



ELECTRIC
SERVICE
HANDBOOK

Revised – July 2006



Electric Construction
Title: Electric Service Handbook

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Introduction

This handbook is published to give customers, architects, engineers, builders, and electrician's general information about routine electric service to new and remodeled buildings. It also provides information regarding the installation of electrical equipment to be serviced from DP&L's electric distribution system.

The information is based on accepted standards in the industry. It is intended to ensure safe, quality, uniform and economical service to our customers.

This booklet is not all inclusive. For situations not covered, contact DP&L Construction Control center for the appropriate area.

This Handbook is in addition to and is intended to be in conformance with the Schedule of Rates, Classifications, Rules and Regulations of the company as filed with the Public Utilities Commission of Ohio (PUCO). This handbook is also intended to be in conformance with the National Electrical Safety Code (NESC).



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DP&L Offices

DP&L furnishes electric service throughout West Central Ohio. Information about service can be obtained from any of the following service centers:

North Construction Control Center (North of I-70)

2385 Campbell Road

Sidney, OH 45365

Phone: 937-498-1237

Toll Free: 800-357-5215

South Construction Control Center (South of I-70)

1900 Dryden Road

Dayton, OH 45439

Phone: 937-331-4860

Toll Free: 800-424-5578

Electric Meter Department

1900 Dryden Road

Dayton, OH 45439

Phone: 937-331-4549

Customer forms mentioned in this book and approved meter socket list can be found at www.waytogo.com.



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General Information

OBTAINING ELECTRIC SERVICE

Anyone needing new service or changes to existing service should contact the appropriate Construction Control Center to obtain an Electrical Service Information Form (ESIF). In order to assure that electric service is ready when needed, please make your requests early and keep DP&L informed of your progress.

ACCESS TO PREMISES

To provide for the best possible service, it may be necessary for DP&L representatives to enter the customer's premises during reasonable hours. Reasons include reading meters, examining and inspecting wiring, installing equipment, testing services, inspecting and repairing equipment, and removing equipment owned by DP&L. The DP&L representative will, upon request, show his company identification and state the reasons for requesting entry.

RELOCATION OF SERVICE FACILITIES

Requests by customers for relocation of electric service facilities should be made by contacting the appropriate Construction Control Center. Relocation fees could apply.

COMPLIANCE WITH CODES

All customer wiring, appliances, and services connected directly or indirectly to DP&L's service facilities will be installed to conform with the latest provisions of applicable federal, state, county, and municipal codes and/or with the provisions of the National Electrical Code (N.E.C.). Service shall not be rendered until wiring has been inspected and approved by the inspecting authority having jurisdiction. In areas where there is no inspecting authority, a "Form for Energizing Service Inspected by Electrician Customer Service Energized Upon Signature". DP&L reserves the right not to connect any service it deems unsafe. In case of apparent or actual conflict, you should contact your Area Construction Control center.

POINT OF DELIVERY

The "point of delivery" of electricity supplied by DP&L is the point where the electricity enters the service entrance conductors of the customer. This definition will apply unless otherwise specified by special contract or as shown on the following pages. DP&L designates the "point of delivery." All equipment on the load side of the "point of delivery" is owned, operated, and maintained by the customer, unless otherwise specified. The meter is always the property of DP&L.

RESPONSIBILITY AFTER ELECTRICITY IS DELIVERED

The customer will provide, install, operate, and maintain the service entrance wiring and all other wiring, appliances, and devices necessary to receive the electricity supplied from and after the point of delivery. Customer is responsible for installation of both new and replacement meter boxes.

IMPORTANT NOTICE

Where the customer installs his own electric generation equipment, it is absolutely necessary that every precaution be taken to prevent backfeeding of customers electricity into DP&L's distribution system. Occurrence of backfeeding could result in loss of equipment, serious injury or death to personnel.



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General Information

EMERGENCY AND AUXILIARY SERVICE

A customer maintaining his own electric generating equipment who desires to use DP&L's electrical service must contact the Construction Control Center for information regarding the connection and operation of his equipment.

RESIDENTIAL SERVICES

DP&L will not install secondary or primary services under, or through buildings, or walls. DP&L recommends that customers on the underground residential distribution system (URD) install UL listed Schedule 40 conduit (2.5 inches minimum) from within 2 feet of the customer's point of attachment up to within 2 feet of the supply facility.

OUPS

The Ohio Utilities Protection Service (OUPS) is a centralized source of information about underground utilities. A telephone call to OUPS will provide you with prompt identification and physical marking of underground electric, gas, telephone, and water facilities. You should use this service whenever you are going to excavate.

By simply calling OUPS two working days before digging, all member utilities in the area will be notified. The OUPS telephone number is:

1-800-362-2764

TRENCHES

Please contact OUPS before conducting any trenching. All trenches must meet DP&L clearance codes for all services as well as pertinent local, state, or national ordinances. The customer is responsible for digging and backfilling trenches on the customer property. The customer is to dig to within 2 feet of DP&L's supply facility. The customer must remove all foreign material, rocks, and sharp objects from backfill material (Refer to page **SEC 10-5-1** of this handbook for additional information on trenching). All trenches are subject to inspection by DP&L for compliance before any DP&L cable or equipment is placed into them.

SERVICE MAST

All overhead service masts will be rigid galvanized steel conduit with a minimum length of 7 feet and minimum diameter of 2.5 inches. Installations of masts other than described above must be approved by DP&L Engineering.

ELECTRICAL CONDUIT

Where required by DP&L, electrical conduit located on customer property will be supplied and installed by the customer. UL listed Schedule 40 (2.5" minimum) conduit is required under decks, paved and concrete surfaces or in unusually rocky soil.

INTERNAL METER BYPASS LEVER SWITCH

All self-contained meter sockets installed for commercial and industrial customers will have a bypass handle for each metered position. This includes multimeter centers.



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General Information

INSTALLING SIGNS, ANTENNAS, FLAG POLES, OR LIGHT POSTS

When installing signs, antennas, poles, or posts near an electrical service, the customer must comply with all applicable ordinances, codes, and DP&L standards.

All customers desiring to install any sign (including motorized signs), antenna, pole, or post within 25 feet of DP&L services (power lines, underground cable, poles, transformers, etc.) must contact the appropriate Construction Control Center.

SERVICE ENTRANCE ON OR IN BUILDINGS

Service entrance conductors will be enclosed in either an approved cable assembly or in conduit and will be exposed to view.

NUMBER DP&L SERVICES

Only one DP&L service drop or lateral will be supplied for each residential building. DP&L will only install overhead commercial and industrial service drops (one per building).

SERVICE CONNECTION

After release from state and local inspection agencies, DP&L will make the final connection between its supply equipment and the customer's service entrance equipment. DP&L will not permit unauthorized persons to make service connections.



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Metering Information

GENERAL

Meters will be furnished and installed by DP&L. Service shall not be rendered until wiring is inspected and approved by the inspecting authority having jurisdiction. In the absence of an inspecting authority, having jurisdiction, the Electrician Inspection Form must be completed. All equipment furnished by DP&L will remain DP&L property. Representative meter installation standard prints are shown in the handbook (these are subject to change). The web-site will be updated.

METER LOCATIONS

Each customer will provide, without charge to DP&L, a suitable location for meters and metering equipment. DP&L retains the right to make a final determination of the location of the meters or metering equipment on the customer's premises.

Meters should be located on the outside of the building.

When approved by DP&L, meters may be located in a basement or utility room. This location will be readily accessible during reasonable hours, lighted and free from permanent dampness, chemical fumes, or mechanical danger.

Meters will not be mounted on switchboards or metal frames unless approved by DP&L. Electric meter socket must have 3 feet horizontal clearance from a gas meter setting.

When choosing a location for metering equipment, sufficient clearance must be provided so that the doors of all cabinets and switches can be completely opened. Not less than 3 feet of clean, unobstructed space will be provided and maintained in front of all metering equipment. In the case of machinery with unguarded moving parts, changes in floor level, etc., a clear distance of 6 feet must be provided in front of all meters. A clearance of at least 6 inches must be provided between the nearest obstruction above and on each side of any single meter or group of meters. When meters are mounted in a group and space is limited, special layouts must be obtained from DP&L before proceeding with the installation of equipment.

