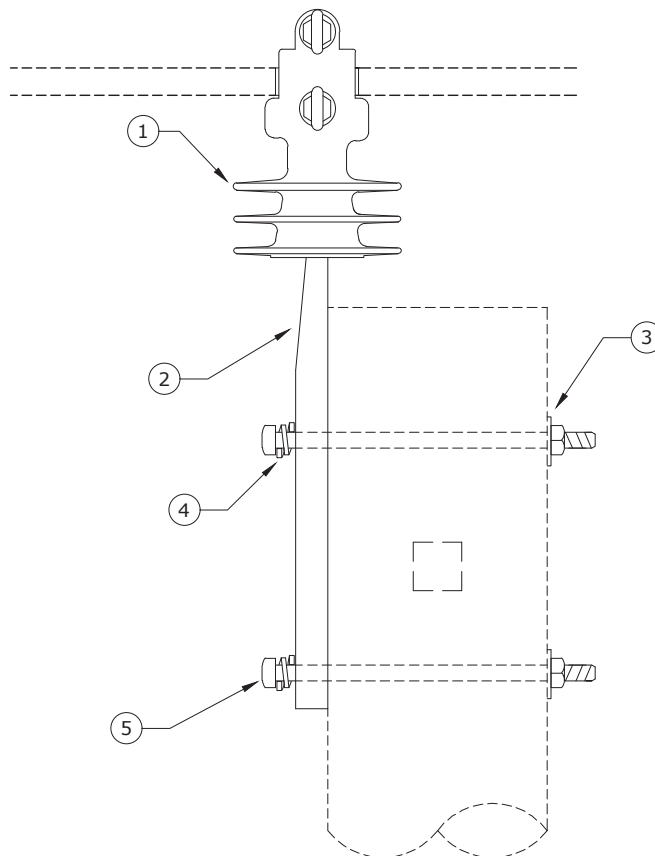
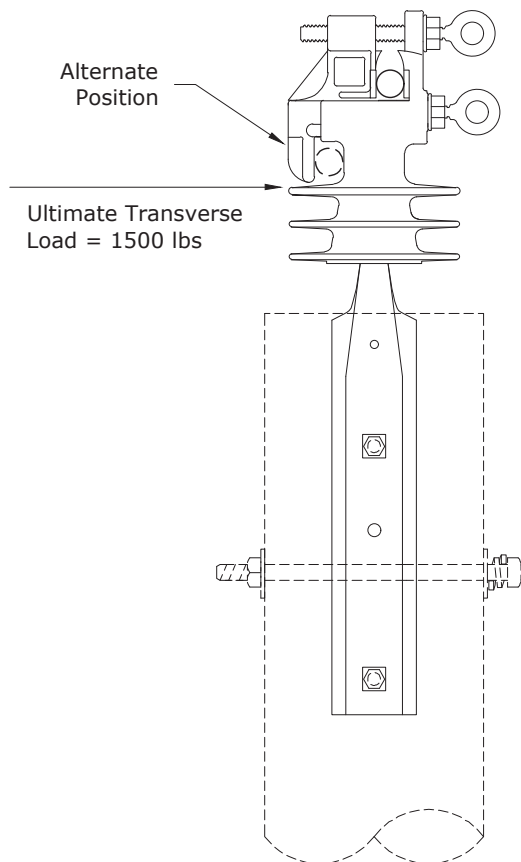


Installation:

- 1st tighten the bottom bolt until ring breaks off
- 2nd tighten the top bolt until ring breaks off
- Remove bolts with socket stick
- Do not reuse bolts after rings have broken off



- Notes:**
1. Ultimate transverse load = 1,500 lbs. Ultimate longitudinal load = 1,200 lbs.
 2. Replacement vise-top insulator bolts S/N 2888.

ITEM NO.	DESCRIPTION	A1.01
		QTY.
1	Insulator, Vise-Top, Polymer ✱	1
2	Pin, Pole Top ✱	1
3	Washer, Curved, Square, 3" x 3" x 3/8" Thick x 13/16" Hole	2
4	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	2
5	Bolt, Machine, 5/8" x 12", Galv., 12,400 lbs. Ultimate Tensile ✱	2



CONSTRUCTION STANDARDS

BASIC UNITS
POLE-TOP PIN
SINGLE VISE-TOP INSULATOR

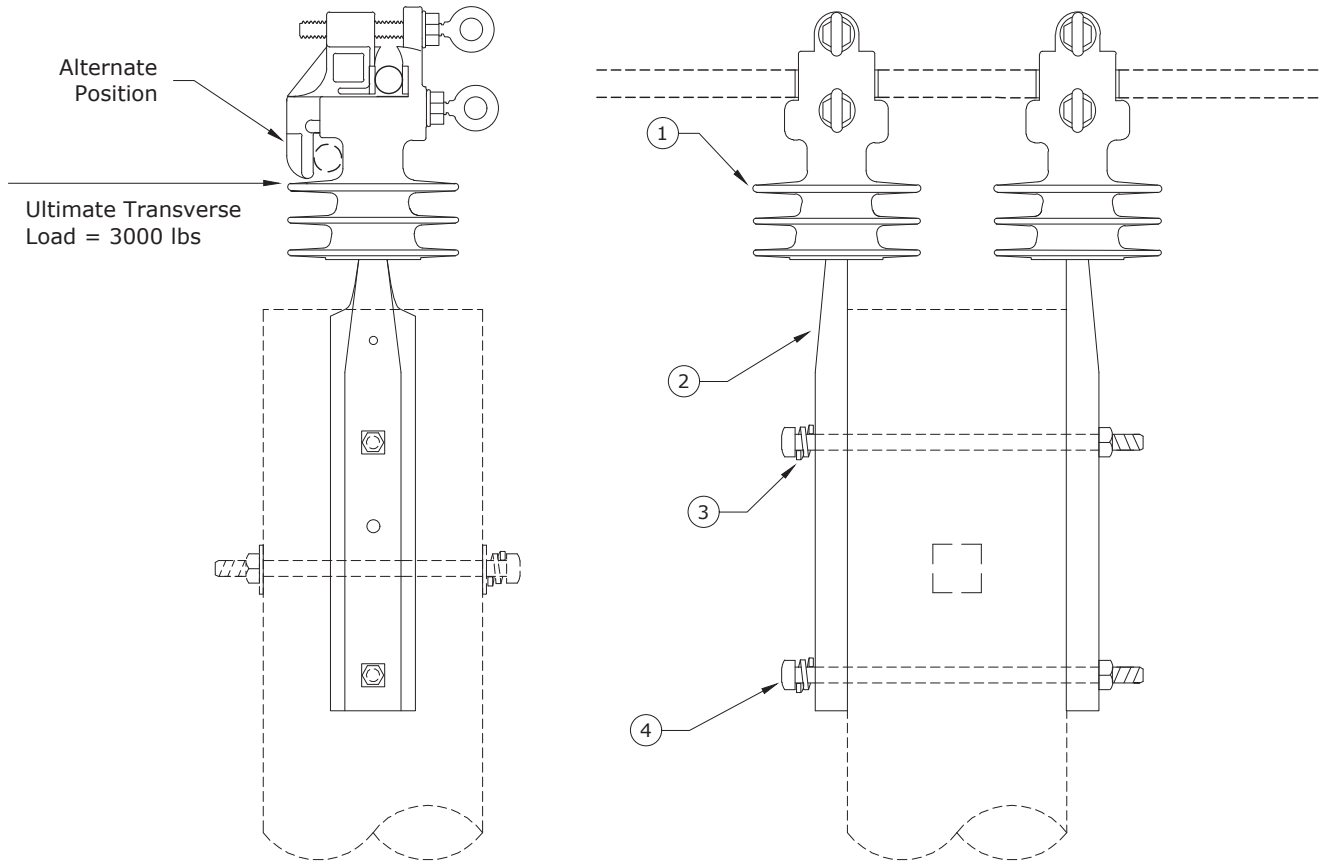
PAGE:
1 of 1

A1.01

△			
△			


Installation:

- 1st tighten the bottom bolt until ring breaks off
- 2nd tighten the top bolt until ring breaks off
- Remove bolts with socket stick
- Do not reuse bolts after rings have broken off



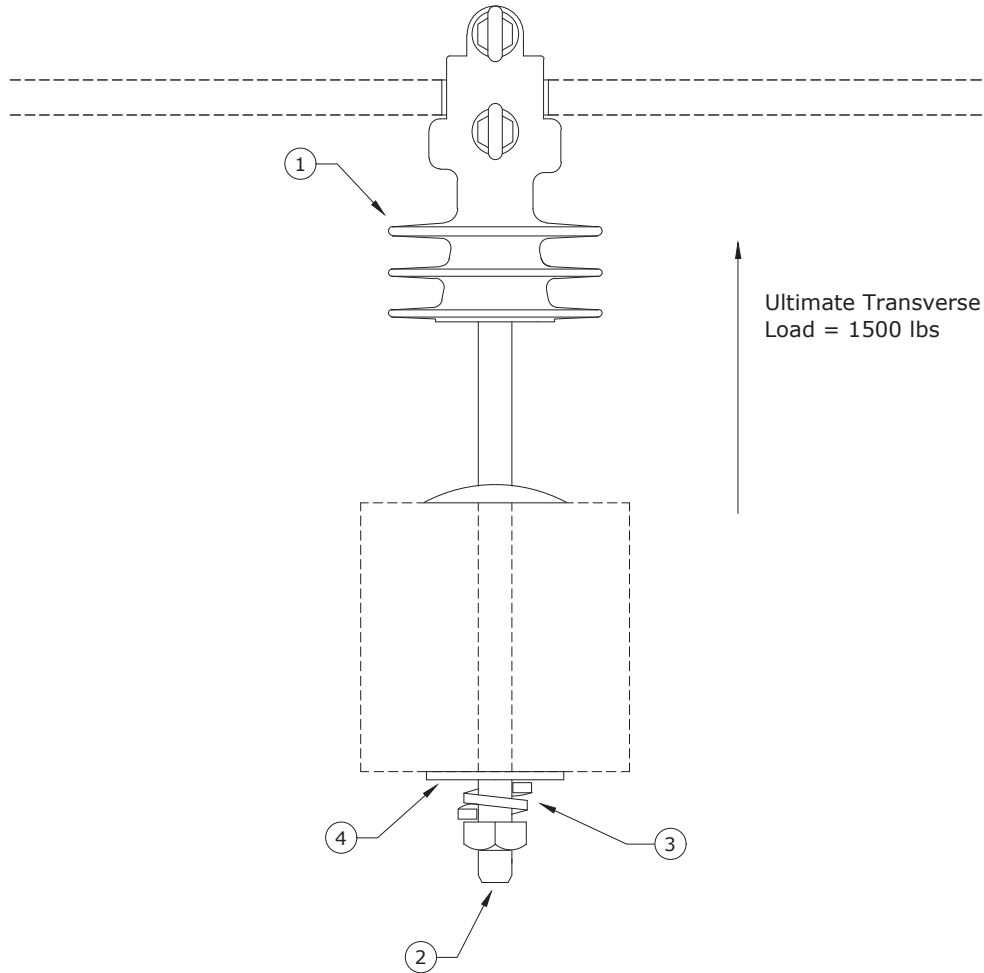
- Notes:**
1. Ultimate transverse load = 3,000 lbs. Ultimate longitudinal load = 2,400 lbs.
 2. Replacement vise-top insulator bolts S/N 2888.

ITEM NO.	DESCRIPTION	A2.01
		QTY.
1	Insulator, Vise-Top, Polymer ✱	2
2	Pin, Pole Top ✱	2
3	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	2
4	Bolt, Machine, 5/8" x 14", Galv., 12,400 lbs. Ultimate Tensile ✱	2

		<h2>CONSTRUCTION STANDARDS</h2> <p>BASIC UNITS POLE-TOP PIN DOUBLE VISE-TOP INSULATOR</p>		<div> <div>⚠</div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>	
				<div> <div>⚠</div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>	
PAGE: 1 of 1		<h1>A2.01</h1>			


Installation:

- 1st tighten the bottom bolt until ring breaks off
- 2nd tighten the top bolt until ring breaks off
- Remove bolts with socket stick
- Do not reuse bolts after rings have broken off



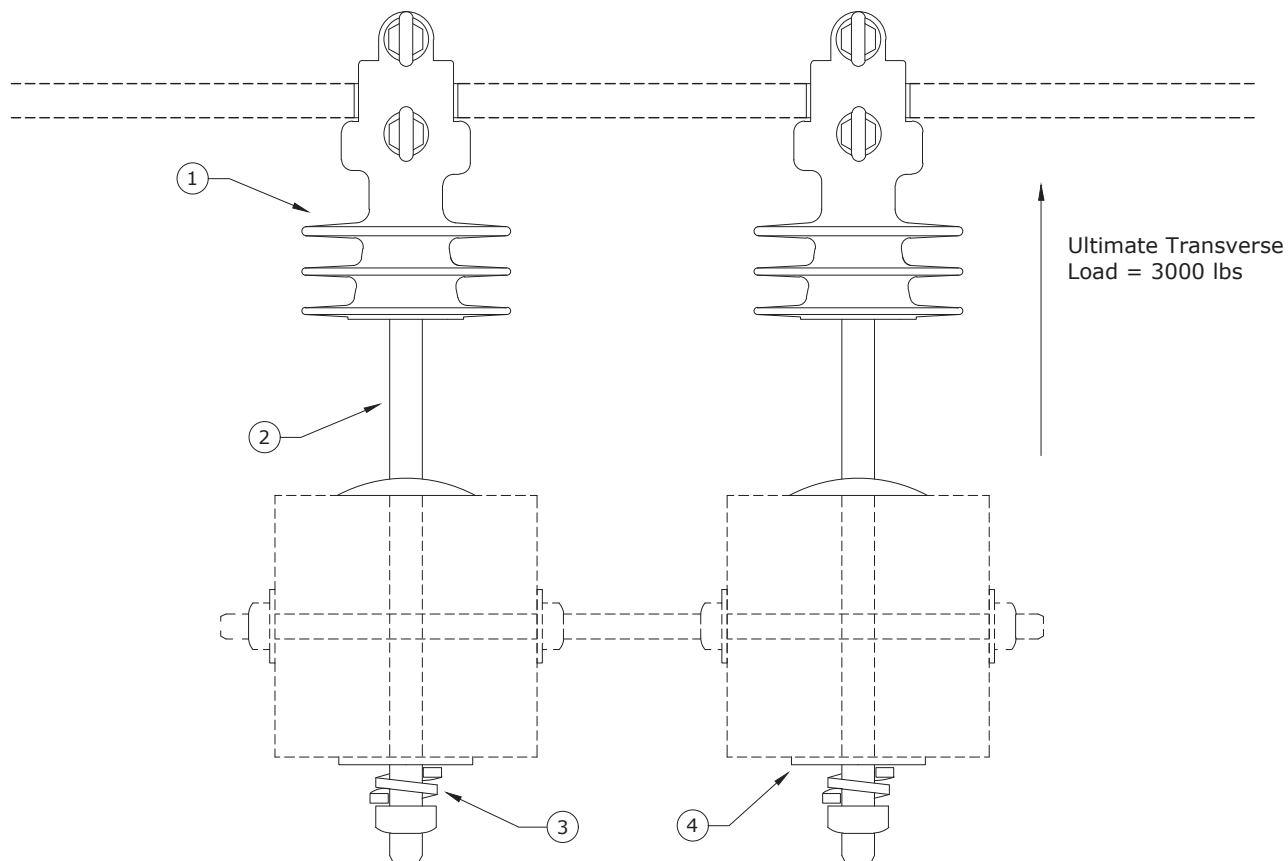
Notes: 1. Ultimate longitudinal load = 1,000 lbs.

ITEM NO.	DESCRIPTION	A1.011	
		QTY.	
1	Insulator, Vise-Top, Polymer ✱	1	
2	Pin, Crossarm ✱	1	
3	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	1	
4	Washer, Square Flat, 5/8", 2 1/4" x 2 1/4"	1	

	CONSTRUCTION STANDARDS BASIC UNITS SINGLE VISE-TOP INSULATOR ON CROSSARM	REVISIONS			
		△	DATE	ENGR	OPS
		△			
PAGE: 1 of 1	A1.011				


Installation:

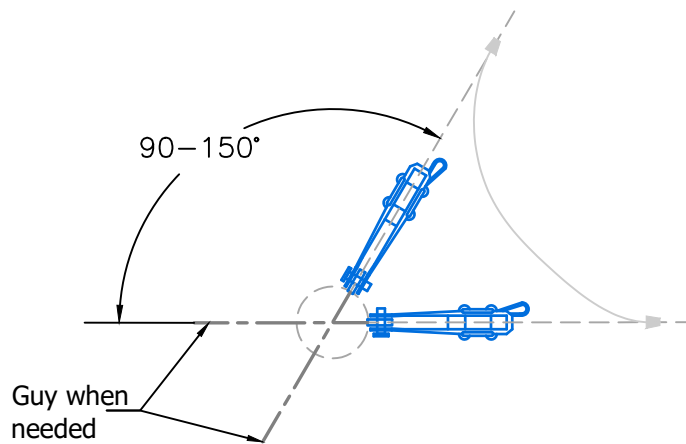
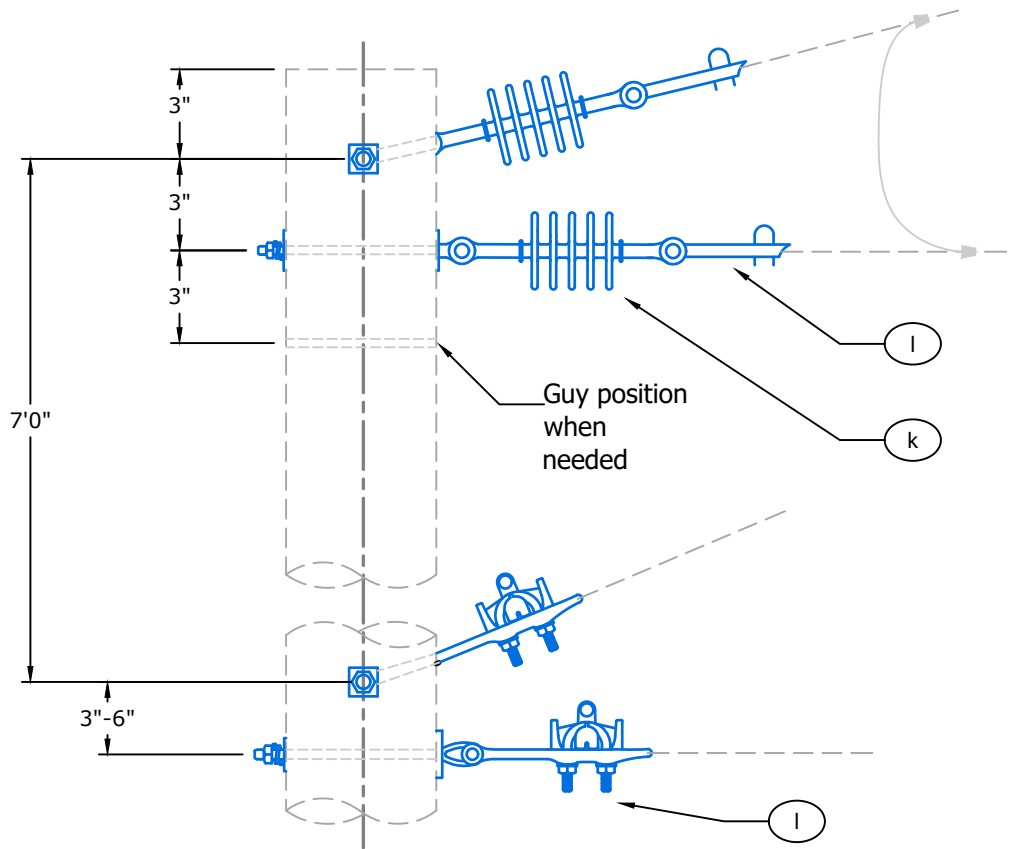
- 1st tighten the bottom bolt until ring breaks off
- 2nd tighten the top bolt until ring breaks off
- Remove bolts with socket stick
- Do not reuse bolts after rings have broken off



Notes: 1. Ultimate longitudinal load = 2,000 lbs.

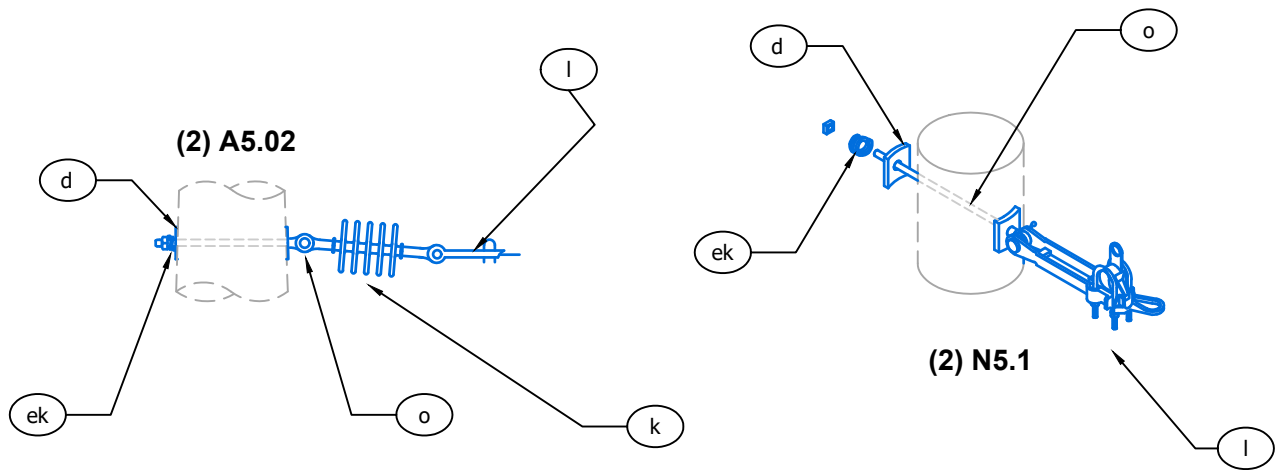
ITEM NO.	DESCRIPTION	A2.021	
		QTY.	
1	Insulator, Vise-Top, Polymer ✱	2	
2	Pin, Crossarm ✱	2	
3	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	2	
4	Washer, Square Flat, 5/8", 2 1/4" x 2 1/4"	2	

	CONSTRUCTION STANDARDS		REVISIONS		
			△	DATE	ENGR OPS
	BASIC UNITS DOUBLE VISE-TOP INSULATORS ON CROSSARMS				
PAGE: 1 of 1		A2.021			



CONSTRUCTION STANDARDS OVERHEAD ONE-PHASE PRIMARY DOUBLE DEADEND SM ANGLE

REVISIONS			
△/R	DATE	ENGR	OPS
A	6/24/25	JJW	OPS



JUMPERS AND CONNECTORS AS REQUIRED

<u>A4.1</u>			
ITEM	QTY	(2) A5.02 - DESCRIPTION	ITEM#
d	4	WASHER, CURVED, SQUARE, CAST, 3" X 3" X 3/8" THICK X 13/16" HOLE	
k	2	INSULATOR, SUSP. 15KV CLEVIS	
o	2	BOLT, EYE 5/8" X 14"	
l	2	CLAMP OR AUTO, STRAIN #4	
ek	2	WASHER, SPRING, 5/8" OR LOCK NUT	
ITEM	QTY	(2) N5.1 - DESCRIPTION	ITEM#
d	4	WASHER, CURVED, SQUARE, CAST, 3" X 3" X 3/8" THICK X 13/16" HOLE	
ek	2	WASHER, SPRING, 5/8" OR LOCK NUT	
o	2	BOLT, EYE 5/8" X 14"	
l	2	CLAMP OR AUTO, STRAIN #4	

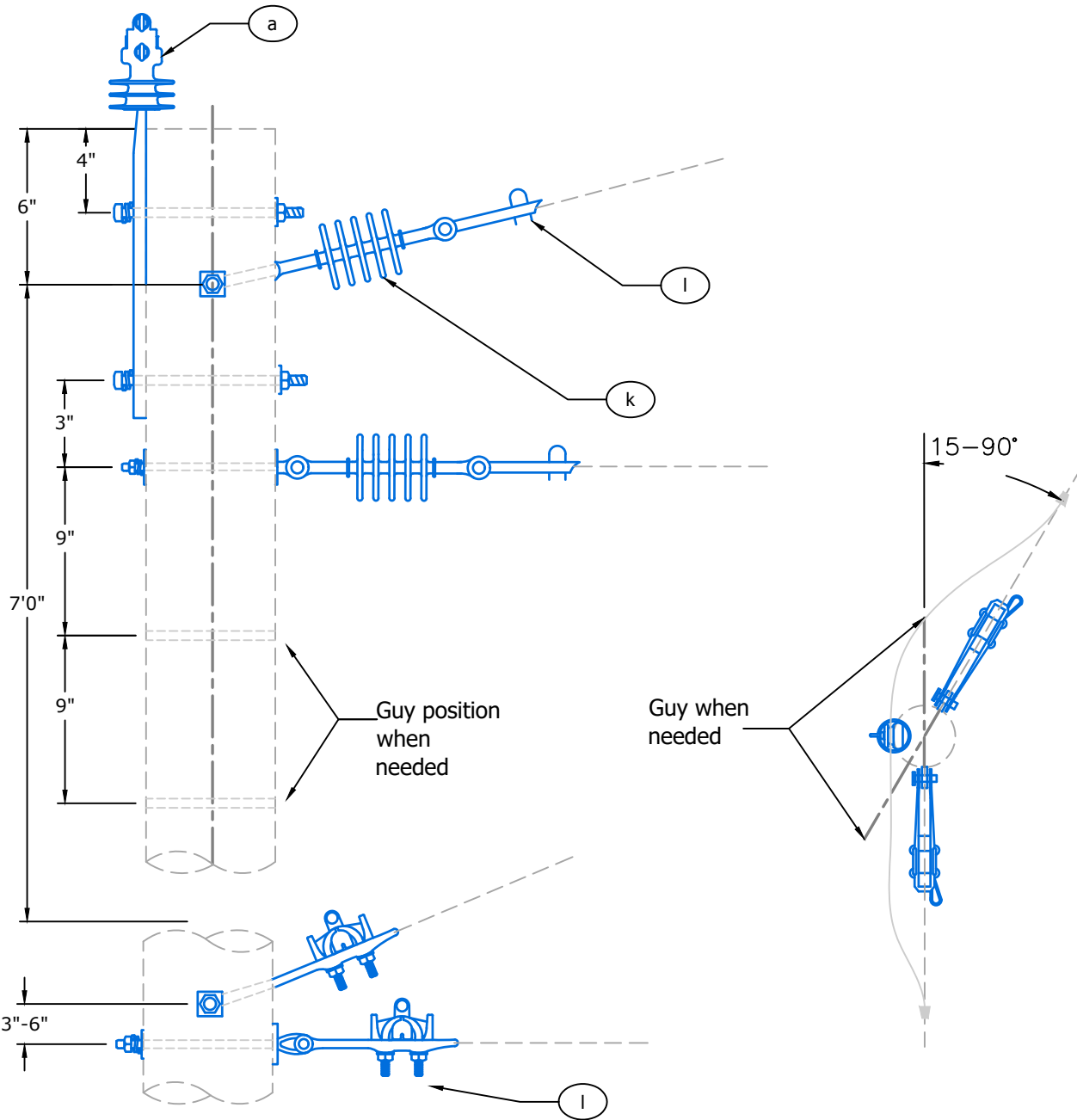


CONSTRUCTION STANDARDS
OVERHEAD
ONE-PHASE PRIMARY
DOUBLE DEADEND SM ANGLE

REVISIONS			
△/R	DATE	ENGR	OPS
A	6/24/25	JJW	OPS

PAGE:
2 of 2

A4.1



CONSTRUCTION STANDARDS

OVERHEAD

ONE-PHASE PRIMARY

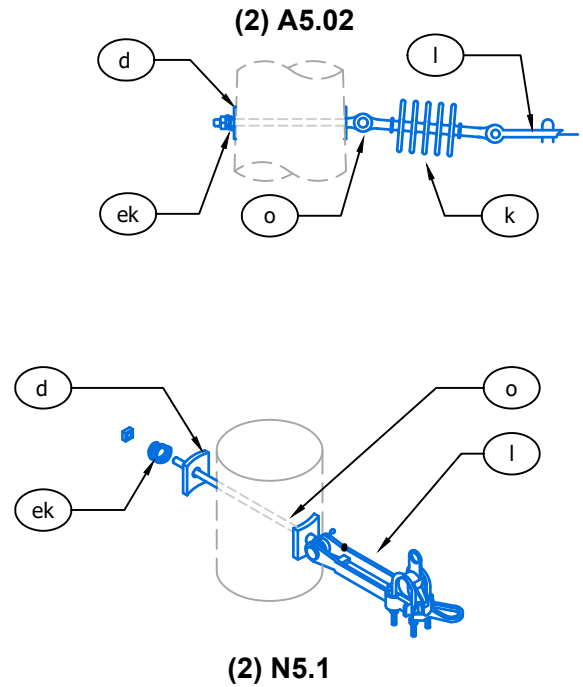
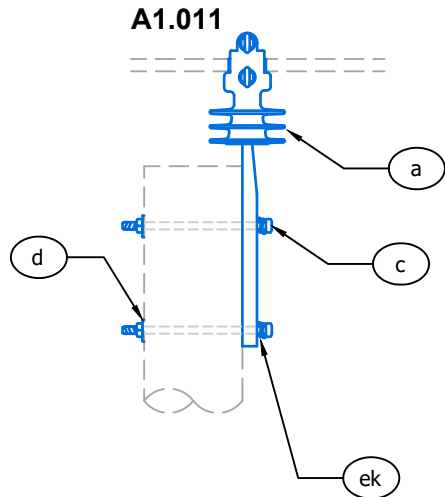
DOUBLE DEADEND LG ANGLE

