

STR #	LENGTH (FT)	ANGLE Δ
53	75	0

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 8 STRINGING: -20', 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

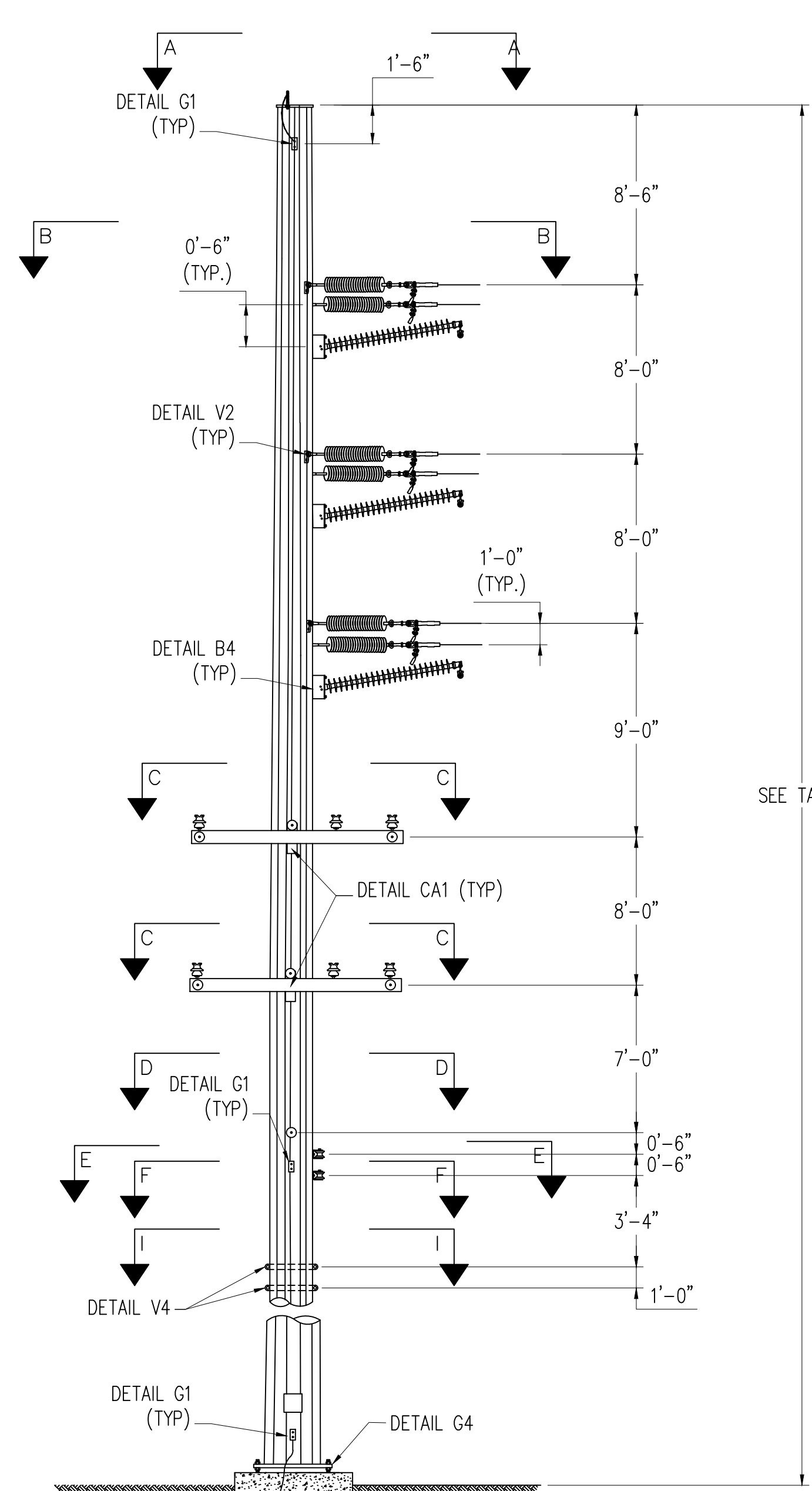
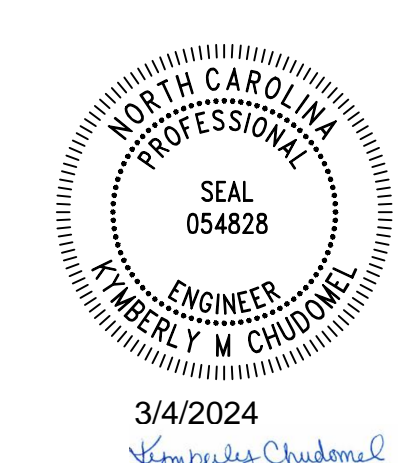
OHGW: 7#9 ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47KV: 795 KCMIL AAC "ARBUTUS"
 DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

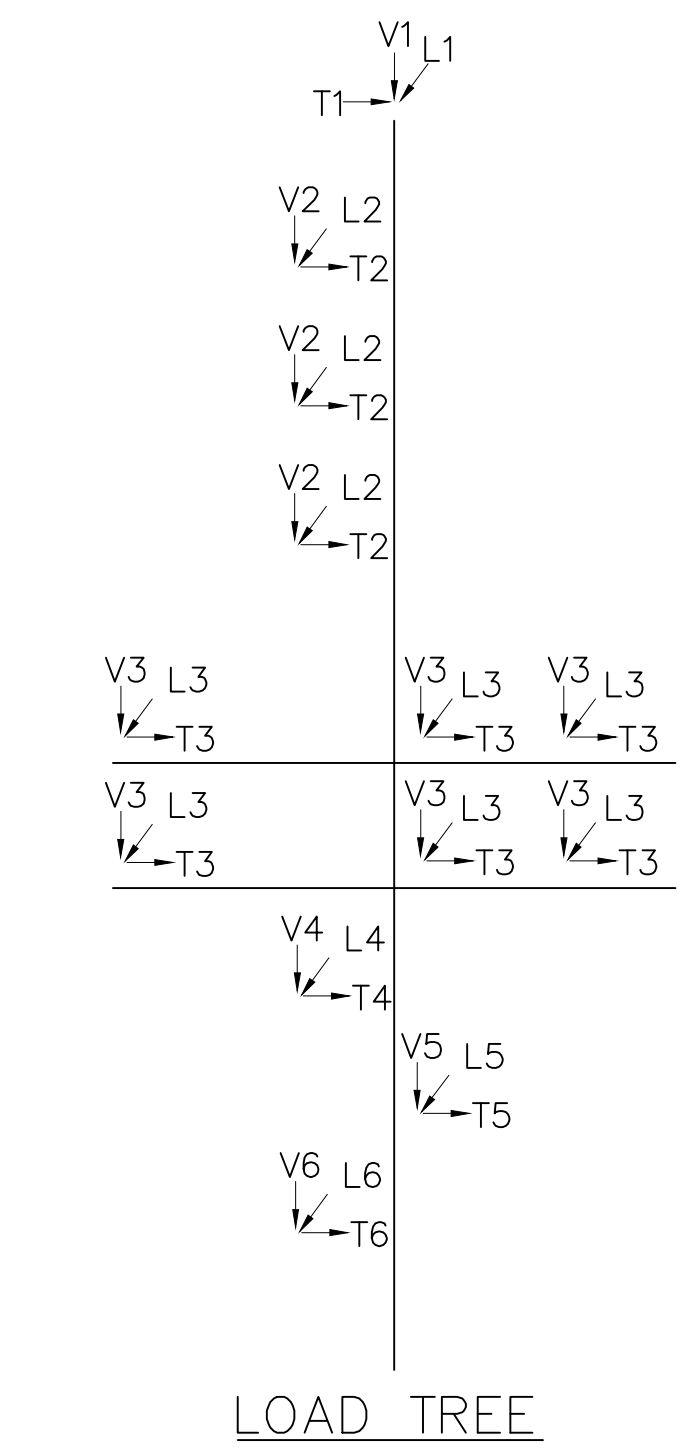
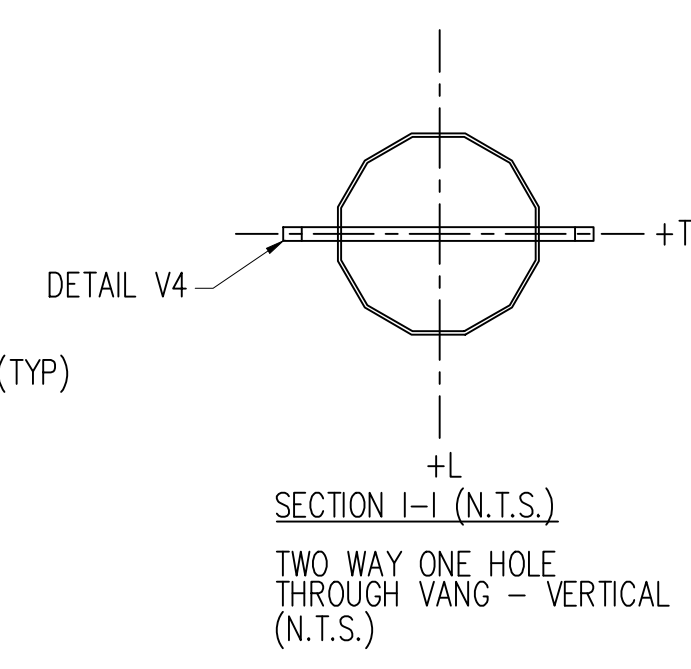
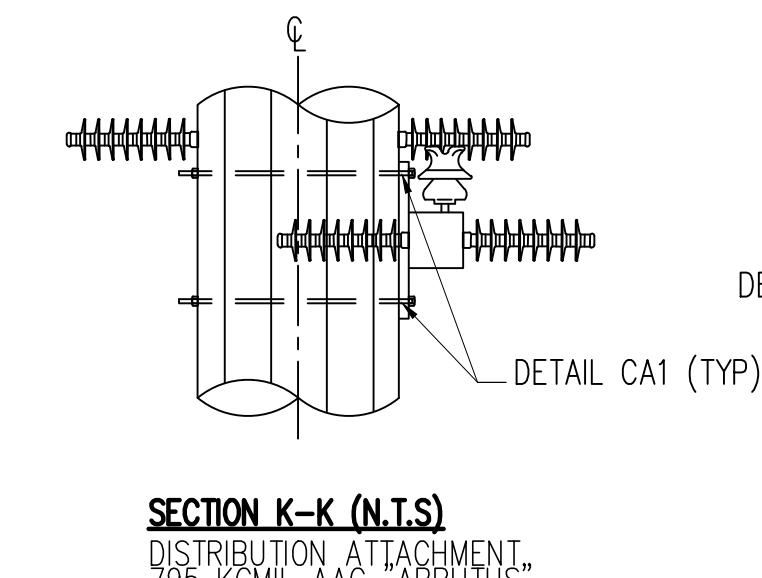
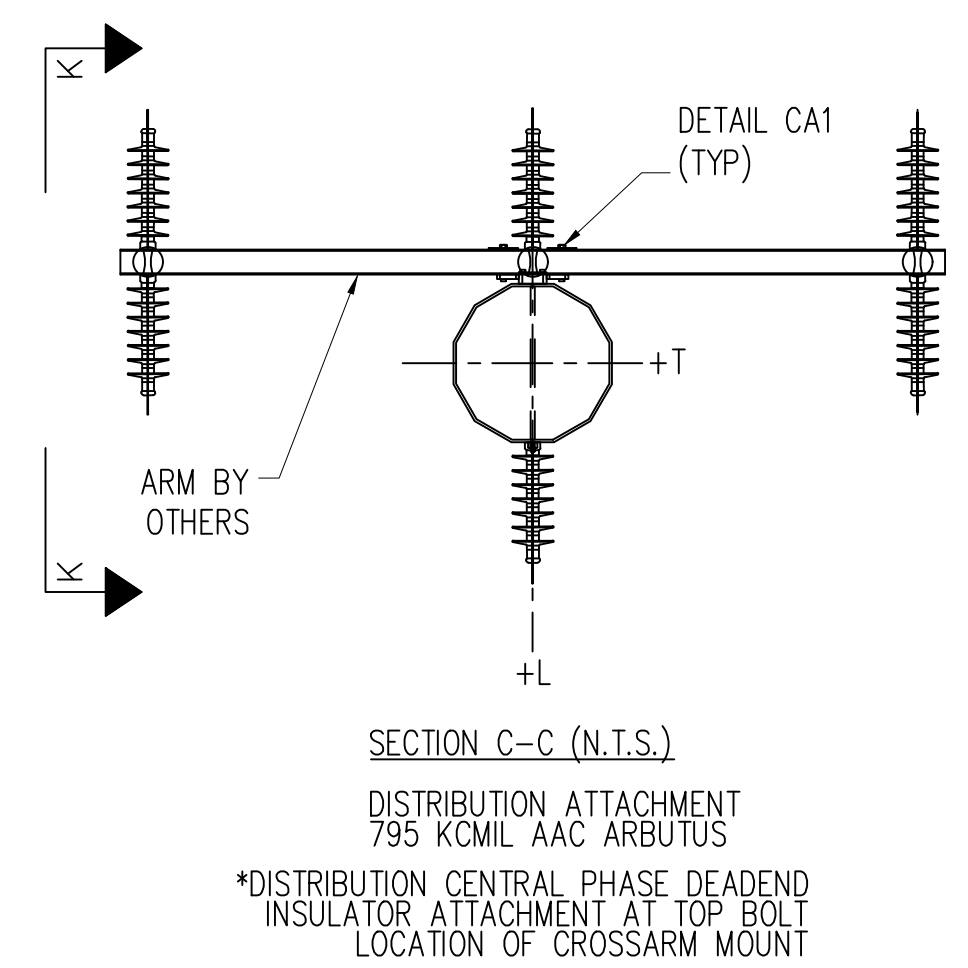
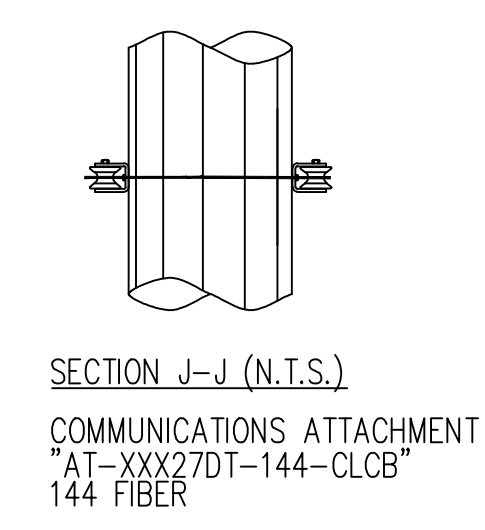
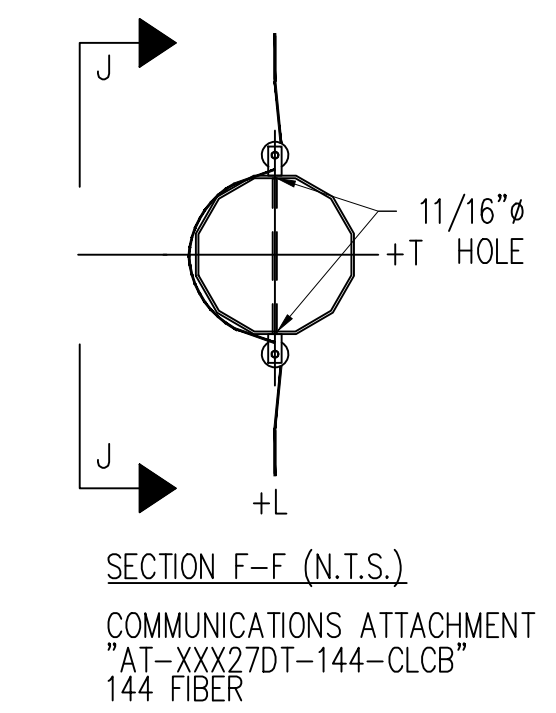
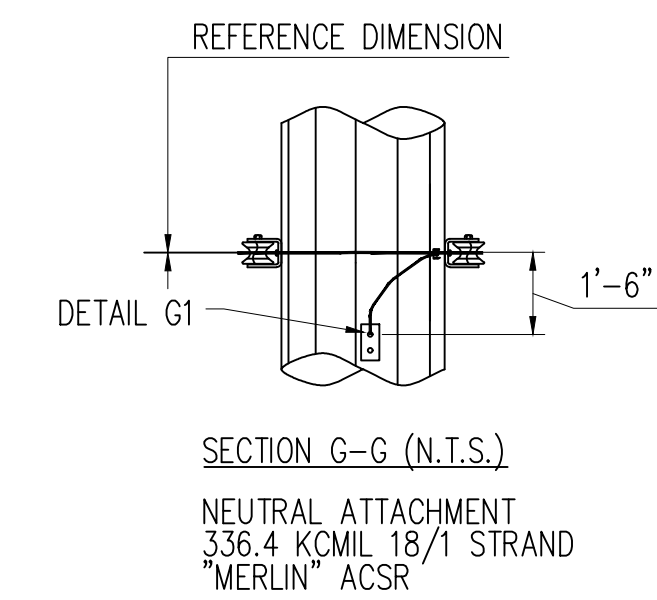
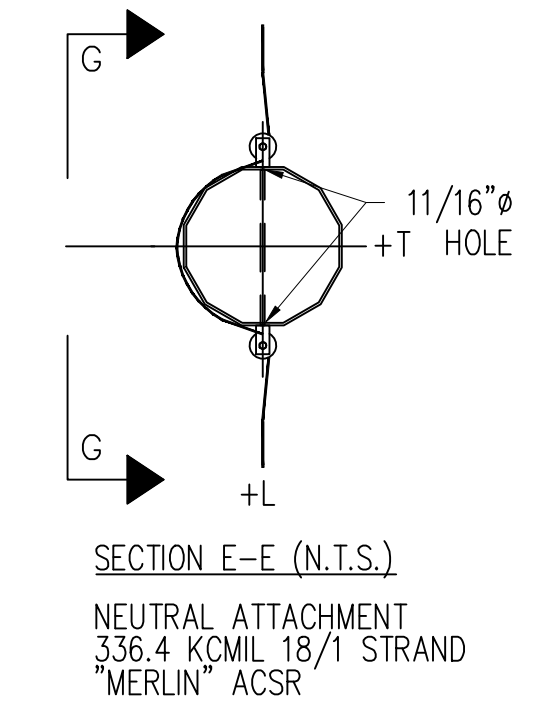
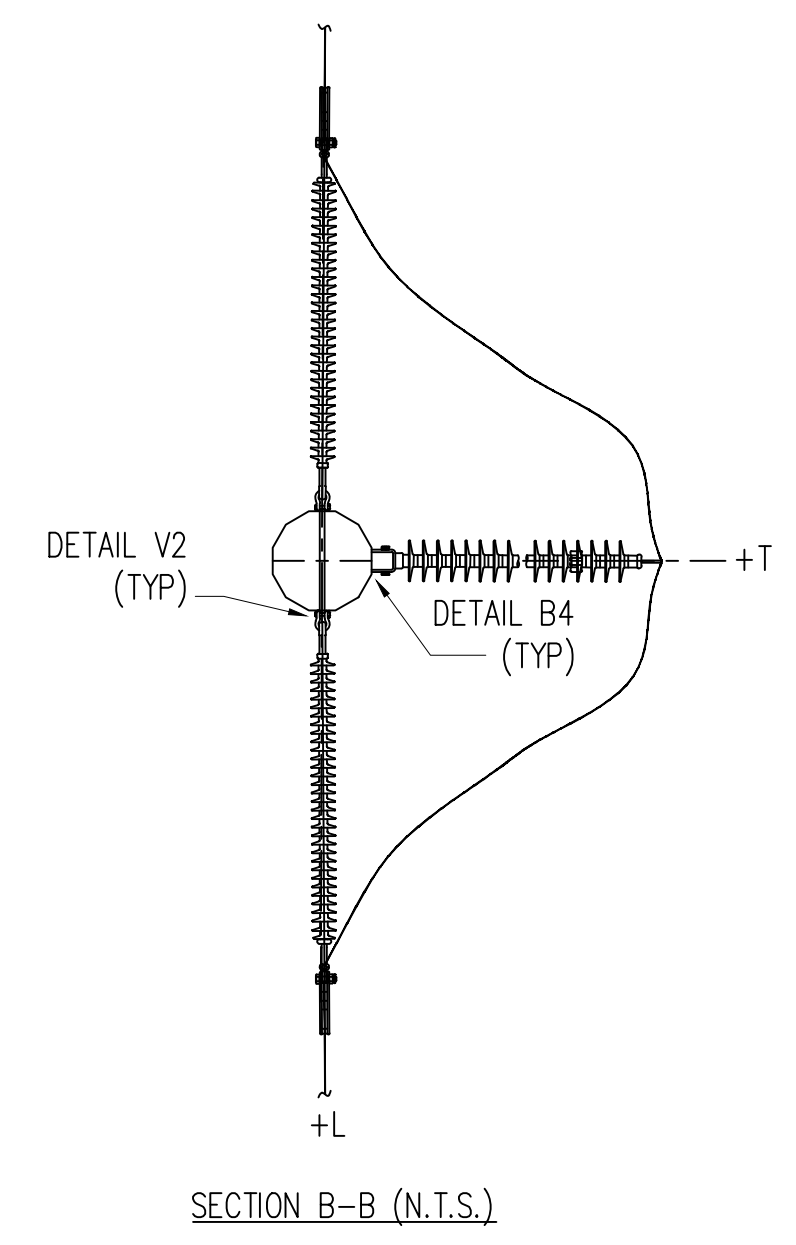
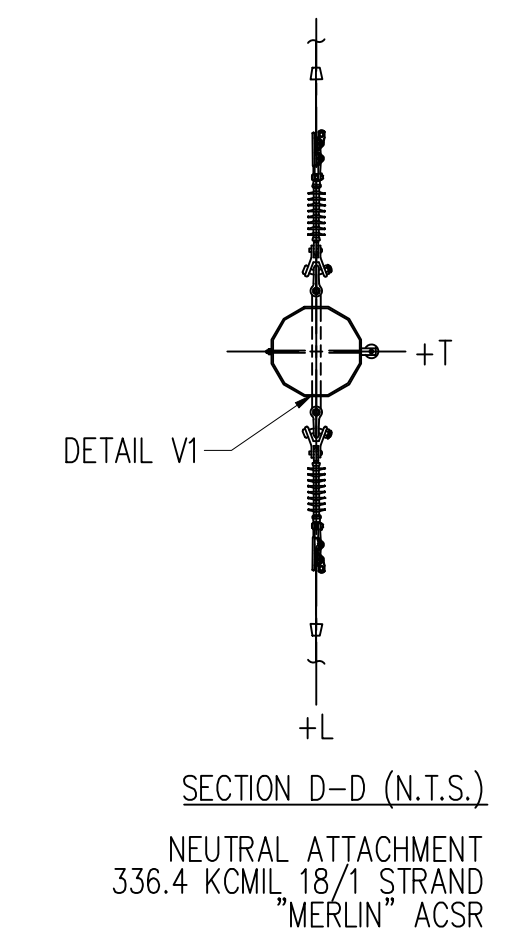
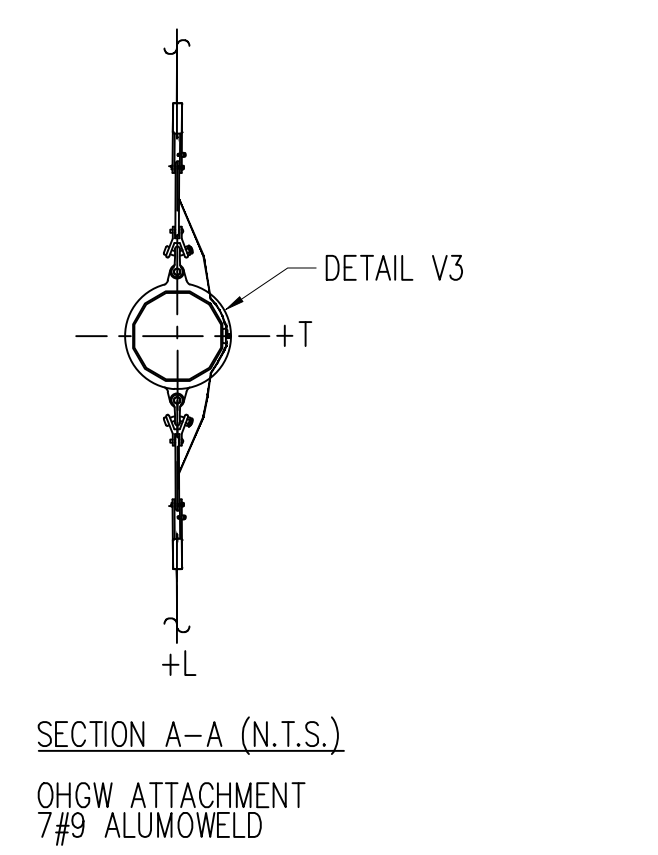
- ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
- STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
- STRUCTURE SHALL BE DESIGNED SELF SUPPORTING. GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
- WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
- FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
- MINIMUM VANG PLATE THICKNESS = 1/2"
- WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
- 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.
- 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' NO WIND LOAD CASE.
- ALL STRUCTURES SHALL BE GALVANIZED STEEL.
- ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
- MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.
- SEE DETAIL SHEET DRAWING FOR ADDITIONAL DETAILS
- ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.

LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 8
V1	100	100	200	100	100	200	100	100
T1	200	600	200	600	200	200	100	100
L1	3,400	2,100	3,200	3,400	2,100	3,200	1,100	2,500
V2	300	300	200	300	300	200	100	300
T2	1,600	4,800	800	1,500	4,800	800	100	600
L2	12,100	7,100	9,200	12,100	7,100	9,200	2,800	8,700
V3	300	300	100	200	200	100	100	300
T3	700	1,900	400	700	1,900	400	100	300
L3	8,200	5,000	6,500	7,700	4,500	6,000	1,800	5,800
V4	200	200	100	200	200	100	100	200
T4	600	1,700	300	600	1,700	300	100	200
L4	5,300	3,200	4,400	5,300	3,200	4,400	1,100	3,700
V5	100	200	300	200	100	200	100	100
T5	300	500	200	200	200	100	100	100
L5	100	200	200	1,600	1,500	1,700	0	0
V6	200	200	400	100	100	200	100	100
T6	300	700	300	200	400	200	100	100
L6	100	100	100	1,500	2,000	2,100	100	100
W (PSF)	4.0	36.9	4.0	4.0	36.9	4.0	0.0	0.0

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



SEE TABLE



LOAD TREE

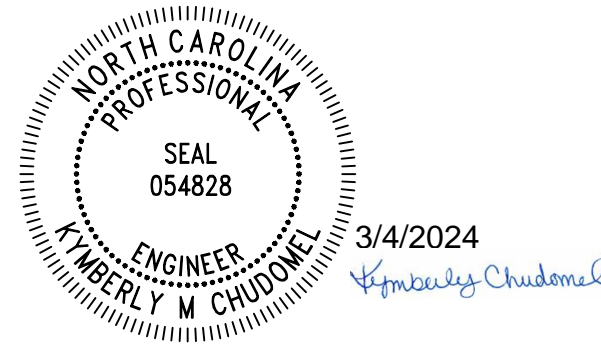
NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
 Greenville, North Carolina

115KV TRANSMISSION LINE
 SIMPSON SUB TO G203
 LOAD AND DESIGN
 DEADEND 0 DEG WITH UNDERBUILD

DWN. J. THOMAS DATE 10/30/23 DWG. NO.
 CKD. A. KELSCH APPD. K. CHUDOMEL DE-ODEG-2UB DE ARM - STR 53
 SCALE: NONE



STR #	LENGTH (FT)	ANGLE Δ	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
85	82	1	TBD	TBD

LOAD CASES

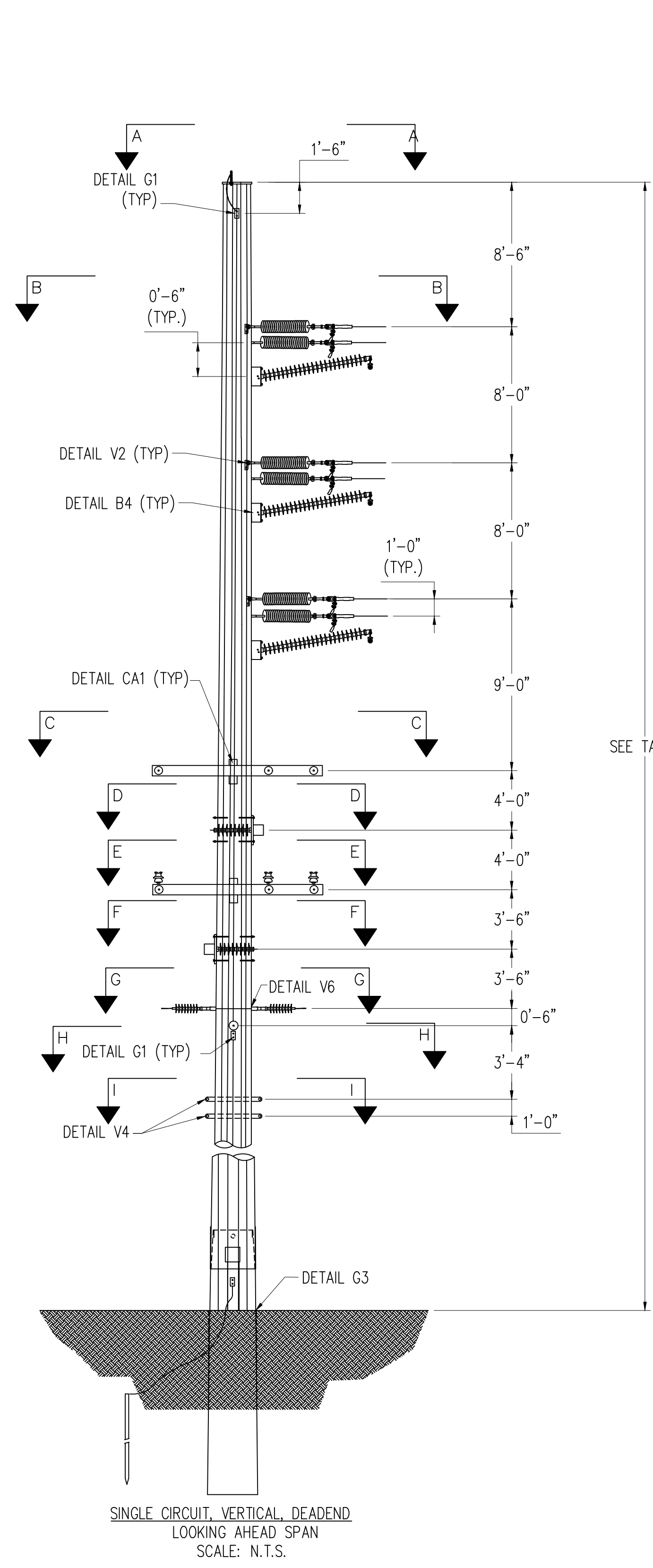
- CASE 1 NESC MEDIUM: 15', .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50
- CASE 2 NESC HIGH WIND: 60', 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 3 NESC ICE WITH WIND: 15', 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 4 NESC MEDIUM DEADEND: 15', .25" ICE, 4 PSF WIND
OLF: L=1.65, 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 8 STRINGING: -20', 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

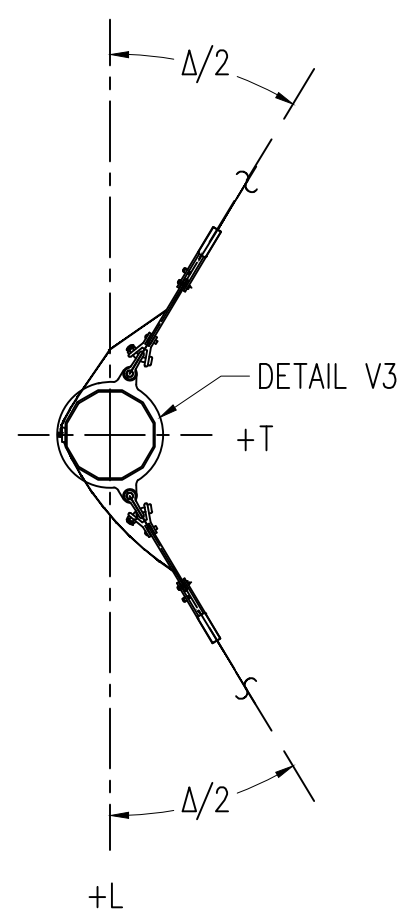
OHGW: 7#9 ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47kV: VARIOUS
 DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

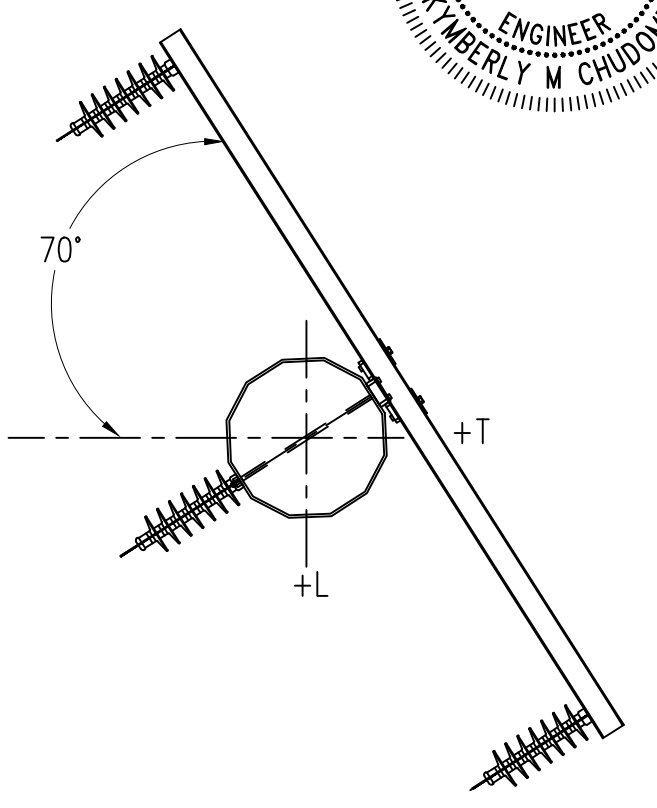
- ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
- STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
- STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
- WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
- FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
- MINIMUM VANG PLATE THICKNESS = 1/2"
- WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
- 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.
- 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' NO WIND LOAD CASE.
- ALL STRUCTURES SHALL BE GALVANIZED STEEL.
- ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
- MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.
- SEE DETAIL SHEET DRAWING FOR ADDITIONAL DETAILS
- ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD.



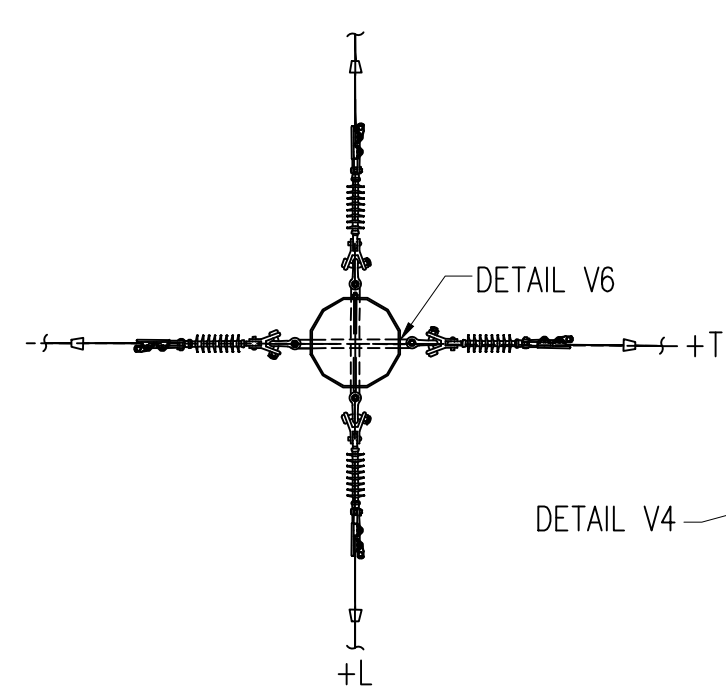
SEE TABLE



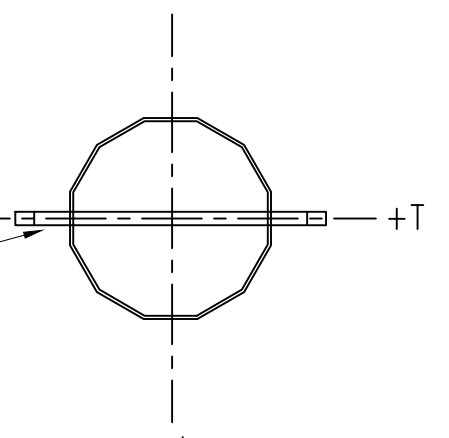
SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



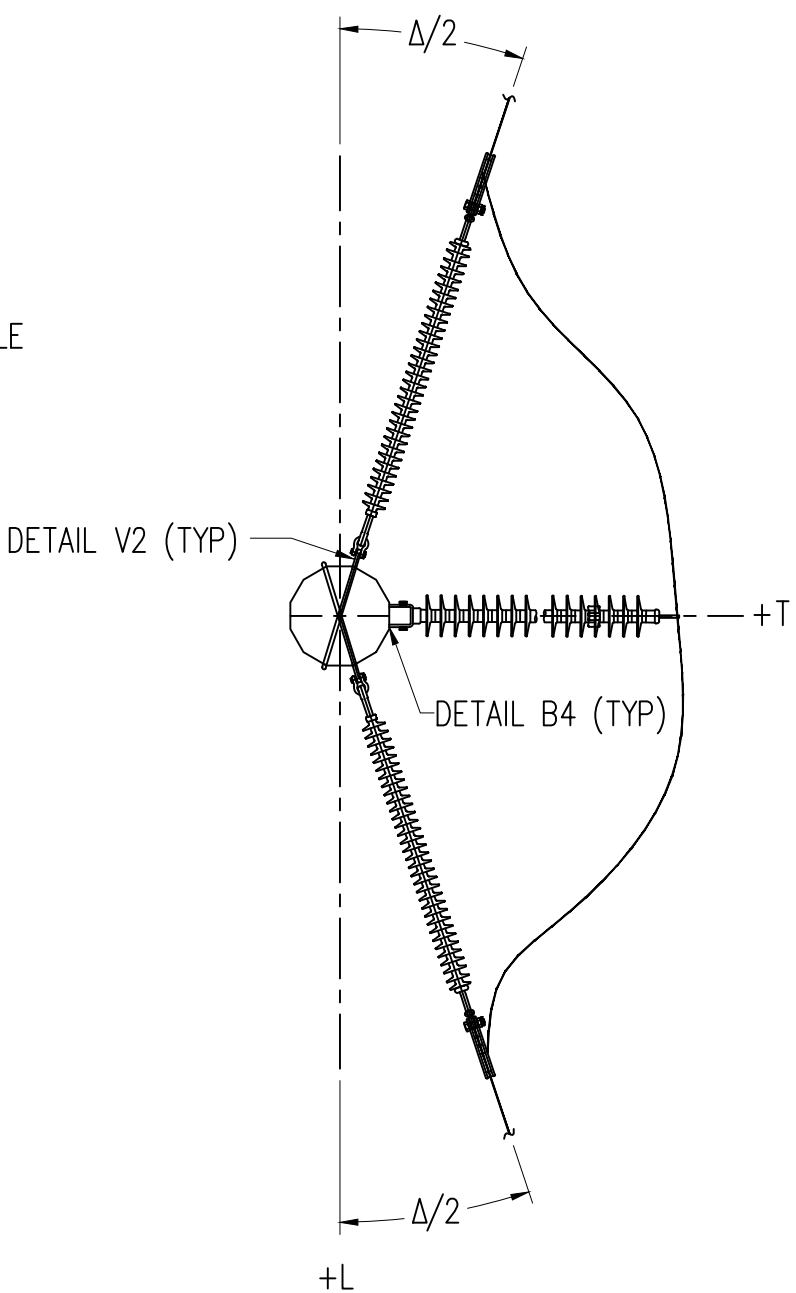
SECTION D-D (N.T.S.)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC "ARBUTUS"
*DISTRIBUTION CENTRAL PHASE DEADEND
INSULATOR ATTACHMENT AT TOP BOLT
LOCATION OF CROSSARM MOUNT



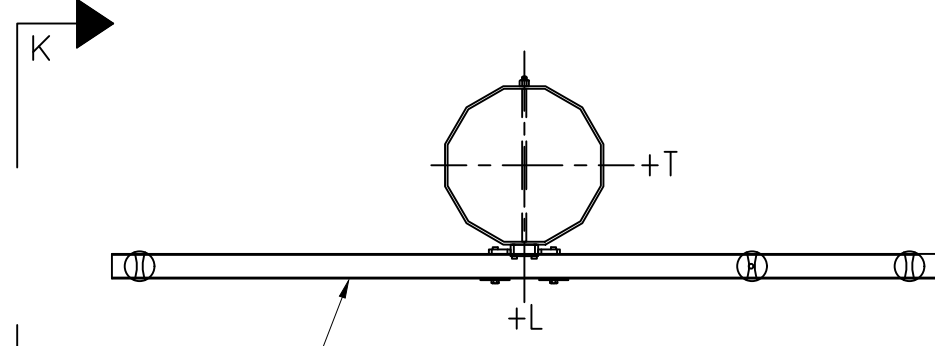
SECTION G-G (N.T.S.)
NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



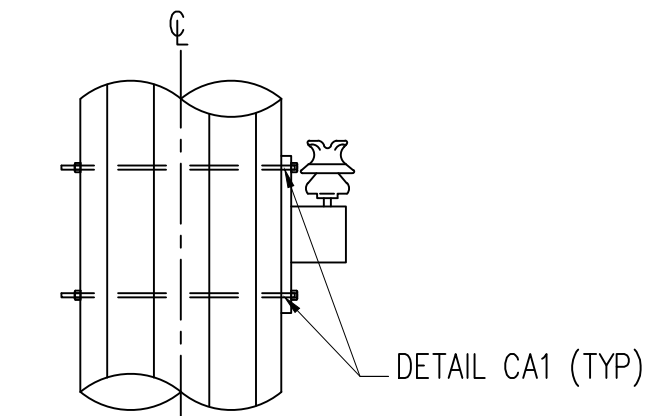
SECTION I-I (N.T.S.)
TWO WAY ONE HOLE
THROUGH VANE - VERTICAL
(N.T.S.)



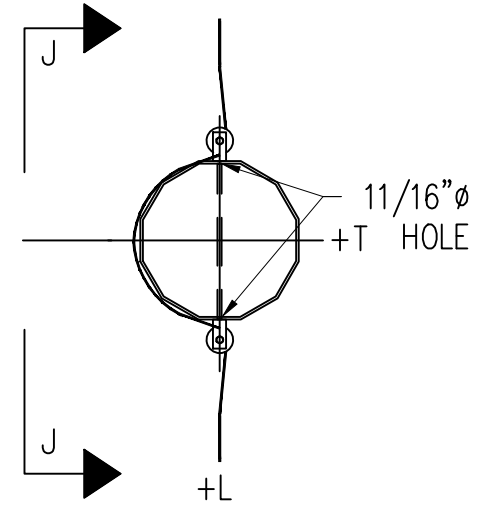
SECTION B-B (N.T.S.)
CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



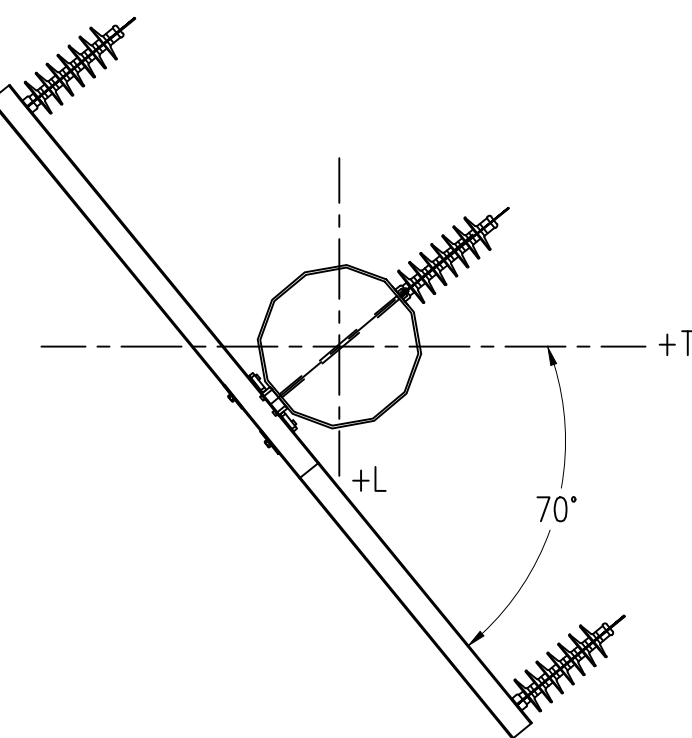
SECTION E-E (N.T.S.)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC "ARBUTUS"



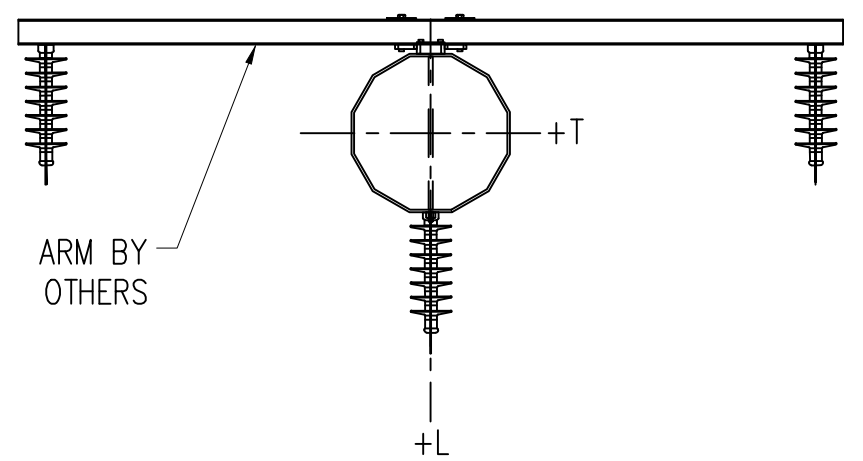
SECTION K-K (N.T.S.)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC "ARBUTUS"



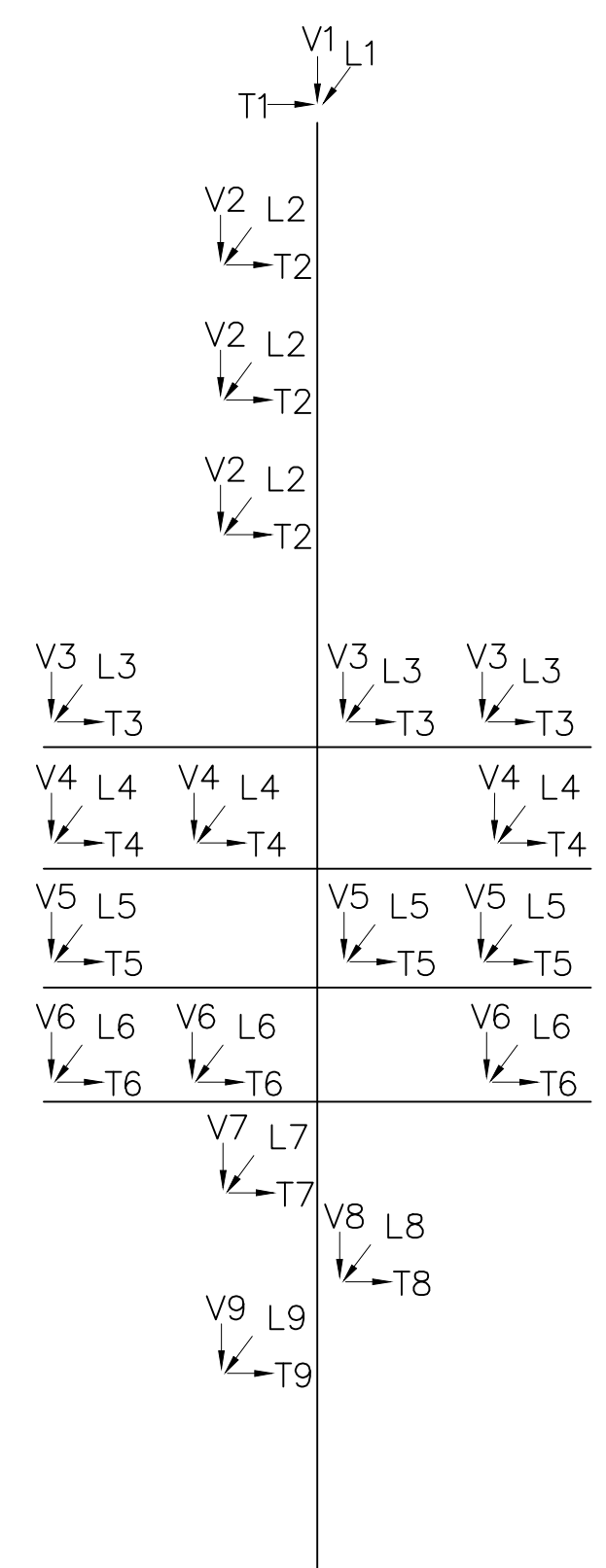
SECTION H-H (N.T.S.)
COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION F-F (N.T.S.)
DISTRIBUTION ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR
*DISTRIBUTION CENTRAL PHASE DEADEND
INSULATOR ATTACHMENT AT TOP BOLT
LOCATION OF CROSSARM MOUNT



SECTION C-C (N.T.S.)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC "ARBUTUS"
*DISTRIBUTION CENTRAL PHASE DEADEND
INSULATOR ATTACHMENT AT TOP BOLT
LOCATION OF CROSSARM MOUNT



LOAD TREE

LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	100	100	300	100	300	300	100	100
T1	200	600	200	200	200	100	100	100
L1	4,000	2,500	3,700	4,000	3,700	3,300	1,200	2,800
V2	300	300	600	400	600	600	200	300
T2	1,600	5,000	900	1,600	900	300	200	700
L2	13,000	8,000	10,000	12,800	10,000	8,700	3,100	9,200
V3	200	200	100	200	100	100	100	2,400
T3	700	2,000	400	700	400	200	100	300
L3	8,000	4,800	6,300	8,000	6,300	5,500	1,700	5,700
V4	200	200	400	200	400	400	100	200
T4	2,400	2,800	1,900	2,400	1,900	1,500	500	1,500
L4	1,500	1,000	1,400	1,500	1,400	1,200	400	1,100
V5	200	100	500	100	100	500	100	1,400
T5	400	600	300	200	200	100	100	100
L5	0	100	0	5,100	5,300	0	0	300
V6	200	100	200	200	200	200	100	200
T6	2,600	2,700	1,900	2,600	1,900	1,500	600	1,800
L6	200	200	200	200	200	100	100	100
V7	200	200	300	200	300	300	100	200
T7	2,600	2,700	1,900	2,600	1,900	1,500	600	1,800
L7	5,100	3,100	4,200	5,100	4,200	3,700	1,100	3,600
V8	300	200	600	200	400	600	100	200
T8	1,600	1,600	1,700	1,600	1,700	1,500	500	900
L8	1,100	1,300	1,200	1,600	2,200	1,100	300	500
V9	100	100	100	100	100	100	100	100
T9	100	100	100	100	100	100	100	100
L9	100	100	100	100	100	100	100	100
W (PSF)	4.0	36.9	4.0	4.0	36.9	4.0	0.0	0.0

