

# REMSI Sketches 51-100 Sketch #70 6-52

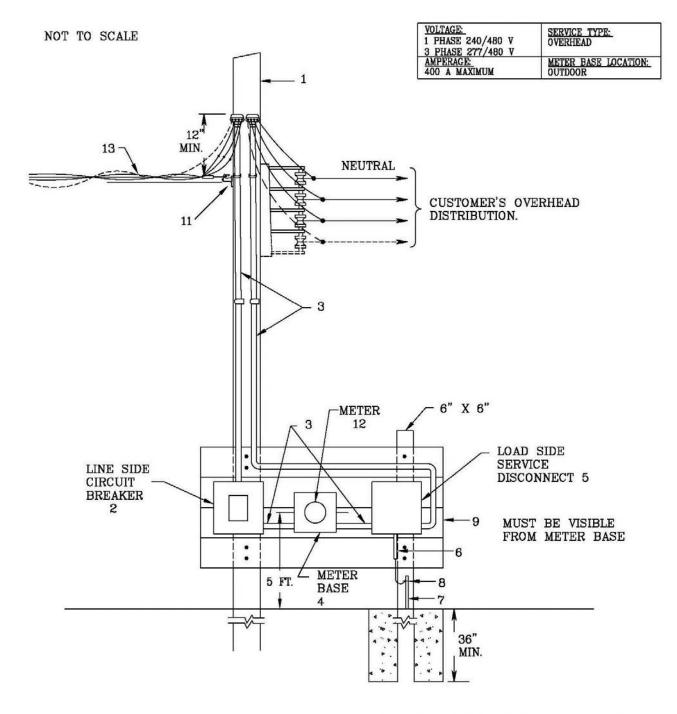
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# Sketch #70 Typical arrangement of outdoor metering equipment on service and meter pole



RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

REFERENCE: SKETCH 6, SKETCH 47, SKETCH 55, SKETCH 55A

Rules: 4, 4A, 5, 13

Date: 7/18/16 Engr: NAP

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# Sketch #70 Typical arrangement of outdoor metering equipment on service and meter pole (cont.)

## CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

- 1. WOOD POLE (CLASS 5 MINIMUM OR EQUIVALENT SEE SKETCH #47) AND ANY GUYS NEEDED TO OFFSET PULL OF PPL EU'S SERVICE DROP OR CUSTOMER'S OVERHEAD DISTRIBUTION WIRES.
- 2. LINE SIDE CIRCUIT BREAKER WITH AIC RATING GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. MUST HAVE PROVISIONS TO BE LOCKED AND SEALED IN THE OPEN AND CLOSED POSITIONS. MUST BE RATED AS SERVICE ENTRANCE EQUIPMENT. A CIRCUIT BREAKER IS THE ONLY DEVICE ALLOWED AHEAD OF THE METER.
- 3. CONDUCTORS IN GRAY SCHEDULE 40 PVC OR RIGID OR INTERMEDIATE STEEL CONDUIT.
- 4. SIDE WIRED METER BASE APPROVED BY PPL EU: RATED FOR 600 VOLTS.
  - 1 PHASE- MUST HAVE 5TH TERMINAL- SEE TABLE 2.
  - 3 PHASE- SEE TABLE 4
- 5. CUSTOMER'S SERVICE EQUIPMENT SHALL INCLUDE A CIRCUIT BREAKER OR DISCONNECT (FUSED OR UNFUSED) THAT IS VISIBLE FROM THE METER AND NO MORE THAN 10 FEET FROM THE METER.
- 6. SERVICE GROUND PROTECT GROUND WIRE WITH MOLDING OR USE ARMORED GROUND CABLE SIZED PER NEC ARTICLE 250 GROUNDING (FROM SKETCH 6).
- 7. GROUND ROD.
- 8. GROUND CLAMP AND BONDING WIRE FOR METAL CONDUIT SIZED PER NEC.
- 9. MOUNTING FOR SERVICE EQUIPMENT 2" NOMINAL LUMBER SECURELY FASTENED TO SUPPORTS CONSISTING OF 1 POLE (SEE SKETCH 47) AND 1-6 INCH BY 6 INCH BY 10 FOOT (MINIMUM) TIMBER SET 36 INCHES MINIMUM IN CONCRETE.
- 10. LINE SIDE BREAKER AND LOAD SIDE DISCONNECT SHALL BE LABELED AS SUCH BY CONTRACTOR OR BUILDING OWNER. BREAKER, DISCONNECT AND METER BASE SHALL ALSO BE LABELED WITH "480V" AND WITH THE SPACE OR UNIT# SERVED BY THE EQUIPMENT.

	REFERENCE: SKETCH 6, SKETCH 47, SKETCH 55, SKETCH 55A
RULES FOR ELECTRIC METER AND SERVICE	Rules: 4, 4A, 5, 13
INSTALLATIONS	Rules, +, +A, U, 10
PPL ELECTRIC UTILITIES	<b>Date:</b> 7/18/16 <b>Engr:</b> NAP
CORPORATION	Date: Engl
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## Sketch #70 Typical arrangement of outdoor metering equipment on service and meter pole (cont.)

PPL EU FURNISHES, CUSTOMER INSTALLS

11. SERVICE BRACKET – PPL EU CID #107280.

PPL EU FURNISHES, INSTALLS, MAINTAINS
12. METER - CL200(200A) OR CL320(400A).

13. NEW SERVICE DROP AND MAKES CONNECTION TO CUSTOMER'S SERVICE ENTRANCE CONDUCTORS MAXIMUM TENSION 700 LBS - SINGLE PHASE, 850 LBS THREE PHASE.

### NOTES:

- A. SEE RULE 4 AND 4A FOR CLEARANCES.
- B. 50" MINIMUM CLEARSPACE IN FRONT OF METER BASE. SEE RULE 13, SKETCH 55 AND SKETCH 55A (SIDE VIEW).
- C. ALL 240/480 VOLT AND 277/480 VOLT SERVICES SHALL BE INSTALLED PER THE NATIONAL ELECTRIC CODE AND ANY OTHER APPLICABLE CODE.
- D. THE LINE SIDE BREAKER IS TO FACILITATE METER MAINTENANCE, AND IS NOT CONSIDERED THE SERVICE DISCONNECTING MEANS AS DEFINED BY THE NEC.
- E. THE GROUNDED (NEUTRAL) SERVICE CONDUCTOR SHALL BE BONDED TO EACH OF THE FOLLOWING ENCLOSURES: THE LINE SIDE BREAKER, THE METER BASE, AND THE LOAD SIDE DISCONNECT. ONLY THE ENCLOSURE OF THE SERVICE DISCONNECTING MEANS SHALL BE CONNECTED TO A GROUNDING ELECTRODE (GROUND ROD).