METER INSTALLATIONS

The type of meter installation to be installed will be determined by the size and character of the customer's load and the type of service to be supplied.

DP&L's meter equipment will be installed to conform to specifications and drawings prepared by DP&L. DP&L will be consulted on all commercial, industrial, center pole, and grouped meter installations.

METER SOCKETS AND METER BOXES

For all new and reconstructed alternating current service installations, meter sockets and meter boxes will be furnished and installed by the customer. Unless otherwise designated and approved by DP&L, the meter will be connected on the supply side of the customer's service equipment.



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Metering Information

Where meter sockets, meter boxes, and similar equipment are mounted on the outside of the structure, additional backing will be provided for securing this equipment to the siding unless equipment mounting screws are set into the studding. Screws installed in soft wood siding and siding shingles backed with insulating board or similar material are not considered securely anchored. Equipment mounted on brick, stone, concrete, concrete block, hollow tile, or plastered walls are not considered securely fastened unless installed with toggle bolts, screws set in metal anchors or expanded shields.

In general, meter socket, service equipment, and meter installation equipment will be arranged so that the top of the meter socket is not more than 66 inches nor less than 42 inches from the floor or ground line. Exceptions may be made where this is not practical.

METER BOARD

Where meter sockets, meter boxes, and similar equipment are mounted indoors and a meter board is required, the meter board will be provided by the customer. The meter board will be good quality solid lumber or plywood (at least $\frac{3}{4}$ inch nominal thickness) fastened rigidly to the wall in a vertical position. When mounting in basements or other areas subject to moisture, an air space must be provided between the meter board and the wall.

All electrical contractors or electricians are required to put their name, address, and telephone number on the meter board. This information will enable DP&L to contact them, if necessary.

METER CENTERS

It is recommended that the customer consult with DP&L when prefabricated meter centers are being considered for a grouped meter installation. Such equipment will be furnished and installed by the customer only after DP&L gives specific approval of the meter center. All single-phase and three-phase commercial grouped meter centers will have a bypass handle for each meter. See "Approved Meter Socket" on website.

GROUPED METER INSTALLATIONS

Where two or more customers occupying the same building are served by separate meters, and a suitable location accessible to all customers is available, all meters may be grouped together.

Where meters are grouped together, the installer must permanently tag each service to indicate which portions of the building are supplied by each service before service will be established.

UNMETERED CONDUCTORS

Unmetered conductors will not be permitted in any raceway, pull-box, distribution panel, or similar device containing metered conductors.

DP&L reserves the right to restrict the use of certain fittings and cabinets in raceways containing unmetered conductors.



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Metering Information

INSTRUMENT TRANSFORMERS

Instrument transformers, where required for service installations metered at secondary voltages, will be furnished by DP&L and installed by the customer.

The secondary wiring of metering transformers normally will be furnished and installed by DP&L. However, in certain cases DP&L may require the customer to install secondary wiring furnished by DP&L. All final wiring connections to meters, associated metering equipment, and metering transformers will be made by DP&L.

INSTRUMENT TRANSFORMER CABINETS

Approved metal or PVC cabinets enclosing instrument transformers will be furnished and installed by the customer. Cabinets and installation practices must meet DP&L specifications.

The customer may, after DP&L's approval, install instrument transformers in metal-clad switchgear if a separate, sealable cubicle or compartment is provided and the transformers are installed so they can be readily replaced. The minimum size for a single phase instrument transformer cabinet is 24" x 32" x 10" (H x W x D). The minimum size for a three phase instrument transformer cabinet is 32" x 36" x 10" (H x W x D). Cabinet to be mounted a minimum of 18" from final grade.

The meter mountings or meters will not be installed in or on metal-clad switchgear. The customer will furnish and install a 1.25-inch minimum rigid rated conduit between the instrument transformer compartment and the meter mounting for the metering cable.

Instrument transformer cabinets will not be used as junction boxes. Service conductors will enter and leave the cabinet as one circuit regardless of the number of conductors per phase. When approved by DP&L, instrument transformers may be installed at the service head of overhead services. In such cases, they can be mounted on a pole, service mast, or building wall at a height not to exceed 22 feet.

METERING OVER 600 VOLTS

Contact the appropriate Construction Control Center.

DP&L will not permit any metering equipment to be installed on or in any Pad Mount Transformers.

SEALING OF METERS AND DEVICES

DP&L will seal all meters and all enclosures that contain meters, associated metering equipment, DP&L controlled load interrupting devices, or unmetered wiring. DP&L will not permit unauthorized persons, to break meter seals, or open any wires or switches in connection with the meter wiring and service facilities.



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Distribution Systems Available

GENERAL

The customer should consult with the appropriate Construction Control Center for a service location and the type of service available. DP&L's response should be received before purchasing electrical equipment for a new service, addition, or modification of an existing service, or before moving equipment to a new service address.

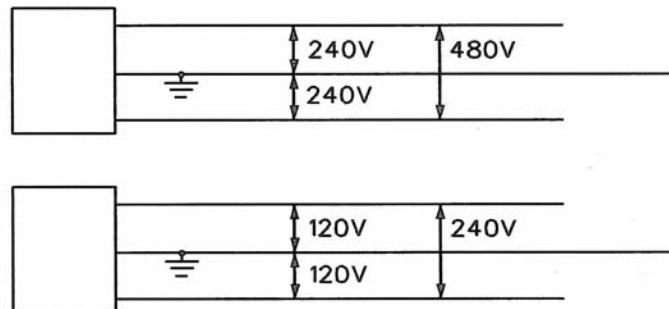
Failure to contact DP&L may result in the purchase or installation of electrical equipment that cannot be used at a specific location.

DP&L furnishes many different types of electrical service to our customers. Some things that determine the type of service furnished to a customer are the location in DP&L's territory, the size of the load, and the customer's electrical equipment. Some types of service may not be available at a specific location.

A description of the types of service and their use follows. All voltages and frequencies are listed as nominal per the current American National Standards Institute (ANSI) standard.

ALTERNATING CURRENT SERVICE

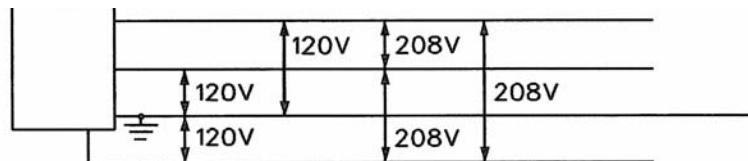
A. 120/240 volt or 240/480 volt, 60 hertz (cycles per second), single phase, three-wire service.



This service is available to all residential, commercial, industrial, and governmental customers. The customer must consult DP&L about service to single phase motors exceeding 5 horsepower.

This service is limited to a customer load of 300 KVA or smaller.

B. 120/208 volt, 60 hertz (cycles per second), three phase, four wire, wye service. 277/480 volt, 60 hertz, three phase, four wire, wye service.





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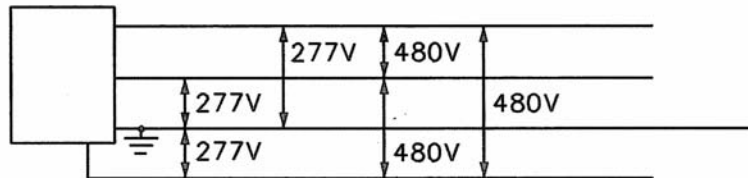
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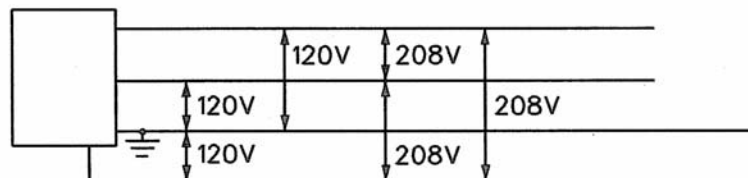
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Distribution Systems Available



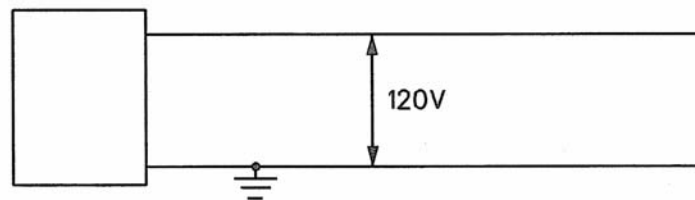
These services are available to commercial, industrial, and governmental customers at DP&L's option.

