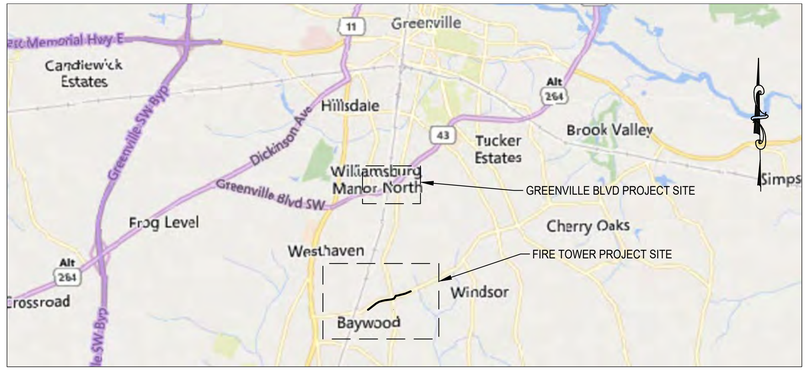
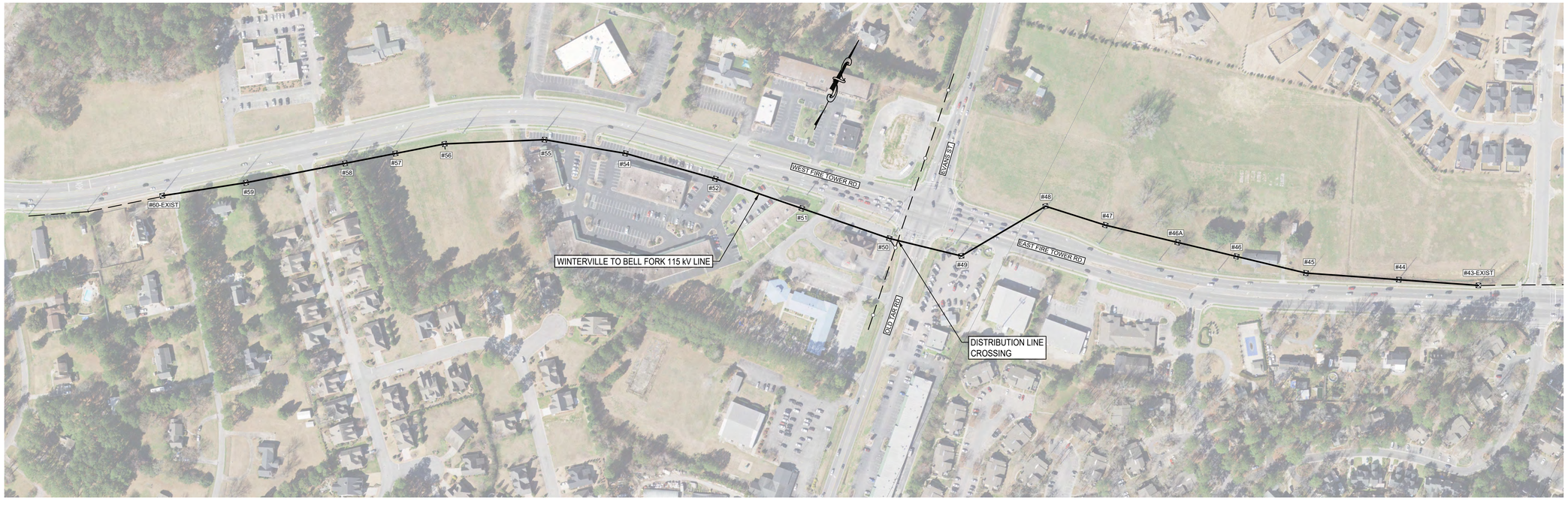


NORTH CAROLINA

GREENVILLE UTILITIES COMMISSION
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION
PITT COUNTY, NC
07-23-26



LINE MILEAGE: 1.39 MI.



ISSUED FOR REVIEW

DRAWING LIST

DWG. NO.	DRAWING TITLE	DATE	REV.
CS01-01	COVER SHEET/DRAWING INDEX	07-23-26	B
PP01-01-03	PLAN AND PROFILE	07-23-26	B
SL01-01	STAKING LIST	07-23-26	B
SC01-01-02	STRINGING CHARTS - 1272 (45/7) AAC "NARCISUSS"	07-23-26	B
SC02-01-02	STRINGING CHARTS - 7#9 ALUMOWELD	07-23-26	B
FD01-01-02	FOUNDATION DETAILS	07-23-26	B
SF01-01-02	STANDARD FRAMING DETAILS	07-23-26	B
SF02-01-04	STEEL POLE FRAMING DETAILS	07-23-26	B
SF03-01-03	STEEL POLE FRAMING DETAILS	07-23-26	B
BM01-01	BILL OF MATERIAL	07-23-26	B
SD01-01-04	POLE BID DRAWINGS	07-23-26	B
GE01-01-06	GEOTECHNICAL REPORT	07-23-26	B
GE02-01-04	GEOTECHNICAL REPORT	07-23-26	B
RK01-01-02	POLE RAKING DETAILS	07-23-26	B

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F.GARRISON
DESIGNER:	F.GARRISON
DRAFTER:	J. RUDASILL
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
COVER SHEET/
DRAWING INDEX

PIKE ENGINEERING

PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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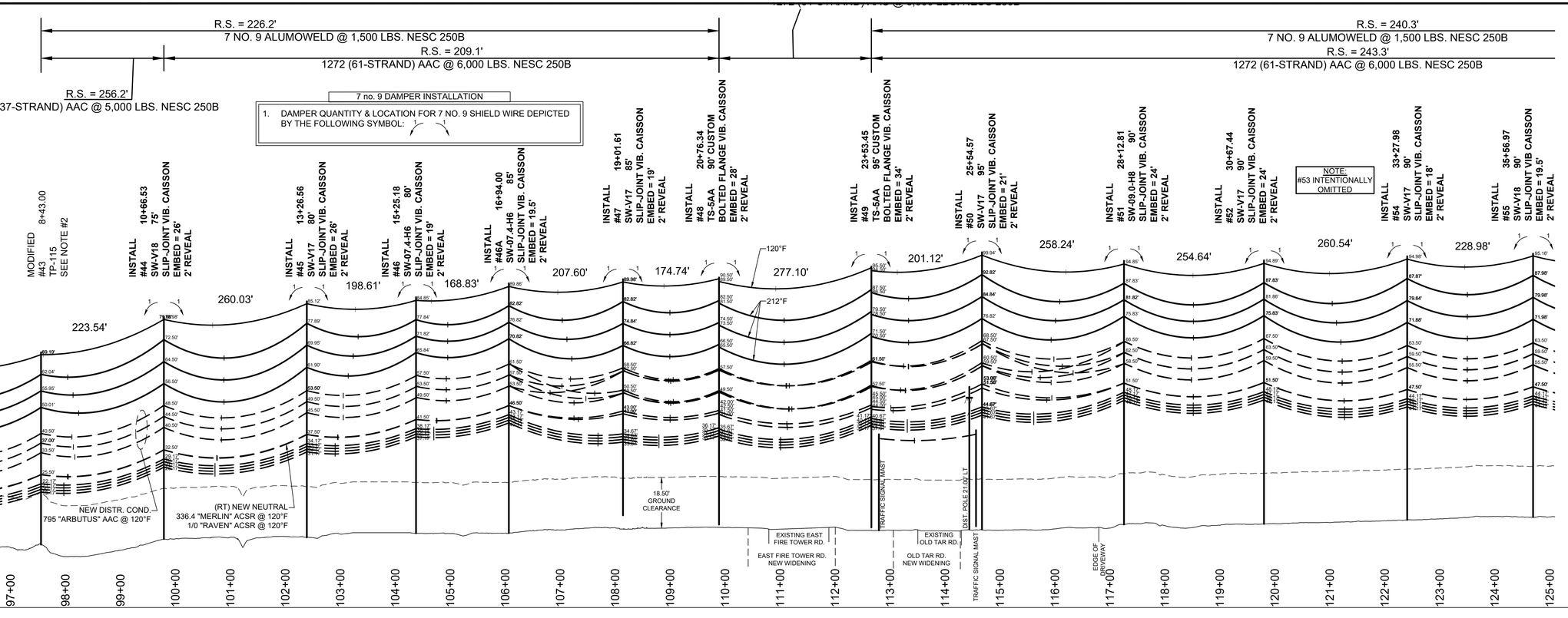
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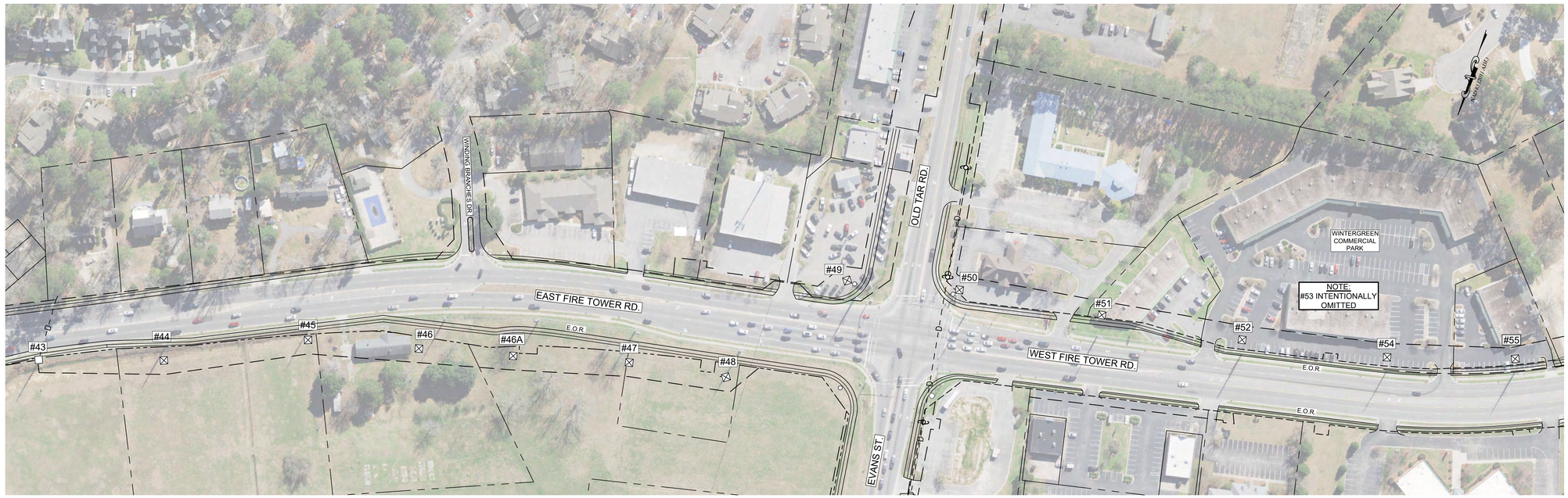
SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
CS01	01	B





NOTE:
1-SEE DISTRIBUTION PACKAGE FOR SAG CHARTS & MATERIAL INSTALLATIONS.
2-FIELD DRILL POLE 43 FOR NEW DISTRIBUTION UNDERBUILT. REFERENCE WITH DWG TPZD1.V1 FOR HOLE PLACEMENT.

ISSUED FOR REVIEW

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CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
PLAN & PROFILE

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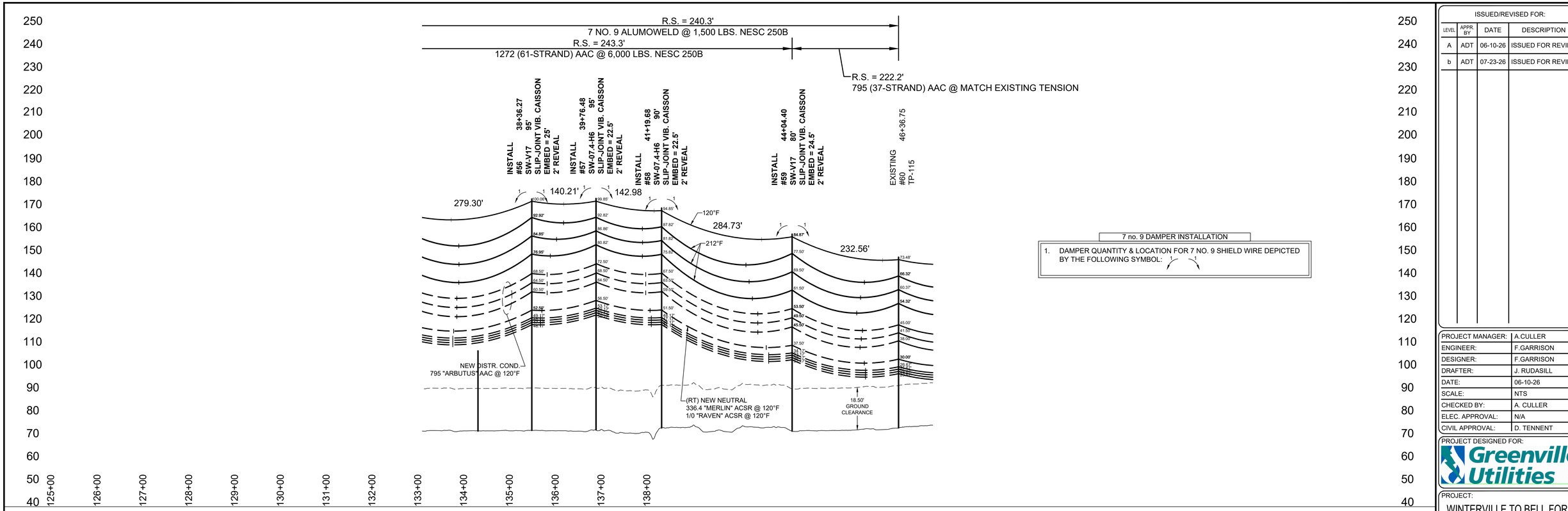
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SEAL

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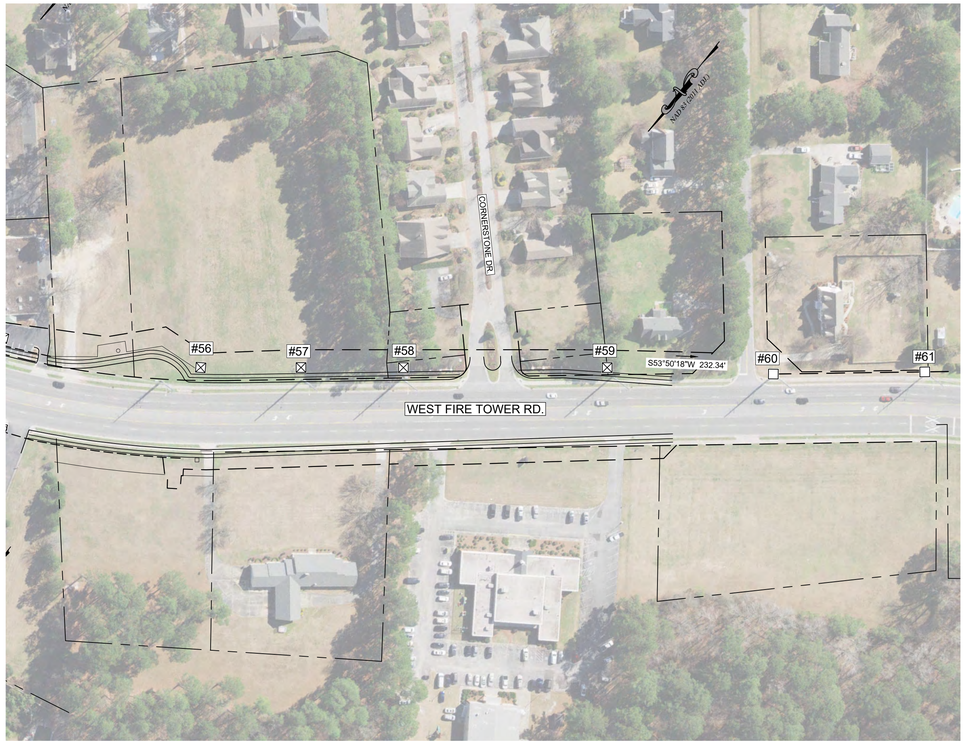
PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
PP01	01	B



7 no. 9 DAMPER INSTALLATION

1. DAMPER QUANTITY & LOCATION FOR 7 NO. 9 SHIELD WIRE DEPICTED BY THE FOLLOWING SYMBOL:



NOTE: SEE DISTRIBUTION PACKAGE FOR SAG CHARTS & MATERIAL INSTALLATIONS

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
b	ADT	07-23-26	ISSUED FOR REVIEW

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DATE:	06-10-26
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CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
PLAN & PROFILE

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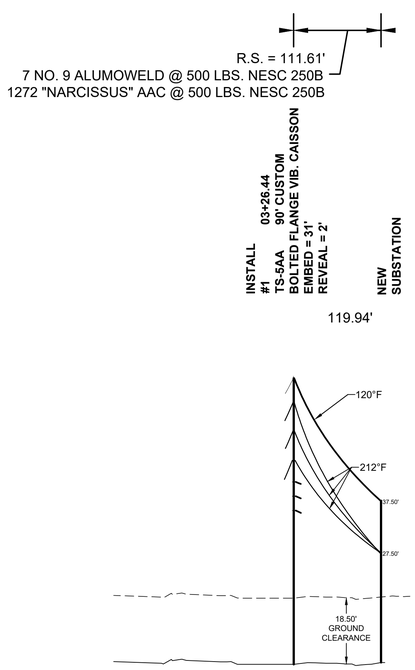
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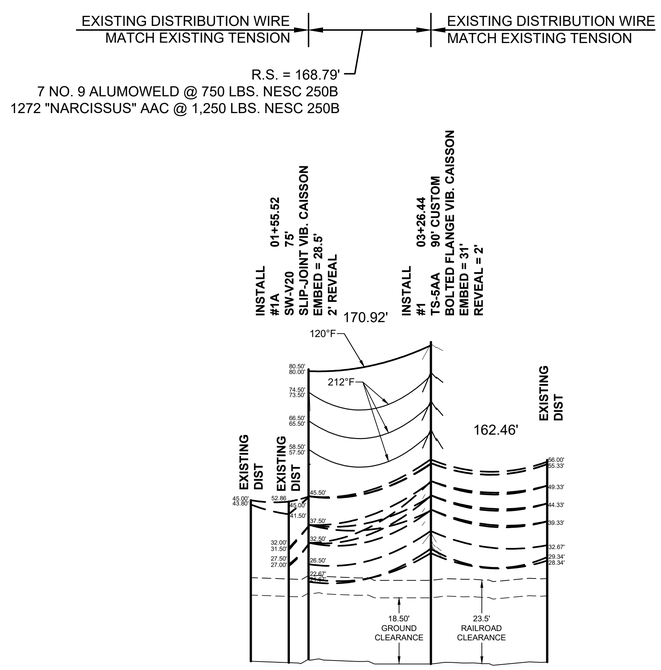
SEAL

PROJECT NUMBER
33461-000

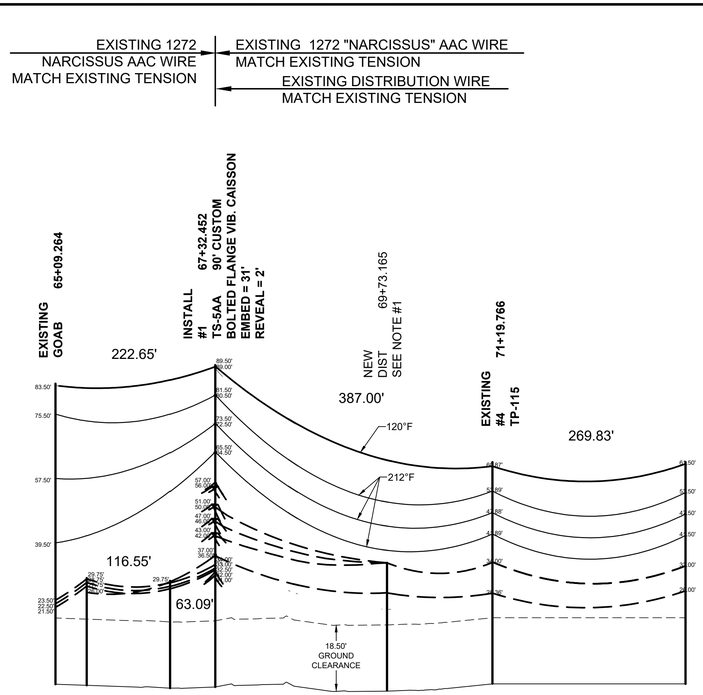
DRAWING	SEQ No.	REV.
PP01	02	B



VIEW INTO GREENVILLE BLVD SS.



VIEW ALONG GREENVILLE BLVD.



VIEW ALONG CSX RAILROAD



NOTE:
1-SEE DISTRIBUTION PACKAGE FOR INSTALLATION

PREMIMINARY

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F.GARRISON
DESIGNER:	F.GARRISON
DRAFTER:	J. RUDASILL
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
PLAN & PROFILE

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
PP01	03	B

FIRE TOWER RD								
STRUCTURE NAME	HEIGHT (FT)	EMBEDMENT DEPTH (FT)	POLE CLASS	STATION (FT)	STATE PLANE NAD83 3200: NORTH CAROLINA		AHEAD SPAN (FT)	LINE ANGLE (DD MM SS)
					NORTHING (M)	EASTING (M)		
44	75	26.0	SW-18	10+66.53	660092.270	2481768.400	260.03	- 8° 25' 20"
45	80	26.0	SW-V17	13+26.56	659976.230	2481535.700	198.6	12° 33 ' 6"
46	80	19.0	SW-07.4-H6	15+25.18	659928.340	2481342.940	168.82	-
46A	85	19.5	SW-07.4-H6	16+94.00	659887.600	2481179.110	207.6	- 1° 10' 3"
47	85	19.0	SW-V17	19+01.61	659833.406	2480978.702	174.73	5° 21 ' 2"
48	90	28.0	TS-5AA	20+76.34	659803.720	2480806.510	277.1	- 47° 13' 28"
49	95	34.0	TS-5AA	23+53.45	659571.304	2480655.611	201.12	43° 22' 11"
50	95	21.0	SW-V17	25+54.57	659523.888	2480460.157	258.2	5° 14 ' 56"
51	90	24.0	SW-09.0-H8	28+12.81	659486.220	2480204.680	254.64	-
52	90	24.0	SW-V17	30+67.44	659449.093	2479952.766	260.5	- 3° 10' 3"
54	90	18.0	SW-V17	33+27.98	659396.922	2479697.504	228.98	- 6° 8' 25"
55	90	19.5	SW-V18	35+56.96	659327.337	2479479.352	279.3	- 12° 2' 55"
56	95	25.0	SW-V17	38+36.27	659188.785	2479236.839	140.21	- 8° 36' 57"
57	95	22.5	SW-07.4-H6	39+76.48	659101.778	2479126.889	143.2	-
58	90	22.5	SW-07.4-H6	41+19.68	659012.916	2479014.595	284.73	-
59	80	24.5	SW-V17	44+04.40	658836.230	2478791.320	232.3	2° 11 ' 39"

GREENVILLE BLVD								
STRUCTURE NAME	HEIGHT (FT)	EMBEDMENT DEPTH (FT)	POLE CLASS	STATION (FT)	STATE PLANE NAD83 3200: NORTH CAROLINA		AHEAD SPAN (FT)	LINE ANGLE (DD MM SS)
					NORTHING (M)	EASTING (M)		
1	90	31.0	TS-5AA	67+32.45	668126.349	2480088.223	387.0	-
1A	75	28.5	SW-V20	78+66.41	668067.233	2479927.854	170.9	1° 26 ' 2"
GREENVILLE BLVD SS	35	N/A	N/A	92+26.39	668183.006	2479896.513	119.9	90° 0 ' 0"

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F.GARRISON
DESIGNER:	F.GARRISON
DRAFTER:	F.GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STAKING LIST

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
SL01	01	B

SECTION FROM STRUCTURE #44 TO STRUCTURE #48
CABLE : 1272 (61) AAC NARCISSUS, RULING SPAN (FT) 209.075
SAGGING DATA : CATENARY (FT) 2556.87 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 6000
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length	Mid Span Sag 40 F	Mid Span Sag 45 F	Mid Span Sag 50 F	Mid Span Sag 55 F	Mid Span Sag 60 F	Mid Span Sag 65 F	Mid Span Sag 70 F	Mid Span Sag 75 F	Mid Span Sag 80 F	Mid Span Sag 85 F	Mid Span Sag 90 F	Mid Span Sag 95 F	Mid Span Sag 100 F	Mid Span Sag 105 F	Mid Span Sag 110 F
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
44-45	258.7	2.53	2.70	2.89	3.08	3.28	3.48	3.69	3.90	4.11	4.32	4.53	4.74	4.94	5.14	5.33
45-46	198.2	1.48	1.58	1.69	1.80	1.92	2.04	2.16	2.28	2.41	2.53	2.66	2.78	2.89	3.01	3.13
46-46A	168.8	1.08	1.15	1.23	1.31	1.40	1.48	1.57	1.66	1.75	1.84	1.93	2.02	2.10	2.19	2.27
46A-47	207.5	1.63	1.74	1.85	1.98	2.11	2.24	2.37	2.50	2.64	2.78	2.91	3.04	3.17	3.30	3.43
47-48	173.1	1.13	1.21	1.29	1.38	1.47	1.56	1.65	1.74	1.84	1.93	2.03	2.12	2.21	2.30	2.38

Span Struct Number	Span Length	3 Wave Time 40 F	3 Wave Time 45 F	3 Wave Time 50 F	3 Wave Time 55 F	3 Wave Time 60 F	3 Wave Time 65 F	3 Wave Time 70 F	3 Wave Time 75 F	3 Wave Time 80 F	3 Wave Time 85 F	3 Wave Time 90 F	3 Wave Time 95 F	3 Wave Time 100 F	3 Wave Time 105 F	3 Wave Time 110 F
	(ft)	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.
44-45	258.7	4.76	4.92	5.08	5.25	5.42	5.58	5.74	5.90	6.06	6.22	6.36	6.51	6.65	6.78	6.91
45-46	198.2	3.64	3.76	3.89	4.02	4.15	4.27	4.40	4.52	4.64	4.76	4.87	4.98	5.09	5.19	5.29
46-46A	168.8	3.10	3.21	3.31	3.42	3.53	3.64	3.75	3.85	3.96	4.06	4.15	4.25	4.33	4.42	4.50
46A-47	207.5	3.81	3.94	4.07	4.21	4.34	4.47	4.60	4.73	4.86	4.98	5.10	5.22	5.33	5.43	5.54
47-48	173.1	3.18	3.29	3.40	3.51	3.62	3.73	3.84	3.95	4.05	4.16	4.26	4.35	4.44	4.53	4.62

		Horiz Tension 40 F	Horiz Tension 45 F	Horiz Tension 50 F	Horiz Tension 55 F	Horiz Tension 60 F	Horiz Tension 65 F	Horiz Tension 70 F	Horiz Tension 75 F	Horiz Tension 80 F	Horiz Tension 85 F	Horiz Tension 90 F	Horiz Tension 95 F	Horiz Tension 100 F	Horiz Tension 105 F	Horiz Tension 110 F
		(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
		3949	3700	3464	3249	3048	2870	2711	2566	2433	2314	2208	2112	2026	1947	1876

SECTION FROM STRUCTURE #48 TO STRUCTURE #49
CABLE : 1272 (61) AAC NARCISSUS, RULING SPAN (FT) 274..027
SAGGING DATA : CATENARY (FT) 2664.15 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 6000
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length	Mid Span Sag 40 F	Mid Span Sag 45 F	Mid Span Sag 50 F	Mid Span Sag 55 F	Mid Span Sag 60 F	Mid Span Sag 65 F	Mid Span Sag 70 F	Mid Span Sag 75 F	Mid Span Sag 80 F	Mid Span Sag 85 F	Mid Span Sag 90 F	Mid Span Sag 95 F	Mid Span Sag 100 F	Mid Span Sag 105 F	Mid Span Sag 110 F
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
48-49	274.10	2.90	3.05	3.21	3.37	3.53	3.69	3.85	4.02	4.18	4.34	4.50	4.66	4.82	4.97	5.12

Span Struct Number	Span Length	3 Wave Time 40 F	3 Wave Time 45 F	3 Wave Time 50 F	3 Wave Time 55 F	3 Wave Time 60 F	3 Wave Time 65 F	3 Wave Time 70 F	3 Wave Time 75 F	3 Wave Time 80 F	3 Wave Time 85 F	3 Wave Time 90 F	3 Wave Time 95 F	3 Wave Time 100 F	3 Wave Time 105 F	3 Wave Time 110 F
	(ft)	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.
48-49	274.10	5.09	5.22	5.36	5.49	5.62	5.75	5.87	5.99	6.11	6.23	6.35	6.46	6.56	6.66	6.77

		Horiz Tension 40 F	Horiz Tension 45 F	Horiz Tension 50 F	Horiz Tension 55 F	Horiz Tension 60 F	Horiz Tension 65 F	Horiz Tension 70 F	Horiz Tension 75 F	Horiz Tension 80 F	Horiz Tension 85 F	Horiz Tension 90 F	Horiz Tension 95 F	Horiz Tension 100 F	Horiz Tension 105 F	Horiz Tension 110 F
		(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
		3871	3680	3497	3332	3179	3039	2911	2792	2683	2584	2492	2407	2329	2259	2191