REFERENCE: SKETCH 6, SKETCH 47, SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

**Rules:** 4, 4A, 5, 13

**Date:** 7/18/16 **Engr:** NAP

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# REMSI Sketches 51-100 Sketch #71 6-52

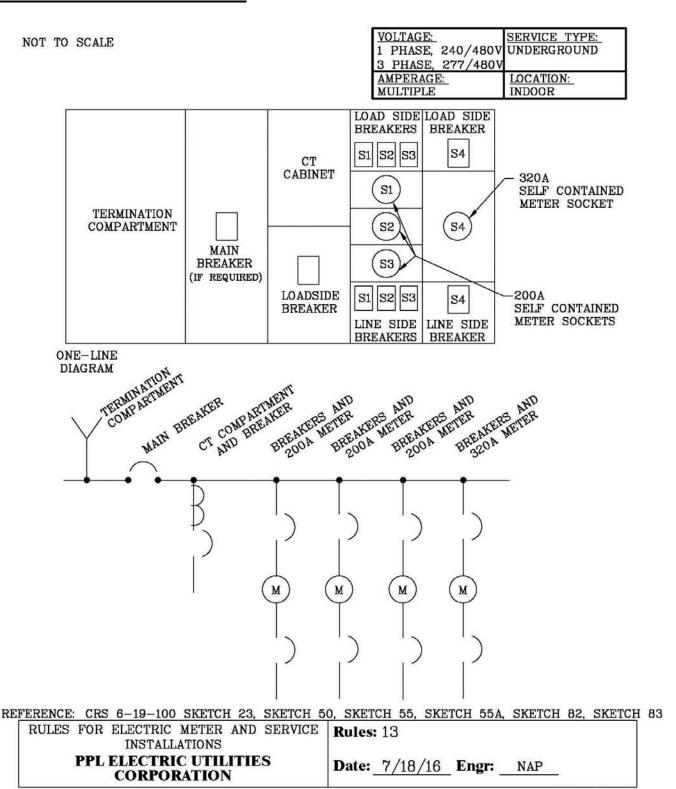
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# Sketch #71 Underground secondary service, indoor multi-meter installation for common service with instrument cabinets and/or meter bases





## REMSI Sketches 51-100 Sketch #71 6-52

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# Sketch #71 Underground secondary service, indoor multi-meter installation for common service with instrument cabinets and/or meter bases (cont.)

### CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

1. LINE SIDE BREAKERS AND LOAD SIDE BREAKERS SHALL BE LABELED AS SUCH BY CONTRACTOR OR BUILDING OWNER. TERMINATION COMPARTMENTS, LINE SIDE BREAKERS, LOAD SIDE BREAKERS AND METER BASES SHALL ALSO BE LABELED WITH "480V" AND WITH THE SPACE OR UNIT# SERVED BY THE EQUIPMENT.

#### NOTES:

- A. SUPPLIER SHALL SUBMIT DETAILED PHYSICAL AND ONE-LINE DIAGRAM TO PPL EU FOR APPROVAL PRIOR TO CONSTRUCTION.
- B. PPL EU FURNISHES DETAILED ELECTRICAL ARRANGEMENT OF TERMINATION AND METERING COMPARTMENTS.
- C. PREAPPROVED METERING AND TERMINATION COMPARTMENT— SEE "APPROVED SWITCHGEAR SECONDARY METERING AND TERMINATION COMPARTMENT" TABLE 2, FOR PREAPPROVED SECONDARY METERING AND WIRE TERMINATION COMPARTMENTS.
- D. METER SOCKETS MUST BE PREAPPROVED AND RATED FOR 600 VOLTS SOCKETS HAVE INDIVIDUAL RINGLESS STYLE COVERS WITH A HASP AND CATCH SEALING PROVISION WITH A 1/2 INCH MINIMUM SEALING HOLE.
- E. LINE AND LOAD SIDE CIRCUIT BREAKERS MUST HAVE COVERS WITH SEALING PROVISIONS (1/2 INCH HOLE MINIMUM) TO PREVENT OPENING AND CLOSING OF THE BREAKER AFTER THE METER HAS BEEN INSTALLED.
- F. 50" MINIMUM CLEARSPACE IN FRONT OF METER BASE. SEE RULE 13, SKETCH 55 AND SKETCH 55A (SIDE VIEW).
- G. ALL 240/480 VOLT AND 277/480 VOLT SERVICES SHALL BE INSTALLED PER THE NATIONAL ELECTRIC CODE ANY OTHER APPLICABLE CODE.
- H. MAIN BREAKER REQUIRED FOR SIX (6) OR MORE SERVICES.
- I. SKETCH 82 AND SKETCH 83 OPTIONS MAY ALSO BE CONSIDERED IN THIS ARRANGEMENT.
- J. LINE SIDE CIRCUIT BREAKERS ARE TO FACILITATE METER MAINTENANCE, AND ARE NOT CONSIDERED THE SERVICE DISCONNECTING MEANS AS DEFINED BY THE NEC.
- K. LINE SIDE AND LOAD SIDE CIRCUIT BREAKER LOCATIONS MAY BE REVERSED FROM SKETCH IF DESIRED.

\*REFERENCE: CRS 6-19-100 SKETCH 23, SKETCH 50, SKETCH 55, SKETCH 55A, SKETCH 82, SKETCH 83

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

Rules: 13

**Date:** 7/18/16 **Engr:** NAP

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# REMSI Sketches 51-100 Sketch #72 6-52

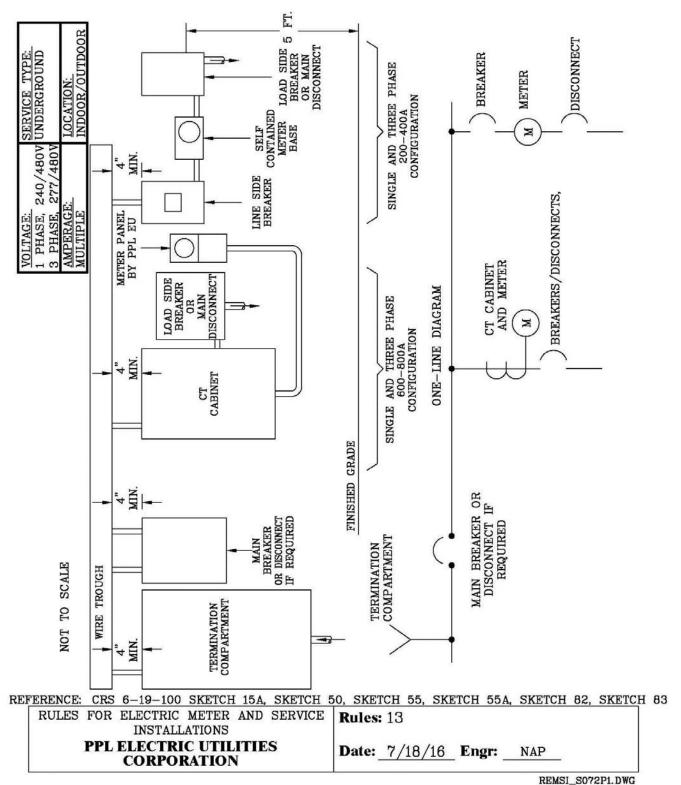
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# Sketch #72 Overhead or underground secondary service, indoor/outdoor multi-meter installation for common service with instrument transformer cabinets and/or meter bases