B. 120/240 volt, 60 hertz (cycles per second), three-phase, four wire delta.



This service is available to commercial, industrial, and governmental customers at DP&L's option.

A. 120 volt, 60 hertz (cycles per second), single phase, two wire service.



ALTERNATING CURRENT SERVICE - HIGHER VOLTAGES

Services above 600 volts are available at DP&L's option.

Contact the appropriate Construction Control Center.



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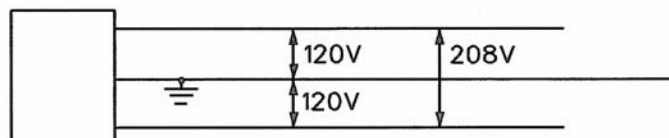
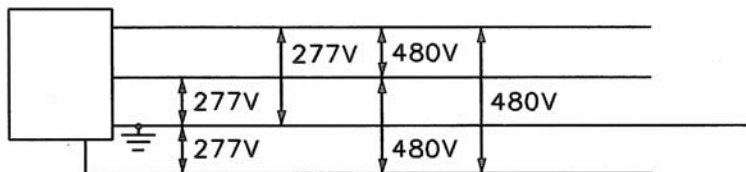
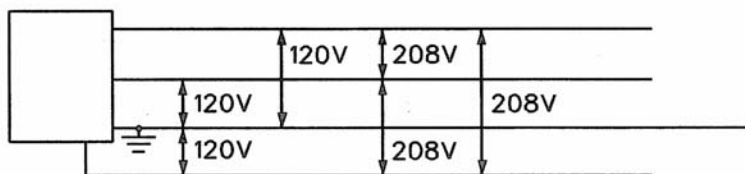
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Distribution Systems Available

ALTERNATING CURRENT SERVICE – CENTRAL BUSINESS DISTRICT, Dayton/Troy

277/480 volt, three phase, four wire wye; 120/208 volt, three phase four wire wye; and 120/208 volt, single phase, three wire services are available at DP&L's option in the downtown Dayton/Troy area.



NETWORK ELECTRIC SERVICE

All new and upgraded single phase and three phase electric services originating from the 120/208Y networks or the 277/480Y spot networks on the DP&L Co. systems shall be constructed with a properly rated load break disconnect switch purchased and installed by the customer on the line side of their meter.

Each of these new or upgraded services energized from the network system shall be installed in a customer owned, U.L. approved wire-way from a DP&L Co. designated manhole or pull-box to the disconnect switch. The conduit wire-way shall be laced and sized to accommodate the service conductor owned and installed by the DP&L Co.

When an electric service originates from a network transformer vault which contains a network transformer and/or voltage bus-work, the customer shall be responsible for all conduit and electrical conductor from this vault to the main service disconnect switch.



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Service Installations

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GENERAL

DP&L is interested in ensuring that quality electrical service is established in a timely and safe manner. Before electrical work is started on a residential, commercial, industrial, or governmental building, it is required that the owner, developer, or electrical contractor consult with the appropriate Construction Control Center to obtain an Electric Construction Packet. DP&L will answer questions regarding metering, ownership, and installation responsibilities, available fault current, rates, motor starting limitations, and other concerns based on the information from the Electric Construction packet.

The customer's service entrance installation shall conform to the latest edition of the National Electrical Code (N.E.C.) and the information in this handbook.

DP&L UNDERGROUND RESIDENTIAL SERVICES IN CONDUIT

It is recommended that conduit be installed for underground services. Conduit should be buried with a minimum of 24 inches cover. The conduit should be installed in as straight a line as possible. Two 90 degree bends of 36-inch radius each are the maximum number allowed in each run of conduit unless DP&L Engineering approves alternatives. All conduit rising above grade subject to physical damage must be schedule 80 or equivalent.

DP&L will not install cable into any conduit that is not UL listed.

Refer to N.E.C. for rules and regulations for grounding services at meter socket. Refer to N.E.C. for rules and regulations for the allowable number of disconnects per building.

Direct buried cable owned by DP&L will have a minimum of 24 inches of cover for cable rated 0 to 600 volts and a minimum cover of 30 inches for cable rated 601 to 50,000 volts. Where the surface is not to final grade or uniformly even, such as a slope, the cable shall be installed to meet the 30 inch cover at time of installation and subsequent thereafter.

CONDUIT SIZING FOR UNDERGROUND SERVICES

The following table contains information on conduit sizes. DP&L's Engineering department may be contacted for additional information or questions.

Verification of any DP&L cable to be placed in customer conduit is required before customer installs conduit.

Multi Conductor Secondary Description	# of Multi-conductor Sets	
	1	2
	Conduit Size (inches)	
TRI 1/0-2 3/C AL	2½	3
TRI 4/0-2/0 3/C AL	2½	4
TRI 350 MCM-4/0 3/C AL	3	4
QUAD 4/0 4/C AL	3	4
QUAD 350 MCM 4/C AL	3	4
QUAD 500 MCM 4/C AL	3	5



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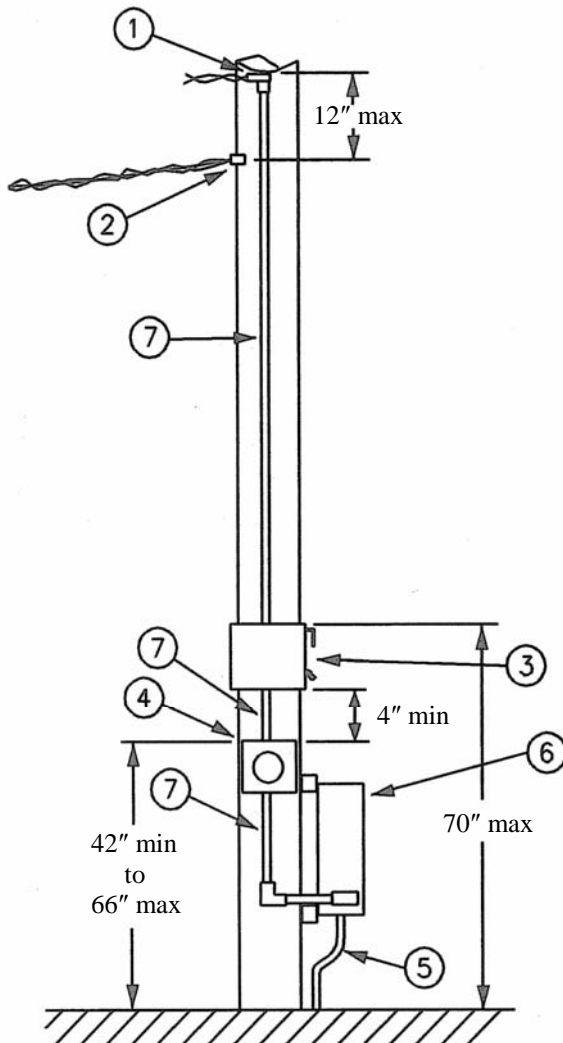
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Pole Mounted Metering for (3W, 480V) Service



1. Service head shall be a maximum of 12" above the clevis. The minimum length of conductors out of the service head shall be 24".
2. Service drop furnished and installed by DP&L. DP&L will furnish the clevis and the customer will install it. DP&L will provide information on height, number, and direction of clevis. DP&L will make final connection of service drop to customer conductors.
3. A two-pole non-fused disconnect switch should be mounted no higher than 70" above the ground.
4. Meter socket to be furnished and installed by customer. DP&L will furnish and install the meter.
5. Power supply to customer load per National Electric Code.
6. Customer equipment.
7. Service entrance per National Electric Code

NOTES:

- A. DP&L to specify the location and size of pole.

