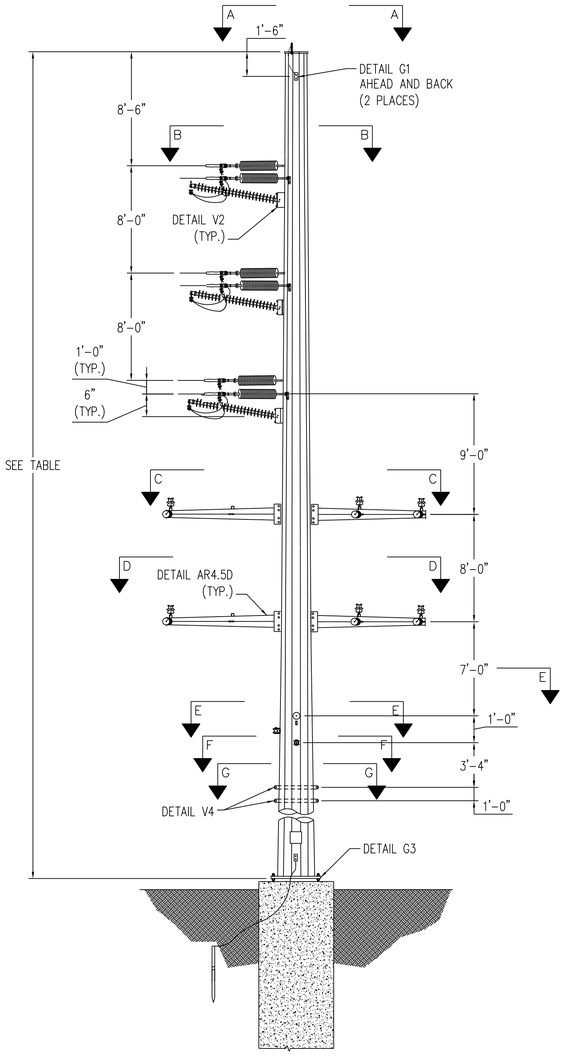
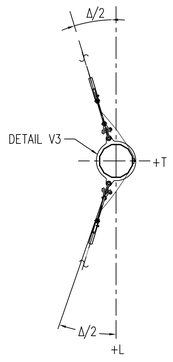
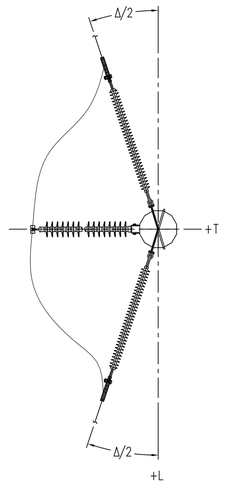


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
1	80	−14
5	95	−28

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	1000	800	1300	700	600	900	600	1400
T1	-3300	-5300	-2400	-1700	-2800	-1400	-800	-2500
L1	100	400	800	4700	2900	4200	100	100
V2	2800	1800	2800	1800	1200	1800	900	3600
T2	-8300	-13400	-5700	-4500	-7100	-3200	-1400	-7300
L2	1400	2000	1800	13100	8600	10400	700	400
V3	1300	800	1500	1300	800	1500	400	5500
T3	-5200	-6700	-3900	-2900	-4000	-2200	-900	-4400
L3	1300	1500	1500	9100	6200	7600	600	1400
V4	600	400	1000	600	400	800	200	700
T4	-3700	-5300	-2800	-2000	-3500	-1600	-600	-3000
L4	900	1000	1000	5800	3900	5100	300	300
V5	300	200	800	200	200	500	200	200
T5	-1100	-1300	-1100	-700	-800	-700	-300	-600
L5	1600	1400	1600	1900	1800	2100	700	1100
V6	500	300	1000	300	200	600	200	300
T6	-1100	-1700	-1300	-600	-1000	-800	-200	-400
L6	1600	2000	2100	1600	2200	2300	400	700
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

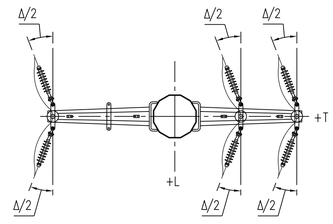
CASE 10 STRINGING: −20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

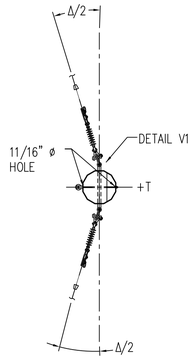
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



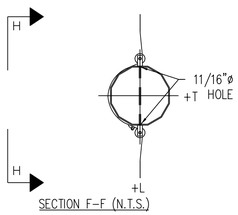
SECTION C–C, D–D (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



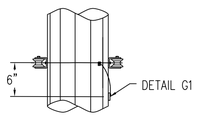
SECTION E–E (N.T.S.)

NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



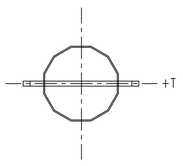
SECTION F–F (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



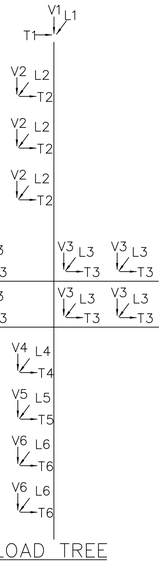
SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION G–G (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG – VERTICAL
(N.T.S.)



LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

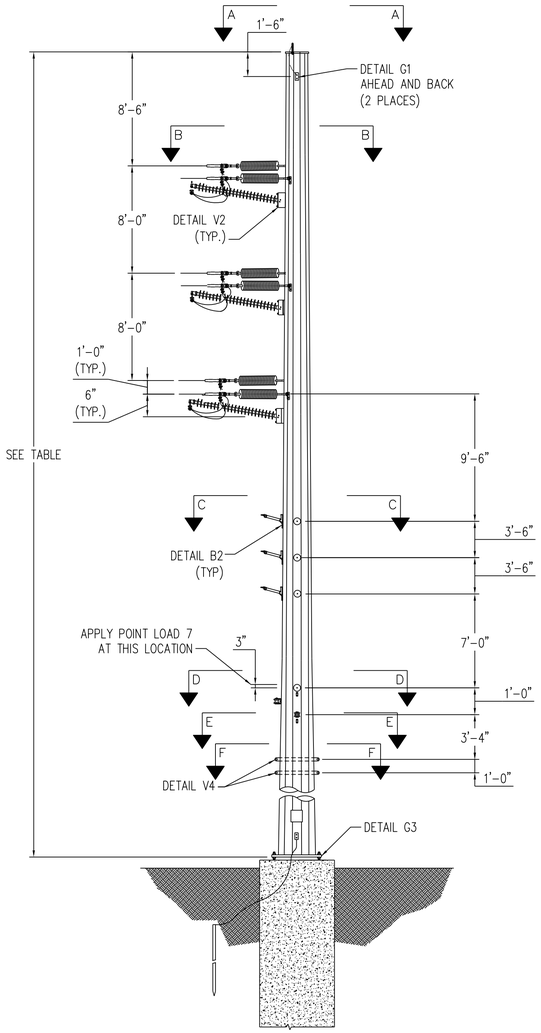
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

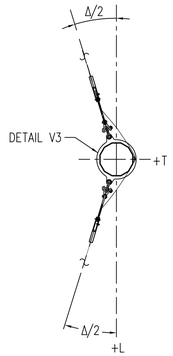
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 0°-30° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE-30L_2Dorm_1-CD
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

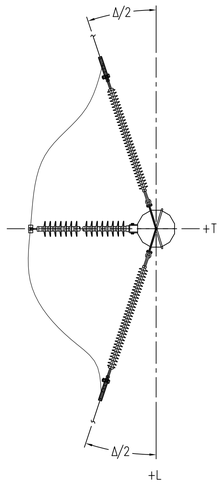


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A-A (N.T.S.)

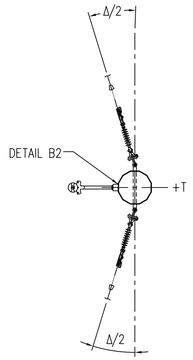
OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B-B (N.T.S.)

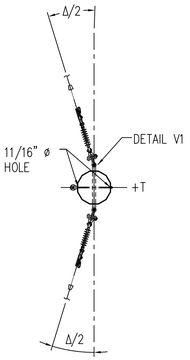
CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
151	80	-19
154	95	-21



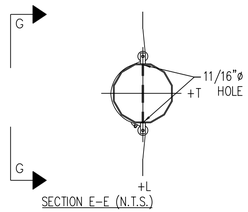
SECTION C-C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



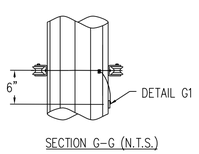
SECTION D-D (N.T.S.)

NEUTRAL ATTACHMENT
1/0 6/1 STRAND
"RAVEN" ACSR



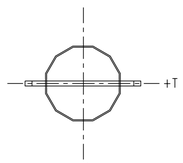
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER

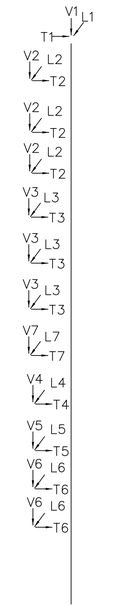


SECTION F-F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG - VERTICAL
(N.T.S.)

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	400	300	800	200	200	500	200	400
T1	-2400	-4900	-1900	-1400	-2600	-1100	-400	-1500
L1	-2200	-1200	-1300	-4700	-2900	-4100	-1000	-1900
V2	1400	900	1800	700	500	1000	600	1400
T2	-6900	-12700	-4600	-3600	-6500	-2500	-1000	-5800
L2	-900	-1100	-1000	-12900	-8300	-10200	-400	-400
V3	600	400	1100	300	200	600	200	3100
T3	-3100	-5200	-2300	-1600	-2700	-1200	-400	-2200
L3	-500	-500	-600	-5700	-3900	-5000	-200	-900
V4	300	200	800	200	100	400	100	300
T4	-2000	-4200	-1500	-1100	-2100	-800	-300	-1100
L4	-300	-300	-300	-2800	-1900	-2800	-100	-100
V5	400	200	900	200	100	500	200	200
T5	-1000	-1200	-1000	-500	-700	-500	-300	-500
L5	-300	-300	-400	-1800	-1800	-2000	-100	-100
V6	500	300	1100	300	200	600	200	300
T6	-1000	-1600	-1100	-500	-800	-600	-200	-300
L6	-100	-200	-300	-1600	-2100	-2300	-100	-200
V7	2000	900	4100	1600	800	3400	900	1500
T7	-1900	-2500	-2500	-1500	-2000	-2000	-300	-800
L7	-600	-800	-1000	-1000	-1300	-1600	-200	-300
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.



LOAD TREE

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 10 STRINGING: -20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENGINITIALS: SJE DATE: 12/03/21

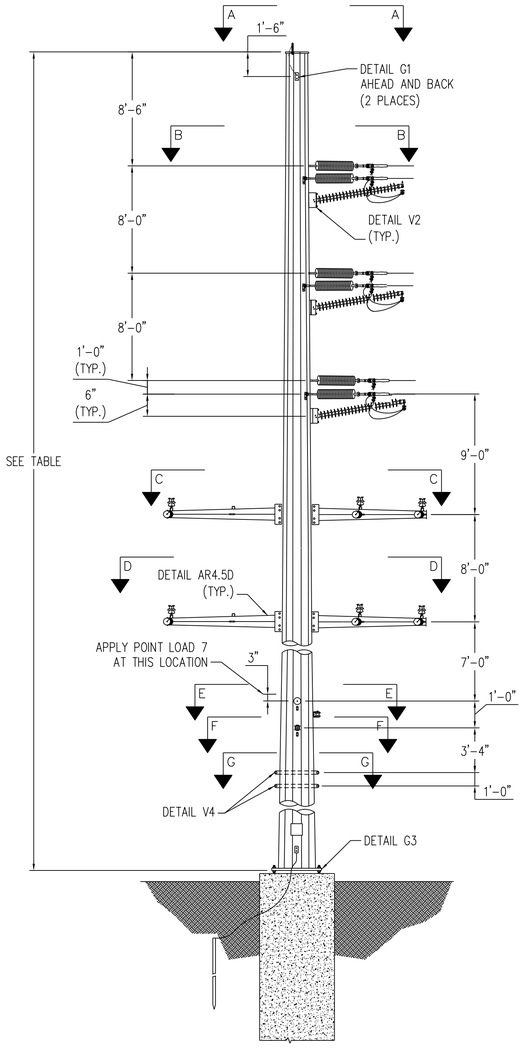
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

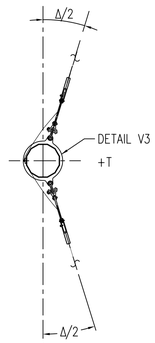
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 0°-30° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE-30L_Vert_1-CD
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

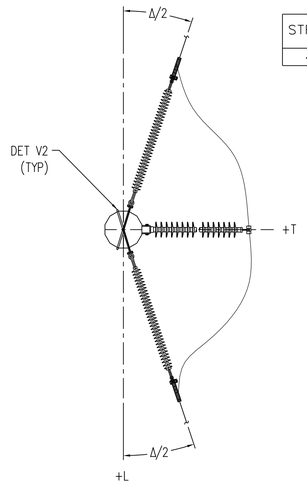


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
4	90	19

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	200	100	500	200	100	300	100	100
T1	2200	4700	1700	1300	2500	1000	400	1300
L1	-2200	-1300	-1600	-4800	-3000	-4300	-1000	-2200
V2	800	400	1100	500	300	600	400	600
T2	6000	11900	3900	3400	6400	2300	1000	4600
L2	-1700	-2100	-2000	-13300	-8700	-10600	-800	-600
V3	500	200	900	300	200	500	200	4600
T3	3900	5800	2800	2100	3100	1600	700	3100
L3	-1500	-1600	-1600	-9300	-6200	-7700	-600	-1800
V4	500	200	900	300	200	500	200	4600
T4	3900	5600	2800	2100	3100	1600	700	3100
L4	-1500	-1600	-1600	-9300	-6200	-7700	-600	-1800
V4	300	200	700	200	200	400	100	200
T4	2800	4700	2000	1500	2500	1200	400	2000
L4	-1000	-1000	-1100	-5900	-4000	-5200	-400	-400
V5	300	100	700	200	100	400	100	100
T5	800	1100	800	500	700	500	300	400
L5	-400	-500	-600	-1900	-1800	-2100	-100	-100
V6	400	200	800	200	100	500	200	200
T6	900	1400	1000	500	900	600	200	300
L6	-100	-200	-300	-1600	-2100	-2300	-100	-100
V7	700	300	1600	-	-	-	300	400
T7	-200	100	-500	-	-	-	-100	-100
L7	-100	-100	-100	-	-	-	-100	-100
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

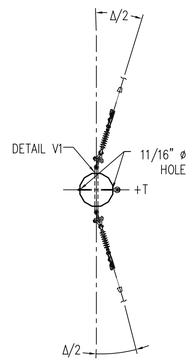
CASE 10 STRINGING: −20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT−XXX27DT−144−CLCB" 144 FIBER

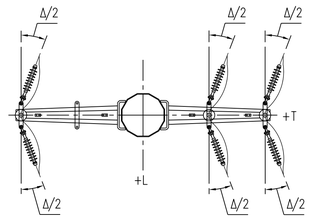
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'−0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



SECTION E–E (N.T.S.)

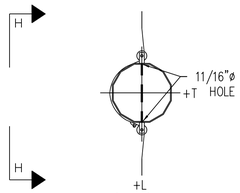
NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



SECTION C–C, D–D (N.T.S.)

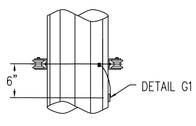
DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC

LOAD TREE



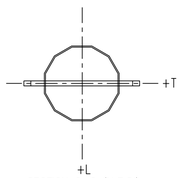
SECTION F–F (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT−XXX27DT−144−CLCB"
144 FIBER



SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT−XXX27DT−144−CLCB"
144 FIBER



SECTION G–G (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG − VERTICAL
(N.T.S.)

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENGINITIALS: S.E DATE: 12/03/21

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 0°−30° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE−30R_STR−4
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

STR #	LENGTH (FT)	ANGLE Δ
22	100	15

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	300	200	700	200	100	500	200	300
T1	2000	4600	1500	1100	2400	800	400	1200
L1	1900	800	600	4800	2800	3700	1100	2500
V2	1200	700	1600	700	400	900	500	1200
T2	5800	12000	3700	3100	6300	2100	900	4400
L2	900	1000	1100	12700	8000	9900	400	400
V3	800	500	1200	500	300	800	300	4800
T3	3400	5600	2400	1800	2900	1300	600	2600
L3	800	800	900	8800	5600	7100	300	1500
V4	300	100	600	200	100	500	100	100
T4	2400	4600	1800	1300	2400	1000	300	1700
L4	100	300	500	5100	3500	4700	100	400
V5	200	100	700	200	100	500	100	100
T5	700	1000	700	400	600	400	200	400
L5	200	200	300	1800	1700	1900	-	100
V6	400	100	900	300	100	600	200	200
T6	800	1400	900	500	800	500	100	300
L6	100	100	200	1600	2100	2200	100	100
V7	2500	1000	6300	1400	600	3500	1000	4100
T7	1300	1900	1400	5200	3600	4300	300	200
L7	200	200	200	900	600	800	100	-100
V8	1400	400	4800	800	300	2700	400	1700
T8	800	1000	1000	2600	1900	2500	100	-100
L8	100	100	100	500	300	400	100	-100
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 10 STRINGING: −20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
12.47kV CROSSING: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL CROSSING: 1/0 6/1 STRAND "RAVEN" ACSR "MERLIN" ACSR
ADSS: "AT−XXX27DT−144−CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
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5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
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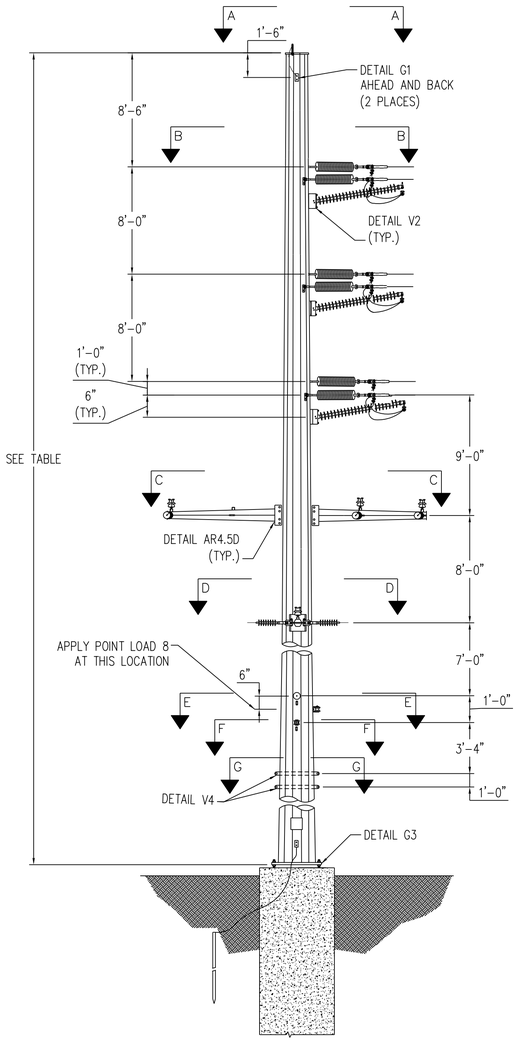
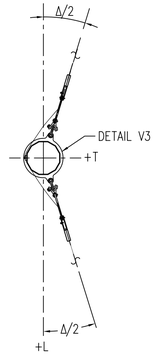
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'−0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

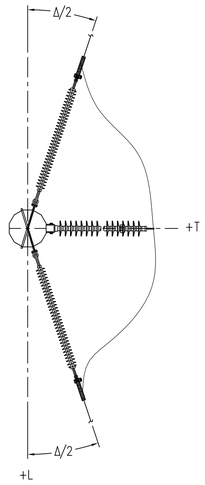


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



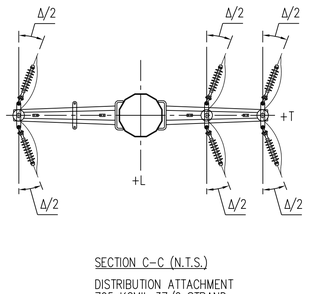
SECTION A−A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



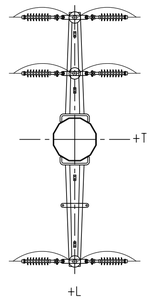
SECTION B−B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



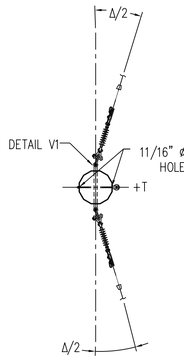
SECTION C−C (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



SECTION D−D (N.T.S.)

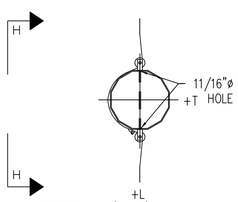
DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



SECTION E−E (N.T.S.)

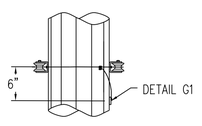
NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR

LOAD TREE



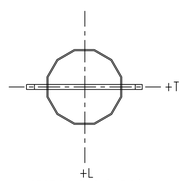
SECTION F−F (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT−XXX27DT−144−CLCB"
144 FIBER



SECTION H−H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT−XXX27DT−144−CLCB"
144 FIBER



SECTION G−G (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG − VERTICAL
(N.T.S.)

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T−LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

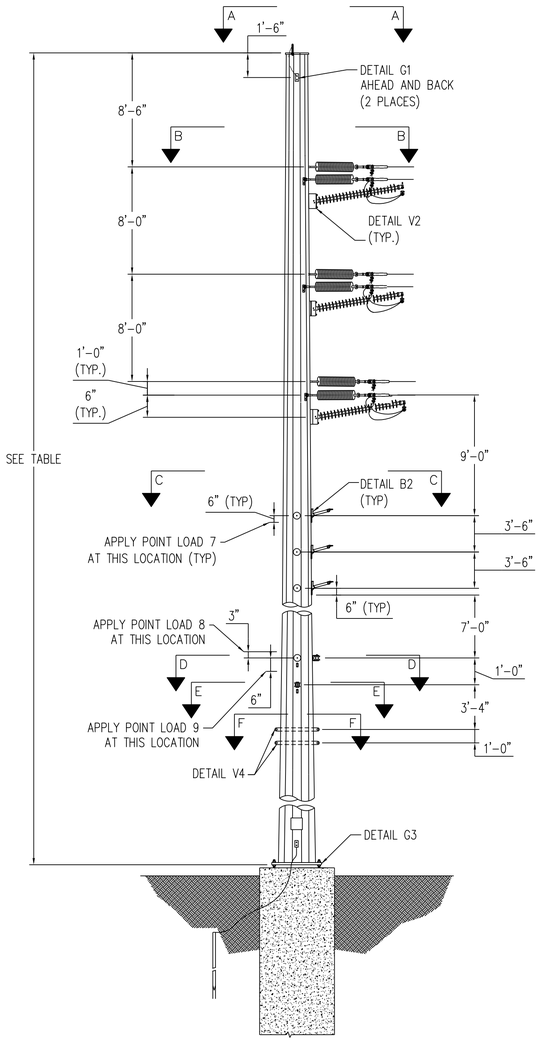
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

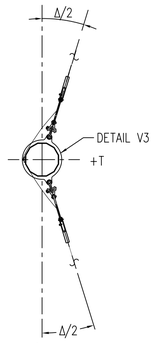
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 0°−30° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE−30R_STR−22
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

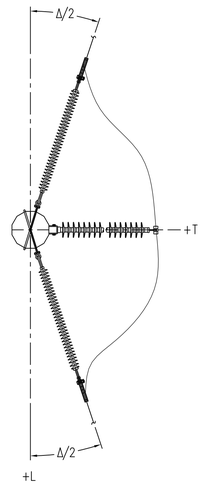


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



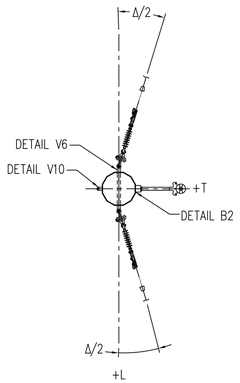
SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



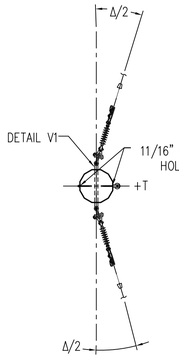
SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



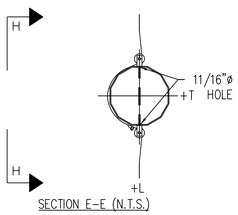
SECTION C–C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



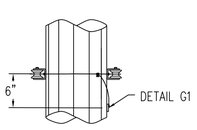
SECTION D–D (N.T.S.)

NEUTRAL ATTACHMENT
1/0 6/1 STRAND
"RAVEN" ACSR



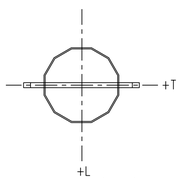
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



SECTION F–F (N.T.S.)

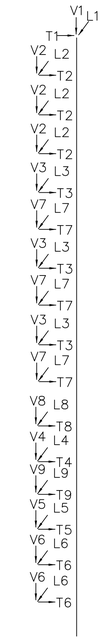
TWO WAY ONE HOLE
THROUGH VANG – VERTICAL
(N.T.S.)

STR #	LENGTH (FT)	ANGLE Δ
64	75	22

LOADING TABLE

LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	-400	-400	-300	-500	-400	-400	-300	-800
T1	2300	4600	1700	1400	2400	1000	500	1500
L1	-2100	-900	-600	-4700	-2600	-3500	-1200	-2800
V2	-1100	-900	-700	-1400	-1000	-1100	-200	-2000
T2	6400	11400	4100	3300	5700	2100	1000	5400
L2	-1300	-1300	-1300	-12300	-7400	-9400	-500	-700
V3	-500	-500	-300	-500	-500	-500	-100	-1800
T3	3100	4700	2300	1700	2500	1300	500	2500
L3	-800	-700	-800	-5400	-3500	-4600	-300	-600
V4	-300	-300	-200	-200	-300	-200	-200	-500
T4	1900	3800	1400	1000	2000	800	300	1200
L4	-300	-300	-400	-2600	-1700	-2500	-100	-100
V5	-100	-300	-200	-100	-200	-200	-100	-200
T5	800	1000	800	500	500	500	300	500
L5	-200	-300	-300	-1700	-1600	-1800	-100	-100
V6	-100	-400	-200	-100	-300	-200	-100	-100
T6	900	1300	1000	500	700	500	200	300
L6	-100	-200	-200	-1500	-2000	-2200	-100	-100
V7	300	100	900	300	100	1000	100	200
T7	-2000	-1000	-1600	-2000	-1000	-1600	-600	-2300
L7	-400	-300	-400	-400	-300	-400	-200	-500
V8	300	100	900	300	100	1000	100	200
T8	-2000	-1000	-1600	-2000	-1000	-1600	-600	-2300
L8	-400	-300	-400	-400	-300	-400	-200	-500
V9	200	100	800	300	100	800	100	100
T9	600	700	600	600	700	600	100	300
L9	-300	-300	-300	-300	-300	-300	-100	-200
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.



LOAD TREE

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 10 STRINGING: –20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT–XXX27DT–144–CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'–0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

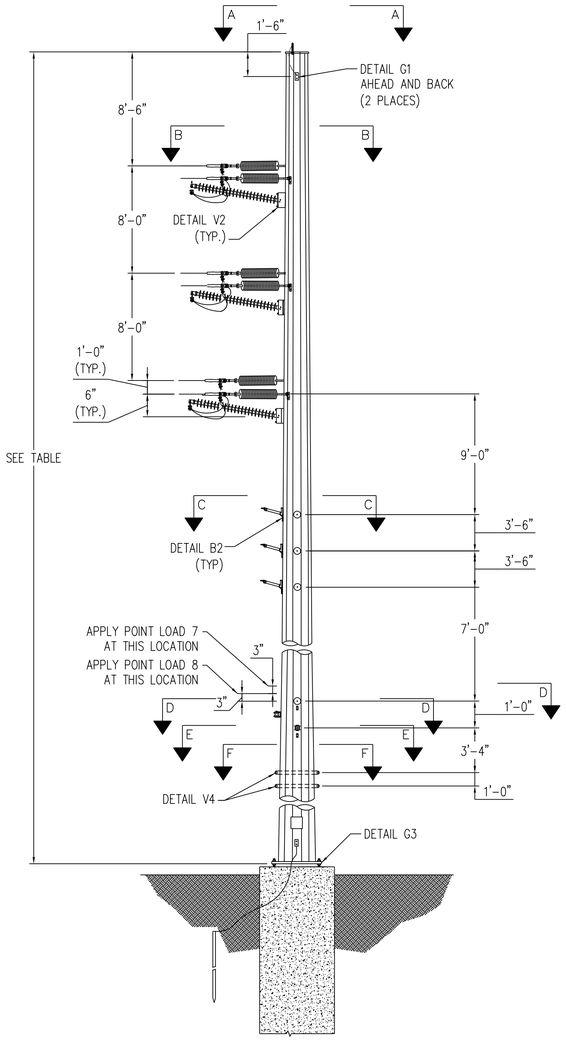
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T–LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

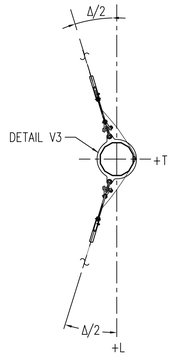
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 0°–30° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE–3OR_STR–64
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

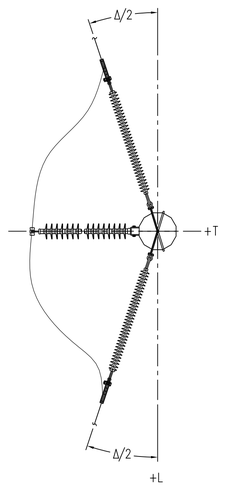


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



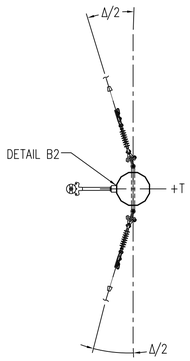
SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



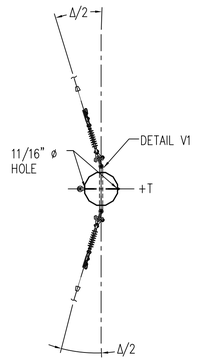
SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



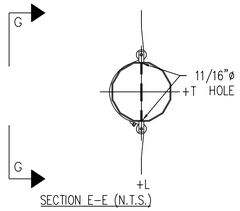
SECTION C–C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



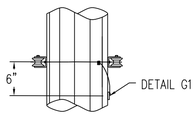
SECTION D–D (N.T.S.)

NEUTRAL ATTACHMENT
1/0 6/1 STRAND
"RAVEN" ACSR



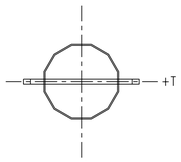
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



SECTION G–G (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



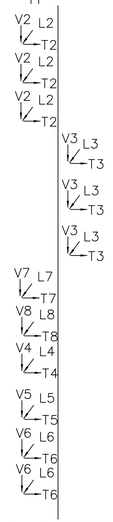
SECTION F–F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG – VERTICAL
(N.T.S.)

STR #	LENGTH (FT)	ANGLE Δ
63	105	–38

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	700	500	1200	600	500	800	400	900
T1	-4100	-5900	-3200	-2100	-3100	-1900	-1100	-3200
L1	200	600	1100	4600	3000	4500	300	700
V2	2400	1500	2700	1900	1200	1800	900	2900
T2	-10700	-15400	-7700	-6000	-8500	-4500	-2000	-9700
L2	2900	3600	3300	13600	9600	11200	1300	1200
V3	900	700	1400	700	500	900	300	3500
T3	-4600	-6300	-3700	-2500	-3500	-2200	-700	-3500
L3	1200	1600	1700	5700	4300	5400	400	1100
V4	500	400	1000	300	300	600	200	500
T4	-2800	-4800	-2300	-1500	-2600	-1400	-400	-1700
L4	600	700	1000	2800	2100	3000	100	300
V5	500	300	1000	300	300	600	200	300
T5	-1300	-1600	-1500	-800	-1000	-900	-300	-600
L5	300	600	700	1600	1900	2100	300	400
V6	600	500	1300	400	400	700	200	400
T6	-1400	-2200	-1700	-800	-1300	-1000	-200	-500
L6	100	400	400	1500	2300	2300	100	200
V7	600	200	2300	700	200	2500	200	200
T7	-100	-200	100	-100	-200	100	100	-100
L7	200	300	400	200	300	400	100	100
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.



LOAD TREE

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 10 STRINGING: –20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT–XXX27DT–144–CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'–0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

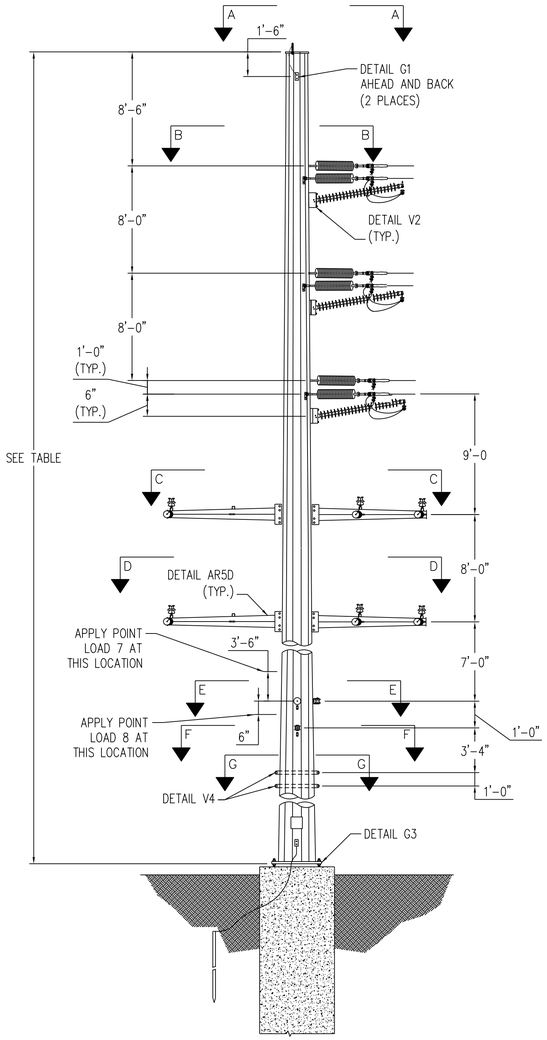
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

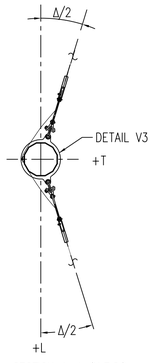
115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 30°–60° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE–60L_STR–63
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		



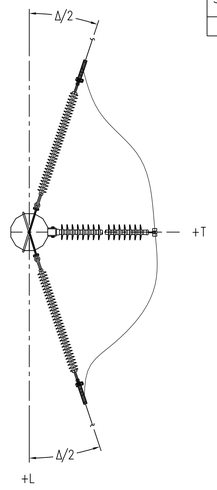
SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.

STR #	LENGTH (FT)	ANGLE Δ
6	80	38



SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	-100	-200	200	-200	-200	300	-100	300
T1	3400	5300	2700	2000	2800	1400	800	2500
L1	1800	700	400	4600	2600	3400	1100	2500
V2	-300	-300	200	-500	-400	400	-100	800
T2	10300	13900	7100	5500	7400	4000	1900	9700
L2	1500	1700	1700	12300	7700	9600	700	700
V3	-300	-400	100	-300	-300	200	-100	3600
T3	6300	7000	4700	3400	3700	2600	1200	5800
L3	1100	1200	1300	8400	5500	6800	500	1200
V4	-300	-300	100	-300	-300	200	-100	3500
T4	6200	6700	4600	3300	3500	2500	1100	5800
L4	800	800	800	8000	5000	6400	300	1100
V4	-200	-300	200	-200	-200	200	-100	400
T4	4200	5300	3300	2200	2800	1800	700	3600
L4	300	600	700	4900	3300	4500	200	200
V5	-100	-100	400	-100	-100	300	-100	100
T5	1300	1400	1300	700	800	700	500	700
L5	300	400	400	1700	1700	1800	100	100
V6	-200	-100	500	-200	-100	400	-100	100
T6	1300	1900	1600	700	1000	900	300	500
L6	100	200	200	1500	2000	2200	100	100
V7	400	100	1100	400	100	1200	100	200
T7	-1200	-600	-1000	-1200	-600	-1000	-400	-1300
L7	1900	1100	1700	1900	1100	1700	500	2000
V8	400	100	1100	400	100	1200	100	200
T8	-1200	-600	-1000	-1200	-600	-1000	-400	-1300
L8	1900	1100	1700	1900	1100	1700	500	2000
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 10 STRINGING: −20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT−XXX27DT−144−CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
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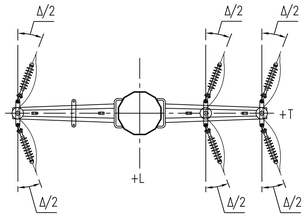
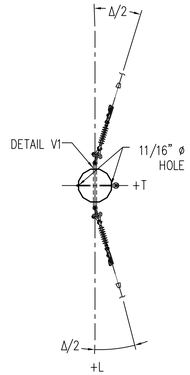
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



SECTION C–C, D–D (N.T.S.)

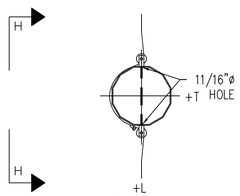
DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



SECTION E–E (N.T.S.)

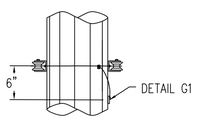
NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR

LOAD TREE



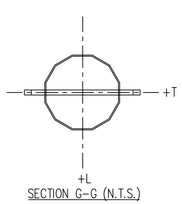
SECTION F–F (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT−XXX27DT−144−CLCB"
144 FIBER



SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT−XXX27DT−144−CLCB"
144 FIBER



SECTION G–G (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG − VERTICAL
(N.T.S.)

