



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter Switch on**  
**Customer-Owned Pole**  
**6-09-192**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 7 of 57

**6-09-192 - Customer Reference Specification - 12kV 3-Phase Service Interrupter Switch on Customer-Owned Pole (Overhead Supply to Underground)**

**Overhead Supply to Underground**

Replaces LA-17251

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter Switch on**  
**Customer-Owned Pole**  
**6-09-192**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 8 of 57

This specification defines the customer's responsibilities and requirements necessary for 12 KV 3 phase service, overhead supply to underground. All details of this specification must be strictly followed.

The pole location and equipment installation must be approved by the PPL Supervisor - Commercial & Industrial Metering Services and PPL Design Supervisor. Any deviation from this specification must be approved. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

Refer to CRS 6-09-199 for Service Termination and Metering Compartments in Customer Owned Switchgear.

**Notes:**

1. All facilities, except source side deadend assemblies and lightning arresters, are provided, installed, and maintained by customer. PPL makes connections to source side of switch and all connections to the system neutral. Customer must make all grounding connections using compression connectors, and all primary connections using cable-to-flat or stem connectors as appropriate.
2. Customer must install and maintain guy designed to hold deadend load of PPL conductors. The maximum tension in each conductor is 2000 pounds.
3. Conduit(s) for primary cable may approach from any direction, but cable riser must be attached to pole in position shown.
4. The customer should install underground conduit(s) by one of the below methods. A spare conduit is recommended, but optional.
  - a. Use 4 or 5 inch hot-dipped galvanized steel conduits (rigid or intermediate grade) directly buried in the earth. All threaded couplings should be tightly joined using plumbers teflon tape or similar joint compound designed to stop water leaks. All bends must be at least 36-inch radius. All steel conduits must have grounding bushings at the switchgear and terminal pole.
  - b. Use 4 or 5 inch type EB or DB PVC conduit encased in a concrete envelope as specified in PPL drawing A-168735. All joints should be tightly sealed using the appropriate contact cement or joint compound. All 90° bends must be hot-dipped galvanized steel (rigid or intermediate grade) with at least 36 inch radius. Concrete must also encase steel bends to prevent breakage at steel-to-plastic adaptors resulting from cable pulling tensions.

After installation, the contractor should clean debris from the conduits. Temporarily plug conduits to keep them clean and dry.

5. Conduit riser should fit snug against pole. Riser can be hot-dipped galvanized steel or schedule 80 PVC. Attach riser to pole using two-hole pipe straps at 5-foot intervals. Both the cable riser conduit and spare should be watersealed.
6. Ground wire from switch base to ground rod must be minimum #2 copper or have the same ampacity as the source side conductors at switch.



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter Switch on**  
**Customer-Owned Pole**  
**6-09-192**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 9 of 57

7. Customer must install at least one lightning arrester per cable terminator. For maximum lightning protection, two arresters per terminator are recommended.
8. Coil approximately 7 feet of the #2/0 copper ground wire under platform and connect at two points. The platform should be chained to prevent removal.
9. Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply."
10. Switch handle is to have provision for 2 locks (customer lock & PPL EU lock) so that either customer or PPL EU may operate switch independently.
11. Customer Main Switch shall meet the following criteria:
  - a. Incorporate a three-pole, gang-operated loadbreak design
  - b. Rated for minimum 14.4kV
  - c. Minimum 110 kV BIL
  - d. Minimum 600A continuous and interrupting current
  - e. Have a visual break when switch is in the open position
  - f. Operable from ground level. Operating handle should be 42" from ground level
  - g. Fuses holder and fuses are not required

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Installed by PPL</b>			
1	3	Deadend assembly, 12 KV	6-13-18
	*	Ft wire, #2 Cu (minimum) SD solid, bare, with connectors as required	147476
2	1	Deadend assembly, neutral	6-13-18
3	3	Bracket, crossarm mounting	139506
	3	Arrester, lightning	139110
	3	Connector, compression	6-12-11
	*	Ft wire, #6 Cu, bare	147474
	3	Connector, hot line, aluminum, #6 - #4/0	1021522
		Connector, hot line, aluminum, #2-556 kcmil	912529
<b>Material Supplied by Customer</b>			
4	1	Pole, (class 3 minimum) length as specified ( 40' minimum)	
5	1	Double Crossarm, wood, 3-1/2" x 4-1/2" x 8' long	
	3	Bolt, double arming, 5/8" x length to suit, galvanized	
	10	Washer, 2-1/4" square for 5/8" bolt	
6	1	Crossarm, wood, 3-1/2" x 4-1/2" x 8' long	
	1	Bolt, 5/8" x length to suit, galvanized	
	2	Washer, 2-1/4" square for 5/8" bolt	
	1	Gain, pole	

\* As required



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter Switch on**  
**Customer-Owned Pole**  
**6-09-192**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 10 of 57

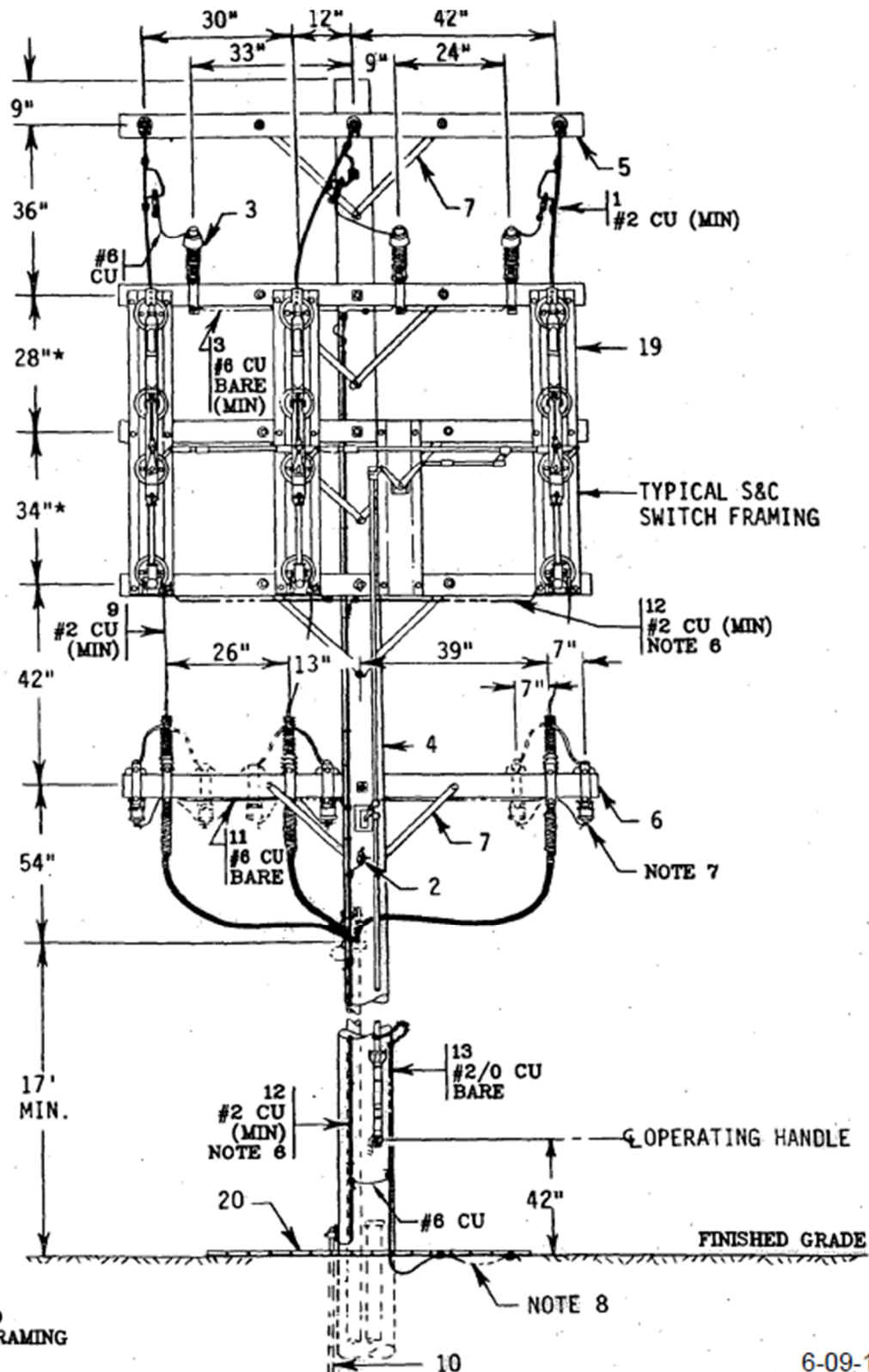
Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by Customer</b>			
7	16	Brace, crossarm, flat, 28" long	
	8	Screw, lag, 1/2" x 4" long, galvanized	
	8	Bolt, carriage, 3/8" x 5" long, galvanized	
8	*	Bracket, for lightning arrester	(Note 7)
	*	Arrester, lightning, for 12 KV, 4 wire system	
	3	Bracket, for outdoor cable terminator	
	3	Terminator, cable, 15 KV, outdoor	
9	*	Ft wire, #2 Cu (minimum), & connectors as required	
10	1	Rod, ground, 1/2" diameter x 8' long, copper clad steel	
11	*	Ft wire, #6 Cu, bare and connectors as required	
12	*	Ft wire, #2 Cu (minimum), HDPE or bare with molding	(Note 6)
13	*	Ft wire, #2/0 Cu, bare & connectors as required	
14	3	Grip, cable supporting	
	1	Bushing, grounding, size to suit conduit	
15	1	Cap, conduit	
16	*	Conduit, 4" or 5", cable riser	(Note 4)
	*	Straps, conduit, with screw lags	
17	*	Bend, 90°, 4" or 5", steel, galvanized	(Note 4)
18	1	Guy, 1/2" H.S. steel, 7 strand, with attachment hardware	(Note 2)
19	1	Customer Main Switch	(Note 11)
20	1	Grounded platform, 3' x 5'	LB-12669

\* As required



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter Switch on**  
**Customer-Owned Pole**  
**6-09-192**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 11 of 57



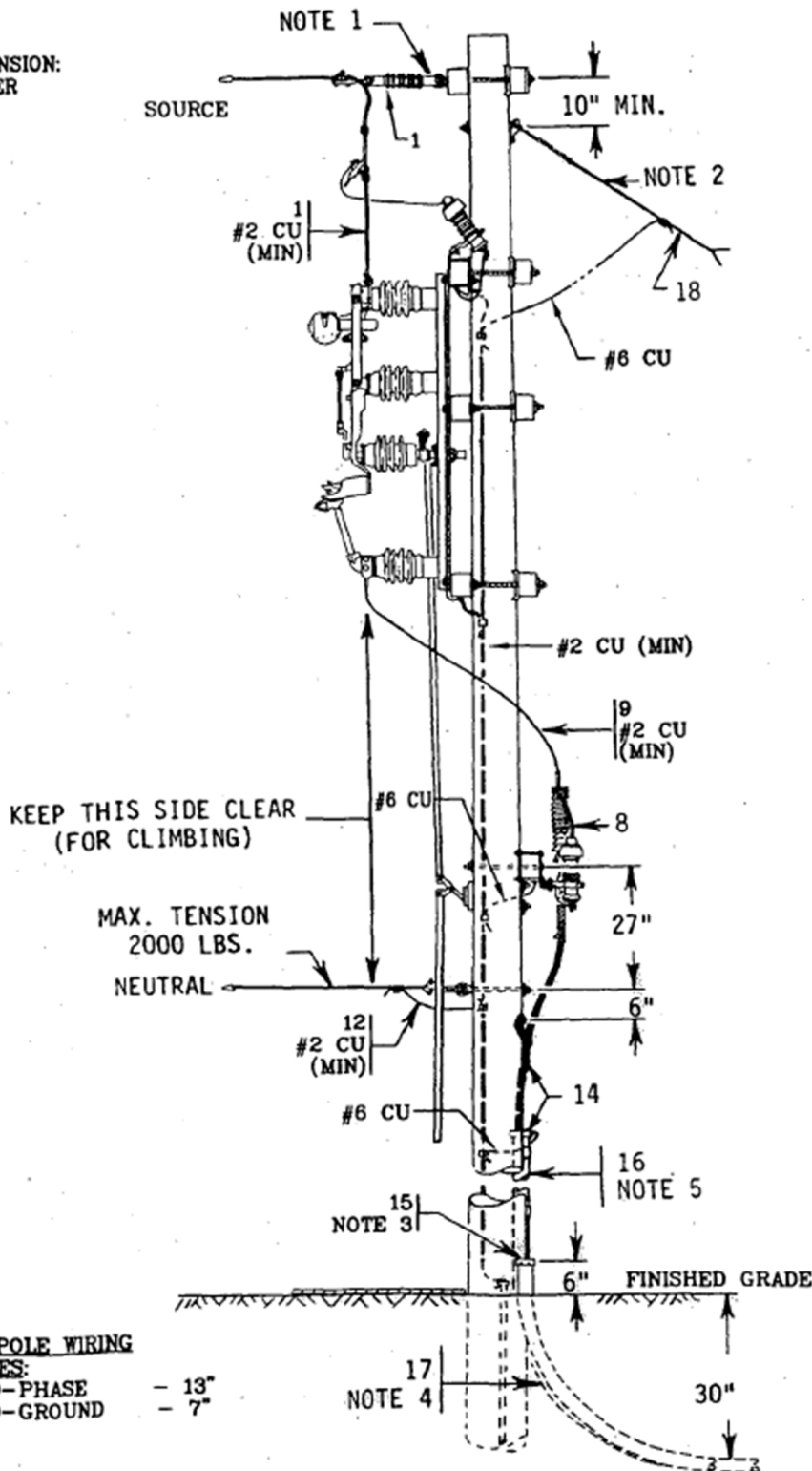
\*NOTE:  
TYPICAL S&C CO  
SOURCE SIDE FRAMING  
SHOWN.

6-09-192-A

**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter Switch on**  
**Customer-Owned Pole**  
**6-09-192**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 12 of 57

MAXIMUM TENSION:  
2000 LBS PER  
CONDUCTOR.



**MINIMUM POLE WIRING**  
**CLEARANCES:**  
PHASE-TO-PHASE - 13"  
PHASE-TO-GROUND - 7"

**REFERENCE:**  
"RULES FOR ELECTRIC  
METER AND SERVICE  
INSTALLATIONS"  
SKETCH #31. 6-09-192-B



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-194**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 13 of 57

**6-09-194 - Customer Reference Specification - 12kV 3-Phase Service Interrupter Switch on Customer-Owned Pole (Overhead Supply to Overhead)**

**Overhead Supply to Overhead**

Replaces A-128453

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Metering  
Customer Reference Specification  
12kV 3-Phase Service Interrupter  
Switch on Customer-Owned Pole  
6-09-194**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 14 of 57

This specification defines the customer's responsibilities and requirements necessary for 12 KV 3 phase service, overhead supply to overhead. All details of this specification must be strictly followed.

