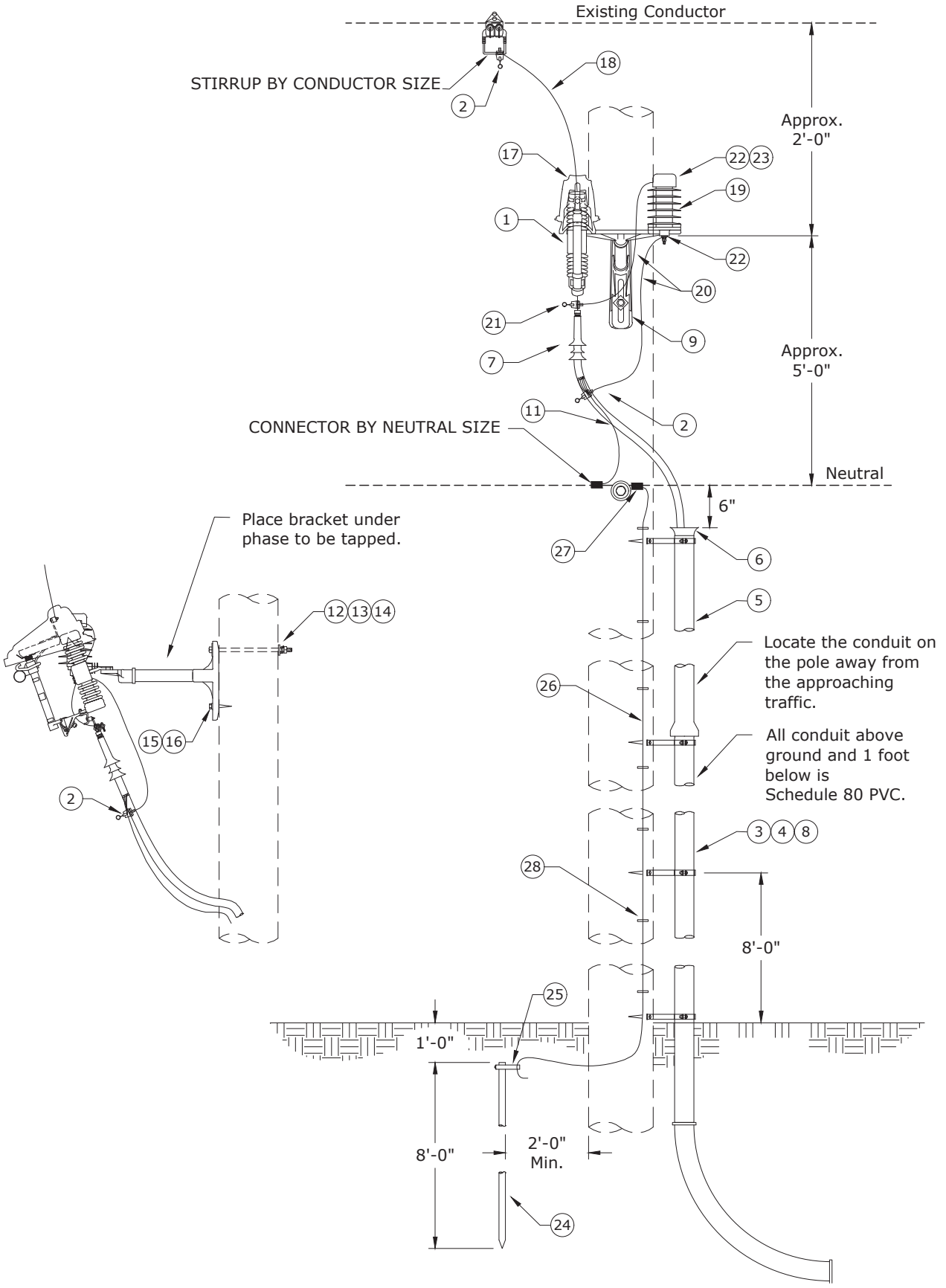


# CONSTRUCTION STANDARDS

SINGLE PHASE
PRIMARY RISER

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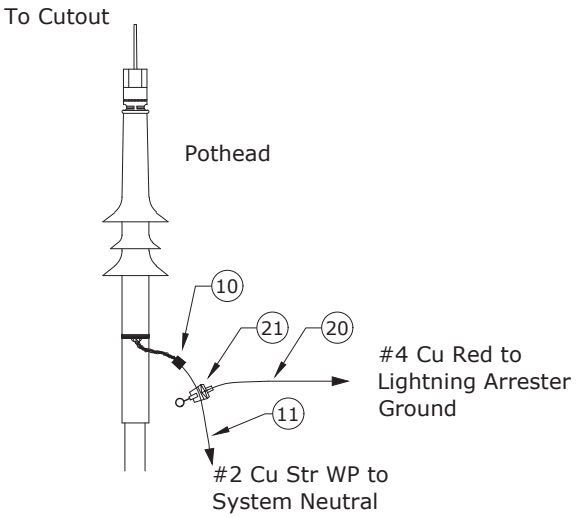
PAGE: 1 of 2

UA1.2




Pothead Connection Detail

## Notes:

4. Connect concentric neutrals to arrester ground using #4 Cu, Red.
5. Make arrester ground terminal-to-concentric neutral jumper as short as possible.

| ITEM NO. | DESCRIPTION | UA1.2 Additional Material QTY. | |
|---|---|---|---|
| 1 | Cutout, Polymer, Universal, 100A, 16kA Asym. | 1 | |
| 2 | Clamp, Hotline, GP 1520, #8 to 2/0 Str, Cu Only | 1 | |
| 3 | Screw, Lag, 1/2" x 3", Fetter Drive, Drive Point | 6 | |
| 4 | Bracket, Standoff Riser, 10 1/2" | 3 | |
| 5 | Conduit, PVC, 2" X 10', Sch 80 | 30 | |
| 6 | End Bell, 2", Sch 40 | 1 | |
| 7 | Terminator, 15kV, Cold-Shrink JCN & CN, #2 | 1 | |
| 8 | Clamp, Standoff Bracket, Conduit, 2" | 3 | |
| 9 | Bracket, Arrester/Cutout Mounting, 1ø Fiberglass 18" | 1 | |
| 10 | Connector, Crimpet, Cu 2/2 - 2/2 (2C2) | 1 | |
| 11 | Conductor, Cu #2, 1/C, 7-Str, SD, 600V, HMP | 10 | |
| 12 | Bolt, Machine, 5/8" x 12", 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 | Screw, Lag, 1/2" x 4 1/2", Twist Drive, Drive Point | 1 | |
| 16 | Washer, Flat, Round Galv., 1/2" | 1 | |
| 17 | Guard, Wildlife, Cutout, Polymer | 1 | |
| 18 | Conductor, Cu 1/C #2, 7-Str, 600V, Red, THW | 3 | |
| ITEM NO. | DESCRIPTION | LA2 QTY. | |
| 19 | Arrester, Surge, 9kV, MOV, Riser Pole | 1 | |
| 20 | Conductor, Cu 1/C #4, 7-Str, 600V, Red, THW | 7 | |
| 21 | Clamp, Hotline, GP 1520, #8 to 2/0 Str, Cu Only | 2 | |
| 22 | Connector, Compression Lug, #4, Cu/Al, One-Hole, Tin-Plated, For Arrester | 2 | |
| 23 | Guard, Wildlife, Polymer Arrester | 1 | |
| ITEM NO. | DESCRIPTION | N1 QTY. | |
| 24 | Rod, Ground, 5/8" x 8' | 1 | |
| 25 | Clamp, Ground Rod, 5/8", Bronze Small | 1 | |
| 26 | Conductor, Copper-Clad Steel, #4 Cu Equivalent, Covered | 40 | |
| 27 | Connector, Cabelok, Al/Cu, #2-2/0 Run, #6-#1 Tap | 1 | |
| 28 | Staple, Ground, Barbed, Galv. 1 1/2" | 24 | |

MASON COUNTY PUD

# CONSTRUCTION STANDARDS

SINGLE PHASE
PRIMARY RISER

| R | | | |
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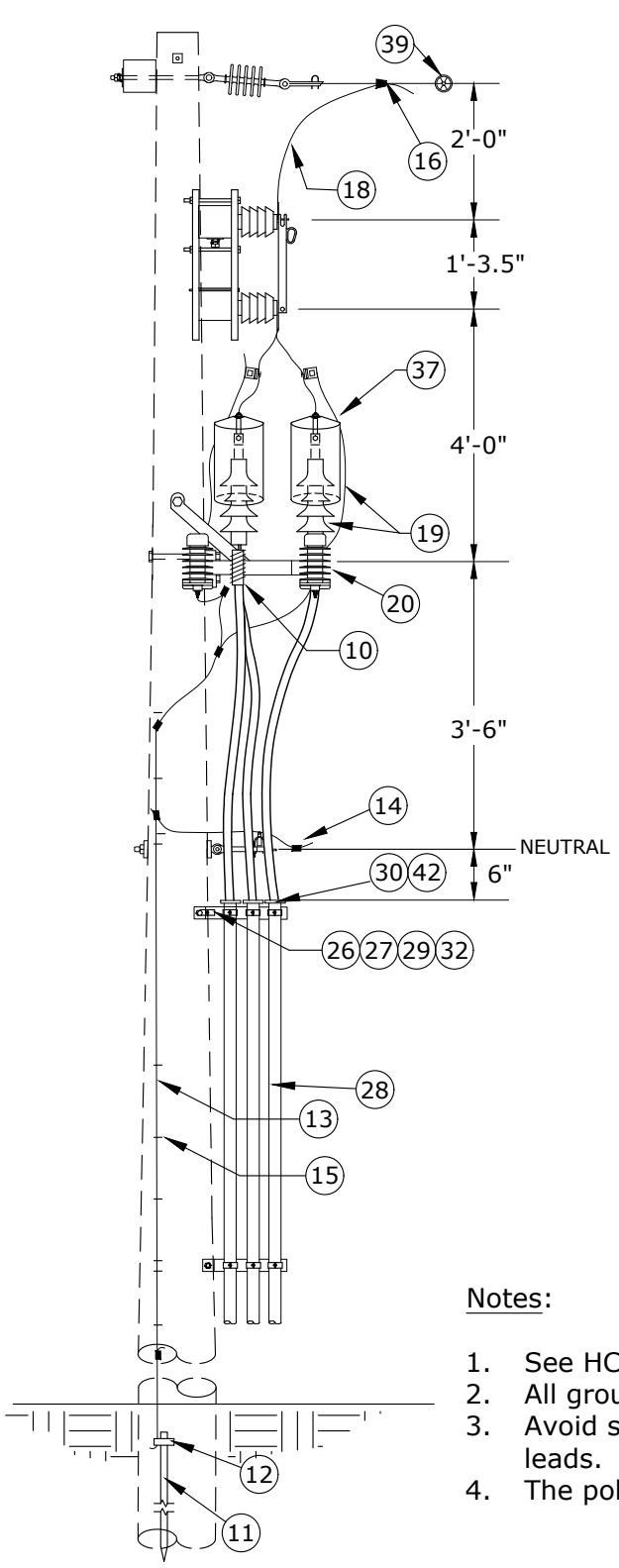
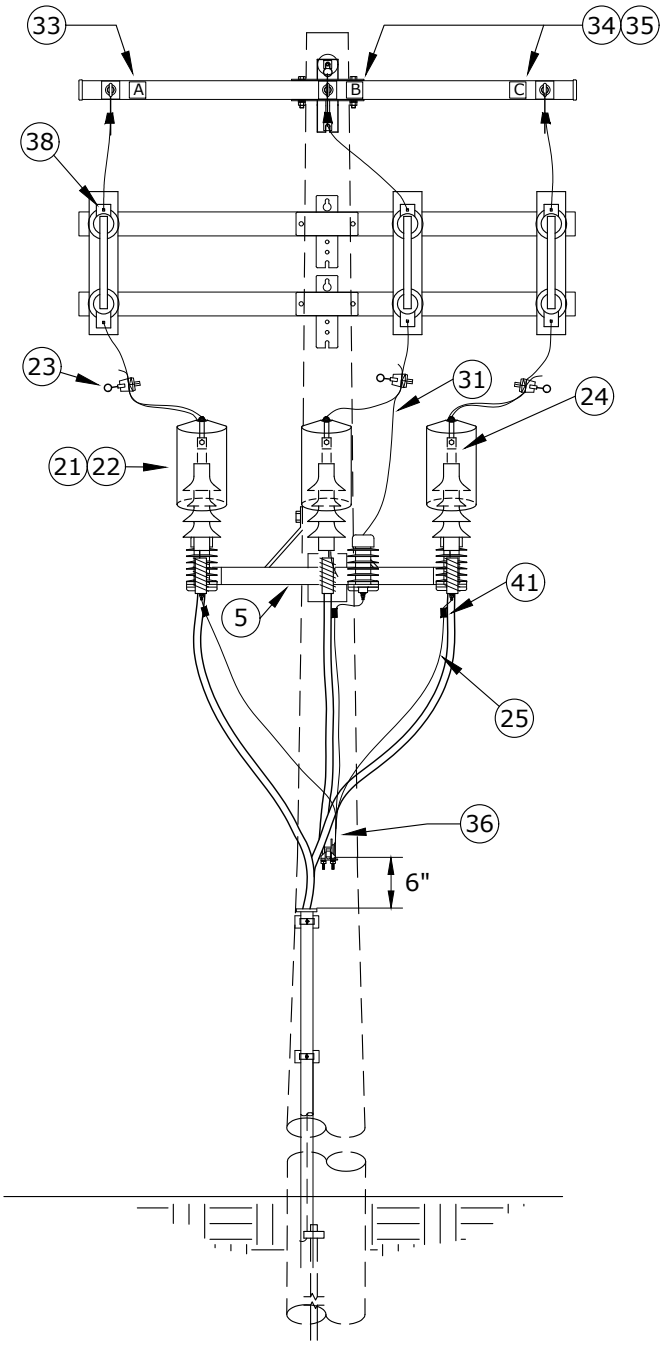
UA1.2




Notes:

1. See HC3.3 for grounding details.
2. All ground wire is #4 Cu equivalent covered copper-clad steel.
3. Avoid sharp turns in lightning arrester grounds and primary leads.
4. The pole must be 45' Class 2 or taller.