# REMSI Sketches 51-100 Sketch #72 6-52

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Sketch #72 Overhead or underground secondary service, indoor/outdoor multi-meter installation for common service with instrument transformer cabinets and/or meter bases (cont.)

## CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

1. LINE SIDE BREAKERS AND LOAD SIDE DISCONNECTS SHALL BE LABELED AS SUCH BY CONTRACTOR OR BUILDING OWNER. TERMINATION COMPARTMENTS, LINE SIDE BREAKERS, LOAD SIDE DISCONNECTS AND METER BASES SHALL ALSO BE LABELED WITH "480V" AND WITH THE SPACE OR UNIT# SERVED BY THE EQUIPMENT.

## NOTES:

- A. SELF CONTAINED METER BASES MUST BE PPL EU APPROVED. SEE APPROVED METERING TABLES 1-4. RATED FOR 600 VOLTS.
- B. TERMINATION COMPARTMENT MUST BE SIZED IN ACCORDANCE WITH CRS 6-19-100.
- C. METERING COMPARTMENT MUST BE IN ACCORDANCE WITH SKETCH 15A.
- D. WIRE TROUGH MUST HAVE SEALING PROVISIONS WITH A ½ INCH SEALING HOLE.
- E. WHERE A SELF-CONTAINED METER IS BEING USED, A LINE SIDE CIRCUIT BREAKER IS REQUIRED. THE SERVICE SHALL ALSO INCLUDE A LOAD SIDE CIRCUIT BREAKER OR DISCONNECT (FUSED OR UNFUSED) THAT IS VISIBLE FROM THE METER AND NO MORE THAN 10 FEET FROM THE METER.
- F. LINE SIDE CIRCUIT BREAKERS MUST HAVE AN AIC RATING GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. MUST HAVE PROVISIONS TO BE LOCKED AND SEALED IN THE OPEN AND CLOSED POSITIONS. MUST BE RATED AS SERVICE ENTRANCE EQUIPMENT AND BE CAPABLE OF TERMINATING 4/0 TO 500 KCMIL CONDUCTORS. A CIRCUIT BREAKER IS THE ONLY DEVICE ALLOWED AHEAD OF THE METER.
- G. CUSTOMER SHALL SUBMIT DETAILED PHYSICAL AND ONE LINE DIAGRAM TO PPL EU FOR APPROVAL PRIOR TO CONSTRUCTION.
  - H. OUTDOOR THE WIRE TROUGH MUST BE ABOVE THE METERING EQUIPMENT. PPL EU MAY REQUIRED CUSTOMER TO INSTALL BARRIERS TO PROTECT METERING FROM VEHICULAR TRAFFIC. IF REQUIRED SEE SKETCH 28 SHEET 2.
- I INDOOR— THE WIRE TROUGH CAN BE LOCATED ABOVE OR BELOW THE METERING EQUIPMENT. BARRIERS ARE NOT REQUIRED INDOORS. 50" OF CLEAR SPACE IS REQUIRED IN FRONT OF EQUIPMENT.
- J. 50" MINIMUM CLEARSPACE IN FRONT OF METER BASE. SEE RULE 13, SKETCH 55 AND SKETCH 55A (SIDE VIEW).

REFERENCE CRS 6-19-100 SKI	ETCH 15A, SKETCH 50, SKETCH 55, SKETCH 55A, SKETCH 82, SKETCH 83
RULES FOR ELECTRIC METER AND SERVICE	Rules: 13
INSTALLATIONS	Rules 10
PPL ELECTRIC UTILITIES	Date: 7/18/16 Engr: NAP
CORPORATION	Date: <u>7/18/16</u> Engr: <u>NAP</u>



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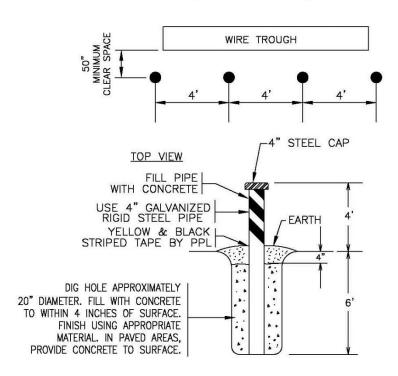
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# Sketch #72 Overhead or underground secondary service, indoor/outdoor multi-meter installation for common service with instrument transformer cabinets and/or meter bases (cont.)

## NOTES (CONTINUED):

- K. ALL SERVICES SHALL BE INSTALLED PER
  THE NATIONAL ELECTRIC CODE AND ANY OTHER APPLICABLE CODE.
- L. MAIN BREAKER REQUIRED FOR SIX (6) OR MORE SERVICES.
- M. SKETCH 82 AND SKETCH 83 OPTIONS MAY ALSO BE CONSIDERED IN THIS ARRANGEMENT.
- N. THE LINE SIDE BREAKER IS TO FACILITATE METER MAINTENANCE, AND IS NOT CONSIDERED THE SERVICE DISCONNECTING MEANS AS DEFINED BY THE NEC.
- O. THE GROUNDED (NEUTRAL) SERVICE CONDUCTOR SHALL BE BONDED TO EACH OF THE FOLLOWING ENCLOSURES: THE LINE SIDE BREAKER, THE METER BASE, AND THE LOAD SIDE DISCONNECT. ONLY THE ENCLOSURE OF THE SERVICE DISCONNECTING MEANS SHALL BE CONNECTED TO A GROUNDING ELECTRODE (GROUND ROD).



RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

RULES: 13

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Date: 7/18/16 Engr: NAP

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# REMSI Sketches 51-100 Sketch #73 6-52

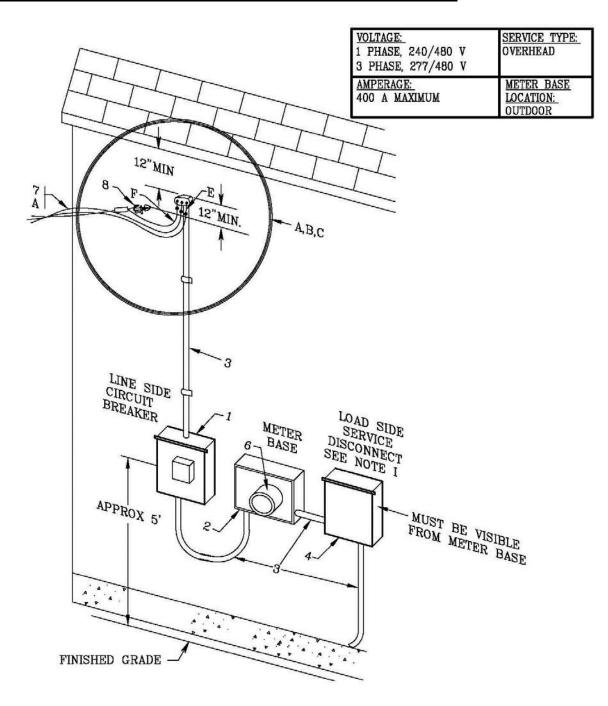
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## Sketch #73 Typical arrangement of outdoor metering equipment on building



REFERENCE: SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

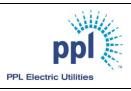
CORPORATION

PPL ELECTRIC UTILITIES

Rules: 4, 4A, 5, 13, 14

Date: 7/18/16 Engr: NAP

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## REMSI Sketches 51-100 Sketch #73 6-52

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## Sketch #73 Typical arrangement of outdoor metering equipment on building (cont.)

### CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

- 1. LINE SIDE CIRCUIT BREAKER WITH AIC RATING GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. MUST HAVE PROVISIONS TO BE LOCKED AND SEALED IN THE OPEN AND CLOSED POSITIONS. MUST BE RATED AS SERVICE ENTRANCE EQUIPMENT. A CIRCUIT BREAKER IS THE ONLY DEVICE ALLOWED AHEAD OF THE METER.
- 2. SIDE WIRED METER BASE APPROVED BY PPL EU. SINGLE PHASE MUST HAVE 5TH TERMINAL. SEE TABLE 2 1 PHASE, TABLE 4 3 PHASE RATED FOR 600 VOLTS.
- 3. CONDUCTORS IN GRAY SCHEDULE 40 PVC OR RIGID OR INTERMEDIATE STEEL CONDUIT (SEE RULE 5).
- 4. CUSTOMER'S SERVICE EQUIPMENT SHALL INCLUDE A CIRCUIT BREAKER OR DISCONNECT (FUSED OR UNFUSED) THAT IS VISIBLE FROM THE METER AND NO MORE THAN 10 FEET FROM THE METER..
- 5. LINE SIDE BREAKER AND LOAD SIDE DISCONNECT SHALL BE LABELED AS SUCH BY CONTRACTOR OR BUILDING OWNER. BREAKER, DISCONNECT AND METER BASE SHALL ALSO BE LABELED WITH "480V" AND WITH THE SPACE OR UNIT# SERVED BY THE EQUIPMENT.

## PPL EU FURNISHES, INSTALLS, MAINTAINS:

- 6. METER-CL200(200A) OR CL320(400A)
- 7. NEW SERVICE DROP AND MAKES CONNECTION TO CUSTOMER'S SERVICE ENTRANCE CONDUCTORS. MAXIMUM TENSION 850 LBS.

REFERENCE: SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

Rules: 4, 4A, 5, 13, 14

**Date:** 7/18/16 **Engr:** NAP

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# REMSI Sketches 51-100 Sketch #73 6-52

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# Sketch #73 Typical arrangement of outdoor metering equipment on building (cont.)

PPL EU FURNISHES, CUSTOMER INSTALLS:

8. SERVICE BRACKET-PPL EU CID #107280

## NOTES:

- A. SEE RULE 4 AND 4A FOR CLEARANCES.
- B. 36 INCHES MINIMUM CLEARANCE IN ANY DIRECTION FROM WINDOWS, DOORS, PORCHES, FIRE ESCAPES, OR SIMILAR. EXCEPTION: SEE NOTE C
- C. LESS THAN 36 INCHES PERMITTED WHEN SERVICE DROPS OR DRIP LOOPS ARE LOCATED OUT OF REACH ABOVE THE TOP LEVEL OF A WINDOW OR THE WINDOW IS DESIGNED NOT TO BE OPENED.
- D. ALL EQUIPMENT MUST BE SECURELY MOUNTED TO 2" NOMINAL LUMBER OR MASONRY CONSTRUCTION.
- E. CUSTOMER RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- F. PPL EU RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- G. 50" MINIMUM CLEARSPACE IN FRONT OF METER BASE. SEE RULE 13, SKETCH 55 AND SKETCH 55A (SIDE VIEW).
- H. ALL 277/480 VOLT SERVICES SHALL BE INSTALLED PER THE NATIONAL ELECTRIC CODE AND ANY OTHER APPLICABLE CODE.
- I. THE LINE SIDE BREAKER IS TO FACILITATE METER MAINTENANCE, AND IS NOT CONSIDERED THE SERVICE DISCONNECTING MEANS AS DEFINED BY THE NEC.
- J. THE GROUNDED (NEUTRAL) SERVICE CONDUCTOR SHALL BE BONDED TO EACH OF THE FOLLOWING ENCLOSURES: THE LINE SIDE BREAKER, THE METER BASE, AND THE LOAD SIDE DISCONNECT. ONLY THE ENCLOSURE OF THE SERVICE DISCONNECTING MEANS SHALL BE CONNECTED TO A GROUNDING ELECTRODE (GROUND ROD).