The pole location and equipment installation must be approved by the PPL Supervisor - Commercial & Industrial Metering Services and PPL Design Supervisor. Any deviation from this specification must be approved. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

Refer to CRS 6-09-196 for 12kV 3-Phase Service Metering on Customer-Owned Pole (Overhead Supply to Overhead) and CRS 6-09-197 for 12kV 3-Phase Service Metering on Customer-Owned Pole (Overhead Supply to Underground).

**General Notes:**

1. All facilities, except source side deadend assemblies and lightning arresters, are provided, installed, and maintained by customer.
2. PPL EU will make connections to source side of switch and all connections to the system neutral. Customer must make all grounding connections using compression connectors and all primary connections using cable-to-flat or stem connectors as appropriate.
3. Customer to furnish and install lightning arresters on load side.
4. Ground wire from the lightning arrester cross arm to ground rod must be minimum #2 covered HDPE copper.
5. Coil approximately 6-feet of the #2/0 bare copper ground wire under platform and connect at two points. The platform should be chained to the pole to prevent removal.
6. Switch handle is to have provision for 2 locks (customer lock & PPL EU lock) so that either customer or PPL EU may operate switch independently.
7. Whenever the customer's pole must be guyed to offset the pull of PPL EU's service drop or the customer's distribution wires, the guy(s) is provided, installed, and maintained by the customer. If guying is necessary to offset tension from PPL EU's service drop, PPL EU will provide specifications for guy wire rod size and lead length. A strain insulator must be installed at the pole end of the guy wire.
8. Minimum clearance required between primary conductor and bare guy is 7". Minimum clearance required between primary conductor and guy insulator is 5-1/4".
9. Ground bare guy to a multi-grounded system neutral or to a pole ground wire that is connected to a multi-grounded system neutral.
10. Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply."



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-194**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 15 of 57

11. Customer Main Switch shall meet the following criteria:

- a. Incorporate a three-pole, gang-operated loadbreak design
- b. Rated for minimum 14.4kV
- c. Minimum 110 kV BIL
- d. Minimum 600A continuous and interrupting current
- e. Have a visual break when switch is in the open position
- f. Operable from ground level. Operating handle should be 42" from ground level
- g. Fuses holder and fuses are not required

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by PPL</b>			
1	3	Deadend assembly, 12 KV	6-13-18
	*	Ft wire, #2 Cu (minimum) SD solid, bare, with connectors as required	147476
2	1	Deadend assembly, neutral	6-13-18
3	3	Bracket, crossarm mounting	139506
	3	Arrester, lightning	139110
	*	Feet wire, #6 Cu, bare (hot leads)	147474
	3	Connector, hot line, aluminum, #6 - #4/0	1021522
		Connector, hot line, aluminum, #2-556 kcmil	912529
	3	Connector, compression	6-12-11
	*	Ft wire, #6 Cu, HDPE (for grounds)	147484
<b>Material Supplied by Customer</b>			
4	1	Pole, (class 3 min) length as specified (35' min)	
5	*	Crossarm, wood, 3-1/2" x 4-1/2" x 8' long	
	*	Bolt, double arming, 5/8" x length to suit, galvanized	
	*	Bolt, machine, 5/8" x length to suit, galvanized	
	*	Washer, 2-1/4" square for 5/8" bolt galvanized	
	*	Brace, crossarm, flat, 28" long, galvanized	
	*	Screw, lag, 1/2" x 4" long, galvanized	
	3	Bolt, carriage, 3/8" x 5" long, galvanized	
	*	Gain, pole	
6	3	Deadend assembly, 12 KV	
7	3	Bracket, for lightning arresters	(Note 3)
	3	Arrester, lightning, for 12 KV, 4 wire system	
	*	Ft wire, #6 HDPE Cu, bare and connectors as required	
8	1	Deadend assembly, neutral	
9	*	Ft wire, #6 HDPE Cu, and connectors as required	
10	*	Ft wire, #2 HDPE Cu	(Note 4)
	*	Connectors as required	

\* As required



**Metering  
Customer Reference Specification  
12kV 3-Phase Service Interrupter  
Switch on Customer-Owned Pole  
6-09-194**

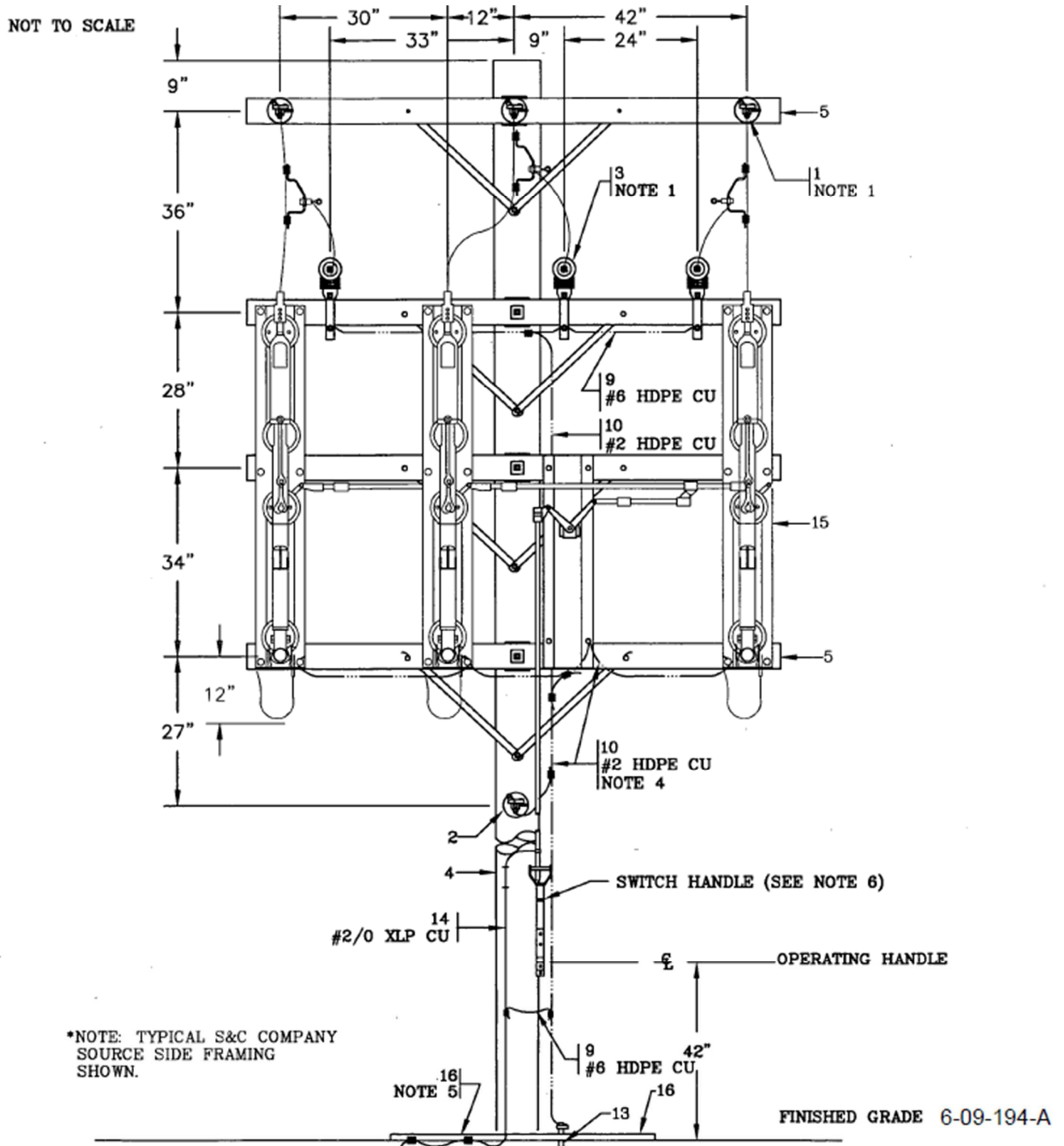
0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 16 of 57

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by Customer</b>			
11	6	Pin, insulator, steel, wood mounting	
	6	Insulator, pin type, 12 kV	
	*	Ft wire, #6 Cu, bare, self-drawn, tie	
12	*	Ft wire, #2 Cu (minimum), strand, bare	
	12	Connectors as required	
13	1	Rod, ground, 1/2" diameter x 8' long, steel, copper clad	
14	*	Ft wire, #2/0 Cu, XLP Insulation, stranded	
	*	Connectors as required	
15	1	Customer Main Switch	(Note 11)
16	1	Grounded platform, 3' x 5'	LB-12669 Note 5
17	1	Guy wire	(Note 7)
	2	Grip, guy, preformed	
	1	Plate, pole eye for fiberglass guy insulator	
	1	Insulator, guy, fiberglass 75	
	2	Bolt, stud, length to suit	
	2	Washer, curved	
	2	Nut, ferrous, locking	
	1	Anchor rod	
	1	Guard, guy, yellow plastic, 8' long	

\* As required

**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-194**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 17 of 57



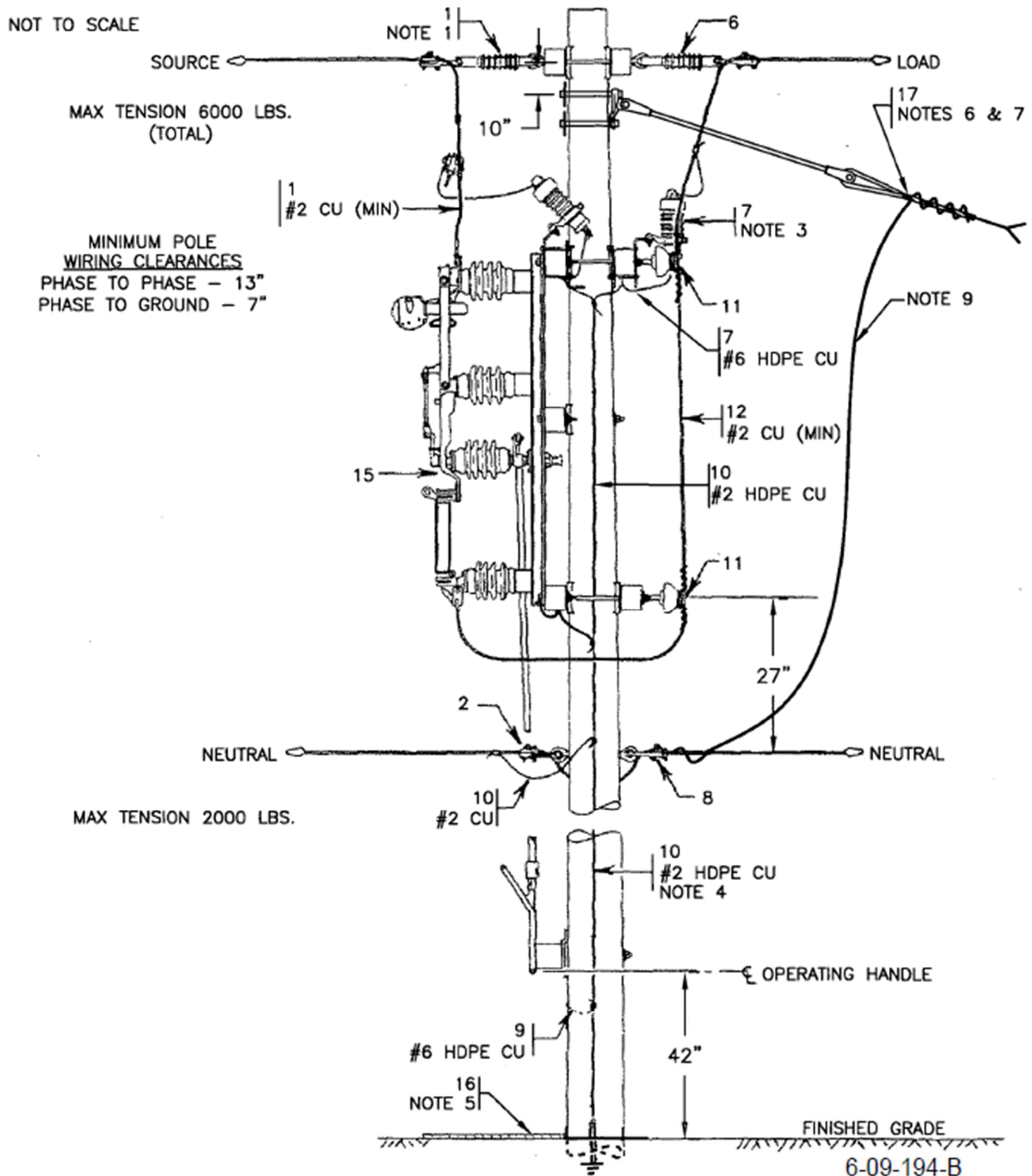




PPL Electric Utilities

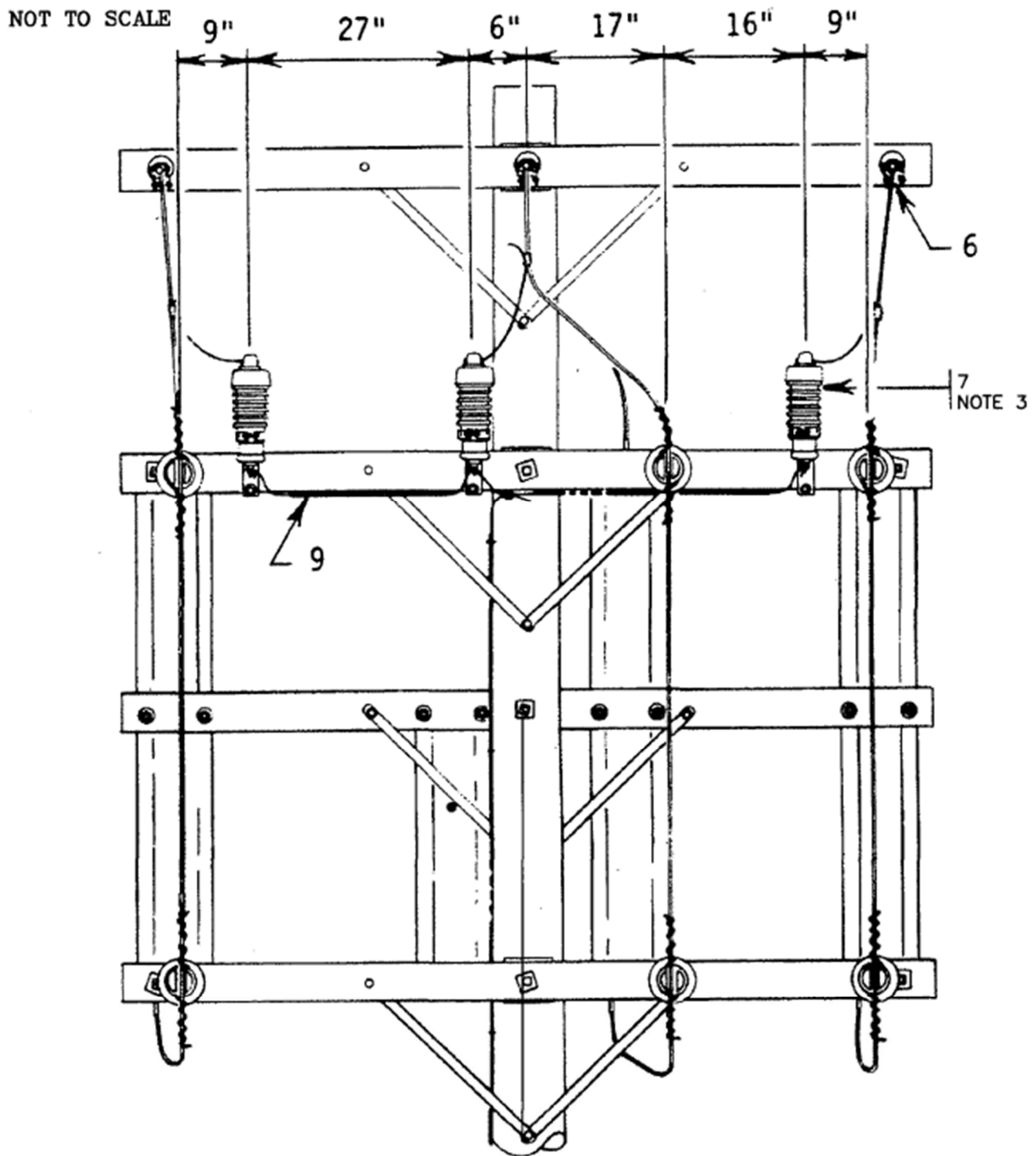
**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-194**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 18 of 57