SECTION FROM STRUCTURE #49 TO STRUCTURE #59
CABLE : 1272 (61) AAC NARCISSUS, RULING SPAN (FT) 243.336
SAGGING DATA : CATENARY (FT) 2602.26 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 6000
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length	Mid Span Sag 40 F	Mid Span Sag 45 F	Mid Span Sag 50 F	Mid Span Sag 55 F	Mid Span Sag 60 F	Mid Span Sag 65 F	Mid Span Sag 70 F	Mid Span Sag 75 F	Mid Span Sag 80 F	Mid Span Sag 85 F	Mid Span Sag 90 F	Mid Span Sag 95 F	Mid Span Sag 100 F	Mid Span Sag 105 F	Mid Span Sag 110 F
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
49-50	199.40	1.53	1.62	1.72	1.81	1.91	2.01	2.12	2.22	2.32	2.42	2.52	2.62	2.71	2.81	2.91
50-51	258.10	2.56	2.72	2.88	3.04	3.21	3.37	3.54	3.72	3.88	4.05	4.22	4.38	4.55	4.71	4.87
51-52	254.60	2.49	2.64	2.80	2.96	3.12	3.28	3.45	3.61	3.78	3.94	4.11	4.27	4.42	4.58	4.73
52-54	260.20	2.60	2.76	2.92	3.09	3.26	3.43	3.60	3.78	3.95	4.12	4.29	4.46	4.62	4.79	4.95
54-55	228.10	2.00	2.12	2.25	2.37	2.50	2.63	2.77	2.90	3.03	3.17	3.30	3.42	3.55	3.68	3.80
55-56	278.30	2.98	3.16	3.34	3.53	3.73	3.92	4.12	4.32	4.52	4.71	4.91	5.10	5.29	5.48	5.66
56-57	139.90	.75	.80	.84	.89	.94	.99	1.04	1.09	1.14	1.19	1.24	1.29	1.33	1.38	1.43
57-58	143.20	.79	.84	.89	.94	.99	1.04	1.09	1.14	1.20	1.25	1.30	1.35	1.40	1.45	1.50
58-59	284.00	3.11	3.29	3.49	3.69	3.89	4.09	4.30	4.51	4.71	4.92	5.12	5.32	5.51	5.71	5.90

Span Struct Number	Span Length	3 Wave Time 40 F	3 Wave Time 45 F	3 Wave Time 50 F	3 Wave Time 55 F	3 Wave Time 60 F	3 Wave Time 65 F	3 Wave Time 70 F	3 Wave Time 75 F	3 Wave Time 80 F	3 Wave Time 85 F	3 Wave Time 90 F	3 Wave Time 95 F	3 Wave Time 100 F	3 Wave Time 105 F	3 Wave Time 110 F
	(ft)	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.
49-50	199.40	3.70	3.81	3.92	4.03	4.14	4.24	4.35	4.45	4.55	4.65	4.75	4.84	4.93	5.01	5.10
50-51	258.10	4.79	4.93	5.07	5.21	5.35	5.49	5.63	5.76	5.89	6.02	6.14	6.26	6.38	6.49	6.60
51-52	254.60	4.72	4.86	5.00	5.14	5.28	5.42	5.55	5.69	5.81	5.94	6.06	6.18	6.29	6.40	6.51
52-54	260.20	4.83	4.97	5.11	5.26	5.40	5.54	5.68	5.81	5.94	6.07	6.19	6.31	6.43	6.54	6.65
54-55	228.10	4.23	4.36	4.48	4.61	4.73	4.85	4.98	5.10	5.21	5.32	5.43	5.53	5.64	5.74	5.83
55-56	278.30	5.16	5.32	5.47	5.62	5.77	5.92	6.07	6.22	6.35	6.49	6.63	6.75	6.88	7.00	7.11
56-57	139.90	2.59	2.67	2.75	2.82	2.90	2.98	3.05	3.12	3.19	3.26	3.33	3.39	3.45	3.52	3.57
57-58	143.20	2.66	2.74	2.81	2.89	2.97	3.05	3.12	3.20	3.27	3.34	3.41	3.47	3.54	3.60	3.66
58-59	284.00	5.27	5.43	5.59	5.74	5.90	6.05	6.20	6.35	6.49	6.63	6.77	6.90	7.02	7.15	7.27

		Horiz Tension 40 F	Horiz Tension 45 F	Horiz Tension 50 F	Horiz Tension 55 F	Horiz Tension 60 F	Horiz Tension 65 F	Horiz Tension 70 F	Horiz Tension 75 F	Horiz Tension 80 F	Horiz Tension 85 F	Horiz Tension 90 F	Horiz Tension 95 F	Horiz Tension 100 F	Horiz Tension 105 F	Horiz Tension 110 F
		(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
		3881	3661	3458	3274	3102	2950	2806	2677	2562	2454	2357	2269	2188	2112	2044

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STRINGING CHARTS
1272 (61) AAC NARCISSUS

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
SC01	01	B

SECTION FROM STRUCTURE #1 TO STRUCTURE #4
CABLE : 1272 (61) AAC NARCISSUS, RULING SPAN (FT) 342.416
SAGGING DATA : CATENARY (FT) 2737.69 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 6000
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
1-1Ahead	385.80	5.86	6.10	6.34	6.58	6.82	7.06	7.29	7.53	7.77	7.99	8.23	8.45	8.67	8.89	9.11

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
1-1Ahead	385.80	7.24	7.39	7.53	7.67	7.81	7.94	8.08	8.21	8.33	8.46	8.58	8.69	8.81	8.92	9.03

Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
3803	3652	3515	3385	3266	3157	3054	2959	2868	2787	2708	2637	2569	2506	2445

SECTION FROM STRUCTURE #1 TO STRUCTURE #1A
CABLE : 1272 (61) AAC NARCISSUS, RULING SPAN (FT) 168.567
SAGGING DATA : CATENARY (FT) 580.235 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 1250
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
1-1A	168.60	5.91	5.98	6.03	6.08	6.14	6.19	6.25	6.31	6.36	6.41	6.46	6.52	6.57	6.62	6.67

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
1-1A	168.60	7.27	7.31	7.34	7.38	7.41	7.44	7.48	7.51	7.54	7.57	7.60	7.64	7.67	7.70	7.73

Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
719	712	705	699	693	687	680	674	669	663	658	652	647	642	638

SECTION FROM STRUCTURE #1A TO STRUCTURE #GREENVILLE SS
CABLE : 1272 (61) AAC NARCISSUS, RULING SPAN (FT) 112.781
SAGGING DATA : CATENARY (FT) 211.809 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 500
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
1A-GREENVILLE SS	118.90	8.78	8.81	8.83	8.86	8.86	8.86	8.89	8.91	8.94	8.97	8.99	9.02	9.05	9.08	9.10

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
1A-GREENVILLE SS	118.90	8.86	8.88	8.89	8.90	8.90	8.90	8.92	8.93	8.94	8.96	8.97	8.98	9.00	9.01	9.02

Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
254	254	253	252	252	252	251	251	250	249	249	248	247	246	246

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STRINGING CHARTS
1272 (61) AAC NARCISSUS

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
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SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
SC01	02	B

SECTION FROM STRUCTURE #43 (EXIST) TO STRUCTURE #48
CABLE : 7#9 ALUMOWELD, RULING SPAN (FT) 226.194
SAGGING DATA : CATENARY (FT) 3161.85 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 1500
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
43-44	223.40	1.67	1.74	1.82	1.90	1.97	2.06	2.14	2.23	2.31	2.40	2.49	2.58	2.66	2.75	2.83
44-45	259.90	2.25	2.35	2.46	2.57	2.67	2.79	2.90	3.02	3.13	3.25	3.37	3.49	3.60	3.72	3.84
45-46	198.50	1.31	1.37	1.44	1.50	1.56	1.62	1.69	1.76	1.82	1.90	1.96	2.03	2.10	2.17	2.24
46-46A	168.80	.95	.99	1.04	1.08	1.13	1.18	1.22	1.27	1.32	1.37	1.42	1.47	1.52	1.57	1.62
46A-47	207.60	1.44	1.50	1.57	1.64	1.70	1.78	1.85	1.92	1.99	2.07	2.15	2.22	2.30	2.37	2.44
47-48	173.40	1.00	1.05	1.09	1.14	1.19	1.24	1.29	1.34	1.39	1.45	1.50	1.55	1.60	1.65	1.71

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
43-44	223.40	3.86	3.94	4.03	4.12	4.20	4.29	4.38	4.46	4.55	4.64	4.72	4.80	4.88	4.96	5.03
44-45	259.90	4.49	4.59	4.69	4.79	4.89	4.99	5.09	5.19	5.29	5.39	5.49	5.58	5.68	5.77	5.86
45-46	198.50	3.43	3.50	3.58	3.66	3.73	3.81	3.89	3.97	4.04	4.12	4.19	4.26	4.34	4.40	4.47
46-46A	168.80	2.92	2.98	3.05	3.11	3.18	3.24	3.31	3.37	3.44	3.50	3.57	3.63	3.69	3.75	3.80
46A-47	207.60	3.58	3.66	3.75	3.83	3.90	3.99	4.07	4.15	4.22	4.31	4.38	4.46	4.53	4.61	4.68
47-48	173.40	2.99	3.06	3.13	3.20	3.26	3.33	3.40	3.46	3.53	3.60	3.66	3.72	3.79	3.85	3.91

Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
778	745	713	683	656	630	605	582	561	540	521	503	487	472	457

SECTION FROM STRUCTURE #48 TO STRUCTURE #49
CABLE : 7#9 ALUMOWELD, RULING SPAN (FT) 274.445
SAGGING DATA : CATENARY (FT) 2891.14 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 1500
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
48-49	274.50	2.86	2.96	3.06	3.16	3.26	3.36	3.46	3.57	3.67	3.77	3.87	3.96	4.06	4.16	4.26

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
48-49	274.50	5.06	5.14	5.23	5.32	5.40	5.49	5.56	5.65	5.73	5.80	5.88	5.95	6.03	6.10	6.17

Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
684	661	639	619	600	581	565	548	534	519	506	493	482	470	460

SECTION FROM STRUCTURE #49 TO STRUCTURE #60(EXIST)
CABLE : 7#9 ALUMOWELD, RULING SPAN (FT) 240.253
SAGGING DATA : CATENARY (FT) 3039.98 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 1500
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
49-50	199.80	1.40	1.46	1.52	1.58	1.64	1.70	1.77	1.83	1.90	1.96	2.02	2.09	2.15	2.22	2.28
50-51	258.20	2.34	2.44	2.54	2.64	2.75	2.85	2.96	3.06	3.17	3.28	3.38	3.49	3.60	3.70	3.81
51-52	254.70	2.28	2.37	2.47	2.57	2.67	2.77	2.87	2.98	3.08	3.19	3.29	3.39	3.50	3.60	3.70
52-54	260.60	2.39	2.48	2.59	2.69	2.80	2.90	3.01	3.12	3.23	3.34	3.45	3.55	3.66	3.77	3.88
54-55	229.10	1.84	1.92	2.00	2.08	2.16	2.24	2.33	2.41	2.50	2.58	2.66	2.75	2.83	2.91	3.00
55-56	279.50	2.74	2.86	2.97	3.10	3.22	3.34	3.46	3.58	3.72	3.84	3.96	4.08	4.21	4.34	4.46
56-57	140.30	.69	.72	.75	.78	.81	.84	.87	.90	.94	.97	1.00	1.03	1.06	1.09	1.12
57-58	143.20	.72	.75	.78	.81	.85	.88	.91	.94	.98	1.01	1.04	1.07	1.11	1.14	1.17
58-59	284.70	2.85	2.97	3.09	3.22	3.34	3.47	3.60	3.73	3.86	3.99	4.12	4.25	4.38	4.51	4.64
59-60	232.30	1.90	1.97	2.06	2.14	2.22	2.31	2.39	2.48	2.57	2.65	2.74	2.82	2.91	3.00	3.08

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
49-50	199.80	3.54	3.61	3.69	3.76	3.84	3.90	3.98	4.05	4.12	4.19	4.26	4.32	4.39	4.45	4.52
50-51	258.20	4.58	4.67	4.77	4.86	4.96	5.05	5.14	5.23	5.33	5.41	5.50	5.58	5.67	5.75	5.84
51-52	254.70	4.51	4.61	4.70	4.80	4.89	4.98	5.07	5.16	5.25	5.34	5.42	5.51	5.59	5.67	5.76
52-54	260.60	4.62	4.71	4.81	4.91	5.00	5.09	5.19	5.28	5.38	5.46	5.55	5.64	5.72	5.81	5.89
54-55	229.10	4.06	4.14	4.23	4.31	4.40	4.48	4.56	4.64	4.73	4.80	4.88	4.96	5.03	5.11	5.18
55-56	279.50	4.95	5.05	5.16	5.26	5.36	5.46	5.57	5.66	5.76	5.86	5.95	6.04	6.14	6.23	6.32
56-57	140.30	2.49	2.54	2.59	2.64	2.69	2.74	2.79	2.84	2.89	2.94	2.99	3.03	3.08	3.13	3.17
57-58	143.20	2.54	2.59	2.64	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.19	3.24
58-59	284.70	5.05	5.15	5.26	5.37	5.47	5.57	5.67	5.77	5.88	5.97	6.07	6.16	6.26	6.35	6.44
59-60	232.30	4.12	4.20	4.29	4.38	4.46	4.54	4.63	4.71	4.79	4.87	4.95	5.03	5.10	5.18	5.25

Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
739	710	682	655	630	608	586	566	546	528	512	496	481	468	455

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STRINGING CHARTS
7#9 ALUMOWELD

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
SC02	01	B

SECTION FROM STRUCTURE #1 TO STRUCTURE #4
CABLE : 7#9 ALUMOWELD, RULING SPAN (FT) 342.485
SAGGING DATA : CATENARY (FT) 2516.86 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 1500
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
1-1Ahead	386.10	6.85	6.99	7.14	7.28	7.42	7.57	7.70	7.84	7.98	8.11	8.25	8.38	8.51	8.64	8.77

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
1-1Ahead	386.10	7.83	7.91	7.99	8.07	8.15	8.23	8.30	8.38	8.45	8.52	8.59	8.66	8.73	8.79	8.86

Span Struct Number	Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
	567	555	543	533	523	513	504	495	486	478	471	463	456	449	442

SECTION FROM STRUCTURE #1A TO STRUCTURE #GREENVILLE SS
CABLE : 7#9 ALUMOWELD, RULING SPAN (FT) 111.609
SAGGING DATA : CATENARY (FT) 657.996 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 500
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
1A-GREENVILLE SS	119.00	2.70	2.75	2.79	2.83	2.87	2.91	2.96	2.99	3.04	3.07	3.11	3.15	3.19	3.23	3.27

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
1A-GREENVILLE SS	119.00	4.92	4.96	4.99	5.03	5.07	5.11	5.14	5.18	5.21	5.24	5.28	5.31	5.34	5.37	5.40

Span Struct Number	Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
	145	143	141	139	137	135	133	131	129	128	126	125	123	122	120

SECTION FROM STRUCTURE #1 TO STRUCTURE #1A
CABLE : 7#9 ALUMOWELD, RULING SPAN (FT) 168.917
SAGGING DATA : CATENARY (FT) 3572.25 CONDITION I TEMPERATURE (DEG F) 60 NESC MEDIUM DESIGN TENSION (lbs) 750
RESULTS BELOW FOR CONDITION 'INITIAL RS'
CALCULATIONS DONE USING ACTUAL SPAN LENGTHS AND VERTICAL PROJECTIONS

Span Struct Number	Span Length (ft)	Mid Span Sag 40 F (ft)	Mid Span Sag 45 F (ft)	Mid Span Sag 50 F (ft)	Mid Span Sag 55 F (ft)	Mid Span Sag 60 F (ft)	Mid Span Sag 65 F (ft)	Mid Span Sag 70 F (ft)	Mid Span Sag 75 F (ft)	Mid Span Sag 80 F (ft)	Mid Span Sag 85 F (ft)	Mid Span Sag 90 F (ft)	Mid Span Sag 95 F (ft)	Mid Span Sag 100 F (ft)	Mid Span Sag 105 F (ft)	Mid Span Sag 110 F (ft)
1-1A	169.10	2.99	3.05	3.11	3.16	3.22	3.27	3.33	3.38	3.44	3.49	3.54	3.59	3.64	3.69	3.74

Span Struct Number	Span Length (ft)	3 Wave Time 40 F Sec.	3 Wave Time 45 F Sec.	3 Wave Time 50 F Sec.	3 Wave Time 55 F Sec.	3 Wave Time 60 F Sec.	3 Wave Time 65 F Sec.	3 Wave Time 70 F Sec.	3 Wave Time 75 F Sec.	3 Wave Time 80 F Sec.	3 Wave Time 85 F Sec.	3 Wave Time 90 F Sec.	3 Wave Time 95 F Sec.	3 Wave Time 100 F Sec.	3 Wave Time 105 F Sec.	3 Wave Time 110 F Sec.
1-1A	169.10	5.17	5.22	5.27	5.32	5.37	5.41	5.46	5.50	5.54	5.59	5.63	5.67	5.71	5.75	5.78

Span Struct Number	Horiz Tension 40 F (lbs)	Horiz Tension 45 F (lbs)	Horiz Tension 50 F (lbs)	Horiz Tension 55 F (lbs)	Horiz Tension 60 F (lbs)	Horiz Tension 65 F (lbs)	Horiz Tension 70 F (lbs)	Horiz Tension 75 F (lbs)	Horiz Tension 80 F (lbs)	Horiz Tension 85 F (lbs)	Horiz Tension 90 F (lbs)	Horiz Tension 95 F (lbs)	Horiz Tension 100 F (lbs)	Horiz Tension 105 F (lbs)	Horiz Tension 110 F (lbs)
	248	244	239	235	231	227	223	220	216	213	210	207	204	201	199

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STRINGING CHARTS
7#9 ALUMOWELD

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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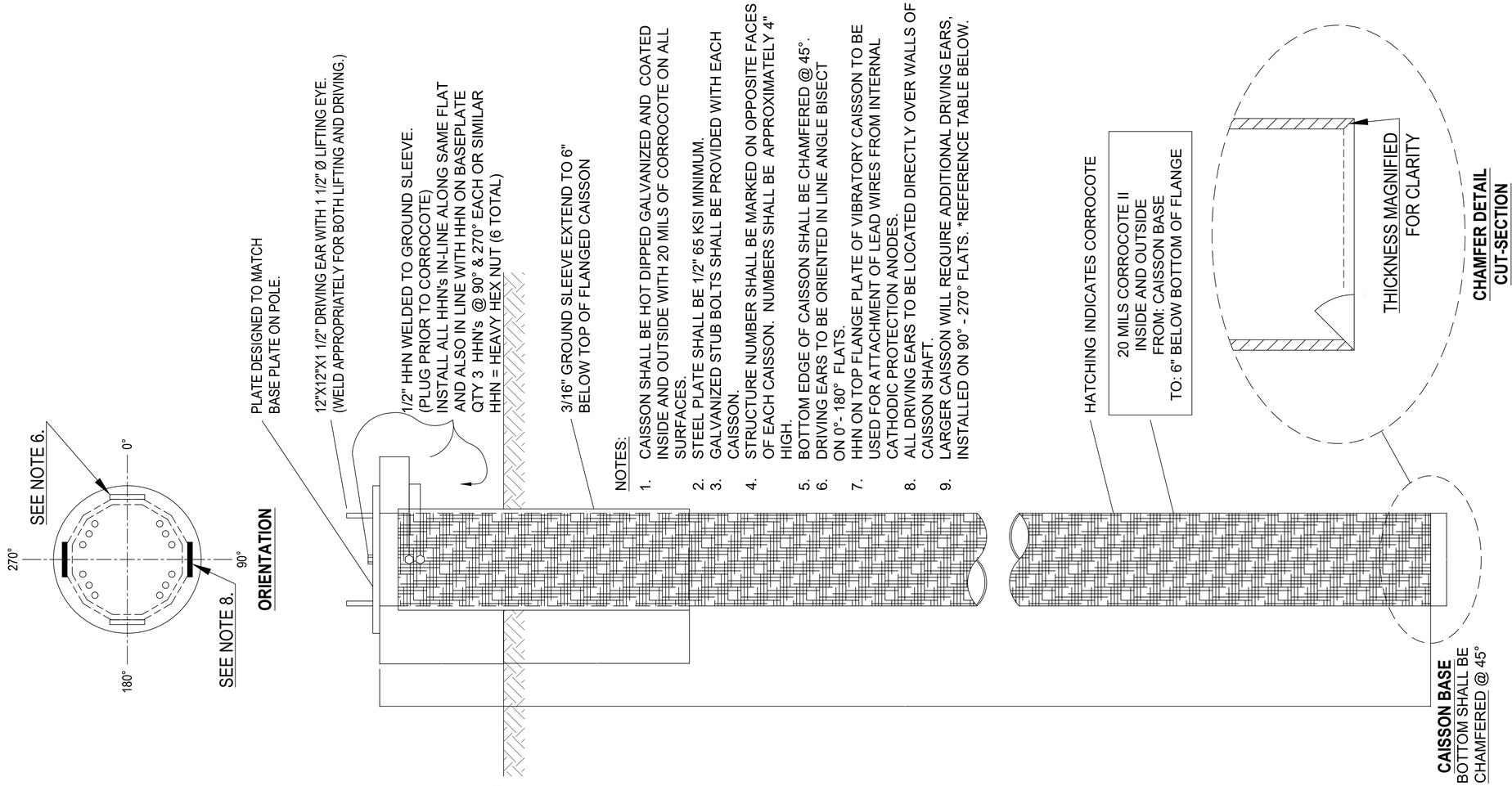
SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
SC02	02	B

STR. #	MIN. "D" [IN.]	"EMBED" [FT.]	"R" [FT.]	"L" [FT.]	"THICKNESS" [IN.]	INTERIOR/ EXTERIOR A.B.	NUMBER OF DRIVING EARS
1	45.00	31	2	33	0.5	EXTERIOR	2
48	51.00	28	2	30	0.5	EXTERIOR	2
49	53.00	34	2	36	0.5	EXTERIOR	2



NOTES:

1. CAISSON SHALL BE HOT DIPPED GALVANIZED AND COATED INSIDE AND OUTSIDE WITH 20 MILS OF CORROCOTE ON ALL SURFACES.
2. STEEL PLATE SHALL BE MARKED ON OPPOSITE FACES OF EACH CAISSON. NUMBERS SHALL BE APPROXIMATELY 4" HIGH.
3. GALVANIZED STUB BOLTS SHALL BE PROVIDED WITH EACH CAISSON.
4. STRUCTURE NUMBER SHALL BE 1/2" 65 KSI MINIMUM.
5. BOTTOM EDGE OF CAISSON SHALL BE CHAMFERED @ 45°.
6. DRIVING EARS TO BE ORIENTED IN LINE ANGLE BISECT ON 0° - 180° FLATS.
7. HHN ON TOP FLANGE PLATE OF VIBRATORY CAISSON TO BE USED FOR ATTACHMENT OF LEAD WIRES FROM INTERNAL CATHODIC PROTECTION ANODES.
8. ALL DRIVING EARS TO BE LOCATED DIRECTLY OVER WALLS OF CAISSON SHAFT.
9. LARGER CAISSON WILL REQUIRE ADDITIONAL DRIVING EARS, INSTALLED ON 90° - 270° FLATS. *REFERENCE TABLE BELOW.

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
FOUNDATION DESIGN

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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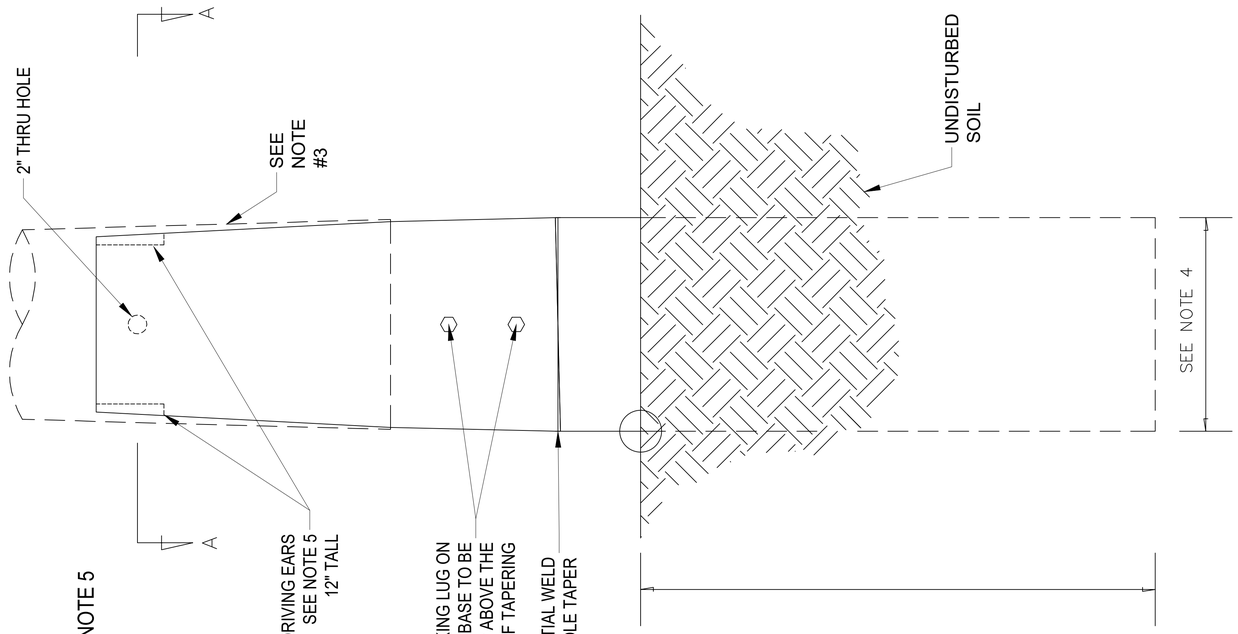
SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
FD01	01	B

STR. #	"EMBED" [FT.]	"THICKNESS" [IN.]
44	26.0	0.3125
45	26.0	0.3125
46	19.0	0.3125
46A	19.5	0.3125
47	19.0	0.3125
50	21.0	0.3125
51	24.0	0.3125
52	24.0	0.3125
54	18.0	0.3125
55	19.5	0.3125
56	25.0	0.3125
57	22.5	0.3125
58	22.5	0.3125
59	24.5	0.3125
1A	28.5	0.3125



SECTION A–A
N.T.S

NOTES:
1. VIBRATORY POLE BASE TO BE INSTALLED USING VIBRATORY HAMMER. THE FREQUENCY AND STROKE AMPLITUDE RANGES FOR INSTALLATION OF THE POLE BASE TO BE PER MANUFACTURERS RECOMMENDATIONS.
2. TAPER OF POLE TO MATCH TAPER OF VIBRATORY POLE BASE.
3. OVERLAP LENGTH TO BE DETERMINED BY MANUFACTURER.
4. VIBRATORY BASE DIAMETERS SHALL BE BASED ON BASE DIAMETER AND TAPER OF POLE. POLE MANUFACTURER IS TO VERIFY VIBRATORY POLE BASE IS ADEQUATE FOR DESIGN LOADS. MINIMUM SHAFT THICKNESS OF 0.5" AND GRADE 65 KSI.
5. MANUFACTURER SHALL DETERMINE ADEQUATE SIZE OF DRIVING EARS.
6. POLE MANUFACTURER TO VERIFY ABOVE GROUND HEIGHT TO BE 114" MINIMUM.

ISSUED FOR REVIEW

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A	ADT	06-10-26	ISSUED FOR REVIEW
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PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
FOUNDATION DESIGN

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
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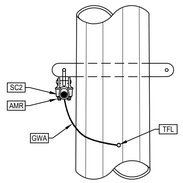
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SEAL

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PROJECT NUMBER
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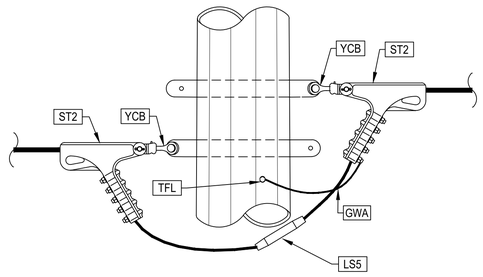
DRAWING	SEQ No.	REV.
FD01	02	B



BILL OF MATERIAL

KEY	QTY.	DESCRIPTION	CATALOG NUMBER
GWA	1	GROUNDING WIRE ASSEMBLY, #4 CU	710010015
SC2	1	SUSPENSION CLAMP, 7#9 AW	HAS162C
AMR	1	ARMOR ROD	AR2126
TFL	1	TRANSFORMER LUG	GTCS-41

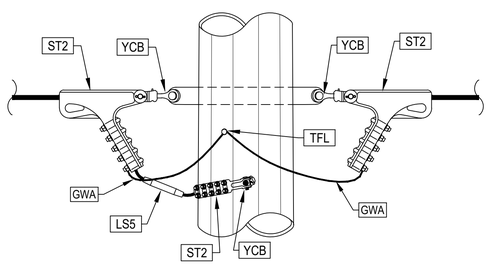
SW1



BILL OF MATERIAL

KEY	QTY.	DESCRIPTION	CATALOG NUMBER
GWA	1	GROUNDING WIRE ASSEMBLY, #4 CU	710010015
ST2	2	BOLTED DEADEND, 7#9 AW	SD70S
TFL	1	TRANSFORMER LUG	GTCS-41
YCB	2	Y-CLEVIS BALL - 30K	YBC30
LS5	1	LOOP SLEEVE, 7#9 AW	YDS7M9T

SW2



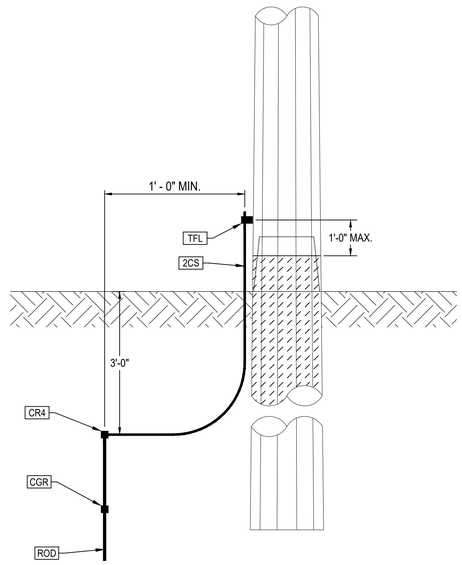
BILL OF MATERIAL

KEY	QTY.	DESCRIPTION	CATALOG NUMBER
GWA	2	GROUNDING WIRE ASSEMBLY, #4 CU	710010015
ST2	3	BOLTED DEADEND, 7#9 AW	SD70S
TFL	1	TRANSFORMER LUG	GTCS-41
YCB	3	Y-CLEVIS BALL - 30K	YBC30
LS5	1	LOOP SLEEVE, 7#9 AW	YDS7M9T

SW3

NOTES:

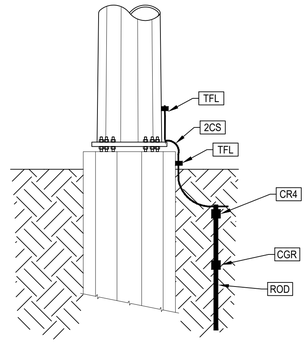
1. TYPICAL INSERTION DEPTH DIMENSIONS SHOWN. REFER TO STRUCTURE SPECIFIC DRAWING FOR EXACT INSERTION DEPTH AND SPACING DIMENSIONS.