REFERENCE: SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

Rules: 4, 4A, 5, 13, 14

Date: 7/18/16 Engr: NAP

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## **REMSI Sketches 51-100** Sketch #80 6-52

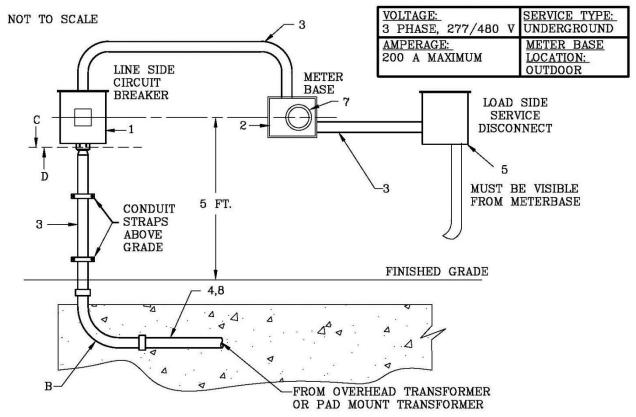
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## Sketch #80 Typical arrangement of outdoor metering equipment on building, underground service, lateral from OH or UG distribution, 3 phase, 277/480 volts self-contained, 200 ampere



#### CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

- 1. LINE SIDE CIRCUIT BREAKER WITH AIC RATING GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. MUST HAVE PROVISIONS TO BE LOCKED AND SEALED IN THE OPEN AND CLOSED POSITIONS. MUST BE RATED AS SERVICE ENTRANCE EQUIPMENT AND BE CAPABLE OF TERMINATING 4/0 TO 500 KCMIL CONDUCTORS. A CIRCUIT BREAKER IS THE ONLY DEVICE ALLOWED AHEAD OF THE METER.
- 2. SIDE WIRED METER BASE APPROVED BY PPL EU SEE TABLE 4 3 PHASE. RATED FOR 600 VOLTS.
- 3. CONDUCTORS IN GRAY SCHEDULE 40 PVC OR RIGID OR INTERMEDIATE STEEL CONDUIT (SEE RULE 5).
- 4. CUSTOMER INSTALLED CONDUIT SYSTEM CAN BE EITHER DIRECTLY BURIED STEEL
- OR PVC (SEE NOTE B) ENCASED IN CONCRETE FOR THE FULL LENGTH OF THE RUN. 5. CUSTOMER'S SERVICE EQUIPMENT SHALL INCLUDE A CIRCUIT BREAKER OR DISCONNECT (FUSED OR UNFUSED) THAT IS VISIBLE FROM THE METER AND NO MORE THAN 10 FEET FROM THE METER.
- 6. LINE SIDE BREAKER AND LOAD SIDE DISCONNECT SHALL BE LABELED AS SUCH BY CONTRACTOR OR BUILDING OWNER. BREAKER, DISCONNECT AND METER BASE SHALL ALSO BE LABELED WITH "480V" AND WITH THE SPACE OR UNIT# SERVED BY THE EQUIPMENT. \*REFERENCE CRS 6-15-180, CRS 6-18-115, SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE **Rules:** 5, 6, 11A, 13, 14 INSTALLATIONS PPL ELECTRIC UTILITIES Date: 7/18/16 Engr: NAP CORPORATION

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Sketch #80 Typical arrangement of outdoor metering equipment on building, underground service, lateral from OH or UG distribution, 3 phase, 277/480 volts self-contained, 200 ampere (cont.)

## PPL EU FURNISHES, INSTALLS, MAINTAINS:

- 7. METER CL200 (200A)
- 8. SERVICE LATERAL CONDUCTORS INSTALLED INSIDE OF CUSTOMER SUPPLIED CONDUIT TERMINATING ON LINE SIDE CIRCUIT BREAKER.

#### NOTES:

- A. PPL EU WILL SPECIFY CONDUIT SIZE FROM TRANSFORMER TO LINE SIDE CIRCUIT BREAKER AND PROVIDE AIC.
- B. 36 INCH RADIUS ELBOW. MUST BE STEEL IN ALL CASES. IF JOINED TO PVC, THE JOINT AND LOWER HALF OF ELBOW SHALL BE ENCASED IN CONCRETE.
- C. CUSTOMER RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- D. PPL EU RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- E. IF DIRECT BURIED STEEL, CUSTOMER EXCAVATES, PROVIDES SELECT BACKFILL, TAMPS IN LAYERS OVER DISTURBED EARTH NEAR BUILDING FOUNDATION TO HELP PREVENT DAMAGE TO SERVICE ENTRANCE EQUIPMENT DUE TO GROUND SETTLING AND RESTORES SURFACE OF TRENCH FROM BASE OF POLE TO BUILDING.
- F. ALL EQUIPMENT MUST BE SECURELY MOUNTED TO 2" NOMINAL LUMBER OR MASONRY CONSTRUCTION.
- G. 50" MINIMUM CLEARSPACE IN FRONT OF METER BASE. SEE RULE 13, SKETCH 55 AND SKETCH 55A (SIDE VIEW).
- H. ALL 240/480 VOLT AND 277/480 VOLT SERVICES SHALL BE INSTALLED PER THE NATIONAL ELECTRIC CODE AND ANY OTHER APPLICABLE CODE.
- I. THE LINE SIDE BREAKER IS TO FACILITATE METER MAINTENANCE, AND IS NOT CONSIDERED THE SERVICE DISCONNECTING MEANS AS DEFINED BY THE NEC.
- J. THE GROUNDED (NEUTRAL) SERVICE CONDUCTOR SHALL BE BONDED TO THE EACH OF THE FOLLOWING ENCLOSURES: THE LINE SIDE BREAKER, THE METER BASE, AND THE LOAD SIDE DISCONNECT. ONLY THE ENCLOSURE OF THE SERVICE DISCONNECTING MEANS SHALL BE CONNECTED TO A GROUNDING ELECTRODE (GROUND ROD).

\*REFERENCE CRS 6-15-180, CRS 6-18-115, SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

**Rules:** 5, 6, 11A, 13, 14

**Date:** 7/18/16 **Engr:** NAP

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## REMSI Sketches 51-100 Sketch #81 6-52

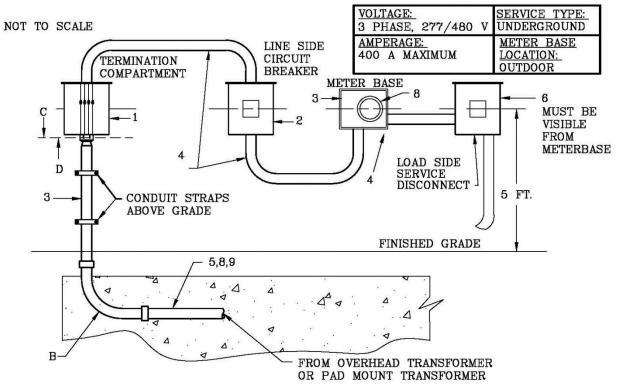
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# Sketch #81 Typical arrangement of outdoor metering equipment on building, underground service, lateral from OH or UG distribution, 3 phase, 277/480 volts self-contained, 400 ampere



### CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

- 1. TERMINATION COMPARTMENT SIZED IN ACCORDANCE WITH SKETCH 54A. WIRES SHALL BE CONNECTED TO CUSTOMER PROVIDED TERMINAL BLOCK.
- 2. LINE SIDE CIRCUIT BREAKER WITH AIC RATING GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. MUST HAVE PROVISIONS TO BE LOCKED AND SEALED IN THE OPEN AND CLOSED POSITIONS. MUST BE RATED AS SERVICE ENTRANCE EQUIPMENT AND BE CAPABLE OF TERMINATING 4/0 TO 500 KCMIL CONDUCTORS. A CIRCUIT BREAKER IS THE ONLY DEVICE ALLOWED AHEAD OF THE METER.
- 3. SIDE WIRED METER BASE APPROVED BY PPL EU SEE TABLE 4 3 PHASE. RATED FOR 600 VOLTS.
- 4. CONDUCTORS IN GRAY SCHEDULE 40 PVC OR RIGID OR INTERMEDIATE STEEL CONDUIT (SEE RULE 5).
- 5. CUSTOMER INSTALLED CONDUIT SYSTEM CAN BE EITHER STEEL, OR PVC (SEE NOTE B) ENCASED IN CONCRETE FOR THE FULL LENGTH OF THE RUN, OR DIRECTLY BURIED STEEL.
- 6. CUSTOMER SERVICE EQUIPMENT SHALL INCLUDE A CIRCUIT BREAKER OR DISCONNECT (FUSED OR UNFUSED) THAT IS VISIBLE FROM THE METER AND NO MORE THAN 10 FEET FROM THE METER.
- 7. LINE SIDE BREAKER AND LOAD SIDE DISCONNECT SHALL BE LABELED AS SUCH BY CONTRACTOR OR BUILDING OWNER. BREAKER, DISCONNECT AND METER BASE SHALL ALSO BE LABELED WITH "480V" AND WITH THE SPACE OR UNIT# SERVED BY THE EQUIPMENT.

  \*REFERENCE CRS 6-15-180, CRS 6-18-115 & SKETCH 54A, SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

PRUSE: 5, 13

Date: 7/18/16 Engr: NAP



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Sketch #81 Typical arrangement of outdoor metering equipment on building, underground service, lateral from OH or UG distribution, 3 phase, 277/480 volts self-contained, 400 ampere (cont.)

#### PPL EU FURNISHES, INSTALLS, MAINTAINS:

- 8. METER CL320 (400A)
- 9. SERVICE LATERAL CONDUCTORS INSTALLED INSIDE OF CUSTOMER SUPPLIED CONDUIT TERMINATING ON CUSTOMER SIDE OF TERMINATION COMPARTMENT.

### NOTES:

- A. PPL EU WILL SPECIFY CONDUIT SIZE FROM TRANSFORMER TO TERMINATION COMPARTMENT AND PROVIDE AIC.
- B. 36 INCH RADIUS ELBOW. MUST BE STEEL IN ALL CASES. IF JOINED TO PVC, THE JOINT AND LOWER HALF OF ELBOW SHALL BE ENCASED IN CONCRETE.
- C. CUSTOMER RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- D. PPL EU RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- E. IF DIRECT BURIED STEEL, CUSTOMER EXCAVATES, PROVIDES SELECT BACKFILL, BACKFILLS, TAMPS IN LAYERS OVER DISTURBED EARTH NEAR BUILDING FOUNDATION TO HELP PREVENT DAMAGE TO SERVICE ENTRANCE EQUIPMENT DUE TO GROUND SETTLING AND RESTORE SURFACE OF TRENCH FROM BASE OF POLE TO BUILDING.
- F. ALL EQUIPMENT MUST BE SECURELY MOUNTED TO 2" NOMINAL LUMBER OR MASONRY CONSTRUCTION.
- G. 50" MINIMUM CLEARSPACE IN FRONT OF METER BASE. SEE RULE 13, SKETCH 55 AND SKETCH 55A (SIDE VIEW).
- H. ALL 240/480 VOLT AND 277/480 VOLT SERVICES SHALL BE INSTALLED PER THE NATIONAL ELECTRIC CODE AND ANY OTHER APPLICABLE CODE.
- I. THE LINE SIDE BREAKER IS TO FACILITATE METER MAINTENANCE, AND IS NOT CONSIDERED THE SERVICE DISCONNECTING MEANS AS DEFINED BY THE NEC.
- J. THE GROUNDED (NEUTRAL) SERVICE CONDUCTOR SHALL BE BONDED TO THE EACH OF THE FOLLOWING ENCLOSURES: THE LINE SIDE BREAKER, THE METER BASE, AND THE LOAD SIDE DISCONNECT. ONLY THE ENCLOSURE OF THE SERVICE DISCONNECTING MEANS SHALL BE CONNECTED TO A GROUNDING ELECTRODE (GROUND ROD).

\*REFERENCE CRS 6-15-180 & SKETCH 54A, SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

**Rules:** 5, 13

**Date:** 7/18/16 **Engr:** NAP

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# **REMSI Sketches 51-100** Sketch #82 6-52

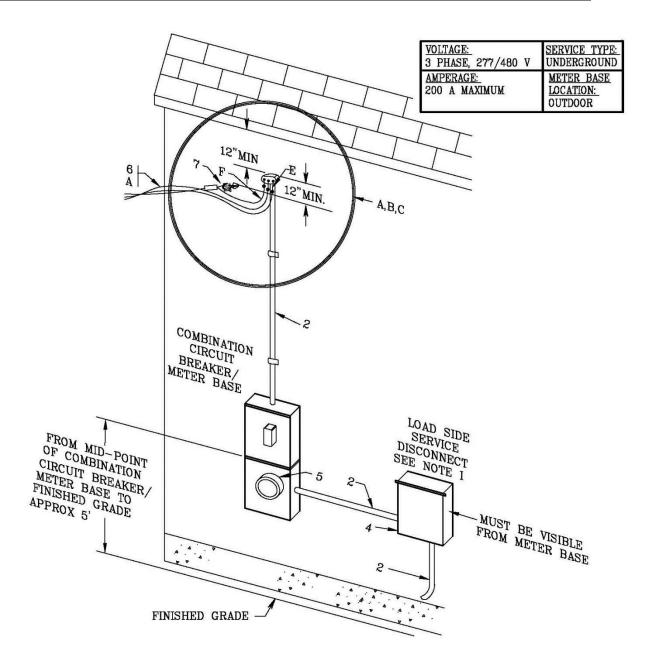
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## Sketch #82 Typical arrangement of outdoor metering equipment on building, OH distribution



RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

> PPL ELECTRIC UTILITIES **CORPORATION**

REFERENCE: SKETCH 55, SKETCH 55A Rules: 4, 4A, 5, 13, 14

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## **REMSI Sketches 51-100** Sketch #82 6-52

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## Sketch #82 Typical arrangement of outdoor metering equipment on building, OH distribution (cont.)

### CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

- 1. COMBINATION CIRCUIT BREAKER/METER BASE. BREAKER AIC RATING SHALL BE GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. REFERENCE TABLE 3 FOR APPROVED COMBINATION BREAKER/METER BASE INFORMATION.
- 2. CONDUCTORS IN GRAY SCHEDULE 40 PVC OR RIGID OR INTERMEDIATE STEEL CONDUIT (SEE RULE 5).
- 3. CUSTOMER SERVICE EQUIPMENT SHALL INCLUDE A CIRCUIT BREAKER OR DISCONNECT (FUSED OR UNFUSED) THAT IS VISIBLE FROM THE METER AND NO MORE THAN 10 FEET FROM THE METER.
- 4. LINE SIDE BREAKER AND LOAD SIDE DISCONNECT SHALL BE LABELED AS SUCH BY CONTRACTOR OR BUILDING OWNER. BREAKER, DISCONNECT AND METER BASE SHALL ALSO BE LABELED WITH "480V" AND WITH THE SPACE OR UNIT# SERVED BY THE EQUIPMENT.

#### PPL EU FURNISHES, INSTALLS, MAINTAINS:

- METER-CL200(200A) OR CL320(400A)
- 6. NEW SERVICE DROP AND MAKES CONNECTION TO CUSTOMERS SERVICE ENTRANCE CONDUCTORS. MAXIMUM TENSION 850 LBS.

## PPL EU FURNISHES, CUSTOMER INSTALLS:

SERVICE BRACKET-PPL EU CATALOG #107280

#### NOTES:

- A. SEE RULE 4 AND 4A FOR CLEARANCES.
- B. 36 INCHES MINIMUM CLEARANCE IN ANY DIRECTION FROM WINDOWS, DOORS, PORCHES, FIRE ESCAPES, OR SIMILAR. EXCEPTION: SEE NOTE C
- C. LESS THAN 36 INCHES PERMITTED WHEN SERVICE DROPS OR DRIP LOOPS ARE LOCATED OUT OF REACH ABOVE THE TOP LEVEL OF A WINDOW OR THE WINDOW IS DESIGNED NOT TO BE OPEN.
- D. ALL EQUIPMENT MUST BE SECURELY MOUNTED TO 2" NOMINAL LUMBER OR MASONRY CONSTRUCTION.
- E. CUSTOMER RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- F. PPL EU RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- G. 50" MINIMUM CLEARSPACE IN FRONT OF COMBINATION CIRCUIT BREAKER/METER BASE SEE RULE 13, SKETCH 55 AND SKETCH 55A (SIDE VIEW).
- H. ALL 240/480 VOLT AND 277/480 VOLT SERVICES SHALL BE INSTALLED PER THE NATIONAL ELECTRIC CODE AND ANY OTHER APPLICABLE CODE.
- I THE LINE SIDE BREAKER IS TO FACILITATE METER MAINTENANCE, AND IS NOT CONSIDERED THE SERVICE DISCONNECTING MEANS AS DEFINED BY THE NEC.
- J. THE GROUNDED (NEUTRAL) SERVICE CONDUCTOR SHALL BE BONDED TO EACH OF THE FOLLOWING ENCLOSURES: THE LINE SIDE BREAKER, THE METER BASE, AND THE LOAD SIDE DISCONNECT. ONLY THE ENCLOSURE OF THE SERVICE DISCONNECTING MEANS SHALL BE CONNECTED TO A GROUNDING ELECTRODE (GROUND ROD).

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# REMSI Sketches 51-100 Sketch #83 6-52

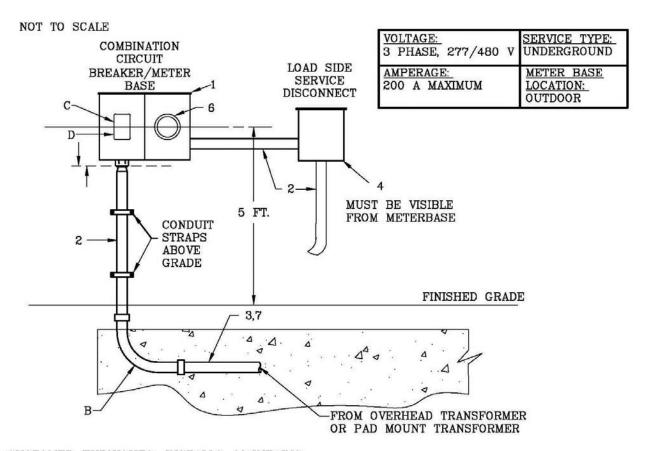
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# Sketch #83 Typical arrangement of outdoor metering equipment on building, lateral from OH or UG distribution



#### CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

- 1. COMBINATION CIRCUIT BREAKER/METER BASE. BREAKER AIC RATING SHALL BE GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. REFERENCE TABLE 4 FOR APPROVED COMBINATION CIRCUIT BREAKER/METER BASE INFORMATION. MAXIMUM CONDUCTOR SIZE 350 KCMIL.
- 2. CONDUCTORS IN GRAY SCHEDULE 40 PVC OR RIGID OR INTERMEDIATE STEEL CONDUIT (SEE RULE 5).
- 3. CUSTOMER INSTALLED CONDUIT SYSTEM CAN BE EITHER, DIRECTLY BURIED STEEL OR PVC (SEE NOTE B) ENCASED IN CONCRETE FOR THE FULL LENGTH OF THE RUN.
- 4. CUSTOMER'S SERVICE EQUIPMENT SHALL INCLUDE A CIRCUIT BREAKER OR DISCONNECT (FUSED OR UNFUSED) THAT IS VISIBLE FROM THE METER AND NO MORE THAN 10 FEET FROM THE METER.
- 5. LINE SIDE BREAKER AND LOAD SIDE DISCONNECT SHALL BE LABELED AS SUCH BY CONTRACTOR OR BUILDING OWNER. BREAKER DISCONNECT AND METER BASE SHALL ALSO BE LABELED WITH "480V" AND WITH THE SPACE OR UNIT# BY THE EQUIPMENT.

\*REFERENCE CRS 6-15-180, CRS 6-18-115, SKETCH 55, SKETCH 55A

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# REMSI Sketches 51-100 Sketch #83 6-52

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# Sketch #83 Typical arrangement of outdoor metering equipment on building, lateral from OH or UG distribution (cont.)