REVISIONS

△ R	DATE	ENGR	OPS
A	6/24/25	JJW	OPS

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A4.2



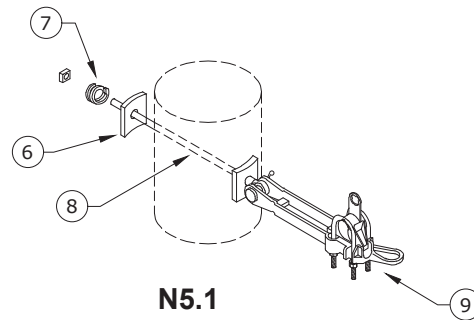
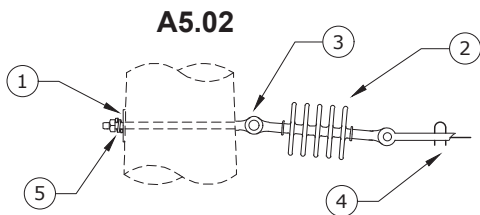
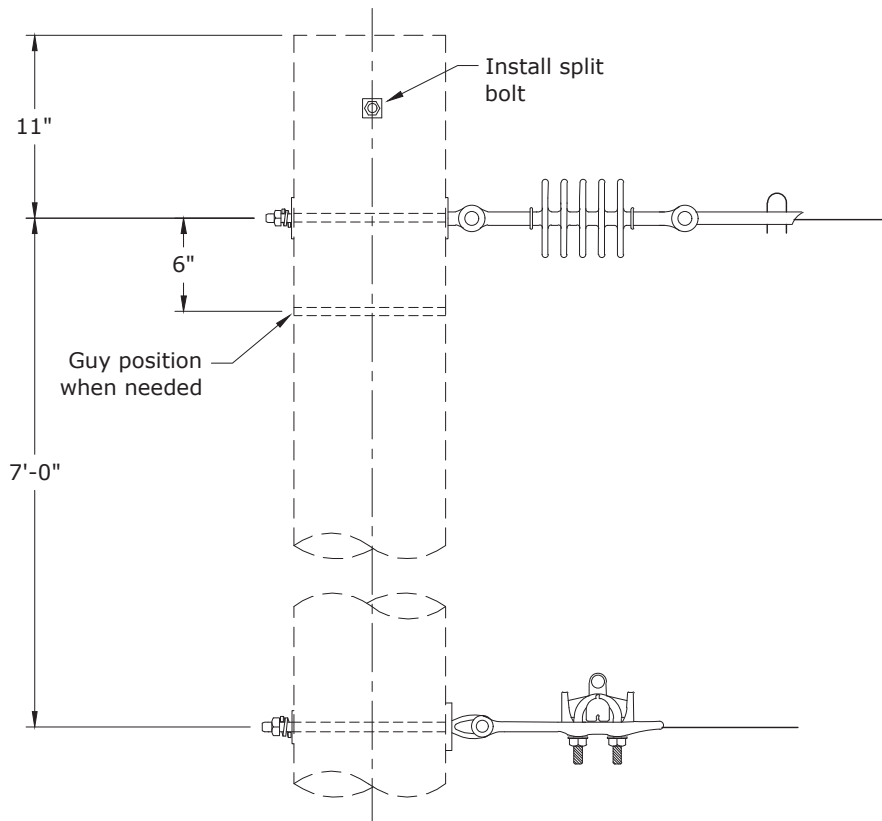
JUMPERS AND CONNECTORS AS REQUIRED

A4.2			
ITEM	QTY	(2) A5.02 - DESCRIPTION	ITEM#
d	4	WASHER, CURVED, SQUARE, CAST, 3" X 3" X 3/8" THICK X 13/16" HOLE	
k	2	INSULATOR, SUSP. 15KV CLEVIS	
o	2	BOLT, EYE 5/8" X 14"	
l	2	CLAMP OR AUTO, STRAIN #4	
ek	2	WASHER, SPRING, 5/8" OR LOCK NUT	
ITEM	QTY	(2) N5.1 - DESCRIPTION	ITEM#
d	4	WASHER, CURVED, SQUARE, CAST, 3" X 3" X 3/8" THICK X 13/16" HOLE	
ek	2	WASHER, SPRING, 5/8" OR LOCK NUT	
o	2	BOLT, EYE 5/8" X 14"	
l	2	CLAMP OR AUTO, STRAIN #4	
ITEM	QTY	A1.011 - DESCRIPTION	ITEM#
a	1	INSULATOR, VISE-TOP, POLYMER	
b	1	PIN, POLE TOP	
d	2	WASHER, CURVED, SQUARE, CAST, 3" X 3" X 3/8" THICK X 13/16" HOLE	
ek	2	WASHER, LOCK, SPRING, DOUBLE COIL, GALV., 5/8" OR LOCK NUT	
c	2	BOLT, MACHINE, 5/8" X 12", GALV., 12,400 LBS. ULTIMATE TENSILE	

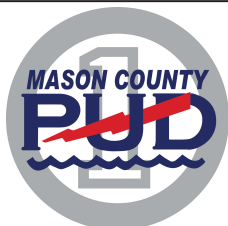


CONSTRUCTION STANDARDS
OVERHEAD
ONE-PHASE PRIMARY
DOUBLE DEADEND LG ANGLE

REVISIONS			
DATE	ENGR	OPS	
6/24/25	JJW	OPS	



ITEM NO.	DESCRIPTION	A5.1	
		A5.02	QTY.
1	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	1	
2	Insulator, Susp. 15 kV Clevis-Tongue, Polymer ✱	1	
3	Bolt, Eye, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile ✱	1	
4	Clamp or Auto, Strain, Distribution, #4ACSR typical	1	
5	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	1	
ITEM NO.	DESCRIPTION	N5.1	
		QTY.	
6	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	2	
7	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	1	
8	Bolt, Eye, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile ✱	1	
9	Clamp or Auto, Strain, Distribution, #4ACSR typical	1	

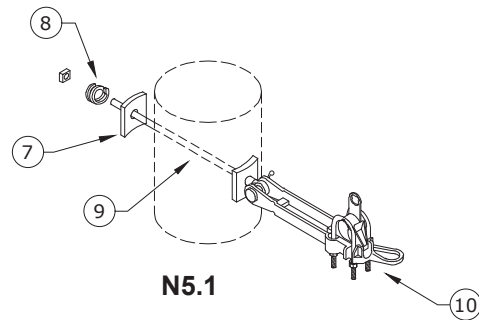
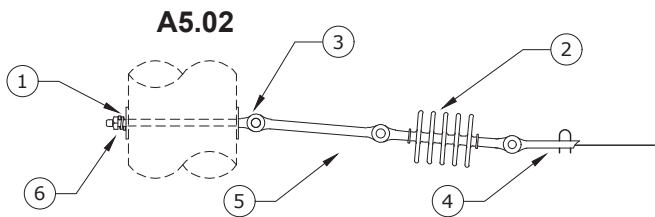
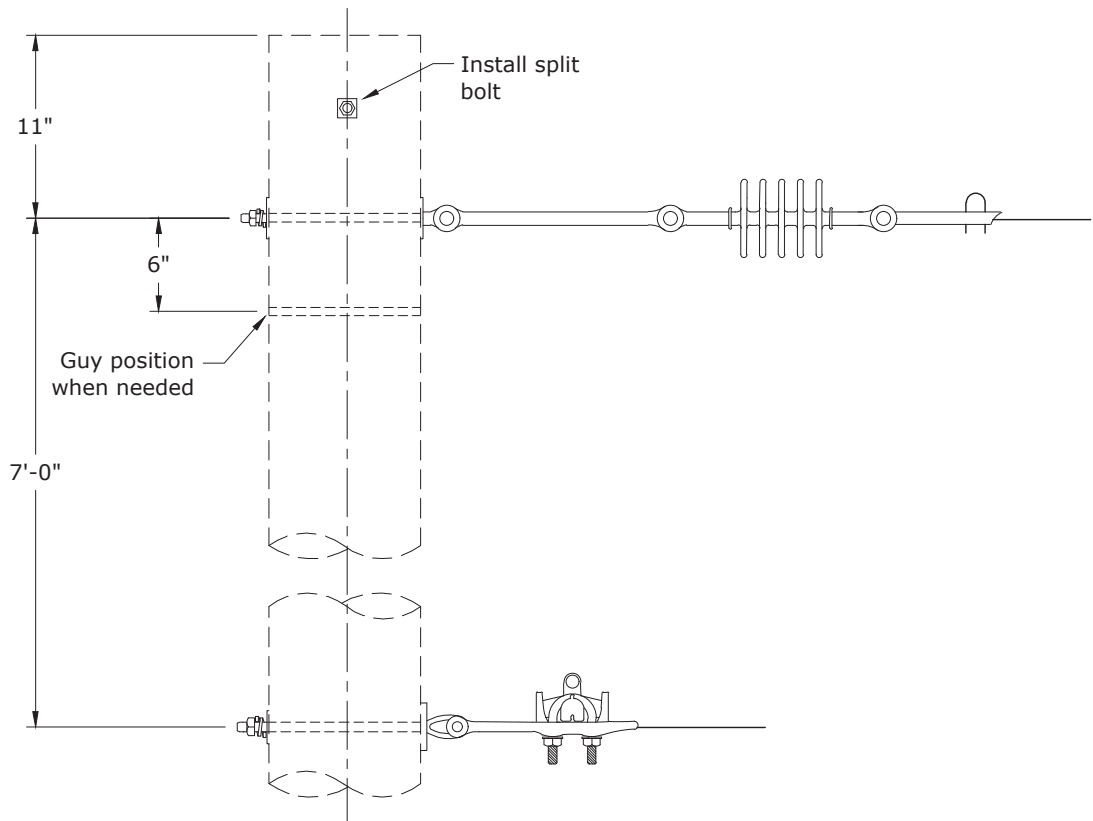


CONSTRUCTION STANDARDS

1Ø VERTICAL DEADEND
2/0 ACSR MAX WIRE

REVISIONS

△	DATE	ENGR	OPS
△			



Rev. 1 - Added avian note.

ITEM NO.	DESCRIPTION	A5.2	
		A5.02	QTY.
1	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	1	
2	Insulator, Susp. 15 kV Clevis-Tongue, Polymer *	1	
3	Bolt, Eye, 5/8" x 14" Galv., 12,400 lbs Ultimate Tensile	1	
4	Clamp or Auto, Strain, Distribution, #4 Typical	1	
5	Insulator, Guy Strain, Fiberglass, 20"	1	
6	Washer, Lock, Spring, Double Coil, Galv., 5/8"	1	
ITEM NO.	DESCRIPTION	N5.1	
		N5.1	QTY.
7	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	2	
8	Washer, Lock, Spring, Double Coil, Galv., 5/8"	1	
9	Bolt, Eye, 5/8" x 14" Galv., 12,400 lbs Ultimate Tensile	1	
10	Clamp or Auto, Strain, Distribution, #4 Typical	1	



CONSTRUCTION STANDARDS

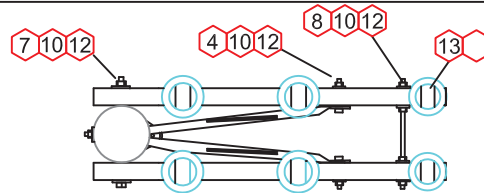
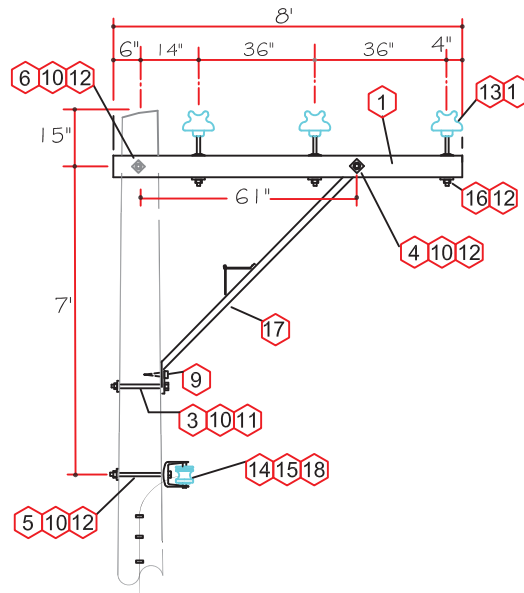
1Ø VERTICAL DEADEND
W/ EXTENSION LINK
2/0 ACSR MAX WIRE

PAGE:
1 of 1

A5.2

REVISIONS

△	DATE	ENGR	OPS
△			



ITEM	DESCRIPTION	QUANTITY
		ALLEY ARM
1	CROSSARM - 8'x3"x4"	2
3	xxx - BOLT MACH - 12 x 1/2	2
4	xxx - BOLT MACH - 6 x 5/8	2
5	xxx - BOLT MACH - 12 X 5/8	3
7	xxx - BOLT MACH - 20 X 5/8	1
8	xxx - BOLT DA - 22 X 5/8	1
9	xxx - LAG SCREW 4 X 1/2	2
10	XXX WASHER - sq-2 1/4	11
11	XXX WASHER - DBL COIL LOCK - 1/2	8
12	XXX WASHER - DBL COIL LOCK - 5/8	2
13	WISE-TOP INSULATOR 15KV	6
		6
14	xxx - SPOOL INSULATOR	1
15	xxx -CLEVIS	1
16	xxx CROSSARM PIN	6
17	BRACE-ALLEY ARM - 84"	2
18	xxx TIES	4



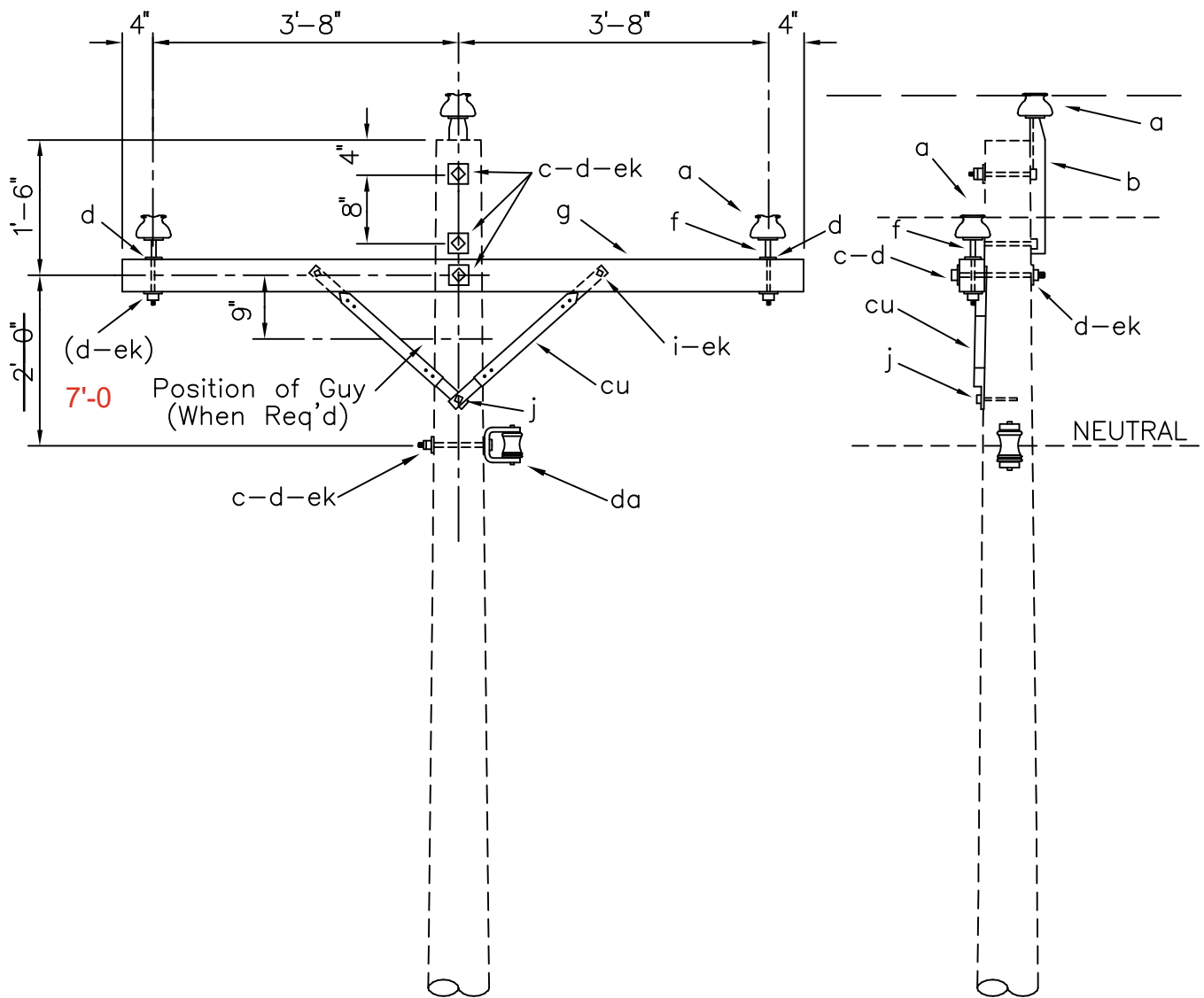
CONSTRUCTION STANDARDS

3Ø DOUBLE 8' ALLEY ARM
0° TO 5°
336 ACSR MAX WIRE

PAGE:
1 of 1

ALLEY ARM

△			
△			



ITEM	QTY	MATERIAL
a	3	Insulator, pin type (12.47/7.2 kV)
b	1	Pin, pole top, 20°
c	4	Bolt, machine, 5/8" x req'd length
d	7	Washer, square, 2 1/4"
f	2	Pin, crossarm, steel, 5/8" x 10 3/4"
g	1	Crossarm, 3 5/8" x 4 5/8" x 8' - 0"
i	2	Bolt, carriage, 3/8" x 4 1/2"
j	1	Screw, lag, 1/2" x 4"
cu	2	Brace, 28"
da	1	Bracket, insulated
ek	6	Locknuts

USE VISE-TOP



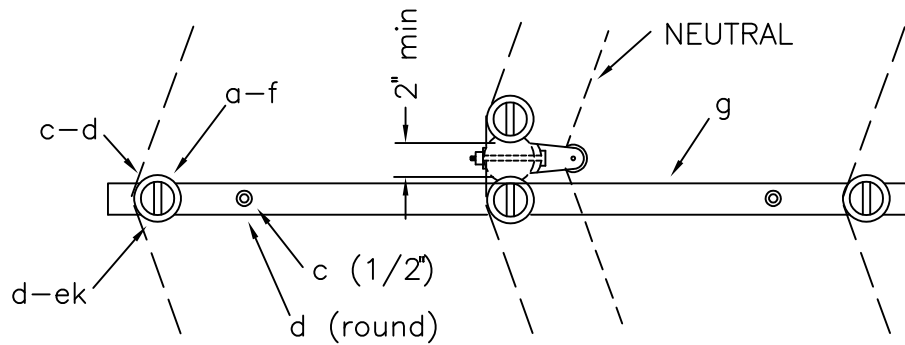
SINGLE SUPPORT ON CROSSARM

APRIL 2005

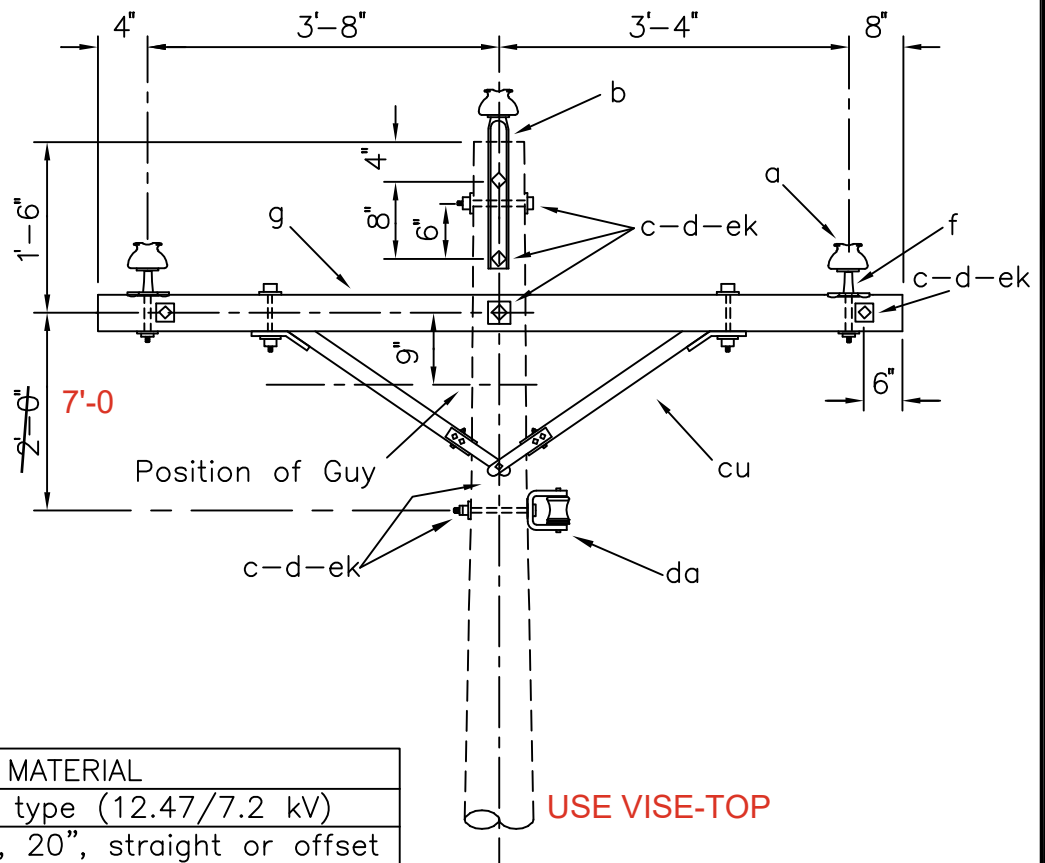
RUS

3 - PHASE PRIMARY
12.47/7.2 kV

C1.13



PLAN



ITEM	QTY	MATERIAL
a	4	Insulator, pin type (12.47/7.2 kV)
b	2	Pin, pole top, 20", straight or offset
c	2	Bolt, machine, 1/2" x req'd length
c	8	Bolt, machine, 5/8" x req'd length
d	2	Washer, round, 1 3/8"
d	12	Washer, square, 2 1/4"
f	2	Pin, crossarm, clamp type
g	1	Crossarm, 3 5/8" x 4 5/8" x 8' 0"
cu	1	Brace, wood, 60" span
da	1	Bracket, insulated
ek	10	Locknuts



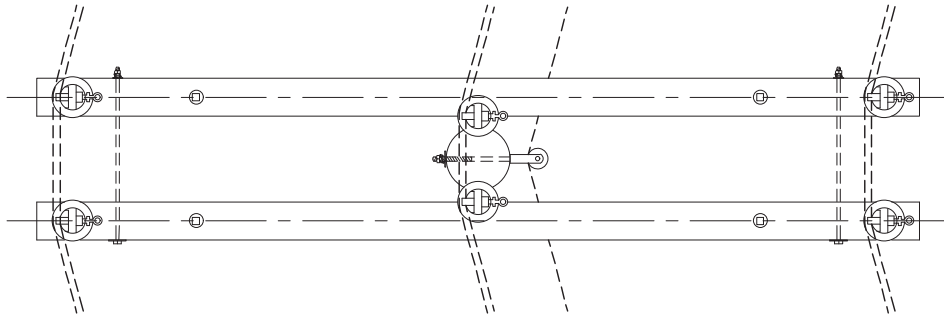
SINGLE SUPPORT ON CROSSARM
(LARGE CONDUCTORS)

APRIL 2005

RUS

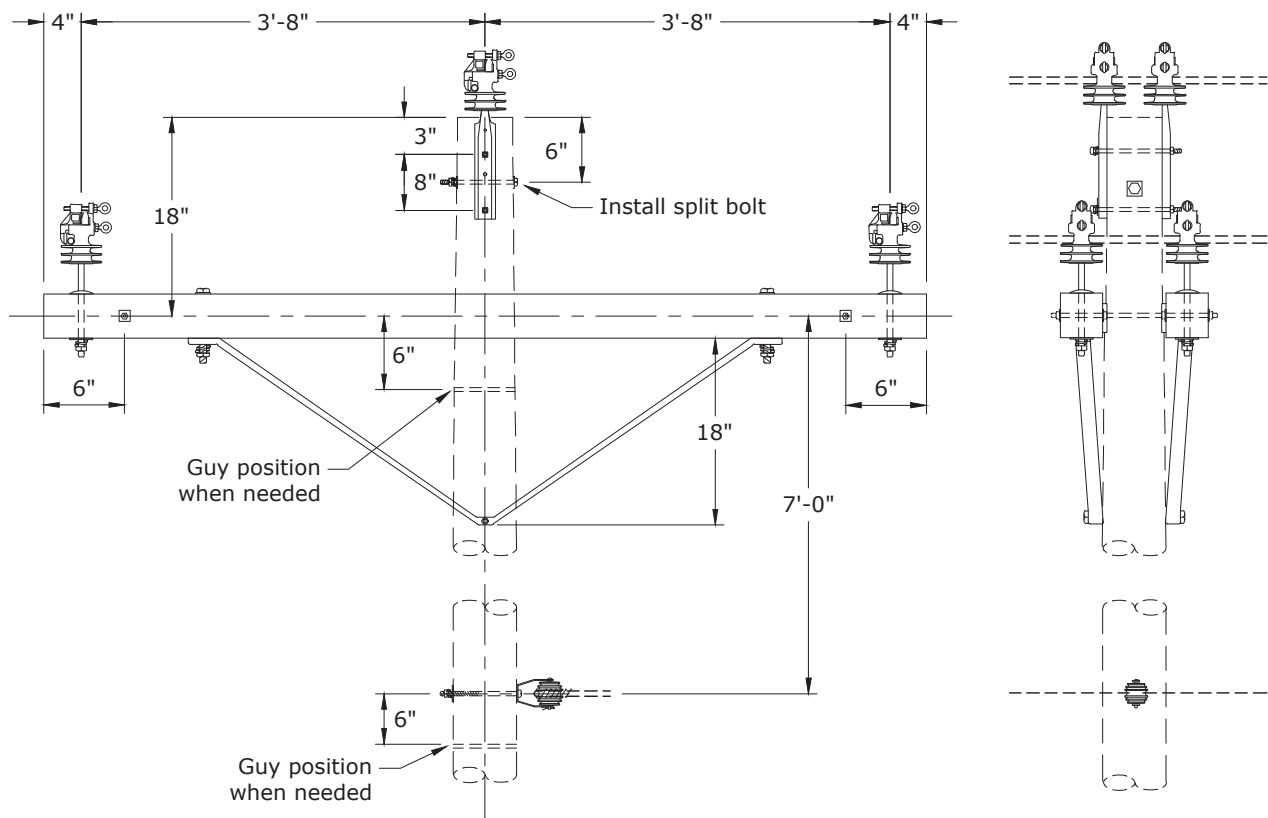
3 - PHASE PRIMARY
12.47/7.2 kV

C1.13L
(C1-4)



Vise-Top Installation:

- 1st tighten the bottom bolt until ring breaks off
- 2nd tighten the top bolt until ring breaks off
- Remove bolts with socket stick
- Do not reuse bolts after rings have broken off



Notes: 1. Maximum line angle calculated for 3,162 lbs. MWT and 350-ft ruling span.



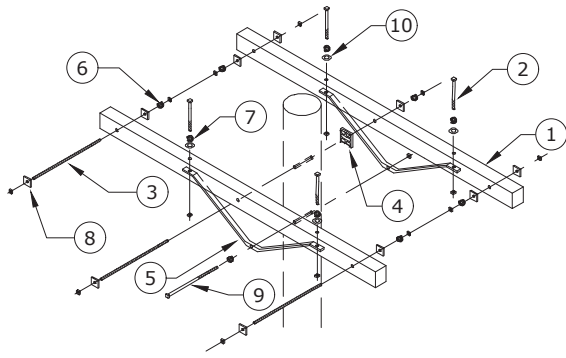
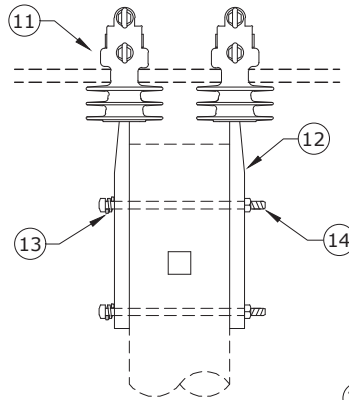
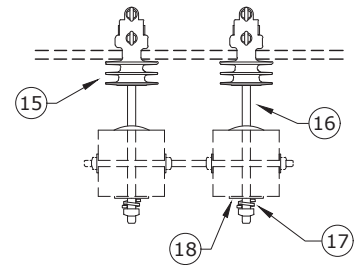
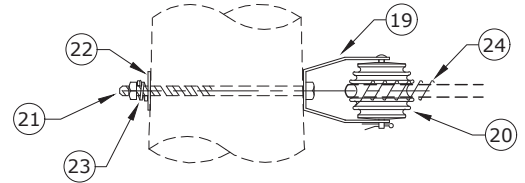
CONSTRUCTION STANDARDS

3Ø DOUBLE 8' CROSSARM W/ DOUBLE POLE
TOP - 0° TO 5°
336 ACSR MAX WIRE

PAGE:
1 of 2

C2.21L

△			
△			

W2.8

A2.01

A2.021

N2.1

Neutral

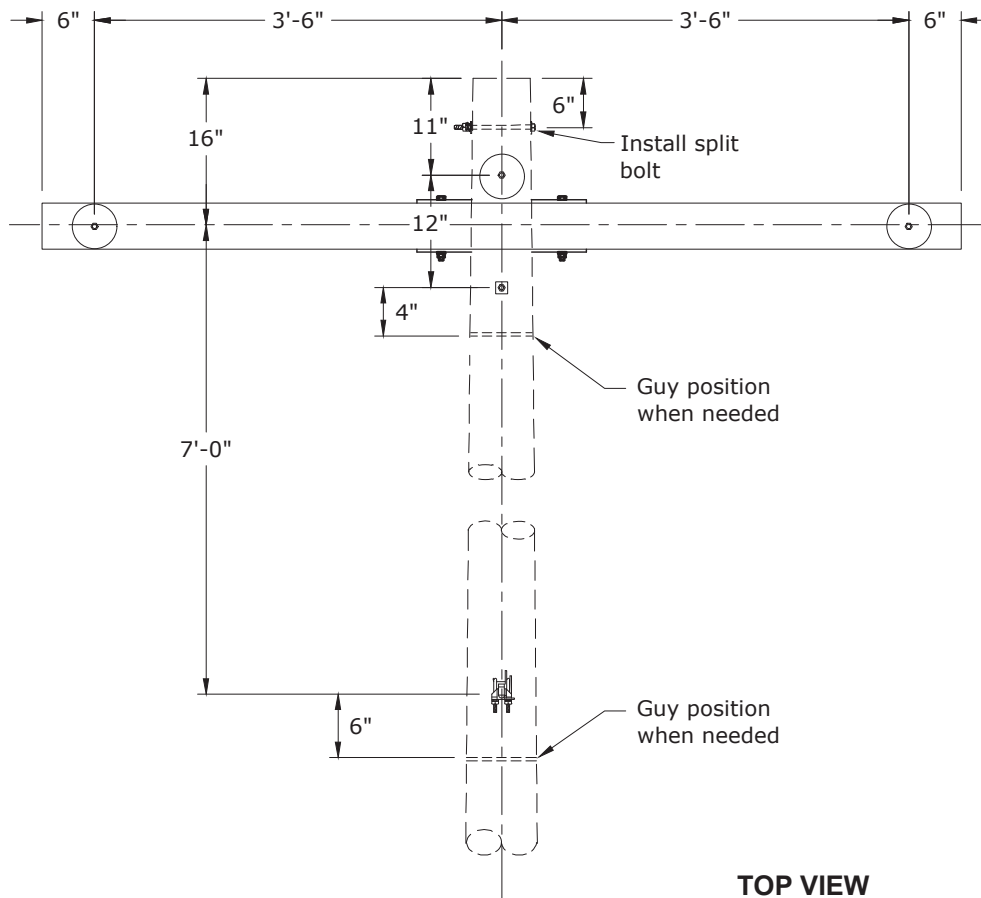
ITEM NO.	DESCRIPTION	C2.21L
		W2.8 QTY.
1	Arm, Cross (Distr.), 3 3/4" x 4 3/4" x 8'	2
2	Bolt, Machine, 1/2" x 7", Galv., 7800 lbs Ultimate Tensile	4
3	Bolt, Double Arm, 5/8" x 20", Galv., 12,400 lbs Ultimate Tensile	3
4	Gain, Pole Plastic	1
5	Brace, Angle, 60"	2
6	Washer, Spring, Lock, Double Coil, Galv., 5/8"	6
7	Washer, Spring, Lock, Double Coil, Galv., 1/2"	4
8	Washer, Square, Flat, 5/8", 2 1/4" x 2 1/4"	10
9	Bolt, Machine, 5/8" x 12", Galv., 12,400 lbs Ultimate Tensile	1
10	Washer, Flat, Round, Galv., 1/2"	4
ITEM NO.	DESCRIPTION	A2.01
		QTY.
11	Insulator, Vise-Top, Polymer ✱	2
12	Pin, Pole Top ✱	2
13	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	2
14	Bolt, Machine, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile ✱	2
ITEM NO.	DESCRIPTION	A2.021
		QTY.
15	Insulator, Vise-Top, Polymer ✱	4
16	Pin, Crossarm ✱	4
17	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	4
18	Washer, Square, Flat, 5/8", 2 1/4" x 2 1/4"	4
ITEM NO.	DESCRIPTION	N2.1
		QTY.
19	Clevis, DE Insulator	1
20	Insulator, Spool, ANSI 53-4 Class	1
21	Bolt, Machine, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile	1
22	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	1
23	Washer, Lock, Spring, Double Coil, Galv., 5/8"	1
24	Wire, Tie, AL Annealed #4 SD	10