BILL OF MATERIAL

KEY	QTY.	DESCRIPTION	CATALOG NUMBER
2CS	13	2/0 COPPER GROUND WIRE	10698902
CGR	1	5/8" GROUND ROD COUPLER	GCC58F
CR4	1	5/8" GROUND ROD TO 2/0 COPPER	C2030344
ROD	2	5/8" GROUND ROD	815850
TFL	1	TRANSFORMER LUG	GTCS-41

SG1



BILL OF MATERIAL

KEY	QTY.	DESCRIPTION	CATALOG NUMBER
2CS	13	2/0 COPPER GROUND WIRE	10698902
CGR	1	5/8" GROUND ROD COUPLER	GCC58F
CR4	1	5/8" GROUND ROD TO 2/0 COPPER	C2030344
ROD	2	5/8" GROUND ROD	815850
TFL	2	TRANSFORMER LUG	GTCS-41

SG2

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW
B	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:

Greenville Utilities

PROJECT:

WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:

STANDARD
FRAMING DETAILS

PIKE ENGINEERING

PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
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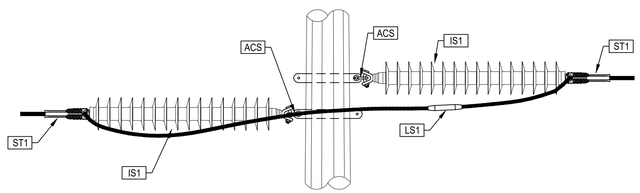
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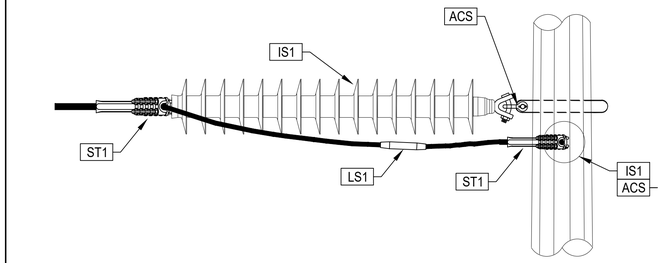
PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
SF01	01	C



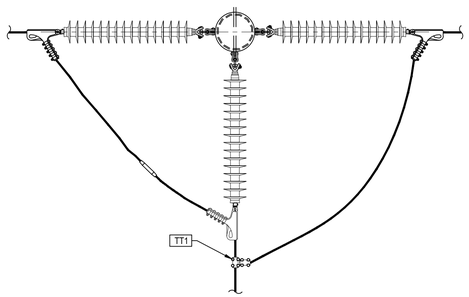
BILL OF MATERIAL			
KEY	QTY.	DESCRIPTION	CATALOG NUMBER
ACS	2	ANCHOR SHACKLE	AS35BNK
IS1	2	SUSPENSION INSULATOR, POLYMER	S54080038MXSS019
LS1	1	LOOP SLEEVE, NARCISSUS AAC	C151414
ST1	2	DEADEND CLAMP, 1272 NARCISSUS	SD155S

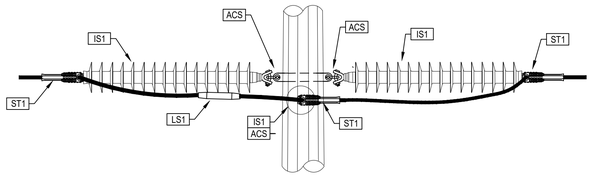
DDE1



BILL OF MATERIAL			
KEY	QTY.	DESCRIPTION	CATALOG NUMBER
ACS	2	ANCHOR SHACKLE	AS35BNK
IS1	2	SUSPENSION INSULATOR, POLYMER	S54080038MXSS019
LS1	1	LOOP SLEEVE, NARCISSUS AAC	C151414
ST1	2	DEADEND CLAMP, 1272 NARCISSUS	SD155S

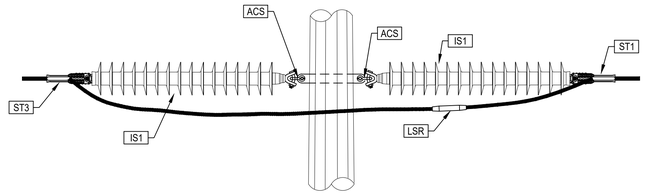
DDE2





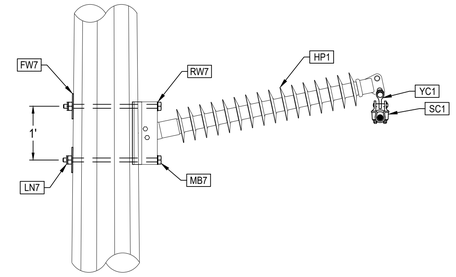
BILL OF MATERIAL			
KEY	QTY.	DESCRIPTION	CATALOG NUMBER
ACS	3	ANCHOR SHACKLE	AS35BNK
IS1	3	SUSPENSION INSULATOR, POLYMER	S54080038MXSS019
LS1	1	LOOP SLEEVE, NARCISSUS AAC	C151414
ST1	3	DEADEND CLAMP, 1272 NARCISSUS	SD155S
TT1	1	CONNECTOR, ELECTRICAL, TEE	ATCC1515

DDE3



BILL OF MATERIAL			
KEY	QTY.	DESCRIPTION	CATALOG NUMBER
ACS	2	ANCHOR SHACKLE	AS35BNK
IS1	2	SUSPENSION INSULATOR, POLYMER	S54080038MXSS019
LSR	1	LOOP REDUCER, NARCISSUS AAC TO ARBUTUS AAC	RCV16090AA
ST1	1	DEADEND CLAMP, 1272 NARCISSUS	SD155S
ST3	1	DEADEND CLAMP, 795 ARBUTUS	SD130S

DDE4



BILL OF MATERIAL			
KEY	QTY.	DESCRIPTION	CATALOG NUMBER
FW7	2	3/4" WASHER, SQUARE	SW2-70-1/8
HP1	1	HORIZONTAL LINE POST INSULATOR, POLYMER	P250043S0070
LN7	2	3/4" LOCK NUT	4037
MB7	2	3/4" x LENGTH REQUIRED MACHINE BOLT	-
RW7	2	13/16" WASHER, ROUND, 2"	6806
SC1	1	SUSPENSION CLAMP, 1272 NARCISSUS	HAS204S
YC1	1	Y-CLEVIS EYE, NARCISSUS AAC	854512000

HLP

NOTES:
1. TYPICAL INSERTION DEPTH DIMENSIONS SHOWN. REFER TO STRUCTURE SPECIFIC DRAWING FOR EXACT INSERTION DEPTH AND SPACING DIMENSIONS.

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LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW
C	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STANDARD
FRAMING DETAILS

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F -1217

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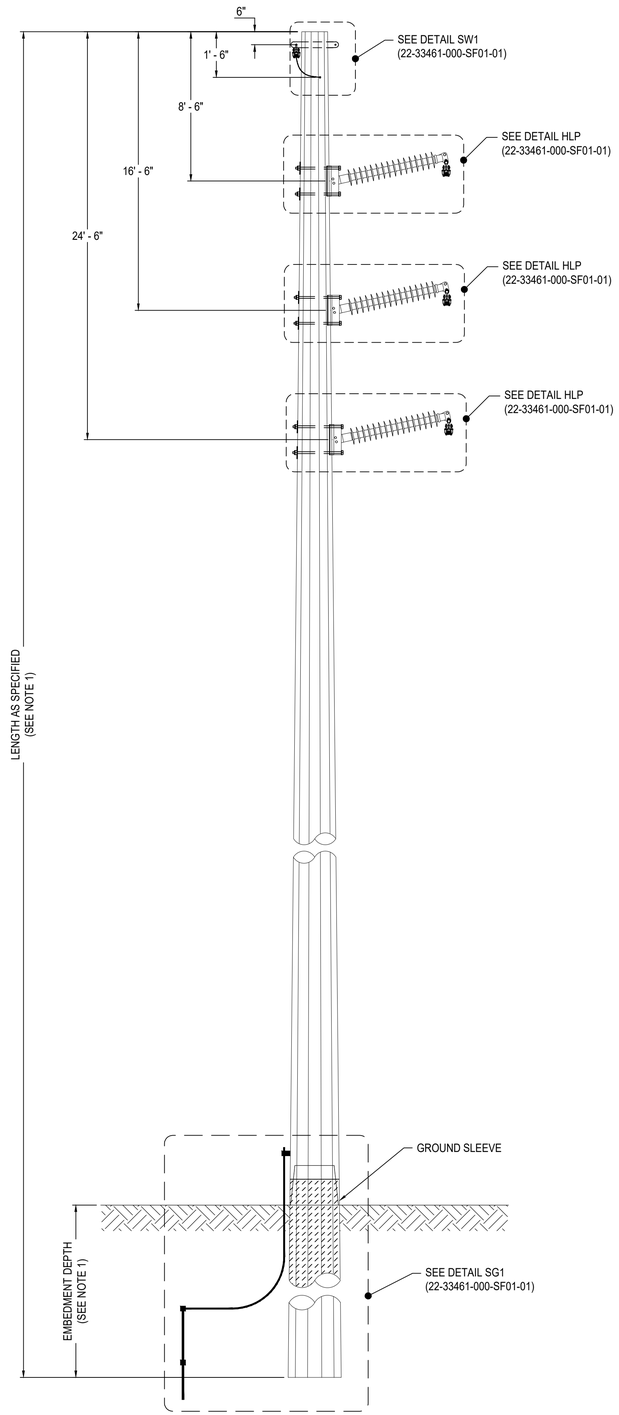
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SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
SF01	02	C



APPLICABLE STRUCTURE NUMBERS:
45, 47, 50, 54, 55, 56

FIBER OPTIC TANGENT ASSEMBLY, SW1 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
GWA	GROUNDING WIRE ASSEMBLY, #4 CU	1	EA	PERFORMED	710010015
SC2	SUSPENSION CLAMP, 7#9 AW	1	EA	PERFORMED	HAS162C
AMR	ARMOR ROD	1	EA	PREFORMED	AR2126
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41

HORIZONTAL LINE POST ASSEMBLY, HLP — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
FW7	3/4" WASHER, SQUARE	6	EA	HUGHES BRO.	SW2-70-1/8
HP1	HORIZONTAL LINE POST INSULATOR, POLYMER	3	EA	HUBBELL	P250043S0070
LN7	3/4" LOCK NUT	6	EA	HUBBELL	4037
MB7	3/4" X LENGTH REQUIRED MACHINE BOLT	6	EA	HUBBELL	-
RW7	13/16" WASHER, ROUND, 2"	6	EA	HUBBELL	6806
SC1	SUSPENSION CLAMP, 1272 NARCISSUS	3	EA	HUBBELL	HAS204S
YC1	Y-CLEVIS EYE, NARCISSUS AAC	3	EA	HUBBELL	854512000

STANDARD DIRECT EMBED GROUNDING ASSEMBLY, SG1 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
2CS	2/0 COPPER GROUND WIRE	13	FT	SOUTHWIRE	10698902
CGR	5/8" GROUND ROD COUPLER	1	EA	ERICO	GCC58F
CR4	5/8" GROUND ROD TO 2/0 COPPER	1	EA	HUBBELL	C2030344
ROD	5/8" GROUND ROD	2	EA	ERICO	815850
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41

BOLT SCHEDULE

STR	45	47	50	54	55	56
HLP TOP	(2) MB7-26	(2) MB7-26	(2) MB7-26	(2) MB7-26	(2) MB7-26	(2) MB7-26
HLP MID	(2) MB7-28	(2) MB7-28	(2) MB7-28	(2) MB7-28	(2) MB7-28	(2) MB7-28
HLP BOT	(2) MB7-30	(2) MB7-30	(2) MB7-30	(2) MB7-30	(2) MB7-30	(2) MB7-30

NOTES:
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B	ADT	07-23-26	ISSUED FOR REVIEW
C	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STEEL POLE FRAMING
DETAILS, STR.
45, 47, 50, 54, 55 & 56

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PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
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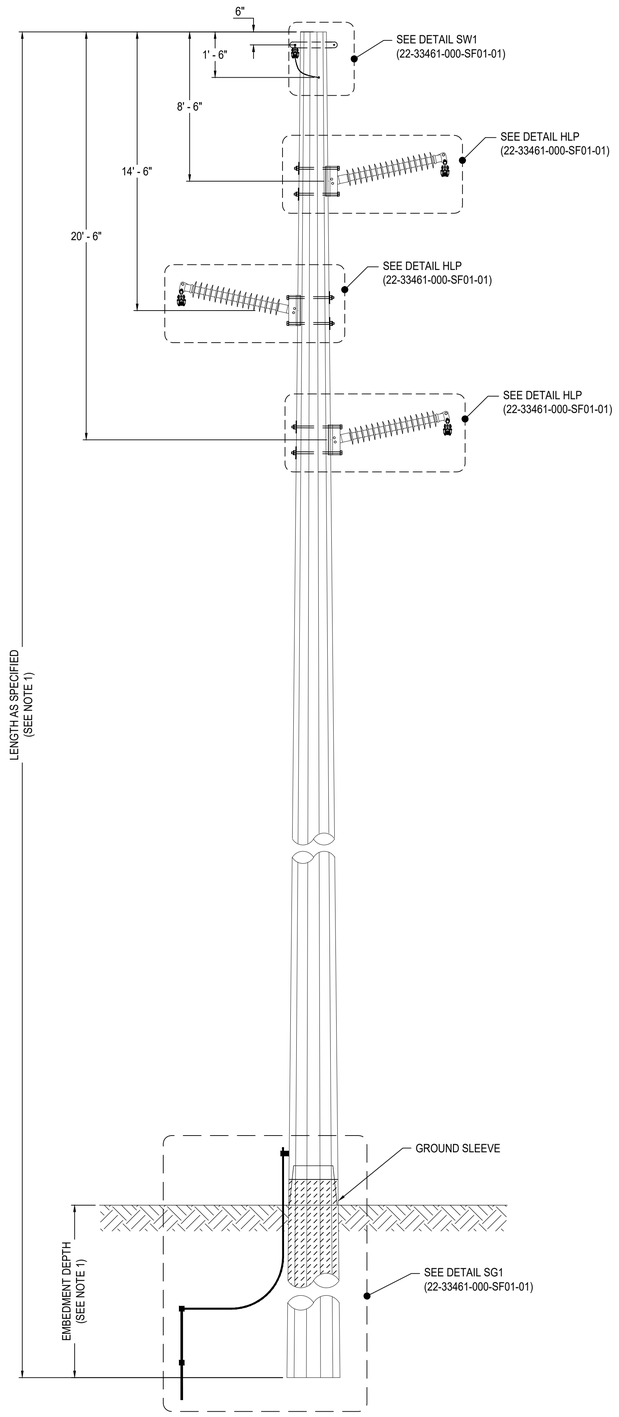
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SEAL

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PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
SF02	01	C



APPLICABLE STRUCTURE NUMBERS:
46, 46A, 51, 52, 57, 58

FIBER OPTIC TANGENT ASSEMBLY, SW1 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
GWA	GROUNDING WIRE ASSEMBLY, #4 CU	1	EA	PERFORMED	710010015
SC2	SUSPENSION CLAMP, 7#9 AW	1	EA	PERFORMED	HAS162C
AMR	ARMOR ROD	1	EA	PREFORMED	AR2126
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41

HORIZONTAL LINE POST ASSEMBLY, HLP — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
FW7	3/4" WASHER, SQUARE	6	EA	HUGHES BRO.	SW2-70-1/8
HP1	HORIZONTAL LINE POST INSULATOR, POLYMER	3	EA	HUBBELL	P250043S0070
LN7	3/4" LOCK NUT	6	EA	HUBBELL	4037
MB7	3/4" X LENGTH REQUIRED MACHINE BOLT	6	EA	HUBBELL	-
RW7	13/16" WASHER, ROUND, 2"	6	EA	HUBBELL	6806
SC1	SUSPENSION CLAMP, 1272 NARCISSUS	3	EA	HUBBELL	HAS204S
YC1	Y-CLEVIS EYE, NARCISSUS AAC	3	EA	HUBBELL	854512000

STANDARD DIRECT EMBED GROUNDING ASSEMBLY, SG1 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
2CS	2/0 COPPER GROUND WIRE	13	FT	SOUTHWIRE	10698902
CGR	5/8" GROUND ROD COUPLER	1	EA	ERICO	GCC58F
CR4	5/8" GROUND ROD TO 2/0 COPPER	1	EA	HUBBELL	C2030344
ROD	5/8" GROUND ROD	2	EA	ERICO	815850
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41

BOLT SCHEDULE

STR	46	46A	51	52	57	58
HLP TOP	(2) MB7-24	(2) MB7-24	(2) MB7-26	(2) MB7-26	(2) MB7-24	(2) MB7-24
HLP MID	(2) MB7-26	(2) MB7-26	(2) MB7-26	(2) MB7-28	(2) MB7-26	(2) MB7-26
HLP BOT	(2) MB7-26	(2) MB7-26	(2) MB7-28	(2) MB7-28	(2) MB7-26	(2) MB7-26

NOTES:
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ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW
C	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STEEL POLE FRAMING
DETAILS, STR
46, 46A, 51, 52, 57 & 58

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PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
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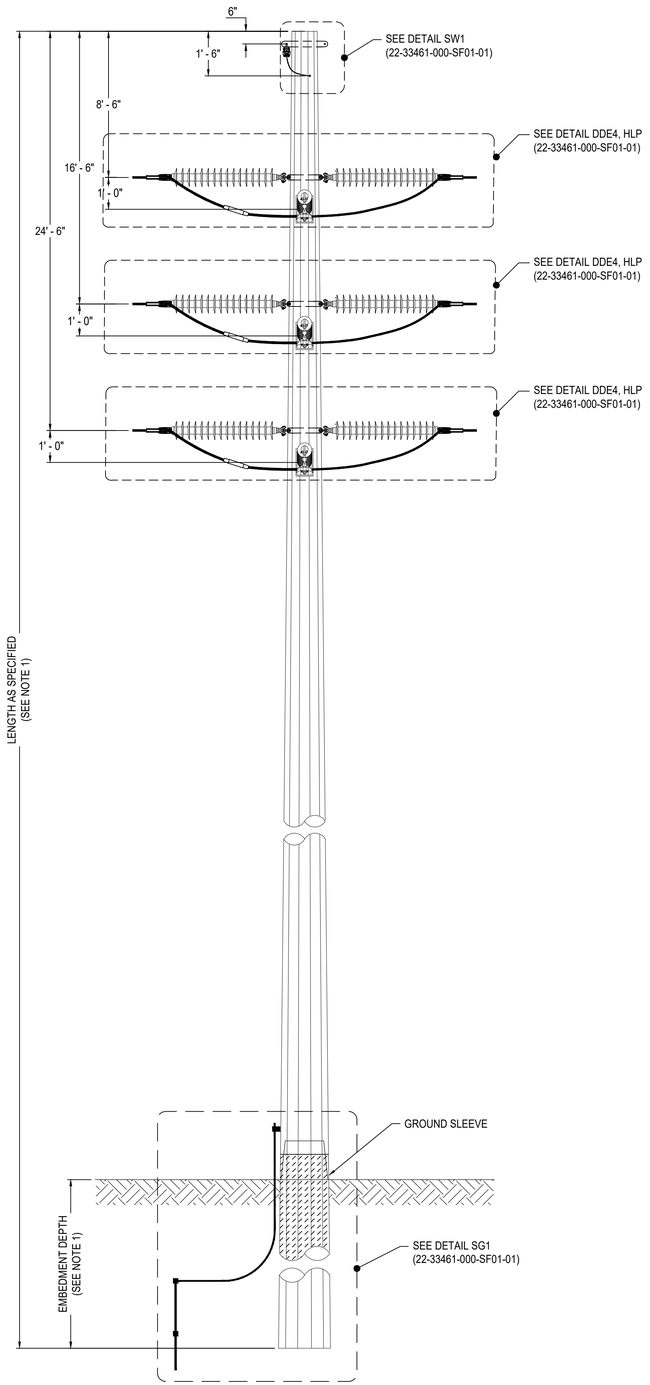
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SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
SF02	02	C



APPLICABLE STRUCTURE NUMBERS:
44, 59

FIBER OPTIC TANGENT ASSEMBLY, SW1 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
GWA	GROUNDING WIRE ASSEMBLY, #4 CU	1	EA	PERFORMED	710010015
SC2	SUSPENSION CLAMP, 7#9 AW	1	EA	PERFORMED	HAS162C
AMR	ARMOR ROD	1	EA	PREFORMED	AR2126
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41

DOUBLE DEADEND ASSEMBLY, DDE4 — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
ACS	ANCHOR SHACKLE	6	EA	HUBBELL	AS35BNK
IS1	SUSPENSION INSULATOR, POLYMER	6	EA	HUBBELL	P250043S0070
LSR	LOOP REDUCER, NARCISSUS AAC TO ARBUTUS AAC	3	EA	AFL	RCV16090AA
ST1	DEADEND CLAMP, 1272 NARCISSUS	3	EA	HUBBELL	SD155S
ST3	DEADEND CLAMP, 795 ARBUTUS	3	EA	HUBBELL	SD130S

HORIZONTAL LINE POST ASSEMBLY, HLP — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
FW7	3/4" WASHER, SQUARE	6	EA	HUGHES BRO.	SW2-70-1/8
HP1	HORIZONTAL LINE POST INSULATOR, POLYMER	3	EA	HUBBELL	P250043S0070
LN7	3/4" LOCK NUT	6	EA	HUBBELL	4037
MB7	3/4" x LENGTH REQUIRED MACHINE BOLT	6	EA	HUBBELL	
RW7	13/16" WASHER, ROUND, 2"	6	EA	HUBBELL	6806
SC1	SUSPENSION CLAMP, 1272 NARCISSUS	3	EA	HUBBELL	HAS204S
YC1	Y-CLEVIS EYE , NARCISSUS AAC	3	EA	HUBBELL	854512000

STANDARD DIRECT EMBED GROUNDING ASSEMBLY, SG1 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
2CS	2/0 COPPER GROUND WIRE	13	FT	SOUTHWIRE	10698902
CGR	5/8" GROUND ROD COUPLER	1	EA	ERICO	GCC58F
CR4	5/8" GROUND ROD TO 2/0 COPPER	1	EA	HUBBELL	C2030344
ROD	5/8" GROUND ROD	2	EA	ERICO	815850
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41

BOLT SCHEDULE		
STR	44	59
HLP TOP	(2) MB7-28	(2) MB7-26
HLP MID	(2) MB7-28	(2) MB7-28
HLP BOT	(2) MB7-30	(2) MB7-30

NOTES:
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ISSUED FOR REVIEW

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A	ADT	06-10-26	ISSUED FOR REVIEW
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C	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STEEL POLE FRAMING
DETAILS, STR
44 & 59

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PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
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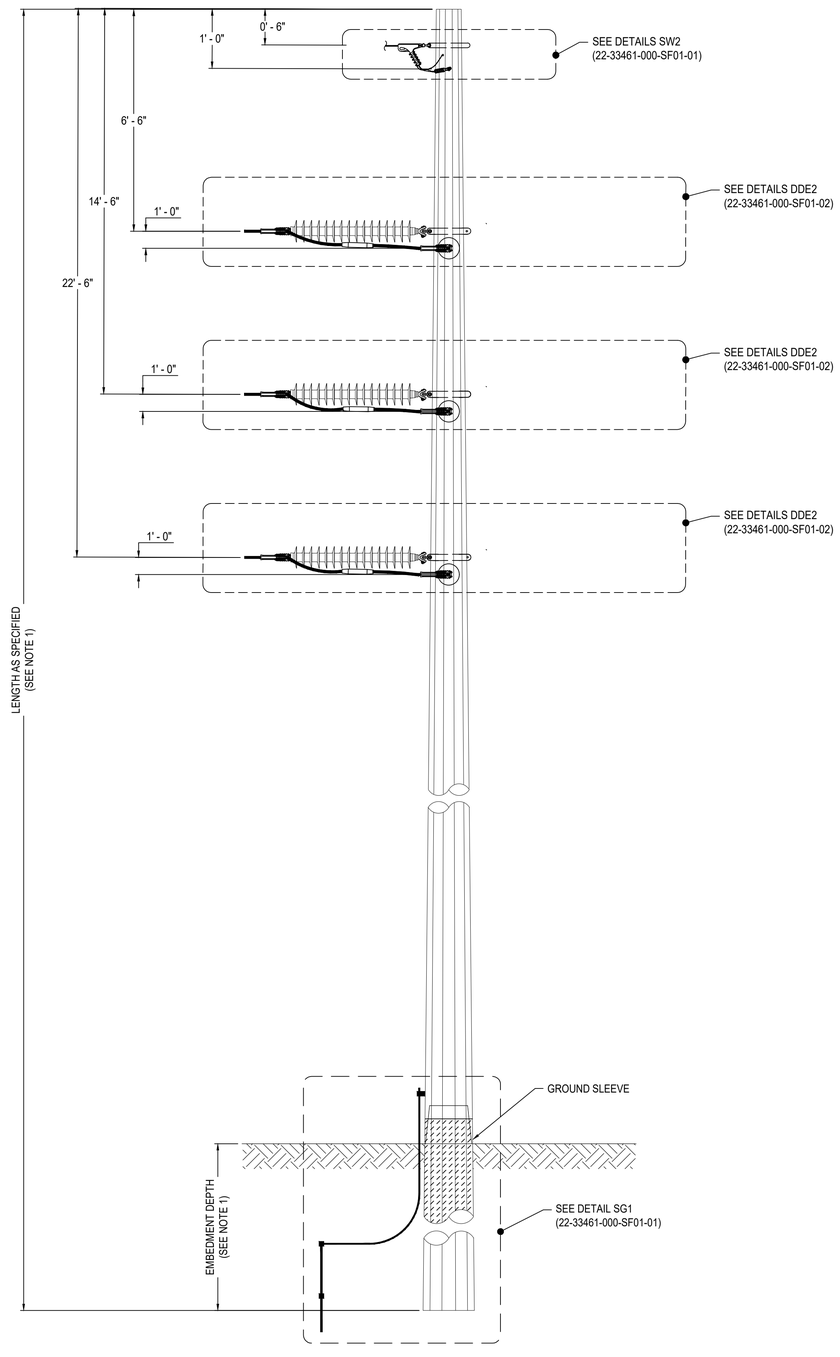
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SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
SF02	03	C



APPLICABLE STRUCTURE NUMBERS:
1A

FIBER OPTIC IN / FIBER OPTIC OUT DEADEND ASSEMBLY, SW2 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
GWA	GROUNDING WIRE ASSEMBLY, #4 CU	1	EA	PERFORMED	710010015
ST2	BOLTED DEADEND, 7#9 AW	2	EA	HUBBELL	SD70S
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41
YCB	Y-CLEVIS BALL - 30K	2	EA	HUBBELL	YBC30
LS5	LOOP SLEEVE, 7#9 AW	1	EA	HUBBELL	YDS7M9T

DOUBLE DEADEND ASSEMBLY, DDE2 — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
ACS	ANCHOR SHACKLE	6	EA	HUBBELL	AS35BNK
IS1	SUSPENSION INSULATOR, POLYMER	6	EA	MACLEAN	S54080038MXSS019
LS1	LOOP SLEEVE, NARCISSUS AAC	3	EA	BURNDY	C151414
ST1	DEADEND CLAMP, 1272 NARCISSUS	6	EA	HUBBELL	SD155S

STANDARD DIRECT EMBED GROUNDING ASSEMBLY, SG1 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
2CS	2/0 COPPER GROUND WIRE	13	FT	SOUTHWIRE	10698902
CGR	5/8" GROUND ROD COUPLER	1	EA	ERICO	GCC58F
CR4	5/8" GROUND ROD TO 2/0 COPPER	1	EA	HUBBELL	C2030344
ROD	5/8" GROUND ROD	2	EA	ERICO	815850
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41

NOTES:
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ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
STEEL POLE FRAMING
DETAILS, STR. 1A

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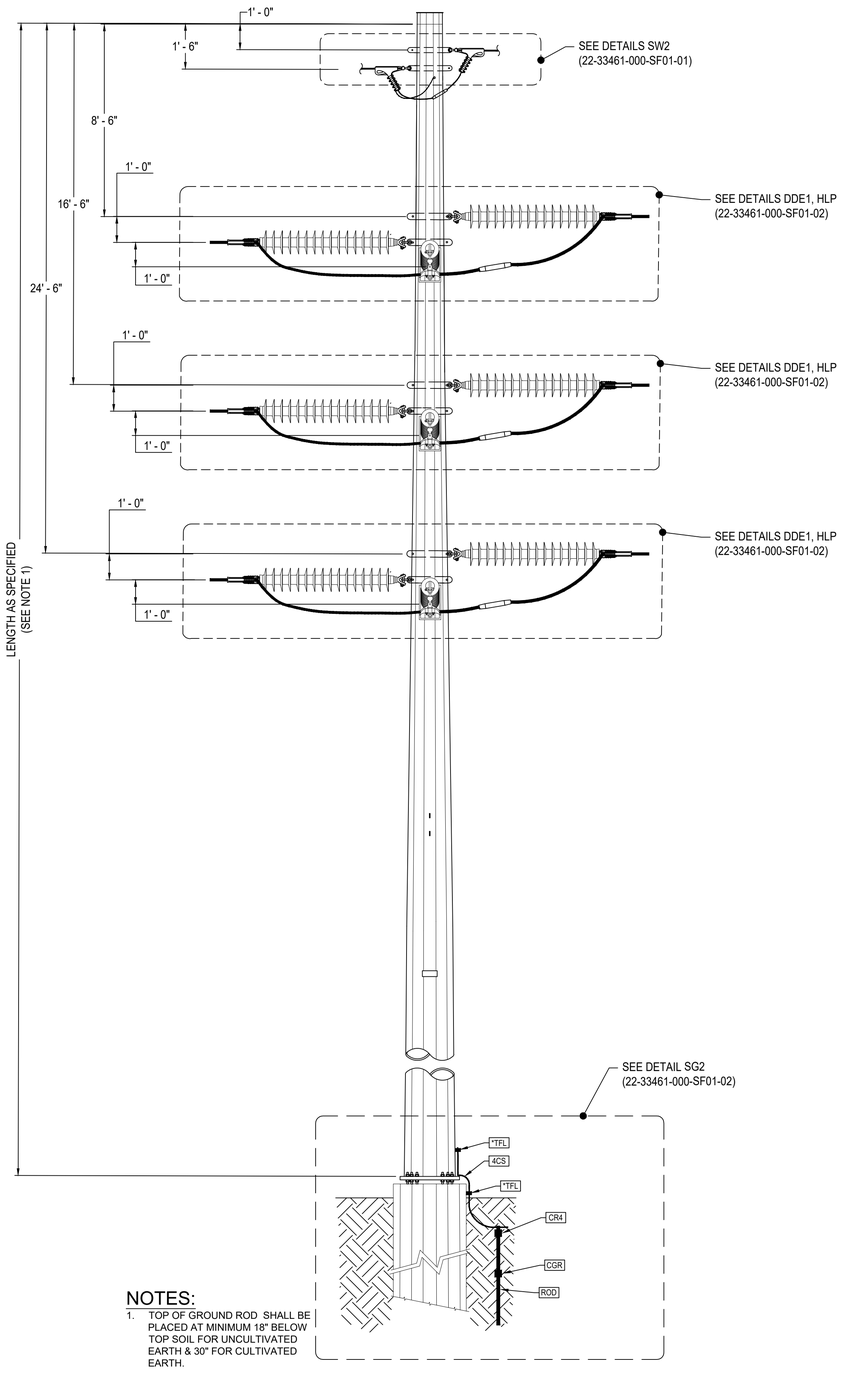
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SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
SF02	04	C



