 1018.87 1375.98 500.00  2.456   4.23322    59.9   4.894
6699.13  490.00 1023.87 1375.99 500.00  2.427   4.18298    59.9   4.836
6699.13  495.00 1028.87 1376.00 500.00  2.398   4.13391    59.9   4.779
6699.13  500.00 1033.87 1376.01 500.00  2.370   4.08598    59.9   4.724
```

Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

ROW CALC 5 - Typical Quadruple OH 34.5kV Collection Line Paralleling 2-PH WO/N OH Distribution

EMF Output

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Meter height above centerline ground:   3.28 (ft)
Cross section offset for graph +/-:   500.00 (ft)
Result interval for graph:              5.00 (ft)
Electric field limit:                   0.00 (kV/m)
Magnetic field limit:                   0.00 (mG)

EMF calculation includes only wires going from structure 32 to structure 33
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EMF Circuit Data:

Set #	Phase #	Conductors Per Phase	Voltage Ph-Ph (kV)	Current (Amps)	Phase Angle (deg)	Bundle Diameter (in)
3	1	1	34.5	662.000	0	0.000
3	2	1	34.5	662.000	120	0.000
3	3	1	34.5	662.000	-120	0.000
4	1	1	34.5	662.000	0	0.000
4	2	1	34.5	662.000	120	0.000
4	3	1	34.5	662.000	-120	0.000
5	1	1	34.5	662.000	0	0.000
5	2	1	34.5	662.000	120	0.000
5	3	1	34.5	662.000	-120	0.000
6	1	1	34.5	662.000	0	0.000
6	2	1	34.5	662.000	120	0.000
6	3	1	34.5	662.000	-120	0.000
7	1	1	18	310.000	0	0.000
7	2	1	18	310.000	120	0.000

Calculated EMF Circuit Data For Last Point:

Wire station and offset are based on alignment closest to point on wire.
In the case of wires that are not parallel, this may result in different stations for the wires and centerline.

Set #	Phase #	Weather Case	Cable Condition	Wind From	Wire X (ft)	Wire Y (ft)	Wire Z (ft)	Wire Station (ft)	Wire Offset (ft)	Eqv. Wire Diameter (in)	Voltage To Gnd. (kV)
3	1	212 Deg F	Creep FE	Left	514.90	2423.98	539.02	8299.20	-18.50	1.108	19.92
3	2	212 Deg F	Creep FE	Left	512.90	2423.98	535.52	8299.20	-20.50	1.108	19.92
3	3	212 Deg F	Creep FE	Left	514.90	2423.98	532.02	8299.20	-18.50	1.108	19.92
4	1	212 Deg F	Creep FE	Left	527.90	2423.95	539.02	8299.20	-5.50	1.108	19.92
4	2	212 Deg F	Creep FE	Left	525.90	2423.96	535.52	8299.20	-7.50	1.108	19.92
4	3	212 Deg F	Creep FE	Left	527.90	2423.95	532.02	8299.20	-5.50	1.108	19.92
5	1	212 Deg F	Creep FE	Left	540.90	2423.92	539.02	8299.20	7.50	1.108	19.92
5	2	212 Deg F	Creep FE	Left	538.90	2423.93	535.52	8299.20	5.50	1.108	19.92
5	3	212 Deg F	Creep FE	Left	540.90	2423.92	532.02	8299.20	7.50	1.108	19.92
6	1	212 Deg F	Creep FE	Left	553.90	2423.89	539.02	8299.20	20.50	1.108	19.92
6	2	212 Deg F	Creep FE	Left	551.90	2423.90	535.52	8299.20	18.50	1.108	19.92
6	3	212 Deg F	Creep FE	Left	553.90	2423.89	532.02	8299.20	20.50	1.108	19.92
7	1	212 Deg F	Creep FE	Left	626.40	2423.74	519.72	8299.20	93.00	0.368	10.39
7	2	212 Deg F	Creep FE	Left	625.40	2423.74	516.97	8299.20	92.00	0.368	10.39

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Maximum magnetic field of 143.47 (mG) found at station 8299.20, offset 90.00 (ft)
Maximum electric field of 0.425 (kV/m) found at station 8299.20, offset 0.00 (ft)
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EMF Calculation Results:

Station (ft)	Offset (ft)	X (ft)	Y (ft)	Z (ft)	B Real (mG)	B Img. (mG)	B Phase Angle (deg)	B rms Res. (mG)	E Real (kV/m)	E Img. (kV/m)	E Phase Angle (deg)	E Axis Angle (deg)	E rms Res. (kV/m)
8299.20	-500.00	33.40	2425.03	500.00	1.645	3.08168	61.9	3.493	0.002	0.00075	20.6	89.3	0.002
8299.20	-495.00	38.40	2425.02	500.00	1.658	3.10904	61.9	3.524	0.002	0.00076	20.6	89.3	0.002
8299.20	-490.00	43.40	2425.01	500.00	1.672	3.13689	61.9	3.555	0.002	0.00078	20.7	89.3	0.002
8299.20	-485.00	48.40	2425.00	500.00	1.686	3.16525	62.0	3.586	0.002	0.00080	20.7	89.3	0.002
8299.20	-480.00	53.40	2424.99	500.00	1.699	3.19412	62.0	3.618	0.002	0.00081	20.7	89.3	0.002
8299.20	-475.00	58.40	2424.97	500.00	1.714	3.22354	62.0	3.651	0.002	0.00083	20.7	89.2	0.002
8299.20	-470.00	63.40	2424.96	500.00	1.728	3.25350	62.0	3.684	0.002	0.00085	20.7	89.2	0.002
8299.20	-465.00	68.40	2424.95	500.00	1.743	3.28403	62.0	3.718	0.002	0.00086	20.7	89.2	0.002
8299.20	-460.00	73.40	2424.94	500.00	1.757	3.31514	62.1	3.752	0.002	0.00088	20.7	89.2	0.002
8299.20	-455.00	78.40	2424.93	500.00	1.773	3.34685	62.1	3.787	0.002	0.00090	20.7	89.2	0.003
8299.20	-450.00	83.40	2424.92	500.00	1.788	3.37917	62.1	3.823	0.002	0.00092	20.7	89.2	0.003
8299.20	-445.00	88.40	2424.91	500.00	1.804	3.41213	62.1	3.859	0.002	0.00094	20.8	89.2	0.003
8299.20	-440.00	93.40	2424.90	500.00	1.819	3.44575	62.2	3.897	0.003	0.00096	20.8	89.2	0.003
8299.20	-435.00	98.40	2424.89	500.00	1.836	3.48004	62.2	3.935	0.003	0.00098	20.8	89.2	0.003
8299.20	-430.00	103.40	2424.88	500.00	1.852	3.51502	62.2	3.973	0.003	0.00101	20.8	89.2	0.003
8299.20	-425.00	108.40	2424.87	500.00	1.869	3.55072	62.2	4.013	0.003	0.00103	20.8	89.2	0.003
8299.20	-420.00	113.40	2424.85	500.00	1.886	3.58716	62.3	4.053	0.003	0.00105	20.8	89.2	0.003
8299.20	-415.00	118.40	2424.84	500.00	1.903	3.62436	62.3	4.094	0.003	0.00108	20.9	89.1	0.003
8299.20	-410.00	123.40	2424.83	500.00	1.921	3.66235	62.3	4.136	0.003	0.00111	20.9	89.1	0.003
8299.20	-405.00	128.40	2424.82	500.00	1.939	3.70115	62.3	4.178	0.003	0.00113	20.9	89.1	0.003
8299.20	-400.00	133.40	2424.81	500.00	1.958	3.74078	62.4	4.222	0.003	0.00116	20.9	89.1	0.003
8299.20	-395.00	138.40	2424.80	500.00	1.976	3.78129	62.4	4.267	0.003	0.00119	20.9	89.1	0.003
8299.20	-390.00	143.40	2424.79	500.00	1.995	3.82268	62.4	4.312	0.003	0.00122	20.9	89.1	0.003
8299.20	-385.00	148.40	2424.78	500.00	2.015	3.86500	62.5	4.359	0.003	0.00125	21.0	89.1	0.003
8299.20	-380.00	153.40	2424.77	500.00	2.035	3.90828	62.5	4.406	0.003	0.00128	21.0	89.1	0.004
8299.20	-375.00	158.40	2424.76	500.00	2.055	3.95255	62.5	4.455	0.003	0.00132	21.0	89.1	0.004
8299.20	-370.00	163.40	2424.75	500.00	2.076	3.99784	62.6	4.505	0.004	0.00135	21.0	89.0	0.004
8299.20	-365.00	168.40	2424.73	500.00	2.097	4.04419	62.6	4.555	0.004	0.00139	21.0	89.0	0.004
8299.20	-360.00	173.40	2424.72	500.00	2.118	4.09164	62.6	4.607	0.004	0.00143	21.1	89.0	0.004
8299.20	-355.00	178.40	2424.71	500.00	2.140	4.14022	62.7	4.661	0.004	0.00147	21.1	89.0	0.004
8299.20	-350.00	183.40	2424.70	500.00	2.163	4.18999	62.7	4.715	0.004	0.00151	21.1	89.0	0.004
8299.20	-345.00	188.40	2424.69	500.00	2.186	4.24098	62.7	4.771	0.004	0.00155	21.1	89.0	0.004
8299.20	-340.00	193.40	2424.68	500.00	2.209	4.29324	62.8	4.828	0.004	0.00160	21.2	89.0	0.004
8299.20	-335.00	198.40	2424.67	500.00	2.233	4.34682	62.8	4.887	0.004	0.00164	21.2	89.0	0.005
8299.20	-330.00	203.40	2424.66	500.00	2.257	4.40177	62.8	4.947	0.004	0.00169	21.2	88.9	0.005
8299.20	-325.00	208.40	2424.65	500.00	2.282	4.45815	62.9	5.008	0.004	0.00174	21.3	88.9	0.005
8299.20	-320.00	213.40	2424.64	500.00	2.308	4.51600	62.9	5.072	0.005	0.00180	21.3	88.9	0.005
8299.20	-315.00	218.40	2424.63	500.00	2.334	4.57539	63.0	5.136	0.005	0.00185	21.3	88.9	0.005
8299.20	-310.00	223.40	2424.61	500.00	2.361	4.63639	63.0	5.203	0.005	0.00191	21.4	88.9	0.005
8299.20	-305.00	228.40	2424.60	500.00	2.388	4.69905	63.1	5.271	0.005	0.00197	21.4	88.9	0.005

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8299.20 -300.00  233.40 2424.59 500.00  2.416   4.76346    63.1   5.341 0.005 0.00204    21.4    88.8 0.006
8299.20 -295.00  238.40 2424.58 500.00  2.445   4.82967    63.1   5.413 0.005 0.00210    21.5    88.8 0.006
8299.20 -290.00  243.40 2424.57 500.00  2.475   4.89778    63.2   5.488 0.006 0.00218    21.5    88.8 0.006
8299.20 -285.00  248.40 2424.56 500.00  2.505   4.96787    63.2   5.564 0.006 0.00225    21.6    88.8 0.006
8299.20 -280.00  253.40 2424.55 500.00  2.536   5.04002    63.3   5.642 0.006 0.00233    21.6    88.8 0.006
8299.20 -275.00  258.40 2424.54 500.00  2.568   5.11432    63.3   5.723 0.006 0.00241    21.7    88.8 0.007
8299.20 -270.00  263.40 2424.53 500.00  2.601   5.19088    63.4   5.806 0.006 0.00250    21.7    88.7 0.007
8299.20 -265.00  268.40 2424.52 500.00  2.635   5.26981    63.4   5.892 0.006 0.00259    21.8    88.7 0.007
8299.20 -260.00  273.40 2424.51 500.00  2.670   5.35120    63.5   5.980 0.007 0.00269    21.8    88.7 0.007
8299.20 -255.00  278.40 2424.49 500.00  2.706   5.43520    63.5   6.071 0.007 0.00279    21.9    88.7 0.007
8299.20 -250.00  283.40 2424.48 500.00  2.743   5.52191    63.6   6.165 0.007 0.00290    21.9    88.6 0.008
8299.20 -245.00  288.40 2424.47 500.00  2.781   5.61148    63.6   6.263 0.007 0.00302    22.0    88.6 0.008
8299.20 -240.00  293.40 2424.46 500.00  2.820   5.70405    63.7   6.363 0.008 0.00314    22.1    88.6 0.008
8299.20 -235.00  298.40 2424.45 500.00  2.861   5.79978    63.7   6.467 0.008 0.00327    22.1    88.6 0.009
8299.20 -230.00  303.40 2424.44 500.00  2.903   5.89883    63.8   6.575 0.008 0.00341    22.2    88.6 0.009
8299.20 -225.00  308.40 2424.43 500.00  2.947   6.00139    63.8   6.686 0.009 0.00356    22.3    88.5 0.009
8299.20 -220.00  313.40 2424.42 500.00  2.993   6.10763    63.9   6.801 0.009 0.00371    22.4    88.5 0.010
8299.20 -215.00  318.40 2424.41 500.00  3.040   6.21778    63.9   6.921 0.009 0.00388    22.5    88.5 0.010
8299.20 -210.00  323.40 2424.40 500.00  3.090   6.33204    64.0   7.046 0.010 0.00406    22.6    88.4 0.011
8299.20 -205.00  328.40 2424.39 500.00  3.142   6.45066    64.0   7.175 0.010 0.00425    22.7    88.4 0.011
8299.20 -200.00  333.40 2424.37 500.00  3.196   6.57389    64.1   7.310 0.011 0.00446    22.8    88.4 0.012
8299.20 -195.00  338.40 2424.36 500.00  3.253   6.70201    64.1   7.450 0.011 0.00468    22.9    88.4 0.012
8299.20 -190.00  343.40 2424.35 500.00  3.313   6.83532    64.1   7.596 0.012 0.00491    23.0    88.3 0.013
8299.20 -185.00  348.40 2424.34 500.00  3.377   6.97413    64.2   7.749 0.012 0.00517    23.2    88.3 0.013
8299.20 -180.00  353.40 2424.33 500.00  3.445   7.11881    64.2   7.908 0.013 0.00544    23.3    88.3 0.014
8299.20 -175.00  358.40 2424.32 500.00  3.517   7.26972    64.2   8.076 0.013 0.00574    23.5    88.2 0.014
8299.20 -170.00  363.40 2424.31 500.00  3.595   7.42728    64.2   8.251 0.014 0.00606    23.7    88.2 0.015
8299.20 -165.00  368.40 2424.30 500.00  3.678   7.59194    64.1   8.436 0.014 0.00641    23.8    88.2 0.016
8299.20 -160.00  373.40 2424.29 500.00  3.769   7.76418    64.1   8.631 0.015 0.00678    24.1    88.1 0.017
8299.20 -155.00  378.40 2424.28 500.00  3.868   7.94455    64.0   8.836 0.016 0.00719    24.3    88.1 0.017
8299.20 -150.00  383.40 2424.27 500.00  3.977   8.13360    63.9   9.054 0.017 0.00763    24.5    88.1 0.018
8299.20 -145.00  388.40 2424.25 500.00  4.098   8.33198    63.8   9.285 0.018 0.00812    24.8    88.1 0.019
8299.20 -140.00  393.40 2424.24 500.00  4.232   8.54037    63.6   9.531 0.018 0.00864    25.1    88.0 0.020
8299.20 -135.00  398.40 2424.23 500.00  4.383   8.75953    63.4   9.795 0.019 0.00922    25.4    88.0 0.022
8299.20 -130.00  403.40 2424.22 500.00  4.553   8.99027    63.1  10.078 0.020 0.00985    25.7    88.0 0.023
8299.20 -125.00  408.40 2424.21 500.00  4.748   9.23348    62.8  10.383 0.021 0.01053    26.1    88.0 0.024
8299.20 -120.00  413.40 2424.20 500.00  4.972   9.49012    62.3  10.714 0.023 0.01128    26.6    88.0 0.025
8299.20 -115.00  418.40 2424.19 500.00  5.232   9.76125    61.8  11.075 0.024 0.01210    27.1    88.0 0.027
8299.20 -110.00  423.40 2424.18 500.00  5.536  10.04797    61.1  11.472 0.025 0.01298    27.7    88.1 0.028
8299.20 -105.00  428.40 2424.17 500.00  5.894  10.35149    60.3  11.912 0.026 0.01394    28.3    88.2 0.029
8299.20 -100.00  433.40 2424.16 500.00  6.317  10.67307    59.4  12.402 0.027 0.01498    29.1    88.3 0.031
8299.20  -95.00  438.40 2424.15 500.00  6.822  11.01401    58.2  12.956 0.028 0.01607    30.0    88.5 0.032
8299.20  -90.00  443.40 2424.13 500.00  7.427  11.37561    56.9  13.585 0.029 0.01721    31.1    88.8 0.033
8299.20  -85.00  448.40 2424.12 500.00  8.156  11.75915    55.3  14.311 0.029 0.01835    32.4    89.2 0.034
8299.20  -80.00  453.40 2424.11 500.00  9.037  12.16578    53.4  15.155 0.029 0.01943    34.1    89.9 0.035
8299.20  -75.00  458.40 2424.10 500.00 10.105  12.59644    51.3  16.149 0.028 0.02032    36.2    90.9 0.034
8299.20  -70.00  463.40 2424.09 500.00 11.405  13.05177    48.9  17.333 0.026 0.02085    39.2    92.6 0.033
8299.20  -65.00  468.40 2424.08 500.00 12.986  13.53206    46.2  18.755 0.022 0.02070    43.5    95.4 0.030
8299.20  -60.00  473.40 2424.07 500.00 14.909  14.03743    43.3  20.478 0.016 0.01940    50.6   280.8 0.025
8299.20  -55.00  478.40 2424.06 500.00 17.237  14.56848    40.2  22.569 0.010 0.01630    59.7   291.2 0.018
8299.20  -50.00  483.40 2424.05 500.00 20.030  15.12813    37.1  25.101 0.016 0.01109    35.1   228.7 0.016
8299.20  -45.00  488.40 2424.04 500.00 23.330  15.72546    34.0  28.135 0.036 0.01000    15.6   240.3 0.036
8299.20  -40.00  493.40 2424.03 500.00 27.128  16.38213    31.1  31.691 0.064 0.02547    21.6   248.3 0.069
8299.20  -35.00  498.40 2424.02 500.00 31.324  17.13977    28.7  35.707 0.101 0.05250    27.5   253.1 0.114
8299.20  -30.00  503.40 2424.00 500.00 35.700  18.06147    26.8  40.009 0.144 0.08938    31.9   256.6 0.169
8299.20  -25.00  508.40 2423.99 500.00 39.937  19.22030    25.7  44.321 0.188 0.13361    35.3   259.7 0.231
8299.20  -20.00  513.40 2423.98 500.00 43.727  20.68275    25.3  48.372 0.230 0.18010    38.0   262.4 0.292
8299.20  -15.00  518.40 2423.97 500.00 46.927  22.50550    25.6  52.045 0.264 0.22295    40.1   264.7 0.346
8299.20  -10.00  523.40 2423.96 500.00 49.597  24.72954    26.5  55.421 0.288 0.25798    41.8   266.7 0.387
8299.20   -5.00  528.40 2423.95 500.00 51.890  27.36154    27.8  58.662 0.301 0.28342    43.3   268.2 0.413
8299.20    0.00  533.40 2423.94 500.00 53.948  30.39148    29.4  61.920 0.302 0.29908    44.7   269.6 0.425
8299.20    5.00  538.40 2423.93 500.00 55.845  33.80257    31.2  65.278 0.292 0.30529    46.2    90.9 0.423
8299.20   10.00  543.40 2423.92 500.00 57.535  37.51578    33.1  68.685 0.271 0.30201    48.1    92.3 0.406
8299.20   15.00  548.40 2423.91 500.00 58.848  41.35935    35.1  71.928 0.239 0.28870    50.4    93.9 0.375
8299.20   20.00  553.40 2423.90 500.00 59.526  45.05686    37.1  74.655 0.196 0.26483    53.4    95.9 0.329
8299.20   25.00  558.40 2423.88 500.00 59.301  48.24935    39.1  76.450 0.147 0.23104    57.6    98.3 0.273
8299.20   30.00  563.40 2423.87 500.00 58.074  50.68418    41.1  77.081 0.096 0.19024    63.2   100.9 0.212
8299.20   35.00  568.40 2423.86 500.00 56.044  52.41434    43.1  76.734 0.051 0.14713    71.0   103.3 0.154
8299.20   40.00  573.40 2423.85 500.00 53.624  53.77353    45.1  75.941 0.023 0.10602    77.5   105.0 0.106
8299.20   45.00  578.40 2423.84 500.00 51.266  55.20841    47.1  75.341 0.035 0.06936    63.4   102.2 0.073
8299.20   50.00  583.40 2423.83 500.00 49.337  57.15426    49.2  75.503 0.055 0.03834    35.1    89.5 0.062
8299.20   55.00  588.40 2423.82 500.00 48.091  60.00928    51.3  76.901 0.071 0.01992    15.7    81.7 0.071
8299.20   60.00  593.40 2423.81 500.00 47.691  64.17292    53.4  79.954 0.084 0.03517    22.8    80.5 0.089
8299.20   65.00  598.40 2423.80 500.00 48.236  70.10796    55.5  85.099 0.095 0.06591    34.9    80.4 0.114
8299.20   70.00  603.40 2423.79 500.00 49.744  78.39274    57.6  92.843 0.104 0.10582    45.5   260.0 0.147
8299.20   75.00  608.40 2423.78 500.00 52.071  89.67972    59.9 103.701 0.112 0.15886    54.9   259.6 0.193
8299.20   80.00  613.40 2423.76 500.00 54.751 104.24947    62.3 117.752 0.115 0.22912    63.4   259.8 0.255
8299.20   85.00  618.40 2423.75 500.00 57.008 120.31193    64.6 133.135 0.111 0.31088    70.3   262.0 0.330
8299.20   90.00  623.40 2423.74 500.00 58.682 130.91931    65.9 143.469 0.109 0.37058    73.6   267.2 0.386
8299.20   95.00  628.40 2423.73 500.00 59.793 127.01977    64.8 140.390 0.125 0.36099    70.8   273.5 0.382
8299.20  100.00  633.40 2423.72 500.00 57.798 110.68236    62.4 124.864 0.143 0.29222    63.9   277.5 0.324
8299.20  105.00  638.40 2423.71 500.00 52.249  91.88536    60.4 105.702 0.142 0.21537    56.6   279.0 0.257
8299.20  110.00  643.40 2423.70 500.00 45.556  75.98585    59.1  88.596 0.128 0.15569    50.6   279.1 0.201
8299.20  115.00  648.40 2423.69 500.00 39.380  63.71034    58.3  74.898 0.110 0.11426    46.1   278.6 0.158
8299.20  120.00  653.40 2423.68 500.00 34.205  54.37514    57.8  64.239 0.093 0.08608    42.7    98.0 0.127
8299.20  125.00  658.40 2423.67 500.00 30.001  47.19983    57.6  55.927 0.079 0.06665    40.0    97.2 0.104
8299.20  130.00  663.40 2423.66 500.00 26.597  41.58314    57.4  49.361 0.068 0.05293    37.9    96.6 0.086
8299.20  135.00  668.40 2423.64 500.00 23.822  37.10074    57.3  44.090 0.059 0.04299    36.0    95.9 0.073
8299.20  140.00  673.40 2423.63 500.00 21.535  33.45800    57.2  39.789 0.052 0.03560    34.5    95.4 0.063
8299.20  145.00  678.40 2423.62 500.00 19.627  30.44873    57.2  36.226 0.046 0.02998    33.2    94.9 0.055
8299.20  150.00  683.40 2423.61 500.00 18.017  27.92640    57.2  33.234 0.041 0.02561    32.0    94.5 0.048
8299.20  155.00  688.40 2423.60 500.00 16.643  25.78492    57.2  30.689 0.037 0.02216    31.0    94.2 0.043
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8299.20  165.00  698.40 2423.58 500.00 14.427  22.35117    57.2  26.603 0.030 0.01711    29.3    93.6 0.035
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8299.20  175.00  708.40 2423.56 500.00 12.723  19.72434    57.2  23.472 0.026 0.01367    28.0    93.2 0.029
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8299.20  190.00  723.40 2423.52 500.00 10.800  16.77323    57.2  19.949 0.021 0.01024    26.4    92.7 0.023
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8299.20  200.00  733.40 2423.50 500.00  9.808  15.25589    57.3  18.137 0.018 0.00866    25.6    92.5 0.020
8299.20  205.00  738.40 2423.49 500.00  9.376  14.59693    57.3  17.349 0.017 0.00801    25.2    92.4 0.019
8299.20  210.00  743.40 2423.48 500.00  8.981  13.99328    57.3  16.627 0.016 0.00744    24.9    92.3 0.018
8299.20  215.00  748.40 2423.47 500.00  8.617  13.43827    57.3  15.964 0.015 0.00693    24.6    92.2 0.017
8299.20  220.00  753.40 2423.46 500.00  8.281  12.92624    57.4  15.351 0.014 0.00647    24.4    92.1 0.016
8299.20  225.00  758.40 2423.45 500.00  7.970  12.45236    57.4  14.784 0.014 0.00606    24.1    92.1 0.015
8299.20  230.00  763.40 2423.44 500.00  7.681  12.01252    57.4  14.258 0.013 0.00569    23.9    92.0 0.014
8299.20  235.00  768.40 2423.43 500.00  7.412  11.60316    57.4  13.769 0.012 0.00535    23.7    91.9 0.013
8299.20  240.00  773.40 2423.42 500.00  7.161  11.22121    57.5  13.312 0.012 0.00505    23.5    91.9 0.013
8299.20  245.00  778.40 2423.40 500.00  6.927  10.86398    57.5  12.884 0.011 0.00477    23.3    91.8 0.012
8299.20  250.00  783.40 2423.39 500.00  6.707  10.52915    57.5  12.484 0.011 0.00452    23.1    91.8 0.011
8299.20  255.00  788.40 2423.38 500.00  6.500  10.21465    57.5  12.107 0.010 0.00429    23.0    91.7 0.011
8299.20  260.00  793.40 2423.37 500.00  6.306   9.91869    57.6  11.753 0.010 0.00407    22.8    91.7 0.010
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Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

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8299.20  265.00  798.40 2423.36 500.00  6.122   9.63965    57.6  11.420 0.009 0.00387    22.7    91.6 0.010
8299.20  270.00  803.40 2423.35 500.00  5.949   9.37611    57.6  11.104 0.009 0.00369    22.6    91.6 0.010
8299.20  275.00  808.40 2423.34 500.00  5.786   9.12682    57.6  10.806 0.009 0.00352    22.5    91.6 0.009
8299.20  280.00  813.40 2423.33 500.00  5.631   8.89063    57.7  10.524 0.008 0.00336    22.4    91.5 0.009
8299.20  285.00  818.40 2423.32 500.00  5.484   8.66653    57.7  10.256 0.008 0.00322    22.3    91.5 0.008
8299.20  290.00  823.40 2423.31 500.00  5.344   8.45362    57.7  10.001 0.008 0.00308    22.2    91.5 0.008
8299.20  295.00  828.40 2423.30 500.00  5.211   8.25106    57.7   9.759 0.007 0.00295    22.1    91.4 0.008
8299.20  300.00  833.40 2423.28 500.00  5.085   8.05812    57.7   9.528 0.007 0.00283    22.0    91.4 0.008
8299.20  305.00  838.40 2423.27 500.00  4.964   7.87411    57.8   9.308 0.007 0.00272    21.9    91.4 0.007
8299.20  310.00  843.40 2423.26 500.00  4.849   7.69844    57.8   9.098 0.007 0.00261    21.8    91.4 0.007
8299.20  315.00  848.40 2423.25 500.00  4.739   7.53054    57.8   8.898 0.006 0.00251    21.8    91.3 0.007
8299.20  320.00  853.40 2423.24 500.00  4.634   7.36989    57.8   8.706 0.006 0.00242    21.7    91.3 0.007
8299.20  325.00  858.40 2423.23 500.00  4.534   7.21605    57.9   8.522 0.006 0.00233    21.6    91.3 0.006
8299.20  330.00  863.40 2423.22 500.00  4.437   7.06858    57.9   8.346 0.006 0.00225    21.6    91.3 0.006
8299.20  335.00  868.40 2423.21 500.00  4.345   6.92709    57.9   8.177 0.006 0.00217    21.5    91.2 0.006
8299.20  340.00  873.40 2423.20 500.00  4.256   6.79122    57.9   8.015 0.005 0.00210    21.5    91.2 0.006
8299.20  345.00  878.40 2423.19 500.00  4.171   6.66064    57.9   7.859 0.005 0.00203    21.4    91.2 0.006
8299.20  350.00  883.40 2423.18 500.00  4.089   6.53505    58.0   7.709 0.005 0.00196    21.4    91.2 0.005
8299.20  355.00  888.40 2423.16 500.00  4.010   6.41416    58.0   7.565 0.005 0.00190    21.3    91.2 0.005
8299.20  360.00  893.40 2423.15 500.00  3.934   6.29771    58.0   7.426 0.005 0.00184    21.3    91.1 0.005
8299.20  365.00  898.40 2423.14 500.00  3.861   6.18546    58.0   7.292 0.005 0.00178    21.2    91.1 0.005
8299.20  370.00  903.40 2423.13 500.00  3.791   6.07718    58.0   7.163 0.004 0.00172    21.2    91.1 0.005
8299.20  375.00  908.40 2423.12 500.00  3.723   5.97267    58.1   7.038 0.004 0.00167    21.1    91.1 0.005
8299.20  380.00  913.40 2423.11 500.00  3.658   5.87173    58.1   6.918 0.004 0.00162    21.1    91.1 0.005
8299.20  385.00  918.40 2423.10 500.00  3.594   5.77418    58.1   6.801 0.004 0.00157    21.1    91.1 0.004
8299.20  390.00  923.40 2423.09 500.00  3.533   5.67985    58.1   6.689 0.004 0.00153    21.0    91.0 0.004
8299.20  395.00  928.40 2423.08 500.00  3.474   5.58858    58.1   6.580 0.004 0.00149    21.0    91.0 0.004
8299.20  400.00  933.40 2423.07 500.00  3.417   5.50023    58.2   6.475 0.004 0.00144    21.0    91.0 0.004
8299.20  405.00  938.40 2423.06 500.00  3.361   5.41466    58.2   6.373 0.004 0.00140    21.0    91.0 0.004
8299.20  410.00  943.40 2423.04 500.00  3.308   5.33173    58.2   6.274 0.004 0.00137    20.9    91.0 0.004
8299.20  415.00  948.40 2423.03 500.00  3.256   5.25132    58.2   6.179 0.003 0.00133    20.9    91.0 0.004
8299.20  420.00  953.40 2423.02 500.00  3.205   5.17333    58.2   6.086 0.003 0.00129    20.9    91.0 0.004
8299.20  425.00  958.40 2423.01 500.00  3.156   5.09764    58.2   5.996 0.003 0.00126    20.9    90.9 0.004
8299.20  430.00  963.40 2423.00 500.00  3.109   5.02415    58.3   5.908 0.003 0.00123    20.8    90.9 0.003
8299.20  435.00  968.40 2422.99 500.00  3.063   4.95277    58.3   5.823 0.003 0.00120    20.8    90.9 0.003
8299.20  440.00  973.40 2422.98 500.00  3.018   4.88340    58.3   5.741 0.003 0.00117    20.8    90.9 0.003
8299.20  445.00  978.40 2422.97 500.00  2.975   4.81597    58.3   5.661 0.003 0.00114    20.8    90.9 0.003
8299.20  450.00  983.40 2422.96 500.00  2.932   4.75039    58.3   5.583 0.003 0.00111    20.7    90.9 0.003
8299.20  455.00  988.40 2422.95 500.00  2.891   4.68658    58.3   5.507 0.003 0.00108    20.7    90.9 0.003
8299.20  460.00  993.40 2422.94 500.00  2.852   4.62448    58.3   5.433 0.003 0.00106    20.7    90.9 0.003
8299.20  465.00  998.40 2422.92 500.00  2.813   4.56401    58.4   5.361 0.003 0.00103    20.7    90.9 0.003
8299.20  470.00 1003.40 2422.91 500.00  2.775   4.50512    58.4   5.291 0.003 0.00101    20.7    90.8 0.003
8299.20  475.00 1008.40 2422.90 500.00  2.738   4.44774    58.4   5.223 0.003 0.00099    20.7    90.8 0.003
8299.20  480.00 1013.40 2422.89 500.00  2.702   4.39181    58.4   5.157 0.003 0.00096    20.6    90.8 0.003
8299.20  485.00 1018.40 2422.88 500.00  2.667   4.33729    58.4   5.092 0.003 0.00094    20.6    90.8 0.003
8299.20  490.00 1023.40 2422.87 500.00  2.633   4.28410    58.4   5.029 0.002 0.00092    20.6    90.8 0.003
8299.20  495.00 1028.40 2422.86 500.00  2.600   4.23222    58.4   4.967 0.002 0.00090    20.6    90.8 0.003
8299.20  500.00 1033.40 2422.85 500.00  2.568   4.18158    58.4   4.907 0.002 0.00088    20.6    90.8 0.003
```

Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

ROW CALC 6 - Typical Quadruple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission

EMF Output

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Meter height above centerline ground:   3.28 (ft)
Cross section offset for graph +/-:   500.00 (ft)
Result interval for graph:              5.00 (ft)
Electric field limit:                   0.00 (kV/m)
Magnetic field limit:                   0.00 (mG)

EMF calculation includes only wires going from structure 41 to structure 42
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EMF Circuit Data:

Set #	Phase #	Conductors Per Phase	Voltage Ph-Ph (kV)	Current (Amps)	Phase Angle (deg)	Bundle Diameter (in)
1	1	1	0	0.000	0	0.000
1	2	1	0	0.000	0	0.000
3	1	1	230	662.000	0	0.000
3	2	1	230	662.000	120	0.000
3	3	1	230	662.000	-120	0.000
13	1	1	34.5	870.000	0	0.000
13	2	1	34.5	870.000	120	0.000
13	3	1	34.5	870.000	-120	0.000
14	1	1	34.5	870.000	0	0.000
14	2	1	34.5	870.000	120	0.000
14	3	1	34.5	870.000	-120	0.000
15	1	1	34.5	870.000	0	0.000
15	2	1	34.5	870.000	120	0.000
15	3	1	34.5	870.000	-120	0.000
16	1	1	34.5	870.000	0	0.000
16	2	1	34.5	870.000	120	0.000
16	3	1	34.5	870.000	-120	0.000

Calculated EMF Circuit Data For Last Point:

**Wire station and offset are based on alignment closest to point on wire.
In the case of wires that are not parallel, this may result in different stations
for the wires and centerline.**

Set #	Phase #	Weather Case	Cable Condition	Wind From	Wire X (ft)	Wire Y (ft)	Wire Z (ft)	Wire Station (ft)	Wire Offset (ft)	Eqv. Wire Diameter (in)	Voltage To Gnd. (kV)
1	1	0 Deg F	Creep FE	Left	633.26	4483.07	565.36	10358.55	95.37	0.360	0
1	2	0 Deg F	Creep FE	Left	652.52	4483.03	565.36	10358.55	114.63	0.360	0
3	1	212 Deg F	Creep FE	Left	623.64	4483.09	554.78	10358.55	85.75	1.108	132.8
3	2	212 Deg F	Creep FE	Left	642.89	4483.05	554.78	10358.55	105.00	1.108	132.8
3	3	212 Deg F	Creep FE	Left	662.14	4483.01	554.78	10358.55	124.25	1.108	132.8
13	1	212 Deg F	Creep FE	Left	531.14	4483.29	496.98	10358.55	-6.75	1.417	19.92
13	2	212 Deg F	Creep FE	Left	531.39	4483.29	496.73	10358.55	-6.50	1.417	19.92
13	3	212 Deg F	Creep FE	Left	530.89	4483.30	496.73	10358.55	-7.00	1.417	19.92
14	1	212 Deg F	Creep FE	Left	535.64	4483.28	496.98	10358.55	-2.25	1.417	19.92
14	2	212 Deg F	Creep FE	Left	535.89	4483.28	496.73	10358.55	-2.00	1.417	19.92
14	3	212 Deg F	Creep FE	Left	535.39	4483.29	496.73	10358.55	-2.50	1.417	19.92
15	1	212 Deg F	Creep FE	Left	540.14	4483.27	496.98	10358.55	2.25	1.417	19.92
15	2	212 Deg F	Creep FE	Left	539.89	4483.28	496.73	10358.55	2.00	1.417	19.92
15	3	212 Deg F	Creep FE	Left	540.39	4483.27	496.73	10358.55	2.50	1.417	19.92
16	1	212 Deg F	Creep FE	Left	544.64	4483.27	496.98	10358.55	6.75	1.417	19.92
16	2	212 Deg F	Creep FE	Left	544.39	4483.27	496.73	10358.55	6.50	1.417	19.92
16	3	212 Deg F	Creep FE	Left	544.89	4483.26	496.73	10358.55	7.00	1.417	19.92

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Maximum magnetic field of 122.25 (mG) found at station 10358.55, offset 0.00 (ft)
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EMF Calculation Results:

Station (ft)	Offset (ft)	X (ft)	Y (ft)	Z (ft)	B Real (mG)	B Img. (mG)	B Phase Angle (deg)	B rms Res. (mG)
10358.55	-500.00	37.89	4484.37	500.00	0.349	0.18971	28.5	0.397
10358.55	-495.00	42.89	4484.36	500.00	0.355	0.19280	28.5	0.404
10358.55	-490.00	47.89	4484.35	500.00	0.361	0.19597	28.5	0.411
10358.55	-485.00	52.89	4484.34	500.00	0.367	0.19922	28.5	0.418
10358.55	-480.00	57.89	4484.33	500.00	0.374	0.20255	28.5	0.425
10358.55	-475.00	62.89	4484.32	500.00	0.380	0.20596	28.4	0.433
10358.55	-470.00	67.89	4484.30	500.00	0.387	0.20946	28.4	0.440
10358.55	-465.00	72.89	4484.29	500.00	0.394	0.21305	28.4	0.448
10358.55	-460.00	77.89	4484.28	500.00	0.401	0.21673	28.4	0.456
10358.55	-455.00	82.89	4484.27	500.00	0.408	0.22051	28.4	0.464
10358.55	-450.00	87.89	4484.26	500.00	0.416	0.22439	28.4	0.472
10358.55	-445.00	92.89	4484.25	500.00	0.423	0.22837	28.3	0.481
10358.55	-440.00	97.89	4484.24	500.00	0.431	0.23245	28.3	0.490
10358.55	-435.00	102.89	4484.23	500.00	0.439	0.23665	28.3	0.499
10358.55	-430.00	107.89	4484.22	500.00	0.448	0.24096	28.3	0.508
10358.55	-425.00	112.89	4484.21	500.00	0.456	0.24539	28.3	0.518
10358.55	-420.00	117.89	4484.20	500.00	0.465	0.24994	28.3	0.528
10358.55	-415.00	122.89	4484.18	500.00	0.474	0.25462	28.2	0.538
10358.55	-410.00	127.89	4484.17	500.00	0.484	0.25943	28.2	0.549
10358.55	-405.00	132.89	4484.16	500.00	0.493	0.26438	28.2	0.560
10358.55	-400.00	137.89	4484.15	500.00	0.503	0.26947	28.2	0.571
10358.55	-395.00	142.89	4484.14	500.00	0.513	0.27470	28.2	0.582
10358.55	-390.00	147.89	4484.13	500.00	0.524	0.28009	28.1	0.594
10358.55	-385.00	152.89	4484.12	500.00	0.535	0.28564	28.1	0.606
10358.55	-380.00	157.89	4484.11	500.00	0.546	0.29136	28.1	0.619
10358.55	-375.00	162.89	4484.10	500.00	0.558	0.29725	28.1	0.632
10358.55	-370.00	167.89	4484.09	500.00	0.570	0.30331	28.0	0.645
10358.55	-365.00	172.89	4484.08	500.00	0.582	0.30957	28.0	0.659
10358.55	-360.00	177.89	4484.06	500.00	0.595	0.31601	28.0	0.673
10358.55	-355.00	182.89	4484.05	500.00	0.608	0.32266	28.0	0.688
10358.55	-350.00	187.89	4484.04	500.00	0.621	0.32952	27.9	0.703
10358.55	-345.00	192.89	4484.03	500.00	0.635	0.33660	27.9	0.719
10358.55	-340.00	197.89	4484.02	500.00	0.650	0.34391	27.9	0.735
10358.55	-335.00	202.89	4484.01	500.00	0.665	0.35145	27.9	0.752
10358.55	-330.00	207.89	4484.00	500.00	0.681	0.35925	27.8	0.770