CONSTRUCTION STANDARDS

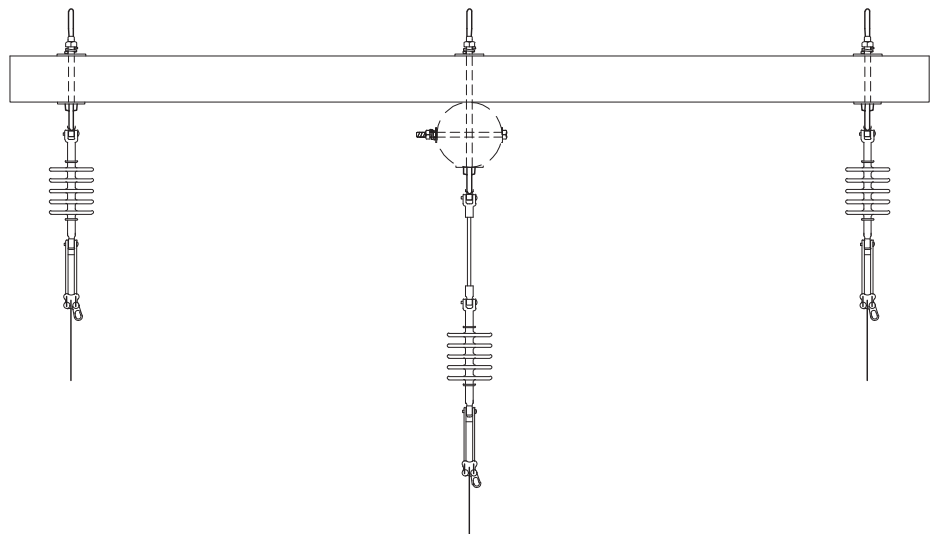
3Ø DOUBLE 8' CROSSARM W/ DOUBLE POLE
TOP - 0° TO 5°
336 ACSR MAX WIRE

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FRONT VIEW



TOP VIEW



Avian Safe

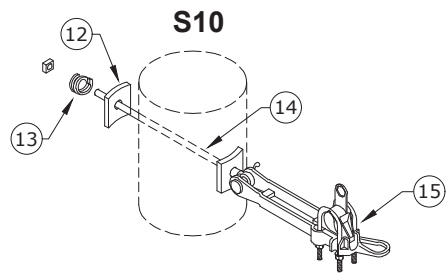


CONSTRUCTION STANDARDS

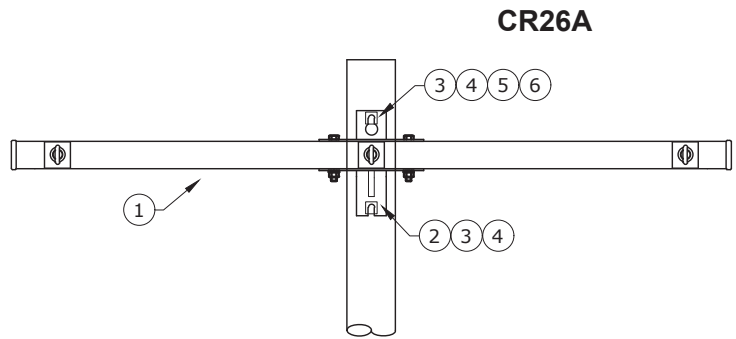
8' PRE-ASSEMBLED DEADEND
336 ACSR MAX WIRE

REVISIONS

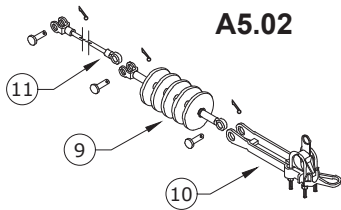
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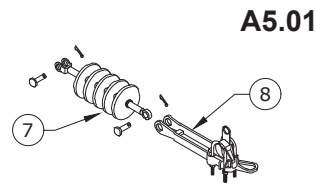
N5.1



Back View



Center Phase



Road & Field Phases

ITEM NO.	DESCRIPTION	C5.21F W2.8DEF	
		QTY.	
1	Arm, Deadend Assembly, 8', 3-position, 397 Max	1	
2	Bolt, Machine, 3/4" x 14", Galv., 18,350 lbs Ultimate Tensile	1	
3	Washer, Lock, Spring, Double Coil, Galv., 3/4"	2	
4	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	2	
5	Nut, Eye Oval 3/4", Galv.	1	
6	Bolt, Machine, 3/4" x 16", Galv., 18,350 lbs Ultimate Tensile	1	
ITEM NO.	DESCRIPTION	A5.01 (2)	
		QTY.	
7	Insulator, Suspension, 15 kV Clevis-Tongue, Polymer Type	2	
8	Clamp, Strain, Distribution, #4 to 336	2	
ITEM NO.	DESCRIPTION	A5.02	
		QTY.	
9	Insulator, Suspension, 15 kV Clevis-Tongue, Polymer Type	1	
10	Clamp, Strain, Distribution, #4 to 336	1	
11	Insulator, Guy Strain, Fiberglass, 20"	1	
ITEM NO.	DESCRIPTION	N5.1	
		QTY.	
12	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	2	
13	Washer, Lock, Spring, Double Coil, Galv., 5/8"	1	
14	Bolt, Eye, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile	1	
15	Clamp, Strain, Distribution, #4 - 336	1	



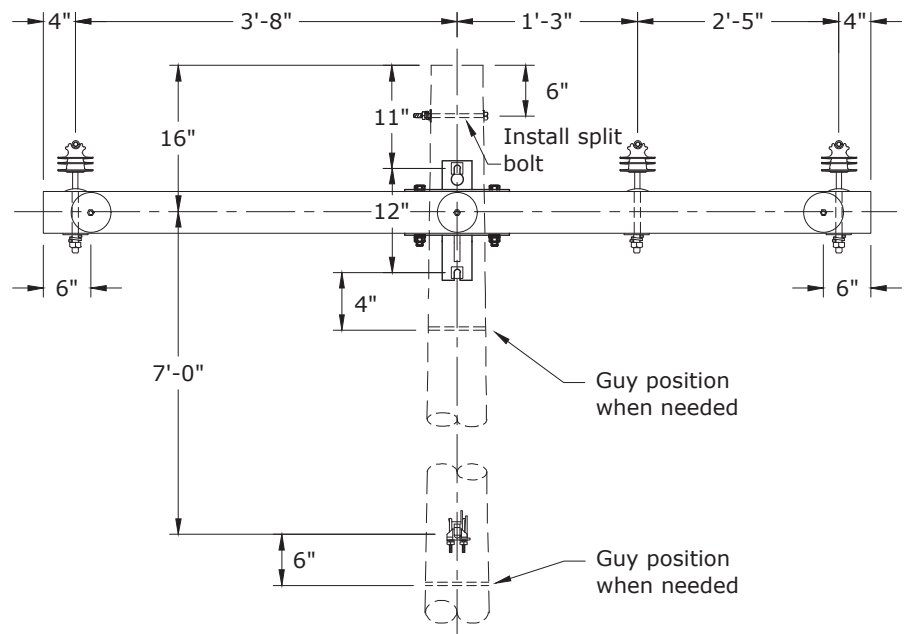
CONSTRUCTION STANDARDS

8' PRE-ASSEMBLED DEADEND
336 ACSR MAX WIRE

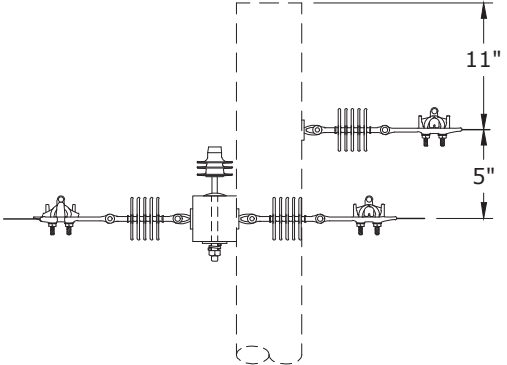
REVISIONS

DATE	ENGR	OPS

FRONT VIEW



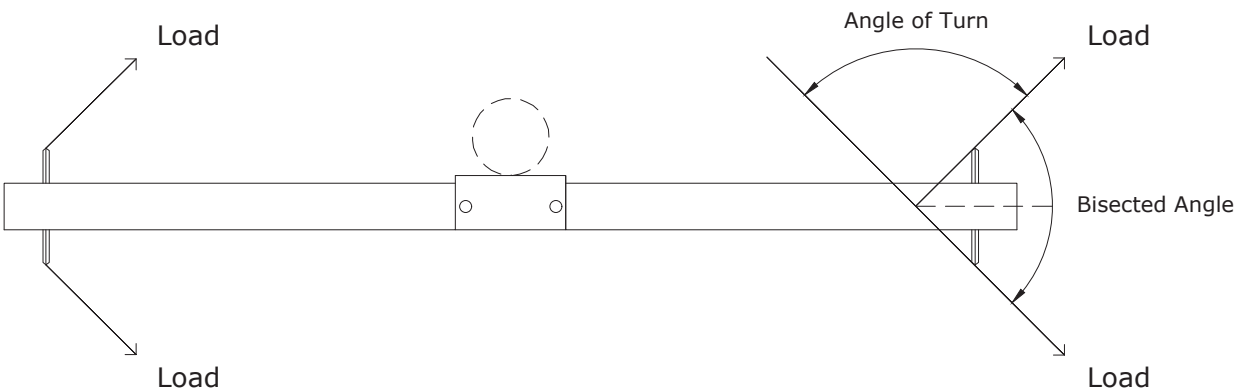
SIDE VIEW



CONSTRUCTION STANDARDS 8' PRE-ASSEMBLED DOUBLE DEADEND 336 ACSR MAX WIRE

REVISIONS			
△	DATE	ENGR	OPS
△			



DEADEND FOR ANGLED SPANS



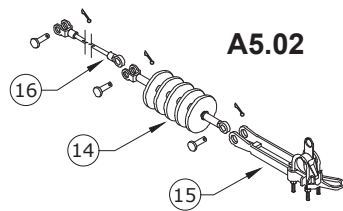
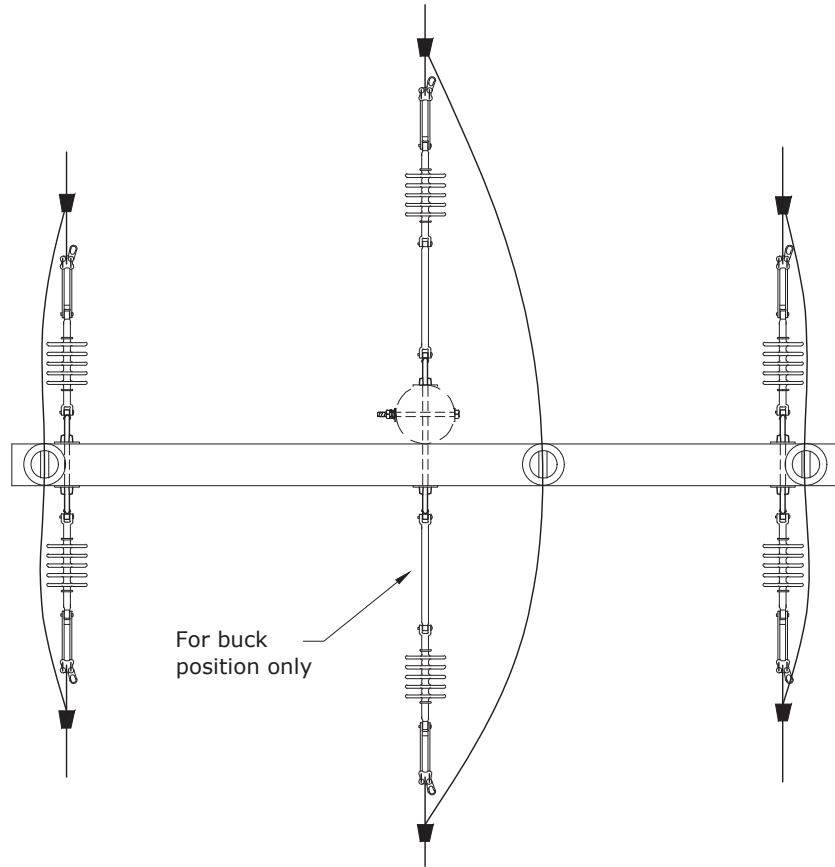
- Notes:
- 1. Maximum angle with 336 is 60°, limited by the 3/4" machine bolt.
 - 2. Angle must be bisected so that each eye-nut has half the angle.



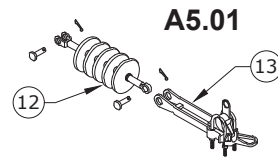
CONSTRUCTION STANDARDS
8' PRE-ASSEMBLED DOUBLE DEADEND
336 ACSR MAX WIRE

REVISIONS			
	DATE	ENGR	OPS
			

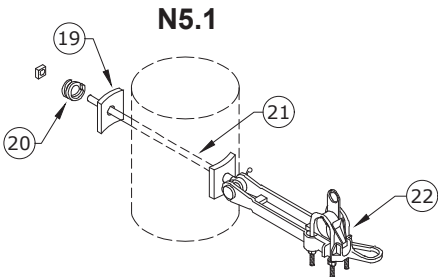
TOP VIEW



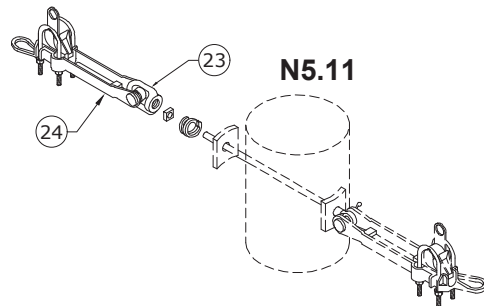
Center Phase



Road & Field Phases



Neutral



Neutral

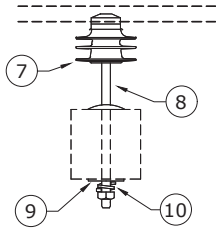
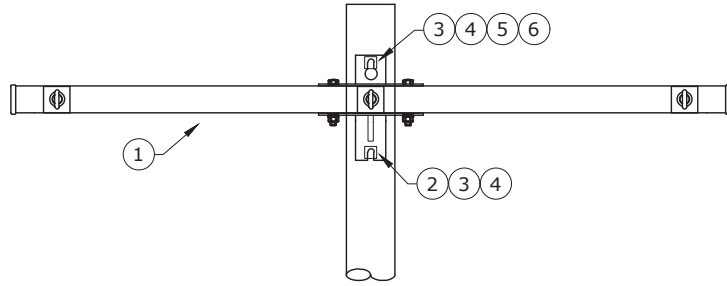


CONSTRUCTION STANDARDS

8' PRE-ASSEMBLED DOUBLE DEADEND
336 ACSR MAX WIRE

REVISIONS

△	DATE	ENGR	OPS
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A1.011**W2.8DEF****Front View**

Rev. 4 - Eliminated porcelain pin insulators and added avian notes.

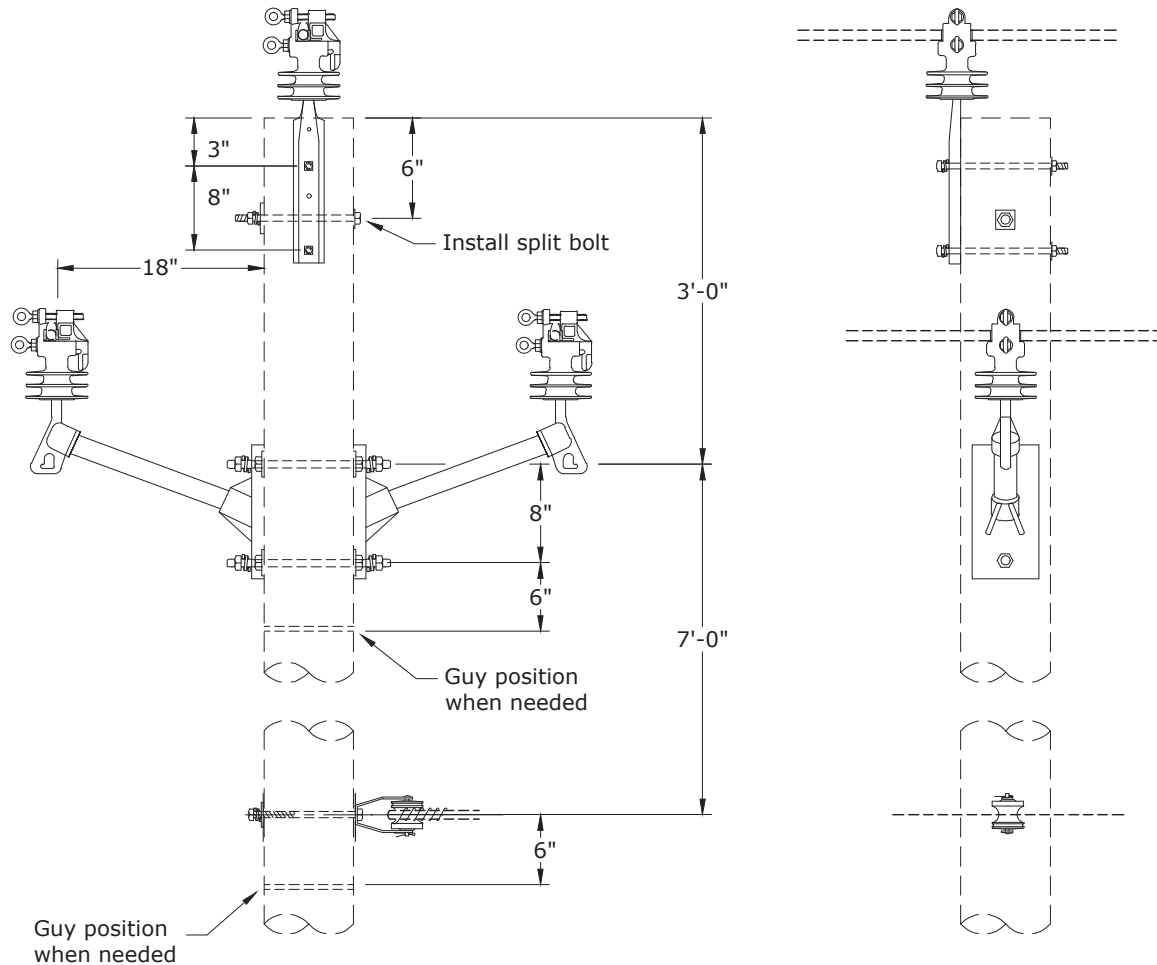
ITEM NO.	DESCRIPTION	C6.21F	
		W2.8DEF	
		QTY.	
1	Arm, Deadend Assembly, 8', 3-position, 336 Max	1	
2	Bolt, Machine, 3/4" x 14", Galv., 18,350 lbs Ultimate Tensile	1	
3	Washer, Lock, Spring, Double Coil, Galv., 3/4"	2	
4	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	2	
5	Nut, Eye Oval 3/4"	1	
6	Bolt, Machine, 3/4" x 16", Galv., 18,350 lbs Ultimate Tensile	1	
ITEM NO.	DESCRIPTION	A1.011 (3)	
		QTY.	
7	Insulator, Vise-Top, Polymer	3	
8	Pin, Crossarm	3	
9	Washer, Square, Flat, 5/8", 2 1/4" x 2 1/4"	3	
10	Washer, Lock, Spring, Double Coil, Galv., 5/8"	3	
ITEM NO.	DESCRIPTION	A5.01 (4)	
		QTY.	
12	Insulator, Suspension, 15 kV Clevis-Tongue, Polymer Type	4	
13	Clamp, Strain, Distribution, #4 - 336	4	
ITEM NO.	DESCRIPTION	A5.02 (2)	
		QTY.	
14	Insulator, Suspension, 15 kV Clevis-Tongue, Polymer Type	2	
15	Clamp, Strain, Distribution, #4 - 336	2	
16	Insulator, Guy Strain, Fiberglass 20"	2	
ITEM NO.	DESCRIPTION	Additional Material	
		QTY.	
17	Connector, Tap, Wedge, 336 to 336	6	
18	Connector, Tap, Wedge, 4/0 to 4/0	2	
ITEM NO.	DESCRIPTION	N5.1	
		QTY.	
19	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	2	
20	Washer, Lock, Spring, Double Coil, Galv., 5/8"	1	
21	Bolt, Eye, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile	1	
22	Clamp, Strain, Distribution, #4 - 336	1	
ITEM NO.	DESCRIPTION	N5.11	
		QTY.	
23	Nut, Eye Oval 5/8"	1	
24	Clamp, Strain, Distribution, #4 - 336	1	

**CONSTRUCTION STANDARDS**8' PRE-ASSEMBLED DOUBLE DEADEND
336 ACSR MAX WIREPAGE:
4 of 4**C6.21F****REVISIONS**

DATE	ENGR	OPS

Vise-Top Installation:

- 1st tighten the bottom bolt until ring breaks off
- 2nd tighten the top bolt until ring breaks off
- Remove bolts with socket stick
- Do not reuse bolts after rings have broken off



Notes:

1. Maximum line angle calculated for 3,162 lbs. MWT and 350-ft ruling span.

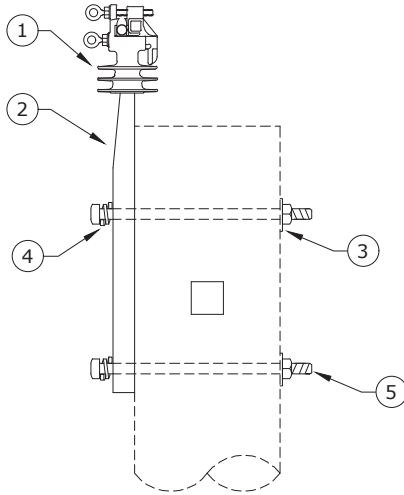


CONSTRUCTION STANDARDS

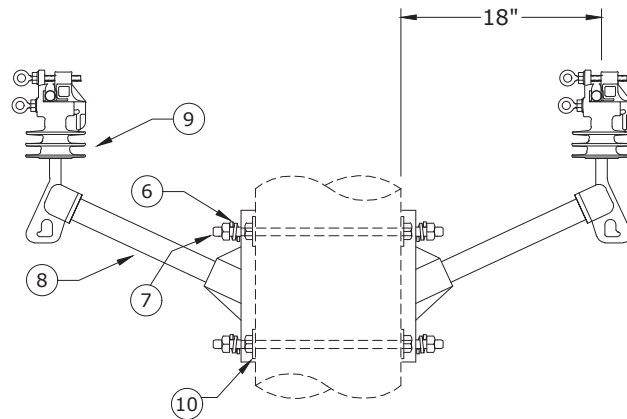
3Ø TWIGGY
0° TO 2°
336 ACSR MAX WIRE

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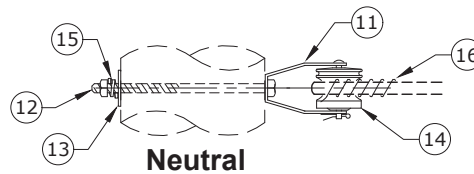
A1.01



A2.04N



N2.1



ITEM NO.	DESCRIPTION	CAL 1
		A1.01
		QTY.
1	Insulator, Vise-Top, Polymer ✱	1
2	Pin, Pole Top ✱	1
3	Washer, Curved, 3" x 3" x 3/8" Thick x 13/16" Hole	2
4	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	2
5	Bolt, Machine, 5/8" x 12", Galv., 12,400 lbs Ultimate Tensile✱	2
		A2.04N
		QTY.
6	Washer, Lock, Spring, Double Coil, Galv., 5/8"	4
7	Bolt, Double Arm, 5/8" x 18", Galv., 12,400 lbs Ultimate Tensile	2
8	Arm, Epoxy 18" 2500 lbs	2
9	Insulator, Vise-Top, Polymer	2
10	Washer, Flat, Round, Galv., 5/8"	4
		N2.1
		QTY.
11	Clevis, D.E. Insulator 1340	1
12	Bolt, Machine, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile	1
13	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	1
14	Insulator, Spool Clevis, ANSI 53-4 Class	1
15	Washer, Lock, Spring, Double Coil, Galv., 5/8"	1
16	Wire, Tie, AL Annealed #4 SD	10



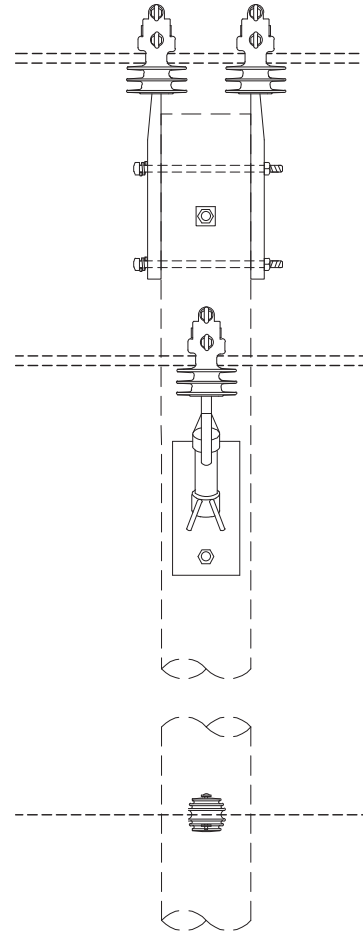
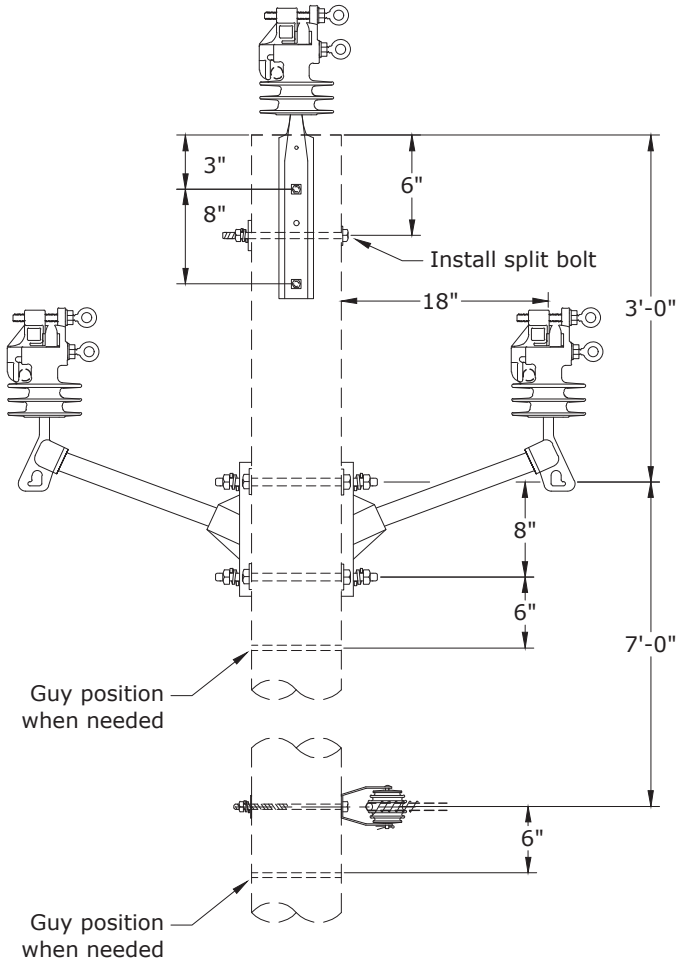
CONSTRUCTION STANDARDS

3Ø TWIGGY
0° TO 2°
336 ACSR MAX WIRE

△			
△			

Vise-Top Installation:

- 1st tighten the bottom bolt until ring breaks off
- 2nd tighten the top bolt until ring breaks off
- Remove bolts with socket stick
- Do not reuse bolts after rings have broken off



Notes: 1. Maximum line angle calculated for 5,000 lbs. MWT and 250-ft ruling span.



CONSTRUCTION STANDARDS

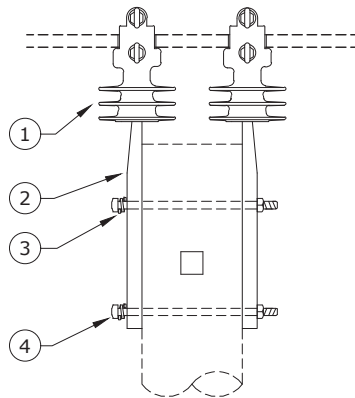
3Ø TWIGGY
2° TO 5°
336 ACSR MAX WIRE

PAGE:
1 of 2

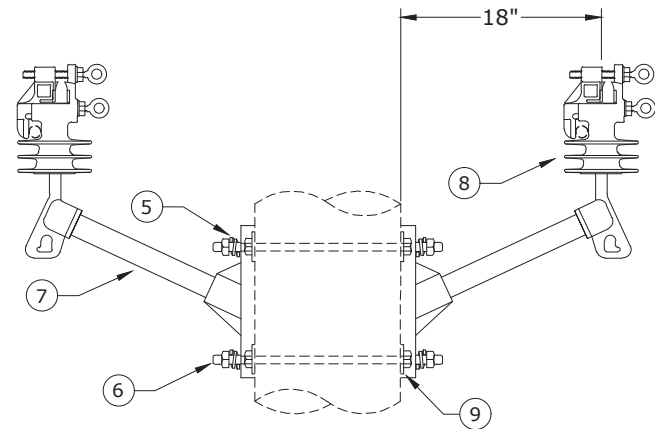
CAL 2

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△			

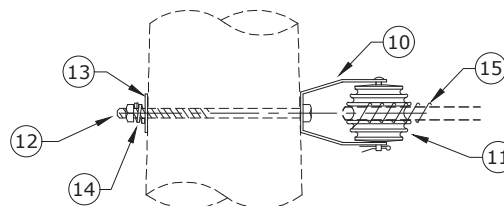
A2.01



A2.04N



N2.1



Neutral

Rev. 3 - Changed all insulators to vise-top, added avian note, and updated material list.