All items shown, except as indicated, to be supplied by customer.



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Installation of Customer Antennas and Other Devices

CAUTION: DANGER OF ELECTROCUTION

No customer antennas or other devices shall be connected to DP&L's lines, poles, crossarms, or other facilities. All antennas erected by the customer shall have a minimum clearance of eight feet from DP&L's nearest conductor and installed to avoid the possibility of the antenna falling into or making accidental contact with such conductors. The customer should avoid the erection of an antenna within close proximity to an electric line and should consult with DP&L in those cases where there is any question as to the clearance of the nearest electric line. The customer should also consult with local authorities concerning permits and regulations.





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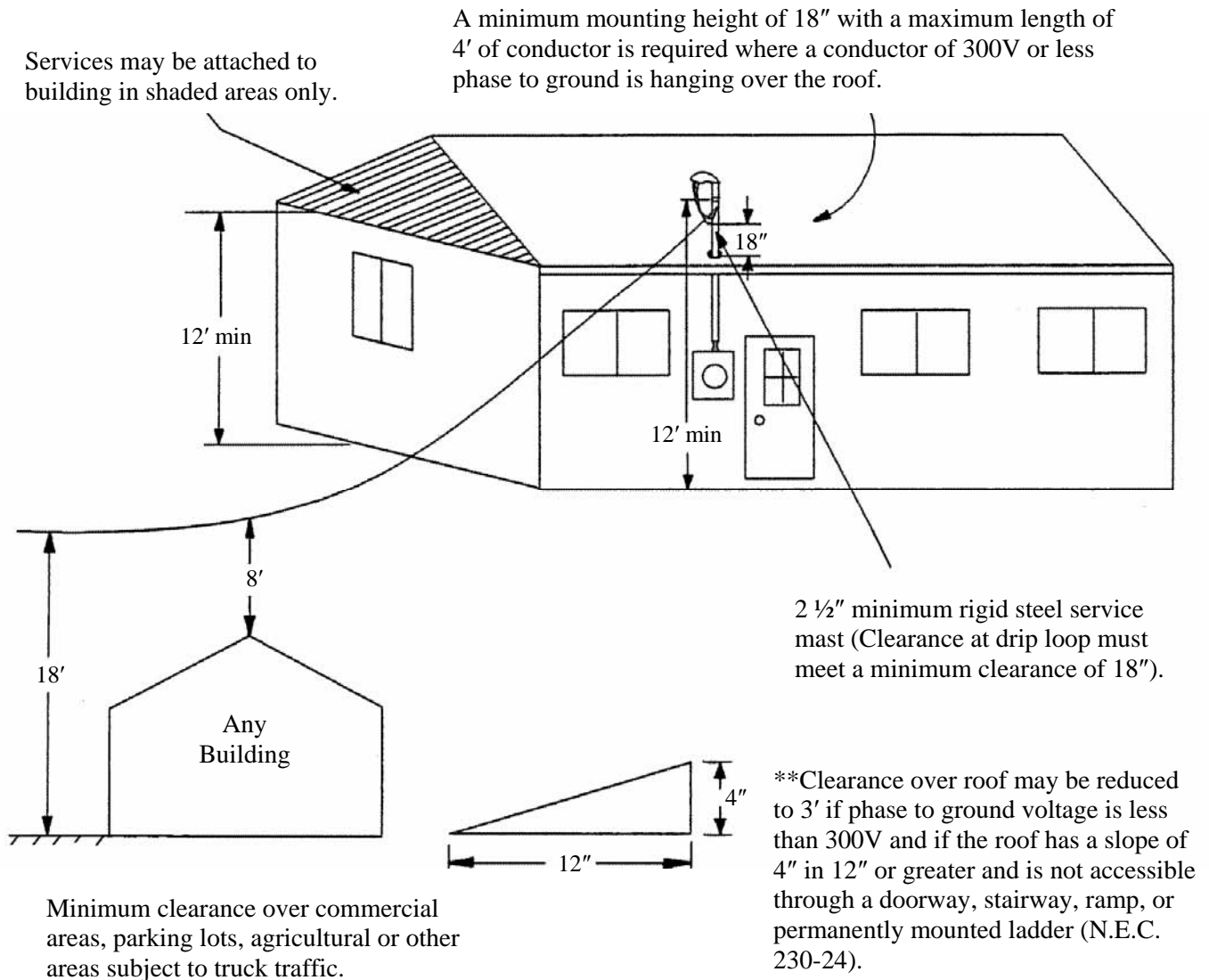
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Overhead Services – Under 600V



Note: All clearances shown are minimum clearances per N.E.C. for the service drop conductors. The sag in the service drop conductors must be considered when installing service attachment.



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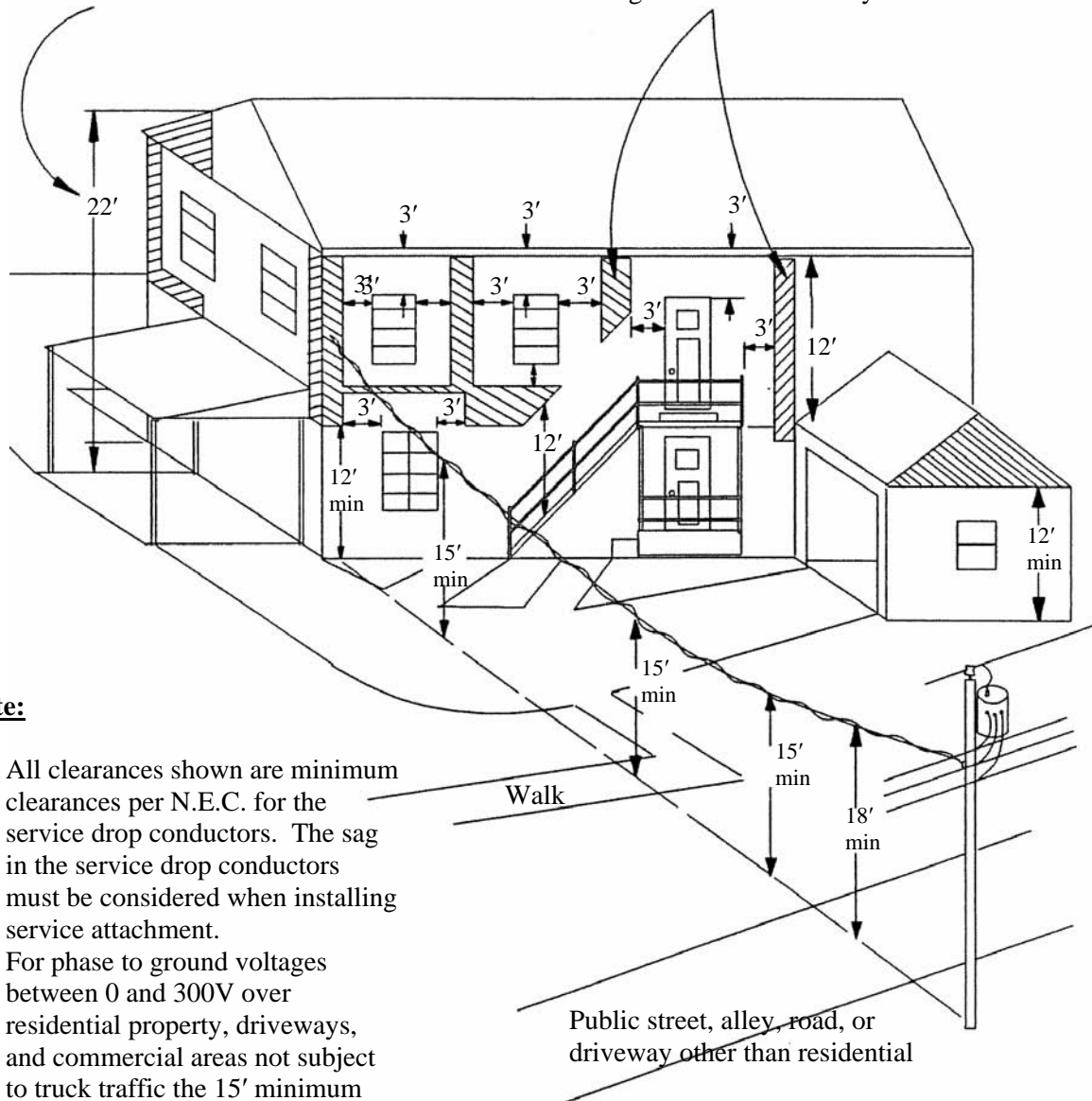
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Overhead Services – Under 600V

Maximum allowable mounting height for any service drop.