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

NO.	REVISIONS

ISSUED FOR BID

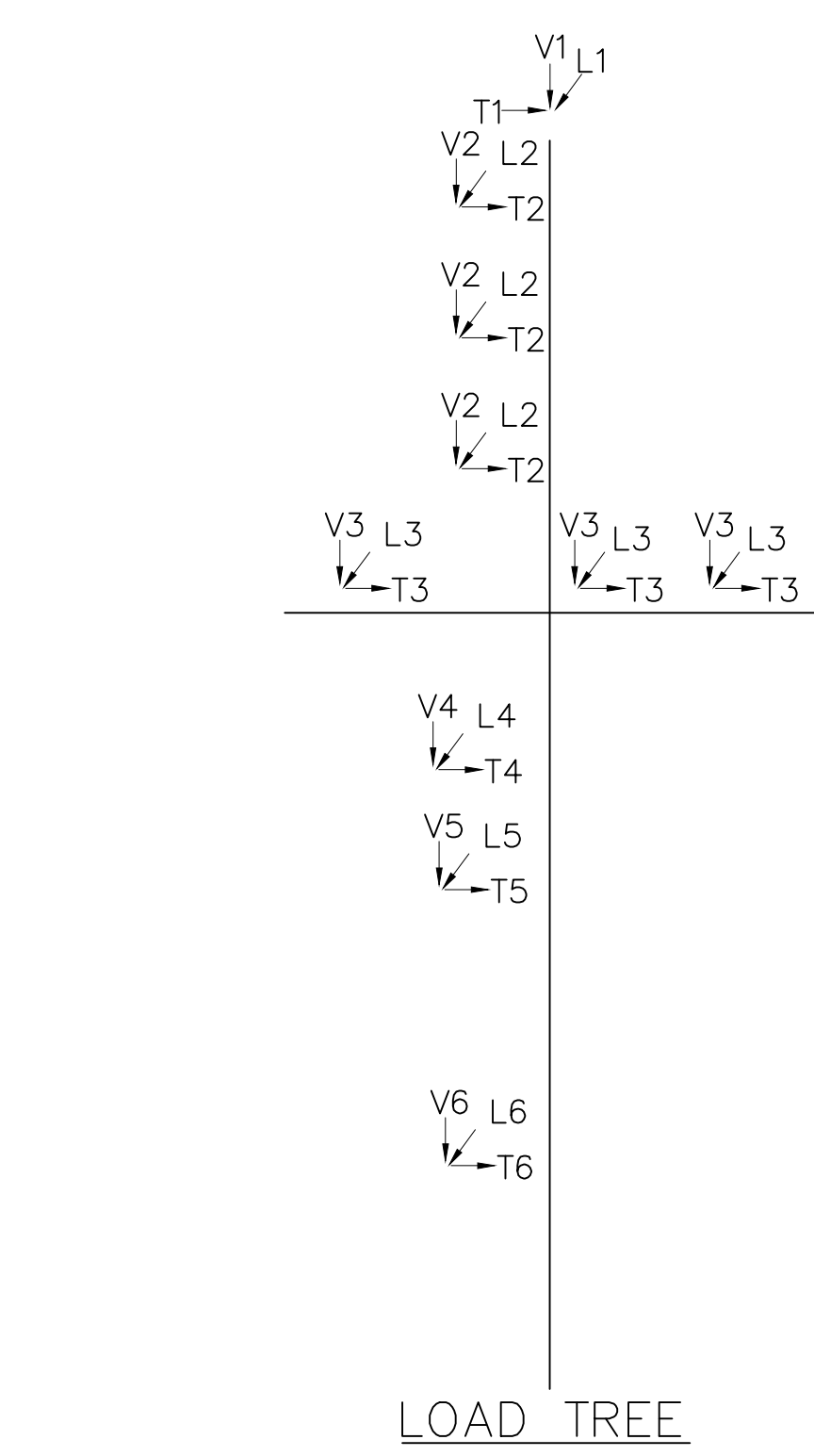
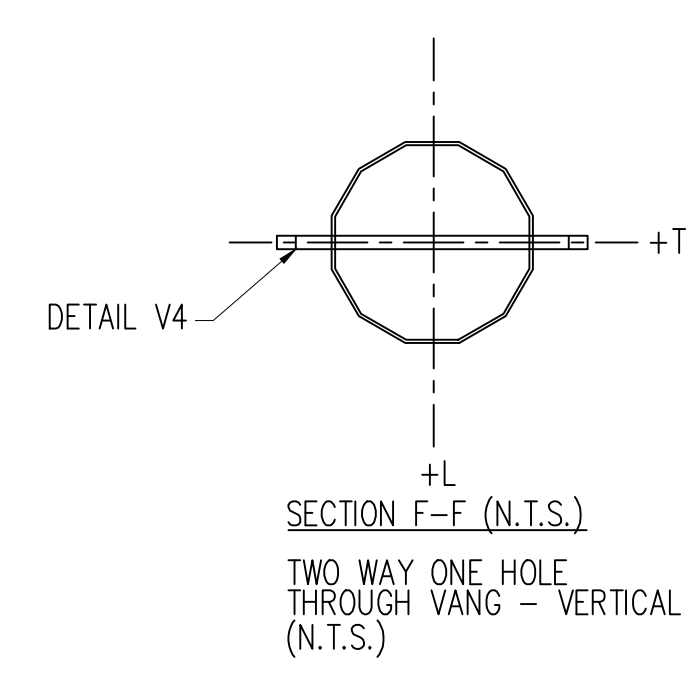
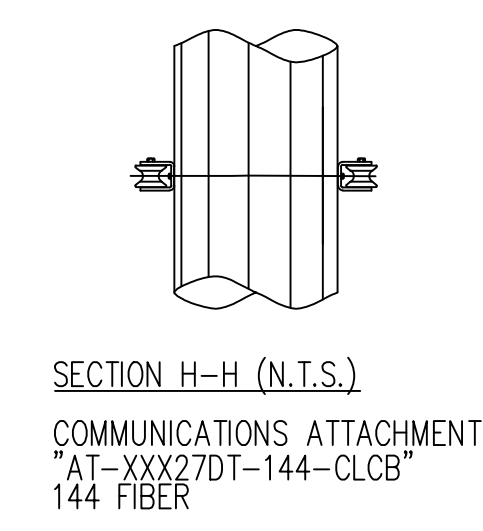
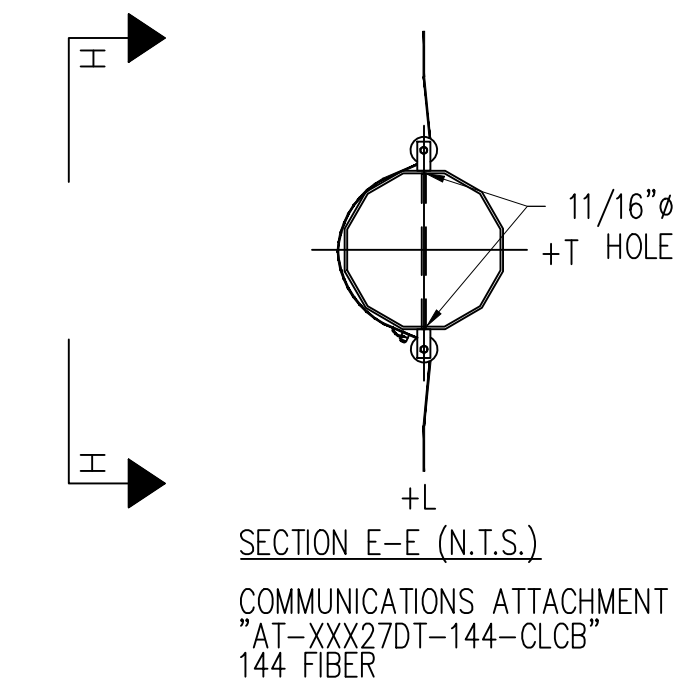
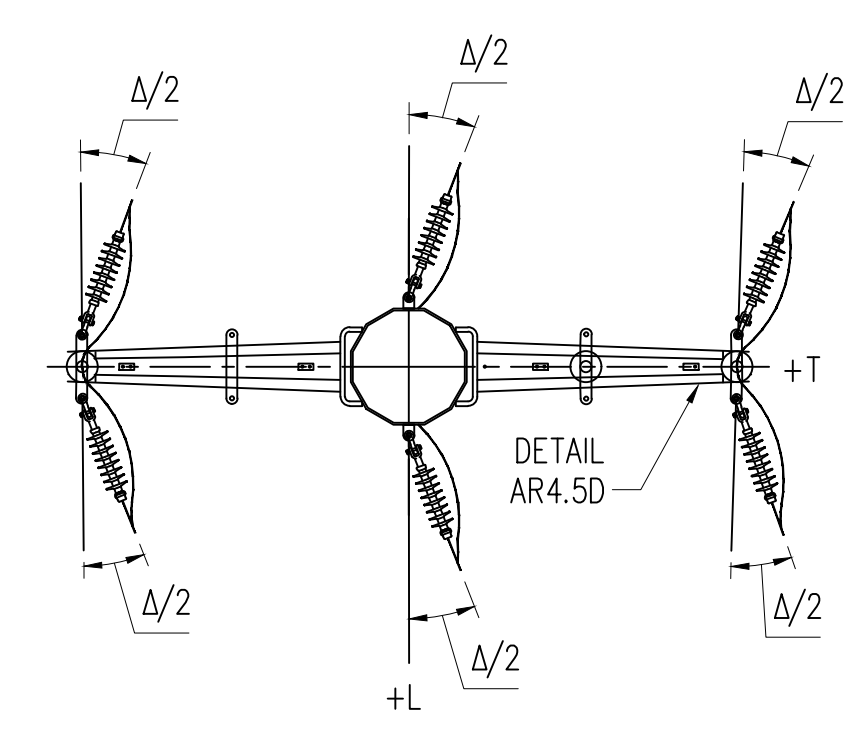
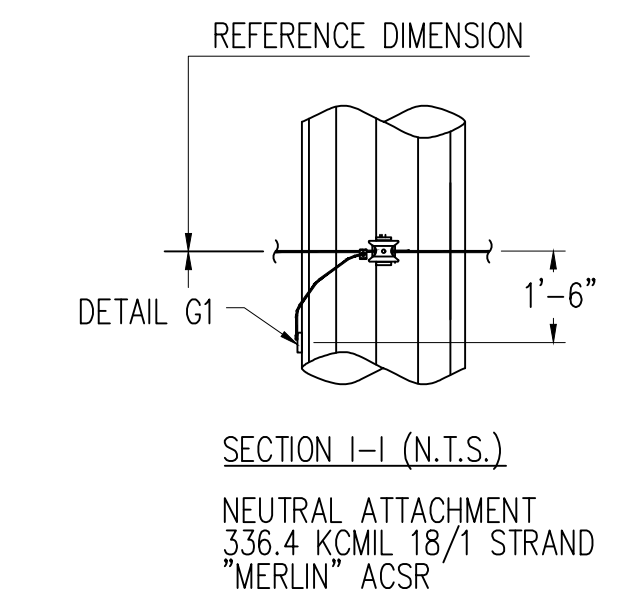
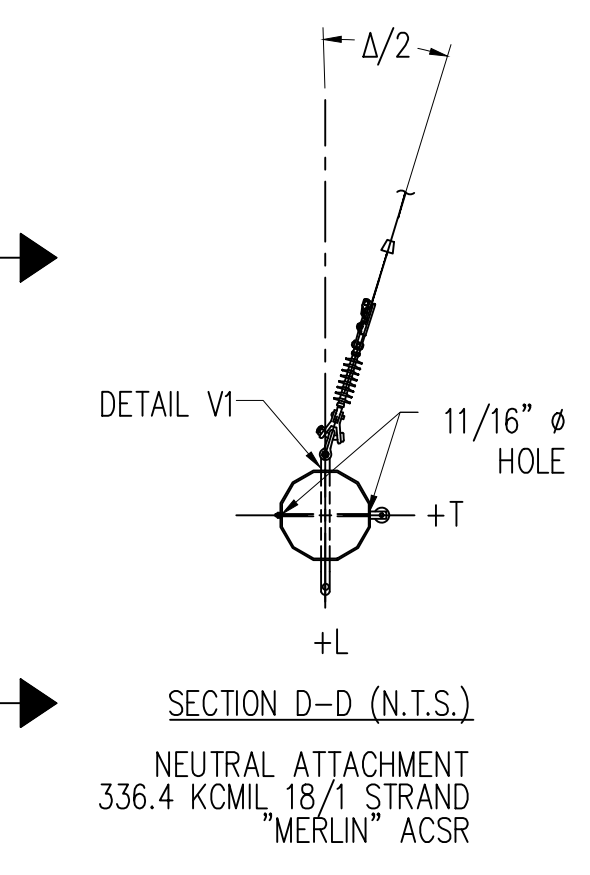
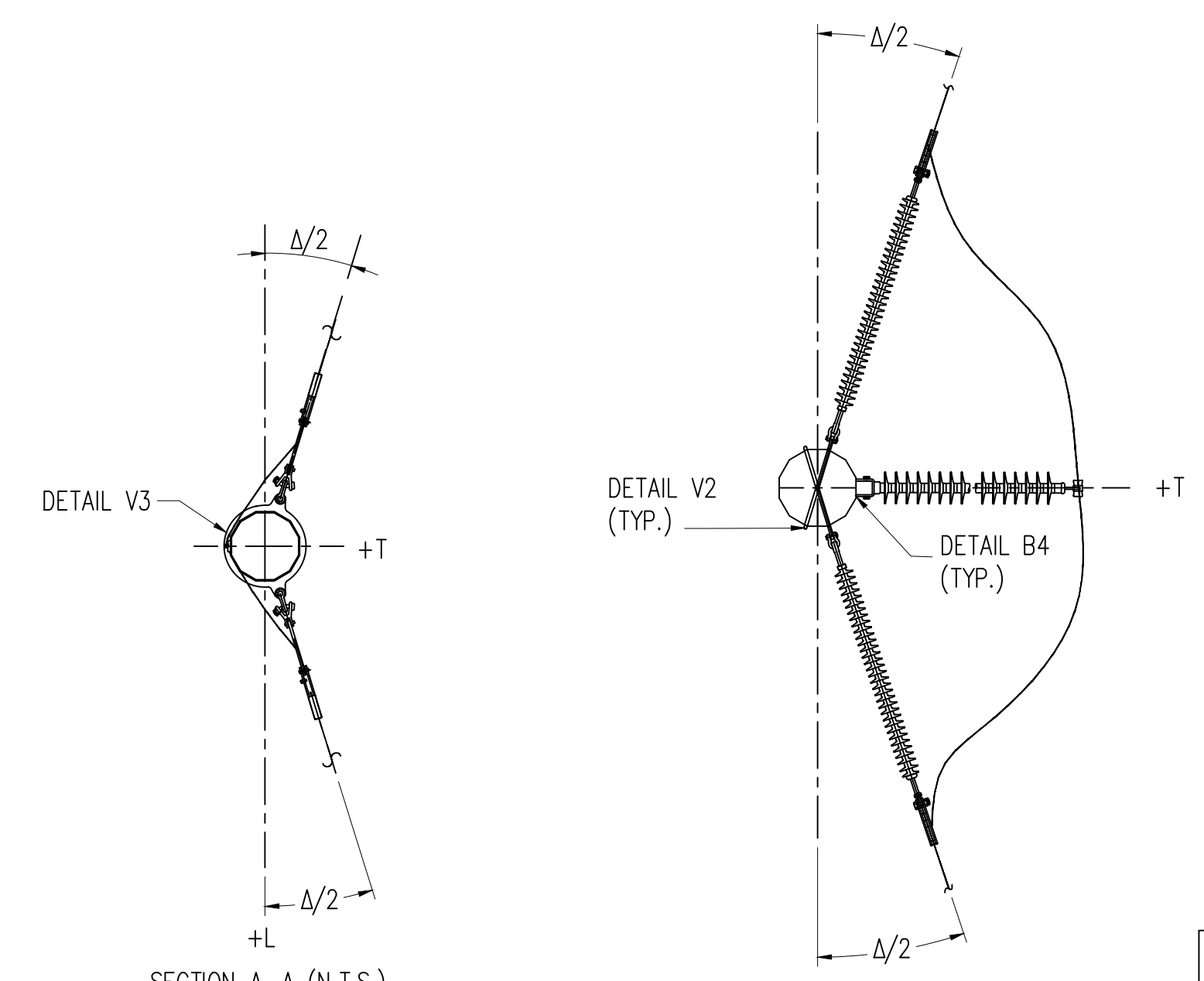
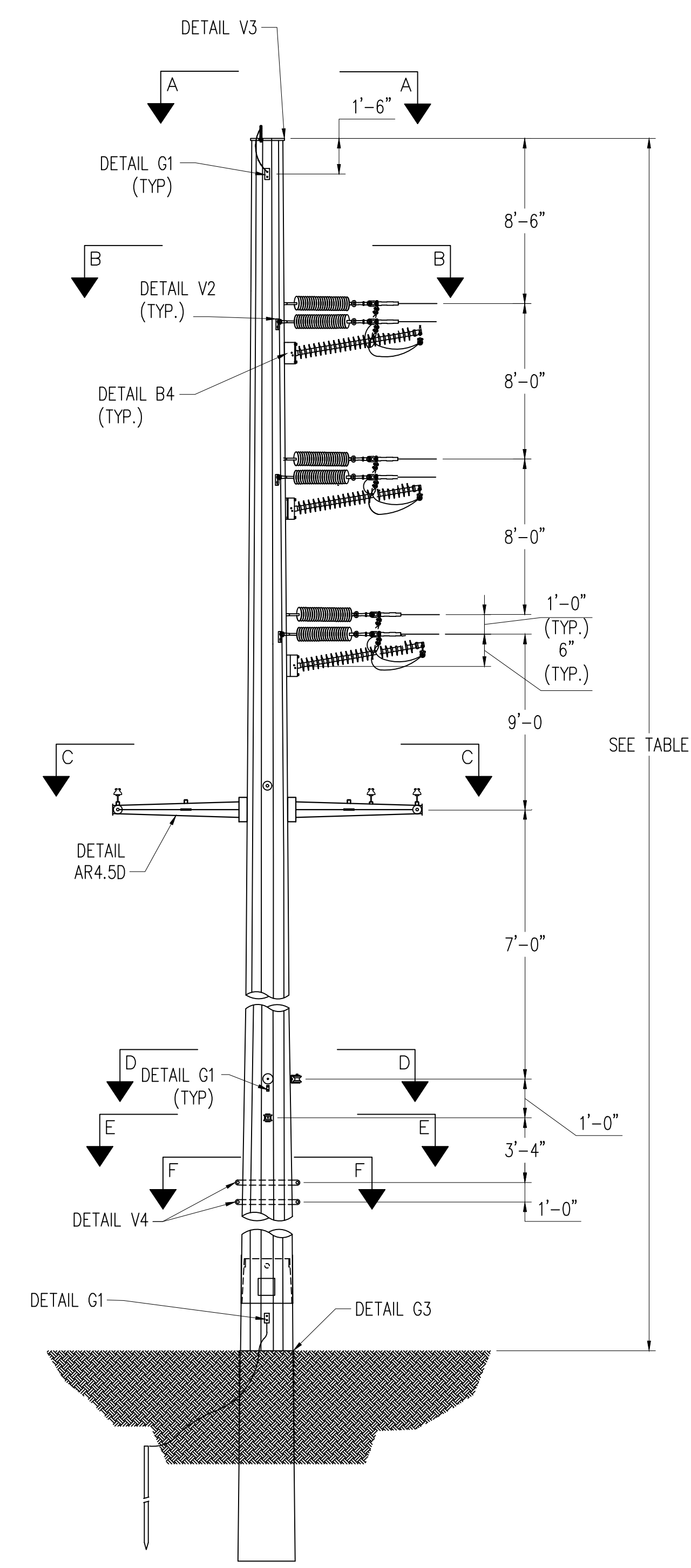
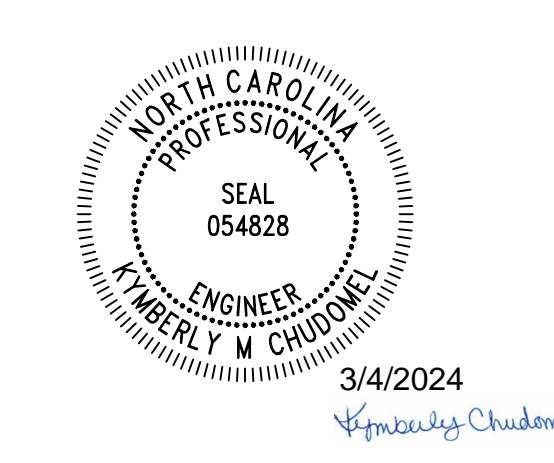
GREENVILLE UTILITIES
Greenville, North Carolina

115KV TRANSMISSION LINE
SIMPSON SUB TO G203
LOAD AND DESIGN
DEADEND 60"-90" WITH UNDERBUILD

DWN. J. CORDERO DATE 11/7/23
CKD. O. PENA APPD. K. CHUDOMEL
SCALE: NONE

DWG. NO.
DE-SR 85

STR #	LENGTH (FT)	ANGLE Δ	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DIA. (FT)
5	85	-31	68	39



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

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 8 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 795 KCMIL AAC "ARBUTUS"
DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

- ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
- STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
- TRANSVERSE AND LONGITUDINAL LOADS MAY ALSO ACT IN OPPOSITE DIRECTION.
- STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
- WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
- FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
- MINIMUM VANG PLATE THICKNESS = 1/2".
- WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
- 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.
- 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' NO WIND LOAD CASE.
- ALL STRUCTURES SHALL BE GALVANIZED STEEL.
- ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
- SEE DRAWING 'DET 2' FOR REFERENCED DETAILS.
- ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD

LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 8
V1	200	100	400	200	100	300	100	200
T1	1,100	1,200	1,100	1,200	1,200	1,100	300	800
L1	3,300	2,200	3,400	3,300	2,200	3,400	1,100	2,500
V2	500	300	700	500	300	700	200	400
T2	4,200	6,800	3,100	4,200	6,800	3,100	800	2,300
L2	10,100	6,700	8,400	10,100	6,700	8,300	2,500	6,700
V3	300	200	500	300	200	500	200	200
T3	2,900	3,500	2,200	2,900	3,500	2,200	600	1,800
L3	8,400	5,400	6,800	8,400	5,400	6,800	1,900	5,800
V4	200	100	400	200	100	400	100	100
T4	1,700	2,600	1,400	1,700	2,600	1,400	300	800
L4	4,200	3,000	4,100	4,200	3,000	4,100	800	2,300
V5	200	100	400	200	100	400	100	100
T5	600	700	600	600	700	600	200	300
L5	1,700	1,500	1,800	1,700	1,600	1,800	700	1,000
V6	200	100	500	200	100	500	100	100
T6	600	1,000	800	600	1,000	800	100	200
L6	1,500	2,100	2,200	1,500	2,100	2,200	400	600
W (PSF)	4.0	36.9	4.0	4.0	36.9	4.0	0.0	0.0

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

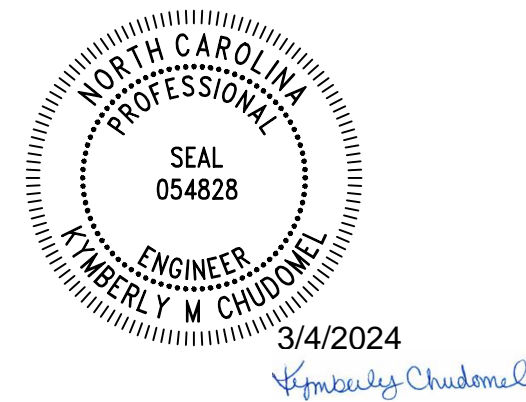
NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

115KV TRANSMISSION LINE
POD - HUDSON & HUDSON - SIMPSON
LOAD AND DESIGN
DEADEND WITH UNDERBUILD

DWN. J. THOMAS	DATE 10/19/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	DE-DIST UB ARM_STR 5
SCALE: NONE		



STR #	LENGTH (FT)	ANGLE Δ	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DIA. (FT)	12.47kV WIRE	NEUTRAL WIRE
37	70	-1	68	39	795 KCMIL AAC "ARBUTUS"	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
142	75	-34	68	43	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR	1/0 AWG 6/1 STRAND "RAVEN" ACSR
151	71	-14	56	40		
167	74	-33	59	40		

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 8 STRINGING: -20', 0" ICE, 2 PSF WIND
OLF: L=1.50, T=1.50, V=1.50

WIRE DATA

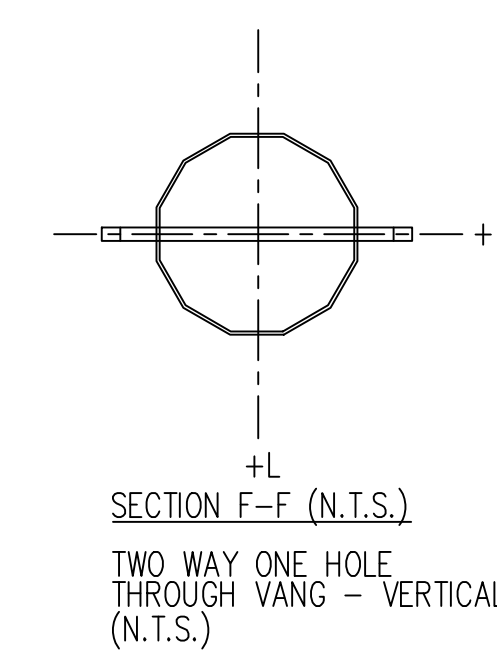
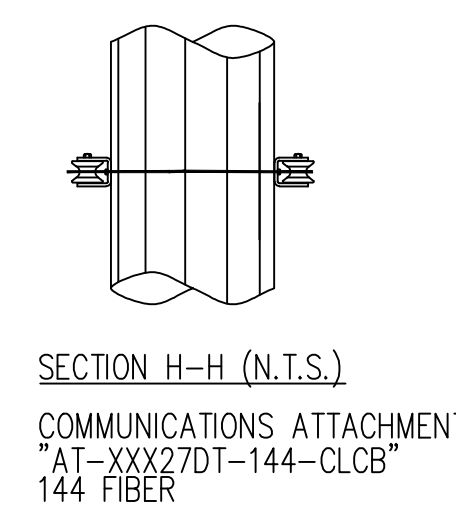
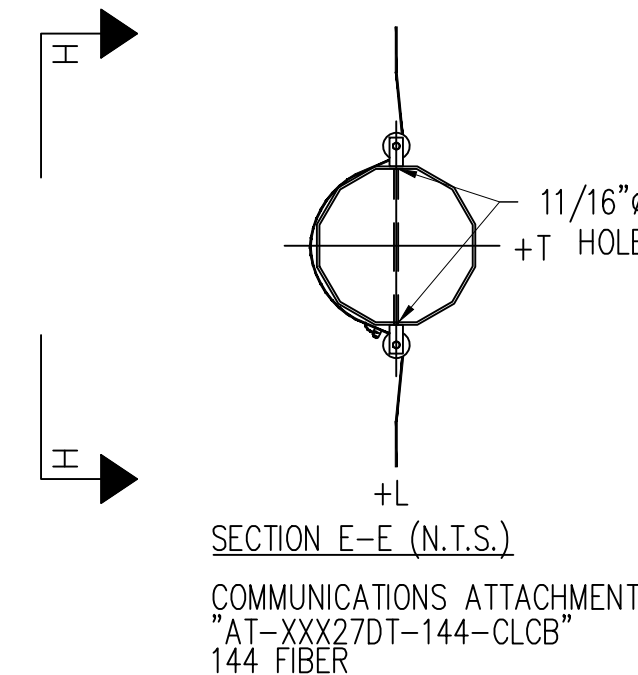
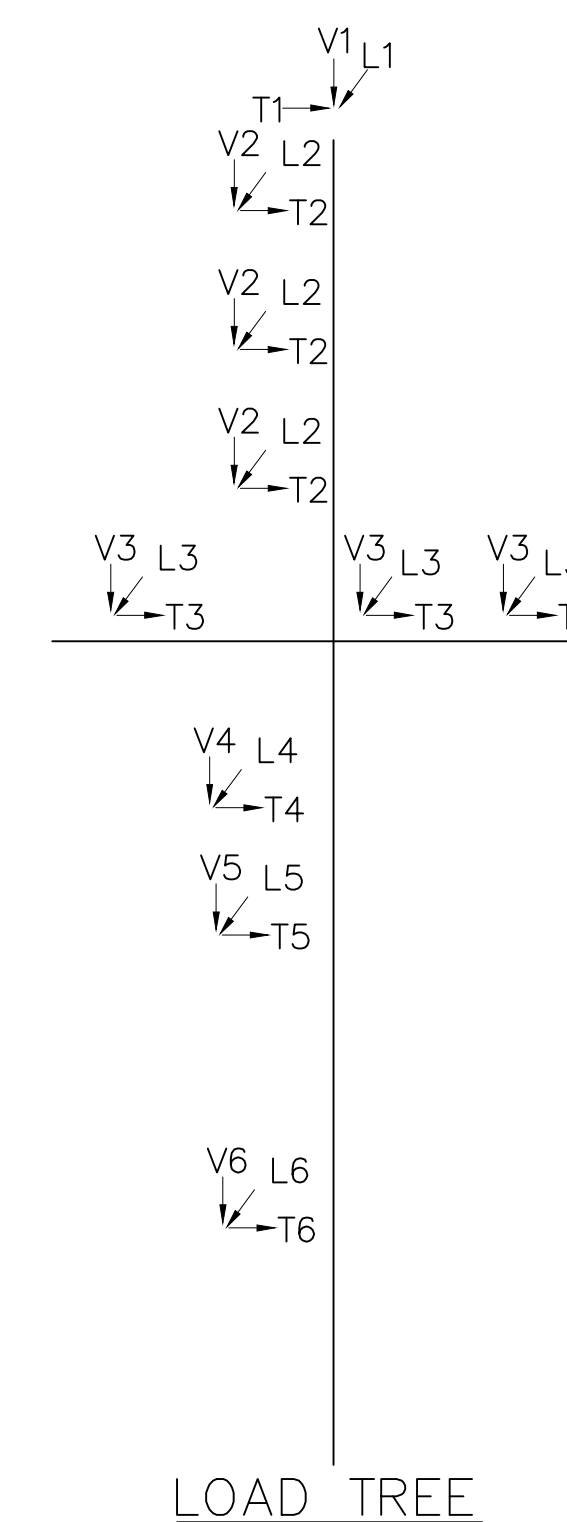
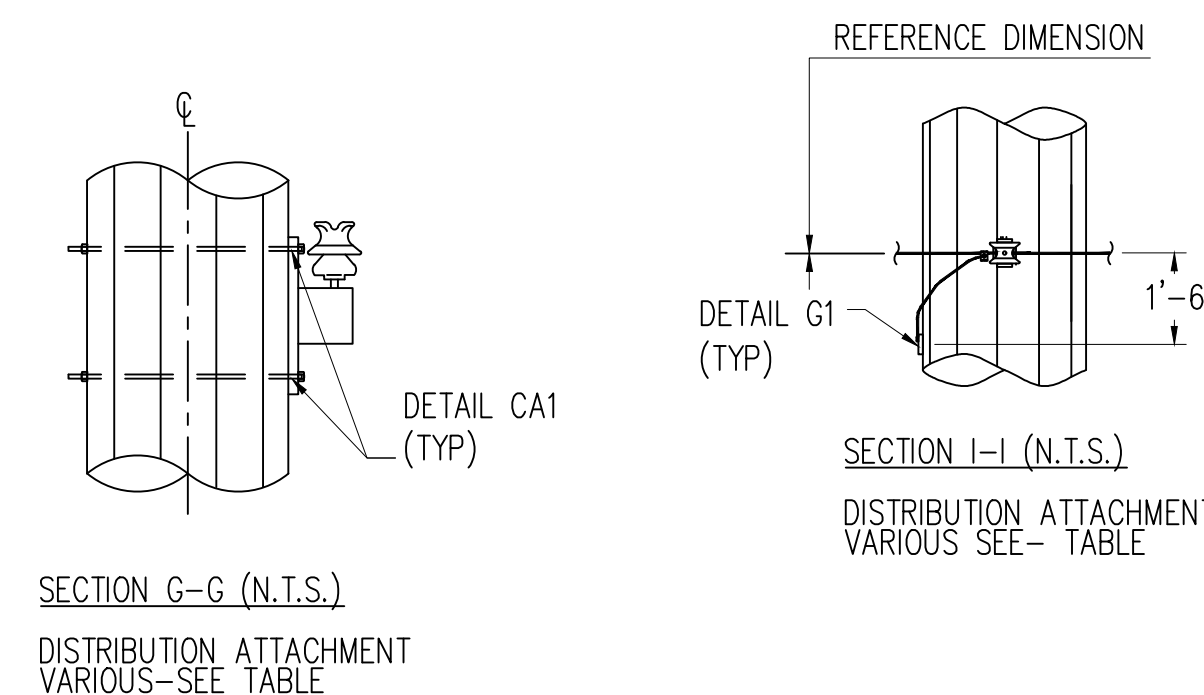
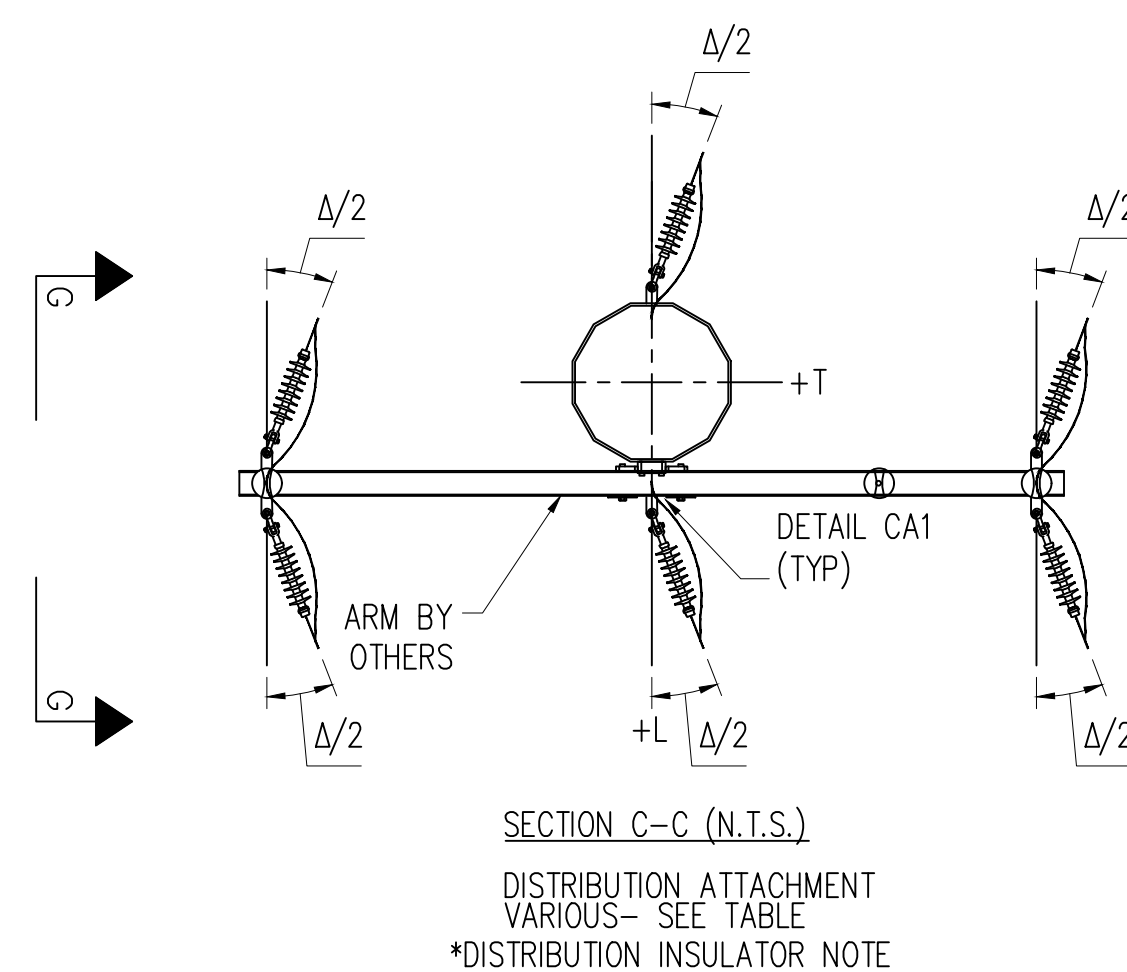
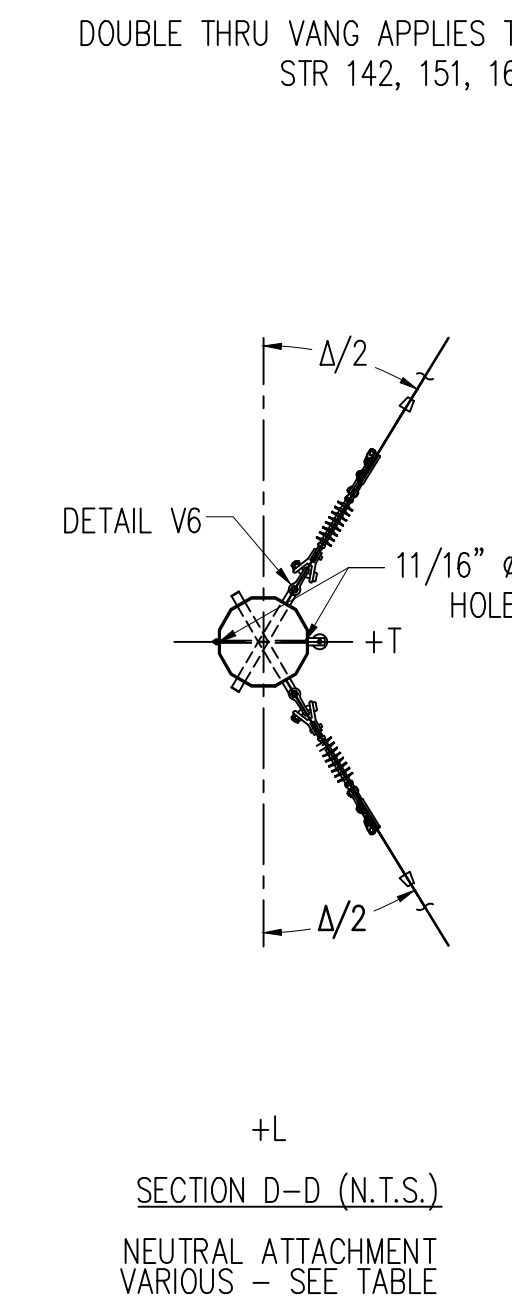
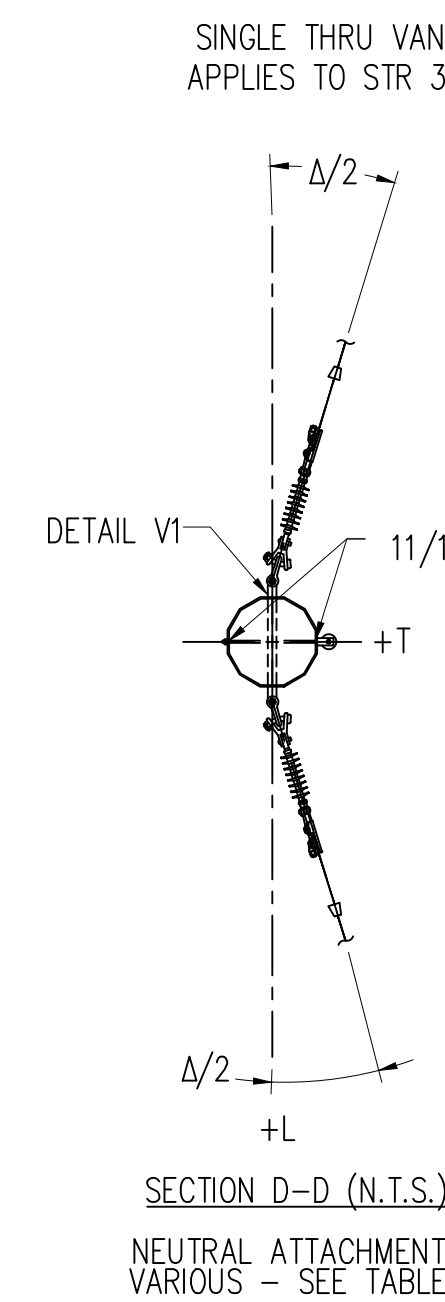
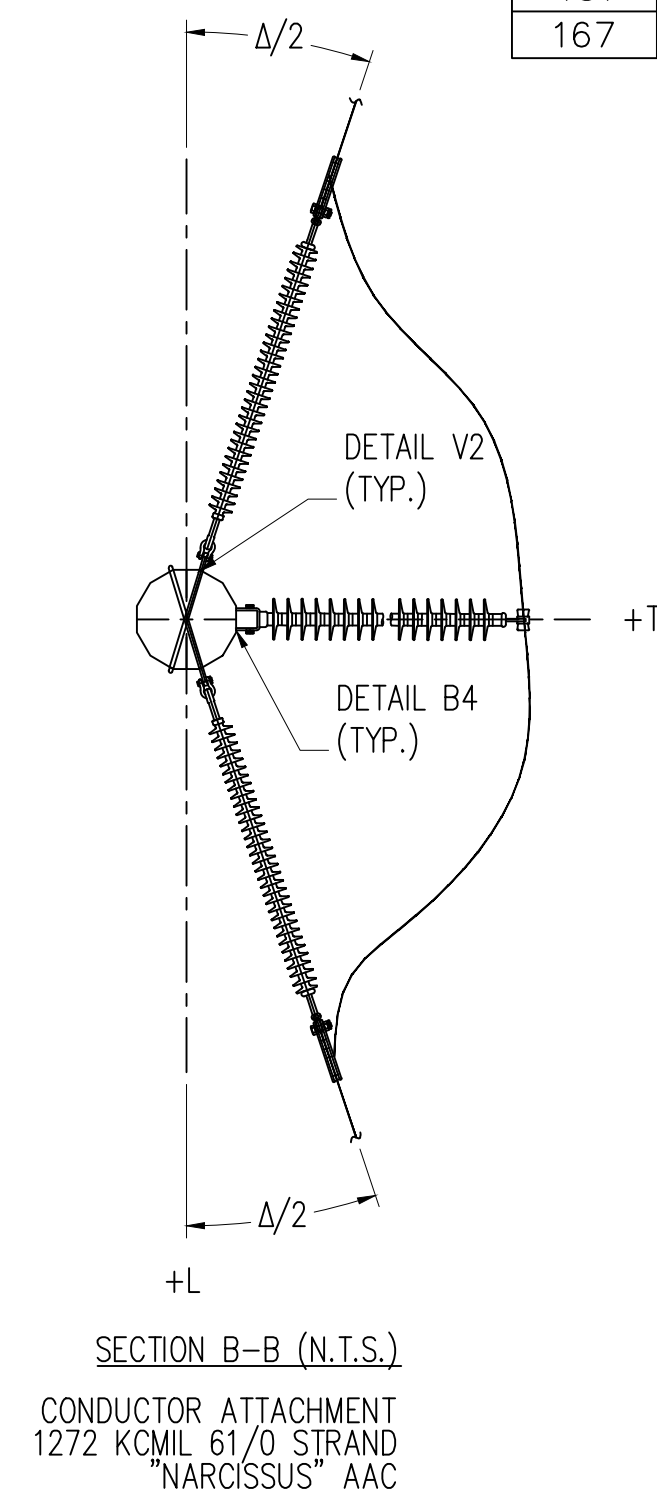
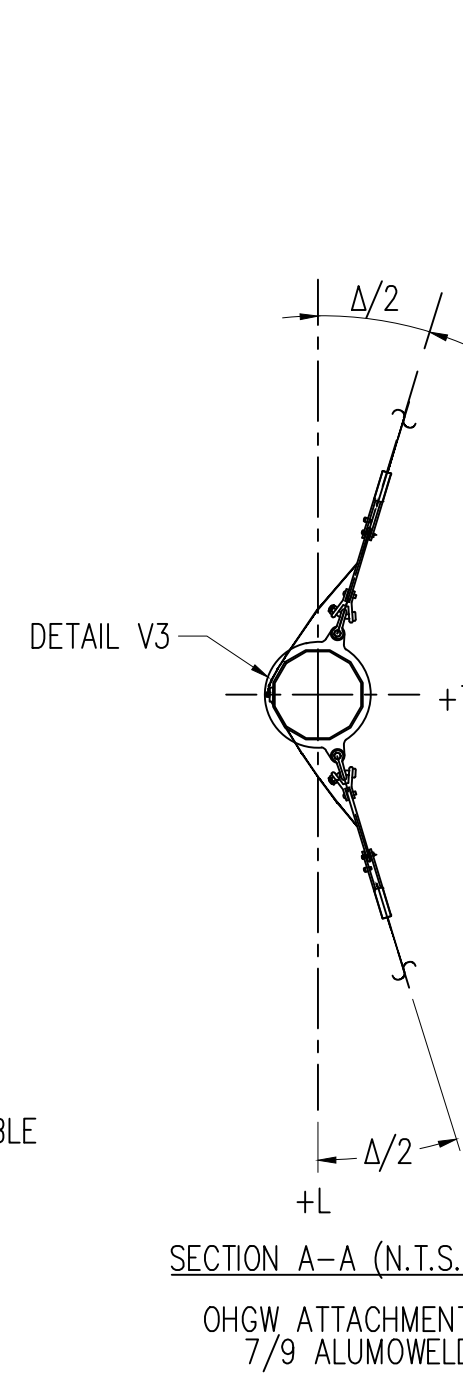
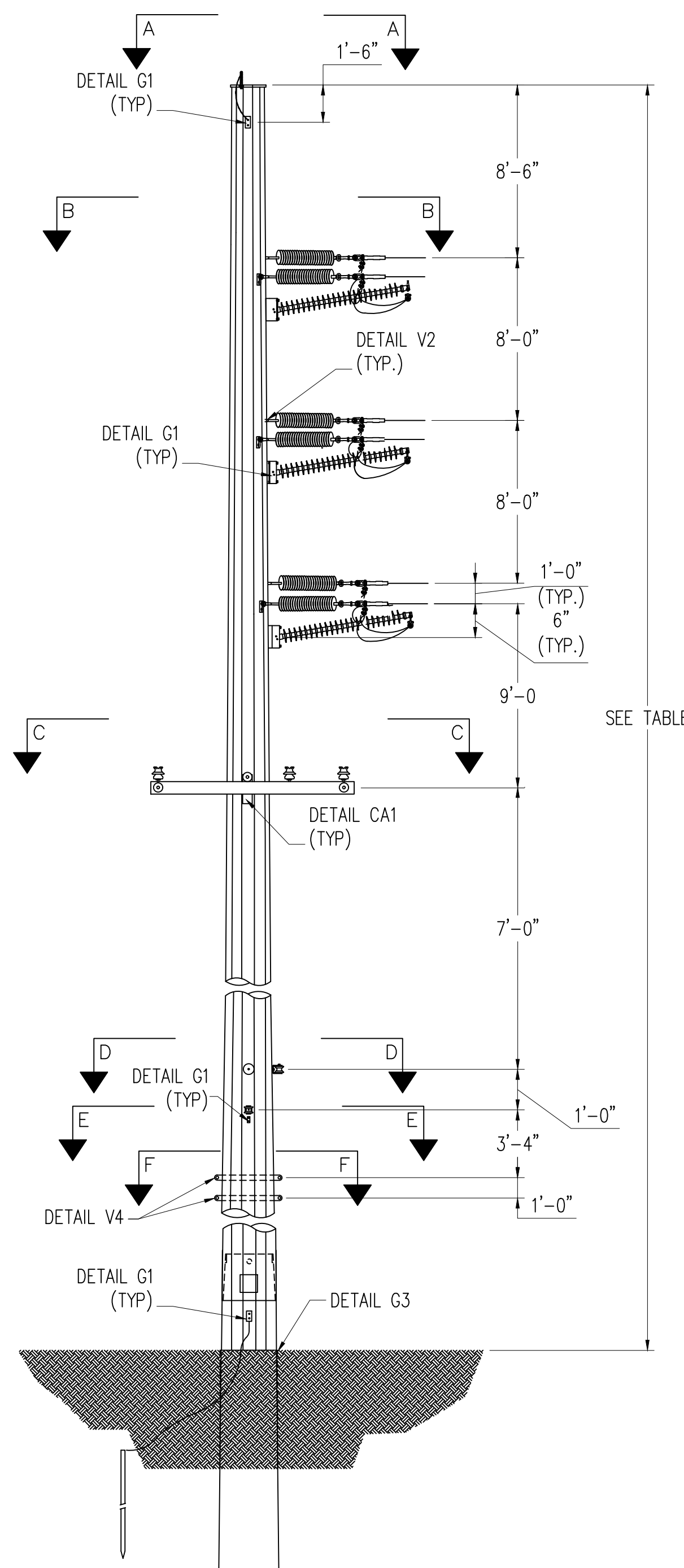
OHGW: 7#9 ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47kV: 336.4 KCMIL VARIOUS - SEE TABLE
 DISTRIBUTION NEUTRAL: VARIOUS - SEE TABLE
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES

- ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
- STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
- TRANSVERSE AND LONGITUDINAL LOADS MAY ALSO ACT IN OPPOSITE DIRECTION.
- STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
- WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
- FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
- MINIMUM VANG PLATE THICKNESS = 1/2".
- WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
- 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.
- 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' NO WIND LOAD CASE.
- ALL STRUCTURES SHALL BE GALVANIZED STEEL.
- ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
- SEE DRAWING 'DET 2' FOR REFERENCED DETAIL.
- ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD

LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 8
V1	100	100	100	100	100	200	200	100
T1	1,200	1,200	1,100	1,200	1,200	1,100	400	900
L1	3,300	2,000	3,100	3,300	2,000	3,100	1,100	2,600
V2	200	100	400	200	100	400	200	100
T2	4,700	6,600	3,200	4,700	6,700	3,200	1,200	2,900
L2	11,800	6,800	8,900	11,800	7,000	9,000	2,900	8,400
V3	100	100	200	100	100	200	200	100
T3	2,000	2,700	1,500	1,700	2,300	1,200	500	1,200
L3	5,000	3,100	4,200	4,100	2,200	3,100	1,200	3,500
V4	100	100	200	100	100	200	100	100
T4	1,200	2,100	1,200	300	2,100	1,000	300	700
L4	2,400	1,600	2,400	2,400	1,600	2,300	1,100	1,600
V5	100	100	400	100	100	300	100	100
T5	1,000	1,100	1,000	500	700	600	500	700
L5	300	400	500	1,600	1,500	1,600	300	100
V6	200	100	500	200	100	300	100	100
T6	1,100	1,500	1,300	600	700	800	200	500
L6	100	400	400	1,500	2,000	2,100	100	200
W (PSF)	4.0	36.9	4.0	4.0	36.9	4.0	0.0	0.0

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



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

NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
 Greenville, North Carolina

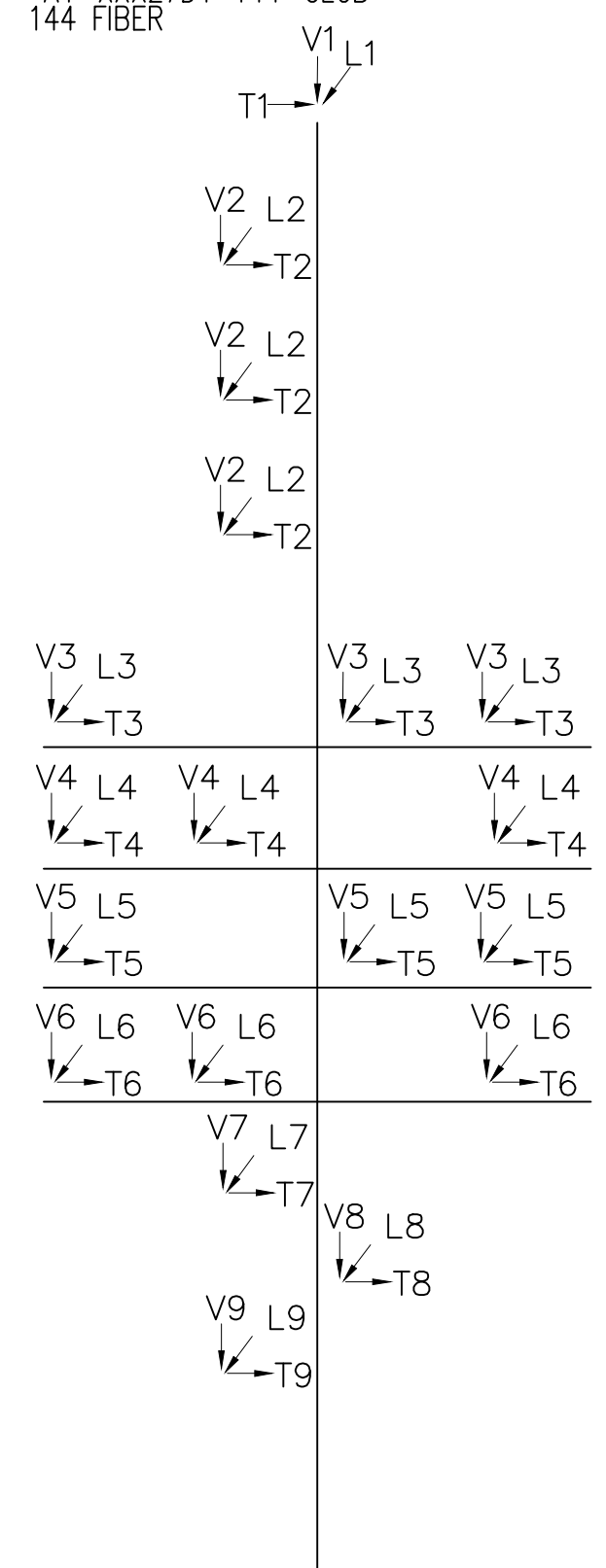
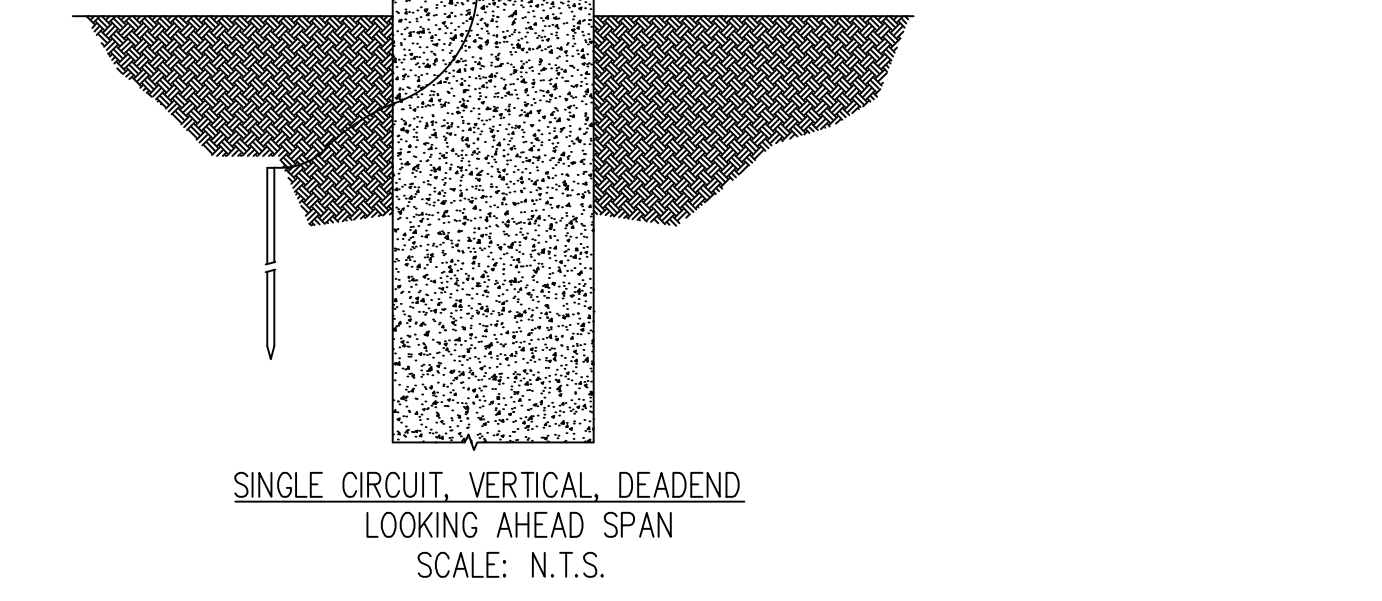
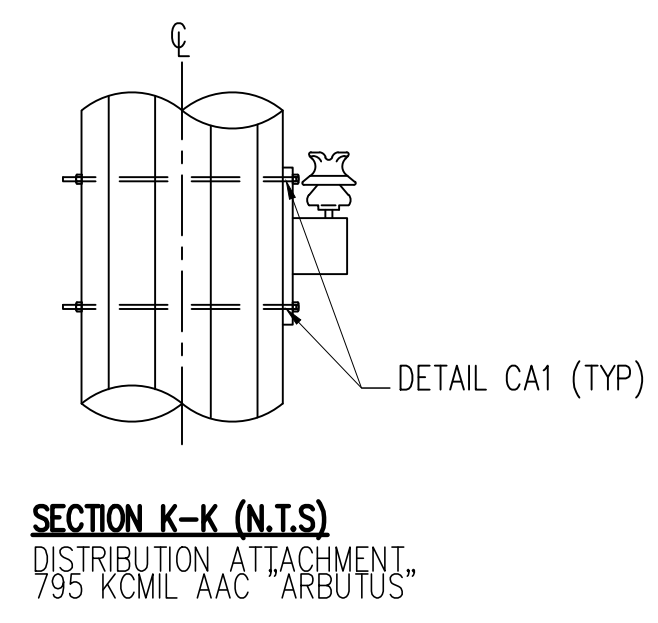
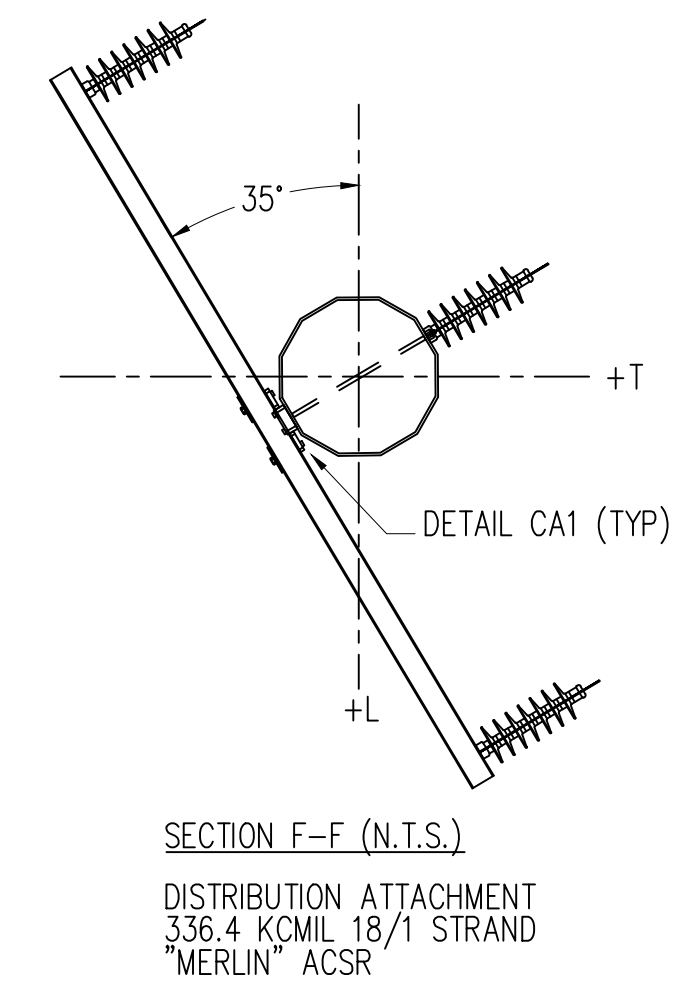
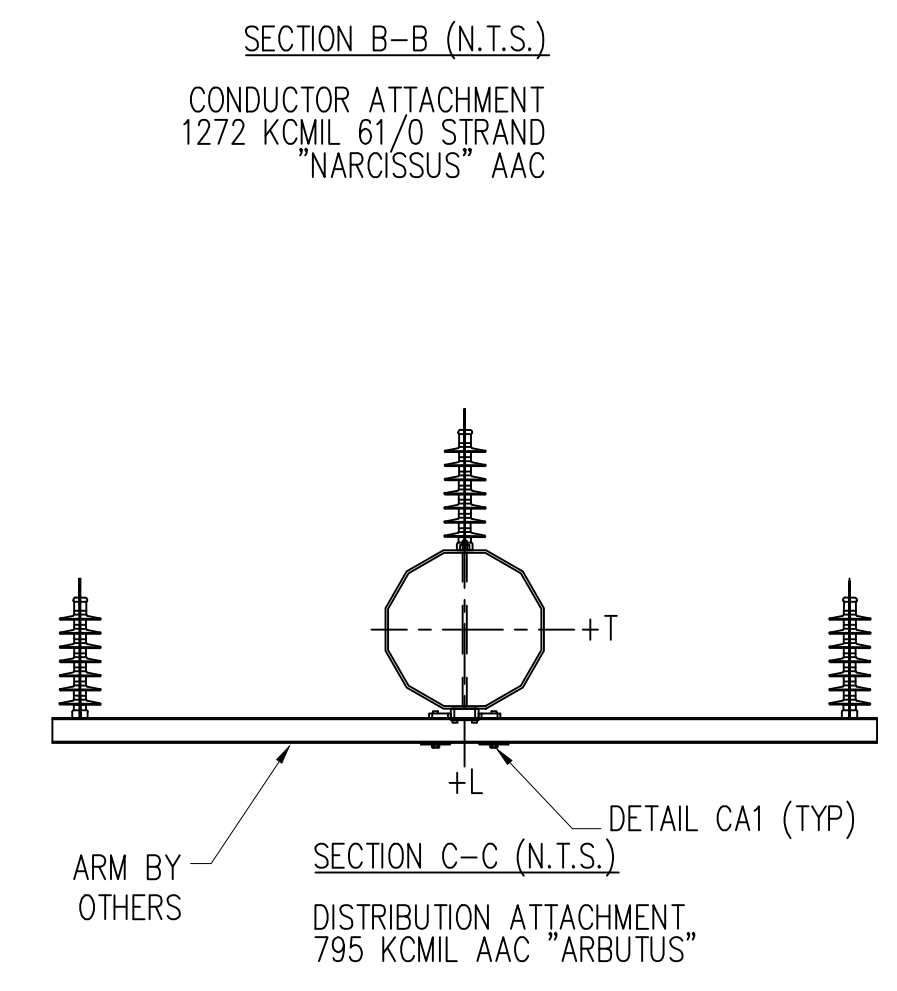
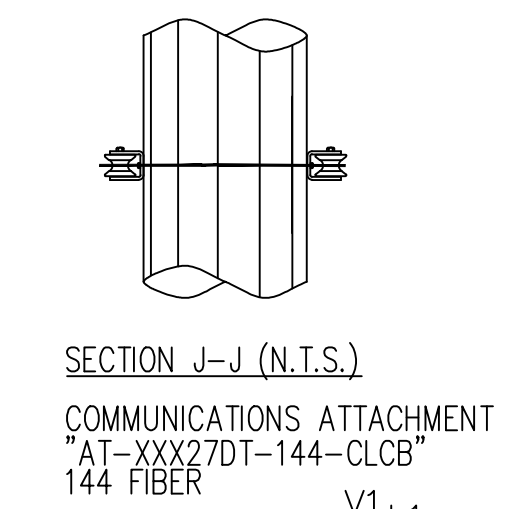
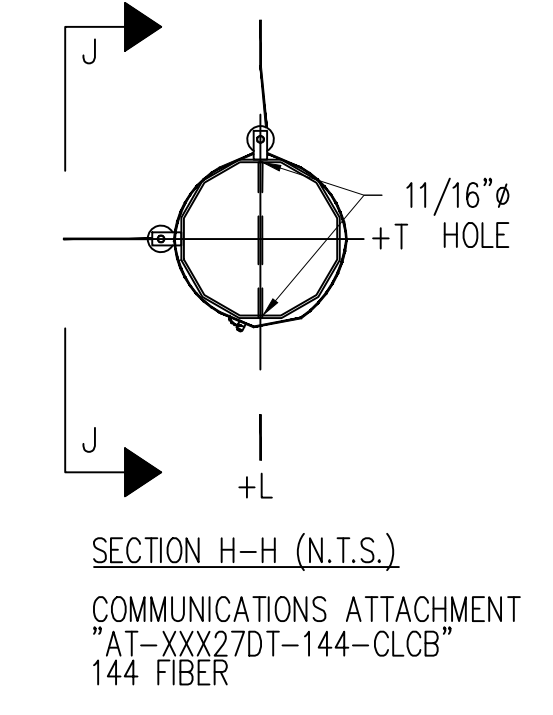
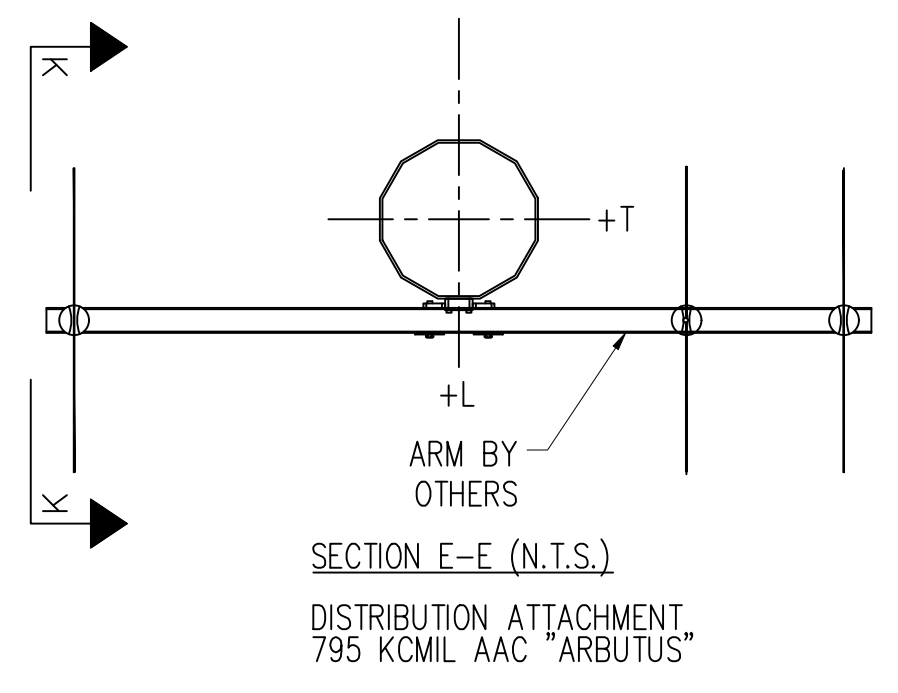
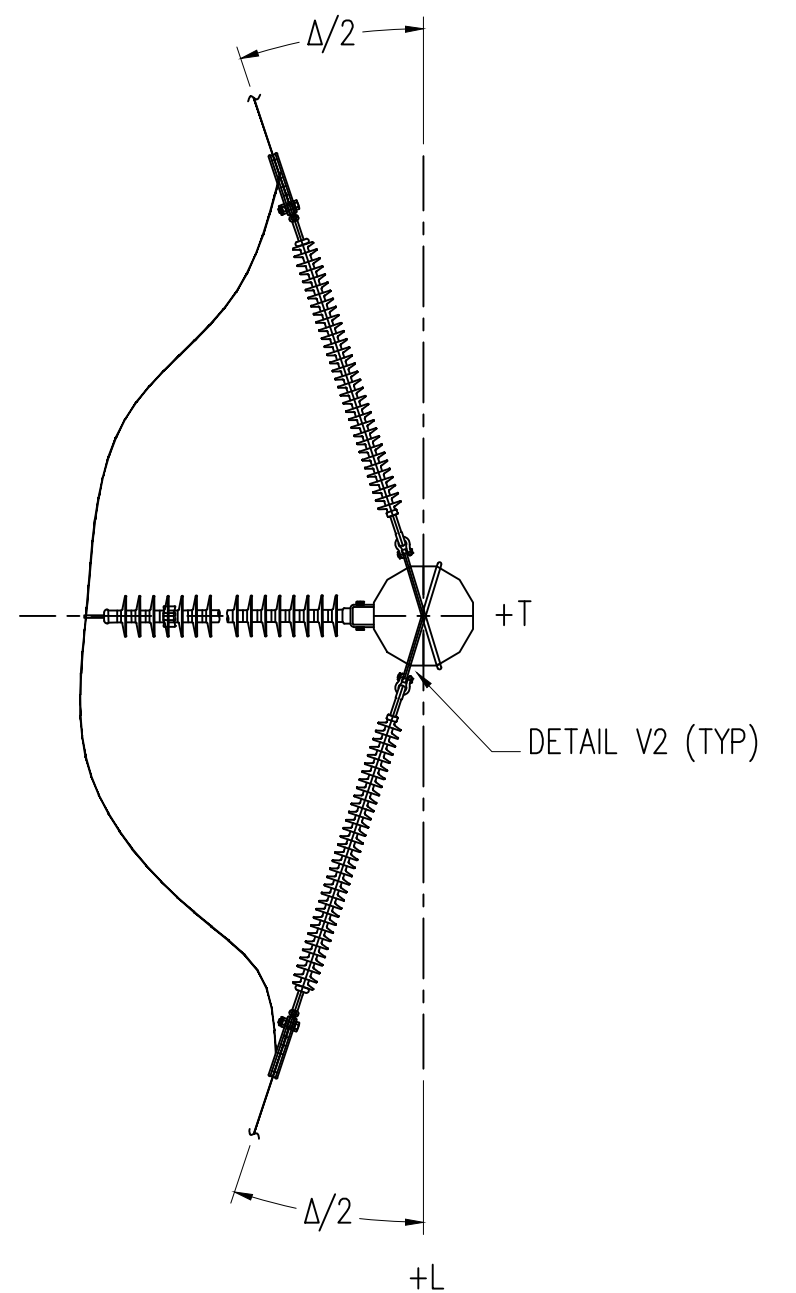
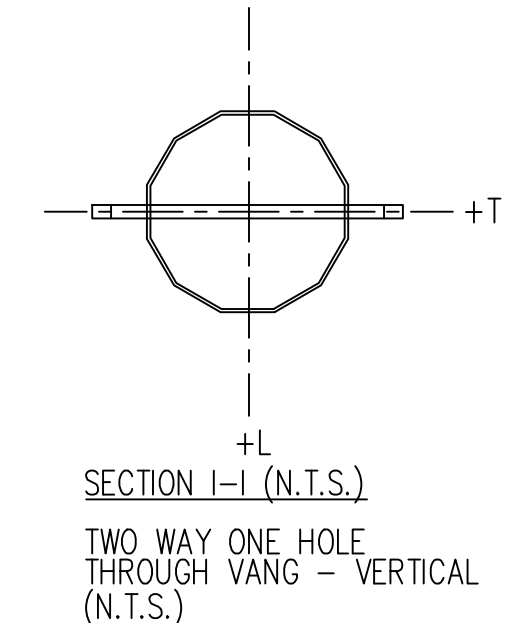
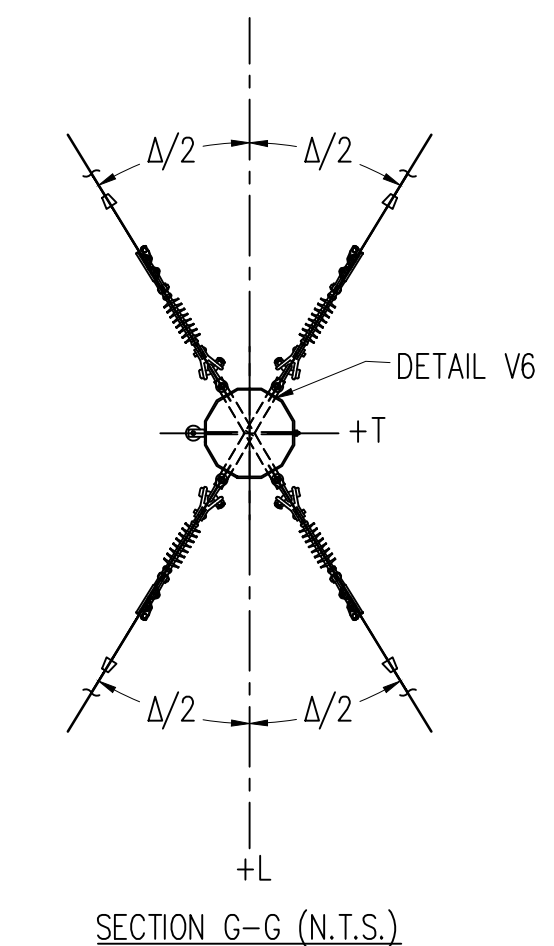
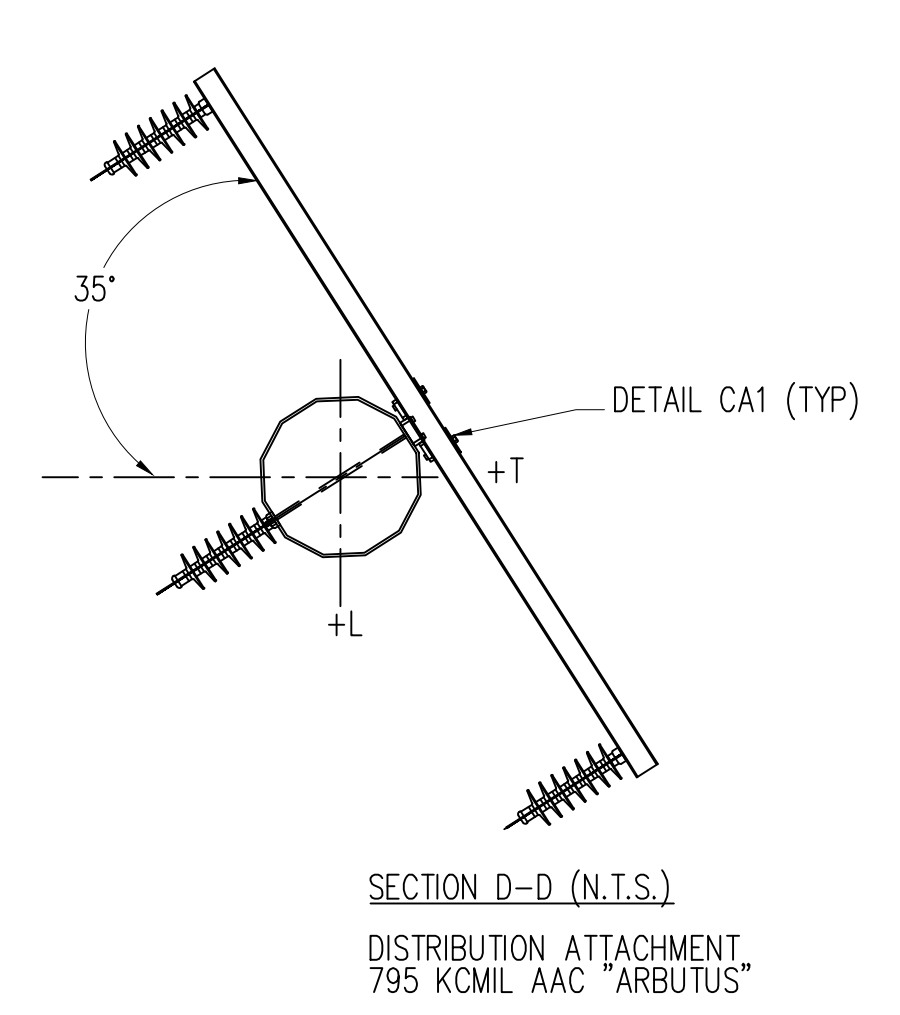
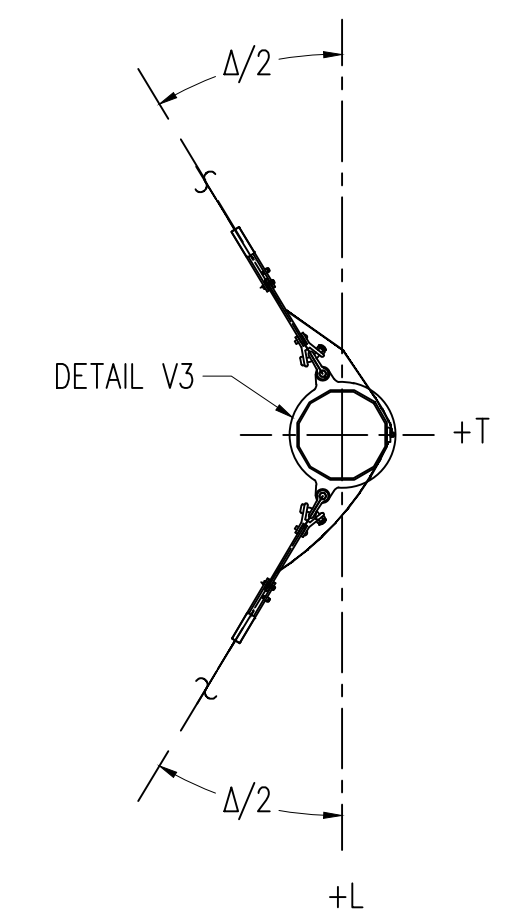
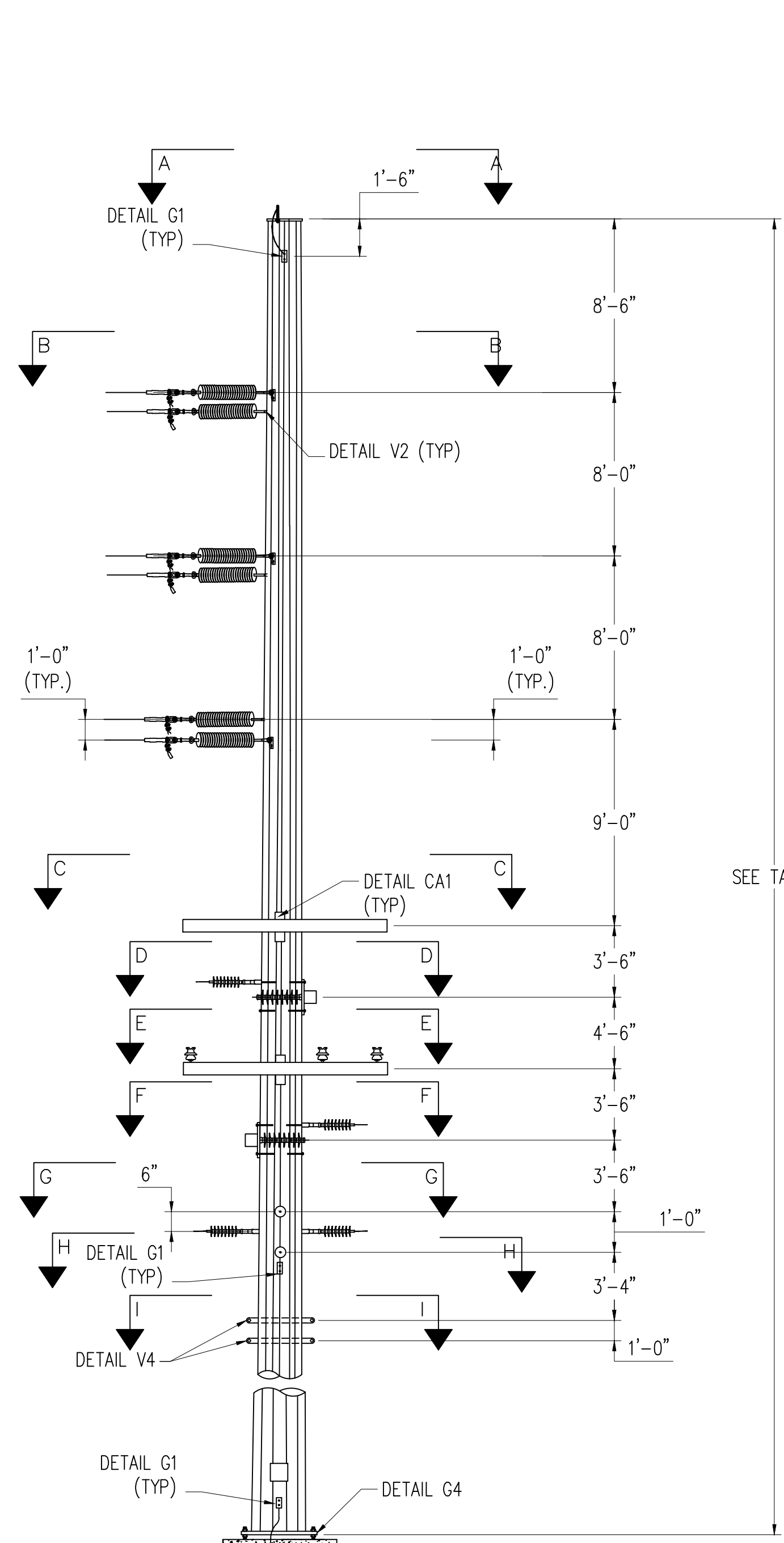
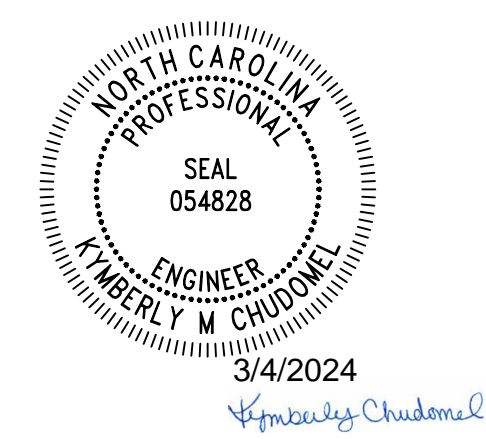
115kV TRANSMISSION LINE
 POD - HUDSON & HUDSON - SIMPSON
 LOAD AND DESIGN
 DEADEND WITH UNDERBUILD