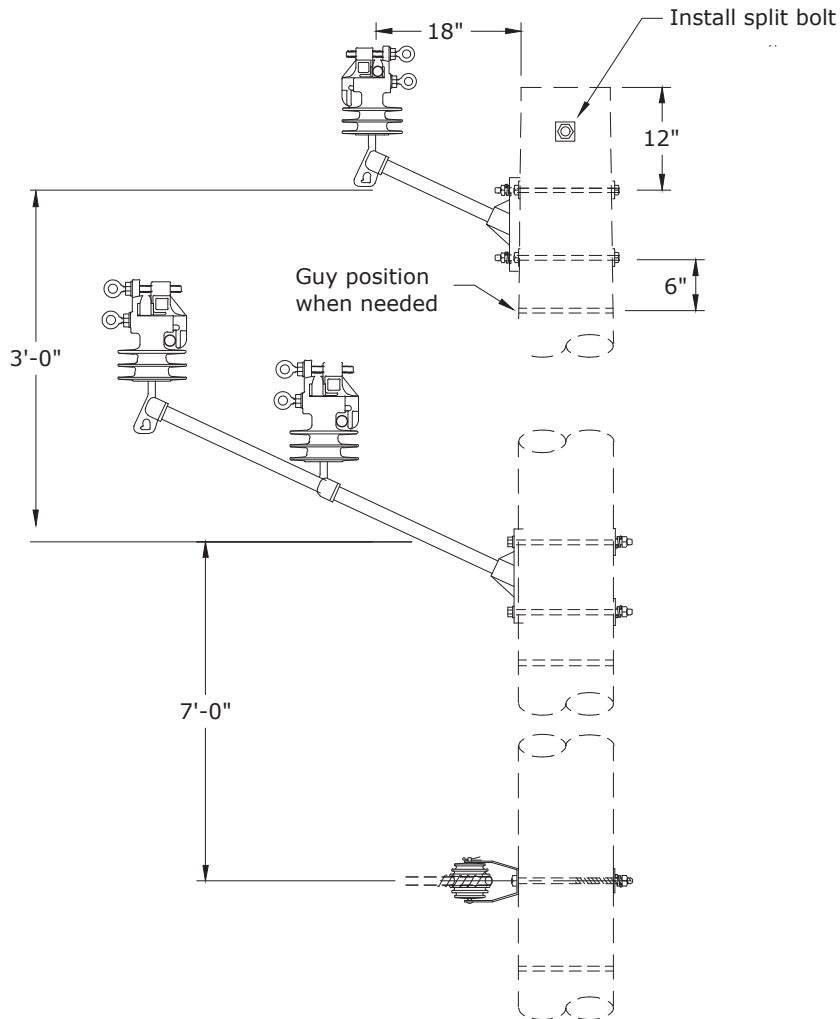
ITEM NO.	DESCRIPTION	CAL 2
		A2.01 QTY.
1	Insulator, Vise-Top, Polymer ✱	2
2	Pin, Pole Top ✱	2
3	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	2
4	Bolt, Machine, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile ✱	2
ITEM NO.	DESCRIPTION	A2.04N QTY.
5	Washer, Lock, Spring, Double Coil, Galv., 5/8"	4
6	Bolt, Double Arm, 5/8" x 18", Galv., 12,400 lbs Ultimate Tensile	2
7	Arm, Epoxy 18" 2500 lb	2
8	Insulator, Vise-Top, Polymer	2
9	Washer, Flat, Round, Galv., 5/8"	4
ITEM NO.	DESCRIPTION	N2.1 QTY.
10	Clevis, DE Insulator	1
11	Insulator, Spool, Clevis, ANSI 53-4 Class	1
12	Bolt, Machine, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile ✱	1
13	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	1
14	Washer, Lock, Spring, Double Coil, Galv., 5/8" ✱	1
15	Wire, Tie, AL Annealed #4 SD	10



CONSTRUCTION STANDARDS

3Ø TWIGGY
2° TO 5°
336 ACSR MAX WIRE

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△			



Vise-Top Installation:

- 1st tighten the bottom bolt until ring breaks off
- 2nd tighten the top bolt until ring breaks off
- Remove bolts with socket stick
- Do not reuse bolts after rings have broken off

Notes:

1. Maximum line angle calculated for 3,162 lbs. MWT and 350-ft ruling span.



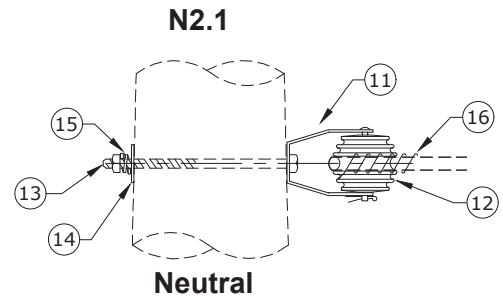
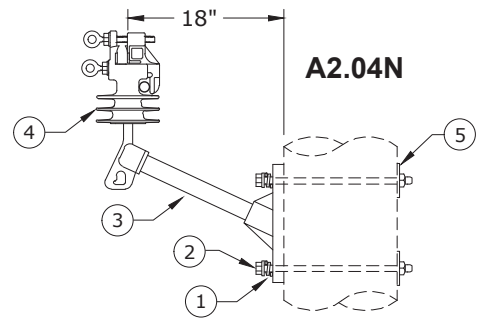
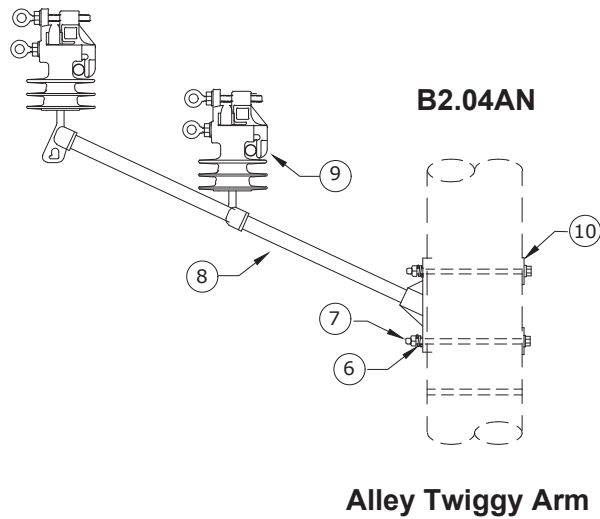
CONSTRUCTION STANDARDS

3Ø ALLEY TWIGGY
6° TO 30°
336 ACSR MAX WIRE

PAGE:
1 of 2

CAL 6

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△			



ITEM NO.	DESCRIPTION	CAL 6
		A2.04N QTY.
1	Washer, Lock, Spring, Double Coil, Galv., 5/8"	2
2	Bolt, Machine, 5/8" x 16", Galv., 12,400 lbs Ultimate Tensile	2
3	Arm, Epoxy 18" 2500 lbs	1
4	Insulator, Vise-Top, Polymer	1
5	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	2
ITEM NO.	DESCRIPTION	B2.04AN
		QTY.
6	Washer, Lock, Spring, Double Coil, Galv., 5/8"	2
7	Bolt, Machine, 5/8" x 16", Galv., 12,400 lbs Ultimate Tensile	2
8	Arm, Epoxy 38" to 42" , 2-position	1
9	Insulator, Vise-Top, Polymer	2
10	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	2
ITEM NO.	DESCRIPTION	N2.1
		QTY.
11	Clevis, DE Insulator	1
12	Insulator, Spool, Clevis, ANSI 53-4 Class	1
13	Bolt, Machine, 5/8" x 14", Galv., 12,400 lbs Ultimate Tensile *	1
14	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole	1
15	Washer, Lock, Spring, Double Coil, Galv., 5/8" *	1
16	Wire, Tie, AL Annealed #4 SD	10

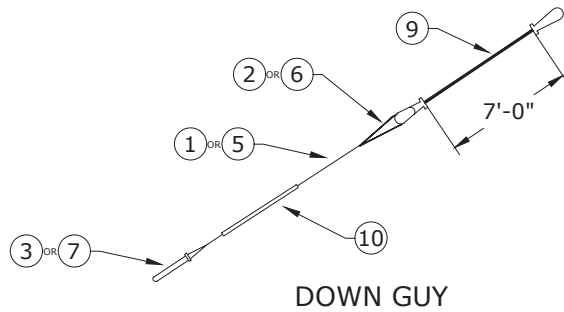
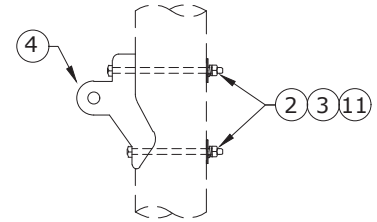


CONSTRUCTION STANDARDS

3Ø ALLEY TWIGGY
6° TO 30°
336 ACSR MAX WIRE

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△			

GUY ATTACHMENT



Notes:

1. If more than one guy will be attached to one anchor, an additional long automatic guy grip must be used.

ITEM NO.	DESCRIPTION	GUY ATTACH	
		QTY.	
2	Machine Bolt, 3/4" x 14", 18,350 lbs. Ultimate Tensile	2	
3	Curved Washer, Cast, 4" x 4"	2	
4	Pole Eye Plate, 21,000 lbs. Ultimate Tensile	1	
11	Double Coil Spring Lock Washer 3/4"	2	

ITEM NO.	DESCRIPTION	DOWN GUY	
		QTY.	
5	Guy Wire, 18M	45ft	
6	Guy Grip, 18M, Preformed	1	
7	Guy Grip, 18M, Automatic, Short	1	
9	Insulator, Fiberglass, 2 Wheel, 7', 21,000 lbs. Ultimate, 530kV Wet Flashover	1	
10	Marker, Guy 8' Yellow	1	



CONSTRUCTION STANDARDS

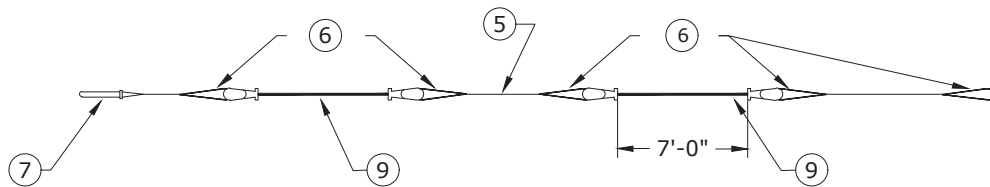
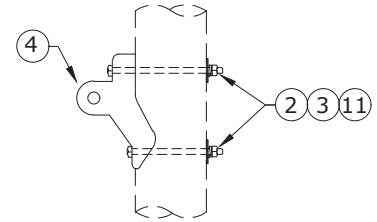
DOWN GUY

PAGE:
1 of 1

E1.1

DATE		

GUY ATTACHMENT



SPAN GUY

ITEM NO.	DESCRIPTION	GUY ATTACH
		QTY.
2	Machine Bolt, 3/4" x 14", 18,350 lbs. Ultimate Tensile	4
3	Curved Washer, Cast, 4" x 4"	4
4	Pole Eye Plate, 21,000 lbs. Ultimate Tensile	2
11	Double Coil Spring Lock Washer 3/4"	4

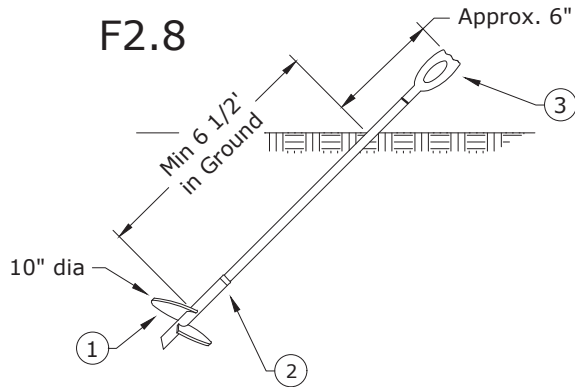
ITEM NO.	DESCRIPTION	SPAN GUY
		QTY.
5	Guy Grip, 18M	150ft
6	Guy Grip, 18M, Preformed	5
7	Guy Grip, 18M, Automatic, Long	1
9	Insulator, Fiberglass, 2 Wheel, 7', 21,000 lbs. Ultimate, 530kV Wet Flashover	2



CONSTRUCTION STANDARDS

SPAN GUYS

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ULTIMATE HOLDING CAPACITY		
	F2.8	
Torque	(lbs)	
(ft-lbs)	10" Helix 1" x 7' Rod	14" Helix 1" x 7' Rod + 3 1/2' Rod
500	4,200	7,350
1,000	7,600	10,700
1,500	11,000	14,050
2,000	14,400	17,400
2,500	17,800	20,750
3,000	21,200	24,100
3,500	24,600	27,450
4,000	28,000	30,800
4,500	31,400	34,150
5,000	34,800	36,000

Notes:

1. A minimum of 6 1/2' of the F2.8 anchor/rod from the top of the helix must be in the ground to obtain the rated holding capacity.
2. 8" helix anchors may be used assuming that the requisite holding capacity is met.

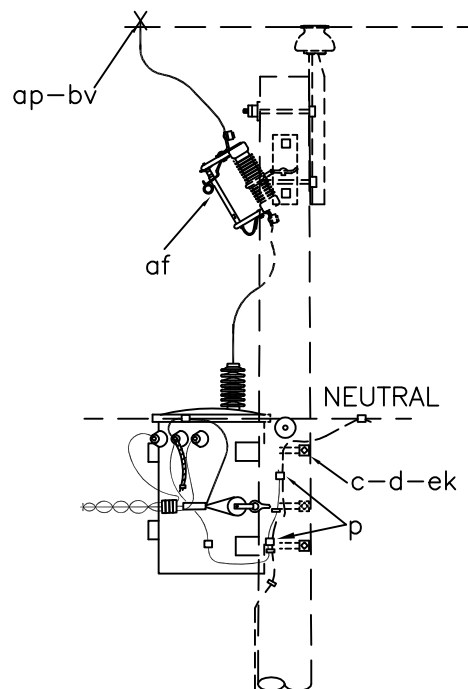
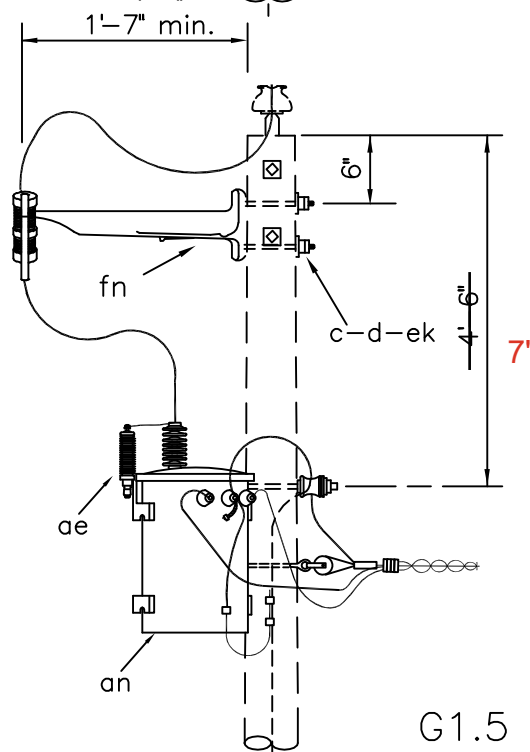
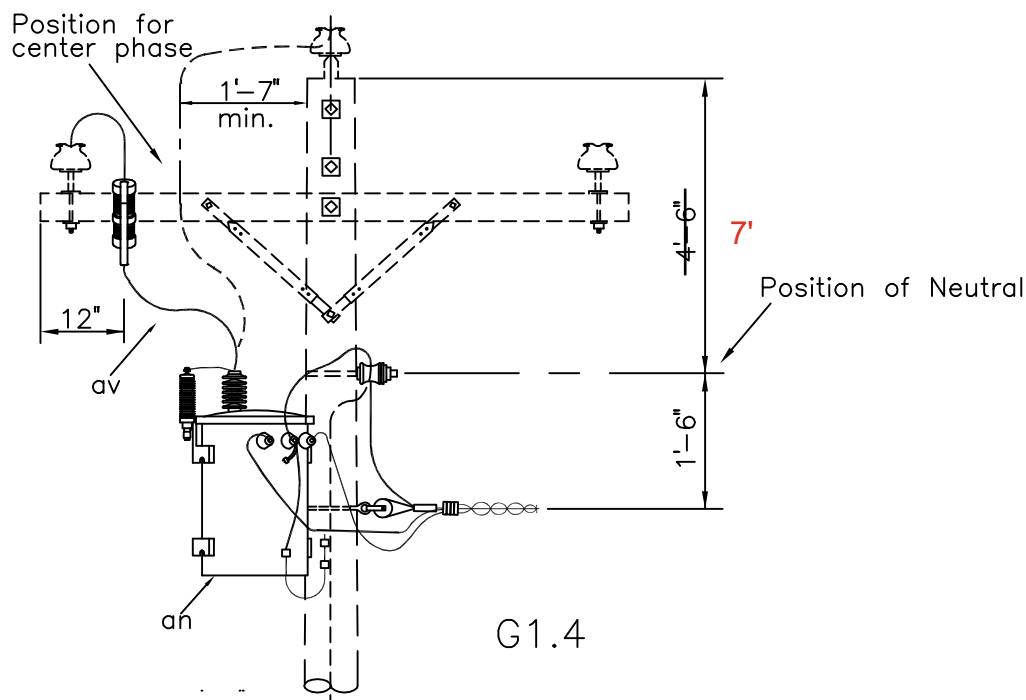
ITEM NO.	DESCRIPTION	F2.8
		QTY.
1	10" Helix Screw Anchor, 15,000 ft-lbs.	1
2	Anchor Rod 1" x 7' - 36,000 lbs. Ultimate Tensile	1
3	Triple Eye Anchor Nut 1"	1



CONSTRUCTION STANDARDS

SINGLE HELIX SCREW ANCHORS

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NOTE: Rotate cutout so the blade faces climbing face of pole.

ASSEMBLY: G1		.4	.5
ITEM	MATERIAL	QTY	QTY
c	Bolt, machine, 5/8" x req'd length	2	4
d	Washer, square, 2 1/4"	2	4
p	Connectors, as req'd		
ae	Arrester, surge (9 kV)	1	1
af	Cutout, dist., open (15 kV)	1	1
an	Transformer, 12.47 kV, conventional	1	1

ASSEMBLY: G1		.4	.5
ITEM	MATERIAL	QTY	QTY
ap	Clamp, hot line	1	1
av	Jumpers, stranded, as req'd		
bv	Rod, armor, as req'd		
ek	Locknuts,	2	4
fn	Bracket, extension		1

DESIGN PARAMETERS:

See Guide Drawing "G1.1G"

SINGLE-PHASE, CONVENTIONAL TRANSFORMER
(TANGENT POLE)

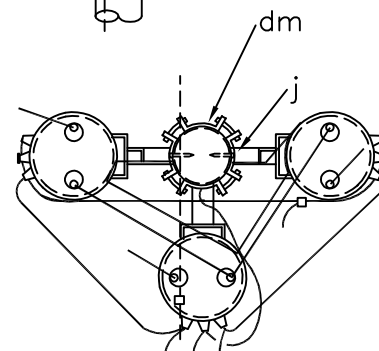
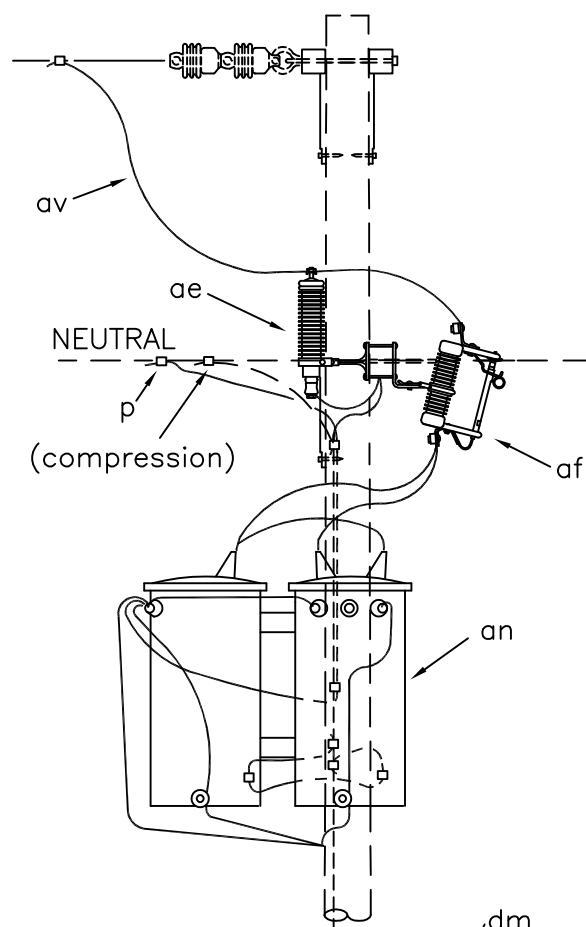
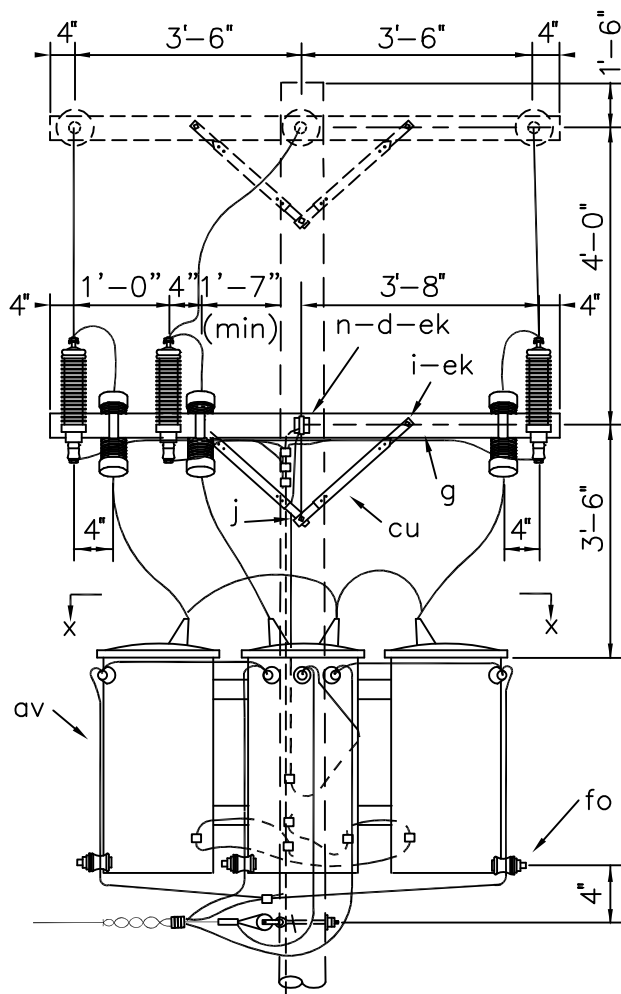
APRIL 2005

RUS

12.47/7.2 kV

G1.4

G1.5



SECTION X-X

NOTES:

1. See Drawing "Q3.1" for additional connection and metering details.
2. All transformer tanks must be grounded.

ITEM	QTY	MATERIAL
d	2	Washer, square, 2 1/4"
g	1	Crossarm, 3 5/8" x 4 5/8" x 8'-0"
i	2	Bolt, carriage, 3/8" x 4 1/2"
j		Screw, lag, 1/2" x 4" as req'd
n	1	Bolt, dble arm, 5/8 x req'd length
p		Connectors, as req'd
p		Connectors, compression, as req'd
ae	3	Arrester, surge, (9 kV)

ITEM	QTY	MATERIAL
af	3	Cutout, dist. open (15 kV)
an	3	Transformer, 12.47 kV, conventional
av		Jumpers, bare, stranded
av		Jumpers, service, as req'd
cu	2	Brace, 28"
dm	1	Bracket, transformer, cluster with adapter plates as req'd
ek	5	Locknuts
fo	3	Bracket, transformer, insulated

DESIGN PARAMETERS:

See Guide Drawing "G3.1G"

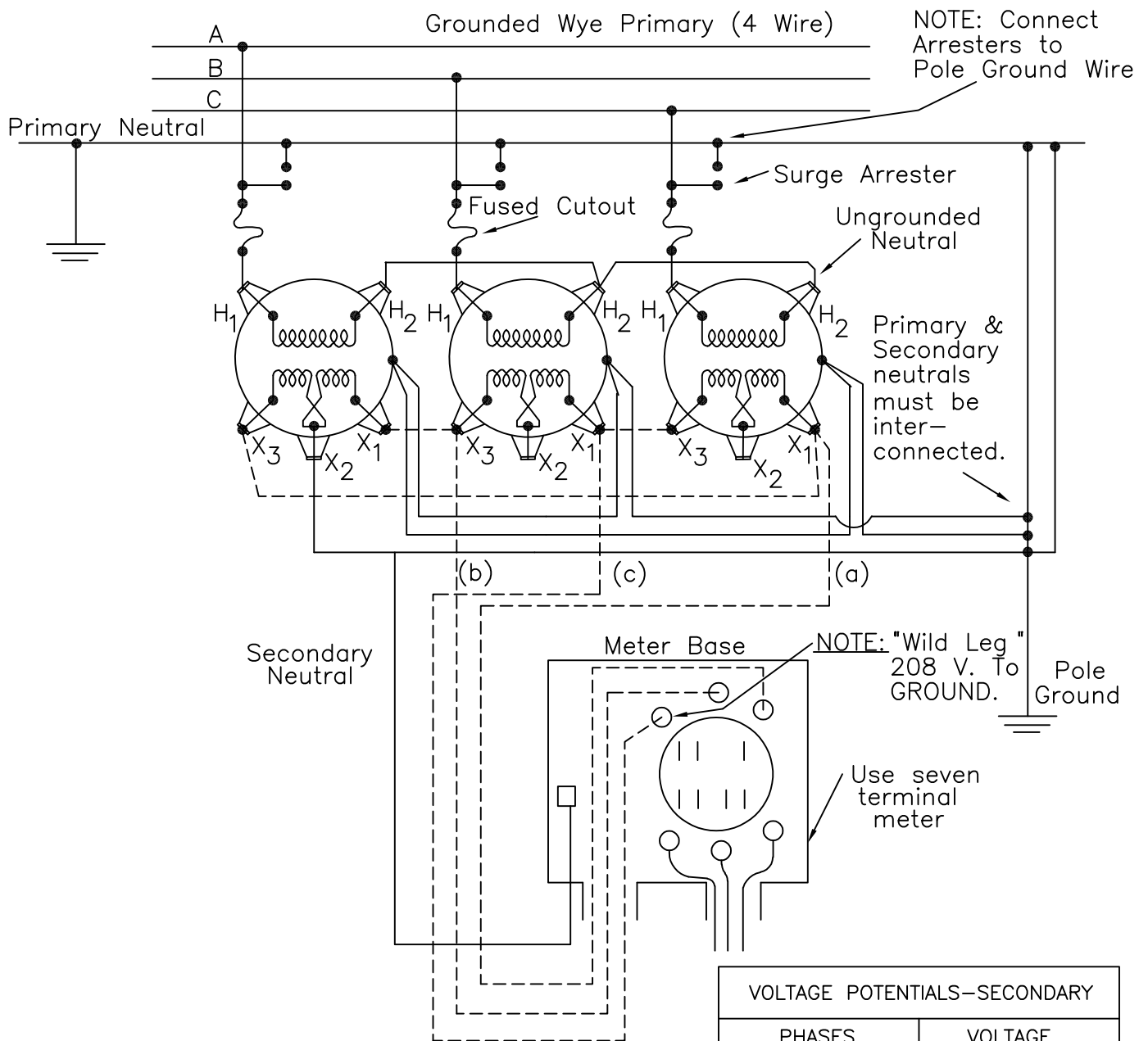
THREE-PHASE TRANSFORMER BANK
UNGROUND-WYE PRIMARY
CENTER-TAP GROUNDED DELTA, 4 WIRE SECONDARY

APRIL 2005

RUS

3 - PHASE PRIMARY
12.47/7.2 kV

G3.1
(G310-)



APPLICATION: Used to supply three-phase, 240 volt loads with small amounts of 120/240 volt single-phase loads.

See drawing "G3.1" or "VG3.1" for construction details.

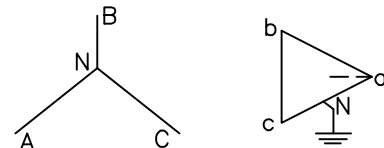
CAUTION: Only ground one secondary neutral bushing of the three transformers. Connecting the high-voltage neutral to the system neutral may cause the transformer bank to burn out. Largest transformer capacity should not be more than 2 times the smallest transformer kVA.

BANK RATING: The center tapped transformer carries 2/3 of the 120/240 volt single-phase load; each of the three units carry 1/3 of the 240 volt three-phase load.

VOLTAGE POTENTIALS—SECONDARY

PHASES	VOLTAGE
a-b	240 VOLTS
b-c	240 VOLTS
a-c	240 VOLTS
a-N	120 VOLTS
b-N	120 VOLTS
c-N	208 VOLTS

210° ANGULAR DISPLACEMENT



(Additive Polarity—See TRANSFORMER SPECIFICATIONS)

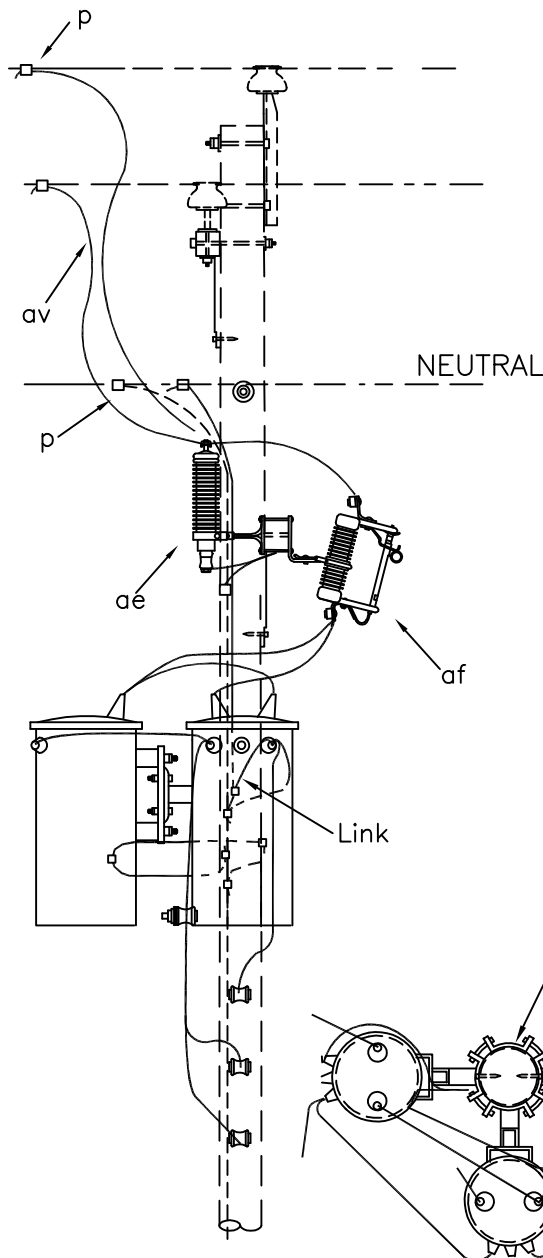
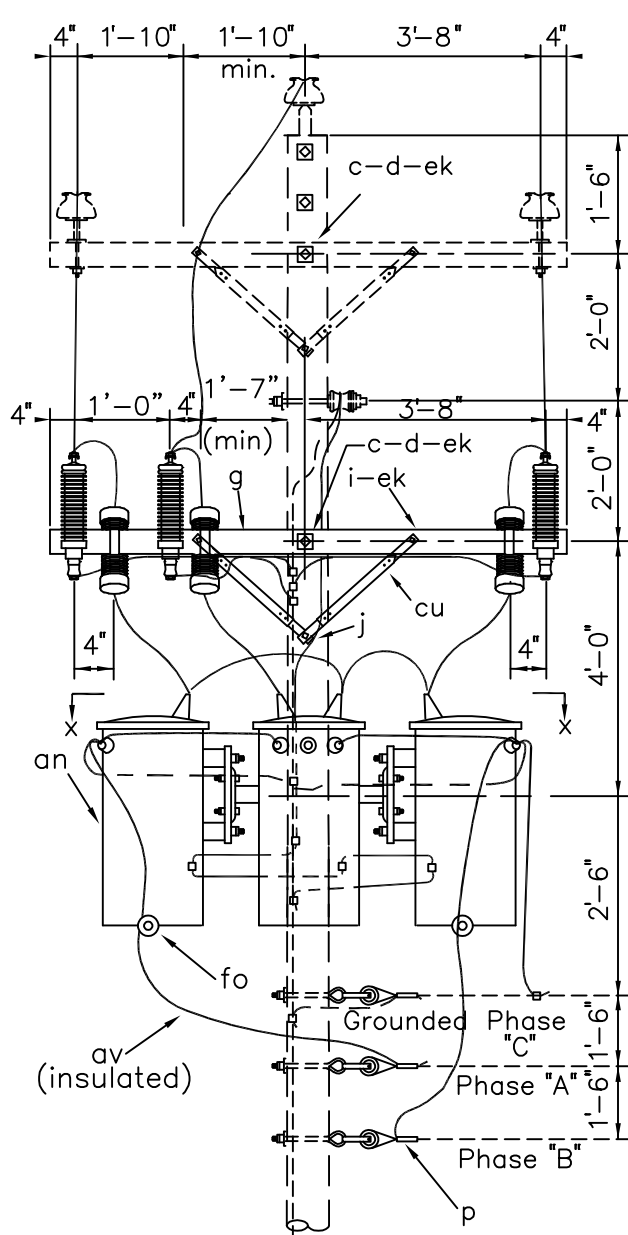
TRANSFORMER/METER CONNECTION GUIDE UNGROUND WYE – CENTER TAP GROUNDED DELTA FOR 120/240 VOLT POWER LOADS

APRIL 2005

3 - PHASE PRIMARY

RUS

G3.1G



NOTES:

1. See Drawing "Q3.2" for additional connection and metering details.
2. This transformer connection not recommended for new services.