New Assembly

MASON COUNTY PUD

# CONSTRUCTION STANDARDS

500MCM CABLE RISER
WITH 600 AMP DISCONNECTS

| R | | | |
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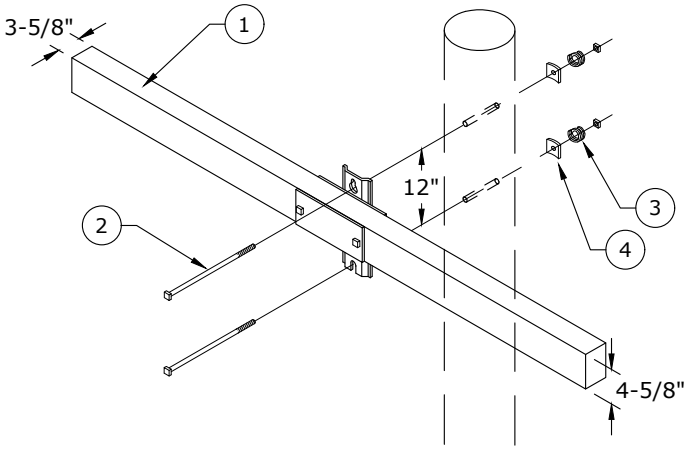
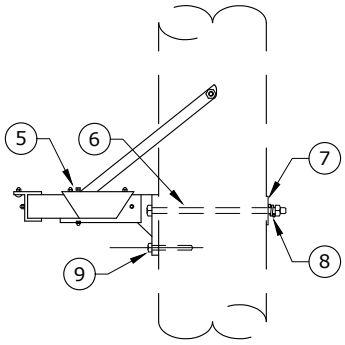
PAGE: 1 of 3

UC3.3

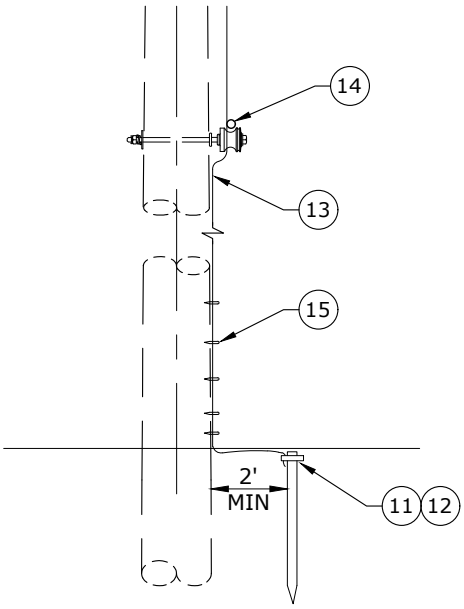
New Assembly

**CR23B**




**BR10**




**N1**

# CONSTRUCTION STANDARDS

500MCM CABLE RISER
WITH 600 AMP DISCONNECTS

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New Assembly

| ITEM NO | DESCRIPTION | UC3.3 CR23B (2) QTY | |
|---|---|---|---|
| 1 | Crossarm, Distribution, Fiberglass, 10' Long x 3-5/8" Wide x 4-5/8" Tall | 2 | |
| 2 | Bolt, Machine, 5/8" x 14", Galv., 12,400 lb Ultimate Tensile | 4 | |
| 3 | Washer, Lock, Spring, Double Coil, Galv, 5/8" | 4 | |
| 4 | Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole | 4 | |
| **ITEM NO** | **DESCRIPTION** | **BR10 QTY** | |
| 5 | Bracket, Terminator, Mount, 48", 500MCM | 1 | |
| 6 | Bolt, Machine, 5/8" x 14", Galv, 12,400 lb Ultimate Tensile | 1 | |
| 7 | Washer, Curved, Square, Cast, 3" x 3" x 3/8" Thick x 13/16" Hole, Galv | 1 | |
| 8 | Washer, Lock, Spring, Double Coil, Galv, 5/8" | 1 | |
| 9 | Screw, Lag, 1/2" x 4 1/2", Twist Drive, Drive Point | 3 | |
| 10 | Support, Cable, 500MCM | 3 | |
| **ITEM NO** | **DESCRIPTION** | **N1 QTY** | |
| 11 | Rod, Ground, 5/8" x 8' | 1 | |
| 12 | Clamp, Ground Rod, 5/8", Small, Bronze | 1 | |
| 13 | Conductor, Copper-Clad Steel, #4 Cu Equivalent, 40% Annealed, Black Jacket with Green Stripe | 40☼ | |
| 14 | Connector, H-Tap, Al/Cu, Run #2 - 2/0 Str, Tap #6 - #1 Str | 1 | |
| 15 | Staple, Ground Wire, Barbed, Galvanized, 1 1/2" | 24☼ | |
| **ITEM NO** | **DESCRIPTION** | **ADDITIONAL MATERIAL QTY** | |
| 16 | Connector, 336 TO 4/0 ACSR | 3 | |
| 17 | Conductor, OH, 600v, Cu, 2/0, 19-Str, XLPE, 80 mil, Soft-Drawn, 1C, RHW-2 | 30 | |
| 18 | Conductor, OH, ACSR, 336, Merlin | 30 | |
| 19 | Terminator, 15kV, Cold-Shrink JCN, 500MCM | 3 | |
| 20 | Arrester, Surge, 9 kV, MOV, Riser Pole | 3 | |
| 21 | Connector, Compression, Lug, 2-Hole, 336 ACSR and 397 AAC | 3 | |
| 22 | Connector, Compression, Lug, Al/Cu, Tin-Plated, 500MCM to NEMA 2-Hole | 3 | |
| 23 | Clamp, Hot Line, GP1530, Line #6 Sol - 400MCM, Tap #6 Sol - 4/0 Str, Cu Only | 3 | |
| 24 | Bolt, 1/2" x 2", w/ Flat and Belleville Washers, Assembly | 6 | |
| 25 | Conductor, OH, Cu, #4 Solid, Bare, Soft-Drawn, 1C | 10 | |
| 26 | Screw, Lag, 1/2" x 4 1/2", Twist Drive, Drive Point | 9 | |
| 27 | Connector, Crimpet, Cu, Run 3/0 - 4/0 Str, Tap #6 Sol - #2 Str | 3 | |
| 28 | Conduit, 3" x 10', Sch 80 | 90☼ | |
| 29 | Clamp, Standoff Bracket, 3" | 9 | |
| 30 | End Bell, 3", Sch 40 | 3 | |
| 31 | Conductor, OH, 600v, Cu, #2, 7-Str, XLPE, 60 mil, Soft-Drawn, 1C, RHW-2 | 15 | |
| 32 | Bracket, Standoff, 15" with Stop and Brace | 3 | |
| 33 | Tag, Phase A | 1 | |
| 34 | Tag, Phase B | 1 | |
| 35 | Tag, Phase C | 1 | |
| 36 | Connector, Crimpet, Cu, Run and Tap 1/0 - 2/0 Str | 2 ☼ | |
| 37 | Guard, Wildlife, Large, OH/UG Terminators | 3 | |
| 38 | Disconnect, 600 Amp, Single Blade | 3 | |
| 39 | Indicator, Fault, 400A, OH, Beacon with Signal Flag, Electric Field Reset | 3 | |
| 40 | Guard, Wildlife, Polymer Arrester | 3 | |
| 41 | Connector, Crimpet, Cu, Run 3/0 Str - 250 Str, Tap #6 Sol - 2/0 Str | 3 | |
| 42 | Grip, Support, 3" Conduit, 500MCM | 3 | |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

500MCM CABLE RISER
WITH 600 AMP DISCONNECTS

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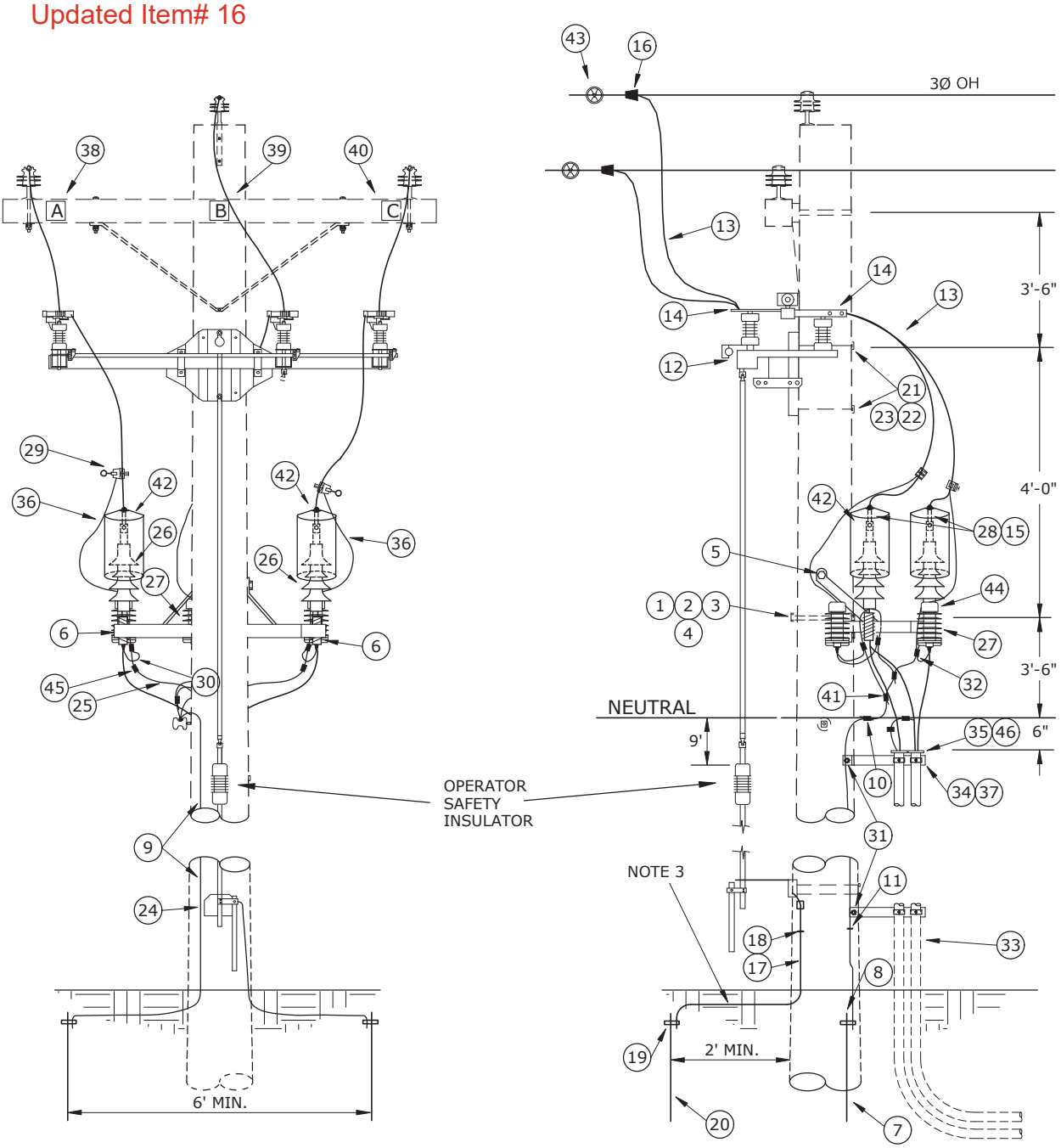
Updated Item# 16




Notes:

1. See HC3.3 for grounding details.
2. All ground wire is #4 Cu equivalent covered copper-clad steel.
3. Avoid sharp turns in lightning arrester grounds and primary leads.
4. The pole must be 45' Class 2 or taller.