PPL EU FURNISHES, INSTALLS, MAINTAINS:

- 6. METER CL200 (200A)
- 7. SERVICE LATERAL CONDUCTORS INSTALLED INSIDE OF CUSTOMER SUPPLIED CONDUIT TERMINATING ON LINE SIDE CIRCUIT BREAKER.

### NOTES:

- A. PPL EU WILL SPECIFY CONDUIT SIZE FROM TRANSFORMER TO LINE SIDE CIRCUIT BREAKER/METER BASE AND PROVIDE AIC.
- B. 36 INCH RADIUS ELBOW MUST BE STEEL IN ALL CASES. IF JOINED TO PVC, THE JOINT AND LOWER HALF OF ELBOW SHALL BE ENCASED IN CONCRETE.
- C. CUSTOMER RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- D. PPL EU RESPONSIBILITY TO MAINTAIN TO THIS POINT.
- E. IF DIRECT BURIED STEEL, CUSTOMER EXCAVATES, PROVIDES SELECT BACKFILL, TAMPS IN LAYERS OVER DISTURBED EARTH NEAR BUILDING FOUNDATION TO HELP PREVENT DAMAGE TO SERVICE ENTRANCE EQUIPMENT DUE TO GROUND SETTLING AND RESTORES SURFACE OF TRENCH FROM BASE OF POLE TO BUILDING.
- F. ALL EQUIPMENT MUST BE SECURELY MOUNTED TO 2" NOMINAL LUMBER OR MASONRY CONSTRUCTION.
- G. 50" MINIMUM CLEARSPACE IN FRONT OF METER BASE. SEE RULE 13, SKETCH 55 AND SKETCH 55A (SIDE VIEW).
- H. ALL 240/480 VOLT AND 277/480 VOLT SERVICES SHALL BE INSTALLED PER THE NATIONAL ELECTRIC CODE AND ANY OTHER APPLICABLE CODE.
- I. THE LINE SIDE BREAKER IS TO FACILITATE METER MAINTENANCE, AND IS NOT CONSIDERED THE SERVICE DISCONNECTING MEANS AS DEFINED BY THE NEC.
- J. THE GROUNDED (NEUTRAL) SERVICE CONDUCTOR SHALL BE BONDED TO EACH OF THE FOLLOWING ENCLOSURES: THE LINE SIDE BREAKER. THE METER BASE, AND THE LOAD SIDE DISCONNECT. ONLY THE ENCLOSURE OF THE SERVICE DISCONNECTING MEANS SHALL BE CONNECTED TO A GROUNDING ELECTRODE (GROUND ROD).

\*REFERENCE CRS 6-15-180, CRS 6-18-115, SKETCH 55, SKETCH 55A

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

**Rules:** 5, 6, 11A, 13, 14

**Date:** 7/18/16 **Engr:** NAP

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# REMSI Sketches 51-100 Sketch #90 6-52

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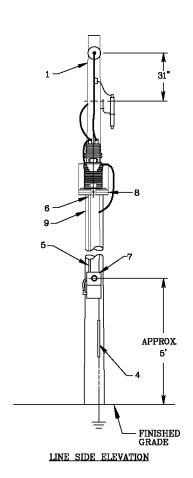
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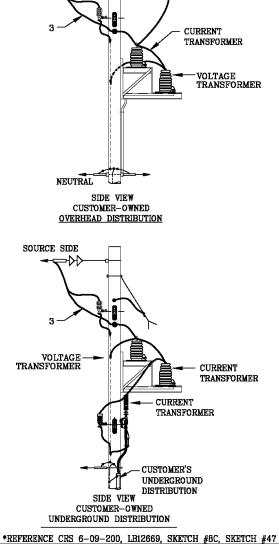
# Sketch #90 Typical arrangement of single phase outdoor metering equipment on customer-owned meter pole, 7.2kv or less

NOT TO SCALE



VOLTAGE: 1 Phase, 7,200V	SERVICE TYPE: Overhead & Underground
CUSTOMER LOAD: 1 MVA Maximum	METER BASE LOCATION: Outdoor

SOURCE SIDE



RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

**Rules:** 7, 8, 18

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**Date:** 3/22/16 **Engr:** NAP



## REMSI Sketches 51-100 Sketch #90 6-52

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# Sketch #90 Typical arrangement of single phase outdoor metering equipment on customer-owned meter pole, 7.2kv or less (cont.)

#### CUSTOMER FURNISHES, INSTALLS, MAINTAINS:

- 1. WOOD POLE (CLASS 4 MIN., SEE SKETCH #47), INCIDENTAL EQUIPMENT, WIRING AND GROUNDING SYSTEM, GUYING.
- 2. OVERHEAD LINE FROM DISCONNECT ON CUSTOMER-OWNED SERVICE POLE, SEE SKETCH #32. MAXIMUM ALLOWED TENSION PER CONDUCTOR-2000 LBS.
- 3. LINE AND LOAD SIDE LIGHTNING ARRESTERS.
- 4. SERVICE GROUND SIZED AND PROTECTED PER NEC ARTICLE 250- GROUNDING.
- 5. 1-1/4 INCH MINIMUM, THREADED, GALVANIZED, RIGID OR INTERMEDIATE STEEL OR SCHEDULE 40 PVC CONDUIT AND FITTINGS BETWEEN 8 INCH BY 8 INCH BY 4 INCH WEATHER TIGHT JUNCTION BOX AND METER PANEL.
- 6. 1 INCH FLEXIBLE CONDUIT AND FITTINGS BETWEEN TRANSFORMERS AND 8 INCH BY 8 INCH BY 4 INCH TRANSFORMERS AND 8 INCH BY 4 INCH WEATHER TIGHT JUNCTION BOX.

#### PPL EU FURNISHES, MAINTAINS; CUSTOMER INSTALLS:

- 7. METER PANEL (SEE SKETCH #8C).
- 8. INSTRUMENT TRANSFORMERS AND MOUNTING STEEL

### PPL EU FURNISHES, INSTALLS, MAINTAINS:

9. WIRING BETWEEN INSTRUMENT TRANSFORMERS AND METER PANEL.

## NOTES:

1. POINT OF CONTACT (POC) IS CONTAINED IN THE PPL EU DOCUMENT "POINT OF CONTACT REQUIREMENTS FOR HIGH VOLTAGE CUSTOMER-OWNED FACILITIES 12KV SUPPLY."

\*REFERENCE CRS 6-09-200, LB12669, SKETCH #8C, SKETCH #47

RULES FOR ELECTRIC METER AND SERVICE INSTALLATIONS

PPL ELECTRIC UTILITIES CORPORATION

**Rules:** 7, 8, 18

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