SECTION X-X

ITEM	QTY	MATERIAL
d	2	Washer, square, 2 1/4"
g	1	Crossarm, 3 5/8" x 4 5/8" x 8'-0"
i	2	Bolt, carriage, 3/8" x 4 1/2"
j		Screw, lag, 1/2" x 4", as req'd
n	1	Bolt, dble arm, 5/8" x req'd length
p		Connectors, as req'd
p		Connectors, compression, as req'd
ae	3	Arrester, surge, (9 kV)

ITEM	QTY	MATERIAL
af	3	Cutout, dist. open (15 kV)
an	3	Transformer, 12.47 kV, conventional
av		Jumpers, bare, stranded
av		Jumpers, service, as req'd
cu	2	Brace, 28"
dm	1	Bracket, transformer, cluster with adapter plates as req'd
ek	5	Locknuts
fo	3	Bracket, transformer, insulated

DESIGN PARAMETERS:

See Guide Drawing "G3.2G"

THREE-PHASE TRANSFORMER BANK
UNGROUND-WYE PRIMARY
CORNER GROUNDED DELTA, 3 WIRE SECONDARY

APRIL 2005

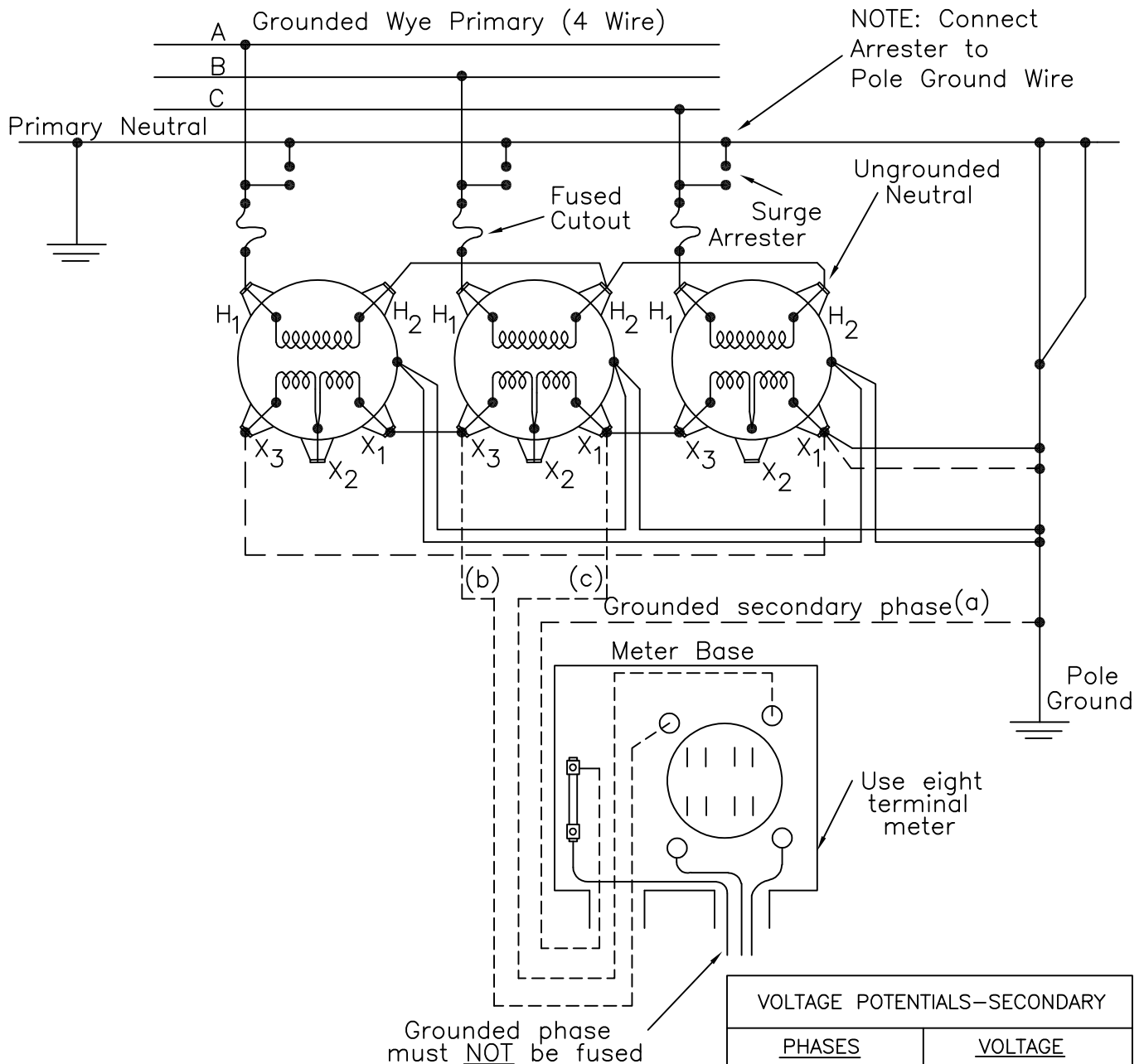
RUS

3 - PHASE PRIMARY

12.47/7.2 kV

G3.2

(G311-)



APPLICATION: Used to supply three-phase (only), 240 or 480 volt power loads.

See drawing "G3.2" or "VG3.2" for construction details.

BANK RATING: The maximum safe kVA rating of the bank is three times the kVA rating of the smallest transformer.

NOTES:

One-half of the above voltages apply when a 240 volt bank is used.

All tanks to be grounded.

Disconnect all secondary neutrals from tank and do not ground.

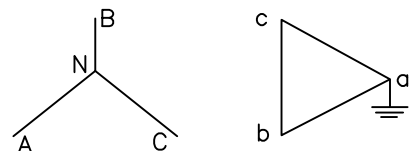
Do not ground bank on primary side. (If grounded, the bank would be a grounding bank for the entire circuit.)

The grounding secondary wire is a current carrying phase wire operating at ground potential and must be identified throughout the circuit run. It is not a neutral.

VOLTAGE POTENTIALS—SECONDARY

PHASES	VOLTAGE
a-b	480 VOLTS
b-c	480 VOLTS
a-c	480 VOLTS
a-GRD	0 VOLTS
b-GRD	480 VOLTS
c-GRD	480 VOLTS

210° ANGULAR DISPLACEMENT



(Additive Polarity—
See TRANSFORMER SPECIFICATIONS)

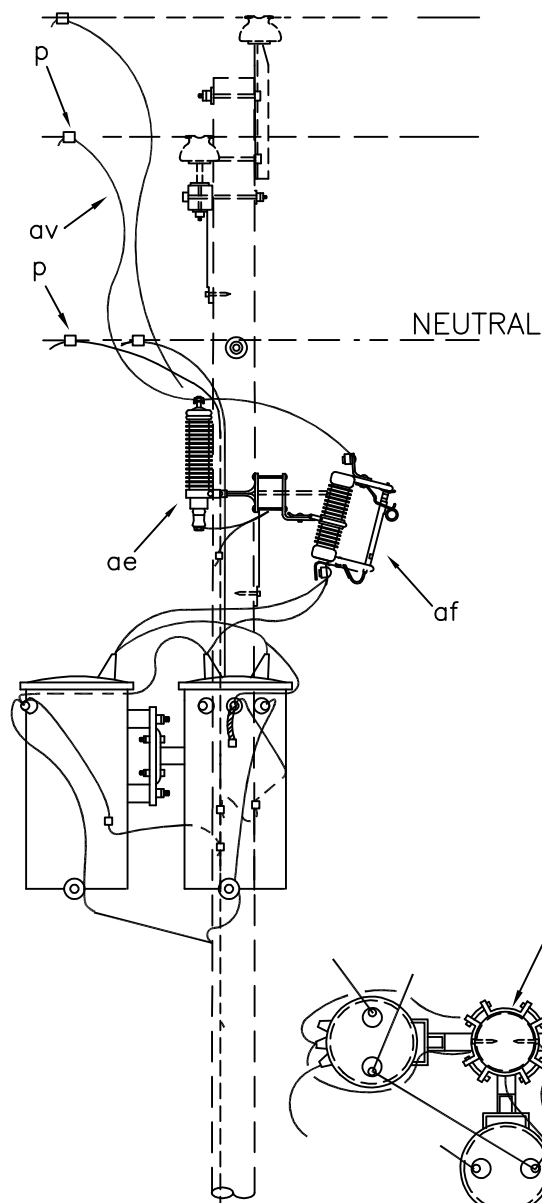
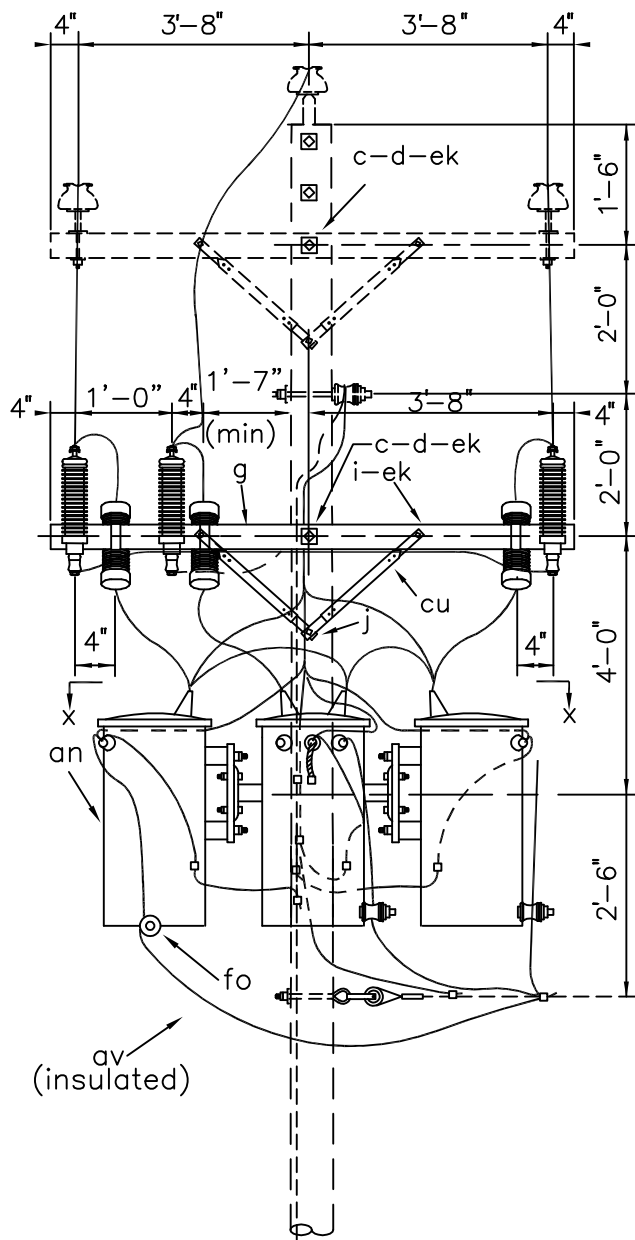
TRANSFORMER/METER CONNECTION GUIDE
 UNGROUNDED WYE – CORNER GROUNDED DELTA
 FOR 240 or 480 VOLT POWER LOADS

APRIL 2005

3 – PHASE PRIMARY

RUS

G3.2G



SECTION X-X

NOTES:

1. See Drawing "Q3.3" for additional connection and metering details.

ITEM	QTY	MATERIAL
d	2	Washer, square, 2 1/4"
g	1	Crossarm, 3 5/8" x 4 5/8" x 8'-0"
i	2	Bolt, carriage, 3/8" x 4 1/2"
j		Screw, lag, 1/2" x 4", as req'd
n	1	Bolt, dble arm, 5/8" x req'd length
p		Connectors, as req'd
p		Connectors, compression, as req'd
ae	3	Arrester, surge, (9 kV)

ITEM	QTY	MATERIAL
af	3	Cutout, dist. open (15 kV)
an	3	Transformer, 12.47 kV, conventional
av		Jumpers, bare, stranded
av		Jumpers, service, as req'd
cu	2	Brace, 28"
dm	1	Bracket, transformer, cluster with adapter plates as req'd
ek	5	Locknuts
fo	3	Bracket, transformer, insulated

DESIGN PARAMETERS:

See Guide Drawing "G3.3G"

THREE-PHASE TRANSFORMER BANK
GROUNDED-WYE PRIMARY
GROUNDED WYE, 4 WIRE SECONDARY

APRIL 2005

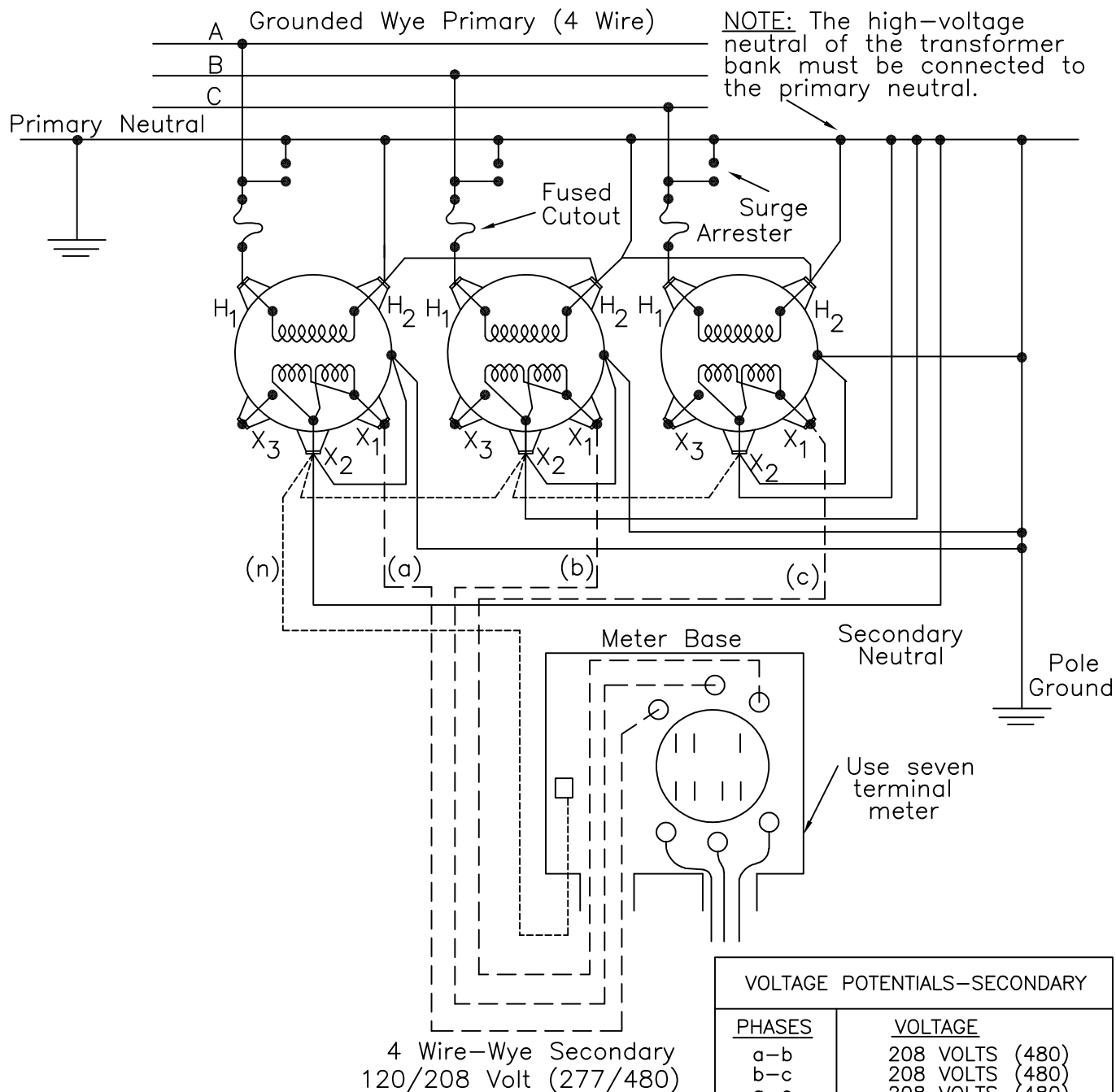
RUS

3 - PHASE PRIMARY

12.47/7.2 kV

G3.3

(G312-)



APPLICATION: Used to supply 120/208 volt single-phase and 208 volt, three-phase power loads.

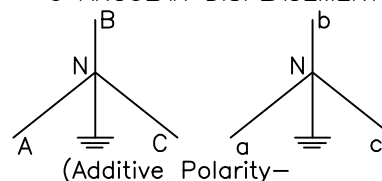
See drawing "G3.3" or "VG3.3" for construction details. Reconnect secondary windings of transformers as shown. Matched (impedance and kVA) transformers are usually used.

BANK RATING: Each unit will supply 1/3 of the three-phase load and all of the single-phase load connected to it.

CAUTION: The primary and secondary neutrals must be firmly tied together and grounded or else excessive secondary voltages may develop.

VOLTAGE POTENTIALS—SECONDARY	
PHASES	VOLTAGE
a-b	208 VOLTS (480)
b-c	208 VOLTS (480)
a-c	208 VOLTS (480)
a-N	120 VOLTS (277)
b-N	120 VOLTS (277)
c-N	120 VOLTS (277)

0° ANGULAR DISPLACEMENT



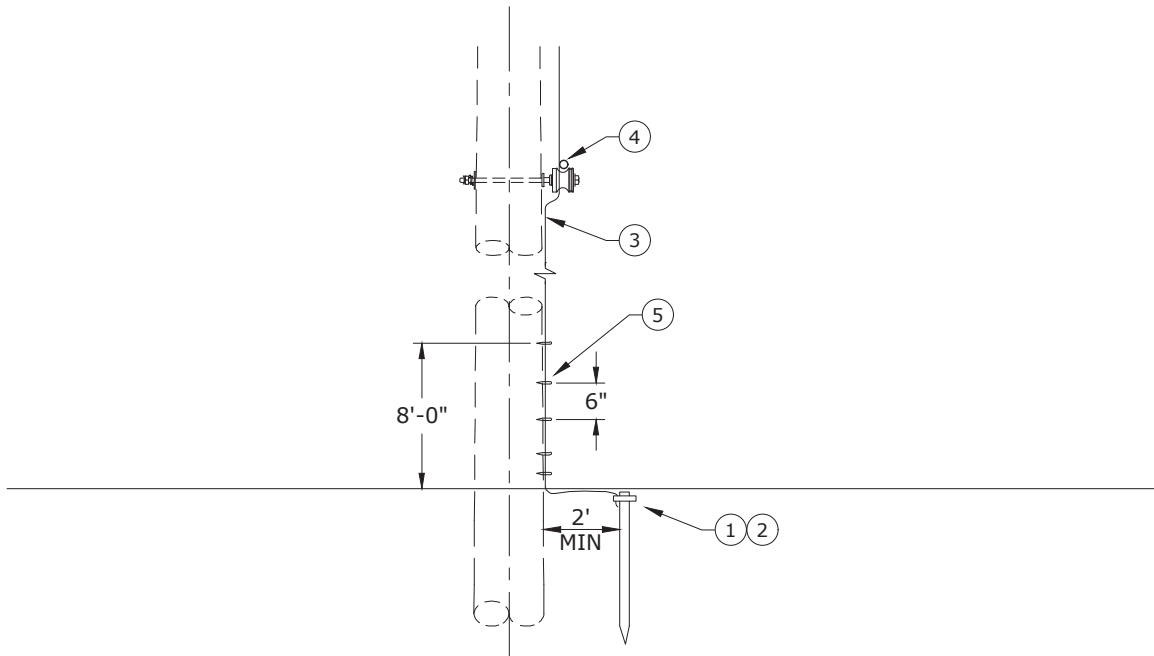
TRANSFORMER/METER CONNECTION GUIDE GROUNDED WYE — GROUNDED WYE FOR 120/208 VOLT POWER LOADS

APRIL 2005

3 — PHASE PRIMARY



RUS

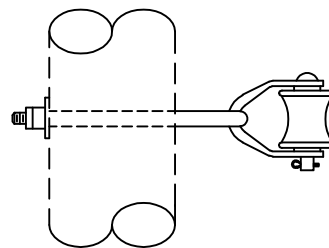
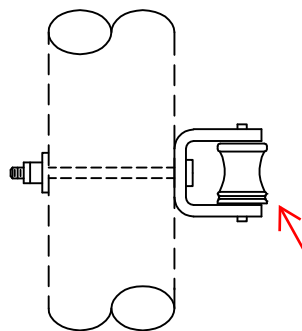
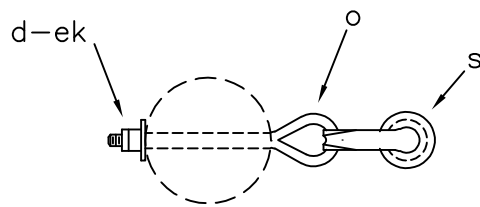
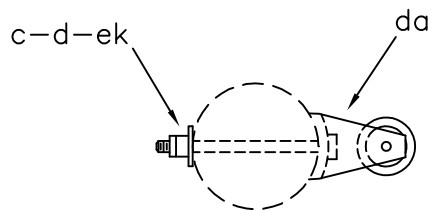
G3.3G



- Notes:**
1. Staple every 6" from ground line up to 8' above ground.
 2. Top of rod must be below final grade.

ITEM NO.	DESCRIPTION	H1.1
		QTY
1	Rod, Ground, 5/8" x 8'	1
2	Clamp, Ground Rod, 5/8", Small, Bronze	1
3	Conductor, Copper-Clad Steel, Black w/ Green Stripe, #4 Cu Equivalent, 40% Annealed	40
4	Connector, H-Tap, Al/Cu, Run #2-2/0 Str - Tap #6-#1 Str ✱	1
5	Staple, Ground, Barbed, Galvanized, 1 1/2"	24

	CONSTRUCTION STANDARDS BASIC UNITS GROUNDING				
	PAGE: 1 of 1		H1.1		



J2.1

J2.2

ADD DEADEND
AUTOMATICS BY
SECONDARY
CONDUCTOR
SIZES.

ITEM	MATERIAL	J2.1	J2.2
		QTY	QTY
c	Bolt, machine, 5/8" X req'd length	1	
d	Washer, 2 1/4" square	1	1
o	Bolt, eye, 5/8" X req'd length		1
s	Clevis, secondary, swinging, insulated		1
da	Bracket, insulated	1	
ek	Locknuts	1	1

DESIGN PARAMETERS:
MAXIMUM LINE ANGLES

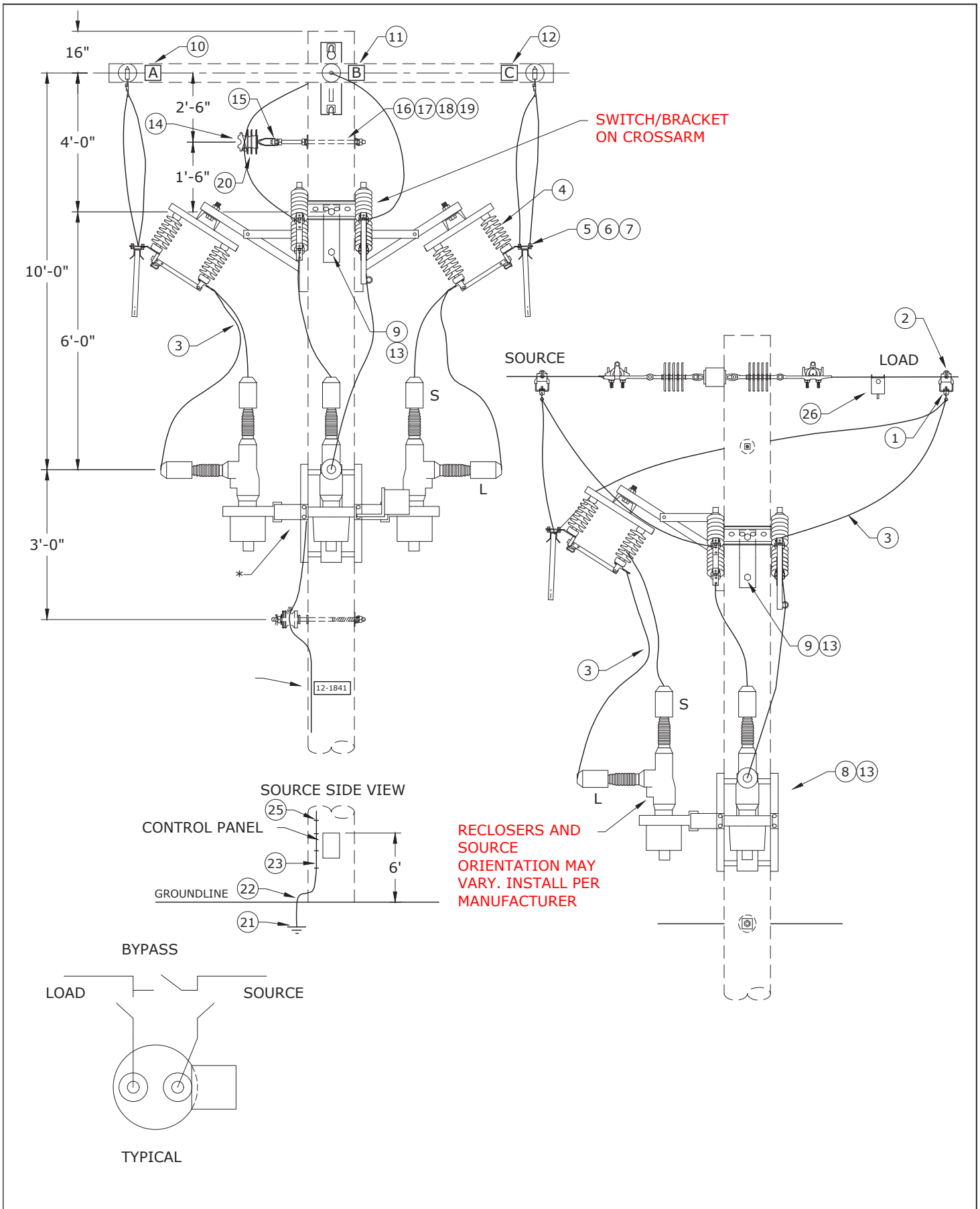
J2.1: 60°
J2.2: 60°

SECONDARY ASSEMBLIES
(LARGE ANGLE)

APRIL 2005

RUS

J2.1,J2.2
(J10),(J7,J7C)




CONSTRUCTION STANDARDS

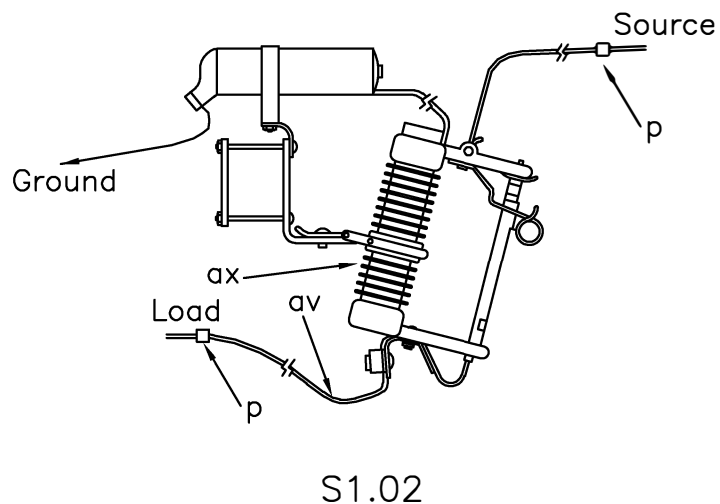
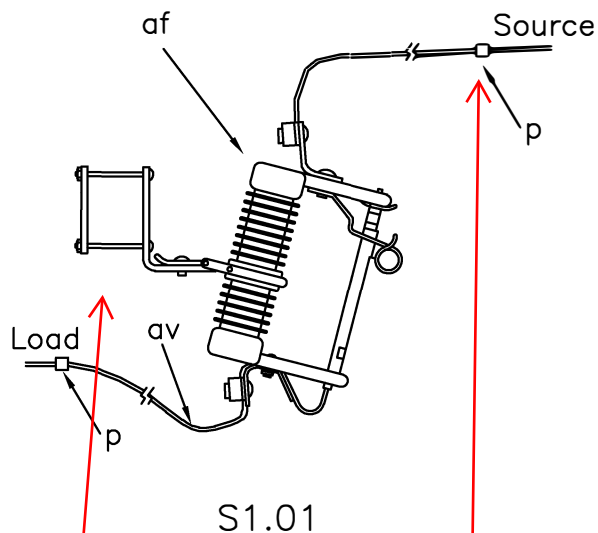
THREE 1Ø
SOLID DIELECTRIC RECLOSERS

PAGE:
1 of 2

R3.3

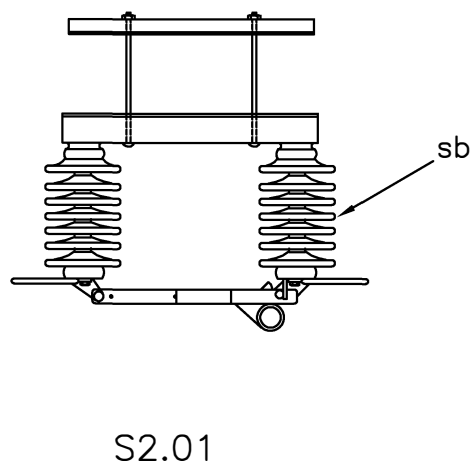
DATE	ENGR	OPS

			R3.3
ITEM NO.	DESCRIPTION		
		QTY.	
1	Clamp, Hotline GP 1540	6	
2	Clamp, Hotline Stirrup, 266.5 - 397.5 Al/Cu	6	
3	Conductor, 4/0 Cu, 1/C, 600V XLP, 19 Str.	80	
4	Switch, Transfer 600A	3	
5	Connector, Comp Lugs, Cu 4/0 to Cu 4/0	12	
6	Bolt, Machine 1/2" x 2", Stainless Steel	24	
7	Bolt, Assembly, 1 1/2" x 2", SS W/ Belleville & Flat Washers	48	
8	Bolt, Machine 5/8" x 12", Galv., 12,400 lbs. Ultimate Tensile	4	
9	Bolt, Machine 5/8" x 14", Galv., 12,400 lbs. Ultimate Tensile	2	
10	Tag, Phasing - A	1	
11	Tag, Phasing - B	1	
12	Tag, Phasing - C	1	
13	Washer, Curved, Square, Cast 3" x 3" x 3/8" Thick x 13/16" Hole	4	
ITEM NO.	DESCRIPTION		
		QTY.	
14	Insulator, Pin, Vise-top, Polyethylene	1	
15	Pin, Adapter	1	
16	Washer, Curved, Square, Cast 3" x 3" x 3/8" Thick x 13/16" Hole	2	
17	Bolt, Double, Arm, 5/8" x 16" Galv.	1	
18	Washer, Lock, Spring, Double Coil, Galv., 5/8"	1	
19	Washer, Lock, Spring, Single Coil, Galv., 5/8"	2	
20	Wire, Tie, Al Annealed #4 SD	10	
ITEM NO.	DESCRIPTION		
		N1 QTY.	
21	Rod, Ground, 5/8" x 8'	1	
22	Clamp, Ground rod, 5/8", Small, Bronze	1	
23	Conductor, Cu-Clad Steel, #4 Cu Equivalent, Black Jacket	36	
24	Connector, Compression, Cu/Al, Neutral	1	
25	Staple, Ground, Barbed, Galv. 1 1/2"	10	
ITEM NO.	DESCRIPTION		
		QTY.	
26	Fault Indicator, OH Beacon, 400A	3	
27	Conduit, Flex, Liquid Tight, 3/4"	10	
28	Conduit, PVC, 3/4" x 10', Sch. 80	3	
29	Conductor, Cu, #12, 600V, 19 Strand (Streetlight)	35	
30	Standoff Bracket 10 1/2"	3	
		CONSTRUCTION STANDARDS THREE 1Ø SOLID DIELECTRIC RECLOSERS	
		<div> <div> <div>△</div> <div></div> </div> <div> <div></div> <div></div> </div> <div> <div></div> <div></div> </div> <div> <div></div> <div></div> </div> <div> <div></div> <div></div> </div> <div> <div>△</div> <div></div> </div> </div>	
PAGE: 2 of 2		R3.3	



WOOD XARM
MOUNTABLE

STIRRUP AND
HOTLINE CLAMP
IN SOURCE SIDE.