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

500MCM CABLE RISER
WITH 3Ø SWITCH

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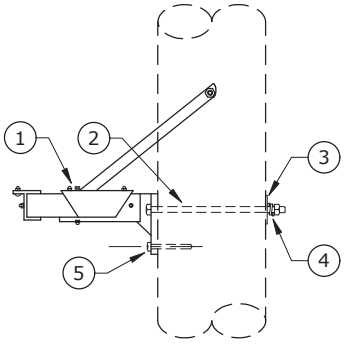
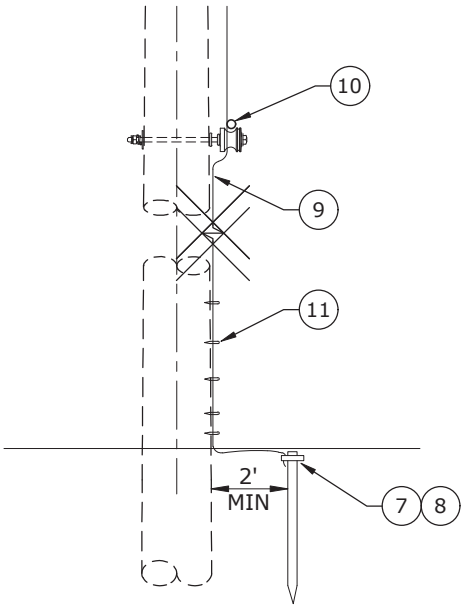
PAGE: 1 of 3

UC3.3GOS

Updated Item# 16




**BR10**




**N1**

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

500MCM CABLE RISER
WITH 3Ø SWITCH

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PAGE: 2 of 3

UC3.3GOS

Updated Item# 16

| | | 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, 336 TO 4/0 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 | |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

500MCM CABLE RISER
WITH 3Ø SWITCH

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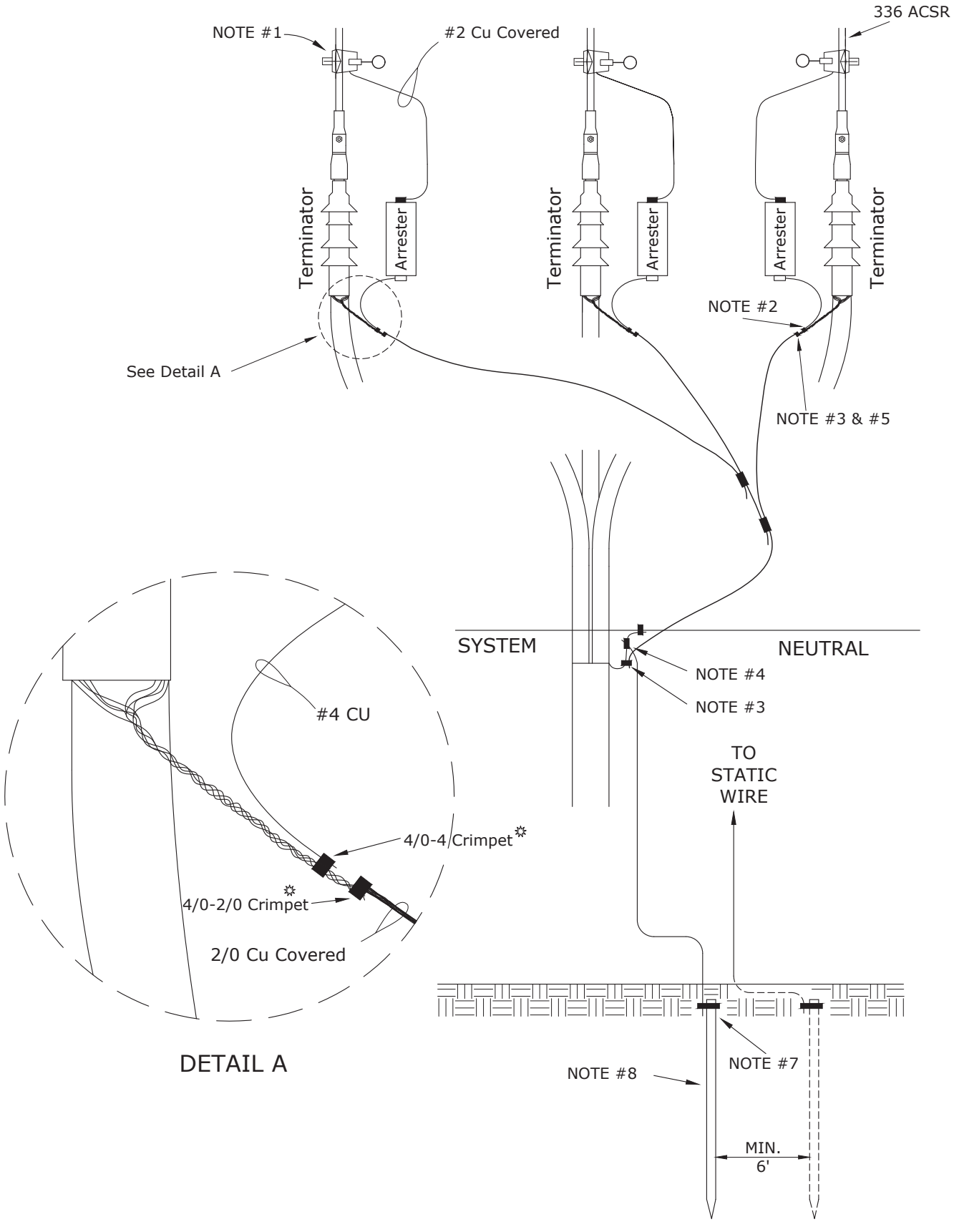
UC3.3GOS




DETAIL A

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

500 MCM CABLE RISER
GROUNDING DETAIL

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PAGE: 1 of 2

# HC3.3 DETAILS

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.

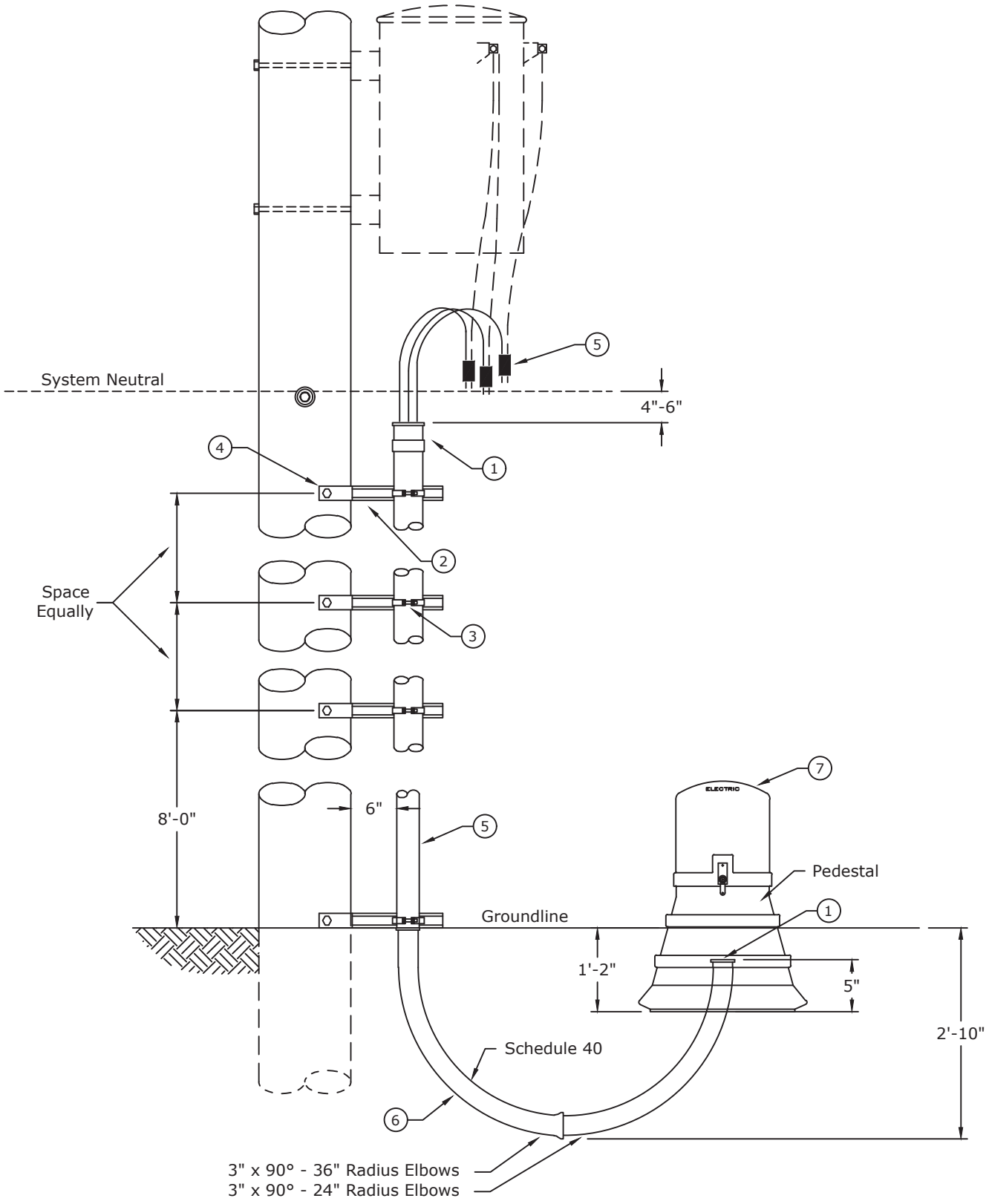
4. Use separate ground lead for system neutral grounding connection. Any other equipment grounds may be connected to this ground lead also per NESC 092B3.

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.




MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

SECONDARY OVERHEAD TO
UNDERGROUND RISER ASSEMBLY
W/ SECONDARY PEDESTAL

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PAGE: 1 of 2

UK3.2

| 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 Reqd | 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 | |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

SECONDARY OVERHEAD TO
UNDERGROUND RISER ASSEMBLY
W/ SECONDARY PEDESTAL

| R | | | |
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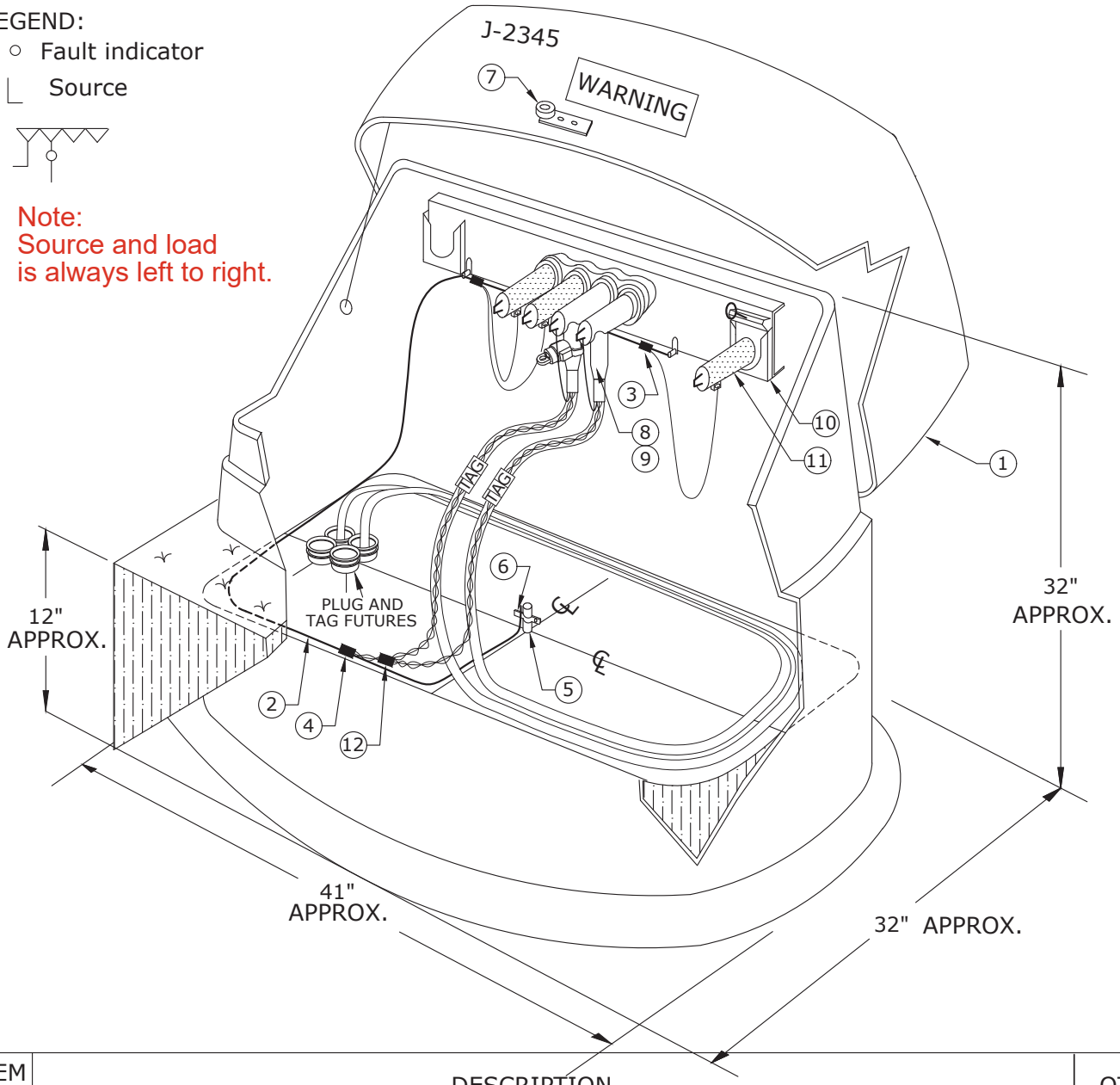
LEGEND:

- ○ Fault indicator
- Source

Note:
Source and load
is always left to right.