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10358.55 -325.00  212.89 4483.99 500.00  0.697   0.36731    27.8   0.788
10358.55 -320.00  217.89 4483.98 500.00  0.713   0.37563    27.8   0.806
10358.55 -315.00  222.89 4483.97 500.00  0.731   0.38424    27.7   0.826
10358.55 -310.00  227.89 4483.96 500.00  0.749   0.39315    27.7   0.846
10358.55 -305.00  232.89 4483.94 500.00  0.767   0.40237    27.7   0.867
10358.55 -300.00  237.89 4483.93 500.00  0.787   0.41191    27.6   0.888
10358.55 -295.00  242.89 4483.92 500.00  0.807   0.42180    27.6   0.911
10358.55 -290.00  247.89 4483.91 500.00  0.828   0.43203    27.6   0.934
10358.55 -285.00  252.89 4483.90 500.00  0.850   0.44265    27.5   0.958
10358.55 -280.00  257.89 4483.89 500.00  0.872   0.45365    27.5   0.983
10358.55 -275.00  262.89 4483.88 500.00  0.896   0.46507    27.4   1.009
10358.55 -270.00  267.89 4483.87 500.00  0.920   0.47691    27.4   1.036
10358.55 -265.00  272.89 4483.86 500.00  0.946   0.48921    27.4   1.065
10358.55 -260.00  277.89 4483.85 500.00  0.972   0.50198    27.3   1.094
10358.55 -255.00  282.89 4483.84 500.00  1.000   0.51525    27.3   1.125
10358.55 -250.00  287.89 4483.83 500.00  1.029   0.52905    27.2   1.157
10358.55 -245.00  292.89 4483.81 500.00  1.059   0.54340    27.2   1.191
10358.55 -240.00  297.89 4483.80 500.00  1.091   0.55833    27.1   1.225
10358.55 -235.00  302.89 4483.79 500.00  1.124   0.57388    27.0   1.262
10358.55 -230.00  307.89 4483.78 500.00  1.159   0.59007    27.0   1.300
10358.55 -225.00  312.89 4483.77 500.00  1.195   0.60694    26.9   1.340
10358.55 -220.00  317.89 4483.76 500.00  1.233   0.62454    26.9   1.382
10358.55 -215.00  322.89 4483.75 500.00  1.273   0.64289    26.8   1.426
10358.55 -210.00  327.89 4483.74 500.00  1.315   0.66205    26.7   1.472
10358.55 -205.00  332.89 4483.73 500.00  1.358   0.68205    26.7   1.520
10358.55 -200.00  337.89 4483.72 500.00  1.405   0.70295    26.6   1.571
10358.55 -195.00  342.89 4483.71 500.00  1.454   0.72480    26.5   1.624
10358.55 -190.00  347.89 4483.69 500.00  1.505   0.74766    26.4   1.680
10358.55 -185.00  352.89 4483.68 500.00  1.559   0.77158    26.3   1.740
10358.55 -180.00  357.89 4483.67 500.00  1.616   0.79663    26.2   1.802
10358.55 -175.00  362.89 4483.66 500.00  1.677   0.82287    26.1   1.868
10358.55 -170.00  367.89 4483.65 500.00  1.741   0.85038    26.0   1.938
10358.55 -165.00  372.89 4483.64 500.00  1.809   0.87924    25.9   2.011
10358.55 -160.00  377.89 4483.63 500.00  1.881   0.90952    25.8   2.089
10358.55 -155.00  382.89 4483.62 500.00  1.958   0.94131    25.7   2.172
10358.55 -150.00  387.89 4483.61 500.00  2.040   0.97471    25.5   2.261
10358.55 -145.00  392.89 4483.60 500.00  2.127   1.00981    25.4   2.354
10358.55 -140.00  397.89 4483.59 500.00  2.220   1.04672    25.2   2.455
10358.55 -135.00  402.89 4483.57 500.00  2.320   1.08554    25.1   2.561
10358.55 -130.00  407.89 4483.56 500.00  2.427   1.12638    24.9   2.676
10358.55 -125.00  412.89 4483.55 500.00  2.543   1.16935    24.7   2.799
10358.55 -120.00  417.89 4483.54 500.00  2.667   1.21458    24.5   2.931
10358.55 -115.00  422.89 4483.53 500.00  2.802   1.26218    24.3   3.073
10358.55 -110.00  427.89 4483.52 500.00  2.948   1.31225    24.0   3.227
10358.55 -105.00  432.89 4483.51 500.00  3.107   1.36491    23.7   3.394
10358.55 -100.00  437.89 4483.50 500.00  3.282   1.42023    23.4   3.576
10358.55  -95.00  442.89 4483.49 500.00  3.473   1.47830    23.1   3.775
10358.55  -90.00  447.89 4483.48 500.00  3.685   1.53914    22.7   3.994
10358.55  -85.00  452.89 4483.47 500.00  3.921   1.60277    22.2   4.236
10358.55  -80.00  457.89 4483.45 500.00  4.185   1.66913    21.7   4.506
10358.55  -75.00  462.89 4483.44 500.00  4.484   1.73816    21.2   4.809
10358.55  -70.00  467.89 4483.43 500.00  4.825   1.80982    20.6   5.153
10358.55  -65.00  472.89 4483.42 500.00  5.219   1.88424    19.9   5.549
10358.55  -60.00  477.89 4483.41 500.00  5.683   1.96224    19.1   6.012
10358.55  -55.00  482.89 4483.40 500.00  6.237   2.04651    18.2   6.565
10358.55  -50.00  487.89 4483.39 500.00  6.917   2.14485    17.2   7.242
10358.55  -45.00  492.89 4483.38 500.00  7.775   2.27874    16.3   8.103
10358.55  -40.00  497.89 4483.37 500.00  8.899   2.50553    15.7   9.245
10358.55  -35.00  502.89 4483.36 500.00 10.439   2.97207    15.9  10.854
10358.55  -30.00  507.89 4483.35 500.00 12.681   4.02611    17.6  13.304
10358.55  -25.00  512.89 4483.33 500.00 16.202   6.44739    21.7  17.438
10358.55  -20.00  517.89 4483.32 500.00 22.286  12.14608    28.6  25.381
10358.55  -15.00  522.89 4483.31 500.00 33.774  26.59463    38.2  42.988
10358.55  -10.00  527.89 4483.30 500.00 51.522  61.76899    50.2  80.436
10358.55   -5.00  532.89 4483.29 500.00 47.985  97.20275    63.7 108.402
10358.55    0.00  537.89 4483.28 500.00 39.467 115.70261    71.2 122.249
10358.55    5.00  542.89 4483.27 500.00 39.750  91.16340    66.4  99.453
10358.55   10.00  547.89 4483.26 500.00 40.626  59.24569    55.6  71.837
10358.55   15.00  552.89 4483.25 500.00 29.775  29.36707    44.6  41.820
10358.55   20.00  557.89 4483.24 500.00 24.155  17.15946    35.4  29.630
10358.55   25.00  562.89 4483.23 500.00 22.077  12.39905    29.3  25.320
10358.55   30.00  567.89 4483.21 500.00 21.605  10.50401    25.9  24.023
10358.55   35.00  572.89 4483.20 500.00 21.983   9.89013    24.2  24.105
10358.55   40.00  577.89 4483.19 500.00 22.899   9.93527    23.5  24.961
10358.55   45.00  582.89 4483.18 500.00 24.206  10.36729    23.2  26.333
10358.55   50.00  587.89 4483.17 500.00 25.824  11.05994    23.2  28.092
10358.55   55.00  592.89 4483.16 500.00 27.690  11.95268    23.3  30.160
10358.55   60.00  597.89 4483.15 500.00 29.748  13.01515    23.6  32.471
10358.55   65.00  602.89 4483.14 500.00 31.929  14.22959    24.0  34.956
10358.55   70.00  607.89 4483.13 500.00 34.146  15.58069    24.5  37.533
10358.55   75.00  612.89 4483.12 500.00 36.297  17.04850    25.2  40.101
10358.55   80.00  617.89 4483.11 500.00 38.263  18.60271    25.9  42.545
10358.55   85.00  622.89 4483.09 500.00 39.924  20.19805    26.8  44.742
10358.55   90.00  627.89 4483.08 500.00 41.172  21.77154    27.9  46.574
10358.55   95.00  632.89 4483.07 500.00 41.927  23.24304    29.0  47.938
10358.55  100.00  637.89 4483.06 500.00 42.143  24.52034    30.2  48.757
10358.55  105.00  642.89 4483.05 500.00 41.816  25.50951    31.4  48.983
10358.55  110.00  647.89 4483.04 500.00 40.976  26.12878    32.5  48.598
10358.55  115.00  652.89 4483.03 500.00 39.681  26.32291    33.6  47.618
10358.55  120.00  657.89 4483.02 500.00 38.004  26.07390    34.5  46.088
10358.55  125.00  662.89 4483.01 500.00 36.028  25.40451    35.2  44.084
10358.55  130.00  667.89 4483.00 500.00 33.844  24.37358    35.8  41.707
10358.55  135.00  672.89 4482.99 500.00 31.538  23.06461    36.2  39.072
10358.55  140.00  677.89 4482.97 500.00 29.191  21.57111    36.5  36.297
10358.55  145.00  682.89 4482.96 500.00 26.875  19.98296    36.6  33.490
10358.55  150.00  687.89 4482.95 500.00 24.644  18.37664    36.7  30.741
10358.55  155.00  692.89 4482.94 500.00 22.538  16.81054    36.7  28.117
10358.55  160.00  697.89 4482.93 500.00 20.581  15.32455    36.7  25.660
10358.55  165.00  702.89 4482.92 500.00 18.784  13.94240    36.6  23.393
10358.55  170.00  707.89 4482.91 500.00 17.149  12.67527    36.5  21.325
10358.55  175.00  712.89 4482.90 500.00 15.669  11.52539    36.3  19.452
10358.55  180.00  717.89 4482.89 500.00 14.337  10.48914    36.2  17.764
10358.55  185.00  722.89 4482.88 500.00 13.140   9.55950    36.0  16.249
10358.55  190.00  727.89 4482.87 500.00 12.066   8.72769    35.9  14.891
10358.55  195.00  732.89 4482.85 500.00 11.102   7.98433    35.7  13.675
10358.55  200.00  737.89 4482.84 500.00 10.237   7.32013    35.6  12.585
10358.55  205.00  742.89 4482.83 500.00  9.460   6.72633    35.4  11.607
10358.55  210.00  747.89 4482.82 500.00  8.760   6.19485    35.3  10.729
10358.55  215.00  752.89 4482.81 500.00  8.130   5.71842    35.1   9.939
10358.55  220.00  757.89 4482.80 500.00  7.560   5.29055    35.0   9.228
10358.55  225.00  762.89 4482.79 500.00  7.045   4.90552    34.8   8.585
10358.55  230.00  767.89 4482.78 500.00  6.578   4.55829    34.7   8.003
10358.55  235.00  772.89 4482.77 500.00  6.154   4.24446    34.6   7.476
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10358.55  240.00  777.89 4482.76 500.00  5.767   3.96017    34.5   6.996
10358.55  245.00  782.89 4482.75 500.00  5.414   3.70208    34.4   6.559
10358.55  250.00  787.89 4482.73 500.00  5.092   3.46724    34.3   6.160
10358.55  255.00  792.89 4482.72 500.00  4.796   3.25308    34.1   5.795
10358.55  260.00  797.89 4482.71 500.00  4.525   3.05737    34.0   5.461
10358.55  265.00  802.89 4482.70 500.00  4.275   2.87813    34.0   5.153
10358.55  270.00  807.89 4482.69 500.00  4.044   2.71365    33.9   4.870
10358.55  275.00  812.89 4482.68 500.00  3.832   2.56242    33.8   4.610
10358.55  280.00  817.89 4482.67 500.00  3.635   2.42309    33.7   4.369
10358.55  285.00  822.89 4482.66 500.00  3.453   2.29448    33.6   4.146
10358.55  290.00  827.89 4482.65 500.00  3.284   2.17557    33.5   3.939
10358.55  295.00  832.89 4482.64 500.00  3.126   2.06543    33.5   3.747
10358.55  300.00  837.89 4482.63 500.00  2.980   1.96324    33.4   3.568
10358.55  305.00  842.89 4482.61 500.00  2.843   1.86827    33.3   3.402
10358.55  310.00  847.89 4482.60 500.00  2.715   1.77988    33.2   3.247
10358.55  315.00  852.89 4482.59 500.00  2.596   1.69748    33.2   3.102
10358.55  320.00  857.89 4482.58 500.00  2.484   1.62056    33.1   2.966
10358.55  325.00  862.89 4482.57 500.00  2.379   1.54865    33.1   2.839
10358.55  330.00  867.89 4482.56 500.00  2.281   1.48134    33.0   2.720
10358.55  335.00  872.89 4482.55 500.00  2.188   1.41825    32.9   2.608
10358.55  340.00  877.89 4482.54 500.00  2.101   1.35903    32.9   2.503
10358.55  345.00  882.89 4482.53 500.00  2.019   1.30339    32.8   2.403
10358.55  350.00  887.89 4482.52 500.00  1.942   1.25104    32.8   2.310
10358.55  355.00  892.89 4482.51 500.00  1.869   1.20174    32.7   2.222
10358.55  360.00  897.89 4482.49 500.00  1.800   1.15526    32.7   2.139
10358.55  365.00  902.89 4482.48 500.00  1.734   1.11138    32.7   2.060
10358.55  370.00  907.89 4482.47 500.00  1.673   1.06993    32.6   1.985
10358.55  375.00  912.89 4482.46 500.00  1.614   1.03072    32.6   1.915
10358.55  380.00  917.89 4482.45 500.00  1.558   0.99360    32.5   1.848
10358.55  385.00  922.89 4482.44 500.00  1.505   0.95843    32.5   1.785
10358.55  390.00  927.89 4482.43 500.00  1.455   0.92507    32.4   1.724
10358.55  395.00  932.89 4482.42 500.00  1.407   0.89341    32.4   1.667
10358.55  400.00  937.89 4482.41 500.00  1.362   0.86333    32.4   1.612
10358.55  405.00  942.89 4482.40 500.00  1.318   0.83472    32.3   1.561
10358.55  410.00  947.89 4482.39 500.00  1.277   0.80750    32.3   1.511
10358.55  415.00  952.89 4482.37 500.00  1.238   0.78158    32.3   1.464
10358.55  420.00  957.89 4482.36 500.00  1.200   0.75688    32.2   1.419
10358.55  425.00  962.89 4482.35 500.00  1.164   0.73331    32.2   1.376
10358.55  430.00  967.89 4482.34 500.00  1.130   0.71082    32.2   1.335
10358.55  435.00  972.89 4482.33 500.00  1.097   0.68935    32.1   1.296
10358.55  440.00  977.89 4482.32 500.00  1.065   0.66882    32.1   1.258
10358.55  445.00  982.89 4482.31 500.00  1.035   0.64919    32.1   1.222
10358.55  450.00  987.89 4482.30 500.00  1.006   0.63040    32.1   1.188
10358.55  455.00  992.89 4482.29 500.00  0.979   0.61241    32.0   1.155
10358.55  460.00  997.89 4482.28 500.00  0.952   0.59518    32.0   1.123
10358.55  465.00 1002.89 4482.27 500.00  0.927   0.57866    32.0   1.092
10358.55  470.00 1007.89 4482.25 500.00  0.902   0.56281    32.0   1.063
10358.55  475.00 1012.89 4482.24 500.00  0.879   0.54760    31.9   1.035
10358.55  480.00 1017.89 4482.23 500.00  0.856   0.53299    31.9   1.008
10358.55  485.00 1022.89 4482.22 500.00  0.834   0.51896    31.9   0.982
10358.55  490.00 1027.89 4482.21 500.00  0.813   0.50547    31.9   0.957
10358.55  495.00 1032.89 4482.20 500.00  0.793   0.49249    31.8   0.933
10358.55  500.00 1037.89 4482.19 500.00  0.774   0.48001    31.8   0.910
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Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

ROW CALC 7 - Typical Octuple UG 34.5kV Collection Line Paralleling 3-PH 230kV Transmission

EMF Output

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Meter height above centerline ground:   3.28 (ft)
Cross section offset for graph +/-:   500.00 (ft)
Result interval for graph:              5.00 (ft)
Electric field limit:                   0.00 (kV/m)
Magnetic field limit:                   0.00 (mG)

EMF calculation includes only wires going from structure 46 to structure 47
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EMF Circuit Data:

Set #	Phase #	Conductors Per Phase	Voltage Ph-Ph (kV)	Current (Amps)	Phase Angle (deg)	Bundle Diameter (in)
1	1	1	0	0.000	0	0.000
1	2	1	0	0.000	0	0.000
3	1	1	230	662.000	0	0.000
3	2	1	230	662.000	120	0.000
3	3	1	230	662.000	-120	0.000
13	1	1	34.5	870.000	0	0.000
13	2	1	34.5	870.000	120	0.000
13	3	1	34.5	870.000	-120	0.000
14	1	1	34.5	870.000	0	0.000
14	2	1	34.5	870.000	120	0.000
14	3	1	34.5	870.000	-120	0.000
15	1	1	34.5	870.000	0	0.000
15	2	1	34.5	870.000	120	0.000
15	3	1	34.5	870.000	-120	0.000
16	1	1	34.5	870.000	0	0.000
16	2	1	34.5	870.000	120	0.000
16	3	1	34.5	870.000	-120	0.000
17	1	1	34.5	870.000	0	0.000
17	2	1	34.5	870.000	120	0.000
17	3	1	34.5	870.000	-120	0.000
18	1	1	34.5	870.000	0	0.000
18	2	1	34.5	870.000	120	0.000
18	3	1	34.5	870.000	-120	0.000
19	1	1	34.5	870.000	0	0.000
19	2	1	34.5	870.000	120	0.000
19	3	1	34.5	870.000	-120	0.000
20	1	1	34.5	870.000	0	0.000
20	2	1	34.5	870.000	120	0.000
20	3	1	34.5	870.000	-120	0.000

Calculated EMF Circuit Data For Last Point:

Wire station and offset are based on alignment closest to point on wire.
In the case of wires that are not parallel, this may result in different stations for the wires and centerline.

Set #	Phase #	Weather Case	Cable Condition	Wind From	Wire X (ft)	Wire Y (ft)	Wire Z (ft)	Wire Station (ft)	Wire Offset (ft)	Eqv. Wire Diameter (in)	Voltage To Gnd. (kV)
1	1	0 Deg F	Creep FE	Left	628.35	5485.28	565.36	11194.51	95.37	0.360	0
1	2	0 Deg F	Creep FE	Left	647.61	5485.27	565.36	11194.51	114.63	0.360	0
3	1	212 Deg F	Creep FE	Left	618.73	5485.28	554.63	11194.51	85.75	1.108	132.8
3	2	212 Deg F	Creep FE	Left	637.98	5485.28	554.63	11194.51	105.00	1.108	132.8
3	3	212 Deg F	Creep FE	Left	657.23	5485.27	554.63	11194.51	124.25	1.108	132.8
13	1	212 Deg F	Creep FE	Left	526.23	5485.32	496.98	11194.51	-6.75	1.417	19.92
13	2	212 Deg F	Creep FE	Left	526.48	5485.32	496.73	11194.51	-6.50	1.417	19.92
13	3	212 Deg F	Creep FE	Left	525.98	5485.32	496.73	11194.51	-7.00	1.417	19.92
14	1	212 Deg F	Creep FE	Left	530.73	5485.32	496.98	11194.51	-2.25	1.417	19.92
14	2	212 Deg F	Creep FE	Left	530.98	5485.32	496.73	11194.51	-2.00	1.417	19.92
14	3	212 Deg F	Creep FE	Left	530.48	5485.32	496.73	11194.51	-2.50	1.417	19.92
15	1	212 Deg F	Creep FE	Left	535.23	5485.31	496.98	11194.51	2.25	1.417	19.92
15	2	212 Deg F	Creep FE	Left	534.98	5485.31	496.73	11194.51	2.00	1.417	19.92
15	3	212 Deg F	Creep FE	Left	535.48	5485.31	496.73	11194.51	2.50	1.417	19.92
16	1	212 Deg F	Creep FE	Left	539.73	5485.31	496.98	11194.51	6.75	1.417	19.92
16	2	212 Deg F	Creep FE	Left	539.48	5485.31	496.73	11194.51	6.50	1.417	19.92
16	3	212 Deg F	Creep FE	Left	539.98	5485.31	496.73	11194.51	7.00	1.417	19.92
17	1	212 Deg F	Creep FE	Left	521.73	5485.32	496.98	11194.51	-11.25	1.417	19.92
17	2	212 Deg F	Creep FE	Left	521.98	5485.32	496.73	11194.51	-11.00	1.417	19.92
17	3	212 Deg F	Creep FE	Left	521.48	5485.32	496.73	11194.51	-11.50	1.417	19.92
18	1	212 Deg F	Creep FE	Left	517.23	5485.32	496.98	11194.51	-15.75	1.417	19.92
18	2	212 Deg F	Creep FE	Left	517.48	5485.32	496.73	11194.51	-15.50	1.417	19.92
18	3	212 Deg F	Creep FE	Left	516.98	5485.32	496.73	11194.51	-16.00	1.417	19.92
19	1	212 Deg F	Creep FE	Left	544.23	5485.31	496.98	11194.51	11.25	1.417	19.92
19	2	212 Deg F	Creep FE	Left	543.98	5485.31	496.73	11194.51	11.00	1.417	19.92
19	3	212 Deg F	Creep FE	Left	544.48	5485.31	496.73	11194.51	11.50	1.417	19.92
20	1	212 Deg F	Creep FE	Left	548.73	5485.31	496.98	11194.51	15.75	1.417	19.92
20	2	212 Deg F	Creep FE	Left	548.48	5485.31	496.73	11194.51	15.50	1.417	19.92
20	3	212 Deg F	Creep FE	Left	548.98	5485.31	496.73	11194.51	16.00	1.417	19.92

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Maximum magnetic field of 154.91 (mG) found at station 11194.51, offset 0.00 (ft)
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EMF Calculation Results:

Station (ft)	Offset (ft)	X (ft)	Y (ft)	Z (ft)	B Real (mG)	B Img. (mG)	B Phase Angle (deg)	B rms Res. (mG)
11194.51	-500.00	32.98	5485.50	500.00	0.356	0.18762	27.8	0.402
11194.51	-495.00	37.98	5485.49	500.00	0.362	0.19065	27.8	0.409
11194.51	-490.00	42.98	5485.49	500.00	0.368	0.19376	27.8	0.416
11194.51	-485.00	47.98	5485.49	500.00	0.375	0.19694	27.7	0.423
11194.51	-480.00	52.98	5485.49	500.00	0.381	0.20020	27.7	0.431
11194.51	-475.00	57.98	5485.49	500.00	0.388	0.20354	27.7	0.438
11194.51	-470.00	62.98	5485.48	500.00	0.395	0.20696	27.7	0.446
11194.51	-465.00	67.98	5485.48	500.00	0.402	0.21047	27.6	0.454
11194.51	-460.00	72.98	5485.48	500.00	0.409	0.21406	27.6	0.462
11194.51	-455.00	77.98	5485.48	500.00	0.417	0.21775	27.6	0.470
11194.51	-450.00	82.98	5485.48	500.00	0.424	0.22154	27.6	0.479

Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

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11194.51 -445.00   87.98 5485.48 500.00  0.432   0.22542    27.5   0.488
11194.51 -440.00   92.98 5485.47 500.00  0.441   0.22941    27.5   0.497
11194.51 -435.00   97.98 5485.47 500.00  0.449   0.23350    27.5   0.506
11194.51 -430.00  102.98 5485.47 500.00  0.458   0.23770    27.5   0.516
11194.51 -425.00  107.98 5485.47 500.00  0.466   0.24202    27.4   0.525
11194.51 -420.00  112.98 5485.47 500.00  0.476   0.24645    27.4   0.536
11194.51 -415.00  117.98 5485.46 500.00  0.485   0.25100    27.4   0.546
11194.51 -410.00  122.98 5485.46 500.00  0.495   0.25568    27.3   0.557
11194.51 -405.00  127.98 5485.46 500.00  0.505   0.26049    27.3   0.568
11194.51 -400.00  132.98 5485.46 500.00  0.515   0.26543    27.3   0.579
11194.51 -395.00  137.98 5485.46 500.00  0.526   0.27052    27.2   0.591
11194.51 -390.00  142.98 5485.46 500.00  0.537   0.27575    27.2   0.603
11194.51 -385.00  147.98 5485.45 500.00  0.548   0.28113    27.2   0.616
11194.51 -380.00  152.98 5485.45 500.00  0.560   0.28667    27.1   0.629
11194.51 -375.00  157.98 5485.45 500.00  0.572   0.29237    27.1   0.642
11194.51 -370.00  162.98 5485.45 500.00  0.584   0.29824    27.0   0.656
11194.51 -365.00  167.98 5485.45 500.00  0.597   0.30428    27.0   0.670
11194.51 -360.00  172.98 5485.45 500.00  0.610   0.31051    27.0   0.685
11194.51 -355.00  177.98 5485.44 500.00  0.624   0.31693    26.9   0.700
11194.51 -350.00  182.98 5485.44 500.00  0.638   0.32354    26.9   0.716
11194.51 -345.00  187.98 5485.44 500.00  0.653   0.33037    26.8   0.732
11194.51 -340.00  192.98 5485.44 500.00  0.668   0.33740    26.8   0.749
11194.51 -335.00  197.98 5485.44 500.00  0.684   0.34466    26.7   0.766
11194.51 -330.00  202.98 5485.43 500.00  0.700   0.35215    26.7   0.784
11194.51 -325.00  207.98 5485.43 500.00  0.717   0.35988    26.6   0.803
11194.51 -320.00  212.98 5485.43 500.00  0.735   0.36786    26.6   0.822
11194.51 -315.00  217.98 5485.43 500.00  0.753   0.37610    26.5   0.842
11194.51 -310.00  222.98 5485.43 500.00  0.772   0.38462    26.5   0.863
11194.51 -305.00  227.98 5485.43 500.00  0.792   0.39342    26.4   0.884
11194.51 -300.00  232.98 5485.42 500.00  0.812   0.40252    26.4   0.907
11194.51 -295.00  237.98 5485.42 500.00  0.834   0.41193    26.3   0.930
11194.51 -290.00  242.98 5485.42 500.00  0.856   0.42167    26.2   0.954
11194.51 -285.00  247.98 5485.42 500.00  0.879   0.43174    26.2   0.979
11194.51 -280.00  252.98 5485.42 500.00  0.903   0.44217    26.1   1.005
11194.51 -275.00  257.98 5485.41 500.00  0.928   0.45296    26.0   1.033
11194.51 -270.00  262.98 5485.41 500.00  0.954   0.46414    25.9   1.061
11194.51 -265.00  267.98 5485.41 500.00  0.981   0.47573    25.9   1.090
11194.51 -260.00  272.98 5485.41 500.00  1.010   0.48773    25.8   1.121
11194.51 -255.00  277.98 5485.41 500.00  1.039   0.50018    25.7   1.153
11194.51 -250.00  282.98 5485.41 500.00  1.070   0.51309    25.6   1.187
11194.51 -245.00  287.98 5485.40 500.00  1.103   0.52647    25.5   1.222
11194.51 -240.00  292.98 5485.40 500.00  1.137   0.54037    25.4   1.259
11194.51 -235.00  297.98 5485.40 500.00  1.173   0.55478    25.3   1.297
11194.51 -230.00  302.98 5485.40 500.00  1.210   0.56975    25.2   1.337
11194.51 -225.00  307.98 5485.40 500.00  1.249   0.58530    25.1   1.380
11194.51 -220.00  312.98 5485.39 500.00  1.291   0.60145    25.0   1.424
11194.51 -215.00  317.98 5485.39 500.00  1.334   0.61822    24.9   1.470
11194.51 -210.00  322.98 5485.39 500.00  1.380   0.63566    24.7   1.519
11194.51 -205.00  327.98 5485.39 500.00  1.428   0.65377    24.6   1.571
11194.51 -200.00  332.98 5485.39 500.00  1.479   0.67261    24.5   1.625
11194.51 -195.00  337.98 5485.39 500.00  1.533   0.69218    24.3   1.682
11194.51 -190.00  342.98 5485.38 500.00  1.590   0.71254    24.1   1.742
11194.51 -185.00  347.98 5485.38 500.00  1.650   0.73369    24.0   1.806
11194.51 -180.00  352.98 5485.38 500.00  1.714   0.75568    23.8   1.873
11194.51 -175.00  357.98 5485.38 500.00  1.782   0.77854    23.6   1.945
11194.51 -170.00  362.98 5485.38 500.00  1.855   0.80228    23.4   2.021
11194.51 -165.00  367.98 5485.38 500.00  1.932   0.82693    23.2   2.101
11194.51 -160.00  372.98 5485.37 500.00  2.014   0.85252    22.9   2.187
11194.51 -155.00  377.98 5485.37 500.00  2.102   0.87905    22.7   2.279
11194.51 -150.00  382.98 5485.37 500.00  2.197   0.90654    22.4   2.377
11194.51 -145.00  387.98 5485.37 500.00  2.299   0.93498    22.1   2.482
11194.51 -140.00  392.98 5485.37 500.00  2.408   0.96435    21.8   2.594
11194.51 -135.00  397.98 5485.36 500.00  2.527   0.99463    21.5   2.716
11194.51 -130.00  402.98 5485.36 500.00  2.655   1.02577    21.1   2.846
11194.51 -125.00  407.98 5485.36 500.00  2.795   1.05769    20.7   2.988
11194.51 -120.00  412.98 5485.36 500.00  2.947   1.09030    20.3   3.142
11194.51 -115.00  417.98 5485.36 500.00  3.114   1.12347    19.8   3.311
11194.51 -110.00  422.98 5485.36 500.00  3.298   1.15705    19.3   3.495
11194.51 -105.00  427.98 5485.35 500.00  3.502   1.19088    18.8   3.699
11194.51 -100.00  432.98 5485.35 500.00  3.728   1.22482    18.2   3.924
11194.51  -95.00  437.98 5485.35 500.00  3.983   1.25884    17.5   4.177
11194.51  -90.00  442.98 5485.35 500.00  4.270   1.29322    16.9   4.461
11194.51  -85.00  447.98 5485.35 500.00  4.597   1.32885    16.1   4.785
11194.51  -80.00  452.98 5485.34 500.00  4.974   1.36810    15.4   5.159
11194.51  -75.00  457.98 5485.34 500.00  5.414   1.41631    14.7   5.596
11194.51  -70.00  462.98 5485.34 500.00  5.934   1.48491    14.0   6.117
11194.51  -65.00  467.98 5485.34 500.00  6.560   1.59716    13.7   6.752
11194.51  -60.00  472.98 5485.34 500.00  7.330   1.79761    13.8   7.547
11194.51  -55.00  477.98 5485.34 500.00  8.300   2.16495    14.6   8.578
11194.51  -50.00  482.98 5485.33 500.00  9.562   2.82893    16.5   9.972
11194.51  -45.00  487.98 5485.33 500.00 11.271   4.00461    19.6  11.961
11194.51  -40.00  492.98 5485.33 500.00 13.704   6.08629    23.9  14.995
11194.51  -35.00  497.98 5485.33 500.00 17.401   9.89977    29.6  20.020
11194.51  -30.00  502.98 5485.33 500.00 23.507  17.39966    36.5  29.246
11194.51  -25.00  507.98 5485.32 500.00 34.489  33.62167    44.3  48.165
11194.51  -20.00  512.98 5485.32 500.00 52.149  68.10345    52.6  85.776
11194.51  -15.00  517.98 5485.32 500.00 50.754  95.88745    62.1 108.491
11194.51  -10.00  522.98 5485.32 500.00 35.925 103.09699    70.8 109.177
11194.51   -5.00  527.98 5485.32 500.00 27.412 125.67307    77.7 128.628
11194.51    0.00  532.98 5485.32 500.00 23.602 153.10547    81.2 154.914
11194.51    5.00  537.98 5485.31 500.00 23.289 120.51992    79.1 122.749
11194.51   10.00  542.98 5485.31 500.00 27.358  96.91256    74.2 100.700
11194.51   15.00  547.98 5485.31 500.00 38.638  91.90313    67.2  99.695
11194.51   20.00  552.98 5485.31 500.00 44.865  70.24772    57.4  83.352
11194.51   25.00  557.98 5485.31 500.00 35.768  39.39911    47.8  53.213
11194.51   30.00  562.98 5485.30 500.00 30.286  24.51890    39.0  38.967
11194.51   35.00  567.98 5485.30 500.00 27.978  17.74512    32.4  33.131
11194.51   40.00  572.98 5485.30 500.00 27.347  14.56788    28.0  30.985
11194.51   45.00  577.98 5485.30 500.00 27.676  13.18138    25.5  30.654
11194.51   50.00  582.98 5485.30 500.00 28.623  12.79540    24.1  31.352
11194.51   55.00  587.98 5485.30 500.00 29.999  13.02483    23.5  32.705
11194.51   60.00  592.98 5485.29 500.00 31.679  13.66724    23.3  34.501
11194.51   65.00  597.98 5485.29 500.00 33.554  14.60932    23.5  36.596
11194.51   70.00  602.98 5485.29 500.00 35.515  15.78108    24.0  38.863
11194.51   75.00  607.98 5485.29 500.00 37.443  17.13047    24.6  41.175
11194.51   80.00  612.98 5485.29 500.00 39.212  18.60788    25.4  43.403
11194.51   85.00  617.98 5485.29 500.00 40.695  20.15602    26.3  45.413
11194.51   90.00  622.98 5485.28 500.00 41.783  21.70406    27.4  47.084
11194.51   95.00  627.98 5485.28 500.00 42.393  23.16632    28.7  48.310
11194.51  100.00  632.98 5485.28 500.00 42.480  24.44626    29.9  49.012
11194.51  105.00  637.98 5485.28 500.00 42.041  25.44620    31.2  49.142
11194.51  110.00  642.98 5485.28 500.00 41.105  26.08102    32.4  48.681
11194.51  115.00  647.98 5485.27 500.00 39.729  26.29257    33.5  47.641
```

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11194.51  120.00  652.98 5485.27 500.00 37.986  26.06049    34.5  46.066
11194.51  125.00  657.98 5485.27 500.00 35.959  25.40591    35.2  44.029
11194.51  130.00  662.98 5485.27 500.00 33.736  24.38682    35.9  41.627
11194.51  135.00  667.98 5485.27 500.00 31.401  23.08653    36.3  38.974
11194.51  140.00  672.98 5485.27 500.00 29.035  21.59885    36.6  36.188
11194.51  145.00  677.98 5485.26 500.00 26.707  20.01420    36.8  33.374
11194.51  150.00  682.98 5485.26 500.00 24.471  18.40965    37.0  30.623
11194.51  155.00  687.98 5485.26 500.00 22.364  16.84411    37.0  27.998
11194.51  160.00  692.98 5485.26 500.00 20.410  15.35789    37.0  25.543
11194.51  165.00  697.98 5485.26 500.00 18.618  13.97502    36.9  23.279
11194.51  170.00  702.98 5485.25 500.00 16.989  12.70687    36.8  21.215
11194.51  175.00  707.98 5485.25 500.00 15.518  11.55580    36.7  19.348
11194.51  180.00  712.98 5485.25 500.00 14.193  10.51829    36.5  17.666
11194.51  185.00  717.98 5485.25 500.00 13.005   9.58736    36.4  16.157
11194.51  190.00  722.98 5485.25 500.00 11.939   8.75426    36.3  14.804
11194.51  195.00  727.98 5485.25 500.00 10.983   8.00963    36.1  13.594
11194.51  200.00  732.98 5485.24 500.00 10.126   7.34421    36.0  12.509
11194.51  205.00  737.98 5485.24 500.00  9.356   6.74922    35.8  11.536
11194.51  210.00  742.98 5485.24 500.00  8.663   6.21661    35.7  10.663
11194.51  215.00  747.98 5485.24 500.00  8.040   5.73909    35.5   9.878
11194.51  220.00  752.98 5485.24 500.00  7.476   5.31019    35.4   9.170
11194.51  225.00  757.98 5485.23 500.00  6.967   4.92417    35.3   8.531
11194.51  230.00  762.98 5485.23 500.00  6.505   4.57601    35.1   7.953
11194.51  235.00  767.98 5485.23 500.00  6.085   4.26130    35.0   7.429
11194.51  240.00  772.98 5485.23 500.00  5.703   3.97618    34.9   6.952
11194.51  245.00  777.98 5485.23 500.00  5.354   3.71730    34.8   6.518
11194.51  250.00  782.98 5485.23 500.00  5.035   3.48171    34.7   6.122
11194.51  255.00  787.98 5485.22 500.00  4.743   3.26685    34.6   5.759
11194.51  260.00  792.98 5485.22 500.00  4.475   3.07047    34.5   5.427
11194.51  265.00  797.98 5485.22 500.00  4.228   2.89061    34.4   5.122
11194.51  270.00  802.98 5485.22 500.00  4.001   2.72554    34.3   4.841
11194.51  275.00  807.98 5485.22 500.00  3.791   2.57375    34.2   4.582
11194.51  280.00  812.98 5485.22 500.00  3.596   2.43389    34.1   4.342
11194.51  285.00  817.98 5485.21 500.00  3.416   2.30479    34.0   4.121
11194.51  290.00  822.98 5485.21 500.00  3.249   2.18541    33.9   3.916
11194.51  295.00  827.98 5485.21 500.00  3.094   2.07483    33.8   3.725
11194.51  300.00  832.98 5485.21 500.00  2.949   1.97222    33.8   3.548
11194.51  305.00  837.98 5485.21 500.00  2.814   1.87686    33.7   3.382
11194.51  310.00  842.98 5485.20 500.00  2.688   1.78809    33.6   3.228
11194.51  315.00  847.98 5485.20 500.00  2.570   1.70534    33.6   3.084
11194.51  320.00  852.98 5485.20 500.00  2.459   1.62809    33.5   2.949
11194.51  325.00  857.98 5485.20 500.00  2.356   1.55586    33.4   2.823
11194.51  330.00  862.98 5485.20 500.00  2.259   1.48825    33.4   2.705
11194.51  335.00  867.98 5485.20 500.00  2.167   1.42487    33.3   2.594
11194.51  340.00  872.98 5485.19 500.00  2.081   1.36538    33.3   2.489
11194.51  345.00  877.98 5485.19 500.00  2.000   1.30949    33.2   2.391
11194.51  350.00  882.98 5485.19 500.00  1.924   1.25690    33.2   2.298
11194.51  355.00  887.98 5485.19 500.00  1.851   1.20737    33.1   2.210
11194.51  360.00  892.98 5485.19 500.00  1.783   1.16066    33.1   2.128
11194.51  365.00  897.98 5485.18 500.00  1.719   1.11658    33.0   2.049
11194.51  370.00  902.98 5485.18 500.00  1.657   1.07493    33.0   1.975
11194.51  375.00  907.98 5485.18 500.00  1.599   1.03553    32.9   1.905
11194.51  380.00  912.98 5485.18 500.00  1.544   0.99824    32.9   1.839
11194.51  385.00  917.98 5485.18 500.00  1.492   0.96290    32.8   1.776
11194.51  390.00  922.98 5485.18 500.00  1.442   0.92938    32.8   1.716
11194.51  395.00  927.98 5485.17 500.00  1.395   0.89756    32.8   1.659
11194.51  400.00  932.98 5485.17 500.00  1.350   0.86733    32.7   1.605
11194.51  405.00  937.98 5485.17 500.00  1.307   0.83858    32.7   1.553
11194.51  410.00  942.98 5485.17 500.00  1.267   0.81123    32.6   1.504
11194.51  415.00  947.98 5485.17 500.00  1.228   0.78518    32.6   1.457
11194.51  420.00  952.98 5485.16 500.00  1.190   0.76035    32.6   1.412
11194.51  425.00  957.98 5485.16 500.00  1.155   0.73667    32.5   1.370
11194.51  430.00  962.98 5485.16 500.00  1.121   0.71407    32.5   1.329
11194.51  435.00  967.98 5485.16 500.00  1.088   0.69248    32.5   1.290
11194.51  440.00  972.98 5485.16 500.00  1.057   0.67185    32.4   1.253
11194.51  445.00  977.98 5485.16 500.00  1.027   0.65213    32.4   1.217
11194.51  450.00  982.98 5485.15 500.00  0.999   0.63325    32.4   1.183
11194.51  455.00  987.98 5485.15 500.00  0.971   0.61517    32.3   1.150
11194.51  460.00  992.98 5485.15 500.00  0.945   0.59785    32.3   1.118
11194.51  465.00  997.98 5485.15 500.00  0.920   0.58124    32.3   1.088
11194.51  470.00 1002.98 5485.15 500.00  0.896   0.56531    32.3   1.059
11194.51  475.00 1007.98 5485.14 500.00  0.872   0.55003    32.2   1.031
11194.51  480.00 1012.98 5485.14 500.00  0.850   0.53535    32.2   1.004
11194.51  485.00 1017.98 5485.14 500.00  0.828   0.52124    32.2   0.979
11194.51  490.00 1022.98 5485.14 500.00  0.807   0.50769    32.2   0.954
11194.51  495.00 1027.98 5485.14 500.00  0.787   0.49465    32.1   0.930
11194.51  500.00 1032.98 5485.14 500.00  0.768   0.48210    32.1   0.907
```

ROW CALC 8 - Typical Underground 34.5kV Collection – Up to 9 Parallel Lines

EMF Output

```
Meter height above centerline ground:   3.28 (ft)
Cross section offset for graph +/-:   500.00 (ft)
Result interval for graph:              5.00 (ft)
Electric field limit:                   0.00 (kV/m)
Magnetic field limit:                   0.00 (mG)

EMF calculation includes only wires going from structure 54 to structure 55
```

EMF Circuit Data:

Set #	Phase #	Conductors Per Phase	Voltage Ph-Ph (kV)	Current (Amps)	Phase Angle (deg)	Bundle Diameter (in)
13	1	1	34.5	870.000	0	0.000
13	2	1	34.5	870.000	120	0.000
13	3	1	34.5	870.000	-120	0.000
14	1	1	34.5	870.000	0	0.000
14	2	1	34.5	870.000	120	0.000
14	3	1	34.5	870.000	-120	0.000
15	1	1	34.5	870.000	0	0.000
15	2	1	34.5	870.000	120	0.000
15	3	1	34.5	870.000	-120	0.000
16	1	1	34.5	870.000	0	0.000
16	2	1	34.5	870.000	120	0.000
16	3	1	34.5	870.000	-120	0.000
17	1	1	34.5	870.000	0	0.000
17	2	1	34.5	870.000	120	0.000
17	3	1	34.5	870.000	-120	0.000
18	1	1	34.5	870.000	0	0.000
18	2	1	34.5	870.000	120	0.000
18	3	1	34.5	870.000	-120	0.000
19	1	1	34.5	870.000	0	0.000
19	2	1	34.5	870.000	120	0.000
19	3	1	34.5	870.000	-120	0.000
20	1	1	34.5	870.000	0	0.000
20	2	1	34.5	870.000	120	0.000
20	3	1	34.5	870.000	-120	0.000
21	1	1	34.5	870.000	0	0.000
21	2	1	34.5	870.000	120	0.000
21	3	1	34.5	870.000	-120	0.000

Calculated EMF Circuit Data For Last Point:

Wire station and offset are based on alignment closest to point on wire.
In the case of wires that are not parallel, this may result in different stations for the wires and centerline.

Set #	Phase #	Weather Case	Cable Condition	Wind From	Wire X (ft)	Wire Y (ft)	Wire Z (ft)	Wire Station (ft)	Wire Offset (ft)	Eqv. Wire Diameter (in)	Voltage To Gnd. (kV)
13	1	212 Deg F	Creep FE	Left	533.00	7125.00	496.86	13031.55	-0.00	1.417	19.92
13	2	212 Deg F	Creep FE	Left	532.75	7125.00	496.61	13031.55	-0.25	1.417	19.92
13	3	212 Deg F	Creep FE	Left	533.25	7125.00	496.61	13031.55	0.25	1.417	19.92
14	1	212 Deg F	Creep FE	Left	528.50	7125.00	496.86	13031.55	-4.50	1.417	19.92
14	2	212 Deg F	Creep FE	Left	528.75	7125.00	496.61	13031.55	-4.25	1.417	19.92
14	3	212 Deg F	Creep FE	Left	528.25	7125.00	496.61	13031.55	-4.75	1.417	19.92
15	1	212 Deg F	Creep FE	Left	524.00	7125.00	496.86	13031.55	-9.00	1.417	19.92
15	2	212 Deg F	Creep FE	Left	524.25	7125.00	496.61	13031.55	-8.75	1.417	19.92
15	3	212 Deg F	Creep FE	Left	523.75	7125.00	496.61	13031.55	-9.25	1.417	19.92
16	1	212 Deg F	Creep FE	Left	519.50	7125.00	496.86	13031.55	-13.50	1.417	19.92
16	2	212 Deg F	Creep FE	Left	519.75	7125.00	496.61	13031.55	-13.25	1.417	19.92
16	3	212 Deg F	Creep FE	Left	519.25	7125.00	496.61	13031.55	-13.75	1.417	19.92
17	1	212 Deg F	Creep FE	Left	515.00	7125.00	496.86	13031.55	-18.00	1.417	19.92
17	2	212 Deg F	Creep FE	Left	515.25	7125.00	496.61	13031.55	-17.75	1.417	19.92
17	3	212 Deg F	Creep FE	Left	514.75	7125.00	496.61	13031.55	-18.25	1.417	19.92
18	1	212 Deg F	Creep FE	Left	537.50	7125.00	496.86	13031.55	4.50	1.417	19.92
18	2	212 Deg F	Creep FE	Left	537.25	7125.00	496.61	13031.55	4.25	1.417	19.92
18	3	212 Deg F	Creep FE	Left	537.75	7125.00	496.61	13031.55	4.75	1.417	19.92
19	1	212 Deg F	Creep FE	Left	542.00	7125.00	496.86	13031.55	9.00	1.417	19.92
19	2	212 Deg F	Creep FE	Left	541.75	7125.00	496.61	13031.55	8.75	1.417	19.92
19	3	212 Deg F	Creep FE	Left	542.25	7125.00	496.61	13031.55	9.25	1.417	19.92
20	1	212 Deg F	Creep FE	Left	546.50	7125.00	496.86	13031.55	13.50	1.417	19.92
20	2	212 Deg F	Creep FE	Left	546.25	7125.00	496.61	13031.55	13.25	1.417	19.92
20	3	212 Deg F	Creep FE	Left	546.75	7125.00	496.61	13031.55	13.75	1.417	19.92
21	1	212 Deg F	Creep FE	Left	551.00	7125.00	496.86	13031.55	18.00	1.417	19.92
21	2	212 Deg F	Creep FE	Left	550.75	7125.00	496.61	13031.55	17.75	1.417	19.92
21	3	212 Deg F	Creep FE	Left	551.25	7125.00	496.61	13031.55	18.25	1.417	19.92

```
Maximum magnetic field of 148.38 (mG) found at station 13031.55, offset 0.00 (ft)
```

EMF Calculation Results:

Station (ft)	Offset (ft)	X (ft)	Y (ft)	Z (ft)	B Real (mG)	B Img. (mG)	B Phase Angle (deg)	B rms Res. (mG)
13031.55	-500.00	33.00	7125.00	500.00	0.051	0.00632	7.0	0.052
13031.55	-495.00	38.00	7125.00	500.00	0.052	0.00641	7.0	0.053
13031.55	-490.00	43.00	7125.00	500.00	0.054	0.00651	6.9	0.054
13031.55	-485.00	48.00	7125.00	500.00	0.055	0.00660	6.9	0.055
13031.55	-480.00	53.00	7125.00	500.00	0.056	0.00670	6.8	0.056
13031.55	-475.00	58.00	7125.00	500.00	0.057	0.00680	6.8	0.057
13031.55	-470.00	63.00	7125.00	500.00	0.058	0.00690	6.8	0.059
13031.55	-465.00	68.00	7125.00	500.00	0.060	0.00700	6.7	0.060
13031.55	-460.00	73.00	7125.00	500.00	0.061	0.00710	6.7	0.061
13031.55	-455.00	78.00	7125.00	500.00	0.062	0.00721	6.6	0.063
13031.55	-450.00	83.00	7125.00	500.00	0.064	0.00731	6.6	0.064
13031.55	-445.00	88.00	7125.00	500.00	0.065	0.00742	6.5	0.065
13031.55	-440.00	93.00	7125.00	500.00	0.066	0.00753	6.5	0.067

Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

```
13031.55 -435.00   98.00 7125.00 500.00  0.068   0.00765     6.4   0.068
13031.55 -430.00  103.00 7125.00 500.00  0.070   0.00776     6.4   0.070
13031.55 -425.00  108.00 7125.00 500.00  0.071   0.00788     6.3   0.072
13031.55 -420.00  113.00 7125.00 500.00  0.073   0.00799     6.3   0.073
13031.55 -415.00  118.00 7125.00 500.00  0.075   0.00811     6.2   0.075
13031.55 -410.00  123.00 7125.00 500.00  0.077   0.00823     6.1   0.077
13031.55 -405.00  128.00 7125.00 500.00  0.078   0.00836     6.1   0.079
13031.55 -400.00  133.00 7125.00 500.00  0.080   0.00848     6.0   0.081
13031.55 -395.00  138.00 7125.00 500.00  0.083   0.00861     6.0   0.083
13031.55 -390.00  143.00 7125.00 500.00  0.085   0.00873     5.9   0.085
13031.55 -385.00  148.00 7125.00 500.00  0.087   0.00886     5.8   0.087
13031.55 -380.00  153.00 7125.00 500.00  0.089   0.00899     5.8   0.090
13031.55 -375.00  158.00 7125.00 500.00  0.092   0.00912     5.7   0.092
13031.55 -370.00  163.00 7125.00 500.00  0.094   0.00925     5.6   0.095
13031.55 -365.00  168.00 7125.00 500.00  0.097   0.00938     5.5   0.097
13031.55 -360.00  173.00 7125.00 500.00  0.099   0.00951     5.5   0.100
13031.55 -355.00  178.00 7125.00 500.00  0.102   0.00964     5.4   0.103
13031.55 -350.00  183.00 7125.00 500.00  0.105   0.00977     5.3   0.106
13031.55 -345.00  188.00 7125.00 500.00  0.108   0.00990     5.2   0.109
13031.55 -340.00  193.00 7125.00 500.00  0.111   0.01003     5.1   0.112
13031.55 -335.00  198.00 7125.00 500.00  0.115   0.01015     5.1   0.115
13031.55 -330.00  203.00 7125.00 500.00  0.118   0.01028     5.0   0.119
13031.55 -325.00  208.00 7125.00 500.00  0.122   0.01040     4.9   0.122
13031.55 -320.00  213.00 7125.00 500.00  0.126   0.01051     4.8   0.126
13031.55 -315.00  218.00 7125.00 500.00  0.130   0.01062     4.7   0.130
13031.55 -310.00  223.00 7125.00 500.00  0.134   0.01073     4.6   0.135
13031.55 -305.00  228.00 7125.00 500.00  0.139   0.01083     4.5   0.139
13031.55 -300.00  233.00 7125.00 500.00  0.143   0.01092     4.4   0.144
13031.55 -295.00  238.00 7125.00 500.00  0.148   0.01100     4.2   0.149
13031.55 -290.00  243.00 7125.00 500.00  0.153   0.01107     4.1   0.154
13031.55 -285.00  248.00 7125.00 500.00  0.159   0.01113     4.0   0.159
13031.55 -280.00  253.00 7125.00 500.00  0.165   0.01117     3.9   0.165
13031.55 -275.00  258.00 7125.00 500.00  0.171   0.01120     3.8   0.171
13031.55 -270.00  263.00 7125.00 500.00  0.177   0.01120     3.6   0.177
13031.55 -265.00  268.00 7125.00 500.00  0.184   0.01118     3.5   0.184
13031.55 -260.00  273.00 7125.00 500.00  0.191   0.01113     3.3   0.191
13031.55 -255.00  278.00 7125.00 500.00  0.199   0.01105     3.2   0.199
13031.55 -250.00  283.00 7125.00 500.00  0.207   0.01093     3.0   0.207
13031.55 -245.00  288.00 7125.00 500.00  0.215   0.01077     2.9   0.216
13031.55 -240.00  293.00 7125.00 500.00  0.224   0.01056     2.7   0.225
13031.55 -235.00  298.00 7125.00 500.00  0.234   0.01029     2.5   0.234
13031.55 -230.00  303.00 7125.00 500.00  0.244   0.00996     2.3   0.245
13031.55 -225.00  308.00 7125.00 500.00  0.256   0.00955     2.1   0.256
13031.55 -220.00  313.00 7125.00 500.00  0.267   0.00906     1.9   0.268
13031.55 -215.00  318.00 7125.00 500.00  0.280   0.00847     1.7   0.280
13031.55 -210.00  323.00 7125.00 500.00  0.294   0.00777     1.5   0.294
13031.55 -205.00  328.00 7125.00 500.00  0.308   0.00694     1.3   0.308
13031.55 -200.00  333.00 7125.00 500.00  0.324   0.00598     1.1   0.324
13031.55 -195.00  338.00 7125.00 500.00  0.341   0.00490     0.8   0.341
13031.55 -190.00  343.00 7125.00 500.00  0.359   0.00377     0.6   0.359
13031.55 -185.00  348.00 7125.00 500.00  0.379   0.00288     0.4   0.379
13031.55 -180.00  353.00 7125.00 500.00  0.401   0.00305     0.4   0.401
13031.55 -175.00  358.00 7125.00 500.00  0.424   0.00464     0.6   0.424
13031.55 -170.00  363.00 7125.00 500.00  0.450   0.00718     0.9   0.450
13031.55 -165.00  368.00 7125.00 500.00  0.478   0.01043     1.2   0.478
13031.55 -160.00  373.00 7125.00 500.00  0.509   0.01439     1.6   0.509
13031.55 -155.00  378.00 7125.00 500.00  0.543   0.01914     2.0   0.543
13031.55 -150.00  383.00 7125.00 500.00  0.580   0.02483     2.5   0.581
13031.55 -145.00  388.00 7125.00 500.00  0.622   0.03164     2.9   0.622
13031.55 -140.00  393.00 7125.00 500.00  0.668   0.03980     3.4   0.669
13031.55 -135.00  398.00 7125.00 500.00  0.719   0.04962     3.9   0.721
13031.55 -130.00  403.00 7125.00 500.00  0.777   0.06147     4.5   0.779
13031.55 -125.00  408.00 7125.00 500.00  0.842   0.07584     5.1   0.845
13031.55 -120.00  413.00 7125.00 500.00  0.915   0.09335     5.8   0.920
13031.55 -115.00  418.00 7125.00 500.00  0.998   0.11482     6.6   1.005
13031.55 -110.00  423.00 7125.00 500.00  1.094   0.14133     7.4   1.103
13031.55 -105.00  428.00 7125.00 500.00  1.204   0.17430     8.2   1.217
13031.55 -100.00  433.00 7125.00 500.00  1.332   0.21565     9.2   1.350
13031.55  -95.00  438.00 7125.00 500.00  1.482   0.26801    10.2   1.506
13031.55  -90.00  443.00 7125.00 500.00  1.659   0.33504    11.4   1.693
13031.55  -85.00  448.00 7125.00 500.00  1.871   0.42191    12.7   1.918
13031.55  -80.00  453.00 7125.00 500.00  2.126   0.53609    14.2   2.192
13031.55  -75.00  458.00 7125.00 500.00  2.438   0.68861    15.8   2.534
13031.55  -70.00  463.00 7125.00 500.00  2.827   0.89621    17.6   2.965
13031.55  -65.00  468.00 7125.00 500.00  3.319   1.18507    19.7   3.524
13031.55  -60.00  473.00 7125.00 500.00  3.956   1.59765    22.0   4.266
13031.55  -55.00  478.00 7125.00 500.00  4.803   2.20581    24.7   5.285
13031.55  -50.00  483.00 7125.00 500.00  5.967   3.13764    27.7   6.742
13031.55  -45.00  488.00 7125.00 500.00  7.635   4.63623    31.3   8.933
13031.55  -40.00  493.00 7125.00 500.00 10.160   7.20041    35.3  12.453
13031.55  -35.00  498.00 7125.00 500.00 14.264  11.95592    40.0  18.612
13031.55  -30.00  503.00 7125.00 500.00 21.552  21.71663    45.2  30.596
13031.55  -25.00  508.00 7125.00 500.00 35.265  43.55660    51.0  56.043
13031.55  -20.00  513.00 7125.00 500.00 51.579  81.26598    57.6  96.253
13031.55  -15.00  518.00 7125.00 500.00 43.548  95.48304    65.5 104.945
13031.55  -10.00  523.00 7125.00 500.00 34.428 110.40403    72.7 115.647
13031.55   -5.00  528.00 7125.00 500.00 30.015 143.70066    78.2 146.802
13031.55    0.00  533.00 7125.00 500.00 28.743 145.57115    78.8 148.382
13031.55    5.00  538.00 7125.00 500.00 30.015 108.48792    74.5 112.563
13031.55   10.00  543.00 7125.00 500.00 34.428  90.03931    69.1  96.397
13031.55   15.00  548.00 7125.00 500.00 43.548  87.49511    63.5  97.734
13031.55   20.00  553.00 7125.00 500.00 51.579  82.77387    58.1  97.529
13031.55   25.00  558.00 7125.00 500.00 35.265  48.67278    54.1  60.106
13031.55   30.00  563.00 7125.00 500.00 21.552  26.30840    50.7  34.009
13031.55   35.00  568.00 7125.00 500.00 14.264  15.61020    47.6  21.146
13031.55   40.00  573.00 7125.00 500.00 10.160  10.09695    44.8  14.324
13031.55   45.00  578.00 7125.00 500.00  7.635   6.96737    42.4  10.336
13031.55   50.00  583.00 7125.00 500.00  5.967   5.04695    40.2   7.815
13031.55   55.00  588.00 7125.00 500.00  4.803   3.79531    38.3   6.121
13031.55   60.00  593.00 7125.00 500.00  3.956   2.94009    36.6   4.929
13031.55   65.00  598.00 7125.00 500.00  3.319   2.33318    35.1   4.057
13031.55   70.00  603.00 7125.00 500.00  2.827   1.88895    33.8   3.400
13031.55   75.00  608.00 7125.00 500.00  2.438   1.55528    32.5   2.892
13031.55   80.00  613.00 7125.00 500.00  2.126   1.29913    31.4   2.491
13031.55   85.00  618.00 7125.00 500.00  1.871   1.09876    30.4   2.169
13031.55   90.00  623.00 7125.00 500.00  1.659   0.93945    29.5   1.907
13031.55   95.00  628.00 7125.00 500.00  1.482   0.81098    28.7   1.690
13031.55  100.00  633.00 7125.00 500.00  1.332   0.70606    27.9   1.508
13031.55  105.00  638.00 7125.00 500.00  1.204   0.61940    27.2   1.354
13031.55  110.00  643.00 7125.00 500.00  1.094   0.54711    26.6   1.223
13031.55  115.00  648.00 7125.00 500.00  0.998   0.48625    26.0   1.111
13031.55  120.00  653.00 7125.00 500.00  0.915   0.43460    25.4   1.013
13031.55  125.00  658.00 7125.00 500.00  0.842   0.39043    24.9   0.928
```

Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

```
13031.55  130.00  663.00 7125.00 500.00  0.777   0.35240    24.4   0.853
13031.55  135.00  668.00 7125.00 500.00  0.719   0.31945    24.0   0.787
13031.55  140.00  673.00 7125.00 500.00  0.668   0.29073    23.5   0.728
13031.55  145.00  678.00 7125.00 500.00  0.622   0.26557    23.1   0.676
13031.55  150.00  683.00 7125.00 500.00  0.580   0.24342    22.8   0.629
13031.55  155.00  688.00 7125.00 500.00  0.543   0.22383    22.4   0.587
13031.55  160.00  693.00 7125.00 500.00  0.509   0.20642    22.1   0.549
13031.55  165.00  698.00 7125.00 500.00  0.478   0.19090    21.8   0.515
13031.55  170.00  703.00 7125.00 500.00  0.450   0.17700    21.5   0.484
13031.55  175.00  708.00 7125.00 500.00  0.424   0.16451    21.2   0.455
13031.55  180.00  713.00 7125.00 500.00  0.401   0.15326    20.9   0.429
13031.55  185.00  718.00 7125.00 500.00  0.379   0.14308    20.7   0.405
13031.55  190.00  723.00 7125.00 500.00  0.359   0.13385    20.4   0.384
13031.55  195.00  728.00 7125.00 500.00  0.341   0.12546    20.2   0.363
13031.55  200.00  733.00 7125.00 500.00  0.324   0.11780    20.0   0.345
13031.55  205.00  738.00 7125.00 500.00  0.308   0.11081    19.8   0.328
13031.55  210.00  743.00 7125.00 500.00  0.294   0.10440    19.6   0.312
13031.55  215.00  748.00 7125.00 500.00  0.280   0.09851    19.4   0.297
13031.55  220.00  753.00 7125.00 500.00  0.267   0.09310    19.2   0.283
13031.55  225.00  758.00 7125.00 500.00  0.256   0.08810    19.0   0.270
13031.55  230.00  763.00 7125.00 500.00  0.244   0.08349    18.9   0.258
13031.55  235.00  768.00 7125.00 500.00  0.234   0.07921    18.7   0.247
13031.55  240.00  773.00 7125.00 500.00  0.224   0.07525    18.5   0.237
13031.55  245.00  778.00 7125.00 500.00  0.215   0.07157    18.4   0.227
13031.55  250.00  783.00 7125.00 500.00  0.207   0.06815    18.2   0.218
13031.55  255.00  788.00 7125.00 500.00  0.199   0.06496    18.1   0.209
13031.55  260.00  793.00 7125.00 500.00  0.191   0.06198    18.0   0.201
13031.55  265.00  798.00 7125.00 500.00  0.184   0.05920    17.8   0.193
13031.55  270.00  803.00 7125.00 500.00  0.177   0.05659    17.7   0.186
13031.55  275.00  808.00 7125.00 500.00  0.171   0.05415    17.6   0.179
13031.55  280.00  813.00 7125.00 500.00  0.165   0.05187    17.5   0.173
13031.55  285.00  818.00 7125.00 500.00  0.159   0.04971    17.4   0.166
13031.55  290.00  823.00 7125.00 500.00  0.153   0.04769    17.3   0.161
13031.55  295.00  828.00 7125.00 500.00  0.148   0.04579    17.2   0.155
13031.55  300.00  833.00 7125.00 500.00  0.143   0.04399    17.1   0.150
13031.55  305.00  838.00 7125.00 500.00  0.139   0.04230    17.0   0.145
13031.55  310.00  843.00 7125.00 500.00  0.134   0.04070    16.9   0.140
13031.55  315.00  848.00 7125.00 500.00  0.130   0.03918    16.8   0.136
13031.55  320.00  853.00 7125.00 500.00  0.126   0.03775    16.7   0.131
13031.55  325.00  858.00 7125.00 500.00  0.122   0.03639    16.6   0.127
13031.55  330.00  863.00 7125.00 500.00  0.118   0.03511    16.5   0.123
13031.55  335.00  868.00 7125.00 500.00  0.115   0.03389    16.4   0.120
13031.55  340.00  873.00 7125.00 500.00  0.111   0.03273    16.4   0.116
13031.55  345.00  878.00 7125.00 500.00  0.108   0.03163    16.3   0.113
13031.55  350.00  883.00 7125.00 500.00  0.105   0.03058    16.2   0.110
13031.55  355.00  888.00 7125.00 500.00  0.102   0.02958    16.1   0.106
13031.55  360.00  893.00 7125.00 500.00  0.099   0.02863    16.1   0.103
13031.55  365.00  898.00 7125.00 500.00  0.097   0.02772    16.0   0.101
13031.55  370.00  903.00 7125.00 500.00  0.094   0.02686    15.9   0.098
13031.55  375.00  908.00 7125.00 500.00  0.092   0.02603    15.9   0.095
13031.55  380.00  913.00 7125.00 500.00  0.089   0.02524    15.8   0.093
13031.55  385.00  918.00 7125.00 500.00  0.087   0.02449    15.7   0.090
13031.55  390.00  923.00 7125.00 500.00  0.085   0.02376    15.7   0.088
13031.55  395.00  928.00 7125.00 500.00  0.083   0.02307    15.6   0.086
13031.55  400.00  933.00 7125.00 500.00  0.080   0.02241    15.6   0.084
13031.55  405.00  938.00 7125.00 500.00  0.078   0.02178    15.5   0.081
13031.55  410.00  943.00 7125.00 500.00  0.077   0.02117    15.5   0.079
13031.55  415.00  948.00 7125.00 500.00  0.075   0.02059    15.4   0.078
13031.55  420.00  953.00 7125.00 500.00  0.073   0.02003    15.3   0.076
13031.55  425.00  958.00 7125.00 500.00  0.071   0.01949    15.3   0.074
13031.55  430.00  963.00 7125.00 500.00  0.070   0.01897    15.2   0.072
13031.55  435.00  968.00 7125.00 500.00  0.068   0.01848    15.2   0.070
13031.55  440.00  973.00 7125.00 500.00  0.066   0.01800    15.2   0.069
13031.55  445.00  978.00 7125.00 500.00  0.065   0.01754    15.1   0.067
13031.55  450.00  983.00 7125.00 500.00  0.064   0.01709    15.1   0.066
13031.55  455.00  988.00 7125.00 500.00  0.062   0.01667    15.0   0.064
13031.55  460.00  993.00 7125.00 500.00  0.061   0.01626    15.0   0.063
13031.55  465.00  998.00 7125.00 500.00  0.060   0.01586    14.9   0.062
13031.55  470.00 1003.00 7125.00 500.00  0.058   0.01548    14.9   0.060
13031.55  475.00 1008.00 7125.00 500.00  0.057   0.01511    14.8   0.059
13031.55  480.00 1013.00 7125.00 500.00  0.056   0.01476    14.8   0.058
13031.55  485.00 1018.00 7125.00 500.00  0.055   0.01441    14.8   0.057
13031.55  490.00 1023.00 7125.00 500.00  0.054   0.01408    14.7   0.055
13031.55  495.00 1028.00 7125.00 500.00  0.052   0.01376    14.7   0.054
13031.55  500.00 1033.00 7125.00 500.00  0.051   0.01345    14.6   0.053
```

ROW CALC 9 - Typical Overhead 34.5kV Collection – Up to 4 Parallel Lines

EMF Output

```
Meter height above centerline ground:   3.28 (ft)
Cross section offset for graph +/-:   500.00 (ft)
Result interval for graph:              5.00 (ft)
Electric field limit:                   0.00 (kV/m)
Magnetic field limit:                   0.00 (mG)

EMF calculation includes only wires going from structure 50 to structure 51
```

EMF Circuit Data:

Set #	Phase #	Conductors Per Phase	Voltage Ph-Ph (kV)	Current (Amps)	Phase Angle (deg)	Bundle Diameter (in)
1	1	1	0	0.000	0	0.000
3	1	1	34.5	827.500	0	0.000
3	2	1	34.5	827.500	120	0.000
3	3	1	34.5	827.500	-120	0.000
4	1	1	34.5	827.500	0	0.000
4	2	1	34.5	827.500	120	0.000
4	3	1	34.5	827.500	-120	0.000
5	1	1	34.5	827.500	0	0.000
5	2	1	34.5	827.500	120	0.000
5	3	1	34.5	827.500	-120	0.000
6	1	1	34.5	827.500	0	0.000
6	2	1	34.5	827.500	120	0.000
6	3	1	34.5	827.500	-120	0.000

Calculated EMF Circuit Data For Last Point:

Wire station and offset are based on alignment closest to point on wire.
In the case of wires that are not parallel, this may result in different stations for the wires and centerline.

Set #	Phase #	Weather Case	Cable Condition	Wind From	Wire X (ft)	Wire Y (ft)	Wire Z (ft)	Wire Station (ft)	Wire Offset (ft)	Eqv. Wire Diameter (in)	Voltage To Gnd. (kV)
1	1	0 Deg F	Creep FE	Left	0.25	6375.00	548.70	11931.55	0.25	0.360	0
3	1	212 Deg F	Creep FE	Left	-12.00	6375.00	538.95	11931.55	-12.00	1.108	19.92
3	2	212 Deg F	Creep FE	Left	-14.00	6375.00	535.45	11931.55	-14.00	1.108	19.92
3	3	212 Deg F	Creep FE	Left	-12.00	6375.00	531.95	11931.55	-12.00	1.108	19.92
4	1	212 Deg F	Creep FE	Left	1.00	6375.00	538.95	11931.55	1.00	1.108	19.92
4	2	212 Deg F	Creep FE	Left	-1.00	6375.00	535.45	11931.55	-1.00	1.108	19.92
4	3	212 Deg F	Creep FE	Left	1.00	6375.00	531.95	11931.55	1.00	1.108	19.92
5	1	212 Deg F	Creep FE	Left	14.00	6375.00	538.95	11931.55	14.00	1.108	19.92
5	2	212 Deg F	Creep FE	Left	12.00	6375.00	535.45	11931.55	12.00	1.108	19.92
5	3	212 Deg F	Creep FE	Left	14.00	6375.00	531.95	11931.55	14.00	1.108	19.92
6	1	212 Deg F	Creep FE	Left	27.00	6375.00	538.95	11931.55	27.00	1.108	19.92
6	2	212 Deg F	Creep FE	Left	25.00	6375.00	535.45	11931.55	25.00	1.108	19.92
6	3	212 Deg F	Creep FE	Left	27.00	6375.00	531.95	11931.55	27.00	1.108	19.92

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Maximum magnetic field of 65.80 (mG) found at station 11931.55, offset 5.00 (ft)
Maximum electric field of 0.437 (kV/m) found at station 11931.55, offset 10.00 (ft)
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EMF Calculation Results:

Station (ft)	Offset (ft)	X (ft)	Y (ft)	Z (ft)	B Real (mG)	B Img. (mG)	B Phase Angle (deg)	B rms Res. (mG)	E Real (kV/m)	E Img. (kV/m)	E Phase Angle (deg)	E Axis Angle (deg)	E rms Res. (kV/m)
11931.55	-500.00	-500.00	6375.00	500.00	0.360	0.23617	33.3	0.431	0.001	0.00043	16.3	89.3	0.002
11931.55	-495.00	-495.00	6375.00	500.00	0.367	0.24090	33.3	0.439	0.001	0.00044	16.4	89.3	0.002
11931.55	-490.00	-490.00	6375.00	500.00	0.375	0.24577	33.3	0.448	0.002	0.00045	16.4	89.3	0.002
11931.55	-485.00	-485.00	6375.00	500.00	0.382	0.25079	33.3	0.457	0.002	0.00045	16.4	89.3	0.002
11931.55	-480.00	-480.00	6375.00	500.00	0.390	0.25596	33.3	0.467	0.002	0.00046	16.5	89.3	0.002
11931.55	-475.00	-475.00	6375.00	500.00	0.398	0.26130	33.3	0.476	0.002	0.00048	16.5	89.2	0.002
11931.55	-470.00	-470.00	6375.00	500.00	0.407	0.26680	33.3	0.486	0.002	0.00049	16.5	89.2	0.002
11931.55	-465.00	-465.00	6375.00	500.00	0.415	0.27248	33.3	0.497	0.002	0.00050	16.6	89.2	0.002
11931.55	-460.00	-460.00	6375.00	500.00	0.424	0.27835	33.3	0.507	0.002	0.00051	16.6	89.2	0.002
11931.55	-455.00	-455.00	6375.00	500.00	0.433	0.28440	33.3	0.518	0.002	0.00052	16.6	89.2	0.002
11931.55	-450.00	-450.00	6375.00	500.00	0.443	0.29066	33.3	0.530	0.002	0.00053	16.7	89.2	0.002
11931.55	-445.00	-445.00	6375.00	500.00	0.453	0.29712	33.3	0.542	0.002	0.00054	16.7	89.2	0.002
11931.55	-440.00	-440.00	6375.00	500.00	0.463	0.30380	33.3	0.554	0.002	0.00056	16.7	89.2	0.002
11931.55	-435.00	-435.00	6375.00	500.00	0.473	0.31071	33.3	0.566	0.002	0.00057	16.8	89.2	0.002
11931.55	-430.00	-430.00	6375.00	500.00	0.484	0.31786	33.3	0.579	0.002	0.00059	16.8	89.2	0.002
11931.55	-425.00	-425.00	6375.00	500.00	0.496	0.32526	33.3	0.593	0.002	0.00060	16.8	89.2	0.002
11931.55	-420.00	-420.00	6375.00	500.00	0.507	0.33292	33.3	0.607	0.002	0.00061	16.9	89.2	0.002
11931.55	-415.00	-415.00	6375.00	500.00	0.519	0.34085	33.3	0.621	0.002	0.00063	16.9	89.1	0.002
11931.55	-410.00	-410.00	6375.00	500.00	0.532	0.34907	33.3	0.636	0.002	0.00065	17.0	89.1	0.002
11931.55	-405.00	-405.00	6375.00	500.00	0.545	0.35758	33.3	0.652	0.002	0.00066	17.0	89.1	0.002
11931.55	-400.00	-400.00	6375.00	500.00	0.558	0.36642	33.3	0.668	0.002	0.00068	17.1	89.1	0.002
11931.55	-395.00	-395.00	6375.00	500.00	0.572	0.37558	33.3	0.684	0.002	0.00070	17.1	89.1	0.002
11931.55	-390.00	-390.00	6375.00	500.00	0.586	0.38510	33.3	0.702	0.002	0.00072	17.1	89.1	0.002
11931.55	-385.00	-385.00	6375.00	500.00	0.601	0.39498	33.3	0.719	0.002	0.00074	17.2	89.1	0.002
11931.55	-380.00	-380.00	6375.00	500.00	0.617	0.40524	33.3	0.738	0.002	0.00076	17.2	89.1	0.003
11931.55	-375.00	-375.00	6375.00	500.00	0.633	0.41591	33.3	0.758	0.003	0.00078	17.3	89.1	0.003
11931.55	-370.00	-370.00	6375.00	500.00	0.650	0.42701	33.3	0.778	0.003	0.00080	17.3	89.0	0.003
11931.55	-365.00	-365.00	6375.00	500.00	0.667	0.43855	33.3	0.799	0.003	0.00082	17.4	89.0	0.003
11931.55	-360.00	-360.00	6375.00	500.00	0.686	0.45057	33.3	0.820	0.003	0.00085	17.5	89.0	0.003
11931.55	-355.00	-355.00	6375.00	500.00	0.705	0.46309	33.3	0.843	0.003	0.00087	17.5	89.0	0.003
11931.55	-350.00	-350.00	6375.00	500.00	0.724	0.47614	33.3	0.867	0.003	0.00090	17.6	89.0	0.003
11931.55	-345.00	-345.00	6375.00	500.00	0.745	0.48975	33.3	0.892	0.003	0.00093	17.6	89.0	0.003
11931.55	-340.00	-340.00	6375.00	500.00	0.767	0.50395	33.3	0.917	0.003	0.00096	17.7	89.0	0.003
11931.55	-335.00	-335.00	6375.00	500.00	0.789	0.51877	33.3	0.944	0.003	0.00099	17.8	89.0	0.003
11931.55	-330.00	-330.00	6375.00	500.00	0.813	0.53426	33.3	0.972	0.003	0.00102	17.8	88.9	0.003
11931.55	-325.00	-325.00	6375.00	500.00	0.837	0.55045	33.3	1.002	0.003	0.00105	17.9	88.9	0.003
11931.55	-320.00	-320.00	6375.00	500.00	0.863	0.56739	33.3	1.033	0.003	0.00109	18.0	88.9	0.004
11931.55	-315.00	-315.00	6375.00	500.00	0.890	0.58512	33.3	1.065	0.003	0.00112	18.0	88.9	0.004
11931.55	-310.00	-310.00	6375.00	500.00	0.918	0.60369	33.3	1.098	0.004	0.00116	18.1	88.9	0.004
11931.55	-305.00	-305.00	6375.00	500.00	0.947	0.62316	33.3	1.134	0.004	0.00120	18.2	88.9	0.004
11931.55	-300.00	-300.00	6375.00	500.00	0.978	0.64359	33.3	1.171	0.004	0.00124	18.3	88.9	0.004