NOTES: Specify cutouts to be furnished with fuse tube or switch blade.

"S2.01" may be used with assembly "C6.21" (mount braces above crossarm). See "S2.32".

ASSEMBLY: S		1.01	1.02	2.01
ITEM	MATERIAL	QTY	QTY	QTY
P	Connector, as req'd			
af	Cutout, dist., open (15 kV)	1		
ax	Cutout, & Arrester Comb. (9 kV)		1	
av	Jumpers, as req'd			
sb	Switch, disconnect (15 kV)			1



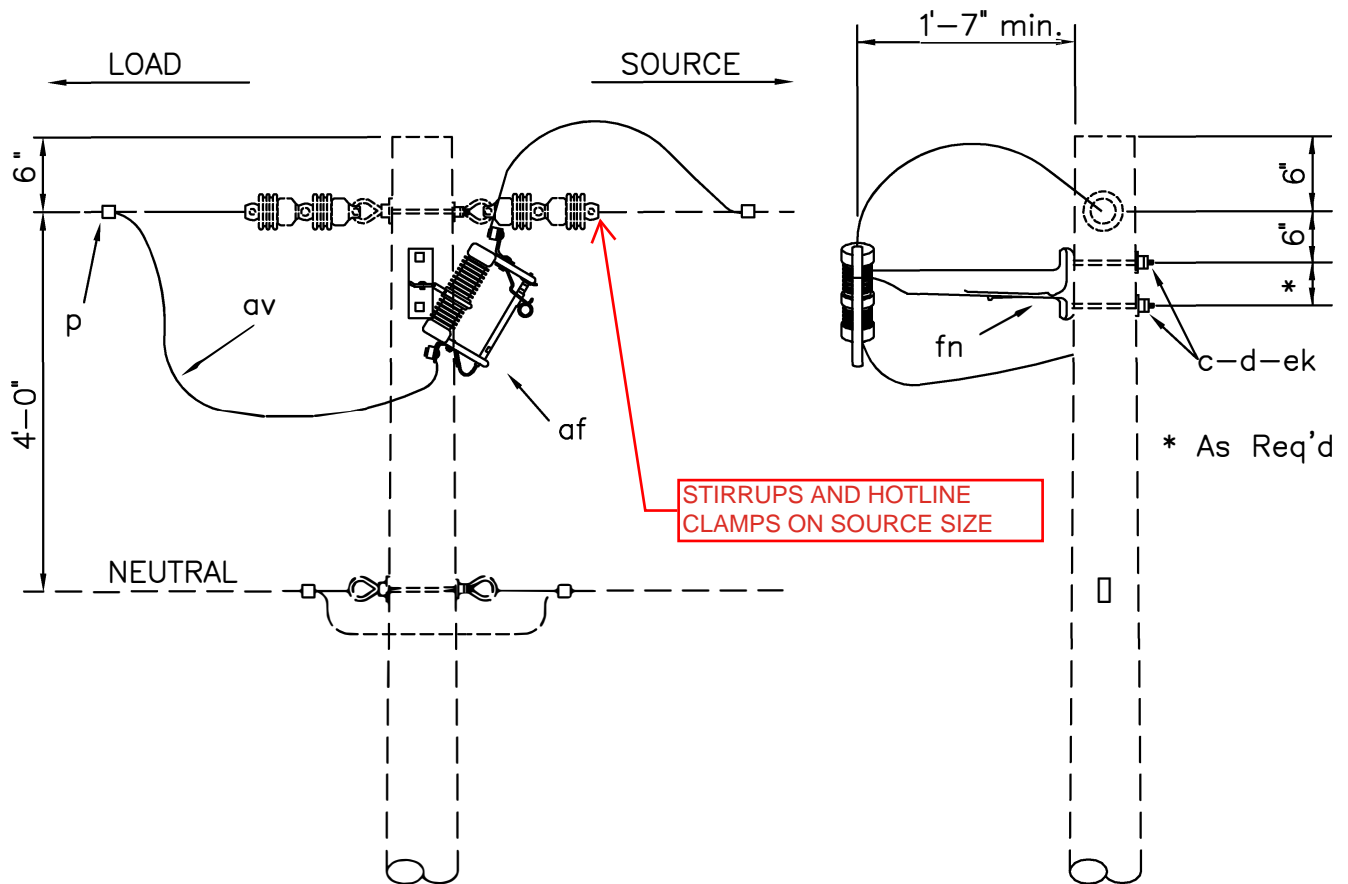
MISCELLANEOUS CUTOUTS AND DISCONNECT SWITCH

APRIL 2005

RUS

12.47/7.2 kV

S1.01,S1.02,S2.01
(M5-9),(M5-10)



NOTE: Specify fuse size or solid blade

ITEM	QTY	MATERIAL
c	2	Bolt, machine, 5/8" x req'd length
d	2	Washer, square, 2 1/4"
p	2	Connector, compression type
af	1	Cutout, distribution, open (15 kV)
av		Jumpers, as required
ek	2	Locknuts
fn	1	Bracket, extension



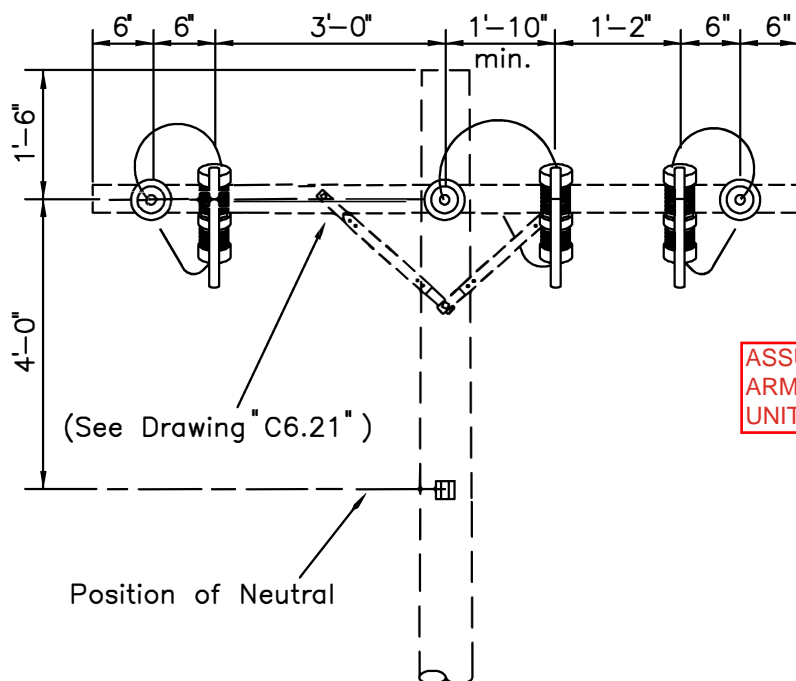
CUTOUT – SINGLE PHASE

APRIL 2005

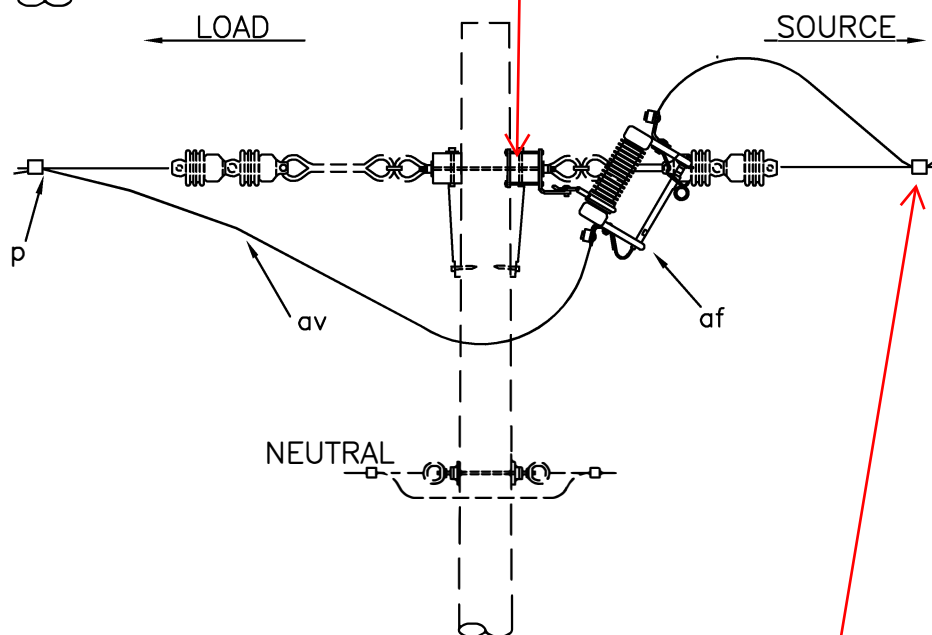
RUS

12.47/7.2 kV

S1.1
(M3-4)



ASSUME FIBERGLASS DE ARM - NOT A PART OF THIS UNIT.



STIRRUPS AND HOTLINE CLAMPS ON SOURCE SIZE

NOTES:

1. Specify fuse size or solid blade.
2. Mount cutouts so that blades face climbing face of pole.

ITEM	QTY	MATERIAL
P	6	Connector, compression type
af	3	Cutout, distribution open (15 kV)
av		Jumpers, as req'd

CUTOUT BRACKETS TO BE MOUNTABLE ON DEADEND FIBERGLASS CROSSARMS



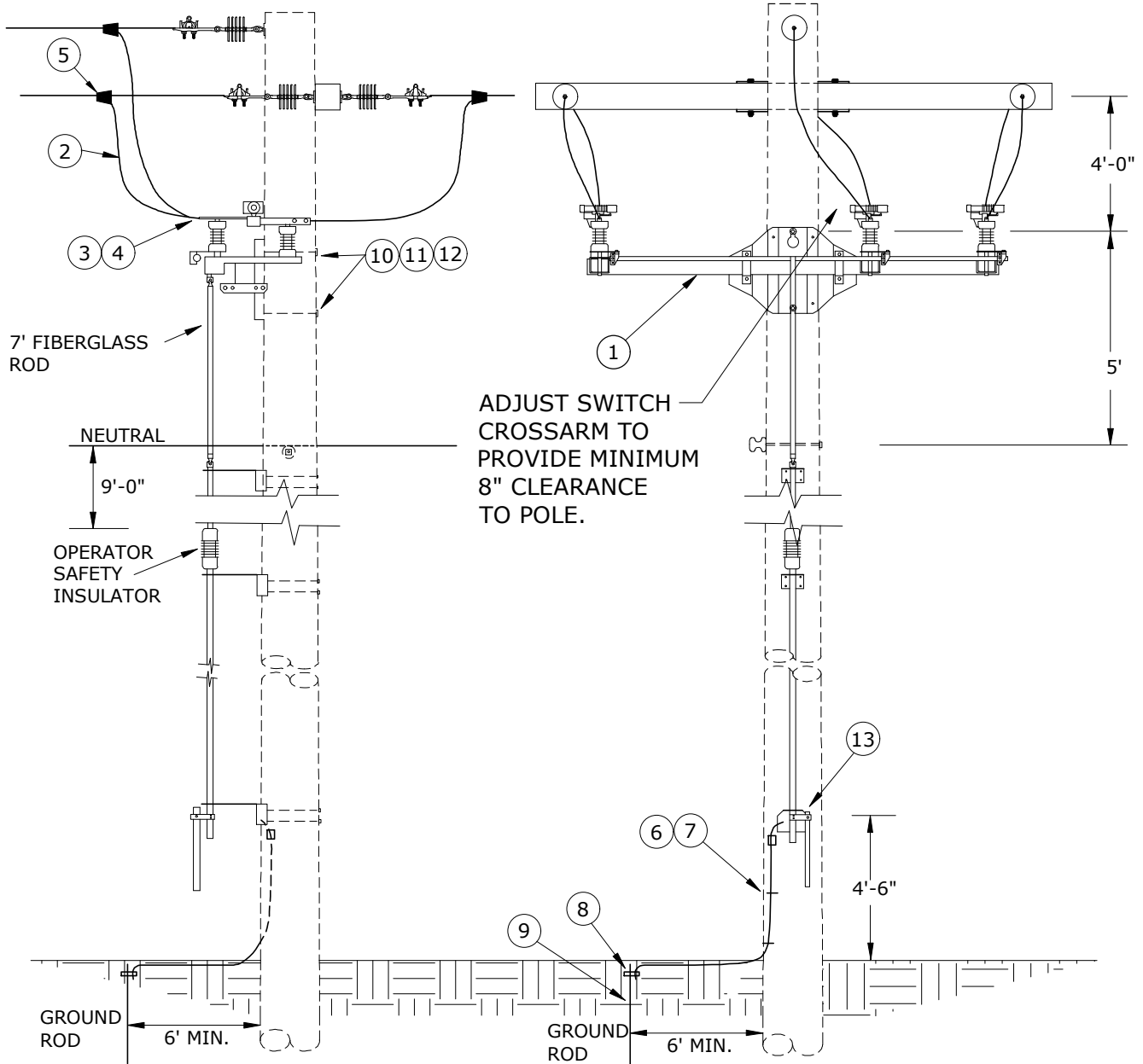
CUTOUTS
(THREE SINGLE-PHASE)

APRIL 2005

RUS

12.47/7.2 kV

S1.3



ITEM NO.	DESCRIPTION	S2.32
		QTY.
1	Switch, loadbreak, horizontal, 15kV	1
2	Conductor, OH, 336 MCM AL, Bare	60
3	Connector, Clamp, 336 to NEMA 2-Hole	6
4	Bolt, Nut, Washer, SS, 1/2" x 2", Assembly	12
5	Connector, Tap, Power Booster, 397-397	6
6	Conductor, #4 CU, covered	20
7	Staples, Ground wire	5
8	Clamp, Ground rod, 5/8", Bronze, Small	1
9	Rod, Ground, 8'	1
10	Bolt, Machine, Galv., 3/4" x 16"	2
11	Washer, Curved, Cast 4" x 4" x 13/16" Hole	2
12	Washer, Spring, 3/4"	2
13	Lock, Padlock, Hardened Stainless Steel	1



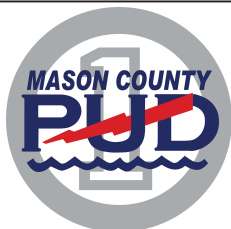
CONSTRUCTION STANDARDS

3Ø SWITCH
UNDERSLUNG

△			
△			

NOTES:

1. Make connections as close to terminator as possible but DO NOT make a sharp bend. Use hot line clamp for easy removal.
2. Connect surge arrester lead to concentric neutral.
3. Connect concentric neutral wires (twist together) to 2/0 stranded copper with 4/0-2/0 crimpet. Connect separate 2/0 runs, as per drawing, from each concentric neutral to the system neutral. Use 2/0 covered conductor and train this conductor back down along the 500MCM cable for appearance.
4. Use separate ground lead for system neutral grounding connection. Any other equipment grounds may be connected to this ground lead also per NESC 092B3.
5. Do not connect arrester grounds separately to system neutral. Connect to concentric neutral as near to the terminator as possible per NESC 097B.
6. Do not ground equipment mounting bracket per NESC 123A.
7. Top of ground rod must be buried per NESC 094C2a3.
8. If more than one ground rod is required they must be separated by at least 6 feet per NESC 094C2a2.




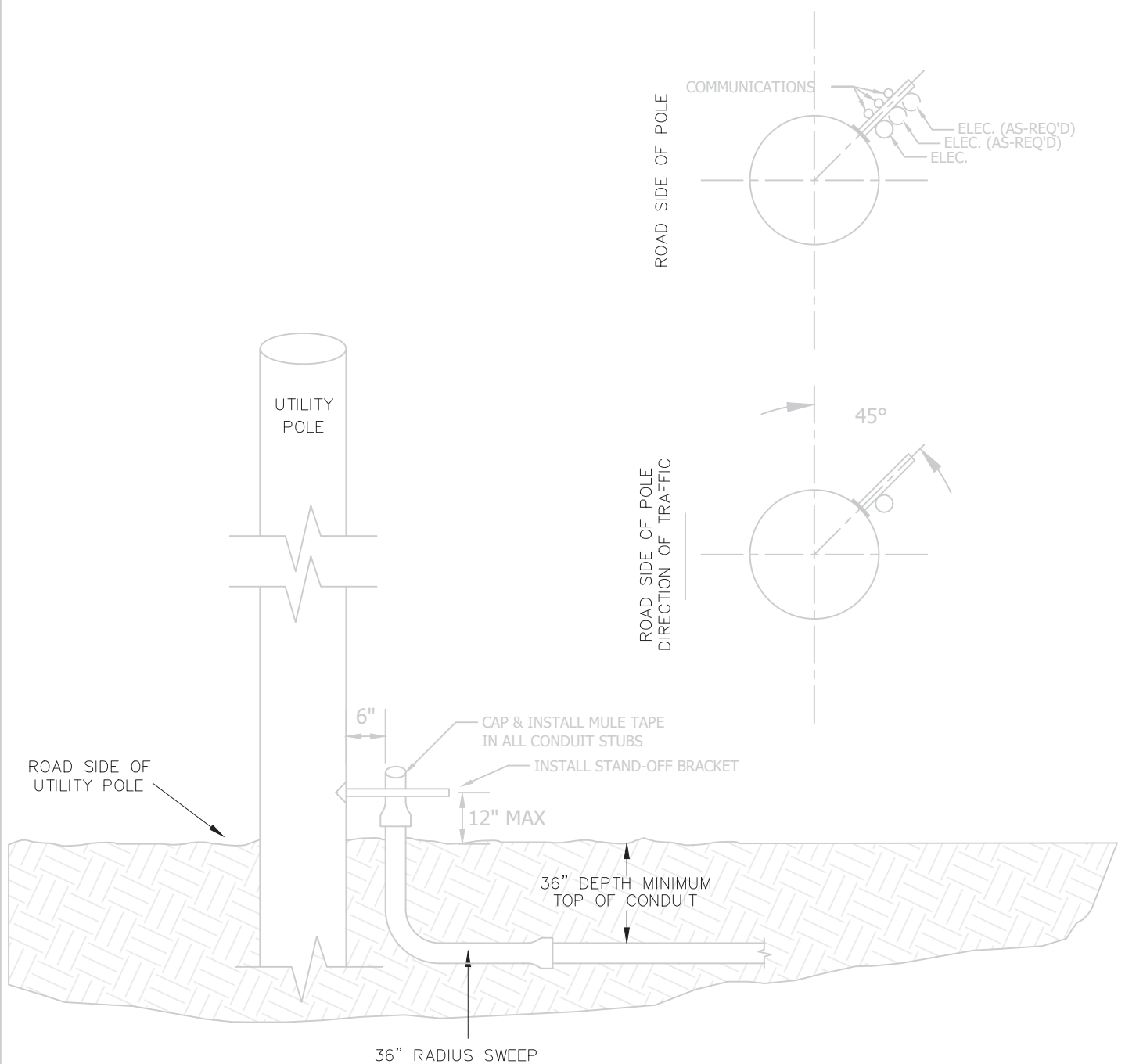
CONSTRUCTION STANDARDS

500 MCM CABLE RISER GROUNDING DETAIL

PAGE:
2 of 2

HC3.3 DETAILS



NOTES:

1. If an existing standoff/riser bracket exist at the pole, stub conduit at the existing bracket.
2. Install conduit 6" from the utility pole on the back side of the pole to the road. Use quadrant that is opposite of the direction of traffic. Location to be approved by pud.
3. Customer/contractor to install stand-off bracket. Bracket is to be supplied by customer. Use WESANCO W-1010-15-HDGAF or equivalent.
4. Conduit stub is to be level out of the ground.
5. The conduit shall be stubbed out of the ground a minimum of 6" above final grade.
6. The conduit sweep used to stub up the pole shall be a full 36" radius 90 degree sweep.
6. Proof conduit and install sequentially numbered, 2500 lb mule tape in all futures.



CONSTRUCTION STANDARDS

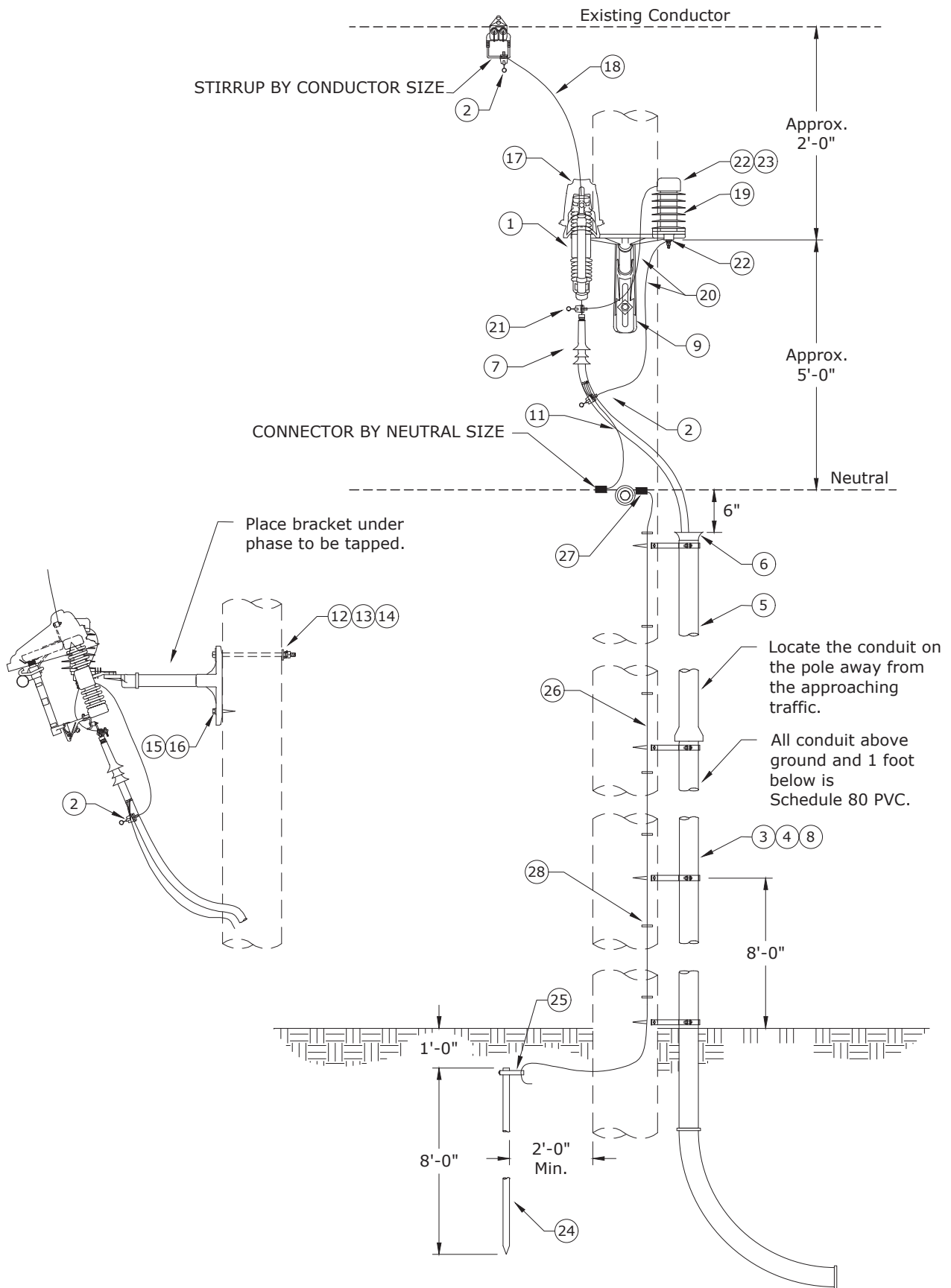
UNDERGROUND POLE RISER CONDUIT STUB

REVISIONS

DATE	ENGR	OPS
3/18/25	JJW	JG

PAGE:
1 of 1

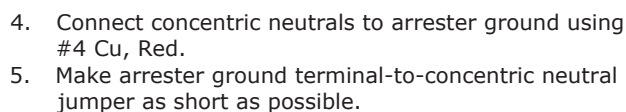
POLE STUB



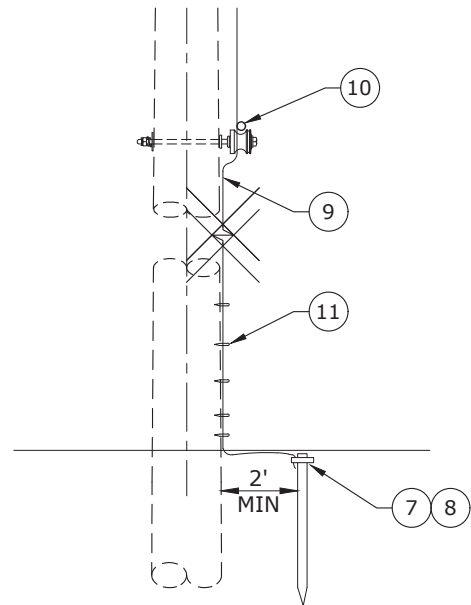
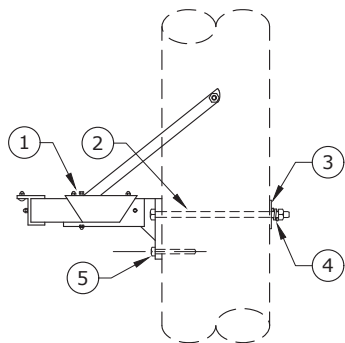
CONSTRUCTION STANDARDS

SINGLE PHASE
PRIMARY RISER

RA			
			DK

The logo for Mason County PUD is a circular emblem. It features a large, stylized gray letter 'M' in the background. Overlaid on the 'M' is the text 'MASON COUNTY' in a bold, blue, sans-serif font. Below this, the letters 'PUD' are written in a larger, bold, blue, sans-serif font. A red diagonal line with a black outline cuts across the 'PUD' text. At the bottom of the emblem, there are three wavy blue lines representing water.