REFERENCE: "RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS" SKETCH #30,





TYPICAL SWITCH FRAMING (LOAD SIDE) 6-09-194-C



**Metering**  
**Customer Reference Specification**  
**7.2kV Single Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-195**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 20 of 57

**6-09-195 - Customer Reference Specification - 7.2kV Single Phase Service Interrupter Switch on Customer-Owned Pole**

**Overhead Supply to Overhead or Underground**

A-188075

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Metering**  
**Customer Reference Specification**  
**7.2kV Single Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-195**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 21 of 57

This specification defines the customer's responsibilities and requirements necessary for 7.2 KV single phase service, overhead supply to overhead or underground. All details of this specification must be strictly followed.

The pole location and equipment installation must be approved by the PPL Supervisor - Commercial & Industrial Metering Services and PPL Design Supervisor. Any deviation from this specification must be approved. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

Refer to CRS 6-09-200 for 7.2kV Single-Phase Service Metering on Customer-Owned Pole.

**Notes:**

1. All facilities, except bill of material items #1, 2, and 3 are provided, installed, and maintained by customer. PPL will make connections to source side of switch and all connections to the system neutral.
2. Customer must install and maintain guy designed to hold deadend load of PPL conductors. The maximum tension in each conductor is 2000 pounds (total 4000 pounds, 1 phase and neutral).
3. Customer to furnish and install lightning arresters on load side.
4. Conduit(s) for primary cable may approach from any direction, but cable riser must be attached to pole in position shown.

The customer should install underground conduit(s) by one of these methods. A spare conduit is recommended, but optional.

- A. Use 4 or 5 inch hot-dipped galvanized steel conduits (rigid or intermediate grade) directly buried in the earth. All threaded couplings should be tightly joined using plumbers teflon tape or similar joint compound designed to stop water leaks. All bends must be at least 36-inch radius. All steel conduits must have grounding bushings at the switchgear and terminal pole.

- or -

- B. Use 4 or 5 inch type EB or DB PVC conduit encased in a concrete envelope as specified in PPL drawing A-168735. All joints should be tightly sealed using the appropriate contact cement or joint compound. All 90° bends must be hot-dipped galvanized steel (rigid or intermediate grade) with at least 36 inch radius. Concrete must also encase steel bends to prevent breakage at steel-to-plastic adaptors resulting from cable pulling tensions.

After installation, the contractor should clean debris from the conduits. Temporarily plug conduits to keep them clean and dry.

5. Conduit riser should fit snug against pole. Riser can be hot-dipped galvanized steel or schedule 80 PVC. Attach riser to pole using two-hole pipe straps at 5-foot intervals. Both the cable riser conduit and spare should be watersealed.
6. The side of pole below fuses must be kept clear for climbing.



**Metering**  
**Customer Reference Specification**  
**7.2kV Single Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-195**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 22 of 57

7. Customer's primary neutral, fused interrupter switch base, instrument transformer cases, lightning arresters, conduit, and secondary neutral of instrument transformers must be grounded. Customer must make all grounding connections using compression connectors, and all primary connections using cable-to-flat or stem connectors as appropriate.
8. Coil approximately 6 feet of the #2/0 copper ground wire under platform and connect at two points. The platform should be chained to the pole to prevent removal.
9. Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply."
10. Switch handle is to have provision for 2 locks (customer lock & PPL EU lock) so that either customer or PPL EU may operate switch independently.
11. Customer Main Switch shall meet the following criteria:
  - a. Incorporate a single pole loadbreak design
  - b. Rated for minimum 14.4kV
  - c. Minimum 110 kV BIL
  - d. Minimum 600A continuous and interrupting current
  - e. Have a visual break when switch is in the open position
  - f. Operable from ground level. Operating handle should be 42" from ground level.
  - g. Fuses holder and fuses are not required

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by PPL</b>			
1	1	Deadend assembly, 12 KV	6-13-18
2	1	Deadend assembly, neutral	6-13-18
3	1	Bracket, crossarm mounting	139506
	1	Arrester, lightning	139110
	2	Connector, compression	6-12-11
	*	Ft. , wire, #6 CU, bare	147474
	1	Connector, hot line, aluminum, #6 - #4/0	1021522
		Connector, hot line, aluminum, #2-556 kcmil	912529
4	-	-	
<b>Material Supplied by Customer</b>			
5	1	Pole, (class 4 min.) length as specified (40' min.)	
6	1	Deadend assembly, 12 KV	
7	2	Pin, insulator, steel	
	2	Insulator, pin type, 12 KV	
	*	Ft., wire, #6 CU, S.D., tie	

\* As Required



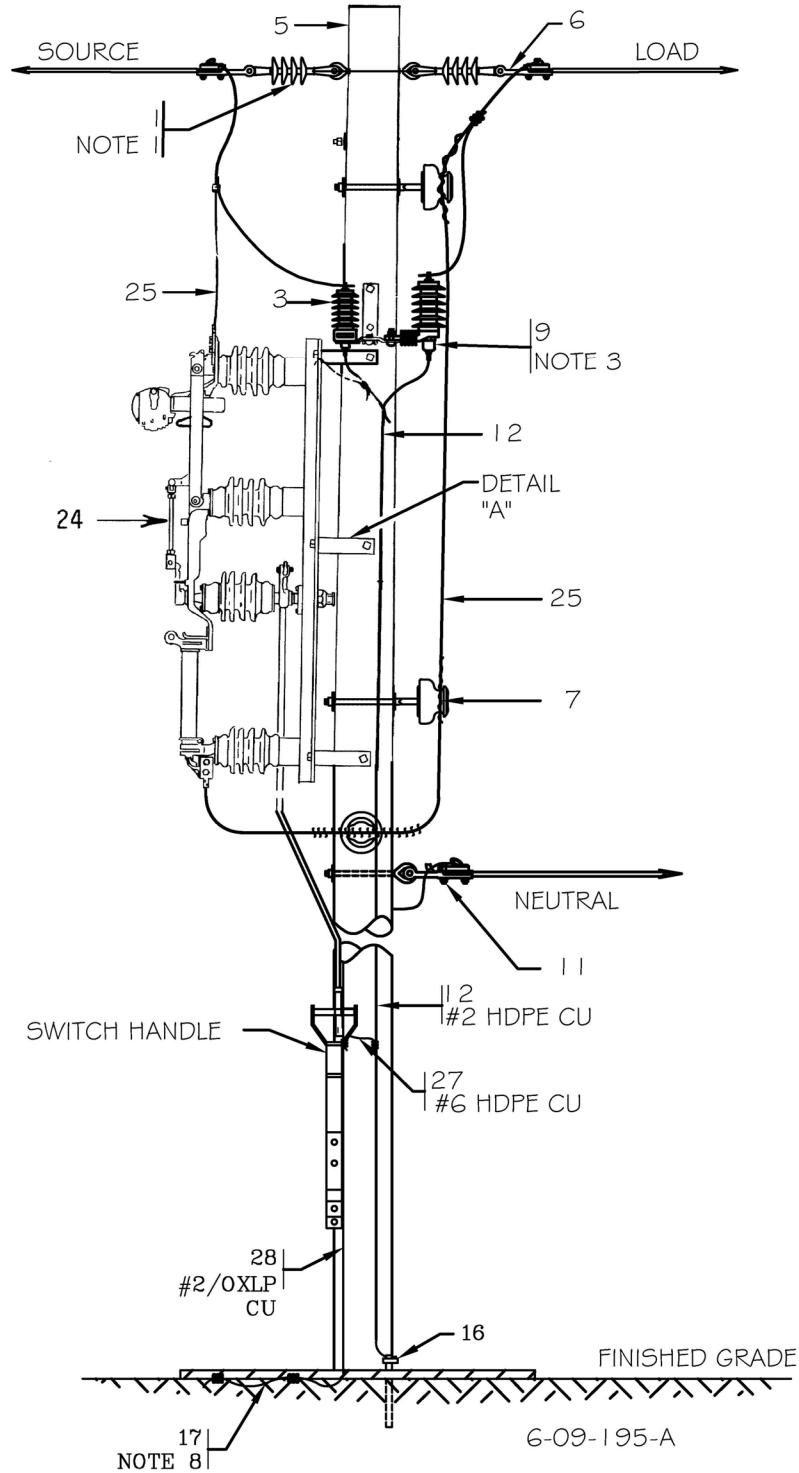
**Metering**  
**Customer Reference Specification**  
**7.2kV Single Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-195**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 23 of 57

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by Customer</b>			
8	*	Bracket, tee	
	*	Bolt, machine, 5/8" x length to suit, galv.	
	*	Washer, 2-1/4" sq. for 5/8" bolt, galv.	
	*	Screw, lag, 3/8" x 4-1/2" long	
9	*	Arrester, lightning, for 12 KV, 4 wire system	(Note 3)
10	1	Terminator, cable, outdoor, 15 KV	
	*	Ft. wire, #2 CU, solid, bare; connectors as required	
	3	Connector, terminal, size and type as required	
11	1	Deadend assembly, neutral	
12	*	Ft. wire, #2. CU (min.) HDPE or bare with molding	
	*	Connectors as required	
13	*	Ft., wire, #6 CU, solid	
	*	Connectors as required	
14	*	Ft., wire, #4 CU (min.) solid; connectors as required	
15	*	Ft., wire, #2/0 CU, Str, bare; connectors as required	
16	1	Rod, ground, 1/2" dia. x 8' long, steel, copper clad	
17	1	Grounded Platform 3' x 5'	LB-12669
18	-	-	
19	1	Grip, cable supporting	
	1	Bushing, grounding size to suit conduit	
20	1	Cap, conduit	
21	*	Conduit, 4" or 5"	
		Straps, conduit, with screw lags	
22	*	Bend, 90°, 4" or 5", steel, galvanized	
23	1	Guy, 3/8" H.S. steel, 7 strand, with attachment hardware	
24	1	Customer Main Switch	(Note 11)
25	*	Ft., wire, #2 CU. (min.), strand, bare	
	*	Connectors, terminal, size and type as required	