| ITEM NO. | DESCRIPTION | QTY |
|---|---|---|
| 1 | Box, Junction, 1Ø, Fiberglass w/LBC4 Installed PUD PROVIDED | 1 |
| 2 | Conductor, Cu, #4 Solid, 1C, Bare, Soft-Drawn | 15 |
| 3 | Connector, Crimpet, Cu, Run & Tap #6 Sol - #4 Str (4C4) | 3 |
| 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, w/Jacket Seal | 2 |
| 9 | Indicator, Fault, UG, 400A, Test Point, Voltage Reset, 1Ø | 1 |
| 10 | Bushing, Standoff Insulated, 200A COMES WITH PUD PROVIDED CABINET | 1 |
| 11 | Cap, Protective Insulated, 200A, 15kV UG | 3 |
| 12 | Connector, Crimpet, Cu, Run & Tap #2 Sol - #2 Str (2C2) | 2 |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

1Ø JUNCTION BOX
4-WAY

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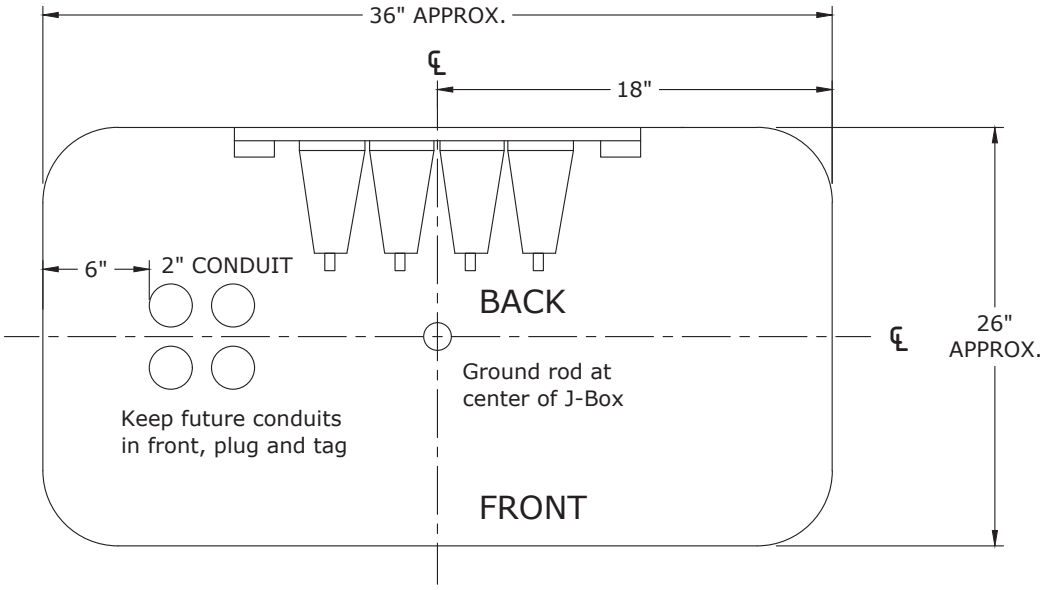
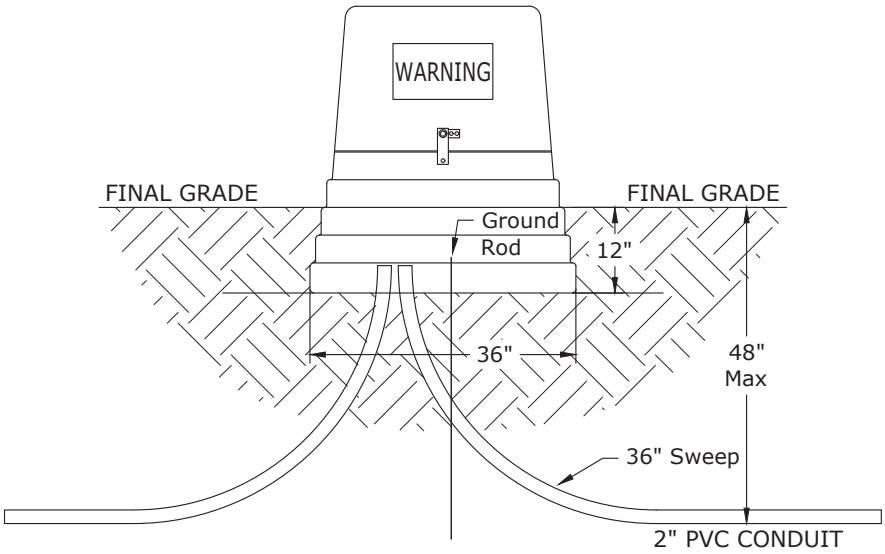
US1.PJ




**Plan View 1-Phase J-Box**




**Primary J-Box Conduit Arrangement**

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.

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

1Ø JUNCTION BOX
4-WAY

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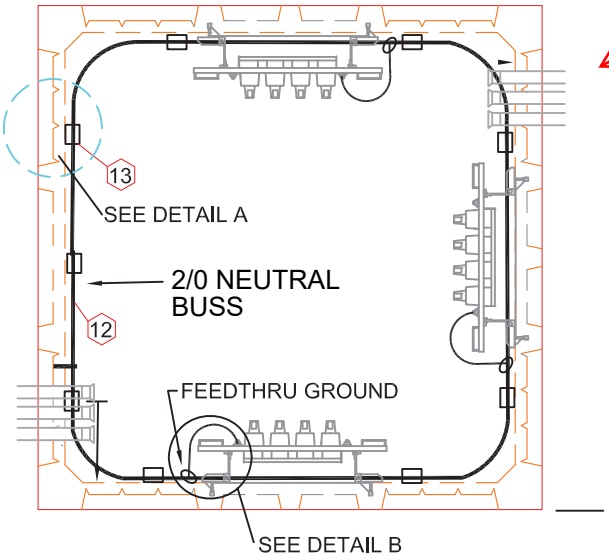
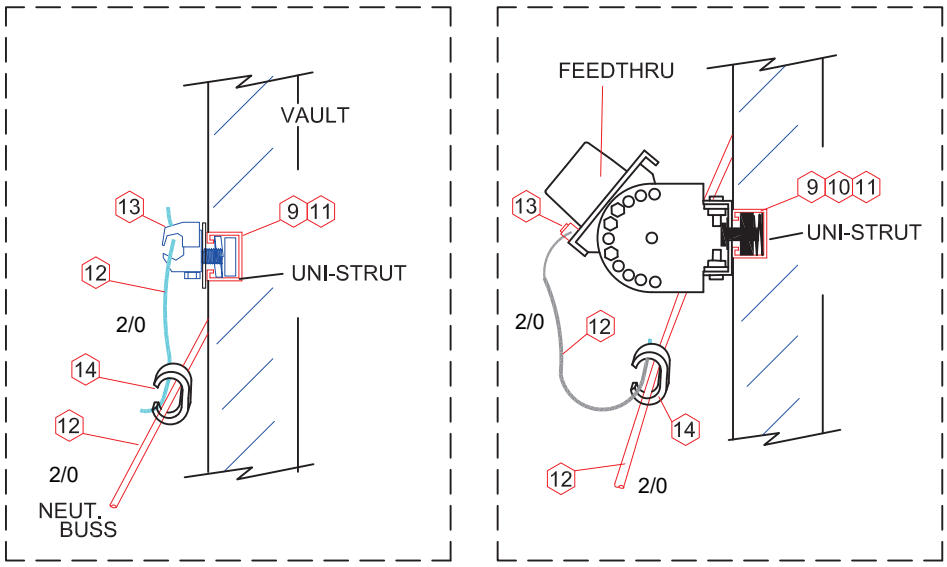
PAGE: 2 of 2

US1.PJ




DETAIL A
NEUTRAL BUSS TO VAULT

DETAIL B
FEEDTHRU GROUNDING

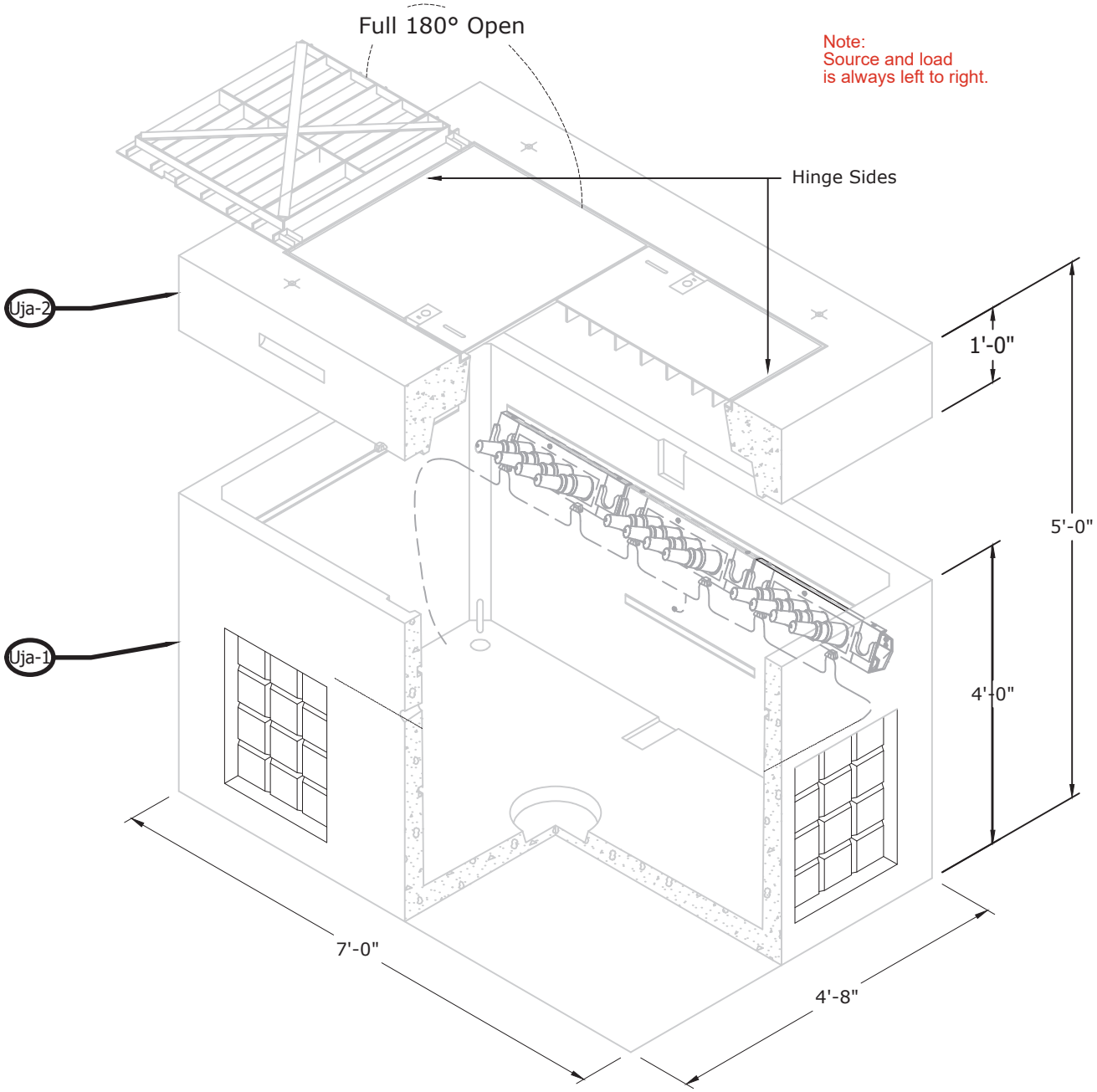
| ITEM | DESCRIPTION | QUANTITY UVG | |
|---|---|---|---|
| | **GROUNDING** | | |
| 9 | SS WASHER - 1/2" ROUND | 10 | |
| 10 | SS BOLT 3/4" x 1/2" | 6 | |
| 11 | UNI STRUT NUT 1/2" | 14 | |
| 12 | 2/0 COPPER S/D | 40' | |
| 13 | GROUND CONNECTOR 2/0 | 8 | |
| 14 | COPPER CRIMP (2/0 - 2/0) | 14 | |