THREE PHASE
PRIMARY RISER







CONSTRUCTION STANDARDS


500MCM CABLE RISER
WITH 3Ø SWITCH

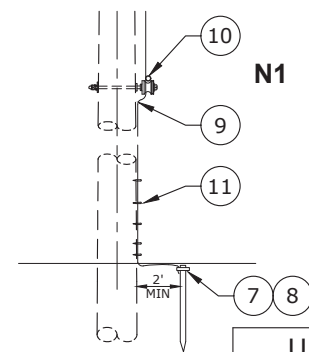
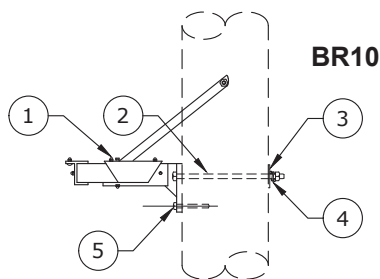
PAGE:
2 of 3

UC3.3GOS

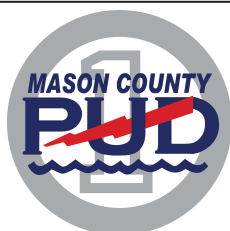
[illegible]

		UC3.3GOS																					
ITEM NO.	DESCRIPTION	BR10																					
		QTY.																					
1	Bracket, Terminator, Mount, 48", 500MCM	1																					
2	Bolt, Machine, 5/8" x 14", Galv, 12,400 lb Ultimate Tensile	1																					
3	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole, Galv	1																					
4	Washer, Lock, Spring, Double Coil, Galv 5/8"	1																					
5	Screw, Lag, 1/2" x 4 1/2", Twist Drive, Drive Point	3																					
6	Support, Cable, 500MCM	3																					
ITEM NO.	DESCRIPTION	N1																					
		QTY.																					
7	Rod, Ground, 5/8" x 8'	1																					
8	Clamp, Ground Rod, 5/8", Small, Bronze	1																					
9	Conductor, Copper-Clad Steel, #4 Cu Equivalent, 40% Annealed, Black Jacket with Green Stripe	40✳																					
10	Connector, H-Tap, Al/Cu, Run #2 - 2/0 Str, Tap #6 - #1 Str	1																					
11	Staple, Ground Wire, Barbed, Galvanized, 1 1/2"	24																					
ITEM NO.	DESCRIPTION	ADDITIONAL MATERIAL																					
		QTY.																					
12	Switch, Loadbreak, Horizontal, 600A, 15kV	1																					
13	Conductor, OH, ACSR, 336, Merlin	60																					
14	Connector, Compression, Lug, 2-Hole, 336 ACSR	6																					
15	Bolt, 1/2" x 2", w/ Flat and Belleville Washers, Assembly	6 ✳																					
16	Connector, Tap, Wedge, Run and Tap 336 ACSR	3																					
17	Conductor, Copper-Clad Steel, #4 Cu Equivalent, 40% Annealed, Black Jacket with Green Stripe	20																					
18	Staple, Ground Wire, Barbed, Galvanized, 1 1/2"	5																					
19	Clamp, Ground Rod, 5/8", Small, Bronze	1																					
20	Rod, Ground, 5/8" x 8'	1																					
21	Machine Bolt, 3/4" x 16" Galv., 18,350 lbs. Ultimate Tensile	2																					
22	Washer, Curved, Cast, 4" x 4" with 13/16" Hole	2																					
23	Washer, Lock Spring, Double Coil, Galv. 3/4"	2																					
24	Lock, Padlock, 2" Hardened Stainless Steel Shackle	1																					
25	Conductor, OH, 600v, Cu, 2/0, 19-Str, XLPE, 80 mil, Soft-Drawn, 1C, RHW-2	60																					
26	Terminator, 15kV, Cold-Shrink JCN, 500 MCM	3																					
27	Arrester, Surge, 9kV, MOV, Riser Pole	3																					
28	Connector, Compression, Lug, Al/Cu, Tin-Plated, 500MCM to NEMA 2-Hole	3																					
29	Clamp, Hot Line, GP 1530, Line #6 Sol - 400MCM, Tap #6 Sol - 4/0 Str Cu Only	3																					
30	Conductor, OH, Cu, #4 Solid, Bare, Soft-Drawn, 1C	10																					
31	Screw, Lag, 1/2" x 4 1/2", Twist Drive, Drive Point	9																					
32	Connector, Crimpet, Cu, Run 3/0 - 4/0 Str, Tap #6 Sol - #2 Str	3 ✳																					
33	Conduit, 3" x 10', Sch 80	90✳																					
34	Clamp, Standoff Bracket, 3"	9																					
35	End Bell, 3" Sch 40	3																					
36	Conductor, OH, 600v, Cu, #2, 7-Str, XLPE, 60 mil, Soft-Drawn, 1C, RHW-2	15																					
37	Bracket, Standoff, 15" with Stop and Brace	3																					
38	Tag, Phase A	1																					
39	Tag, Phase B	1																					
40	Tag, Phase C	1																					
41	Connector, Crimpet, Cu, Run and Tap 1/0 - 2/0 Str	2 ✳																					
42	Guard, Wildlife, Large, OH/UG Terminators	3																					
43	Indicator, Fault, 400A, OH, Beacon with Signal Flag, Electric Field Reset	3																					
44	Guard, Wildlife, Polymer Arrester	3																					
45	Connector, Crimpet, Cu, Run 3/0 Str - 250 Str, Tap #6 Sol - 2/0 Str	3																					
46	Grip, Support, 3" Conduit, 500MCM	3																					
		CONSTRUCTION STANDARDS																					
		500MCM CABLE RISER WITH 3Ø SWITCH																					
PAGE: 3 of 3		UC3.3GOS																					
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ITEM NO.	DESCRIPTION	UPR1	
		BR10	
		QTY.	S/N
1	Bracket, Terminator, Mount, 48", 500MCM	1	2842 *
2	Bolt, Machine, 5/8" x 14", Galv, 12,400 lb Ultimate Tensile	1	156
3	Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole, Galv	1	1392
4	Washer, Lock, Spring, Double Coil, Galv, 5/8"	1	2217
5	Screw, Lag, 1/2" x 4 1/2", Twist Drive, Drive Point	3	1132
6	Support, Cable, 500MCM	3	2229
ITEM NO.	DESCRIPTION	N1	
		QTY.	S/N
		QTY.	S/N
7	Rod, Ground, 5/8" x 8'	1	1124
8	Clamp, Ground Rod, 5/8", Small, Bronze	1	281
9	Conductor, Copper-Clad Steel, #4 Cu Equivalent, 40% Annealed, Black Jacket with Green Stripe	40*	1512 *
10	Connector, H-Tap, Al/Cu, Run #2-2/0 Str - Tap #6-#1 Str	1	413
11	Staple, Ground Wire, Barbed, Galvanized, 1 1/2"	24	2707
ITEM NO.	DESCRIPTION	ADDITIONAL MATERIAL	
		QTY.	S/N
		QTY.	S/N
12	Connector, Tap, Wedge, Run and Tap 336 ACSR	3	2501
13	Conductor, OH, 600v, Cu, 2/0, 19-Str, XLPE, 80 mil, Soft-Drawn, 1C, RHW-2	30	381
14	Conductor, OH, ACSR, 336, Merlin	30	367
15	Terminator, 15kV, Cold-Shrink JCN, 500MCM	3	2225
16	Arrester, Surge, 9 kV, MOV, Riser Pole	3	58
17	Connector, Compression, Lug, 2-hole, 336 ACSR	3	438
18	Connector, Compression, Lug, Al/Cu, Tin-Plated, 500MCM to NEMA 2-Hole	3	1501
19	Clamp, Hot Line, GP1530, Line #6 Sol - 400MCM, Tap #6 Sol - 4/0 Str Cu Only	3	284
20	Bolt, 1/2" x 2", w/ Flat and Belleville Washers, Assembly	6	1389
21	Conductor, OH, Cu, #4 Solid, Bare, Soft-Drawn, 1C	10	376
22	Screw, Lag, 1/2" x 4 1/2", Twist Drive, Drive Point	6	1132
23	Connector, Crimpet, Cu, Run 3/0 - 4/0 Str, Tap #6 Sol - #2 Str	3	458 *
24	Conduit, 3" x 10', Sch 80	90	2203
25	Clamp, Standoff Bracket, 3"	9	297
26	End Bell, 3", Sch 40	3	2204
27	Conductor, OH, 600v, Cu, #2, 7-Str, XLPE, 60 mil, Soft-Drawn, 1C, RHW-2	15	393
28	Bracket, Standoff, 15" w/ Stop and Brace	3	227
29	Tag, Phase A	1	1280
30	Tag, Phase B	1	1281
31	Tag, Phase C	1	1282
32	Connector, Crimpet, Cu, Run and Tap 1/0 - 2/0 Str	2 *	457
33	Guard, Wildlife, Large, OH/UG Terminators	3	1676
34	Indicator, Fault, 400A, OH, Beacon w/ Signal Flag, Electric Field Reset	3	2558
35	Guard, Wildlife, Polymer Arrester	3	2583
36	Connector, Crimpet, Cu, Run 3/0 Str - 250 Str, Tap #6 Sol - 2/0 Str	3	459 *
37	Grip, Support, 3" Conduit, 500MCM	3	2521 *



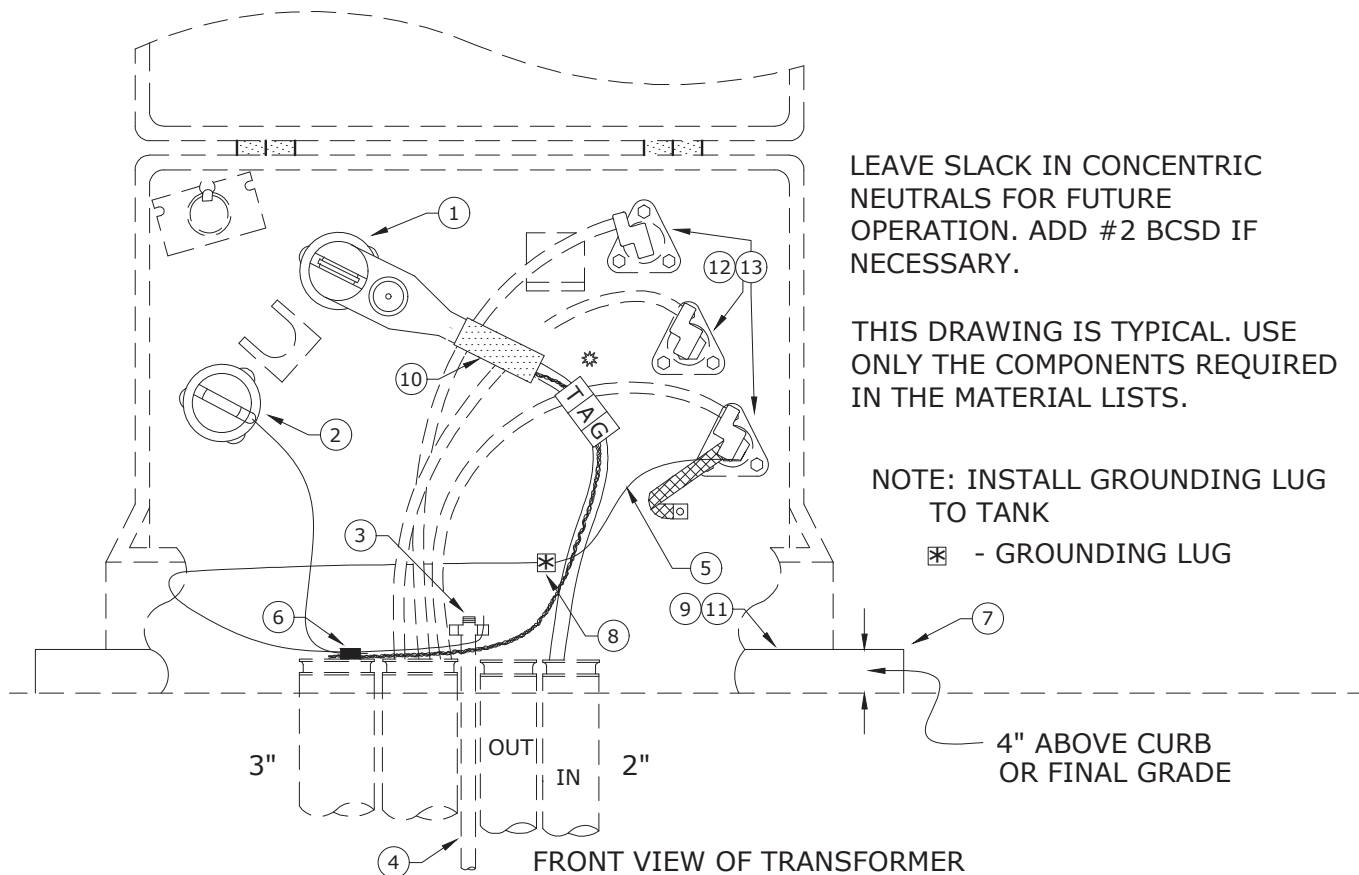
CONSTRUCTION STANDARDS

500 MCM CABLE RISER

PAGE:
2 of 2

UC3





RADIAL FEED

UG1.1

MATERIAL LIST

ITEM NO.	DESCRIPTION	UG1.1
		QTY.
1	Elbow, Loadbreak, 1/0, 200A, 175 mil	1
2	Cap, Protective Insulated, 200A	1
3	Clamp, Ground Rod 5/8", Small	1
4	Rod, Ground 5/8" x 8'	1
5	Conductor, Wire BSDC #4 SLD	6
6	Connector, Crimpet, #4 to #2	1
7	Pad, Transformer 42" x 42"	1
8	Ground Lug	1
9	Bolt, Machine, 1/2" x 1-1/2" SS	2
10	Elbow, Sealing Kit, 1/0, 175 & 220 mil	1
11	Washer, 2" x 3" x 3/16" w/ 9/16" Slotted Hole	2
12	Connector, z-bar #2-500 MCM + Streetlight	3
13	Cover, Connector U.G.	3



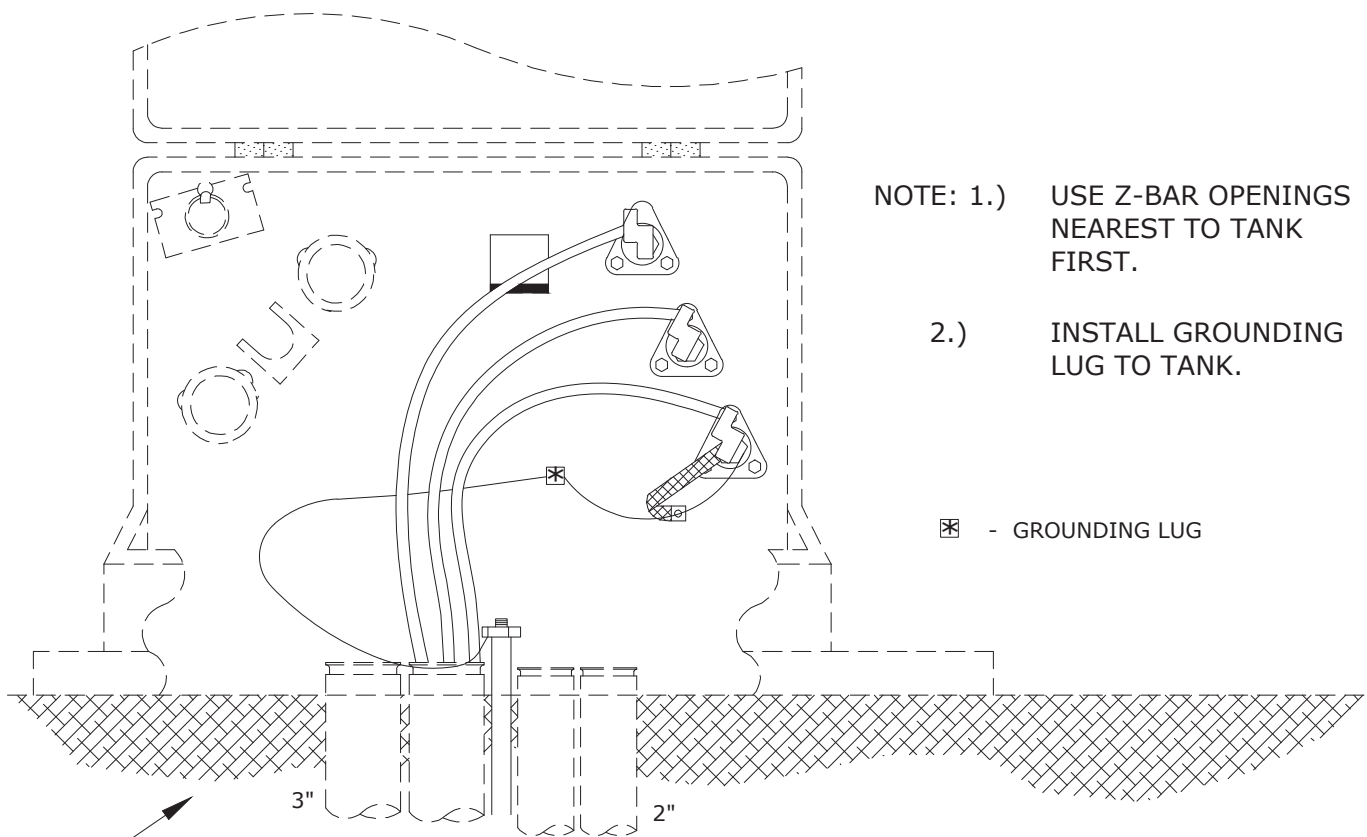
CONSTRUCTION STANDARDS

SINGLE PHASE
 PADMOUNT TRANSFORMER
 RADIAL FEED

PAGE:
 1 of 2

UG1.1

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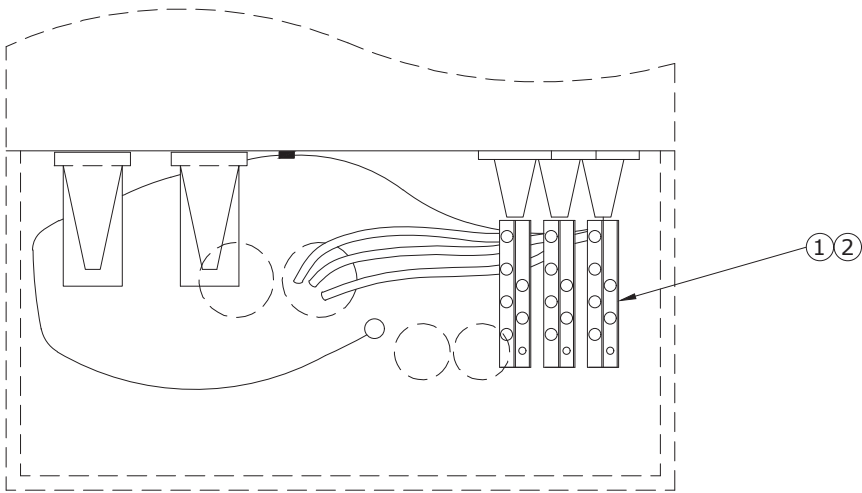


- NOTE: 1.) USE Z-BAR OPENINGS NEAREST TO TANK FIRST.
- 2.) INSTALL GROUNDING LUG TO TANK.

⊠ - GROUNDING LUG

SECONDARY CONDUITS
AS NEEDED
(MAXIMUM 6)

FRONT VIEW OF TRANSFORMER



TOP VIEW OF PAD WINDOW
(SHOWING CONDUIT AND CONDUCTOR LOCATION)

ITEM NO.	DESCRIPTION	UG1.1
		QTY.
1	Connector, Z-Bar #2-500KCM + St. Lt.	3
2	Cover, Connector, U.G.	3



CONSTRUCTION STANDARDS PADMOUNT TRANSFORMER ASSEMBLY SINGLE PHASE SECONDARY

△			
△			



SECONDARY OVERHEAD TO UNDERGROUND RISER ASSEMBLY

UK1.1, UK2.1,UK3.1

R			

ITEM NO.	DESCRIPTION	UK1.1
		QTY.
1	End Bell, 1", Sch 40	1
2	Bracket, Standoff Riser 10 1/2"	3
3	Clamp, Standoff Bracket, 1" Conduit	3
4	Screw, Lag 1/2" X 3", Fetter Drive, Drive Point	6
5	Conduit, PVC, 1" x 10', Sch 80	30
6	Elbow, PVC, 1", 90°, 24" Radius, Sch 40	1
ITEM NO.	DESCRIPTION	UK2.1
		QTY.
1	End Bell, 2", Sch 40	1
2	Bracket, Standoff Riser 10 1/2"	3
3	Clamp, Standoff Bracket, 2" Conduit	3
4	Screw, Lag 1/2" X 3", Fetter Drive, Drive Point	6
5	Conduit, PVC, 2" x 10', Sch 80	30
6	Elbow, PVC, 2", 90°, 24" Radius, Sch 40	1
ITEM NO.	DESCRIPTION	UK3.1
		QTY.
1	End Bell, 3", Sch 40	1
2	Bracket, Standoff Riser 10 1/2"	3
3	Clamp, Standoff Bracket, 3" Conduit	3
4	Screw, Lag 1/2" X 3", Fetter Drive, Drive Point	6
5	Conduit, PVC, 3" x 10', Sch 80	30
6	Elbow, PVC, 3", 90°, 24" Radius, Sch 40	1



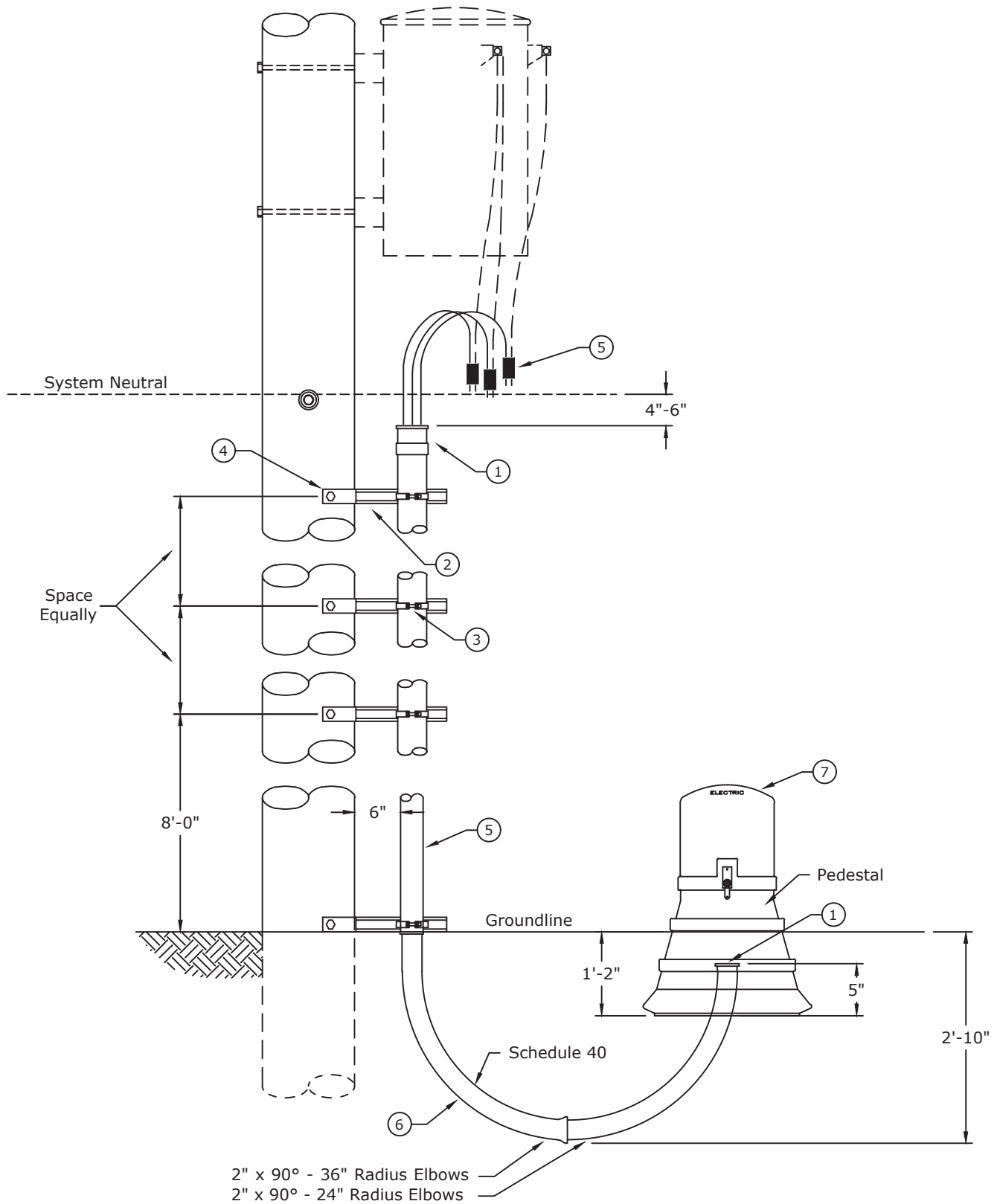
CONSTRUCTION STANDARDS

SECONDARY OVERHEAD TO UNDERGROUND RISER ASSEMBLY

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UK1.1, UK2.1, UK3.1

R			



CONSTRUCTION STANDARDS

SECONDARY OVERHEAD TO
UNDERGROUND RISER ASSEMBLY
W/ SECONDARY PEDESTAL

PAGE:
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UK2.2

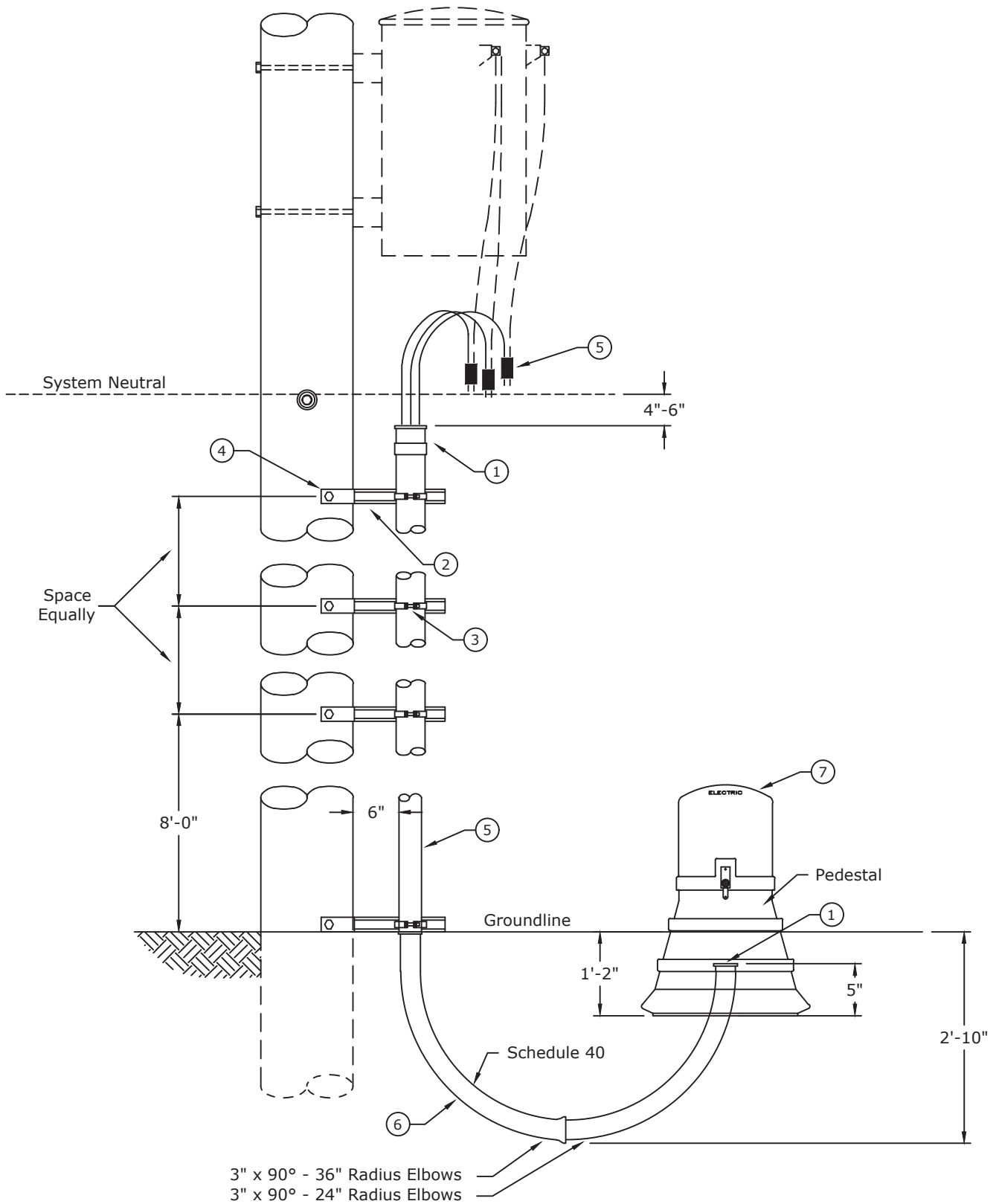
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ITEM NO.	DESCRIPTION	UK3.2	
		QTY.	
1	End Bell, 2", Sch. 40	2	
2	Bracket, Standoff Riser 10-1/2" U.G.	3	
3	Clamp, Standoff Bracket, 2"	3	
4	Screw, Lag 1/2" X 3"	6	
5	Connectors - As Req'd	3	
6	Conduit, PVC, Sch 80, 2" x 10'	30*	
7	Pedestal, Secondary, Aboveground W/ Connectors and Covers	1	
	Elbow, PVC, 2", 90°, 24" Radius, Sch. 40	1	
	Elbow, PVC, 2", 90°, 36" Radius, Sch. 40	1	



CONSTRUCTION STANDARDS SECONDARY OVERHEAD TO UNDERGROUND RISER ASSEMBLY W/ SECONDARY PEDESTAL





CONSTRUCTION STANDARDS

SECONDARY OVERHEAD TO
UNDERGROUND RISER ASSEMBLY
W/ SECONDARY PEDESTAL

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UK3.2

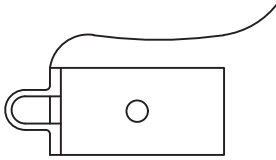
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ITEM NO.	DESCRIPTION	UK3.2	
		QTY.	
1	End Bell, 3", Sch. 40	2	
2	Bracket, Standoff Riser 10-1/2" U.G.	3	
3	Clamp, Standoff Bracket, 3"	3	
4	Screw, Lag 1/2" X 3"	6	
5	Connectors - As Req'd	3	
6	Conduit, PVC, Sch 80, 3" x 10'	30*	
7	Pedestal, Secondary, Aboveground W/ Connectors and Covers	1	
	Elbow, PVC, 3", 90°, 24" Radius, Sch. 40 Straight	1	
	Elbow, PVC, 3", 90°, 36" Radius, Sch. 40	1	

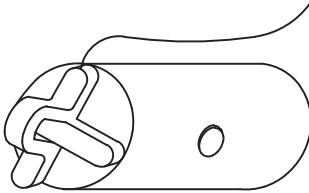


CONSTRUCTION STANDARDS SECONDARY OVERHEAD TO UNDERGROUND RISER ASSEMBLY W/ SECONDARY PEDESTAL

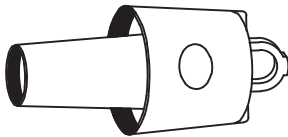




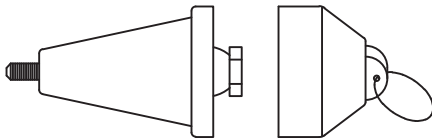
UM6.C2 INSULATED PROTECTIVE CAP
200 AMP LOAD BREAK (FORMERLY UM6-10)



UM6.C6 INSULATED PROTECTIVE CAP
600 AMP DEAD BREAK (FORMERLY UM6-11)
Provided by PUD1
Richards #K656DR - Elastimold #K656DR



UM6.PL2 BUSHING WELL PLUG
200 AMP LOAD BREAK (FORMERLY UM6-7)



UM6.PL6 INSULATING PLUG TEE CONNECTOR
600 AMP DEAD BREAK (FORMERLY UM6-17)

NOTES:

UM6.C (CAP DESCRIPTION)
2 FOR 200 AMP LOAD BREAK CAP
6 FOR 600 AMP DEAD BREAK CAP

UM6.PL (PLUG DESCRIPTION)
2 FOR 200 AMP BUSHING WELL INSERTS
6 FOR 600 AMP TEE CONNECTOR

ITEM	MATERIAL	UM6.C2	UM6.C6	UM6.PL2	UM6.PL6
Uhb	Insulated protective cap, 200 AMP	1			
Uhb	Insulated protective cap, 600 AMP		1		
Uhb	Bushing well plug, 200 AMP			1	
Uhb	Insulating plug tee connector, 600 AMP				1