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

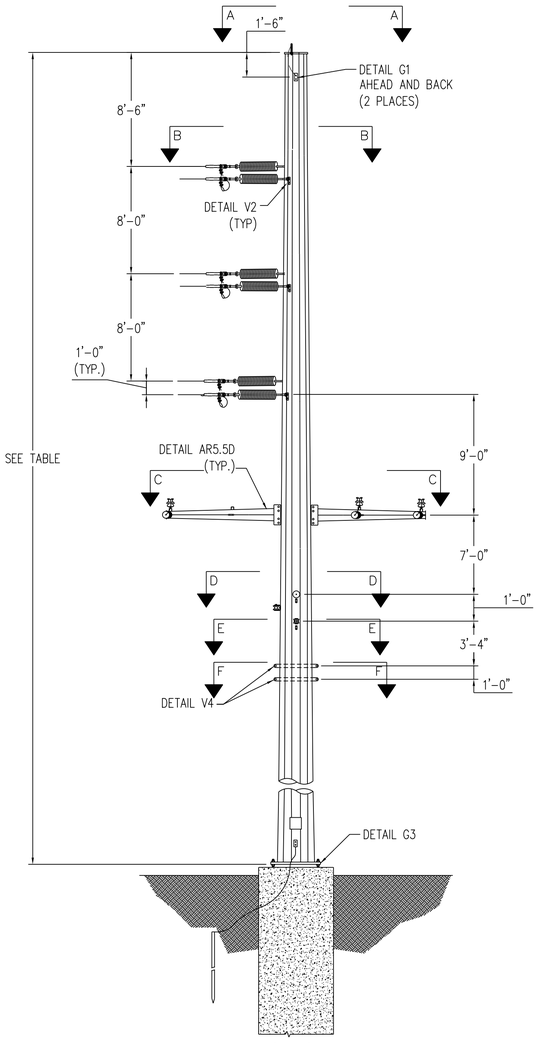
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

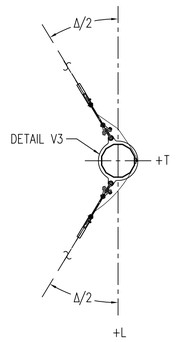
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 30°−60° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE−60R_STR−6
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

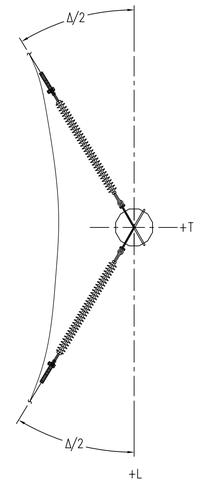


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
25	70	-94

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	100	-100	300	-100	-100	200	100	100
T1	-5200	-6500	-5100	-2600	-3300	-2700	-1000	-3700
L1	-100	-100	-200	-2100	-1500	-2300	-100	-300
V2	100	-300	400	-200	-300	300	100	600
T2	-20700	-20000	-15200	-10800	-10500	-8100	-4400	-20900
L2	-600	-700	-700	-9200	-6000	-7200	-200	-300
V3	200	-300	300	-200	-200	200	100	3700
T3	-13600	-11400	-10600	-7000	-6000	-5600	-2800	-13000
L3	-500	-500	-500	-6200	-4200	-5100	-200	-800
V4	100	-200	300	-100	-200	200	100	400
T4	-9000	-8400	-7400	-4700	-4400	-3900	-1800	-8400
L4	-400	-300	-400	-4100	-2700	-3500	-100	-200
V5	100	-100	500	-100	-100	300	100	100
T5	-2600	-2700	-2800	-1400	-1400	-1500	-1000	-1600
L5	-200	-200	-200	-1300	-1400	-1400	-100	-100
V6	300	-100	600	-200	-100	400	100	200
T6	-2400	-3400	-3400	-1300	-1800	-1700	-500	-900
L6	-100	-100	-100	-1200	-1700	-1600	-100	-100
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

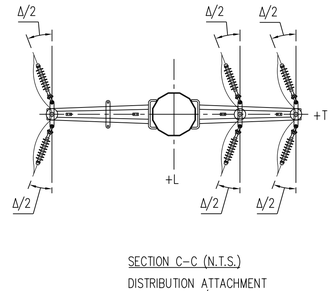
CASE 10 STRINGING: -20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

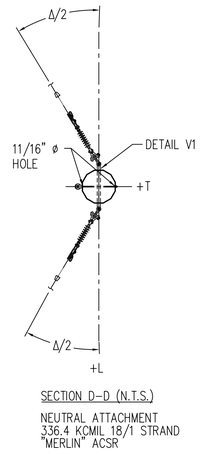
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



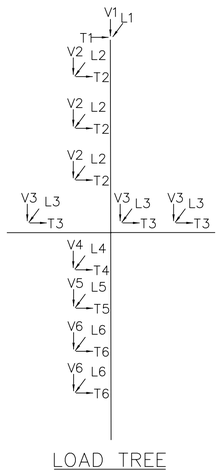
SECTION C-C (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC

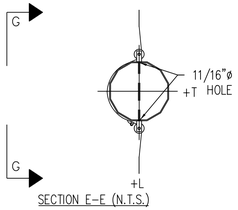


SECTION D-D (N.T.S.)

NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR

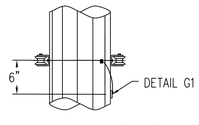


LOAD TREE



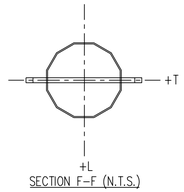
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION F-F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG - VERTICAL
(N.T.S.)

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

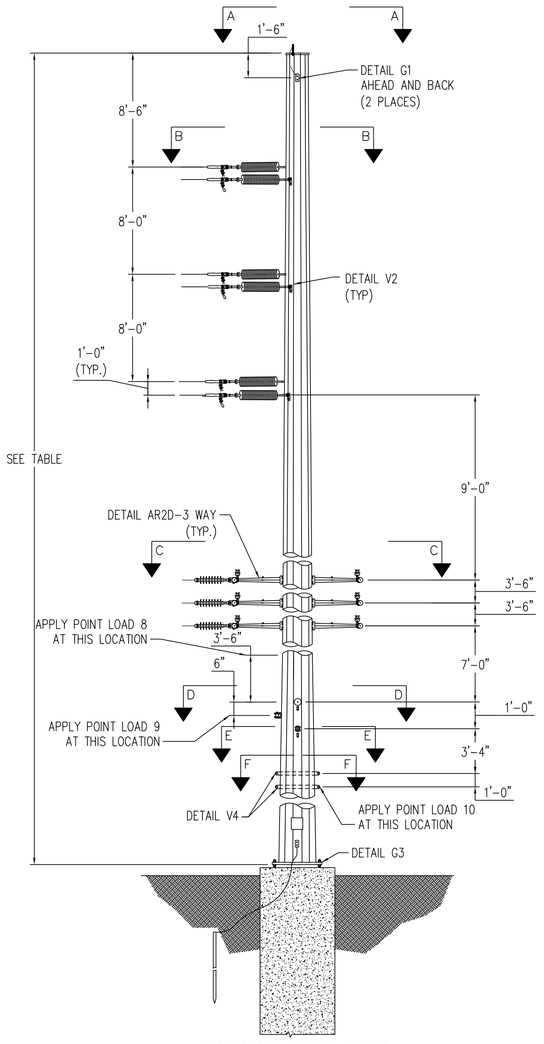
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENGINITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

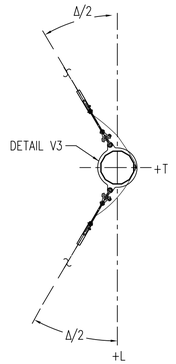
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 60°-90° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE-90L_STR-25
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

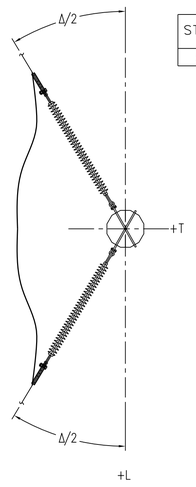


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B–B (N.T.S.)

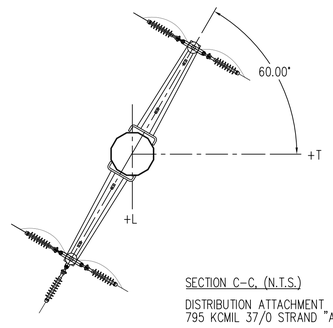
CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
52	95	–89

LOADING TABLE

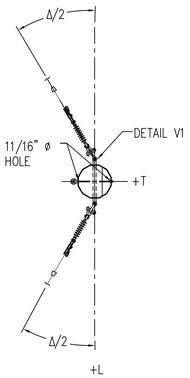
LOAD	CASE 1	CASE 2	CASE 3	CASE 4A	CASE 5A	CASE 6A	CASE 4B	CASE 5B	CASE 6B	CASE 7	CASE 10
V1	300	200	700	300	200	700	200	-100	400	100	200
T1	-5000	-6700	-5100	-5000	-6700	-5100	-2500	-3400	-2600	-1000	-3300
L1	100	100	100	100	-100	100	-2200	-1600	-2500	100	100
V2	1000	600	1500	1000	600	1500	600	-300	800	500	900
T2	-20500	-21100	-15300	-20500	-21100	-15300	-10400	-10700	-7800	-4400	-20300
L2	100	200	100	100	-200	100	-9600	-6300	-7500	100	100
V3	400	200	700	400	200	700	-	-	-	200	300
T3	-6800	-6100	-5400	-6800	-6100	-5400	-	-	-	-1500	-6700
L3	6500	4500	5400	6500	-4500	5400	-	-	-	1500	6700
V4	-500	-300	-800	-100	-100	-200	-100	-100	-200	-200	-3100
T4	-1000	-3800	-800	-4500	-4500	-3700	-4500	-4500	-3700	-200	-1000
L4	1600	1300	1600	4200	-2900	3700	-4200	-2900	-3700	400	1300
V5	-500	-300	-800	-100	-100	-200	-100	-100	-200	-200	-3100
T5	-1000	-3800	-800	-4500	-4500	-3700	-4500	-4500	-3700	-200	-1000
L5	1600	1300	1600	4200	-2900	3700	-4200	-2900	-3700	400	1300
V6	200	100	700	200	100	700	100	-100	400	100	100
T6	-2700	-2800	-2900	-2700	-2800	-2900	-1400	-1500	-1500	-900	-1500
L6	100	100	100	100	-100	100	-1400	-1500	-1500	100	100
V7	400	100	900	400	100	900	200	-100	500	200	200
T7	-2400	-3500	-3300	-2400	-3500	-3300	-1300	-1800	-1700	-500	-900
L7	100	100	100	100	-100	100	-1300	-1800	-1700	100	100
V8	500	200	1500	-	-	-	-	-	-	200	200
T8	1300	600	1100	-	-	-	-	-	-	400	1500
L8	-1800	-1100	-1600	-	-	-	-	-	-	-500	-1900
V9	2100	800	5100	-	-	-	-	-	-	800	1300
T9	4700	2000	3800	-	-	-	-	-	-	1200	5800
L9	900	500	600	-	-	-	-	-	-	100	1400
V10	1400	500	3200	-	-	-	-	-	-	500	800
T10	1200	600	1300	-	-	-	-	-	-	500	1000
L10	300	300	300	-	-	-	-	-	-	100	300
W(PSF)	10	36.9	4.1	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.



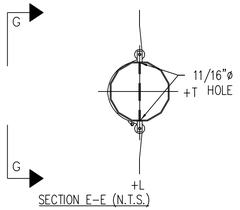
SECTION C–C, (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND "ARBUTTUS" AAC



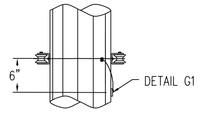
SECTION D–D (N.T.S.)

NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



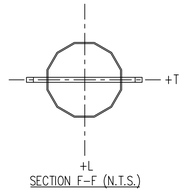
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



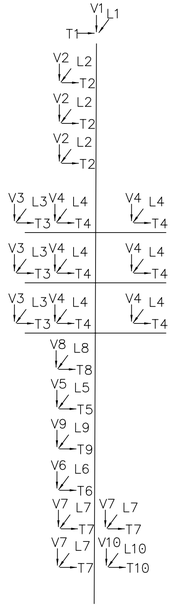
SECTION G–G (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



SECTION F–F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG – VERTICAL
(N.T.S.)



LOAD TREE

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 4A NESC MEDIUM MAIN ALIGNMENT DEADEND: 15°, .25" ICE,
4 PSF WIND, OLF: L=1.65, T=2.50, V=1.50

CASE 4B NESC MEDIUM ONE–WAY DEADEND: 15°, .25" ICE,
4 PSF WIND, OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 5A NESC HIGH WIND MAIN ALIGNMENT DEADEND: 60°, 0" ICE,
120 MPH WIND, OLF: L=1.00, T=1.00, V=1.00

CASE 5B NESC HIGH WIND ONE–WAY DEADEND: 60°, 0" ICE, 120 MPH
WIND, OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6A NESC ICE WITH WIND MAIN ALIGNMENT DEADEND: 15°, 1" ICE,
40 MPH WIND, OLF: L=1.00, T=1.00, V=1.00

CASE 6B NESC ICE WITH WIND ONE–WAY DEADEND: 15°, 1" ICE,
40 MPH WIND, OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 10 STRINGING: –20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT–XXX27DT–144–CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'–0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T–LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

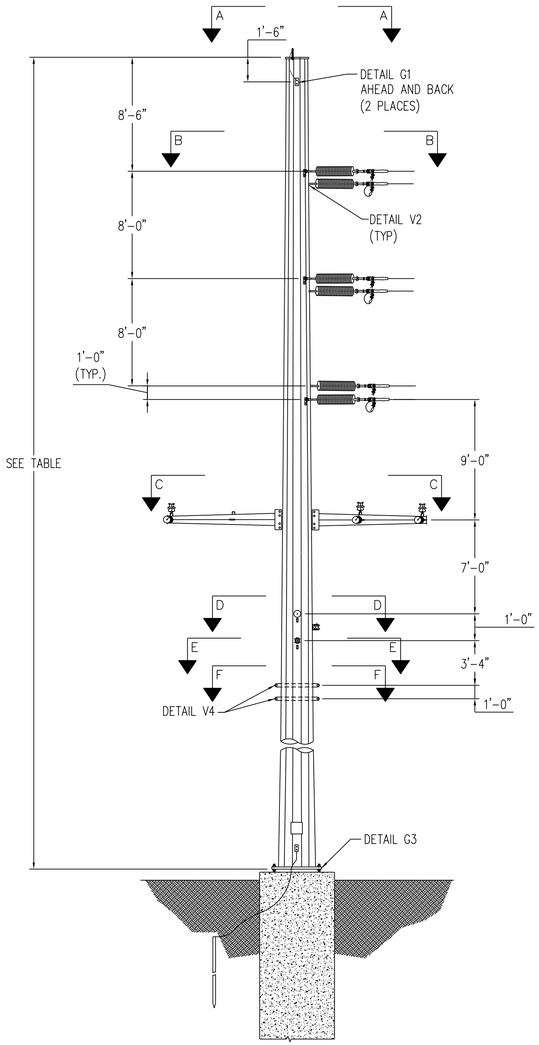
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

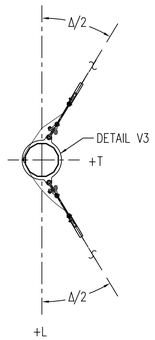
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 60°–90° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE–90L_STR–52
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

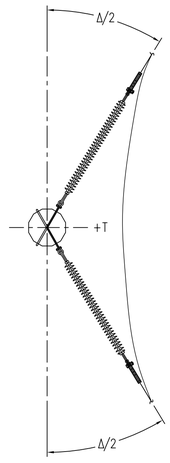


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
23	95	89

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	300	200	600	300	200	500	100	200
T1	6300	7100	5200	3800	3900	2900	1800	5300
L1	1400	700	-600	-3500	-2100	-2700	700	1600
V2	1100	600	1300	1000	600	1100	500	1100
T2	19300	19500	13900	9900	9900	7200	4000	20000
L2	100	200	-200	-8700	-5400	-6600	100	200
V3	700	400	1000	600	400	800	300	4700
T3	12400	10800	9600	6300	5500	4900	2500	12200
L3	200	200	-300	-6100	-3900	-4800	100	900
V4	600	400	900	400	300	600	200	600
T4	8300	8100	6600	4200	4200	3400	1600	7900
L4	200	100	-200	-3900	-2500	-3300	100	100
V5	300	200	700	200	200	400	100	200
T5	2400	2400	2500	1200	1300	1300	900	1500
L5	100	100	-100	-1300	-1300	-1300	100	100
V6	400	300	900	300	200	500	200	200
T6	2400	3300	3100	1200	1700	1600	500	900
L6	100	100	-100	-1200	-1700	-1600	100	100
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

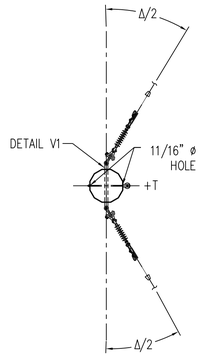
CASE 10 STRINGING: −20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT–XXX27DT–144–CLCB" 144 FIBER

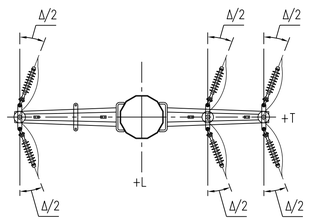
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'–0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



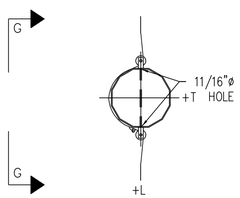
SECTION D–D (N.T.S.)

NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



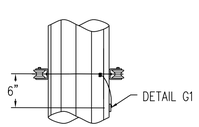
SECTION C–C, (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



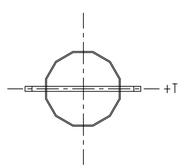
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



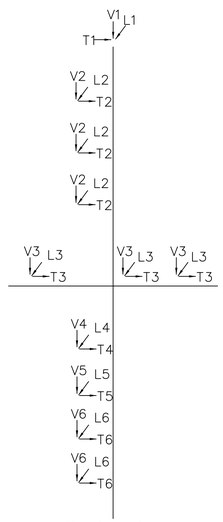
SECTION G–G (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



SECTION F–F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG – VERTICAL
(N.T.S.)



LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T–LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

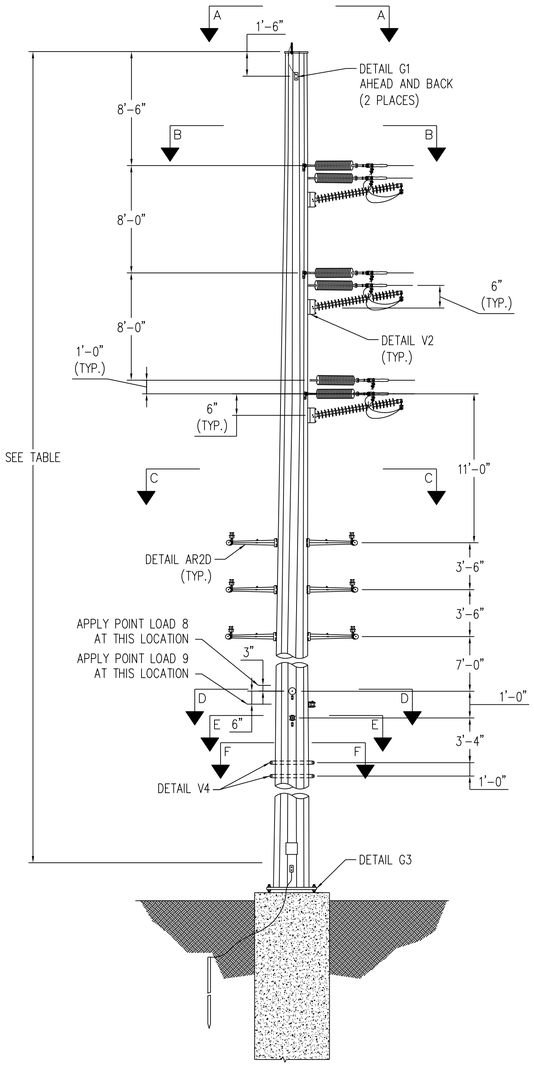
ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

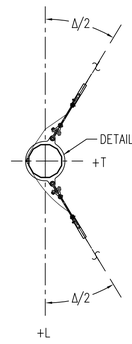
115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 60°–90° WITH UNDERBUILD

DWN.D. CHAMBLISS DATE 12/03/21
CKD. R. DILLABOUGH APPD. S. ECKMAN
SCALE: NONE

DWG. NO.
DE–90R_STR–23

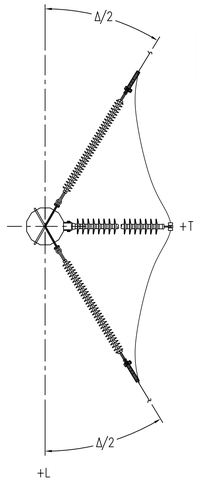


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
62	105	73

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	400	200	900	200	200	500	200	300
T1	5600	7100	5300	3400	3900	3100	1300	4000
L1	-1600	-1000	-1200	4000	2600	3900	-700	1600
V2	1500	800	2000	900	600	1200	700	1300
T2	18500	20900	14000	9800	11000	7600	4200	17400
L2	-1000	-1400	-1300	11600	8400	9600	-500	300
V3	1100	800	1500	700	500	900	400	3800
T3	1600	4400	1200	4000	4300	3300	300	1100
L3	-1100	-1200	-1100	4700	3300	4100	-300	1200
V4	600	300	1100	400	300	700	200	3000
T4	8000	8800	6900	4100	4600	3700	1600	6500
L4	-200	-500	-600	4900	3800	4600	-100	800
V5	600	300	1100	400	300	700	200	3000
T5	8000	8800	6900	4100	4600	3700	1600	6500
L5	-200	-500	-600	4900	3800	4600	-100	800
V6	400	200	1000	200	200	600	200	200
T6	2400	2700	2700	1200	1500	1400	600	1100
L6	-200	-200	-200	1500	1700	1800	-300	400
V7	600	300	1300	300	200	700	200	300
T7	2200	3400	3000	1200	1800	1600	400	800
L7	-100	-200	-100	1400	2100	2000	-100	100
V8	1000	300	3600	-	-	-	300	1600
T8	-1200	-500	-1000	-	-	-	-400	-1300
L8	-1800	-1100	-1600	-	-	-	-500	-1700
V9	400	100	1500	-	-	-	100	200
T9	300	400	200	-	-	-	-100	200
L9	-300	-300	-400	-	-	-	-100	-100
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 10 STRINGING: -20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

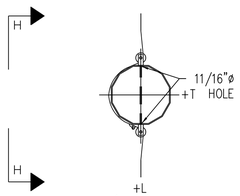
1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

SECTION D-D (N.T.S.)

NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR

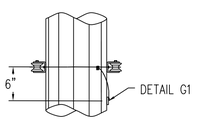
SECTION C-C, (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



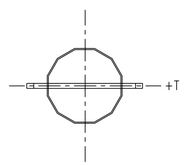
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION H-H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION F-F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG - VERTICAL
(N.T.S.)

LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

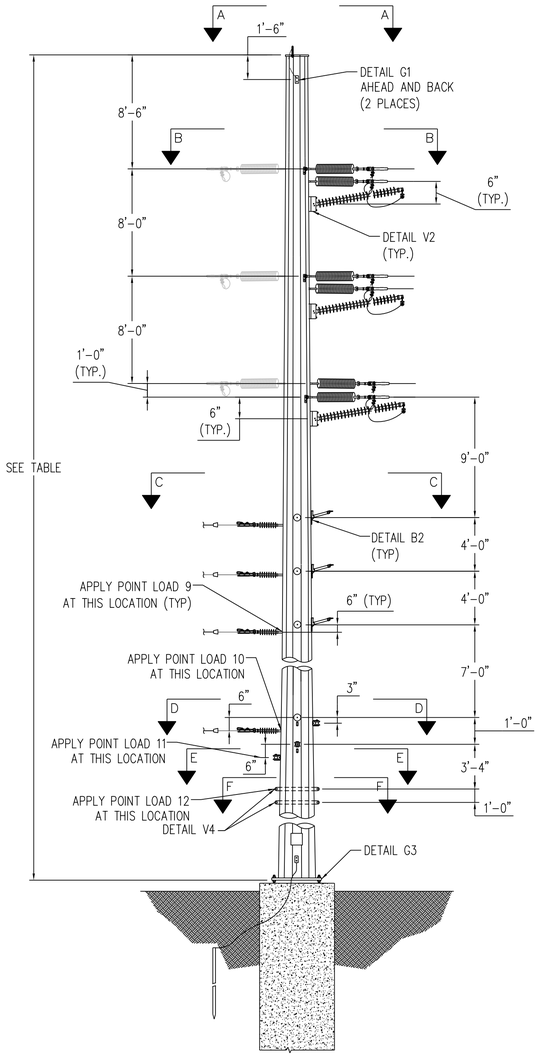
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

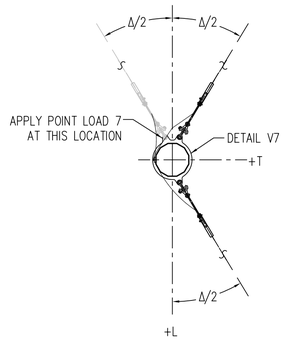
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 60°-90° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE-90R_STR-62
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

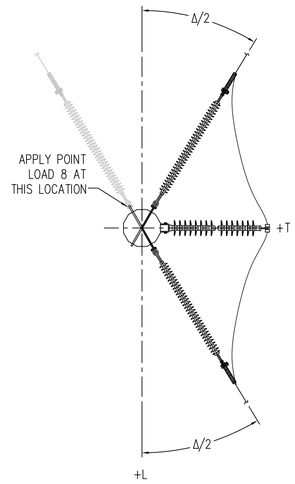


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
99	85	69

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	300	200	700	200	100	400	100	200
T1	3900	5800	3800	2000	2900	1900	700	2500
L1	-100	-100	-100	-2200	-1500	-2500	-100	-100
V2	1100	700	1500	700	400	800	500	1100
T2	16700	18000	12000	8400	9000	6100	3500	16600
L2	-400	-300	-400	-10500	-6500	-8100	-100	-400
V3	400	200	800	200	100	400	200	2800
T3	7200	7500	5800	3700	3800	3000	1300	6200
L3	-300	-200	-200	-4600	-3100	-3900	-100	-800
V4	200	100	500	100	100	300	100	100
T4	3900	5200	3400	2000	2600	1700	800	2900
L4	-100	-100	-100	-2200	-1500	-2200	-100	-100
V5	200	100	700	100	100	400	100	100
T5	2100	2200	2200	1100	1100	1100	800	1200
L5	-100	-100	-100	-1500	-1500	-1500	-	-100
V6	100	100	200	100	100	200	100	100
T6	1600	1000	1300	1600	1000	1300	400	1600
L6	-1700	-1000	-1400	-1700	-1000	-1400	-500	-1700
V7	500	200	1500	600	200	1600	200	300
T7	-3900	-1900	-2500	-3900	-1900	-2500	-1700	-4500
L7	-3500	-1900	-2300	-3500	-1900	-2300	-1400	-3800
V8	2200	1000	3400	2300	1100	3700	1000	1700
T8	-7300	-2700	-5000	-7300	-2700	-5000	-1600	-10100
L8	-6500	-3200	-4500	-6500	-3200	-4500	-1400	-8700
V9	600	300	1400	700	300	1600	300	400
T9	-3000	-1300	-2300	-3000	-1300	-2300	-600	-4000
L9	-2800	-1500	-2100	-2800	-1500	-2100	-600	-3500
V10	400	100	1100	400	100	1200	100	200
T10	-1500	-700	-1200	-1500	-700	-1200	-500	-1800
L10	-1400	-800	-1200	-1400	-800	-1200	-400	-1600
V11	500	200	1400	600	200	1600	200	300
T11	-800	-300	-700	-800	-300	-700	-500	-700
L11	-900	-700	-800	-900	-700	-800	-500	-700
V12	1600	600	3600	1700	600	3900	600	900
T12	-2700	-1400	-2700	-2700	-1400	-2700	-1300	-2500
L12	-2800	-2500	-2700	-2800	-2500	-2700	-1100	-2500
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

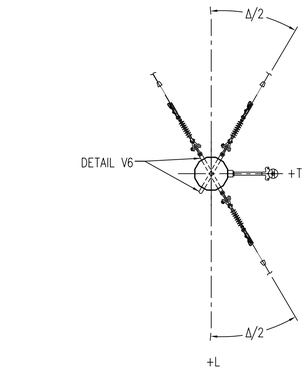
CASE 10 STRINGING: -20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

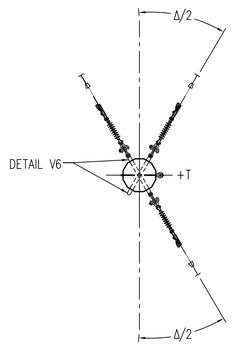
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



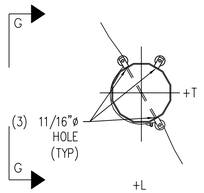
SECTION C-C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



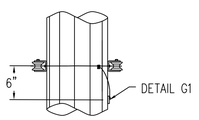
SECTION D-D (N.T.S.)

NEUTRAL ATTACHMENT
1/0 6/1 STRAND
"RAVEN" ACSR



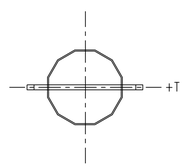
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



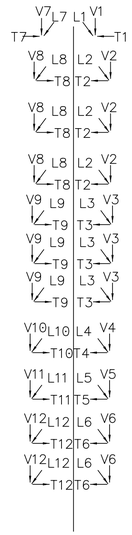
SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION F-F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG - VERTICAL
(N.T.S.)



LOAD TREE

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENGINITIALS: S.E DATE: 12/03/21

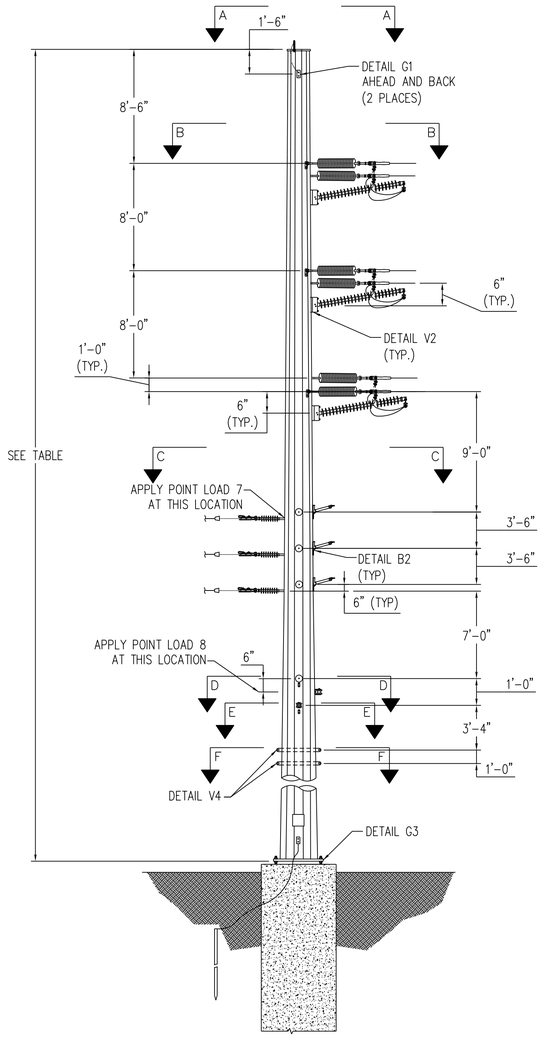
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

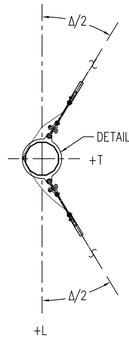
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 60°-90° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE-90R_STR-99
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

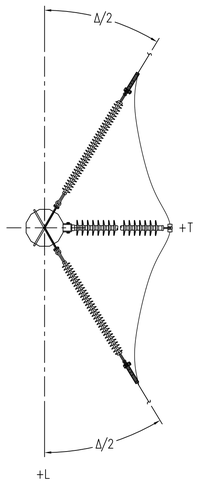


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



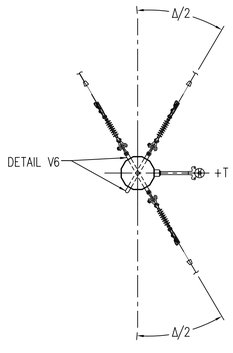
SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



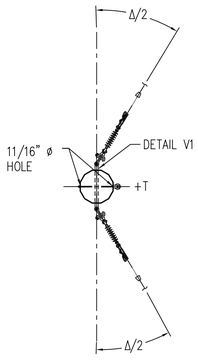
SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



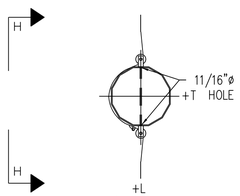
SECTION C–C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



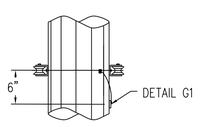
SECTION D–D (N.T.S.)

NEUTRAL ATTACHMENT
1/0 6/1 STRAND
"RAVEN" ACSR



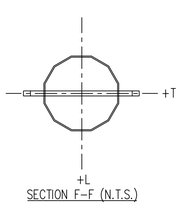
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



SECTION F–F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG – VERTICAL
(N.T.S.)

STR #	LENGTH (FT)	ANGLE Δ
132	75	68

LOADING TABLE								
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	-100	-100	200	-100	-100	100	-100	100
T1	3700	5600	3600	1900	2800	1800	700	2500
L1	100	100	100	2200	1500	2500	-100	100
V2	-500	-500	200	-400	-300	200	-100	900
T2	14200	16200	10400	7600	8300	5500	2900	14200
L2	1700	800	900	10500	6400	8000	-400	1700
V3	-200	-300	100	-200	-200	100	-100	2100
T3	6600	6900	5300	3400	3500	2700	1200	5800
L3	200	100	100	4500	2900	3800	-100	600
V4	-100	-200	100	-100	-100	100	-100	200
T4	3800	5000	3300	1900	2500	1700	800	2900
L4	100	100	100	2200	1500	2100	-100	100
V5	-100	-100	300	-100	-100	200	-100	100
T5	2000	2000	2000	1000	1000	1100	800	1200
L5	100	100	100	1400	1400	1500	-	100
V6	-200	-200	300	-100	-100	200	-100	100
T6	1800	2500	2500	1000	1300	1300	400	700
L6	100	100	100	1400	1800	1900	-100	100
V7	500	200	1200	-	-	-	200	300
T7	-1700	-700	-1400	-	-	-	-400	-2200
L7	-4200	-2400	-3300	-	-	-	-900	-5000
V8	300	100	900	-	-	-	100	200
T8	-800	-400	-700	-	-	-	-300	-1000
L8	-2100	-1300	-1900	-	-	-	-600	-2200
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

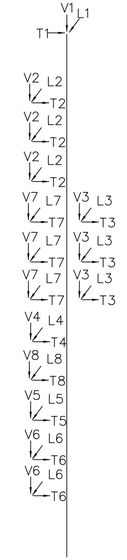
CASE 10 STRINGING: –20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT–XXX27DT–144–CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'–0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T–LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

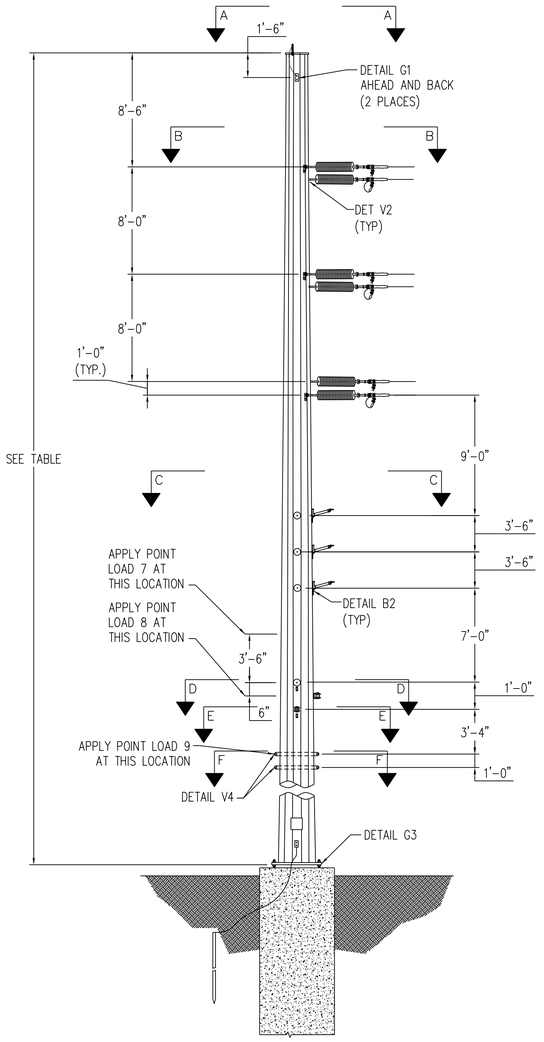
ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

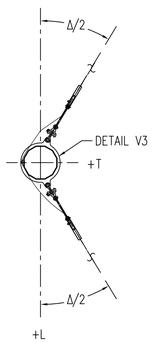
115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 60°–90° WITH UNDERBUILD

DWN.D. CHAMBLISS DATE 12/03/21
CKD. R. DILLABOUGH APPD. S. ECKMAN
SCALE: NONE

DWG. NO.
DE–90R_STR–132

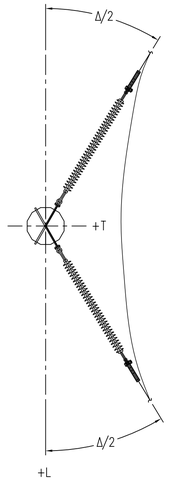


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



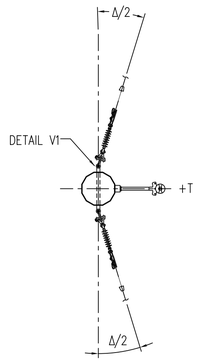
SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



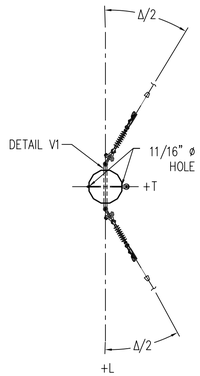
SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



SECTION C-C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



SECTION D-D (N.T.S.)