DWN. J. THOMAS	DATE 10/30/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	DE-DIST UB ARM_B
SCALE: NONE		

STR #	LENGTH (FT)	ANGLE Δ
52	85	-112

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 8 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 AAC "ARBUTUS"
 DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES

- ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
- STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
- TRANSVERSE AND LONGITUDINAL LOADS MAY ALSO ACT IN OPPOSITE DIRECTION.
- STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
- WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
- FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
- MINIMUM VANG PLATE THICKNESS = 1/2".
- WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
- 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.
- 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' NO WIND LOAD CASE.
- ALL STRUCTURES SHALL BE GALVANIZED STEEL.
- ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
- SEE DRAWING 'DET 2' FOR REFERENCED DETAILS.
- ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD

LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 8
V1	200	200	400	200	200	400	100	200
T1	3,000	2,300	2,700	3,000	2,300	2,700	900	2,100
L1	2,000	1,300	1,800	2,000	1,300	1,900	600	1,400
V2	800	500	900	800	500	900	300	700
T2	10,700	9,900	7,600	10,700	9,900	9,900	2,200	7,300
L2	6,600	4,000	4,900	6,600	4,000	4,900	1,500	4,700
V3	500	400	700	500	400	700	200	2,800
T3	6,800	5,500	5,200	6,800	5,600	5,200	1,300	4,600
L3	4,400	3,000	3,500	4,400	2,800	3,500	900	3,100
V4	300	200	500	300	200	500	200	3,000
T4	7,800	6,400	6,100	7,800	6,400	6,100	1,600	5,300
L4	5,000	2,800	3,900	5,000	3,400	4,100	1,200	3,500
V5	800	600	1,300	500	300	700	300	600
T5	300	400	200	4,300	3,400	4,400	100	100
L5	400	600	400	2,900	2,500	3,000	100	200
V6	100	100	200	100	100	200	100	100
T6	1,700	2,300	1,200	1,700	2,300	1,200	400	1,100
L6	2,000	1,100	1,600	2,000	1,100	1,600	500	1,500
V7	300	200	500	300	200	500	100	200
T7	3,300	3,600	3,100	3,300	3,600	3,100	600	1,600
L7	2,000	1,500	2,000	2,000	1,500	2,000	500	1,500
V8	300	100	700	200	100	400	100	200
T8	2,700	2,600	2,800	1,400	1,400	1,500	1,100	1,700
L8	100	100	100	1,000	1,100	1,000	0	0
V9	300	200	500	300	200	500	100	200
T9	1,400	1,900	1,900	1,400	1,900	1,900	300	600
L9	1,400	1,500	1,600	1,300	1,500	1,600	400	700
W (PSF)	4.0	36.9	4.0	4.0	36.9	4.0	0.0	0.0

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

NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
 Greenville, North Carolina

115kV TRANSMISSION LINE
 POD - HUDSON & HUDSON - SIMPSON
 LOAD AND DESIGN
 DEADEND STR 52

DWN. J. THOMAS	DATE 10/30/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	DE-STR-52
SCALE: NONE		

STR #	LENGTH (FT)	ANGLE Δ
69A	74	1
69B	74	1

LOAD CASES

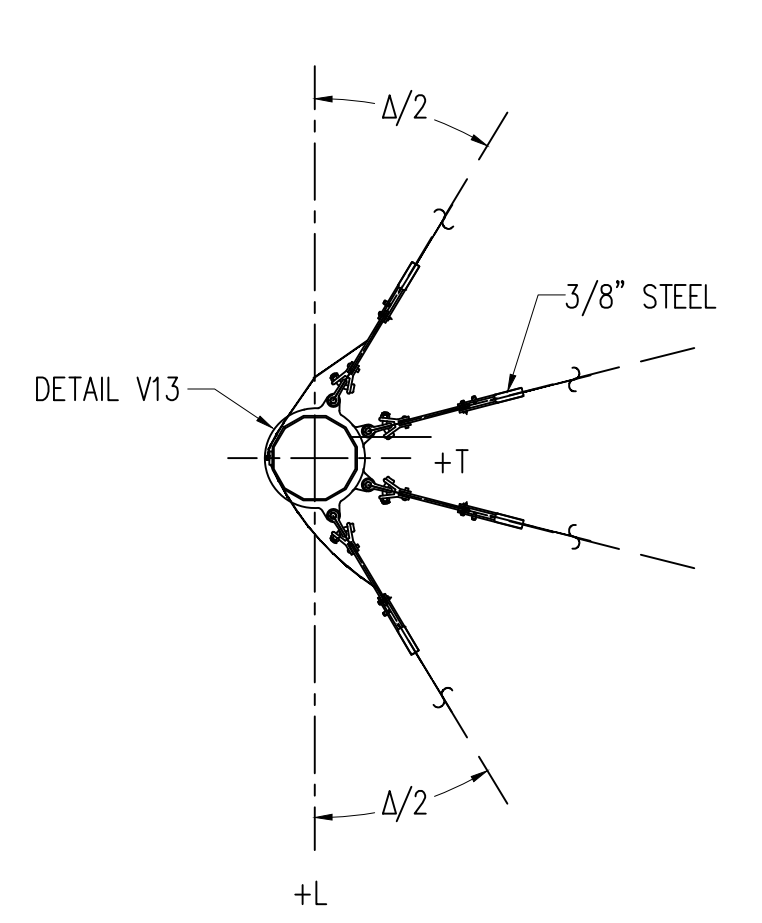
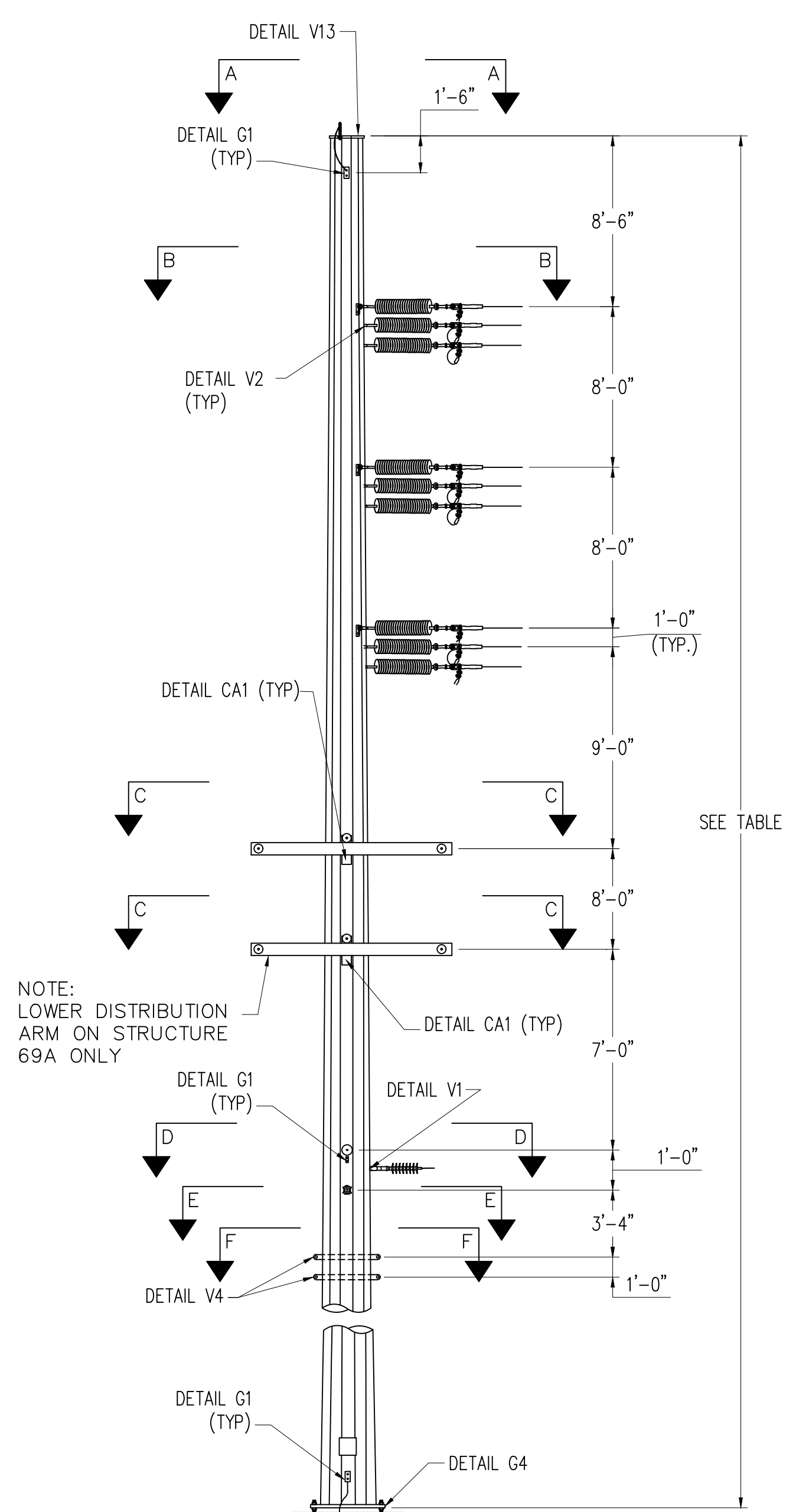
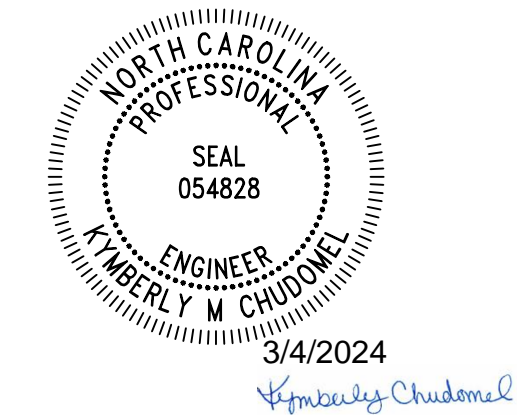
- CASE 1 NESC MEDIUM: 15', .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50
- CASE 2 NESC HIGH WIND: 60', 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 3 NESC ICE WITH WIND: 15', 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 4 NESC MEDIUM DEADEND: 15', .25" ICE, 4 PSF WIND
OLF: L=1.65, 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

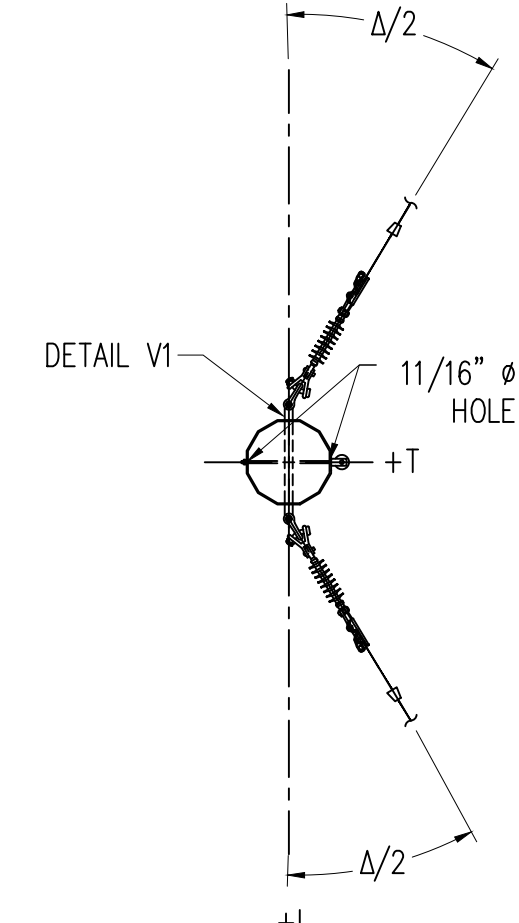
OHGW: 7#9 ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47kv: 795 KCMIL "ARBUS" AAC
 DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES

- ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
- STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
- TRANSVERSE AND LONGITUDINAL LOADS MAY ALSO ACT IN OPPOSITE DIRECTION.
- STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
- WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
- FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
- MINIMUM VANG PLATE THICKNESS = 1/2".
- WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
- 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.
- 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' NO WIND LOAD CASE.
- ALL STRUCTURES SHALL BE GALVANIZED STEEL.
- ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
- SEE DRAWING "DET 2" FOR REFERENCED DETAILS.
- ALL BOLTED ATTACHMENTS BELOW LOWEST DISTRIBUTION CROSSARM WILL BE DRILLED IN THE FIELD

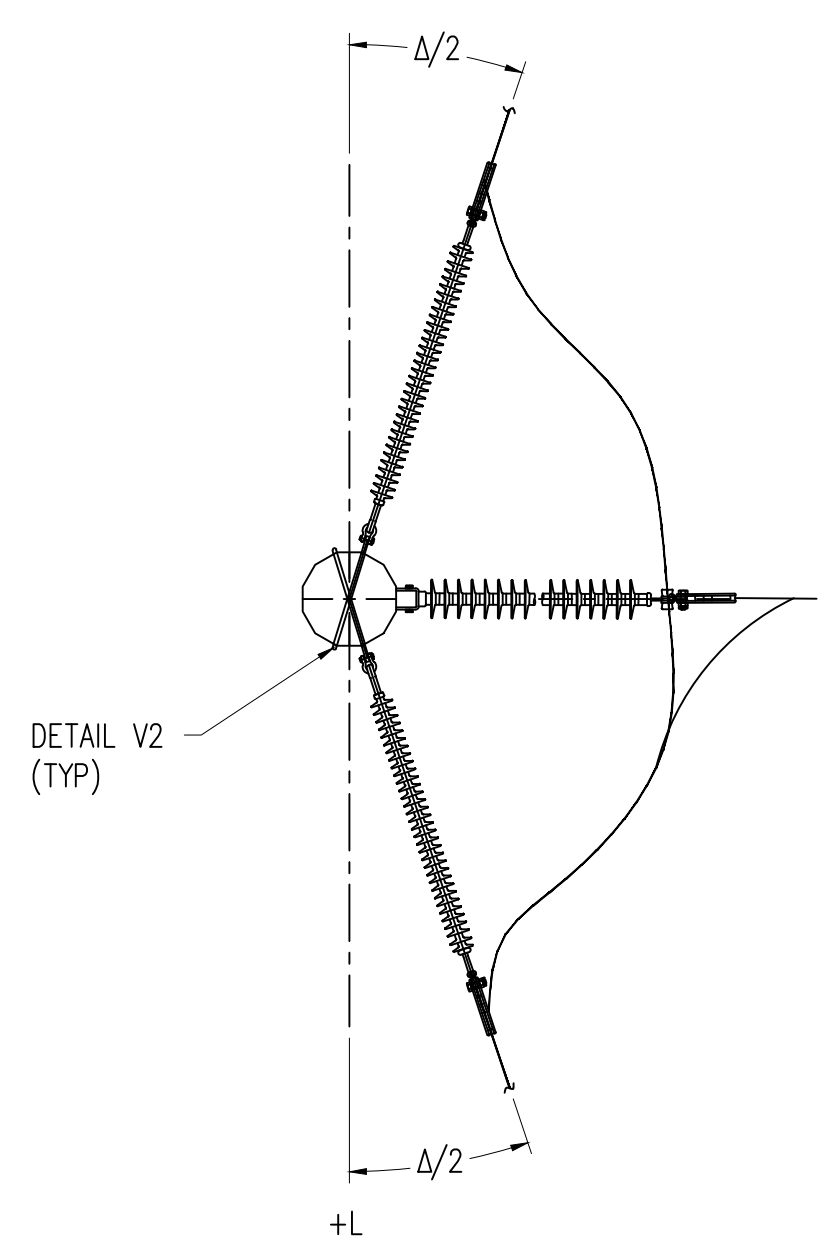


SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD
UNLESS OTHERWISE NOTED

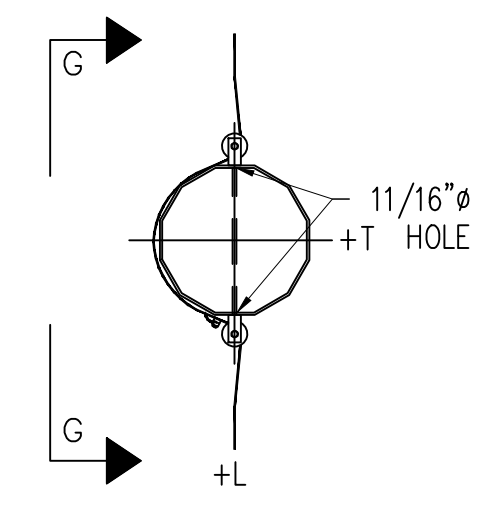


SECTION E-E (N.T.S.)
NEUTRAL ATTACHMENT
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR

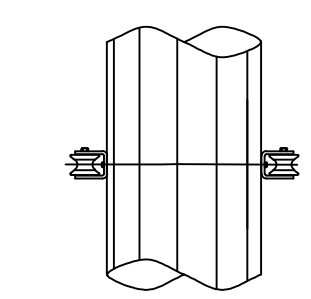
NEUTRAL ATTACHMENT FOR
69A: BACK ONLY
69B: AHEAD ONLY



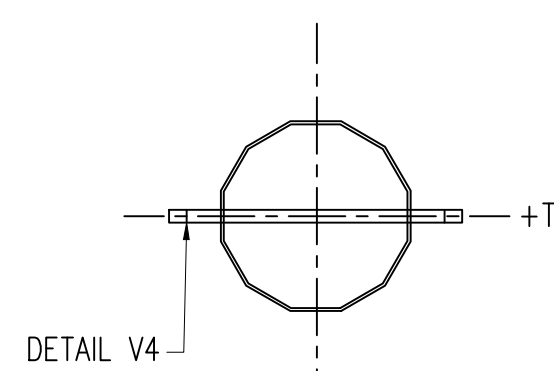
SECTION B-B (N.T.S.)
CONDUCTOR ATTACHMENT
1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



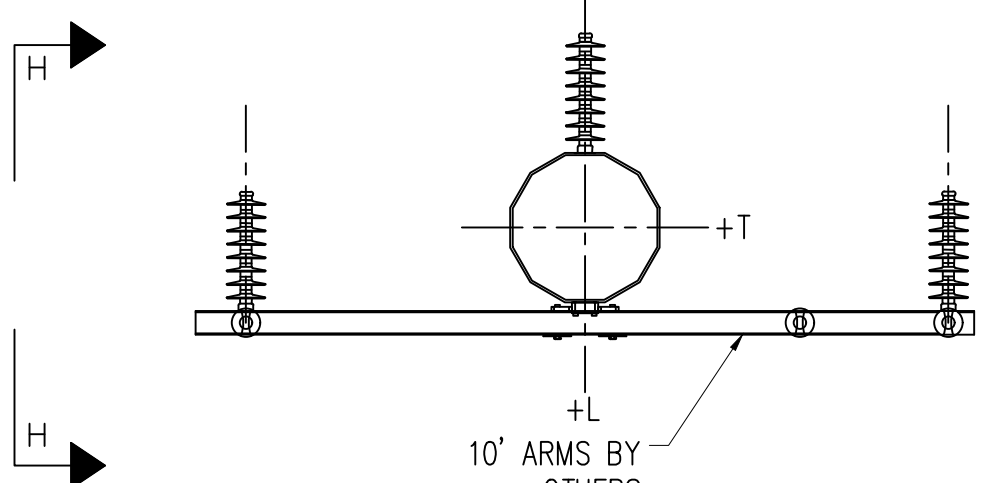
SECTION F-F (N.T.S.)
COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER



SECTION G-G (N.T.S.)
COMMUNICATIONS ATTACHMENT
"AT-XXX27DT-144-CLCB"
144 FIBER

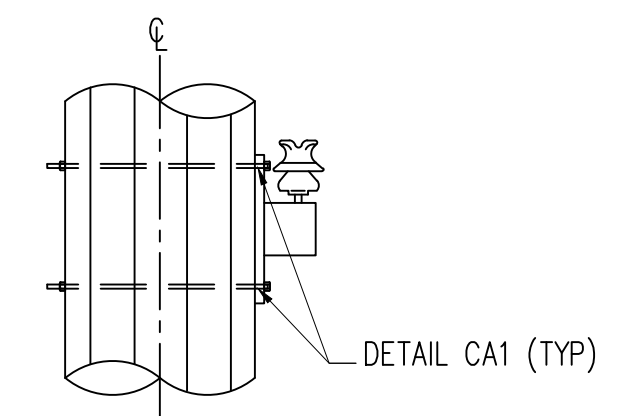


SECTION F-F (N.T.S.)
TWO WAY ONE HOLE
THROUGH VANG - VERTICAL
(N.T.S.)



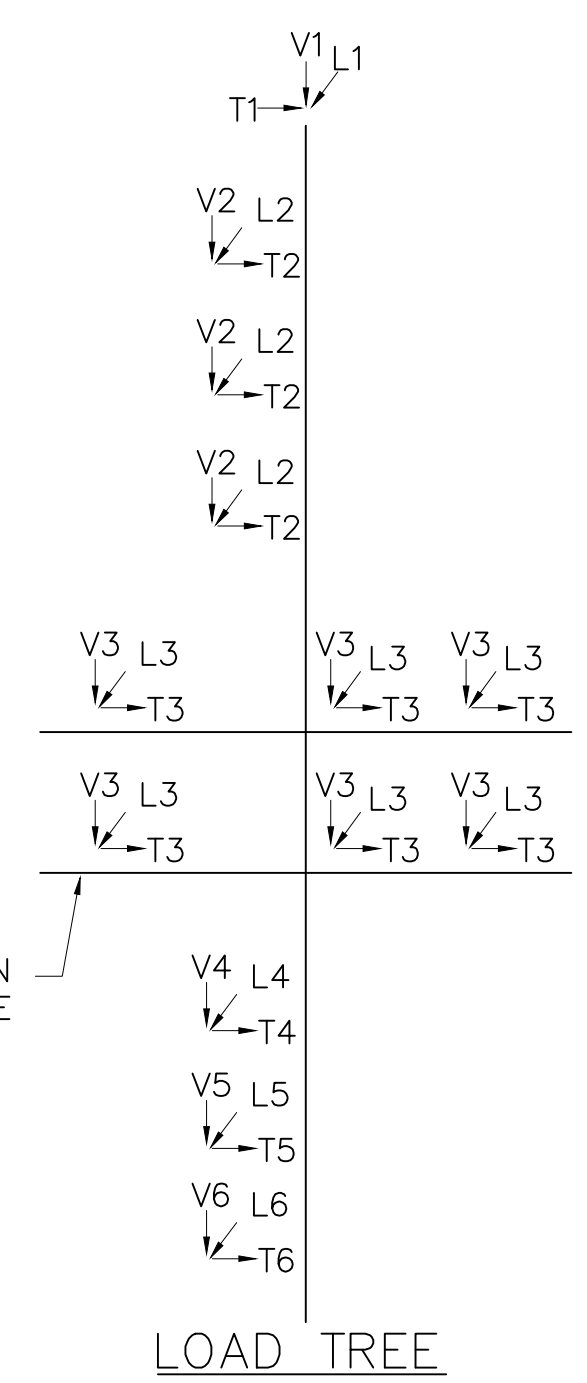
SECTION C-C (N.T.S.)
DISTRIBUTION ATTACHMENT
795 KCMIL AAC "ARBUS"
*DISTRIBUTION CENTRAL PHASE DEADEND
INSULATOR ATTACHMENT AT TOP BOLT
LOCATION OF CROSSARM MOUNT

NOTE:
SECTION C-C WIRES FOR
69A: BACK ONLY
69B: AHEAD ONLY



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

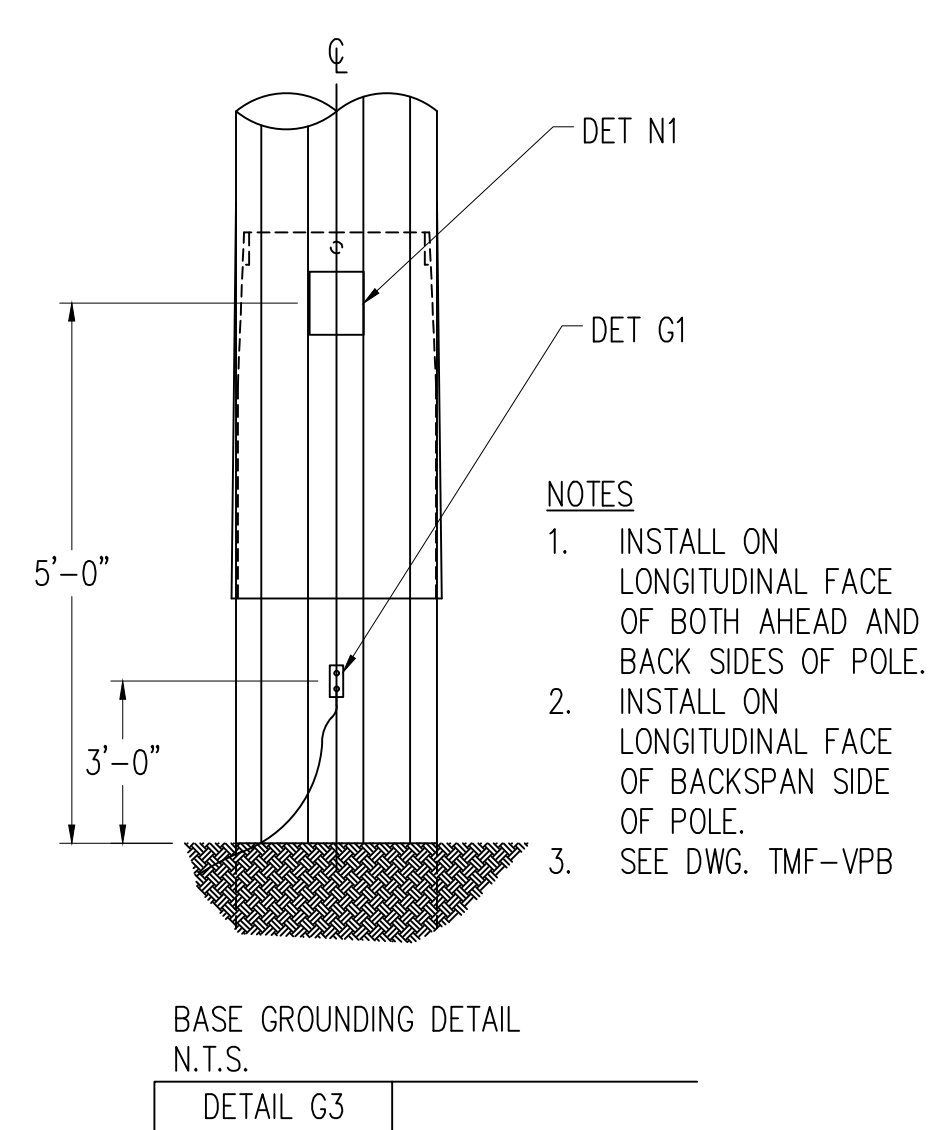
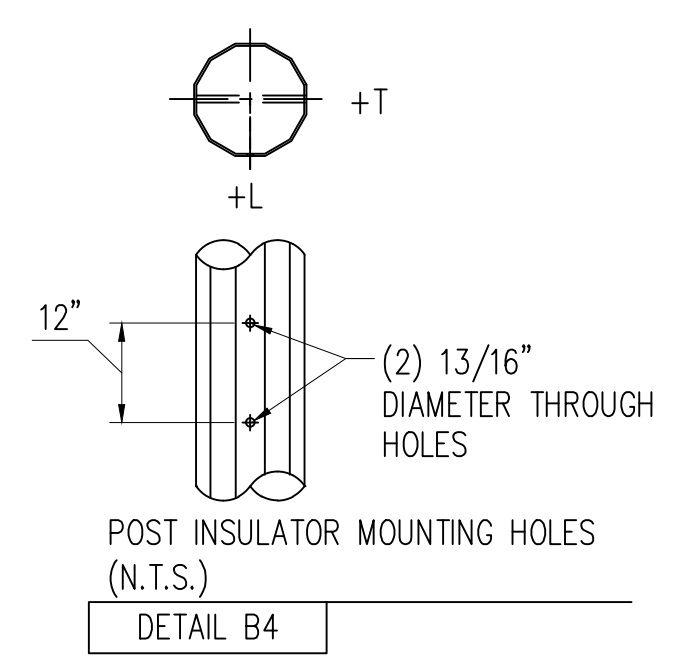
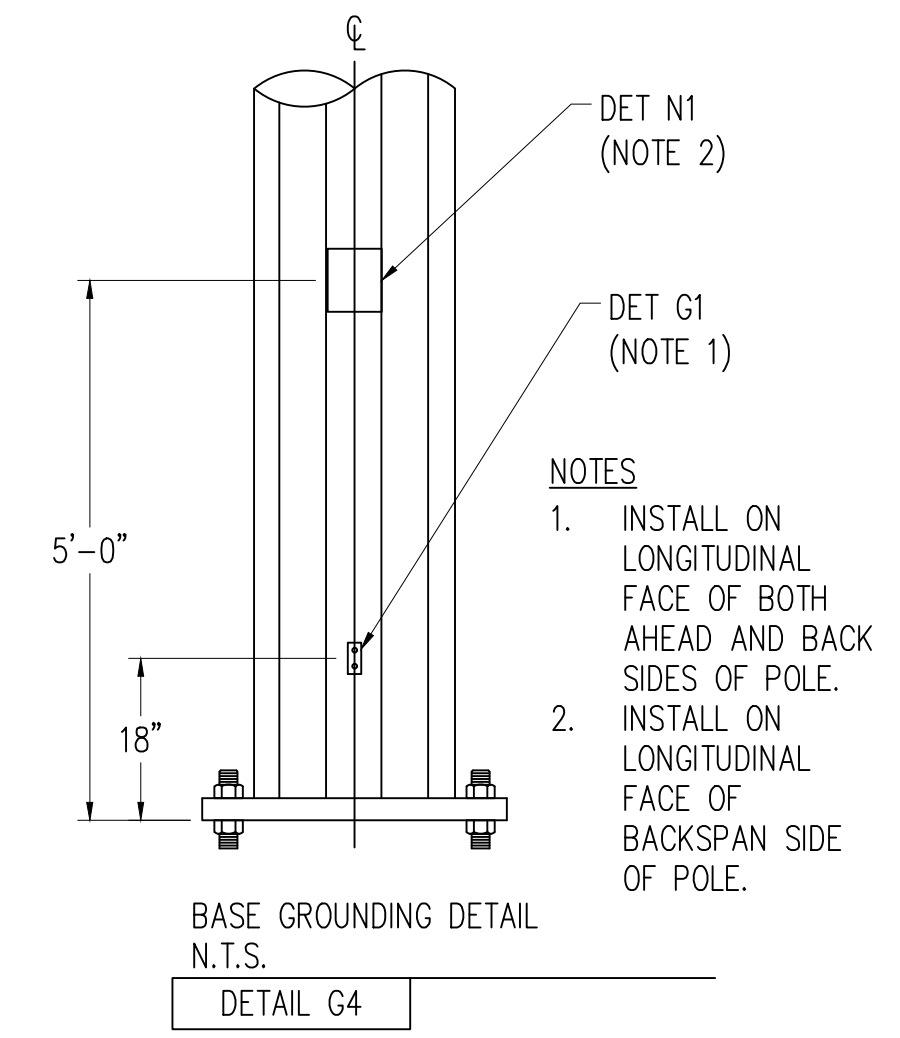
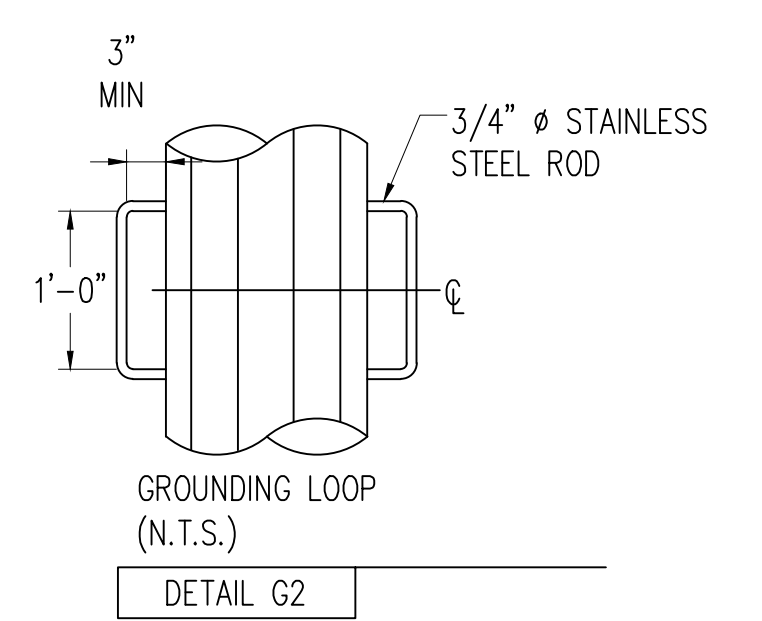
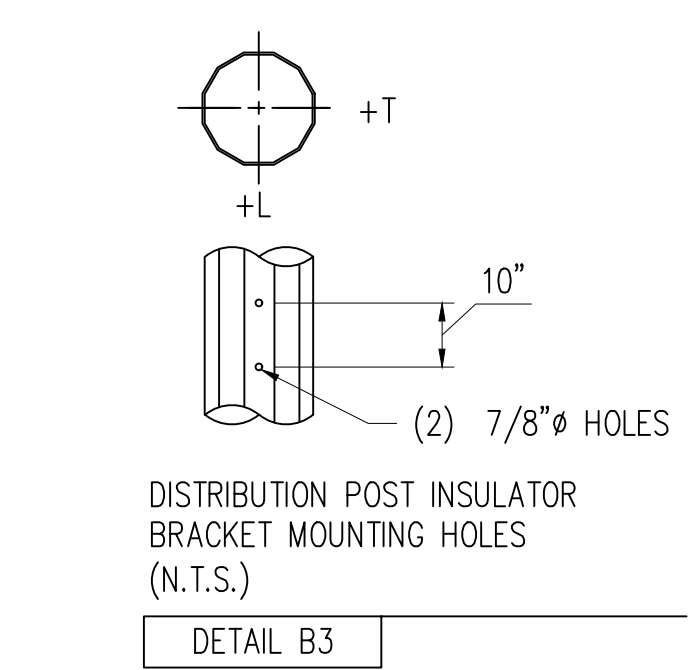
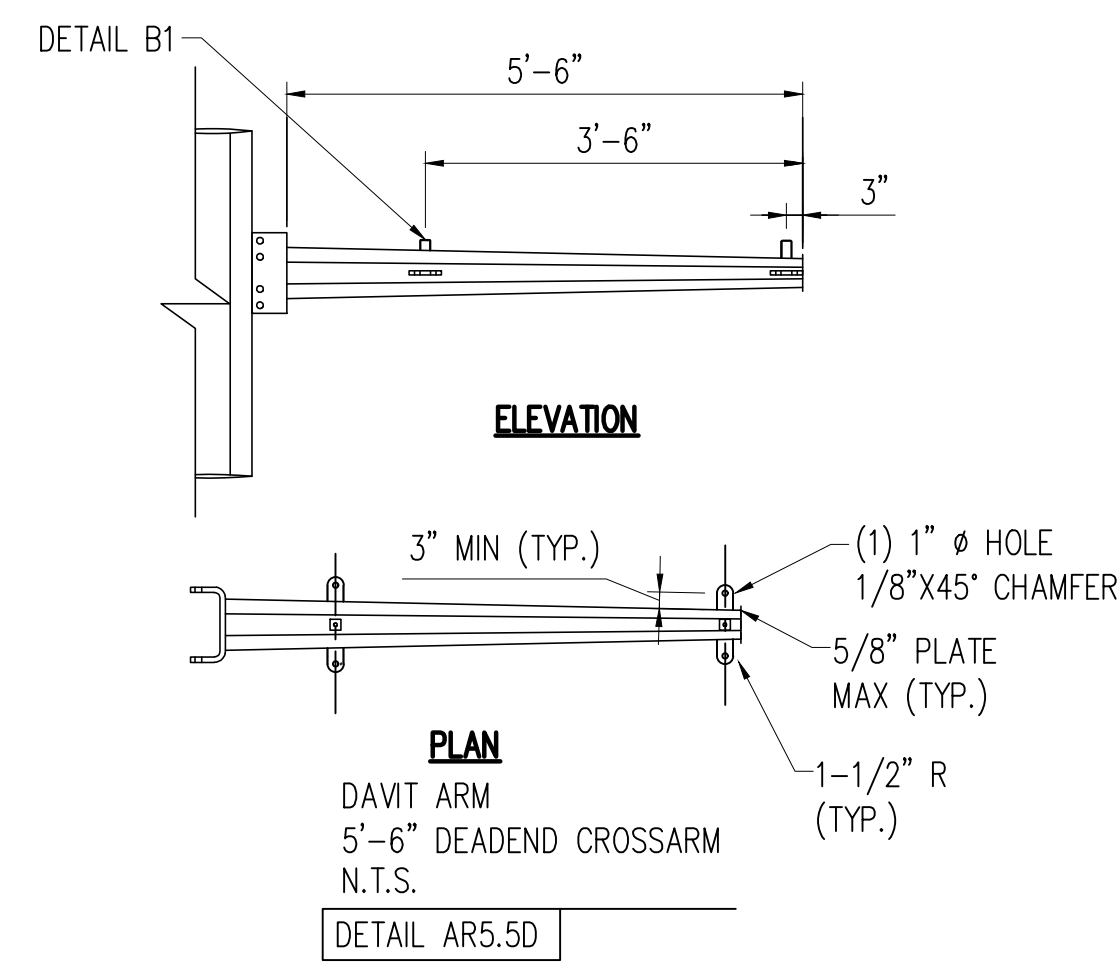
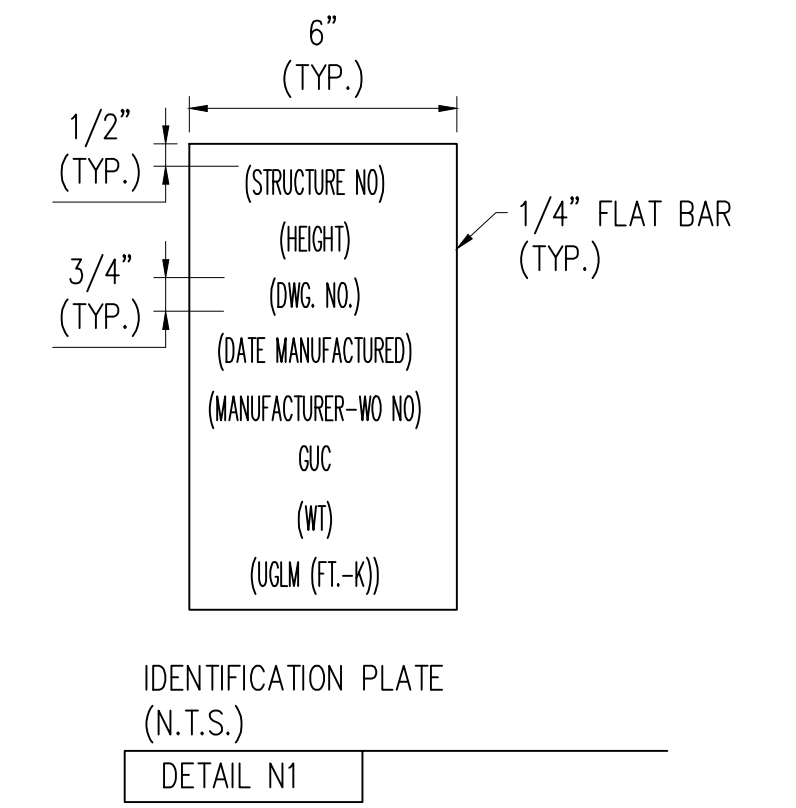
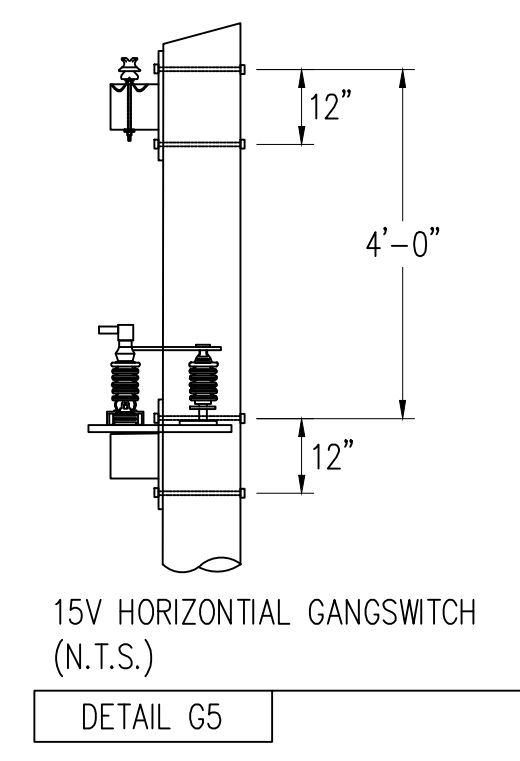
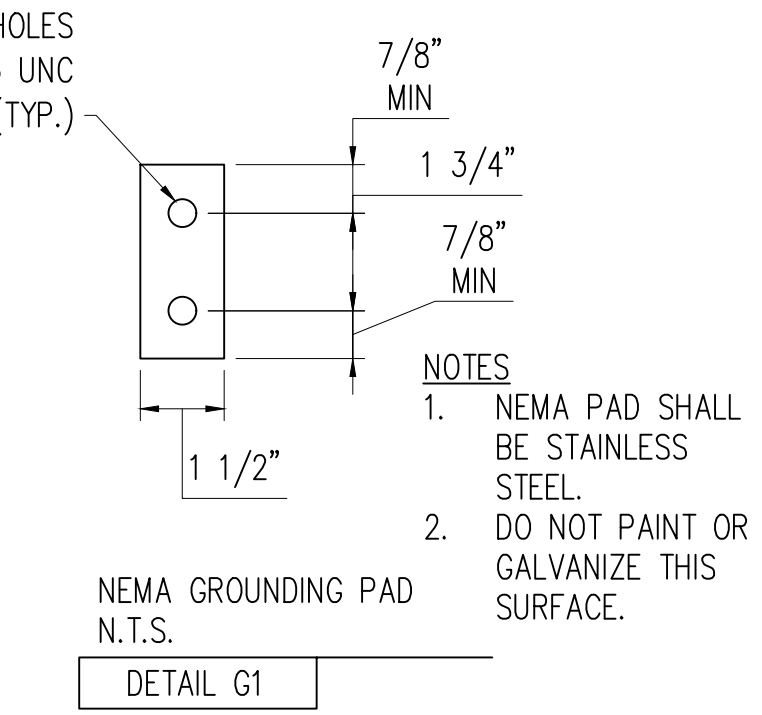
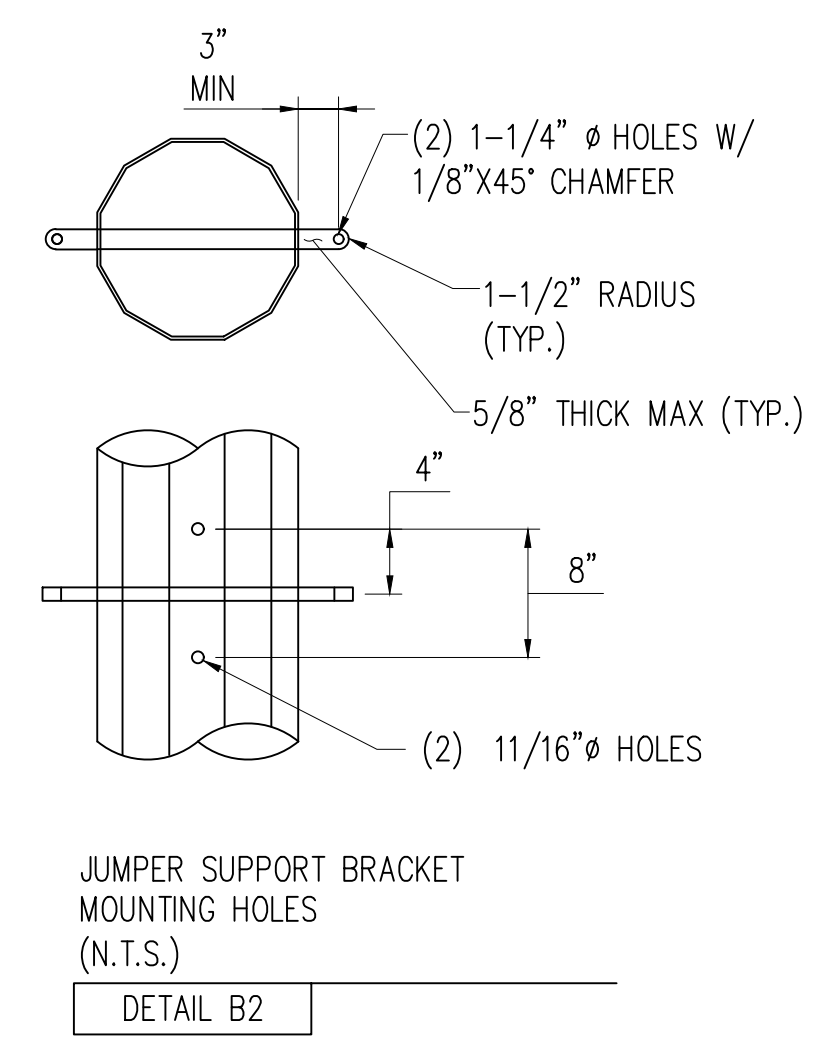
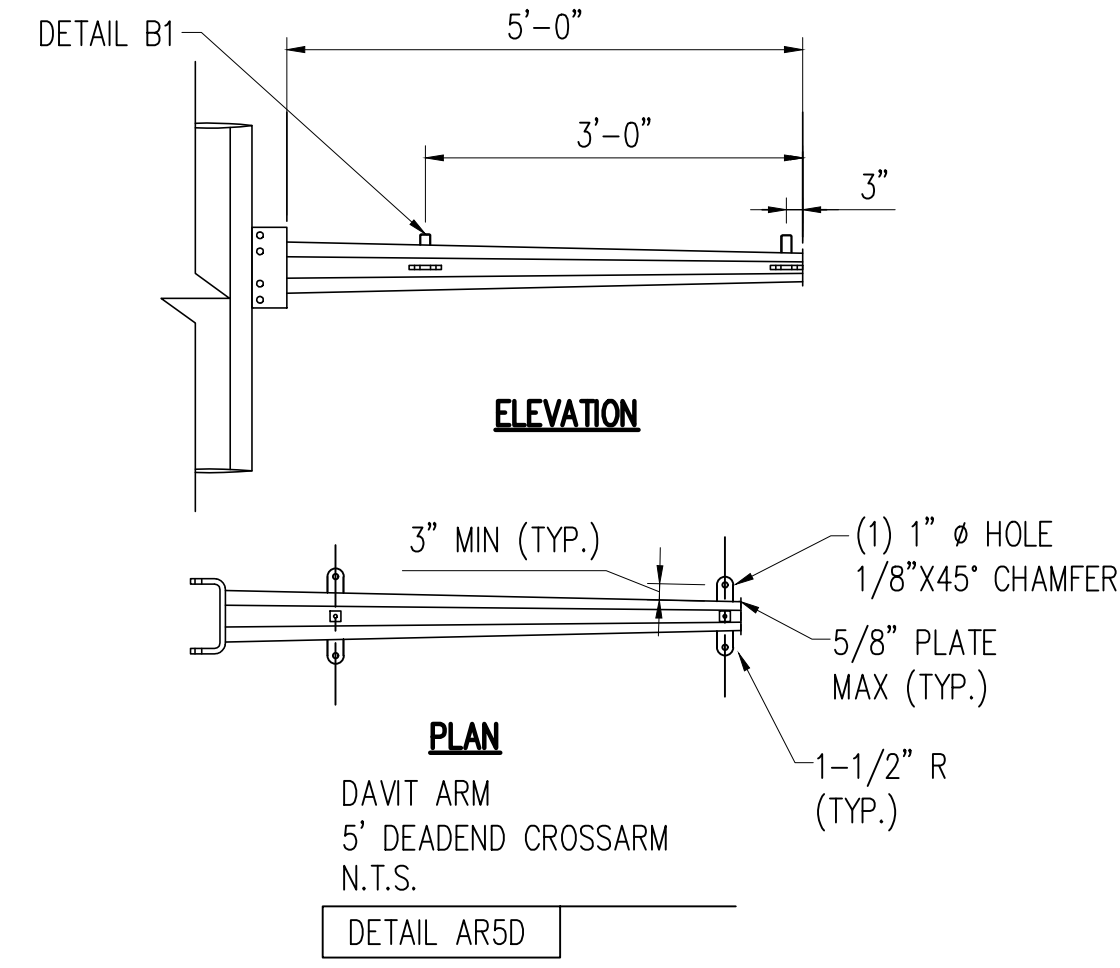
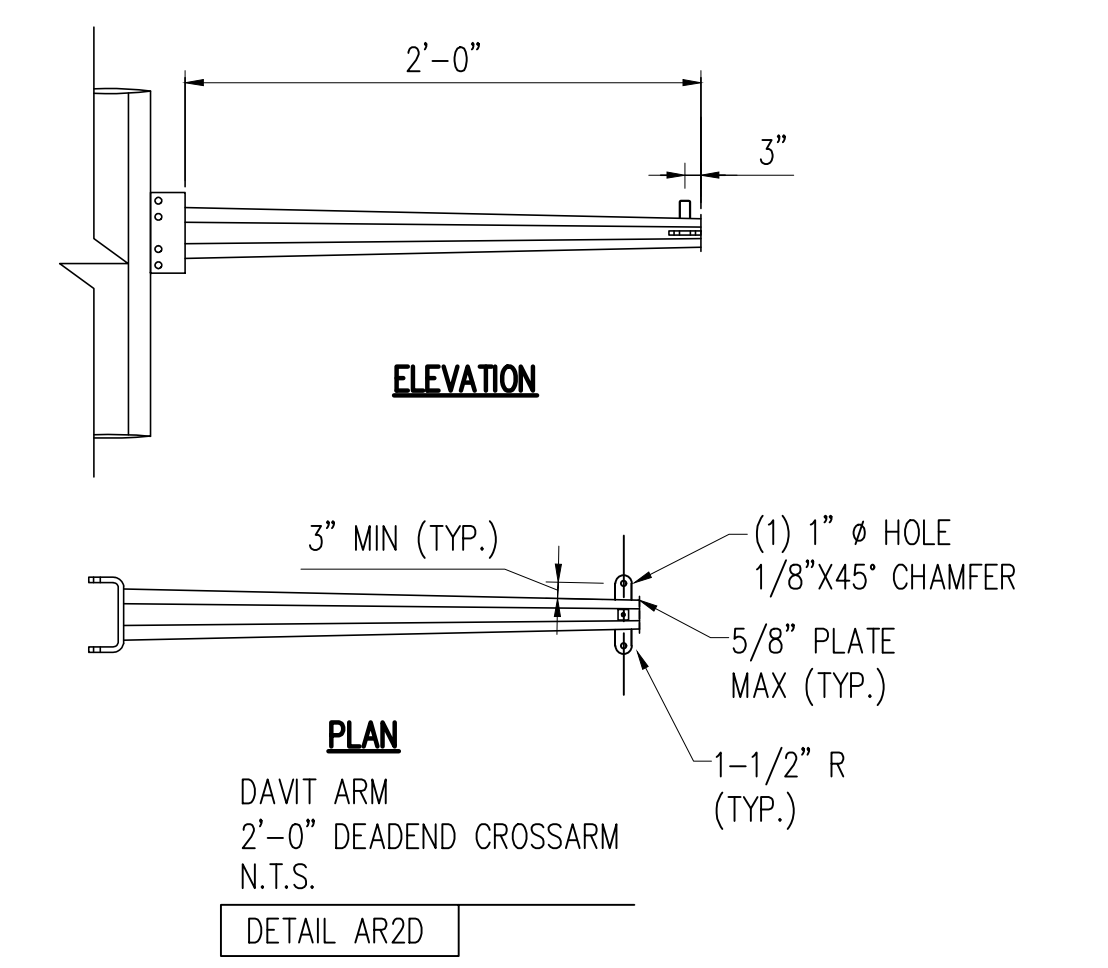
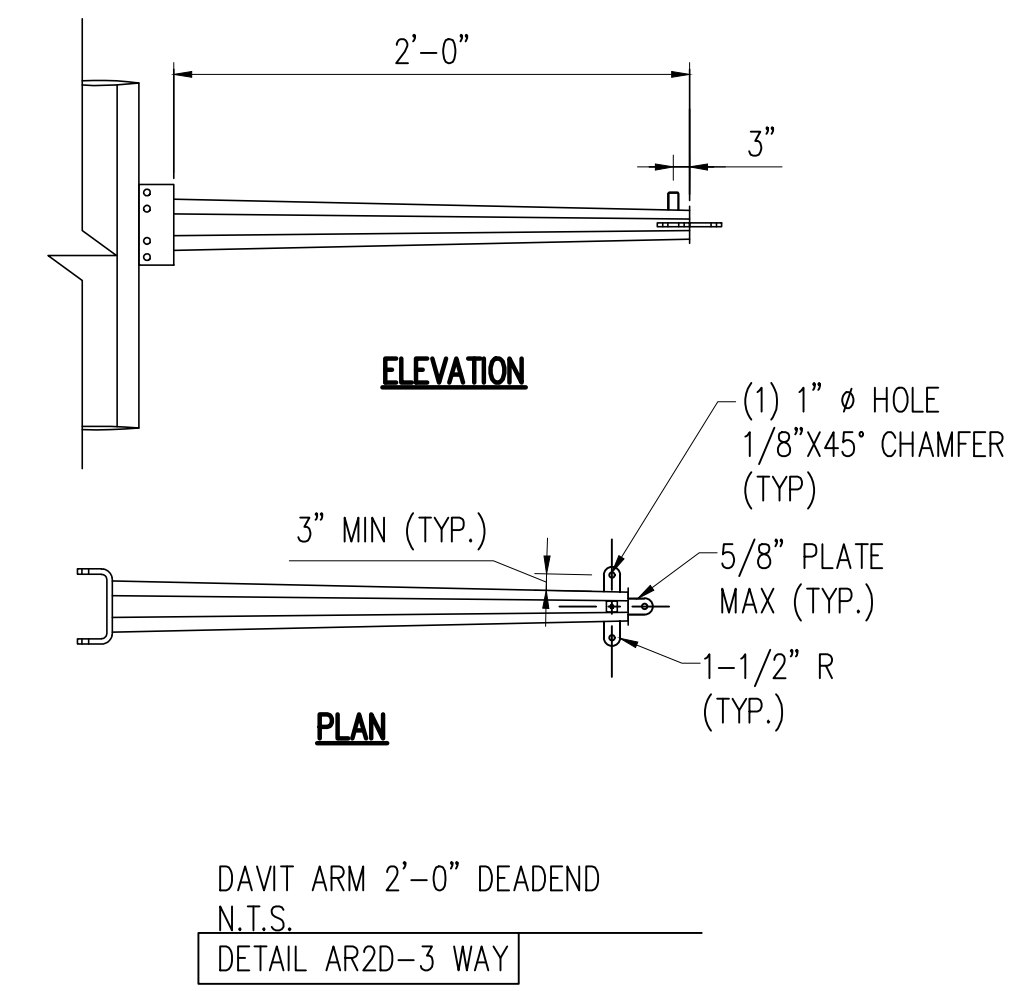
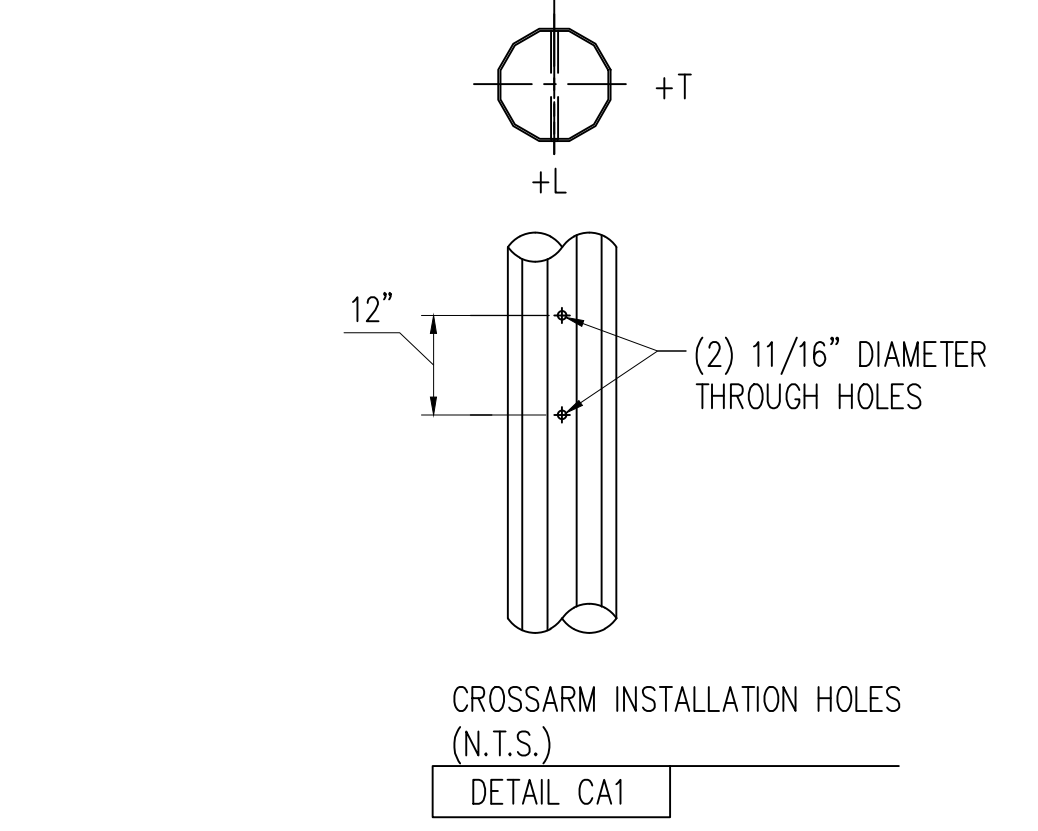
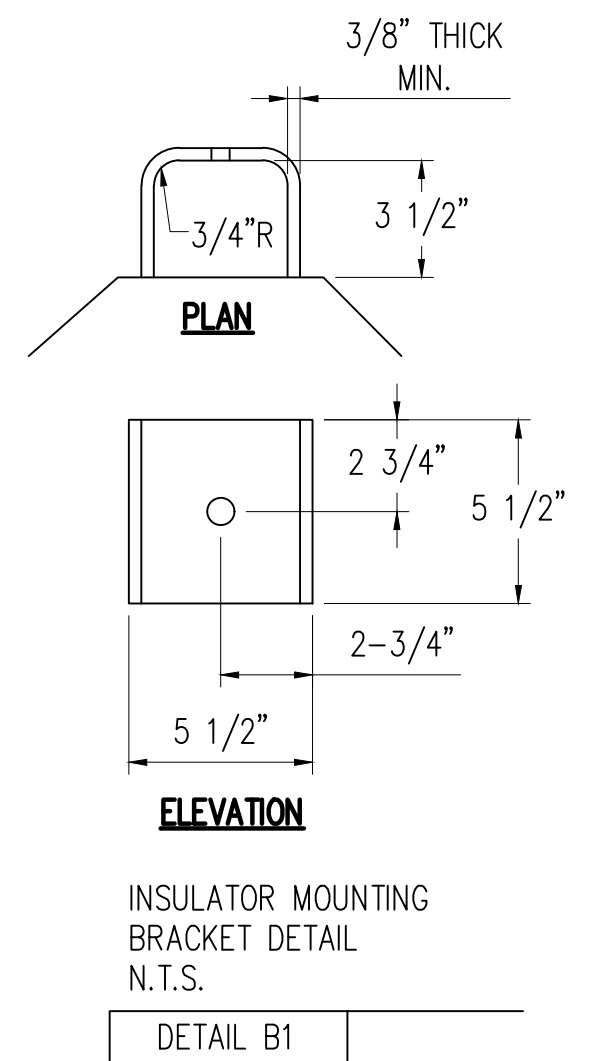
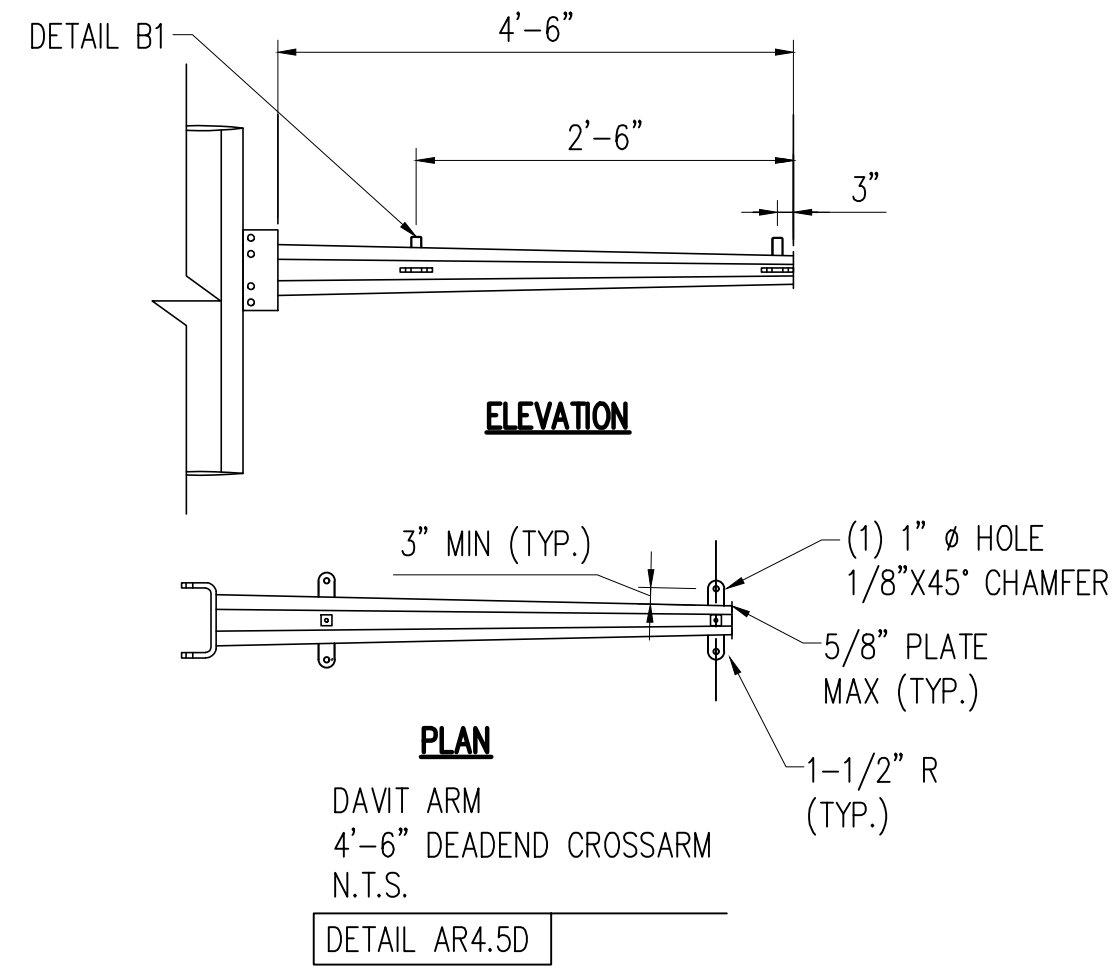
NOTE:
LOWER DISTRIBUTION
ARM ON STRUCTURE
69A ONLY



LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 10
V1	600	500	800	600	500	200	400	600
T1	3,400	2,300	3,000	3,400	2,300	3,000	1,300	2,500
L1	3,400	2,000	3,000	3,400	2,000	3,000	1,200	2,800
V2	1,600	1,000	1,500	1,600	1,000	1,500	500	1,300
T2	11,300	9,600	8,100	11,300	9,600	8,100	2,200	7,400
L2	11,800	6,800	8,900	11,900	6,800	8,900	2,800	8,500
V3	200	200	100	100	100	100	100	2,500
T3	600	1,900	400	700	1,900	400	100	300
L3	8,000	4,800	6,300	8,000	4,800	6,300	1,800	5,700
V4	100	200	100	100	100	100	100	100
T4	600	1,700	300	600	1,700	300	100	200
L4	5,100	3,100	4,200	5,100	3,100	4,200	1,100	3,600
V5	100	100	300	100	100	200	100	100
T5	200	300	200	200	200	100	100	100
L5	400	500	600	1,600	1,400	1,600	100	100
V6	200	100	400	100	100	300	100	100
T6	200	500	200	200	300	200	100	100
L6	100	500	500	1,600	2,000	2,100	200	300
W (PSF)	4.0	36.9	4.0	4.0	36.9	4.0	0.0	0.0

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

NO.	REVISIONS	ISSUED FOR BID	GREENVILLE UTILITIES Greenville, North Carolina 115kV TRANSMISSION LINE POD - HUDSON & HUDSON - SIMPSON LOAD AND DESIGN DEADEND STR 69A/69B



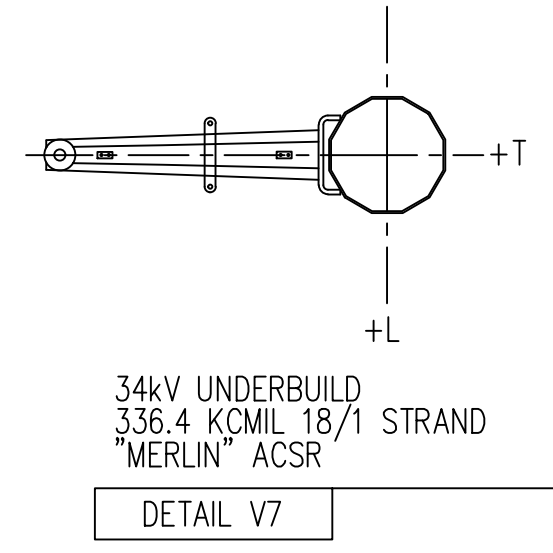
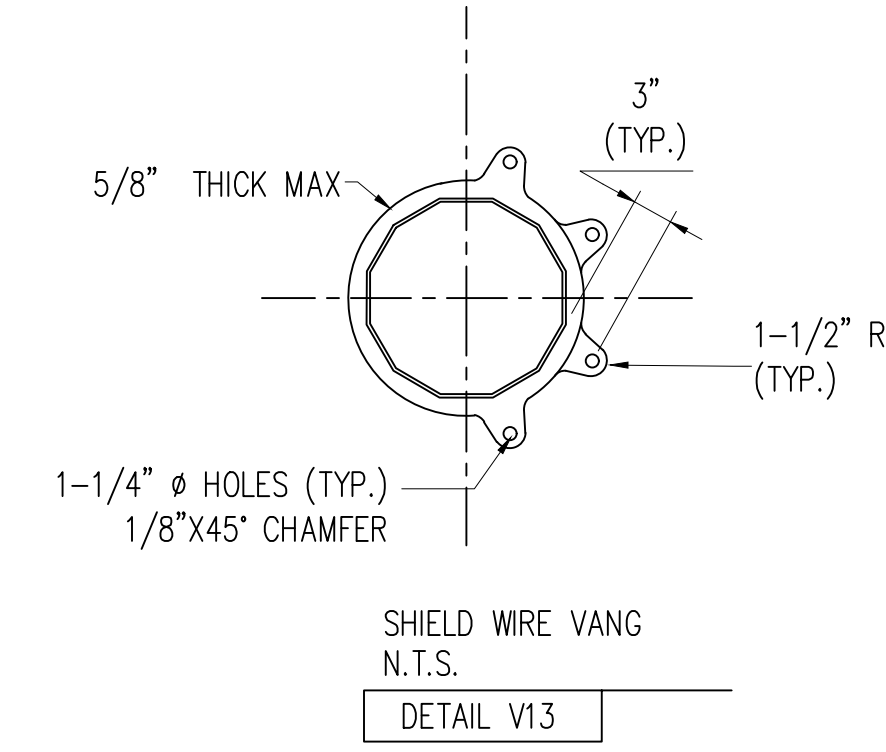
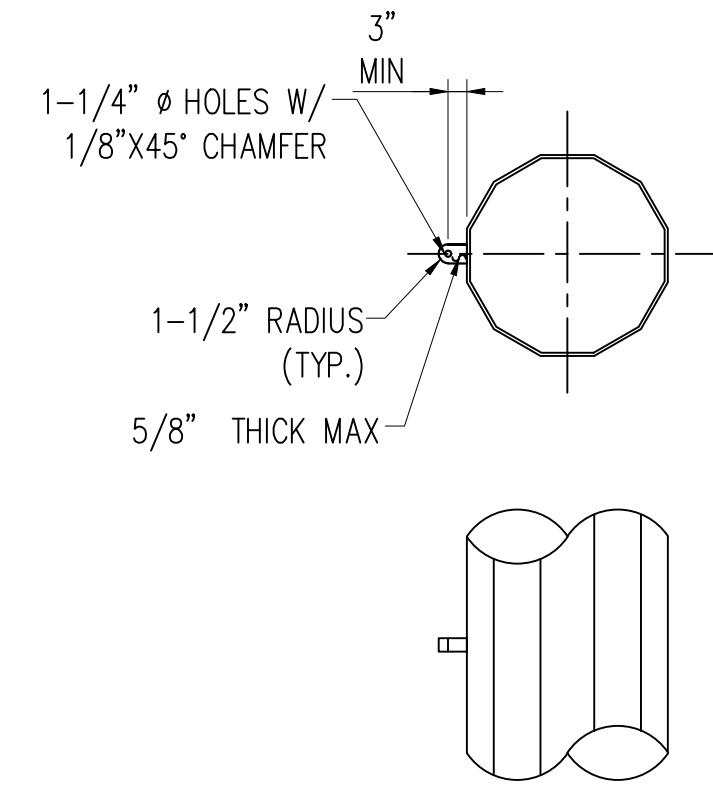
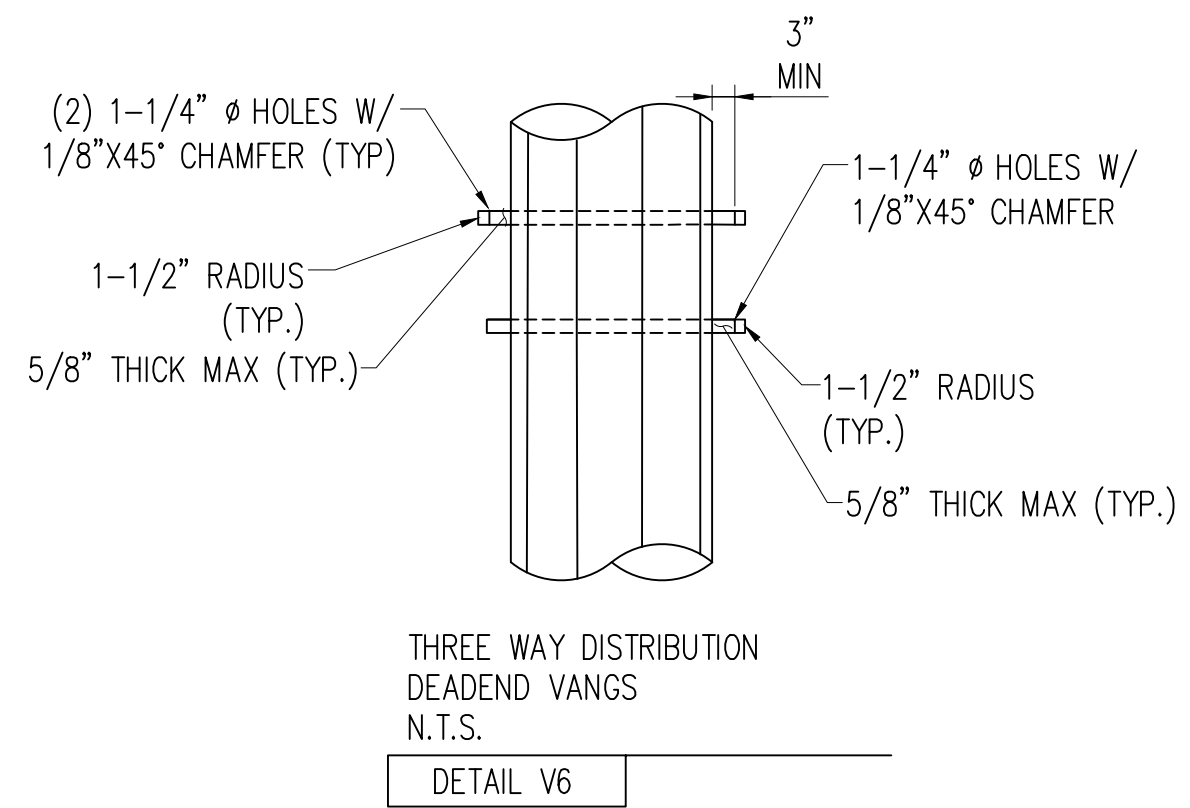
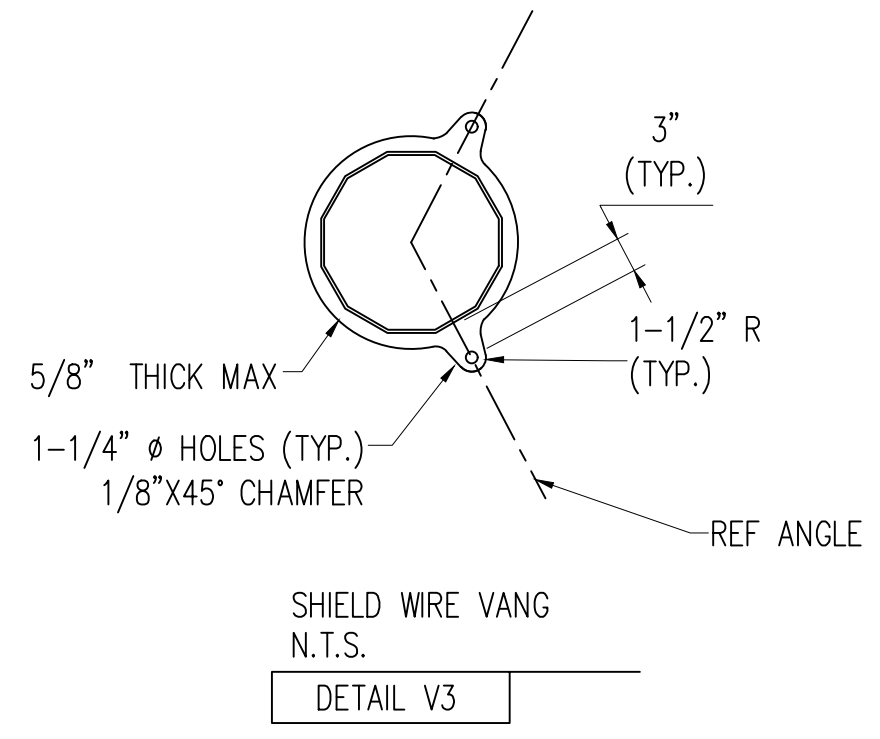
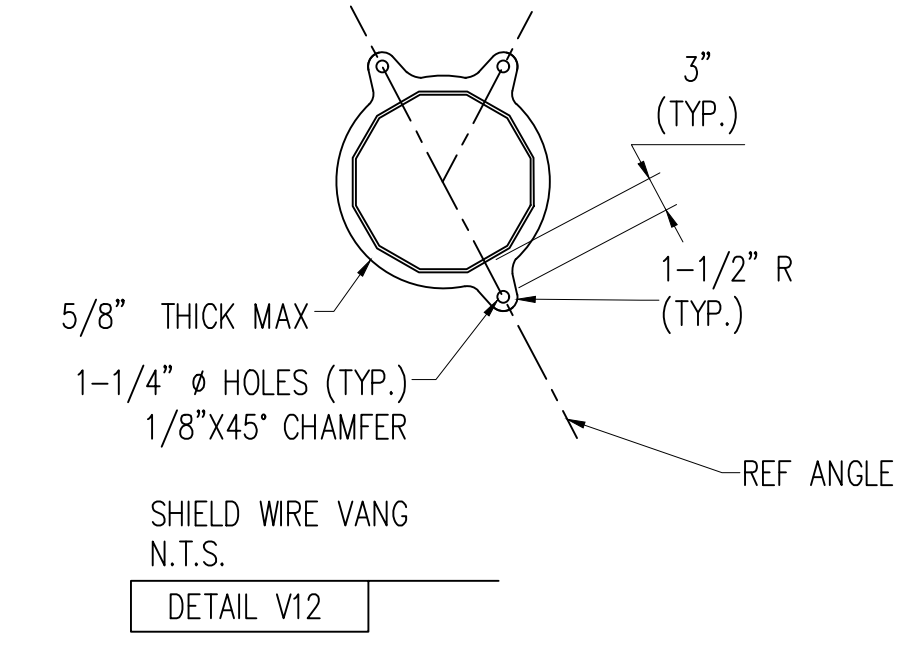
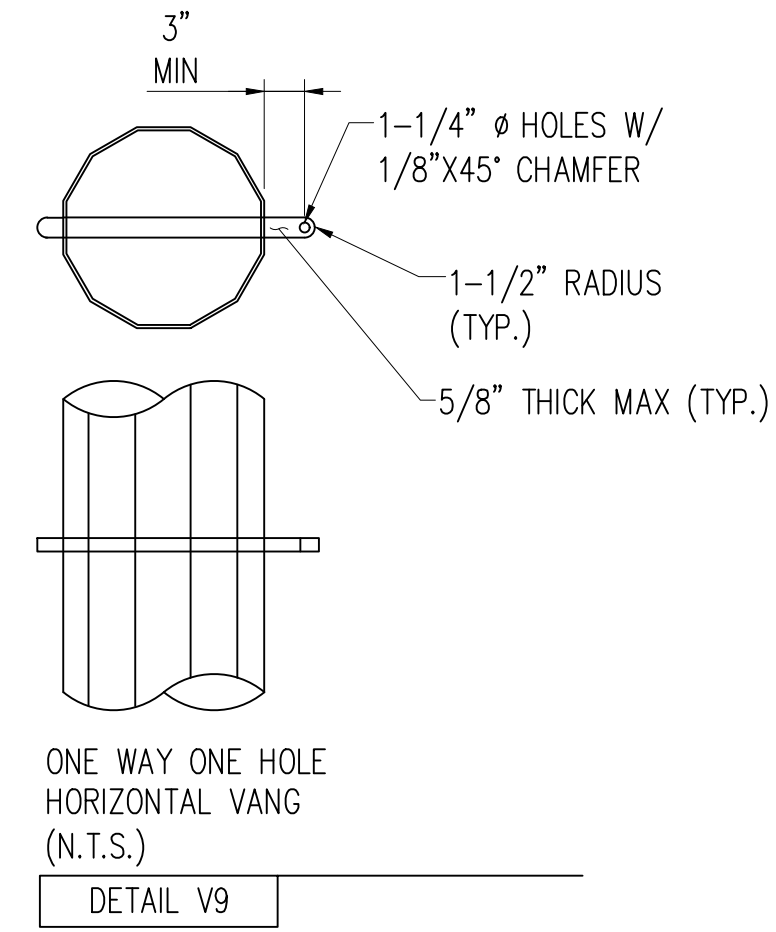
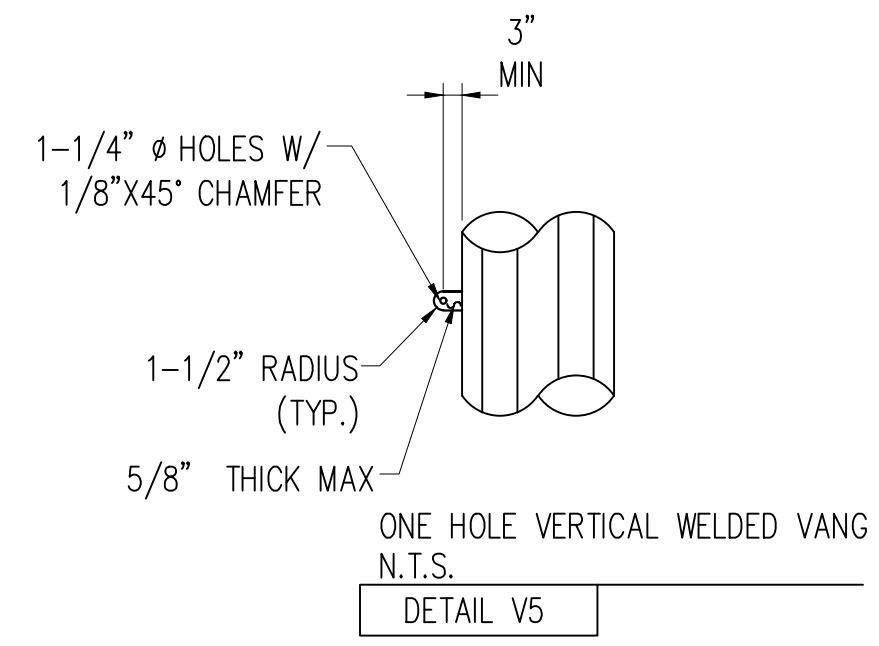
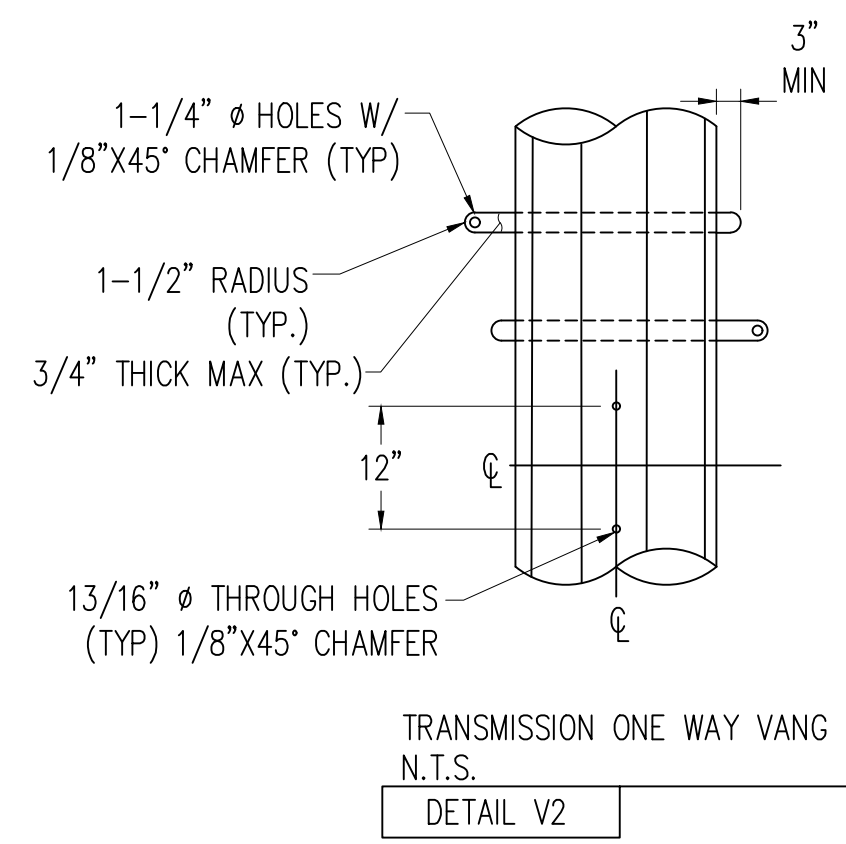
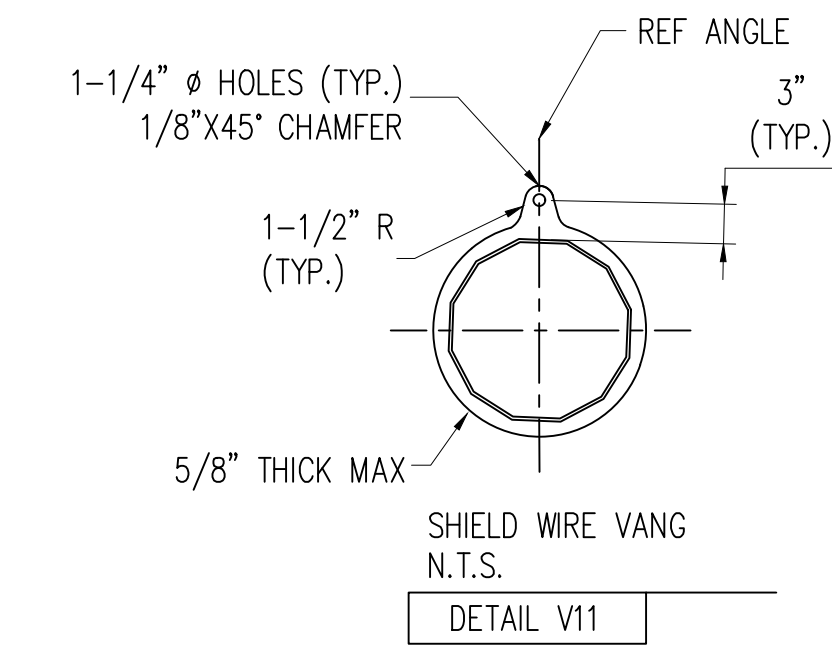
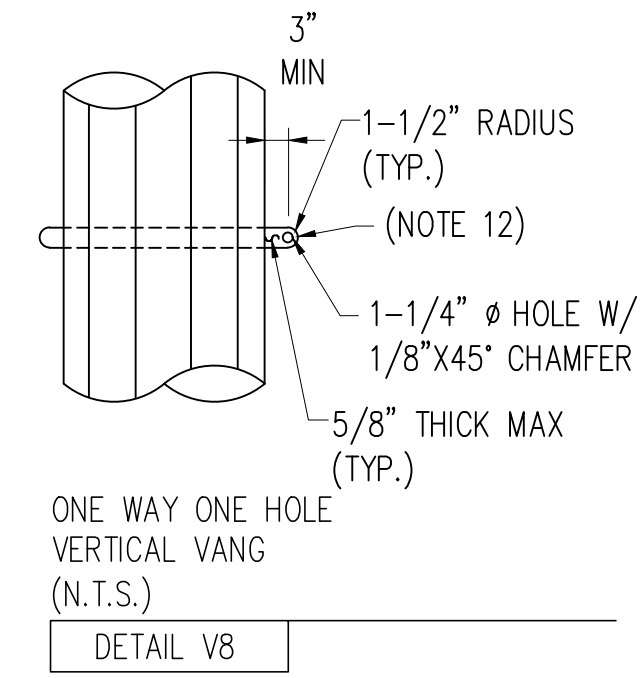
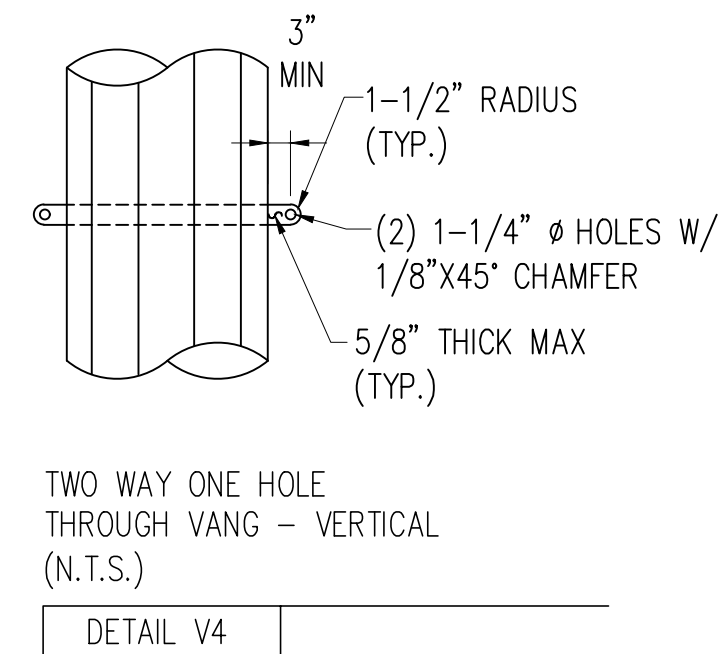
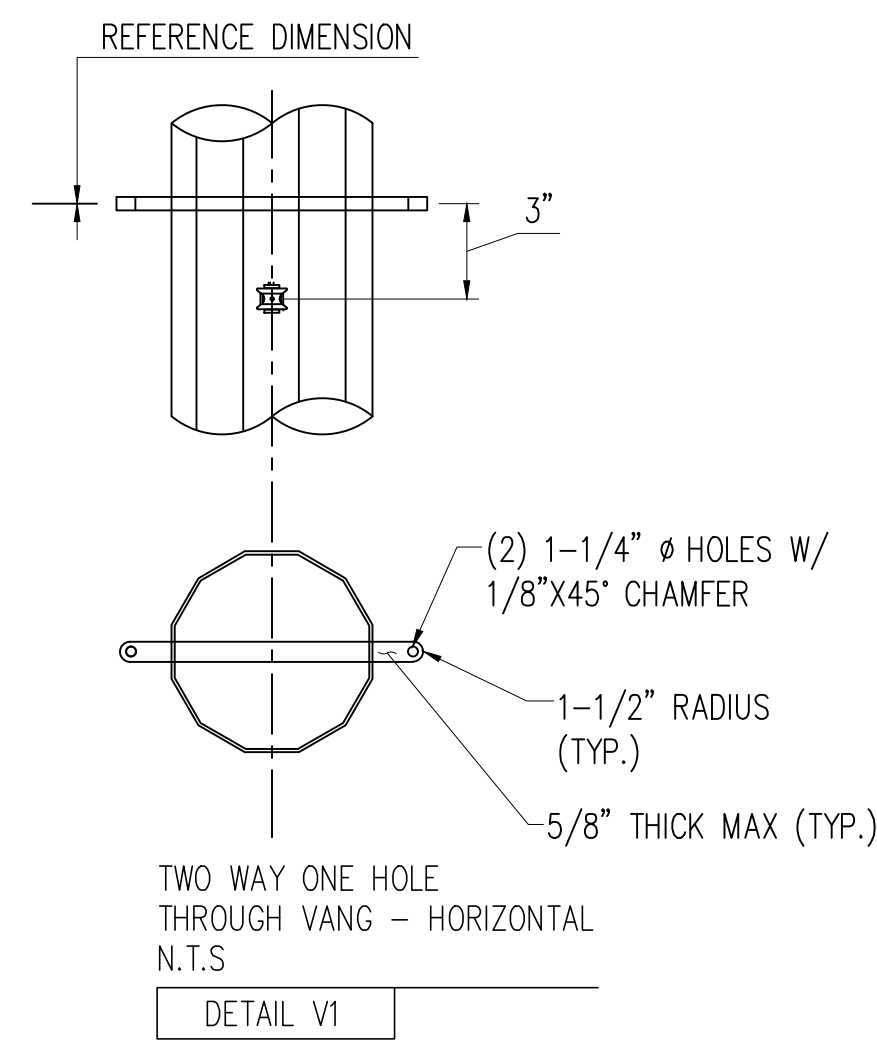
NO. REVISIONS

ISSUED FOR CONSTRUCTION

GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
POD - HUDSON & HUDSON - SIMPSON
DETAILS

DWN.J. THOMAS	DATE 10/19/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	DETAILS SHEET 1



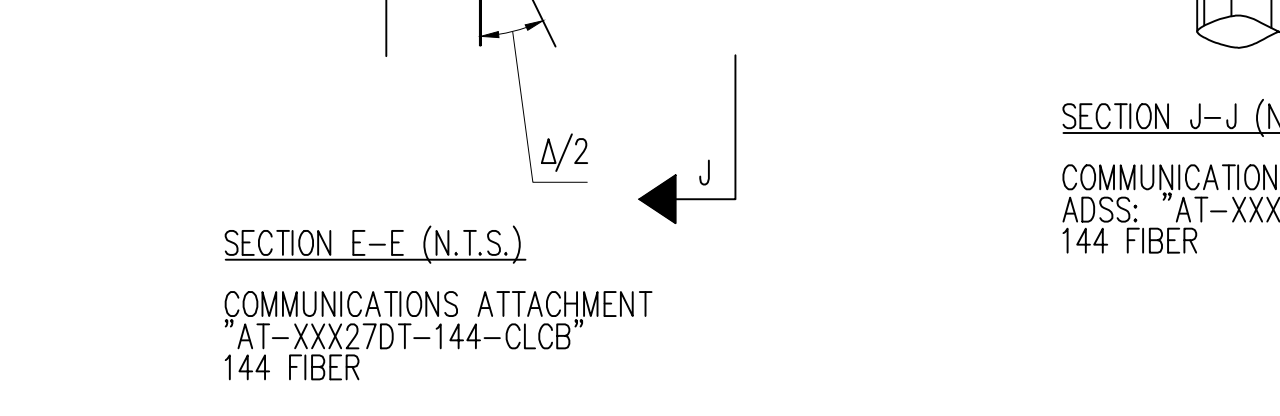
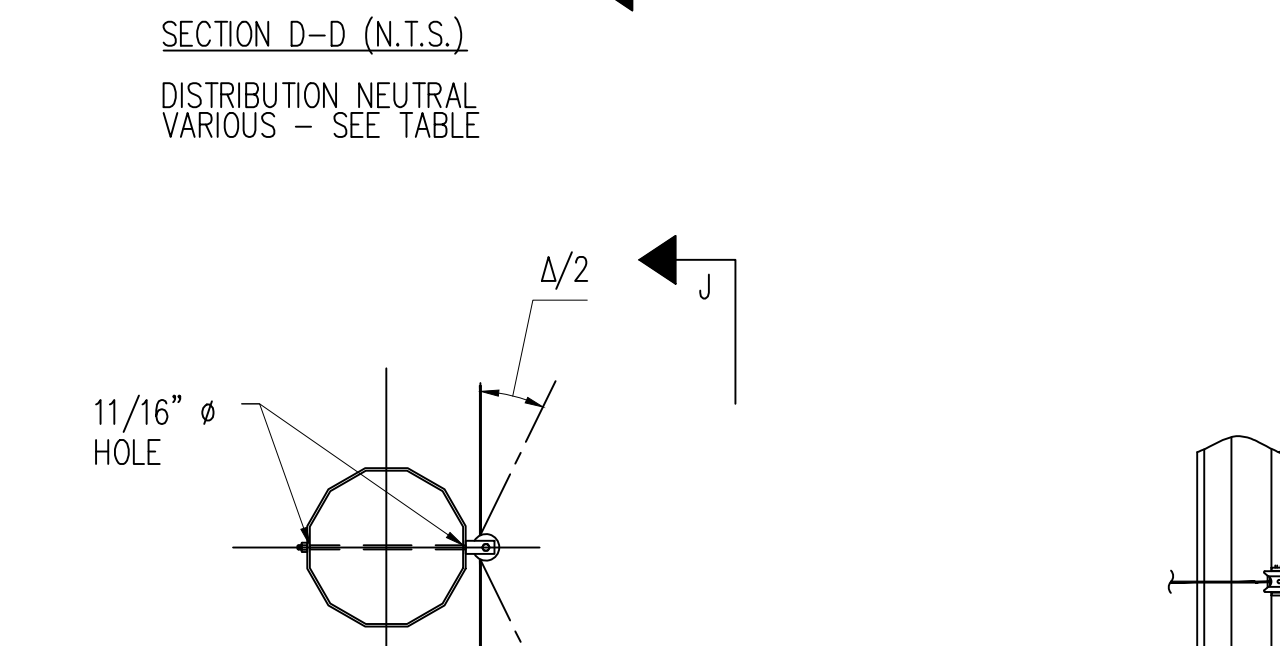
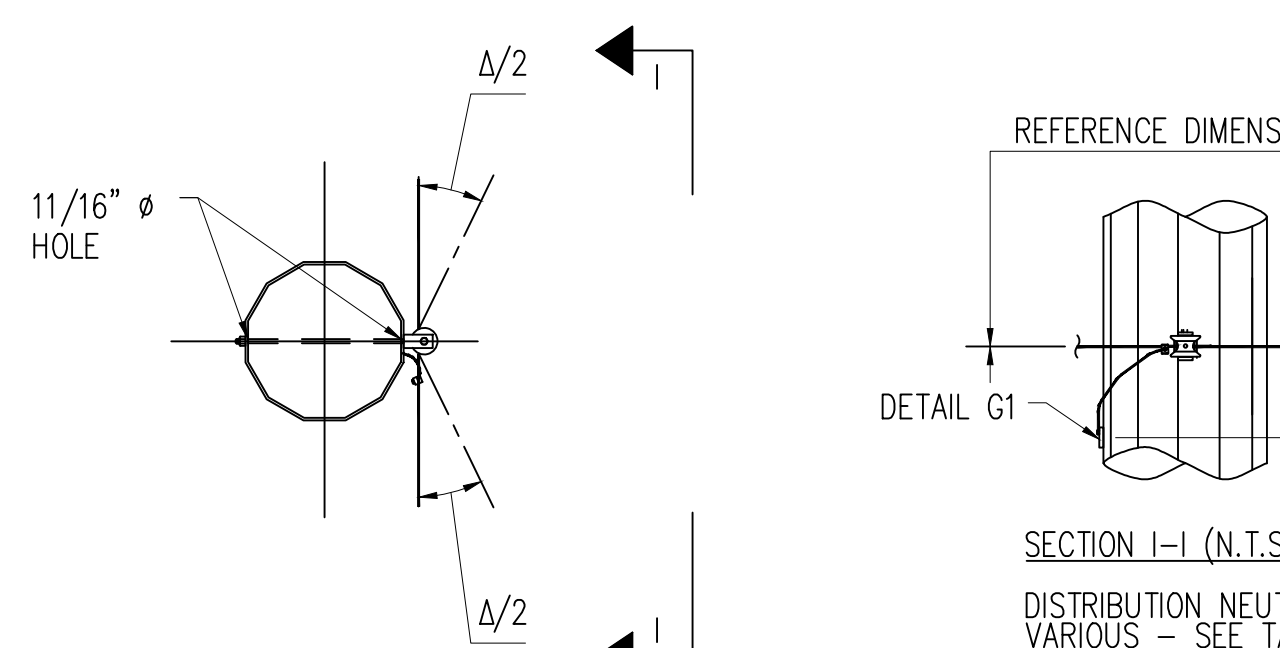
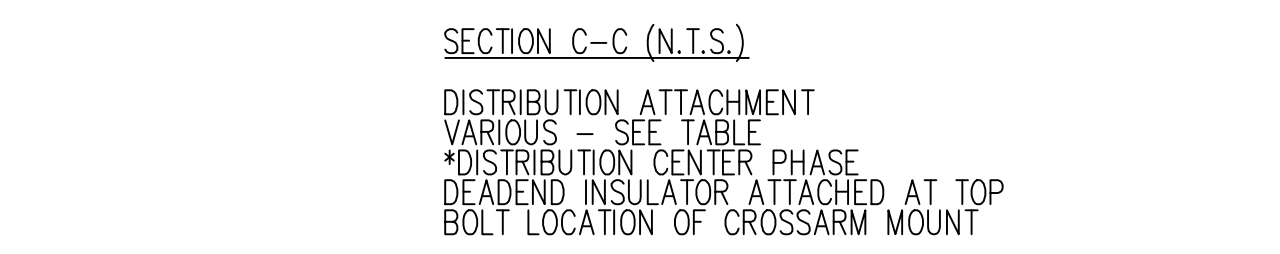
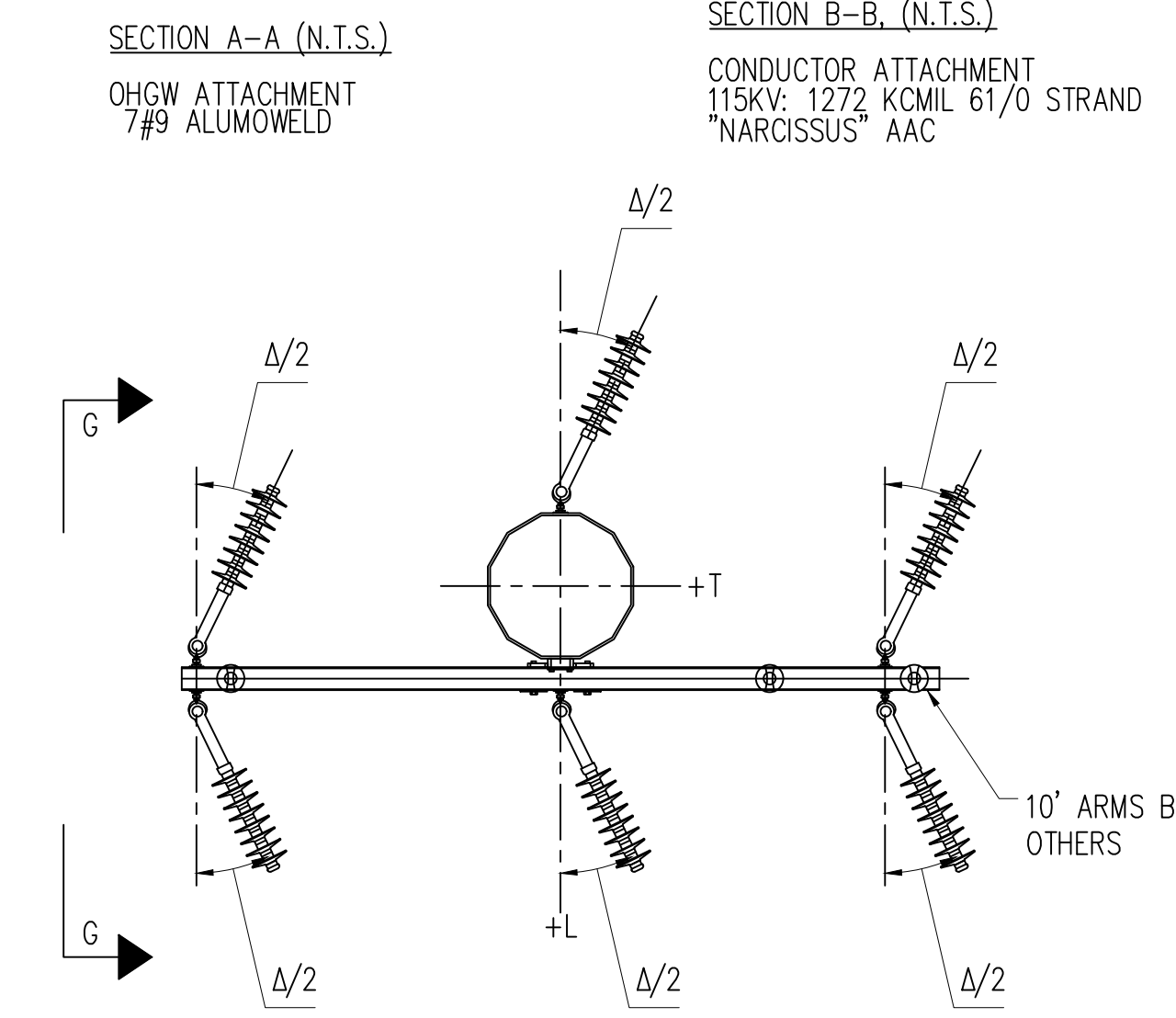
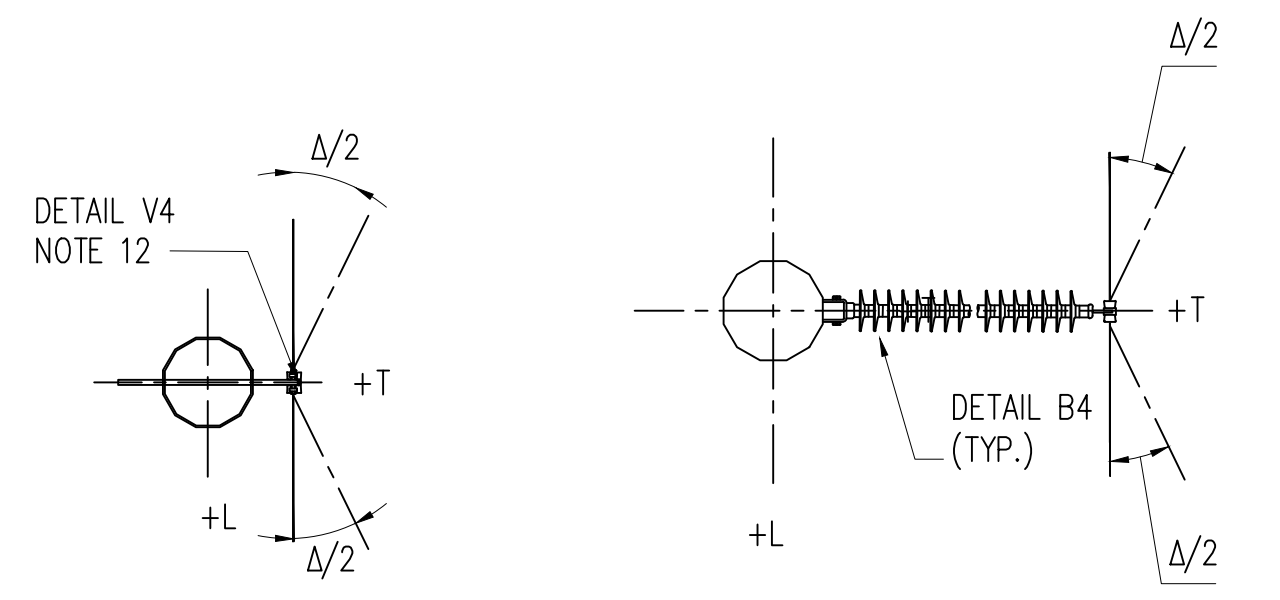
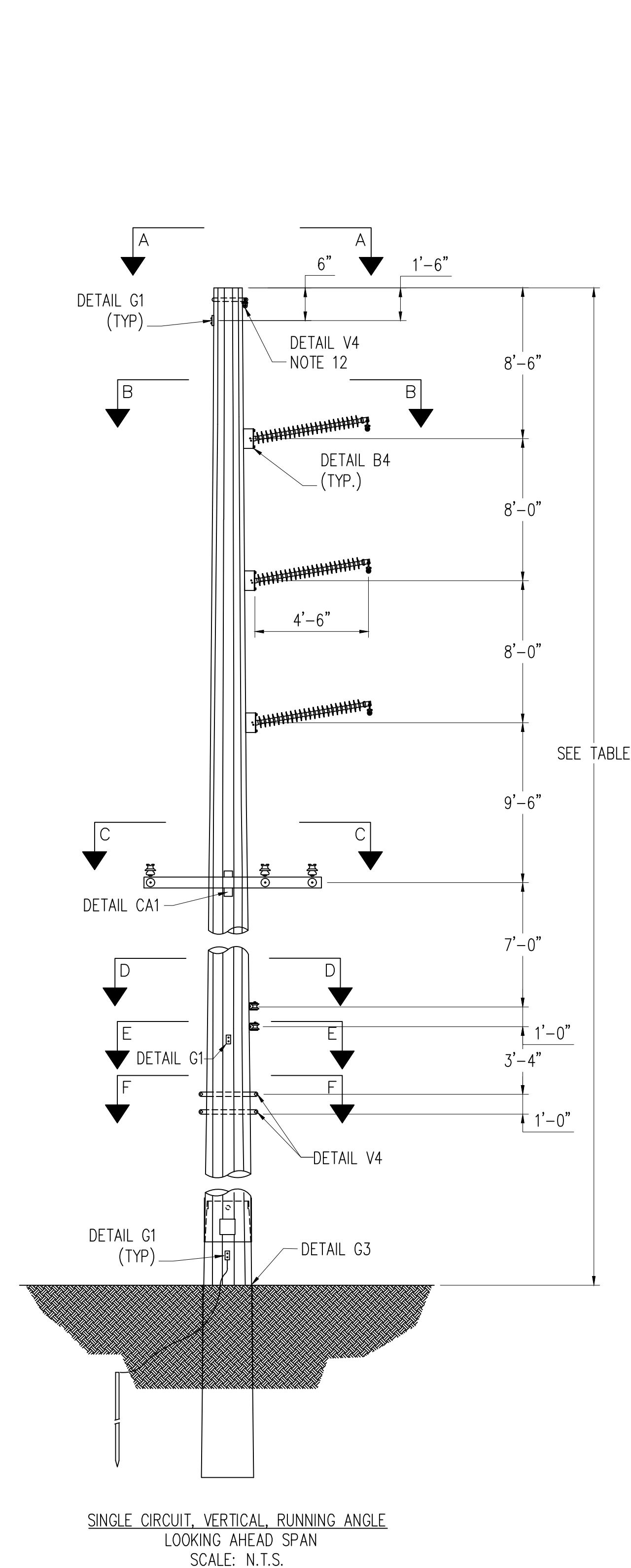
NO.
REVISIONS

ISSUED FOR BID

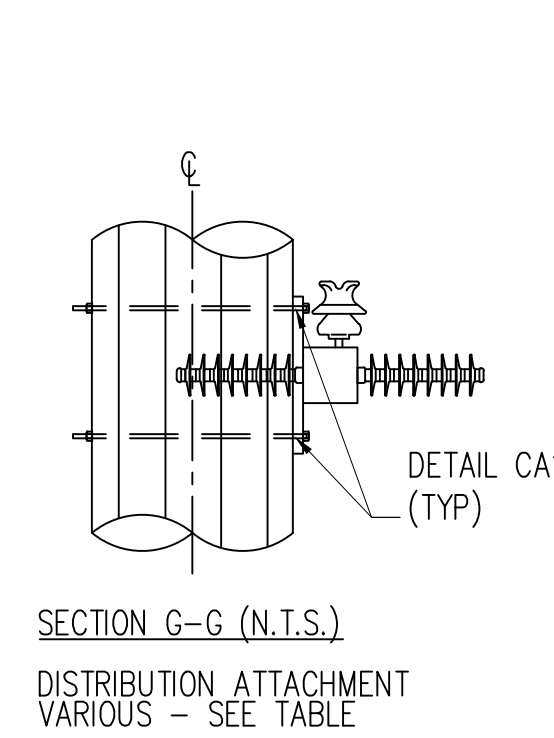
GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
SIMPSON SUB TO G203
DETAILS SHEET 2

DWN. J. THOMAS	DATE 10/19/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	DETAILS SHEET 2
SCALE: NONE		



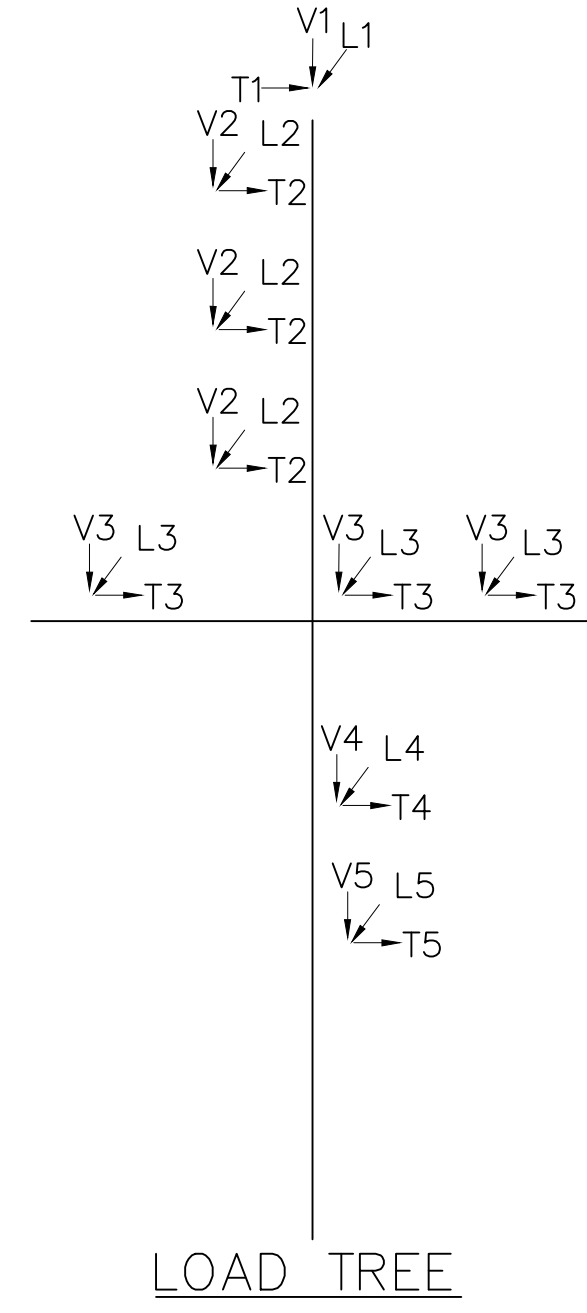
STR #	HEIGHT (FT)	ANGLE Δ	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)	12.47KV WIRE	NEUTRAL WIRE
8	80	9	38	32	795 KCMIL AAC "ARBUTUS"	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
9	80	11	38	32		
10	80	7	31	25		
26	80	8	38	32		
40	75	10	38	32		
41	75	0	44	38		
42	75	0	34	34		
50	78	-8	51	40		
51	80	9	51	40		
99	85	-10	45	33		
100	90	-13	46	35		
107	84	13	45	33		
108	86	13	45	33		
143	80	20	52	40		
147	74	-15	36	34		
148	74	-14	34	27		
149	74	-14	34	27		
150	74	-12	34	27		
					336.4 KCMIL 18/1 STRAND "MERLIN" ACSR	1/0 AWG 6/1 STRAND "RAVEN" ACSR



- 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', .25" 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 EXTREME ICE :32', 1" ICE, NO WIND
OLF: L=1.00, T=1.00, V=1.00
 - CASE 5 UPLIFT: 0', NO ICE, NO 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

- WIRE DATA**
- OHW: 7#9 ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47KV: VARIOUS - SEE TABLE
 DISTRIBUTION NEUTRAL: VARIOUS - SEE TABLE
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER
- ALL STATED LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS AND INSULATOR WEIGHT.
 - STRUCTURE AND ATTACHMENTS SHALL BE DESIGNED FOR THE SIMULTANEOUS APPLICATION OF DEAD LOAD, WIND ON THE STRUCTURE, AND WIRE LOADS FOR EACH LOADING CASE.
 - STRUCTURE SHALL BE DESIGNED SELF SUPPORTING, GUYS ARE NOT PERMITTED. STRUCTURE SHALL MEET ALL TECHNICAL REQUIREMENTS OF THE STEEL POLE SPECIFICATIONS.
 - WIND PRESSURES SHOWN ON LOAD WORKSHEET ARE BASED ON A SHAPE FACTOR OF 1.0.
 - FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
 - MINIMUM VANG PLATE THICKNESS = 1/2".
 - WIND SHALL BE APPLIED IN THE DIRECTION WHICH RESULTS IN THE MOST SEVERE EFFECT.
 - 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.
 - 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.
 - ALL STRUCTURES SHALL BE GALVANIZED STEEL.
 - ORIENT SINGLE SIDED VANGS FOR HARDWARE SHOWN ON DRAWINGS.
 - MANUFACTURER SHALL APPLY POINT LOADS NECESSARY TO CREATE THE MOST SEVERE EFFECTS ON ALL MEMBERS INCLUDING ARMS, POLES, BASE PLATES, ETC.
 - SEE DRAWING 'DET 2' FOR REFERENCED DETAILS.

LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 7
V1	200	100	500	550	100	100
T1	1,100	1,000	1,100	800	550	300
L1	3,300	2,000	3,100	2,900	1,850	1,000
V2	800	400	1,200	1,200	400	400
T2	4,700	3,400	3,500	3,000	2,800	1,200
L2	150	100	100	100	100	100
V3	500	250	900	900	200	250
T3	2,000	2,600	1,600	1,200	1,000	500
L3	8,500	5,300	6,800	6,200	4,900	2,000
V4	300	200	700	700	150	100
T4	1,300	2,000	1,150	900	600	300
L4	5,000	3,000	4,100	3,800	3,000	1,100
V5	300	200	700	700	100	100
T5	1,200	1,300	1,300	1,200	400	350
L5	1,050	1,200	1,200	1,150	350	300
W (PSF)	4.0	36.9	4.0	0.0	0.0	0.0



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

NO.

REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
 Greenville, North Carolina

115KV TRANSMISSION LINE
 SIMPSON SUB TO G203
 LOAD AND DESIGN
 RUNNING ANGLE WITH UNDERBUILD

DWN. J. THOMAS DATE 11/7/23 DWG. NO.
 CKD. A. KELSCH APPD. K. CHUDOMEL RA-UB-ARM
 SCALE: NONE

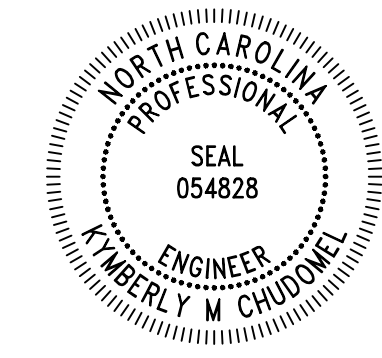
STR #	HEIGHT (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY DEPTH (FT)	12.47KV WIRE	NEUTRAL WIRE
62	80	S-08.0	36	28	795 KCMIL AAC "ARBUTUS"	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
66*	80	S-10.0	39	30		
173	85	S-11.0	34	29	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR	1/0 AWG 6/1 STRAND "RAVEN" ACSR

WIRE DATA

OHGW: "7#9" ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47KV: VARIOUS - SEE TABLE
 DISTRIBUTION NEUTRAL: VARIOUS - SEE TABLE
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

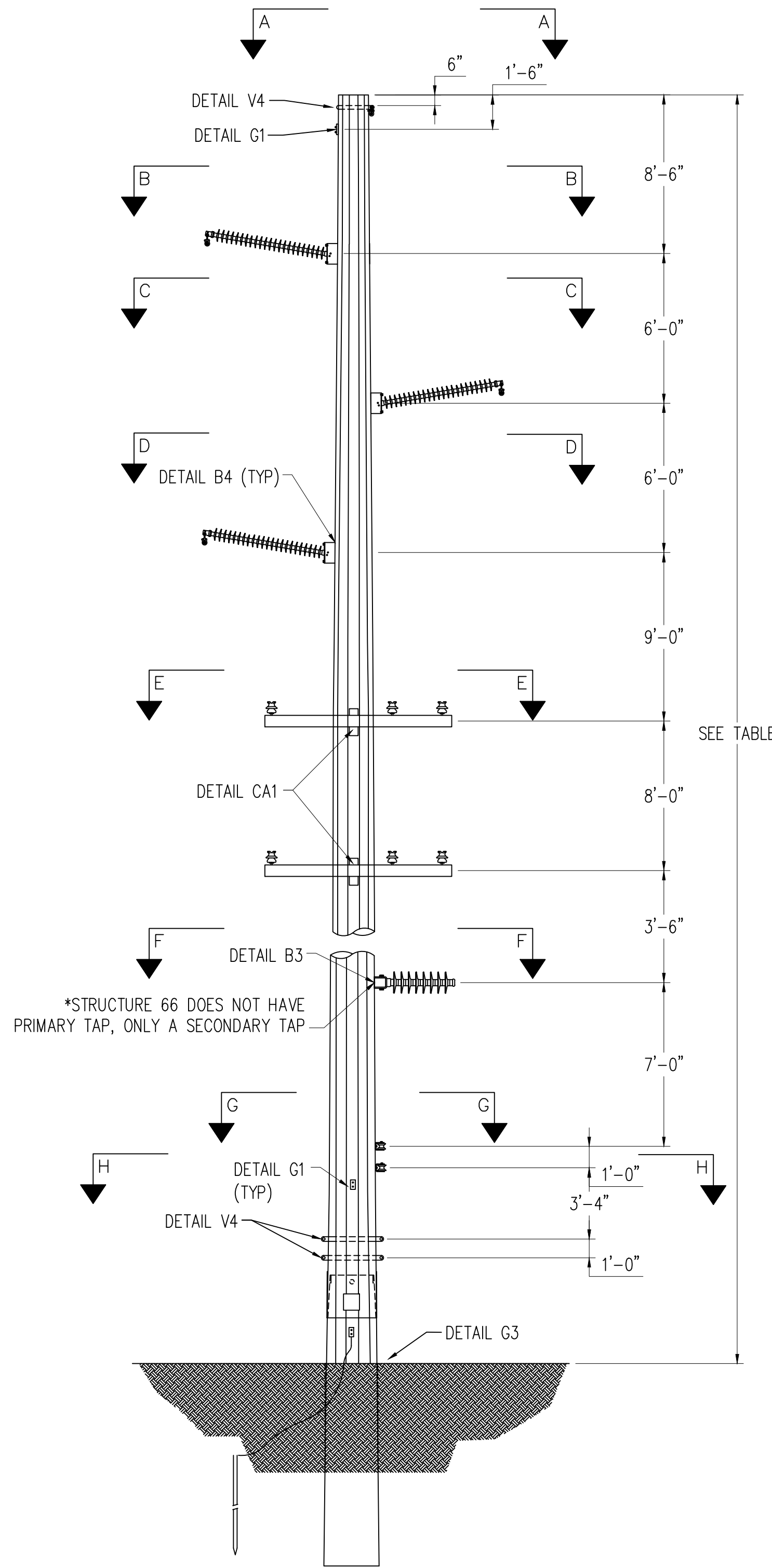
NOTES:

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

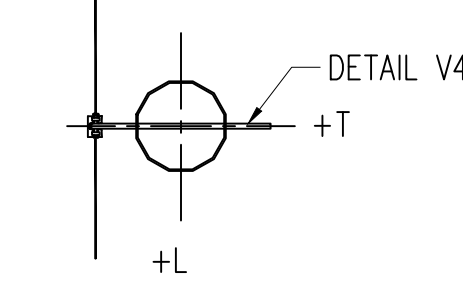


3/4/2024

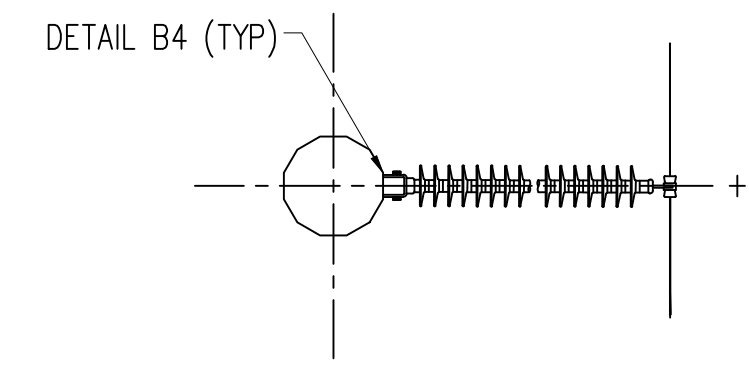
Tyler M. Chiddister



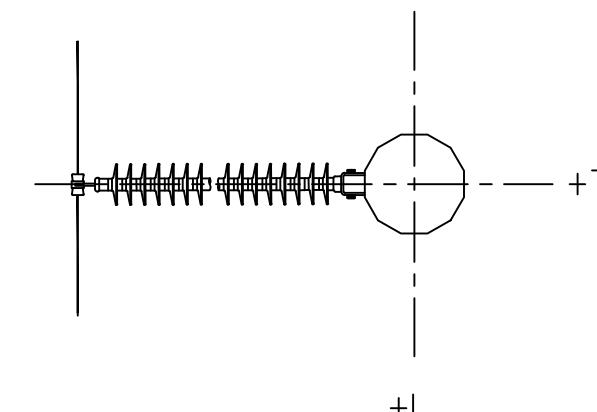
SINGLE CIRCUIT, DELTA, TANGENT
LOOKING AHEAD SPAN



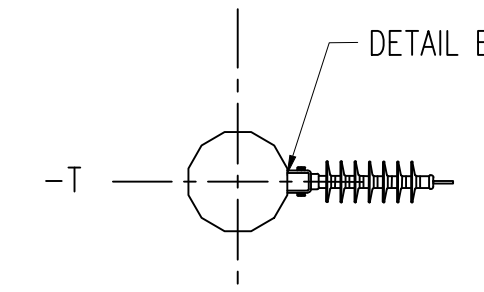
SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



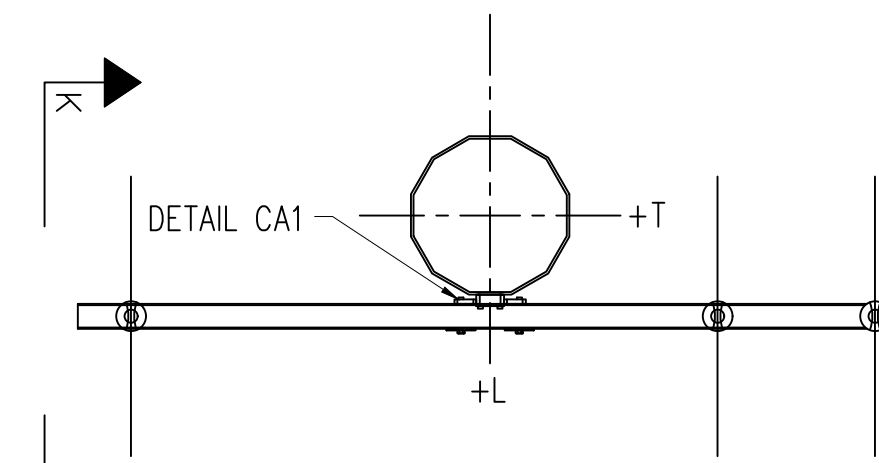
SECTION C-C (N.T.S.)
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



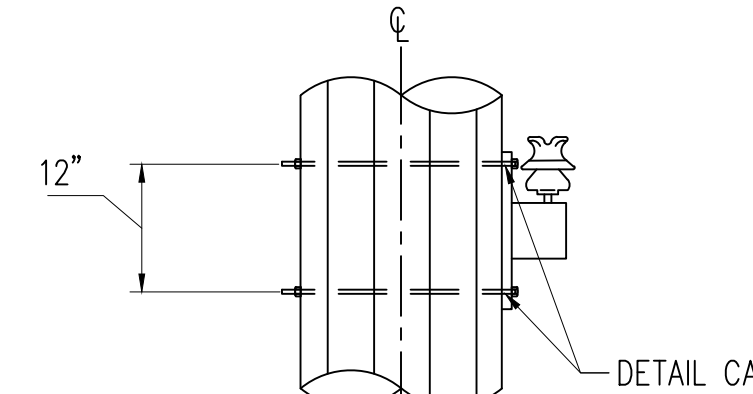
SECTION B-B, D-D (N.T.S.)
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



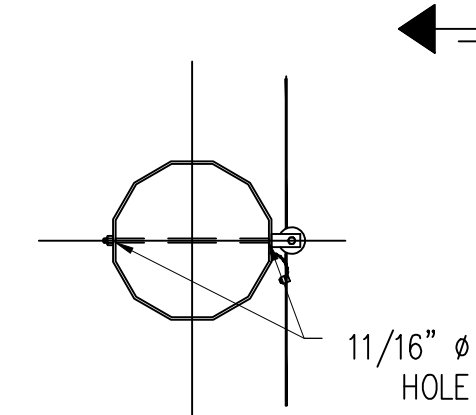
SECTION F-F (N.T.S.)
DISTRIBUTION ATTACHMENTS
1/0 ACSR "RAVEN"



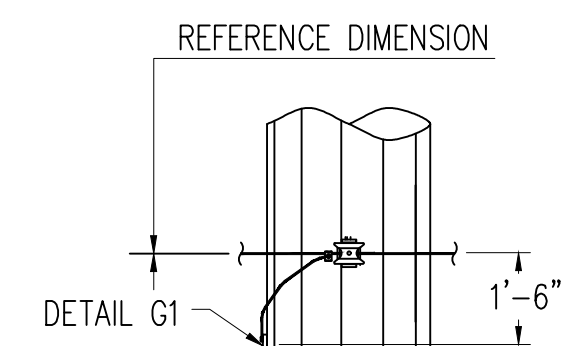
SECTION E-E (N.T.S.)
DISTRIBUTION ATTACHMENT
VARIOUS - SEE TABLE



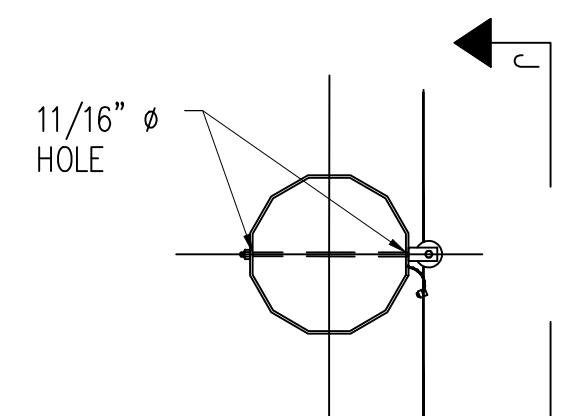
SECTION K-K (N.T.S.)
DISTRIBUTION ATTACHMENT
VARIOUS - SEE TABLE



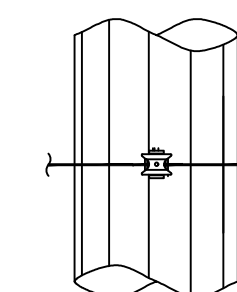
SECTION G-G (N.T.S.)
DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



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



SECTION H-H (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

NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

115KV TRANSMISSION LINE
SIMPSON SUB TO G203
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

DWN. J. THOMAS	DATE 11/7/23	DWG. NO.
CKD. A. KELSCH	APPD. K. OHDMEL	TAN-DELTA-2018-ARM-11AP-SP
SCALE: NONE		

STR #	LENGTH (FT)	ANGLE Δ	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
68	79	1	44	38

LOAD CASES

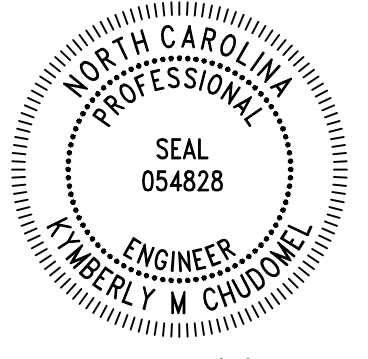
- CASE 1 NESC MEDIUM: 15', .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50
- CASE 2 NESC HIGH WIND: 60', 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 3 NESC ICE WITH WIND: 15', 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 4 EXTREME ICE: 32', 1" ICE, NO WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 5 UPLIFT: 0', NO ICE, NO WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 6 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

WIRE DATA

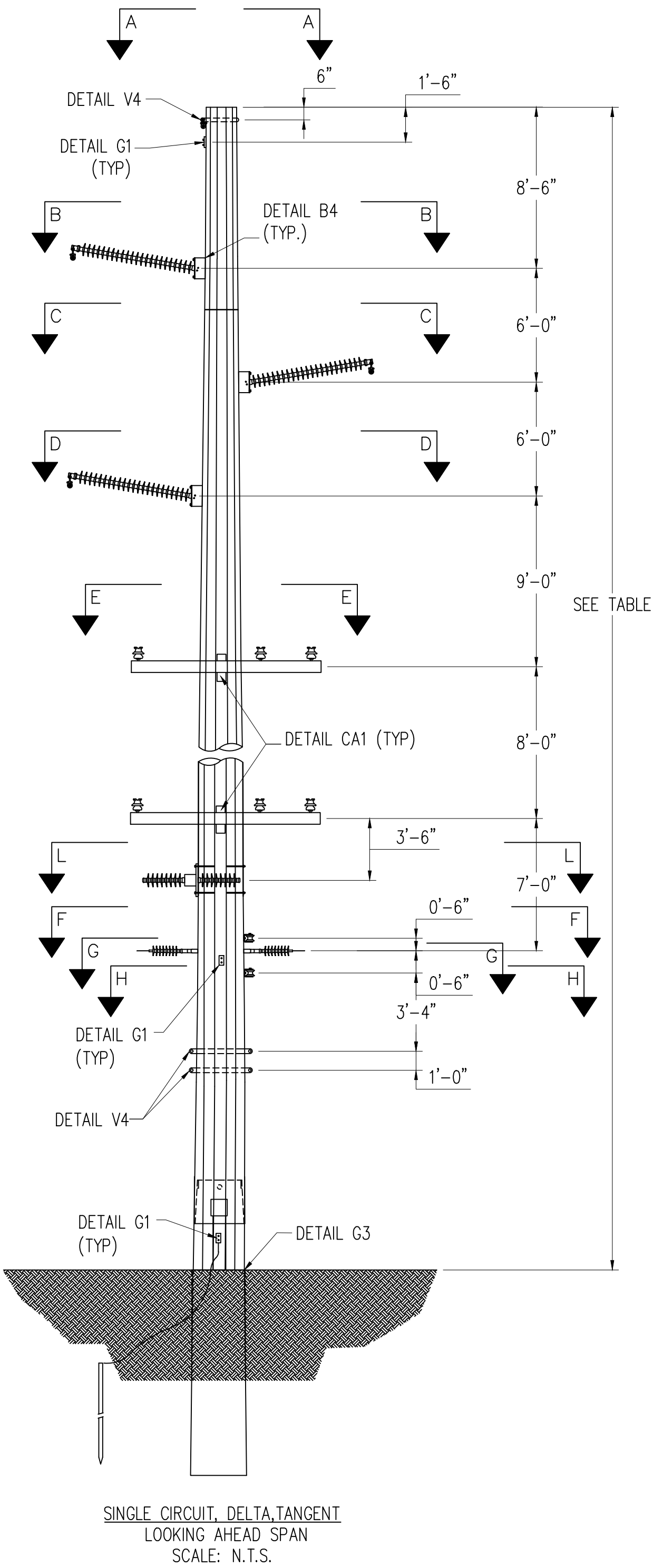
OHGW: "7#9" ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47KV: 795 KCMIL AAC "ARBUTUS"
 DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

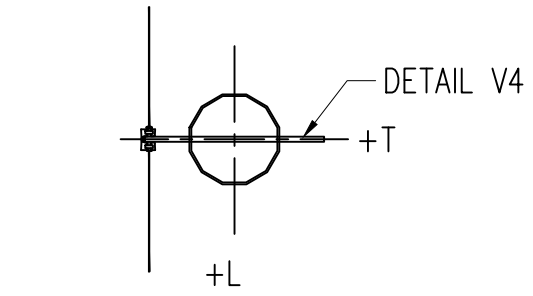
- FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
- MINIMUM VANG PLATE THICKNESS = 1/2".
- POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE GRADE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



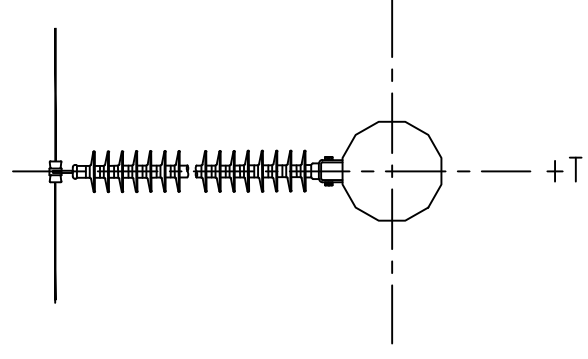
3/4/2024
Kimberly Chudomel



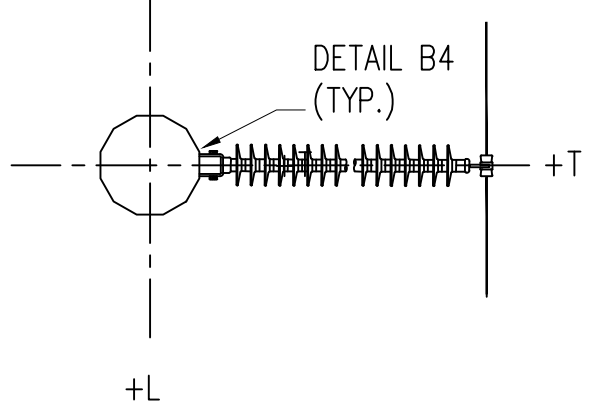
SINGLE CIRCUIT, DELTA, TANGENT
 LOOKING AHEAD SPAN
 SCALE: N.T.S.



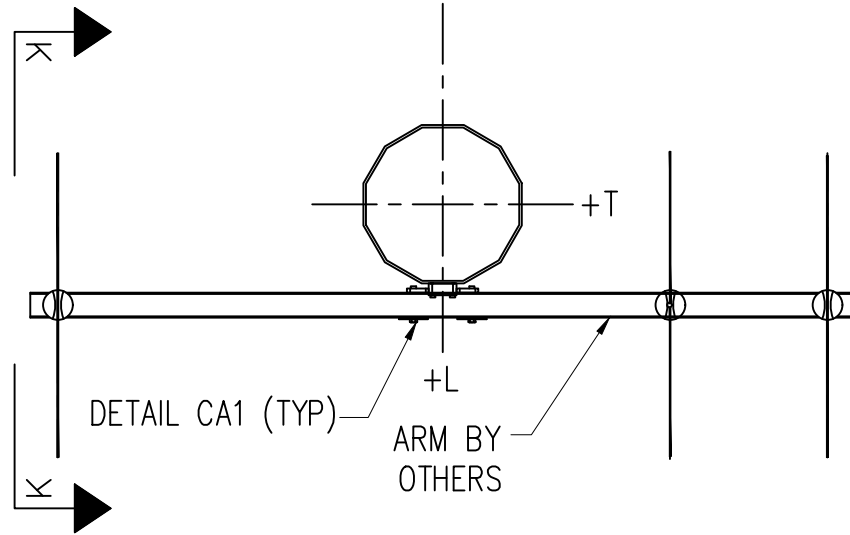
SECTION A-A (N.T.S.)
 OHGW ATTACHMENT
 7#9 ALUMOWELD



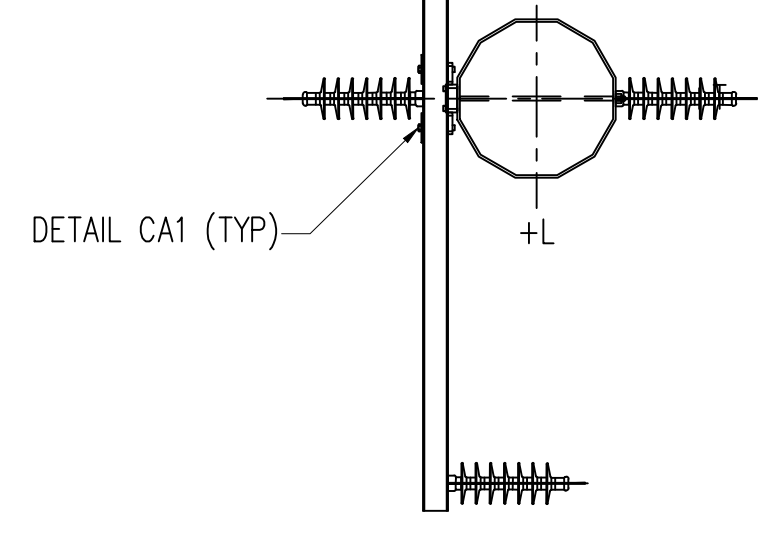
SECTION B-B, D-D (N.T.S.)
 CONDUCTOR ATTACHMENT
 115KV: 1272 KCMIL 61/0 STRAND
 "NARCISSUS" AAC



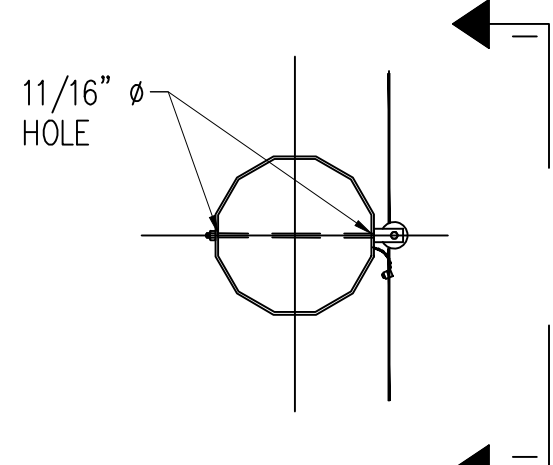
SECTION C-C (N.T.S.)
 CONDUCTOR ATTACHMENT
 115KV: 1272 KCMIL 61/0 STRAND
 "NARCISSUS" AAC



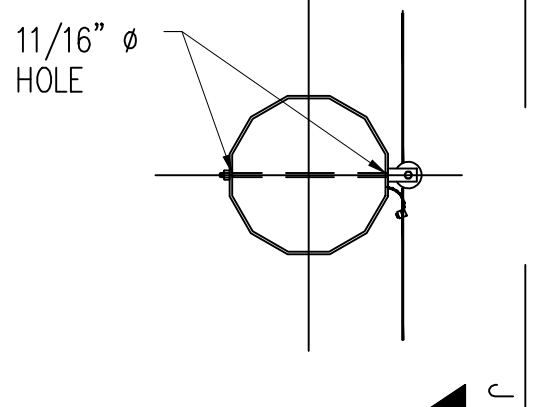
SECTION E-E (N.T.S.)
 DISTRIBUTION ATTACHMENT
 795 KCMIL AAC "ARBUTUS"



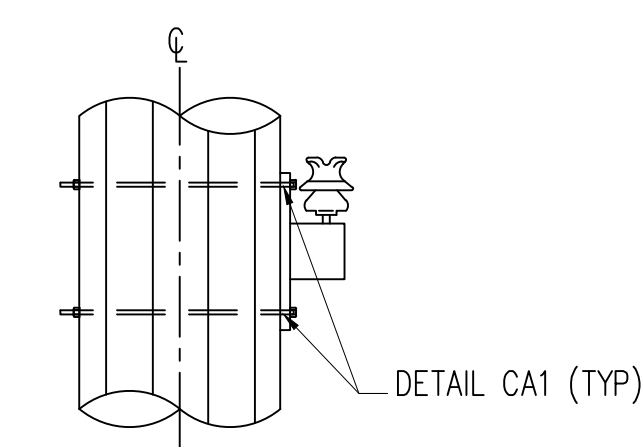
SECTION L-L (N.T.S.)
 DISTRIBUTION ATTACHMENT
 1/0 AMG 6/1 STRAND "RAVEN" ACSR
 *DISTRIBUTION DEADEND NOTE



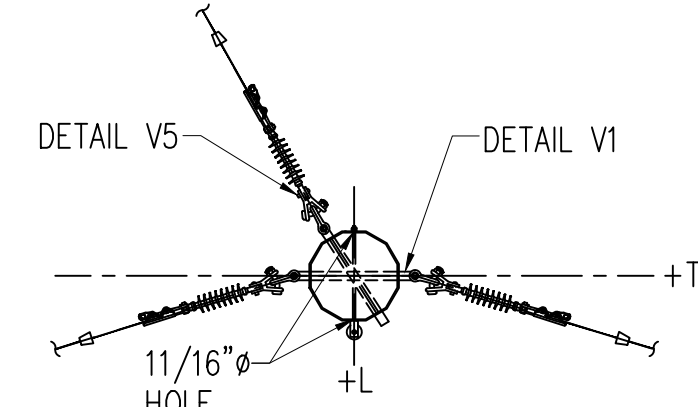
SECTION F-F (N.T.S.)
 DISTRIBUTION NEUTRAL
 336.4 KCMIL 18/1 STRAND
 "MERLIN" ACSR



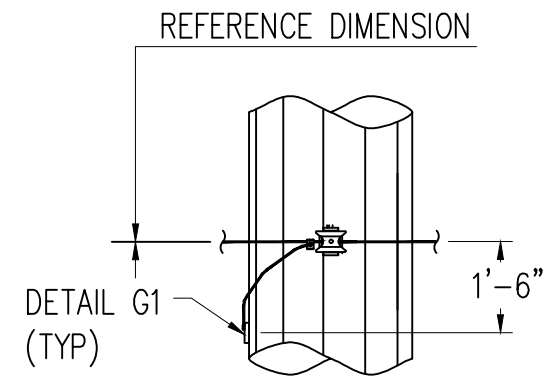
SECTION H-H (N.T.S.)
 COMMUNICATIONS ATTACHMENT
 ADSS: "AT-XXX27DT-144-CLCB"
 144 FIBER



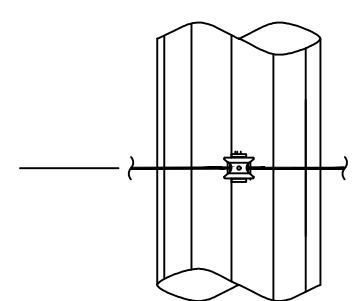
SECTION K-K (N.T.S.)
 DISTRIBUTION ATTACHMENT
 795 KCMIL AAC "ARBUTUS"



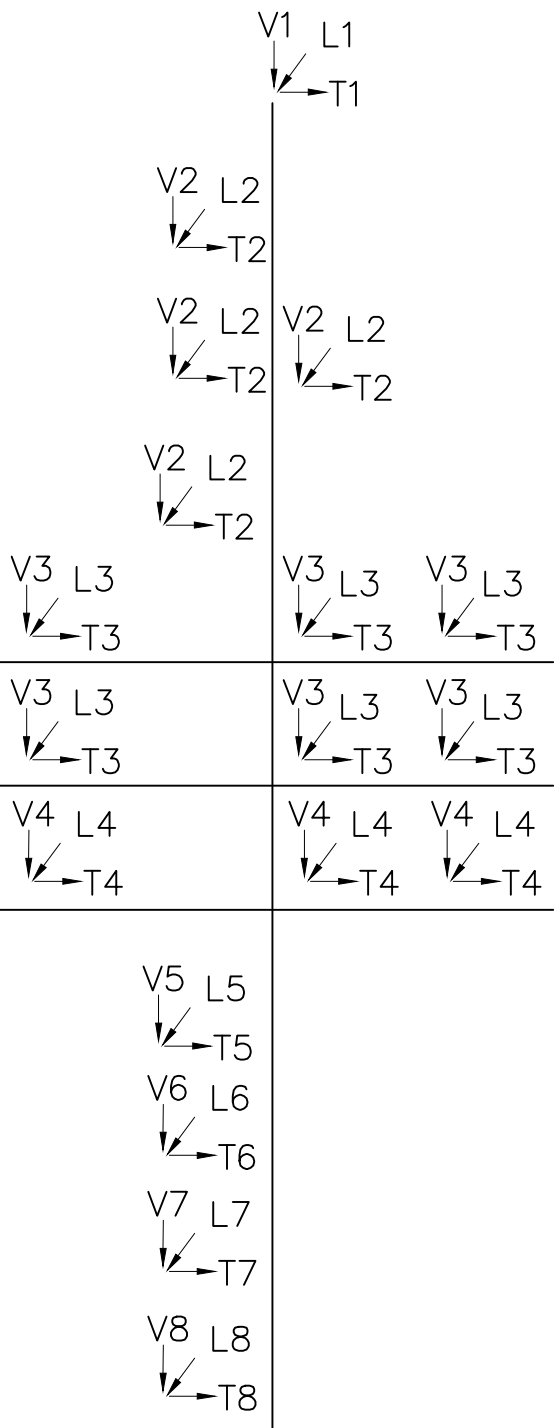
SECTION G-G (N.T.S.)
 DISTRIBUTION ATTACHMENTS
 1/0 ACSR "RAVEN"



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



LOAD TREE

LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6
V1	200	100	500	500	100	100
T1	300	300	300	100	100	100
L1	0	0	0	0	0	0
V2	1,100	700	1,300	1,300	700	400
T2	900	1,100	700	400	400	300
L2	100	100	0	0	0	0
V3	800	500	1,100	1,000	500	300
T3	400	700	300	100	100	100
L3	0	100	0	0	0	0
V4	200	100	400	400	100	100
T4	2,700	3,000	2,400	2,100	1,200	600
L4	1,300	700	1,300	1,100	600	300
V5	400	300	800	700	300	200
T5	300	400	200	100	100	100
L5	0	0	0	0	0	0
V6	200	100	400	400	100	100
T6	2,900	3,100	2,600	2,300	1,400	700
L6	1,300	900	1,300	1,100	600	300
V7	300	200	600	600	100	100
T7	300	500	300	100	100	100
L7	0	0	0	0	0	0
V8	400	200	800	800	200	200
T8	400	700	300	100	100	100
L8	0	0	0	0	0	0
W (PSF)	4.0	36.9	4.0	0.0	0.0	0.0

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

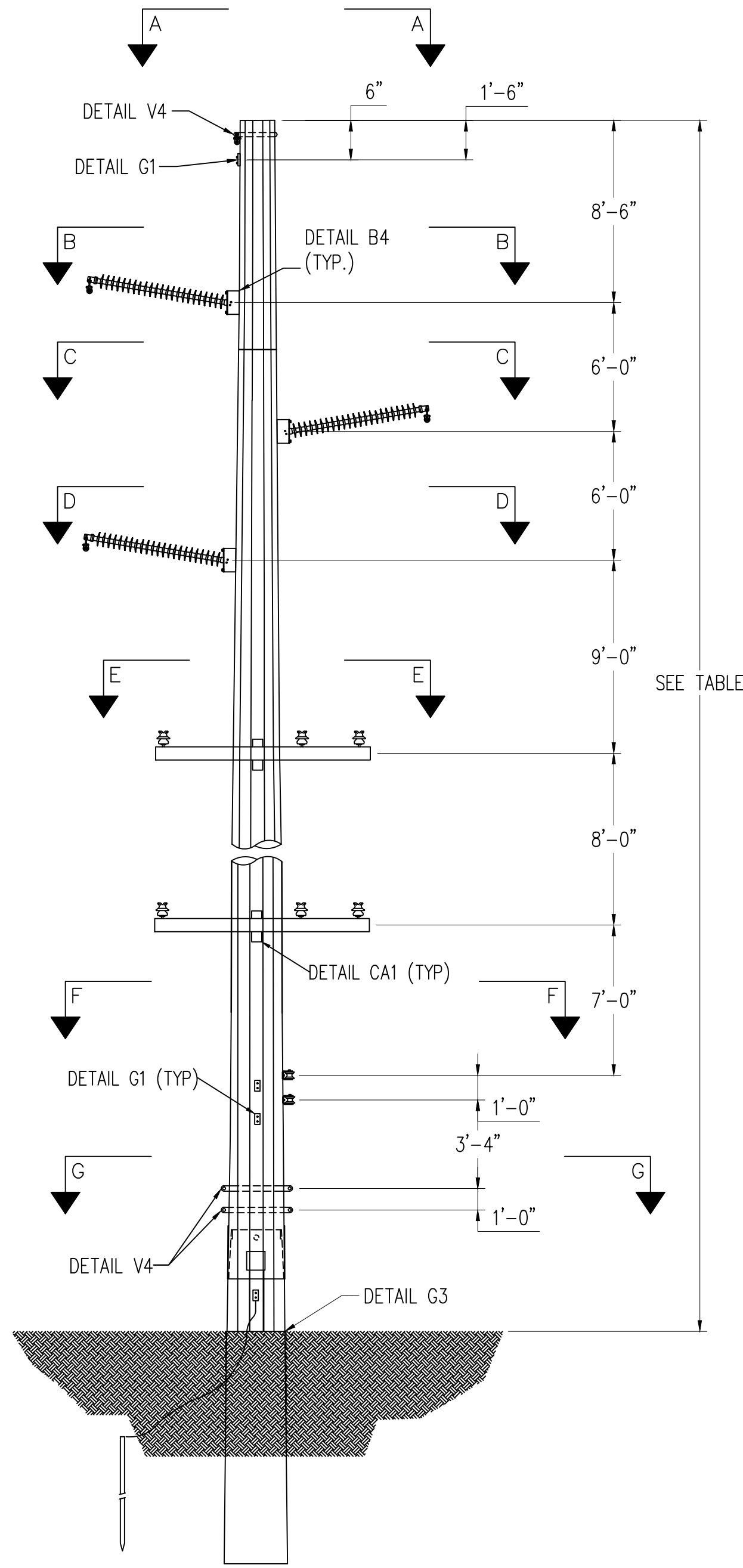
NO.
 REVISIONS

ISSUED FOR BID

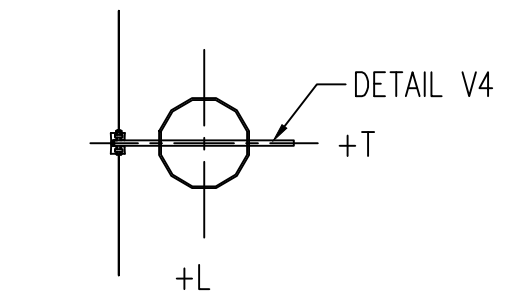
GREENVILLE UTILITIES
 Greenville, North Carolina

115KV TRANSMISSION LINE
 SIMPSON SUB TO G203
 LOAD AND DESIGN
 TANGENT WITH UNDERBUILD

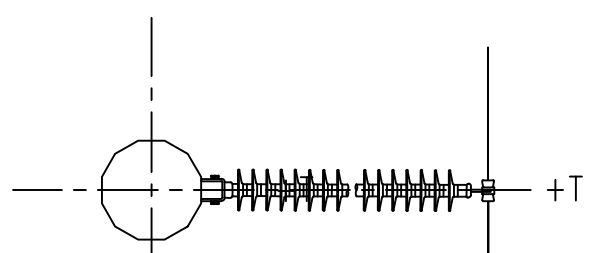
DWN. J. THOMAS	DATE 10/30/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	TAN-DELTA-201ST-ARM-1TAP-ARM-3PH
SCALE: NONE		



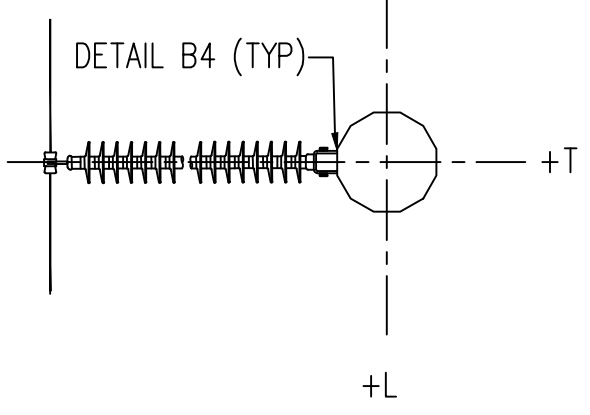
SINGLE CIRCUIT, DELTA, TANGENT
LOOKING AHEAD SPAN
SCALE: N.T.S.



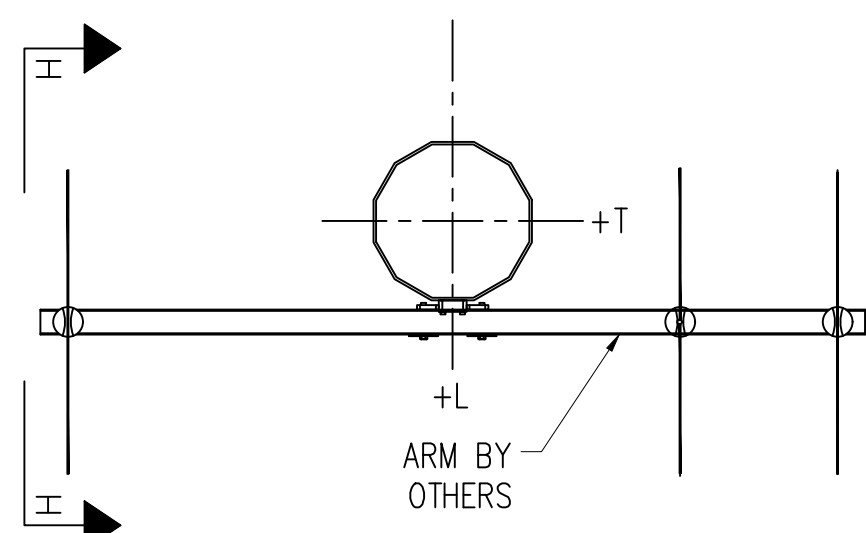
SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7/9 ALUMOWELD



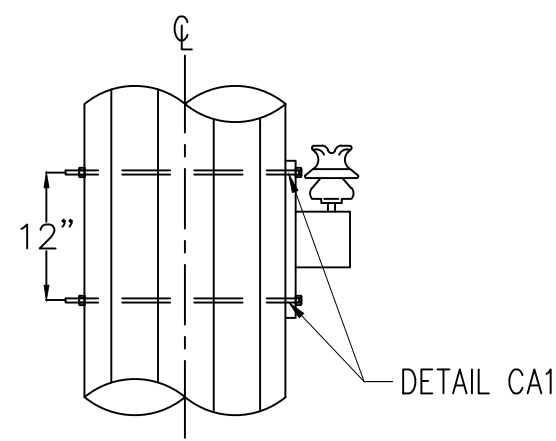
SECTION C-C (N.T.S.)
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
'NARCISSUS' AAC



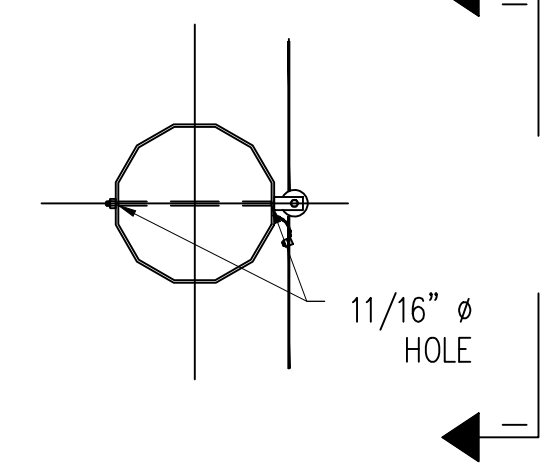
SECTION B-B, D-D (N.T.S.)
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
'NARCISSUS' AAC



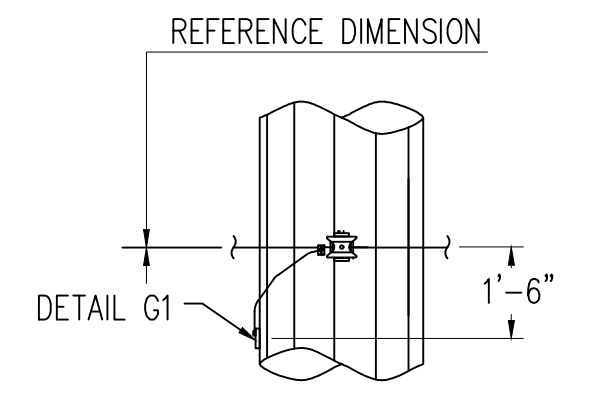
SECTION E-E (N.T.S.)
VARIOUS - SEE TABLE



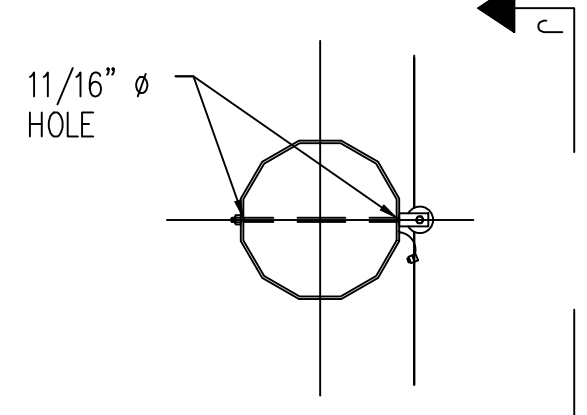
SECTION H-H (N.T.S.)
DISTRIBUTION ATTACHMENT
VARIOUS - SEE TABLE



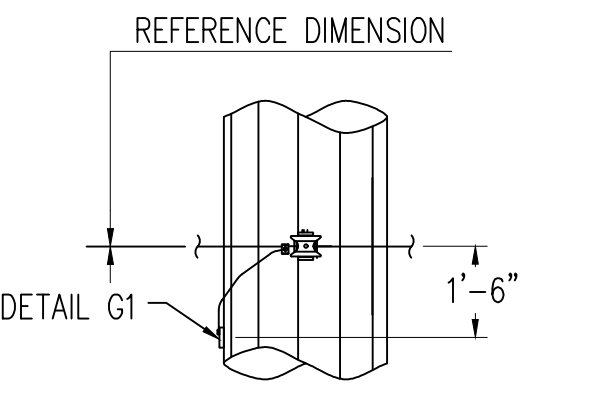
SECTION F-F (N.T.S.)
DISTRIBUTION NEUTRAL
VARIOUS - SEE TABLE



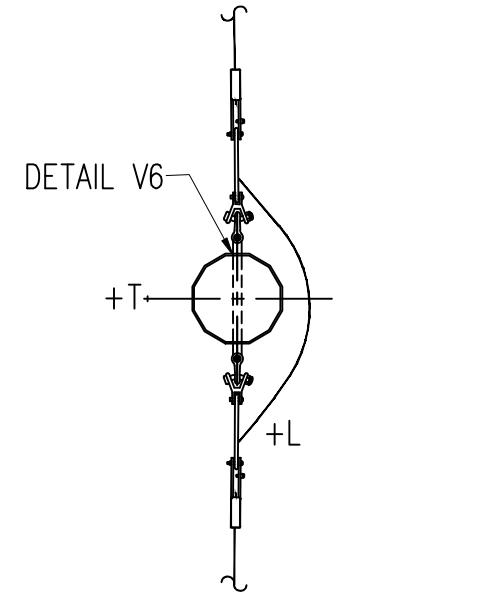
SECTION I-I (N.T.S.)
DISTRIBUTION NEUTRAL
VARIOUS - SEE TABLE



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



DETAIL 1 (N.T.S.)
OHGW DEADEND ATTACHMENT
7/9 ALUMOWELD

STR #	HEIGHT (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)	12.47KV WIRE	NEUTRAL WIRE
54	80	S-07.4	32	27	795 KCMIL AAC "ARBUSUS"	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
55	85	S-08.0	36	28		
56	85	S-10.0	39	30		
57	85	S-09.0	39	30		
58	85	S-07.4	32	27		
59	85	S-08.0	36	28		
60	80	S-10.0	39	30		
61	80	S-08.0	36	28		
63	80	S-09.0	36	28		
64	80	S-08.0	36	28		
65	80	S-08.0	32	27		
67	80	S-07.4	36	28		
71	75	S-07.4	25	22		
72	75	S-09.0	28	23		
73	75	S-09.0	25	22		
74	75	S-08.0	25	22		
75	75	S-07.4	25	22		
76	75	S-05.7	25	22		
77	75	S-07.4	25	22		
78	75	S-09.0	28	23		
81	80	S-11.0	34	26		
82	85	S-11.0	34	26		
83	85	S-10.0	31	23		
84	85	S-09.0	31	23		
170	85	S-11.0	32	25		
171	85	S-07.4	25	25		
172	85	S-10.0	32	25		
175	85	S-10.0	32	25		
176	80	S-07.4	25	25		
177	85	S-07.4	25	25		
179	80	S-07.4	25	25		
180	80	S-07.4	25	25		
181	80	S-09.0	32	25		
182	85	S-11.0	34	29		
183	85	S-11.0	34	29		
184	85	S-09.0	32	25		
185	85	S-07.4	25	25		
186	85	S-08.0	29	24		
188*	80	S-07.4	25	25		

* SHIELD WIRE ATTACHMENT IS A DEADEND. SEE DETAIL 1.

WIRE DATA

OHGW: "7/9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kv: VARIOUS - SEE TABLE
DISTRIBUTION NEUTRAL: VARIOUS - SEE TABLE
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

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



NO.

REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

115KV TRANSMISSION LINE
SIMPSON SUB TO G203
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

DWN.J. THOMAS	DATE 10/19/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	TAN-DELTA-201ST-ARM
SCALE: NONE		

STR #	LENGTH (FT)	ANGLE Δ
79	75	4

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 EXTREME ICE: 32", 1" ICE, NO WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 5 UPLIFT: 0", NO ICE, NO WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 6 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

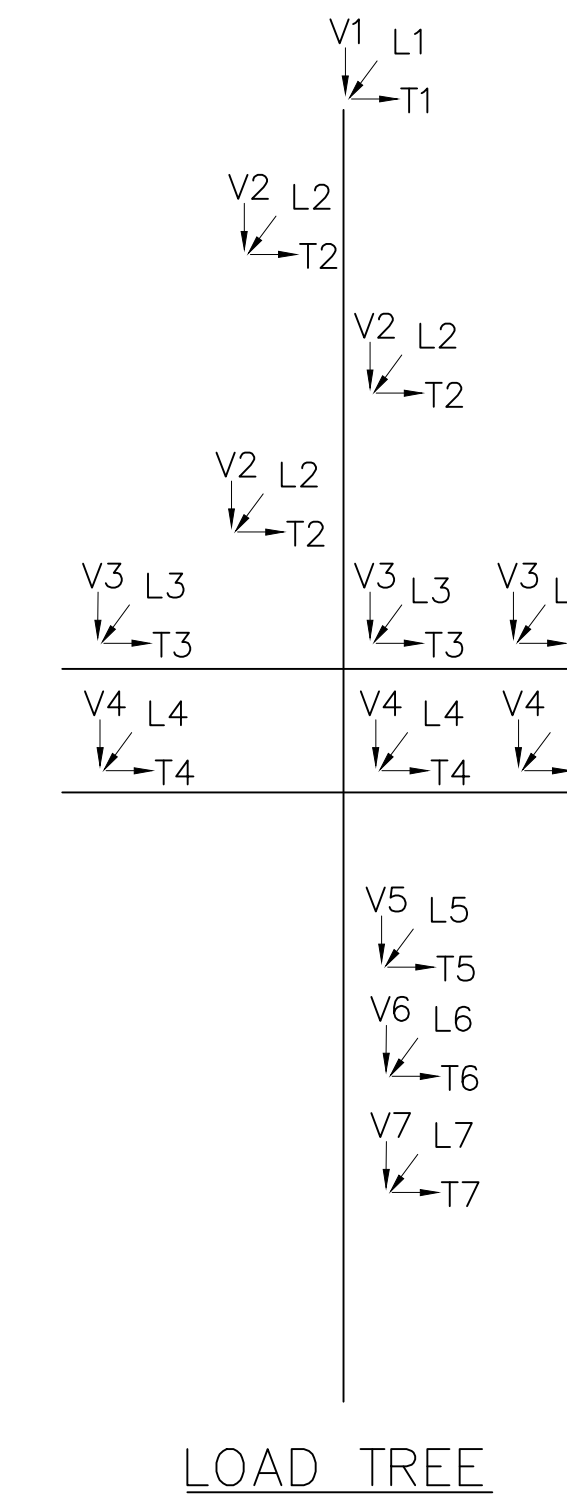
WIRE DATA

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

NOTES:

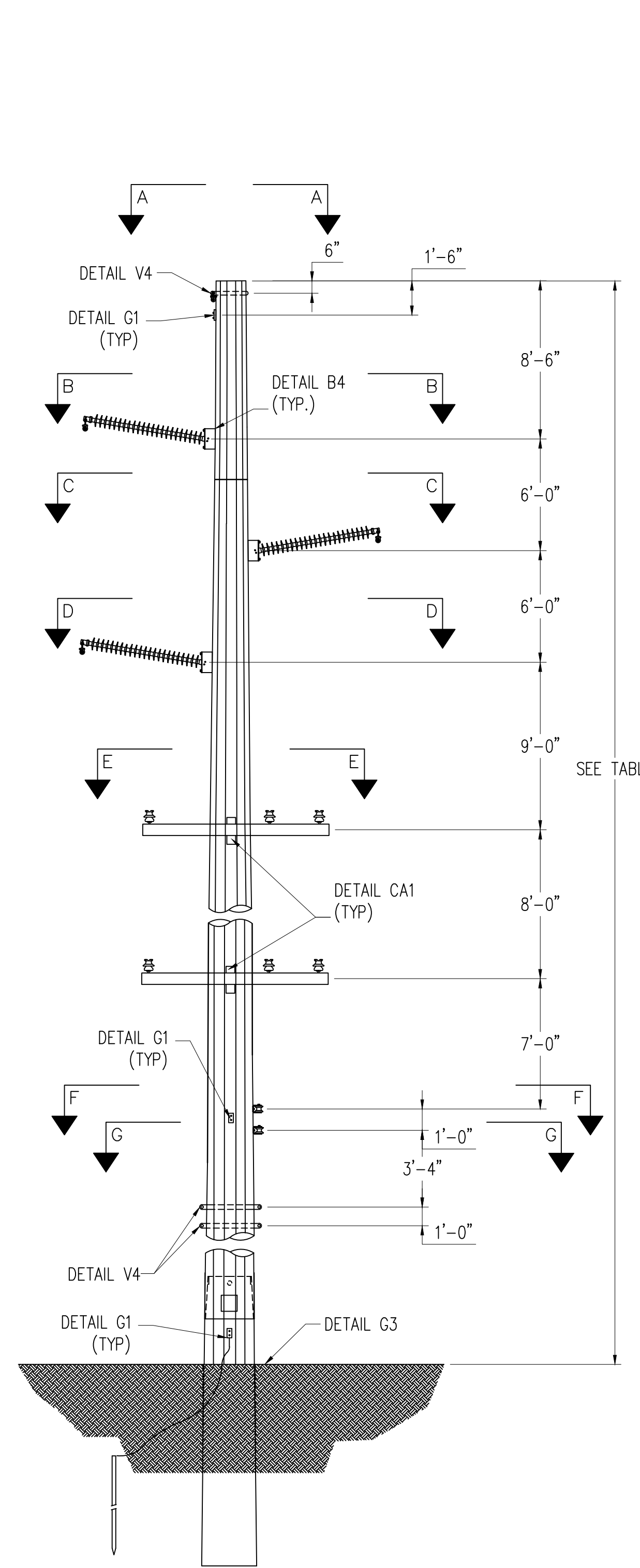
1. FABRICATOR MAY PROPOSE STRUCTURAL DETAILS DIFFERENT THAN THOSE SHOWN TO SIMPLIFY FABRICATION. VARIATIONS SHALL BE SUBMITTED TO ENGINEER IN WRITING.
2. MINIMUM VANG PLATE THICKNESS = 1/2".
3. POLE AND FABRICATION SHALL INCLUDE PROVISIONS FOR A SLIP JOINT TO LIMIT LOWEST POLE SEGMENT EXTENSION ABOVE 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. SEE DETAIL SHEET DRAWING FOR ADDITIONAL DETAILS.

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

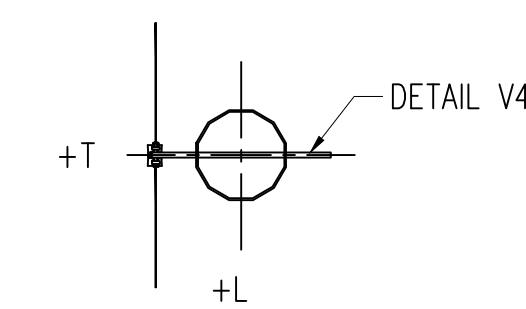


LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6
V1	100	100	400	400	100	100
T1	400	400	400	300	200	200
L1	0	0	0	0	0	0
V2	400	200	800	800	200	300
T2	1,200	1,300	900	600	600	300
L2	0	0	0	0	0	0
V3	300	100	600	600	100	200
T3	900	1,000	700	500	400	200
L3	0	0	0	0	0	0
V4	400	100	700	700	200	200
T4	700	900	600	400	200	200
L4	0	0	0	0	0	0
V5	200	200	500	500	100	100
T5	800	1,700	900	600	300	200
L5	400	400	600	500	100	100
V6	200	100	500	500	100	100
T6	400	600	400	200	100	100
L6	0	0	0	0	0	0
V7	300	100	700	700	100	100
T7	400	800	400	200	100	100
L7	0	0	0	0	0	0
W (PSF)	4.0	36.9	4.0	0.0	0.0	0.0

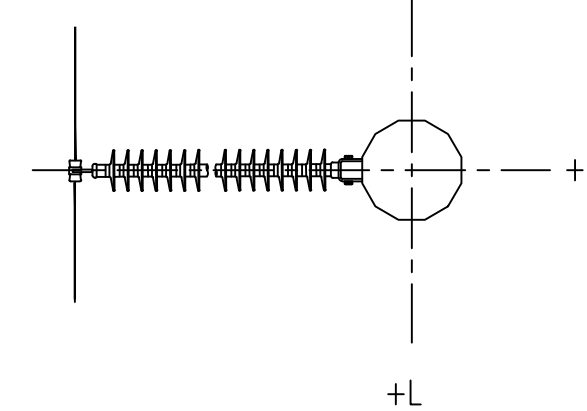
ALL LOADS ARE IN LBS, ARE ULTIMATE, AND INCLUDE ALL OVERLOAD FACTORS. "W" REPRESENTS WIND PRESSURE (PSF) TO BE APPLIED TO STRUCTURE.