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11931.55 -295.00 -295.00 6375.00 500.00  1.010  0.66504    33.4  1.210 0.004 0.00129    18.3    88.8 0.004
11931.55 -290.00 -290.00 6375.00 500.00  1.045  0.68758    33.4  1.251 0.004 0.00133    18.4    88.8 0.004
11931.55 -285.00 -285.00 6375.00 500.00  1.080  0.71128    33.4  1.294 0.004 0.00138    18.5    88.8 0.004
11931.55 -280.00 -280.00 6375.00 500.00  1.118  0.73622    33.4  1.339 0.004 0.00144    18.6    88.8 0.005
11931.55 -275.00 -275.00 6375.00 500.00  1.158  0.76250    33.4  1.386 0.004 0.00149    18.7    88.8 0.005
11931.55 -270.00 -270.00 6375.00 500.00  1.200  0.79021    33.4  1.437 0.005 0.00155    18.8    88.7 0.005
11931.55 -265.00 -265.00 6375.00 500.00  1.244  0.81945    33.4  1.489 0.005 0.00161    18.9    88.7 0.005
11931.55 -260.00 -260.00 6375.00 500.00  1.290  0.85034    33.4  1.545 0.005 0.00167    19.0    88.7 0.005
11931.55 -255.00 -255.00 6375.00 500.00  1.340  0.88302    33.4  1.605 0.005 0.00174    19.1    88.7 0.005
11931.55 -250.00 -250.00 6375.00 500.00  1.392  0.91760    33.4  1.667 0.005 0.00182    19.2    88.7 0.006
11931.55 -245.00 -245.00 6375.00 500.00  1.447  0.95426    33.4  1.733 0.005 0.00189    19.3    88.6 0.006
11931.55 -240.00 -240.00 6375.00 500.00  1.506  0.99315    33.4  1.804 0.006 0.00198    19.5    88.6 0.006
11931.55 -235.00 -235.00 6375.00 500.00  1.568  1.03446    33.4  1.879 0.006 0.00207    19.6    88.6 0.006
11931.55 -230.00 -230.00 6375.00 500.00  1.634  1.07840    33.4  1.958 0.006 0.00216    19.7    88.6 0.006
11931.55 -225.00 -225.00 6375.00 500.00  1.705  1.12519    33.4  2.042 0.006 0.00226    19.9    88.5 0.007
11931.55 -220.00 -220.00 6375.00 500.00  1.780  1.17508    33.4  2.133 0.006 0.00237    20.0    88.5 0.007
11931.55 -215.00 -215.00 6375.00 500.00  1.860  1.22836    33.4  2.229 0.007 0.00248    20.2    88.5 0.007
11931.55 -210.00 -210.00 6375.00 500.00  1.945  1.28533    33.5  2.332 0.007 0.00260    20.3    88.5 0.007
11931.55 -205.00 -205.00 6375.00 500.00  2.037  1.34635    33.5  2.442 0.007 0.00274    20.5    88.4 0.008
11931.55 -200.00 -200.00 6375.00 500.00  2.135  1.41180    33.5  2.560 0.008 0.00288    20.7    88.4 0.008
11931.55 -195.00 -195.00 6375.00 500.00  2.241  1.48213    33.5  2.687 0.008 0.00303    20.9    88.4 0.008
11931.55 -190.00 -190.00 6375.00 500.00  2.354  1.55781    33.5  2.823 0.008 0.00319    21.1    88.4 0.009
11931.55 -185.00 -185.00 6375.00 500.00  2.476  1.63943    33.5  2.970 0.009 0.00337    21.3    88.3 0.009
11931.55 -180.00 -180.00 6375.00 500.00  2.608  1.72759    33.5  3.128 0.009 0.00356    21.5    88.3 0.010
11931.55 -175.00 -175.00 6375.00 500.00  2.751  1.82303    33.5  3.300 0.009 0.00377    21.8    88.3 0.010
11931.55 -170.00 -170.00 6375.00 500.00  2.906  1.92655    33.5  3.486 0.010 0.00399    22.0    88.2 0.011
11931.55 -165.00 -165.00 6375.00 500.00  3.073  2.03909    33.6  3.688 0.010 0.00423    22.3    88.2 0.011
11931.55 -160.00 -160.00 6375.00 500.00  3.256  2.16172    33.6  3.908 0.011 0.00450    22.6    88.2 0.012
11931.55 -155.00 -155.00 6375.00 500.00  3.456  2.29568    33.6  4.149 0.011 0.00479    22.9    88.1 0.012
11931.55 -150.00 -150.00 6375.00 500.00  3.674  2.44238    33.6  4.411 0.012 0.00510    23.3    88.1 0.013
11931.55 -145.00 -145.00 6375.00 500.00  3.913  2.60347    33.6  4.700 0.012 0.00545    23.6    88.1 0.014
11931.55 -140.00 -140.00 6375.00 500.00  4.176  2.78090    33.7  5.017 0.013 0.00582    24.0    88.1 0.014
11931.55 -135.00 -135.00 6375.00 500.00  4.466  2.97689    33.7  5.367 0.014 0.00624    24.5    88.1 0.015
11931.55 -130.00 -130.00 6375.00 500.00  4.787  3.19410    33.7  5.755 0.014 0.00669    25.0    88.0 0.016
11931.55 -125.00 -125.00 6375.00 500.00  5.143  3.43566    33.7  6.185 0.015 0.00718    25.5    88.0 0.017
11931.55 -120.00 -120.00 6375.00 500.00  5.539  3.70527    33.8  6.664 0.016 0.00773    26.1    88.0 0.018
11931.55 -115.00 -115.00 6375.00 500.00  5.983  4.00734    33.8  7.201 0.017 0.00833    26.7    88.1 0.019
11931.55 -110.00 -110.00 6375.00 500.00  6.480  4.34718    33.9  7.803 0.017 0.00898    27.4    88.1 0.019
11931.55 -105.00 -105.00 6375.00 500.00  7.040  4.73115    33.9  8.482 0.018 0.00970    28.3    88.2 0.020
11931.55 -100.00 -100.00 6375.00 500.00  7.674  5.16697    34.0  9.251 0.019 0.01048    29.2    88.3 0.021
11931.55  -95.00  -95.00 6375.00 500.00  8.394  5.66402    34.0 10.126 0.019 0.01132    30.3    88.4 0.022
11931.55  -90.00  -90.00 6375.00 500.00  9.216  6.23377    34.1 11.126 0.020 0.01222    31.6    88.7 0.023
11931.55  -85.00  -85.00 6375.00 500.00 10.158  6.89026    34.1 12.274 0.020 0.01316    33.2    89.0 0.024
11931.55  -80.00  -80.00 6375.00 500.00 11.243  7.65075    34.2 13.600 0.020 0.01411    35.1    89.6 0.025
11931.55  -75.00  -75.00 6375.00 500.00 12.500  8.53642    34.3 15.136 0.020 0.01502    37.5    90.3 0.025
11931.55  -70.00  -70.00 6375.00 500.00 13.960  9.57322    34.4 16.927 0.018 0.01579    40.8    91.5 0.024
11931.55  -65.00  -65.00 6375.00 500.00 15.663 10.79257    34.6 19.021 0.016 0.01625    45.5   273.5 0.023
11931.55  -60.00  -60.00 6375.00 500.00 17.654 12.23177    34.7 21.477 0.012 0.01616    52.7   276.6 0.020
11931.55  -55.00  -55.00 6375.00 500.00 19.983 13.93339    34.9 24.361 0.008 0.01511    63.4   281.3 0.016
11931.55  -50.00  -50.00 6375.00 500.00 22.702 15.94234    35.1 27.740 0.009 0.01256    55.5   271.6 0.013
11931.55  -45.00  -45.00 6375.00 500.00 25.851 18.29817    35.3 31.671 0.021 0.00838    21.8   241.9 0.021
11931.55  -40.00  -40.00 6375.00 500.00 29.444 21.01908    35.5 36.176 0.041 0.00904    12.6   246.5 0.041
11931.55  -35.00  -35.00 6375.00 500.00 33.437 24.07358    35.8 41.201 0.067 0.02341    19.2   250.9 0.071
11931.55  -30.00  -30.00 6375.00 500.00 37.689 27.34093    36.0 46.562 0.102 0.04786    25.2   254.1 0.112
11931.55  -25.00  -25.00 6375.00 500.00 41.932 30.57929    36.1 51.898 0.143 0.08208    29.9   256.9 0.165
11931.55  -20.00  -20.00 6375.00 500.00 45.792 33.44967    36.1 56.708 0.187 0.12461    33.6   259.5 0.225
11931.55  -15.00  -15.00 6375.00 500.00 48.908 35.64441    36.1 60.519 0.230 0.17113    36.6   262.1 0.287
11931.55  -10.00  -10.00 6375.00 500.00 51.107 37.06246    35.9 63.131 0.267 0.21572    38.9   264.3 0.343
11931.55   -5.00   -5.00 6375.00 500.00 52.467 37.84152    35.8 64.690 0.294 0.25352    40.8   266.3 0.388
11931.55    0.00    0.00 6375.00 500.00 53.197 38.20084    35.7 65.492 0.309 0.28213    42.4   267.9 0.419
11931.55    5.00    5.00 6375.00 500.00 53.496 38.31630    35.6 65.803 0.314 0.30106    43.8   269.2 0.435
11931.55   10.00   10.00 6375.00 500.00 53.486 38.28634    35.6 65.777 0.307 0.31069    45.3    90.4 0.437
11931.55   15.00   15.00 6375.00 500.00 53.165 38.08824    35.6 65.401 0.290 0.31124    47.0    91.7 0.425
11931.55   20.00   20.00 6375.00 500.00 52.410 37.59085    35.6 64.497 0.262 0.30239    49.1    93.1 0.400
11931.55   25.00   25.00 6375.00 500.00 51.022 36.59930    35.7 62.791 0.223 0.28363    51.9    94.8 0.360
11931.55   30.00   30.00 6375.00 500.00 48.795 34.90498    35.6 59.994 0.176 0.25515    55.4    96.7 0.310
11931.55   35.00   35.00 6375.00 500.00 45.653 32.44034    35.4 56.005 0.127 0.21918    60.0    98.6 0.253
11931.55   40.00   40.00 6375.00 500.00 41.773 29.39166    35.1 51.077 0.080 0.18017    66.0   100.1 0.197
11931.55   45.00   45.00 6375.00 500.00 37.519 26.10035    34.8 45.704 0.042 0.14287    73.6   100.9 0.148
11931.55   50.00   50.00 6375.00 500.00 33.265 22.88312    34.5 40.376 0.017 0.11048    81.0   100.6 0.111
11931.55   55.00   55.00 6375.00 500.00 29.279 19.93863    34.3 35.423 0.019 0.08414    77.3    98.9 0.085
11931.55   60.00   60.00 6375.00 500.00 25.698 17.35048    34.0 31.007 0.029 0.06361    65.2    96.6 0.069
11931.55   65.00   65.00 6375.00 500.00 22.565 15.12703    33.8 27.166 0.037 0.04797    52.7    94.6 0.060
11931.55   70.00   70.00 6375.00 500.00 19.862 13.23872    33.7 23.870 0.040 0.03621    42.0    93.3 0.054
11931.55   75.00   75.00 6375.00 500.00 17.547 11.64195    33.6 21.058 0.042 0.02740    33.3    92.7 0.050
11931.55   80.00   80.00 6375.00 500.00 15.570 10.29162    33.5 18.664 0.042 0.02080    26.6    92.5 0.046
11931.55   85.00   85.00 6375.00 500.00 13.879  9.14663    33.4 16.622 0.040 0.01582    21.4    92.5 0.043
11931.55   90.00   90.00 6375.00 500.00 12.429  8.17171    33.3 14.875 0.039 0.01205    17.3    92.5 0.040
11931.55   95.00   95.00 6375.00 500.00 11.182  7.33747    33.3 13.375 0.037 0.00918    14.0    92.6 0.038
11931.55  100.00  100.00 6375.00 500.00 10.104  6.61981    33.2 12.080 0.035 0.00698    11.4    92.6 0.035
11931.55  105.00  105.00 6375.00 500.00  9.169  5.99910    33.2 10.957 0.033 0.00528     9.2    92.6 0.033
11931.55  110.00  110.00 6375.00 500.00  8.353  5.45936    33.2  9.979 0.031 0.00396     7.4    92.6 0.031
11931.55  115.00  115.00 6375.00 500.00  7.638  4.98759    33.1  9.122 0.029 0.00293     5.8    92.6 0.029
11931.55  120.00  120.00 6375.00 500.00  7.008  4.57319    33.1  8.368 0.027 0.00212     4.5    92.5 0.027
11931.55  125.00  125.00 6375.00 500.00  6.451  4.20745    33.1  7.702 0.025 0.00148     3.4    92.5 0.025
11931.55  130.00  130.00 6375.00 500.00  5.957  3.88322    33.1  7.111 0.024 0.00098     2.4    92.5 0.024
11931.55  135.00  135.00 6375.00 500.00  5.516  3.59455    33.1  6.584 0.022 0.00059     1.5    92.4 0.022
11931.55  140.00  140.00 6375.00 500.00  5.122  3.33652    33.1  6.113 0.021 0.00029     0.8    92.4 0.021
11931.55  145.00  145.00 6375.00 500.00  4.768  3.10500    33.1  5.690 0.019 0.00015     0.4    92.3 0.019
11931.55  150.00  150.00 6375.00 500.00  4.449  2.89654    33.1  5.309 0.018 0.00025     0.8    92.3 0.018
11931.55  155.00  155.00 6375.00 500.00  4.161  2.70820    33.1  4.964 0.017 0.00039     1.3    92.2 0.017
11931.55  160.00  160.00 6375.00 500.00  3.899  2.53750    33.1  4.652 0.016 0.00051     1.8    92.2 0.016
11931.55  165.00  165.00 6375.00 500.00  3.661  2.38233    33.1  4.368 0.015 0.00061     2.3    92.1 0.015
11931.55  170.00  170.00 6375.00 500.00  3.444  2.24087    33.1  4.109 0.014 0.00069     2.7    92.1 0.014
11931.55  175.00  175.00 6375.00 500.00  3.246  2.11158    33.0  3.872 0.014 0.00074     3.1    92.0 0.014
11931.55  180.00  180.00 6375.00 500.00  3.064  1.99309    33.0  3.655 0.013 0.00079     3.5    92.0 0.013
11931.55  185.00  185.00 6375.00 500.00  2.897  1.88426    33.0  3.455 0.012 0.00082     3.8    91.9 0.012
11931.55  190.00  190.00 6375.00 500.00  2.743  1.78406    33.0  3.272 0.012 0.00085     4.1    91.9 0.012
11931.55  195.00  195.00 6375.00 500.00  2.601  1.69160    33.0  3.102 0.011 0.00086     4.4    91.9 0.011
11931.55  200.00  200.00 6375.00 500.00  2.469  1.60613    33.0  2.946 0.011 0.00087     4.7    91.8 0.011
11931.55  205.00  205.00 6375.00 500.00  2.348  1.52695    33.0  2.800 0.010 0.00088     5.0    91.8 0.010
11931.55  210.00  210.00 6375.00 500.00  2.235  1.45346    33.0  2.666 0.010 0.00088     5.2    91.8 0.010
11931.55  215.00  215.00 6375.00 500.00  2.130  1.38513    33.0  2.540 0.009 0.00088     5.5    91.7 0.009
11931.55  220.00  220.00 6375.00 500.00  2.032  1.32149    33.0  2.424 0.009 0.00087     5.7    91.7 0.009
11931.55  225.00  225.00 6375.00 500.00  1.940  1.26213    33.0  2.315 0.008 0.00086     5.9    91.6 0.008
11931.55  230.00  230.00 6375.00 500.00  1.855  1.20667    33.0  2.213 0.008 0.00085     6.1    91.6 0.008
11931.55  235.00  235.00 6375.00 500.00  1.775  1.15478    33.0  2.118 0.008 0.00084     6.3    91.6 0.008
11931.55  240.00  240.00 6375.00 500.00  1.701  1.10615    33.0  2.029 0.007 0.00083     6.4    91.6 0.007
11931.55  245.00  245.00 6375.00 500.00  1.630  1.06053    33.0  1.945 0.007 0.00082     6.6    91.5 0.007
11931.55  250.00  250.00 6375.00 500.00  1.564  1.01766    33.0  1.866 0.007 0.00081     6.8    91.5 0.007
11931.55  255.00  255.00 6375.00 500.00  1.502  0.97734    33.0  1.792 0.007 0.00079     6.9    91.5 0.007
11931.55  260.00  260.00 6375.00 500.00  1.444  0.93936    33.0  1.723 0.006 0.00078     7.1    91.4 0.006
11931.55  265.00  265.00 6375.00 500.00  1.389  0.90355    33.0  1.657 0.006 0.00076     7.2    91.4 0.006
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Project Title	Baron Winds EMF
Calculation Title	Electric and Magnetic Field Study
	Output Data

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11931.55  270.00  270.00 6375.00 500.00  1.337  0.86975    33.0  1.595 0.006 0.00075     7.3    91.4 0.006
11931.55  275.00  275.00 6375.00 500.00  1.288  0.83780    33.0  1.536 0.006 0.00073     7.5    91.4 0.006
11931.55  280.00  280.00 6375.00 500.00  1.241  0.80758    33.0  1.481 0.005 0.00072     7.6    91.3 0.005
11931.55  285.00  285.00 6375.00 500.00  1.197  0.77896    33.0  1.428 0.005 0.00071     7.7    91.3 0.005
11931.55  290.00  290.00 6375.00 500.00  1.156  0.75184    33.1  1.379 0.005 0.00069     7.8    91.3 0.005
11931.55  295.00  295.00 6375.00 500.00  1.116  0.72610    33.1  1.331 0.005 0.00068     7.9    91.3 0.005
11931.55  300.00  300.00 6375.00 500.00  1.078  0.70166    33.1  1.287 0.005 0.00066     8.0    91.3 0.005
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11931.55  310.00  310.00 6375.00 500.00  1.009  0.65634    33.1  1.203 0.004 0.00064     8.2    91.2 0.004
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11931.55  325.00  325.00 6375.00 500.00  0.916  0.59617    33.1  1.093 0.004 0.00060     8.5    91.2 0.004
11931.55  330.00  330.00 6375.00 500.00  0.888  0.57794    33.1  1.060 0.004 0.00058     8.6    91.1 0.004
11931.55  335.00  335.00 6375.00 500.00  0.861  0.56053    33.1  1.028 0.004 0.00057     8.6    91.1 0.004
11931.55  340.00  340.00 6375.00 500.00  0.836  0.54389    33.1  0.997 0.004 0.00056     8.7    91.1 0.004
11931.55  345.00  345.00 6375.00 500.00  0.811  0.52799    33.1  0.968 0.004 0.00055     8.8    91.1 0.004
11931.55  350.00  350.00 6375.00 500.00  0.788  0.51277    33.1  0.940 0.003 0.00054     8.9    91.1 0.003
11931.55  355.00  355.00 6375.00 500.00  0.765  0.49820    33.1  0.913 0.003 0.00053     8.9    91.1 0.003
11931.55  360.00  360.00 6375.00 500.00  0.744  0.48424    33.1  0.888 0.003 0.00051     9.0    91.1 0.003
11931.55  365.00  365.00 6375.00 500.00  0.723  0.47086    33.1  0.863 0.003 0.00050     9.1    91.0 0.003
11931.55  370.00  370.00 6375.00 500.00  0.704  0.45802    33.1  0.840 0.003 0.00049     9.1    91.0 0.003
11931.55  375.00  375.00 6375.00 500.00  0.685  0.44571    33.1  0.817 0.003 0.00048     9.2    91.0 0.003
11931.55  380.00  380.00 6375.00 500.00  0.666  0.43388    33.1  0.795 0.003 0.00047     9.3    91.0 0.003
11931.55  385.00  385.00 6375.00 500.00  0.649  0.42252    33.1  0.774 0.003 0.00046     9.3    91.0 0.003
11931.55  390.00  390.00 6375.00 500.00  0.632  0.41160    33.1  0.754 0.003 0.00046     9.4    91.0 0.003
11931.55  395.00  395.00 6375.00 500.00  0.616  0.40109    33.1  0.735 0.003 0.00045     9.4    91.0 0.003
11931.55  400.00  400.00 6375.00 500.00  0.601  0.39098    33.1  0.717 0.003 0.00044     9.5    91.0 0.003
11931.55  405.00  405.00 6375.00 500.00  0.586  0.38125    33.1  0.699 0.003 0.00043     9.5    90.9 0.003
11931.55  410.00  410.00 6375.00 500.00  0.571  0.37188    33.1  0.682 0.002 0.00042     9.6    90.9 0.003
11931.55  415.00  415.00 6375.00 500.00  0.557  0.36285    33.1  0.665 0.002 0.00041     9.6    90.9 0.002
11931.55  420.00  420.00 6375.00 500.00  0.544  0.35414    33.1  0.649 0.002 0.00041     9.7    90.9 0.002
11931.55  425.00  425.00 6375.00 500.00  0.531  0.34574    33.1  0.634 0.002 0.00040     9.7    90.9 0.002
11931.55  430.00  430.00 6375.00 500.00  0.519  0.33764    33.1  0.619 0.002 0.00039     9.8    90.9 0.002
11931.55  435.00  435.00 6375.00 500.00  0.506  0.32982    33.1  0.604 0.002 0.00038     9.8    90.9 0.002
11931.55  440.00  440.00 6375.00 500.00  0.495  0.32227    33.1  0.591 0.002 0.00038     9.9    90.9 0.002
11931.55  445.00  445.00 6375.00 500.00  0.484  0.31497    33.1  0.577 0.002 0.00037     9.9    90.9 0.002
11931.55  450.00  450.00 6375.00 500.00  0.473  0.30792    33.1  0.564 0.002 0.00036     9.9    90.8 0.002
11931.55  455.00  455.00 6375.00 500.00  0.462  0.30111    33.1  0.552 0.002 0.00036    10.0    90.8 0.002
11931.55  460.00  460.00 6375.00 500.00  0.452  0.29451    33.1  0.540 0.002 0.00035    10.0    90.8 0.002
11931.55  465.00  465.00 6375.00 500.00  0.442  0.28813    33.1  0.528 0.002 0.00034    10.1    90.8 0.002
11931.55  470.00  470.00 6375.00 500.00  0.433  0.28196    33.1  0.517 0.002 0.00034    10.1    90.8 0.002
11931.55  475.00  475.00 6375.00 500.00  0.424  0.27598    33.1  0.506 0.002 0.00033    10.1    90.8 0.002
11931.55  480.00  480.00 6375.00 500.00  0.415  0.27019    33.1  0.495 0.002 0.00032    10.2    90.8 0.002
11931.55  485.00  485.00 6375.00 500.00  0.406  0.26458    33.1  0.485 0.002 0.00032    10.2    90.8 0.002
11931.55  490.00  490.00 6375.00 500.00  0.398  0.25915    33.1  0.475 0.002 0.00031    10.2    90.8 0.002
11931.55  495.00  495.00 6375.00 500.00  0.390  0.25387    33.1  0.465 0.002 0.00031    10.3    90.8 0.002
11931.55  500.00  500.00 6375.00 500.00  0.382  0.24876    33.1  0.456 0.002 0.00030    10.3    90.8 0.002
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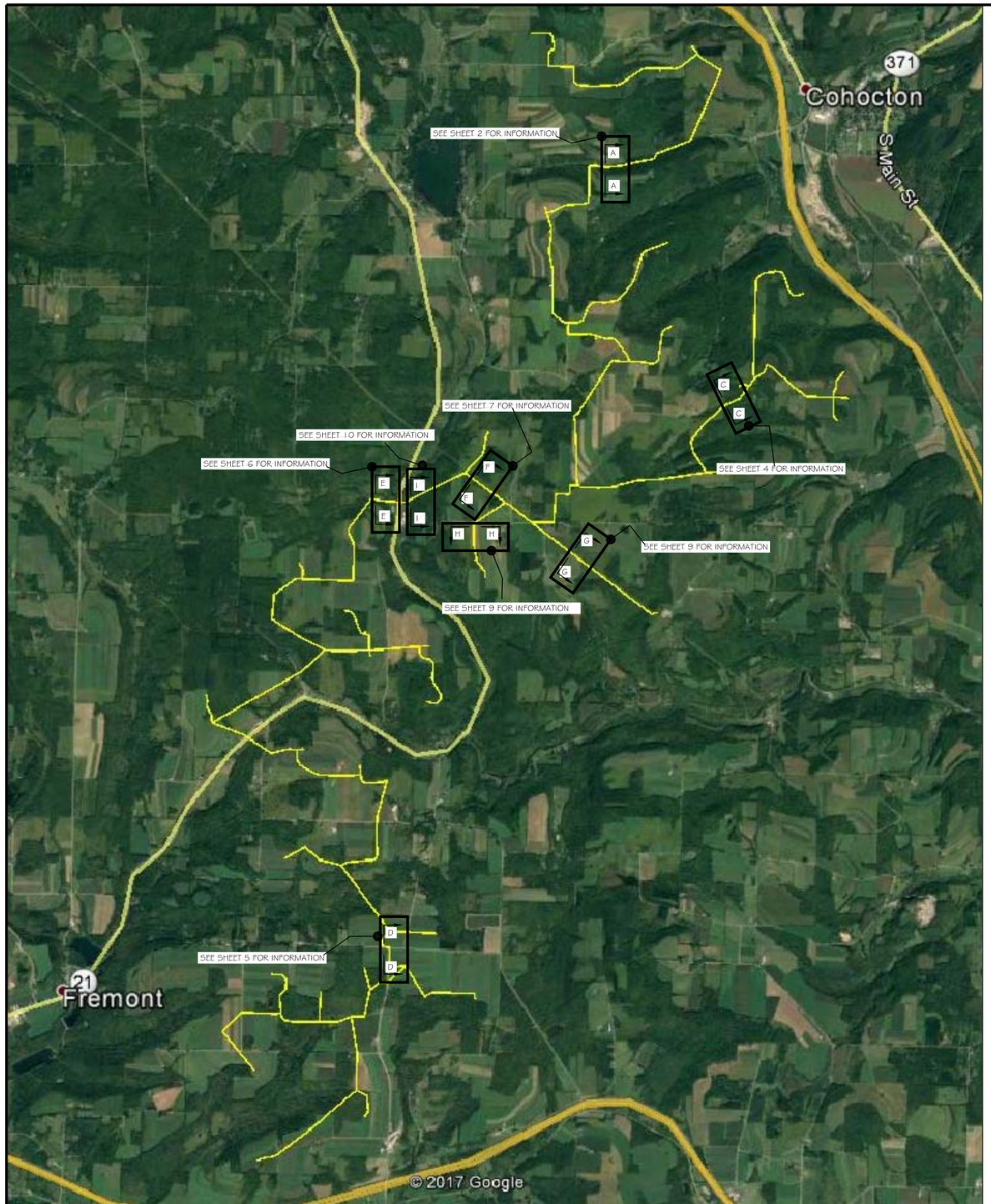
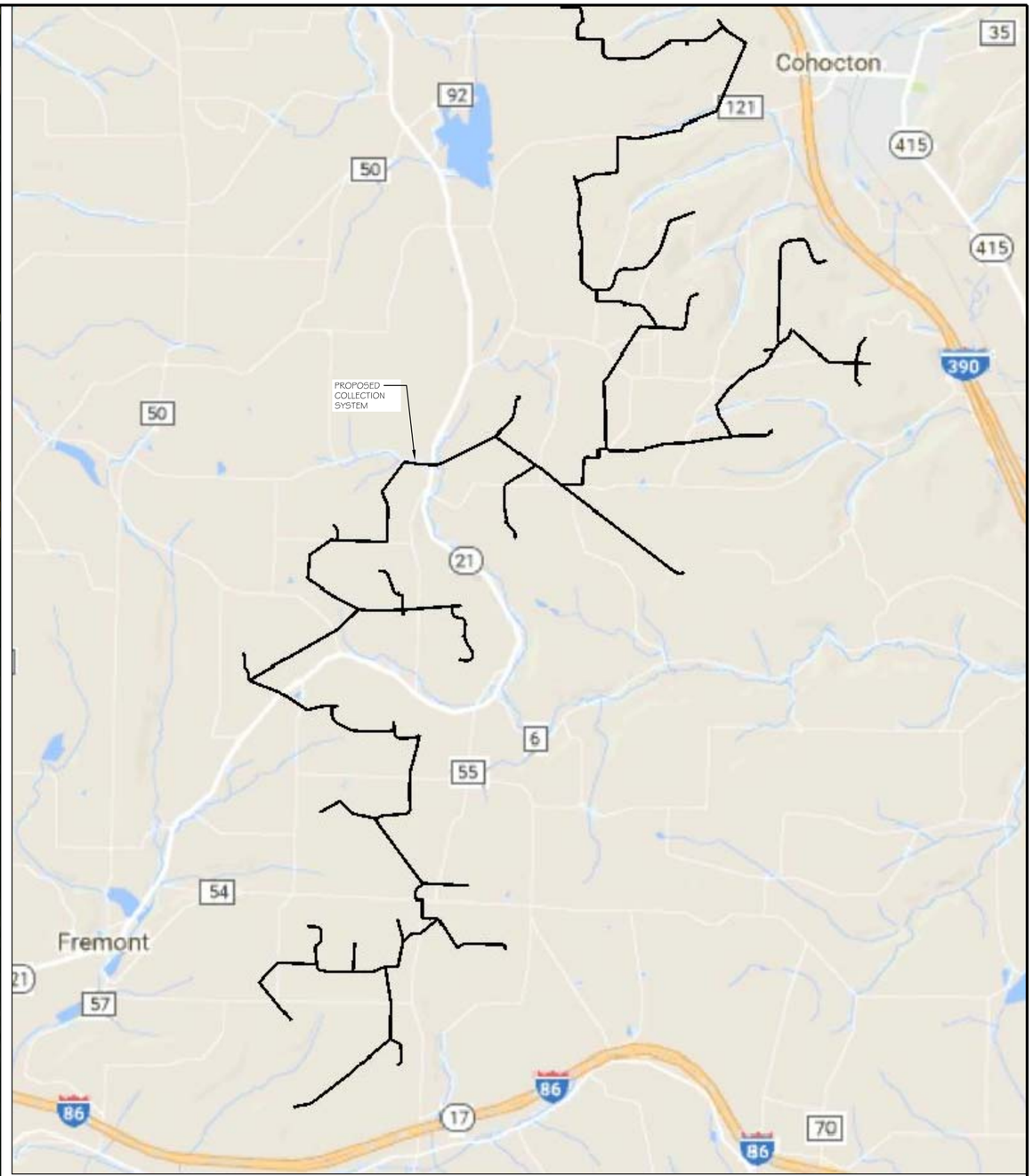