NEUTRAL ATTACHMENT
1/0 6/1 STRAND
"RAVEN" ACSR

STR #	LENGTH (FT)	ANGLE Δ
153	85	91

LOADING TABLE									
LOAD	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	100	100	400	100	100	200	100	100
T1	6100	6900	5100	3900	4000	3200	1700	5300
L1	-1600	-1100	-1300	-3500	-2200	-3000	-700	-1400
V2	400	100	700	300	200	400	200	100
T2	19000	19000	13600	10500	10700	7900	3900	19500
L2	-1400	-2000	-1700	-9400	-6300	-7400	-700	-500
V3	200	100	400	100	100	300	100	2600
T3	8300	8000	6600	4600	4600	3900	1500	7500
L3	-900	-1000	-1100	-4200	-2900	-3700	-400	-800
V4	100	100	400	100	100	200	100	100
T4	4500	5500	3900	2500	3000	2300	900	3500
L4	-400	-500	-600	-2100	-1500	-2100	-100	-100
V5	200	100	500	100	100	400	100	100
T5	2400	2400	2500	1400	1500	1500	1000	1500
L5	-400	-500	-500	-1400	-1500	-1500	-	-100
V6	200	200	500	200	200	500	100	200
T6	1200	1500	1400	1200	1500	1400	300	500
L6	-1200	-1500	-1500	-1200	-1500	-1500	-300	-600
V7	-	-	-	500	200	1800	200	300
T7	-	-	-	1400	700	1300	500	1700
L7	-	-	-	-1600	-1000	-1400	-500	1700
V8	-	-	-	500	200	1800	200	300
T8	-	-	-	1400	700	1300	500	1700
L8	-	-	-	-1600	-1000	-1400	500	1700
V9	-	-	-	1300	500	3000	400	700
T9	-	-	-	-700	500	-1100	300	300
L9	-	-	-	1100	1300	1400	300	600
W(PSF)	10	36.9	4.1	10	36.9	4.1	0	3

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND
INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS
WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 4 NESC MEDIUM DEADEND: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 5 NESC HIGH WIND DEADEND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 6 NESC ICE WITH WIND DEADEND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 10 STRINGING: -20°, 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "RAVEN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

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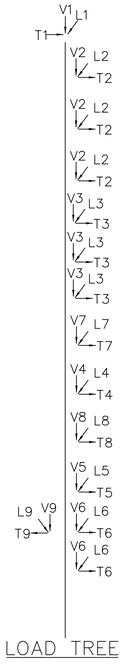
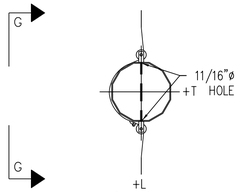
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

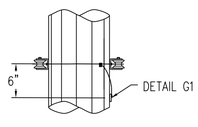


LOAD TREE



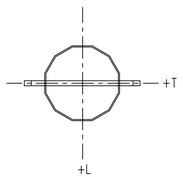
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION F-F (N.T.S.)

TWO WAY ONE HOLE
THROUGH VANG - VERTICAL
(N.T.S.)

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

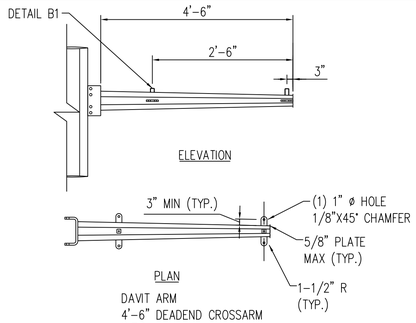
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

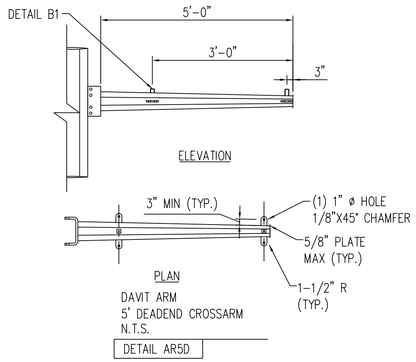
115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
DEADEND 60°-90° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DE-90R_STR-153
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		



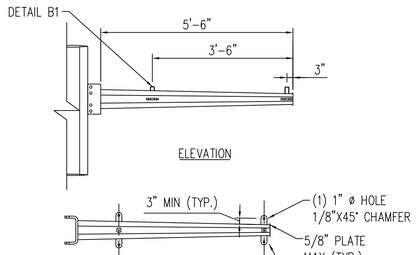
DAVIT ARM
4'-6" DEADEND CROSSARM
N.T.S.

DETAIL AR4.5D



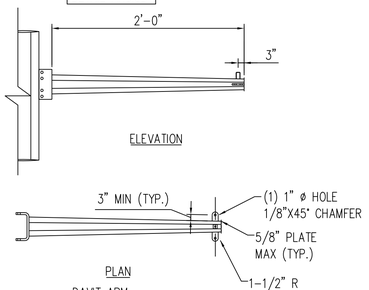
DAVIT ARM
5' DEADEND CROSSARM
N.T.S.

DETAIL AR5D



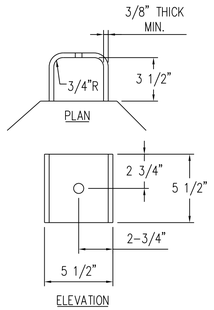
DAVIT ARM
5'-6" DEADEND CROSSARM
N.T.S.

DETAIL AR5.5D



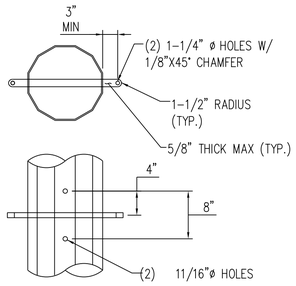
DAVIT ARM
2'-0" DEADEND CROSSARM
N.T.S.

DETAIL AR2D



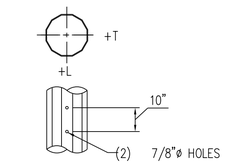
INSULATOR MOUNTING
BRACKET DETAIL
N.T.S.

DETAIL B1



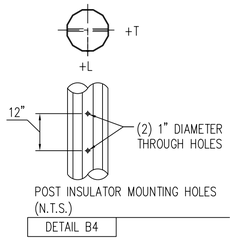
JUMPER SUPPORT BRACKET
MOUNTING HOLES
(N.T.S.)

DETAIL B2



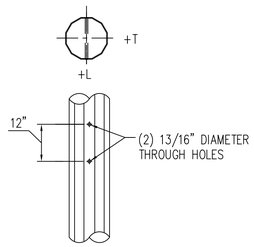
DISTRIBUTION POST INSULATOR
BRACKET MOUNTING HOLES
(N.T.S.)

DETAIL B3



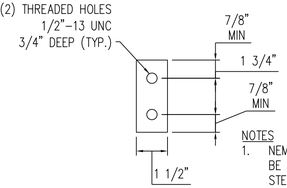
POST INSULATOR MOUNTING HOLES
(N.T.S.)

DETAIL B4



CROSSARM INSTALLATION HOLES
(N.T.S.)

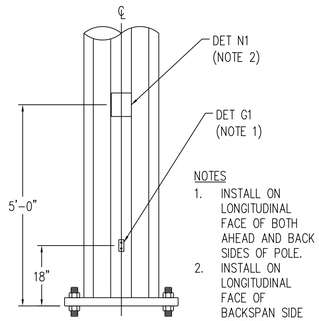
DETAIL CA1



NOTES
1. NEMA PAD SHALL BE STAINLESS STEEL.
2. DO NOT PAINT OR GALVANIZE THIS SURFACE.

NEMA GROUNDING PAD
N.T.S.

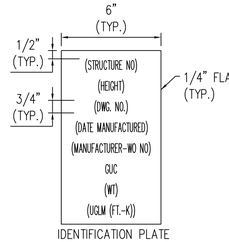
DETAIL G1



NOTES
1. INSTALL ON LONGITUDINAL FACE OF BOTH AHEAD AND BACK SIDES OF POLE.
2. INSTALL ON LONGITUDINAL FACE OF BACKSPAN SIDE OF POLE.

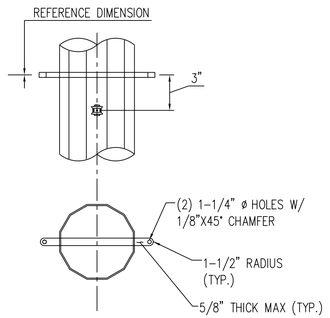
BASE GROUNDING DETAIL
N.T.S.

DETAIL G3



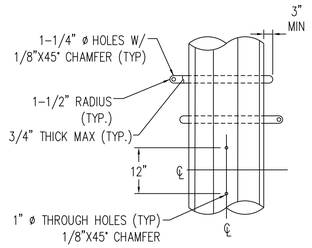
IDENTIFICATION PLATE
N.T.S.

DETAIL N1



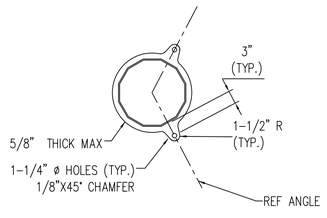
TWO WAY ONE HOLE
THROUGH VANG – HORIZONTAL
N.T.S

DETAIL-V1



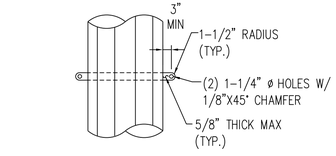
TRANSMISSION ONE WAY VANG
N.T.S.

DETAIL V2



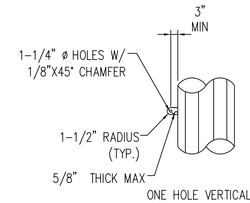
SHIELD WIRE VANG
N.T.S.

DETAIL V3



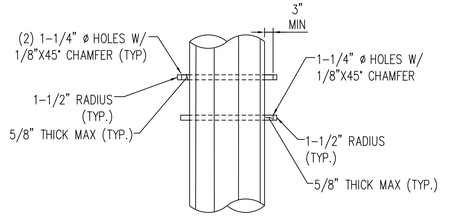
TWO WAY ONE HOLE
THROUGH VANG – VERTICAL
(N.T.S.)

DETAIL V4



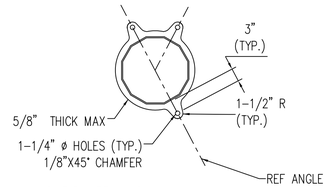
ONE HOLE VERTICAL WELDED VANG
N.T.S.

DETAIL V5



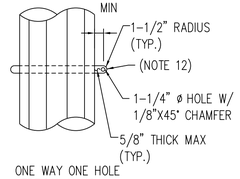
THREE WAY DISTRIBUTION
DEADEND VANGS
N.T.S.

DETAIL V6



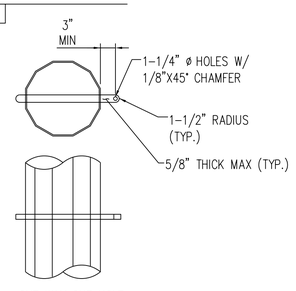
SHIELD WIRE VANG
N.T.S.

DETAIL V7



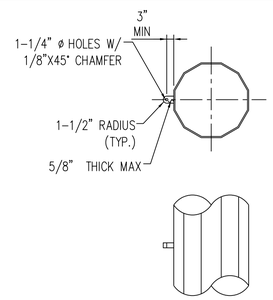
ONE WAY ONE HOLE
VERTICAL VANG
(N.T.S.)

DETAIL V8



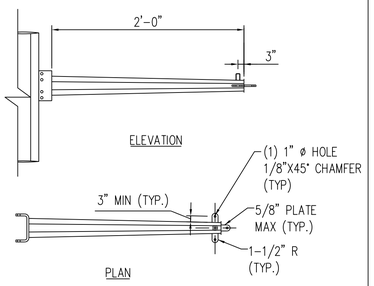
ONE WAY ONE HOLE
HORIZONTAL VANG
(N.T.S.)

DETAIL V9



ONE HOLE HORIZONTAL WELDED VANG
N.T.S.

DETAIL V10



DAVIT ARM 2'-0" DEADEND
N.T.S.

DETAIL AR2D-3 WAY

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

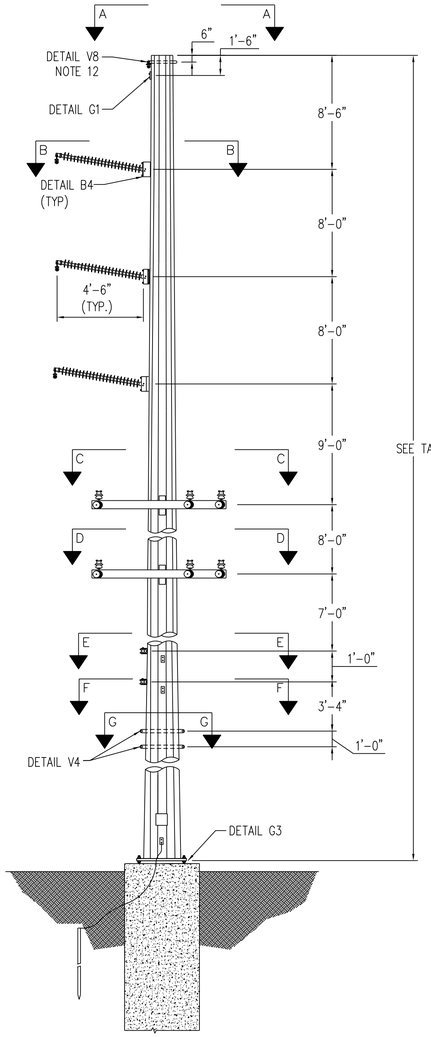
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

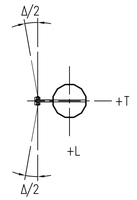
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
DETAILS

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. DETAILS
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

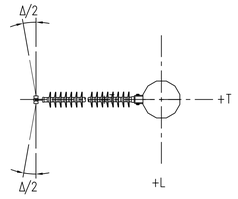


SINGLE CIRCUIT, VERTICAL, RUNNING ANGLE
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
3	85	-12

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	300	100	600	100	700
T1	-1000	-800	-1200	-200	-1000
L1	100	100	100	-	-300
V2	900	500	1400	500	1500
T2	-3700	-3000	-2900	-600	-2600
L2	100	100	100	-100	-200
V3	600	300	1000	300	1100
T3	-3700	-5500	-2700	-500	-2100
L3	100	100	100	-100	-1100
V4	400	200	800	200	900
T4	-1900	-1500	-1700	-300	-1400
L4	100	100	100	-	-900
V5	300	200	800	100	900
T5	-800	-1000	-800	-200	-600
L5	100	100	100	-	-500
V6	500	200	1000	200	1100
T6	-800	-1300	-900	-100	-700
L6	100	100	100	-	-400
W(PSF)	10	36.9	4.1	0	0

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

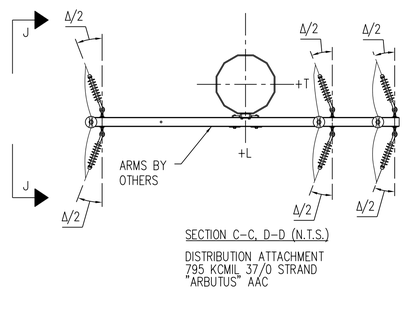
CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

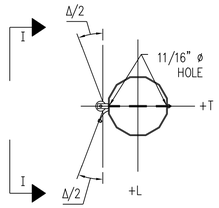
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



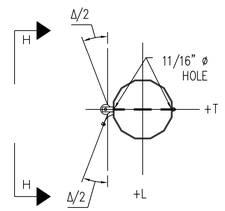
SECTION C-C, D-D (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



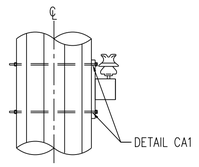
SECTION E-E (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



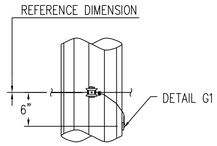
SECTION F-F (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



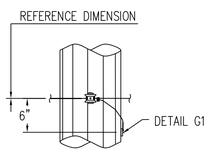
SECTION J-J (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



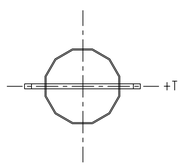
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



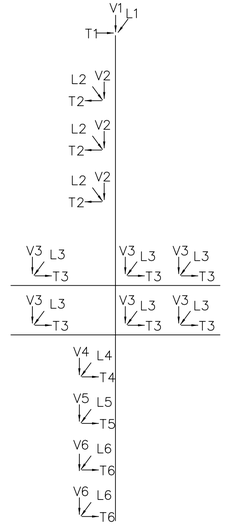
SECTION H-H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION G-G (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

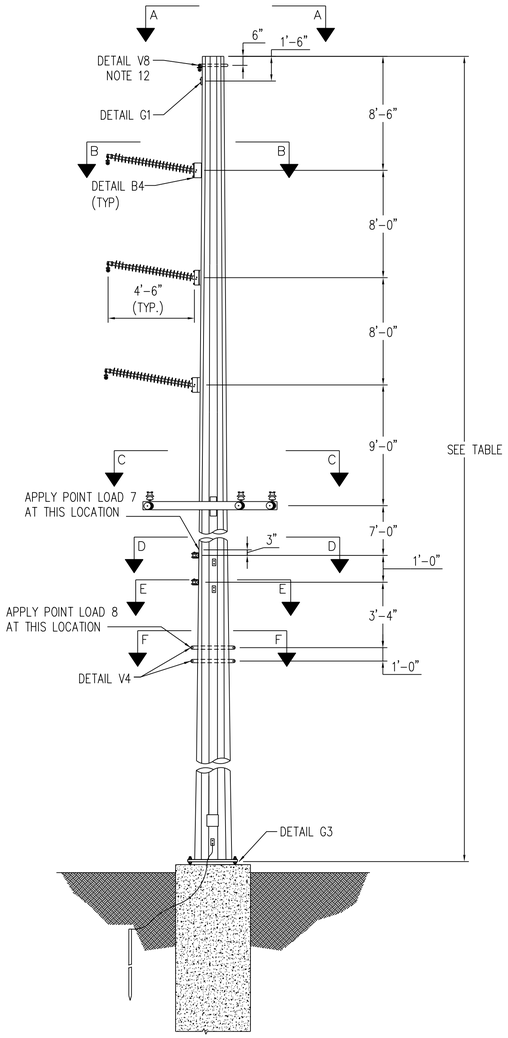
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENGINITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

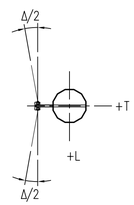
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
RUNNING ANGLE WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. RA-15L_2FFD_1-CT
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

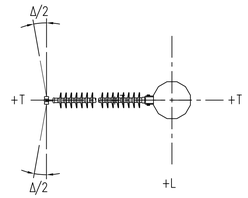


SINGLE CIRCUIT, VERTICAL, RUNNING ANGLE
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
18	80	-10
35	80	-4
40	75	-8
45	75	-15
46	80	-12
65*	75	-6
147*	75	-3

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	300	100	600	100	700
T1	-1000	-800	-1200	-200	-1000
L1	-100	-100	-100	-	-300
V2	900	500	1400	500	1500
T2	-3700	-3000	-2900	-600	-2600
L2	-100	-100	-100	-100	-200
V3	600	300	1000	300	1100
T3	-3700	-5500	-2700	-500	-2100
L3	-100	-100	-100	-100	-1100
V4	400	200	800	200	900
T4	-1900	-1500	-1700	-300	-1400
L4	-100	-100	-100	-	-900
V5	300	200	800	100	900
T5	-800	-1000	-800	-200	-600
L5	-100	-100	-100	-	-500
V6	500	200	1000	200	1100
T6	-800	-1300	-900	-100	-700
L6	-100	-100	-100	-	-400
V7	800	300	1800	300	300
T7	-800	-1400	-1100	-100	-800
L7	-100	-200	-200	-100	-200
V8	900	300	2000	300	300
T8	-1900	-2500	-2100	-400	-1700
L8	-300	-300	-400	-100	-300
W(PSF)	10	36.9	4.1	0	0

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

* APPLY POINT LOAD 7 AND 8 TO STRUCTURES 65 AND 147 ONLY.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

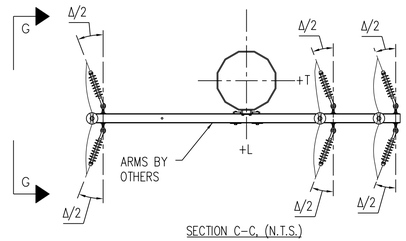
CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

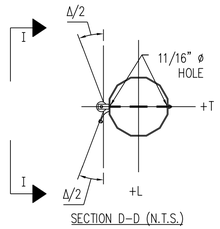
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



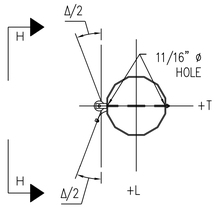
SECTION C-C, (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



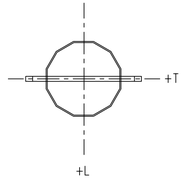
SECTION D-D (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



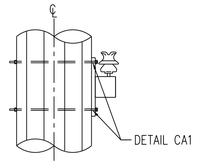
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



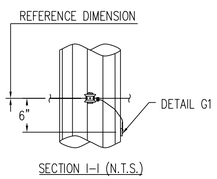
SECTION F-F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



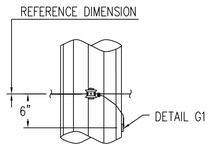
SECTION G-G (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



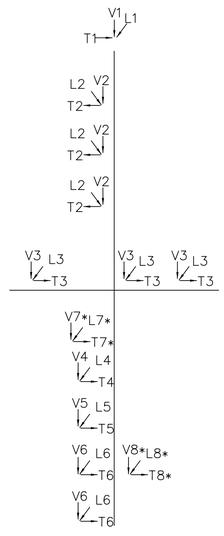
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



SECTION H-H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

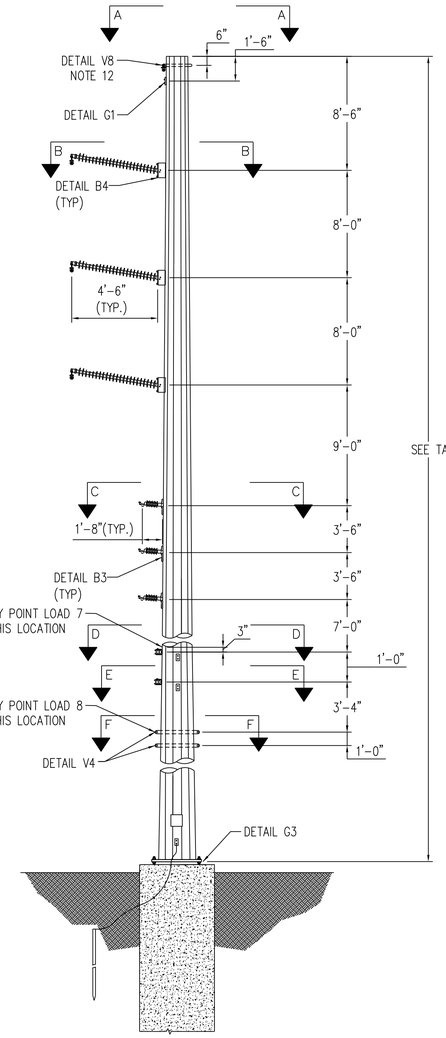
ISSUED FOR BID

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

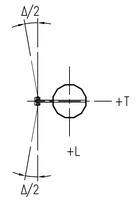
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
RUNNING ANGLE WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. RA-15L_FFD_1-CT
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

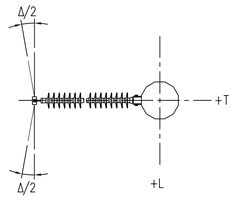


SINGLE CIRCUIT, VERTICAL, RUNNING ANGLE
LOOKING AHEAD SPAN
SCALE: N.T.S.



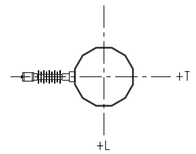
SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



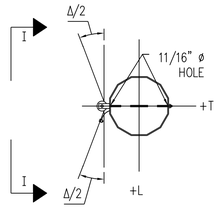
SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



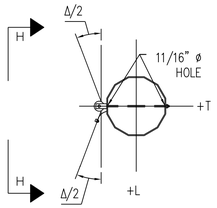
SECTION C-C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



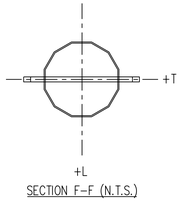
SECTION D-D (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 6/1 STRAND
"RAVEN" ACSR



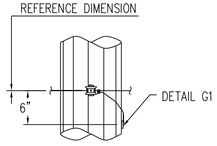
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



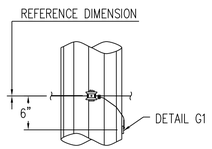
SECTION F-F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 6/1 STRAND
"RAVEN" ACSR



SECTION H-H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER

STR #	LENGTH (FT)	ANGLE Δ
114	90	-5
115	90	-5
140	80	-14
141*	80	-9

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	300	100	600	100	700
T1	-1000	-800	-1200	-200	-1000
L1	-100	-100	-100	-	-300
V2	900	500	1400	500	1500
T2	-3700	-3000	-2900	-600	-2600
L2	-100	-100	-100	-100	-200
V3	600	300	1000	300	1100
T3	-3700	-5500	-2700	-500	-2100
L3	-100	-100	-100	-100	-1100
V4	400	200	800	200	900
T4	-1900	-1500	-1700	-300	-1400
L4	-100	-100	-100	-	-900
V5	300	200	800	100	900
T5	-800	-1000	-800	-200	-600
L5	-100	-100	-100	-	-500
V6	500	200	1000	200	1100
T6	-800	-1300	-900	-100	-700
L6	-100	-100	-100	-	-400
V7	600	200	1400	200	200
T7	-400	-800	-400	-100	-200
L7	-500	-700	-800	-100	-700
V8	700	300	1500	300	300
T8	-700	-1100	-600	-100	-300
L8	-1500	-1500	-1600	-500	-1500
W(PSF)	10	36.9	4.1	0	0

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

* APPLY POINT LOAD 7 AND 8 TO STRUCTURE 141 ONLY.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

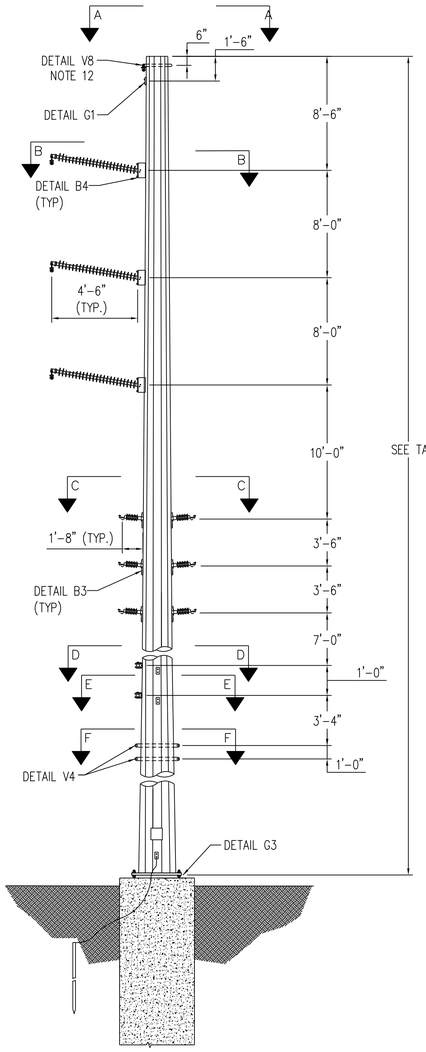
ISSUED FOR BID

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

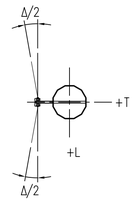
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
RUNNING ANGLE WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. RA-15L_VERT_1-CT
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

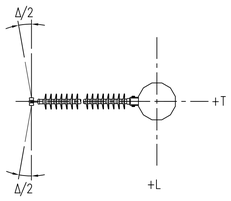


SINGLE CIRCUIT, VERTICAL, RUNNING ANGLE
LOOKING AHEAD SPAN
SCALE: N.T.S.



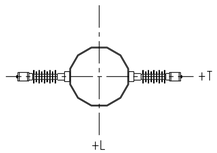
SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



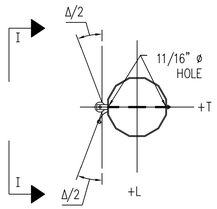
SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



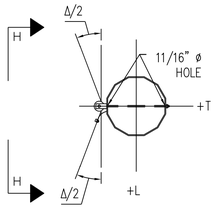
SECTION C–C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



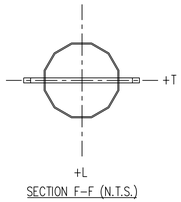
SECTION D–D (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



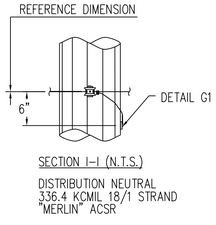
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



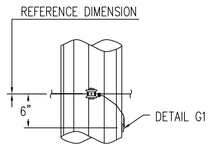
SECTION F–F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



SECTION I–I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



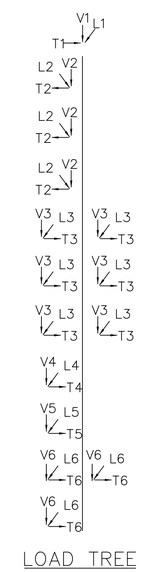
SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER

STR #	LENGTH (FT)	ANGLE Δ
61	90	−6

LOADING TABLE						
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	300	100	600	100	700
T1	-1000	-800	-1200	-200	-1000
L1	100	100	100	-	300
V2	900	500	1400	500	1500
T2	-3700	-3000	-2900	-600	-2600
L2	100	100	100	-100	-200
V3	600	300	1000	300	1100
T3	-3700	-5500	-2700	-500	-2100
L3	100	100	100	-100	-1100
V4	400	200	800	200	900
T4	-1900	-1500	-1700	-300	-1400
L4	100	100	100	-	-900
V5	300	200	800	100	900
T5	-800	-1000	-800	-200	-600
L5	100	100	100	-	-500
V6	500	200	1000	200	1100
T6	-800	-1300	-900	-100	-700
L6	100	100	100	-	-400
W(PSF)	10	36.9	4.1	0	0

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.



LOAD TREE

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT–XXX27DT–144–CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'–0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T–LINE ISSUED FOR BID ENG.INITIALS: SE DATE: 12/03/21

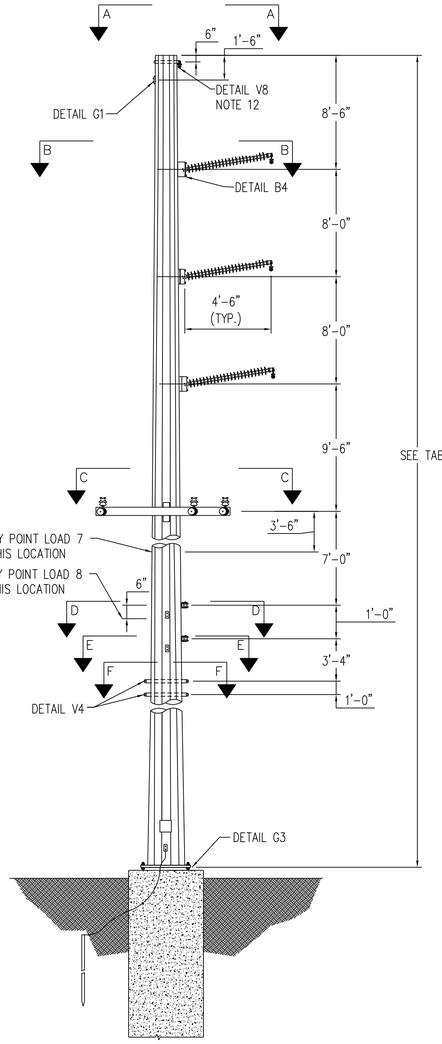
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

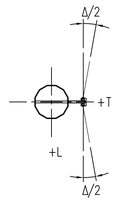
115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
RUNNING ANGLE WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO.
CKD. R. DILLABOUGH	APPD. S. ECKMAN	RA–15L_Vert_1–CT_STR–61
SCALE: NONE		



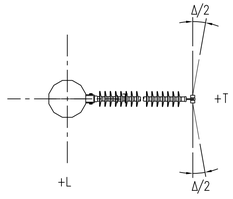
SINGLE CIRCUIT, VERTICAL, RUNNING ANGLE
LOOKING AHEAD SPAN
SCALE: N.T.S.

STR #	HEIGHT (FT)	ANGLE Δ
11	75	7



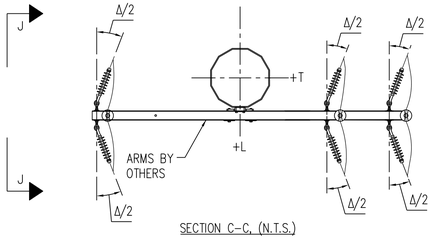
SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



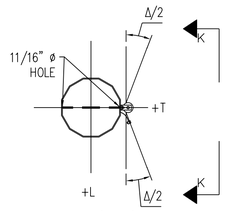
SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



SECTION C–C, (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



SECTION D–D (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	200	200	600	100	600
T1	1100	900	1200	200	1100
L1	-100	-100	-100	-100	-300
V2	900	500	1300	400	1400
T2	4300	3600	3400	1000	3100
L2	-100	-100	-100	-100	-200
V3	500	300	1000	300	1000
T3	3900	5800	2800	600	2300
V4	400	200	900	200	900
T4	2000	1700	1800	400	1600
L4	-100	-100	-100	-100	-1000
V5	300	100	800	100	900
T5	900	1200	900	200	700
L5	-100	-100	-100	-100	-700
V6	500	200	1000	200	1100
T6	900	1600	1000	100	700
L6	-100	-100	-100	-	-600
V7	500	200	1600	200	200
T7	-1900	-900	-1500	-600	-1600
L7	-400	-200	-300	-100	-300
V8	500	200	1600	200	200
T8	-1900	-900	-1500	-600	-1600
L8	-400	-200	-300	-100	-300
W(PSF)	10	36.9	4.1	0	0

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

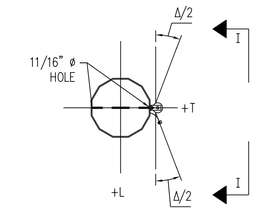
CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

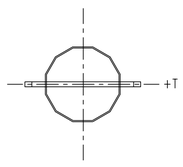
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



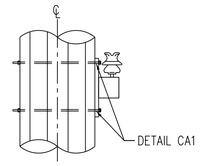
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



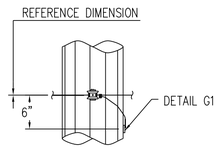
SECTION F–F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



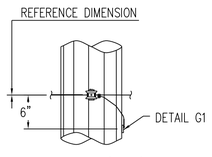
SECTION J–J (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



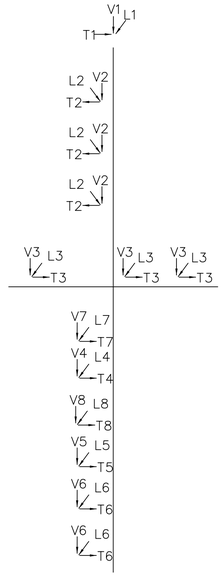
SECTION K–K (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



SECTION I–I (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



LOAD TREE

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENGINITIALS: S.E DATE: 12/03/21

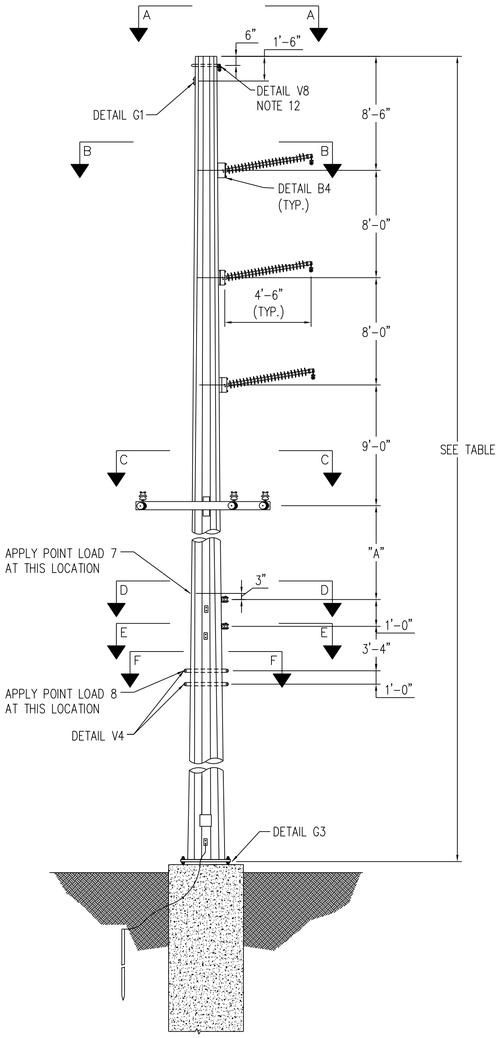
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

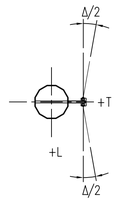
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
RUNNING ANGLE 10° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. RA-115R_FFD_1.5-CT
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

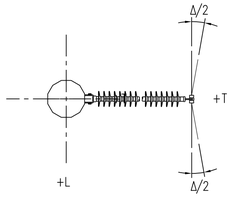


SINGLE CIRCUIT, VERTICAL, RUNNING ANGLE
LOOKING AHEAD SPAN
SCALE: N.T.S.