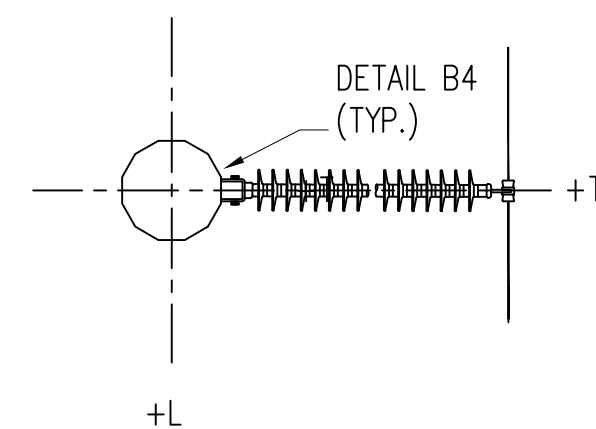
SINGLE CIRCUIT, DELTA, TANGENT
 LOOKING AHEAD SPAN
 SCALE: N.T.S.



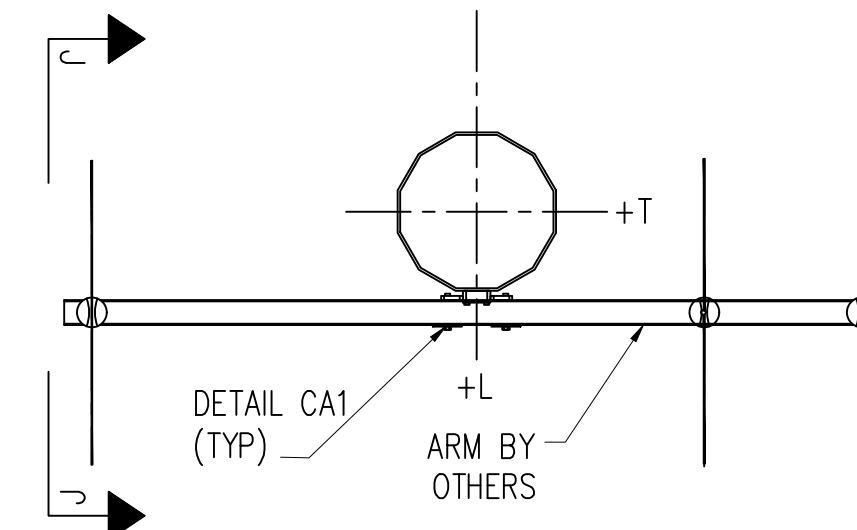
SECTION A-A (N.T.S.)
 OHGW ATTACHMENT
 7#9 ALUMOWELD



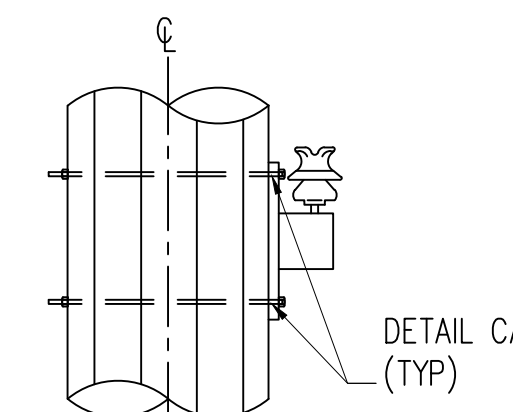
SECTION B-B, D-D (N.T.S.)
 CONDUCTOR ATTACHMENT
 115KV: 1272 KCMIL 61/0 STRAND
 "NARCISSUS" AAC



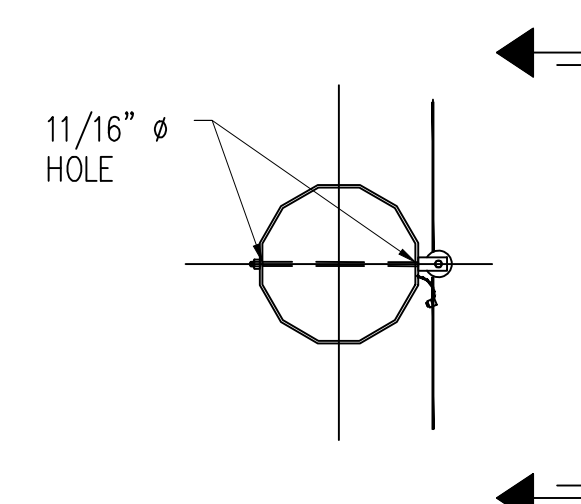
SECTION C-C (N.T.S.)
 CONDUCTOR ATTACHMENT
 115KV: 1272 KCMIL 61/0 STRAND
 "NARCISSUS" AAC



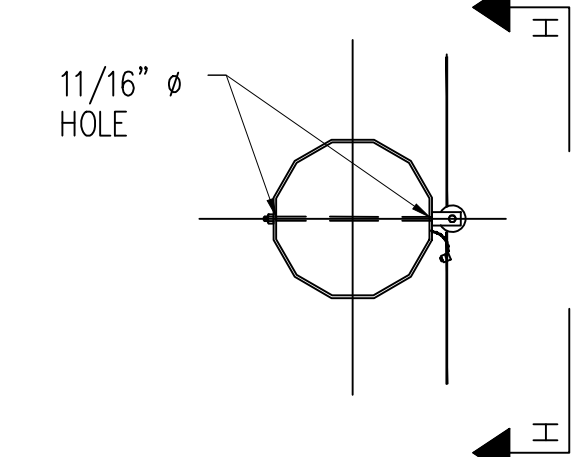
SECTION E-E (N.T.S.)
 DISTRIBUTION ATTACHMENT
 795 KCMIL AAC "ARBUTUS"



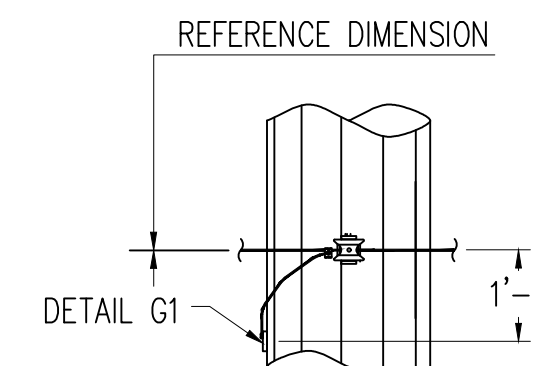
SECTION J-J (N.T.S.)
 DISTRIBUTION ATTACHMENT
 795 KCMIL AAC "ARBUTUS"



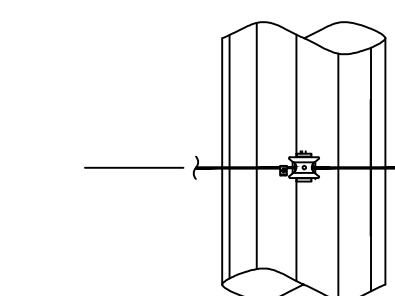
SECTION F-F (N.T.S.)
 DISTRIBUTION NEUTRAL
 336.4 KCMIL 18/1 STRAND
 "MERLIN" ACSR



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 H-H (N.T.S.)
 COMMUNICATIONS ATTACHMENT
 ADSS: "AT-XXX27DT-144-CLCB"
 144 FIBER

NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
 Greenville, North Carolina

115KV TRANSMISSION LINE
 SIMPSON SUB TO G203
 LOAD AND DESIGN
 TANGENT WITH UNDERBUILD

DWN. J. CORDERO	DATE 09/18/23	DWG. NO.
CKD. O. PENA	APPD. J. VARONE	TAN-DELTA-2DST-ARM-BTM DIST DE
SCALE: NONE		

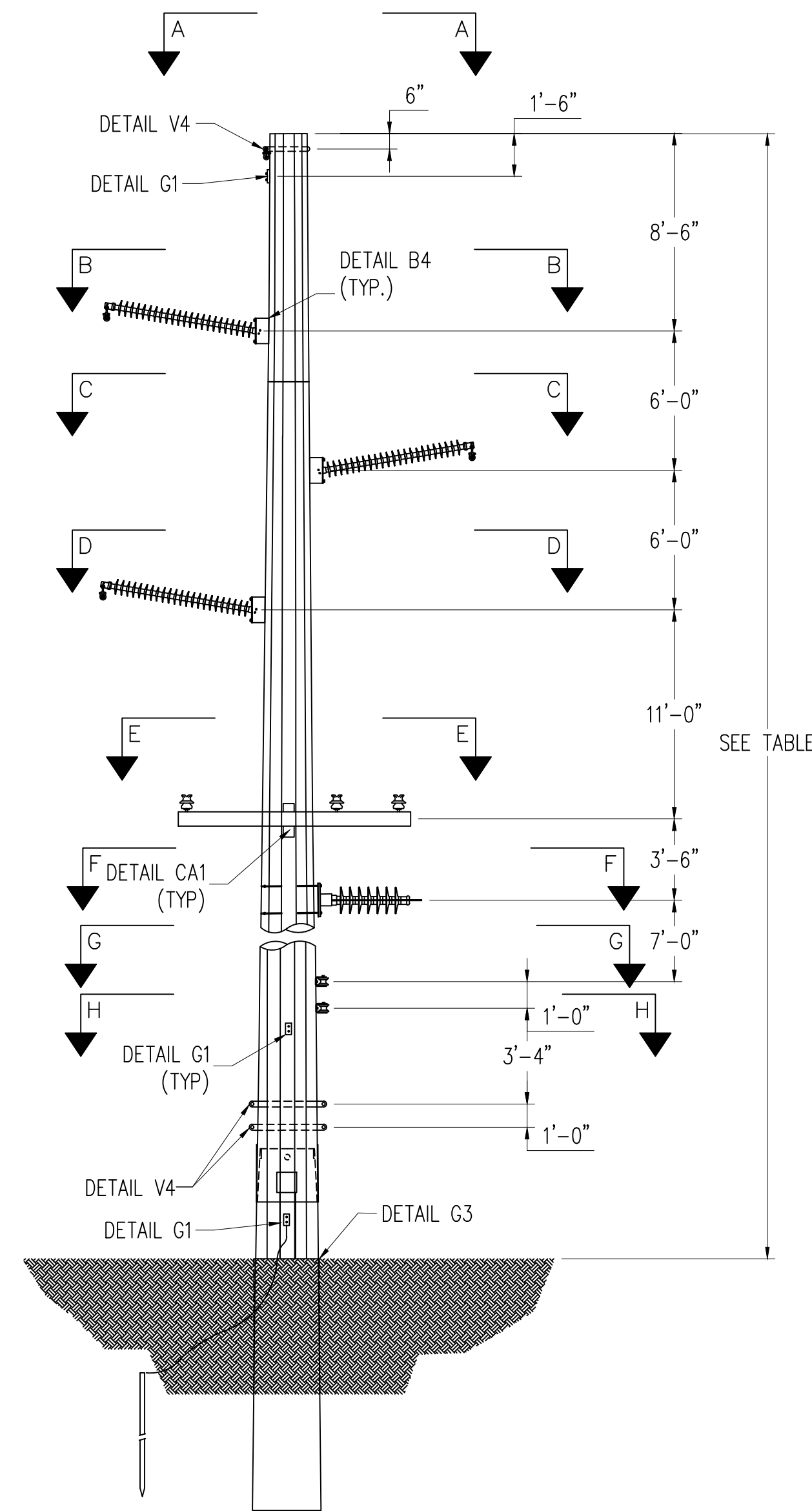
STR #	HEIGHT (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)	12.47KV WIRE	NEUTRAL WIRE
36	75	S-11.0	30	23	795 KCMIL AAC "ARBUTUS"	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
146	75	S-09.0	30	25	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR	1/0 AWG 6/1 STRAND "RAVEN" ACSR

WIRE DATA

OHGW: "7#9" ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47KV (IN-LINE): VARIOUS - SEE TABLE
 12.47KV (TAP): 1/0 AWG 6/1 STRAND "RAVEN" ACSR
 DISTRIBUTION NEUTRAL: VARIOUS - SEE TABLE
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

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



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

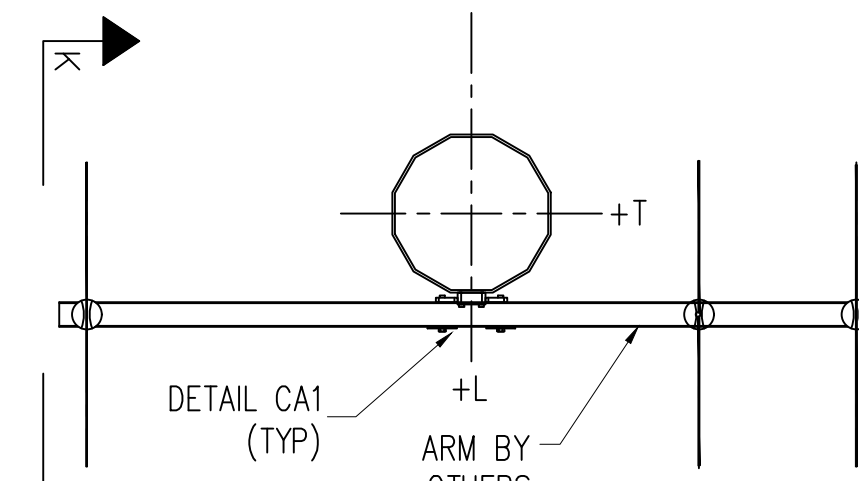
CONDUCTOR ATTACHMENT
 115KV: 1272 KCMIL 61/0 STRAND
 "NARCISSUS" AAC

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

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

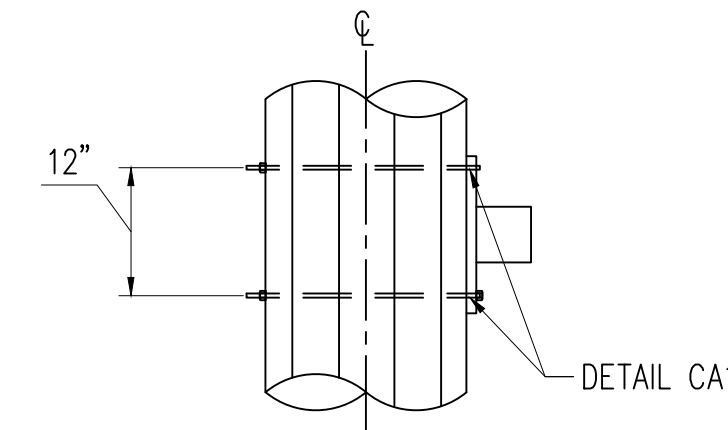
SECTION E-E (N.T.S.)

DISTRIBUTION ATTACHMENT
 VARIOUS - SEE TABLE



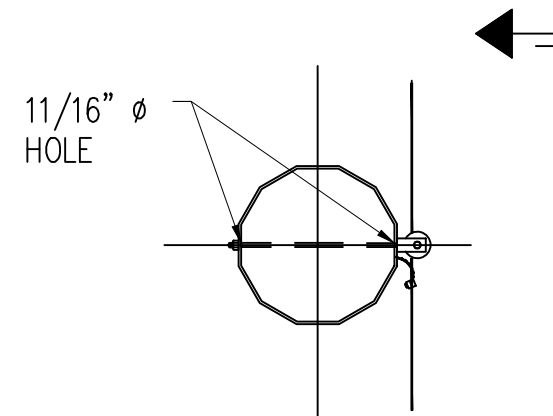
SECTION K-K (N.T.S.)

DISTRIBUTION ATTACHMENT
 VARIOUS - SEE TABLE



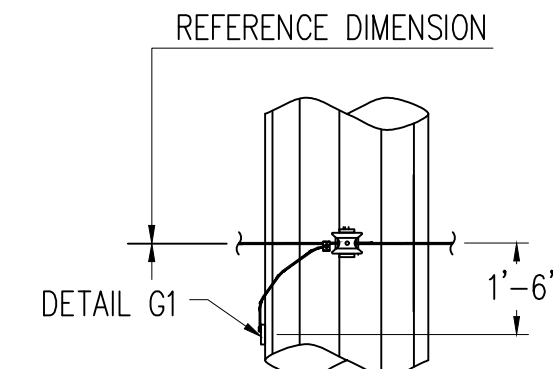
SECTION G-G (N.T.S.)

DISTRIBUTION NEUTRAL
 VARIOUS - SEE TABLE



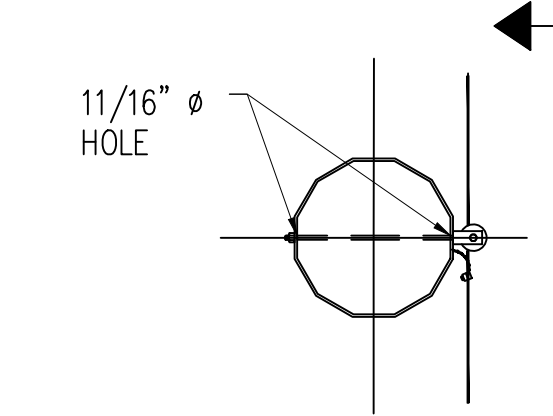
SECTION I-I (N.T.S.)

DISTRIBUTION NEUTRAL
 VARIOUS - SEE TABLE



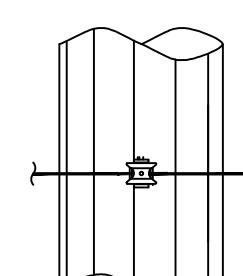
SECTION H-H (N.T.S.)

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



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

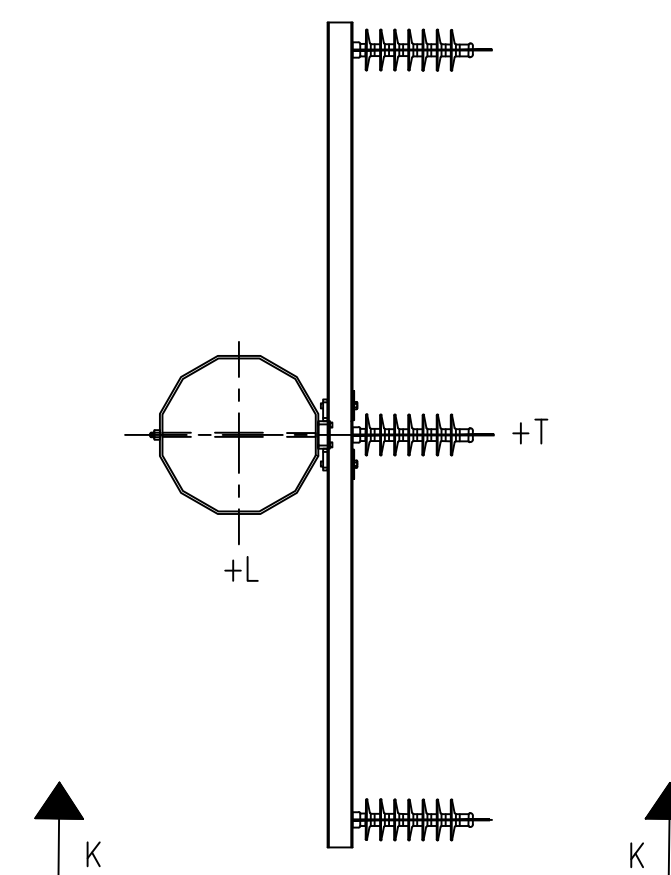
COMMUNICATIONS ATTACHMENT
 ADSS: "AT-XXX27DT-144-CLCB"
 144 FIBER



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

DISTRIBUTION ATTACHMENT
 *DISTRIBUTION CENTER PHASE
 DEADEND INSULATOR ATTACHED AT TOP
 BOLT LOCATION OF CROSSARM MOUNT.

**STRUCTURE 146 IS ONLY A 2 PHASE TAP.
 ELIMINATE CENTER PHASE INSULATOR.



NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
 Greenville, North Carolina

115KV TRANSMISSION LINE
 SIMPSON SUB TO G203
 LOAD AND DESIGN
 TANGENT WITH UNDERBUILD

DWN. J. THOMAS	DATE 11/7/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	TAN-DELTA-DIST-ARM-1TAP-ARM
SCALE: NONE		

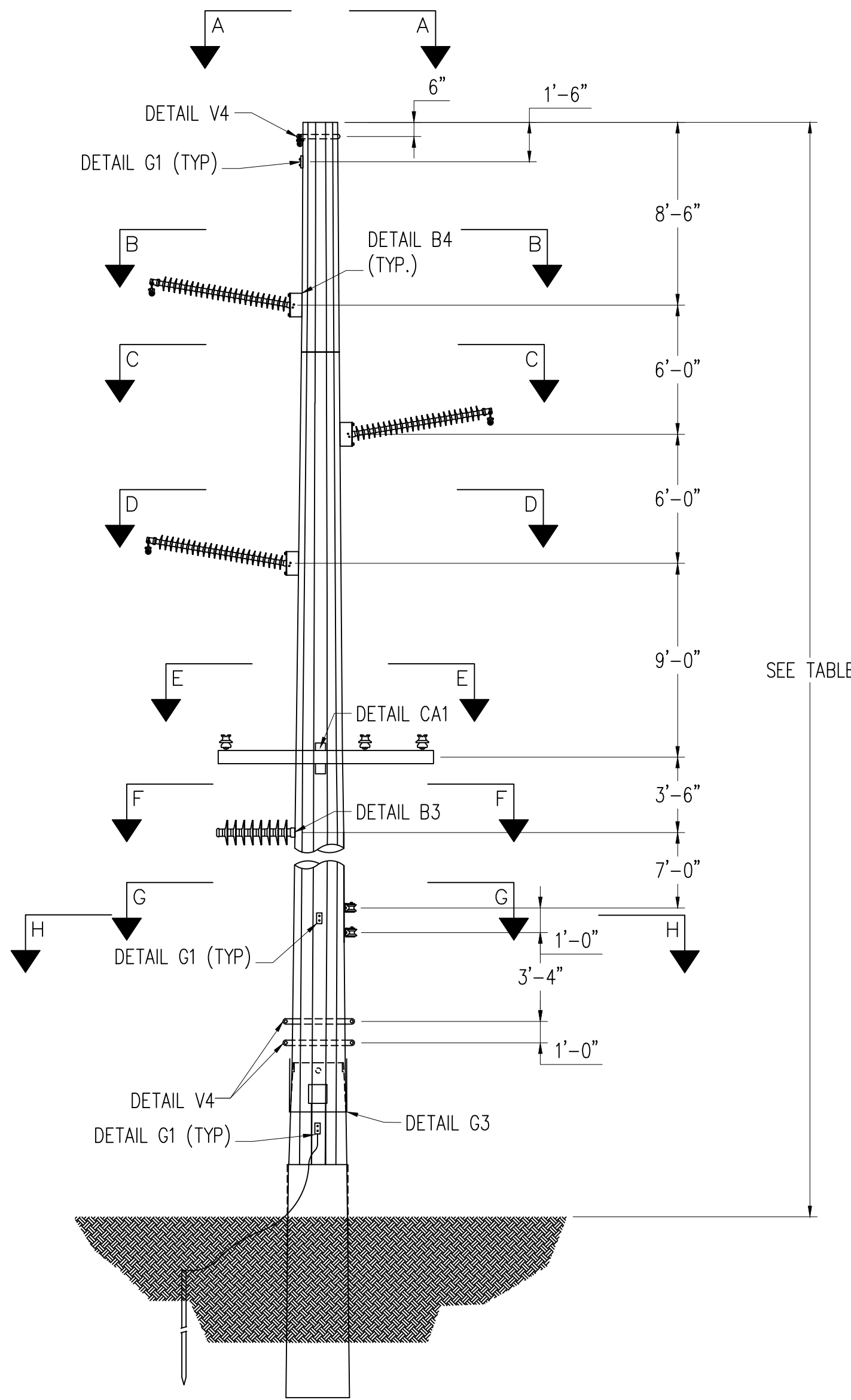
STR #	LENGTH (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)
19	80	S-10.0	30	23
117	80	S-10.0	32	27
119	80	S-10.0	32	27

WIRE DATA

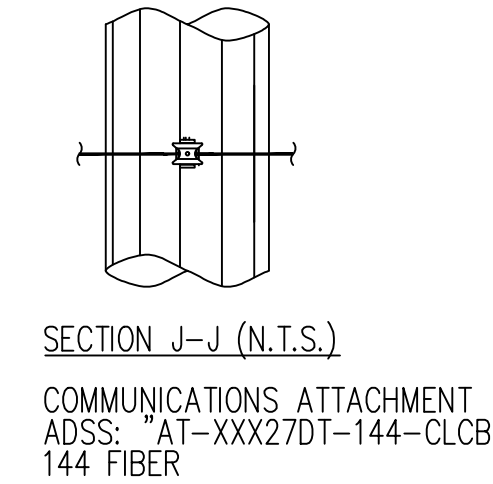
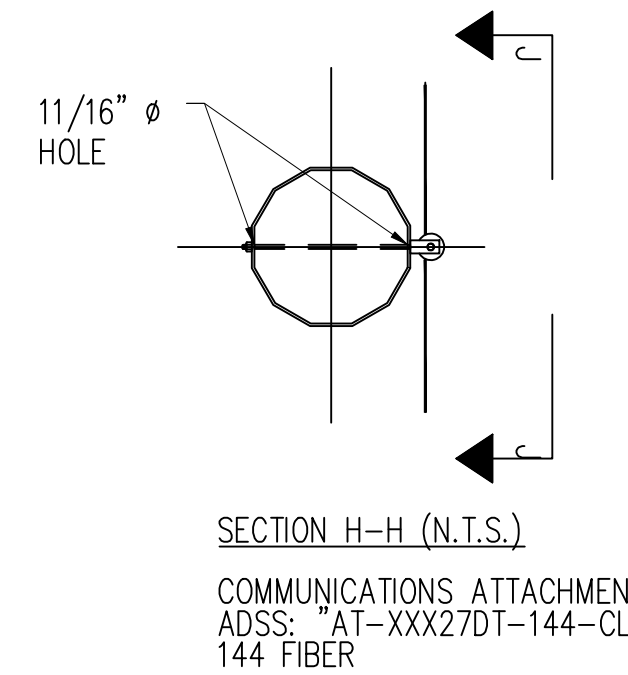
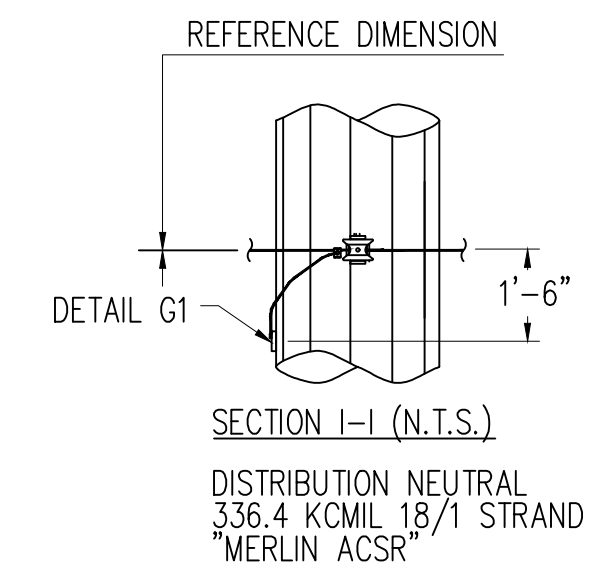
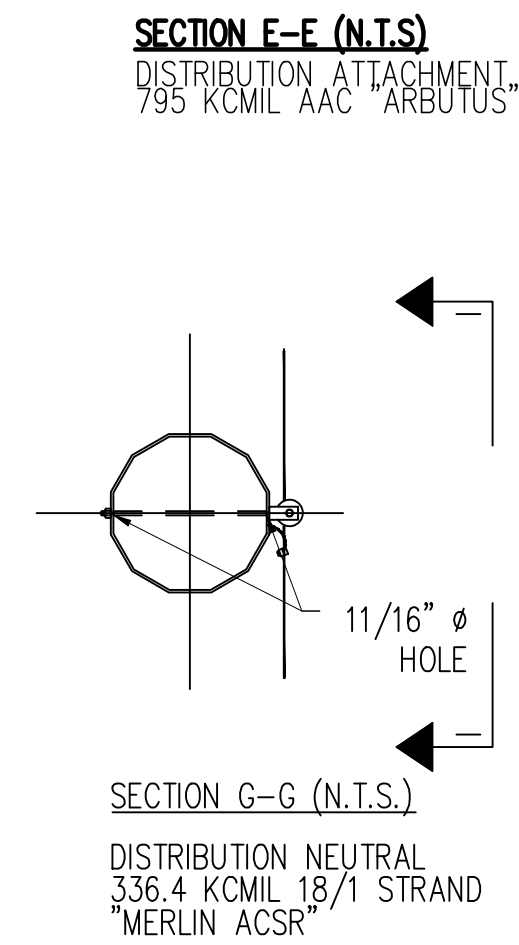
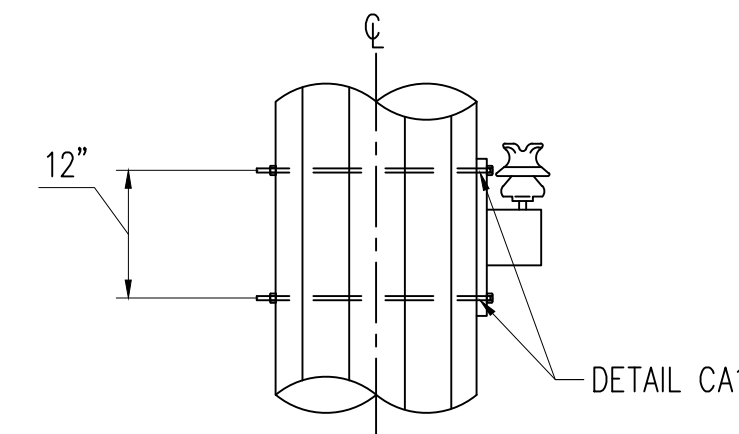
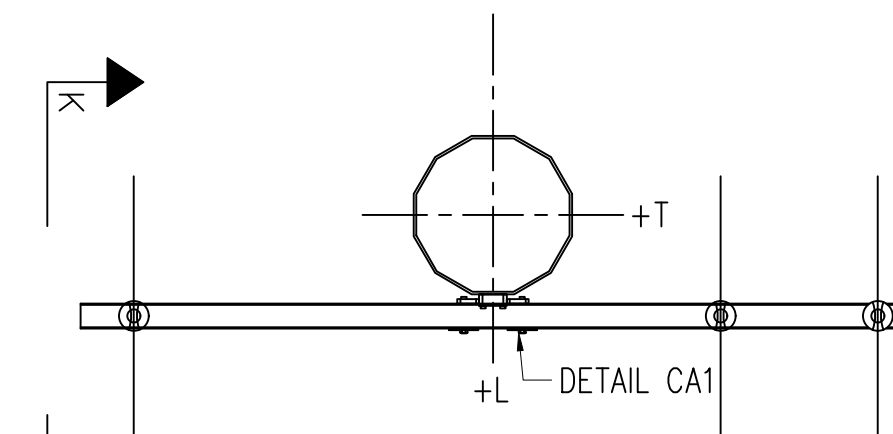
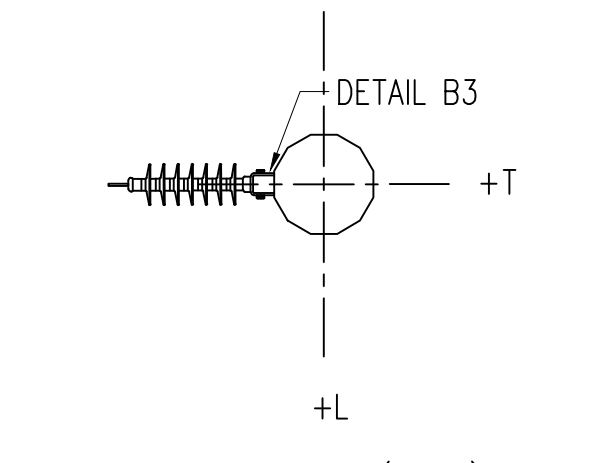
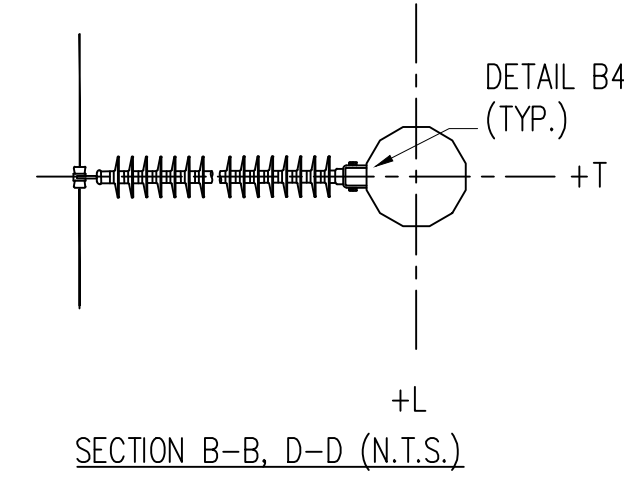
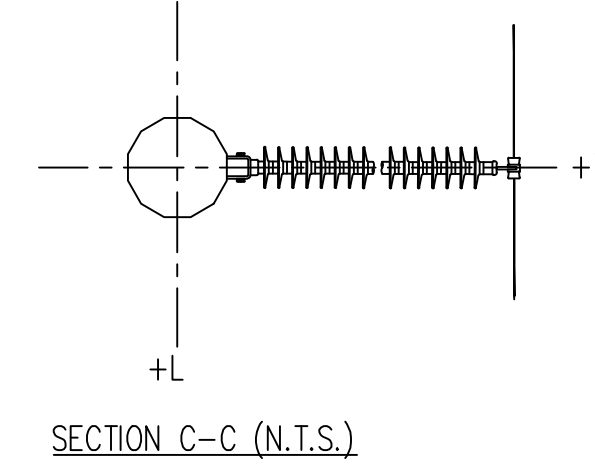
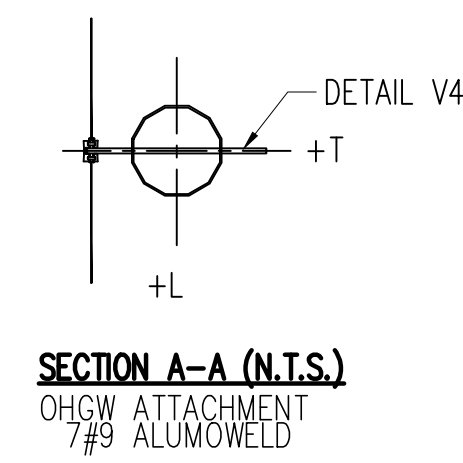
OHGW: "7#9" ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47KV: 795 KCMIL 37/0 STRAND "ARBUTUS" ACSR
 DISTRIBUTION NEUTRAL: 336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

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



SEE TABLE



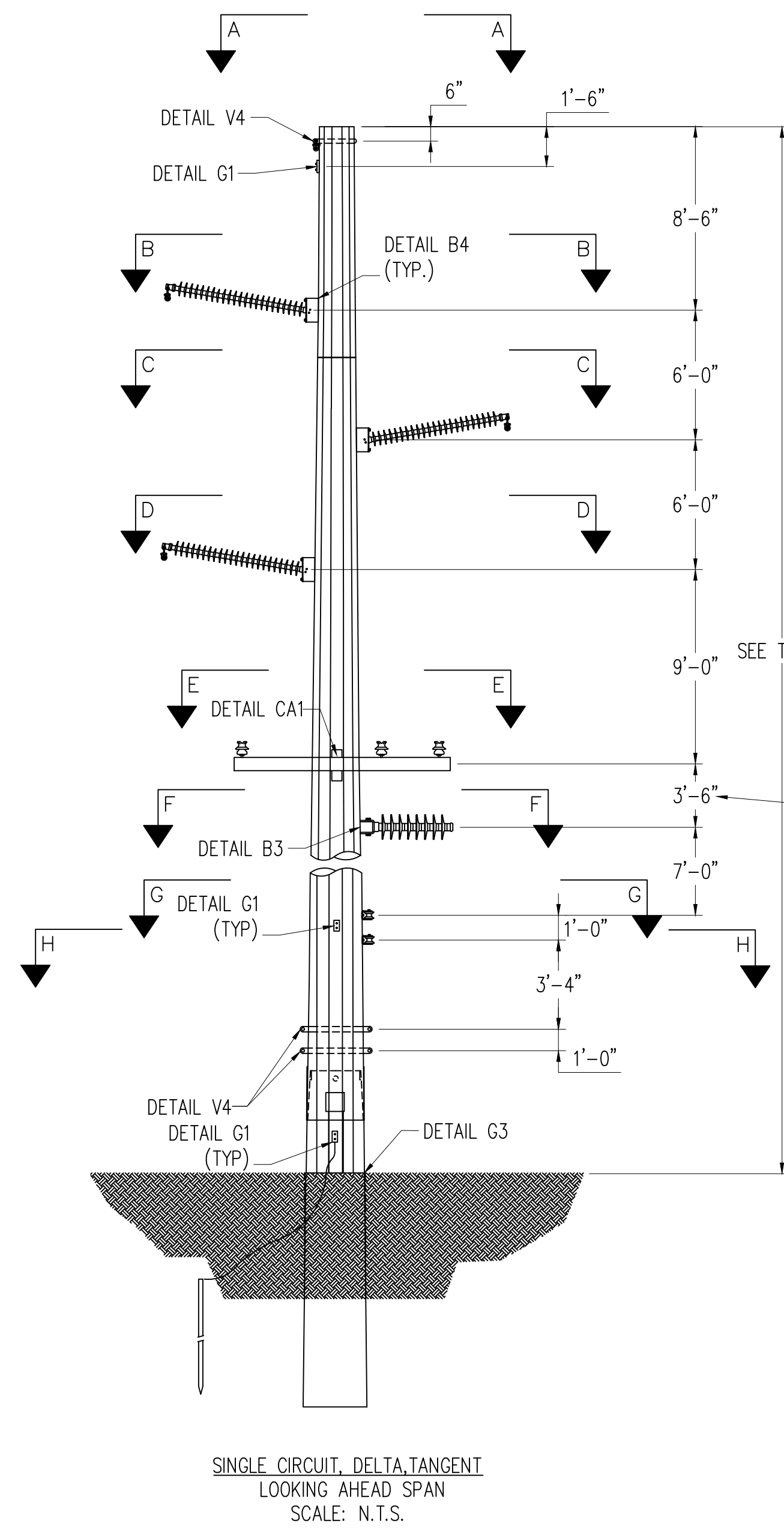
NO. REVISIONS

ISSUED FOR BID

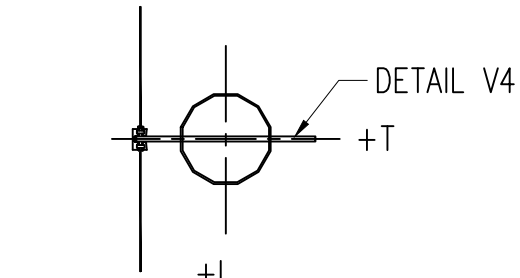
GREENVILLE UTILITIES
 Greenville, North Carolina

115KV TRANSMISSION LINE
 SIMPSON SUB TO G203
 LOAD AND DESIGN
 TANGENT WITH UNDERBUILD

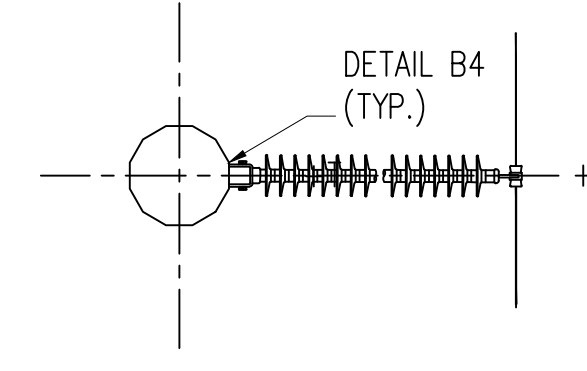
DWN. J. THOMAS	DATE 11/7/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	TAN-DELTA-DIST-ARM-1TAP-SP
SCALE: NONE		



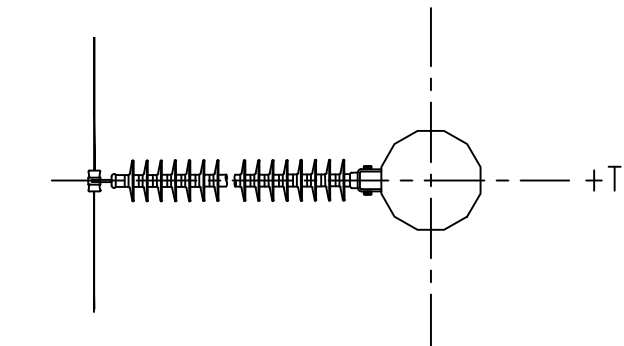
SINGLE CIRCUIT DELTA TANGENT
LOOKING AHEAD SPAN
SCALE: N.T.S.



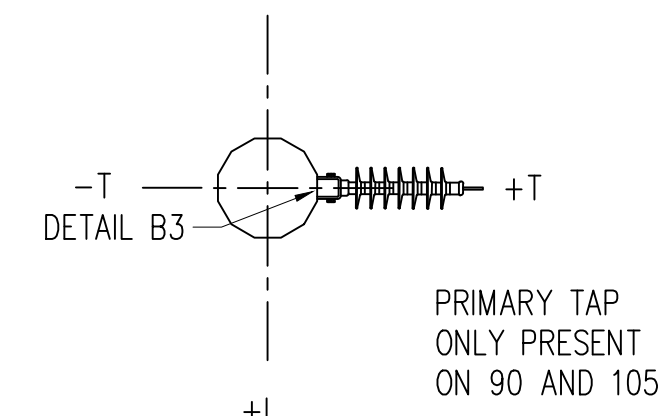
SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



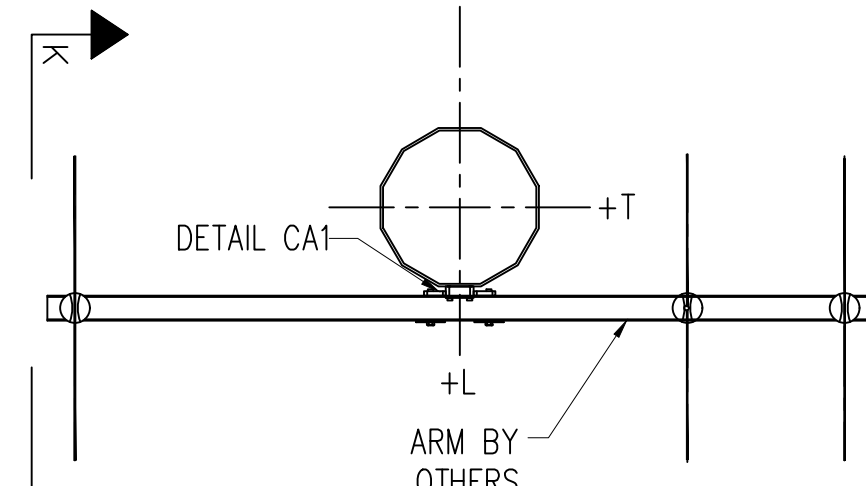
SECTION C-C (N.T.S.)
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



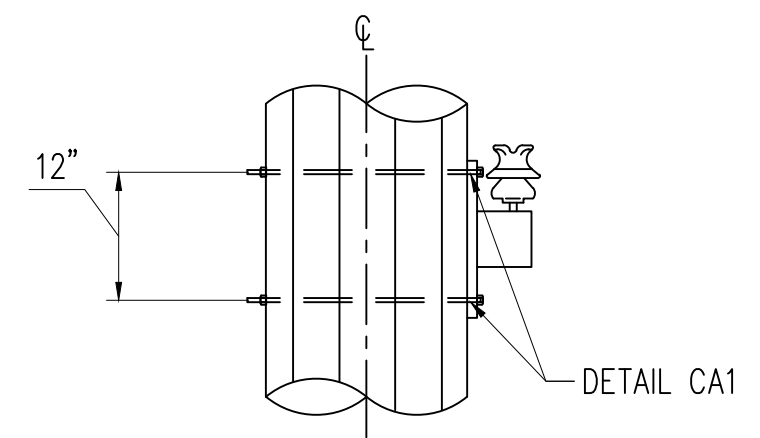
SECTION B-B, D-D (N.T.S.)
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



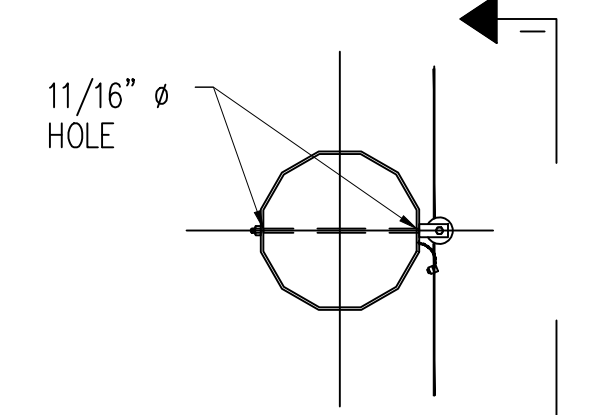
SECTION F-F (N.T.S.)
DISTRIBUTION ATTACHMENTS
1/0 AWG 6/1 STRAND "RAVEN" ACSR



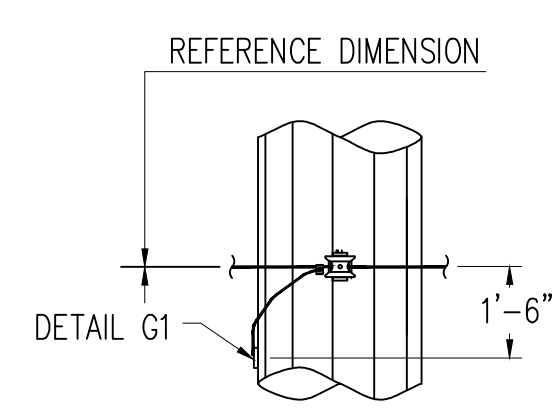
SECTION E-E (N.T.S.)
DISTRIBUTION ATTACHMENT
VARIOUS - SEE TABLE



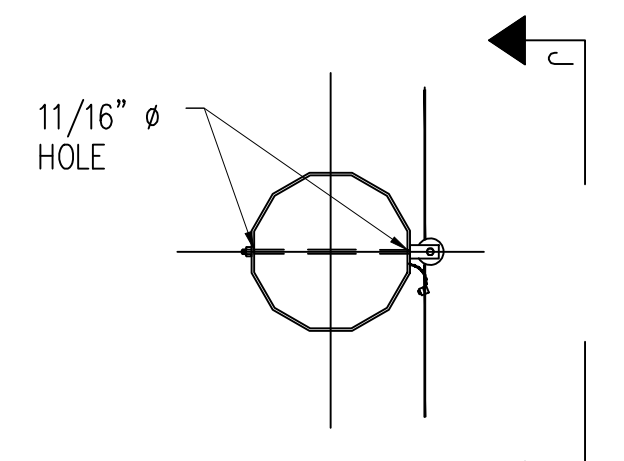
SECTION K-K (N.T.S.)
DISTRIBUTION ATTACHMENT
VARIOUS - SEE TABLE



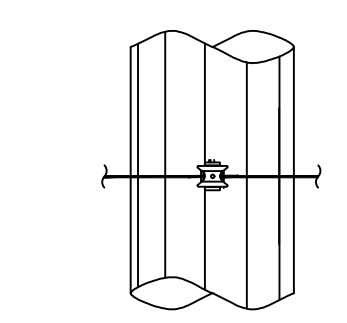
SECTION G-G (N.T.S.)
DISTRIBUTION ATTACHMENT
VARIOUS - SEE TABLE



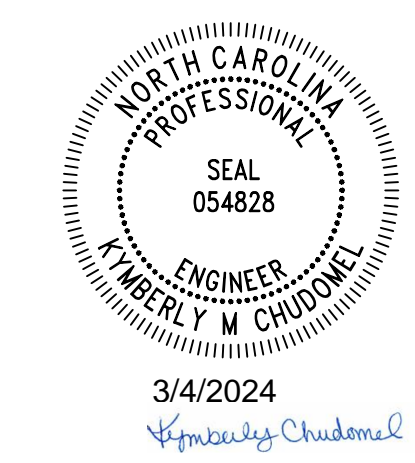
SECTION I-I (N.T.S.)
DISTRIBUTION ATTACHMENT
VARIOUS - SEE TABLE



SECTION H-H (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



WIRE DATA
OHGW: "7#9" ALUMOWELD
115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
12.47kV: VARIOUS - SEE TABLE
DISTRIBUTION NEUTRAL: VARIOUS - SEE TABLE
ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

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

STR #	HEIGHT (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY DEPTH (FT)	12.47KV WIRE	NEUTRAL WIRE
6	85	S-08.0	26	23	795 KCMIL AAC "ARBUSUS"	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
7	85	S-09.0	30	23		
11	80	S-09.0	26	23		
12	80	S-08.0	26	23		
13	80	S-09.0	26	23		
14	80	S-08.0	26	23		
15	80	S-09.0	26	23		
16	80	S-10.0	26	23		
17	80	S-08.0	26	23		
18	80	S-07.4	24	22		
20	80	S-08.0	24	22		
21	80	S-10.0	30	22		
22	80	S-11.0	30	23		
23	80	S-10.0	30	23		
23A	80	S-07.4	24	22		
24	80	S-09.0	26	23		
28	80	S-07.4	24	22		
29	80	S-07.4	24	22		
30	80	S-07.4	24	22		
31	80	S-08.0	26	23		
32	80	S-11.0	30	23		
33	80	S-11.0	30	23		
34	80	S-07.4	24	22		
35	80	S-08.0	24	22		
35A	75	S-05.7	24	22		
38	75	S-08.0	24	22		
43	75	S-07.4	32	27		
44	75	S-06.5	32	27		
45	75	S-05.7	32	27		
46	75	S-05.7	32	27		
47	75	S-05.7	32	27		
48	75	S-05.7	32	27		
49	75	S-07.4	32	27		
86	80	S-07.4	25	22		
87	80	S-09.0	28	23		
88	80	S-08.0	28	23		
89	80	S-08.0	28	23		
90	80	S-10.0	31	23		
91	80	S-07.4	25	22		
92	80	S-10.0	31	23		
93	80	S-10.0	31	23		
95	85	S-09.0	31	23		
96	85	S-09.0	31	23		
97	85	S-09.0	31	23		
98	85	S-09.0	31	23		
103	80	S-07.4	26	23		
104	75	S-08.0	26	23		
105	75	S-09.0	29	25		
109	80	S-11.0	36	30		
111	80	S-07.4	26	23		
112	80	S-07.4	26	23		
113	80	S-07.4	29	25		
114	80	S-07.4	26	23		
115	80	S-07.4	26	23		
116	80	S-07.4	26	23		
118	80	S-09.0	29	25		
124	80	S-08.0	29	25		
145	80	S-09.0	30	25		
153	75	S-07.4	21	22		
155	80	S-08.0	24	23		
156	80	S-07.4	24	23		
158	75	S-06.5	24	23		
159	75	S-06.5	24	23		
160	80	S-07.4	24	23		
					336.4 KCMIL 18/1 STRAND "MERLIN" ACSR	1/0 AWG 6/1 STRAND "RAVEN" ACSR

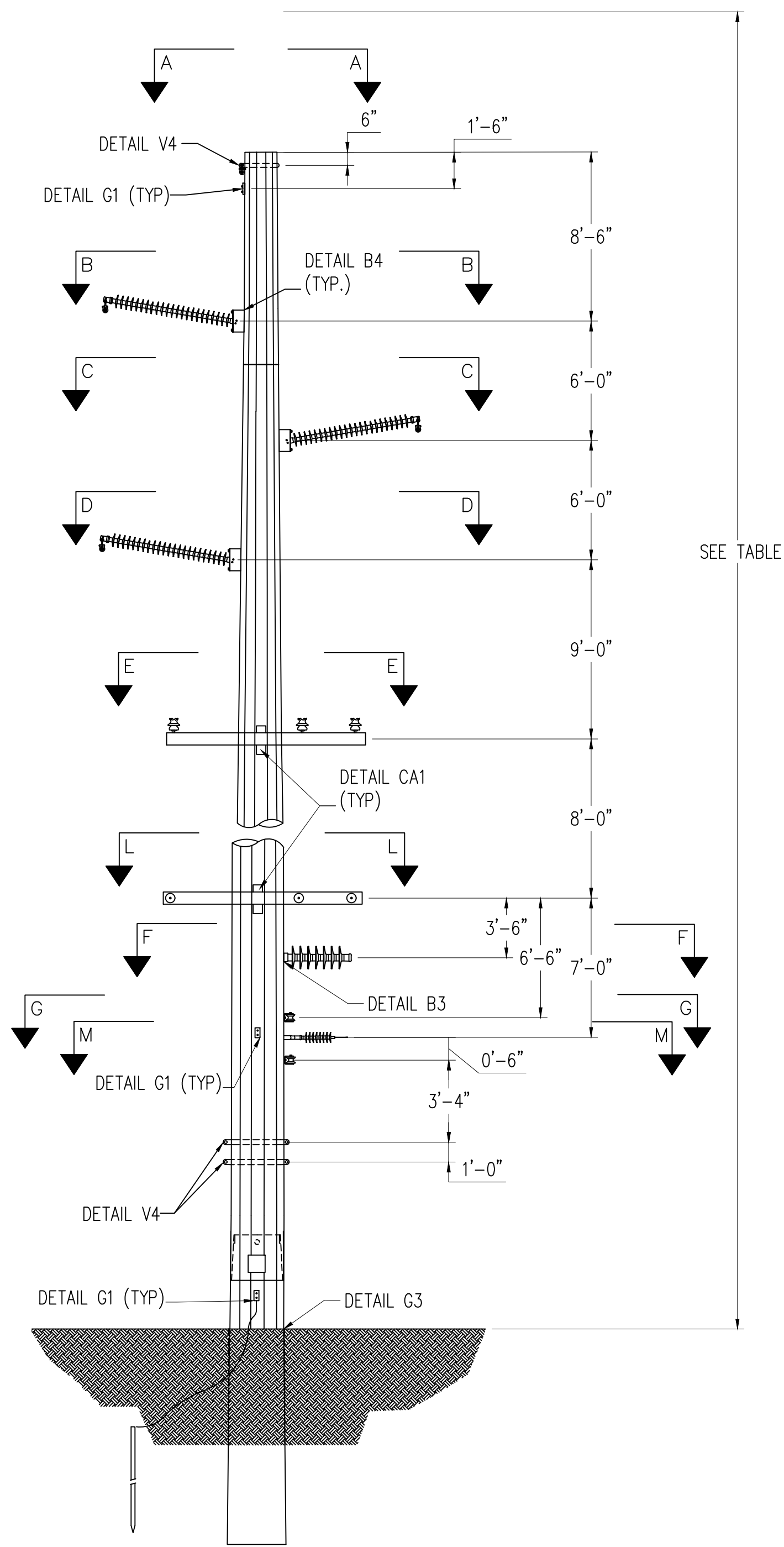
NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

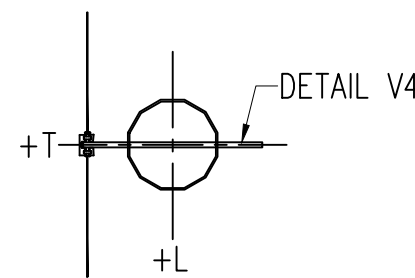
115KV TRANSMISSION LINE
SIMPSON SUB TO G203
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

DWN.J. THOMAS	DATE 11/7/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	TAN-DELTA-DIST-ARM
SCALE: NONE		

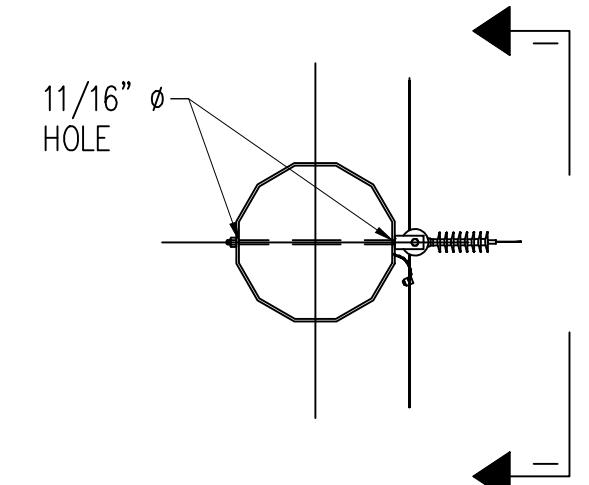


SINGLE CIRCUIT, DELTA, TANGENT
LOOKING AHEAD SPAN
SCALE: N.T.S.