NOTES:

1. TOP OF GROUND ROD SHALL BE PLACED AT MINIMUM 18" BELOW TOP SOIL FOR UNCULTIVATED EARTH & 30" FOR CULTIVATED EARTH.

APPLICABLE STRUCTURE NUMBERS:

48

FIBER OPTIC IN / FIBER OPTIC OUT DEADEND ASSEMBLY, SW2 — ASSY'S REQ'D = 1

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
GWA	GROUNDING WIRE ASSEMBLY, #4 CU	1	EA	PERFORMED	710010015
ST2	BOLTED DEADEND, 7#9 AW	2	EA	HUBBELL	SD70S
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41
YCB	Y-CLEVIS BALL - 30K	2	EA	HUBBELL	YBC30
LS5	LOOP SLEEVE, 7#9 AW	1	EA	HUBBELL	YDS7M9T

DOUBLE DEADEND ASSEMBLY, DDE1 — ASSY'S REQ'D = 3

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
ACS	ANCHOR SHACKLE	6	EA	HUBBELL	AS35BNK
IS1	SUSPENSION INSULATOR, POLYMER	6	EA	MACLEAN	S54080038MXSS019
LS1	LOOP SLEEVE, NARCISSUS AAC	3	EA	BURNDY	C151414
ST1	DEADEND CLAMP, 1272 NARCISSUS	6	EA	HUBBELL	SD155S

HORIZONTAL LINE POST ASSEMBLY, HLP — ASSY'S REQ'D = 3

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
FW7	3/4" WASHER, SQUARE	6	EA	HUGHES BRO.	SW2-70-1/8
HP1	HORIZONTAL LINE POST INSULATOR, POLYMER	3	EA	HUBBELL	P250043S0070
LN7	3/4" LOCK NUT	6	EA	HUBBELL	4037
MB7	3/4" x LENGTH REQUIRED MACHINE BOLT	6	EA	HUBBELL	-
RW7	13/16" WASHER, ROUND, 2"	6	EA	HUBBELL	6806
SC1	SUSPENSION CLAMP, 1272 NARCISSUS	3	EA	HUBBELL	HAS204S
YC1	Y-CLEVIS EYE, NARCISSUS AAC	3	EA	HUBBELL	854512000

STANDARD DIRECT EMBED GROUNDING ASSEMBLY, SG2 — ASSY'S REQ'D = 1

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
2CS	2/0 COPPER GROUND WIRE	13	FT	SOUTHWIRE	10698902
CGR	5/8" GROUND ROD COUPLER	1	EA	ERICO	GCC58F
CR4	5/8" GROUND ROD TO 2/0 COPPER	1	EA	HUBBELL	C2030344
ROD	5/8" GROUND ROD	2	EA	ERICO	815850
TFL	TRANSFORMER LUG	2	EA	HUBBELL	GTCS-41

BOLT SCHEDULE	
HLP TOP	(2) MB7-38
HLP MID	(2) MB7-40
HLP BOT	(2) MB7-42

NOTES:

1. STRUCTURE LENGTH AND EMBEDMENT DEPTH STATED ON STAKING LIST, FOUND ON DWG. 33461-FD01.
2. MATERIAL QUANTITIES SHOWN INCLUDE ALL HARDWARE REQUIRED FOR STRUCTURE. REFER TO DWG NO. 33461-SF01 FOR INDIVIDUAL ASSEMBLY QUANTITIES.

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW
C	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:

Greenville Utilities

PROJECT:

WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:

STEEL POLE FRAMING
DETAILS, STR. 48

PIKE ENGINEERING

PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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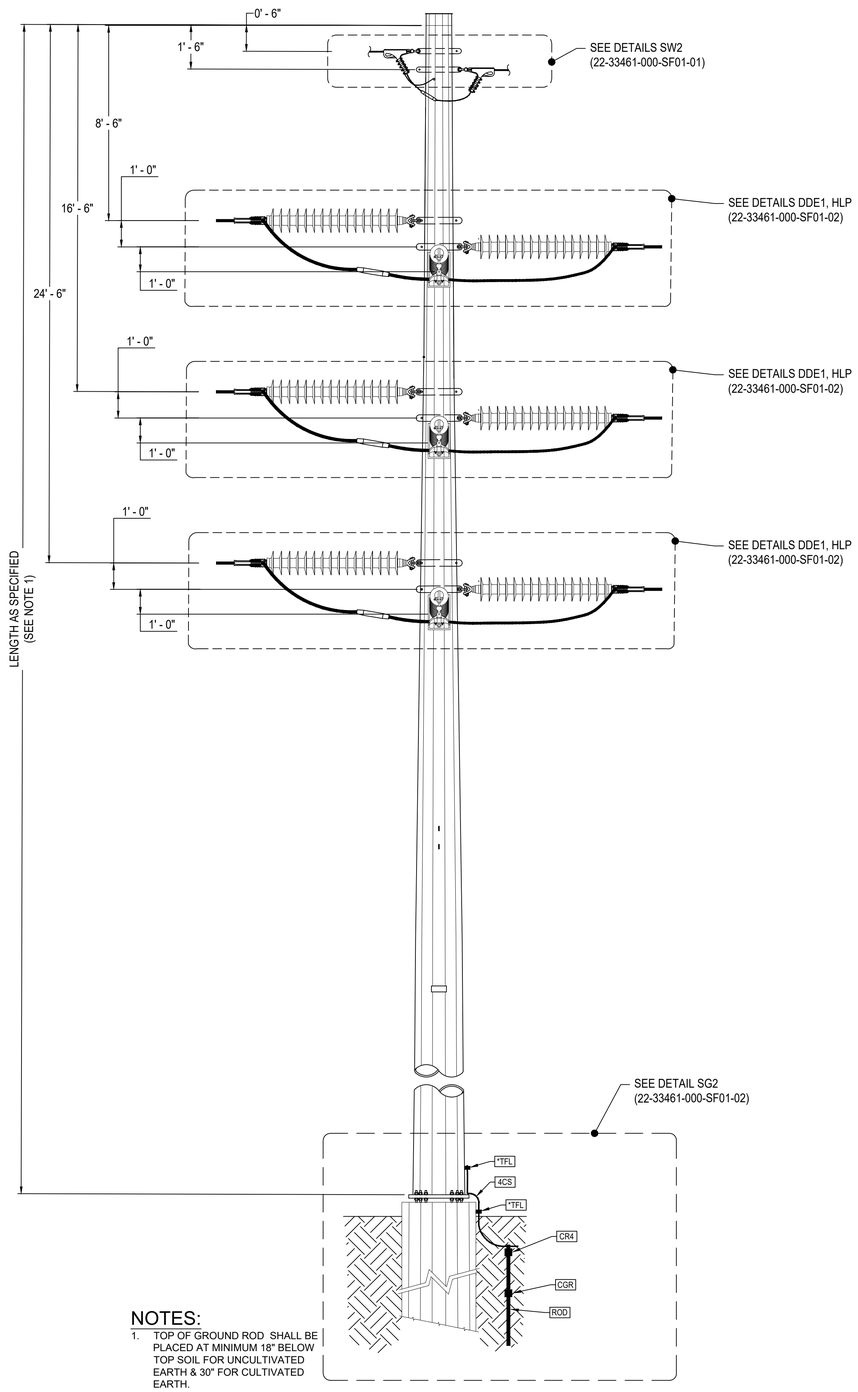
CONTRACTOR SHALL VERIFY ALL CONDITIONS ON JOB SITE & NOTIFY PROJECT MANAGER OF ANY VARIATIONS FROM DIMENSIONS SHOWN ON THESE DRAWINGS BEFORE PROCEEDING WITH ANY CONSTRUCTION.

SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
SF03	01	C



NOTES:

1. TOP OF GROUND ROD SHALL BE PLACED AT MINIMUM 18" BELOW TOP SOIL FOR UNCULTIVATED EARTH & 30" FOR CULTIVATED EARTH.

APPLICABLE STRUCTURE NUMBERS:

49

FIBER OPTIC IN / FIBER OPTIC OUT DEADEND ASSEMBLY, SW2 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
GWA	GROUNDING WIRE ASSEMBLY, #4 CU	1	EA	PERFORMED	710010015
ST2	BOLTED DEADEND, 7#9 AW	2	EA	HUBBELL	SD70S
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41
YCB	Y-CLEVIS BALL - 30K	2	EA	HUBBELL	YBC30
LS5	LOOP SLEEVE, 7#9 AW	1	EA	HUBBELL	YDS7M9T

DOUBLE DEADEND ASSEMBLY, DDE1 — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
ACS	ANCHOR SHACKLE	6	EA	HUBBELL	AS35BNK
IS1	SUSPENSION INSULATOR, POLYMER	6	EA	MACLEAN	S54080038MXSS019
LS1	LOOP SLEEVE, NARCISSUS AAC	3	EA	BURNDY	C151414
ST1	DEADEND CLAMP, 1272 NARCISSUS	6	EA	HUBBELL	SD155S

HORIZONTAL LINE POST ASSEMBLY, HLP — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
FW7	3/4" WASHER, SQUARE	6	EA	HUGHES BRO.	SW2-70-1/8
HP1	HORIZONTAL LINE POST INSULATOR, POLYMER	3	EA	HUBBELL	P250043S0070
LN7	3/4" LOCK NUT	6	EA	HUBBELL	4037
MB7	3/4" x LENGTH REQUIRED MACHINE BOLT	6	EA	HUBBELL	-
RW7	13/16" WASHER, ROUND, 2"	6	EA	HUBBELL	6806
SC1	SUSPENSION CLAMP, 1272 NARCISSUS	3	EA	HUBBELL	HAS204S
YC1	Y-CLEVIS EYE, NARCISSUS AAC	3	EA	HUBBELL	854512000

STANDARD DIRECT EMBED GROUNDING ASSEMBLY, SG2 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
2CS	2/0 COPPER GROUND WIRE	13	FT	SOUTHWIRE	10698902
CGR	5/8" GROUND ROD COUPLER	1	EA	ERICO	GCC58F
CR4	5/8" GROUND ROD TO 2/0 COPPER	1	EA	HUBBELL	C2030344
ROD	5/8" GROUND ROD	2	EA	ERICO	815850
TFL	TRANSFORMER LUG	2	EA	HUBBELL	GTCS-41

BOLT SCHEDULE	
HLP TOP	(2) MB7-38
HLP MID	(2) MB7-40
HLP BOT	(2) MB7-42

NOTES:

1. STRUCTURE LENGTH AND EMBEDMENT DEPTH STATED ON STAKING LIST, FOUND ON DWG. 33461-FD01.
2. MATERIAL QUANTITIES SHOWN INCLUDE ALL HARDWARE REQUIRED FOR STRUCTURE. REFER TO DWG NO. 33461-SF01 FOR INDIVIDUAL ASSEMBLY QUANTITIES.

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW
C	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:

Greenville Utilities

PROJECT:

WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:

STEEL POLE FRAMING
DETAILS, STR. 49

PIKE ENGINEERING

PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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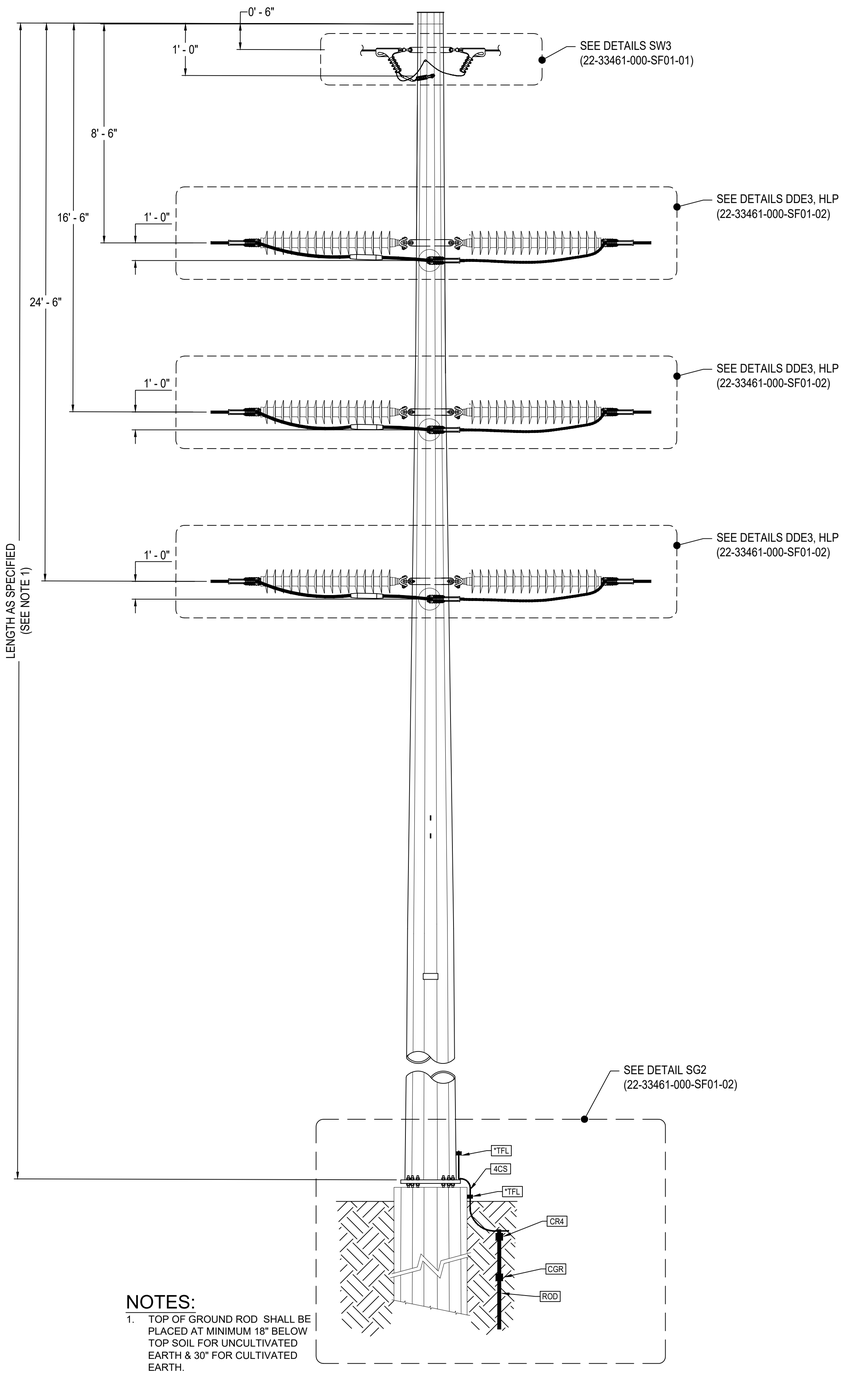
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SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
SF03	02	C



NOTES:

1. TOP OF GROUND ROD SHALL BE PLACED AT MINIMUM 18" BELOW TOP SOIL FOR UNCULTIVATED EARTH & 30" FOR CULTIVATED EARTH.

APPLICABLE STRUCTURE NUMBERS:

1

FIBER OPTIC IN / FIBER OPTIC OUT DEADEND ASSEMBLY, SW3 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
GWA	GROUNDING WIRE ASSEMBLY, #4 CU	2	EA	PERFORMED	710010015
ST2	BOLTED DEADEND, 7#9 AW	3	EA	HUBBELL	SD70S
TFL	TRANSFORMER LUG	1	EA	HUBBELL	GTCS-41
YCB	Y-CLEVIS BALL - 30K	3	EA	HUBBELL	YBC30
LS5	LOOP SLEEVE, 7#9 AW	1	EA	HUBBELL	YDS7M9T

DOUBLE DEADEND ASSEMBLY, DDE3 — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
ACS	ANCHOR SHACKLE	9	EA	HUBBELL	AS35BNK
IS1	SUSPENSION INSULATOR, POLYMER	9	EA	MACLEAN	S54080038MXSS019
LS1	LOOP SLEEVE, NARCISSUS AAC	3	EA	BURNDY	C151414
ST1	DEADEND CLAMP, 1272 NARCISSUS	9	EA	HUBBELL	SD155S
TT1	CONNECTOR, ELECTRICAL, TEE	1	EA	HUBBELL	ATCC1515

HORIZONTAL LINE POST ASSEMBLY, HLP — **ASSY'S REQ'D = 3**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
FW7	3/4" WASHER, SQUARE	6	EA	HUGHES BRO.	SW2-70-1/8
HP1	HORIZONTAL LINE POST INSULATOR, POLYMER	3	EA	HUBBELL	P250043S0070
LN7	3/4" LOCK NUT	6	EA	HUBBELL	4037
MB7	3/4" x LENGTH REQUIRED MACHINE BOLT	6	EA	HUBBELL	-
RW7	13/16" WASHER, ROUND, 2"	6	EA	HUBBELL	6806
SC1	SUSPENSION CLAMP, 1272 NARCISSUS	3	EA	HUBBELL	HAS204S
YC1	Y-CLEVIS EYE, NARCISSUS AAC	3	EA	HUBBELL	854512000

STANDARD DIRECT EMBED GROUNDING ASSEMBLY, SG2 — **ASSY'S REQ'D = 1**

ITEM	DESCRIPTION	QUANTITY	UOM	MANUFACTURER	PART NUMBER
2CS	2/0 COPPER GROUND WIRE	13	FT	SOUTHWIRE	10698902
CGR	5/8" GROUND ROD COUPLER	1	EA	ERICO	GCC58F
CR4	5/8" GROUND ROD TO 2/0 COPPER	1	EA	HUBBELL	C2030344
ROD	5/8" GROUND ROD	2	EA	ERICO	815850
TFL	TRANSFORMER LUG	2	EA	HUBBELL	GTCS-41

BOLT SCHEDULE	
HLP TOP	(2) MB7-28
HLP MID	(2) MB7-32
HLP BOT	(2) MB7-36

NOTES:

1. STRUCTURE LENGTH AND EMBEDMENT DEPTH STATED ON STAKING LIST, FOUND ON DWG. 33461-FD01.
2. MATERIAL QUANTITIES SHOWN INCLUDE ALL HARDWARE REQUIRED FOR STRUCTURE. REFER TO DWG NO. 33461-SF01 FOR INDIVIDUAL ASSEMBLY QUANTITIES.

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW
C	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:

Greenville Utilities

PROJECT:

WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:

STEEL POLE FRAMING
DETAILS, STR. 1

PIKE ENGINEERING

PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
SF03	03	C

BILL OF MATERIAL

KEY CODE	ITEM DESCRIPTION	QUANTITY	UNIT OF MEASURE	CATALOG #	MANUFACTURER
2CS	2/0 COPPER GROUND WIRE	234	EA.	10698902	SOUTHWIRE
ACS	ANCHOR SHACKLE	48	EA.	AS35BNK	HUBBELL
AMR	ARMOR ROD	14	EA.	AR2126	Perform
GWA	GROUNDING WIRE ASSEMBLY, #4 CU	18	EA.	710010015	PERFORMED
CGR	5/8" GROUND ROD COUPLER	18	EA.	GCC58F	Erico
CR4	5/8" GROUND ROD TO 2/0 COPPER	18	EA.	C2030344	Hubbell
FW7	3/4" WASHER, SQUARE	102	EA.	SW2-70-1/8	Hughes Bro
HP1	HORIZONTAL LINE POST INSULATOR, POYMER,	51	EA.	P250043S0070	HUBBELL
IS1	SUSPENSION INSULATOR, POLYMER	39	EA.	S54080038MXSS019	MACLEAN
LN7	3/4" LOCK NUT	102	EA.	4037	Hubbell
LS1	LOOP SLEEVE, NARCISSUS AAC	12	EA.	C151414	BURNDY
LSR	LOOP REDUCER, NARCISSUS AAC TO ARBUTUS AAC	6	EA.	RCV16090AA	AFL
MB7	3/4" X LENGTH REQUIRED MACHINE BOLT	102	EA.	-	-
MB7-24	3/4" X 24" MACHINE BOLT w/NUT	8	EA.	8924	Hubbell
MB7-26	3/4" X 26" MACHINE BOLT w/NUT	36	EA.	8255	Allied Bolt
MB7-28	3/4" X 28" MACHINE BOLT w/NUT	26	EA.	8259	Allied Bolt
MB7-30	3/4" X 30" MACHINE BOLT w/NUT	16	EA.	8930	Allied Bolt
MB7-32	3/4" X 32" MACHINE BOLT w/NUT	2	EA.	82623	Allied Bolt
MB7-36	3/4" X 36" MACHINE BOLT w/NUT	2	EA.	82625	Allied Bolt
MB7-40	3/4" X 40" DOUBLE-ARMING BOLT	4	EA.	PS889840	Hubbell
MB7-42	3/4" X 42" DOUBLE-ARMING BOLT	4	EA.	PS889842	Hubbell
MB7-46	3/4" X 46" DOUBLE-ARMING BOLT	4	EA.	6108	Allied Bolt
ROD	5/8" GROUND ROD	36	EA.	815850	Erico
RW7	13/16" WASHER, ROUND	102	EA.	6806	Hubbell
SC1	SUSPENSION CLAMP, 1272 NARCISSUS	51	EA.	HAS204S	Hubbell
SC2	SUSPENSION CLAMP, 7#9 AW	14	EA.	HAS162C	HUBBELL
ST1	DEADEND CLAMP, 1272 NARCISSUS	33	EA.	SD155S	HUBBELL
ST2	DEADEND CLAMP, 7#9 AW	9	EA.	SD70S	HUBBELL
TFL	TRANSFORMER LUG	39	EA.	GTCS41	HUBBELL
YC1	Y-CLEVIS EYE, NARCISSUS AAC	51	EA.	854512000	HUBBELL
YCB	Y-CLEVIS BALL - 30K	9	EA.	YBC30	HUBBELL
7#9	7#9 ALUMOWELD OHGW	5000	FT.	-	-
1272	NARCISSUS 1272 AAC CONDUCTOR	13500	FT.	-	-
LS5	LOOP SLEEVE, 7#9 AW	4	EA.	YDS7M9T	HUBBELL
ST3	DEADEND CLAMP, 795 ARBUTUS	6	EA.	SD130S	HUBBELL
TT1	CONNECTOR, ELECTRICAL, TEE	1	EA.	ATCC1515	HUBBELL

NOTES:
1. APPROVED EQUIVALENTS SHALL BE USED IN PLACE OF SPECIFIED MATERIAL ABOVE.
2. MATERIAL DOES NOT HAVE QTY SURPLUS MULTIPLIERS AND SHOULD BE ADDED BY FKEC IF NEEDED.
3. BOLT LENGTHS WERE NOT CALCULATED FOR CONCRETE POLES AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW
C	ADT	10-15-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
BILL OF MATERIAL

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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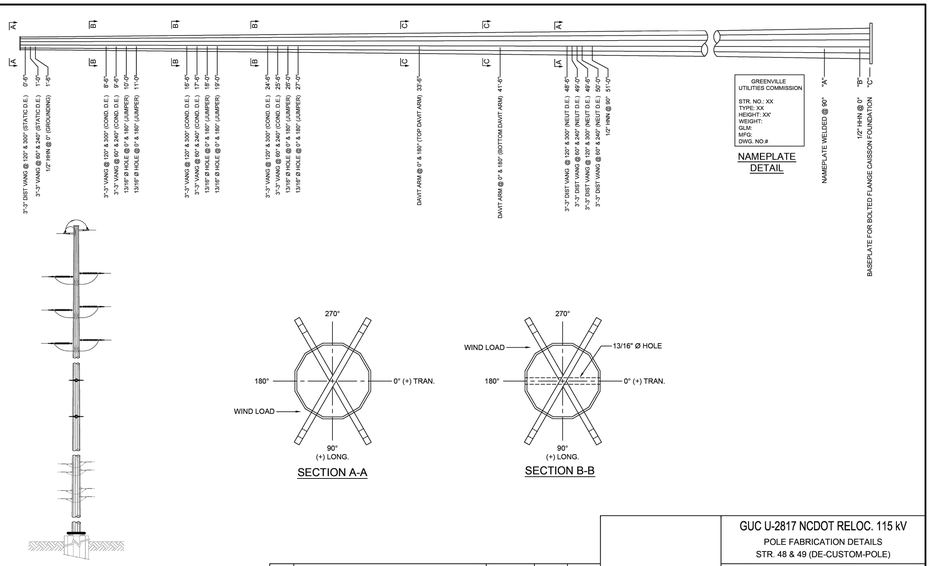
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SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
BM01	01	C



NOTES:
1. STRUCTURES SHALL BE DESIGNED USING APPLIED LOADS SHOWN IN TABLE AND IN ACCORDANCE WITH PIKE ENGINEERING STEEL POLE SPECIFICATION.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 48 & 49 (DE-CUSTOM-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

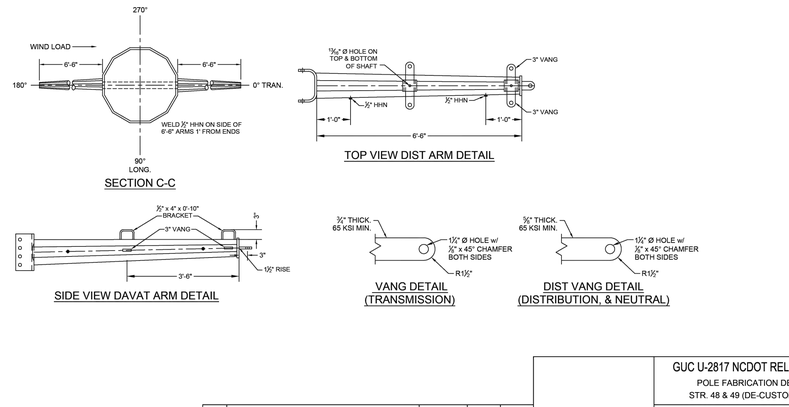
PIKE ENGINEERING, LLC, 1800 INNOVATION POINT, FORT MILL, SC 29715, NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1201 | Sht. 1 of 3

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STRUCTURE DETAILS

STRUCTURE	DESIGN	LOAD TABLE	LENGTH	"A"	"B"	"C"
48	1201-A-090	A	90'-0"	85'-0"	88'-6"	90'-0"
49	1201-A-095	A	95'-0"	90'-0"	93'-6"	95'-0"



NOTES:
1. STRUCTURES SHALL BE DESIGNED USING APPLIED LOADS SHOWN IN TABLE AND IN ACCORDANCE WITH PIKE ENGINEERING STEEL POLE SPECIFICATION.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 48 & 49 (DE-CUSTOM-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC, 1800 INNOVATION POINT, FORT MILL, SC 29715, NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1201 | Sht. 2 of 3

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LOAD TABLE "A"

DIST. FROM TOP	NESC MEDIUM (250B)			NESC EXTREME WIND (250C)			NESC ICE & WIND (250D)			NORMAL			FULL DEADEND			ECCENTRICITY (FT)
	VERT.	TRANS.	LONG.	VERT.	TRANS.	LONG.	VERT.	TRANS.	LONG.	VERT.	TRANS.	LONG.	VERT.	TRANS.	LONG.	
0.50'	240	2610	0	140	1580	-90	340	2200	-100	140	520	60	210	1340	-2400	
8.50'	860	10280	0	440	6570	-630	970	7260	-330	450	2550	-130	710	5240	-9570	
16.50'	860	10280	0	440	6570	-630	970	7260	-330	450	2550	-130	710	5240	-9570	
24.50'	860	10280	0	440	6570	-630	970	7260	-330	450	2550	-130	710	5240	-9570	
33.50'	630	5600	0	310	4020	-600	780	4320	-390	320	1150	-130	530	2880	-5110	6'-6" @ 180°
33.50'	630	5600	0	310	4020	-600	780	4320	-390	320	1150	-130	530	2880	-5110	3'-6" @ 0°
33.50'	630	5600	0	310	4020	-600	780	4320	-390	320	1150	-130	530	2880	-5110	6'-6" @ 0°
41.50'	630	5600	0	310	4020	-600	780	4320	-390	320	1150	-130	530	2880	-5110	6'-6" @ 180°
41.50'	630	5600	0	310	4020	-600	780	4320	-390	320	1150	-130	530	2880	-5110	3'-6" @ 0°
41.50'	630	5600	0	310	4020	-600	780	4320	-390	320	1150	-130	530	2880	-5110	6'-6" @ 0°
48.50'	290	4710	0	120	3030	-220	470	3490	-140	120	1050	60	230	2420	-4310	
105.94	071	0902	0	06	0141	08-	043	0571	08-	06	013	05	041	0901	0481-	
	WIND LOAD		10.00 psf	WIND LOAD		30.98 psf	WIND LOAD		2.30 psf	WIND LOAD		0.00 psf	WIND LOAD		10.00 psf	
	DEAD LOAD FACTOR		1.5	DEAD LOAD FACTOR		1	DEAD LOAD FACTOR		1	DEAD LOAD FACTOR		1	DEAD LOAD FACTOR		1.5	
	WIND SPAN		250	WIND SPAN		250	WIND SPAN		250	WIND SPAN		250	WIND SPAN		187.5	
	WEIGHT SPAN		250	WEIGHT SPAN		250	WEIGHT SPAN		250	WEIGHT SPAN		260	WEIGHT SPAN		187.5	

LINE ANGLE: 48.0° (LOADS IN POUNDS)
DESIGN ANGLE RANGE: 30°-60°
STATIC 1: 1500# (795 ALUMOWELD)
COND. 1.: 6000# (1272 KCMIL AAC "NARCISSUS")
DIST. 1: 3200# (795 KCMIL AAC "ARBUTUS")
DIST. 2: 3200# (795 KCMIL AAC "ARBUTUS")
NEUT. 1: 2700# (336.4 KCMIL ACSR "MERLIN")
NEUT. 2: 1150# (1/0 AWG ACSR "RAVEN")

NOTES:
1. STRUCTURES SHALL BE DESIGNED USING APPLIED LOADS SHOWN IN TABLE AND IN ACCORDANCE WITH PIKE ENGINEERING STEEL POLE SPECIFICATION.