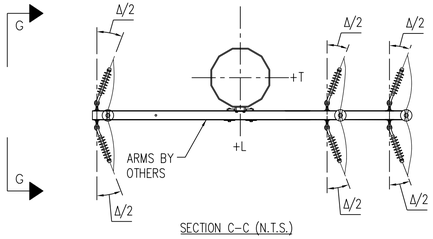
SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



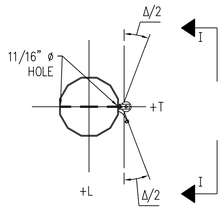
SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



SECTION C–C (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



SECTION D–D (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR

STR #	HEIGHT (FT)	DIMENSION "A" (FT)	ANGLE Δ
13	75	7	8
21	90	7	10
38	75	7	4
42	85	7	4
49	85	7	10
50	80	7	15
100	80	10	7
101*	80	7	10
102	80	7	7
145*	80	7	6

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	300	100	600	100	700
T1	-1000	-800	-1200	-200	-1000
L1	-100	-100	-100	-	-300
V2	900	500	1400	500	1500
T2	-3700	-3000	-2900	-600	-2600
L2	-100	-100	-100	-100	-200
V3	600	300	1000	300	1100
T3	-3700	-5500	-2700	-500	-2100
L3	-100	-100	-100	-100	-1100
V4	400	200	800	200	900
T4	-1900	-1500	-1700	-300	-1400
L4	-100	-100	-100	-	-900
V5	300	200	800	100	900
T5	-800	-1000	-800	-200	-600
L5	-100	-100	-100	-	-500
V6	500	200	1000	200	1100
T6	-800	-1300	-900	-100	-700
L6	-100	-100	-100	-	-400
V7	500	100	1600	100	100
T7	600	700	700	100	500
L7	-100	-100	-100	-100	-100
V8	1100	400	2500	400	400
T8	1900	2100	1700	600	1400
L8	-300	-300	-300	-100	-300
W(PSF)	10	36.9	4.1	0	0

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

* APPLY POINT LOAD 7 AND 8 TO STRUCTURE 101 AND 145 ONLY.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
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3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
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9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
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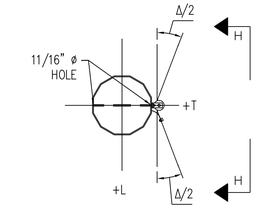
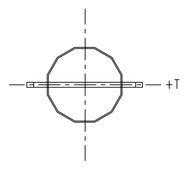
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



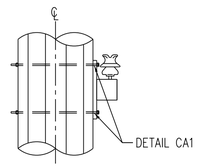
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



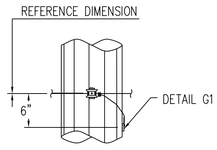
SECTION F–F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



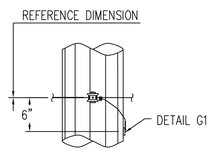
SECTION G–G (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



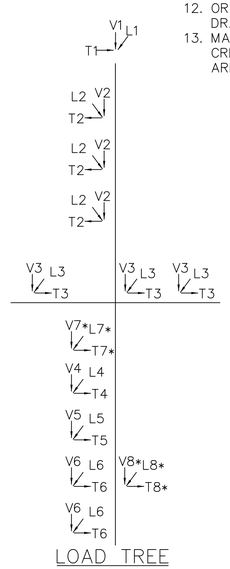
SECTION I–I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENGINITIALS: S.E DATE: 12/03/21

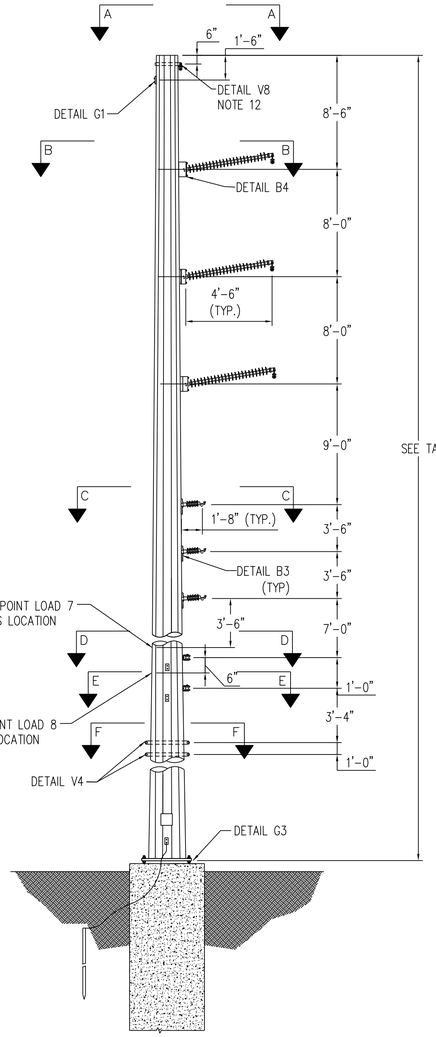
ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

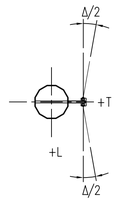
115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
RUNNING ANGLE WITH UNDERBUILD

DWN.D. CHAMBLISS DATE 12/03/21
CKD. R. DILLABOUGH APPD. S. ECKMAN
SCALE: NONE

DWG. NO.
RA-15R_FFD_1-CT

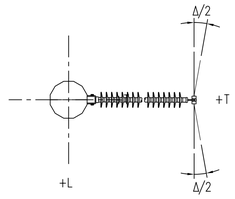


SINGLE CIRCUIT, VERTICAL, RUNNING ANGLE
LOOKING AHEAD SPAN
SCALE: N.T.S.



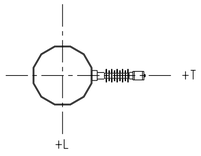
SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



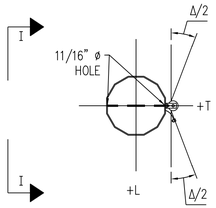
SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



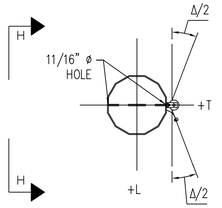
SECTION C–C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



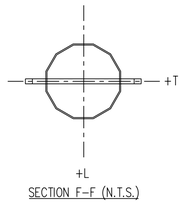
SECTION D–D (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 6/1 STRAND
"RAVEN" ACSR



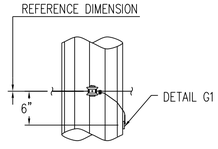
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



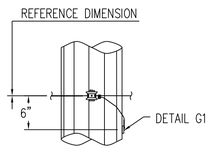
SECTION F–F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



SECTION I–I (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 6/1 STRAND
"RAVEN" ACSR



SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER

STR #	HEIGHT (FT)	ANGLE Δ
142	80	4

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	200	200	600	100	600
T1	1100	900	1200	200	1100
L1	-100	-100	-100	-100	-300
V2	900	500	1300	400	1400
T2	4300	3600	3400	1000	3100
L2	-100	-100	-100	-100	-200
V3	500	300	1000	300	1000
T3	3900	5800	2800	600	2300
L3	-100	-100	-100	-100	-1300
V4	400	200	900	200	900
T4	2000	1700	1800	400	1600
L4	-100	-100	-100	-100	-1000
V5	300	100	800	100	900
T5	900	1200	900	200	700
L5	-100	-100	-100	-100	-700
V6	500	200	1000	200	1100
T6	900	1600	1000	100	700
L6	-100	-100	-100	-	-600
V7	600	200	2100	200	200
T7	1800	1000	1300	500	1000
L7	-1000	-500	-700	-300	-600
V8	600	200	2100	200	200
T8	1100	700	900	100	700
L8	-600	-300	-400	-100	-400
W(PSF)	10	36.9	4.1	0	0

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

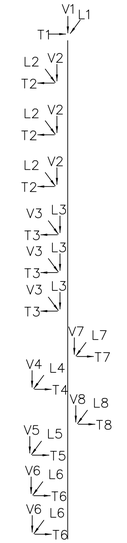
CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT–XXX27DT–144–CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'–0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



LOAD TREE

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENGINITIALS: S.E DATE: 12/03/21

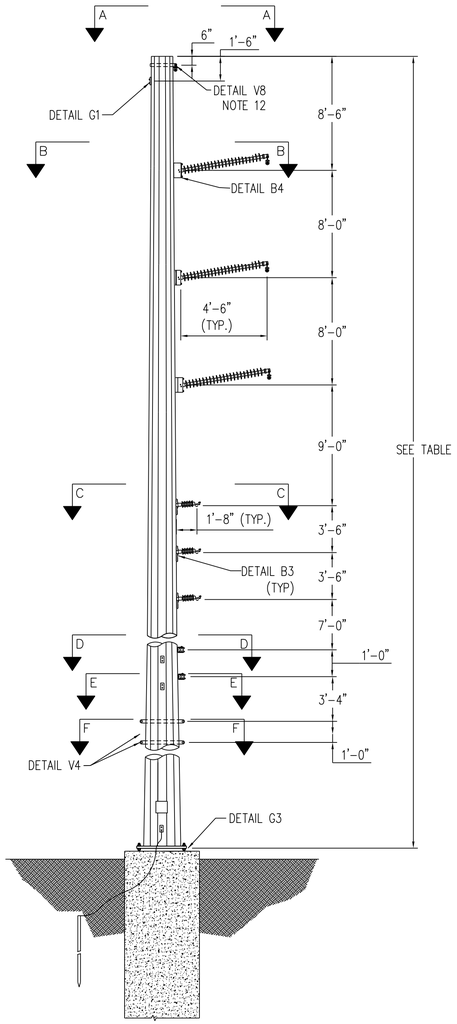
CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

ISSUED FOR BID

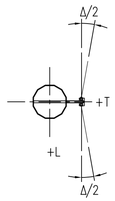
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
RUNNING ANGLE 10° WITH UNDERBUILD

DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. RA–15R_Vert_1.5–CT
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		

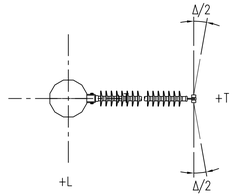


SINGLE CIRCUIT, VERTICAL, RUNNING ANGLE
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	HEIGHT (FT)	ANGLE Δ
143	85	7

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	200	200	600	100	600
T1	1100	900	1200	200	1100
L1	-100	-100	-100	100	300
V2	900	500	1300	400	1400
T2	4300	3600	3400	1000	3100
L2	-100	-100	-100	100	200
V3	500	300	1000	300	1000
T3	3900	5800	2800	600	2300
L3	-100	-100	-100	100	1300
V4	400	200	900	200	900
T4	2000	1700	1800	400	1600
L4	-100	-100	-100	100	1000
V5	300	100	800	100	900
T5	900	1200	900	200	700
L5	-100	-100	-100	100	700
V6	500	200	1000	200	1100
T6	900	1600	1000	100	700
L6	-100	-100	-100	-	600
W(PSF)	10	36.9	4.1	0	0

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 6/1 STRAND "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
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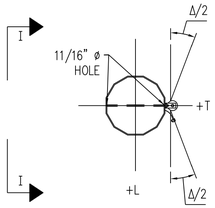
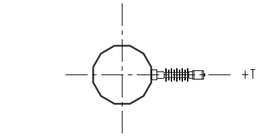
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. POLE DESIGN AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
11. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
12. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
13. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



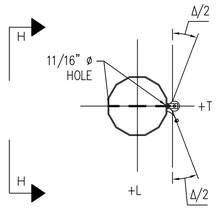
SECTION D-D (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 6/1 STRAND
"RAVEN" ACSR



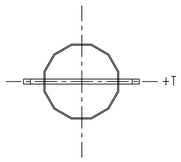
SECTION C-C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/ STRAND
"MERLIN" ACSR



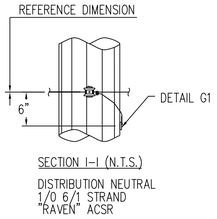
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



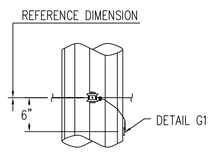
SECTION F-F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



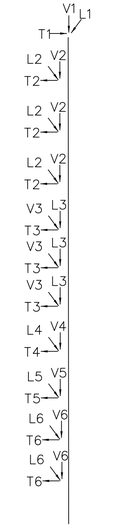
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 6/1 STRAND
"RAVEN" ACSR



SECTION H-H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



LOAD TREE

CONSTRUCTION NOTE:
REMOVE OLD WIRE LABELS WITH ORANGE TEXT,
INSTALL NEW WIRE LABELS WITH GREEN TEXT

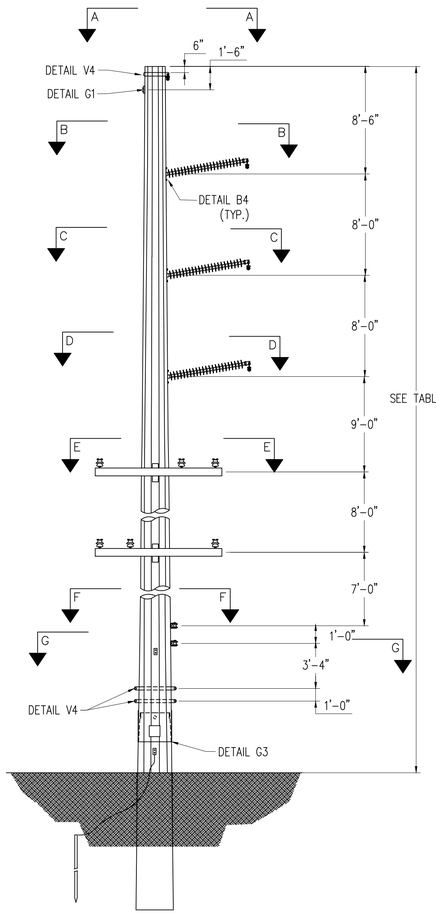
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

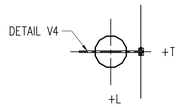
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
RUNNING ANGLE 10° WITH UNDERBUILD

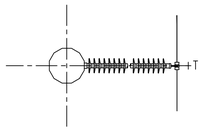
DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. RA-15R_Vert_1-CT
CKD. R. DILLABOUGH	APPD. S. ECKMAN	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

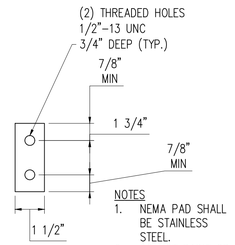


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD

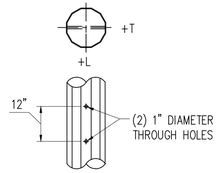


SECTION B-B, C-C, D-D (N.T.S.)

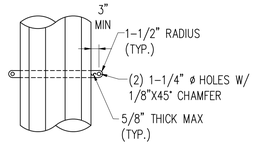
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



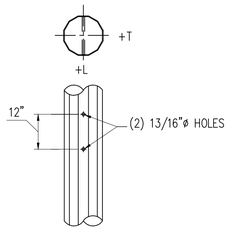
NEMA GROUNDING PAD
(N.T.S.)
DETAIL G1



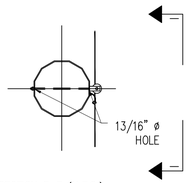
POST INSULATOR MOUNTING HOLES
(N.T.S.)
DETAIL B4



TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)
DETAIL V4

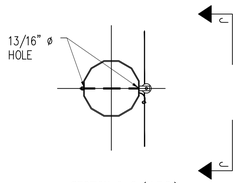


CROSSARM BRACKET INSTALLATION HOLES
(N.T.S.)
DETAIL CA1



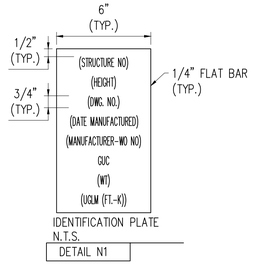
SECTION F-F (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"

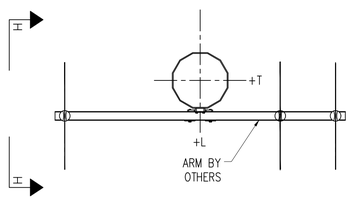


SECTION G-G (N.T.S.)

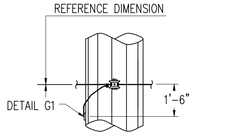
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



IDENTIFICATION PLATE
N.T.S.
DETAIL N1

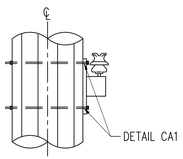


SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC ARBUTUS

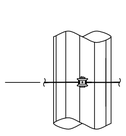


SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"

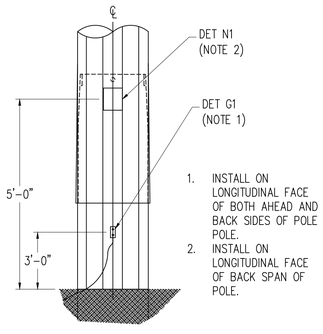


SECTION H-H (N.T.S)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC ARBUTUS



SECTION J-J (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



BASE GROUNDING DETAIL
N.T.S.
DETAIL G3

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
2	85	S-10.0	30	25

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 2-795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

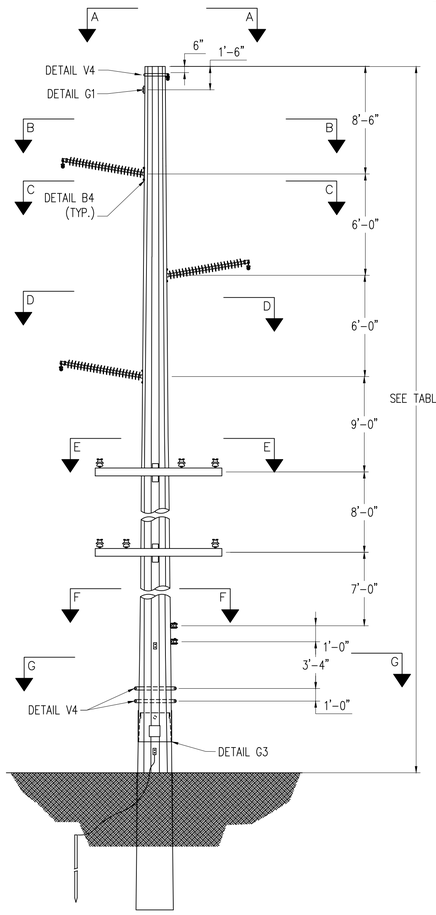
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG:INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAILED DESIGN K.C DATE9/8/22

ISSUED FOR BID

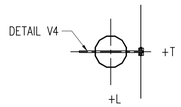
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

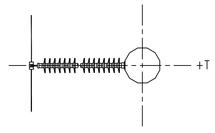
DWN.SJP	DATE 8/26/2022	DWG. NO. TAN-VERT-2DIST-ARM
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

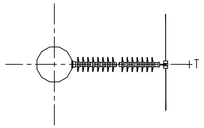


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



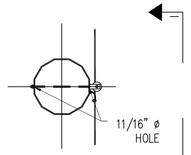
SECTION B-B, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



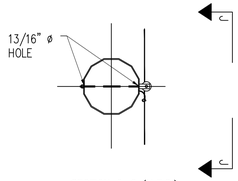
SECTION C-C (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



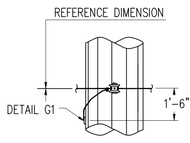
SECTION F-F (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"



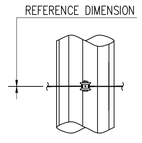
SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



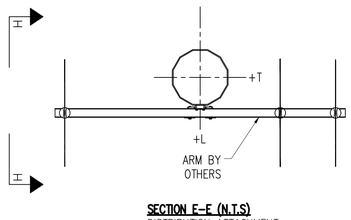
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 KCMIL "RAVEN" ACSR

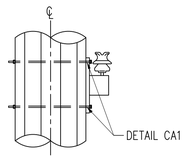


SECTION J-J (N.T.S.)

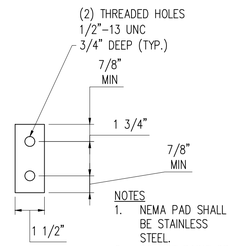
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC ARBUTUS

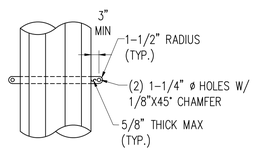


SECTION H-H (N.T.S)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC ARBUTUS

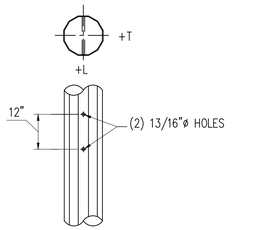


NOTES
1. NEMA PAD SHALL BE STAINLESS STEEL.
2. DO NOT PAINT OR GALVANIZE THIS SURFACE.

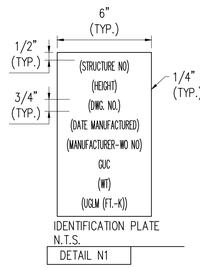
NEMA GROUNDING PAD
(N.T.S.)
DETAIL G1



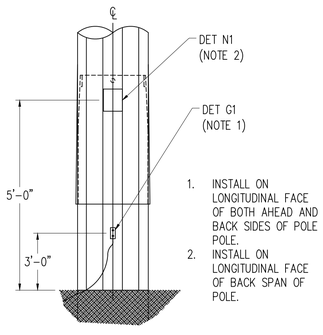
TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)
DETAIL V4



CROSSARM BRACKET INSTALLATION HOLES
(N.T.S.)
DETAIL CA1

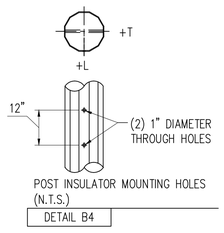


IDENTIFICATION PLATE
N.T.S.
DETAIL N1



1. INSTALL ON LONGITUDINAL FACE OF BOTH AHEAD AND BACK SIDES OF POLE POLE.
2. INSTALL ON LONGITUDINAL FACE OF BACK SPAN OF POLE.

BASE GROUNDING DETAIL
N.T.S.
DETAIL G3



POST INSULATOR MOUNTING HOLES
(N.T.S.)
DETAIL B4

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
7	80	S-10.0	30	25

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 2-795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 1/0 "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

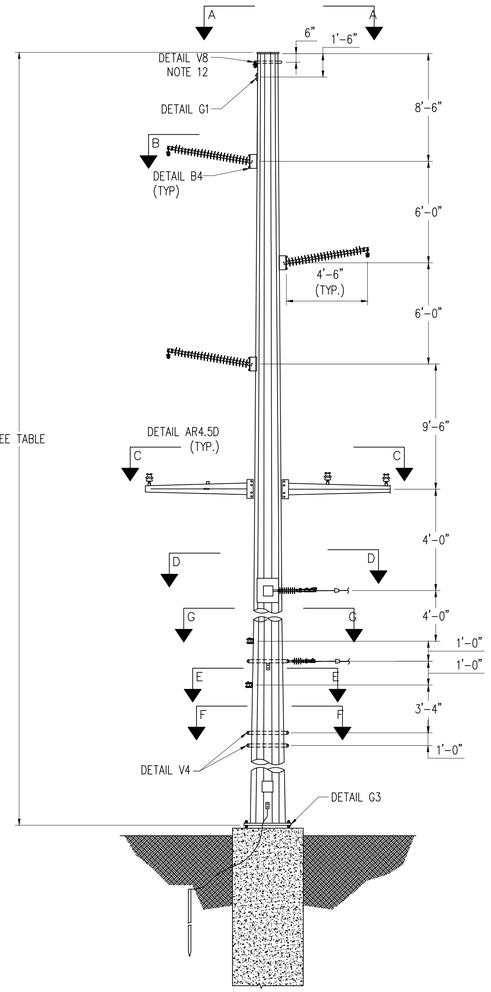
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG:INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE FINAL DESIGN KMC DATE 9/7/22

ISSUED FOR BID

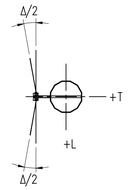
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

DWN.SJP	DATE 9/7/22	DWG. NO. TAN-DELTA-2DIST-ARM
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		

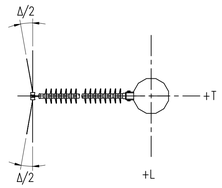


SINGLE CIRCUIT, VERTICAL, DEADEND
LOOKING AHEAD SPAN
SCALE: N.T.S.



SECTION A-A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



SECTION B-B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

STR #	LENGTH (FT)	ANGLE Δ
8	80	−1
75	75	−1
85	80	−1

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	209	103	594	76	648
T1	-340	-397	340	24	130
L1	1	1	1	0	0
V2	925	507	1341	406	1456
T2	-1394	-1626	-1122	105	-823
L2	-32	-34	-25	0	-20
V3	629	326	1053	257	1146
T3	670	967	541	69	259
L3	1	2	0	0	0
V4	230	116	627	89	694
T4	-480	-622	420	39	171
L4	0	0	0	0	0
V5	268	127	732	87	801
T5	457	611	356	28	84
L5	1	1	1	0	0
V6	404	205	935	131	1023
T6	466	936	413	17	114
L6	-2	-3	-1	0	0
V7	197	145	468	68	502
T7	-2930	-1935	-2882	-703	-2980
L7	-268	-253	-277	-37	-177
V8	176	123	431	61	465
T8	-3390	-3747	-2730	-708	-3004
L8	-239	-276	-295	-31	-129

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.

LOAD CASES

CASE 1 NESC MEDIUM: 15°, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60°, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15°, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

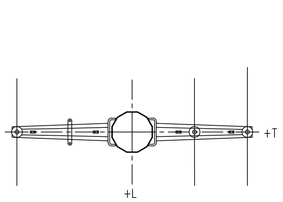
CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: AS NOTED
DISTRIBUTION NEUTRAL: 1/0 ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

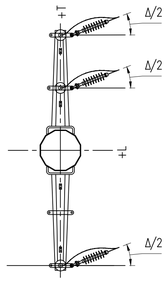
NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION.VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
11. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
12. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.



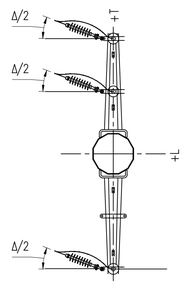
SECTION C-C (N.T.S.)

DISTRIBUTION ATTACHMENT
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC



SECTION D-D (N.T.S.) STR 8

DISTRIBUTION ATTACHMENT
336 KCMIL 18/1 STRAND
"MERLIN" ACSR

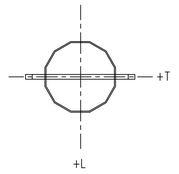


SECTION D-D (N.T.S.)STR 75 & 85

DISTRIBUTION ATTACHMENT
1/0 KCMIL "RAVEN" ACSR

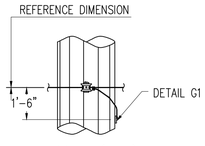
SECTION E-E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



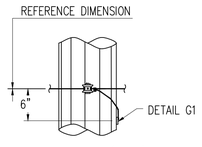
SECTION F-F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



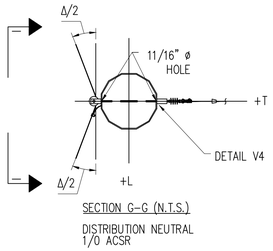
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR (STRS 75 & 85)
795 KCMIL 37/0 STRAND
"ARBUTUS" AAC (STR 8)



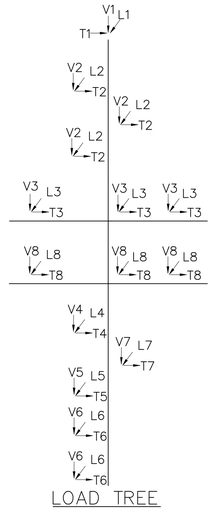
SECTION H-H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION G-G (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 ACSR



LOAD TREE

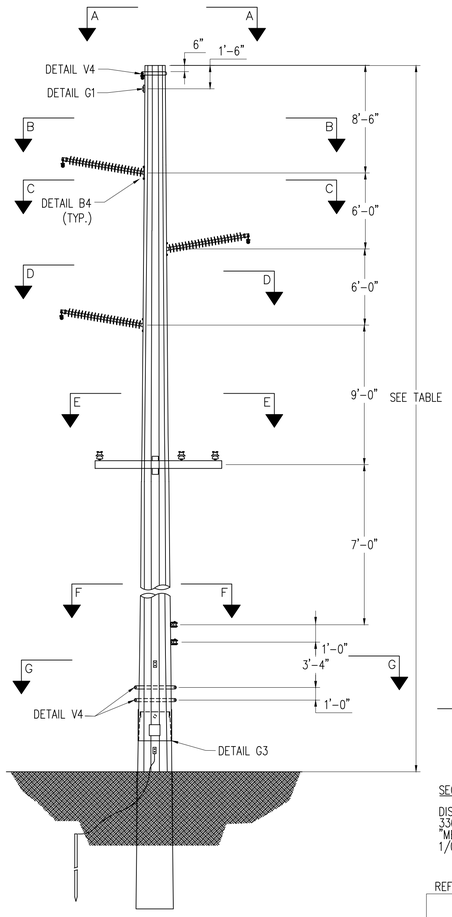
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

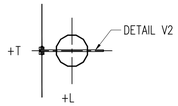
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
TANGENT DELTA WITH UNDERBUILD

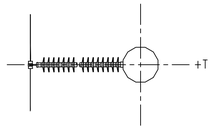
DWN.D. CHAMBLISS	DATE 09/07/2022	DWG. NO.
CKD. A. KELSH	APPD. K. CHUDOMEL	TAN-DELTA-ARM-TAP-STRS 8,75,85
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

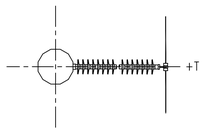


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
"7#9" ALUMOWELD



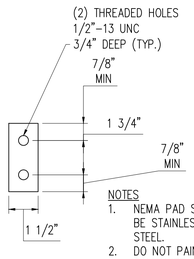
SECTION B-B, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

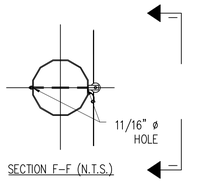


SECTION C-C (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

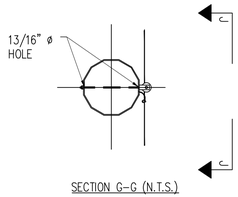


NEMA GROUNDING PAD
(N.T.S.)
DETAIL G1



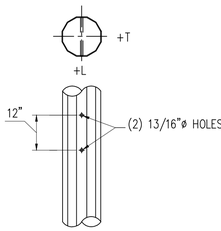
SECTION F-F (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"(FOR 795 ACSR PRIMARY CONDUCTOR)
1/0 "RAVEN" ACSR (FOR 336.4 ACSR PRIMARY CONDUCTOR)

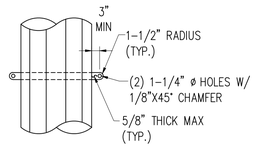


SECTION G-G (N.T.S.)

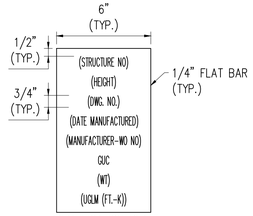
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



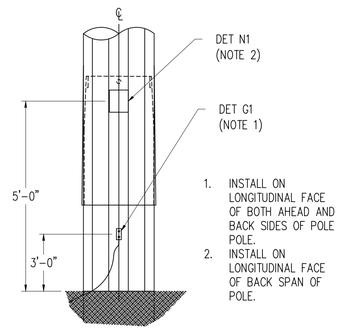
CROSSARM BRACKET INSTALLATION HOLES
(N.T.S.)
DETAIL CA1



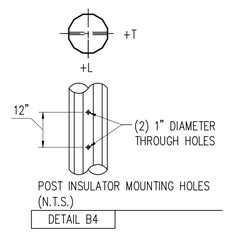
TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)
DETAIL V4



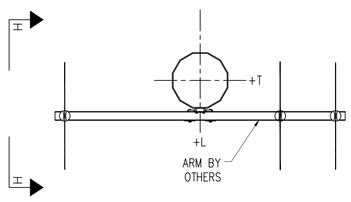
IDENTIFICATION PLATE
N.T.S.
DETAIL N1



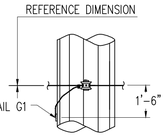
BASE GROUNDING DETAIL
N.T.S.
DETAIL G3



POST INSULATOR MOUNTING HOLES
(N.T.S.)
DETAIL B4

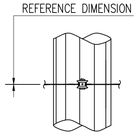


SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC ARBUTUS (STRS 5-52)
336.4 KCMIL 18/1 STRAND "MERLIN ACSR" (OTHERS)



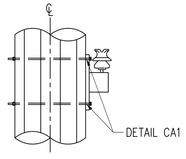
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"(FOR 795 ACSR PRIMARY CONDUCTOR)
& "RAVEN" ACSR (FOR 336.4 ACSR PRIMARY CONDUCTOR)



SECTION J-J (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



SECTION H-H (N.T.S)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC ARBUTUS

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
9	75	S-09.0	28	24
10	75	S-09.0	30	25
14	80	S-11.0	30	25
15	80	S-11.0	30	25
16	75	S-09.0	30	25
17	75	S-08.0	28	24
19	80	S-11.0	30	25
20	80	S-11.0	30	25
26	75	S-11.0	30	25
27	75	S-09.0	30	25
28	80	S-11.0	30	25
29	80	S-11.0	30	25
30	80	S-11.0	30	25
31	75	S-09.0	30	25
32	75	S-10.0	30	25
33	80	S-11.0	30	25
34	80	S-11.0	30	25
66	70	S-08.0	28	24
69	70	S-07.4	28	24
70	70	S-09.0	28	24
71	70	S-07.4	28	24
76	80	S-11.0	30	25
77	80	S-09.0	30	25
78	80	S-11.0	30	24
79	80	S-10.0	30	25
80	80	S-11.0	30	24
81	80	S-07.4	28	24
82	80	S-07.4	28	24
86	75	S-08.0	28	24
87	75	S-07.4	28	24
88	70	S-07.4	28	24
89	70	S-07.4	28	24
90	70	S-07.4	28	24
91	70	S-11.0	28	24
92	70	S-07.04	28	24
93	70	S-07.04	28	24
94	75	S-11.0	28	24
95	70	S-07.4	28	24
96	70	S-07.4	28	24
97	70	S-07.4	28	24
98	75	S-08.0	28	24
103	75	S-09.0	28	24
105	70	S-05.7	28	24
106	70	S-05.7	28	24
107	70	S-05.7	28	24
108	70	S-06.5	28	24
109	70	S-07.4	28	24
110	70	S-07.4	28	24
123	80	S-09.0	30	25
124	80	S-09.0	28	24
146	75	S-07.0	28	24
159	75	S-09.0	28	24
160	70	S-08.0	28	24
161	70	S-08.0	28	24
163	70	S-08.0	28	24

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC (STRS 5-52)
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR (OTHERS)
DISTRIBUTION NEUTRAL: 1/0 "RAVEN" ACSR (OTHERS)
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR (STRS 5-52)
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.
6. DISTRIBUTION IS FUTURE FOR STRUCTURES 5 THROUGH 52.

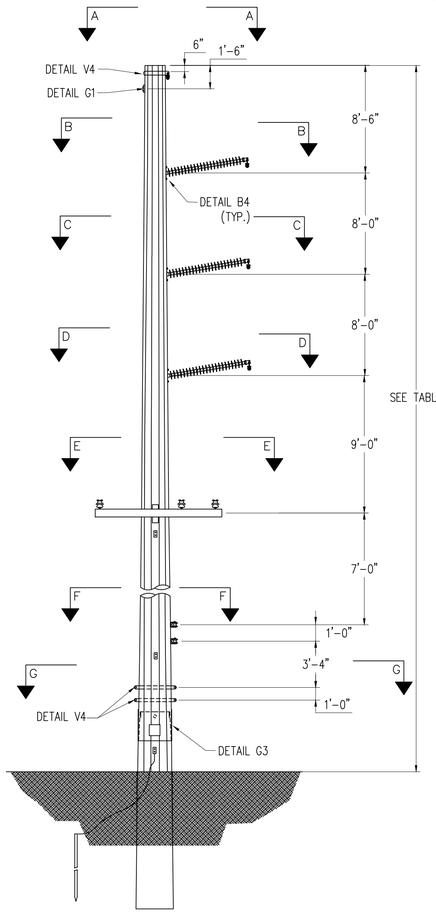
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG.INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAILED DESIGN K.C DATE 9/8/22

ISSUED FOR BID

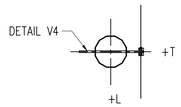
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

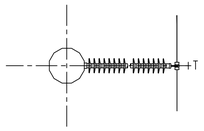
DWN.J.THOMAS	DATE 8/26/2022	DWG. NO. TAN-DELTA-DIST-ARM
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

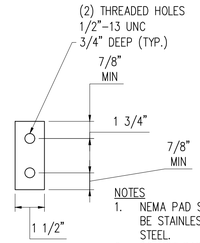


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



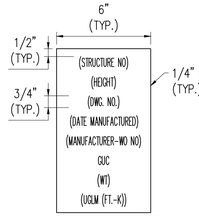
SECTION B-B, C-C, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

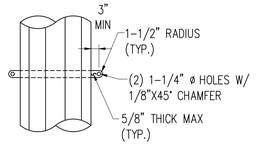


NOTES
1. NEMA PAD SHALL BE STAINLESS STEEL.
2. DO NOT PAINT OR GALVANIZE THIS SURFACE.

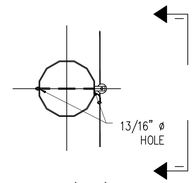
NEMA GROUNDING PAD
(N.T.S.)
DETAIL G1



IDENTIFICATION PLATE
N.T.S.
DETAIL N1

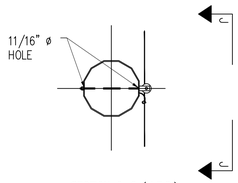


TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)
DETAIL V4



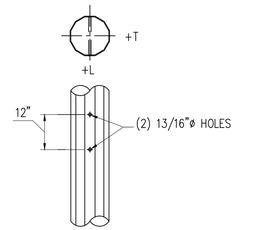
SECTION F-F (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"

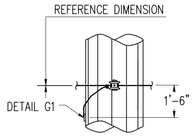


SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER

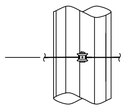


CROSSARM BRACKET INSTALLATION HOLES
(N.T.S.)
DETAIL CA1



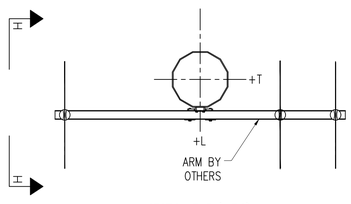
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"

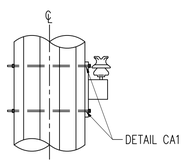


SECTION J-J (N.T.S.)

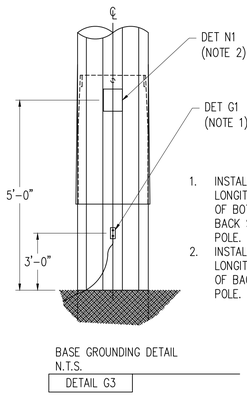
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC ARBUTUS

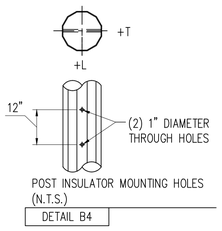


SECTION H-H (N.T.S)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC ARBUTUS



1. INSTALL ON LONGITUDINAL FACE OF BOTH AHEAD AND BACK SIDES OF POLE POLE.
2. INSTALL ON LONGITUDINAL FACE OF BACK SPAN OF POLE.

BASE GROUNDING DETAIL
N.T.S.
DETAIL G3



POST INSULATOR MOUNTING HOLES
(N.T.S.)
DETAIL B4

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 795 KCMIL 37/0 STRAND "ARBUTUS"AAC
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.
6. DISTRIBUTION IS FUTURE.