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

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

MASON COUNTY PUD 1

# UVG




VAULT AND LID ARE PUD PROVIDED

| 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 |

MASON COUNTY PUD

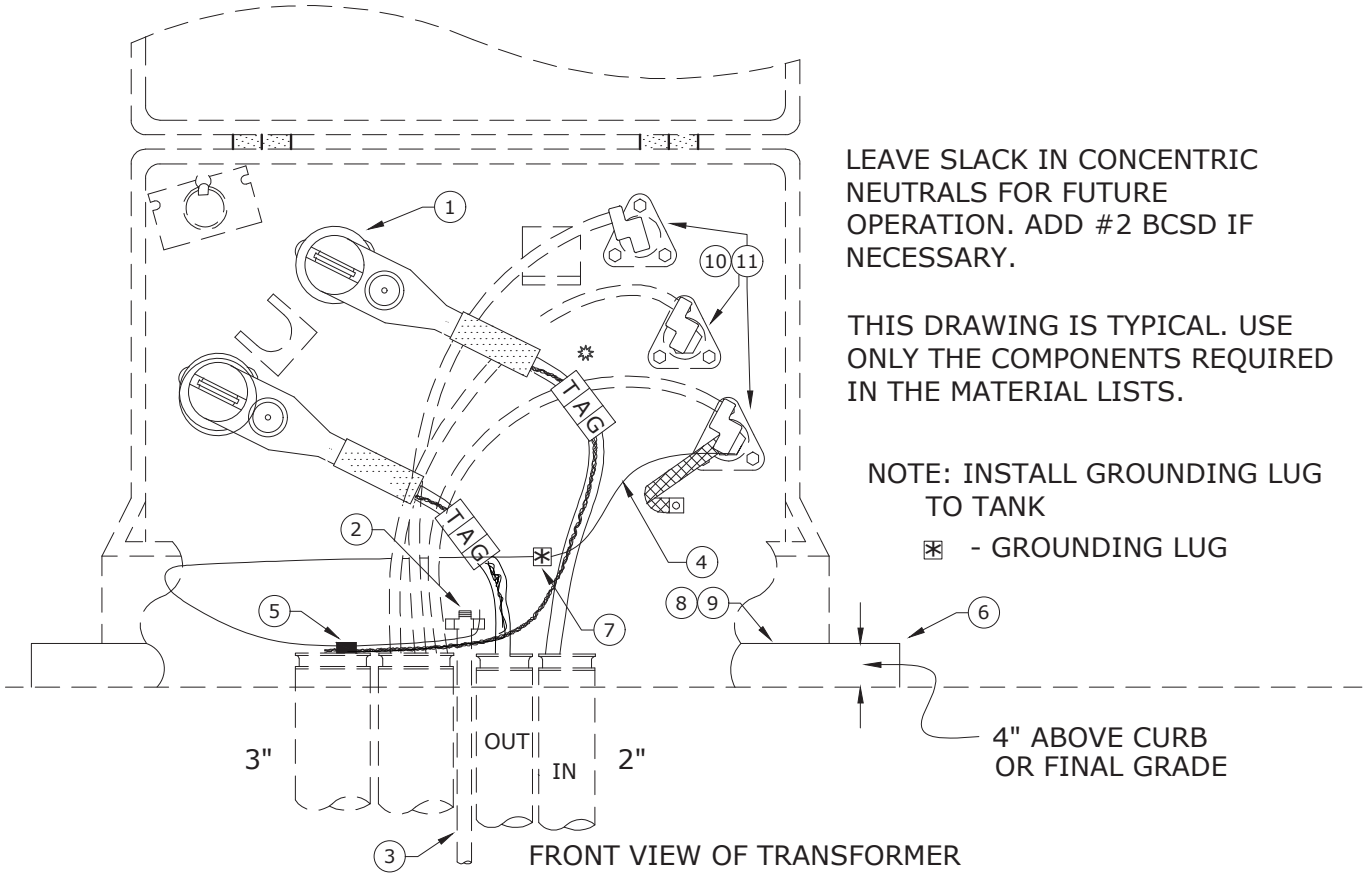
# CONSTRUCTION STANDARDS

UNDERGROUND
THREE-PHASE PRIMARY
575 VAULT AND COVER

| REVISIONS | | | |
|---|---|---|---|
| R | DATE | ENGR | OPS |
| A | 3/18/25 | JJW | OPS |



V(C)57



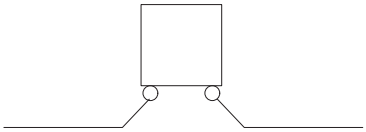

LEAVE SLACK IN CONCENTRIC NEUTRALS FOR FUTURE OPERATION. ADD #2 BCSD IF NECESSARY.

THIS DRAWING IS TYPICAL. USE ONLY THE COMPONENTS REQUIRED IN THE MATERIAL LISTS.

NOTE: INSTALL GROUNDING LUG TO TANK

⊠ - GROUNDING LUG

FRONT VIEW OF TRANSFORMER



FEED-THRU

UG1.3

MATERIAL LIST

| ITEM NO. | DESCRIPTION | UG1.3 QTY. |
|---|---|---|
| 1 | Elbow, Loadbreak, #2, 200A, 220 mil | 2 |
| 2 | Clamp, Ground Rod 5/8", Small | 2 |
| 3 | Rod, Ground 5/8" x 8' | 1 |
| 4 | Conductor, Wire BSDC #4 SLD | 10' |
| 5 | Connector, Crimpet, #4 to #2 | 2 |
| 6 | Basement, Transformer 36" x 36" x 24" | 1 |
| 7 | Ground Lug | 1 |
| 8 | Bolt, Machine, 1/2" x 1-1/2" SS | 2 |
| 9 | Washer, 2" x 3" x 3/16" w/ 9/16" Slotted Hole | 2 |
| 10 | Connector, z-bar #2-500 MCM + Streetlight | 3 |
| 11 | Cover, Connector U.G. | 3 |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

SINGLE PHASE
PADMOUNT TRANSFORMER
FEED-THRU

| R | | | |
|---|---|---|---|
| | | | |
| | | | |
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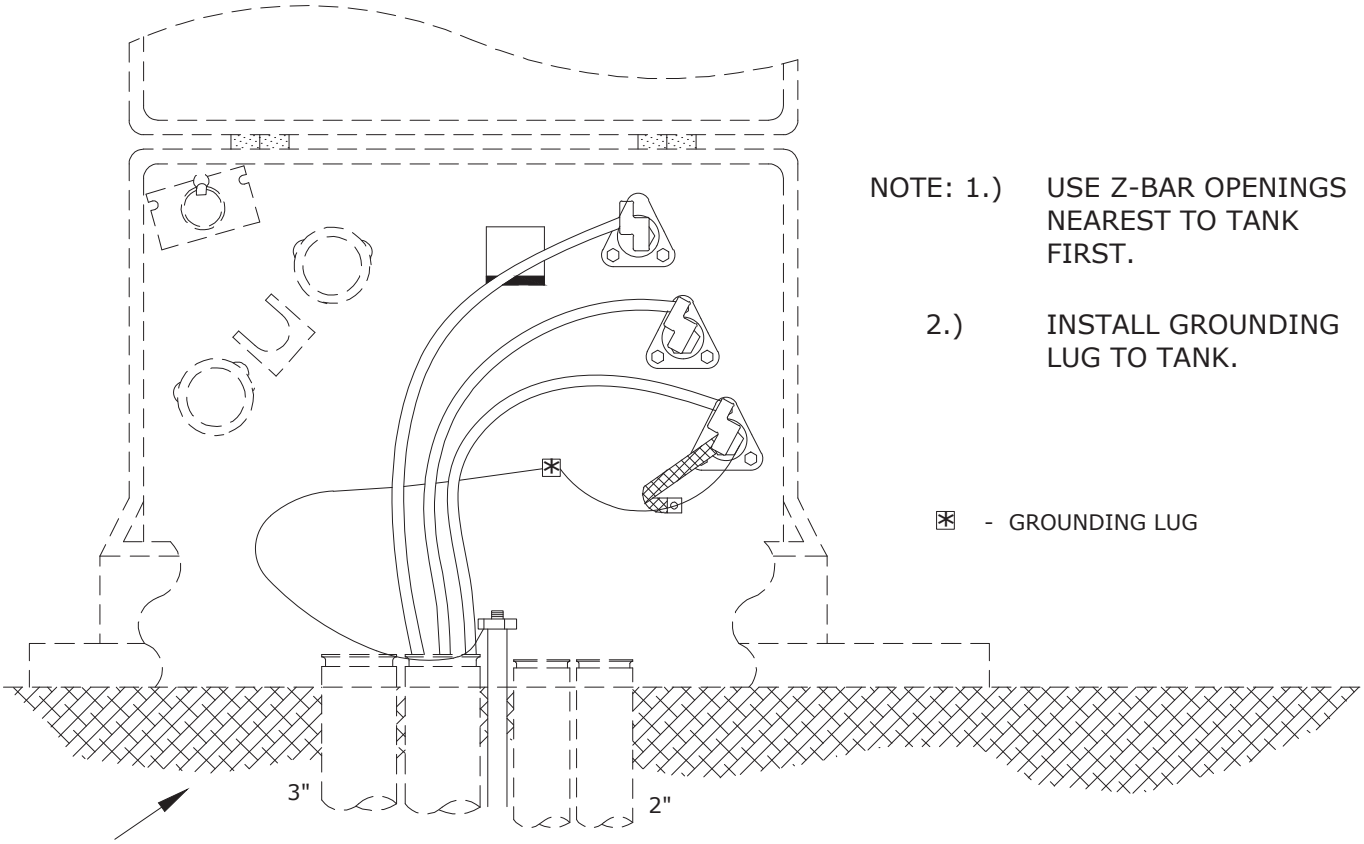
UG1.3

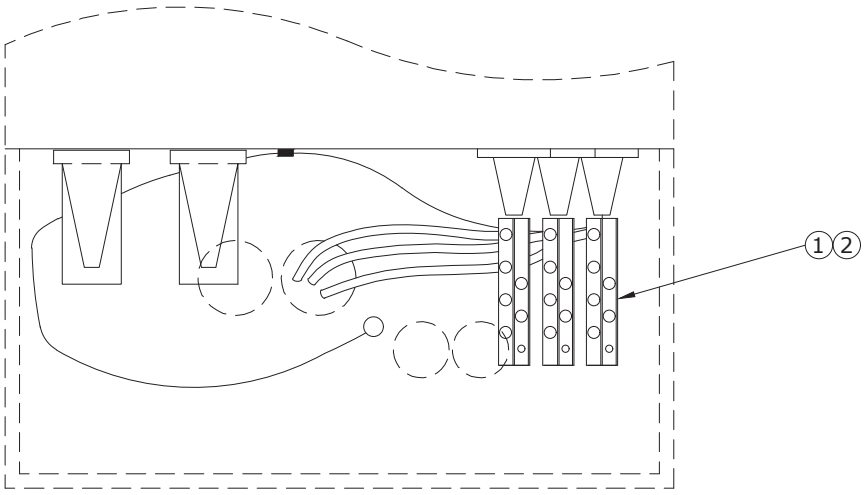



NOTE: 1.) USE Z-BAR OPENINGS NEAREST TO TANK FIRST.

2.) INSTALL GROUNDING LUG TO TANK.

⊠ - GROUNDING LUG

FRONT VIEW OF TRANSFORMER




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

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

MASON COUNTY PUD

# CONSTRUCTION STANDARDS

PADMOUNT TRANSFORMER ASSEMBLY
SINGLE PHASE SECONDARY

| R | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
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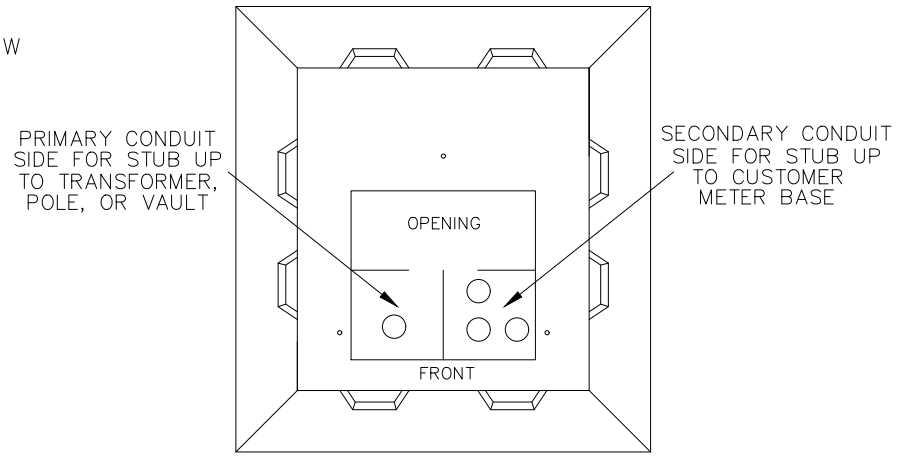
| △ | | | |

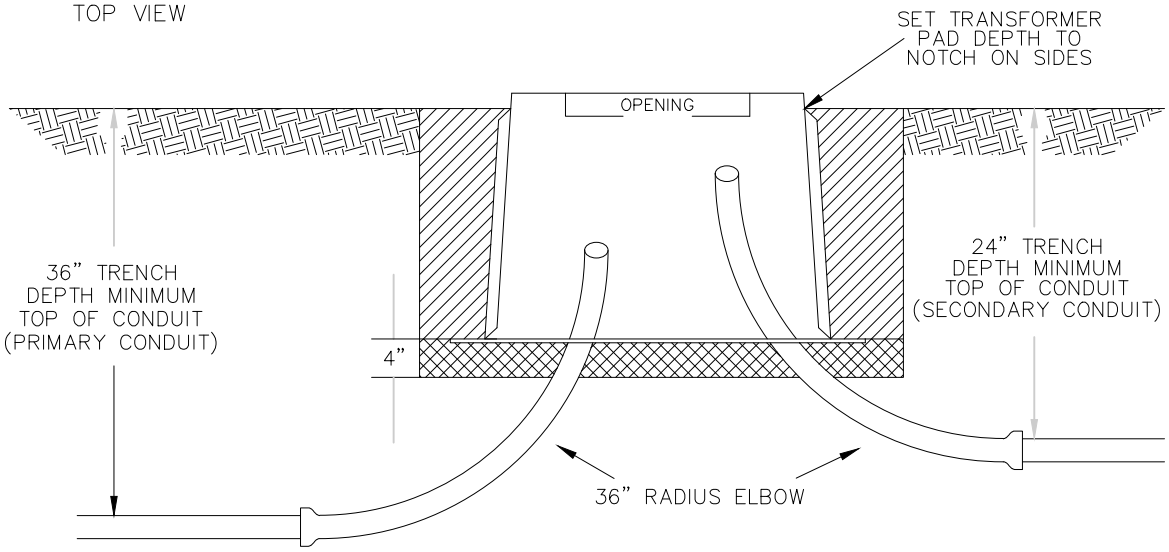


UG1.3

FRONT VIEW




TOP VIEW




LEGEND

- SAND OR CLEAN SOIL
- COMPACTED BACKFILL UNLESS OTHERWISE SPECIFIED
- UNDISTURBED EARTH

NOTES:

1. All elbows shall be whole and be inside the opening of the transformer as show above.
2. Sand or clean gravel shall be used as a level base for all transformer pads.
3. Proof conduit and install sequentially numbered, 2500 lb mule tape in all futures.