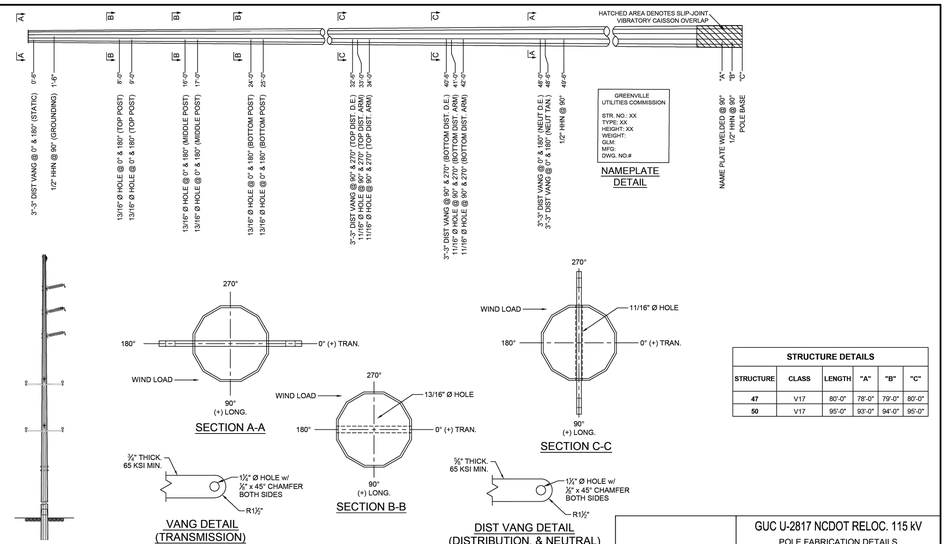
Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 48 & 49 (DE-CUSTOM-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC, 1800 INNOVATION POINT, FORT MILL, SC 29715, NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1201 | Sht. 3 of 3

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STRUCTURE DETAILS

STRUCTURE	CLASS	LENGTH	"A"	"B"	"C"
47	V17	80'-0"	78'-0"	78'-0"	80'-0"
50	V17	95'-0"	93'-0"	94'-0"	95'-0"

NOTES:
1. SEE DRAWING 33461-1301 SHEET 2 FOR SLIP JOINT VIBRATORY CAISSON DETAILS.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 47 & 50 (TANGENT-VERTICAL-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC, 1800 INNOVATION POINT, FORT MILL, SC 29715, NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1202 | Sht. 1 of 1

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ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR: Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
POLE BID DRAWINGS

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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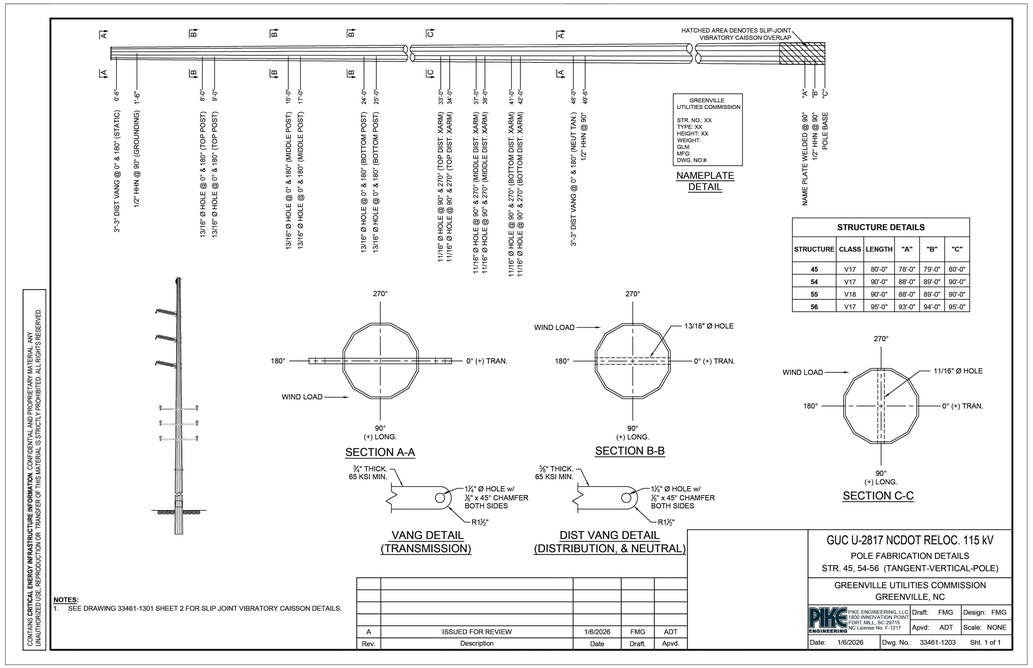
CONTRACTOR SHALL VERIFY ALL CONDITIONS ON JOB SITE & NOTIFY PROJECT MANAGER OF ANY VARIATIONS FROM DIMENSIONS SHOWN ON THESE DRAWINGS BEFORE PROCEEDING WITH ANY CONSTRUCTION.

SEAL

SEAL

PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
SD01	01	B



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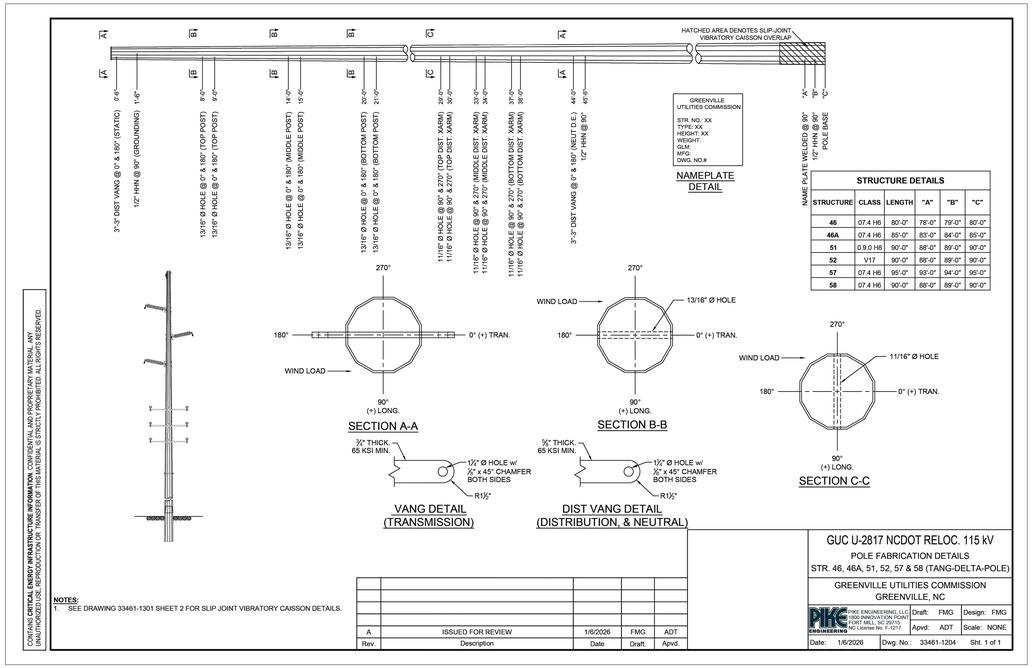
NOTES:
1. SEE DRAWING 33461-1301 SHEET 2 FOR SLIP JOINT VIBRATORY CAISSON DETAILS.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 45, 54-56 (TANGENT-VERTICAL-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC 1000 INNOVATION POINT FORT MILL, SC 29715 NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1203 | Sht. 1 of 1



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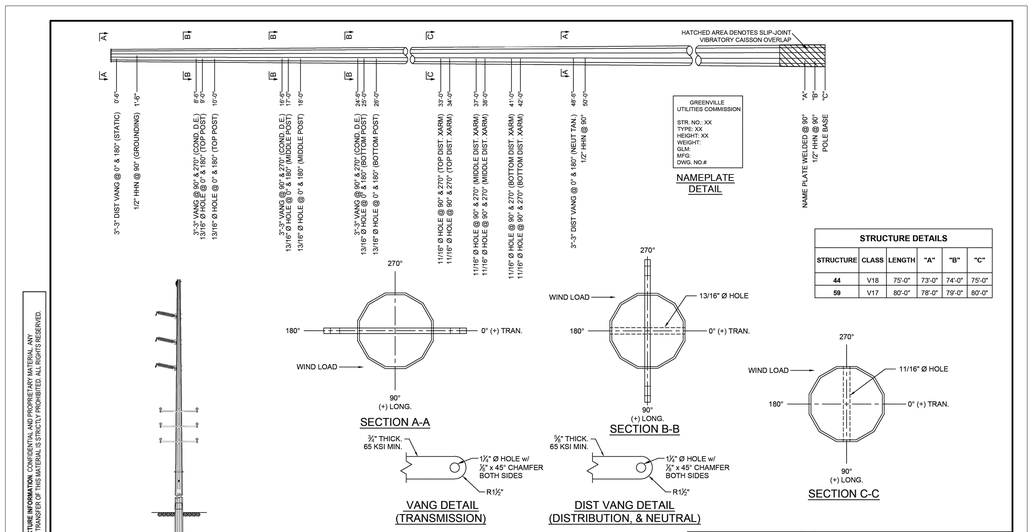
NOTES:
1. SEE DRAWING 33461-1301 SHEET 2 FOR SLIP JOINT VIBRATORY CAISSON DETAILS.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 46, 46A, 51, 52, 57 & 58 (TANG-DELTA-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC 1000 INNOVATION POINT FORT MILL, SC 29715 NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1204 | Sht. 1 of 1



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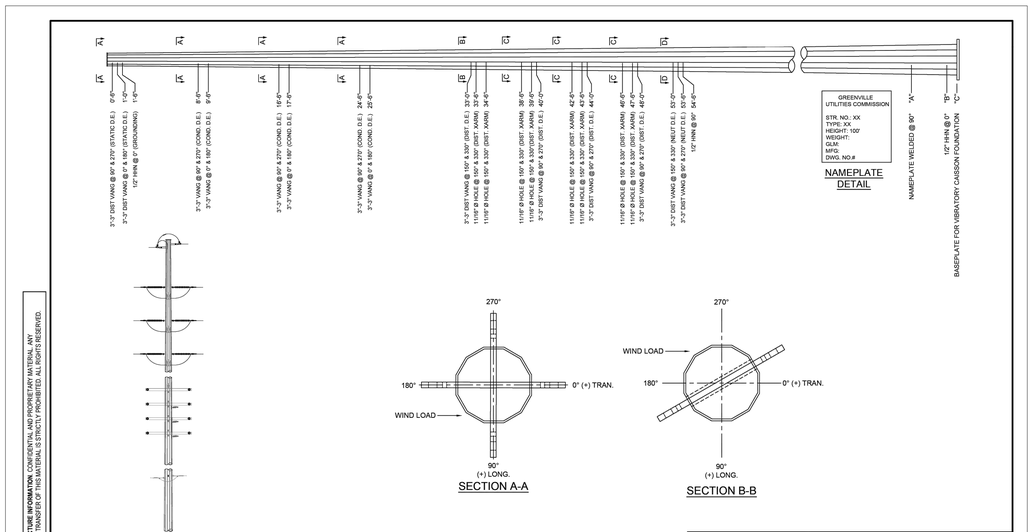
NOTES:
1. SEE DRAWING 33461-1301 SHEET 2 FOR SLIP JOINT VIBRATORY CAISSON DETAILS.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 44 & 59 (DE-VERTICAL-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC 1000 INNOVATION POINT FORT MILL, SC 29715 NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1205 | Sht. 1 of 1



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NOTES:
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Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 1 (DE-CUSTOM-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC 1000 INNOVATION POINT FORT MILL, SC 29715 NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1206 | Sht. 1 of 3

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
POLE BID DRAWINGS

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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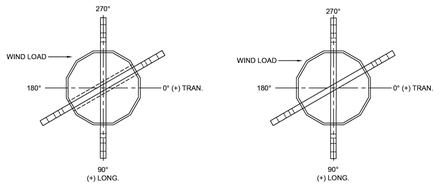
SEAL

SEAL

PROJECT NUMBER
33461-000

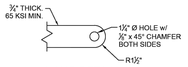
DRAWING	SEQ No.	REV.
SD01	02	B

STRUCTURE DETAILS						
STRUCTURE	DESIGN	LOAD TABLE	LENGTH	"A"	"B"	"C"
1	1206-A-090	A	90'-0"	85'-0"	88'-6"	90'-0"

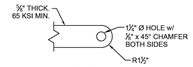


SECTION C-C

SECTION D-D



VANG DETAIL
(TRANSMISSION)



VANG DETAIL
(DISTRIBUTION & NEUTRAL)

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NOTES:
1. STRUCTURES SHALL BE DESIGNED USING APPLIED LOADS SHOWN IN TABLE AND IN ACCORDANCE WITH PIKE ENGINEERING STEEL POLE SPECIFICATION.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 1 (DE-CUSTOM-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC 1800 INNOVATION POINT FORT MILL, SC 29715 NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1206 | Sht. 2 of 3

LOAD TABLE "A"

	DIST. FROM TOP	NESC MEDIUM (250B)			NESC EXTREME WIND (250C)			NESC ICE & WIND (250D)			NORMAL			FULL DEADEND			ECCENTRICITY (FT)
		VERT.	TRANS.	LONG.	VERT.	TRANS.	LONG.	VERT.	TRANS.	LONG.	VERT.	TRANS.	LONG.	VERT.	TRANS.	LONG.	
STATIC 1	0.50'	450	590	50	300	350	-40	650	480	-210	270	0	150	360	340	2480	
STATIC 1	1.50'	450	1890	-2450	300	1060	-1360	650	1450	-1910	270	510	-550	360	120	0	
COND. 1	8.50'	1560	2200	10	980	2070	-770	1700	1450	-610	890	0	-210	1210	1220	9940	
COND. 2	9.50'	1560	2220	-2480	980	2590	-2190	1700	1800	-2310	890	560	-610	1210	350	0	
COND. 1	16.50'	1560	2200	10	980	2070	-770	1700	1450	-610	890	0	-210	1210	1220	9940	
COND. 2	17.50'	1560	2220	-2480	980	2590	-2190	1700	1800	-2310	890	560	-610	1210	350	0	
COND. 1	24.50'	1560	2200	10	980	2070	-770	1700	1450	-610	890	0	-210	1210	1220	9940	
COND. 2	25.50'	1560	2220	-2480	980	2590	-2190	1700	1800	-2310	890	560	-610	1210	350	0	
DISTR. 1	34.00'	610	600	0	300	1000	30	920	260	0	280	0	0	490	3640	-1500	5.0' @ 240°
	34.00'	610	600	0	300	1000	30	920	260	0	280	0	0	490	3640	-1500	
	34.00'	610	600	0	300	1000	30	920	260	0	280	0	0	490	3640	-1500	5.0' @ 60°
DISTR. 2	39.00'	660	660	-20	340	1120	-10	960	320	-30	310	20	0	520	4820	-2010	5.0' @ 240°
DISTR. 4	39.00'	610	600	0	300	1000	30	920	260	0	280	0	0	490	3640	-1500	5.0' @ 60°
DISTR. 3	40.00'	610	610	-3540	300	740	-2350	920	400	-3040	280	0	-830	490	540	-3540	
DISTR. 2	43.00'	660	660	-20	340	1120	-10	960	320	-30	310	20	0	520	4820	-2010	5.0' @ 240°
DISTR. 4	43.00'	610	600	0	300	1000	30	920	260	0	280	0	0	490	3640	-1500	5.0' @ 60°
DISTR. 3	44.00'	610	610	-3540	300	740	-2350	920	400	-3040	280	0	-830	490	540	-3540	
DISTR. 2	47.00'	660	660	-20	340	1120	-10	960	320	-30	310	20	0	520	4820	-2010	5.0' @ 240°
DISTR. 4	47.00'	610	600	0	300	1000	30	920	260	0	280	0	0	490	3640	-1500	5.0' @ 60°
DISTR. 3	48.00'	610	610	-3540	300	740	-2350	920	400	-3040	280	0	-830	490	540	-3540	
NEUT. 1	53.00'	660	660	-20	340	1120	-10	960	320	-30	310	20	0	520	4820	-2010	
NEUT. 2	53.50'	660	1120	-520	340	980	-1010	960	720	-990	310	0	20	520	660	-4920	
		WIND LOAD		10.00 psf	WIND LOAD		30.98 psf	WIND LOAD		2.30 psf	WIND LOAD		0.00 psf	WIND LOAD		10.00 psf	
		DEAD LOAD FACTOR		1.5	DEAD LOAD FACTOR		1	DEAD LOAD FACTOR		1	DEAD LOAD FACTOR		1	DEAD LOAD FACTOR		1.5	
		WIND SPAN		310	WIND SPAN		310	WIND SPAN		310	WIND SPAN		310	WIND SPAN		232.5	
		WEIGHT SPAN		580	WEIGHT SPAN		770	WEIGHT SPAN		520	WEIGHT SPAN		690	WEIGHT SPAN		435	

LINE ANGLE: 0.0° (LOADS IN POUNDS)
STATIC 1: 1500# (7#9 ALUMOWELD)
COND. 1: 6000# (1272 KCMIL AAC "NARCISSUS")
DISTR. 1: 2150# (336.4 KCMIL AAC "TULIP")
DISTR. 3: 2150# (336.4 KCMIL AAC "TULIP")
NEUT. 1: 3000# (336.4 KCMIL ACSR "MERLIN")

DESIGN ANGLE RANGE: 0°-10°
STATIC 2: 1500# (7#9 ALUMOWELD)
COND. 2: 2500# (1272 KCMIL AAC "NARCISSUS")
DISTR. 2: 3000# (336.4 KCMIL ACSR "MERLIN")
DISTR. 4: 2150# (336.4 KCMIL AAC "TULIP")
NEUT. 2: 3000# (336.4 KCMIL ACSR "MERLIN")

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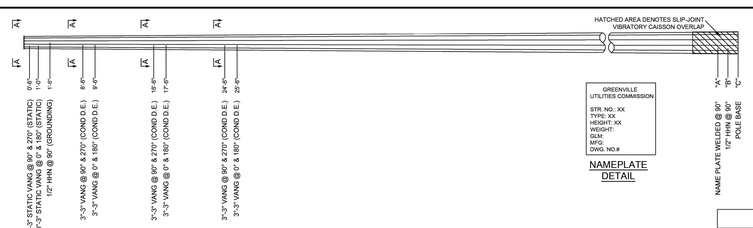
NOTES:
1. STRUCTURES SHALL BE DESIGNED USING APPLIED LOADS SHOWN IN TABLE AND IN ACCORDANCE WITH PIKE ENGINEERING STEEL POLE SPECIFICATION.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 1 (DE-CUSTOM-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC 1800 INNOVATION POINT FORT MILL, SC 29715 NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1206 | Sht. 3 of 3

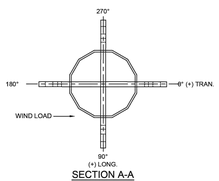


GREENVILLE UTILITIES COMMISSION
STR_NO.: XX
TYPE: XX
HEIGHT: XX
WEIGHT:
GLM:
MFG:
DWG. NO.#

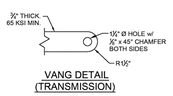
NAMEPLATE DETAIL

STRUCTURE DETAILS						
STRUCTURE	CLASS	LENGTH	"A"	"B"	"D"	
1A	V20	75'-0"	73'-0"	74'-0"	75'-0"	

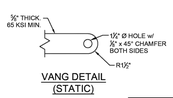




SECTION A-A



VANG DETAIL
(TRANSMISSION)



VANG DETAIL
(STATIC)

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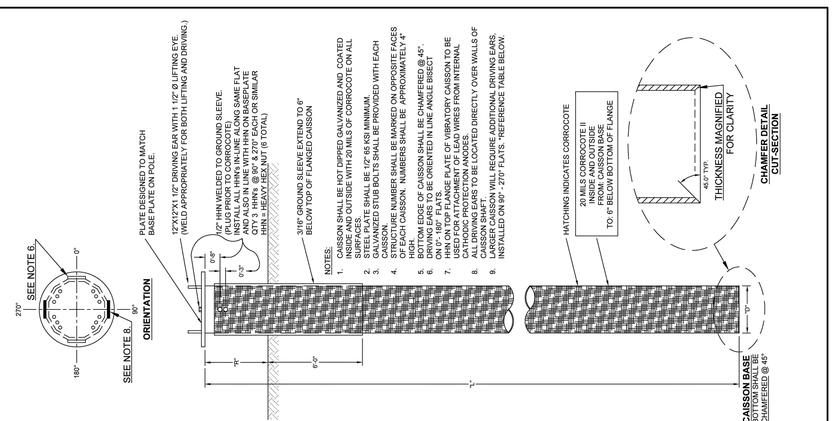
NOTES:
1. SEE DRAWING 33461-1301 SHEET 2 FOR SLIP JOINT VIBRATORY CAISSON DETAILS.

Rev.	Description	Date	Draft.	Apvd.
A	ISSUED FOR REVIEW	1/6/2026	FMG	ADT

GUC U-2817 NCDOT RELOC. 115 kV
POLE FABRICATION DETAILS
STR. 1A (DE-VERTICAL-POLE)
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

PIKE ENGINEERING, LLC 1800 INNOVATION POINT FORT MILL, SC 29715 NC License No. F-1217

Draft: FMG | Design: FMG | Apvd: ADT | Scale: NONE
Date: 1/6/2026 | Dwg. No.: 33461-1207 | Sht. 1 of 1



STR. #	MIN. "D" [IN.]	"EMBED" [FT.]	"R" [FT.]	"L" [FT.]	"THICKNESS" [IN.]	INTERIOR/ EXTERIOR A.B.	NUMBER OF DRIVING EARS
1	45.00	31	2	33	0.5	EXTERIOR	2
48	51.00	28	2	30	0.5	EXTERIOR	2
49	53.00	34	2	36	0.5	EXTERIOR	2

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GUC U-2817 NCDOT RELOC. 115 kV
BOLTED FLANGE CAISSON DETAILS
STR. 48 & 49
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NC

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B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR: Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
POLE BID DRAWINGS

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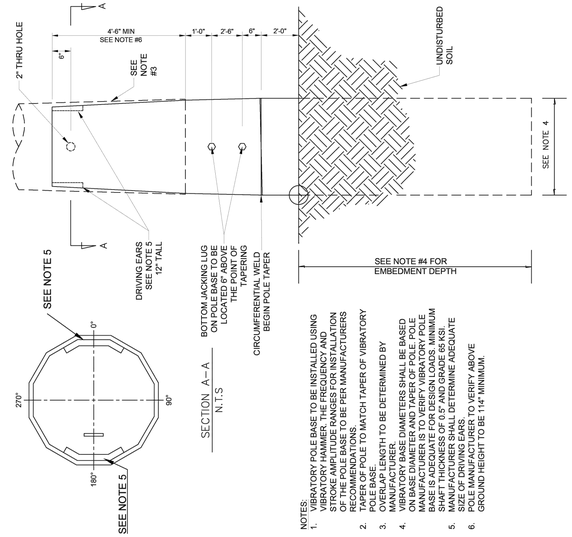
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SD01	03	B

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NOTES:
1. VIBRATORY POLE BASE TO BE INSTALLED USING VIBRATORY HAMMER WITH REFERENCED LAST STROKE AMPLITUDE RANGE FOR INSTALLATION OF THE POLE BASE TO BE PER MANUFACTURERS RECOMMENDATIONS.
2. TYPE OF POLE TO MATCH TAPER OF VIBRATORY POLE BASE.
3. OVERLAP LENGTH TO BE DETERMINED BY MANUFACTURER.
4. VIBRATORY BASE DIAMETERS SHALL BE BASED ON BASE DIAMETER AND TAPER OF POLE. POLE MANUFACTURER IS TO VERIFY VIBRATORY POLE BASE SHALL FACILITATE FOR POLE LOADS, MINIMUM SHAFT THICKNESS OF 0.5" AND GRADE 65 KSI.
5. MANUFACTURER SHALL DETERMINE ADEQUATE SIZE AND SPACING FOR ELDS.
6. POLE MANUFACTURER TO VERIFY ABOVE GROUND HEIGHT TO BE 114" MINIMUM.

STR. #	"EMBED" [FT.]	"THICKNESS" [IN.]
44	26.0	0.3125
45	26.0	0.3125
46	19.0	0.3125
46A	19.5	0.3125
47	19.0	0.3125
50	21.0	0.3125
51	24.0	0.3125
52	24.0	0.3125
54	18.0	0.3125
55	19.5	0.3125
56	25.0	0.3125
57	22.5	0.3125
58	22.5	0.3125
59	24.5	0.3125
1A	28.5	0.3125

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GUC U-2817 NCDOT RELOC. 115 kV
SLIP JOINT VIBRATORY CAISSON DETAILS
STR. 44 to 47, 50 to 59, & 1A

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Date: 1/6/2026	Dwg. No.: 33461-1301	Sht. 2 of 2	

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DATE:	06-10-26
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ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
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GEOTECHNICAL ENGINEERING REPORT

GUC – U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina
Pitt County, North Carolina

Schnabel Reference # 23290034.000
October 10, 2024

schnabel-eng.com

Schnabel ENGINEERING
SCHNABEL ENGINEERING SOUTH, P.C.

Schnabel ENGINEERING
Schnabel Engineering South, P.C.
1133 Military Cutoff Road, Suite 210 // Wilmington, NC 28405
T 910.769.1521
schnabel-eng.com

October 10, 2024

Mr. David Tennent
Pike Engineering, LLC
123 N. White Street
Fort Mill, SC 29715

Subject: **Geotechnical Engineering Report**
GUC – U-2817 Evans Street Transmission Line Relocation
Pitt County, North Carolina
Schnabel Reference No. 23290034.000

Dear Mr. Tennent,

SCHNABEL ENGINEERING SOUTH, P.C. is pleased to submit our geotechnical engineering report for this project. This study was performed in accordance with our proposal dated May 2, 2024, as authorized by Pike Engineering, LLC Purchase Order #01004475 on September 4, 2024.

We appreciate the opportunity to be of service for this project. Please call us if you have any questions regarding this report.

Sincerely,

SCHNABEL ENGINEERING SOUTH, P.C.

Jacob P. Rose, EIT
Staff Engineer

Jacob C. Wessell, P.E.
Associate

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030395

Pike Engineering, LLC
GUC – U-2817 Evans Street Transmission Line Relocation

GEOTECHNICAL ENGINEERING REPORT
GUC – U-2817 EVANS STREET TRANSMISSION LINE RELOCATION
PITT COUNTY, NORTH CAROLINA

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Figure 1: Site Vicinity Map
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APPENDICES

Appendix A: Subsurface Exploration Data
Appendix B: Soil Laboratory Test Data
Appendix C: Soil Data Tables

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Pike Engineering, LLC
GUC – U-2817 Evans Street Transmission Line Relocation

1.0 EXECUTIVE SUMMARY

This report presents the results of subsurface exploration, laboratory testing, and geotechnical engineering analysis for the GUC – U-2817 Evans Street Transmission Relocation in Pitt County, North Carolina.

We understand your team is coordinating with Greenville Utility Commission (GUC) to re-route and construct transmission poles running in the east-west direction near the intersection of Fire Tower Road and Evans Street in Winterville, NC. The proposed locations are within existing GUC Right-of-Way (ROW).

Subsurface conditions encountered at the project site generally consist of Coastal Plains sands and silty/clayey soils of the Yorktown Formation. We observed groundwater during drilling and after completion, as well as 24 hours later, at various depths across the project site. The depth to groundwater ranged from approximately 2.5 to 7 feet below the ground surface. In boring SB-06, groundwater was not present in the borehole after completion due to the borehole collapsing at around 6.8 feet. Based on surrounding borings, where the encountered depth was 18 feet, we anticipate the groundwater to be approximately 7 feet in this location. When designing foundations, special consideration should be given to the shallow groundwater table.

We anticipate transmission line structures can be supported on vibratory caissons, rather than direct embedded steel poles, due to the shallow groundwater table and wet, soft to medium-stiff, fine-grained soils, and very loose to medium dense nature of the coarse-grained soils within the upper 45 feet of the subsurface profile. We understand that Pike will design these structures using the MFAD and LPILE soil parameters summarized in the Soil Data Tables included in Appendix C, as applicable.

We are providing this executive summary solely for purposes of overview. Any party that relies on this report must read the full report. This executive summary omits several details, any one of which could be very important to the proper application of the report.

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GUC – U-2817 Evans Street Transmission Line Relocation

2.0 SCOPE OF SERVICES

Our proposal dated May 2, 2024, defines the scope of services for this project. Our services include subsurface exploration, field engineering, soil laboratory testing, and the development of geotechnical engineering recommendations. The objective of this study is to evaluate the subsurface conditions and provide geotechnical engineering design recommendations for this project. This study was conducted under the supervision of a Professional Engineer registered in the state of North Carolina.

Services not described in our agreement are not included in this study. We would be happy to provide additional support services to the design team as the project demands.

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GUC – U-2817 Evans Street Transmission Line Relocation

3.0 DESCRIPTION OF SITE AND PROPOSED CONSTRUCTION

3.1 Site Description and Proposed Construction

The boring locations are within GUC ROW on either side of the intersection between Firetower Road and Evans Street and can be accessed from existing roads and driveways. According to the 1985 State Geologic Map of North Carolina, the project site is located in the Coastal Plains Physiographic Province of North Carolina. Based on the map, the project site is primarily underlain by the Yorktown Formation, characterized by alluvial and sedimentary deposits from the Tertiary period.