OVERVIEW DRAWING



OVERVIEW MAP

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

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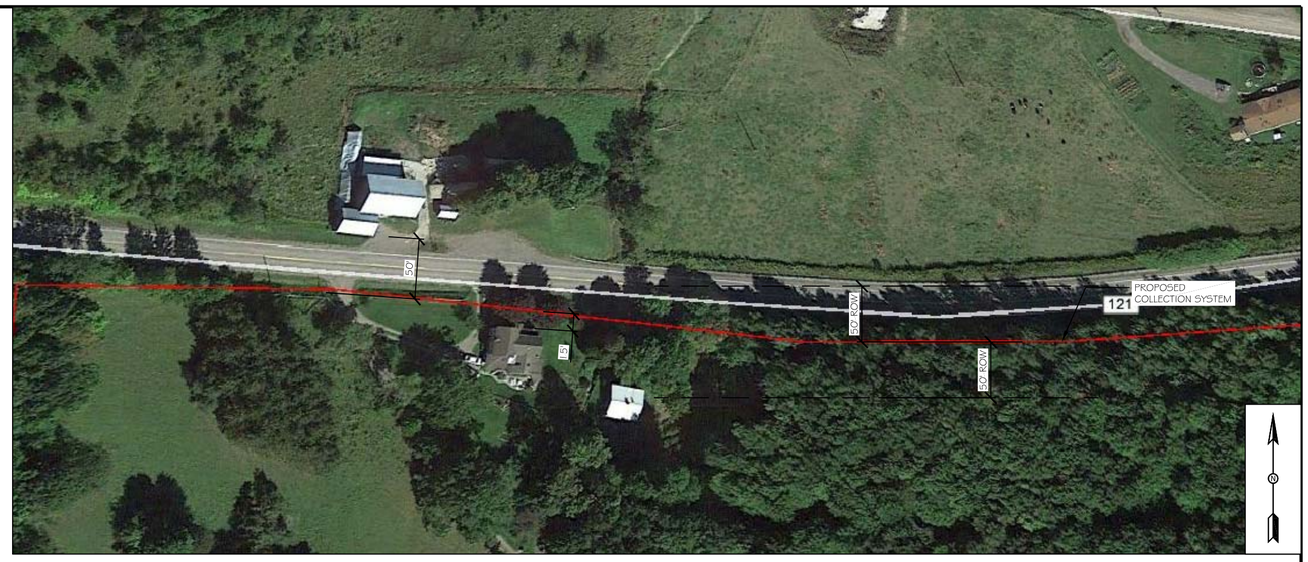
BARON WINDS EMF STUDY
MSE ENGINEERING

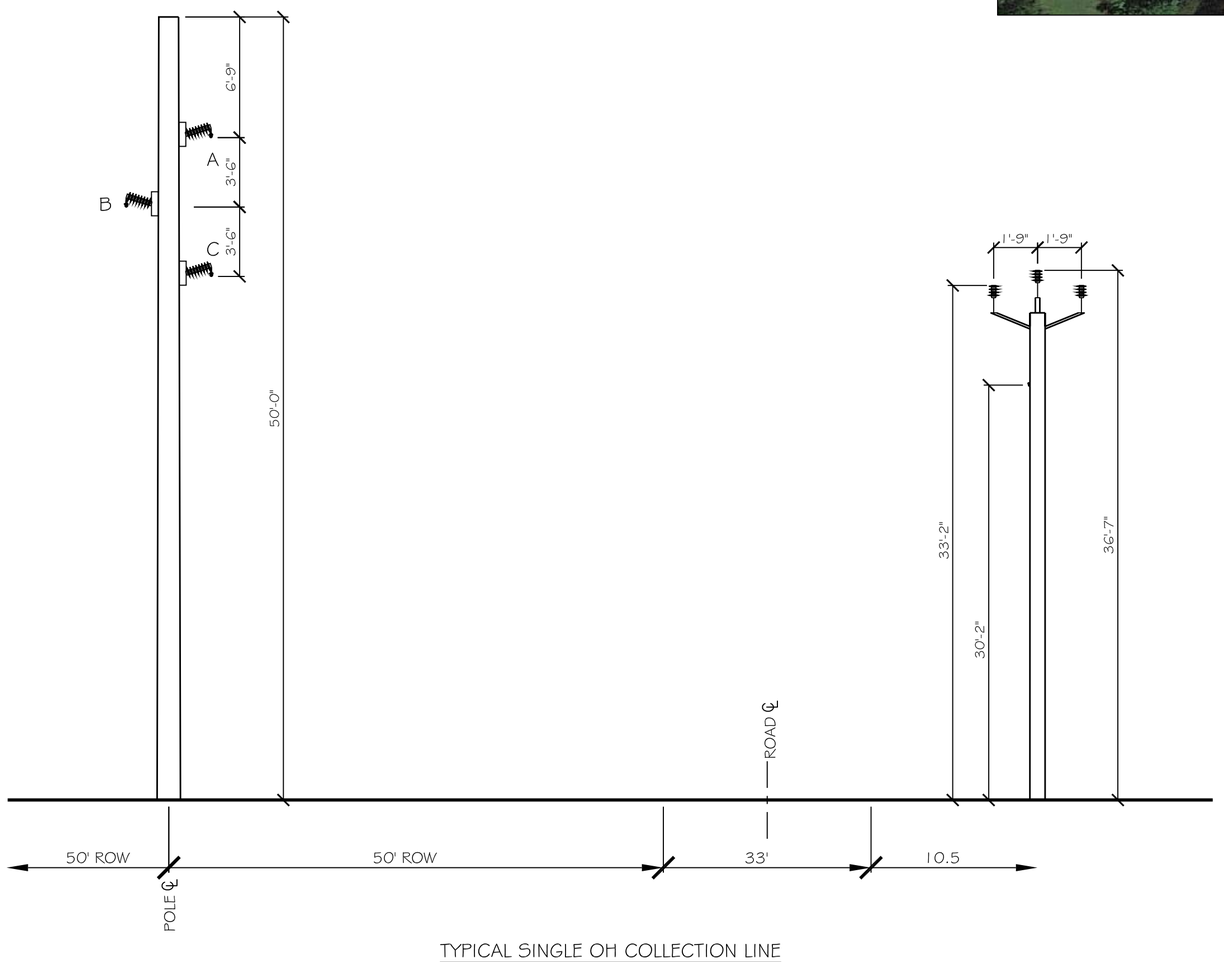
GENERAL AREA OVERVIEW
PROPOSED 34.5 kV COLLECTION SYSTEM
UNIQUE CROSS SECTIONS & CLEARANCES

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	01	2



NEAREST RESIDENCE IN ROW SECTION



TYPICAL SINGLE OH COLLECTION LINE
PARALLELING 3-PH W/N DISTRIBUTION

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

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BARON WINDS EMF STUDY
MSE ENGINEERING

ROW CALC 01
PROPOSED 34.5 kV COLLECTION SYSTEM
SECTION A-A

PLOT SCALE:
ARCH ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	02	2

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THIS CROSS-SECTION NOT USED

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

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BARON WINDS EMF STUDY
MSE ENGINEERING

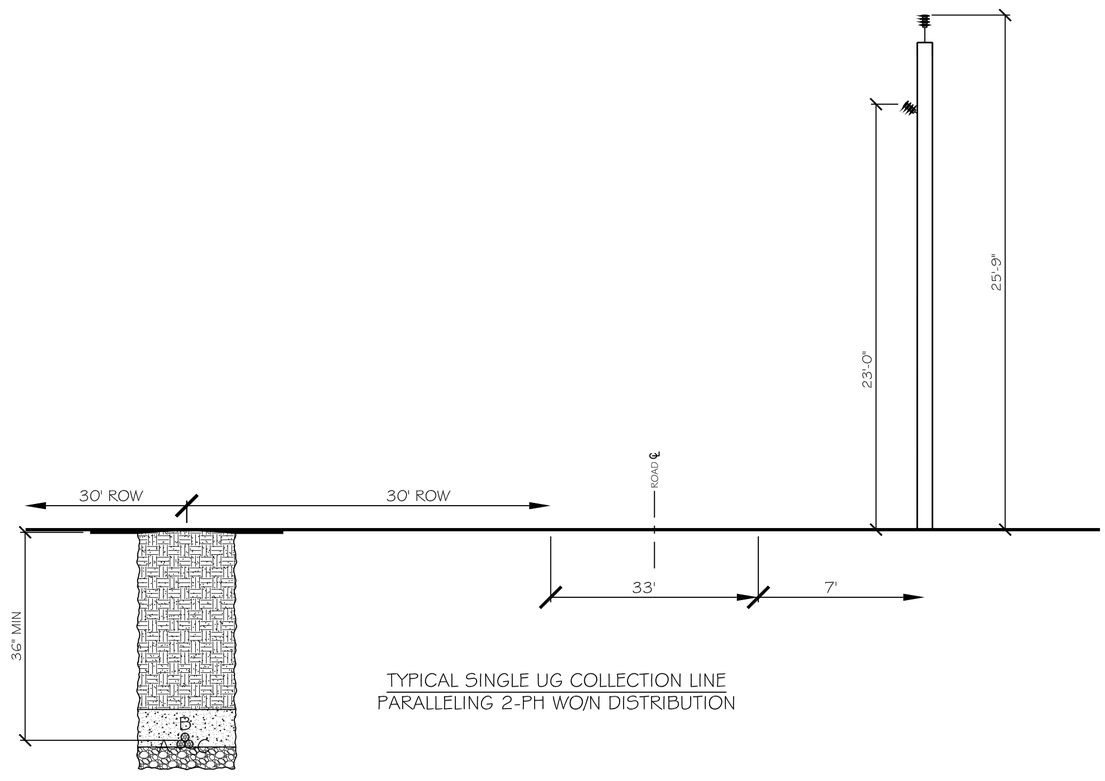
ROW CALC 02
NA - THIS CALC NOT USED IN THIS PROJECT
SECTION B-B

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	03	2

NEAREST RESIDENCE IN ROW SECTION

NEAREST RESIDENCE IN ROW SECTION
*** NO RESIDENCE IN SECTION



TYPICAL SINGLE UG COLLECTION LINE
PARALLELING 2-PH WO/N DISTRIBUTION

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

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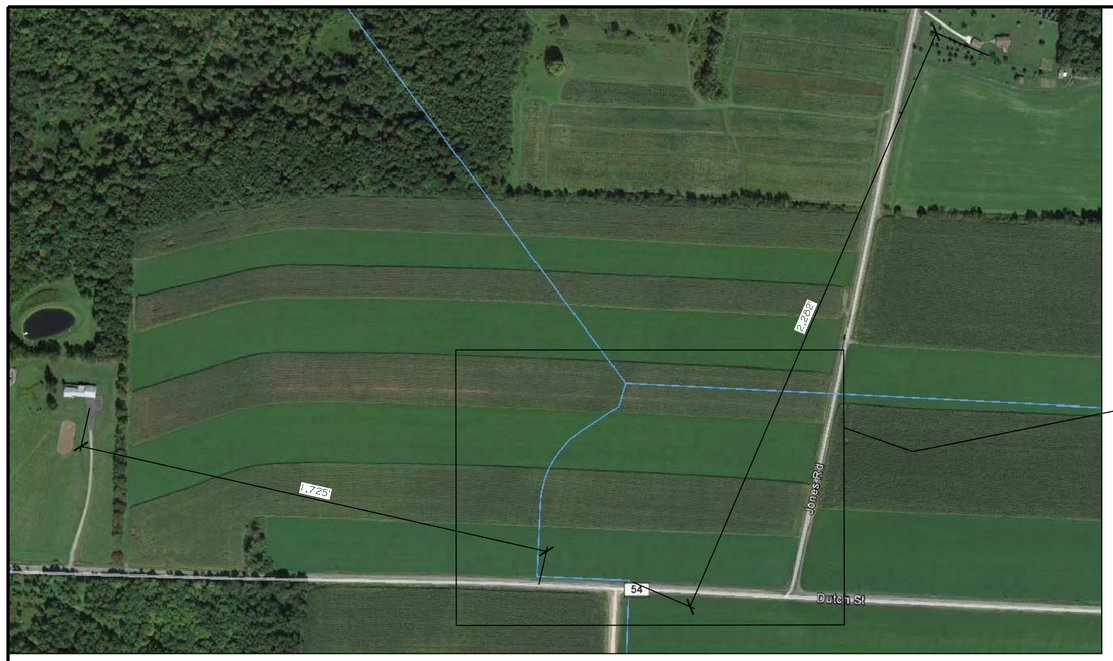
BARON WINDS EMF STUDY
MSE ENGINEERING

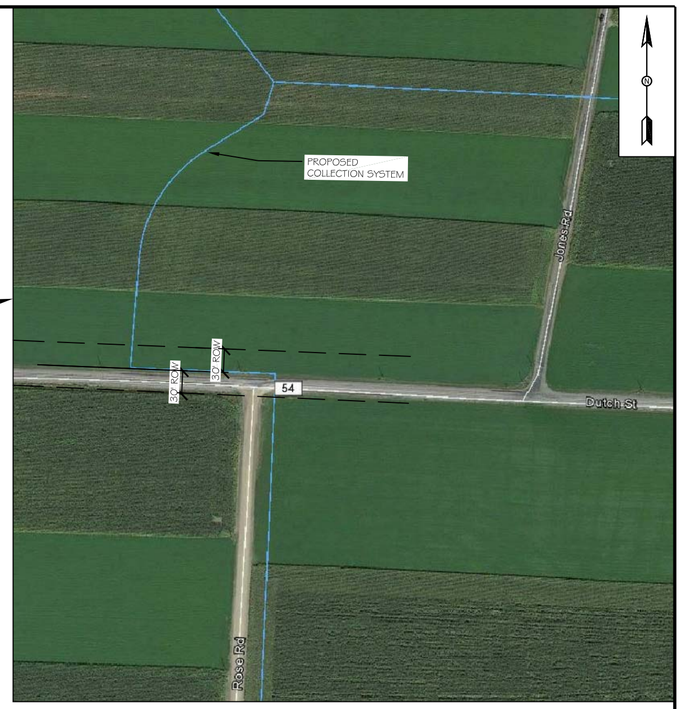
ROW CALC 03
PROPOSED 34.5 kV COLLECTION SYSTEM
SECTION C-C

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

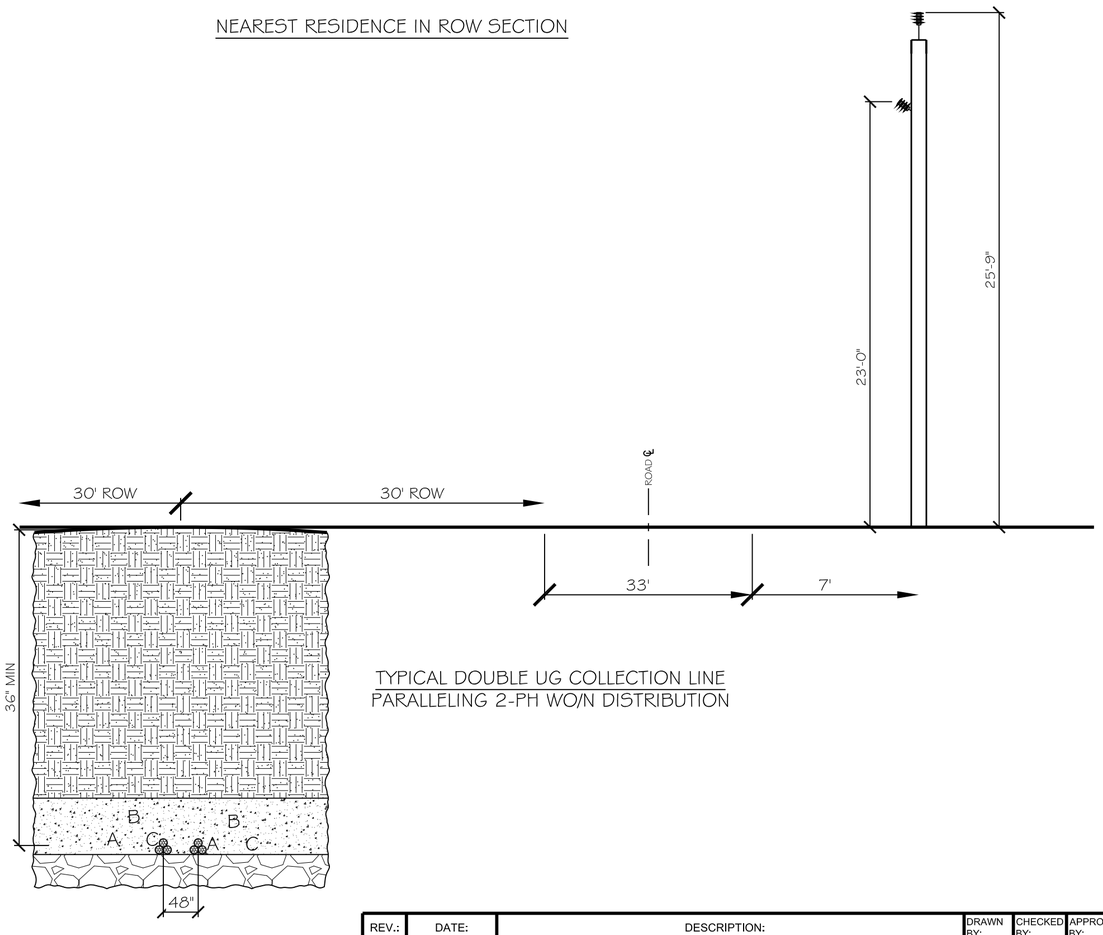
PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	04	2