\* As Required

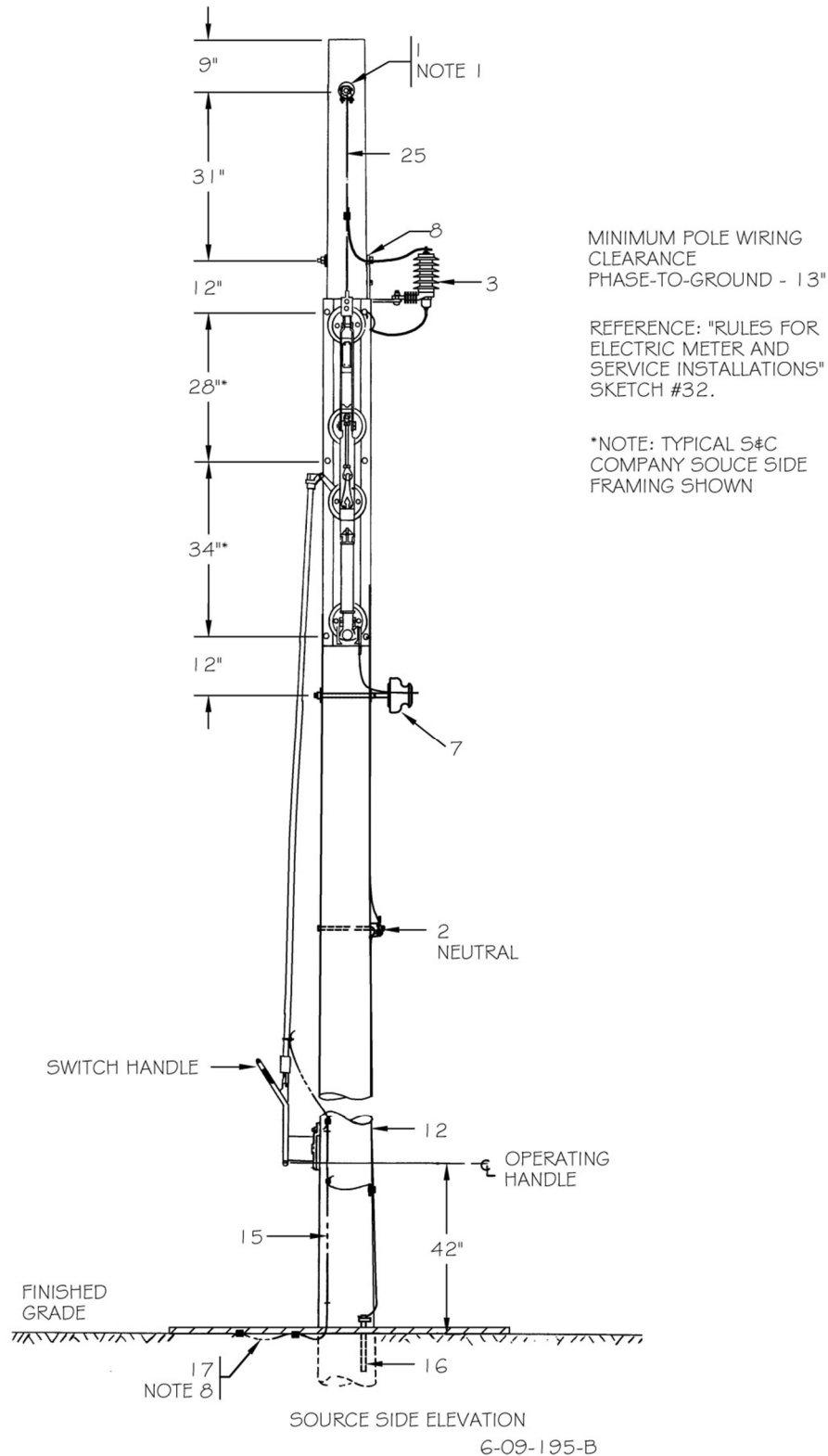
**Overhead Service**



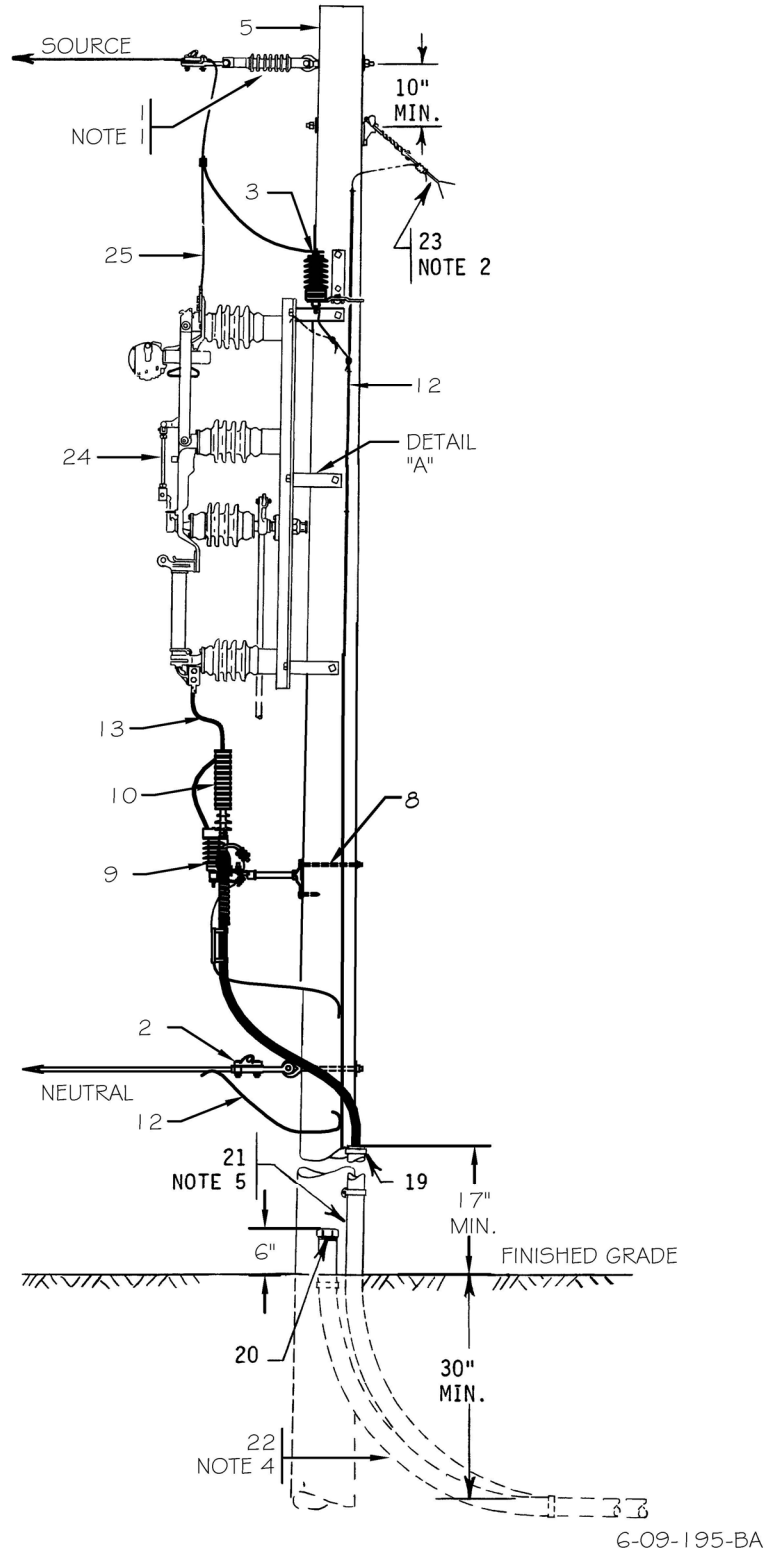
**Metering**  
**Customer Reference Specification**  
**7.2kV Single Phase Service Interrupter**  
**Switch on Customer-Owned Pole**  
**6-09-195**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 25 of 57

**Overhead Service**

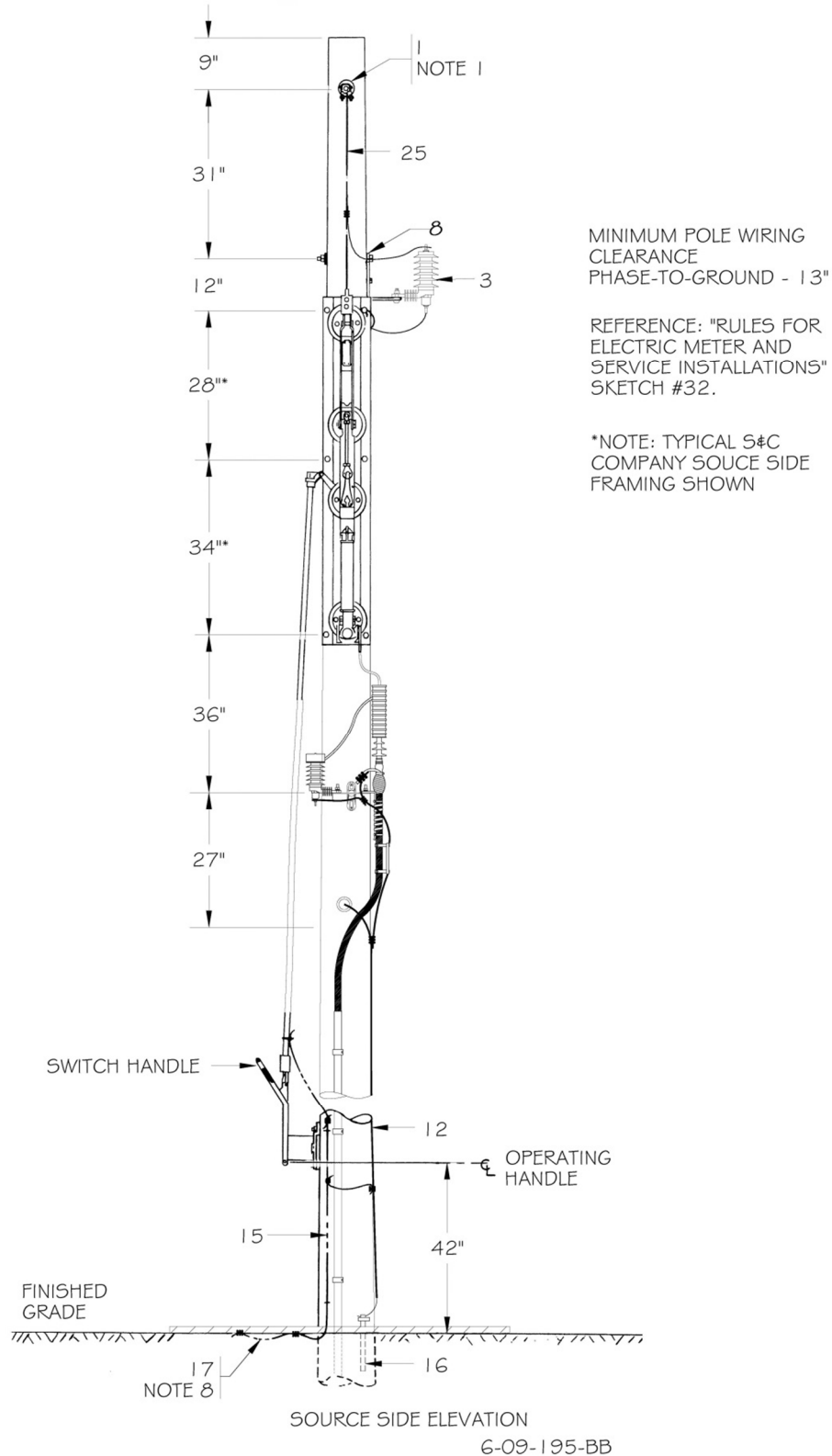


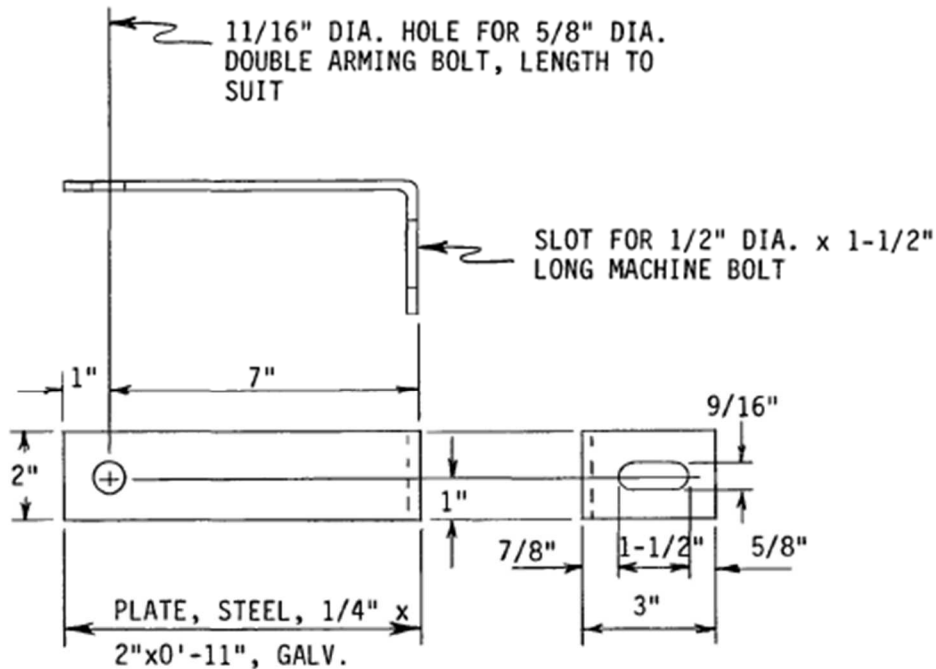
**Underground Service**





**Underground Service**





DETAIL "A"  
 INTERRUPTER SWITCH MOUNTING STRAPS 6-09-195-C



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Metering on Customer-**  
**Owned Pole (Overhead Supply to OH)**  
**6-09-196**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 29 of 57

**6-09-196 - Customer Reference Specification - 12kV 3-Phase Service Metering on Customer-Owned Pole (Overhead Supply to Overhead)**

**Overhead Supply to Overhead**

A-188076

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Metering on Customer-**  
**Owned Pole (Overhead Supply to OH)**  
**6-09-196**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 30 of 57

This specification defines the customer's responsibilities and requirements necessary for 12 KV 3 phase service, overhead supply to overhead. All details of this specification must be strictly followed.

The pole location and equipment installation must be approved by the PPL Supervisor- Commercial & Industrial Metering Services and PPL Design Supervisor. Any deviation from this specification must be approved. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

Refer to CRS 6-09-194 for 12kV 3-Phase Service Interrupter Switch on Customer-Owned Pole (Overhead Supply to Overhead).

**Notes:**

1. All facilities, except bill of material items #1 and 2, are provided, installed, and maintained by customer. PPL will make metering connections and all connections to the system neutral.
2. Customer to furnish and install lightning arresters.
3. Maximum tension in PPL supply conductors is 2000 pounds each (8000 pounds total, 3 phase and neutral).
4. Customer's primary neutral, fused interrupter switch base, instrument transformer cases, lightning arresters, conduit and secondary neutral of instrument transformers must be grounded.

Customer must make all grounding connections using compression connectors, and all primary connections using cable-to-flat or stem connectors as appropriate.

5. Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply."

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by PPL</b>			
1	1	Bracket, 3-phase cluster mount, aluminum	1017555
2	3	Instrument transformer, voltage	Meter Dept.
	3	Instrument transformer, current	Meter Dept.
	*	Meter mounting and material	Meter Dept.
	*	Ft., wire, from meter to instrument transformers	Meter Dept.
	1	Bolt, machine, 5/8" x length to suit, galv.	M&E
	1	Insulator, pin type, porcelain, 12 kV	118111
	1	Pin, steel, for insulator, wood mounting	111580

\* As Required

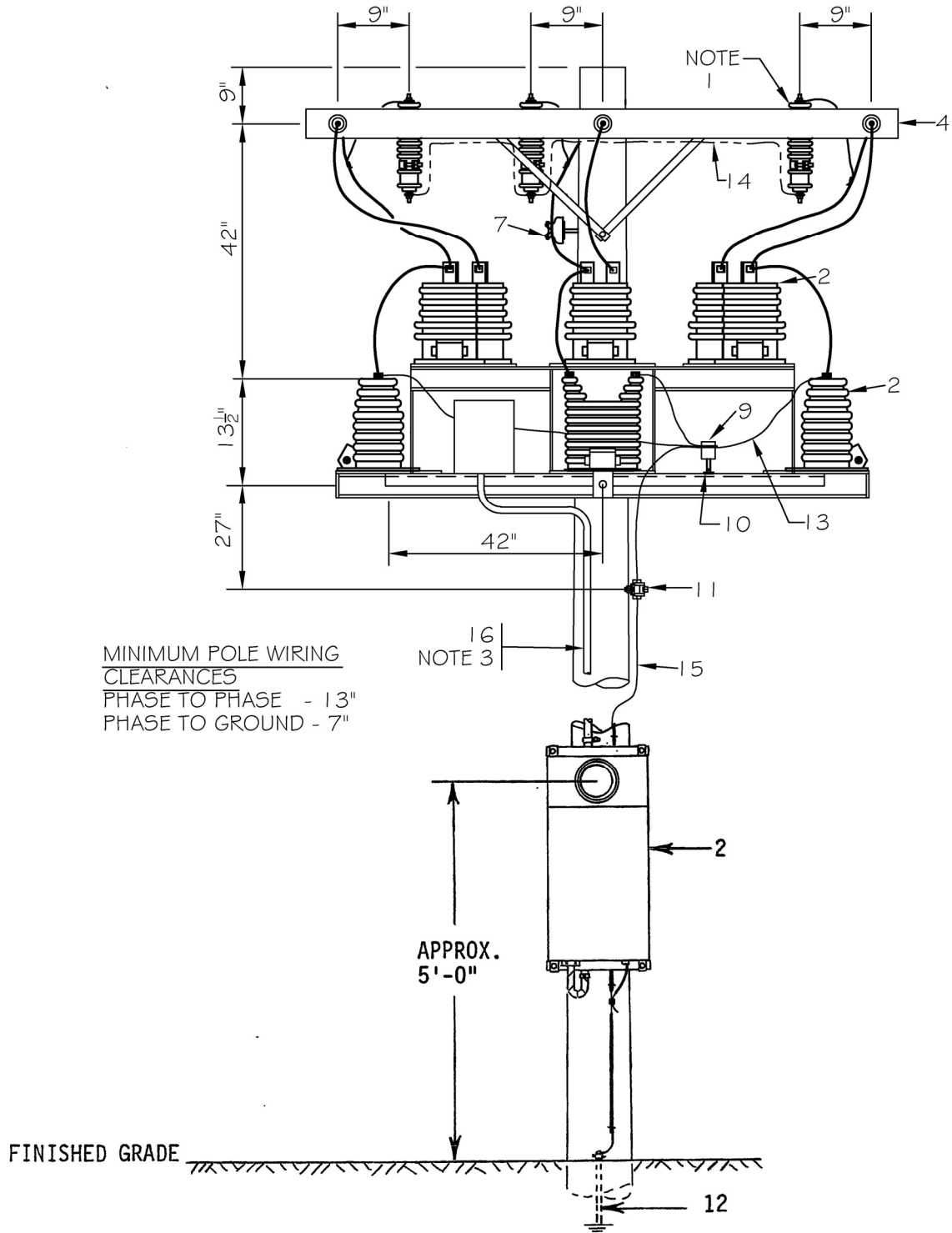


**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Metering on Customer-**  
**Owned Pole (Overhead Supply to OH)**  
**6-09-196**