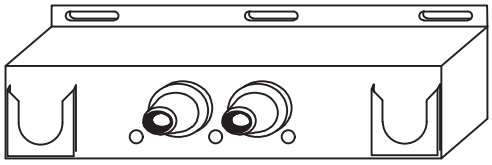
# CONSTRUCTION STANDARDS

UNDERGROUND
TRANSFORMER RISER (NON-ENERGIZED)
CONDUIT STUB DETAILS

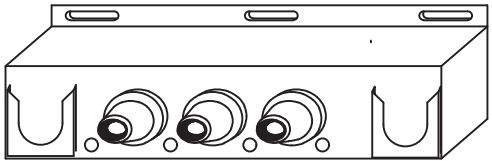
| REVISIONS | | | |
|---|---|---|---|
| R | DATE | ENGR | OPS |
| 0 | 3/18/25 | JJW | JG |



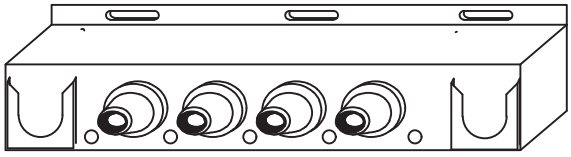
X-RIS-NON



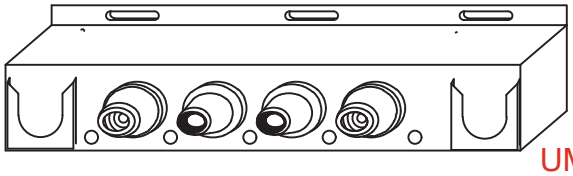
UM6.JN22 TWO POINT TERMINATION
2–200 AMP LOAD BREAK (FORMERLY UM6–20)



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.JN6666

Hubbell #625-J4-U - ELASTIMOLD-DP#0568120

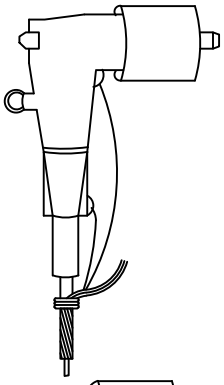
| ITEM | QTY. | MATERIAL |
|---|---|---|
| Uhq | 1 | Multipoint junction |
| | | |
| | | |
| | | |
| | | |
| | | |

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

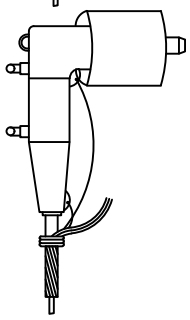
MASON COUNTY PUD 1

MULTIPOINT JUNCTIONS

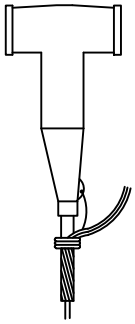
| | | |
|---|---|---|
| AUG 2016 | | |
| RUS | | UM6.JN |



LOAD BREAK ELBOW – 200 AMP LOAD BREAK
UM6.EL2.WIRE SIZE
(FORMERLY UM6–1)



FUSED ELBOW TERMINATION 200 AMP LOAD BREAK
UM6.EL2F.FUSE SIZE.WIRE SIZE
UM6.EL2F.30.WIRE SIZE FOR 30 AMP FUSE
(FORMERLY UM6–2)



DEAD BREAK TERMINATION 600 AMP
UM6.EL6.WIRE SIZE
DEAD BREAK TERMINATION 900 AMP
UM6.EL9.WIRE SIZE
(FORMERLY UM6–3)

NOTES:
APPEND "R" SUFFIX TO INDICATE LONGER ELBOW FOR REPAIR OR REPLACEMENT

| ITEM | MATERIAL | UM6.EL2 | UM6.EL2F | UM6.EL6 | UM6.EL9 |
|---|---|---|---|---|---|
| Uhp | Elbow, 200 AMP, load break | 1 | | | |
| Uhp | Fused elbow, 200 AMP, load break | | 1 | | |
| Uhb | Dead break termination, 600 AMP | | | 1 | |
| Uhb | Dead break termination, 900 AMP | | | | 1 |
| | | | | | |
| | | | | | |

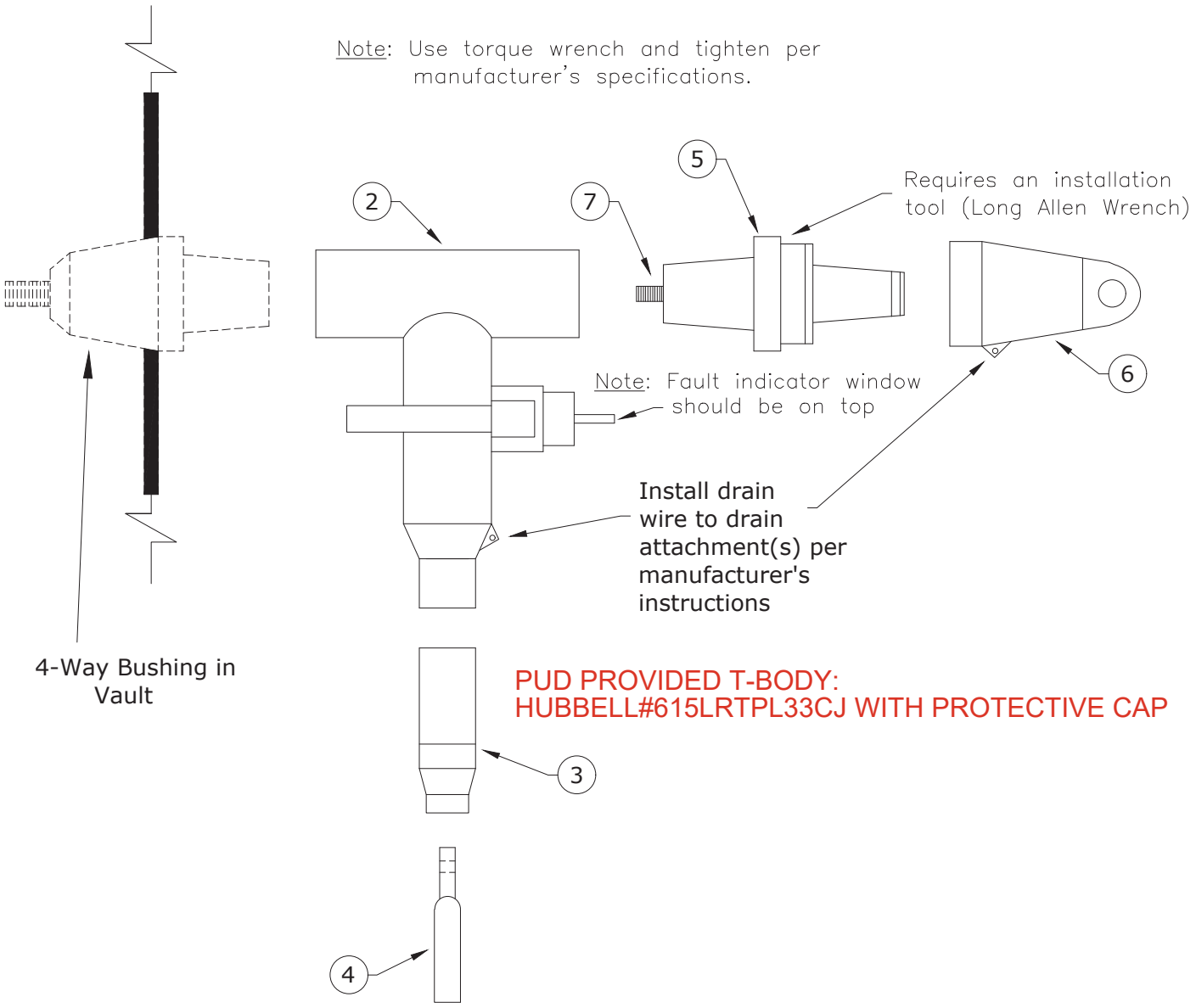
ELBOWS

AUG 2016

RUS

UM6.EL

# ASSEMBLY DIAGRAM
# ONE ASSEMBLY PER 600A PHASE




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

MASON COUNTY PUD

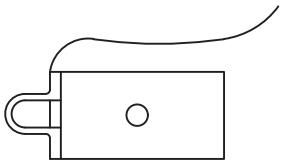
## CONSTRUCTION STANDARDS

600 AMP ELBOW - 500MCM CABLE

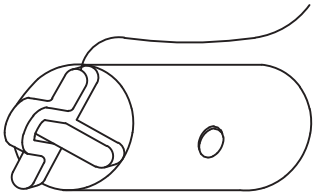
| R | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

PAGE: 1 of 1

UM6.EL6.500

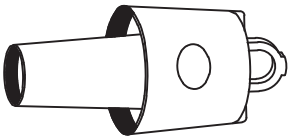


UM6.C2 INSULATED PROTECTIVE CAP
200 AMP LOAD BREAK (FORMERLY UM6–10)

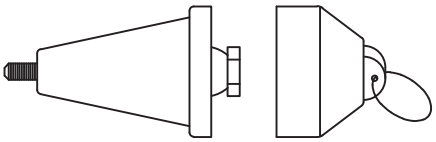


UM6.C6 INSULATED PROTECTIVE CAP
600 AMP DEAD BREAK (FORMERLY UM6–11)

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

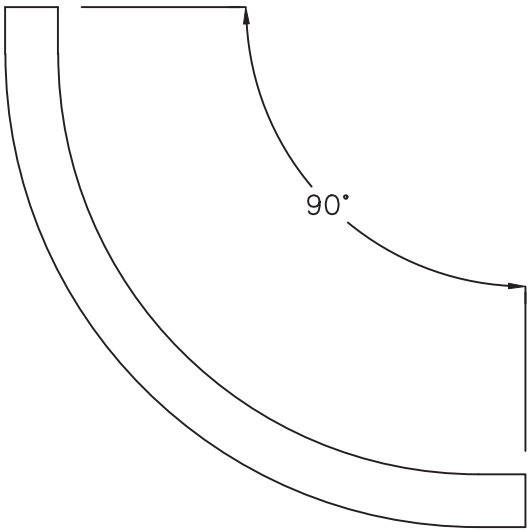
UM6.PL (PLUG DESCRIPTION)
2 FOR 200 AMP BUSHING WELL INSERTS
6 FOR 600 AMP TEE CONNECTOR

| 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 |
| | | | | | |
| | | | | | |