Services may be attached to building in shaded areas only



Note:

- All clearances shown are minimum clearances per N.E.C. for the service drop conductors. The sag in the service drop conductors must be considered when installing service attachment.
- For phase to ground voltages between 0 and 300V over residential property, driveways, and commercial areas not subject to truck traffic the 15' minimum clearance may be reduced to 12'.
- Point of attachment shall not be located in an area that cannot be accessed from a ground based ladder.



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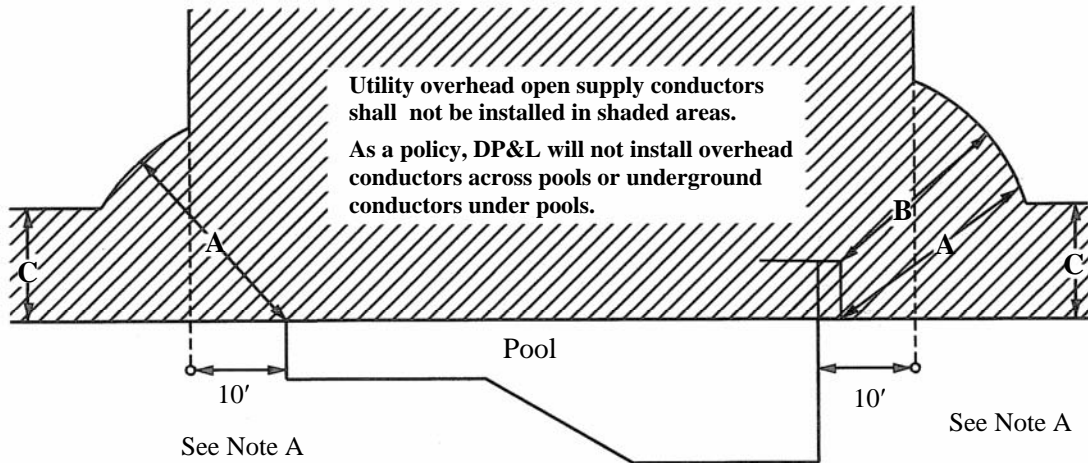
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Swimming Pool Clearances to Open Supply Conductors



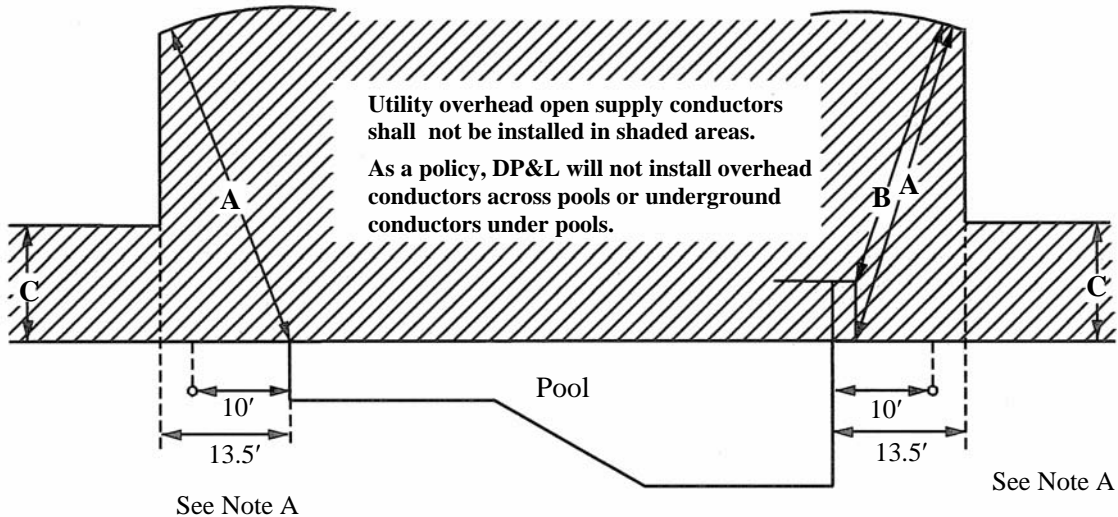
	CASE	* OPEN WIRE 0-750V	* OPEN WIRE AND CABLE 751V TO 50KV
A.	Clearance in any direction from the water level, edge of pool, base of diving platform, or anchored raft.	23 FT.	25 FT.
B.	Clearance in any direction to the diving platform or tower.	15 FT.	17 FT.
C.	Vertical clearance over adjacent land	Refer to Standard Section 22	

(Voltages are Phase to Ground)

- These minimum clearances meet the NESC requirements.

NOTES:

- Overhead supply cables should not be installed over a swimming pool or in the area extending 10' beyond inside walls of the pool or its auxiliary equipment. 5' is permissible for underground conductors but local codes may dictate 10'.
- Local ordinances or rules may be more stringent than these requirements.

**Swimming Pool Clearances to Triplexed Cable**

	CASE	* TRIPLEXED CABLE 0-300V GUY & MESSENGERS
A.	Clearance in any direction from the water level, edge of pool, base of diving platform, or anchored raft.	22.5 FT.
B.	Clearance in any direction to the diving platform or tower.	14.5 FT.
C.	Vertical clearance over adjacent land.	Refer to Standard Section 22

(Voltages are Phase to Ground)

* These minimum clearances meet the NESC requirements.

NOTES:

- A. Overhead supply cables should not be installed over a swimming pool or in the area extending 13.5' beyond inside walls of the pool or its auxiliary equipment. 5' is permissible for underground conductors but local codes may dictate 10'.
- B. Local ordinances or rules may be more stringent than these requirements.



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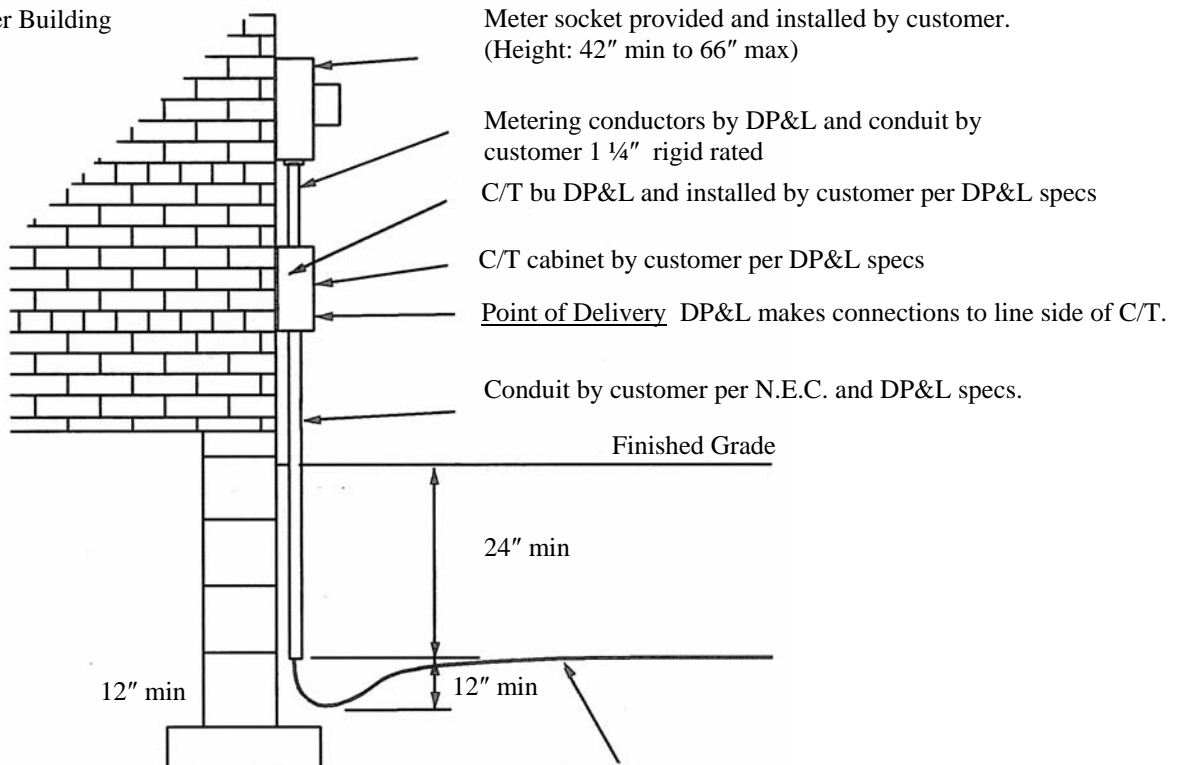
Rev. Jul-06