CAPS AND PLUGS

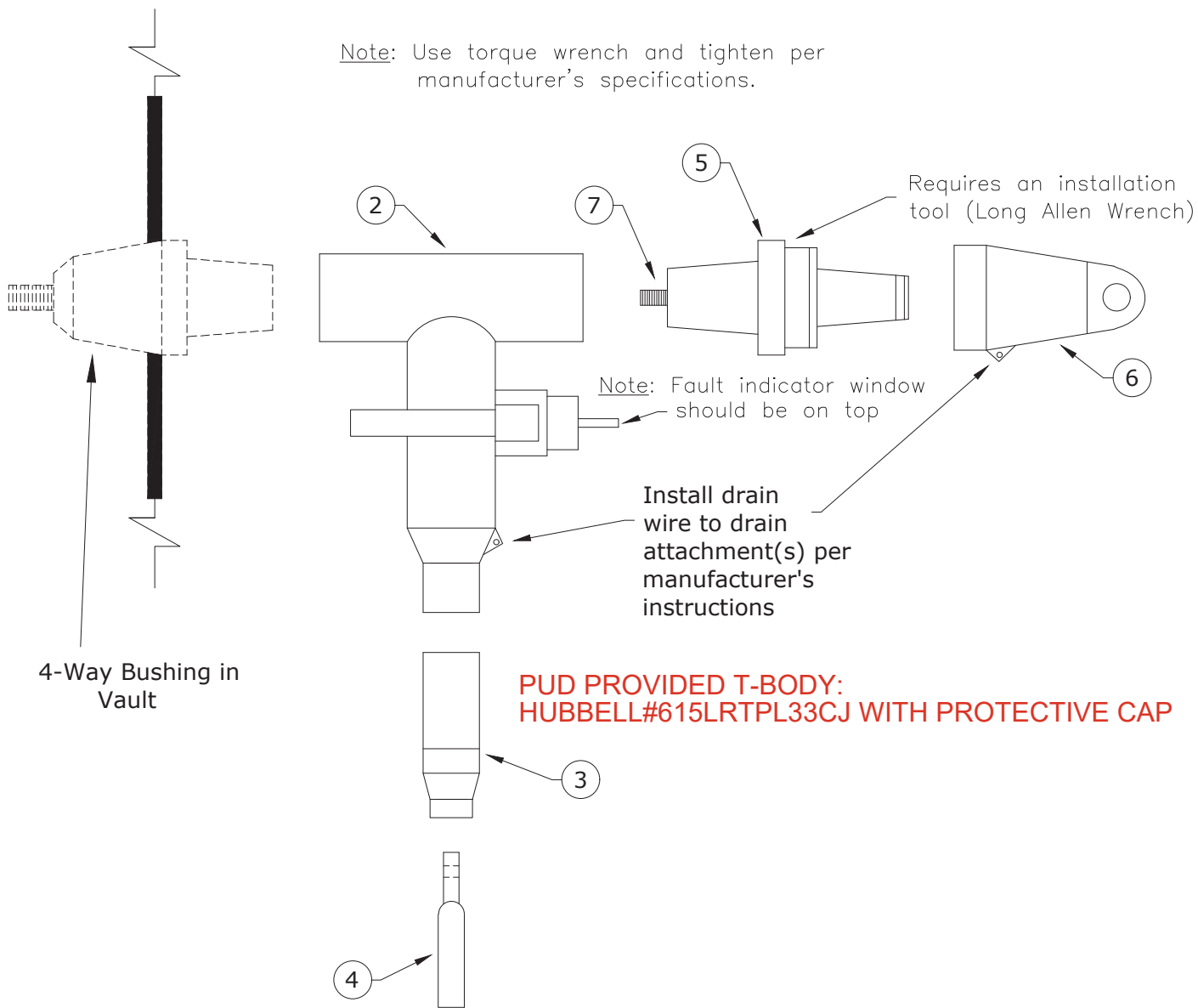
AUG 2016

RUS

UM6.C
UM6.PL

ASSEMBLY DIAGRAM

ONE ASSEMBLY PER 600A PHASE



ITEM NO.	DESCRIPTION	UM6.EL6.500	
		QTY.	
1	600A Elbow Kit	1	
	<i>Each Kit Consists Of #2 to #7:</i>		
2	<i>Housing, Elbow, 600A</i>	1	
3	<i>Adapter, Cable, 500 MCM</i>	1	
4	<i>Contact, Compression, 500 MCM, Al, Non-Threaded Hole</i>	1	
5	<i>Plug, Loadbreak Reducing Tap, 600A-200A</i>	1	
6	<i>Cap, Protective Insulated, 200A, 15kV</i>	1	
7	<i>Stud, Al, 600A, T-Body to Reducer Plug</i>	1	
8	600A Elbow Sealing Kit	1	




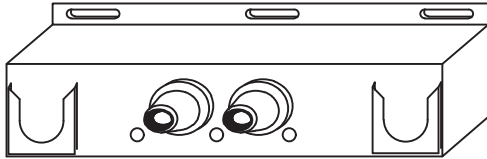
CONSTRUCTION STANDARDS

600 AMP ELBOW - 500MCM CABLE

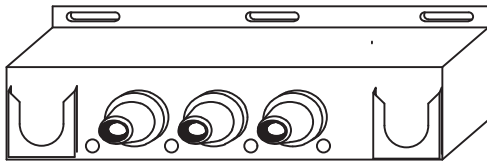
PAGE:
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UM6.EL6.500

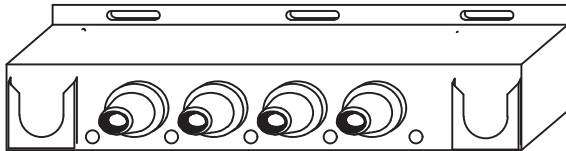
			



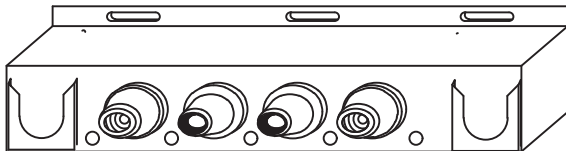
UM6.JN22 TWO POINT TERMINATION
2-200 AMP LOAD BREAK (FORMERLY UM6-20)



UM6.JN222 THREE POINT TERMINATION
3-200 AMP LOAD BREAK (FORMERLY UM6-21)



UM6.JN2222 FOUR POINT TERMINATION
4-200 AMP LOAD BREAK (FORMERLY UM6-22)



UM6.JN6226 FOUR POINT TERMINATION
2-600 AMP DEAD BREAK
2-200 AMP LOAD BREAK

UM6.JN666 provided by PUD1
Hubbell #625-J4-U - ELASTIMOLD-DP#0568120

ITEM	QTY.	MATERIAL
Uhq	1	Multipoint junction

DEFINE THE NUMBER OF POINTS
AND TYPE OF POINT FOR EACH MODULE
2 FOR 200 AMP LOAD BREAK
6 FOR 600 AMP DEAD BREAK
9 FOR 900 AMP DEAD BREAK

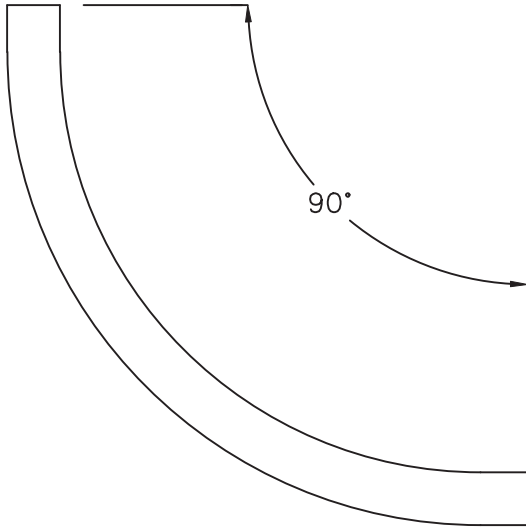


MULTIPOINT JUNCTIONS

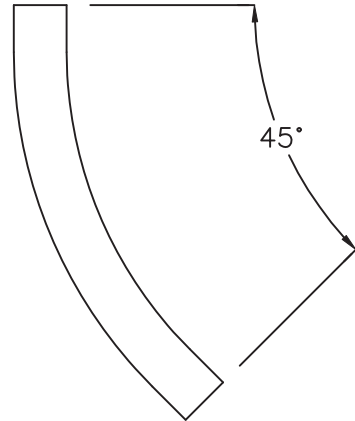
AUG 2016

RUS

UM6.JN

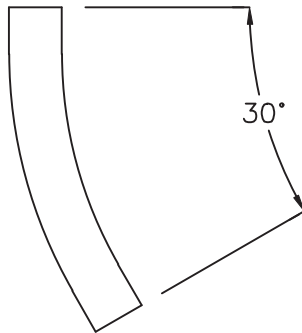


UP7.04.90

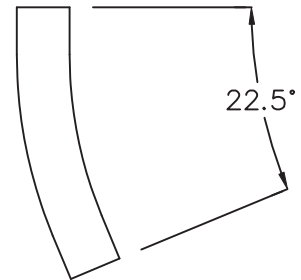


UP7.04.45

.1 = 1"
.2 = 2"
.3 = 3"



UP7.04.30



UP7.04.22

ITEM	QTY.	MATERIAL
	1	Conduit, elbow

DESIGN PARAMETERS:

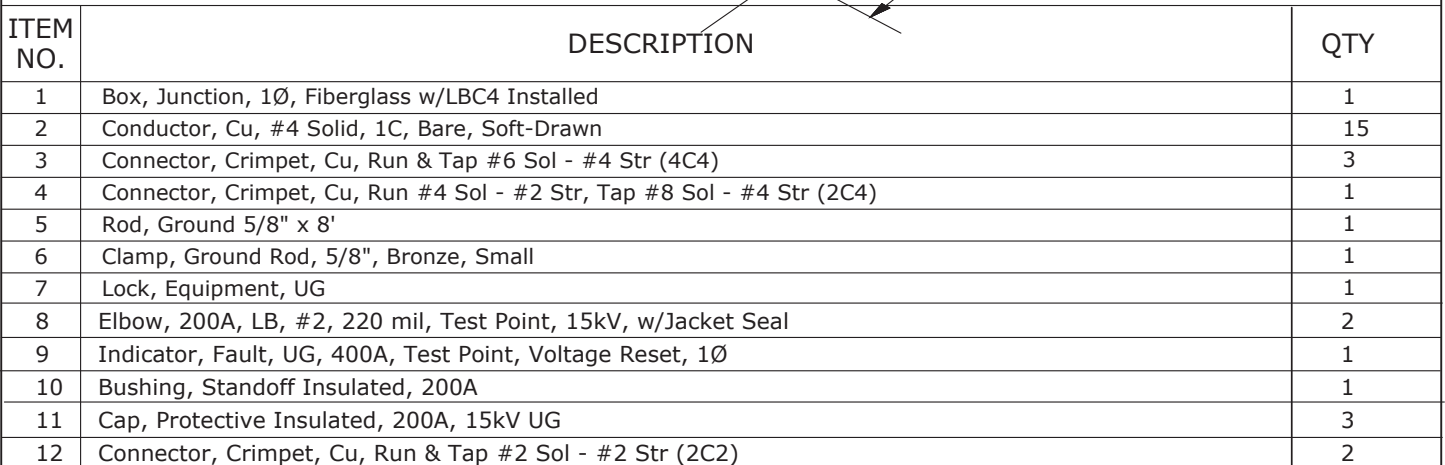
SEE SECTION 8.1 FOR
MINIMUM BENDING RADIUS.

CONDUIT ELBOW

AUG 2016


RUS

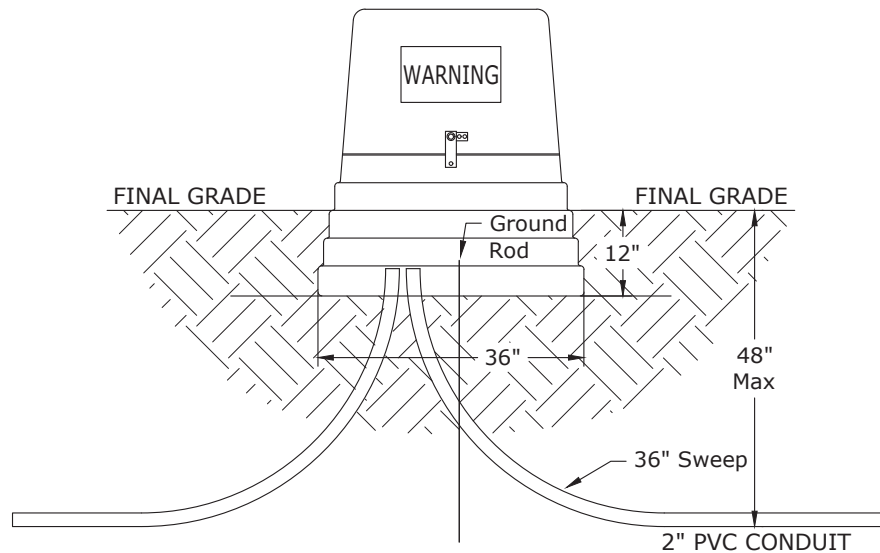
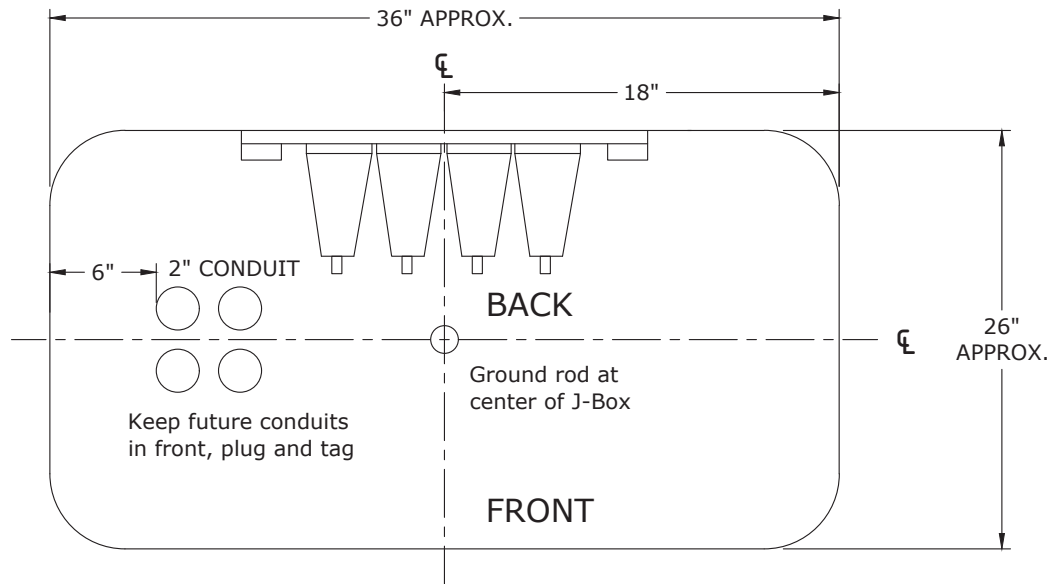
UP7.04



1Ø JUNCTION BOX
4-WAY

US1.PJ



Notes:

1. Typical elbow arrangement is shown.
2. Do not put dirt inside junction box. Space is required for cable slack and operating clearance.
3. Leave cable slack for future operations.
4. Future conduits shall be plugged w/ 2" plastic conduit plug.
5. Futures should be tagged with direction and length of conduit.
6. Proof conduit and install sequentially numbered, 2500 lb mule tape in all futures.




CONSTRUCTION STANDARDS

1Ø JUNCTION BOX
4-WAY

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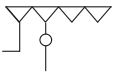
US1.PJ

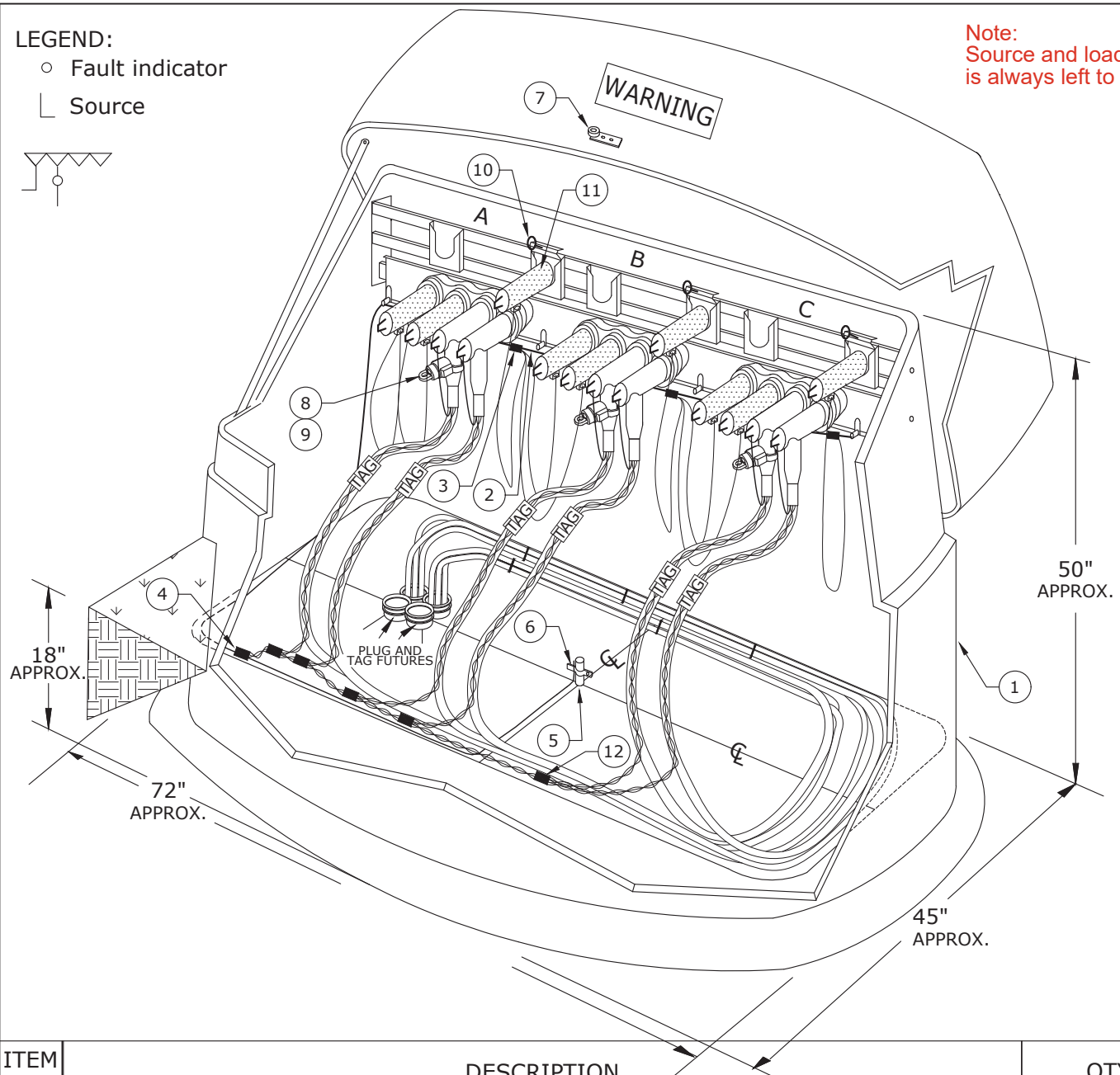
LEGEND:

○ Fault indicator

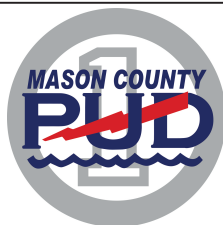
└ Source



Note:
Source and load
is always left to right.



ITEM NO.	DESCRIPTION	QTY
1	Box, Junction, 3Ø, Fiberglass w/LBC4 Installed, 49" High	1
2	Conductor, Cu, #4 Solid, 1C, Bare, Soft-Drawn	25
3	Connector, Crimpet, Cu, Run & Tap #6 Sol - #4 Str (4C4)	5
4	Connector, Crimpet, Cu, Run #4 Sol - #2 Str, Tap #8 Sol - #4 Str (2C4)	1
5	Rod, Ground 5/8" x 8'	1
6	Clamp, Ground Rod, 5/8", Bronze, Small	1
7	Lock, Equipment, UG	1
8	Elbow, 200A, LB, #2, 220 mil, Test Point, 15kV	6
9	Indicator, Fault, UG, 400A, Test Point, Voltage Reset, 1Ø	3
10	Bushing, Standoff Insulated, 200A	3
11	Cap, Protective Insulated, 200A, 15kV UG	9
12	Connector, Crimpet, Cu, Run & Tap #2 Sol - #2 Str (2C2)	2



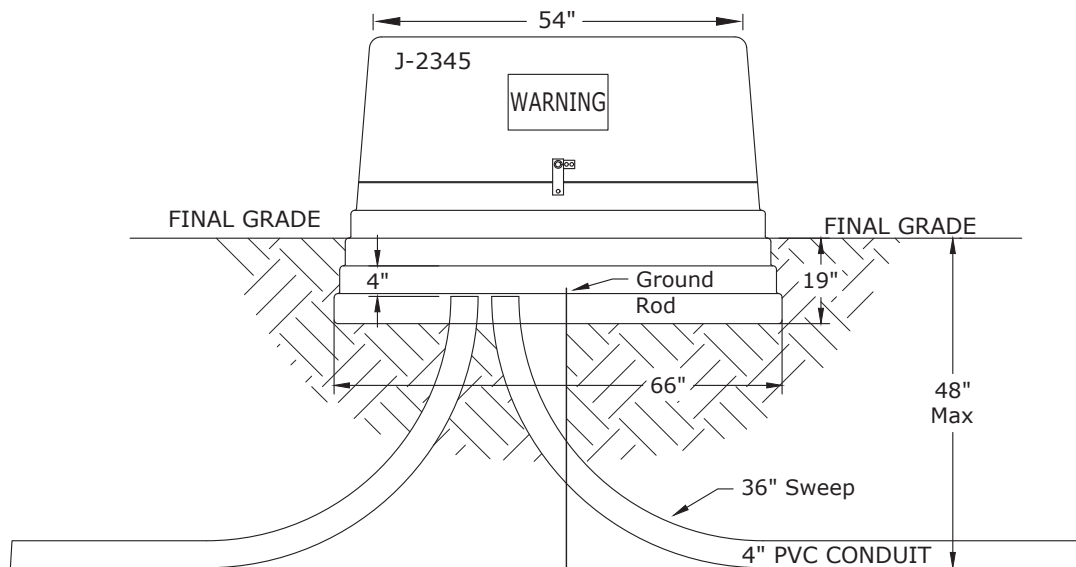
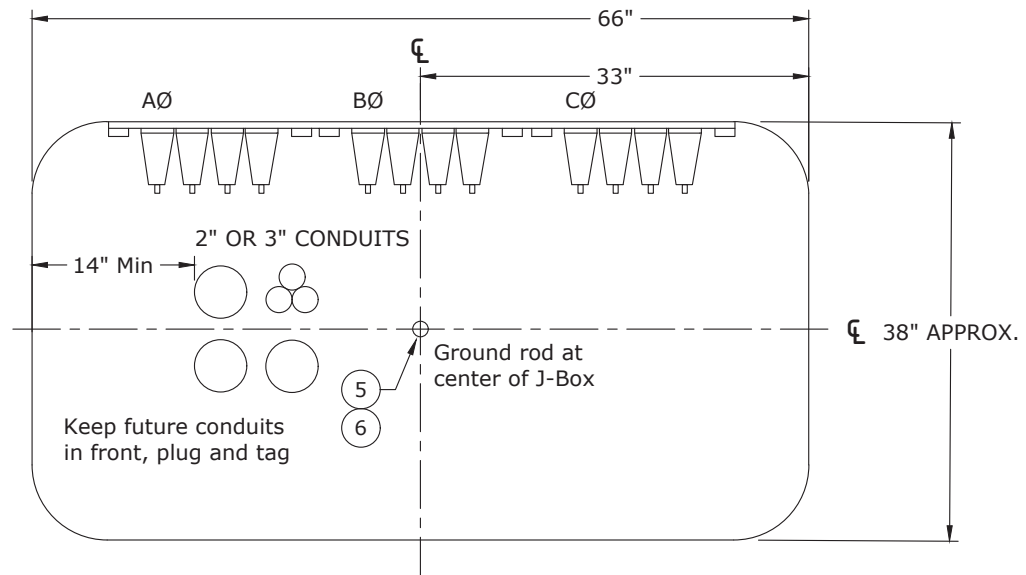
CONSTRUCTION STANDARDS

3Ø JUNCTION BOX
4-WAY

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US3.PJ

△			



Notes:

1. Typical elbow arrangement is shown.
2. Do not put dirt inside junction box. Space is required for cable slack and operating clearance.
3. Leave cable slack for future operations.
4. Future conduits shall be plugged w/ 2" plastic conduit plug.
5. Futures should be tagged with direction and length of condu
6. Proof conduit and install sequentially-numbered, 2500 lb, mule tape in all futures.




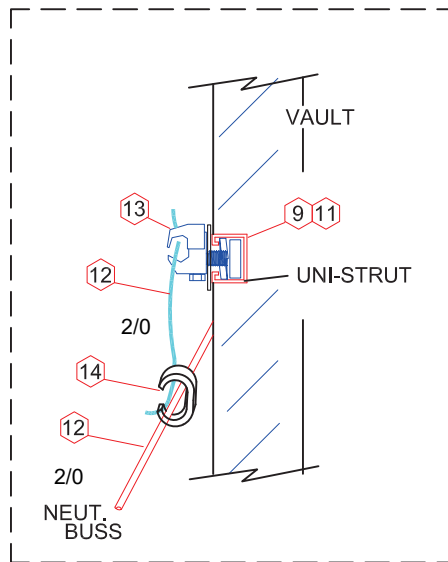
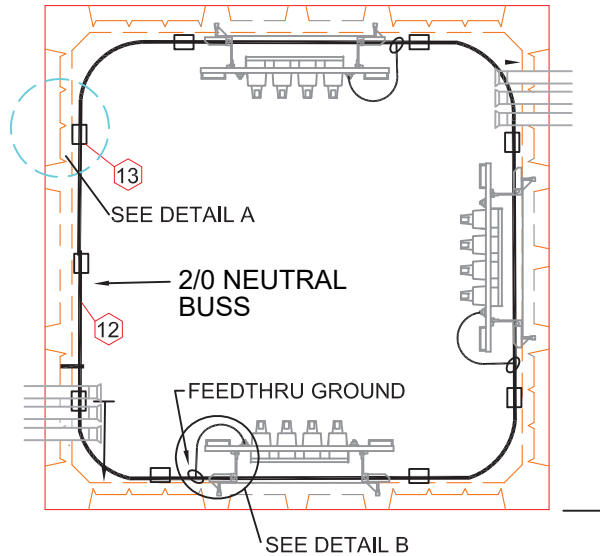
CONSTRUCTION STANDARDS

3Ø JUNCTION BOX
4-WAY

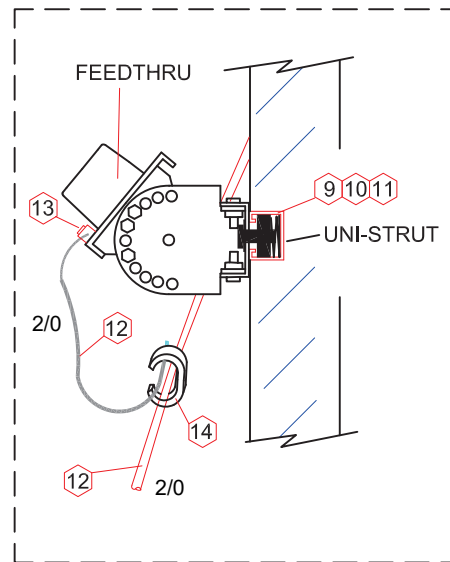
PAGE:
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US3.PJ

			
APP:			
DATE:			



DETAIL A
NEUTRAL BUSS TO VAULT



DETAIL B
FEEDTHRU GROUNDING

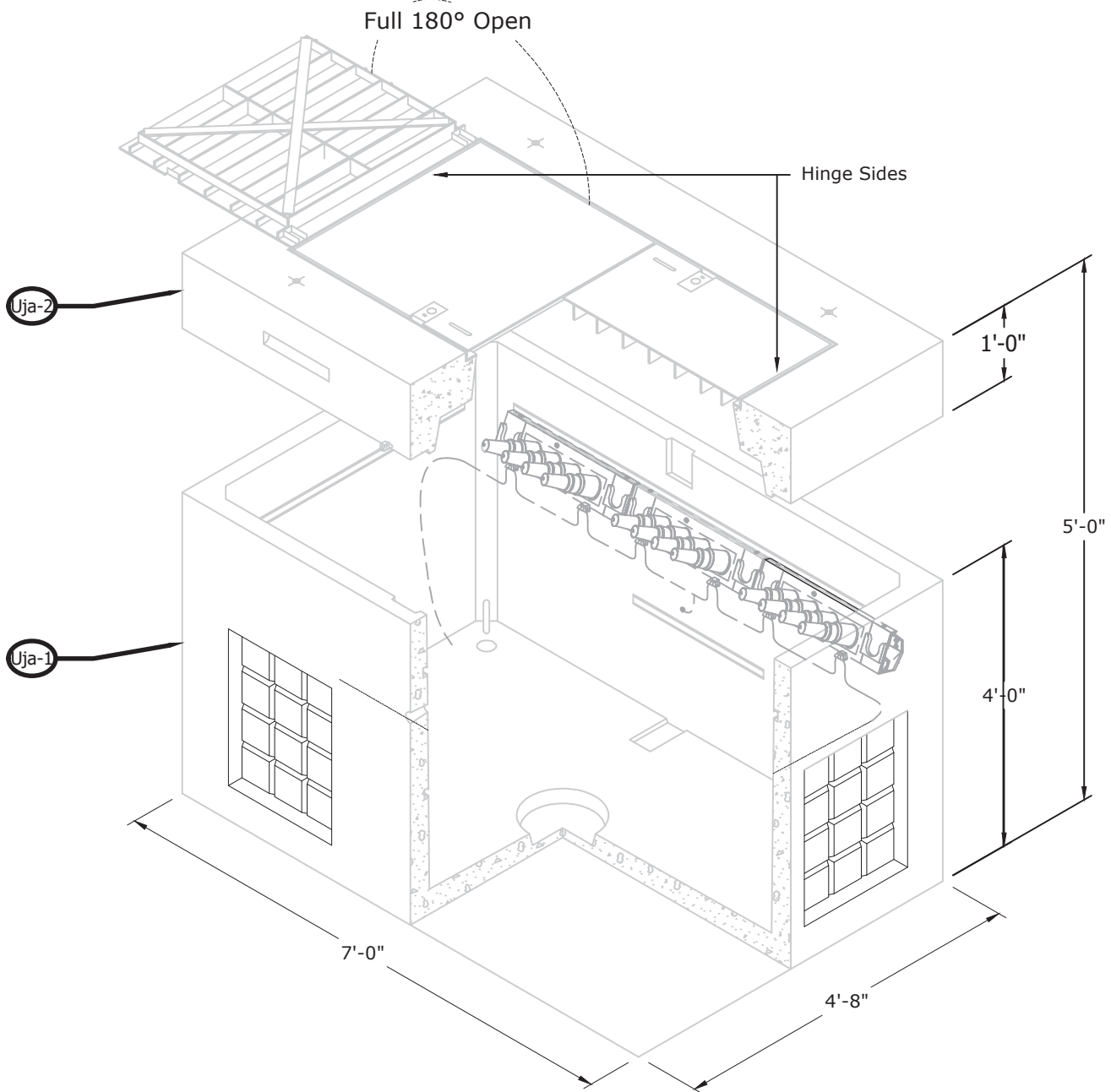
ITEM	DESCRIPTION	QUANTITY	
		UVG	
	GROUNDING		
9	SS WASHER - 1/2" ROUND	10	
10	SS BOLT 3/4" x 1/2"	6	
11	UNI STRUT NUT 1/2"	14	
12	2/0 COPPER S/D	40'	
13	GROUND CONNECTOR 2/0	8	
14	COPPER CRIMP (2/0 - 2/0)	14	

ADDITIONAL MATERIAL NOT SHOWN:
 30' :Conductor, Cu, #4 solid, 1C, Bare, Soft-drawn (Grounds for elbows, grd caps, etc.)
 Qty As Req'd: Connector, Crimpet, Cu, #4 to 2/0 (Ground to Buss)

Qty As Req'd: Connector, Crimpet, Cu, 4/0 to 2/0 (Concentric to Buss)



UVG



V57			
ITEM	QTY	DESCRIPTION	ITEM#
Uja-1	10	VAULT, 575LA, UFER GROUND (SELF-GROUNDING)	76006575

VC57			
ITEM	QTY	DESCRIPTION	ITEM#
Uja-2	10	VAULT COVER, DBL DOOR, 575-LA, NON SLIP	76006554



CONSTRUCTION STANDARDS UNDERGROUND THREE-PHASE PRIMARY 575 VAULT AND COVER

REVISIONS			
DATE	ENGR	OPS	
3/18/25	JJW	OPS	