Based on the review of publicly available QL2 LiDAR data from NC Spatial Data, we understand that the site slopes downwards from west to east. Elevations on site lie between approximately 66 and 74 feet above mean sea level, indicating low levels of topographical relief.

Schnabel obtained the site and project information from the Request for Proposal document provided by Pike Engineering, LLC (Pike) on July 10, 2023, review of publicly available aerial photography, and site visits during the subsurface exploration.

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GUC – U-2817 Evans Street Transmission Line Relocation

4.0 SUBSURFACE EXPLORATION PROGRAM

We performed a subsurface exploration and field-testing program to identify the subsurface stratigraphy underlying the site and to evaluate the geotechnical properties of the materials encountered. Per the RFP, this program included 7 test borings drilled to depths of up to 40 feet below the ground surface. Exploration methods are discussed below. The appendices to this report contain the results of our exploration.

4.1 Subsurface Exploration and Field Testing

4.1.1 Test Borings

Our subcontractor, Bridger Drilling, drilled seven (7) test borings identified as SB-01 through SB-07 to depths of approximately 30 to 45 feet on September 3 and 4, 2024, under our observation. The test borings were sampled by performing Standard Penetration Testing (SPT; in general accordance with ASTM D1586) every 2.5 ft to a depth of 10 feet, and at 5-feet intervals thereafter.

The SPT samples were obtained using a hydraulically driven automatic trip hammer (ATH). Most correlations with SPT data are based on N-values collected with a safety hammer. The energy applied to the split-spoon sampler using the ATH is about 33 percent greater than that applied using the safety hammer. The hammer blows shown on the boring logs are uncorrected for the higher energy. However, we corrected the SPT N-values for the higher energy when using N-values in our analyses.

Undisturbed samples were obtained in offset borings with a 3-inch diameter thin-walled metal tube in general accordance with ASTM D1587.

Appendix A includes specific observations, remarks, and logs for the borings, classification criteria, drilling methods, and sampling protocols. Figure 2, included at the end of this report, indicates the approximate test boring locations. We will retain soil samples up to 45 days beyond the issuance of this report, unless you request other disposition.

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GUC – U-2817 Evans Street Transmission Line Relocation

5.0 LABORATORY TESTING

Our in-house laboratory performed tests on selected samples obtained during the subsurface exploration. The testing aided in classifying materials encountered in the subsurface exploration and provided data for use in developing recommendations for the design of foundations and earthwork. Moisture contents and index test results are shown on the boring logs in Appendix A. The remainder of the test results are included in Appendix B.

5.1 Soils Testing

5.1.1 Index Testing

We performed natural moisture content, Atterberg Limit, and gradation tests on 11 split-spoon samples and two undisturbed samples of soil representing Strata A1 and A2, for classification and to provide parameters for use with published correlations with soil properties. The results are presented in the Summary of Laboratory Tests in Appendix B and are summarized for each stratum in Section 6.0.

6.0 SITE GEOLOGY AND SUBSURFACE CONDITIONS

6.1 Site Geology

The project site falls within the Coastal Plains physiographic province of North Carolina, but more specifically, the site falls within the Yorktown Formation. The subsurface in the Yorktown Formation generally consists of fossiliferous clays with interbedded sandy lenses.

The following section presents the stratigraphy and groundwater conditions encountered during our field exploration:

6.2 Generalized Subsurface Stratigraphy

We characterized the following generalized subsurface stratigraphy based on the exploration and laboratory test data included in the appendices.

Surface Material: **Topsoil or Asphalt**

Surface material generally consisted of 3 to 7 inches of topsoil in borings SB-01, SB-02, SB-03, SB-04, and SB-05 and 3 to 5 inches of bituminous asphalt pavement in borings SB-06 and SB-07.

Stratum F: **Fill – Fine to Coarse-Grained Material**

Below the topsoil or asphalt, Fill material was encountered in borings SB-02, SB-06, and SB-07. This stratum consisted of material sampled as elastic silt at boring SB-02 and silty gravel with sand (assumed to be ABC stone base beneath pavements) at SB-06 and SB-07. The Fill material was encountered below the surface material (topsoil or asphalt pavement) to depths of 1 to 3 feet below the ground surface.

The field SPT N-value recorded in the Stratum F material at SB-02 was 3 blows per foot (bpf), indicating soft fine-grained soils.

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ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F.GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR: Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

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PIKE ENGINEERING, LLC.
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Stratum A1: Coastal Plain – Fine-Grained Material

Below the surface material and/or Fill of Stratum F, Coastal Plain soils of Stratum A1 were generally encountered in borings SB-01, SB-03, and SB-05 to depths of 5.5 to 17 feet below existing grade. In boring SB-04, Stratum A1 was encountered below Stratum A2 in a layer from 5.5 to 12 feet below existing grade and again from 37 feet to the boring termination depth of 45 feet. In boring SB-07, Stratum A1 was encountered below Stratum A2 in a layer from 4 to 19 feet below existing grade and again from 32 to 37 feet. This stratum consisted of fine-grained soils classified as Elastic Silt (MH), Sandy Elastic Silt (MH), Lean Clay (CL), Sandy Lean Clay (CL), and Fat Clay (CH). The field SPT N-values recorded in the Stratum A1 materials ranged from 1 to 9 bpf, indicating very soft to stiff fine-grained materials.

Laboratory testing on selected samples of Stratum A1 soils indicates natural moisture contents ranging from about 28 to 73 percent, and material passing the number 200 sieve ranging from about 54 to 97 percent. Measured Liquid Limits of the materials ranged from 35 to 66, and Plasticity Indices ranged from 13 to 32.

Stratum A2: Coastal Plain – Coarse-Grained Material

The Coastal Plain soils of Stratum A2 were encountered in all test borings ranging from just below the topsoil to termination depths of up to 40 feet below the ground surface. Very loose to dense, coarse-grained soils comprise this stratum and were classified as Clayey Sand (SC), Silty to Clayey Sand (SC-SM), Silty Sand (SM), Poorly Graded Sand with Clay (SP-SC), Poorly Graded Sand with Silt (SP-SM), and Poorly Graded Sand (SP). The field SPT N-values recorded in the Stratum A2 materials ranged from 3 to 50 bpf, indicating very loose to dense coarse-grained materials.

Laboratory testing on selected samples of Stratum A2 soil indicates natural moisture contents ranging from about 11 to 31 percent, and material passing the number 200 sieve ranging from about 7 to 47 percent. Measured Liquid Limits of the materials ranged from Non-Plastic (NP) to 47, and Plasticity Indices ranged from NP to 23.

6.3 Groundwater

We observed groundwater upon completion of drilling at depths of 2.5 to 7.0 feet across the project corridor. These depths correlate to elevations ranging from approximately 61 to 71 feet above mean sea level. Groundwater levels observed in our exploration may adversely impact open borehole foundation construction methods, including direct-embedded poles or drilled shaft construction, depending on the depth and amount of precipitation before and during construction. Recommendations to address the impact of groundwater are discussed in subsequent sections.

The groundwater levels on the logs indicate our estimate of the hydrostatic water table at the time of our subsurface exploration. The final design should anticipate the fluctuation of the hydrostatic water table depending on variations in precipitation, surface runoff, pumping, evaporation, leaking utilities, stream levels, and similar factors.

The test boring logs in Appendix A include groundwater observations obtained during our subsurface exploration.

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7.0 FOUNDATION RECOMMENDATIONS AND CONSTRUCTION CONSIDERATIONS

We based our geotechnical engineering analysis on the information developed from our subsurface exploration and soil laboratory testing, along with the project information provided to our office and our previous experience on similar projects. We understand the proposed transmission structures may consist of direct embedded steel poles, vibratory caissons, or engineered steel poles on concrete drilled shafts.

Design soil parameters for direct embedded poles, vibratory caissons, and drilled shafts are summarized in the Soil Data Tables included in Appendix C. The recommended soil parameters were developed based on correlations with SPT N-values and other soil properties, as provided in the November 2009 edition of the User Guide for MFAD 5.0 (Moment Foundation Analysis and Design), the technical manual for LPILE v2019, FHWA GEC 10 (2018), and through our engineering judgment.

7.1 Direct Embedded Steel Poles

Direct embedded steel poles are generally considered a practical and cost-effective option for foundation construction. As very loose sands and soft clays are generally present at depths up to approximately 45 feet across the site, direct embedded steel poles may not be a practical solution in this case. The depth to groundwater was also observed between 2.5 and 7 feet across the borings at the site, which would likely preclude the use of open borehole foundation construction techniques for this method.

7.2 Vibratory Caissons

We understand transmission line structures may be supported on vibratory caissons. Vibratory caissons are suitable for soft/loose to hard/dense, saturated soils; however, installation may be hindered when a hard, indurated, or cemented layer is encountered above softer/looser soils prior to reaching the required bearing stratum. Based on our exploration, the transmission line borings generally indicate very loose/soft to medium dense soils within the upper 40 feet, with the exception of some isolated hard and dense lenses at about 20 to 30 feet in a few of the borings. We do not anticipate hard, indurated, or cemented layers causing significant hindrance to the installation of vibratory caissons for this project.

7.3 Drilled Shafts on Soil

We also understand that drilled shafts may be considered for support of transmission structures. Based on the subsurface profile, we recommend sizing the drilled shafts for embedment of approximately 20 to 30 feet in the medium-dense/dense sands of Stratum A2 in order to avoid the very soft/soft silty/clayey soils of Stratum A1.

We anticipate that a drilled shaft will develop its capacity through a combination of shaft side friction and end bearing. Side resistance should be ignored in the portion of the shaft within the top 5 feet below the lowest finished ground surface. We recommend that a geotechnical engineer observe the drilled shaft excavation and approve the foundation soils based on the excavated materials and correlations with the test boring information provided herein.

The lateral loads and moments may be resisted by the stiffness of the drilled shaft and the passive resistance of the soils adjacent to the shaft.

If a drilled shaft is utilized for foundation support, it should be constructed according to good engineering practice and in accordance with DEP Concrete Foundation Specification B-2543. Below the groundwater

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table, the drilled shaft will likely need to be laterally supported by steel casing to provide hole stability and cut off groundwater. The Contractor should be required to dewater the shaft if the casing cannot be sealed to stop groundwater intrusion. Alternatively, drilling fluid may be used to maintain an open hole.

We anticipate that GUC has requirements for specialty contractors working in these soil conditions for the placement of drilled shaft foundations. Means and methods should be required that meet GUC requirements and that have proven successful in similar subsurface conditions. A wet placement work plan should be required that demonstrates how quality control and quality assurance will be provided.

After excavation to suitable bearing material, the Contractor should thoroughly clean the bearing surface of all loose material, including mud and soft, unsuitable soils using a mud bucket. We recommend that the bottom of drilled shaft excavations be cleaned if the shafts are designed considering end bearing.

For drilled shafts constructed in wet conditions where groundwater cannot be lowered adequately, concrete should be pumped to the bottom of the shaft using proper tremie techniques. Tremie pipes should consist of a minimum 10-inch diameter, clean steel piping with water-tight joints. To separate concrete from water in the shaft, an appropriate plug device should be inserted into the bottom of the tremie pipe before lowering it into the shaft. We recommend that pump hoses and tremie pipes be lubricated with a rich cement grout prior to concrete placement to ease the flow of concrete. A minimum hose diameter of 5 inches should be used for pumped concrete. A concrete slump of 8 inches (± 1 inch) is recommended for drilled shafts constructed in wet conditions. Super-plasticizing agents should be used to achieve the required slump. The tremie pipe should be kept at the bottom of the shaft until the pipe is full of concrete and then lifted to initiate the flow of concrete. The bottom of the tremie pipe should be kept at least 10 ft below the top of the concrete as the shaft is filled.

Where shafts are excavated in the dry, concrete may be placed using free fall methods provided that proper techniques are used to avoid hitting the reinforcing steel cage or shaft sidewalls. Shafts should be filled with concrete as the casing is withdrawn. A minimum concrete head of 8 ft above the bottom of the casing should be provided so that discontinuities do not develop in the drilled shaft due to intrusion of soil into the shaft. Concrete volume should be recorded by the Geotechnical Engineer and compared to theoretical volume of the drilled shaft, for quality control purposes. A concrete slump of 6 inches (± 1 inch) is recommended for drilled shafts constructed in dry conditions to reduce the possibility of the concrete arching within the casing during withdrawal. Concreting of the drilled shaft should be completed the same day the drilled shaft is drilled. The concrete should be poured in one continuous pour.

To ensure that the reinforcing steel cage is properly spaced and aligned in the drilled shaft, the Contractor should be required to use SHAFTSPACER™ and BARBOOT™ alignment devices, or their technical equivalent.

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8.0 ENGINEERING SERVICES DURING CONSTRUCTION

The engineering recommendations provided in this report are based on the information obtained from the subsurface exploration and laboratory testing. However, conditions on the site may vary between the discrete locations observed at the time of our subsurface exploration. The nature and extent of variations between borings may not become evident until during construction.

To account for this variability, we should provide professional observation and testing of subsurface conditions revealed during construction as an extension of our engineering services. These services will also help in evaluating the Contractor's conformance with the plans and specifications. Because of our unique position to understand the intent of the geotechnical engineering recommendations, retaining Schnabel for these services will allow us to provide consistent service throughout the project construction.

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9.0 GENERAL SPECIFICATION RECOMMENDATIONS

An allowance should be established to account for possible additional costs that may be required to construct earthwork and foundations as recommended in this report. Additional costs may be incurred for a variety of reasons including variation of soil between borings, greater than anticipated unsuitable soils, need for borrow fill material, wet on-site soils, obstructions, rock excavation, temporary dewatering, etc.

The project specifications should indicate the Contractor's responsibility for providing adequate site drainage during construction. Inadequate drainage will most likely lead to disturbance of soils by construction traffic and increased volume of undercut.

This report may be made available to prospective bidders for informational purposes. We recommend that the project specifications contain the following statement:

> *Schnabel Engineering South, P.C. has prepared this geotechnical engineering report for this project. This report is for informational purposes only and is not part of the contract documents. The opinions expressed represent the Geotechnical Engineer's interpretation of the subsurface conditions, tests, and the results of analyses performed. Should the data contained in this report not be adequate for the Contractor's purposes, the Contractor may make, before bidding, independent exploration, tests, and analyses. This report may be examined by bidders at the office of the Owner, or copies may be obtained from the Owner at nominal charge.*

Additional data and reports prepared by others that could have an impact upon the Contractor's bid should also be made available to prospective bidders for informational purposes.

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10.0 LIMITATIONS

We based the analyses and recommendations submitted in this report on the information revealed by our exploration. We attempted to provide for normal contingencies, but the possibility remains that unexpected conditions may be encountered during construction.

This report has been prepared to aid in the evaluation of this site and to assist in the design of the project. It is intended for use concerning this specific project. We based our recommendations on information on the site and proposed construction as described in this report. Substantial changes in loads, locations, or grades should be brought to our attention so we can modify our recommendations as needed. We would appreciate an opportunity to review the plans and specifications as they pertain to the recommendations contained in this report, and to submit our comments to you based on this review.

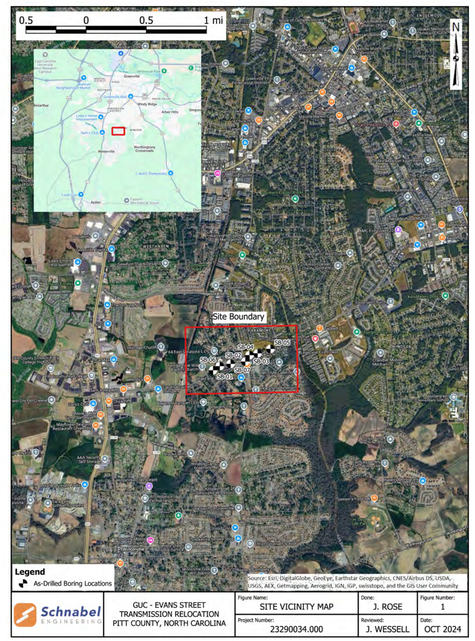
We have endeavored to complete the services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions as this project. No other representation, express or implied, is included or intended, and no warranty or guarantee is included or intended in this report or other instrument of service.

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FIGURES

Figure 1: Site Vicinity Map
Figure 2: Boring Location Plan

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Schnabel ENGINEERING	GUC - EVANS STREET TRANSMISSION RELOCATION PITT COUNTY, NORTH CAROLINA	Figure Name: SITE VICINITY MAP	Done: J. ROSE	Figure Number: 1
		Project Number: 23290034.000	Reviewed: J. WESSELL	Date: OCT 2024

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	D. TENNENT
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR: Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

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PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
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NC License No. F-1217

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CONTRACTOR SHALL VERIFY ALL CONDITIONS ON JOB SITE & NOTIFY PROJECT MANAGER OF ANY VARIATIONS FROM DIMENSIONS SHOWN ON THESE DRAWINGS BEFORE PROCEEDING WITH ANY CONSTRUCTION.

SEAL

SEAL

PROJECT NUMBER
33461–000

DRAWING	SEQ No.	REV.
GE01	02	B



APPENDIX A

SUBSURFACE EXPLORATION DATA

Subsurface Exploration Procedures
General Notes for Subsurface Exploration Logs
Identification of Soil
Boring Logs: SB-01 through SB-07

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SUBSURFACE EXPLORATION PROCEDURES

Test Borings – Hollow Stem Auger

The borings are advanced by turning an auger with a center opening of 3¼ inches. A plug device blocks off the center opening while augers are advanced. Cuttings are brought to the surface by the auger flights. Sampling is performed through the center opening in the hollow stem auger by standard methods after removal of the plug. Usually, no water is introduced into the boring using this procedure.

Standard Penetration Test Results

The Standard Penetration Test (SPT) is performed in the borings at regular depth intervals to collect soil samples. The numbers in the Sampling Data column of the boring logs represent SPT results. Each number represents the blows needed to drive a 2-inch O.D., 1⅜-inch I.D. split-spoon sampler 6 inches, using a 140-pound hammer falling 30 inches. The sampler is typically driven a total of 18 or 24 inches. The first 6 inches are considered a seating interval. The total of the number of blows for the second and third 6-inch intervals is the SPT "N-value." The Standard Penetration Test is performed according to ASTM D1586.

The SPT samples were obtained using a hydraulically driven automatic trip hammer (ATH). Most correlations with SPT data are based on N-values collected with a safety hammer. The energy applied to the split-spoon sampler using the ATH is about 33 percent greater than that applied using the safety hammer, resulting in lower N-values. The hammer blows shown on the boring logs are uncorrected for the higher energy. However, we correct SPT N-values for the higher energy when using N-values in our analyses.

Soil Classification Criteria

The group symbols on the logs represent the Unified Soil Classification System Group Symbols (ASTM D2487) based on visual observation and limited laboratory testing of the samples. Criteria for visual identification of soil samples are included in this appendix. Some variation can be expected between samples visually classified, and samples classified in the laboratory.

Boring Locations and Elevations

Boring locations were staked by Schnabel personnel. Approximate boring locations are shown on Figure 2. Ground surface elevations at the boring locations were estimated from the site plan, as well as utilizing publicly available GIS maps, and are indicated on the boring logs. Locations and elevations should be considered no more accurate than the methods used to determine them.

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GENERAL NOTES FOR SUBSURFACE EXPLORATION LOGS

1. Numbers in sampling data column next to Standard Penetration Test (SPT) symbols indicate blows required to drive a 2-inch O.D., 1⅜-inch I.D. sampling spoon 6 inches using a 140 pound hammer falling 30 inches. The Standard Penetration Test (SPT) N-value is the number of blows required to drive the sampler 12 inches, after a 6-inch seating interval. The Standard Penetration Test is performed in general accordance with ASTM D1586.
2. Visual classification of soil is in accordance with terminology set forth in "Identification of Soil." The ASTM D2487 group symbols (e.g., CL) shown in the classification column are based on visual observations.
3. Estimated water levels indicated on the logs are only estimates from available data and may vary with precipitation, porosity of the soil, site topography, and other factors.
4. Refusal at the surface of rock, boulder, or other obstruction is defined as an SPT resistance of 50 blows for 1 inch or less of penetration.
5. The logs and related information depict subsurface conditions only at the specific locations and at the particular time when drilled or excavated. Soil conditions at other locations may differ from conditions occurring at these locations. Also, the passage of time may result in a change in the subsurface soil and water level conditions at the subsurface exploration location.
6. The stratification lines represent the approximate boundary between soil and rock types as obtained from the subsurface exploration. Some variation may also be expected vertically between samples taken. The soil profile, water level observations and penetration resistances presented on these logs have been made with reasonable care and accuracy and must be considered only an approximate representation of subsurface conditions to be encountered at the particular location.
7. Key to symbols and abbreviations:

SS-01, SPT 7+9+11	Sample No., Standard Penetration Test Number of blows in each 6-inch increment
RS-1, CORE Run= 5.0 ft REC= 60", 100% RQD= 60", 100%	Core No., Rock Core Run length in feet Recovery in inches, Percent Recovery RQD in inches, Percent RQD
LL MC PL %Passing#200	Liquid Limit Moisture Content (percent) Plastic Limit Percent by weight passing a No. 200 Sieve

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IDENTIFICATION OF SOIL

I. DEFINITION OF SOIL GROUP NAMES (ASTM D2487)

			SYMBOL	GROUP NAME
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels – More than 50% of coarse fraction retained on No. 4 sieve Coarse, ¾" to 3" Fine, No. 4 to ¾"	Clean Gravels Less than 5% fines	GW	WELL GRADED GRAVEL
			GP	POORLY GRADED GRAVEL
		Gravels with fines More than 12% fines	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	Sands – 50% or more of coarse Fraction passes No. 4 sieve Coarse, No. 10 to No. 4 Medium, No. 40 to No. 10 Fine, No. 200 to No. 40	Clean Sands Less than 5% fines	SW	WELL GRADED SAND
			SP	POORLY GRADED SAND
		Sands with fines More than 12% fines	SM	SILTY SAND
			SC	CLAYEY SAND
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays – Liquid Limit less than 50 Low to medium plasticity	Inorganic	CL	LEAN CLAY
			ML	SILT
		Organic	OL	ORGANIC CLAY
				ORGANIC SILT
	Silts and Clays – Liquid Limit 50 or more Medium to high plasticity	Inorganic	CH	FAT CLAY
			MH	ELASTIC SILT
		Organic	OH	ORGANIC CLAY
				ORGANIC SILT
Highly Organic Soils	Primarily organic matter, dark in color and organic odor		PT	PEAT

II. DEFINITION OF SOIL COMPONENT PROPORTIONS (ASTM D2487)

			Examples
Adjective Form	GRAVELLY SANDY	>30% to <50% coarse grained component in a fine-grained soil	GRAVELLY LEAN CLAY
	CLAYEY SILTY	>12% to <50% fine grained component in a coarse-grained soil	SILTY SAND
"With"	WITH GRAVEL WITH SAND	>15% to <30% coarse grained component in a fine-grained soil	FAT CLAY WITH GRAVEL
	WITH GRAVEL WITH SAND	>15% to <50% coarse grained component in a coarse-grained soil	POORLY GRADED GRAVEL WITH SAND
	WITH SILT WITH CLAY	>5% to <12% fine grained component in a coarse-grained soil	POORLY GRADED SAND WITH SILT

III. GLOSSARY OF MISCELLANEOUS TERMS

SYMBOLS ..... Unified Soil Classification Symbols are shown above as group symbols. A dual symbol "-" indicates the soil belongs to two groups. A borderline symbol "/" indicates the soil belongs to two possible groups.
FILL ..... Man-made deposit containing soil, rock and often foreign matter.
PROBABLE FILL ..... Soils that contain no visually detected foreign matter but which are suspect with regard to origin.
DISINTEGRATED ROCK (DR) ..... Residual materials with a standard penetration resistance (SPT) between 60 blows per foot and refusal. Refusal is defined as an SPT of 100 blows for 2" or less penetration.
PARTIALLY WEATHERED ROCK (PWR) ..... Residual materials with a standard penetration resistance (SPT) between 100 blows per foot and refusal. Refusal is defined as an SPT of 100 blows for 2" or less penetration.
BOULDERS & COBBLES ..... Boulders are considered rounded pieces of rock larger than 12 inches, while cobbles range from 3 to 12-inch size.
LENSES ..... 0 to ½-inch seam within a material in a test pit.
LAYERS ..... ½ to 12-inch seam within a material in a test pit.
POCKET ..... Discontinuous body within a material in a test pit.
MOISTURE CONDITIONS ..... Wet, moist or dry to indicate visual appearance of specimen.
COLOR ..... Overall color, with modifiers such as light to dark or variation in coloration.

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Schnabel ENGINEERING TEST BORING LOG — **Project:** GUC - U-2817 Evans Street Transmission Line Relocation, Winterville, North Carolina — **Boring Number:** SB-01 — **Contract Number:** 23290034.000 — **Sheet:** 1 of 2

Contractor:
Contractor Foreman: K. Campbell
Schnabel Representative: Q. Hill
Equipment: CME-55 (Truck)
Method: 2-1/4" I.D. Hollow Stem Auger
Hammer Type: Auto Hammer (140 lb)
Dates Started: 9/3/24 **Finished:** 9/4/24
North: 659147 ft **East:** 2479196 ft
Coordinate System: NC State Plane
Ground Surface Elevation: 73± (ft) **Total Depth:** 40.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered ▽	9/3	---	18.5'	18.5'	---
Casing Pulled ▼	9/3	---	2.2'	---	19.0'
After Drilling ▼	9/4	---	2.5'	---	18.8'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DATA DEPTH	SAMPLING DATA	TESTS	REMARKS
0.5	Topsoil; moist, TOPSOIL 6-INCHES		72.5					
	FAT CLAY; moist, light brown and light gray, probable COASTAL material	CH			2	S-01, SS 2+2+1 REC=17", 94%	PP = 0.50 tsf	
	Change: gray and reddish brown				4	S-02, SS 2+2+3 REC=16", 89%	PP = 1.00 tsf	
					6	S-03, SS 2+2+2 REC=16", 89%	PP = 0.50 tsf	
				A1	8	S-04, SS 2+2+4 REC=18", 100%	LL = 54 PL = 22 MC = 27.7% % Passing #200 = 86.2 PP = 0.50 tsf	
12.0	SANDY LEAN CLAY; gray and reddish brown	CL	61.0		10	S-05, SS 2+2+2 REC=18", 100%	LL = 35 PL = 22 MC = 72.5% % Passing #200 = 67.8 UCS = 10.93 psi PP = 0.50 tsf	
17.0	POORLY GRADED SAND WITH CLAY, fine to medium grained sand; orangish brown and gray	SP-SC	56.0		12	S-06, SS 8+11+12 REC=18", 100%		
					14			
				A2	16			
22.0	POORLY GRADED SAND WITH SILT, fine to medium grained sand; wet, orangish brown and gray	SP-SM	51.0		18	S-07, SS 13+16+17 REC=18", 100%	LL = NP MC = 22.2% % Passing #200	

TEST BORING LOG_EVANS ROAD\23817.GUC.GPJ_SCHNABEL DATA TEMPLATE 2006.GP_M_GDT 10/10/24

(continued)

Schnabel ENGINEERING TEST BORING LOG — **Project:** GUC - U-2817 Evans Street Transmission Line Relocation, Winterville, North Carolina — **Boring Number:** SB-01 — **Contract Number:** 23290034.000 — **Sheet:** 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DATA DEPTH	SAMPLING DATA	TESTS	REMARKS
	POORLY GRADED SAND WITH SILT, fine to medium grained sand; wet, orangish brown and gray *(continued)*	SP-SM					= 8.1	
				A2	30	S-08, SS 5+3+4 REC=18", 100%		
37.0	CLAYEY SAND; gray, contains shell fragments	SC	36.0		35	S-09, SS 13+17+17 REC=18", 100%		
40.0			33.0		40	S-10, SS 13+5+6 REC=9", 50%		

Bottom of Boring at 40.0 ft.
Boring backfilled with cuttings upon completion.