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
12	75	S-08.0	28	24
24	85	S-09.0	30	25
36	75	S-09.0	28	24
37	80	S-11.0	28	24
39	75	S-08.0	28	24
41	80	S-0.80	28	24
43	85	S-11.0	33	25
44	80	S-0.90	30	25
47	85	S-11.0	30	25
48	90	S-11.0	30	25
51	90	S-11.0	33	25

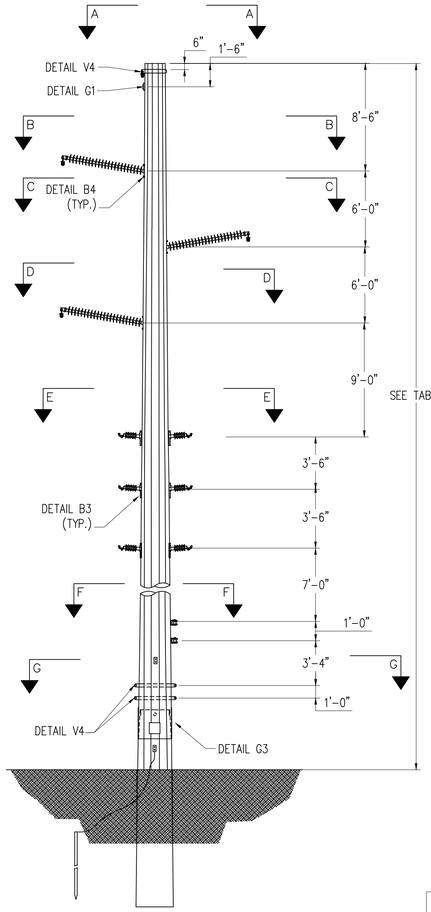
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG.INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAILED DESIGN K.C. DATE 9/8/22

ISSUED FOR BID

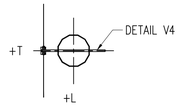
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

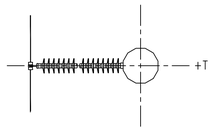
DWN.SJP	DATE 8/26/2022	DWG. NO. TAN-VERT-DIST-ARM
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

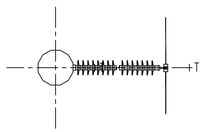


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
"7#9" ALUMOWELD



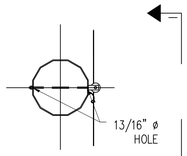
SECTION B-B, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



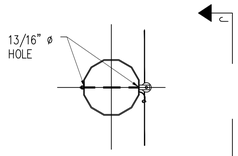
SECTION C-C (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



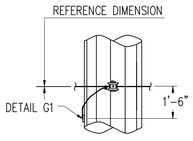
SECTION F-F (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"



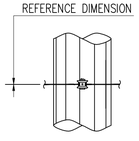
SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



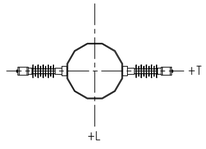
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"

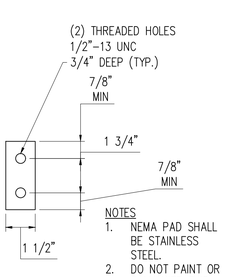


SECTION J-J (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER

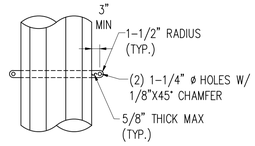


SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND "MERLIN" ACSR

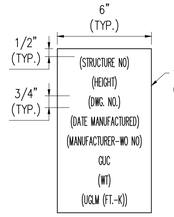


NOTES
1. NEMA PAD SHALL BE STAINLESS STEEL.
2. DO NOT PAINT OR GALVANIZE THIS SURFACE.

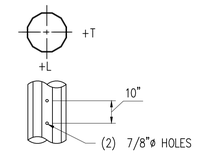
NEMA GROUNDING PAD
(N.T.S.)
DETAIL G1



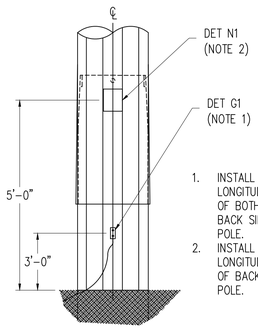
TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)
DETAIL V4



IDENTIFICATION PLATE
N.T.S.
DETAIL N1

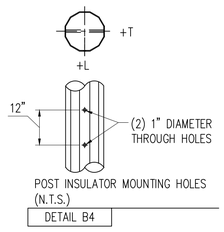


DISTRIBUTION POST INSULATOR
BRACKET MOUNTING HOLES
(N.T.S.)
DETAIL B3



1. INSTALL ON LONGITUDINAL FACE OF BOTH AHEAD AND BACK SIDES OF POLE POLE.
2. INSTALL ON LONGITUDINAL FACE OF BACK SPAN OF POLE.

BASE GROUNDING DETAIL
N.T.S.
DETAIL G3



POST INSULATOR MOUNTING HOLES
(N.T.S.)
DETAIL B4

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
53	90	S-11.0	30	25
54	90	S-11.0	30	25
57	85	S-11.0	30	25
58	80	S-10.0	30	25
59	80	S-10.0	30	25
60	80	S-10.0	30	25

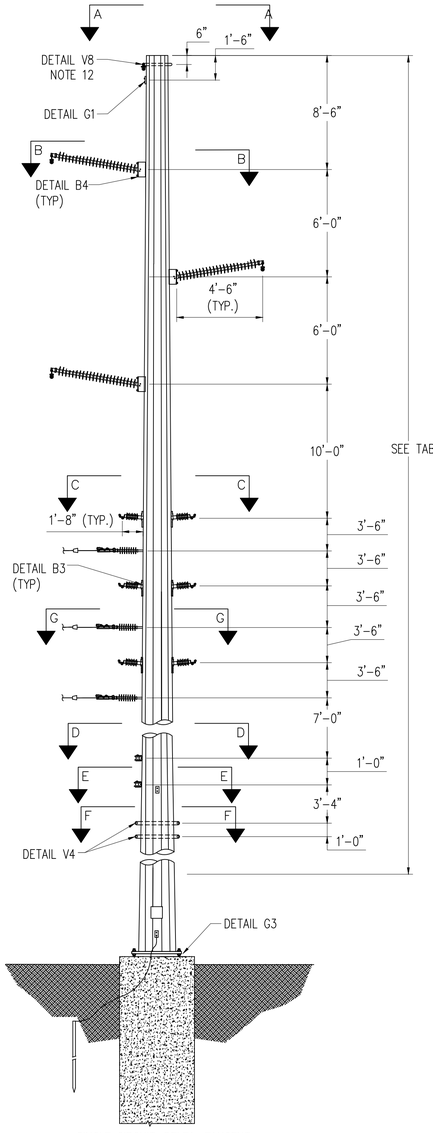
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG:INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAIL DESIGN K.C DATE 9/8/22

ISSUED FOR BID

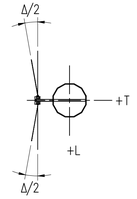
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

DWN.J.THOMAS	DATE	DWG. NO.
CKD. A.KELSCH	APPD. K.CHUDOME	TAN-DELTA-DC DIST POST
SCALE: NONE		

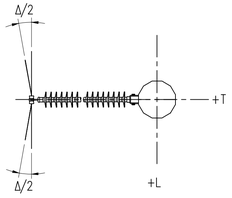


SINGLE CIRCUIT, DELTA, TANGENT
LOOKING AHEAD SPAN
SCALE: N.T.S.



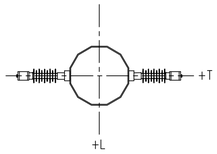
SECTION A–A (N.T.S.)

OHGW ATTACHMENT
"7/9" ALUMOWELD



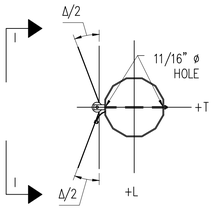
SECTION B–B (N.T.S.)

CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



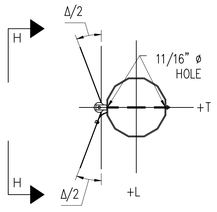
SECTION C–C (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



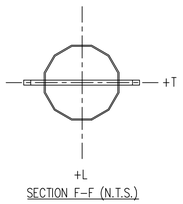
SECTION D–D (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



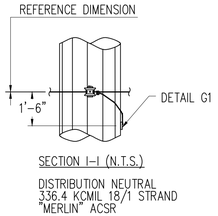
SECTION E–E (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



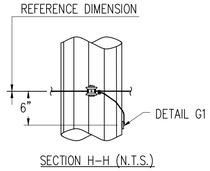
SECTION F–F (N.T.S.)

3RD PARTY COMMUNICATIONS
ATTACHMENT



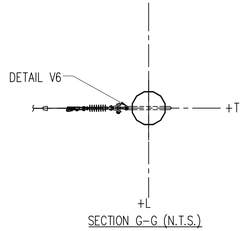
SECTION I–I (N.T.S.)

DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



SECTION H–H (N.T.S.)

COMMUNICATIONS ATTACHMENT
"AT–XXX27DT–144–CLCB"
144 FIBER



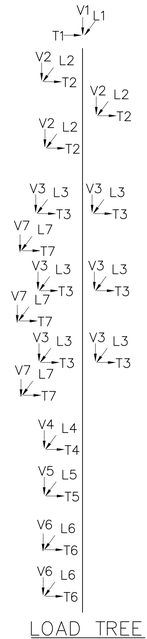
SECTION G–G (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR

STR #	LENGTH (FT)	ANGLE Δ
55	95	1
56	95	1

LOADING TABLE					
LOAD	CASE 1	CASE 2	CASE 3	CASE 7	CASE 9
V1	257	142	707	94	769
T1	330	399	373	25	127
L1	0	1	0	0	0
V2	1201	690	1648	505	1780
T2	985	1499	754	125	407
L2	1	6	0	0	0
V3	496	279	970	185	1054
T3	534	735	480	50	202
L3	1	2	0	0	0
V4	292	102	745	110	821
T4	530	694	479	50	200
L4	0	-1	0	0	0
V5	246	58	757	63	833
T5	406	713	372	24	77
L5	0	-1	0	0	0
V6	407	125	974	133	1071
T6	497	1024	426	12	90
L6	-1	-1	0	0	0
V7	376	270	458	157	468
T7	-991	-2119	-179	-141	-388
L7	-2100	-1049	-1543	-560	-1539

ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (psf) TO BE APPLIED TO STRUCTURE.



LOAD TREE

LOAD CASES

CASE 1 NESC MEDIUM: 15*, .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50

CASE 2 NESC HIGH WIND: 60*, 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 3 NESC ICE WITH WIND: 15*, 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00

CASE 7 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

CASE 9 UNBALANCED ICE: 32 DEGREES, 1" ICE, NO WIND
OLF: L=1.10, T=1.10, V=1.10

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT–XXX27DT–144–CLCB" 144 FIBER

NOTES:

1. ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
2. STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
3. STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
4. WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
5. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
6. MINIMUM VANG PLATE THICKNESS = 1/2".
7. WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
8. THE DEFLECTION AT THE POLE TOP SHALL BE LIMITED TO 1.5% OF THE POLE HEIGHT UNDER THE DEFLECTION CASE. POLES MAY BE CAMBERED TO FALL WITHIN THE DESIGN LIMIT.
9. MAXIMUM DEFLECTION AT TOP OF THE STRUCTURE SHALL BE LIMITED TO 10% OF STRUCTURE HEIGHT UNDER ALL LOAD CASES WITH THE EXCEPTION TO THE 60°F NO WIND LOAD CASE.
10. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
11. ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
12. MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.
13. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION ATTACHMENT WILL BE DRILLED IN THE FIELD.

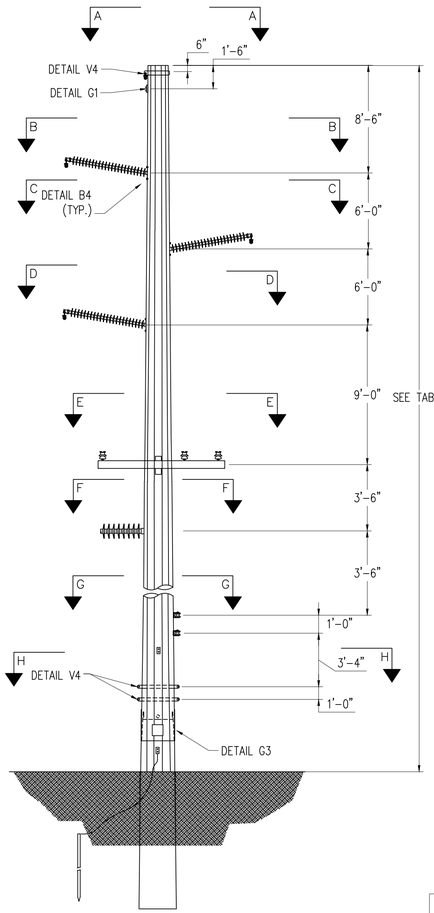
NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: S.E DATE: 12/03/21

ISSUED FOR BID

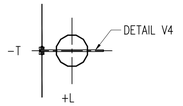
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

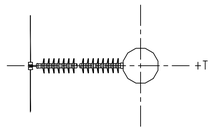
DWN.D. CHAMBLISS	DATE 12/03/21	DWG. NO. TAN–DELT_DIST–DC–STR55–56
CKD. A. KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

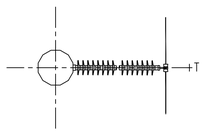


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
"7#9" ALUMOWELD



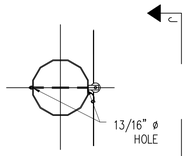
SECTION B-B, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



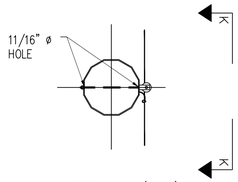
SECTION C-C (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



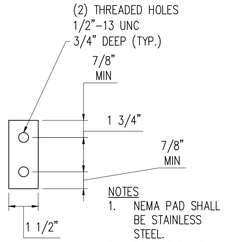
SECTION G-G (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR



SECTION H-H (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER

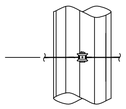


NEMA GROUNDING PAD
(N.T.S.)

DETAIL G1

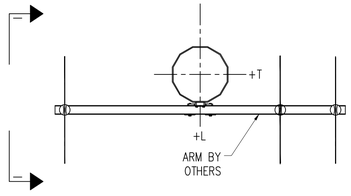
SECTION J-J (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR

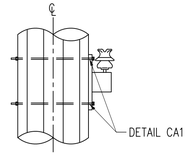


SECTION K-K (N.T.S.)

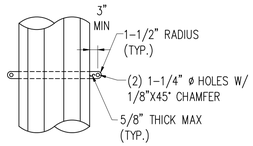
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND "MERLIN" ACSR

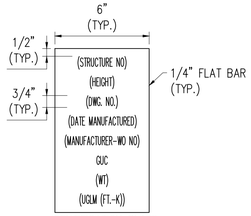


SECTION I-I (N.T.S)
DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND "MERLIN" ACSR



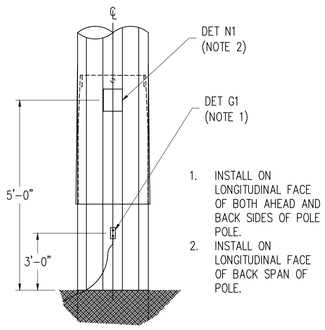
TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)

DETAIL V4



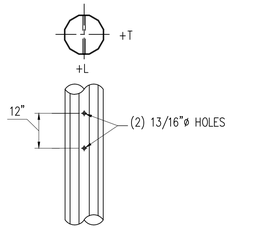
IDENTIFICATION PLATE
N.T.S.

DETAIL N1



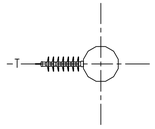
BASE GROUNDING DETAIL
N.T.S.

DETAIL G3



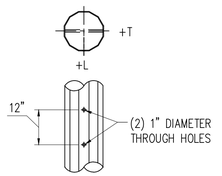
CROSSARM BRACKET INSTALLATION HOLES
(N.T.S.)

DETAIL CA1



SECTION F-F (N.T.S.)

DISTRIBUTION ATTACHMENT
VARIOUS



POST INSULATOR MOUNTING HOLES
(N.T.S.)

DETAIL B4

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
67	70	S-08.0	28	24
72	70	S-10.00	30	25
73	80	S-11.0	30	25
74	80	S-11.0	30	25
104	70	S-09.0	28	24
111	75	S-09.0	28	24
162	70	S-07.4	28	24

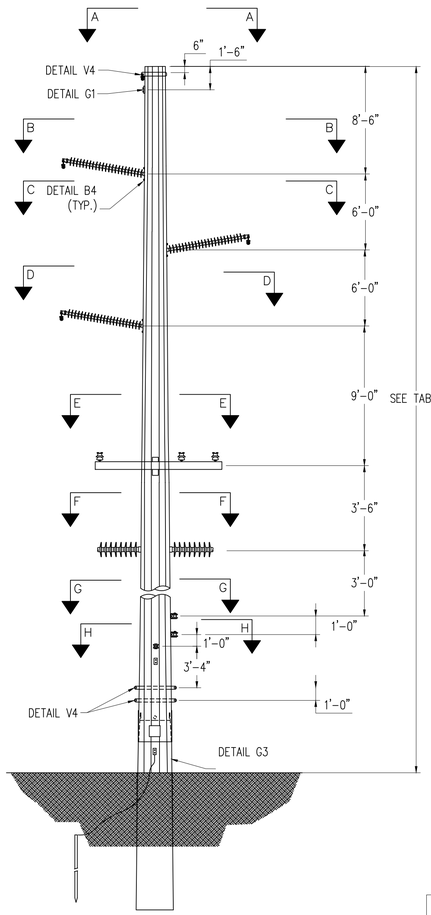
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG:INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAILED DESIGN K.C DATE 9/8/22

ISSUED FOR BID

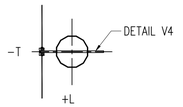
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

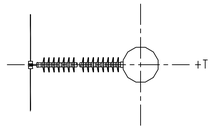
DWN.J.THOMAS	DATE 8/26/2022	DWG. NO. TAN-DELTA-DIST-ARM-1TAP
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

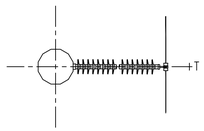


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



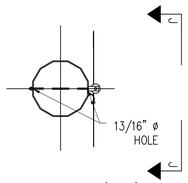
SECTION B-B, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



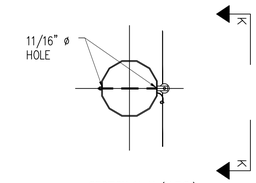
SECTION C-C (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



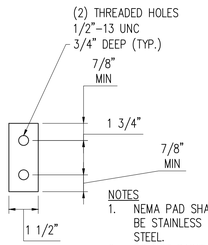
SECTION G-G (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR



SECTION H-H (N.T.S.)

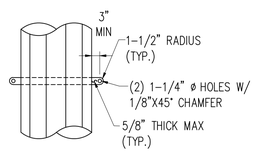
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



NOTES
1. NEMA PAD SHALL BE STAINLESS STEEL.
2. DO NOT PAINT OR GALVANIZE THIS SURFACE.

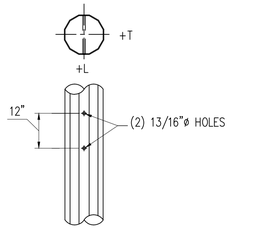
NEMA GROUNDING PAD
(N.T.S.)

DETAIL G1



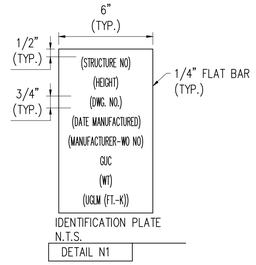
TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)

DETAIL V4



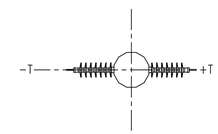
CROSSARM BRACKET INSTALLATION HOLES
(N.T.S.)

DETAIL CA1



IDENTIFICATION PLATE
N.T.S.

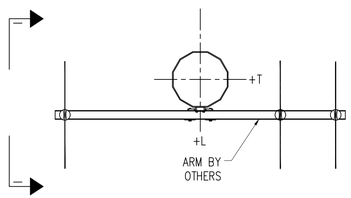
DETAIL N1



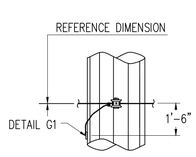
+L

SECTION F-F (N.T.S.)

DISTRIBUTION ATTACHMENTS
1/0 ACSR "RAVEN"
336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
(STR 68 HAS A TAP ONLY TO NORTH)

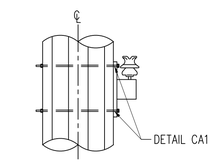


SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND "MERLIN" ACSR

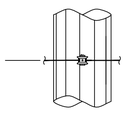


SECTION J-J (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR

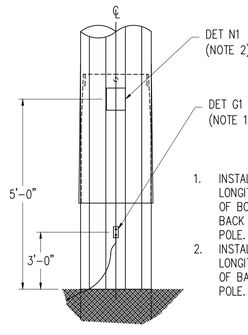


SECTION I-I (N.T.S)
DISTRIBUTION ATTACHMENT
336.4 KCMIL ACSR MERLIN



SECTION K-K (N.T.S.)

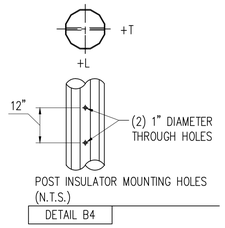
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



1. INSTALL ON LONGITUDINAL FACE OF BOTH AHEAD AND BACK SIDES OF POLE POLE.
2. INSTALL ON LONGITUDINAL FACE OF BACK SPAN OF POLE.

BASE GROUNDING DETAIL
N.T.S.

DETAIL G3



POST INSULATOR MOUNTING HOLES
(N.T.S.)

DETAIL B4

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
68	70	S-11.0	28	24
158	75	S-11.0	30	25

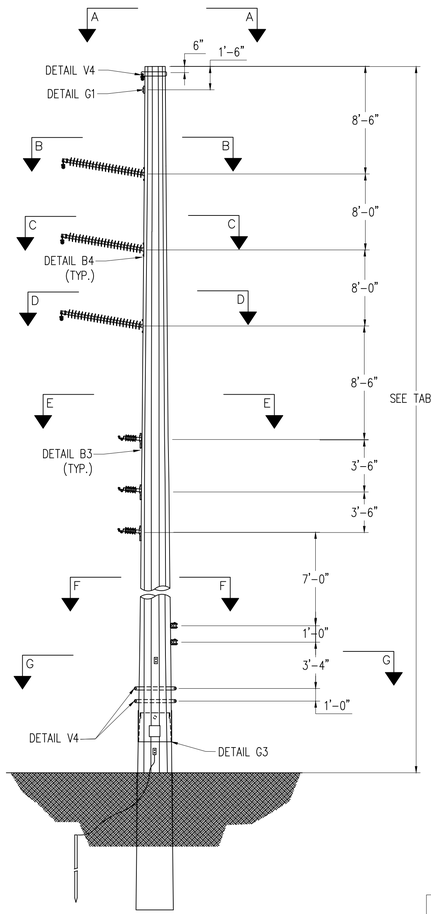
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG:INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAILED DESIGN K.C DATE 9/8/22

ISSUED FOR BID

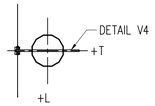
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

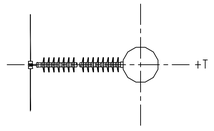
DWN.J.THOMAS	DATE 8/26/2022	DWG. NO. TAN-DELTA-DIST-ARM-2TAP
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

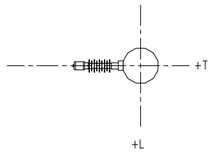


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



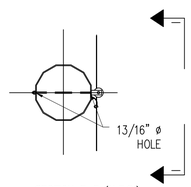
SECTION B-B, C-C, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



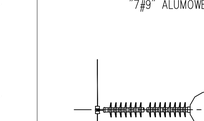
SECTION E-E (N.T.S.)

DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN ACSR"



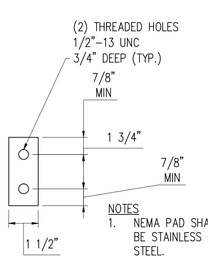
SECTION F-F (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR



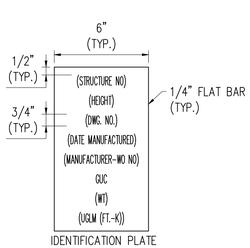
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR



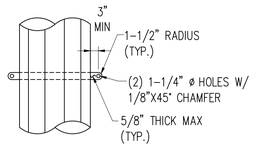
NEMA GROUNDING PAD
(N.T.S.)

DETAIL G1



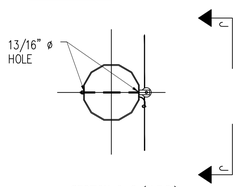
IDENTIFICATION PLATE
N.T.S.

DETAIL N1



TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)

DETAIL V4

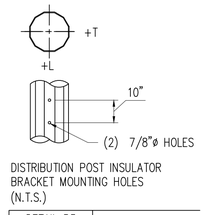


SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER

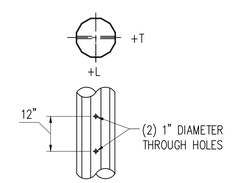
SECTION J-J (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



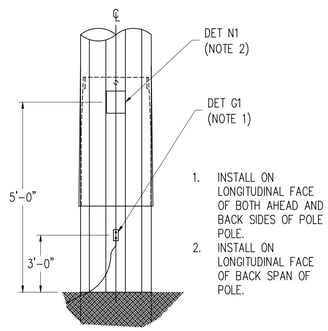
DISTRIBUTION POST INSULATOR
BRACKET MOUNTING HOLES
(N.T.S.)

DETAIL B3



POST INSULATOR MOUNTING HOLES
(N.T.S.)

DETAIL B4



BASE GROUNDING DETAIL
N.T.S.

DETAIL G3

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
83	85	S-08.0	28	24
117	80	S-07.4	28	24
118	80	S-07.4	28	24
129	85	S-09.0	30	25
133	80	S-07.4	28	24
137	80	S-07.4	28	24
139	85	S-07.4	28	24
155	85	S-09.0	28	24

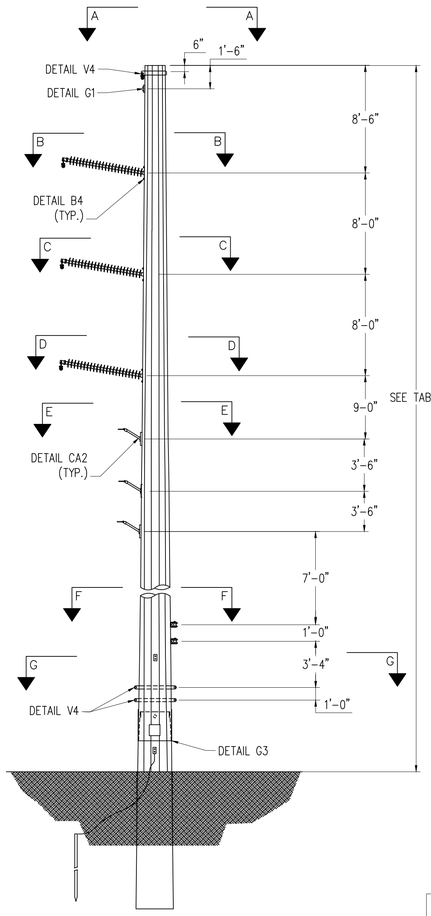
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG:INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAILED DESIGN KMC DATE 9/8/22

ISSUED FOR BID

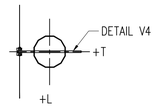
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

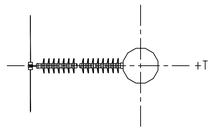
DWN.SJP	DATE 8/26/2022	DWG. NO. TAN-VERT-DIST-VERT
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

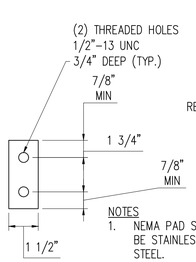


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
"#9 ALUMOWELD



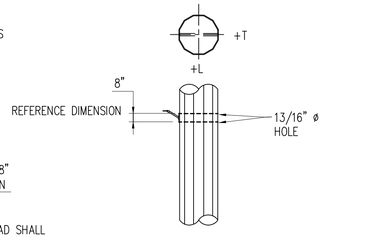
SECTION B-B, C-C, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

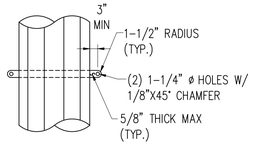


NOTES
1. NEMA PAD SHALL BE STAINLESS STEEL.
2. DO NOT PAINT OR GALVANIZE THIS SURFACE.

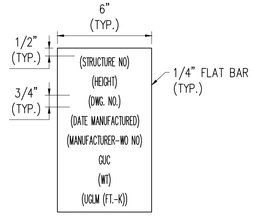
NEMA GROUNDING PAD
(N.T.S.)
DETAIL G1



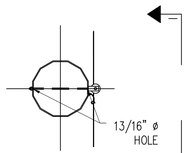
STANDOFF BRACKET INSTALLATION HOLES
(N.T.S.)
DETAIL CA2



TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)
DETAIL V4

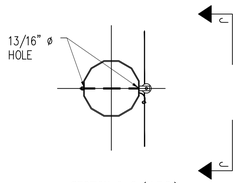


IDENTIFICATION PLATE
N.T.S.
DETAIL N1



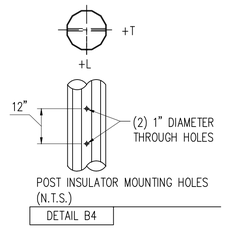
SECTION F-F (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR

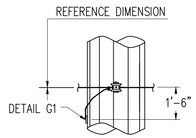


SECTION G-G (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER

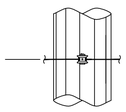


POST INSULATOR MOUNTING HOLES
(N.T.S.)
DETAIL B4



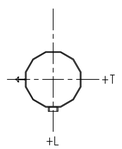
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR

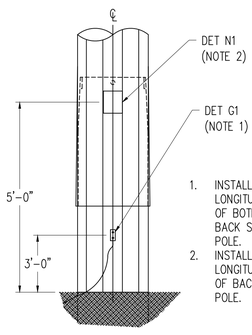


SECTION J-J (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND "MERLIN" ACSR



1. INSTALL ON LONGITUDINAL FACE OF BOTH AHEAD AND BACK SIDES OF POLE POLE.
2. INSTALL ON LONGITUDINAL FACE OF BACK SPAN OF POLE.

BASE GROUNDING DETAIL
N.T.S.
DETAIL G3

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
84	85	S-09.0	28	24
112	80	S-11.0	28	24
113	85	S-08.0	28	24
116	85	S-08.0	28	24
119	90	S-11.0	28	24
120	85	S-08.0	28	24
121	90	S-11.0	30	25
122	85	S-09.0	28	24
125	85	S-08.0	28	24
126	85	S-08.0	30	25
127	85	S-09.0	30	25
128	85	S-09.0	30	25
130	80	S-07.4	28	24
134	85	S-11.0	28	24
135	85	S-08.0	28	24
136	85	S-09.0	28	24
138	85	S-11.0	28	24
148	75	S-07.4	28	24
149	75	S-07.4	28	24
150	80	S-07.4	28	24
152	85	S-07.4	28	24
156	85	S-07.4	28	24
157	80	S-8.00	28	24

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

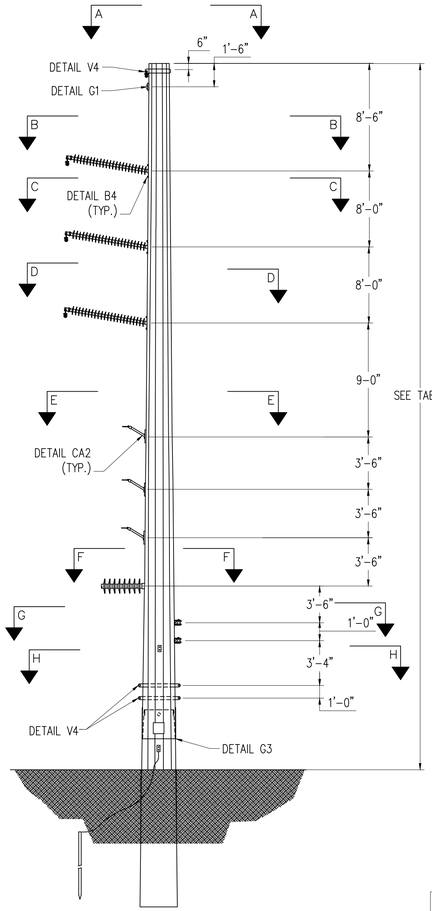
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENGINITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAILED DESIGN KC DATE 9/8/22

ISSUED FOR BID

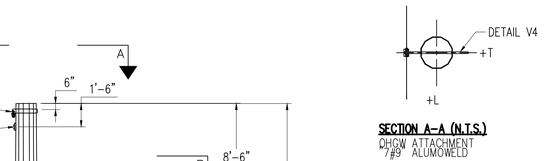
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

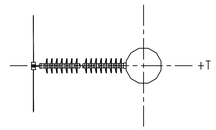
DWN.J.THOMAS	DATE 8/26/2022	DWG. NO. TAN-VERT-DIST-VERT-BRACKET
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



SINGLE CIRCUIT, VERTICAL, TANGENT
LOOKING AHEAD SPAN

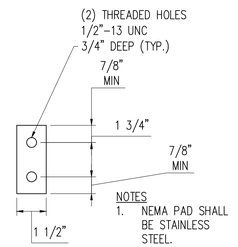


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



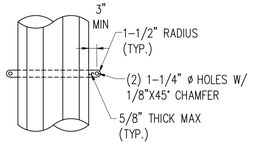
SECTION B-B, C-C, D-D (N.T.S.)

CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC

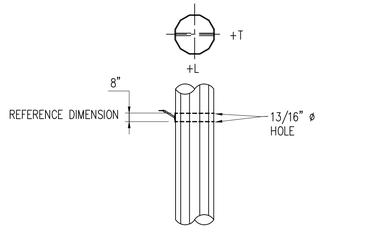


NOTES
1. NEMA PAD SHALL BE STAINLESS STEEL.
2. DO NOT PAINT OR GALVANIZE THIS SURFACE.

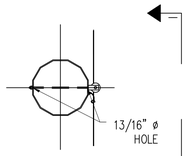
NEMA GROUNDING PAD
(N.T.S.)
DETAIL G1



TWO WAY ONE HOLE THROUGH VANG
(N.T.S.)
DETAIL V4

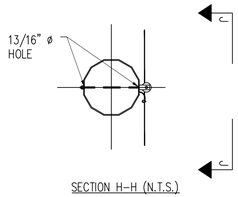


STANDOFF BRACKET INSTALLATION HOLES
(N.T.S.)
DETAIL CA2



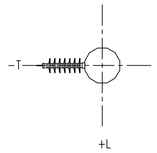
SECTION G-G (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR



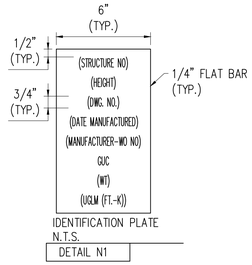
SECTION H-H (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER

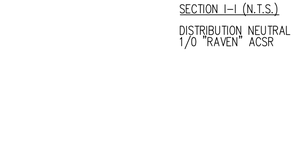


SECTION F-F (N.T.S.)

DISTRIBUTION ATTACHMENT
VARIOUS



IDENTIFICATION PLATE
N.T.S.
DETAIL N1



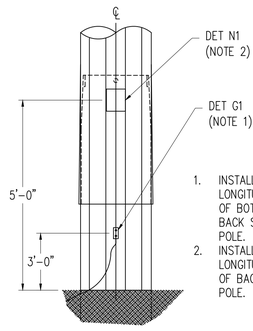
SECTION E-E (N.T.S)
DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND "MERLIN" ACSR

SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
1/0 "RAVEN" ACSR

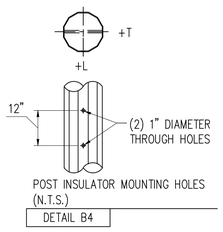
SECTION J-J (N.T.S.)

COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



1. INSTALL ON LONGITUDINAL FACE OF BOTH AHEAD AND BACK SIDES OF POLE POLE.
2. INSTALL ON LONGITUDINAL FACE OF BACK SPAN OF POLE.