NEAREST RESIDENCE IN ROW SECTION



NEAREST RESIDENCE IN ROW SECTION
*** NO RESIDENCE IN SECTION



TYPICAL DOUBLE UG COLLECTION LINE
PARALLELING 2-PH W/O/N DISTRIBUTION

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

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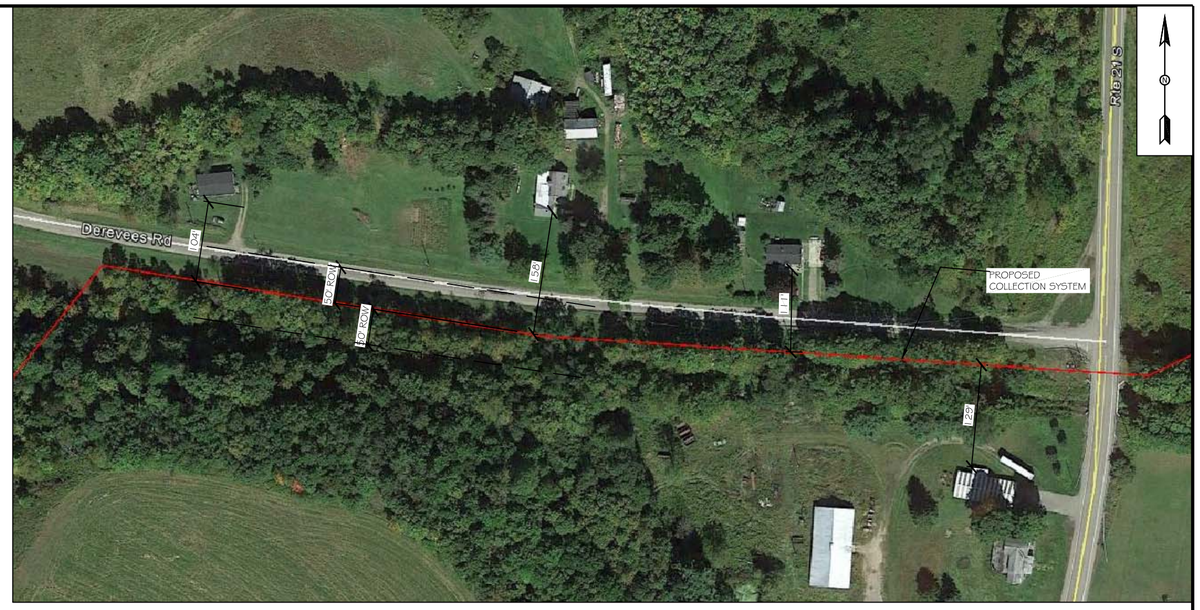
BARON WINDS EMF STUDY
MSE ENGINEERING

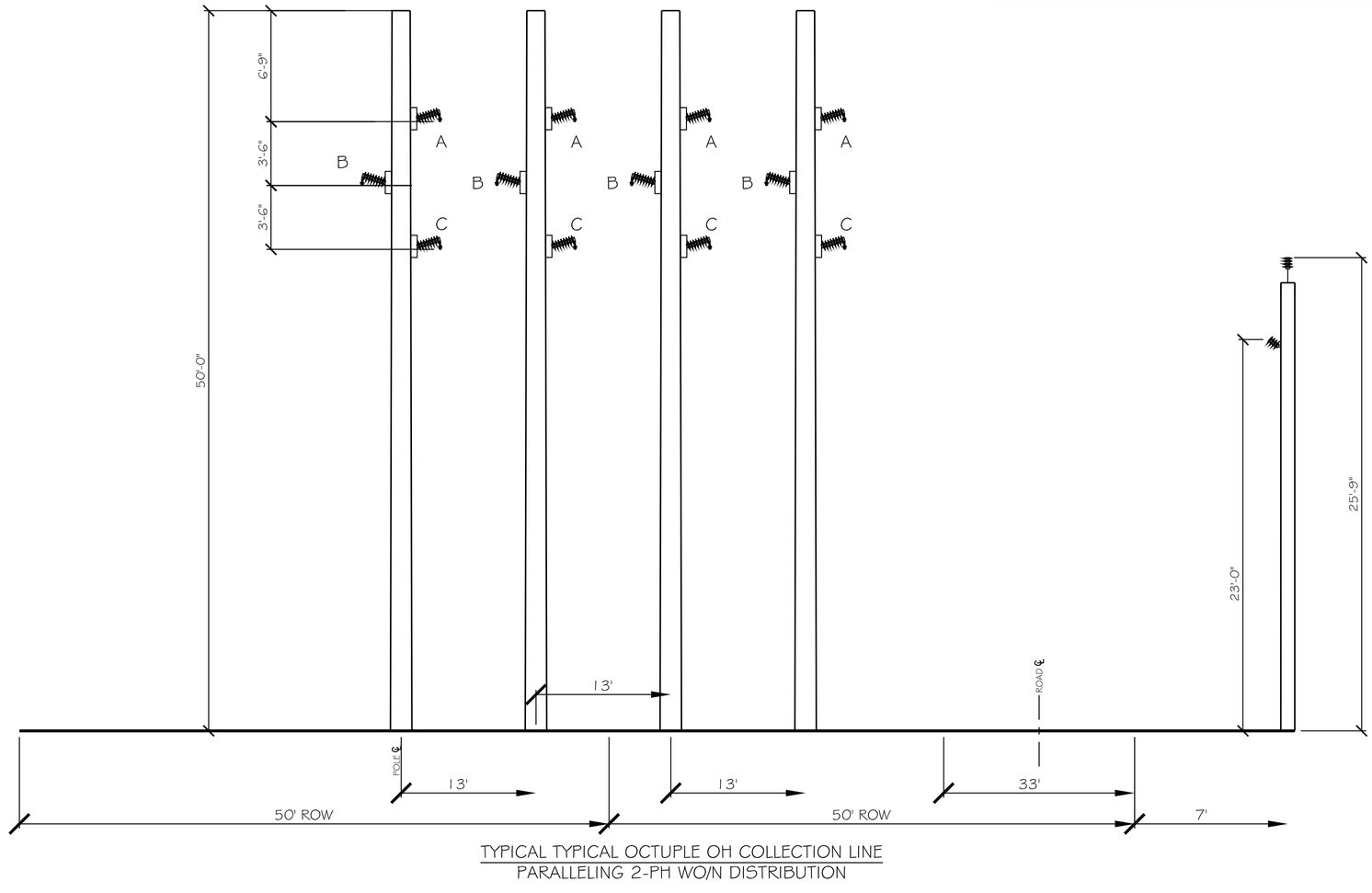
ROW CALC 04
PROPOSED 34.5 kV COLLECTION SYSTEM
SECTION D-D

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	05	2



NEAREST RESIDENCE IN ROW SECTION



TYPICAL TYPICAL OCTUPLE OH COLLECTION LINE
PARALLELING 2-PH W/O/N DISTRIBUTION

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

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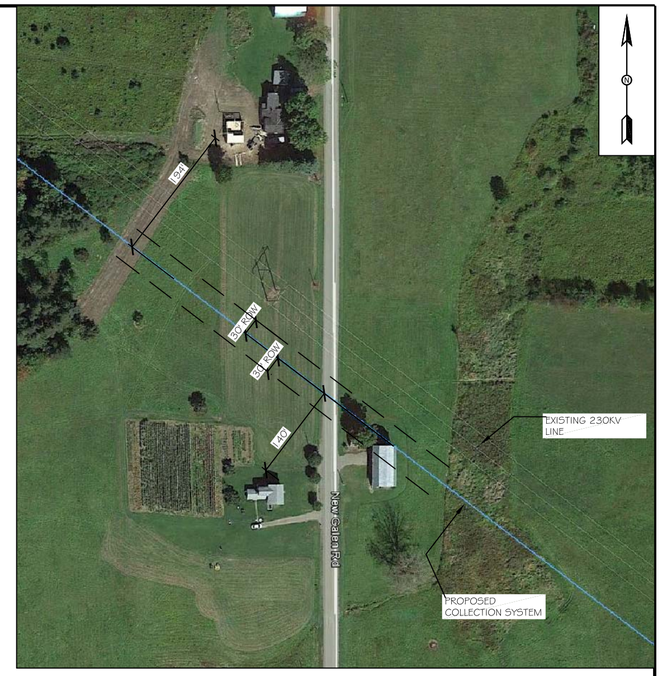
BARON WINDS EMF STUDY
MSE ENGINEERING

ROW CALC 05
PROPOSED 34.5 kV COLLECTION SYSTEM
SECTION E-E

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	06	2



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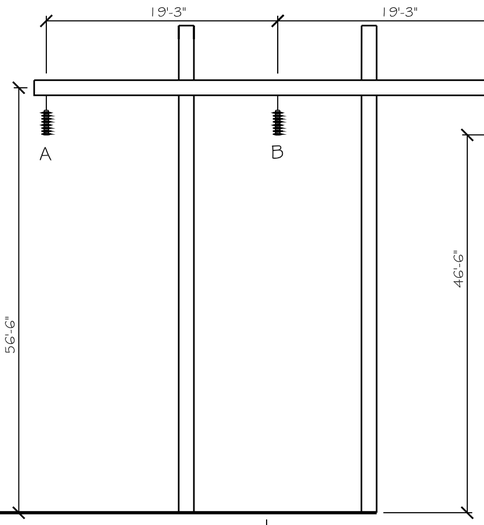

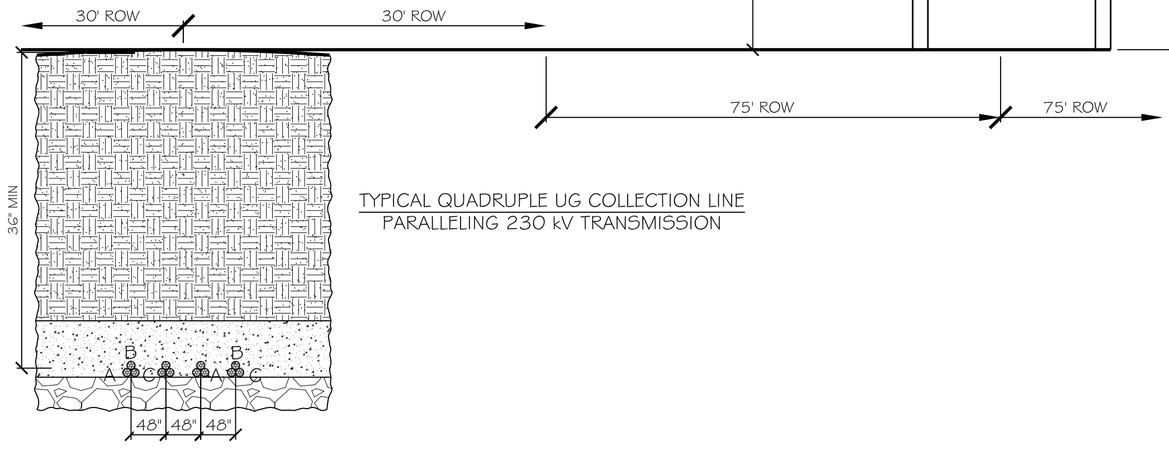

TYPICAL QUADRUPLE UG COLLECTION LINE
PARALLELING 230 kV TRANSMISSION

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

MAIN LINE
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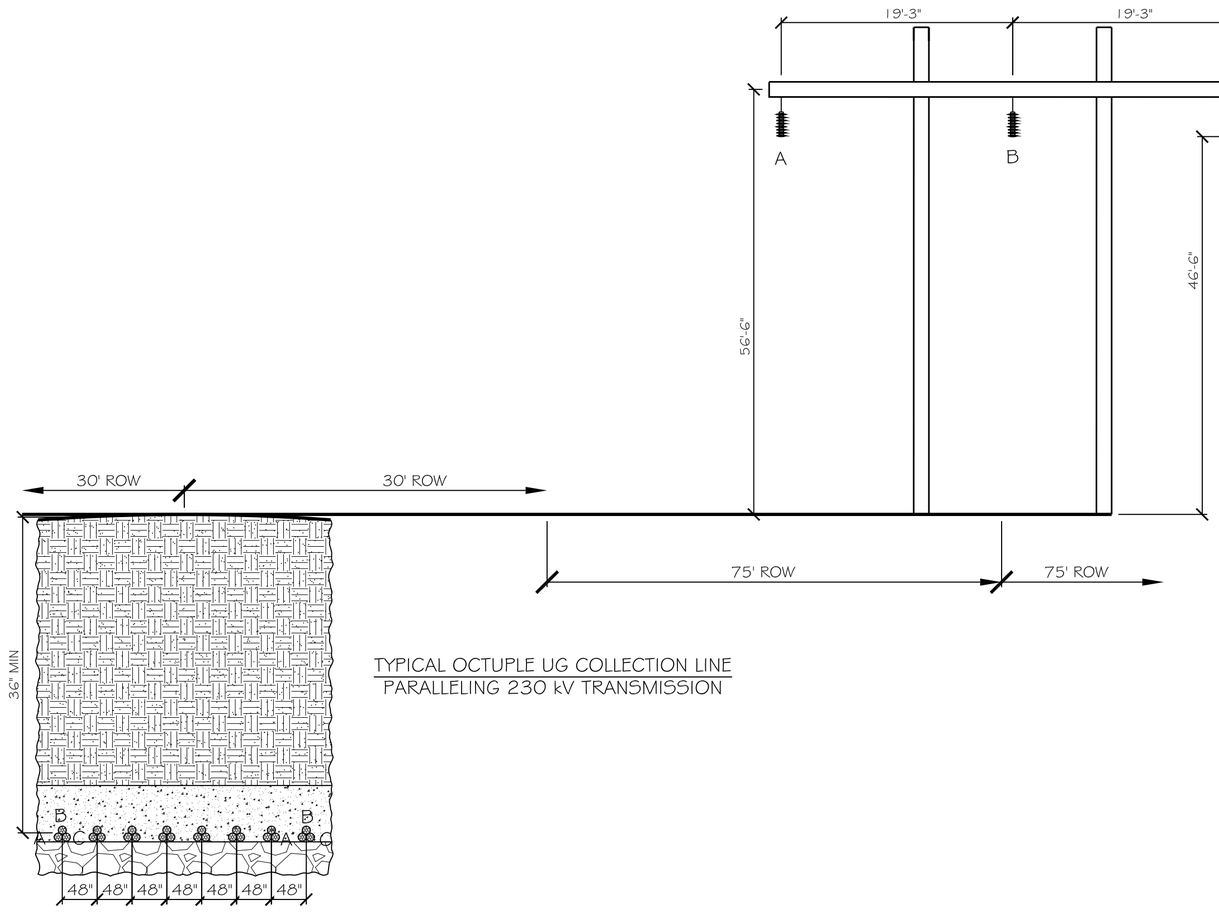
BARON WINDS EMF STUDY
MSE ENGINEERING

ROW CALC 06
PROPOSED 34.5 kV COLLECTION SYSTEM
SECTION F-F

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	07	2

NEAREST RESIDENCE IN ROW SECTION



TYPICAL OCTUPLE UG COLLECTION LINE
PARALLELING 230 kV TRANSMISSION

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

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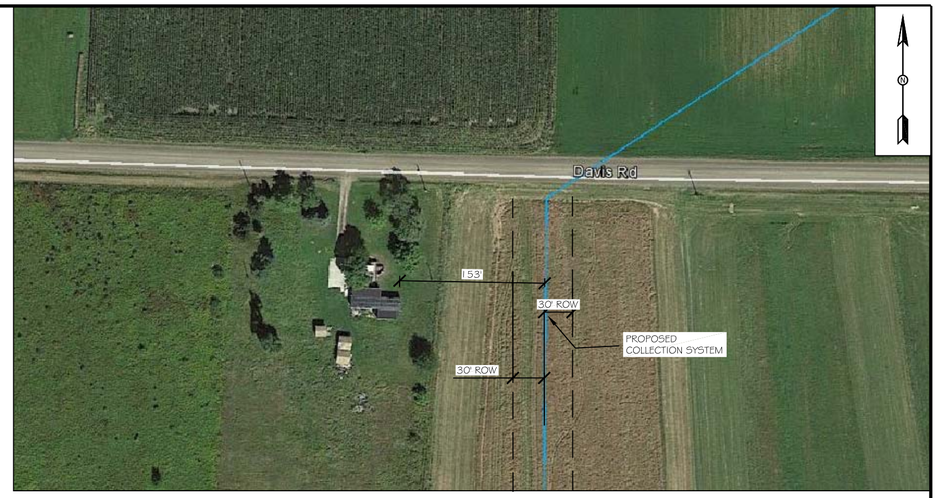
BARON WINDS EMF STUDY
MSE ENGINEERING

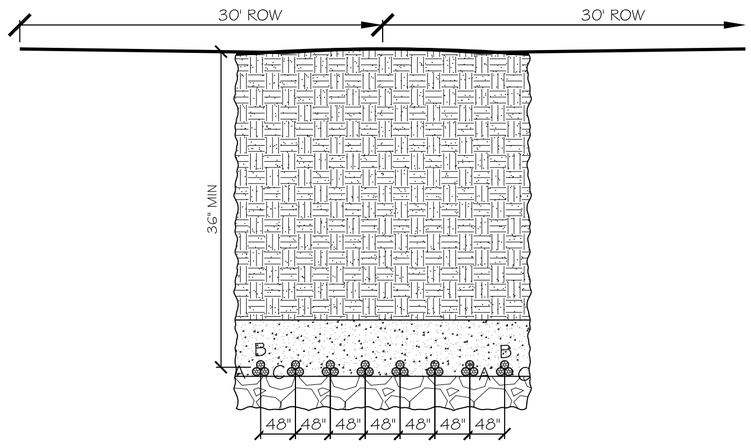
ROW CALC 07
PROPOSED 34.5 kV COLLECTION SYSTEM
SECTION G-G

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	08	2



NEAREST RESIDENCE IN ROW SECTION



MAXIMUM UG COLLECTION LINE
NONUPLE

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH		EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

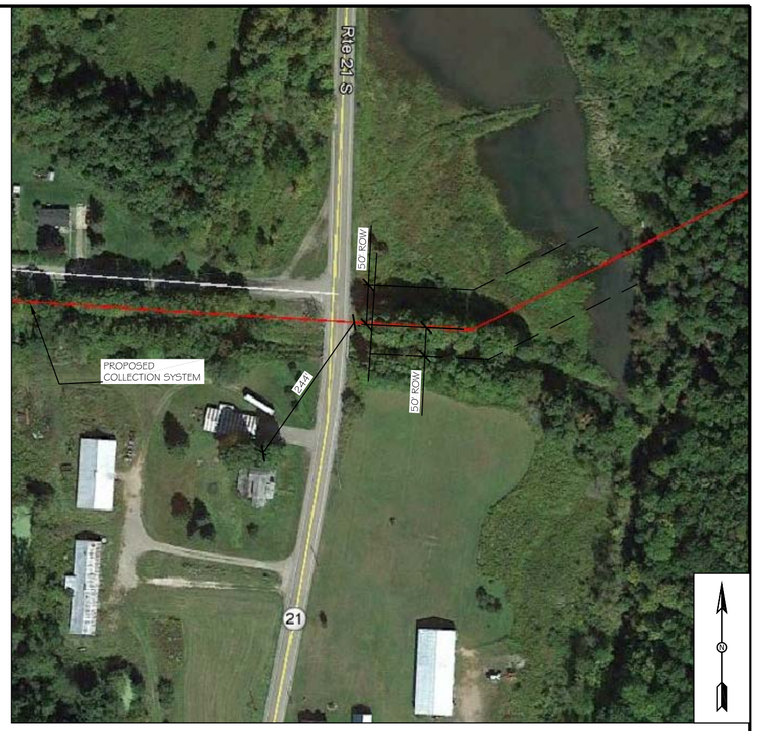
MAIN LINE
ENERGY CONSULTANTS LLC
WWW.MAINLEC.COM

BARON WINDS EMF STUDY
MSE ENGINEERING

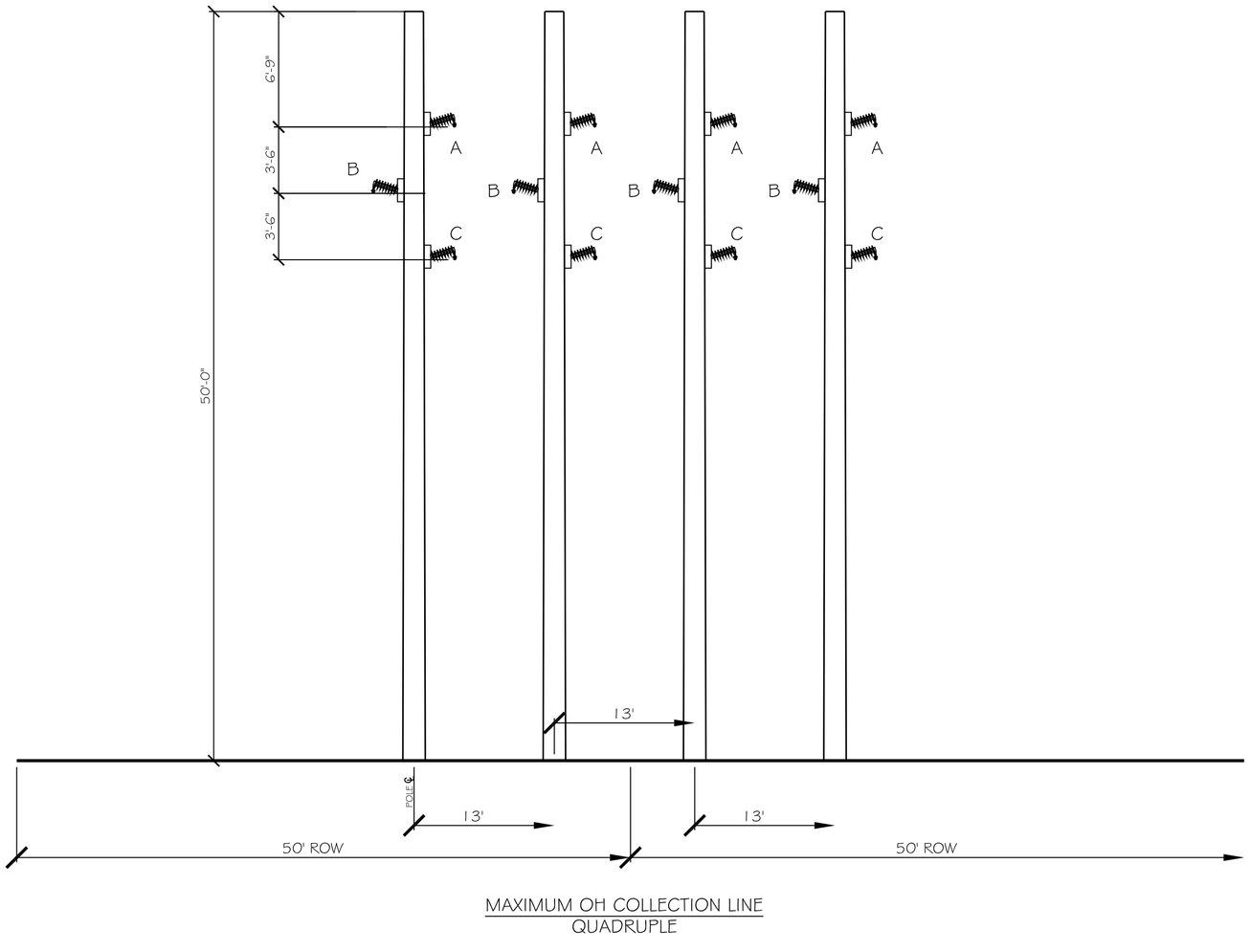
ROW CALC 08
PROPOSED 34.5 kV COLLECTION SYSTEM
SECTION H-H

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	09	2



NEAREST RESIDENCE IN ROW SECTION



MAXIMUM OH COLLECTION LINE
QUADRUPLE

REV.:	DATE:	DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:
2	10/12/17	ALIGNMENT UPDATE	RSH	TN	EP
1	8/9/17	LAYOUT REVISION	RSH	TN	EP
0	7/24/17	ISSUE TO CLIENT	RSH	JZG	EP

MAIN LINE
ENERGY CONSULTANTS LLC
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BARON WINDS EMF STUDY
MSE ENGINEERING

ROW CALC 09
PROPOSED 34.5 kV COLLECTION SYSTEM
SECTION I-I

PLOT SCALE:
ARCH 0 1 2
ENGRG 0 1 2

PROJ. NO.:	SCALE:	
AHV-16-004	NONE	
DWG. NO.:	SHEET:	REV.:
SK1	10	2