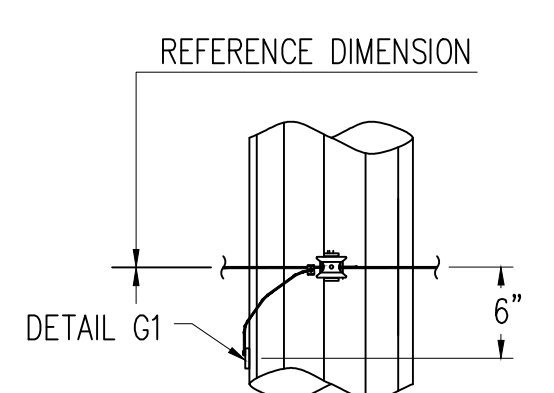
SEE TABLE



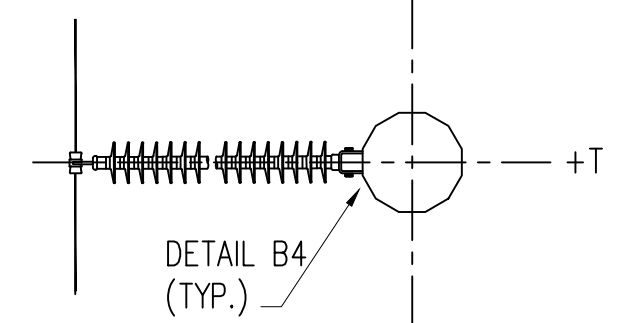
SECTION A-A (N.T.S.)
OHGW ATTACHMENT
7#9 ALUMOWELD



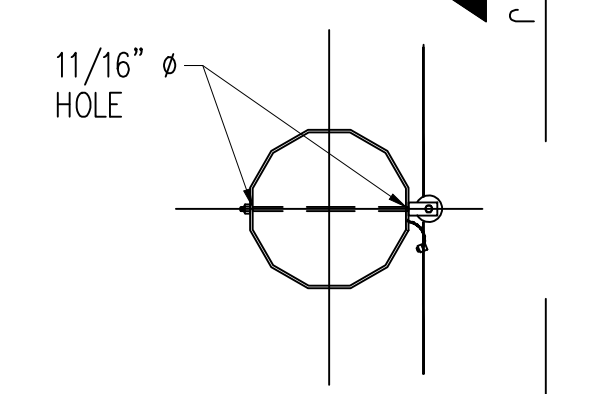
SECTION G-G (N.T.S.)
DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



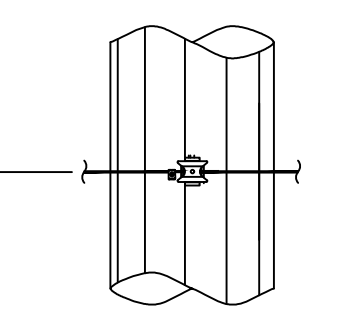
SECTION I-I (N.T.S.)
DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 STRAND
"MERLIN" ACSR



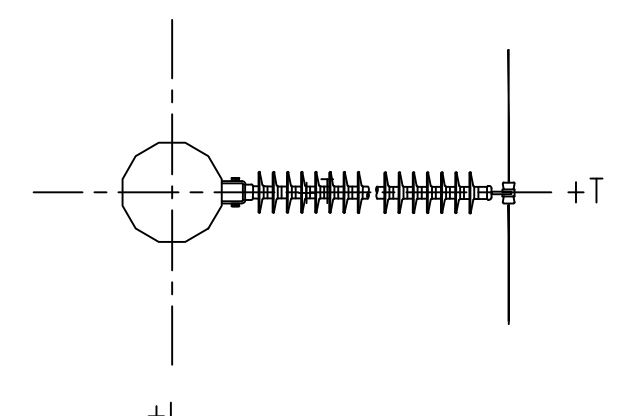
SECTION B-B, D-D (N.T.S.)
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



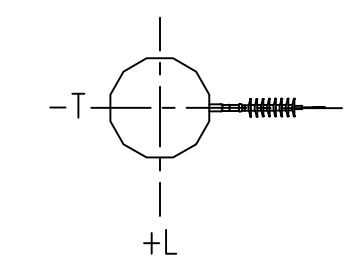
SECTION H-H (N.T.S.)
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



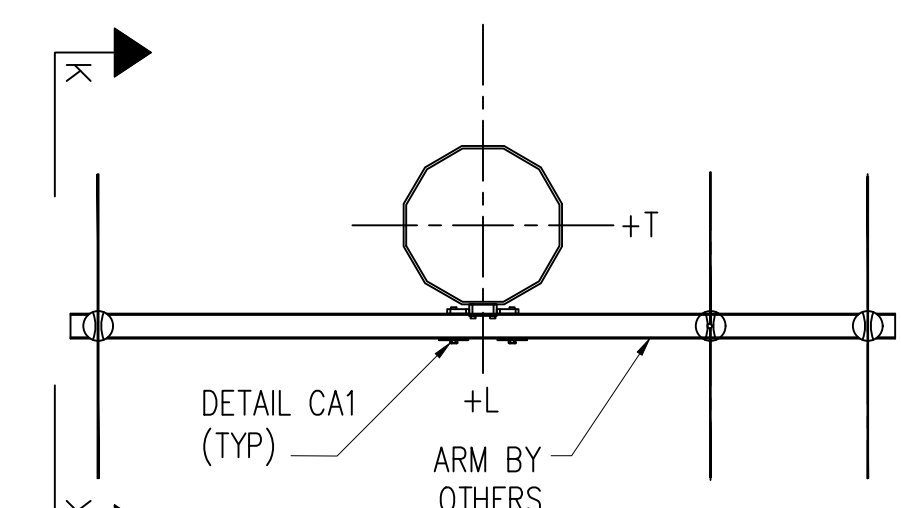
SECTION J-J (N.T.S.)
COMMUNICATIONS ATTACHMENT
ADSS: "AT-XXX27DT-144-CLCB"
144 FIBER



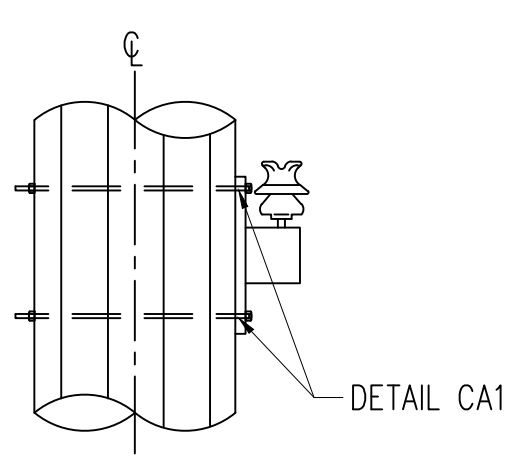
SECTION C-C (N.T.S.)
CONDUCTOR ATTACHMENT
115KV: 1272 KCMIL 61/0 STRAND
"NARCISSUS" AAC



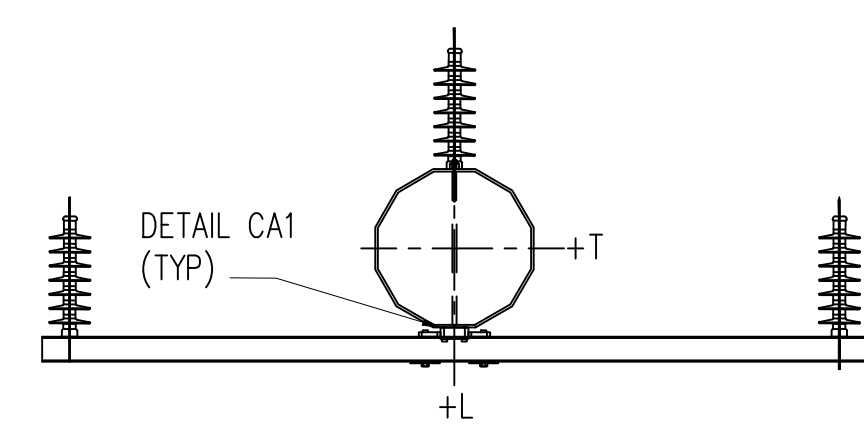
SECTION M-M (N.T.S.)
DISTRIBUTION NEUTRAL
336.4 KCMIL 18/1 "MERLIN"



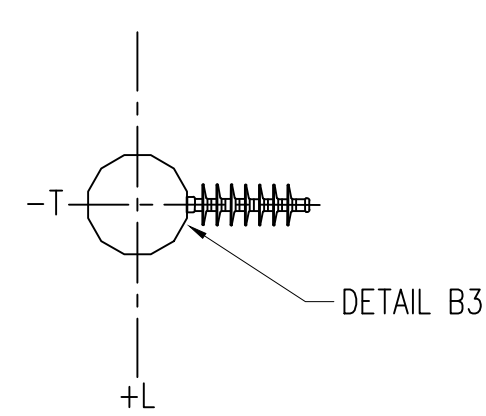
SECTION E-E (N.T.S.)
DISTRIBUTION ATTACHMENT,
795 KCMIL AAC "ARBUTUS"



SECTION K-K (N.T.S.)
DISTRIBUTION ATTACHMENT,
795 KCMIL AAC "ARBUTUS"



SECTION L-L (N.T.S.)
DISTRIBUTION ATTACHMENT,
795 KCMIL AAC "ARBUTUS"
*DISTRIBUTION CENTRAL PHASE DEADEND
INSULATOR ATTACHMENT AT TOP BOLT
LOCATION OF CROSSARM MOUNT



SECTION F-F (N.T.S.)
DISTRIBUTION ATTACHMENTS
1/0 ACSR "RAVEN"

STR #	LENGTH (FT)	ANGLE Δ	VIBRATORY BASE DIA. (IN)	VIBRATORY DEPTH (FT)
70	75	-1	44	38

LOAD CASES

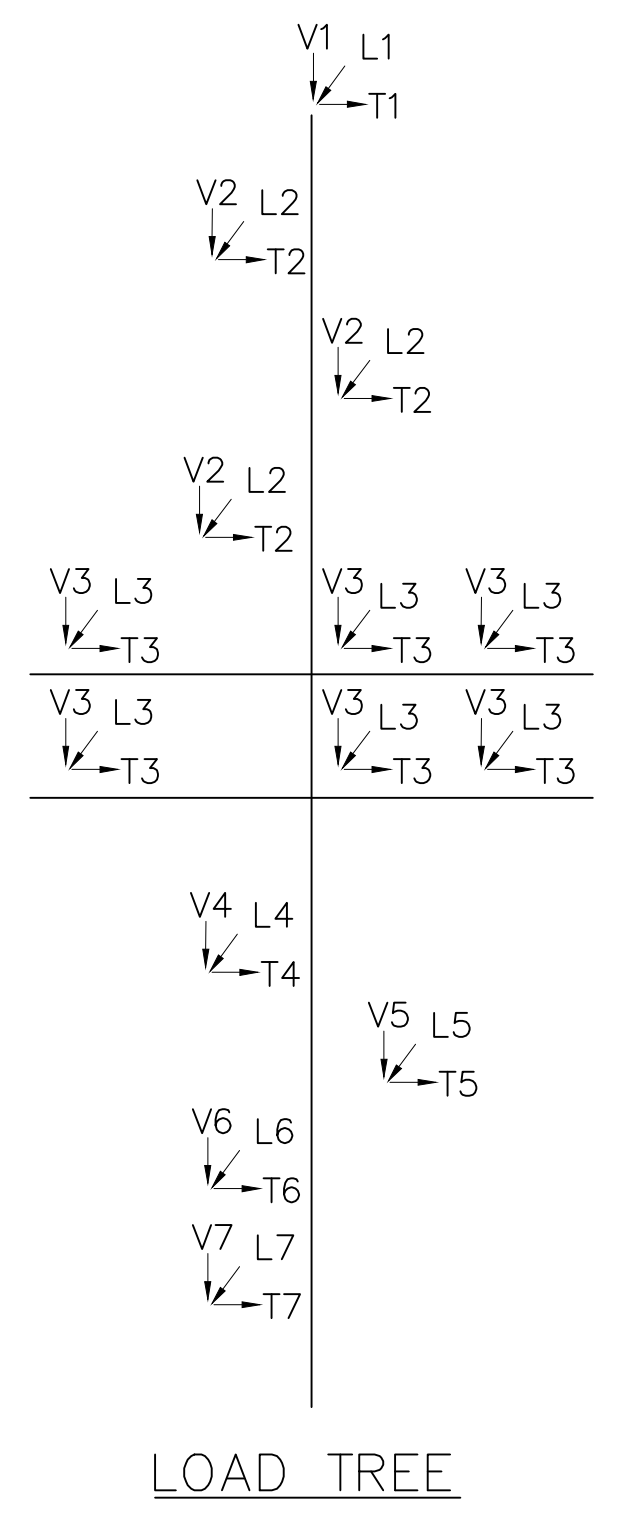
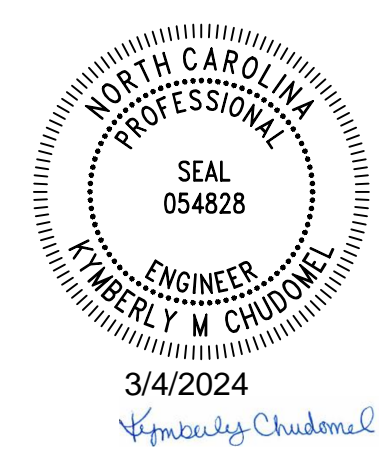
- CASE 1 NESIC MEDIUM: 15', .25" ICE, 4 PSF WIND
OLF: L=1.65, T=2.50, V=1.50
- CASE 2 NESIC HIGH WIND: 60', 0" ICE, 120 MPH WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 3 NESIC ICE WITH WIND: 15', 1" ICE, 40 MPH WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 4 EXTREME ICE: 32', 1" ICE, NO WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 5 UPLIFT: 0', NO ICE, NO WIND
OLF: L=1.00, T=1.00, V=1.00
- CASE 6 DEFLECTION: 60 DEGREES, NO ICE, NO WIND, FINAL
OLF: L=1.00, T=1.00, V=1.00

WIRE DATA

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

NOTES:

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



LOAD CASE	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6
V1	100	100	300	300	100	100
T1	200	200	200	100	100	100
L1	0	0	0	0	0	0
V2	600	400	900	800	400	300
T2	800	900	600	400	400	200
L2	100	100	0	0	0	0
V3	500	300	700	700	300	200
T3	600	1800	300	200	200	100
L3	5000	3900	5100	4700	2400	1200
V4	100	100	200	200	100	100
T4	700	1800	700	500	100	100
L4	300	300	500	500	100	100
V5	300	200	500	500	200	100
T5	300	400	300	100	100	100
L5	0	0	0	0	0	0
V6	200	100	500	500	100	100
T6	200	400	200	100	100	100
L6	0	0	0	0	0	0
V7	300	200	600	600	100	100
T7	300	600	200	100	100	100
L7	0	0	0	0	0	0
W (PSF)	4.0	4.0	4.0	4.0	36.9	36.9

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

NO.

REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
Greenville, North Carolina

115KV TRANSMISSION LINE
SIMPSON SUB TO G203
LOAD AND DESIGN
TANGENT WITH UNDERBUILD

DWN. J. THOMAS	DATE 10/30/23	DWG. NO.
CKD. A. KELSCH	APPD. K. CHUDOMEL	TAN-DELTA-STR 70
SCALE: NONE		

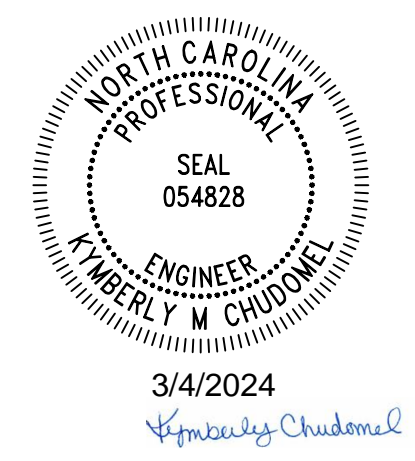
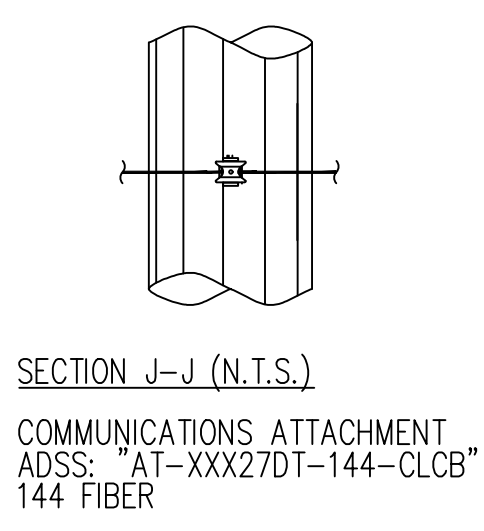
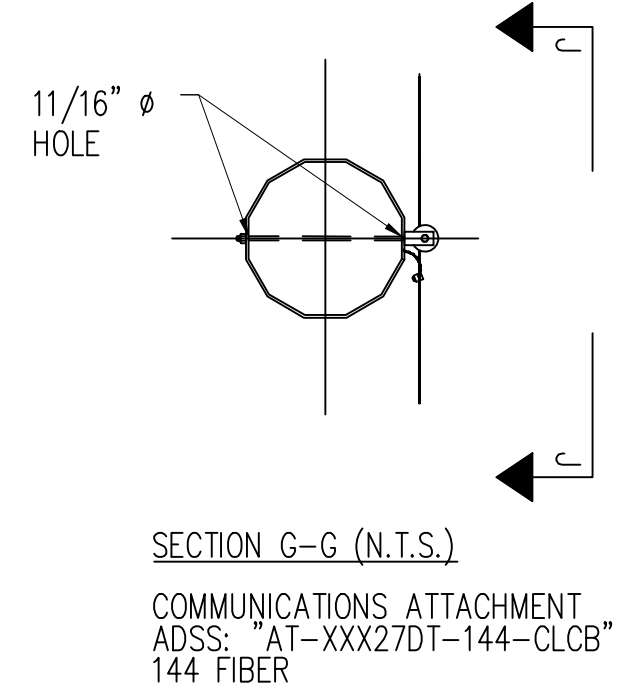
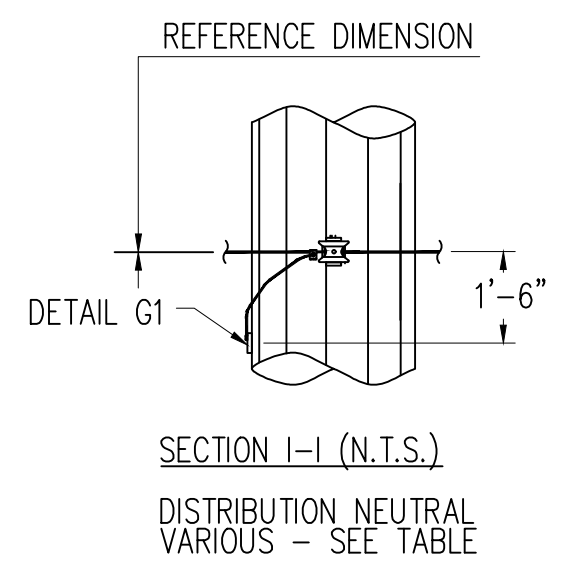
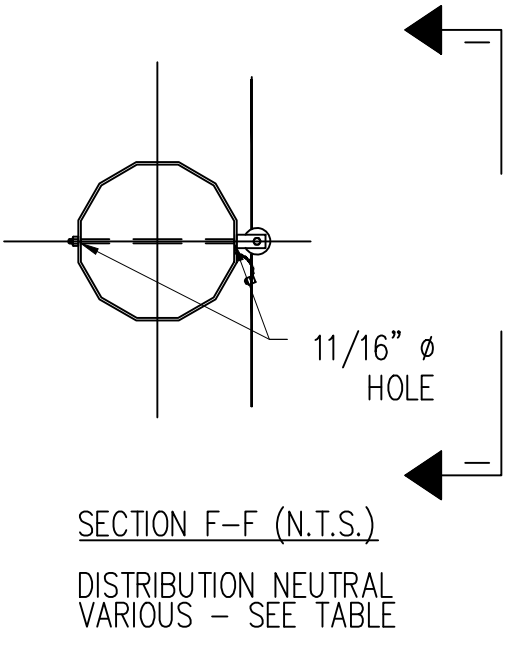
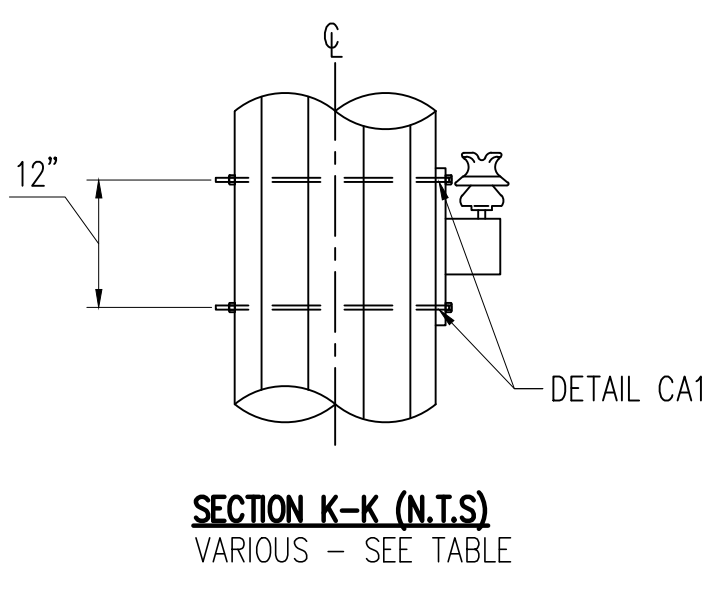
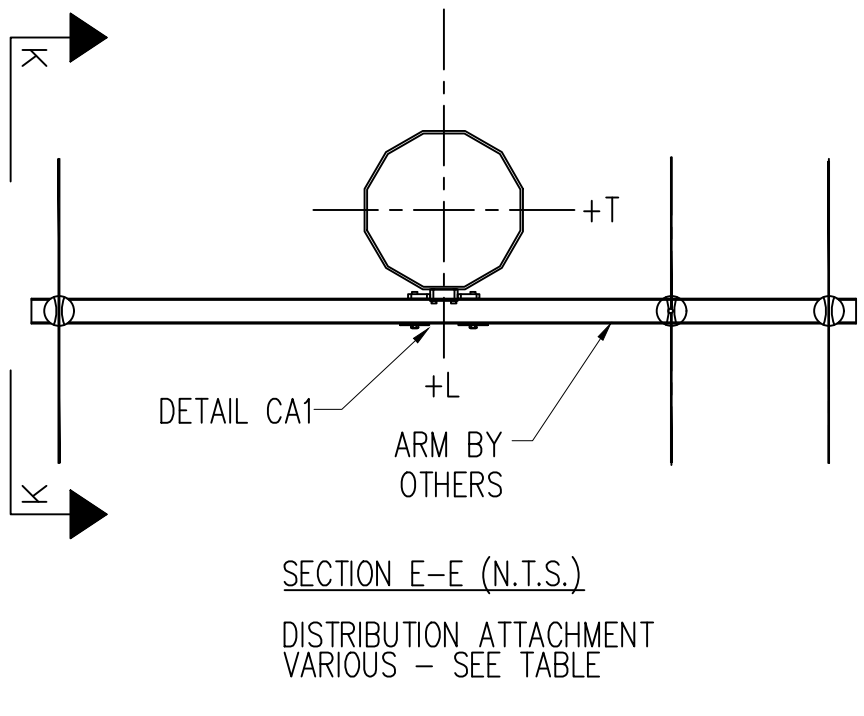
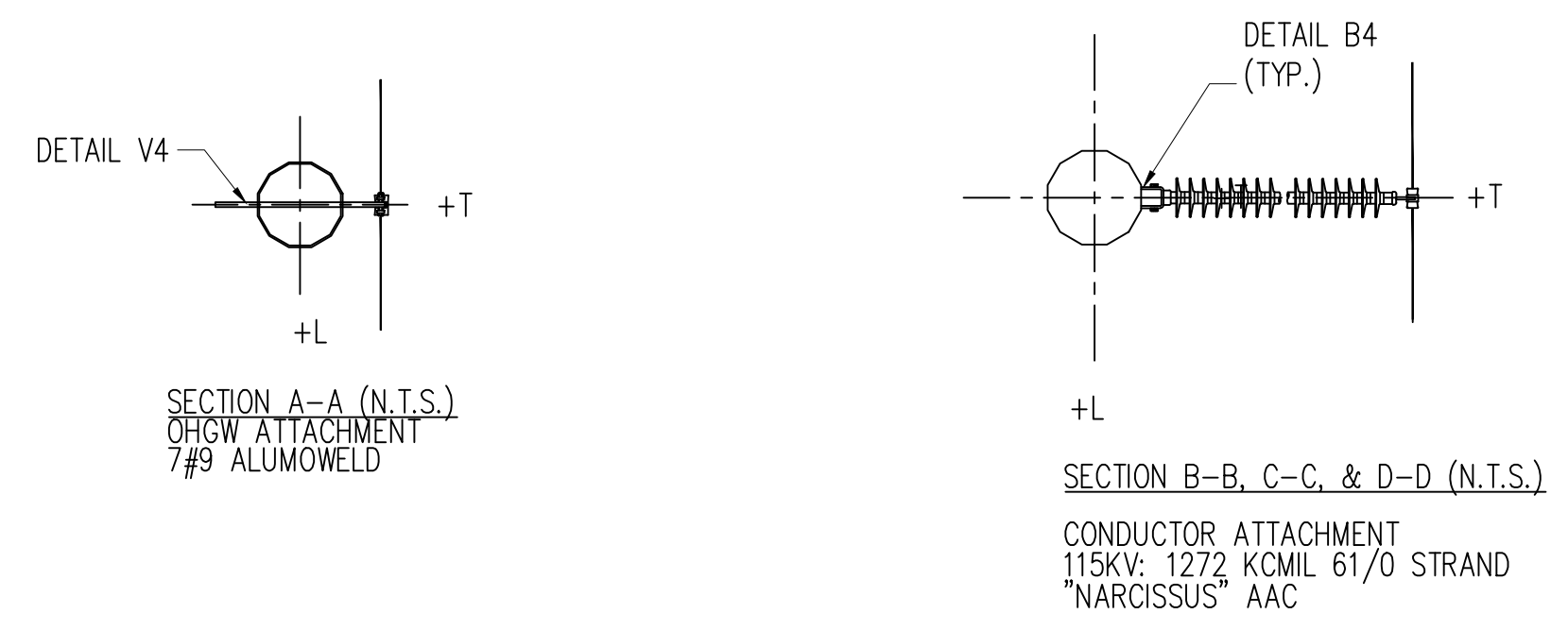
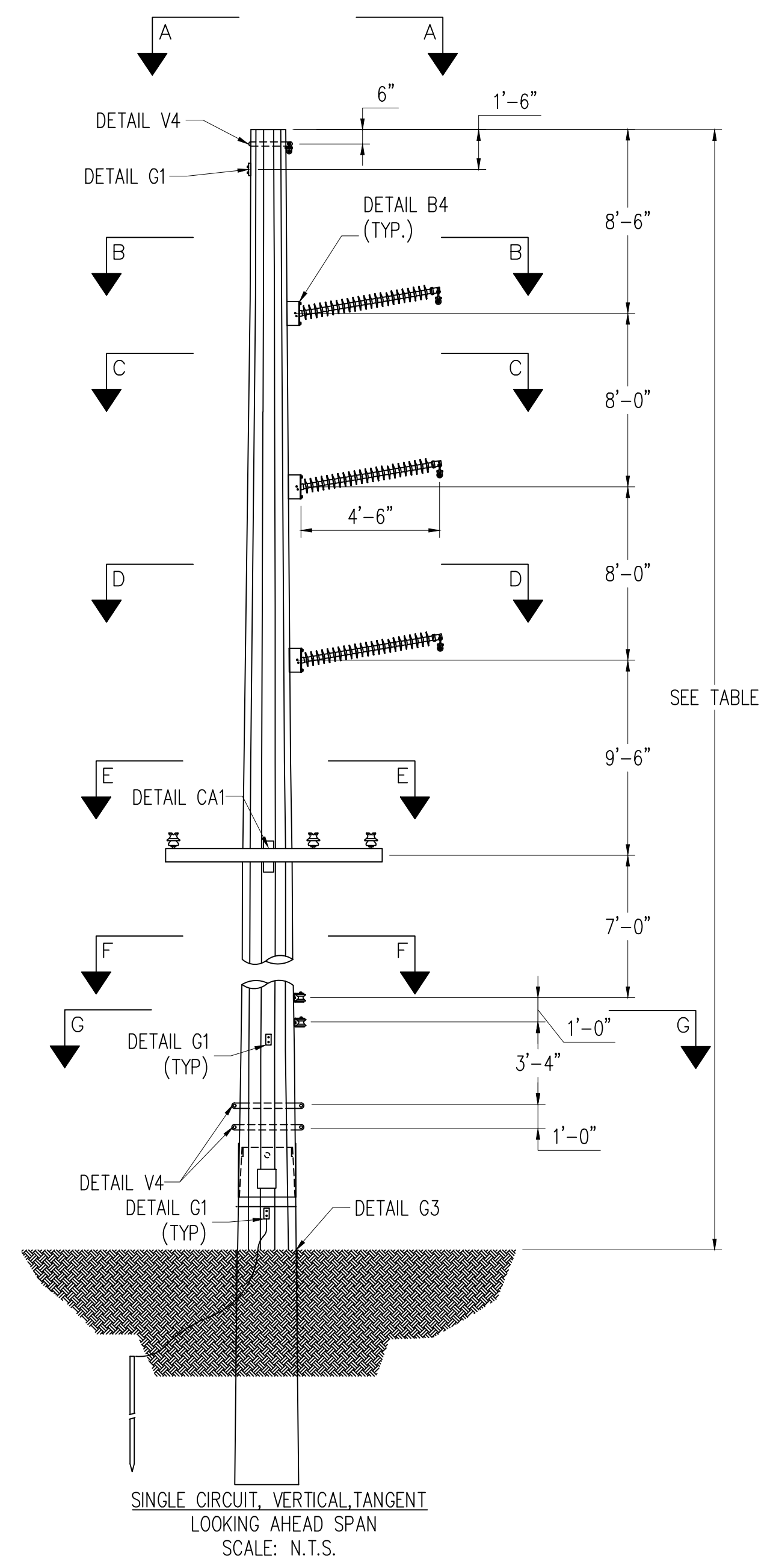
STR #	HEIGHT (FT)	POLE CLASS	VIBRATORY BASE DIA. (IN)	VIBRATORY BASE DEPTH (FT)	12.47KV WIRE	NEUTRAL WIRE
25	80	S-07.4	26	23	795 KCMIL AAC "ARBUTUS"	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR
25A	80	S-09.0	30	23		
27	80	S-09.0	30	23		
39	75	S-10.0	30	23		
106	80	S-11.0	36	30		
120	85	S-10.0	32	27		
121	80	S-07.4	26	23		
122	80	S-10.0	32	27		
128	85	S-09.0	32	27		
129	85	S-09.0	28	28		
133	85	S-07.4	26	25	336.4 KCMIL 18/1 STRAND "MERLIN" ACSR	1/0 AWG 6/1 STRAND "RAVEN" ACSR
134	85	S-07.4	26	25		
137A	85	S-07.4	26	25		
138	80	S-07.4	26	25		
139	80	S-07.4	26	25		
139A	80	S-08.0	30	25		
140	80	S-09.0	30	25		
161	80	S-09.0	29	25		

WIRE DATA

OHGW: "7#9" ALUMOWELD
 115KV: 1272 KCMIL 61/0 STRAND "NARCISSUS" AAC
 12.47kv: VARIOUS - SEE TABLE
 DISTRIBUTION NEUTRAL: VARIOUS - SEE TABLE
 ADSS: "AT-XXX27DT-144-CLCB" 144 FIBER

NOTES:

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



NO. REVISIONS

ISSUED FOR BID

GREENVILLE UTILITIES
 Greenville, North Carolina

115KV TRANSMISSION LINE
 SIMPSON SUB TO G203
 LOAD AND DESIGN
 TANGENT WITH UNDERBUILD

DWN. J. THOMAS	DATE 11/7/23	DWG. NO.
CKD. A. KELSCH	APPD. K.CHUDOMEL	TAN-VERT-DIST-ARM
SCALE: NONE		

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:

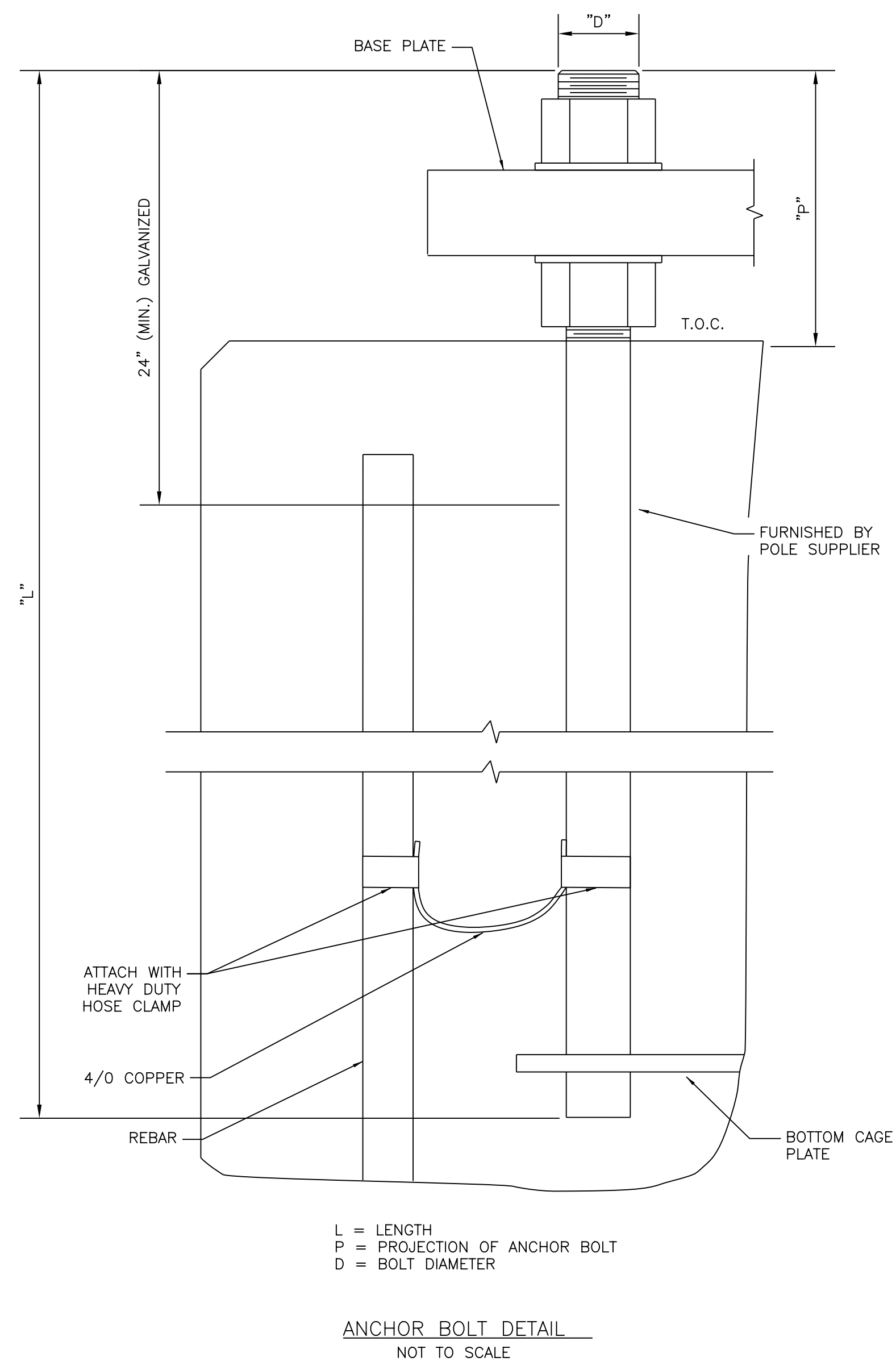
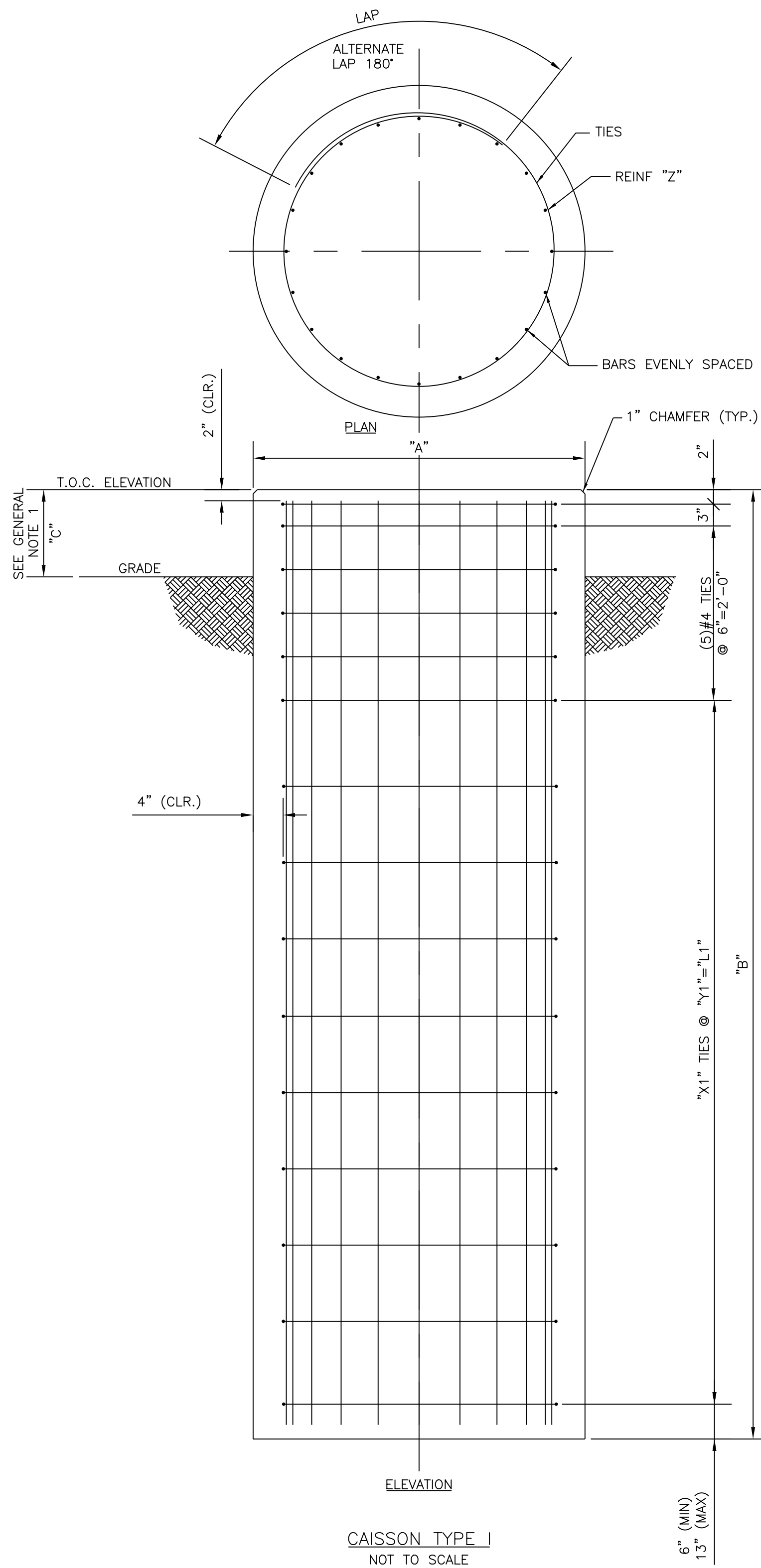
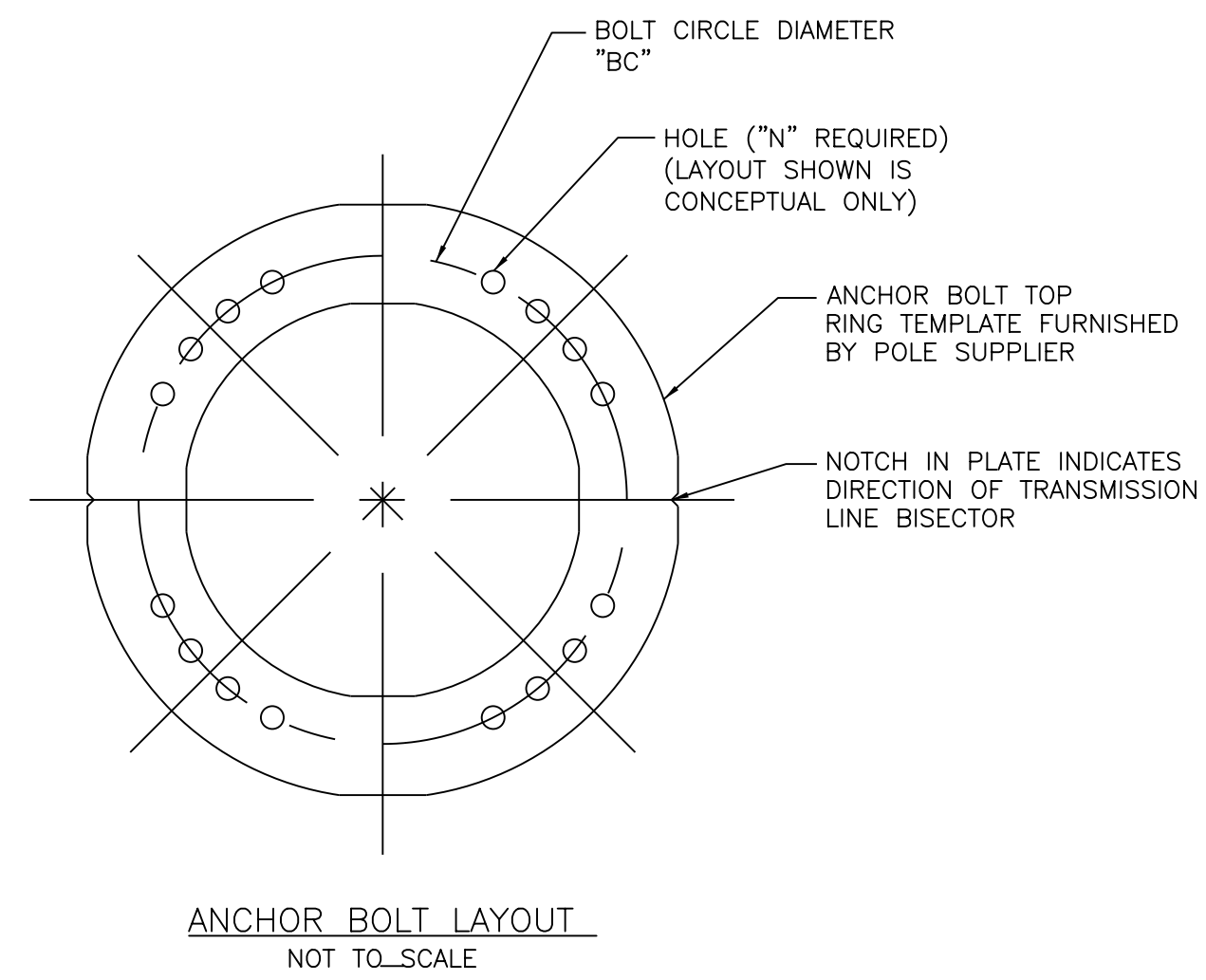
1. EXPOSED CONCRETE CORNER CHAMFER: 1" UNLESS SHOWN OTHERWISE.
2. ACCURATELY POSITION BOLTS TO ASSURE CORRECT VERTICAL AND HORIZONTAL LOCATION TO MATCH POLE BOLT PATTERN. PROTECT THREADS DURING INSTALLATION.
3. POLE SHALL NOT BE ERECTED UNTIL CONCRETE HAS ATTAINED A MINIMUM OF 85% OF THE SPECIFIED 28 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 FOUNDATIONS DETAILS
 PLAN & PROFILE, SHEETS 1-16



NO.	A		
REVISIONS	SIMPSON TO SUPPLY PRELIMINARY DESIGN INITIALS: O.P. DATE: 09/20/23		

ISSUED FOR REVIEW

GREENVILLE UTILITIES
Greenville, North Carolina

115kV TRANSMISSION LINE
SIMPSON SUB TO G203
DRILLED PIER
FOUNDATION DETAILS


DWN. J. CORDERO	DATE 09/20/23	DWG. NO.
CKD. O. PENA	APPD. J. VARONE	SF01-1
SCALE: NONE		

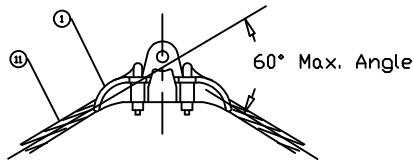
CAISSON SCHEDULE															
STRUCTURE NUMBER	SOIL BORING	CAISSON TYPE	PIER DIMENSIONS			REINFORCING				ANCHORS					REMARKS
			"A" FT.	"B" FT.	"C" FT.	"X1"	"Y1" FT.	"L1" FT.	"Z"	"D" IN	"BC" IN	"N"	"L"	"p"	
52	SB-15	I	7.5	52.0	1.0	#5	1.0	49.0	(26)-#14	-	-	-	-	-	
53	SB-15	I	7.5	52.0	1.0	#5	1.0	49.0	(26)-#14	-	-	-	-	-	
130	SB-12	I	7.0	44.0	1.0	#5	1.0	41.0	(17)-#14	-	-	-	-	-	
141	SB-11	I	7.0	49.0	1.0	#5	1.0	46.0	(15)-#14	-	-	-	-	-	
189	SB-8	I	7.0	44.0	1.0	#5	1.0	41.0	(17)-#14	-	-	-	-	-	
190	SB-9	I	7.0	49.0	1.0	#5	1.0	46.0	(17)-#14	-	-	-	-	-	
193	SB-10	I	7.5	43.0	1.0	#5	1.0	40.0	(17)-#14	-	-	-	-	-	
194	SB-11	I	7.5	42.0	1.0	#5	1.0	39.0	(17)-#14	-	-	-	-	-	
195	SB-12	I	7.0	44.0	1.0	#5	1.0	41.0	(17)-#14	-	-	-	-	-	
69A	SB-15	I	7.5	52.0	1.0	#5	1.0	49.0	(26)-#14	-	-	-	-	-	
69B	SB-15	I	7.0	49.0	1.0	#5	1.0	46.0	(15)-#14	-	-	-	-	-	

ON HOLD PENDING
FINAL REVIEW

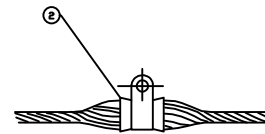
NO.	A
REVISIONS	SIMPSN SUB TO BE PRELIMINARY DESIGN ENGINEER: O.P. DATE: 09/20/23

ISSUED FOR
REVIEW

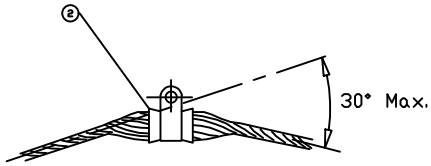
 GREENVILLE UTILITIES Greenville, North Carolina	
115kV TRANSMISSION LINE SIMPSON SUB TO G203 DRILLED PIER FOUNDATION SCHEDULE	
DWN. J. CORDERO	DATE 09/20/23
CKD. O. PENA	APPD. J. VARONE
SCALE: NONE	DWG. NO. SF01-2



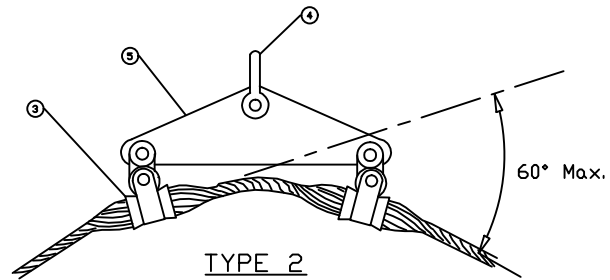
TANGENT & ANGLE CLAMP
TM-4A



TANGENT ASSEMBLY
TM-4B

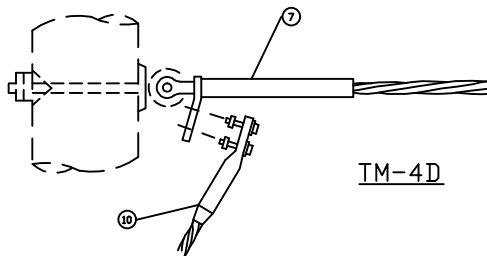


TYPE 1

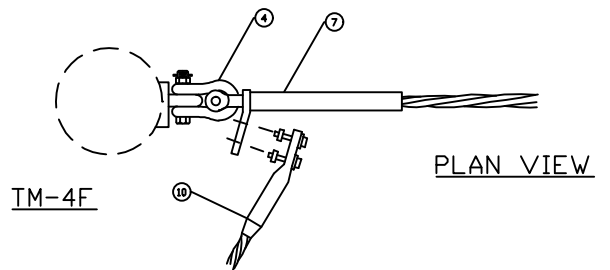


TYPE 2

ANGLE ASSEMBLY
TM-4C (NOTE 1)

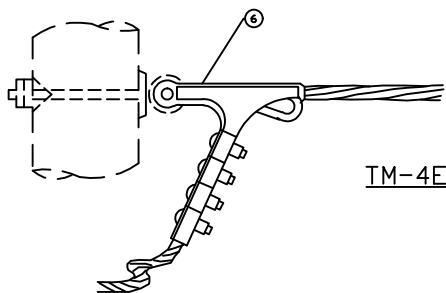


TM-4D

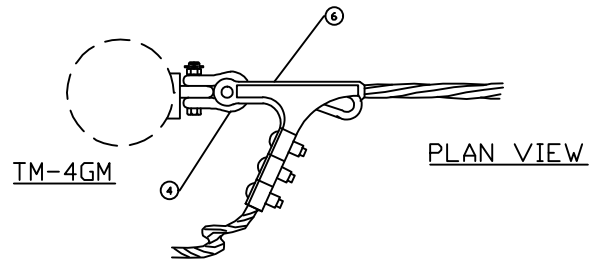


TM-4F

PLAN VIEW



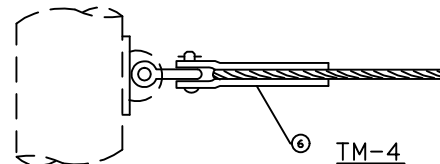
TM-4E



TM-4GM

PLAN VIEW

DEADEND ASSEMBLY




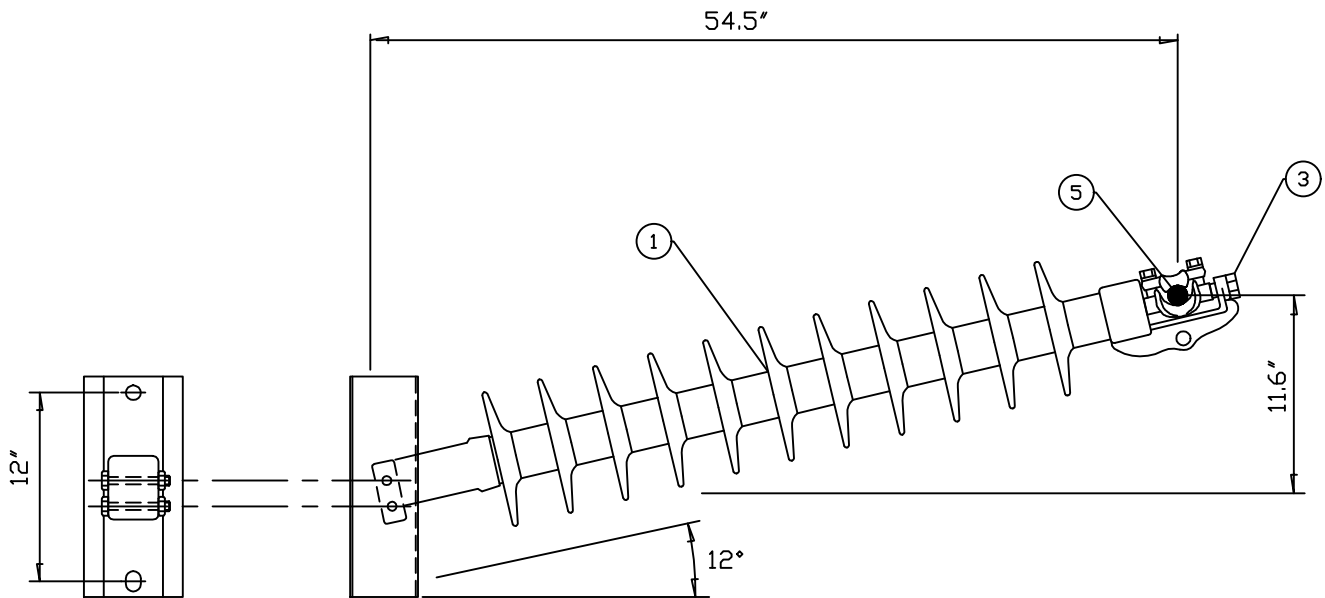
TM-4

NOTES:

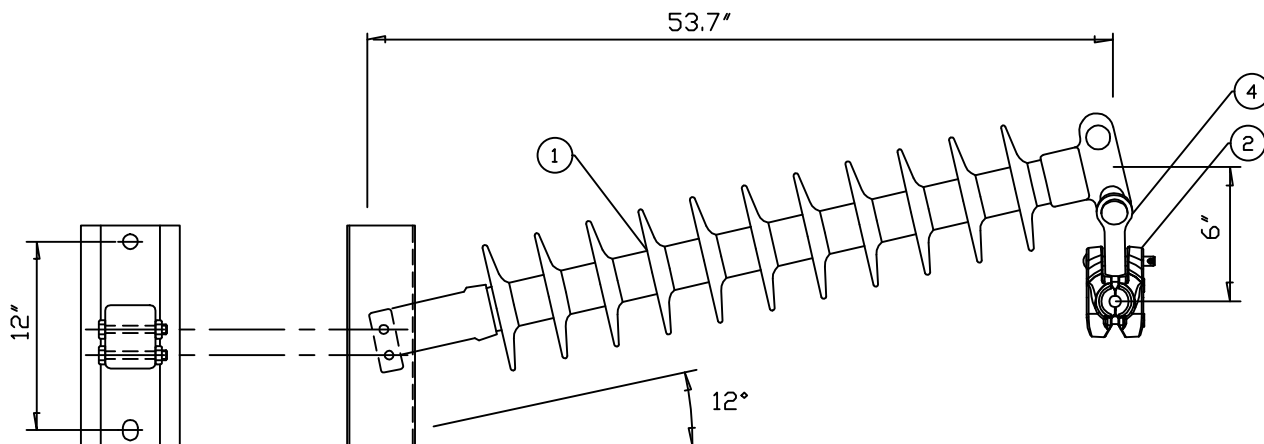
1. The appropriate cushioned suspension angle assembly shall be installed for the line angles shown on the plan-profile drawings:

- 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.	LIST OF MATERIALS		GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA			
	ITEM	DESCRIPTION	O.H.G.W. ASSEMBLIES CUSHIONED SUSPENSION AND SUSPENSION CLAMPS			
1		CLAMP, SUSPENSION (TO 60°)	 DWN. JLS CKD. KW SCALE: N.T.S. DATE	DATE: 02/27/19		DWG. NO. TM-4
2		CLAMP, CUSHIONED SUSPENSION		APPD. KW		
3		CLAMP, CUSHIONED SUSP. & CLEVIS EYE		DATE	REVISION	
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				



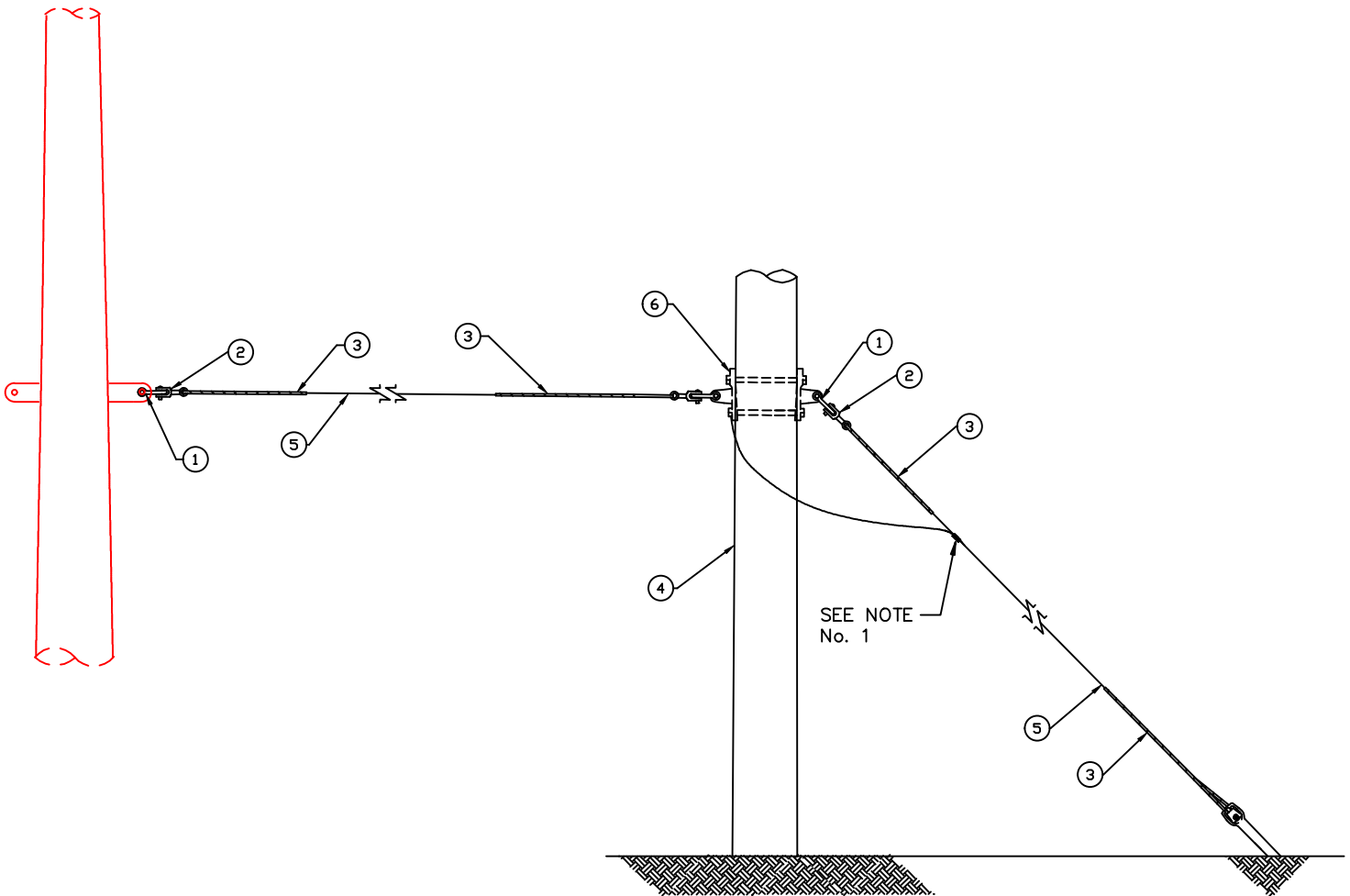
TM-3BM - HORIZONTAL POST INSULATOR



TM-3DM - HORIZONTAL POST INSULATOR - TANGENT & SMALL ANGLE



DWG. REF.	TM-3		LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA	
	BM	DM	DESCRIPTION	HORIZONTAL POST INSULATOR ASSEMBLY	
1	1	1	INSULATOR, POLYMER HORIZONTAL POST		DATE: 03/01/19 APPD. KW
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		
				DWN. JLS	DATE
				CKD. KW	APPD. KW
				SCALE: N.T.S.	
				DATE	DATE
					REVISION
		*	Armor Rod not required if suspension clamp is cushioned		

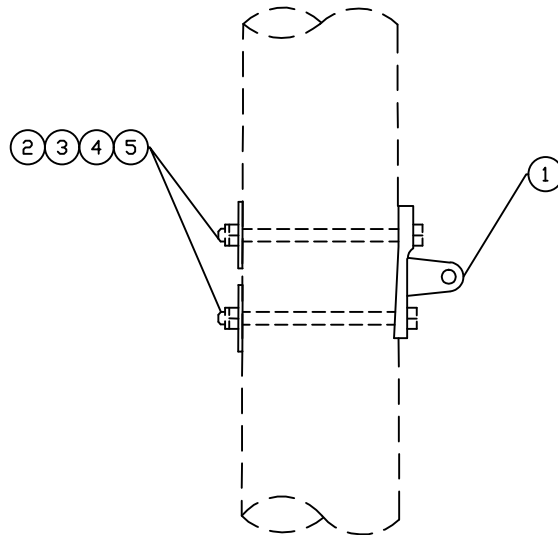
DWG. NO.
TM-3



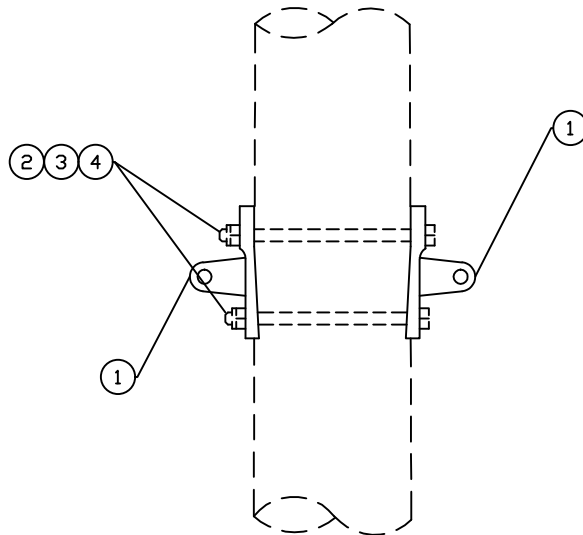
NOTES:

- 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) GUY STRAIN INSULATOR MAY BE REQUIRED. SEE STRUCTURE DRAWING/MATERIAL LIST TO VERIFY.