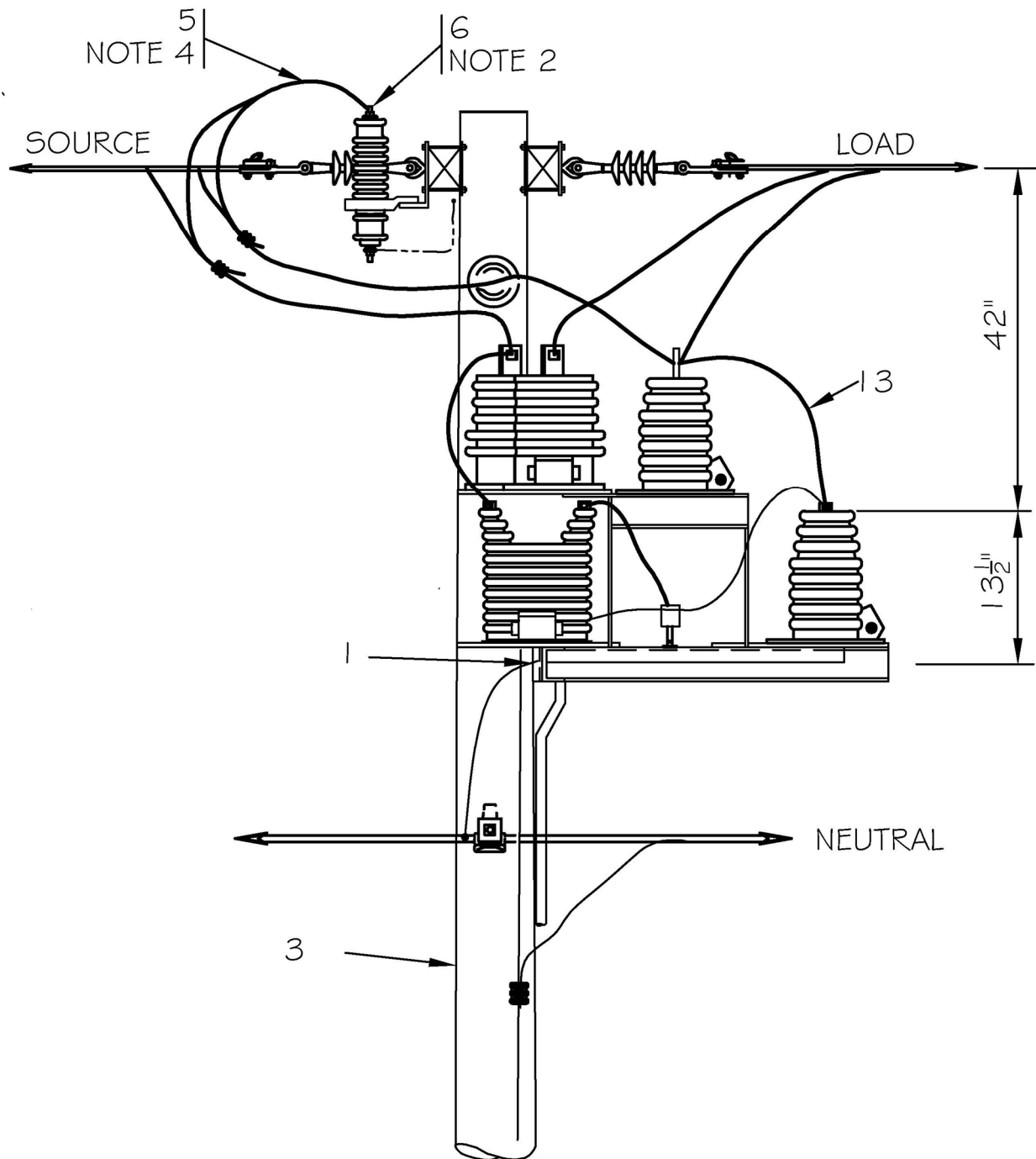
0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 31 of 57

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by Customer</b>			
3	1	Pole, (class 3 min.) length as specified (35' min.)	
4	1	Crossarm, wood, 3-1/2" x 4-1/2" x 8' long	
	1	Bolt, machine, 5/8" x length to suit, galv.	
	2	Washer, 2-1/4" sq. for 5/8" bolt, galv.	
	2	Brace, crossarm, flat, 28" long	
	2	Bolt, carriage, 3/8" x 5" long, galv.	
	1	Screw, lag, 1/2" x 4" long, galv.	
5	6	Clamp, strain	
	3	Insulator, suspension, clevis type	
	3	Link, 1/2"	
6	6	Bracket, lightning arrester mounting	
	6	Arrester, lightning, for 12 kV, 4 wire system	
7	2	Insulator, pin type, 12 kV	
	2	Pin, insulator, steel, wood mounting	
8	1	Gain, pole	
9	*	Insulator, pin type, neutral	110576
10	*	Pin, insulator, steel, steel mounting	
11	1	Aerial cable neutral clamp	
12	1	Rod, ground 1/2" dia. x 8' long, steel, CU clad	
13	*	Ft. wire, 2/0 Cu, stranded, HDPE or bare	
	6	Connector, terminal, size and type as required	
14	*	Ft. wire, #2 Cu, solid, HDPE or bare	
	*	Connectors as required	
15	*	Ft. wire, #2 Cu, solid, HDPE or bare with molding	
	*	Connectors as required	
16	1	Lot, 1-1/4" and 1" rigid metal conduit, 1-1/4" and 1" flexible metal weatherproof conduit, junction boxes and fittings	
17	1	Insulator, pin type, 12 kV	
	1	Pin, steel, for pole top mounting	
	2	Bolt, machine, 5/8" x length to suit, galv.	
	2	Washer, 2-1/4" square	
	1	Washer, round for 5/8" bolt	

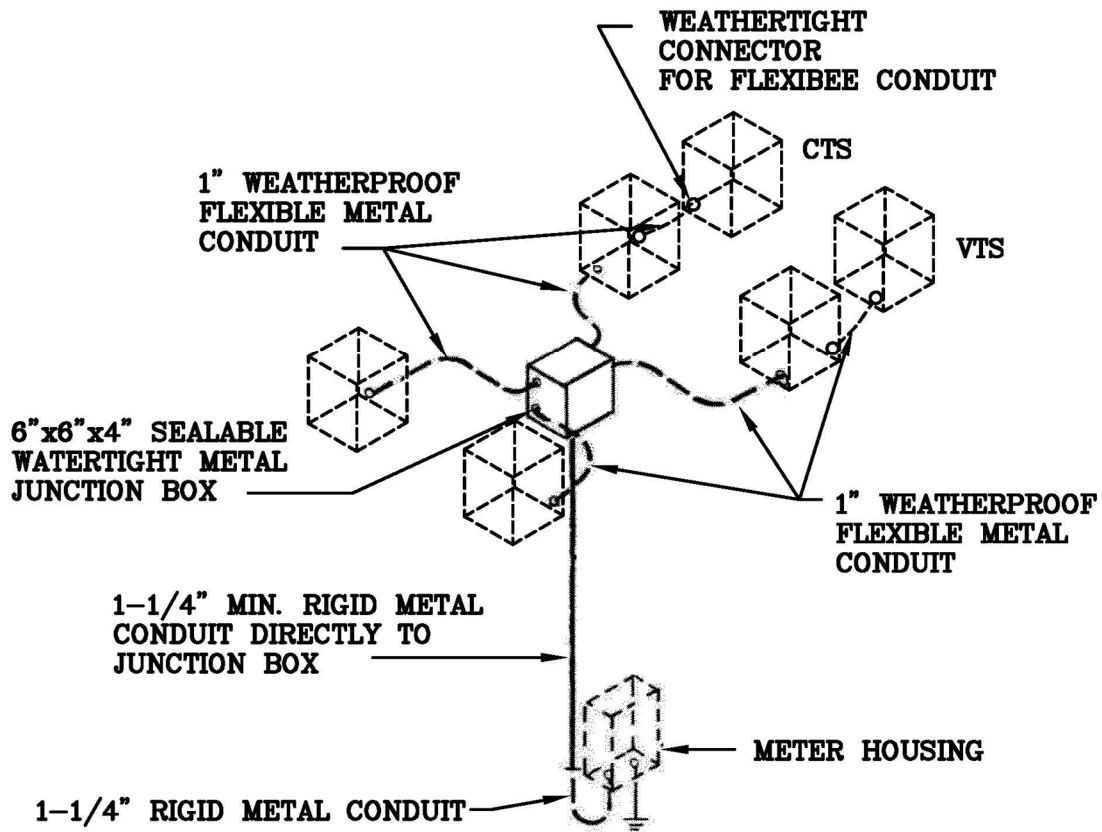
\* As Required



6-09-196-A



6-09-196-B



6-09-196-C





**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Metering on Customer**  
**Owned Pole (Overhead Supply to UG)**  
**6-09-197**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 35 of 57

**6-09-197 - Customer Reference Specification - 12kV 3-Phase Service Metering on Customer-Owned Pole (Overhead Supply to Underground)**

**Overhead Supply to Underground**

A-188077

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Metering on Customer**  
**Owned Pole (Overhead Supply to UG)**  
**6-09-197**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 36 of 57

This specification defines the customer's responsibilities and requirements necessary for 12 KV three phase service, overhead supply to underground. All details of this specification must be strictly followed.

The pole location and equipment installation must be approved by the PPL Supervisor- Commercial & Industrial Metering Services and PPL Design Supervisor. Any deviation from this specification must be approved. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

Refer to CRS 6-09-194 for 12kV 3-Phase Service Interrupter Switch on Customer-Owned Pole (Overhead Supply to Overhead).

**Notes:**

1. All facilities, except bill of material item #1 are provided, installed, and maintained by customer. PPL will make metering connections and all connections to the system neutral.
2. Maximum tension in PPL supply conductors is 2000 pounds (total 8000 pounds, 3 phase and neutral).
3. Customer's primary neutral, instrument transformer cases, lightning arresters, conduit and secondary neutral of instrument transformers must be grounded.

Customer must make all grounding connections using compression connectors, and all primary connections using cable-to-flat or stem connectors as appropriate.

4. Conduit(s) for primary cable may approach from any direction, but cable riser must be attached to pole in position shown.
5. The customer should install underground conduit(s) by one of these methods. A spare conduit is recommended, but optional.
  - A. Use 4 or 5 inch hot-dipped galvanized steel conduits (rigid or intermediate grade) directly buried in the earth. All threaded couplings should be tightly joined using plumbers teflon tape or similar joint compound designed to stop water leaks. All bends must be at least 36-inch radius. All steel conduits must have grounding bushings at the switchgear and terminal pole.
  - or -
  - B. Use 4 or 5 inch type EB or DB PVC conduit encased in a concrete envelope as specified in PPL drawing A-168735. All joints should be tightly sealed using the appropriate contact cement or joint compound. All 90° bends must be hot-dipped galvanized steel (rigid or intermediate grade) with at least 36 inch radius. Concrete must also encase steel bends to prevent breakage at steel-to-plastic adaptors resulting from cable pulling tensions.

After installation, the contractor should clean debris from the conduits. Temporarily plug conduits to keep them clean and dry.

6. Conduit riser should fit snug against pole. Riser can be hot-dipped galvanized steel or schedule 80 PVC. Attach riser to pole using two-hole pipe straps at 5-foot intervals. Both the cable riser conduit and spare should be watersealed.



**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Metering on Customer**  
**Owned Pole (Overhead Supply to UG)**  
**6-09-197**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 37 of 57

7. Customer must install at least one lightning arrester per cable terminator. For maximum lightning protection, two arresters per terminator are recommended.
8. Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply."

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by PPL</b>			
1	1	Bracket, 3-phase cluster mount, aluminum	1017555
2	3	Instrument transformer, voltage	Meter Dept.
	3	Instrument transformer, current	Meter Dept.
	*	Meter mounting and material	Meter Dept.
	*	Ft., wire, from meter to instrument transformers	Meter Dept.
	1	Bolt, machine, 5/8" x length to suit, galv.	M&E
	1	Insulator, pin type, porcelain, 12 kV	118111
	1	Pin, steel, for insulator, wood mounting	111580
<b>Material Supplied by Customer</b>			
3	1	Pole, wood, (class 3 min.) length as specified	
4	2	Crossarm, wood, 3-1/2" x 4-1/2" x 8' long	
	3	Bolt, double arming, 5/8" x length to suit, galv.	
	6	Washer, 2-1/4" sq. for 5/8" bolt, galv.	
	4	Brace, crossarm, flat, 28" long	
	4	Bolt, carriage, 3/8" x 5" long, galv.	
	2	Screw, lag, 1/2" x 4" long, galv.	
	3	Bracket, for lightning arresters	
5	3	Assembly, deadend, 12 KV	
6	1	Guy, 1/2" H.S. steel, 7 strand, with attachment HDWE	(Note 2)
7	1	Gain, pole	
8	1	Pin, insulator, steel, wood mounting	
	1	Insulator, pin type	
9	3	Pin, insulator, steel, steel mounting	
	3	Insulator, pin type, neutral	
10	*	Ft., wire, #4 or #6 CU, bare, solid	
	6	Connector, terminal, size and type as required	
11	1	Crossarm, wood, 3-1/2" x 4-1/2" x 8' long	
	1	Bolt, machine, 5/8" x length to suit, galv.	
	1	Washer, 2-1/4" sq. for 5/8" bolt	
	2	Brace, crossarm, flat, 28" long	
	2	Bolt, carriage, 3/8" x 5" long, galv.	
	1	Screw, lag, 1/2" x 4" long, galv.	