Replaces:

Aug-95

Residential URD Secondary Service Transformer Rated Metering

Customer Building



Meter socket provided and installed by customer.
(Height: 42" min to 66" max)

Metering conductors by DP&L and conduit by
customer 1 1/4" rigid rated

C/T bu DP&L and installed by customer per DP&L specs

C/T cabinet by customer per DP&L specs

Point of Delivery DP&L makes connections to line side of C/T.

Conduit by customer per N.E.C. and DP&L specs.

Finished Grade

24" min

12" min

12" min

See Section 98 for installation
requirements of secondary conductors

Note:

The customer provides duct for DP&L
conductors, if required. Under concrete,
paved surfaces and decks.



Electric Construction

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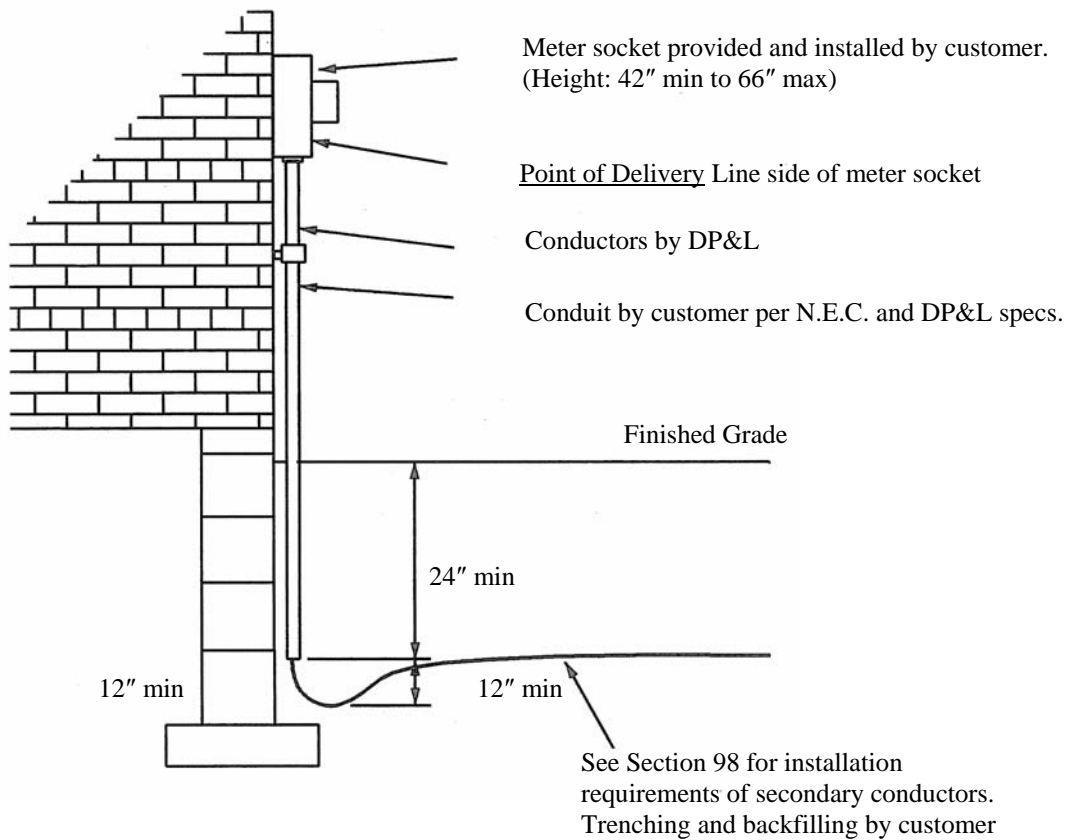
Rev. Jul-06

Replaces:

Aug-95

Residential URD Secondary Service Self Contained Metering

Customer Building

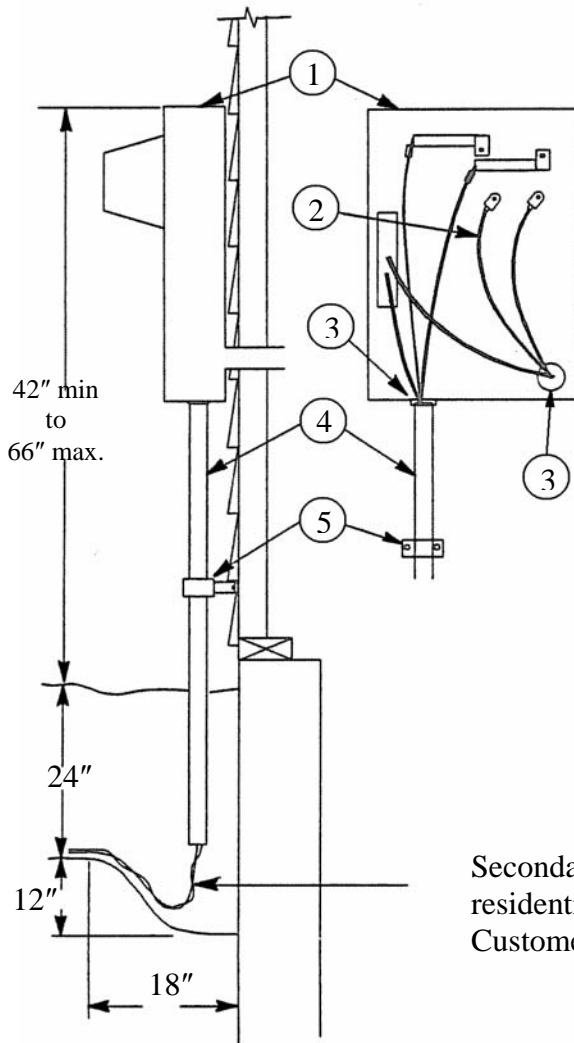


Note:

The customer provides duct for DP&L conductors, if required. Under concrete, paved surfaces and decks.



Residential 400 AMP and Smaller (1Ø, 3W, URD)



1. Meter socket provided and installed by customer.
2. Customer conductors, sized per N.E.C. to be determined by an electrician
3. Approved box connector per N.E.C.
4. 2 1/2" minimum rigid conduit or PVC per N.E.C. and DP&L specifications. The conduit shall be continuous without splices and installed by customer on the left side of the bottom of meter socket.
5. Pipe strap as per N.E.C.

Secondary conductor provided and installed by DP&L for residential, see Section 98, "Trenching and Backfilling by Customer".

Note:

- A. 3" conduit or PVC required for services larger than 200 AMP.
- B. Incoming line side wires must be connected to high side of meter – not reversed.