BASE GROUNDING DETAIL
N.T.S.
DETAIL G3



POST INSULATOR MOUNTING HOLES
(N.T.S.)
DETAIL B4

WIRE DATA

OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
DISTRIBUTION NEUTRAL: 1/0 "RAVEN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE TO 12'-0" MAXIMUM.
4. ALL STRUCTURES SHALL BE GALVANIZED STEEL.
5. ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
131	80	S-07.4	28	24
144	85	S-11.0	30	25

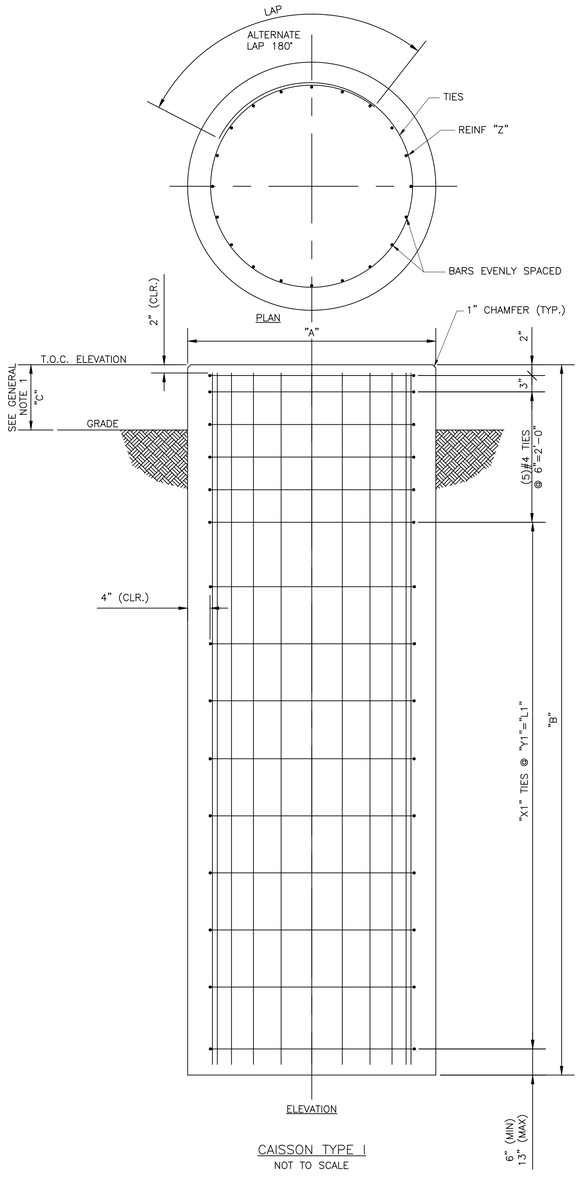
NO.	REVISIONS
1.A	MT. PLEASANT TO SUGG T-LINE PRELIMINARY DESIGN ENG:INITIALS DATE
1.B	MT. PLEASANT TO SUGG T-LINE DETAILED DESIGN K.C. DATE 9/8/22

ISSUED FOR BID

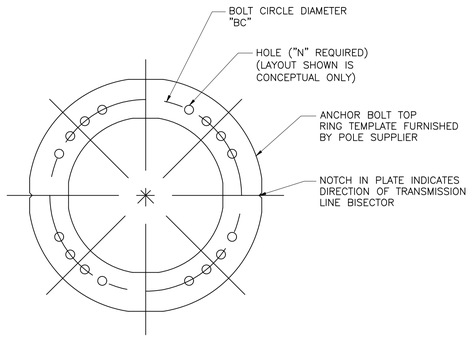
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO INDIGREEN SUB
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

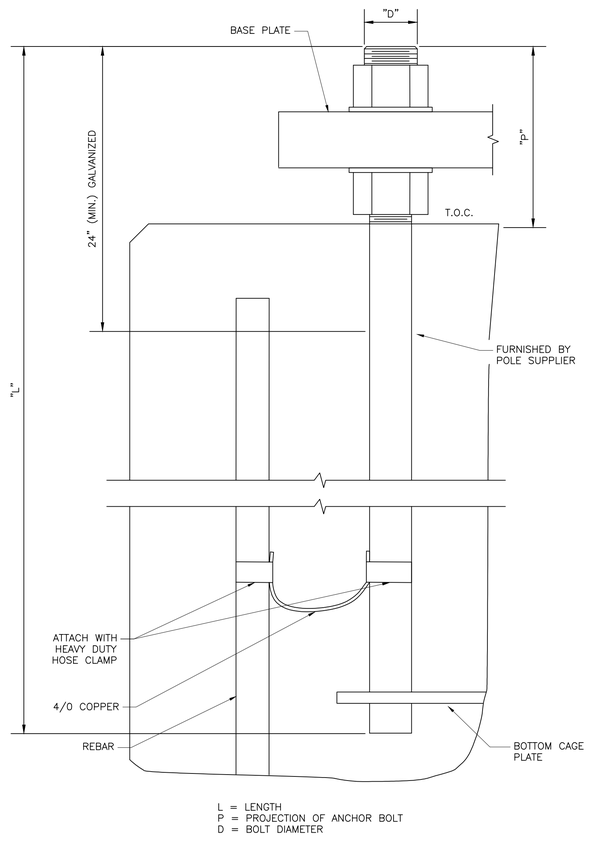
DWN.SJP	DATE 8/26/2022	DWG. NO. TAN-VERT-DIST-VERT-BRACKET-1TAP
CKD. A.KELSCH	APPD. K.CHUDOMEL	
SCALE: NONE		



CAISSON TYPE I
NOT TO SCALE



ANCHOR BOLT LAYOUT
NOT TO SCALE



L = LENGTH
P = PROJECTION OF ANCHOR BOLT
D = BOLT DIAMETER

ANCHOR BOLT DETAIL
NOT TO SCALE

REINFORCING STEEL NOTES:

1. CONFORM WITH ACI 318 AND ACI STANDARD FOR "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT".
2. SHIFT REINFORCING BARS TO CLEAR ANCHOR BOLTS AND EMBEDDED ITEMS; OBTAIN ENGINEER'S APPROVAL AND ADD EXTRA REINFORCING BAR IF REQUESTED BY ENGINEER. CUTTING OF REINFORCING BARS NOT PERMITTED.
3. REINFORCING SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS UNLESS SHOWN OTHERWISE.
4. MINIMUM BAR SPLICE LAP LENGTH SHALL BE AS SHOWN. WHERE LAP LENGTH IS NOT SHOWN ON DRAWINGS, USE MINIMUM LENGTH SHOWN IN THE FOLLOWING TABLE.

REINFORCING BAR MINIMUM SPLICE LAP LENGTH IN INCHES									
BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11
TIE	25	33	41	49	71	81	91	102	113
LONGITUDINAL	19	25	31	37	54	62	70	79	87

5. REINFORCING BAR SPLICES PERMITTED ONLY WHERE SHOWN OR APPROVED BY ENGINEER.
6. ALL BARS INDICATED AS BEING BENT SHALL HAVE STANDARD 90 DEGREE HOOKS UNLESS SHOWN OTHERWISE. 180 DEGREE HOOKS ARE AN ACCEPTABLE ALTERNATE WHERE APPROVED BY ENGINEER.
7. ALL BARS SHALL BE SECURELY PLACED IN FINAL POSITION PRIOR TO PLACING CONCRETE. PLACING BARS INTO WET CONCRETE IS PROHIBITED.
8. SHAFT SPACERS SHALL BE INSTALLED EVERY 10 FEET, ONE ROLLER PER FOOT OF DIAMETER MINIMUM.
9. REINFORCING CONCRETE COVER UNLESS OTHERWISE SHOWN: 4".

STRUCTURAL DESIGN CRITERIA:

1. CONCRETE DESIGN CODE: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-05; PUBLISHED BY AMERICAN CONCRETE INSTITUTE.
2. CONCRETE COMPRESSIVE STRENGTH: 4000 PSI AT 28 DAYS.
3. SLUMP:
   A. DRY HOLE: 5"-7".
   B. TREMIE PLACEMENT: 7"-9".
4. REINFORCING STEEL: ASTM A615, GRADE 60.

CONCRETE NOTES:

1. EXPOSED CONCRETE CORNER CHAMFER: 1" UNLESS SHOWN OTHERWISE.
2. ACCURATELY POSITION BOLTS TO ASSURE CORRECT VERTICAL AND HORIZONTAL LOCATION TO MATCH POLE BOLT PATTERN. PROTECT THREADS DURING INSTALLATION.
3. POLE SHALL NOT BE ERECTED UNTIL CONCRETE HAS ATTAINED A MINIMUM OF 85% OF THE SPECIFIED 28 DAY COMPRESSIVE STRENGTH.
4. CONDUCTORS AND SHIELD WIRES SHALL NOT BE ATTACHED TO POLE UNTIL CONCRETE HAS ATTAINED THE SPECIFIED 28 DAY COMPRESSIVE STRENGTH.
5. DO NOT PLACE CONCRETE UNTIL REINFORCING STEEL PLACEMENT HAS BEEN VERIFIED BY ENGINEER.

GENERAL NOTES:

1. DIMENSION "C" SHALL BE MEASURED FROM HIGHEST GRADE ELEVATION AT FOUNDATION.
2. NOTIFY THE ENGINEER OF ANY UNEXPECTED SUBSURFACE CONDITIONS AND DISCONTINUE WORK IN AREA UNTIL OWNER/CONSTRUCTION SUPERVISOR PROVIDES NOTIFICATION TO RESUME WORK.

REFERENCE DRAWINGS:

SF01-2 FOUNDATION DETAILS

PLAN & PROFILE, SHEETS 1-14

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR REVIEW ENG.INITIALS: K.C DATE: 08/26/22
B	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: K.C DATE: 10/12/22

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
DRILLED PIER
FOUNDATION DETAILS

DWN. H. HENRY	DATE 08/26/22	DWG. NO. SF01-1
CKD. O. PENA	APPD. K. CHUDOMEL	
SCALE: NONE		

CAISSON SCHEDULE															
STRUCTURE NUMBER	SOIL BORING	CAISSON TYPE	PIER DIMENSIONS			REINFORCING				ANCHORS					REMARKS
			"A" FT.	"B" FT.	"C" FT.	"X1"	"Y1" FT.	"L1" FT.	"Z"	"D" IN	"BC" IN	"N"	"L"	"P"	
1	SB-7	I	7.0	44.0	1.0	#5	1.0	41.0	(16)-#14	2 1/4"	59.50	16	11'-3"	1'-0"	
3	SB-7	I	6.0	31.0	1.0	#5	1.0	28.0	(14)-#11	2 1/4"	46.00	12	11'-3"	1'-0"	
4	SB-7	I	7.5	48.0	1.0	#5	1.0	45.0	(22)-#14	2 1/4"	66.00	24	11'-3"	1'-0"	
5	SB-7	I	8.5	46.0	1.0	#5	1.0	43.0	(19)-#14	2 1/4"	76.00	20	11'-3"	1'-0"	
6	SB-7	I	8.0	44.0	1.0	#5	1.0	41.0	(17)-#14	2 1/4"	69.50	16	11'-3"	1'-0"	
8	SB-7	I	5.5	30.0	1.0	#5	1.0	27.0	(11)-#11	2 1/4"	44.00	8	11'-3"	1'-0"	
11	SB-7	I	5.5	25.0	1.0	#5	1.0	22.0	(11)-#11	2 1/4"	41.50	4	11'-3"	1'-0"	
13	SB-7	I	5.5	27.0	1.0	#5	1.0	24.0	(11)-#11	2 1/4"	44.00	8	11'-3"	1'-0"	
18	SB-7	I	5.5	28.0	1.0	#5	1.0	25.0	(11)-#11	2 1/4"	41.00	8	11'-3"	1'-0"	
21	SB-7	I	6.0	29.0	1.0	#5	1.0	26.0	(14)-#11	2 1/4"	45.50	12	11'-3"	1'-0"	
22	SB-7	I	8.0	45.0	1.0	#5	1.0	42.0	(17)-#14	2 1/4"	69.50	20	11'-3"	1'-0"	
23	SB-7	I	9.5	48.0	1.0	#5	1.0	45.0	(23)-#14	2 1/4"	90.00	20	11'-3"	1'-0"	
25	SB-7	I	7.5	46.0	1.0	#5	1.0	43.0	(17)-#14	2 1/4"	63.50	16	11'-3"	1'-0"	
35	SB-6	I	5.5	27.0	1.0	#5	1.0	24.0	(11)-#11	2 1/4"	41.00	8	11'-3"	1'-0"	
38	SB-6	I	5.5	27.0	1.0	#5	1.0	24.0	(11)-#11	2 1/4"	41.00	4	11'-3"	1'-0"	
40	SB-6	I	5.5	27.0	1.0	#5	1.0	24.0	(11)-#11	2 1/4"	41.00	8	11'-3"	1'-0"	
42	SB-6	I	5.5	28.0	1.0	#5	1.0	25.0	(11)-#11	2 1/4"	43.50	8	11'-3"	1'-0"	
45	SB-6	I	5.5	29.0	1.0	#5	1.0	26.0	(11)-#11	2 1/4"	41.50	8	11'-3"	1'-0"	
46	SB-6	I	5.5	29.0	1.0	#5	1.0	26.0	(11)-#11	2 1/4"	42.50	8	11'-3"	1'-0"	
49	SB-6	I	5.5	29.0	1.0	#5	1.0	26.0	(12)-#11	2 1/4"	45.00	12	11'-3"	1'-0"	
50	SB-6	I	5.5	30.0	1.0	#5	1.0	27.0	(12)-#11	2 1/4"	45.00	12	11'-3"	1'-0"	
52	SB-5	I	9.0	38.0	1.0	#5	1.0	35.0	(22)-#14	2 1/4"	86.50	20	11'-3"	1'-0"	
55	SB-5	I	5.5	27.0	1.0	#5	1.0	24.0	(11)-#11	2 1/4"	44.00	8	11'-3"	1'-0"	
56	SB-5	I	5.0	25.0	1.0	#5	1.0	22.0	(10)-#11	2 1/4"	39.00	8	11'-3"	1'-0"	
61	SB-4	I	5.5	21.0	1.0	#5	1.0	18.0	(11)-#11	2 1/4"	44.50	8	11'-3"	1'-0"	
62	SB-4	I	9.5	45.0	1.0	#5	1.0	42.0	(23)-#14	2 1/4"	92.00	24	11'-3"	1'-0"	
63	SB-4	I	9.0	40.0	1.0	#5	1.0	37.0	(21)-#14	2 1/4"	83.00	20	11'-3"	1'-0"	
64	SB-4	I	6.5	28.0	1.0	#5	1.0	25.0	(16)-#11	2 1/4"	56.00	12	11'-3"	1'-0"	
65	SB-4	I	5.5	20.0	1.0	#5	1.0	17.0	(11)-#11	2 1/4"	39.50	4	11'-3"	1'-0"	
75	SB-3	I	5.5	25.0	1.0	#5	1.0	22.0	(11)-#11	2 1/4"	43.00	4	11'-3"	1'-0"	
85	SB-3	I	5.5	25.0	1.0	#5	1.0	22.0	(11)-#11	2 1/4"	43.00	4	11'-3"	1'-0"	
99	SB-3	I	8.0	35.0	1.0	#5	1.0	32.0	(17)-#14	2 1/4"	72.50	16	11'-3"	1'-0"	
100	SB-3	I	5.5	25.0	1.0	#5	1.0	22.0	(11)-#11	2 1/4"	40.50	4	11'-3"	1'-0"	
101	SB-3	I	5.5	25.0	1.0	#5	1.0	22.0	(11)-#11	2 1/4"	44.75	8	11'-3"	1'-0"	
102	SB-3	I	5.0	25.0	1.0	#5	1.0	22.0	(11)-#11	2 1/4"	39.00	4	11'-3"	1'-0"	
114	SB-3	I	5.0	25.0	1.0	#5	1.0	22.0	(10)-#11	2 1/4"	36.00	4	11'-3"	1'-0"	
115	SB-3	I	5.0	25.0	1.0	#5	1.0	22.0	(10)-#11	2 1/4"	36.50	4	11'-3"	1'-0"	
132	SB-2	I	7.5	35.0	1.0	#5	1.0	32.0	(15)-#14	2 1/4"	68.00	16	11'-3"	1'-0"	
140	SB-2	I	5.0	23.0	1.0	#5	1.0	20.0	(10)-#11	2 1/4"	38.50	4	11'-3"	1'-0"	
141	SB-2	I	5.0	21.0	1.0	#5	1.0	18.0	(10)-#11	2 1/4"	34.00	4	11'-3"	1'-0"	
142	SB-2	I	4.5	21.0	1.0	#5	1.0	18.0	(8)-#11	2 1/4"	31.50	4	11'-3"	1'-0"	
143	SB-2	I	4.5	22.0	1.0	#5	1.0	19.0	(8)-#11	2 1/4"	33.00	4	11'-3"	1'-0"	
145	SB-2	I	5.5	24.0	1.0	#5	1.0	21.0	(11)-#11	2 1/4"	41.00	4	11'-3"	1'-0"	
147	SB-1	I	5.0	19.0	1.0	#5	1.0	16.0	(10)-#11	2 1/4"	37.50	4	11'-3"	1'-0"	
151	SB-1	I	7.0	30.0	1.0	#5	1.0	27.0	(13)-#14	2 1/4"	62.00	12	11'-3"	1'-0"	
153	SB-1	I	8.8	34.0	1.0	#5	1.0	31.0	(19)-#14	2 1/4"	81.00	16	11'-3"	1'-0"	
154	SB-1	I	7.5	32.0	1.0	#5	1.0	29.0	(15)-#14	2 1/4"	68.00	16	11'-3"	1'-0"	

NO.	REVISIONS
A	MT. PLEASANT TO SUGG T-LINE ISSUED FOR REVIEW ENG.INITIALS: K.C DATE: 08/26/22
B	MT. PLEASANT TO SUGG T-LINE ISSUED FOR BID ENG.INITIALS: K.C DATE: 10/12/22

ISSUED FOR BID

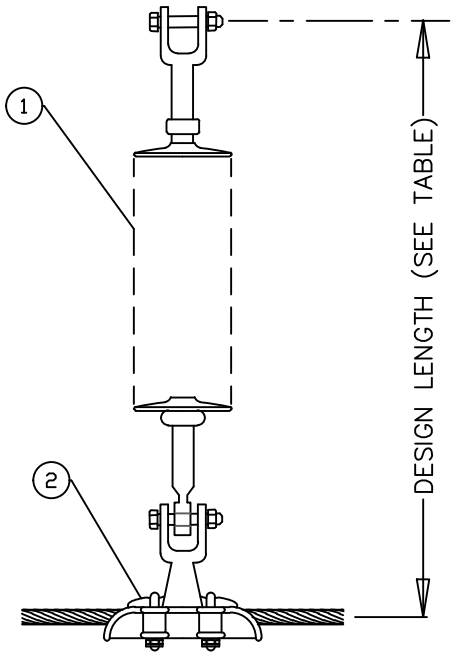
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
MT. PLEASANT SUB TO SUGG
DRILLED PIER
FOUNDATION SCHEDULE

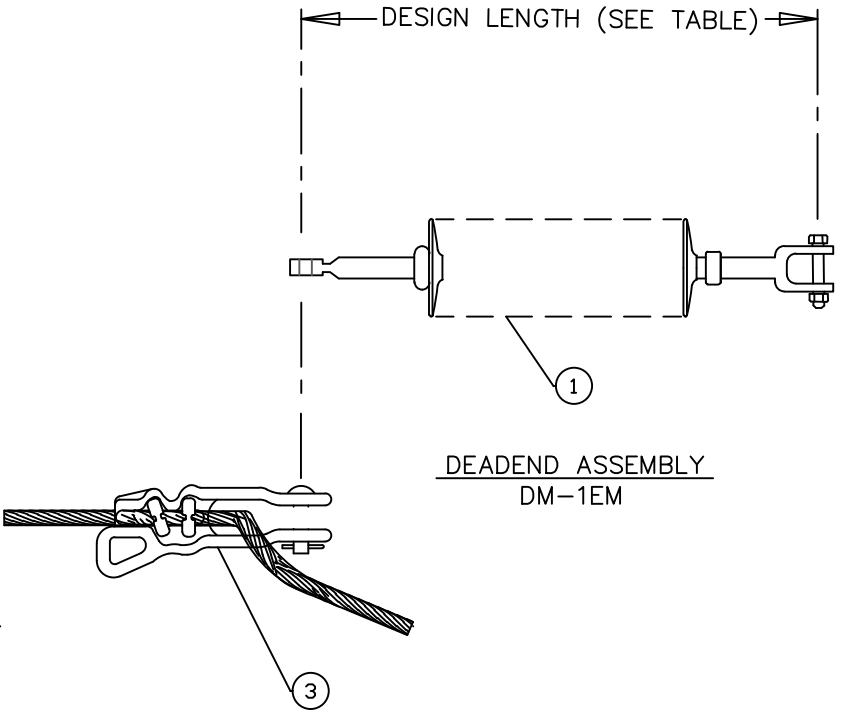
DWN. H. HENRY	DATE 08/26/22	DWG. NO. SF01-2
CKD. O. PENA	APPD. K. CHUDOMEL	
SCALE: NONE		

NOTES:

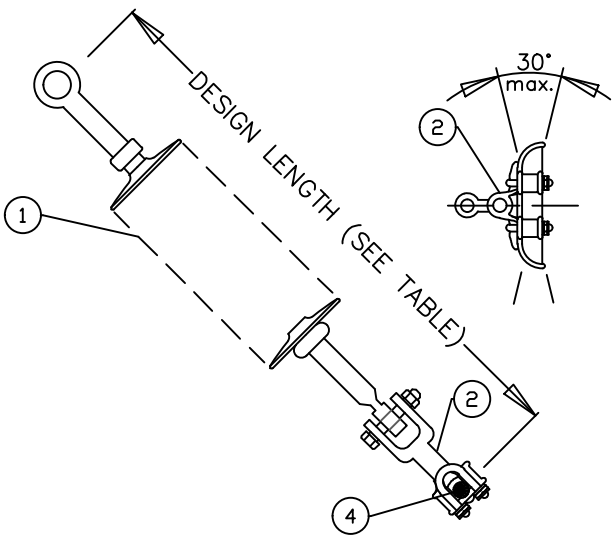
1. THE TABLE BELOW SHALL BE COMPLETED FOR EACH PROJECT.
2. SUITABLE SUSPENSION CLAMPS MUST BE SELECTED FOR THE CONDUCTOR BEING USED. THE FOLLOWING ARE TO BE CONSIDERED: TYPE OF CONDUCTOR, DIAMETER OF CONDUCTOR (CONSIDERING ARMOR RODS AND/OR LINERS), ETC.
3. THE CAPACITY OF THE HARDWARE MUST BE EQUAL TO OR GREATER THAN THE SPECIFIED MECHANICAL LOAD OF THE INSULATOR UNITS SHOWN IN THE TABLE BELOW.



TANGENT ASSEMBLY
DM–1AM (OR) DM–1BM



DEADEND ASSEMBLY
DM–1EM



ANGLE ASSEMBLY
DM–1CM

15 KV STOCK NUMBER: 206920	ASSEMBLY		
	TANGENT	ANGLE	DEADEND
QUANTITY OF UNITS	1	1	1
INSULATION LEVEL (kV)	18	18	18
LEAKAGE DISTANCE (in.)	16	16	16
SPEC. MECH. LOAD (lb.)	10,000	10,000	10,000
INSULATOR WEIGHT (lb.)	2.3	2.3	2.3
DESIGN LENGTH (in.)	12.5	12.5	12.5
COLOR OF UNITS	GRAY	GRAY	GRAY

LIST OF MATERIALS

DWG. REF.	ITEM	DESCRIPTION
1		INSULATOR, SUSPENSION. POLYMER
2		CLAMP, SUSPENSION x REQ. CONDUCTOR SIZE
3		DEADEND SHOE, x REQ. CONDUCTOR SIZE
4	*	ARMOR ROD x REQ. CONDUCTOR SIZE

* Armor Rod not required if suspension clamp is cushioned

GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

Greenville Utilities

SUSPENSION INSULATOR ASSEMBLY

DWN. DRB | DATE: 06/01/2022
CKD. JLS | APPD. JLS
SCALE: N.T.S.

DWG. NO.
DM–1

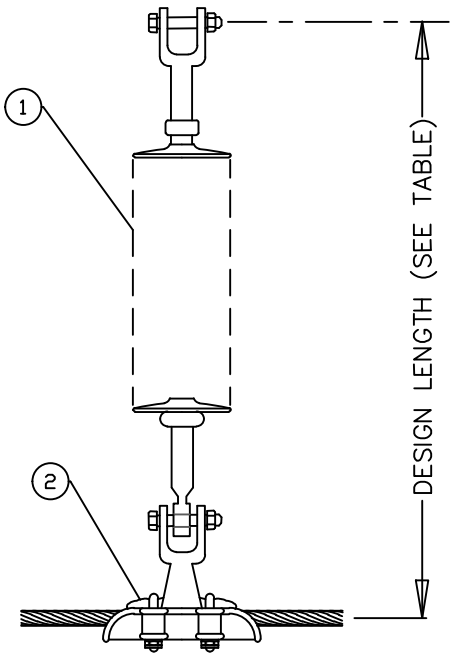
DATE	DATE	REVISION

NOTES:

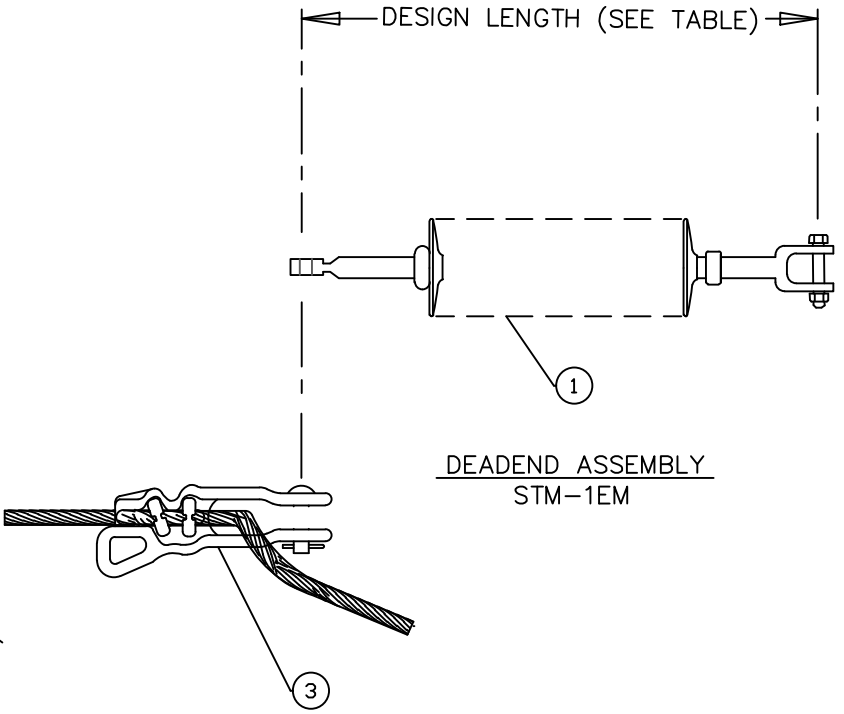
1. THE TABLE BELOW SHALL BE COMPLETED FOR EACH PROJECT.

2. SUITABLE SUSPENSION CLAMPS MUST BE SELECTED FOR THE CONDUCTOR BEING USED. THE FOLLOWING ARE TO BE CONSIDERED: TYPE OF CONDUCTOR, DIAMETER OF CONDUCTOR (CONSIDERING ARMOR RODS AND/OR LINERS), ETC.

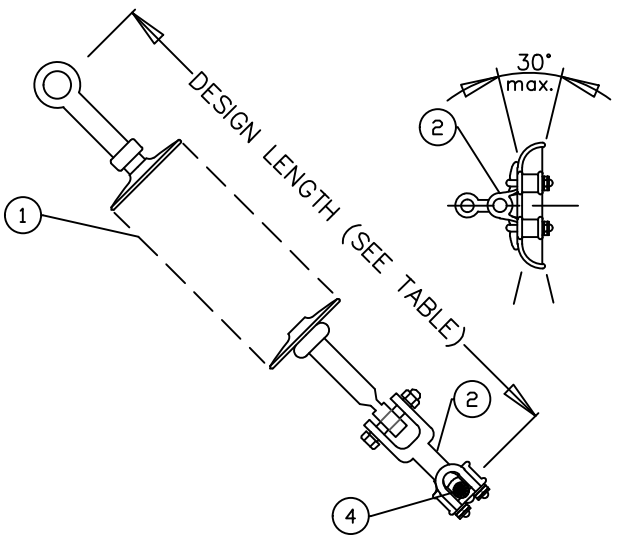
3. THE CAPACITY OF THE HARDWARE MUST BE EQUAL TO OR GREATER THAN THE SPECIFIED MECHANICAL LOAD OF THE INSULATOR UNITS SHOWN IN THE TABLE BELOW.



TANGENT ASSEMBLY
STM-1AM (OR) STM-1BM



DEADEND ASSEMBLY
STM-1EM



ANGLE ASSEMBLY
STM-1CM

35 KV STOCK NUMBER: 208330	ASSEMBLY		
	TANGENT	ANGLE	DEADEND
QUANTITY OF UNITS	1	1	1
INSULATION LEVEL (kV)	42	42	42
LEAKAGE DISTANCE (in.)	33	33	33
SPEC. MECH. LOAD (lb.)	10,000	10,000	10,000
INSULATOR WEIGHT (lb.)	2.8	2.8	2.8
DESIGN LENGTH (in.)	25.0	25.0	25.0
COLOR OF UNITS	GRAY	GRAY	GRAY

LIST OF MATERIALS

DWG. REF.	ITEM	DESCRIPTION
1		INSULATOR, SUSPENSION. POLYMER
2		CLAMP, SUSPENSION x REQ. CONDUCTOR SIZE
3		DEADEND SHOE, x REQ. CONDUCTOR SIZE
4	*	ARMOR ROD x REQ. CONDUCTOR SIZE
5		
	*	Armor Rod not required if suspension clamp is cushioned

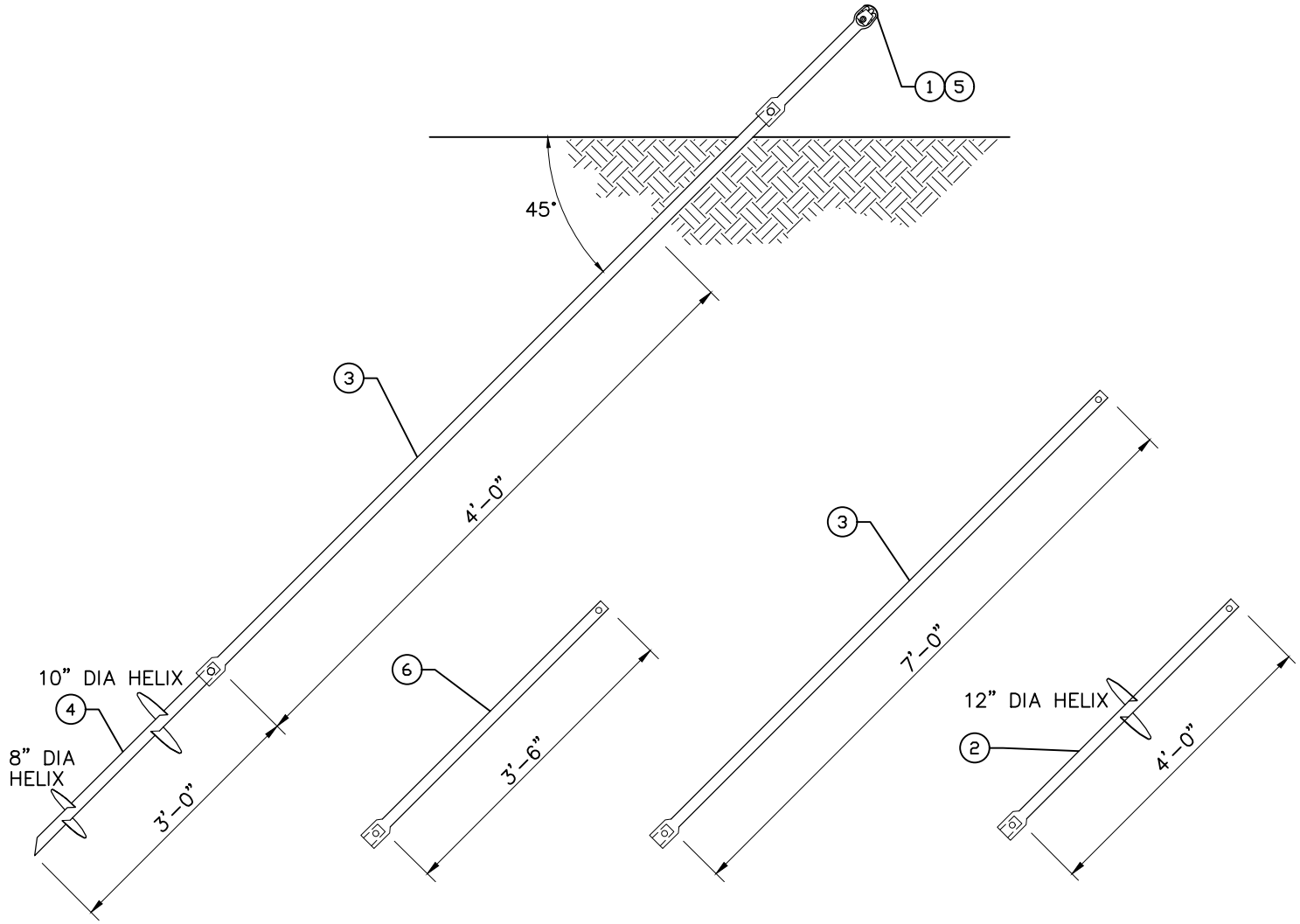
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

Greenville Utilities

SUSPENSION INSULATOR ASSEMBLY

DWN. DRB	DATE: 06/01/2022	DWG. NO.
CKD. JLS	APPD. JLS	STM-1
SCALE: N.T.S.		

DATE	DATE	REVISION



NOTES:

1) MAXIMUM WORKING LOAD VALUES BASED UPON USE OF ANCHOR IN CLASS 6 SOIL CONDITIONS.

2) MAXIMUM WORKING LOAD FOR THE TA-2H = 23,000 LBS.
MAXIMUM WORKING LOAD FOR THE TA-2H WITH THE TA-4HE = 32,000 LBS.

3) ANCHOR TO BE POWER INSTALLED USING TORQUE INDICATOR WITH A MINIMUM TORQUE VALUE OF:
2,300 FT.-LBS. FOR THE TA-2H
3,000 FT.-LBS. FOR THE TA-2H WITH THE TA-4HE
AND MAXIMUM OF 6,000 FT.-LBS.

4) WHEN SPECIFICALLY CALLED FOR ON THE PLAN & PROFILE AND/OR STAKING SHEETS, THE TA-4HE (ITEM 2) SHALL BE INSTALLED CONNECTED DIRECTLY TO THE DOUBLE HELIX ANCHOR ASSEMBLY (ITEM 4) WITH THE SEVEN FOOT EXTENSION ASSEMBLY (ITEM 3) THEN BEING CONNECTED TO THE TA-4HE.

DWG. REF.	LIST OF MATERIALS ea.	DESCRIPTION
1		ANCHOR – CLAMP, BONDING
2		ANCHOR – EXTENSION ASSEMBLY, 12" HELIX
		(1-1/2" SQUARE SHAFT x 4'-0")
3		ANCHOR – EXTENSION ASSEMBLY
		(1-1/2" SQUARE SHAFT x 7'-0")
4		ANCHOR – DOUBLE HELIX (8", 10")
		(1-1/2" SQUARE SHAFT x 3'-0")
5		ANCHOR – TWINEYE ASSEMBLY, FOR DOUBLE HELIX
6		ANCHOR – EXTENSION ASSEMBLY
		(1-1/2" SQUARE SHAFT x 3'-6")

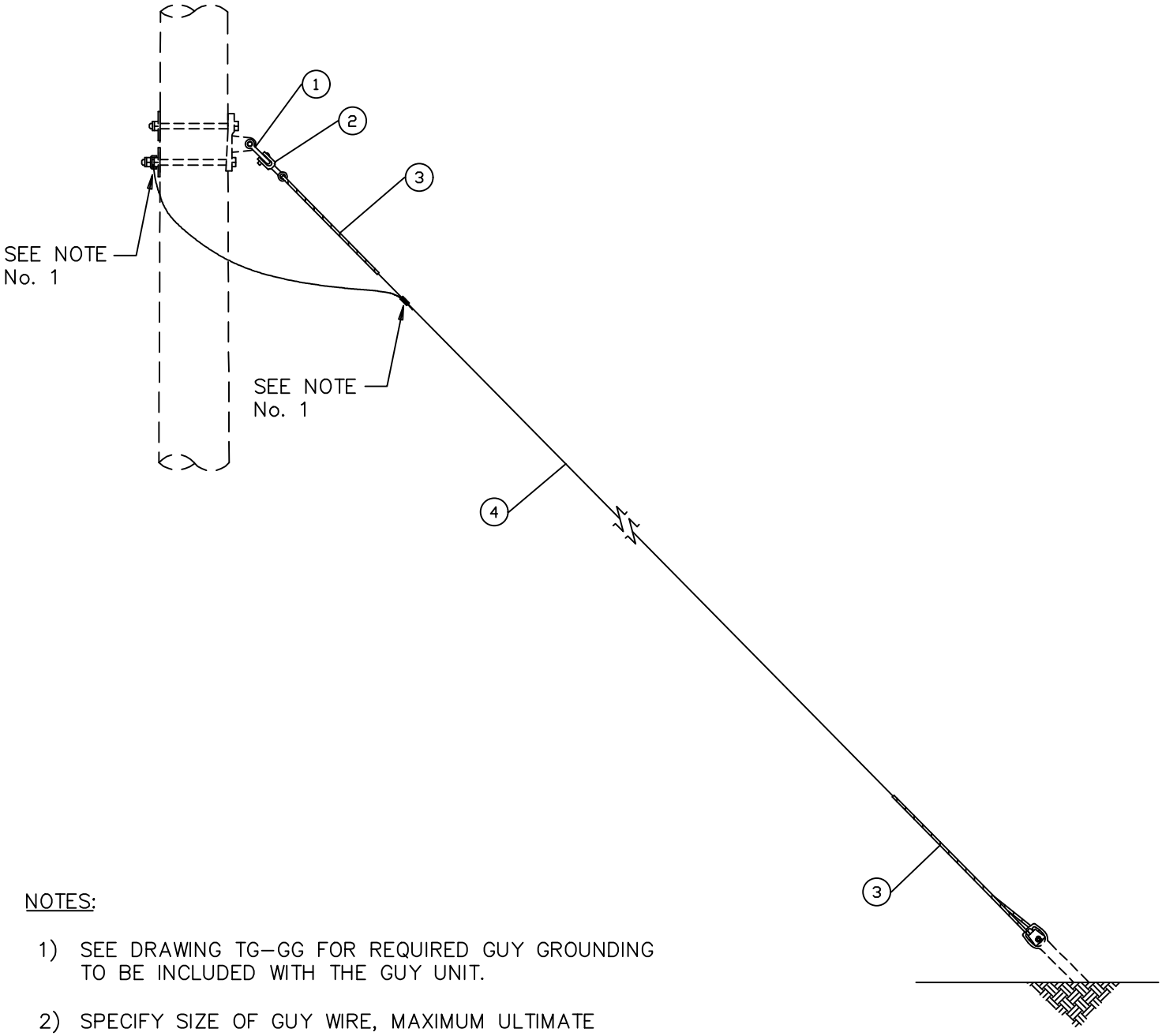
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

Greenville Utilities

TRANSMISSION AND DISTRIBUTION
ANCHOR ASSEMBLY

DWN. JLS	DATE: 03/14/19	DWG. NO.
CKD. KW	APPD. KW	
SCALE: N.T.S.		TA-2

DATE		DATE	REVISION



NOTES:

1) SEE DRAWING TG–GG FOR REQUIRED GUY GROUNDING TO BE INCLUDED WITH THE GUY UNIT.

2) SPECIFY SIZE OF GUY WIRE, MAXIMUM ULTIMATE RATED STRENGTH TO BE 33,000 LBS. REFER TO SPECIFIC WIRE SPECIFICATIONS FOR RATED STRENGTH.

3) "M" INDICATES INCLUSION ON ANCHOR ASSEMBLY.