TEST BORING LOG_EVANS ROAD\23817.GUC.GPJ_SCHNABEL DATA TEMPLATE 2006.GP_M_GDT 10/10/24

Schnabel ENGINEERING TEST BORING LOG — **Project:** GUC - U-2817 Evans Street Transmission Line Relocation, Winterville, North Carolina — **Boring Number:** SB-02 — **Contract Number:** 23290034.000 — **Sheet:** 1 of 2

Contractor:
Contractor Foreman: K. Campbell
Schnabel Representative: Q. Hill
Equipment: CME-55 (Truck)
Method: 2-1/4" I.D. Hollow Stem Auger
Hammer Type: Auto Hammer (140 lb)
Dates Started: 9/4/24 **Finished:** 9/4/24
North: 659528 ft **East:** 2480611 ft
Coordinate System: NC State Plane
Ground Surface Elevation: 68± (ft) **Total Depth:** 40.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered ▽	9/4	---	7.0'	6.0'	---
Casing Pulled ▼	9/4	---	5.1'	---	14.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DATA DEPTH	SAMPLING DATA	TESTS	REMARKS
0.6	Topsoil; TOPSOIL 7-INCHES		72.5					
	FILL, sampled as elastic silt; moist, dark brown and yellowish brown	FILL	67.4	F	2	S-01, SS 3+1+2 REC=14", 78%	PP = 1.25 tsf	
3.0	CLAYEY SAND WITH SAND; moist, grayish and yellow brown, probable COASTAL material		65.0		4	S-02, SS WOH+2+2 REC=8", 44%	PP = 0.50 tsf	
	Change: wet	SC			6	S-03, SS 1+2+2 REC=10", 56%	LL = 42 PL = 22 MC = 23.2% % Passing #200 = 42.9 PP = 1.25 tsf PP = 0.75 tsf	
					8	S-04, SS 2+2+1 REC=17", 94%		
	Change: sat, gray and yellow brown			A2	10			
17.0	SILTY, CLAYEY SAND; sat, gray	SC-SM	51.0		12	S-05, SS 2+2+1 REC=17", 94%		
					14			
22.0	SILTY SAND; sat, gray	SM	46.0		16	S-06, SS 3+3+5 REC=18", 100%	LL = 28 PL = 19 MC = 23.1% % Passing #200 = 46.3	
					18	S-07, SS 13+15+8 REC=18", 100%		

TEST BORING LOG_EVANS ROAD\23817.GUC.GPJ_SCHNABEL DATA TEMPLATE 2006.GP_M_GDT 10/10/24

(continued)

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	D. TENNENT
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR: Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK 115kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

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PIKE ENGINEERING, LLC.
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FORT MILL, SC 29715
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SEAL

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PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
GE01	03	B

1/8" 1 4 8 12 16 20 24 28 32 36 40
1/4" 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
3/8" 1 2 3 4 5 6 7 8 9 10 11 12
1/2" 1 2 3 4 5 6 7 8 9 10
3/4" 1 2 3 4 5 6
1" 1 2 3 4

Schnabel Engineering — TEST BORING LOG

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-02
Contract Number: 23290034.000
Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
	SILTY SAND; sat, gray *(continued)*	SM						
27.0	POORLY GRADED SAND, fine to coarse grained sand; sat, gray	SP	41.0	A2	30	S-08, SS 9+10+14 REC=18", 100%		
32.0	SILTY SAND; sat, gray, trace clay	SM	36.0		35	S-09, SS 8+8+10 REC=18", 100%		
40.0	Bottom of Boring at 40.0 ft. Boring backfilled with cuttings upon completion.		28.0		40	S-10, SS 3+2+2 REC=18", 100%		

Schnabel Engineering — TEST BORING LOG

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-03
Contract Number: 23290034.000
Sheet: 1 of 2

Contractor:
Contractor Foreman: K. Campbell
Schnabel Representative: Q. Hill
Equipment: CME-55 (Truck)
Method: 3-3/4" O.D. Drag Bit

Hammer Type: Auto Hammer (140 lb)
Dates Started: 9/4/24 **Finished:** 9/4/24
North: 659808 ft **East:** 2480798 ft
Coordinate System: NC State Plane
Ground Surface Elevation: 69± (ft) **Total Depth:** 30.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered ▽	9/4	---	---	---	---
Casing Pulled ▽	9/4	---	7.0'	---	9.8'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.3	Topsoil; TOPSOIL 3-INCHES		68.8	A1				
	LEAN CLAY; moist, orangish brown, probable COASTAL material Change: light brown and gray	CL			5	S-01, SS 1+2+3 REC=14", 78%	PP = 0.50 tsf	
5.5	SILTY, CLAYEY SAND; light brown	SC-SM	63.5			S-02, SS 3+4+5 REC=14", 78%	PP = 2.75 tsf	
12.0	POORLY GRADED SAND WITH SILT, fine to medium grained sand; light gray		57.0	A2	10	S-03, SS 2+3+4 REC=18", 100%		
	Change: light to dark gray	SP-SM			15	S-04, SS 1+4+6 REC=15", 83%		
					20	S-05, SS 7+9+11 REC=12", 67%		
						S-06, SS 7+13+14 REC=15", 83%		
						S-07, SS 9+5+3 REC=10", 56%		

(continued)

Schnabel Engineering — TEST BORING LOG

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-03
Contract Number: 23290034.000
Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
	POORLY GRADED SAND WITH SILT, fine to medium grained sand; light gray *(continued)*	SP-SM		A2	30	S-08, SS 5+14+12 REC=12", 67%	LL = NP MC = 17.9% % Passing #200 = 11.2	
30.0	Bottom of Boring at 30.0 ft. Boring backfilled with bentonite upon completion.		39.0					

Schnabel Engineering — TEST BORING LOG

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-04
Contract Number: 23290034.000
Sheet: 1 of 2

Contractor:
Contractor Foreman: K. Campbell
Schnabel Representative: Q. Hill
Equipment: CME-55 (Truck)
Method: 2-3/4" O.D. Drag Bit

Hammer Type: Auto Hammer (140 lb)
Dates Started: 9/4/24 **Finished:** 9/4/24
North: 659868 ft **East:** 2481151 ft
Coordinate System: NC State Plane
Ground Surface Elevation: 68± (ft) **Total Depth:** 45.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered ▽	9/4	---	---	---	---
Casing Pulled ▽	9/4	---	7.0'	---	42.9'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.4	Topsoil; TOPSOIL 5-INCHES		67.6	A2				
	SILTY, CLAYEY SAND; moist, gray and yellowish brown, probable COASTAL material	SC-SM			5	S-01, SS 3+4+4 REC=10", 56%	LL = 20 PL = 15 MC = 11.1% PP = 2.25 tsf	
5.5	FAT CLAY; moist, light gray	CH	62.5	A1		S-02, SS 3+3+4 REC=12", 67%	PP = 0.50 tsf	
12.0	SILTY, CLAYEY SAND; moist, light gray and yellowish brown	SC-SM	56.0		10	S-03, SS 2+1+2 REC=17", 94%	PP = 0.50 tsf	
						S-04, SS WOH/12"+1 REC=17", 28%	PP <0.25 tsf	
17.0	SILTY SAND; moist, light brown and orangish brown	SM	51.0	A2	15	S-05, SS 4+9+13 REC=17", 94%	PP <0.25 tsf	
					20	S-06, SS 9+9+12 REC=12", 67%		
						S-07, SS 9+12+16 REC=18", 100%		

(continued)

Schnabel Engineering — TEST BORING LOG

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-04
Contract Number: 23290034.000
Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
	SILTY SAND; moist, light brown and orangish brown *(continued)*	SM						
27.0	POORLY GRADED SAND, fine to medium grained sand; moist, yellowish and orangish brown	SP	41.0	A2	30	S-08, SS 9+10+14 REC=18", 100%		
37.0	SANDY LEAN CLAY; moist, dark gray, contains shell fragments	CL	31.0	A1	35	S-09, SS 3+3+3 REC=18", 100%		
					40	S-10, SS (WOH)*2+1 REC=18", 100%	PP = 0.50 tsf	
45.0	Bottom of Boring at 45.0 ft. Boring backfilled with bentonite upon completion.		23.0		45	S-11, SS 5+8+4 REC=18"	PP = 1.00 tsf	

Schnabel Engineering — TEST BORING LOG

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-05
Contract Number: 23290034.000
Sheet: 1 of 2

Contractor:
Contractor Foreman: K. Campbell
Schnabel Representative: Q. Hill
Equipment: CME-55 (Truck)
Method: 2-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 9/4/24 **Finished:** 9/4/24
North: 660083 ft **East:** 2481714 ft
Coordinate System: NC State Plane
Ground Surface Elevation: 66± (ft) **Total Depth:** 30.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered ▽	9/4	---	18.5'	---	---
Casing Pulled ▽	9/4	---	4.4'	---	10.7'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.6	Topsoil; TOPSOIL 7-INCHES		65.4	A1				
	LEAN CLAY; moist, yellowish brown, trace sand, probable COASTAL material	CL			5	S-01, SS 2+1+2 REC=13", 72%	PP = 1.50 tsf	
8.0	SANDY ELASTIC SILT; moist, light brown and light gray, some sand	MH	58.0			S-02, SS 2+2+3 REC=14", 78%	PP = 2.50 tsf	
12.0	SANDY LEAN CLAY; moist, light brown to gray	CL	54.0		10	S-03/S-03A, SS 2+2+3 REC=15", 83%	PP = 0.75 tsf	
17.0	POORLY GRADED SAND WITH SILT, fine to medium grained sand; moist, orangish brown and gray Change: wet	SP-SM	49.0	A2		S-04, SS 2+2+2 REC=18", 100%	LL = 59 PL = 34 MC = 34.4% % Passing #200 = 62.7 UCS = 5.63 psi PP = 1.25 tsf	
					15	S-05, SS 3+3+3 REC=18", 100%	LL = 41 PL = 22 MC = 36.6% % Passing #200 = 53.9 PP <0.25 tsf	
					20	S-06, SS 5+4+6 REC=18", 100%		
						S-07, SS 11+14+13 REC=18", 100%	LL = NP MC = 21.4% % Passing #200	

(continued)

Schnabel Engineering — TEST BORING LOG

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-05
Contract Number: 23290034.000
Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
	POORLY GRADED SAND WITH SILT, fine to medium grained sand; moist, orangish brown and gray *(continued)*	SP-SM		A2	30	S-08, SS 10+14+15 REC=18", 100%	= 7.2	
30.0	Bottom of Boring at 30.0 ft. Boring backfilled with cuttings upon completion.		36.0					

Schnabel Engineering — TEST BORING LOG

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-06
Contract Number: 23290034.000
Sheet: 1 of 2

Contractor:
Contractor Foreman: K. Campbell
Schnabel Representative: Q. Hill
Equipment: CME-55 (Truck)
Method: 2-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 9/3/24 **Finished:** 9/3/24
North: 659328 ft **East:** 2479489 ft
Coordinate System: NC State Plane
Ground Surface Elevation: 73± (ft) **Total Depth:** 40.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered ▽	9/3	---	18.5'	18.5'	---
Casing Pulled	9/3	---	Dry	---	6.8'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.3	Asphalt; ASPHALT 3-INCHES		72.7	F				
1.0	FILL, sampled as silty gravel with sand, fine to coarse gravel, gray and brown	FILL	72.0		5	S-01, SS 3+3+4 REC=18", 89%	PP = 1.00 tsf	
	CLAYEY SAND; yellowish brown, probable COASTAL material Change: orangish brown and gray	SC		A2		S-02, SS 3+3+4 REC=14", 78%	LL = 47 PL = 24 MC = 20.6% % Passing #200 = 46.5 PP = 1.75 tsf	
					10	S-03, SS 2+2+4 REC=15", 83%	PP = 1.50 tsf	
						S-04, SS 3+3+2 REC=18", 100%	PP = 1.00 tsf	
					15	S-05, SS 2+1+2 REC=18", 100%	PP = 0.75 tsf	
17.0	SILTY SAND; gray and orangish brown	SM	56.0		20	S-06, SS 9+10+12 REC=18", 100%	LL = 23 PL = 22 MC = 30.7% % Passing #200 = 44.7	
						S-07, SS 18-24+26 REC=18", 100%		

(continued)

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10 1 2 3 4 5
20 1 2 3 4 5 6 7 8 9 10
30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
100 1 4 8 12 16 20 24 28 32 36 40 44 48
200 1 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	D. TENNENT
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

PIKE ENGINEERING
PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
NC License No. F-1217

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PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
GE01	04	B

TEST BORING LOG_EVANS ROAD U-2817 GUC.GPJ SCHNABEL DATA TEMPLATE 2006_07_30_GDT_10/10/24

Schnabel ENGINEERING **TEST BORING LOG**

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-06
Contract Number: 23290034.000
Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
	SILTY SAND; gray and orangish brown *(continued)*	SM			30	S-08, SS 8+15+18 REC=18", 100%		
32.0	POORLY GRADED SAND WITH SILT, fine to coarse grained sand; orangish brown and gray	SP-SM	41.0	A2	35	S-09, SS 6+4+3 REC=18", 100%		
40.0	Bottom of Boring at 40.0 ft. Boring backfilled with cuttings, plug and asphalt patch.		33.0		40	S-10, SS 4+19+13 REC=18", 100%		

TEST BORING LOG_EVANS ROAD U-2817 GUC.GPJ SCHNABEL DATA TEMPLATE 2008_07_30_GDT 10/10/24

Schnabel ENGINEERING **TEST BORING LOG**

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-07
Contract Number: 23290034.000
Sheet: 1 of 2

Contractor:
Contractor Foreman: K. Campbell
Schnabel Representative: Q. Hill
Equipment: CME-55 (Truck)
Method: 2-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 9/3/24 **Finished:** 9/3/24
North: 659428 ft **East:** 2479965 ft
Coordinate System: NC State Plane
Ground Surface Elevation: 70± (ft) **Total Depth:** 40.0 ft

Groundwater Observations

	Date	Time	Depth	Casing	Caved
Encountered ▽	9/3	---	18.5'	---	---
Casing Pulled ▼	9/3	---	7.0'	---	18.0'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.4	Asphalt; ASPHALT 5-INCHES		69.6	F				
1.0	FILL, sampled as silty gravel with sand, fine to coarse gravel; gray and brown	FILL	69.0					
1.9	CLAYEY SAND; gray and brown, probable COASTAL material	SC	68.1			S-01, SS 1+4+3 REC=16", 89%		
4.0	POORLY GRADED SAND WITH SILT, fine to medium grained sand	SP-SM	66.0	A2	5	S-02, SS 4+3+5 REC=0", 0%		
	SANDY LEAN CLAY; orangish brown	CL				S-03, SS 2+2+2 REC=18", 100%		
8.0	ELASTIC SILT; orangish brown to gray	MH	62.0	A1	10	S-04, SS 2+1+2 REC=18", 100%	LL = 66 PL = 41 MC = 49.0% % Passing #200 = 97.0 PP = 1.75 tsf	
					15	S-05, SS 3+2+3 REC=18", 100%	PP = 1.50 tsf	
19.0	POORLY GRADED SAND WITH SILT, fine to medium grained sand; gray	SP-SM	51.0	A2	20	S-06, SS 3+14+16 REC=18", 100%	PP <0.25 tsf	
						S-07, SS 6+15+14 REC=18", 100%	PP <0.25 tsf	

(continued)

TEST BORING LOG_EVANS ROAD U-2817 GUC.GPJ SCHNABEL DATA TEMPLATE 2008_07_30_GDT 10/10/24

Schnabel ENGINEERING **TEST BORING LOG**

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, North Carolina

Boring Number: SB-07
Contract Number: 23290034.000
Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
27.0	POORLY GRADED SAND WITH SILT, fine to medium grained sand; gray *(continued)*	SP-SM	43.0	A2	30	S-08, SS 3+2+1 REC=18", 100%		
	SILTY SAND; orangish brown	SM						
32.0	SANDY LEAN CLAY; gray	CL	38.0	A1	35	S-09, SS 3+4+4 REC=18", 100%	PP = 0.50 tsf	
37.0	SILTY SAND; gray	SM	33.0	A2	40	S-10, SS 3+3+2 REC=18", 100%	LL = NP MC = 29.7% % Passing #200 = 19.6	
40.0	Bottom of Boring at 40.0 ft. Boring backfilled with cuttings, plug and asphalt patch.		30.0					

TEST BORING LOG_EVANS ROAD U-2817 GUC.GPJ SCHNABEL DATA TEMPLATE 2008_07_30_GDT 10/10/24

APPENDIX B

SOIL LABORATORY TEST DATA

Summary of Laboratory Tests
Gradation Curves
Atterberg Limits

October 10, 2024
Project 23290034.000

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Summary Of Laboratory Tests

Appendix
Sheet 1 of 2
Project Number: 23290034.000

Boring No.	Sample Depth ft / Elevation ft	Sample Type	Description of Soil Specimen	Testing Laboratory	Natural Moisture (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Retained No. 4 Sieve	% Passing No. 10 Sieve	% Passing No. 40 Sieve	% Passing No. 200 Sieve
SB-01	8.5 - 10.0 64.5 - 63.0	Bag	FAT CLAY (CH), light brown and light gray	RICH	27.7	54	22	32	0.0	99.9	99.6	86.2
SB-01	13.0 - 15.0 60.0 - 58.0	Tube	SANDY LEAN CLAY (CL), gray and reddish brown	RICH	72.5	35	22	13	--	--	100.0	67.8
SB-01	23.5 - 25.0 49.5 - 48.0	Bag	POORLY GRADED SAND WITH SILT (SP-SM), fine to medium grained sand, orangish brown and gray	RICH	22.2	NP	NP	NP	--	100.0	85.9	8.1
SB-02	6.0 - 7.5 62.0 - 60.5	Bag	CLAYEY SAND (SC), fine to medium grained sand, gray and yellowish brown	RICH	23.2	42	22	20	--	100.0	98.1	42.9
SB-02	18.5 - 20.0 49.5 - 48.0	Bag	SILTY, CLAYEY SAND (SC-SM), fine to medium grained sand, gray and brown	RICH	23.1	26	19	7	--	100.0	90.9	46.3
SB-03	28.5 - 30.0 40.5 - 39.0	Bag	POORLY GRADED SAND WITH SILT (SP-SM), fine to medium grained sand, gray	RICH	17.9	NP	NP	NP	0.0	99.3	46.5	11.2
SB-04	1.0 - 2.5 67.0 - 65.5	Bag	SILTY, CLAYEY SAND (SC-SM), fine to coarse grained sand, yellowish brown	RICH	11.1	20	15	5	--	--	--	--

Notes:
1. Soil tests in general accordance with ASTM standards.
2. Soil classifications are in general accordance with ASTM D2487(as applicable), based on testing indicated and visual classification.
3. Key to abbreviations: NP=Non-Plastic; -- indicates no test performed

Schnabel ENGINEERING

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, NC

DYNAMIC LAB SUMMARY_EVANS ROAD U-2817 GUC.GPJ SCHNABEL DATA TEMPLATE 2018_02_25.GDT 10/9/24

Summary Of Laboratory Tests

Appendix
Sheet 2 of 2
Project Number: 23290034.000

Boring No.	Sample Depth ft / Elevation ft	Sample Type	Description of Soil Specimen	Testing Laboratory	Natural Moisture (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Retained No. 4 Sieve	% Passing No. 10 Sieve	% Passing No. 40 Sieve	% Passing No. 200 Sieve
SB-05	8.0 - 10.0 58.0 - 56.0	Tube	SANDY ELASTIC SILT (MH), light brown and light gray	RICH	34.4	59	34	25	--	100.0	98.9	62.7
SB-05	13.5 - 15.0 52.5 - 51.0	Bag	SANDY LEAN CLAY (CL), light brown to gray	RICH	36.6	41	22	19	--	--	99.9	53.9
SB-05	23.5 - 25.0 42.5 - 41.0	Bag	POORLY GRADED SAND WITH SILT (SP-SM), fine to medium grained sand, orangish brown and gray	RICH	21.4	NP	NP	NP	--	100.0	77.7	7.2
SB-06	3.5 - 5.0 69.5 - 68.0	Bag	CLAYEY SAND (SC), yellowish brown and gray	RICH	20.6	47	24	23	--	100.0	99.1	46.5
SB-06	18.5 - 20.0 54.5 - 53.0	Bag	SILTY SAND (SM), gray and orangish brown	RICH	30.7	23	22	1	--	--	100.0	44.7
SB-07	8.5 - 10.0 61.5 - 60.0	Bag	ELASTIC SILT (MH), orangish brown	RICH	49.0	66	41	25	--	--	99.8	97.0
SB-07	38.5 - 40.0 31.5 - 30.0	Bag	SILTY SAND (SM), fine to medium grained sand, dark gray	RICH	29.7	NP	NP	NP	--	100.0	99.1	19.6

Notes:
1. Soil tests in general accordance with ASTM standards.
2. Soil classifications are in general accordance with ASTM D2487(as applicable), based on testing indicated and visual classification.
3. Key to abbreviations: NP=Non-Plastic; -- indicates no test performed

Schnabel ENGINEERING

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, NC

DYNAMIC LAB SUMMARY_EVANS ROAD U-2817 GUC.GPJ SCHNABEL DATA TEMPLATE 2018_02_25.GDT 10/9/24

ISSUED FOR REVIEW

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	D. TENNENT
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

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PIKE ENGINEERING, LLC.
1800 INNOVATION POINT
FORT MILL, SC 29715
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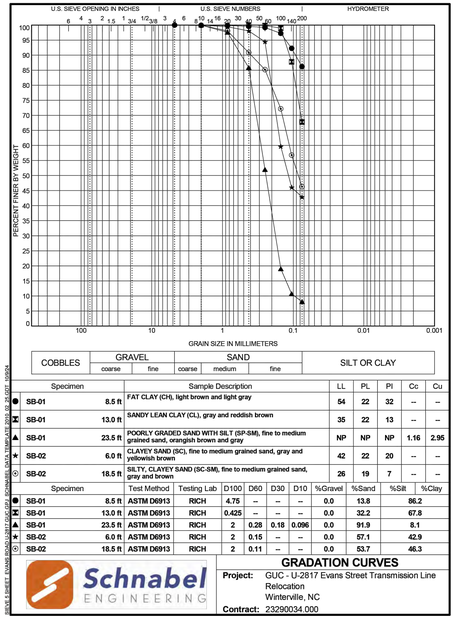
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PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
GE01	05	B



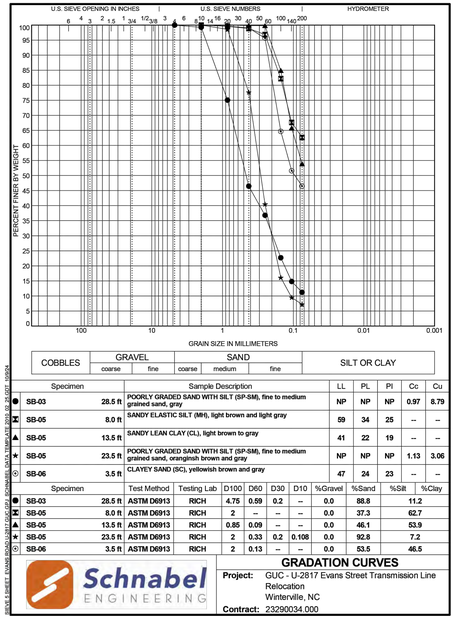
Specimen		Sample Description	LL	PL	PI	Cc	Cu
SB-01	8.5 ft	FAT CLAY (CH), light brown and light gray	54	22	32	--	--
SB-01	13.0 ft	SANDY LEAN CLAY (CL), gray and reddish brown	35	22	13	--	--
SB-01	23.5 ft	POORLY GRADED SAND WITH SILT (SP-SM), fine to medium grained sand, orangish brown and gray	NP	NP	NP	1.16	2.95
SB-02	6.0 ft	CLAYEY SAND (SC), fine to medium grained sand, gray and yellowish brown	42	22	20	--	--
SB-02	18.5 ft	SILTY, CLAYEY SAND (SC-SM), fine to medium grained sand, gray and brown	26	19	7	--	--

Specimen		Test Method	Testing Lab	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
SB-01	8.5 ft	ASTM D6913	RICH	4.75	--	--	--	0.0	13.8	86.2	
SB-01	13.0 ft	ASTM D6913	RICH	0.425	--	--	--	0.0	32.2	67.8	
SB-01	23.5 ft	ASTM D6913	RICH	2	0.28	0.18	0.096	0.0	91.9	8.1	
SB-02	6.0 ft	ASTM D6913	RICH	2	0.15	--	--	0.0	57.1	42.9	
SB-02	18.5 ft	ASTM D6913	RICH	2	0.11	--	--	0.0	53.7	46.3	

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GRADATION CURVES

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, NC
Contract: 23290034.000



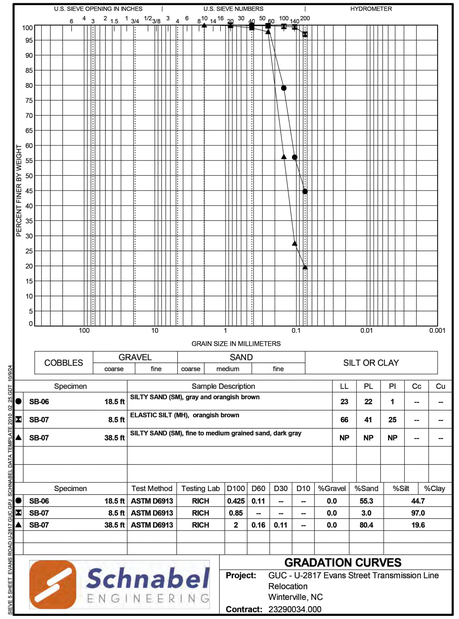
Specimen		Sample Description	LL	PL	PI	Cc	Cu
SB-03	28.5 ft	POORLY GRADED SAND WITH SILT (SP-SM), fine to medium grained sand, gray	NP	NP	NP	0.97	8.79
SB-05	8.0 ft	SANDY ELASTIC SILT (MH), light brown and light gray	59	34	25	--	--
SB-05	13.5 ft	SANDY LEAN CLAY (CL), light brown to gray	41	22	19	--	--
SB-05	23.5 ft	POORLY GRADED SAND WITH SILT (SP-SM), fine to medium grained sand, orangish brown and gray	NP	NP	NP	1.13	3.06
SB-06	3.5 ft	CLAYEY SAND (SC), yellowish brown and gray	47	24	23	--	--

Specimen		Test Method	Testing Lab	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
SB-03	28.5 ft	ASTM D6913	RICH	4.75	0.59	0.2	--	0.0	88.8	11.2	
SB-05	8.0 ft	ASTM D6913	RICH	2	--	--	--	0.0	37.3	62.7	
SB-05	13.5 ft	ASTM D6913	RICH	0.85	0.09	--	--	0.0	46.1	53.9	
SB-05	23.5 ft	ASTM D6913	RICH	2	0.33	0.2	0.108	0.0	92.8	7.2	
SB-06	3.5 ft	ASTM D6913	RICH	2	0.13	--	--	0.0	53.5	46.5	

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GRADATION CURVES

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, NC
Contract: 23290034.000



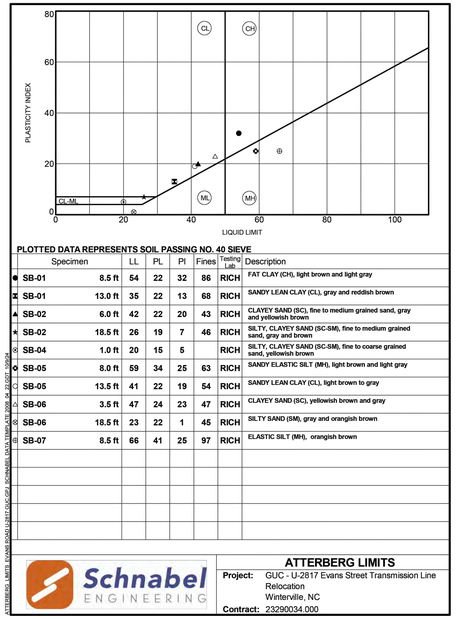
Specimen		Sample Description	LL	PL	PI	Cc	Cu
SB-06	18.5 ft	SILTY SAND (SM), gray and orangish brown	23	22	1	--	--
SB-07	8.5 ft	ELASTIC SILT (MH), orangish brown	66	41	25	--	--
SB-07	38.5 ft	SILTY SAND (SM), fine to medium grained sand, dark gray	NP	NP	NP	--	--

Specimen		Test Method	Testing Lab	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
SB-06	18.5 ft	ASTM D6913	RICH	0.425	0.11	--	--	0.0	55.3	44.7	
SB-07	8.5 ft	ASTM D6913	RICH	0.85	--	--	--	0.0	3.0	97.0	
SB-07	38.5 ft	ASTM D6913	RICH	2	0.16	0.11	--	0.0	80.4	19.6	

Schnabel ENGINEERING

GRADATION CURVES

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, NC
Contract: 23290034.000



PLOTTED DATA REPRESENTS SOIL PASSING NO. 40 SIEVE

Specimen		LL	PL	PI	Fines	Testing Lab	Description
SB-01	8.5 ft	54	22	32	86	RICH	FAT CLAY (CH), light brown and light gray
SB-01	13.0 ft	35	22	13	68	RICH	SANDY LEAN CLAY (CL), gray and reddish brown
SB-02	6.0 ft	42	22	20	43	RICH	CLAYEY SAND (SC), fine to medium grained sand, gray and yellowish brown
SB-02	18.5 ft	26	19	7	46	RICH	SILTY, CLAYEY SAND (SC-SM), fine to medium grained sand, gray and brown
SB-04	1.0 ft	20	15	5		RICH	SILTY, CLAYEY SAND (SC-SM), fine to coarse grained sand, yellowish brown
SB-05	8.0 ft	59	34	25	63	RICH	SANDY ELASTIC SILT (MH), light brown and light gray
SB-05	13.5 ft	41	22	19	54	RICH	SANDY LEAN CLAY (CL), light brown to gray
SB-06	3.5 ft	47	24	23	47	RICH	CLAYEY SAND (SC), yellowish brown and gray
SB-06	18.5 ft	23	22	1	45	RICH	SILTY SAND (SM), gray and orangish brown
SB-07	8.5 ft	66	41	25	97	RICH	ELASTIC SILT (MH), orangish brown

Schnabel ENGINEERING

ATTERBERG LIMITS

Project: GUC - U-2817 Evans Street Transmission Line Relocation
Winterville, NC
Contract: 23290034.000

APPENDIX C

SOIL DATA TABLES

Soil Data Tables – Recommended Design Parameters for MFAD and Lateral Load Analysis

October 10, 2024
Project 23290034.000

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GUC U-2817 Evans Rd NCDOT Relocation
Greenville, NC
Schnabel Prj. No.: 23290034.000

	Layer Type (Soil/Rock)	Depth to Bottom of Layer (ft)	Total Unit Weight (pcf)	Deformation Modulus (tsf)	Friction Angle (deg)	Undrained Shear Strength (tsf)	Rock Bond Strength (ksf)	Average N-Value	Average N60-Value	Soil Classification (USCS)
Boring Name	SB-01									
Depth to Water Table (ft)	2.5	17	110	0.4	--	0.3	--	4	5	CL-CH
		27	125	4	38	--	--	28	40	SP-SC-SM
		32	115	1	32	--	--	7	10	SP-SM
		37	125	5.3	38	--	--	34	53	SP-SM
		40	120	1.1	33	--	--	11	17	SC
Boring Name	SB-02									
Depth to Water Table (ft)	5.3	17	110	0.4	30	--	--	3	4	SC
		22	115	1.1	32	--	--	8	11	SC-SM
		27	120	3.1	36	--	--	21	31	SM
		33	110	0.4	30	--	--	3	4	SP
		37	115	2.5	34	--	--	16	25	SM
		40	110	0.6	31	--	--	4	6	SM
Boring Name	SB-03									
Depth to Water Table (ft)	7.0	3	110	0.5	--	0.3	--	5	6	CL
		5.5	115	1	--	0.6	--	9	11	CL
		7	115	0.8	32	--	--	7	8	SC-SM
		12	115	1.2	33	--	--	10	12	SC-SM
		22	120	3.1	36	--	--	23	35	SP-SM
		27	115	1.2	32	--	--	8	12	SP-SM
		30	120	3.9	37	--	--	26	39	SP-SM
Boring Name	SB-04									
Depth to Water Table (ft)	7.0	5.5	110	0.8	32	--	--	7	8	SC-SM
		7	110	0.4	--	0.25	--	3	4	CH
		12	105	0.25	--	0.1	--	1	1	CH
		32	120	3.3	36	--	--	23	33	SC-SM-SP
		37	110	0.9	32	--	--	6	9	SP
		42	105	0.25	--	0.1	--	1	2	CL
		45	115	1.2	--	0.5	--	8	12	CL
Boring Name	SB-05									
Depth to Water Table (ft)	4.4	8	110	0.5	--	0.3	--	4	6	CL
		12	110	0.5	--	0.3	--	4	6	MH
		17	110	0.6	--	0.4	--	6	8	CL
		22	115	1.3	33	--	--	10	13	SP-SM
		30	120	4.1	36	--	--	28	41	SP-SM
Boring Name	SB-06									
Depth to Water Table (ft)	18.5	12	110	0.7	32	--	--	6	7	SC
		17	105	0.4	30	--	--	3	4	SC
		22	120	2.9	36	--	--	22	29	SM
		27	130	7.4	38	--	--	50	74	SM
		32	125	4.9	37	--	--	33	49	SM
		37	115	1.1	32	--	--	7	11	SP-SM
		40	125	4.5	37	--	--	29	45	SP-SM
Boring Name	SB-07									
Depth to Water Table (ft)	7	4	110	0.8	32	--	--	7	8	SC-SP-SM
		19	110	0.5	--	0.4	--	5	6	CL-MH
		27	125	4.1	37	--	--	29	43	SP-SM
		32	110	0.4	30	--	--	3	4	SM
		37	115	0.8	--	0.5	--	8	12	CL
		40	110	0.8	31	--	--	5	8	SM

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ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	D. TENNENT
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

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PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
GE01	06	B

Transmission Line

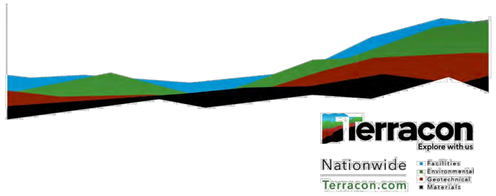
Geotechnical Engineering Report

October 16, 2025 | Terracon Project No. 72255066

Greenville, North Carolina

Prepared for:

Pike Engineering, LLC
4721 Hargrove Road
Raleigh, North Carolina 27616



Terracon

314 Beacon Drive
Winterville, NC 28590
P (252) 353-1600
North Carolina Registered, F-0869
Terracon.com

October 16, 2025

Pike Engineering, LLC
4721 Hargrove Road
Raleigh, North Carolina 27616

Attn: Miles Parker / Project Manager I

P: (919) 573-6747
E: MParker@pike.com

Re: Geotechnical Engineering Report

Transmission Line
128 Greenville Blvd Southwest
Greenville, North Carolina
Terracon Project No. 72255066

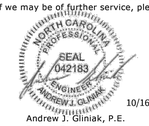
Dear Mr. Parker:

We have completed the scope of Geotechnical Engineering services for the above referenced project in general accordance with Terracon Proposal No. P72255066 dated August 28, 2025. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning the design and construction of foundations for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon



John Zellers III
John R. Zellers, III
Geotechnical Staff

10/16/2025
Andrew J. Gliniak, P.E.
Project Engineer
Registered, NC 042183

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Exploration and Testing Procedures
Photography Log
Site Location and Exploration Plans
Exploration and Laboratory Results
Design Soil Parameters for Drilled Piers
Supporting Information

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon logo will bring you back to this page. For more interactive features, please view your project online at **client.terracon.com**.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services performed for the proposed Transmission Line located at 128 Greenville Blvd Southwest in Greenville, North Carolina. The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Seismic site classification
- Site preparation and earthwork
- Dewatering considerations
- Foundation design and construction

The geotechnical engineering Scope of Services for this project included the advancement of one boring, standard penetration test (SPT) soil sampling, laboratory testing, engineering analysis, and preparation of this report.