Electric Construction

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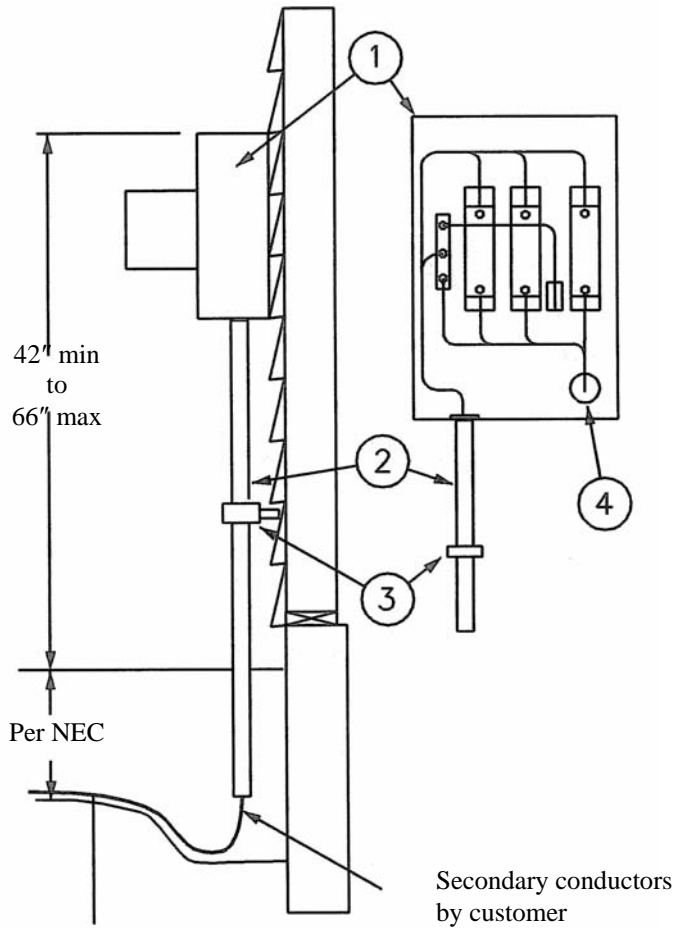
Page No: **SH-10-020-02**

Rev. Jul-06

Replaces:

Aug-95

200 AMP and Smaller (3Ø, 4W, WYE, URD)



1. Meter socket provided and installed by customer. Wire terminations by electrician
2. Customer provides and installs conduit per N.E.C.
3. Pipe straps as per N.E.C.
4. Box connector as per N.E.C.



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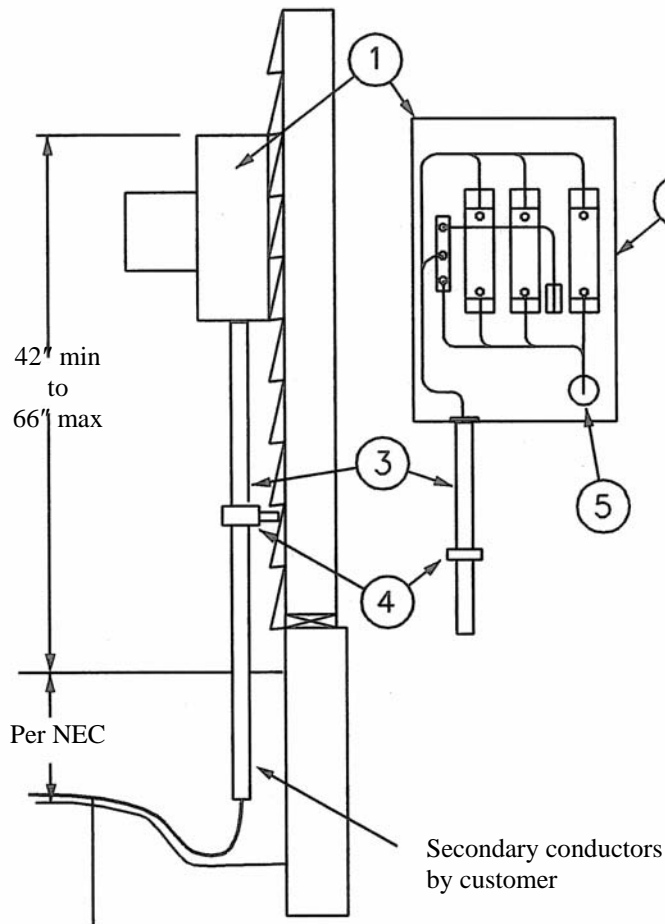
Page No: **SH-10-020-03**

Rev. Jul-06

Replaces:

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200 AMP and Smaller (3Ø, 4W, DELTA, URD)



1. Meter socket provided and installed by customer. Wire terminations by electrician.
2. High phase (208 volts to ground) to be identified orange and located on the right hand side terminal of meter socket.

Note: This same phase must be located in the center position of the main disconnect as per N.E.C.

3. Customer provides and installs conduit per N.E.C.
4. Pipe strap as per N.E.C.
5. Box connector as per N.E.C.

Note: Due to way electric meter manufacturer configure the meter internally necessitates the Phase (208 Volts to Ground) to be on the right hand side of the meter socket

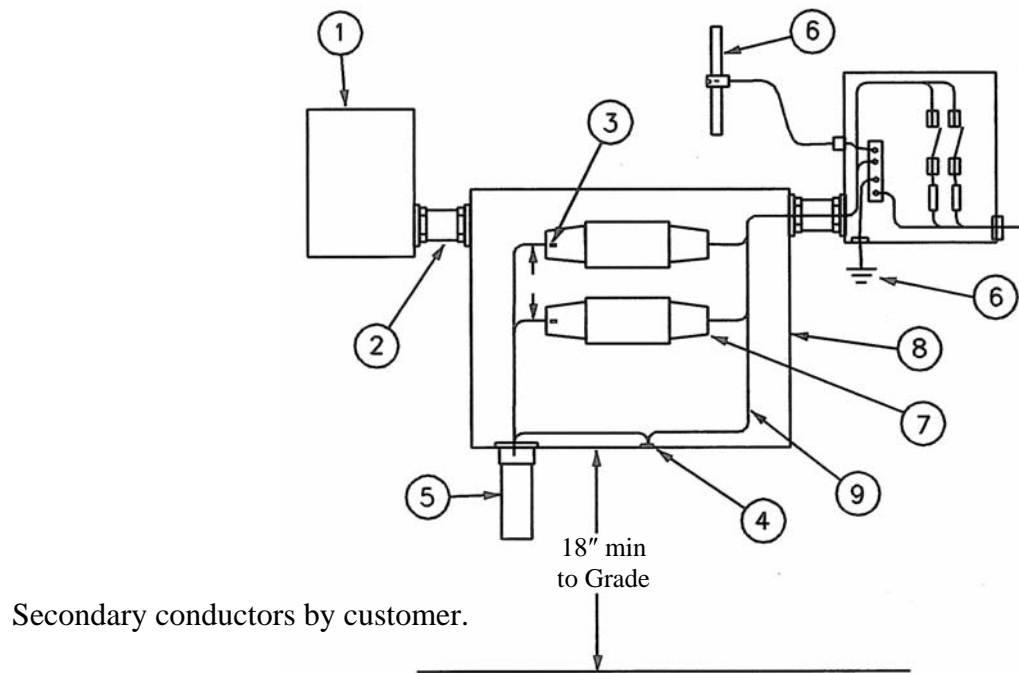


401 to 1200 AMP with Current Transformer (1Ø, 3W, URD)

1. Meter enclosure provided and installed by customer.
2. 1-1/4" rigid rated conduit per DP&L. All metal raceways to be bonded per NEC.
3. White polarity markings (install as shown).
4. Neutral shall be lugged to bottom of cabinet.
5. 3" minimum rigid conduit or PVC per N.E.C. and DP&L specifications. The conduit shall be continuous and installed by customer.

NOTE: Number 5 does not apply to commercial services.

6. Grounding conductors as per N.E.C.
7. Current transformers furnished by DP&L and installed by customer. Current transformers shall be securely mounted to the 0.75" (3/4 inch) thick exterior grade wood backing board in the cabinet.
8. 24" X 32" X 10" minimum C/T cabinet by customer per DP&L specifications.
9. Secure conductor to 0.75" (3/4 inch) thick exterior grade wood backing board in the cabinet as needed.