DWG. REF.	TG–21		LIST OF MATERIALS
	A	A(M)	DESCRIPTION
1	–	1	ANCHOR SHACKLE, 30,000 LBS (MINIMUM)
2	1	1	CLEVIS – THIMBLE TYPE (40,000 LBS)
3	2	2	GUY – GRIP, PREFORMED, FOR GUY WIRE
4	*	*	GUY – WIRE
			* GUY WIRE AS REQUIRED

GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

Greenville Utilities

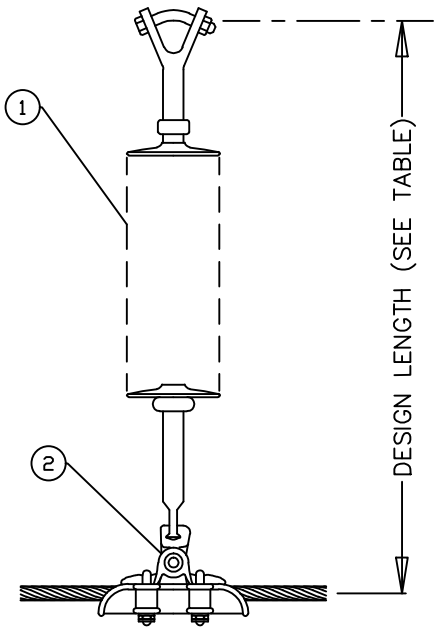
SINGLE DOWN GUY – WITH PREFORMED GRIPS.

DWN. JLS		DATE: 03/15/19	
CKD. KW		APPD. KW	
SCALE: N.T.S.			
DATE		DATE	REVISION

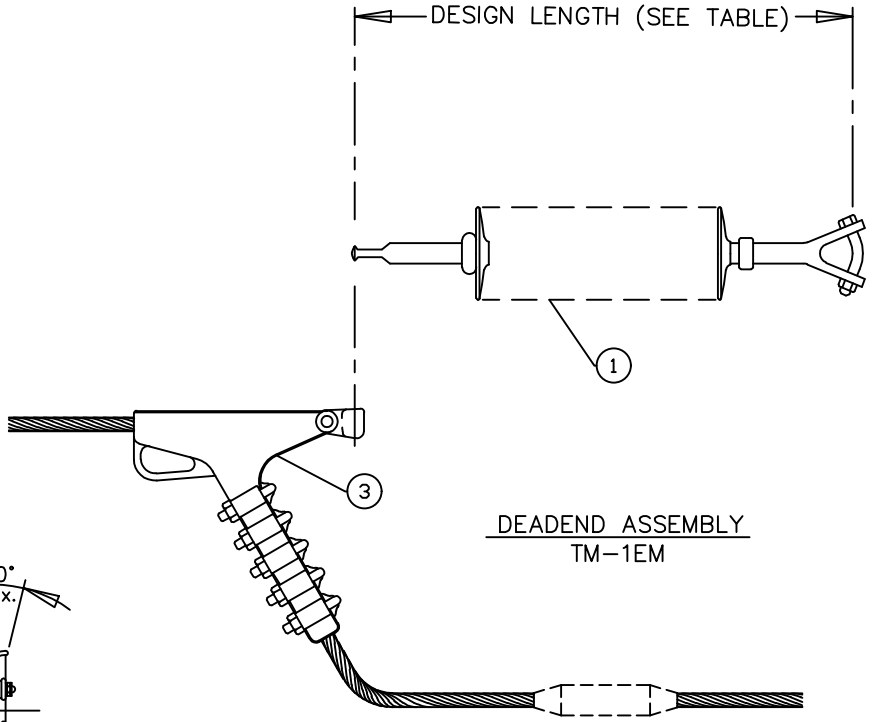
DWG. NO.
TG–21

NOTES:

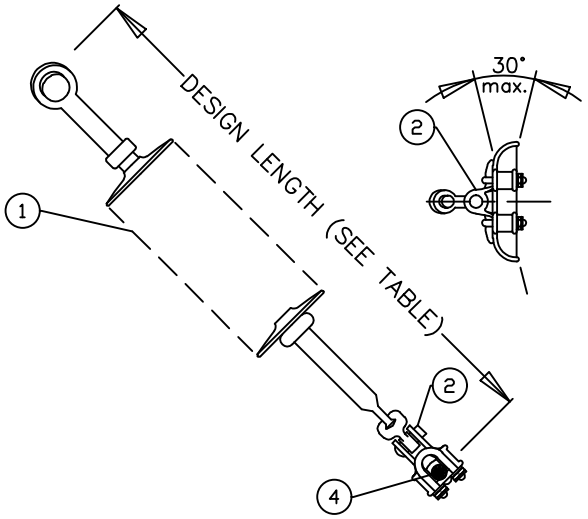
1. THE TABLE BELOW SHALL BE COMPLETED FOR EACH PROJECT.
2. SUITABLE SUSPENSION CLAMPS MUST BE SELECTED FOR THE CONDUCTOR BEING USED. THE FOLLOWING ARE TO BE CONSIDERED: TYPE OF CONDUCTOR, DIAMETER OF CONDUCTOR (CONSIDERING ARMOR RODS AND/OR LINERS), ETC.
3. THE CAPACITY OF THE HARDWARE MUST BE EQUAL TO OR GREATER THAN THE SPECIFIED MECHANICAL LOAD OF THE INSULATOR UNITS SHOWN IN THE TABLE BELOW.



TANGENT ASSEMBLY
TM–1AM (OR) TM–1BM



DEADEND ASSEMBLY
TM–1EM



ANGLE ASSEMBLY
TM–1CM

115 KV	ASSEMBLY		
	TANGENT	ANGLE	DEADEND
QUANTITY OF UNITS	1	1	1
INSULATION LEVEL (kV)	138	138	138
LEAKAGE DISTANCE (in.)	139	139	139
SPEC. MECH. LOAD (lb.)	25,000	25,000	25,000
INSULATOR WEIGHT (lb.)	11.9	11.9	11.9
DESIGN LENGTH (in.)	59.6	59.6	59.6
COLOR OF UNITS	GRAY	GRAY	GRAY

DWG. REF.	LIST OF MATERIALS	
	ITEM	DESCRIPTION
1		INSULATOR, SUSPENSION. POLYMER
2		CLAMP, SUSPENSION x REQ. CONDUCTOR SIZE
3		DEADEND SHOE, x REQ. CONDUCTOR SIZE
4	*	ARMOR ROD x REQ. CONDUCTOR SIZE
5		CORONA RING FOR 115 KV INSULATOR
	*	Armor Rod not required if suspension clamp is cushioned

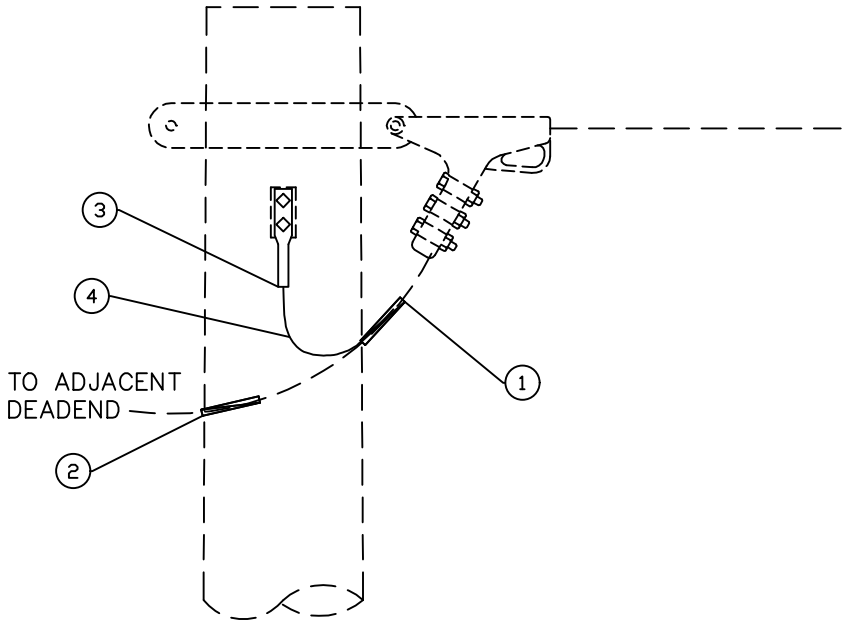
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

Greenville Utilities

SUSPENSION INSULATOR ASSEMBLY

DWN. JLS	DATE: 03/11/19	DWG. NO.
CKD. KW	APPD. KW	TM–1
SCALE: N.T.S.		

DATE	DATE	REVISION



TM–2A SINGLE DEADEND
TM–2B DOUBLE DEADEND
TM–2C TRIPLE DEADEND

DWG. REF.	TM–2			LIST OF MATERIALS
	A	B	C	DESCRIPTION
1	1	1	1	CONNECTOR – COMPRESSION, OHGW TO #4
2	–	1	2	CONNECTOR – COMPRESSION SLEEVE OHGW TO OHGW
3	1	1	1	CONNECTOR – COMPRESSION, NEMA 2 HOLE #4
4	5	5	5	GROUND WIRE, #4 (ft.)

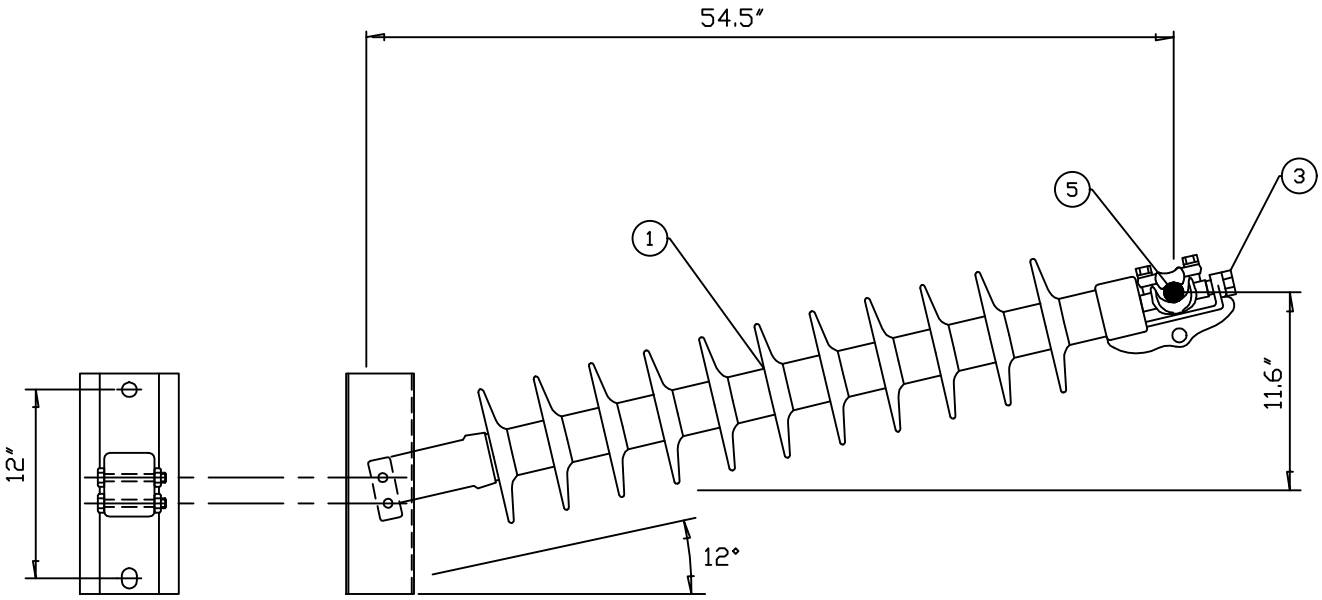
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

TRANSMISSION OHGW STEEL POLE
DEADEND GROUNDING ASSEMBLY

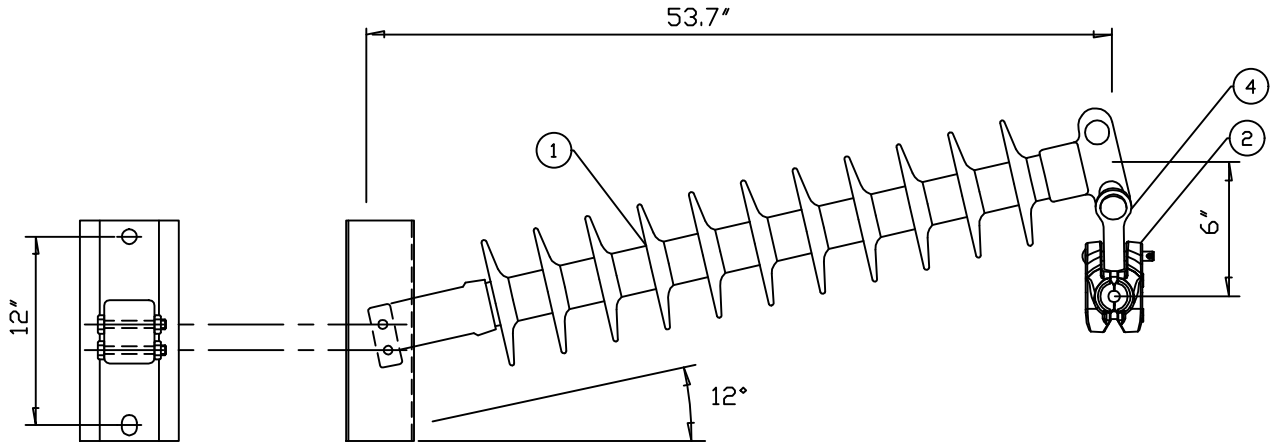
DWN. JLS	DATE: 03/12/19
CKD. KW	APPD. KW
SCALE: N.T.S.	

DATE		DATE	REVISION

DWG. NO.
TM–2



TM-3BM - HORIZONTAL POST INSULATOR



TM-3DM - HORIZONTAL POST INSULATOR - TANGENT & SMALL ANGLE

DWG. REF.	TM-3		LIST OF MATERIALS
	BM	DM	DESCRIPTION
1	1	1	INSULATOR, POLYMER HORIZONTAL POST
2	–	1	CLAMP, SUSPENSION x REQ. CONDUCTOR SIZE
3	1	–	CLAMP, TRUNION x REQ. CONDUCTOR SIZE
4	–	1	Y-CLEVIS, BALL
5	1	*	ARMOR ROD x REQ. CONDUCTOR SIZE
		*	Armor Rod not required if suspension clamp is cushioned

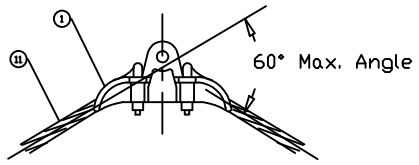
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

Greenville Utilities

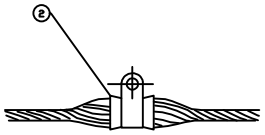
HORIZONTAL POST INSULATOR ASSEMBLY

DWN. JLS		DATE: 03/01/19	
CKD. KW		APPD. KW	
SCALE: N.T.S.			
DATE		DATE	REVISION

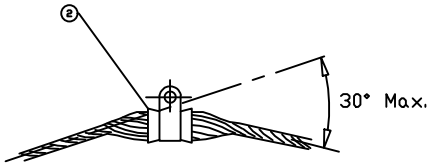
DWG. NO.
TM-3



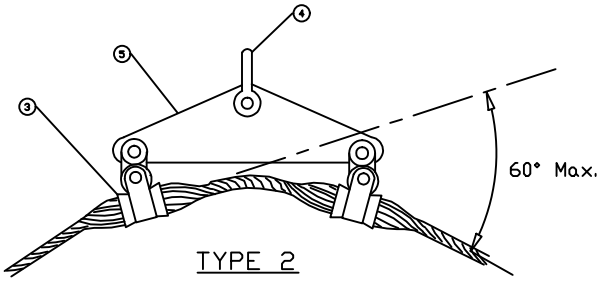
TANGENT & ANGLE CLAMP
TM-4A



TANGENT ASSEMBLY
TM-4B

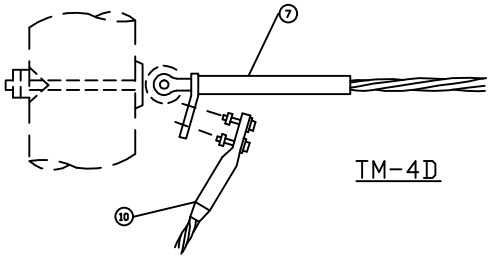


TYPE 1

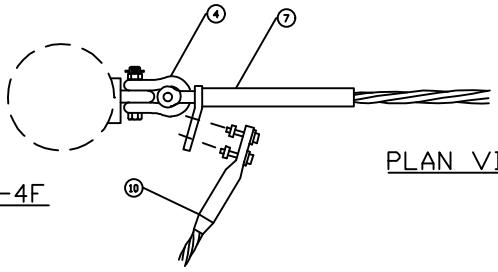


TYPE 2

ANGLE ASSEMBLY
TM-4C (NOTE 1)

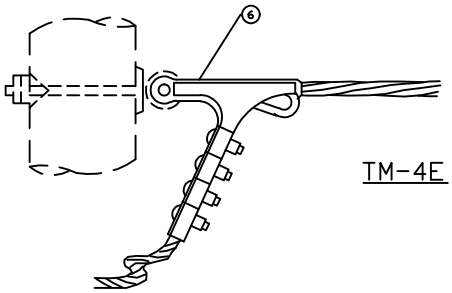


TM-4D

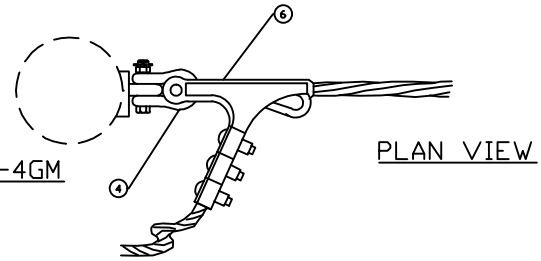


TM-4F

PLAN VIEW



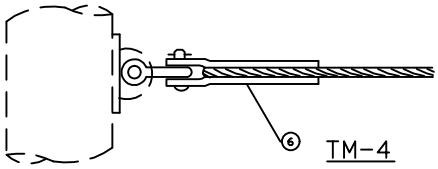
TM-4E



TM-4GM

PLAN VIEW

DEADEND ASSEMBLY



TM-4

NOTES:

1. The appropriate cushioned suspension angle assembly shall be installed for the line angles shown on the plan-profile drawings:
   - A. For angles from 0 degrees to 30 degrees, use type 1
   - B. For angles from 30 degrees to 60 degrees use type 2

DWG. REF.	ITEM	LIST OF MATERIALS DESCRIPTION
1		CLAMP, SUSPENSION (TO 60°)
2		CLAMP, CUSHIONED SUSPENSION
3		CLAMP, CUSHIONED SUSP. & CLEVIS EYE
4		ANCHOR SHACKLE 40,000 LBS. BNC
5		YOLK PLATE
6		CLAMP BOLTED DEADEND (3 BOLT)
7		CLAMP, COMPRESSION DEADEND
8		LINK, EXTENSION, CLEVIS 6"
9		JUMPER CONNECTOR, COMPRESSION
10		JUMPER TERMINAL, COMPRESSION
11		ARMOR ROD

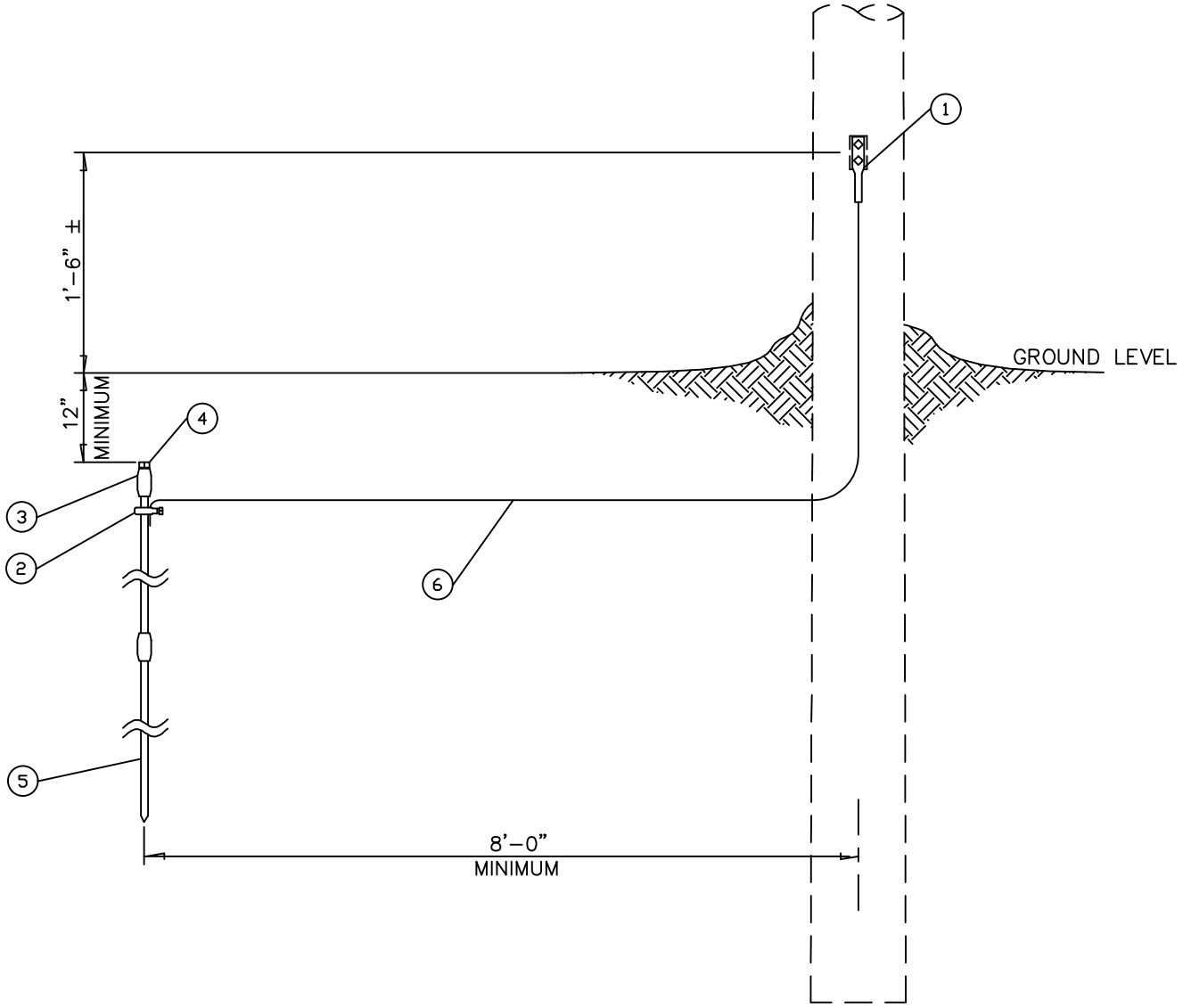
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

Greenville Utilities

O.H.G.W. ASSEMBLIES CUSHIONED SUSPENSION AND SUSPENSION CLAMPS

DWN. JLS		DATE: 02/27/19	
CKD. KW		APPD. KW	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.
TM-4



NOTES:

1) MAXIMUM GROUND RESISTANCE READING SHALL BE 25 OHMS. IF THE CLAMP–ON RESISTANCE MEASUREMENT IS USED, THE GROUND ROD SHALL BE INSTALLED AND TEMPORARILY BONDED UNTIL THE GROUND RESISTANCE READING IS TAKEN. ADDITIONAL ROD SECTIONS SHALL BE ADDED AS NECESSARY TO REDUCE RESISTANCE TO 25 OHMS MAXIMUM.

2) SPECIFY TM–9R FOR ADDITIONAL GROUND ROD SECTION AND COUPLING.

3) GROUND ROD TO BE INSTALLED IN UNDISTURBED SOIL.

DWG. REF.	TM–9		LIST OF MATERIALS
	SP	R	DESCRIPTION
1	1	–	CONNECTOR – COMPRESSION, NEMA 2 HOLE #4
2	1	–	GROUND – ROD CLAMP, GALVANIZED, 5/8"
3	1	1	GROUND – ROD COUPLING, GALVANIZED, 5/8" THREADED
4	1	–	GROUND – DRIVING STUD, STEEL, 5/8"
5	1	1	GROUND – ROD, GALVANIZED, 5/8" x 10'–0"
6	15	–	GROUND – WIRE, #4 (ft.)

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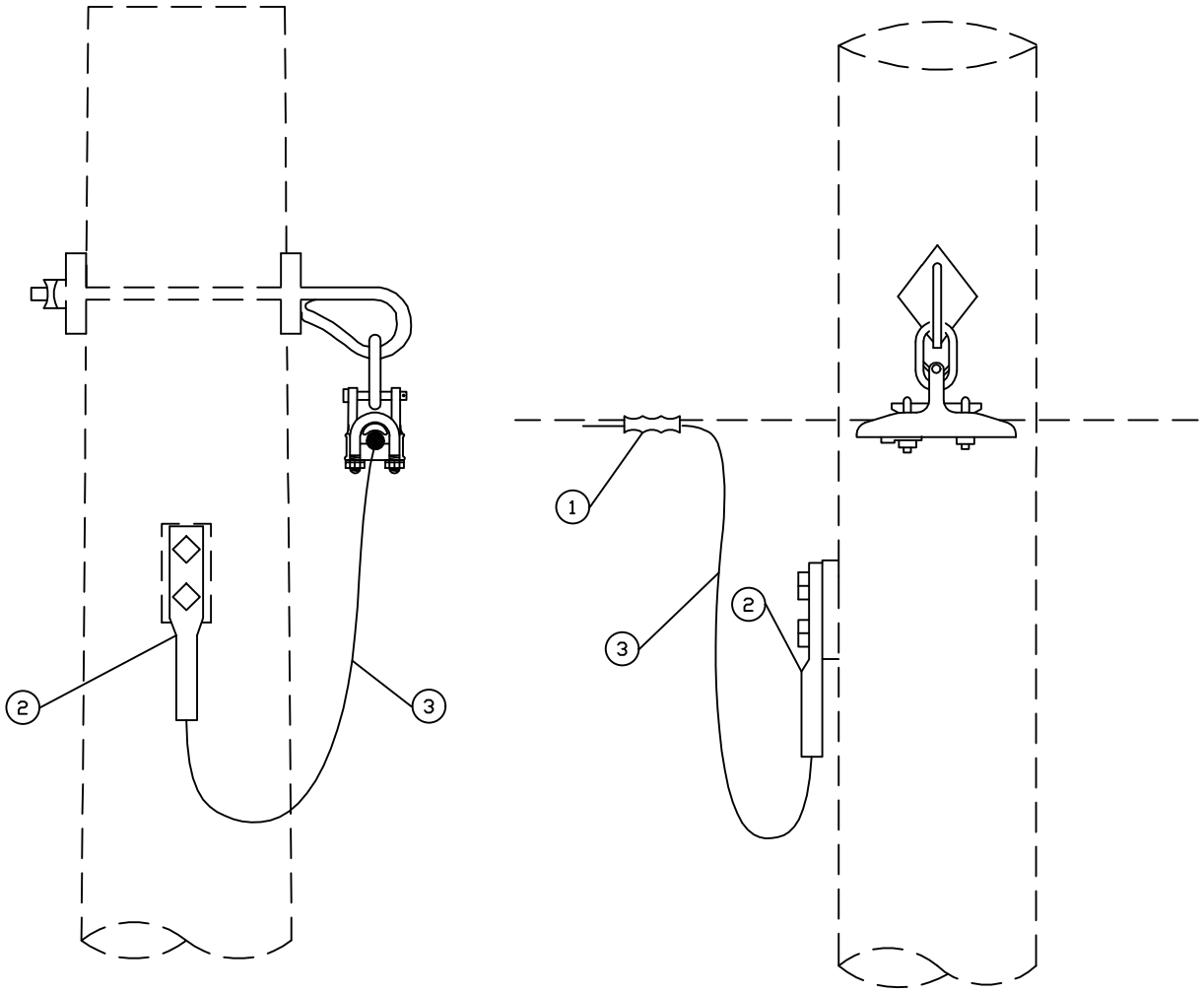
Greenville Utilities

DRIVEN GROUND ROD GROUNDING ASSEMBLY – STEEL POLE

DWN. JLS		DATE: 03/13/19	
CKD. KW		APPD. KW	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.
TM–9



DWG. REF.	LIST OF MATERIALS	
	ea.	DESCRIPTION
1	1	CONNECTOR – COMPRESSION, BI–METALLIC, 7 No. 9
		ALUMOWELD TO #4
2	1	CONNECTOR – COMPRESSION, NEMA 2–HOLE FOR #4
3	5	GROUND – WIRE, #4 (ft.)

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GREENVILLE, NORTH CAROLINA

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OVERHEAD GROUND WIRE GROUNDING ASSEMBLY – STEEL POLE

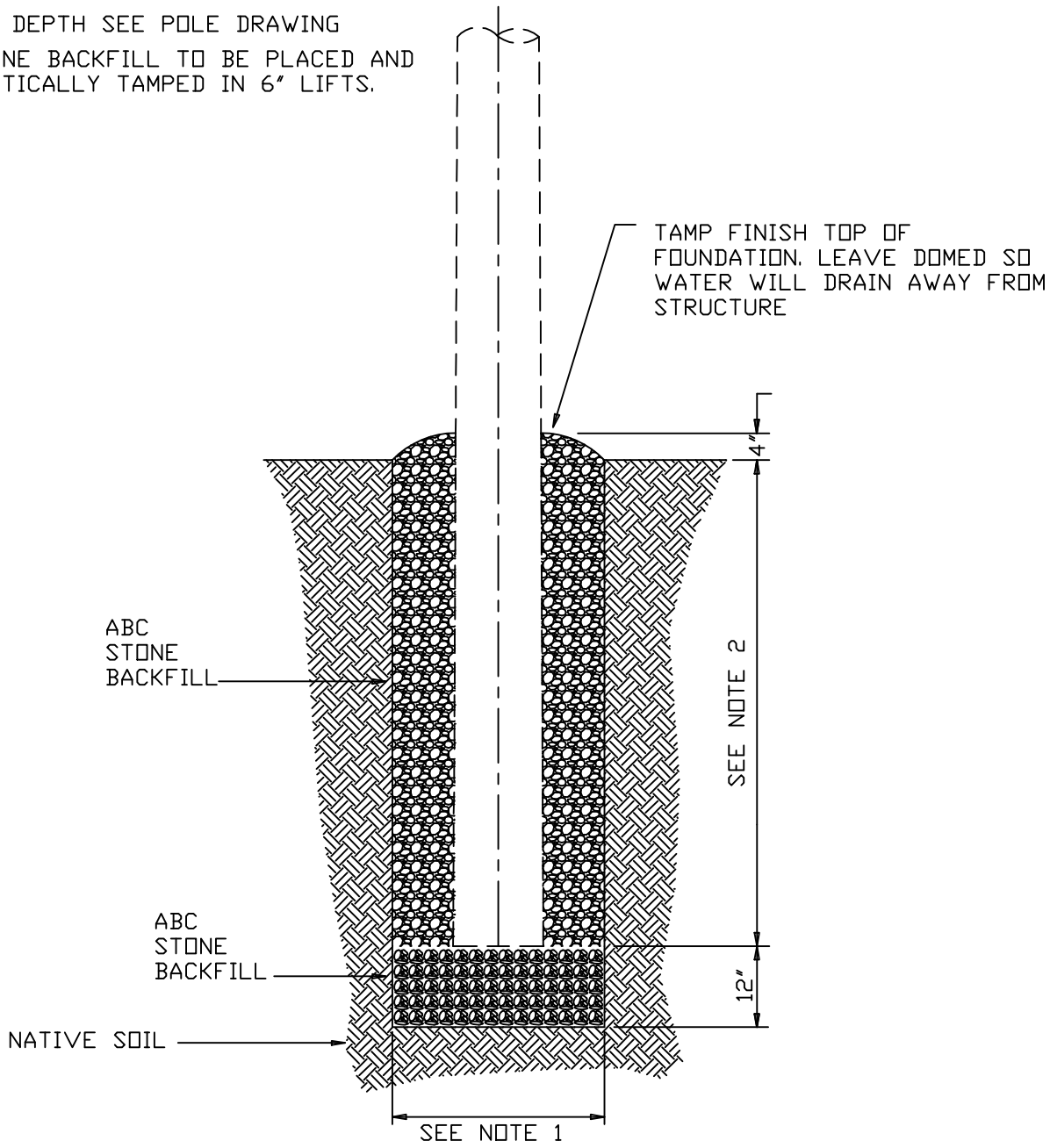
DWN. JLS		DATE: 03/13/19	
CKD. KW		APPD. KW	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.

TM–9X(S)

NOTES:

1. HOLE DIAMETER SHALL BE EQUAL TO THE POLE BUTT DIAMETER PLUS 18", UNLESS OTHERWISE NOTED.
2. SETTING DEPTH SEE POLE DRAWING
3. ABC STONE BACKFILL TO BE PLACED AND PNEUMATICALLY TAMPED IN 6" LIFTS.



DWG. REF.	LIST OF MATERIALS	
	ea.	DESCRIPTION
	*	ABC STONE BACKFILL
		* SIGNIFIES AS REQUIRED

GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

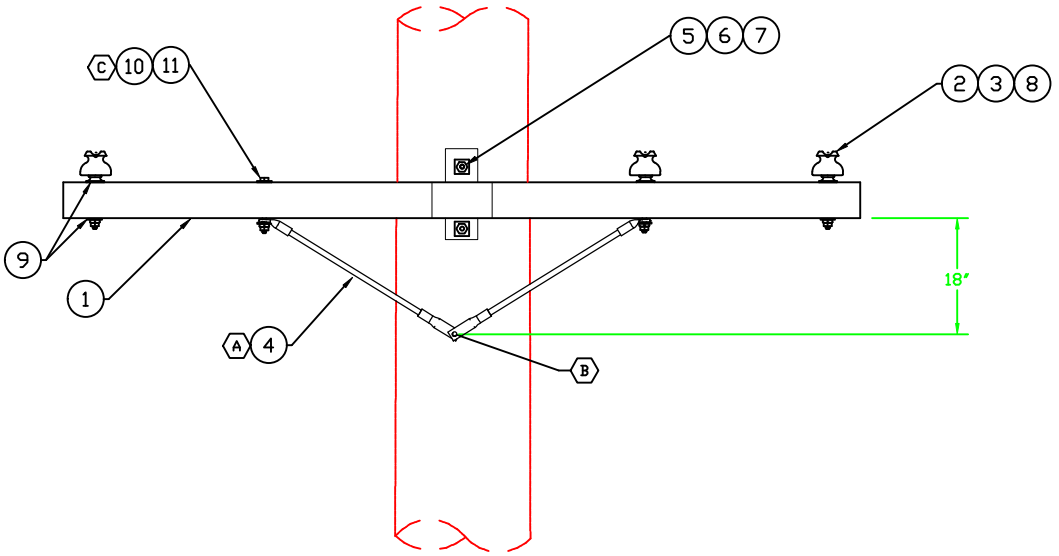
Greenville Utilities

ABC STONE BACKFILL FOUNDATION

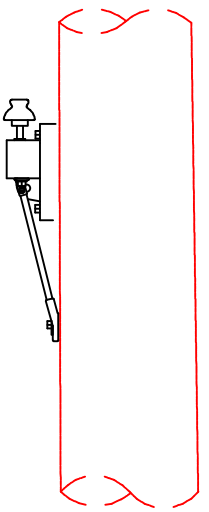
DWN. JLS		DATE: 02/27/19	
CKD. KW		APPD. KW	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.

TMF-EMB



SIDE VIEW



NOTES:

1) INSULATOR ITEM(2) & ITEM(3) WILL VARY BASED ON WIRE SIZE.

Ⓐ MOUNT BRACE USING EXISTING HOLES IN CROSSARM.

Ⓑ HOLE TO BE FIELD DRILLED AT SPECIFIED LOCATION.

Ⓒ INSTALL 3 X 3 SQUARE WASHER, ITEM(9), ON TOP AND BOTTOM OF CROSSARM.

DWG. REF.	XRM-10A QTY	LIST OF MATERIALS DESCRIPTION
1	1	ARMS, 10' H/T FIBERGLASS
2	3	PIN INSULATOR
3	3	PREFORMS, WRAP LOCK
4	1	CROSSARM BRACE
5	3	BOLT, MACHINE 5/8" X LENGTH"
6	3	SPRING LOCK WASHER, 5/8"
7	3	WASHER, SQ. 4 X 4 X 13/16"
8	3	CROSSARM PINS
9	8	3 X 3 SQUARE WASHERS
10	1	5/8" x 8" BOLT
11	1	5/8" LOCK WASHER

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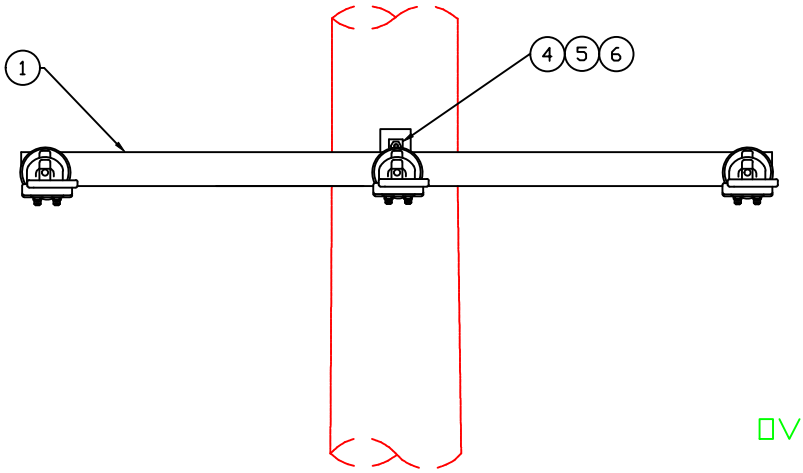
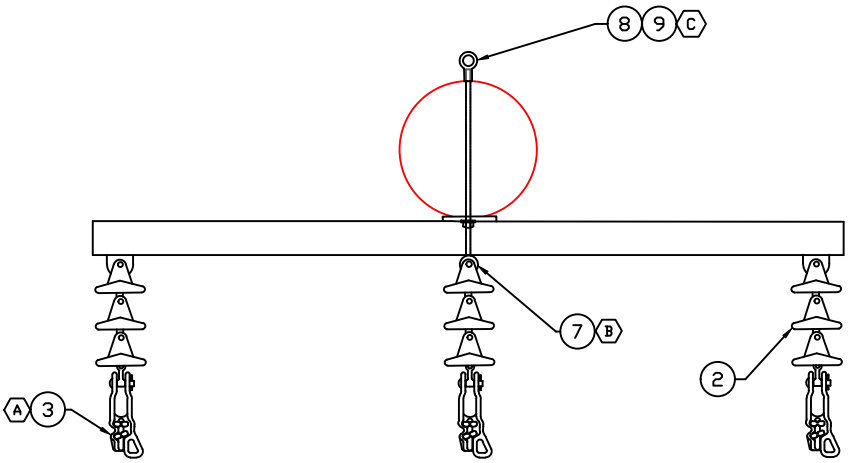
Greenville Utilities

10' TANGENT DISTRIBUTION CROSSARM

DWN. DRB		DATE: 5/27/2022	DWG. NO.
CKD. JLS		APPD. JLS	XRM-10A
SCALE: N.T.S.			
DATE		DATE	REVISION



OVERHEAD VIEW



NOTES:

Ⓐ SELECT DEADEND SHOE APPROPRIATE FOR WIRE SIZE.