Drawings showing the site and exploration locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included in the **Exploration and Laboratory Results** section.

Project Description

Our final understanding of the project conditions is as follows:

Item	Description
Information Provided	An email request for proposal was sent by Dave Tennent with United Grid Solutions, LLC on August 5, 2025. The request included the site location with coordinates and a document with requested deliverables. An online meeting was held on August 29, 2025, with the project team to discuss access to the site and safety hazards that are present on site.
Project Description	The project consists of installing a new steel transmission line structure. Foundations of concrete drilled piers are anticipated.
Finished Floor Elevation	Existing grade

Item	Description
Maximum Loads	Anticipated structural loads were not provided. We assumed the following maximum moment based on our experience with similar projects. ▪ 4,500 ft-kips overturning
Grading/Slopes	None.
Building Code	2024 North Carolina State Building Code

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially the grading information, as modifications to our recommendations may be necessary.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located at 128 Greenville Blvd Southwest in Greenville, North Carolina. Latitude/Longitude (approximate) 35.5750° N 77.3854° W See **Site Location**
Existing Improvements	The pole is being installed on a grassy island surrounded by asphalt and concrete.
Current Ground Cover	Grass and asphalt.
Existing Topography	Based on information obtained from Google Earth Pro the current elevation ranges between 71 feet to 73 feet.

We also collected photographs at the time of our field exploration program. Representative photos are provided in our **Photography Log**.

Geotechnical Characterization

Geology

The project site is in the Coastal Plain Physiographic Province. The Coastal Plain soils consist mainly of marine sediments that were deposited during successive periods of

fluctuating sea level and moving shoreline. The soils include sands, silts, and clays with irregular deposits of shells, which are typical of those lain down in a shallow sloping sea bottom. Recent alluvial sands, silts, and clays are typically present near rivers and creeks.

According to USGS Mineral Resources On-Line Spatial Data based on the 1998 digital equivalent of the 1985 Geologic Map of North Carolina, the site is mapped within the Yorktown Formation and Duplin Formation, Undivided (Tertiary).

Soil Conditions

We have developed a general characterization of the subsurface conditions based upon our review of the previous subsurface explorations by others, the recent Terracon subsurface explorations, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of the site. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** and the GeoModel can be found in the **Figures** attachment of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each test location, refer to the GeoModel. Surficial not included in model.

Model Layer	Layer Name	General Description
1	**Clayey Sand**	Very loose to medium dense Clayey Sand (SC)
2	**Sand with Silt**	Loose to dense Poorly Graded Sand with Silt (SP-SM)

The test location encountered surficial materials as follows:

- Asphalt is approximately 2 inches
- Aggregate base course is approximately 2 inches

Groundwater Conditions

The SPT borings were advanced using mud rotary drilling methods, which limited the ability to measure groundwater depths in them. Based on the cave in depths and moisture condition of the soil samples, groundwater is anticipated at depths ranging from 6 feet to 10 feet below the existing ground surface.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the soundings were performed. Therefore, groundwater levels during construction or at other times in the life of the

structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

Seismic Site Class

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7-16 and the North Carolina Building Code (NCSBC). Based on the soil properties observed at the site and as described on the exploration logs and results, our professional opinion is for that a **Seismic Site Classification of D** be considered for the project. Subsurface exploration at this site was extended to a maximum depth of 40 feet. The site properties below the test locations to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area.

Geotechnical Overview

The boring encountered very loose to medium dense clayey sand and loose to dense poorly graded sand with silt. Groundwater is anticipated at depths ranging from 6 feet to 10 feet. We recommend using drilled piers installed with the slurry method for the foundation of the pole.

The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the Exploration Results), engineering analysis, and our current understanding of the proposed project. The General Comments section provides an understanding of the report limitations.

Drilled Pier Foundation

Drilled Shaft Foundation Design

Shallow groundwater and sandy soils as encountered in the borings are conditions where caving of the sidewalls or "blow out" of the bottom can occur in the pier excavation. The "blow out" is caused by hydrostatic pressures causing water to flow upward into the excavation and lift soil from the bottom. Excavation for the piers utilizing slurry drilling techniques will reduce the potential blow out by counter-balancing the hydrostatic pressure. Typically, the wet

method construction also requires incorporation of temporary or permanent surface casing to stabilize the top of the deep foundation excavation during construction. The temporary casing is removed after completion of concrete placement.

Drilled Shaft Axial Parameters

The axial soil design parameters are provided below in the table for the design of drilled shaft foundations. Design parameters for the skin and end bearing capacity of drilled piers are presented in **Design Soil Parameters for Drilled Piers** section. The values presented are factored side friction and end bearing. The provided skin friction values should be reduced by 2/3 for uplift loading. These values should be considered approximate. To avoid a reduction in uplift and lateral resistance caused by variable soil depths and quality, we recommend that a minimum pier length be stated on the design drawings.

The design should **consider reducing or neglecting the upper 3 feet of surficial material** to the potential effects of construction disturbance and creation of an annulus from lateral movements. If the design pier length exceeds 40 feet, Terracon should be contacted to provide additional comment with regard to end bearing support. It may be necessary to drill an additional soil test boring to confirm conditions at greater depths. It should be noted that subsurface conditions could vary if supports are moved from the location of our boring or if significant grade changes occur at the site.

MFAD Foundation Design

It is our understanding that the new transmission line structure will be supported on a deep foundation system, such as drilled shaft. We understand that the lateral load capacity for deep foundations (drilled shafts or direct embedment) will be analyzed using the MFDA program developed by the Electric Power Research Institute (EPRI) at each foundation location. The soil parameters used in the analyses include moist unit weight (γ_m), undrained shear strength (Su), angle of internal friction (Φ), and the deformation modulus (Ep). It should be noted that the recommended soil strength parameters are not factored. Therefore, appropriate safety factors should be applied to the foundation design. Allowable soil/concrete bond strength for the shaft are zero. Additionally, lateral pile capacity analysis programs typically require input of moist unit weight above the groundwater table and submerged or effective unit weight below the groundwater table. Based on the data obtained in our exploration, and correlations provided in the MFAD 5.0 User Guide, we recommend the lateral resistance of drilled piers are presented in **Design Soil Parameters for Drilled Piers** section.

Drilled Shaft Construction Considerations

Based on subsurface conditions, a wet slurry displacement method is recommended for drilled shaft foundation construction. Drilled shafts and this construction method are typically used in the project area for support of similar structures subjected to high ground line moment and

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ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F.GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

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PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
GE02	01	B

shear loads (traffic signal mast arms, high mast lighting, highway guide signs, etc.). Experienced drilled shaft contractors should be available in the area. The following recommendations are applicable for the wet method of drilled shaft construction.

- Temporary casing of the top portion of the shaft excavation is recommended to help maintain stability and reduce the potential for caving at the top of the excavation. Temporary casing will likely be permanent due to site conditions.
- A slurry displacement method drilled shaft is constructed by excavating with a drill rig equipped with appropriately sized tooling (earth augers, clean-out buckets, etc.) beneath drilling mud slurry which stabilizes the excavated shaft walls above the tooling while the shaft is being excavated.
- Typically, the slurry is introduced into the excavation at some depth above the groundwater level to help prevent caving of the sidewalls and maintain the integrity of the side friction resistance provided by the soil.
- When the design shaft depth is reached, fluid concrete is placed through a tremie pipe at the bottom of the excavation and the slurry is displaced out of the top of the shaft excavation as the shaft fills with concrete.
- The slurry level in the shaft excavation should be maintained at a minimum of 5 feet or one shaft diameter (whichever is greater) above the subsurface water level.
- Observation during drilled shaft excavation should include monitoring: plumbness; sufficient slurry head; the density, viscosity, pH and sand content of the drilling slurry; and any changes in the depth of the excavation between initial approval and prior to concreting. Recommend following local NCDOT slurry specifications.
- The specific gravity or relative density of the drilling mud slurry should be periodically monitored from the initial mixing to the completion of the excavation of each shaft. An increase in the specific gravity or density of the drilling slurry at the bottom of the shaft by as much as 10 percent could be indicative of soil particles settling out of the slurry onto the bottom of the excavation. Excessive accumulation of loose particles in the bottom of the shaft prior to concrete placement could result in a reduction of the factored bearing capacity of the bottom of the drilled shaft or discontinuities in the shaft cross section if loose soil becomes suspended in the fluid concrete mass during concrete placement.
- The required fabricated reinforcing steel cage should be placed in the drilled shaft excavation after the shaft has reached the required depth and the drilling slurry has been cleaned/modified as necessary to meet specification requirements, and as close to the initiation of shaft concrete placement as feasible. The reinforcing cage should be designed to allow fluid concrete to flow freely between and around the individual

bars. Minimum concrete cover should be 3 inches for drilled shafts with diameters up to 3 feet; 4 inches for diameters greater than 3 feet and less than 5 feet; and 6 inches for drilled shaft diameters of 5 feet or larger.

- Following approval of the shaft excavation depth and drilling slurry properties, the drilled shaft should be concreted as soon as practically possible using tremie methods. We recommend Type II Portland cement be used in the concrete mix. The concrete should have a 7- to 9-inch slump prior to discharge into the tremie. The bottom of the tremie pipe should be set at about one tremie pipe diameter above the bottom of the shaft excavation. A closure flap at the bottom of the tremie should be used, or a sliding plug introduced into the tremie before the fluid concrete, to reduce the potential for the concrete being contaminated by the slurry. The bottom of the tremie pipe must be completely embedded (typically at least 5 feet) in fluid concrete during placement, which should be a continuous operation.
- If temporary casings are used and the contractor is unable to remove the casing during pier construction the design engineer should be contacted. Any portion of temporary casing that cannot be removed may require additional drilled pier length to compensate for any loss of skin friction.

Due to the inherent variability in the subsurface materials, a representative of the Geotechnical Engineer should verify the design parameters are valid during drilled shaft and direct embedment construction. Some modification to the design values presented in this report could be required in the field.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly effect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Figures

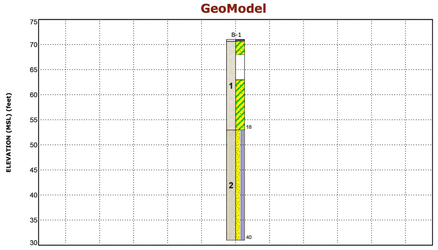
Contents:

GeoModel

Transmission Line - Greenville NC
128 Greenville Blvd SW | Greenville, NC
Terracon Project No. 72255066

314 Beacon Dr
Winterville, NC

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Clayey Sand	Very loose to medium dense Clayey Sand (SC)
2	Sand with Silt	Loose to dense Poorly Graded Sand with Silt (SP-SM)

Legend: Asphalt; Aggregate Base Course; Clayey Sand; Poorly-graded Sand with Silt

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

Attachments

Exploration and Testing Procedures

Field Exploration

Number of Test Locations	Approximate Boring Depth (feet) [1]	Location
B-1	40	Offset Planned Structure

1. Referenced from existing ground surface.

Boring Layout and Elevations: Terracon personnel provided the boring layout using handheld GPS equipment (estimated horizontal accuracy of about ±15 feet) and referencing existing site features. Approximate ground surface elevations were obtained by interpolation from the use of Google Earth Pro.

Standard Penetration Testing (SPT): We advanced the borings with a track-mounted rotary drill rig using mud rotary procedures. Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon through 12 inches after a 6-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. For safety purposes, all borings were backfilled with soil cuttings and bentonite chips after their completion.

We also observed the boreholes while drilling for the presence of groundwater based on the apparent moisture condition of the recovered soils. The estimated groundwater levels are shown on the attached boring logs.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

Geotechnical staff reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

- Moisture Content
- Atterberg Limits
- Grain Size Analysis

The laboratory testing program included examination of soil samples by geotechnical staff. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

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CHECKED BY:	D. TENNENT
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PROJECT:
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DRAWING	SEQ No.	REV.
GE02	02	B

Photography Log

Photographs taken September 16, 2025



View of the site facing south.



View of site facing southeast.



View of the site facing southwest.



View of boring hole in the J&J parking lot.

Site Location and Exploration Plans

Contents:

Site Location
Exploration Plan

Note: All attachments are one page unless noted above.

Site Location

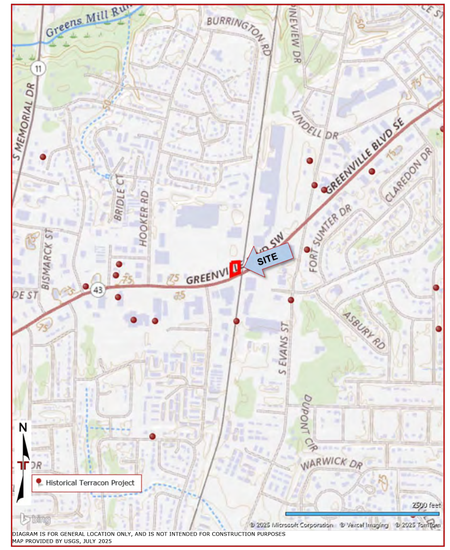


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES
MAP PROVIDED BY USGS, JULY 2025

Exploration Plan



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES
SITE PLAN PROVIDED BY CLIENT
MAP PROVIDED BY MICROSOFT BING MAPS

Exploration and Laboratory Results

Contents:

Boring Log (B-1)
Atterberg Limits
Grain Size Distribution

Note: All attachments are one page unless noted above.

314 Beacon Dr
Winterville, NC

Boring Log No. B-1

Location: See Exploration Plan
Latitude: 35.5751° Longitude: -77.3855°
Depth (Ft.) | Approximate Elevation: 71 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Atterberg Limits LL-PL-PI	Percent Fines
		0.2 ASPHALT, 2 inches						
		0.3 AGGREGATE BASE COURSE, 2 inches						
		0.5 CLAYEY SAND (SC), brown, medium dense						
		2.0 SAND/NO RECOVERY			9-8-5 N=13			
		8.0 CLAYEY SAND (SC), tan to dark gray, very loose to loose			2-1-2 N=3			
					WOH/12-2 N=2			
1					WOH	32.9	34-9-25	33.5
					2-2-3 N=5	33.3		
		18.0 POORLY GRADED SAND WITH SILT (SP-SM), gray, loose to dense			4-5-10 N=15	30.6		
					15-16-18 N=34	21.2	NP	9.0
2					5-10-8 N=18	24.4		
					7-5-4 N=9			
		40.0 Boring Terminated at 40 Feet			1-2-4 N=6			

Stratification lines are approximate. See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.
Elevation Reference: Elevation was obtained using Google Earth Pro
WOH = Weight of Hammer

Water Level Observations
Water level not determined
Cave-in

Notes

Advancement Method
Mud rotary

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Drill Rig
Drill Rig
3126 GT

Hammer Type
Automatic

Driller
MB

Logged by
JMZ

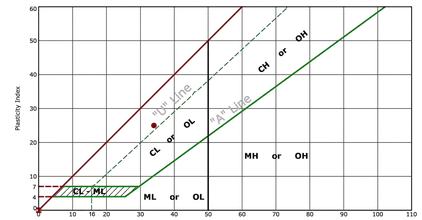
Boring Started
09-16-2025

Boring Completed
09-16-2025

314 Beacon Dr
Winterville, NC

Atterberg Limit Results

ASTM D4318



	Boring ID	Depth (Ft)	LL	PL	PI	Fines	USCS	Description
●	B-1	8.5 - 10	34	9	25	33.5	SC	CLAYEY SAND
■	B-1	23.5 - 25	NP	NP	NP	9.0	SP-SM	POORLY GRADED SAND with SILT

ISSUED/REVISED FOR:

LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
A	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	D. TENNENT
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

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SEAL

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PROJECT NUMBER
33461-000

DRAWING	SEQ No.	REV.
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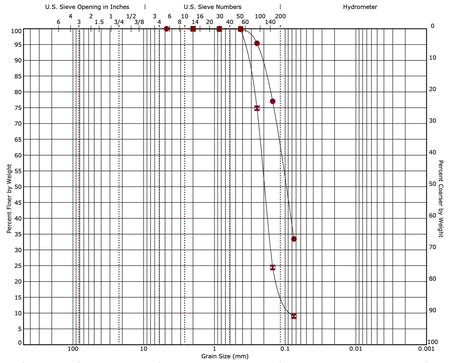
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Winterville, NC

Grain Size Distribution

ASTM D422 / ASTM C136



Boring ID	Depth (Ft)	Description	USCS	LL	PL	PI	Cc	Cu
B-1	8.5 - 10	CLAYEY SAND	SC	34	9	25		
B-1	23.5 - 25	POORLY GRADED SAND with SILT	SP-SM	NP	NP	NP	1.49	2.74

Boring ID	Depth (Ft)	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Fines	%Silt	%Clay
B-1	8.5 - 10	4.75	0.114			0.0	0.0	66.5	33.5		
B-1	23.5 - 25	2	0.215	0.159	0.078	0.0	0.0	91.0	9.0		

Supporting Information

Contents:

Design Soil Parameters for Drilled Piers
General Notes
Unified Soil Classification System

Note: All attachments are one page unless noted above.

Geotechnical Engineering Report
Transmission Line | Greenville, North Carolina
October 16, 2025 | Terracon Project No. 72255066

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DESIGN SOIL PARAMETERS FOR DRILLED PIERS

Applicable to the following tables:

- The thickness of the bottom layer is undetermined due to the boring termination depth.
- Soil classifications are based on visual examination of soil samples.
- Soil parameters are ultimate values, appropriate safety factors should be applied by the designer.
- We have considered groundwater at a depth of 0 feet.
- The upper 3 feet of soil profile should be ignored due to surface disturbance and frost action.
- Applicable for compressive loading only. Reduce to 2/3 of values shown for uplift loading. The effective weight of the shaft can be added to uplift load resistance to the extent permitted by NCSBC.
- The noted bearing pressure should be considered applicable to a depth 35 feet below the existing ground surface. this allows for 5 feet of data below the maximum tip depth of the shaft assuming shaft diameters of approximately 36 inches. Should it be necessary to extend the pile bottom below that depth or increase the diameter of the shaft at a depth of 40 feet, we recommend that a supplemental exploration be performed to collect deeper soil data.
- NR = Not Recommended

Boring B-1

Layer (feet) Top	Bottom	Soil Type (Clay/Sand)	Cohesion (psf)	Friction Angle (degrees)	Effective Unit Weight of Soil (pcf)	MFAD Deformation Modulus (ksi)	Allowable Skin Friction (Factor of Safety = 2) (psf)	Allowable End Bearing Pressure (Factor of Safety = 2) (psf)
0	3	Sand	---	---	120	---	---	---
3	8	Sand	---	28	105	0.3	110	NR
8	13	Sand	---	28	105	0.2	80	NR
13	18	Sand	---	30	110	0.35	225	3,000
18	33	Sand	---	34	127	2	550	13,200
33	40	Sand	---	32	110	0.8	430	4,800

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General Notes

Sampling

Standard Penetration Test

Water Level

Water Initially Encountered
Water Level After a Specified Period of Time
Water Level After a Specified Period of Time
Cave In Encountered

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

Field Tests

N	Standard Penetration Test Resistance (Blows/Ft.)
(HP)	Hand Penetrometer
(T)	Torvane
(DCP)	Dynamic Cone Penetrometer
UC	Unconfined Compressive Strength
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance

Relative Density	Standard Penetration or N-Value (Blows/Ft.)
Very Loose	0 - 3
Loose	4 - 9
Medium Dense	10 - 29
Dense	30 - 50
Very Dense	> 50

Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance

Consistency	Unconfined Compressive Strength Qu (tsf)	Standard Penetration or N-Value (Blows/Ft.)
Very Soft	less than 0.25	0 - 1
Soft	0.25 to 0.50	2 - 4
Medium Stiff	0.50 to 1.00	5 - 8
Stiff	1.00 to 2.00	9 - 15
Very Stiff	2.00 to 4.00	16 - 30
Hard	> 4.00	> 30

Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

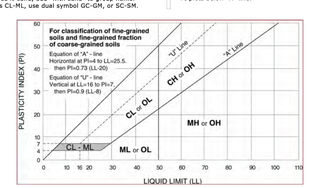
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Transmission Line | Greenville, North Carolina
October 16, 2025 | Terracon Project No. 72255066

Terracon

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OL	Organic clay [K, L, M, N] Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OH	Organic clay [K, L, M, P] Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.



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B	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A. CULLER
ENGINEER:	F. GARRISON
DESIGNER:	F. GARRISON
DRAFTER:	F. GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	D. TENNENT
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115kV LINE RELOCATION

TITLE:
GEOTECHNICAL REPORT

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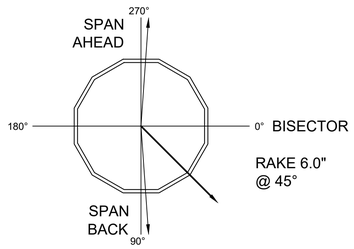
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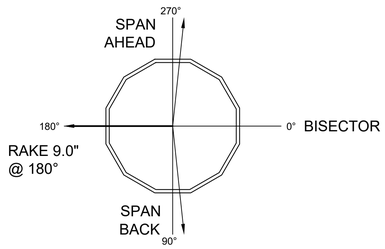
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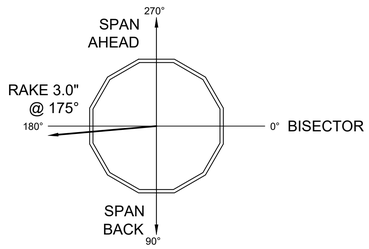
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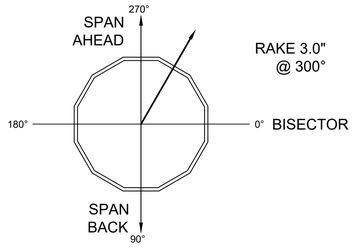
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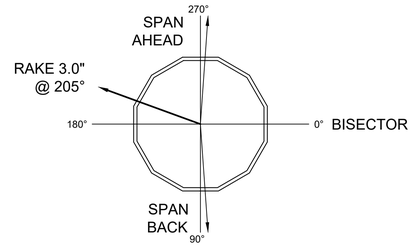


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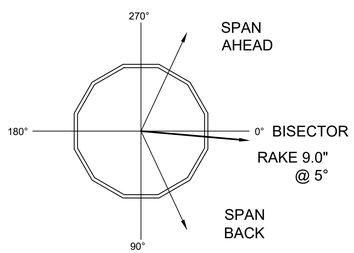


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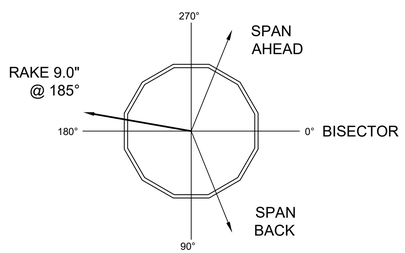
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46	3	175
46A	3	290
47	3	205
48	9	0
49	9	180
50	6	160



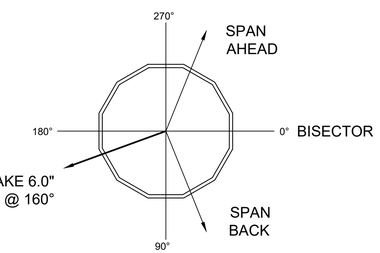
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STR #50

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LEVEL	APPR. BY	DATE	DESCRIPTION
A	ADT	06-10-26	ISSUED FOR REVIEW
A	ADT	07-23-26	ISSUED FOR REVIEW

PROJECT MANAGER:	A.CULLER
ENGINEER:	F.GARRISON
DESIGNER:	F.GARRISON
DRAFTER:	F.GARRISON
DATE:	06-10-26
SCALE:	NTS
CHECKED BY:	A. CULLER
ELEC. APPROVAL:	N/A
CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:

Greenville Utilities

PROJECT:

WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:

POLE RAKING DETAILS

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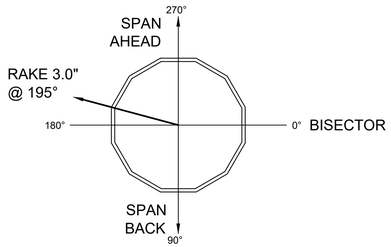
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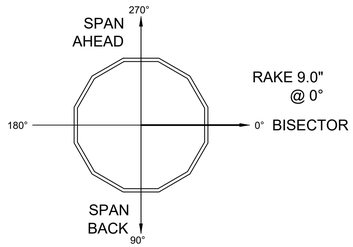
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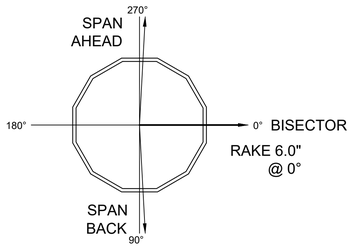
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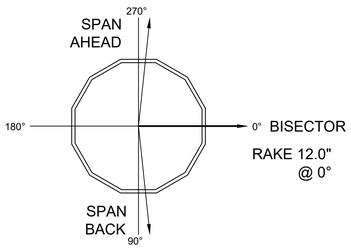
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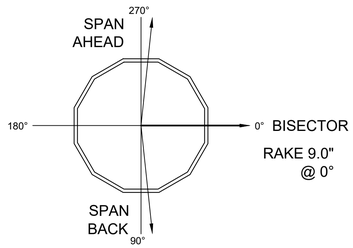
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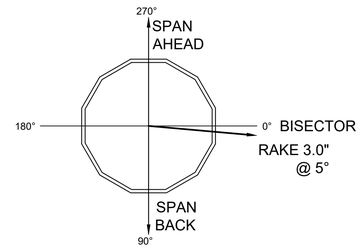


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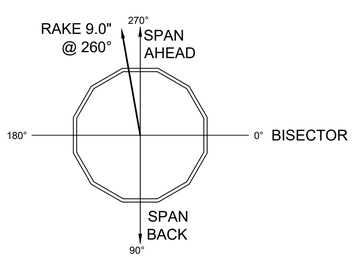


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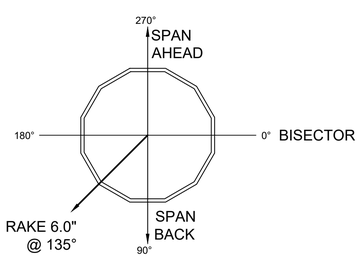
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54	6	0
55	12	0
56	9	0
57	3	5
59	9	260
1	6	135
1A	9	75



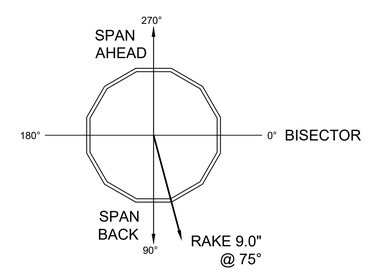
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STR #59



STR #1



STR #1A

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CIVIL APPROVAL:	D. TENNENT

PROJECT DESIGNED FOR:
Greenville Utilities

PROJECT:
WINTERVILLE TO BELL FORK
115 kV LINE RELOCATION

TITLE:
POLE RAKING DETAILS

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