DWG. REF.	QTY	LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA				
		DESCRIPTION		SPAN GUY – WITH PREFORMED GRIPS.			
1	3	ANCHOR SHACKLE, 30,000 LBS (MINIMUM)			DWN. DRB DATE: 5/23/2022 CKD. JLS APPD. JLS SCALE: N.T.S. DATE DATE REVISION		
2	3	CLEVIS – THIMBLE TYPE (40,000 LBS)					
3	4	GUY – GRIP, PREFORMED					
4	1	WOODEN POLE					
5	*	GUY – WIRE					
6	2	PLATE, P-345 GUY					
* GUY WIRE AS REQUIRED							

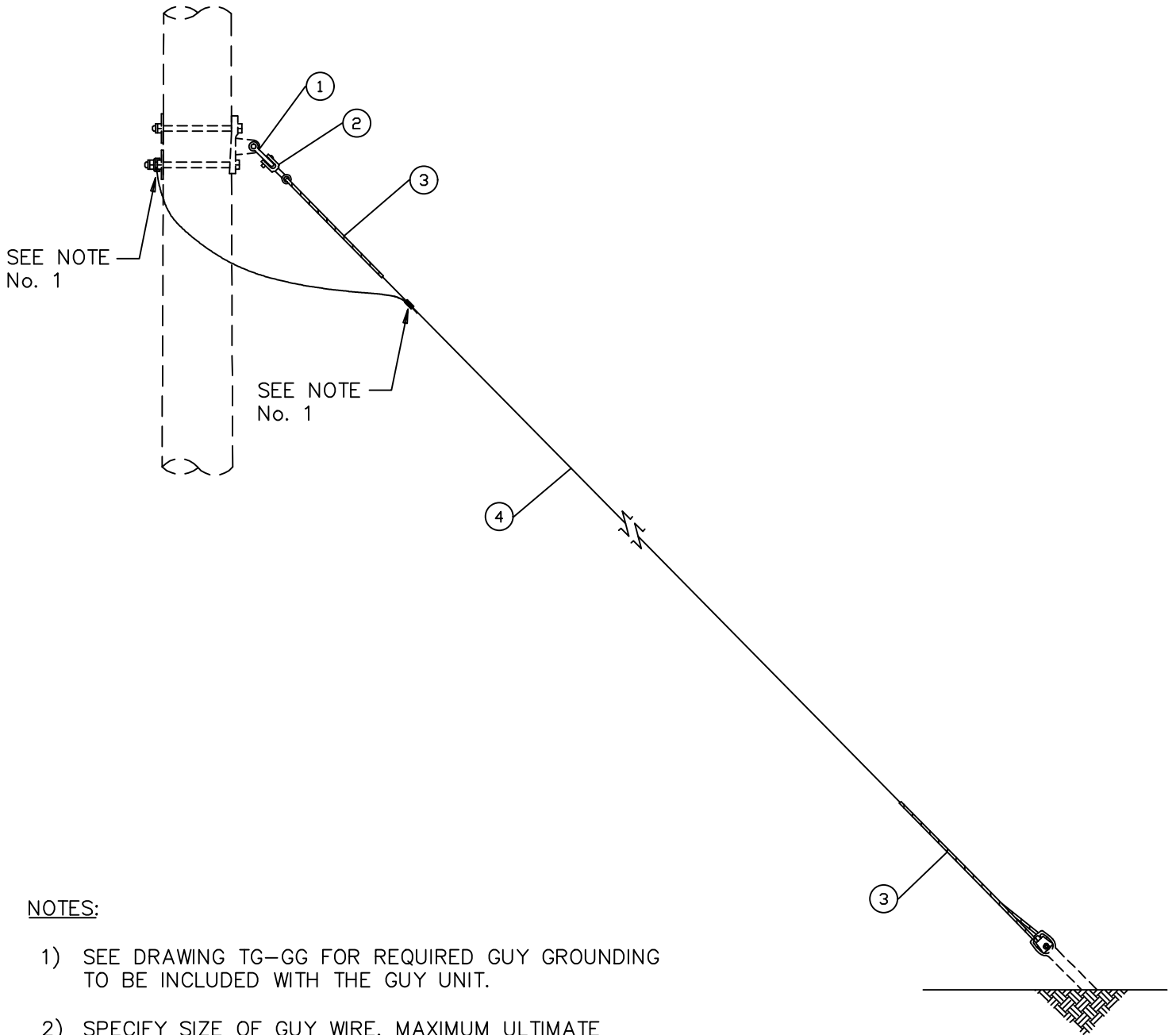


TG-27C




TG-27D

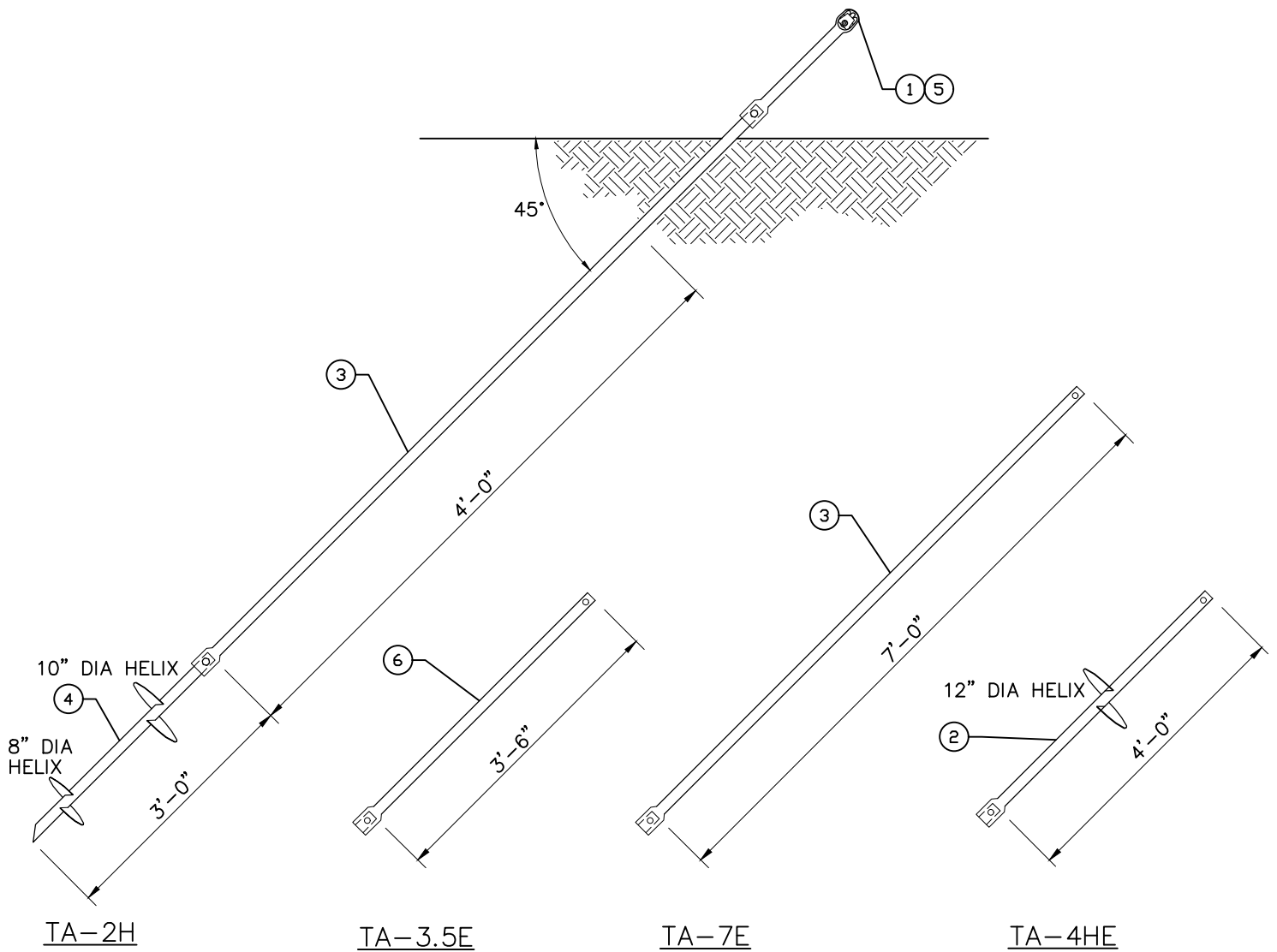
DWG. REF.	TG-27		LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA			
	C	D	DESCRIPTION	 TRANSMISSION AND DISTRIBUTION LINE GUY ATTACHMENT UNITS			
1	1	2	TRANSMISSION GUY PLATE				
2	2	2	BOLT, MACHINE, 3/4" x Required Length	CKD. KW	APPD. KW		
3	2	2	SPRING LOCK WASHER, 3/4"	SCALE: N.T.S.			
4	2	2	NUT, 3/4"	DATE	DATE	REVISION	
5	2	-	WASHER, SQUARE, 4" x 4" x 1/4" w/ 15/16"				



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.

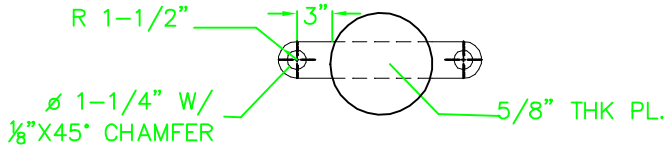
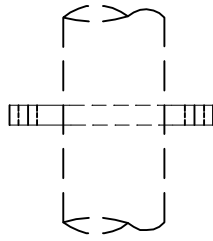
DWG. REF.	TG-21		LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA																								
	A	A(M)	DESCRIPTION	 <p>SINGLE DOWN GUY - WITH PREFORMED GRIPS.</p>																								
1	-	1	ANCHOR SHACKLE, 30,000 LBS (MINIMUM)					<table border="1"> <tr> <td colspan="2">DWN. JLS</td> <td colspan="2">DATE: 03/15/19</td> <td rowspan="4">DWG. NO.</td> </tr> <tr> <td colspan="2">CKD. KW</td> <td colspan="2">APPD. KW</td> </tr> <tr> <td colspan="4">SCALE: N.T.S.</td> </tr> <tr> <td>DATE</td> <td></td> <td>DATE</td> <td>REVISION</td> </tr> </table>				DWN. JLS		DATE: 03/15/19		DWG. NO.	CKD. KW		APPD. KW		SCALE: N.T.S.				DATE		DATE	REVISION
DWN. JLS		DATE: 03/15/19										DWG. NO.																
CKD. KW		APPD. KW																										
SCALE: N.T.S.																												
DATE		DATE	REVISION																									
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	<p style="text-align: right; font-size: 2em; font-weight: bold;">TG-21</p>																								



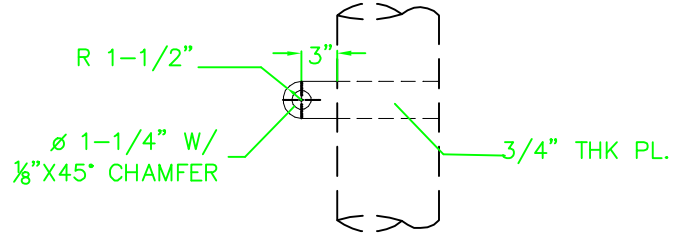
NOTES:

- 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.

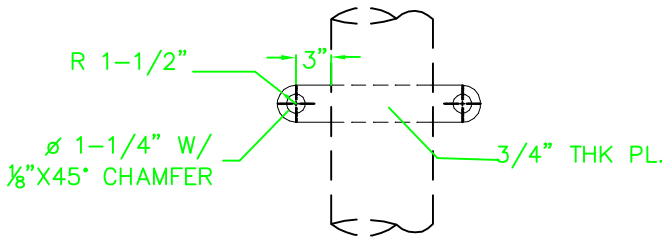
DWG. REF.	LIST OF MATERIALS		GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA			
	ea.	DESCRIPTION		TRANSMISSION AND DISTRIBUTION ANCHOR ASSEMBLY		
1		ANCHOR - CLAMP, BONDING		DWN. JLS CKD. KW SCALE: N.T.S.	DATE: 03/14/19	
2		ANCHOR - EXTENSION ASSEMBLY, 12" HELIX (1-1/2" SQUARE SHAFT x 4'-0")	APPD. KW			
3		ANCHOR - EXTENSION ASSEMBLY (1-1/2" SQUARE SHAFT x 7'-0")	DATE		REVISION	
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")				



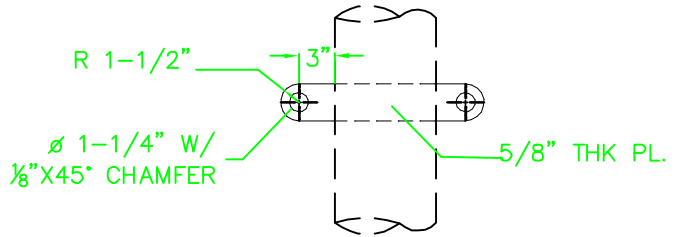
DETAIL V1
HORIZONTAL OHGW/DISTRIBUTION VANG




DETAIL V2
VERTICAL TRANSMISSION VANG (1-SIDED)

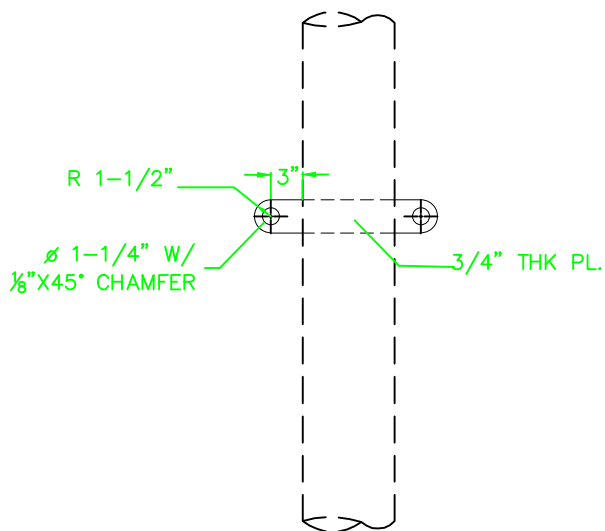


DETAIL V3
VERTICAL TRANSMISSION VANG

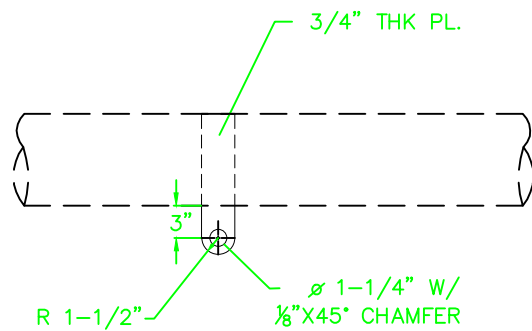


DETAIL V4
VERTICAL OHGW/DISTRIBUTION VANG


DWG. REF.	LIST OF MATERIALS		GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA					
	ed.	DESCRIPTION	VANG DETAILS					
				DWN. JLS		DATE: 02/11/2022	DWG. NO. TV-2	
				CKD. JLS		APPD. JLS		
				SCALE: N.T.S.				
				DATE		DATE		REVISION



STEEL POLE THRU VANG

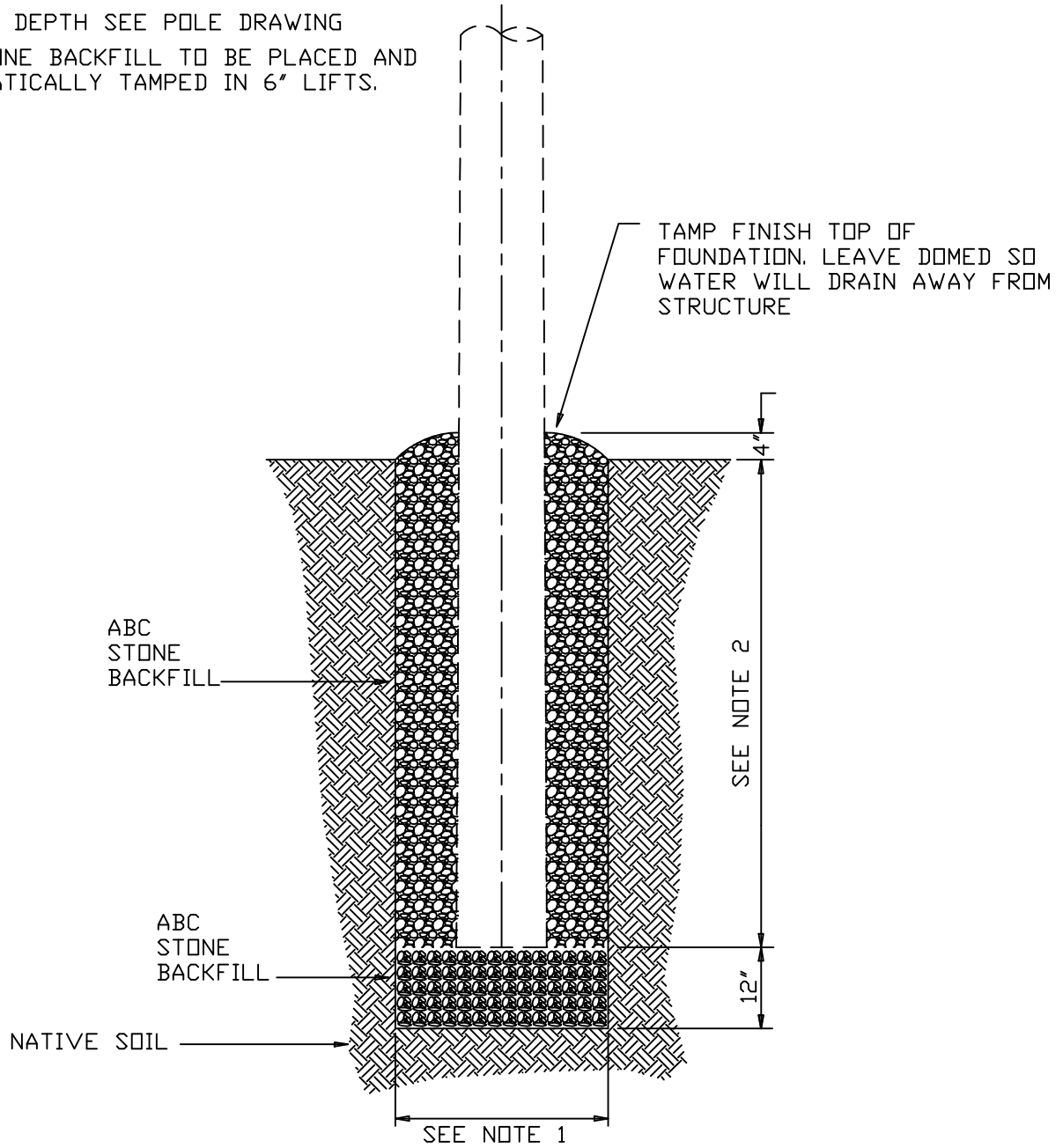



CROSSARM THRU VANG

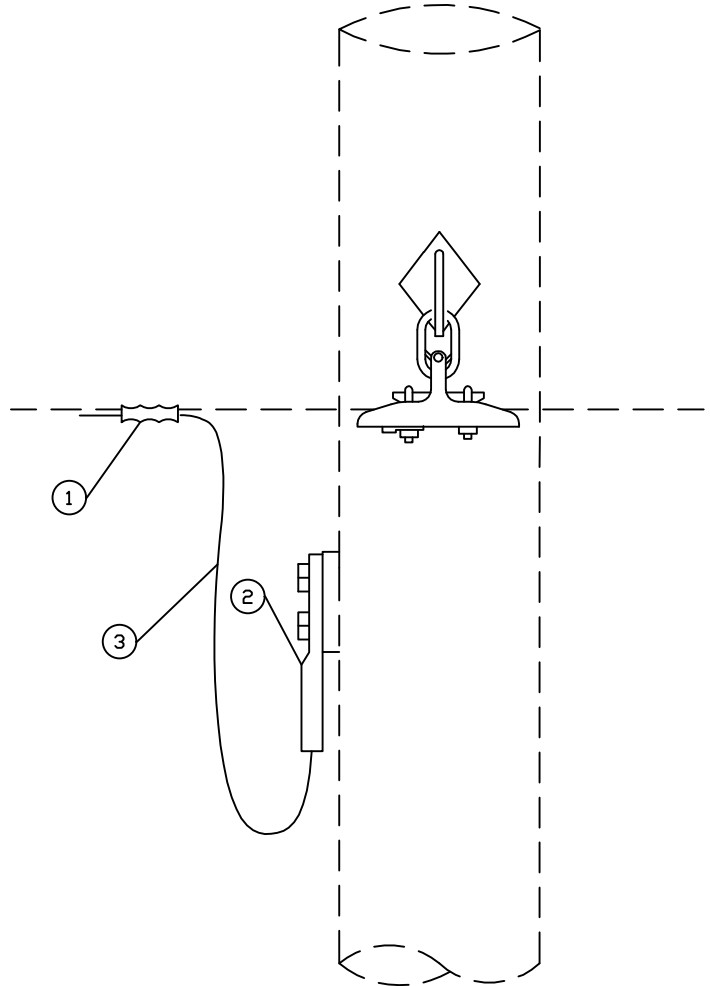
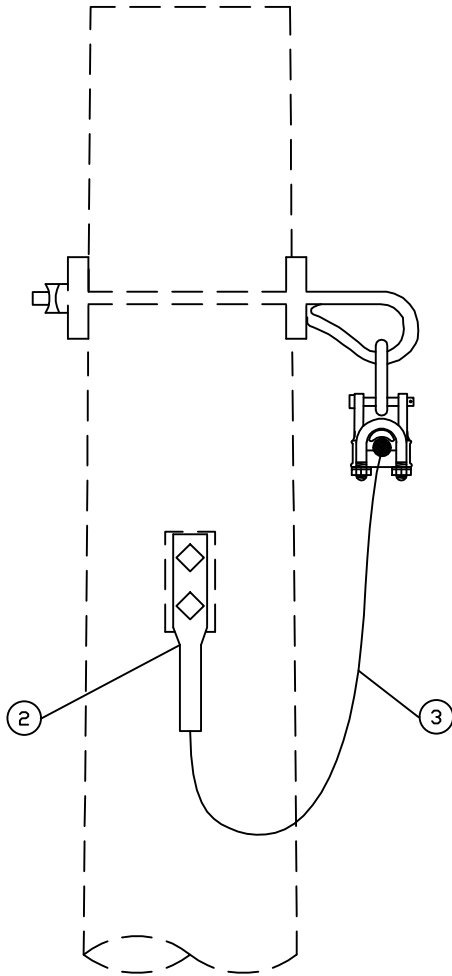
DWG. REF.	LIST OF MATERIALS		GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA					
	ea.	DESCRIPTION	STEEL POLE/CROSSARM THRU VANG					
				DWN. JLS		DATE: 04/01/19	DWG. NO. TV-1	
				CKD. KW		APPD. KW		
				SCALE: N.T.S.				
				DATE	DATE	REVISION		

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		GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA		
	ea.	DESCRIPTION		ABC STONE BACKFILL FOUNDATION	
*	ABC STONE BACKFILL				
			DWN. JLS	DATE: 02/27/19	
			CKD. KW	APPD. KW	
			SCALE: N.T.S.		
			DATE	DATE	REVISION
		* SIGNIFIES AS REQUIRED			
					DWG. NO. TMF-EMB

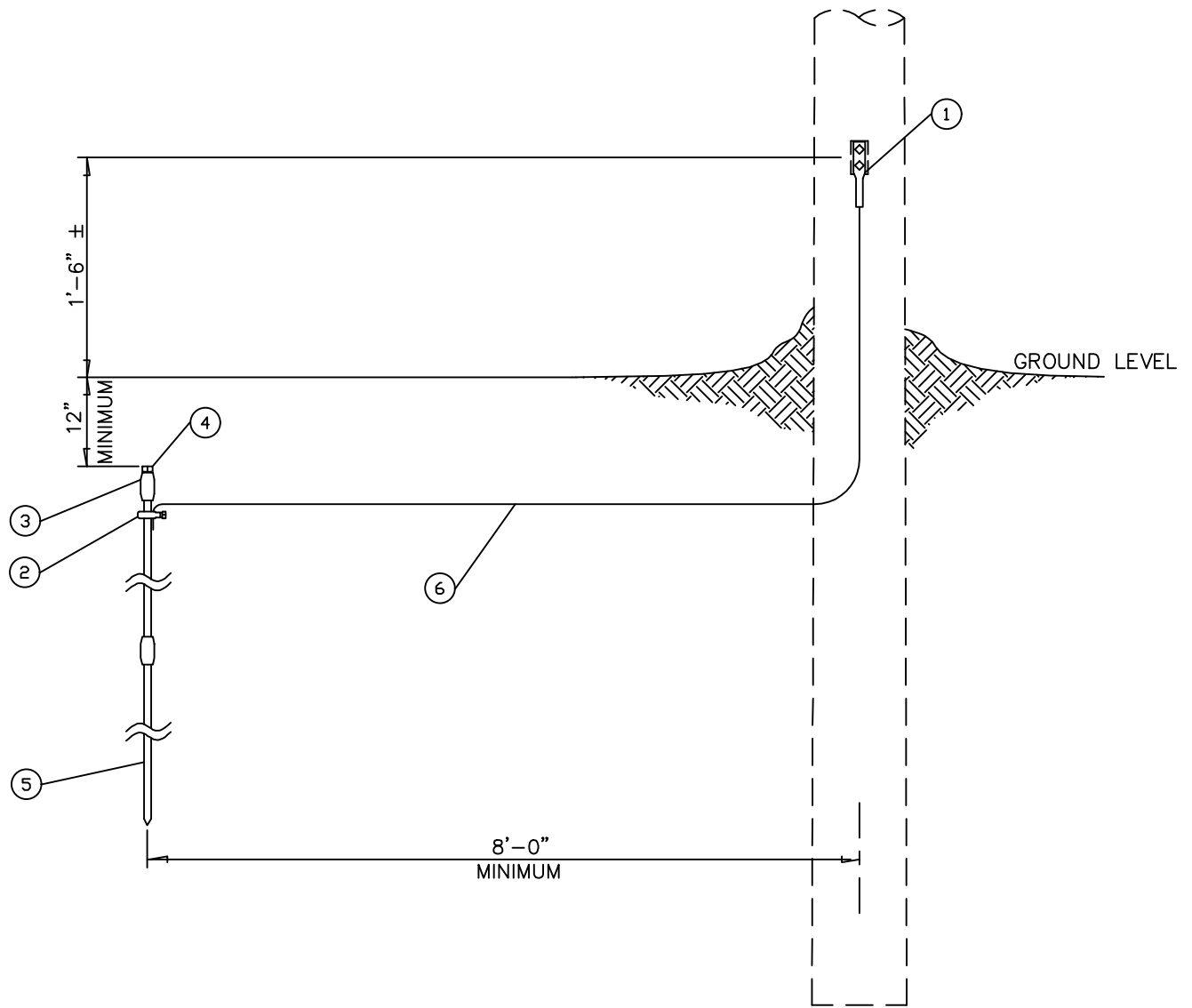


DWG. REF.	LIST OF MATERIALS	
	ea.	DESCRIPTION
1	1	CONNECTOR - COMPRESSION, BI-METALLIC, 7 No. 9 ALUMOWELD TO #4
2	1	CONNECTOR - COMPRESSION, NEMA 2-HOLE FOR #4
3	5	GROUND - WIRE, #4 (ft.)

GREENVILLE UTILITIES COMMISSION
GREENVILLE, NORTH CAROLINA


OVERHEAD GROUND WIRE GROUNDING
ASSEMBLY - STEEL POLE

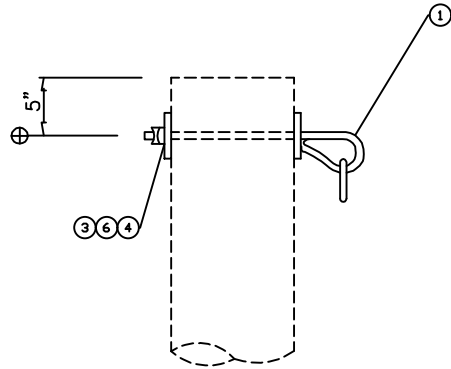
DWN. JLS		DATE: 03/13/19		DWG. NO. TM-9X(S)
CKD. KW		APPD. KW		
SCALE: N.T.S.				
DATE		DATE	REVISION	



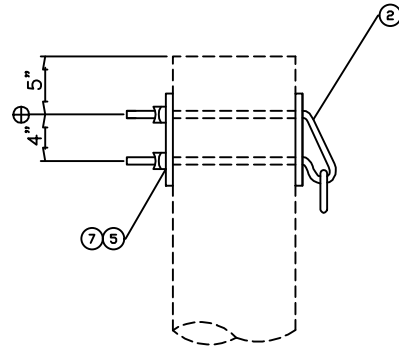
NOTES:

- 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 DESCRIPTION	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA			
	SP	R			DRIVEN GROUND ROD GROUNDING ASSEMBLY - STEEL POLE		
1	1	-	CONNECTOR - COMPRESSION, NEMA 2 HOLE #4		DWN. JLS	DATE: 03/13/19	
2	1	-	GROUND - ROD CLAMP, GALVANIZED, 5/8"	CKD. KW	APPD. KW		
3	1	1	GROUND - ROD COUPLING, GALVANIZED, 5/8" THREADED	SCALE: N.T.S.			
4	1	-	GROUND - DRIVING STUD, STEEL, 5/8"	DATE	DATE	REVISION	
5	1	1	GROUND - ROD, GALVANIZED, 5/8" x 10'-0"				
6	15	-	GROUND - WIRE, #4 (ft.)				



SINGLE BOLT O.H.G.W. SUPPORT
TM-6A(S)




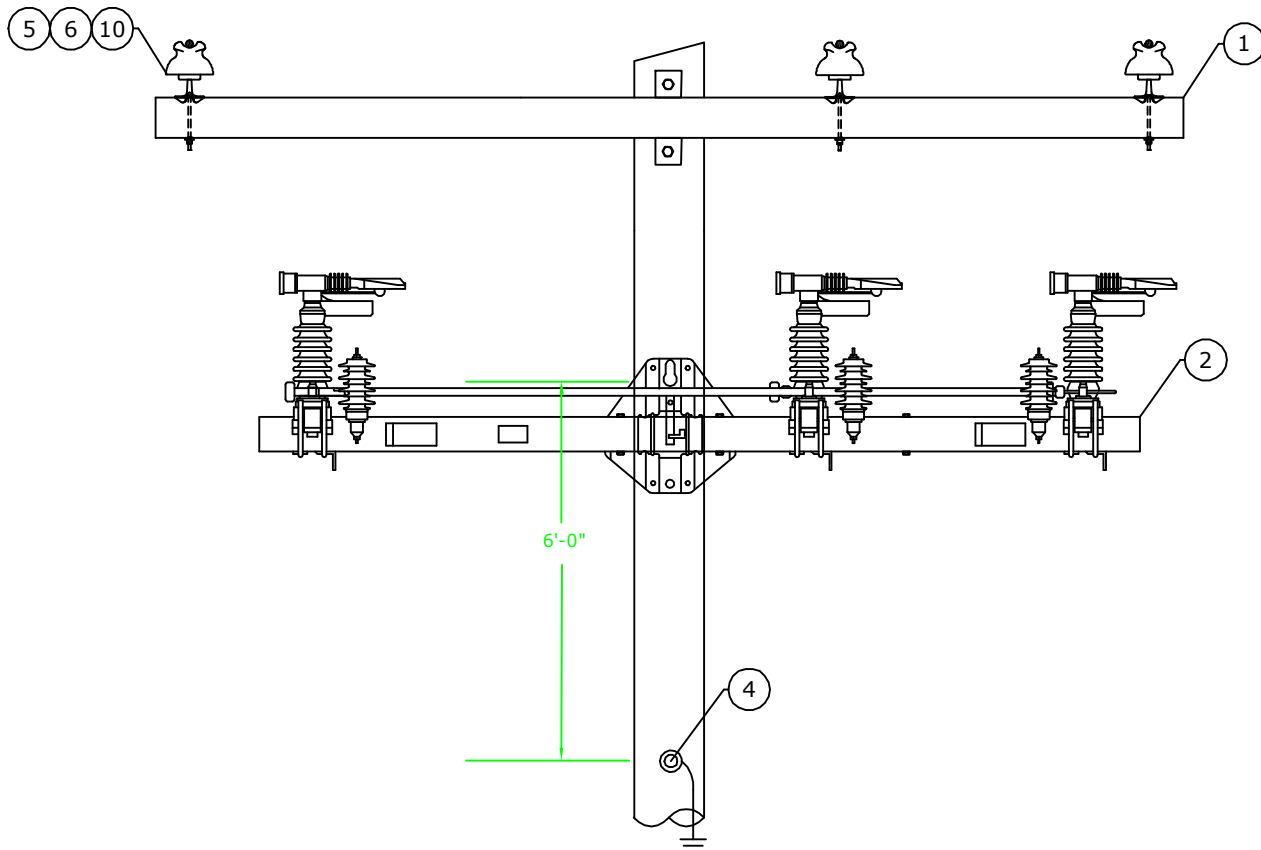
DOUBLE BOLT O.H.G.W. SUPPORT
TM-6B(S)

NOTES

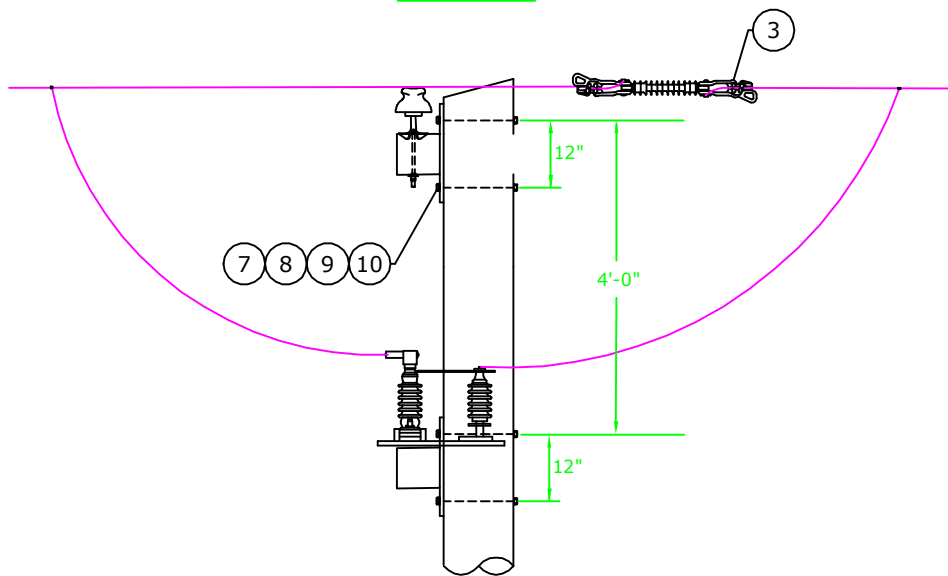
1. Designated strength limitations of the overhead groundwire support assemblies are:

	Allowable Vertical Load
TM-6A(S)	5,000 lbs.
TM-6B(S)	5,000 lbs.

DWG. REF.	TM-6		LIST OF MATERIALS DESCRIPTION	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA			
	A	B			O.H.G.W. SUPPORT ASSEMBLY FOR STEEL POLES		
1	1	-	SUPPORT, SINGLE BOLT OHGW, 3/4"		DWN. JLS CKD. KW SCALE: N.T.S. DATE	DATE: 02/26/19	
2	-	1	SUPPORT, DOUBLE BOLT OHGW, 5/8"	APPD. KW			
3	1	-	WASHER, SQUARE, 4" x 4" x 1/4" w/ 15/16"	DATE			
4	1	-	NUT, 3/4"	REVISION			
5	-	2	NUT, 5/8"	DATE			
6	1	-	SPRING LOCK WASHER, 3/4"	REVISION			
7	-	2	SPRING LOCK WASHER, 5/8"	DATE			




FRONT VIEW



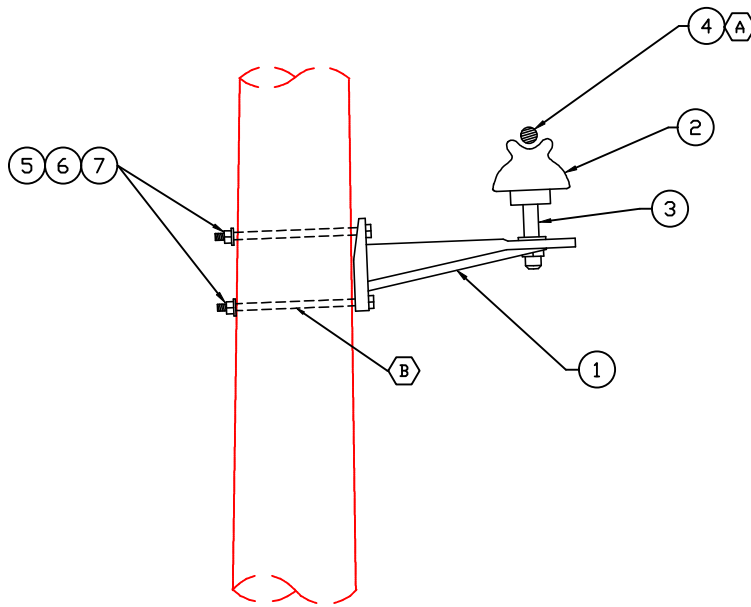
SIDE VIEW

NOTES:

- 1) FIBERGLASS CROSSARM BRACE NOT SHOWN IN DRAWING.


DWG. REF.	LIST OF MATERIALS				GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA				
	ea.	DESCRIPTION	ITEM	DET.	 HORIZONTAL GANG SWITCH DETAIL				
1	1	10' DISTRIBUTION CROSSARM DE	-						DWN. JLS DATE: 11/23/21 CKD. KW APPD. KW
2	1	15 KV HORIZONTAL GANG SWITCH	-						
3	3	DEAD END ASSEMBLY, SECONDARY	-		SCALE: N.T.S. PAGE 1 OF 1 DATE REVISION DATE REVISION				
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"	-						

SIDE VIEW

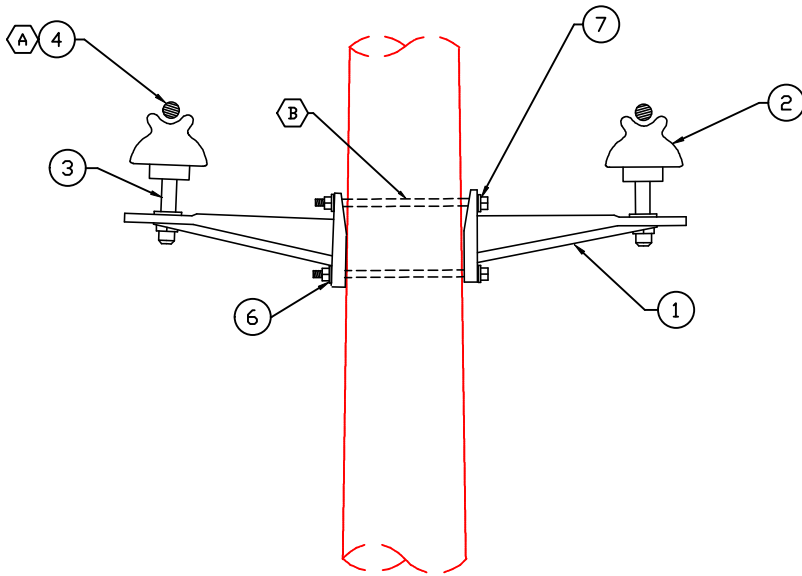


NOTES:

- (A) SELECT INSULATOR & WRAP LOCK APPROPRIATE FOR WIRE SIZE.
- (B) SELECT BOLT LENGTH APPROPRIATE FOR POLE DIAMETER


DWG. REF.	QTY	LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA				
		DESCRIPTION	 MIF BRACKET ASSEMBLY				
1	1	BRACKET, 18" FIBERGLASS					DWN. DRB CKD. JLS SCALE: N.T.S. DATE
2	1	INSULATOR, PIN TYPE	APPD. JLS				
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"					
					REVISION		

SIDE VIEW

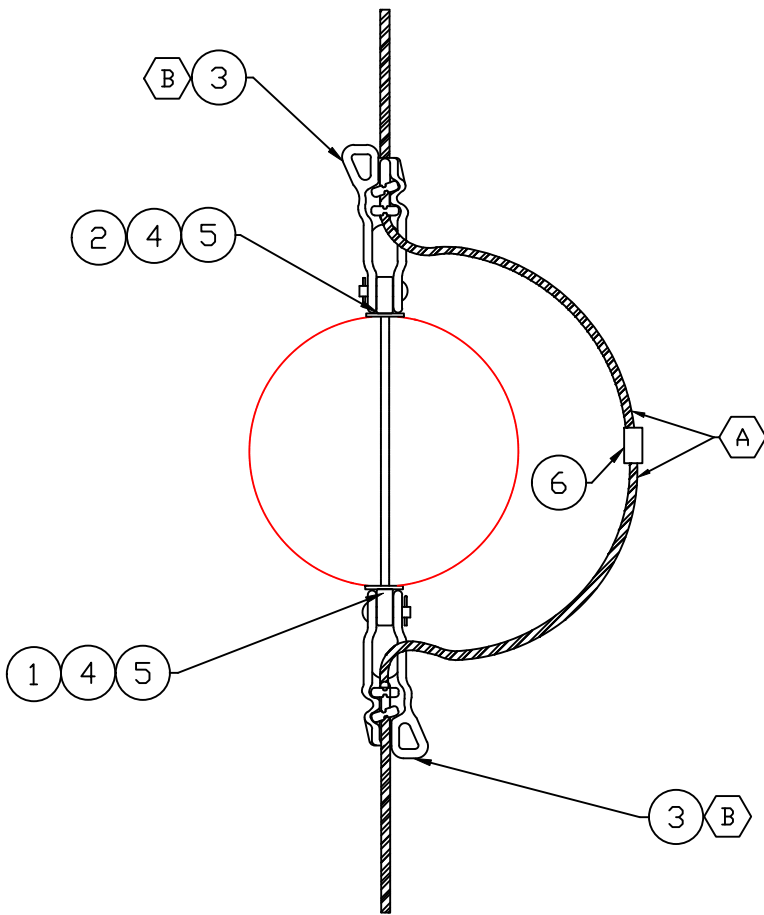


NOTES:

- (A) SELECT INSULATOR & WRAP LOCK APPROPRIATE FOR WIRE SIZE.
- (B) SELECT BOLT LENGTH APPROPRIATE FOR POLE DIAMETER



DWG. REF.	QTY	LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA			
		DESCRIPTION	 DOUBLE MIF BRACKET ASSEMBLY			
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"				

OVERHEAD VIEW

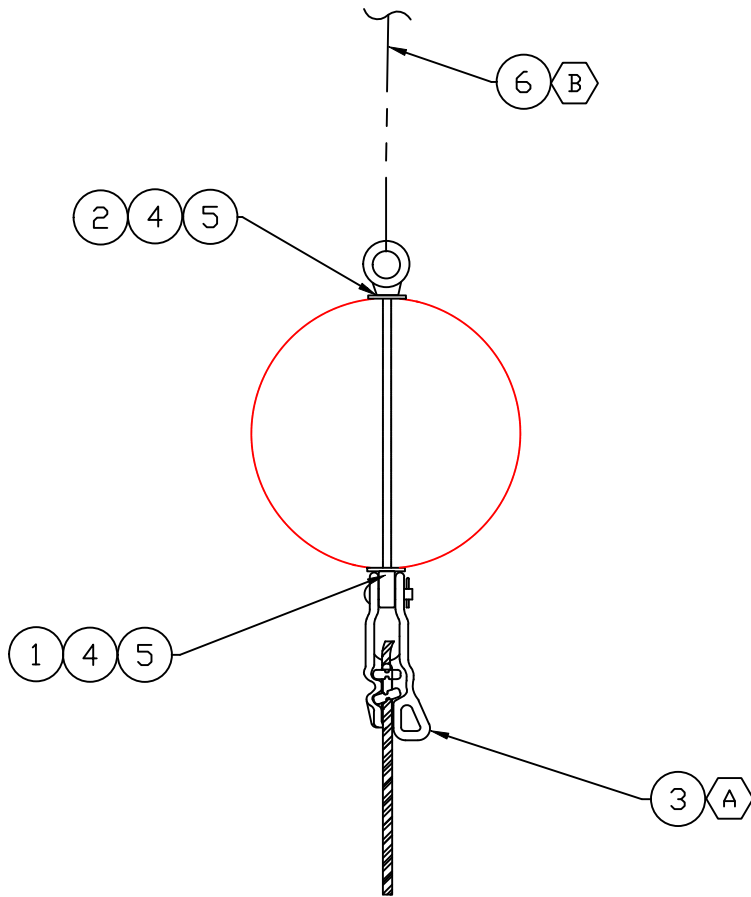


NOTES:

- Ⓐ MEASURE AND TRIM EXCESS NEUTRAL CONDUCTORS AS REQUIRED AND CONNECT ENDS WITH SQUEEZON/AMPACT, ITEM (6).
- Ⓑ SELECT DEADEND SHOE & SQUEEZON/AMPACT APPROPRIATE FOR WIRE SIZE.



DWG. REF.	QTY	LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA				
		DESCRIPTION		NEUTRAL DOUBLE DEADEND			
1	1	EYE BOLT, 5/8" X LENGTH"			DWN. DRB CKD. JLS SCALE: N.T.S. DATE		
2	1	5/8" EYE NUT					
3	2	DEADEND SHOE					
4	2	WASHER, SQUARE, 4" X 4" X 13/16" HOLE					
5	2	SPRING LOCK WASHER, 5/8"					
6	1	SQUEEZON/AMPACT (REQUIRED SIZE)	DATE				

OVERHEAD VIEW

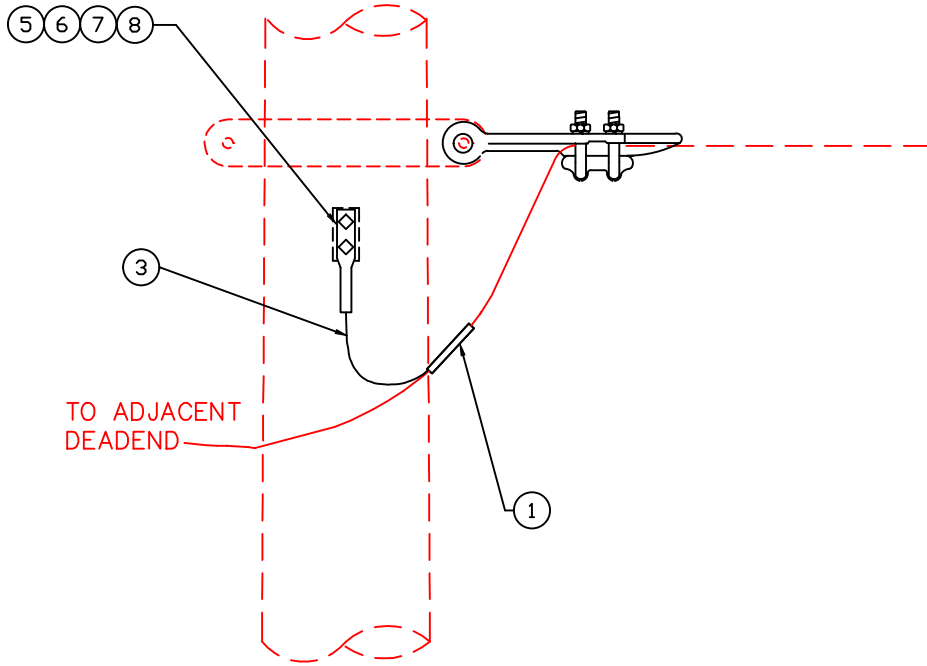


NOTES:

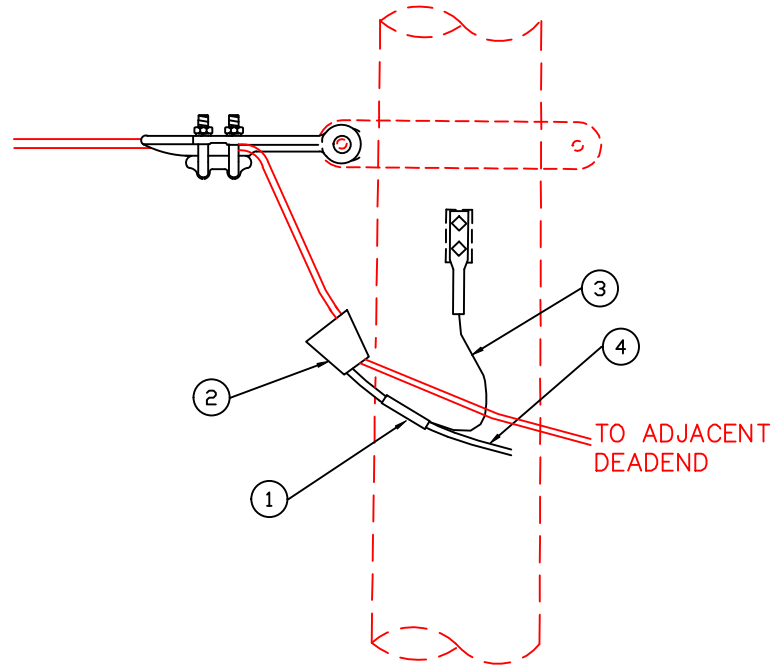
- Ⓐ SELECT DEADEND SHOE APPROPRIATE FOR WIRE SIZE.
- Ⓑ REFERENCE DWG TG-21 FOR SINGLE DOWN GUY ASSEMBLY.


DWG. REF.	QTY	LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA				
		DESCRIPTION		NEUTRAL DEADEND			
1	1	EYE BOLT, 5/8" X LENGTH"			DWN. DRB DATE: 06/03/2022 CKD. JLS APPD. JLS SCALE: N.T.S. DATE DATE REVISION		
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					

NG-1/0 SUB-ASSY

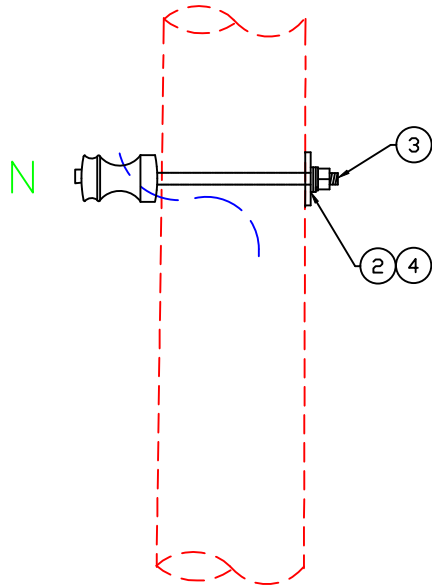


NG-336 SUB-ASSY

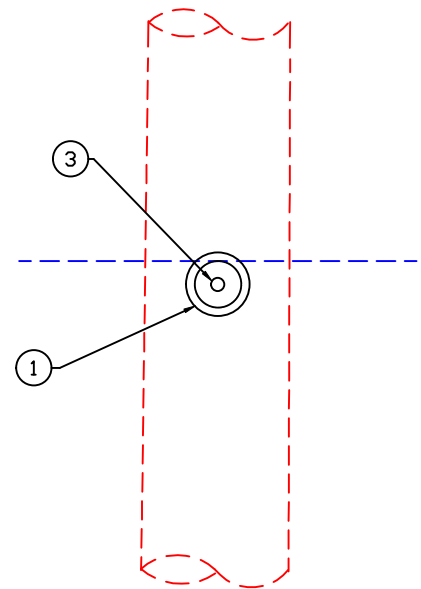


DWG. REF.	NG-1/0 QTY	NG-336 QTY	LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA			
			DESCRIPTION		NEUTRAL GROUNDING ASSEMBLY		
1	1	1	SQUEEZEON CONNECTOR #2		DWN. DRB CKD. JLS SCALE: N.T.S. DATE	DATE: 06/01/2022	
2		1	AMPACT CONNECTOR 336-1/0	APPD. JLS			
3	*	*	WIRE, #4 SOFT DRAWN				
4		*	WIRE 1/0 ACSR				
5	1	1	#4 COPPER 2-HOLE NEMA PAD	DATE	DATE	REVISION	
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				

FRONT VIEW




SIDE VIEW

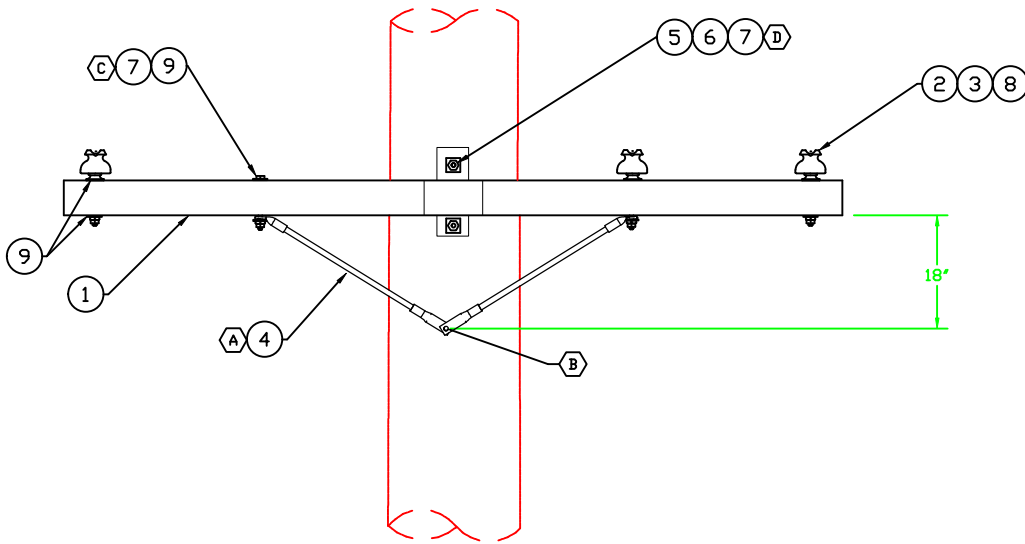


NOTE:

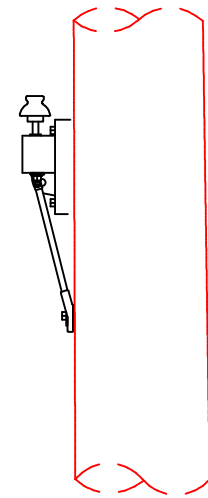
- 1. PREFORM IS USED TO SECURE NEUTRAL CONDUCTOR ONTO SPOOL INSULATOR. PREFORM NOT SHOWN.
- 2. ITEM(4) IS NOT USED ON WOODEN POLES.

DWG. REF.	QTY	LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA																								
		DESCRIPTION		NEUTRAL SPOOL ASSEMBLY																							
1	1	INSULATOR, SPOOL "J151"		<table border="1"> <tr> <td colspan="2">DWN. DRB</td> <td colspan="2">DATE: 08/18/2022</td> <td rowspan="5">DWG. NO.</td> </tr> <tr> <td colspan="2">CKD. JLS</td> <td colspan="2">APPD. JLS</td> </tr> <tr> <td colspan="4">SCALE: N.T.S.</td> </tr> <tr> <td>DATE</td> <td></td> <td>DATE</td> <td>REVISION</td> </tr> <tr> <td></td> <td></td> <td>5/24/2023</td> <td>1</td> </tr> </table>			DWN. DRB		DATE: 08/18/2022		DWG. NO.	CKD. JLS		APPD. JLS		SCALE: N.T.S.				DATE		DATE	REVISION			5/24/2023	1
DWN. DRB		DATE: 08/18/2022					DWG. NO.																				
CKD. JLS		APPD. JLS																									
SCALE: N.T.S.																											
DATE		DATE	REVISION																								
		5/24/2023	1																								
2	1	WASHER, SQUARE, 2 1/4"																									
3	1	SPOOL BOLT X REQ. LENGTH																									
4	1	SPRING LOCK WASHER, 5/8"																									
	1	PREFORM WRAPLOCK (VARIES BY WIRE SIZE)																									

NS-1




SIDE VIEW



NOTES:

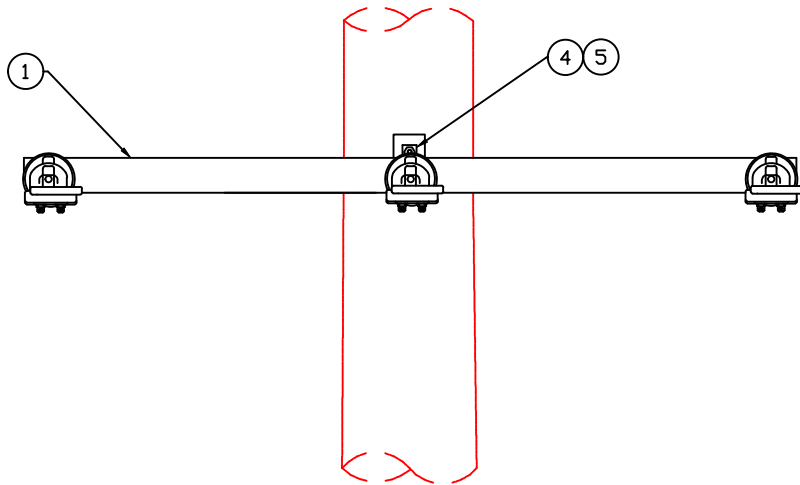
- 1) INSULATOR ITEM(2) & ITEM(3) WILL VARY BASED ON WIRE SIZE.
- (A) MOUNT BRACE USING EXISTING HOLES IN CROSSARM.
- (B) HOLE TO BE FIELD DRILLED AT SPECIFIED LOCATION.
- (C) INSTALL 4 X 4 SQUARE WASHER, ITEM(7), ON TOP AND BOTTOM OF CROSSARM.
- (D) USE 3 X 3 CURVED WASHERS (GUC#204450) INSTEAD OF ITEM(7) WHEN MOUNTING CROSSARM TO A WOODEN POLE.

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	11	WASHER, SQ. 4 X 4 X 13/16"
8	3	CROSSARM PINS
9	1	5/8" x 8" BOLT

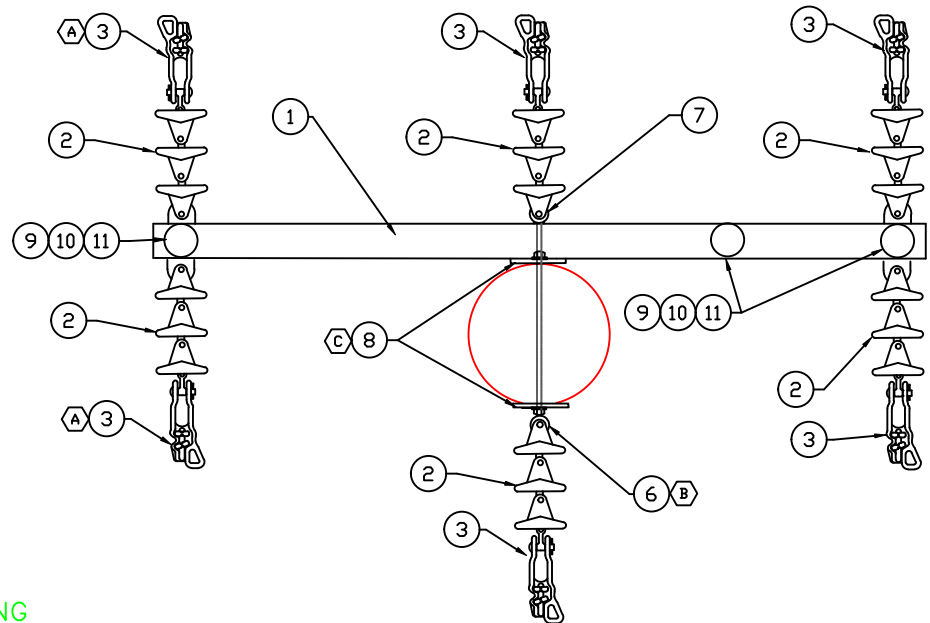
GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA	
	10' TANGENT DISTRIBUTION CROSSARM
DWN. DRB	DATE: 5/27/2022
CKD. JLS	APPD. JLS
SCALE: N.T.S.	
DATE	DATE
	REVISION
	10/31/23
	1

DWG. NO.
XRM-10A

FRONT VIEW




OVERHEAD VIEW



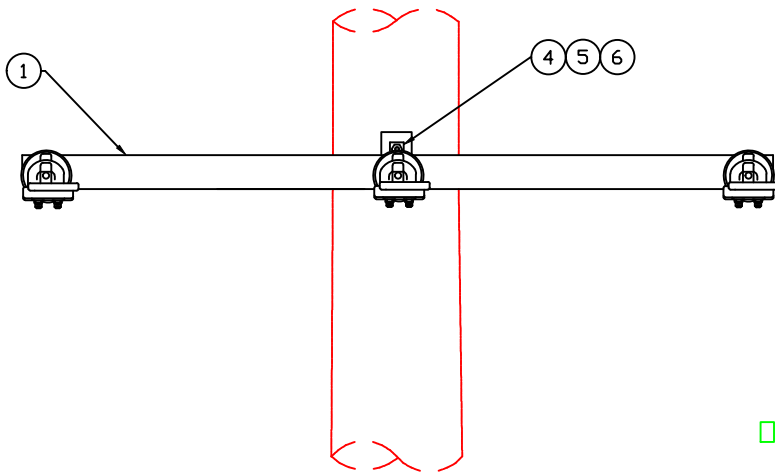
NOTES:

- 1. AMPACTS NOT SHOWN IN DRAWING
- 2. ITEM(5) NOT REQUIRED WHEN INSTALLING ON WOODEN POLE
- A SELECT DEADEND SHOE APPROPRIATE FOR WIRE SIZE.
- B EYEBOLT TO BE INSTALLED IN TOP HOLE OF CROSSARM BRACKET, AS SHOWN.
- C USE 3 X 3 CURVED WASHER (GUC#204450) INSTEAD OF ITEM(8) WHEN MOUNTING CROSSARM TO A WOODEN POLE.

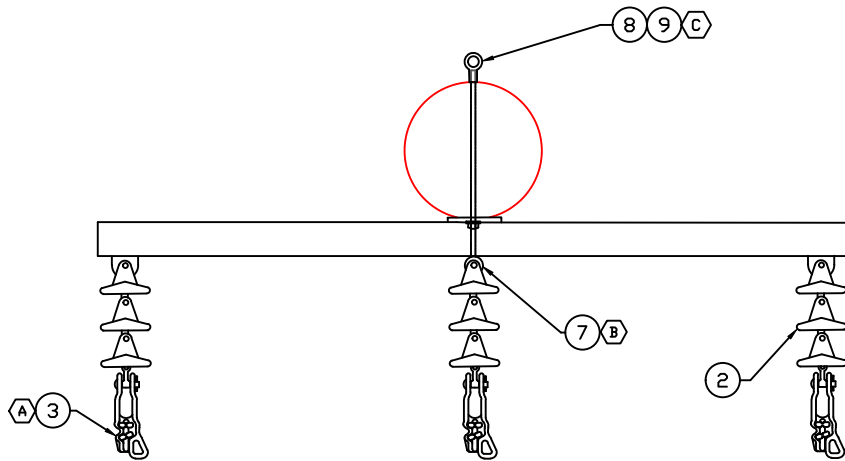
DWG. REF.	QTY	LIST OF MATERIALS DESCRIPTION
1	1	ARMS, DE FIBERGLASS
2	6	INSULATORS, POLY DE BELLS
3	6	DEADEND SHOE
4	1	BOLT, MACHINE 5/8" X LENGTH"
5	2	SPRING LOCK WASHER, 5/8"
6	1	EYE BOLT, 5/8" X LENGTH"
7	1	5/8" EYE NUT
8	2	4 X 4 SQUARE WASHERS
9	3	15 KV PIN INSULATOR
10	3	PREFORMS, WRAP LOCK
11	3	PIN SHANK, LONG CROSS
	*	CONN. AMPACT (VARIES BY WIRE SIZE)

GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA	
	10' DOUBLE DEADEND DISTRIBUTION CROSSARM
DWN. DRB	DATE: 5/27/2023
CKD. JLS	APPD. JLS
SCALE: N.T.S.	
DATE	DATE
	REVISION
	10/31/23
	1
DWG. NO. XRM-10DDE	

*QUANTITY VARIES. USE AS NEEDED



OVERHEAD VIEW



NOTES:

- (A) SELECT DEADEND SHOE APPROPRIATE FOR WIRE SIZE.
- (B) EYEBOLT TO BE INSTALLED IN TOP HOLE OF CROSSARM BRACKET, AS SHOWN.
- (C) GUY ASSEMBLY NOT SHOWN. SEE DWG TG-21 FOR REFERENCE.

DWG. REF.	XRM-10B QTY	LIST OF MATERIALS	GREENVILLE UTILITIES COMMISSION GREENVILLE, NORTH CAROLINA					
		DESCRIPTION	10' DEADEND DISTRIBUTION CROSSARM					
1	1	ARMS, 10' DE FIBERGLASS		DWN. DRB CKD. JLS SCALE: N.T.S.		DATE: 5/27/2022 APPD. JLS		DWG. NO. XRM-10DE
2	3	INSULATORS, POLY DE BELLS						
3	3	DEADEND SHOE						
4	1	BOLT, MACHINE 5/8" X LENGTH"	DATE	DATE	REVISION			
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						