Ⓑ EYEBOLT TO BE INSTALLED IN TOP HOLE OF CROSSARM BRACKET, AS SHOWN.

Ⓒ GUY ASSEMBLY NOT SHOWN. SEE DWG TG-21 FOR REFERENCE.

DWG. REF.	XRM-10B QTY	LIST OF MATERIALS DESCRIPTION
1	1	ARMS, 10' DE FIBERGLASS
2	3	INSULATORS, POLY DE BELLS
3	3	DEADEND SHOE
4	1	BOLT, MACHINE 5/8" X LENGTH"
5	2	SPRING LOCK WASHER, 5/8"
6	3	WASHER, SQ. 4 X 4 X 13/16"
7	1	EYE BOLT, 5/8" X LENGTH"
8	1	5/8" EYE NUT
9	1	GUY ASSEMBLY

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10' DEADEND DISTRIBUTION CROSSARM

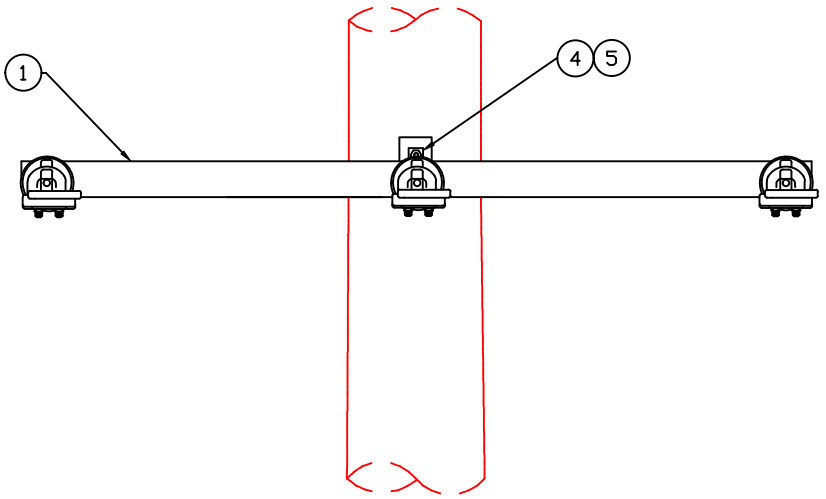
DWN. DRB | DATE: 5/27/2022

CKD. JLS | APPD. JLS

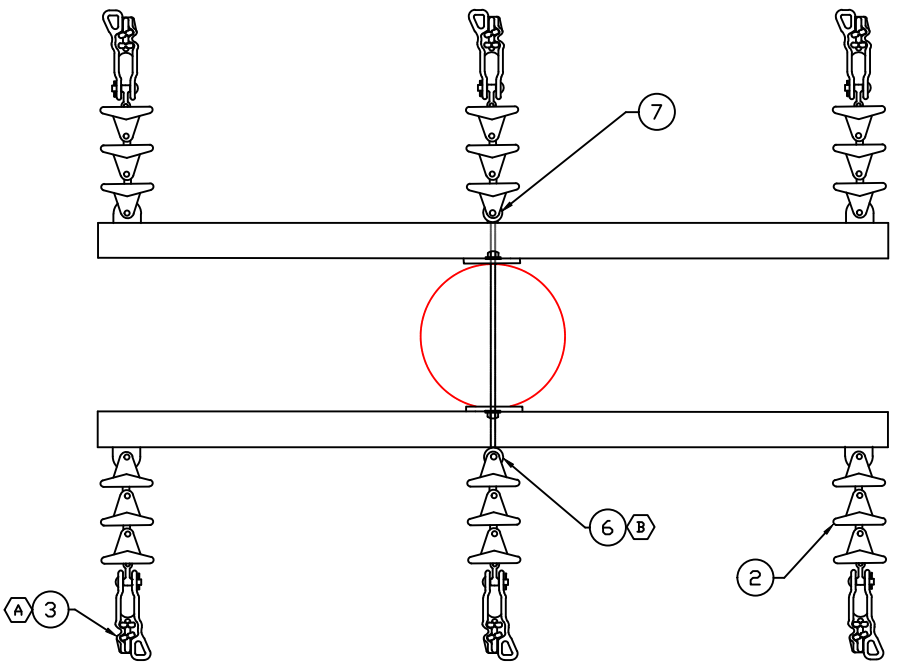
SCALE: N.T.S.

DATE		DATE	REVISION

DWG. NO.
XRM-10DE



OVERHEAD VIEW



NOTES:

Ⓐ SELECT DEADEND SHOE APPROPRIATE FOR WIRE SIZE.

Ⓑ EYEBOLT TO BE INSTALLED IN TOP HOLE OF CROSSARM BRACKET, AS SHOWN.

DWG. REF.	QTY	LIST OF MATERIALS DESCRIPTION
1	2	ARMS, 10' DE FIBERGLASS
2	6	INSULATORS, POLY DE BELLS
3	6	DEADEND SHOE
4	1	BOLT, MACHINE 5/8" X LENGTH"
5	2	SPRING LOCK WASHER, 5/8"
6	1	EYE BOLT, 5/8" X LENGTH"
7	1	5/8" EYE NUT

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GREENVILLE, NORTH CAROLINA

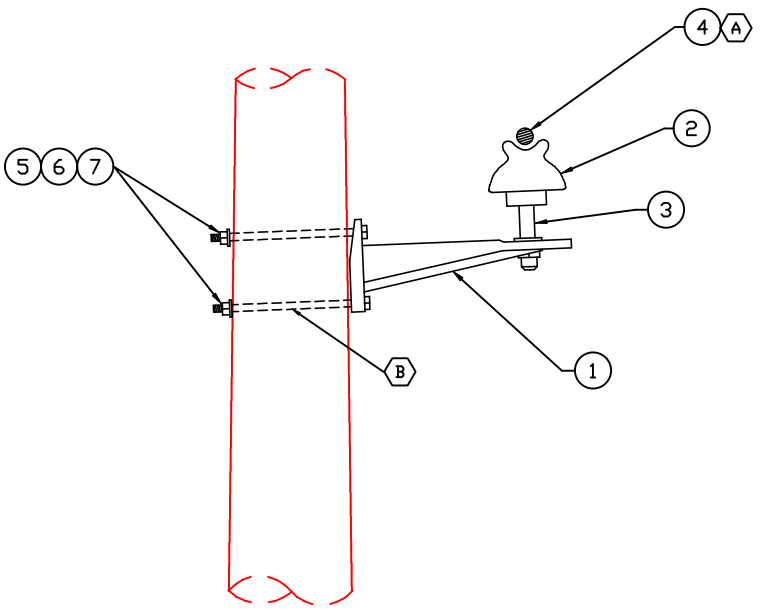
Greenville Utilities

10' DOUBLE DEADEND DISTRIBUTION CROSSARM

DWN. DRB		DATE: 5/27/2022	
CKD. JLS		APPD. JLS	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.
XRM-10DDE

SIDE VIEW



NOTES:

Ⓐ SELECT INSULATOR & WRAP LOCK APPROPRIATE FOR WIRE SIZE.

Ⓑ SELECT BOLT LENGTH APPROPRIATE FOR POLE DIAMETER

DWG. REF.	QTY	LIST OF MATERIALS DESCRIPTION
1	1	BRACKET, 18" FIBERGLASS
2	1	INSULATOR, PIN TYPE
3	1	PIN SHANK
4	1	PREFORM, WRAP LOCK
5	2	BOLT, MACHINE 5/8" REQUIRED LENGTH
6	2	WASHERS, 2 1/4" SQUARE
7	2	SPRING LOCK WASHER 5/8"

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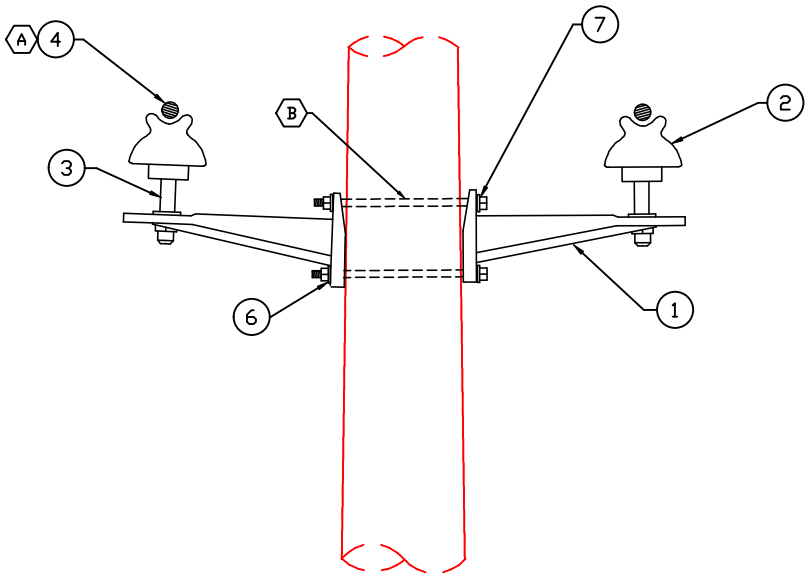
MIF BRACKET ASSEMBLY

DWN. DRB		DATE: 06/06/2022	
CKD. JLS		APPD. JLS	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.
MIF-1

SIDE VIEW



NOTES:

Ⓐ SELECT INSULATOR & WRAP LOCK APPROPRIATE FOR WIRE SIZE.

Ⓑ SELECT BOLT LENGTH APPROPRIATE FOR POLE DIAMETER

DWG. REF.	QTY	LIST OF MATERIALS DESCRIPTION
1	2	BRACKET, 18" FIBERGLASS
2	2	INSULATOR, PIN TYPE
3	2	PIN SHANK
4	2	PREFORM, WRAP LOCK
5	2	BOLT, MACHINE 5/8" REQUIRED LENGTH
6	2	SPRING LOCK WASHER 5/8"

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GREENVILLE, NORTH CAROLINA

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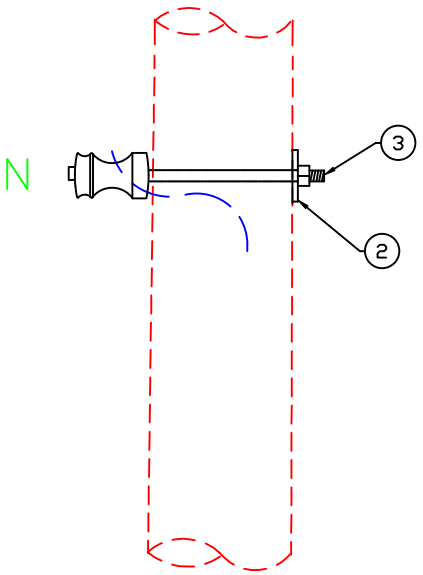
DOUBLE MIF BRACKET ASSEMBLY

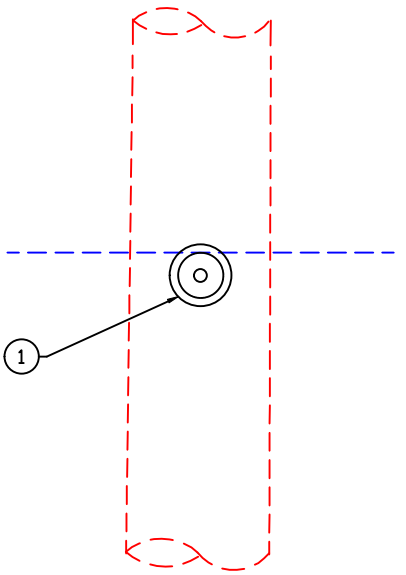
DWN. DRB		DATE: 06/06/2022	
CKD. JLS		APPD. JLS	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.
MIFD-1

FRONT VIEW



SIDE VIEW



DWG. REF.	QTY	LIST OF MATERIALS
		DESCRIPTION
1	1	INSULATOR, SPOOL "J151"
2	1	WASHER, SQUARE, 2 1/4"
3	1	SPOOL BOLT X REQ. LENGTH
4	1	PREFORM WRAPLOCK X REQ. LENGTH, WIRE SIZE

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Greenville Utilities

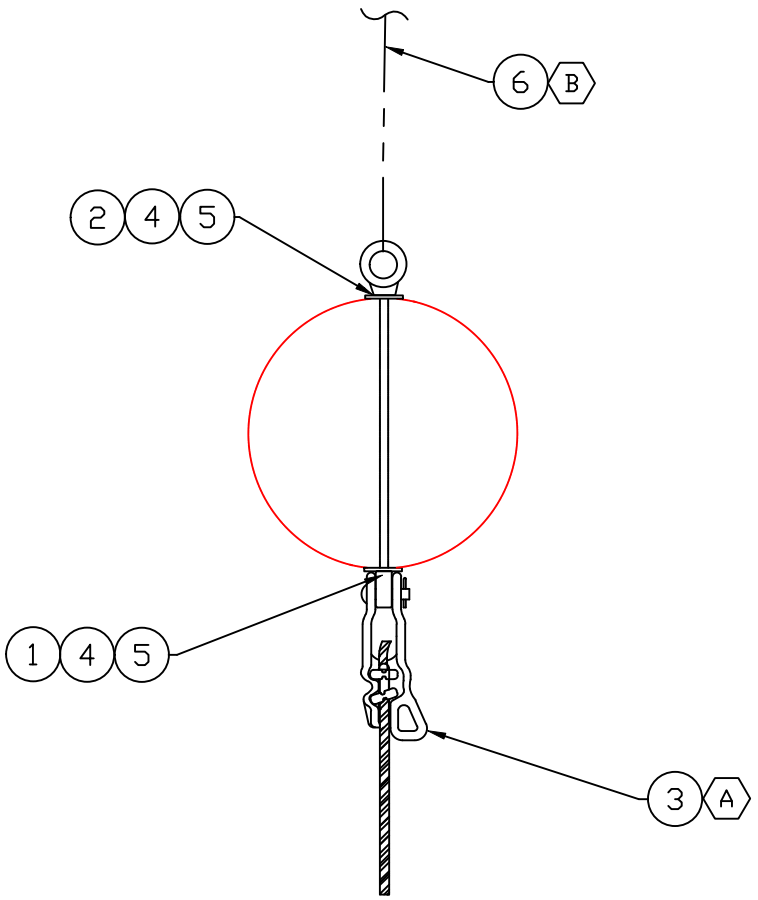
NEUTRAL SPOOL ASSEMBLY

DWN. DRB		DATE: 08/18/2022	
CKD. JLS		APPD. JLS	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.

NS-1

OVERHEAD VIEW



NOTES:

(A) SELECT DEADEND SHOE APPROPRIATE FOR WIRE SIZE.

(B) REFERENCE DWG TG-21 FOR SINGLE DOWN GUY ASSEMBLY.

DWG. REF.	QTY	LIST OF MATERIALS DESCRIPTION
1	1	EYE BOLT, 5/8" X LENGTH"
2	1	5/8" EYE NUT
3	1	DEADEND SHOE
4	2	WASHER, SQUARE, 4" X 4" X 13/16" HOLE
5	2	SPRING LOCK WASHER, 5/8"
6	1	SINGLE DOWN GUY

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GREENVILLE, NORTH CAROLINA

Greenville Utilities

NEUTRAL DEADEND

DWN. DRB | DATE: 06/03/2022

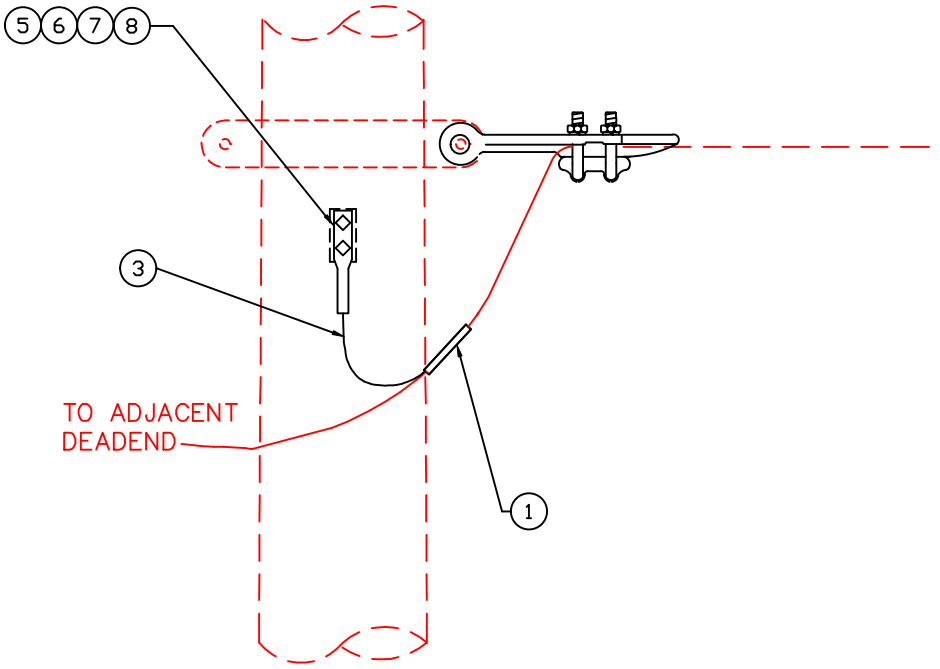
CKD. JLS | APPD. JLS

SCALE: N.T.S.

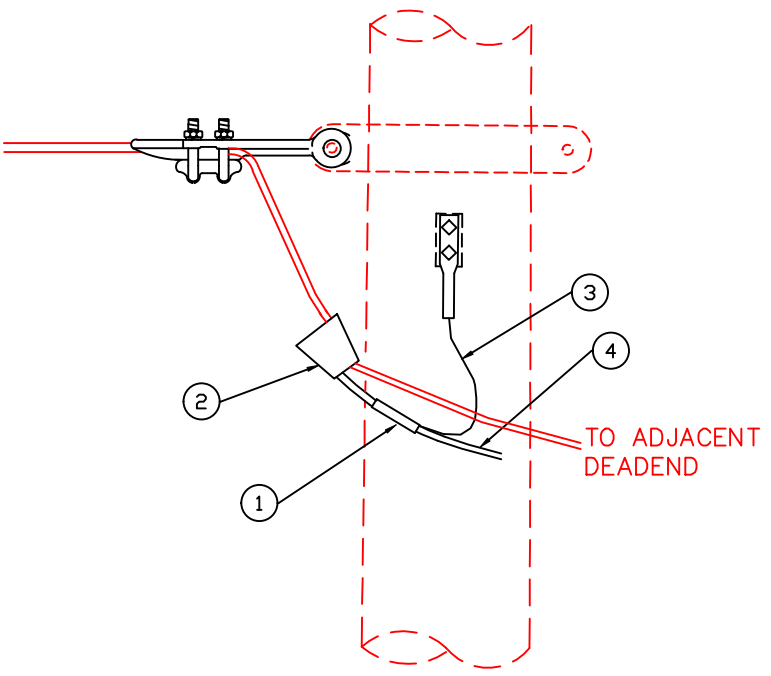
DATE		DATE	REVISION

DWG. NO.
NDE-1

NG-1/0 SUB-ASSY



NG-336 SUB-ASSY



DWG. REF.	NG-1/0 QTY	NG-336 QTY	LIST OF MATERIALS DESCRIPTION
1	1	1	SQUEEZEON CONNECTOR #2
2		1	AMPACT CONNECTOR 336-1/0
3	*	*	WIRE, #4 SOFT DRAWN
4		*	WIRE 1/0 ACSR
5	1	1	#4 COPPER 2-HOLE NEMA PAD
6	2	2	BOLT MACHINE, 1/2" X 1"
7	2	2	FLAT WASHER, 1/2"
8	2	2	LOCK WASHER, 1/2"
*LENGTH OF WIRE AS REQUIRED			

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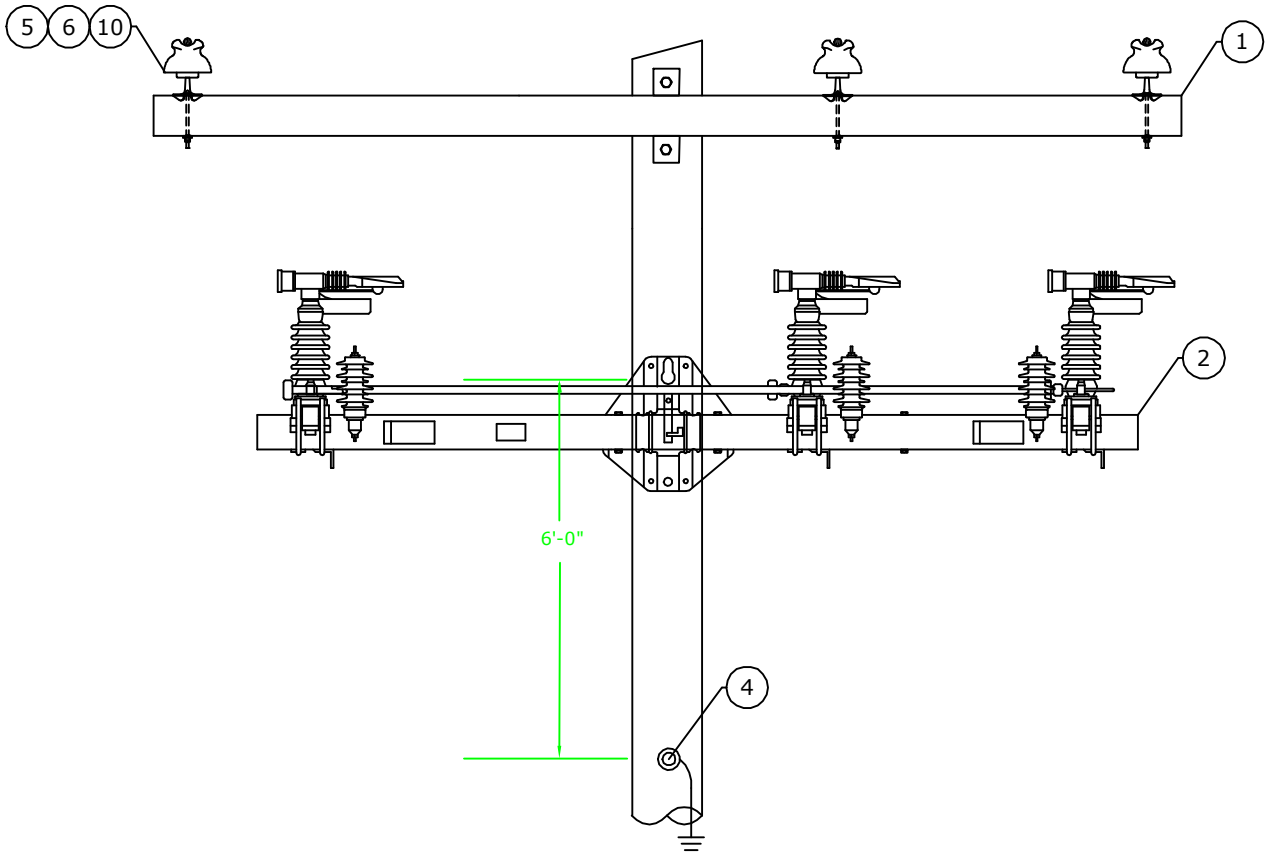
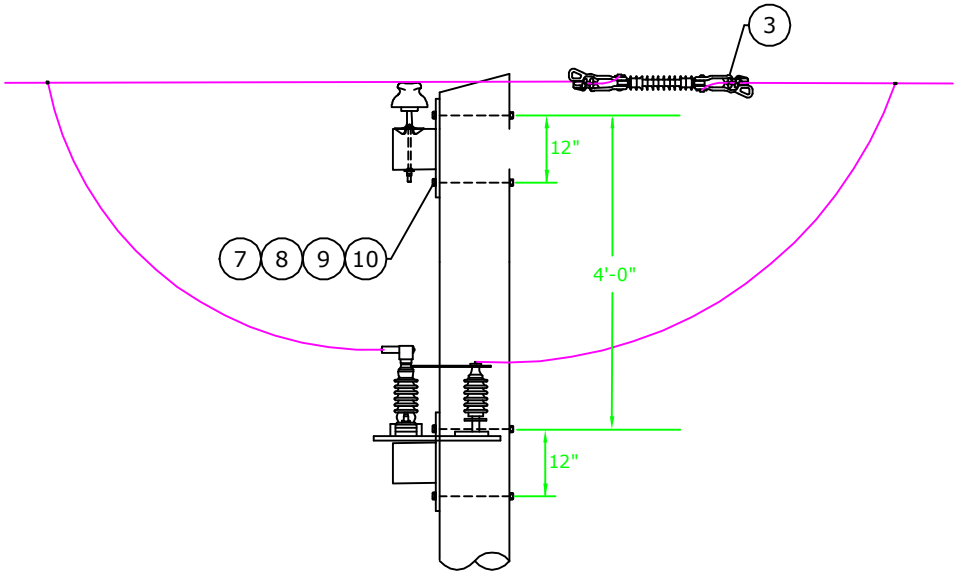
NEUTRAL GROUNDING ASSEMBLY

DWN. DRB		DATE: 06/01/2022	
CKD. JLS		APPD. JLS	
SCALE: N.T.S.			
DATE		DATE	REVISION

DWG. NO.
NG-1



FRONT VIEW



SIDE VIEW

NOTES:

1) FIBERGLASS CROSSARM BRACE NOT SHOWN IN DRAWING.

DWG. REF.	ea.	DESCRIPTION	ITEM	DET.
1	1	10' DISTRIBUTION CROSSARM DE	–	
2	1	15 KV HORIZONTAL GANG SWITCH	–	
3	3	DEAD END ASSEMBLY, SECONDARY	–	
4	1	NEUTRAL ASSEMBLY, DEADEND	–	TM-4E
5	3	25 KV PIN INSULATOR	–	
6	3	25 KV PINS, LONG SHANK CROSS	–	
7	4	BOLT, MACHINE 5/8" x 20"	–	
8	4	SPRING LOCK WASHER, 5/8"	–	
9	4	NUT, 5/8"	–	
10	7	WASHER, SQUARE, 3 x 3 x 1/4" w/ 13/16"	–	

LIST OF MATERIALS

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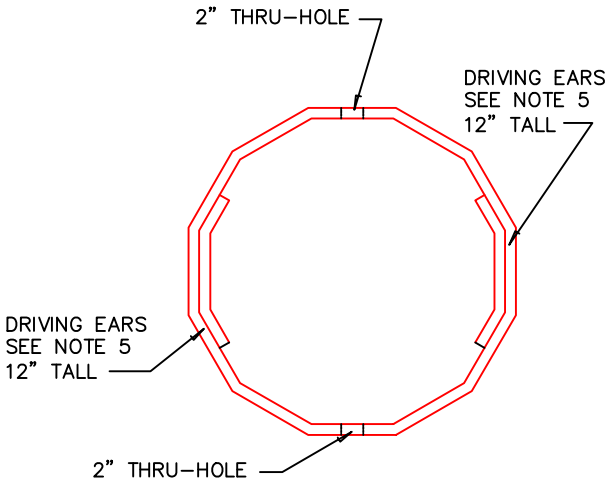
GREENVILLE, NORTH CAROLINA

Greenville Utilities

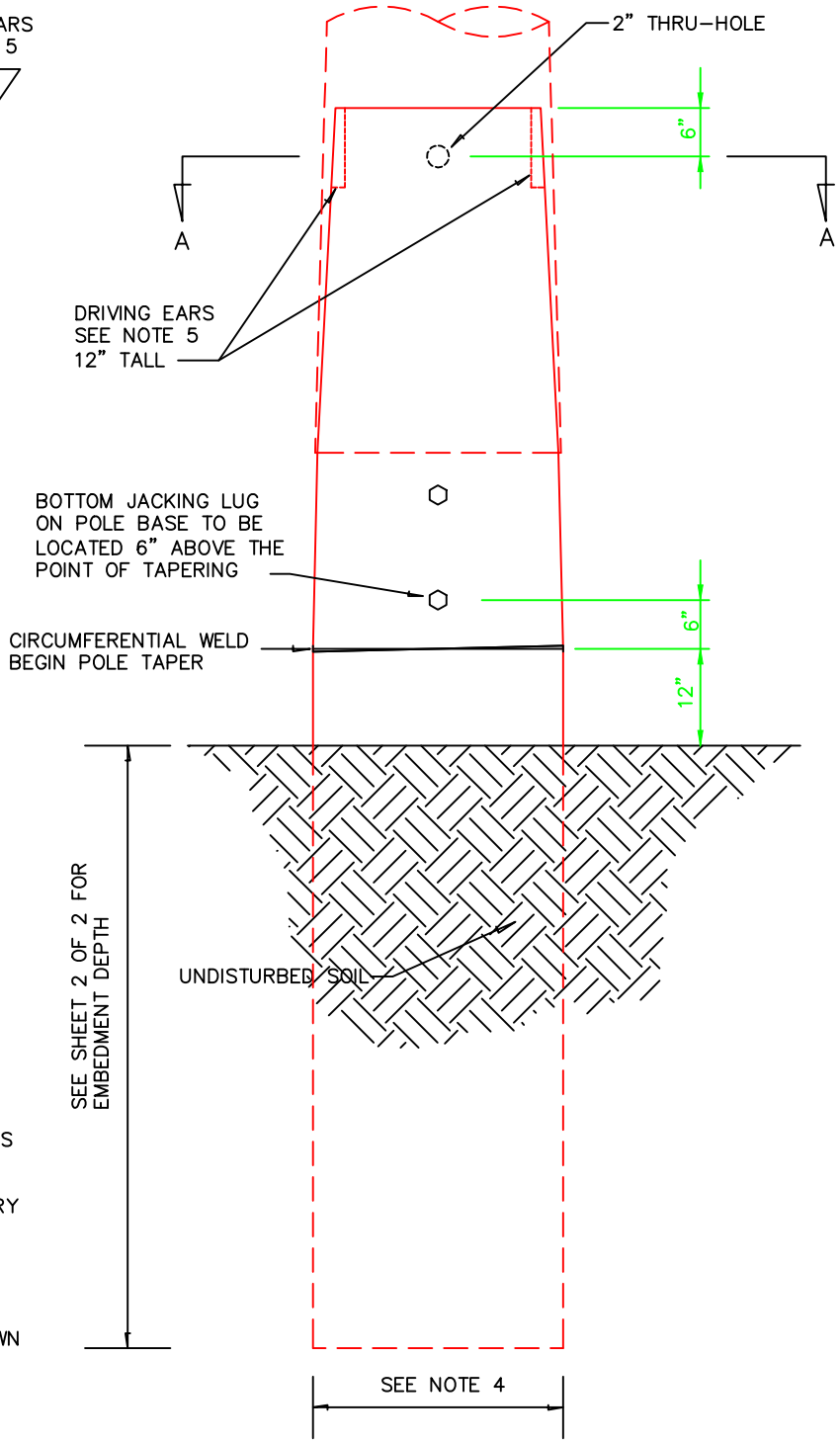
HORIZONTAL GANG SWITCH DETAIL

DWN. JLS		DATE: 11/23/21	
CKD. KW		APPD. KW	
SCALE: N.T.S.		PAGE 1 OF 1	
DATE	REVISION	DATE	REVISION

DWG. NO.



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 AND DEPTHS SHOWN ON SHEET 2 OF 2 ARE MINIMUM. POLE MANUFACTURER IS TO VERIFY VIBRATORY POLE BASE IS ADEQUATE FOR DESIGN LOADS.
5. MANUFACTURER SHALL DETERMINE ADEQUATE SIZE OF DRIVING EARS.

DWG. REF.	ea.	LIST OF MATERIALS DESCRIPTION	ITEM	DET.
	1	VIBRATORY POLE BASE	–	

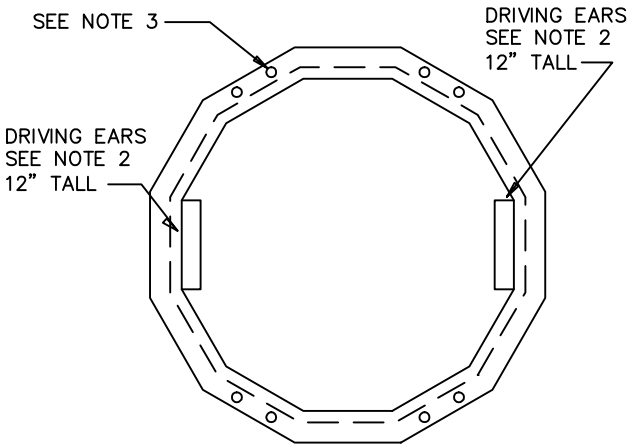
GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA

Greenville Utilities

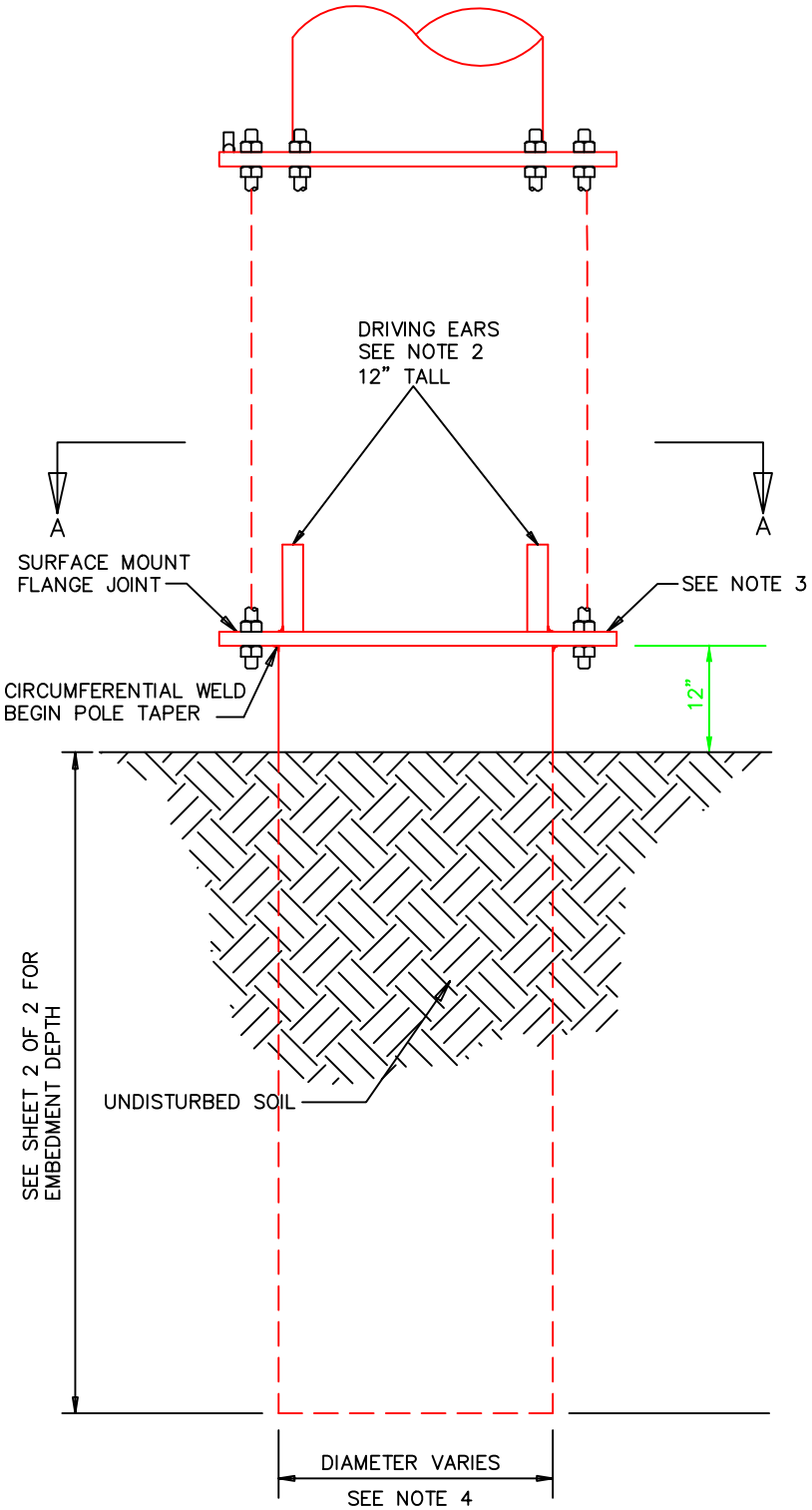
VIBRATORY DRIVEN POLE BASE

DWN. JLS		DATE: 05/01/2020	
CKD. KW		APPD. KW	
SCALE: N.T.S.		SHEET: 1 OF 2	
DATE	REVISION	DATE	REVISION

DWG. NO.
TMF-VPB



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. MANUFACTURER SHALL DETERMINE ADEQUATE SIZE OF DRIVING EARS.
3. FLANGE SIZE AND BOLT PATTERN TO BE DETERMINED BY MANUFACTURER. BOLT PATTERN OF POLE TO MATCH BOLT PATTERN OF FOUNDATION FLANGE JOINT.
4. VIBRATORY BASE DIAMETERS AND DEPTHS SHOWN ON SHEET 2 OF 2 ARE MINIMUM. POLE MANUFACTURER IS TO VERIFY VIBRATORY POLE BASE IS ADEQUATE FOR DESIGN LOADS.

DWG. REF.	ea.	LIST OF MATERIALS DESCRIPTION	ITEM	DET.
	1	VIBRATORY POLE BASE, FLANGE MOUNT	–	

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VIBRATORY DRIVEN POLE BASE
FLANGE TYPE

DWN. JLS		DATE: 05/01/2020	
CKD. KW		APPD. KW	
SCALE: N.T.S.		SHEET: 1 OF 2	
DATE	REVISION	DATE	REVISION

DWG. NO.
TMF–VPB–F