\* As Required

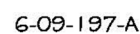
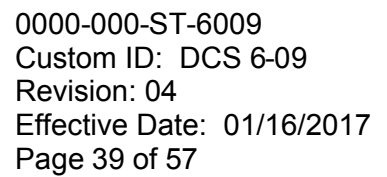


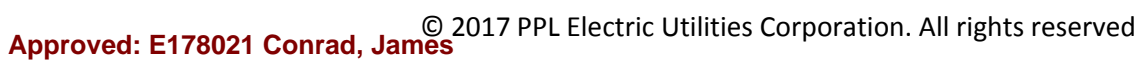
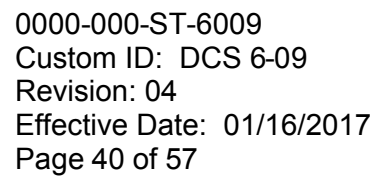
**Metering**  
**Customer Reference Specification**  
**12kV 3-Phase Service Metering on Customer**  
**Owned Pole (Overhead Supply to UG)**  
**6-09-197**

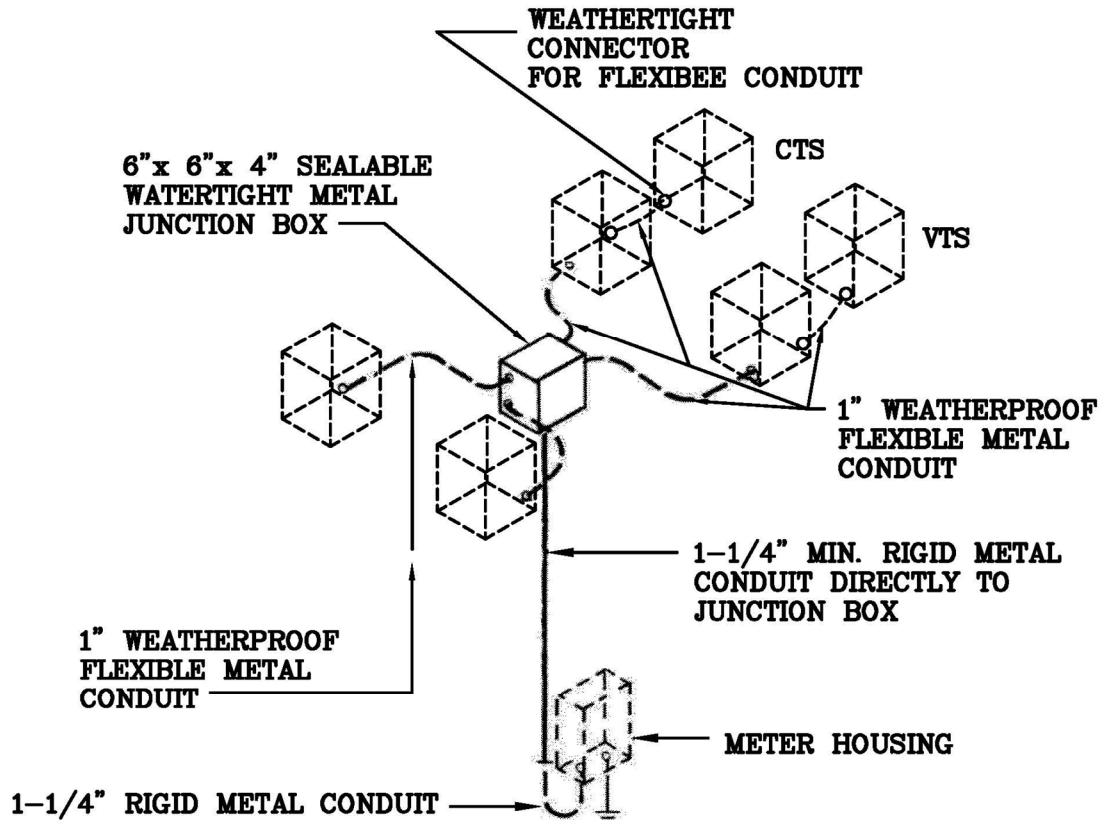
0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 38 of 57

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by Customer</b>			
12	3	Bracket, for lightning arrester	
	3	Arrester, lightning, for 12 KV, 4 wire system	
	3	Bracket, for terminator	
	3	Terminator, cable, outdoor, 15 KV	
13	*	Ft. wire, #6 CU, bare	
	*	Connectors as required	
14	*	Ft. wire, #6 CU, solid, HDPE or bare with molding	
	*	Connectors as required	
15	1	Deadend assembly, neutral	
16	3	Grip, cable supporting	
	*	Bushing, grounding, size to suit conduit	
17	*	Conduit, 4" or 5"	(Note 6)
	*	Straps, conduit, with screw lags	
18	*	Bend, 90°, 4" or 5", steel, galv.	(Note 6)
19	1	Cap, conduit	
20	1	Rod, ground 1/2" dia. X 8' long, steel, copper clad	
21	1	Lot, 1-1/4" and 1" rigid metal conduit, 1-1/4" and 1" flexible metal weatherproof conduit, junction boxes and fittings	
22	6	Arrester, lightning	

\* As Required







6-09-197-C



**Metering**  
**Customer Reference Specification**  
**3-Phase, 4 Wire WYE 7,200/12,470V Service**  
**Termination and Metering Compartments in**  
**Customer-Owned Switchgear**  
**6-09-199**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 42 of 57

**6-09-199 - Customer Reference Specification - 3-Phase, 4 Wire WYE 7,200/12,470V Service Termination and Metering Compartments in Customer Owned Switchgear**

**Underground Supply**

Replaces LA-17936

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.





**Metering  
Customer Reference Specification  
3-Phase, 4 Wire WYE 7,200/12,470V Service  
Termination and Metering Compartments in  
Customer-Owned Switchgear  
6-09-199**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 43 of 57

These specification details clearance requirements for customer installed 12 kV switchgear with metering to receive 3-phase, 4 wire, WYE 7,200/12,470V underground supplied service.

Prior to manufacture of the switchgear, PPL Electric Utilities (PPL EU) requires:

- A detailed construction drawing of the termination compartment (open front view and side view),
- A detailed construction drawing of the metering compartment (open front view and side view),
- A one-line drawing of the switchgear arrangement (See REMSI Sketch #39),
- A detailed floor plan showing proposed location of the switchgear, incoming service and metering conduit, access to service cables, and distance from switchgear to walls and other obstructions.

Any switchgear and termination compartments not currently listed on PPL EU's REMSI website, Table 3, "Approved Switchgear Metering and Termination Compartments" may require up to 90 days for review and approval.

Failure to comply with the above may result in delay of service. Any design, clearance, or access deficiencies must be corrected by the customer before PPL EU facilities are connected.

**Notes:**

1. Install the service entrance disconnect or circuit breaker on the source side of the metering compartment, unless specified otherwise by PPL EU.

Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply".

2. Minimum acceptable Basic Impulse Level (BIL) rating is 95 kV.
3. Minimum clearance between bare live parts (edge to edge) is:

Phase-to-Phase	7-1/2 inches
Phase-to-Ground	5 inches

All minimum clearances must be maintained (insulating barriers are not permitted).

4. If insulated bus bars are used, provide bare sections at points of connection of current transformers and terminators. All minimum clearances must be maintained as stated in Note 3 above.



**Metering**  
**Customer Reference Specification**  
**3-Phase, 4 Wire WYE 7,200/12,470V Service**  
**Termination and Metering Compartments in**  
**Customer-Owned Switchgear**  
**6-09-199**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 44 of 57

**Notes continued:**

5. Do not install switchgear heaters, auxiliary load, customer current transformers (CT's) or voltage transformers (VT's) on the source side of the PPL EU metering transformers. For main breakers requiring AC operating voltage, a 1 kVA control power transformer (CPT) will be allowed.
6. Do not install any buswork, other than what is shown, in the termination compartment.
7. The customer provides two 9/16 inch NEMA spaced holes on each bus bar. The 1/2 inch galvanized steel bolts and cable-to-flat connectors by PPL EU. Termination compartment shall only contain 1 conductor per phase per bus bar.
8. The customer furnishes and installs 1/2 inch diameter rigid metal studs for temporary safety grounding in termination compartment as shown in Detail A, Fig. 6-09-199-A.
9. Termination and metering compartments must have a hinged full length metal screen barrier which must be opened to gain access to PPL EU equipment.
10. PPL EU will furnish and maintain, the customer installs, metering transformers (3 VT's and 3 CT's) and metering panel(s) (not shown, see REMSI Sketch #8C). Install panel where designated by PPL EU. Do not attach panel to the switchgear.

In the metering compartment, customer furnishes, installs, and maintains 2 inch panduit or equivalent plastic wireway between VT's and CT's.

From the meter compartment to the meter panel, the customer furnishes, install and maintains:

- 1) For installations of 50 feet or less, 1-1/4 inch minimum threaded galvanized or intermediate rigid steel or gray Schedule 40 PVC conduit and fittings, or
- 2) For installations over 50 feet, approval by metering support is required. 1-1/2 inch minimum threaded galvanized or intermediate rigid steel or gray Schedule 40 PVC conduit (with no more than three 90 degree bends - galvanized rigid or intermediate steel conduit shall be used for all elbows in runs exceeding 50 feet - corner fittings such as LR condulets are not permitted) and fittings.

A pull string is to be provided.

To facilitate installation of jacketed metering cable, conduit run from compartment to metering panel must be continuous. PPL EU will furnish and install 8/C #10 metering cable between instrument transformers and meter panel.

11. PPL EU reserves the right to label exterior of metering compartment.
12. The customer must provide sealable, lockable hasps with 1/2 inch hole on doors of both termination and metering compartments.



**Metering**  
**Customer Reference Specification**  
**3-Phase, 4 Wire WYE 7,200/12,470V Service**  
**Termination and Metering Compartments in**  
**Customer-Owned Switchgear**  
**6-09-199**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 45 of 57

**Notes continued:**

13. The customer furnishes and installs 1/2 inch diameter rigid metal studs for temporary safety ground in the metering compartment on both the line and load sides of current transformers. See Detail A, Fig. 6-09-199-B.

14. Connect white dot and/or H1 polarity designation on current transformer toward line side (source).

15. PPL EU phase rotation is C-B-A (counter clockwise) system wide.

The 69-12 kV transformers are connected with A phase-to-bushing H1, B phase-to-bushing H2, and C phase-to-bushing H3, so the low side voltage lags the high side voltage by 30 degrees.

The only exception is the Lancaster region; where the DELTA-WYE are connected with C phase-to-bushing H1, B phase-to-bushing H2, and A phase-to-bushing H3, so the low side voltage lags the high side voltage by 30 degrees.

See pages 18 and 19 of the PPL Electric Utilities Point of Contact (POC) Requirements for High Voltage Customer-Owned Facilities 12kV Supply.

16. PPL EU installs arresters on the riser pole and prefers there be no arresters in the termination cabinet. If an arrester is used, it shall be non-porcelain which fails in a safe manner, and shall be installed in a way that permits PPL EU to terminate the cables. The customer must submit the arrester voltage ratings and manufacturer's catalog number to PPL EU for approval.

17. Separate ground and isolated neutral buses are required in both the termination and metering compartments. These buses and grounding bushings must be bonded together only in the termination compartment. Bonding jumper must be sized per the National Electric Code (NEC) Article 250- Grounding.

The customer should request available interrupting currents from PPL EU prior to sizing the Point of Contact switchgear. At a maximum, the switchgear should withstand the following conditions:

- 1) PPL EU distribution substation bus is designed to withstand a 20,000 ampere- 18 cycles fault condition. Should a customer install switchgear alongside of a PPL EU substation, there is potential that it could be subjected to a 20,000 ampere ground fault.
- 2) Most ground faults will be less than 10,000 amperes. With typical relay settings, the maximum clearing time for such a fault would be less than 0.53 seconds.

18. #6 minimum copper wire with 15 kV insulation installed by the customer in three locations.

19. #6 minimum copper wire with minimum 600V insulation installed by the customer in three locations.

20. Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply."



**Metering**  
**Customer Reference Specification**  
**3-Phase, 4 Wire WYE 7,200/12,470V Service**  
**Termination and Metering Compartments in**  
**Customer-Owned Switchgear**  
**6-09-199**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 46 of 57

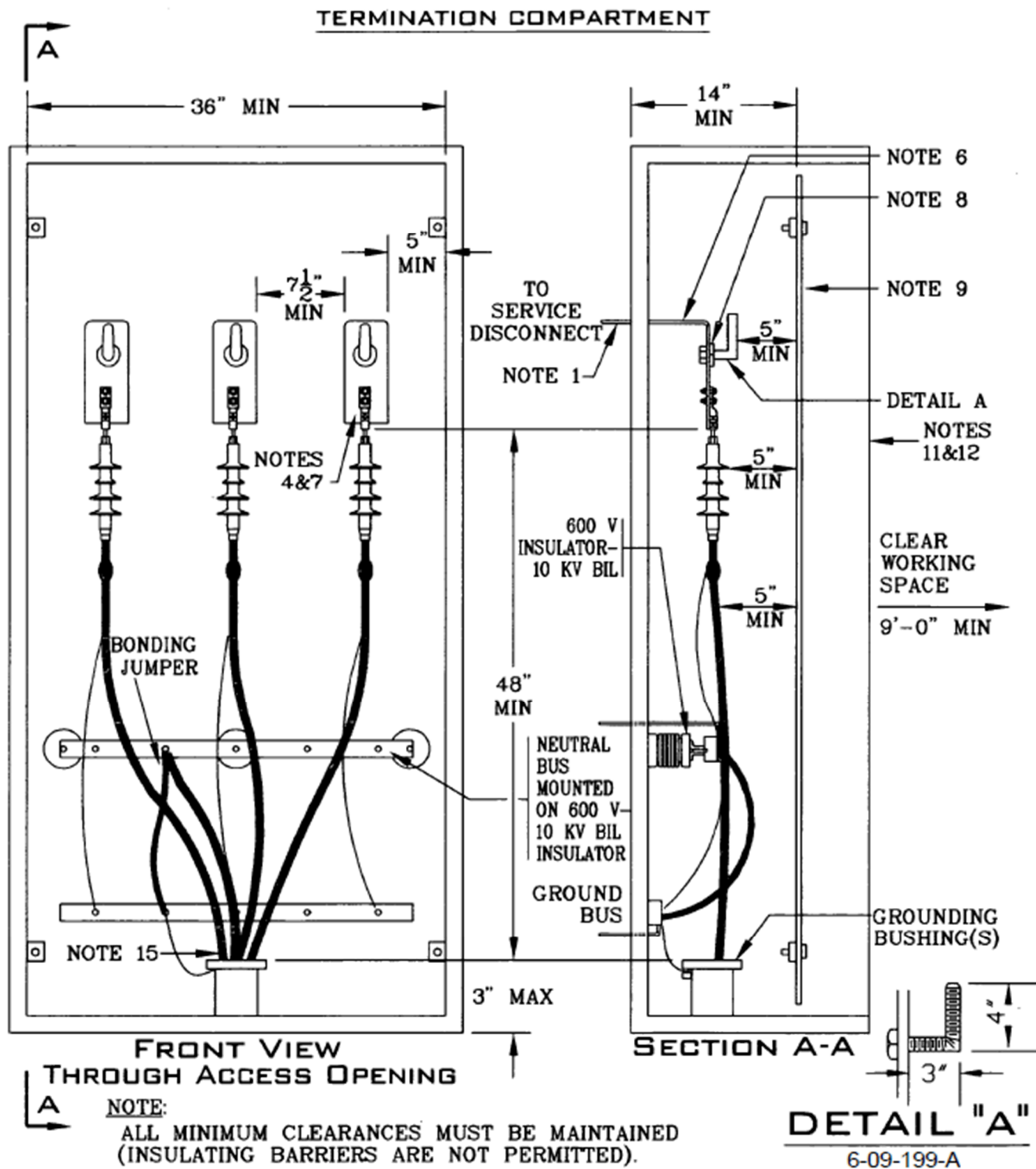
Item	Qty.	Bill of Material (BOM)	CID No. or Drawing No.
<b>Material Supplied by PPL</b>			
1	*	2 inch panduit or equivalent plastic wireway	---
2	*	1-1/4 or 1-1/2 inch rigid conduit - galvanized or gray Schedule 40 PVC (see Note 10).	---
3	1	Uninsulated meter grounding terminal block mounted on neutral bar. Must accommodate 1 - #6 and 5 - #10 stranded copper conductors.	---