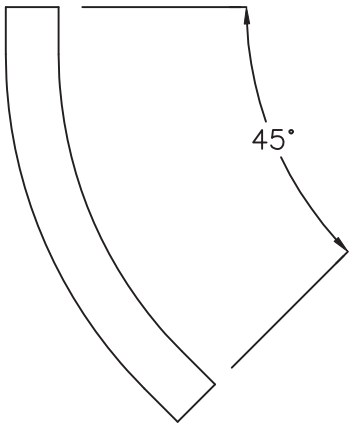
MASON COUNTY PUD 1

CAPS AND PLUGS

| | | |
|---|---|---|
| AUG 2016 | | UM6.C |
| RUS | | UM6.PL |

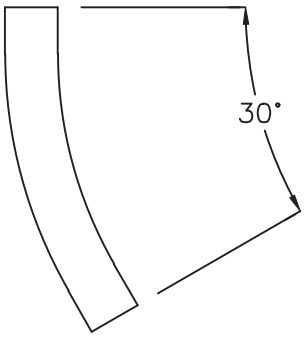



UP7.04.90

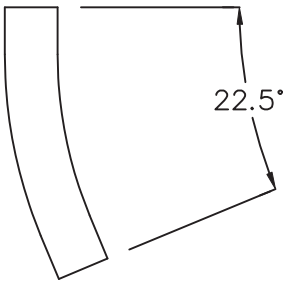



UP7.04.45

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




UP7.04.30




UP7.04.22

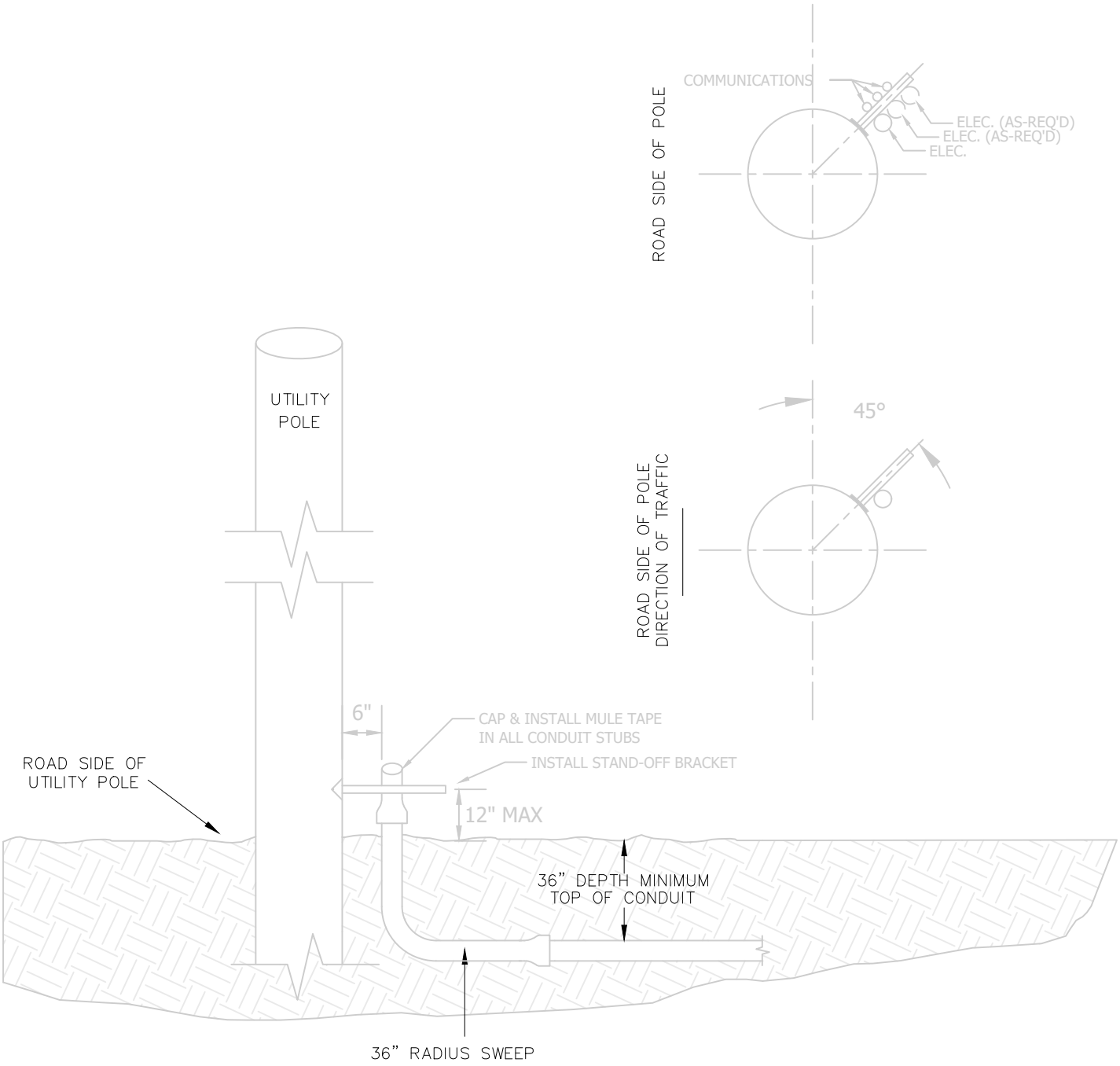
| ITEM | QTY. | MATERIAL |
|---|---|---|
| | 1 | Conduit, elbow |
| | | |
| | | |
| | | |
| | | |
| | | |

DESIGN PARAMETERS:

SEE SECTION 8.1 FOR MINIMUM BENDING RADIUS.

CONDUIT ELBOW

| | | |
|---|---|---|
| AUG 2016 | | |
| RUS | | UP7.04 |




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.

MASON COUNTY PUD 1 90 YEARS EST. 1935

# CONSTRUCTION STANDARDS

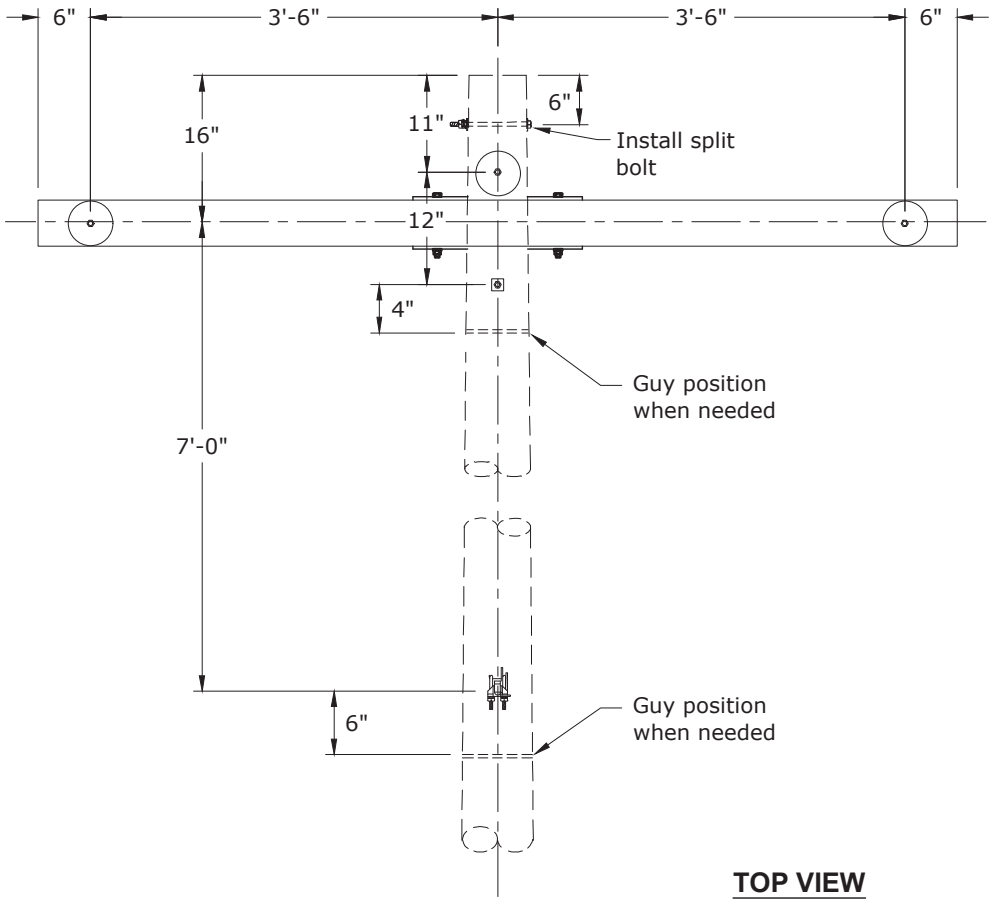
UNDERGROUND
POLE RISER
CONDUIT STUB

| REVISIONS | | | |
|---|---|---|---|
| R | DATE | ENGR | OPS |
| 0 | 3/18/25 | JJW | JG |
| | | | |
| | | | |
| | | | |

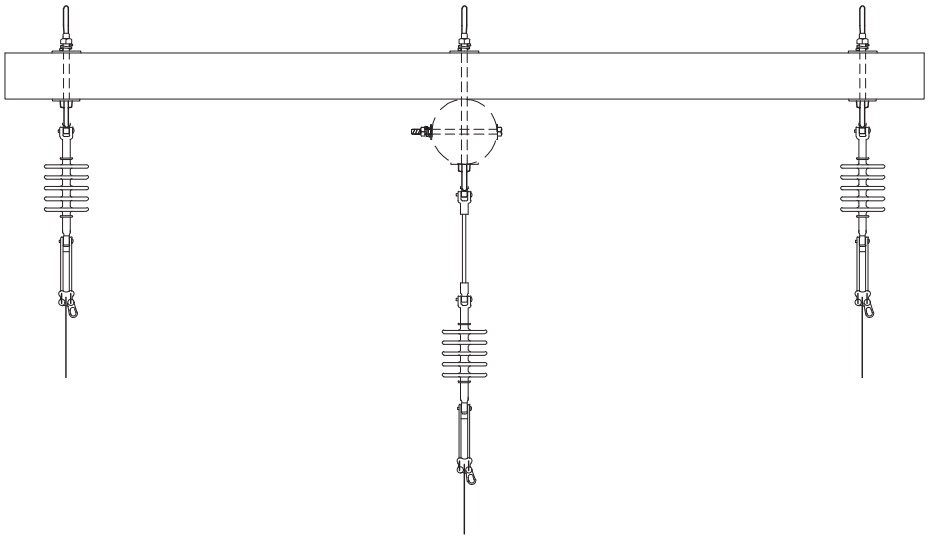


POLE STUB

**FRONT VIEW**



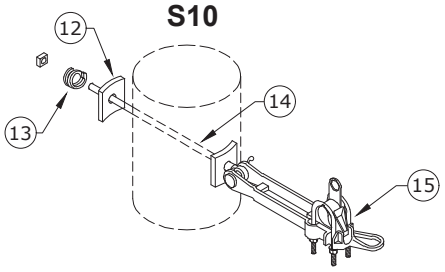

**TOP VIEW**



## Avian Safe

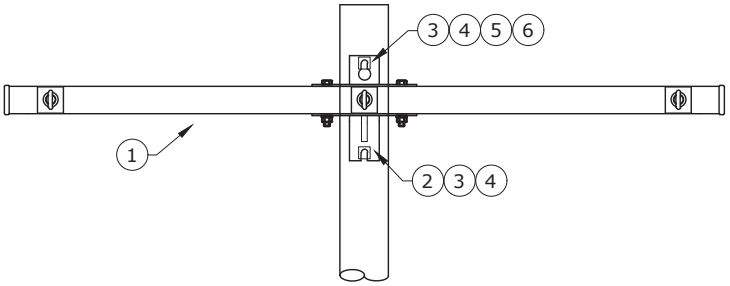
| | | |
|---|---|---|
| MASON COUNTY PUD 1 | CONSTRUCTION STANDARDS<br>8' PRE-ASSEMBLED DEADEND<br>336 ACSR MAX WIRE | REVISIONS<br>R / DATE / ENGR / OPS |
| | PAGE: 1 of 2 | C5.21F |

S10



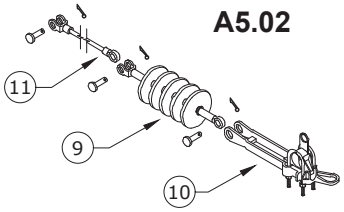

N5.1

CR26A



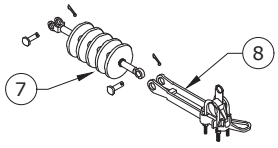

Back View

A5.02




Center Phase

A5.01




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 | |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

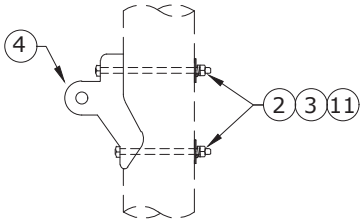
8' PRE-ASSEMBLED DEADEND
336 ACSR MAX WIRE

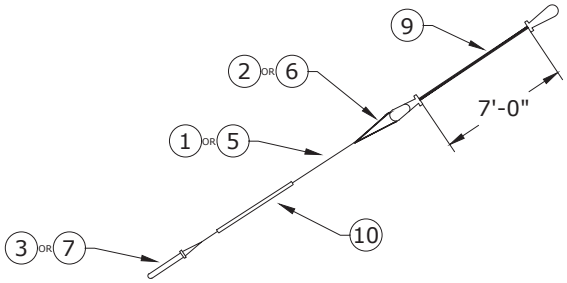
| REVISIONS | | | |
|---|---|---|---|
| R | DATE | ENGR | OPS |
| | | | |
| | | | |
| | | | |
| | | | |
| △ | | | |



C5.21F

GUY ATTACHMENT




DOWN GUY

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 | |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

DOWN GUY

| △R | DATE | | |
|---|---|---|---|
| | | | |
| | | | |
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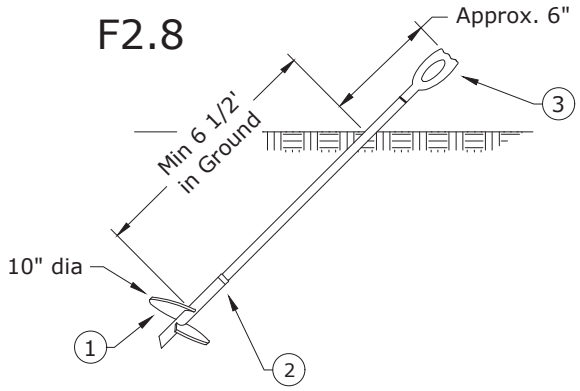
PAGE: 1 of 1

E1.1

# F2.8




| ULTIMATE HOLDING CAPACITY | | |
|---|---|---|
| | F2.8 | |
| **Torque** | **(lbs)** | |
| (ft-lbs) | 10" Helix | 14" Helix |
| | 1" x 7' Rod | 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 |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