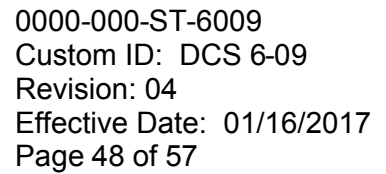
\* As required

Reference: REMSI Rule 8, Rule 18 and Sketch #39.

**Metering**  
**Customer Reference Specification**  
**3-Phase, 4 Wire WYE 7,200/12,470V Service**  
**Termination and Metering Compartments in**  
**Customer-Owned Switchgear**  
**6-09-199**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 47 of 57





**FRONT VIEW**

TO METER PANEL

10.0" MIN

14.0" MIN

14.0" MIN

10.0" MIN

7 1/2" MIN

5" MIN

BOM 1

NOTE 10

30"

30"

NOTE 4

NOTE 18

NOTE 19

BOM 3

BOM 2

NOTE 10

12"

14"

14"

8"

TO METER PANEL

**SECTION B-B**

TO LOAD

SOLID BARRIER

FROM SERVICE DISCONNECT

NOTES 1,5

NOTE 9

NOTE 13

NOTE 4

NOTE 14

SEE DETAIL A

NEUTRAL BUS MOUNTED ON 600 V-10 KV BIL INSULATOR

GND

20" MIN

NOTES 11,12

9'-0" MIN

**DETAIL "A"**

4"

3"

**NOTE:**

MINIMUM CLEARANCES MUST BE MAINTAINED

**BOM-BILL OF MATERIAL**

Approved: E178021 Conrad, James



**Metering**  
**Customer Reference Specification**  
**7.2kV Single Phase Service Metering**  
**on Customer-Owned Pole**  
**6-09-200**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 49 of 57

**6-09-200 - Customer Reference Specification - 7.2kV Single Phase Service Metering on Customer-Owned Pole**

**Overhead Supply to Overhead or Underground**

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE  
RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.





**Metering  
Customer Reference Specification  
7.2kV Single Phase Service Metering  
on Customer-Owned Pole  
6-09-200**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 50 of 57

This specification defines the customer's responsibilities and requirements necessary for 7.2kV single phase service metering, overhead supply to overhead or underground. All details of this specification must be strictly followed.

The pole location and equipment installation must be approved by the PPL Supervisor- Commercial & Industrial Metering Services and PPL Design Supervisor. Any deviation from this specification must be approved. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

Refer to CRS 6-09-195 for 7.2kV Single Phase Service Interrupter Switch on Customer-Owned Pole.

**Notes:**

1. All facilities, except bill of material item #1, are provided, installed, and maintained by customer. PPL will make metering connections and all connections to the system neutral.
2. Customer must install and maintain guy designed to hold deadend load of PPL conductors. The maximum tension in each conductor is 2000 pounds (total 4000 pounds, 1 phase and neutral).
3. Customer to furnish and install lightning arresters.
4. Conduit(s) for primary cable may approach from any direction, but cable riser must be attached to pole in position shown.

The customer should install underground conduit(s) by one of these methods. A spare conduit is recommended, but optional.

- C. Use 4 or 5 inch hot-dipped galvanized steel conduits (rigid or intermediate grade) directly buried in the earth. All threaded couplings should be tightly joined using plumbers teflon tape or similar joint compound designed to stop water leaks. All bends must be at least 36-inch radius. All steel conduits must have grounding bushings at the switchgear and terminal pole.

- or -

- D. Use 4 or 5 inch type EB or DB PVC conduit encased in a concrete envelope as specified in PPL drawing A-168735. All joints should be tightly sealed using the appropriate contact cement or joint compound. All 90° bends must be hot-dipped galvanized steel (rigid or intermediate grade) with at least 36 inch radius. Concrete must also encase steel bends to prevent breakage at steel-to-plastic adaptors resulting from cable pulling tensions.

After installation, the contractor should clean debris from the conduits. Temporarily plug conduits to keep them clean and dry.

5. Conduit riser should fit snug against pole. Riser can be hot-dipped galvanized steel or schedule 80 PVC. Attach riser to pole using two-hole pipe straps at 5-foot intervals. Both the cable riser conduit and spare should be watersealed.
6. The side of pole opposite of the metering equipment must be kept clear for climbing.





**Metering**  
**Customer Reference Specification**  
**7.2kV Single Phase Service Metering**  
**on Customer-Owned Pole**  
**6-09-200**

0000-000-ST-6009  
 Custom ID: DCS 6-09  
 Revision: 04  
 Effective Date: 01/16/2017  
 Page 51 of 57

7. Customer's primary neutral, instrument transformer cases, lightning arresters, conduit, and secondary neutral of instrument transformers must be grounded. Customer must make all grounding connections using compression connectors, and all primary connections using cable-to-flat or stem connectors as appropriate.
8. Coil approximately 6 feet of the #2/0 copper ground wire under platform and connect at two points. The platform should be chained to the pole to prevent removal.
9. Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply."

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by PPL</b>			
1	1	Steel, mounting, for instrument transformers	1018397
	1	Transformer, voltage	Meter Dept.
	1	Transformer, current	Meter Dept.
	*	Meter mounting and material	Meter Dept.
	*	Ft., wire, from meter to inst. transf.	Meter Dept.
	2	Brace, crossarm, flat, 28" long, galv.	
	1	Screw, lag, 1/2" x 4" long, galv.	
	2	Bolt, machine, 3/8" x 1-1/2" long, galv.	
	1	Bolt, machine, 5/8" x length to suit, galv.	
	*	Washer, 2-1/4" sq. for 5/8" bolt, galv.	
	2	Bolt, machine, 5/8" x 1-1/2" long	
	*	Bolt, machine, 3/8" x 1-1/2" long	
<b>Material Supplied by Customer</b>			
2	1	Pole, (class 4 min.) length as specified (40' min.)	
3	1	Bracket, tee	
	1	Arrester, lightning	(Note 3)
	1	Hot-line clamp	
	2	Connector, compression	
	*	Ft., wire, #6 CU, bare	
	1	Connector, hot-line clamp, bronze	
4	*	Deadend assembly, 12 KV	
5	1	Pin, insulator, steel	
	1	Insulator, pin type, 12 KV	
	*	Ft., wire, #6 CU, S.D., tie	
6	*	Bracket, tee	
	*	Bolt, machine, 5/8" x length to suit, galv.	
	*	Washer, 2-1/4" sq. for 5/8" bolt, galv.	
	*	Screw, lag, 3/8" x 4-1/2" long	

\* As Required



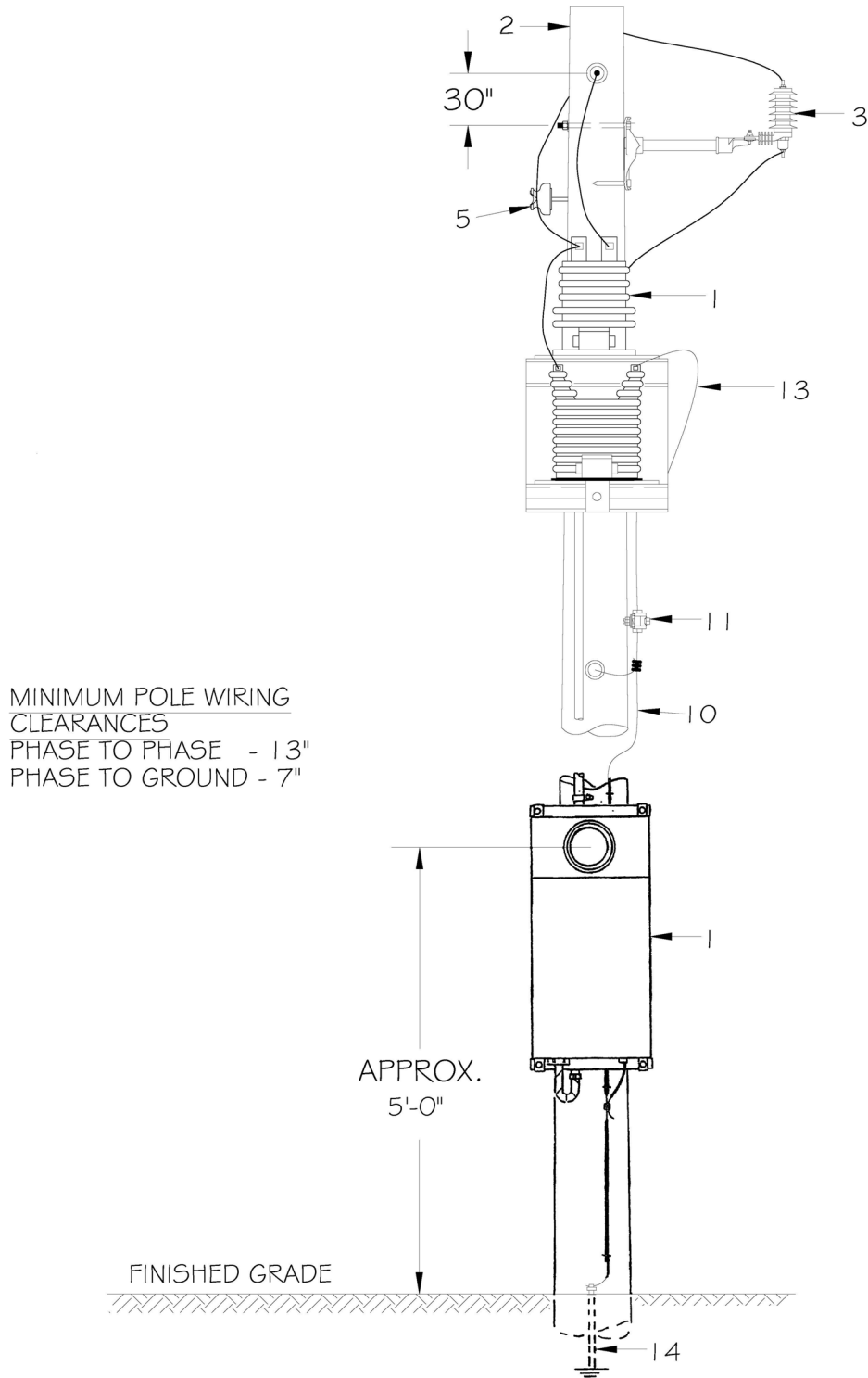
**Metering  
Customer Reference Specification  
7.2kV Single Phase Service Metering  
on Customer-Owned Pole  
6-09-200**

0000-000-ST-6009  
Custom ID: DCS 6-09  
Revision: 04  
Effective Date: 01/16/2017  
Page 52 of 57

Item	Qty.	Bill of Material	CID No. or Drawing No.
<b>Material Supplied by Customer</b>			
7	*	Arrester, lightning, for 12 KV, 4 wire system	(Note 3)
	*	Bracket, lightning arrester mounting	
8	*	Terminator, cable, outdoor, 15 KV	
	*	Ft. wire, #2 CU, solid, bare; connectors as required	
	*	Connector, terminal, size and type as required	
9	*	Deadend assembly, neutral	
10	*	Ft. wire, #2. CU (min.) HDPE or bare with molding	
	*	Connectors as required	
11	*	Aerial cable neutral clamp	
12	*	Ft., wire, #2 CU. (min.), strand, bare	
	*	Connectors, terminal, size and type as required	
13	*	Ft., wire, #2/0 CU, Str, bare	
	*	Connectors as required	
14	1	Rod, ground, 1/2" dia. x 8' long, steel, copper clad	
15	1	Lot, 1-1/4" and 1" rigid metal conduit, 1-1/4" and 1" flexible metal weatherproof conduit, junction boxes and fittings	(Detail "A" or Detail "B")
16	1	Grip, cable supporting	
	1	Bushing, grounding size to suit conduit	
17	1	Cap, conduit	
18	*	Conduit, 4" or 5"	
	*	Straps, conduit, with screw lags	
19	*	Bend, 90°, 4" or 5", steel, galvanized	
20	*	Guy, 3/8" H.S. steel, 7 strand, with attachment hardware	

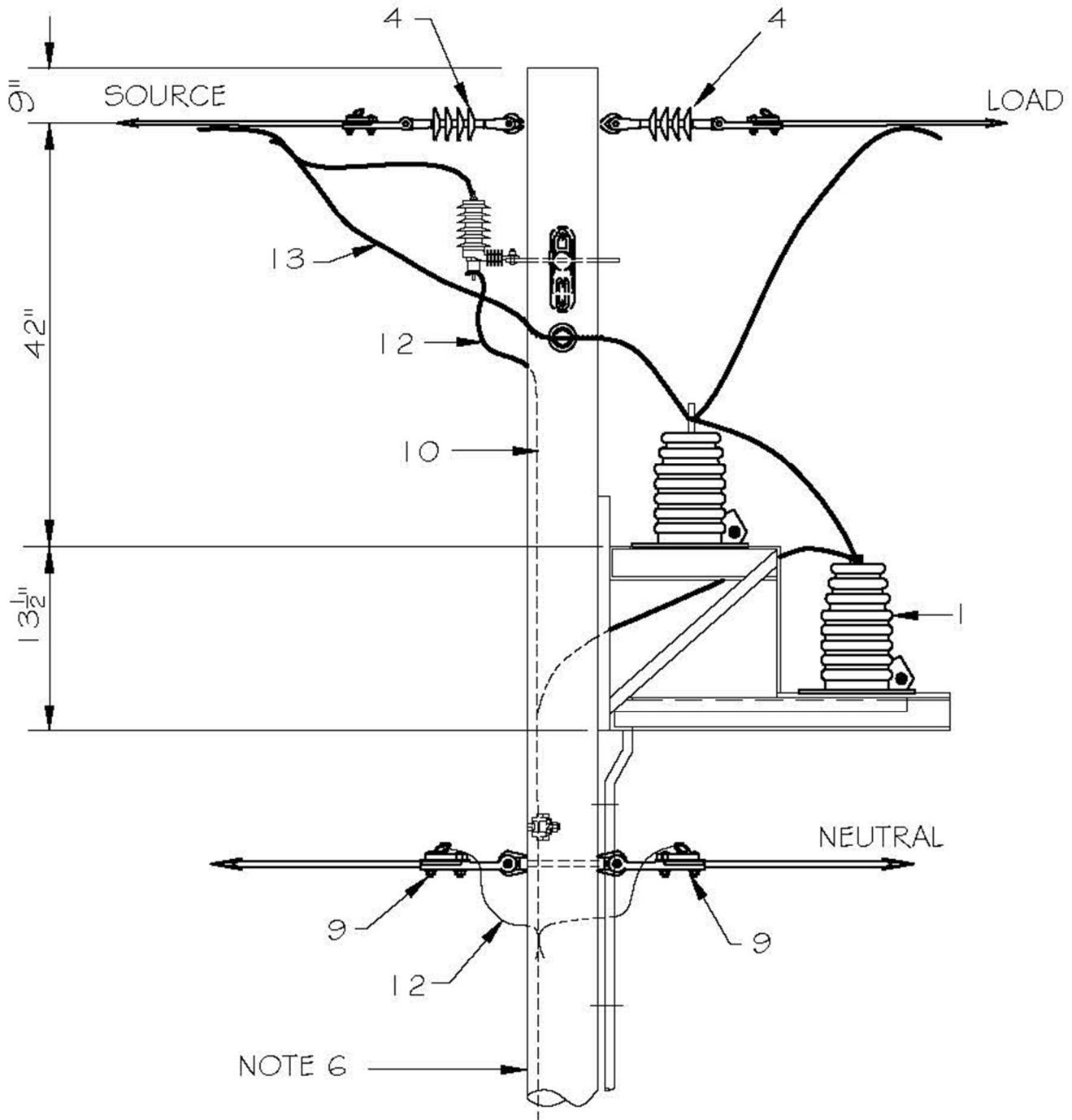
\* As Required

**Overhead Service**



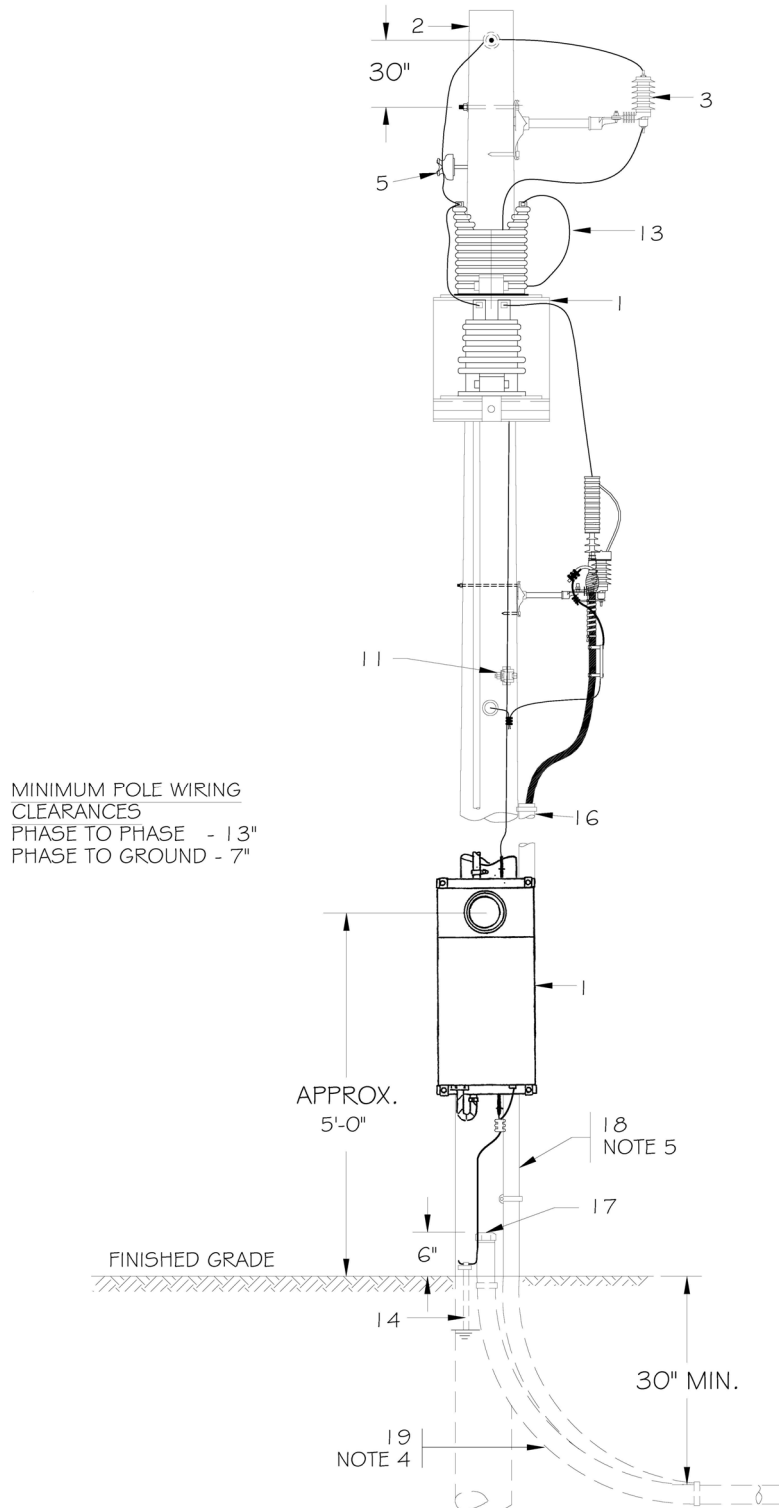
6-09-200-A

**Overhead Service**



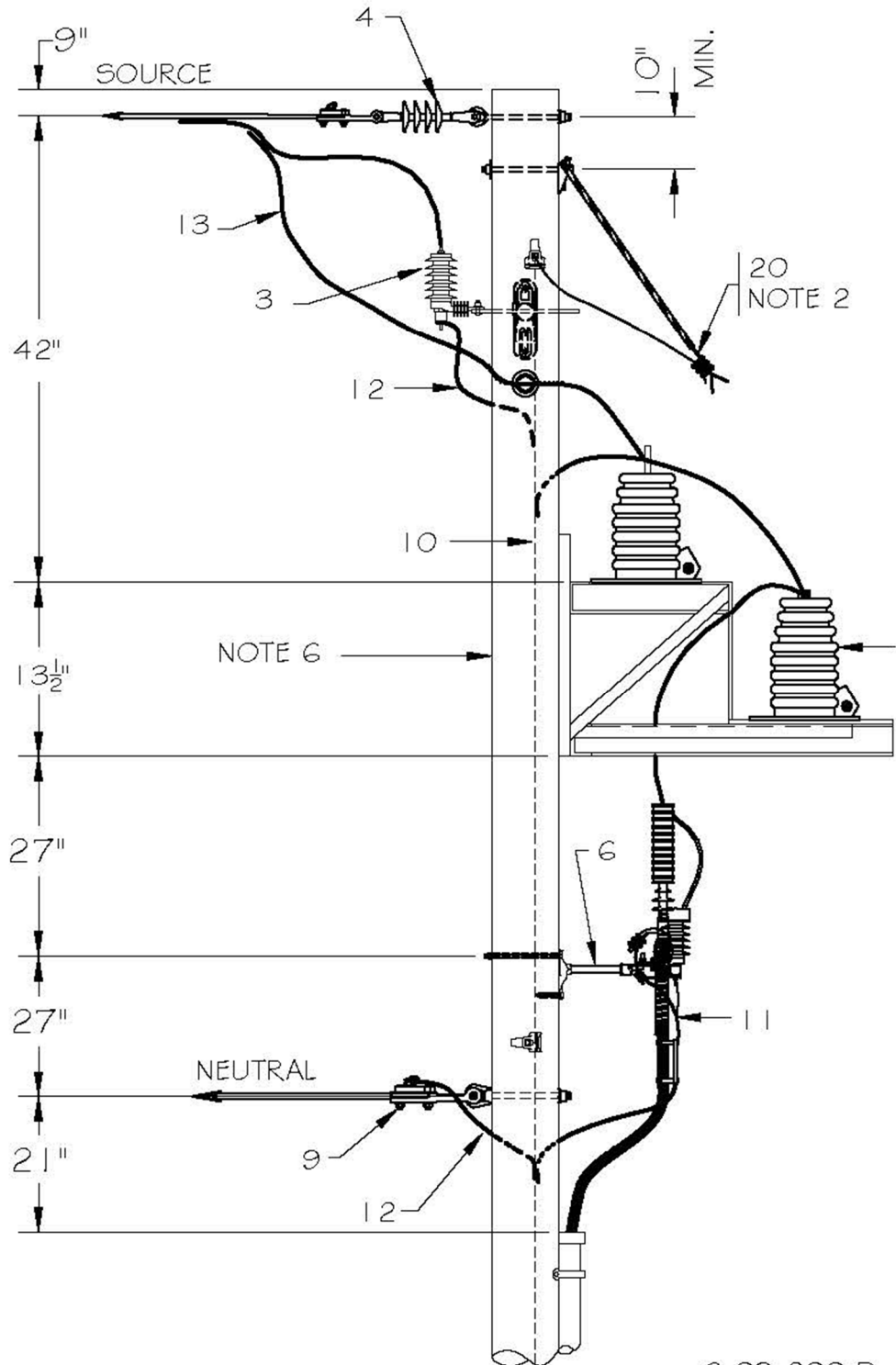
6-09-200-B

**Underground Service**



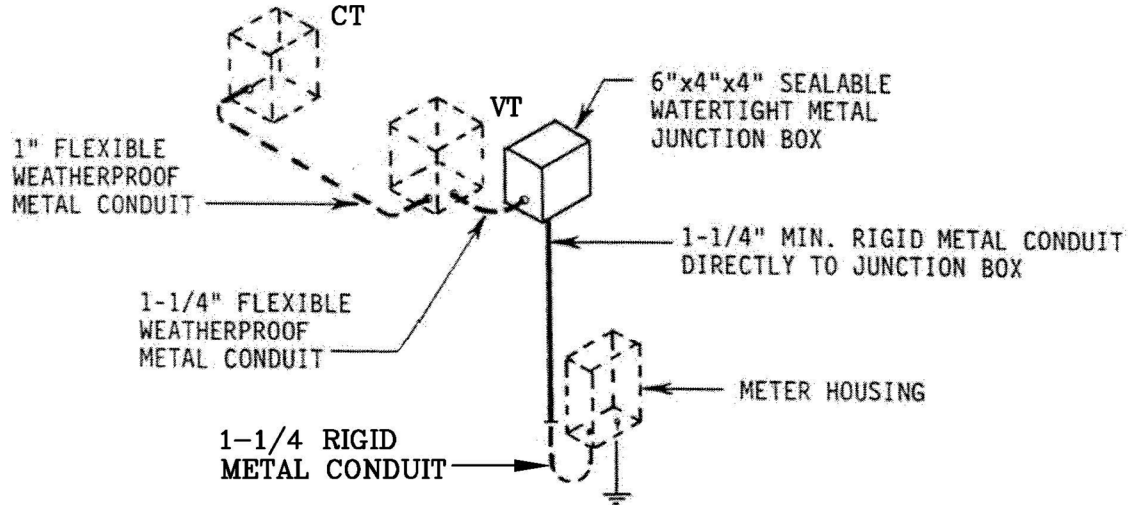
6-09-200-C

**Underground Service**



6-09-200-D

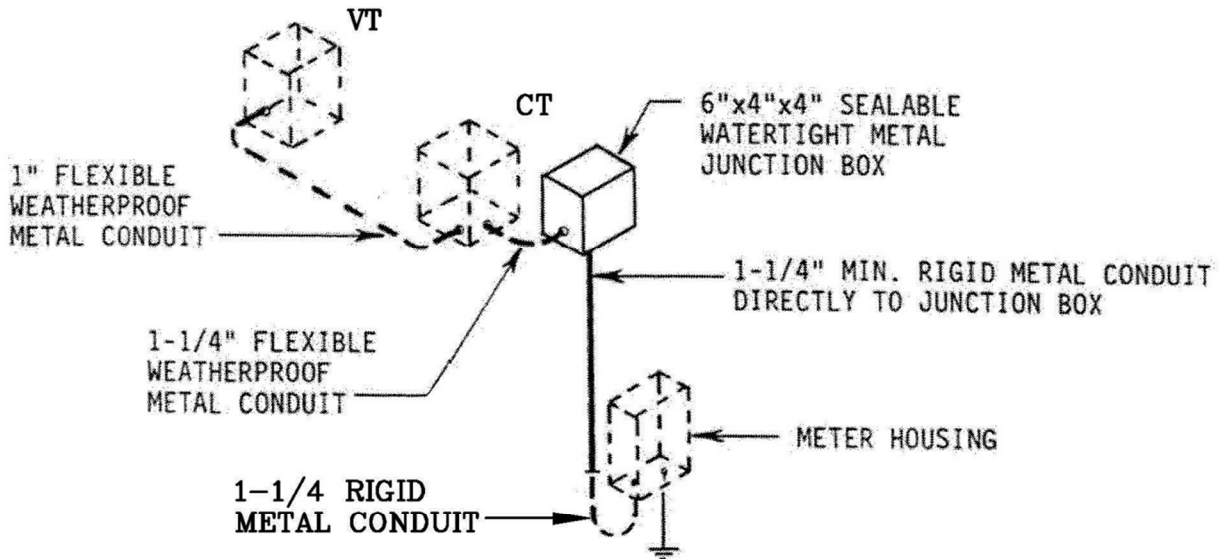
## Overhead Service



**DETAIL "A"**  
**METERING SECONDARY CONDUIT ARRANGEMENT**

6-09-200-E

## Underground Service



**DETAIL "B"**  
**METERING SECONDARY CONDUIT ARRANGEMENT**

6-09-200-F