SINGLE HELIX SCREW ANCHORS

| R | | | |
|---|---|---|---|
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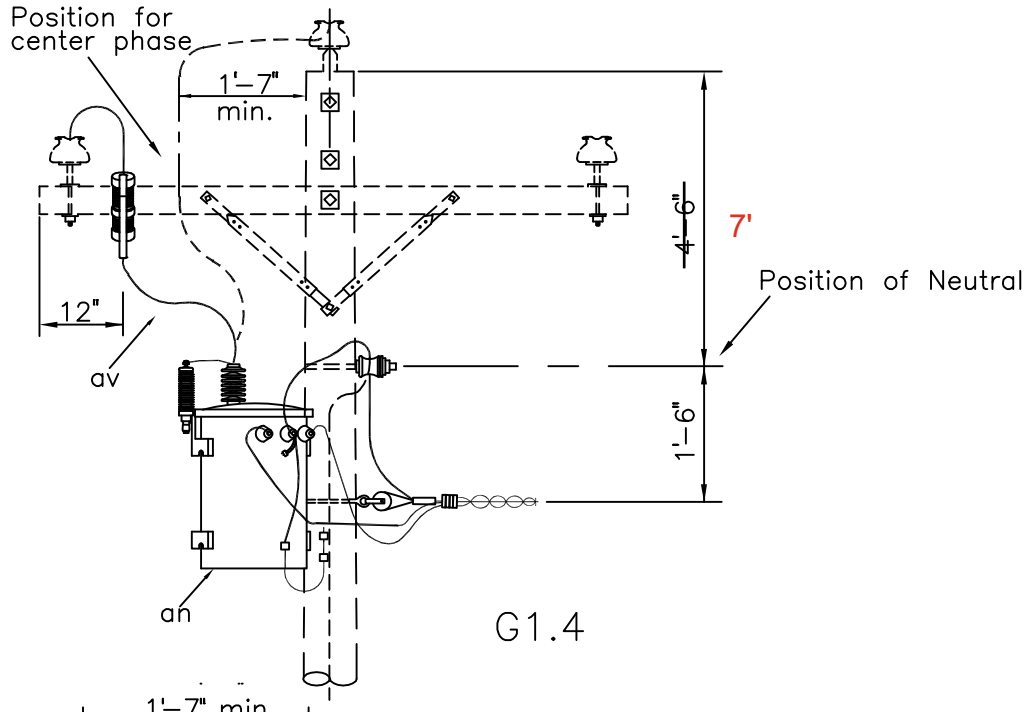
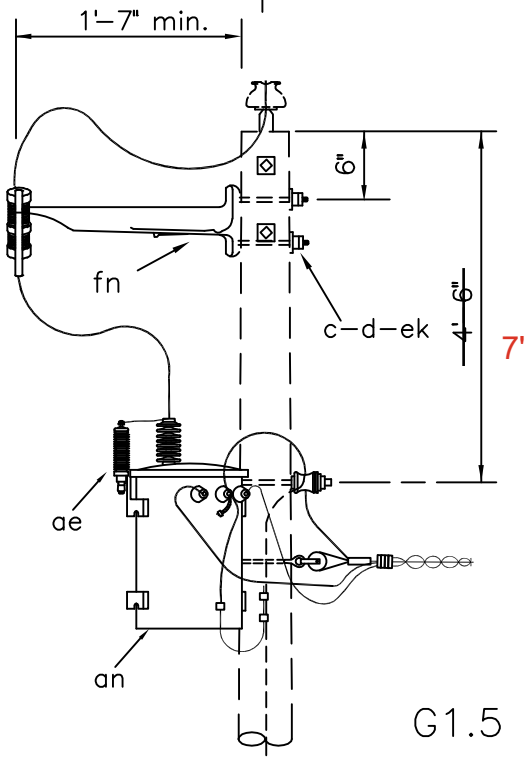
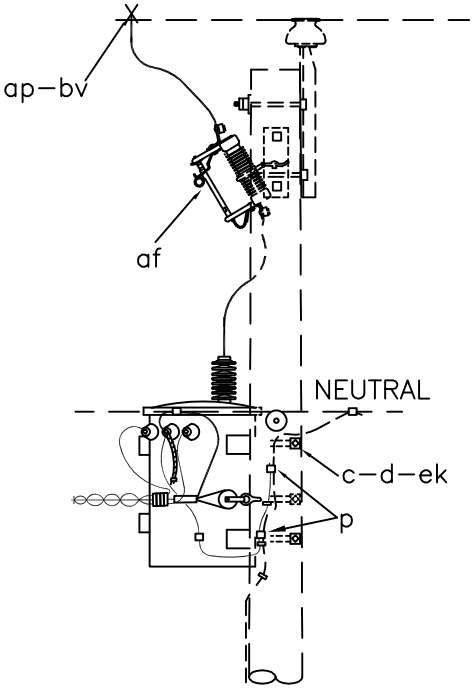



G1.4




G1.5




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 |

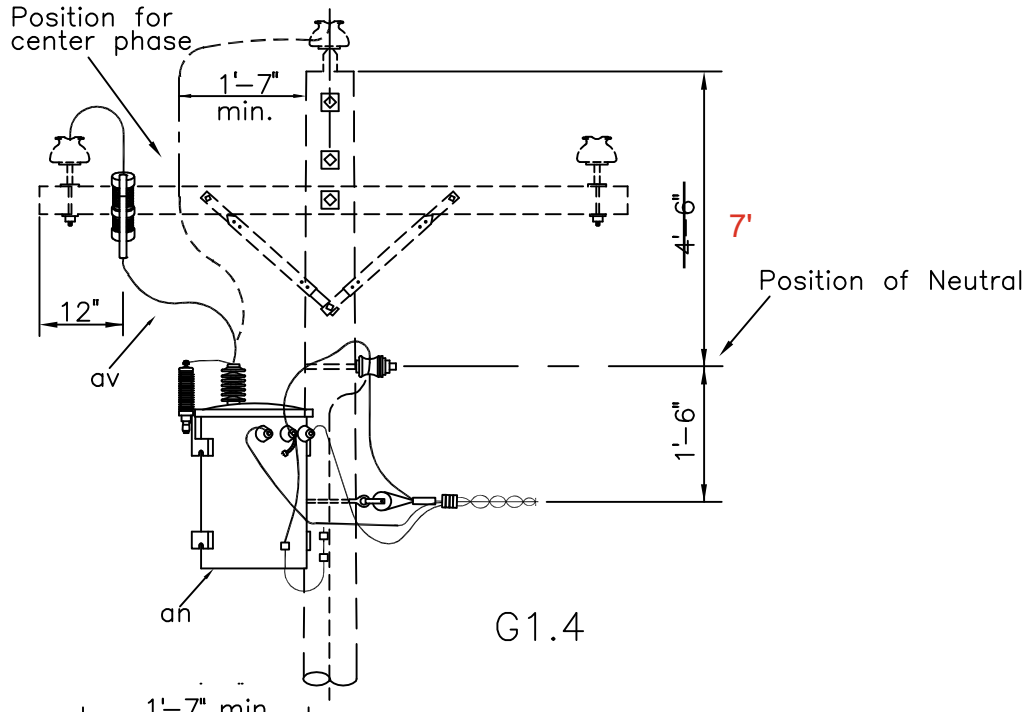
| ASSEMBLY: G1 | | .4 | .5 |
|---|---|---|---|
| ITEM | MATERIAL | QTY | QTY |
| ap | Clamp, hot line | 1 | 1 |
| av | Jumpers, stranded, as req'd | | |
| bv | Rod, armor, as req'd | | |
| ek | Locknuts, | 2 | 4 |
| fn | Bracket, extension | | 1 |
| | | | |

DESIGN PARAMETERS:

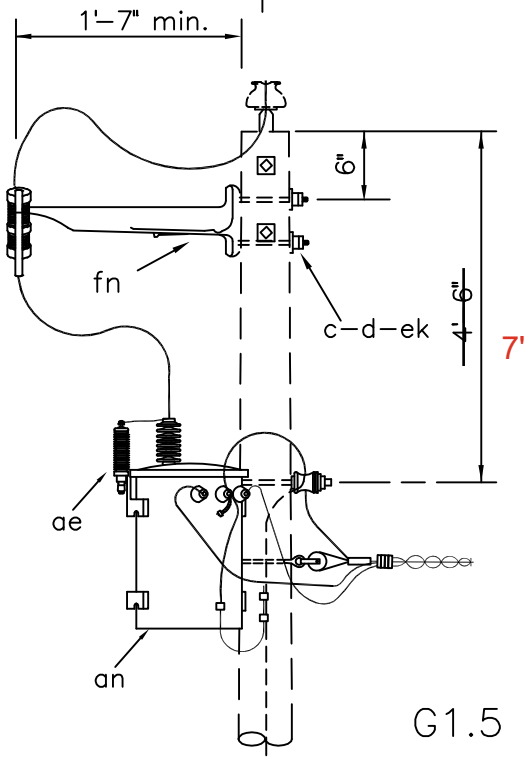
See Guide Drawing "G1.1G"

# SINGLE–PHASE, CONVENTIONAL TRANSFORMER (TANGENT POLE)

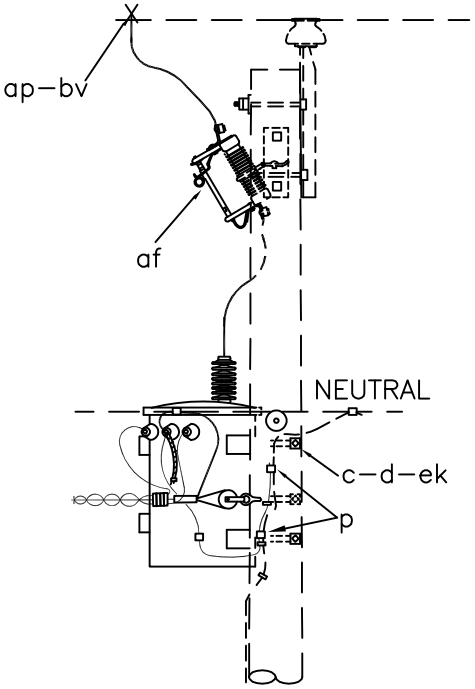
| | | |
|---|---|---|
| APRIL 2005 | | G1.4 |
| RUS | 12.47/7.2 kV | G1.5 |




G1.4




G1.5




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 |

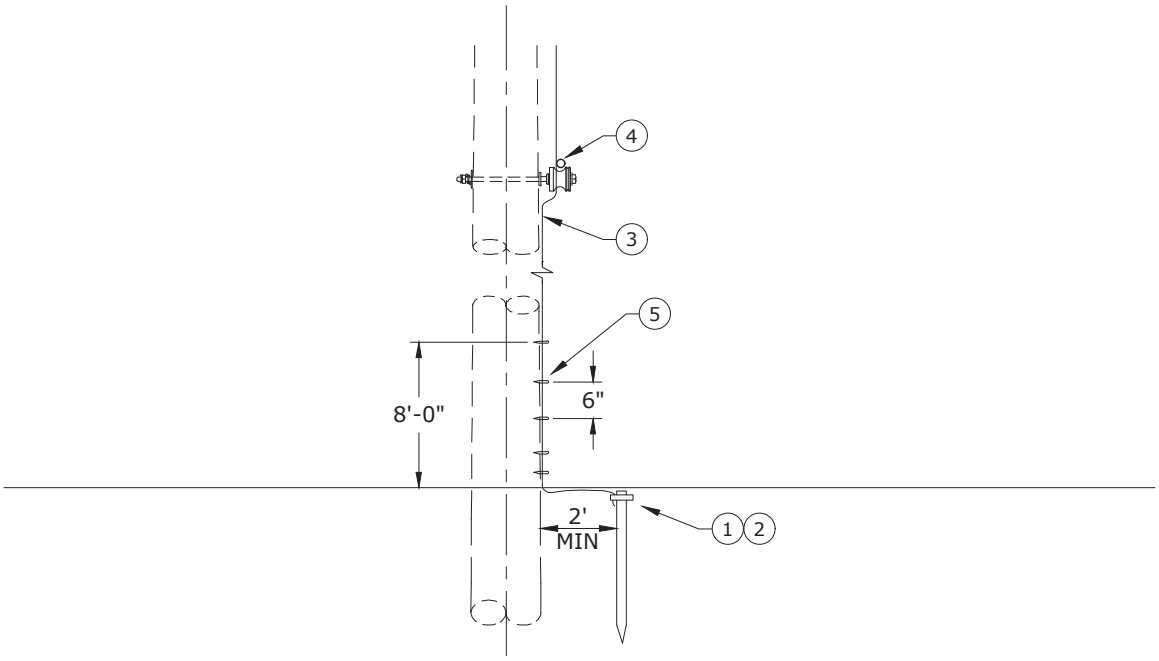
| ASSEMBLY: G1 | | .4 | .5 |
|---|---|---|---|
| ITEM | MATERIAL | QTY | QTY |
| ap | Clamp, hot line | 1 | 1 |
| av | Jumpers, stranded, as req'd | | |
| bv | Rod, armor, as req'd | | |
| ek | Locknuts, | 2 | 4 |
| fn | Bracket, extension | | 1 |
| | | | |

DESIGN PARAMETERS:

See Guide Drawing "G1.1G"

# SINGLE–PHASE, CONVENTIONAL TRANSFORMER (TANGENT POLE)

| | | |
|---|---|---|
| APRIL 2005 | | G1.4 |
| RUS | 12.47/7.2 kV | G1.5 |




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 |

MASON COUNTY PUD 1

# CONSTRUCTION STANDARDS

BASIC UNITS
GROUNDING

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| | | | |
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H1.1