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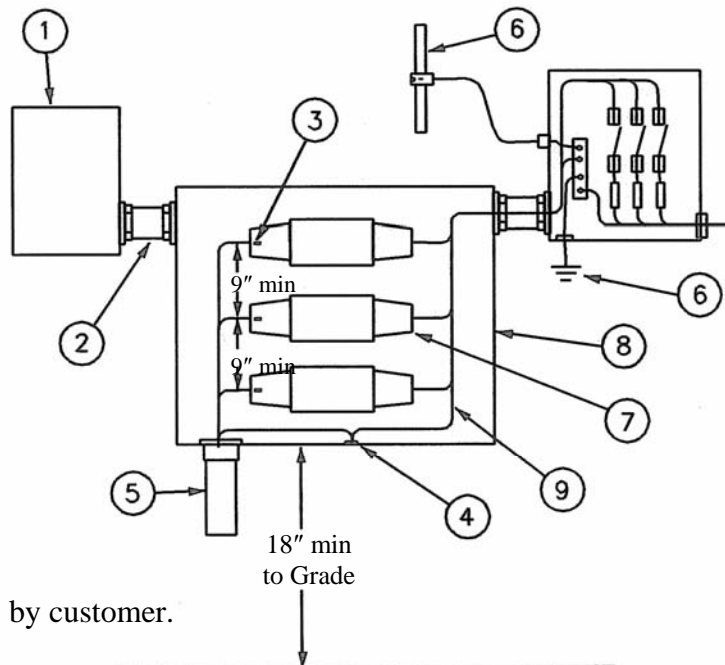
Rev. Jul-06

Replaces: 10-3-3

Aug-95

201 to 1200 AMP with Current Transformer (3Ø, 4W, WYE, URD)

1. Meter enclosure provided and installed by customer.
2. 1-1/4" rigid rated conduit per DP&L. All metal raceways to be bonded per NEC
3. White polarity markings (install as shown).
4. Neutral shall be lugged to bottom of cabinet.
5. Conduit per N.E.C.
6. Grounding conductors as per N.E.C.
7. Current transformers furnished by DP&L and installed by the customer. Current transformer shall be securely mounted to the 0.75" (3/4 inch) thick exterior grade wood backing board in the cabinet.
8. 32" X 36" X 10" minimum C/T cabinet by customer per DP&L specifications.
9. Secure conductor to 0.75" (3/4 inch) thick exterior grade wood backing board in the cabinet as needed.



Secondary conductors by customer.



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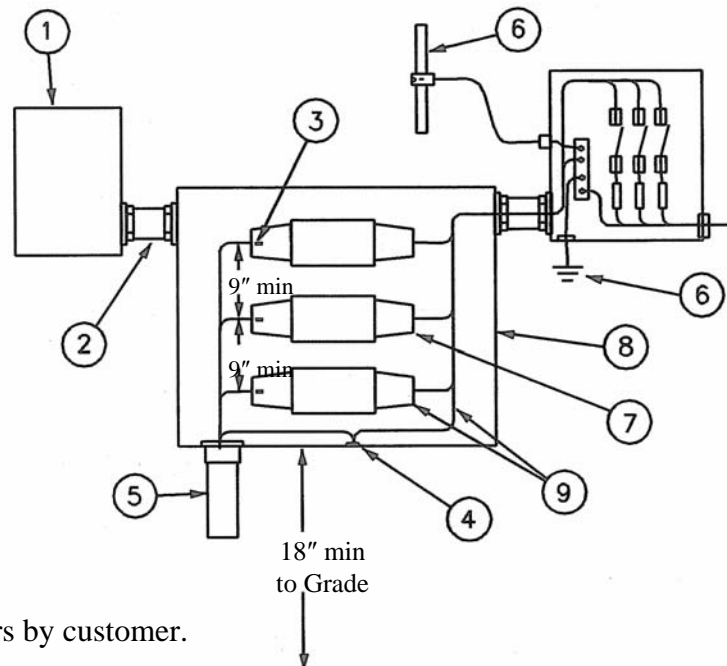
Rev. Jul-06

Replaces: 10-3-5

Aug-95

201 to 1200 AMP with Current Transformer (3Ø, 4W, DELTA, URD)

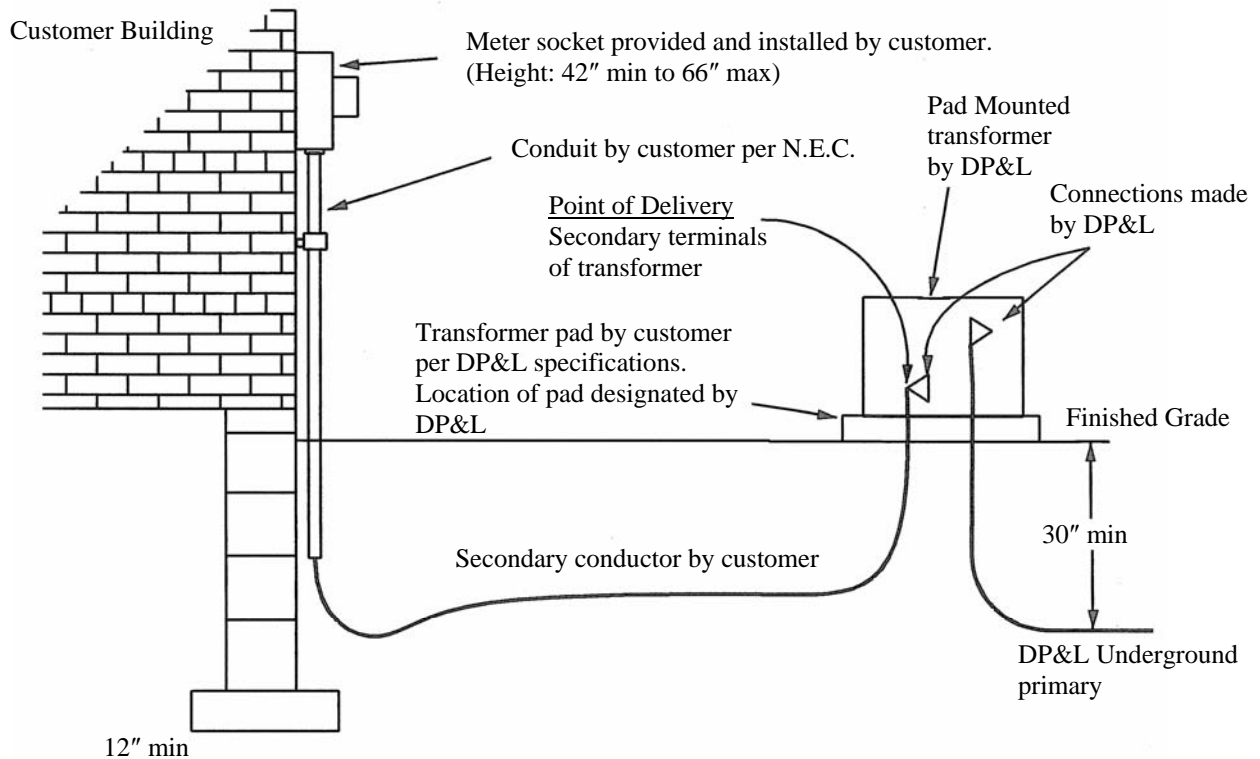
1. Meter enclosure provided and installed by customer.
2. 1-1/4" rigid rated conduit per DP&L. All metal raceways to be bonded per NEC
3. White polarity markings (install as shown).
4. Neutral shall be lugged to bottom of cabinet.
5. Conduit per N.E.C.
6. Grounding conductors per N.E.C.
7. Current transformers furnished by DP&L and installed by customer. Current transformers shall be securely mounted to 0.75" (3/4 inch) thick exterior grade wood backing board in cabinet.
8. 32" X 36" X 10" minimum C/T cabinet by customer per DP&L specifications.
9. High phase to be identified orange and located on bottom.



Secondary conductors by customer.



**Pad Mounted Transformer 1Ø Self-contained Commercial
Meter Installation**



NOTES:

- A. The customer provides ducts if required for DP&L conductors.
- B. DP&L may require a padmounted splice box to accommodate multiple conductors.



Electric Construction

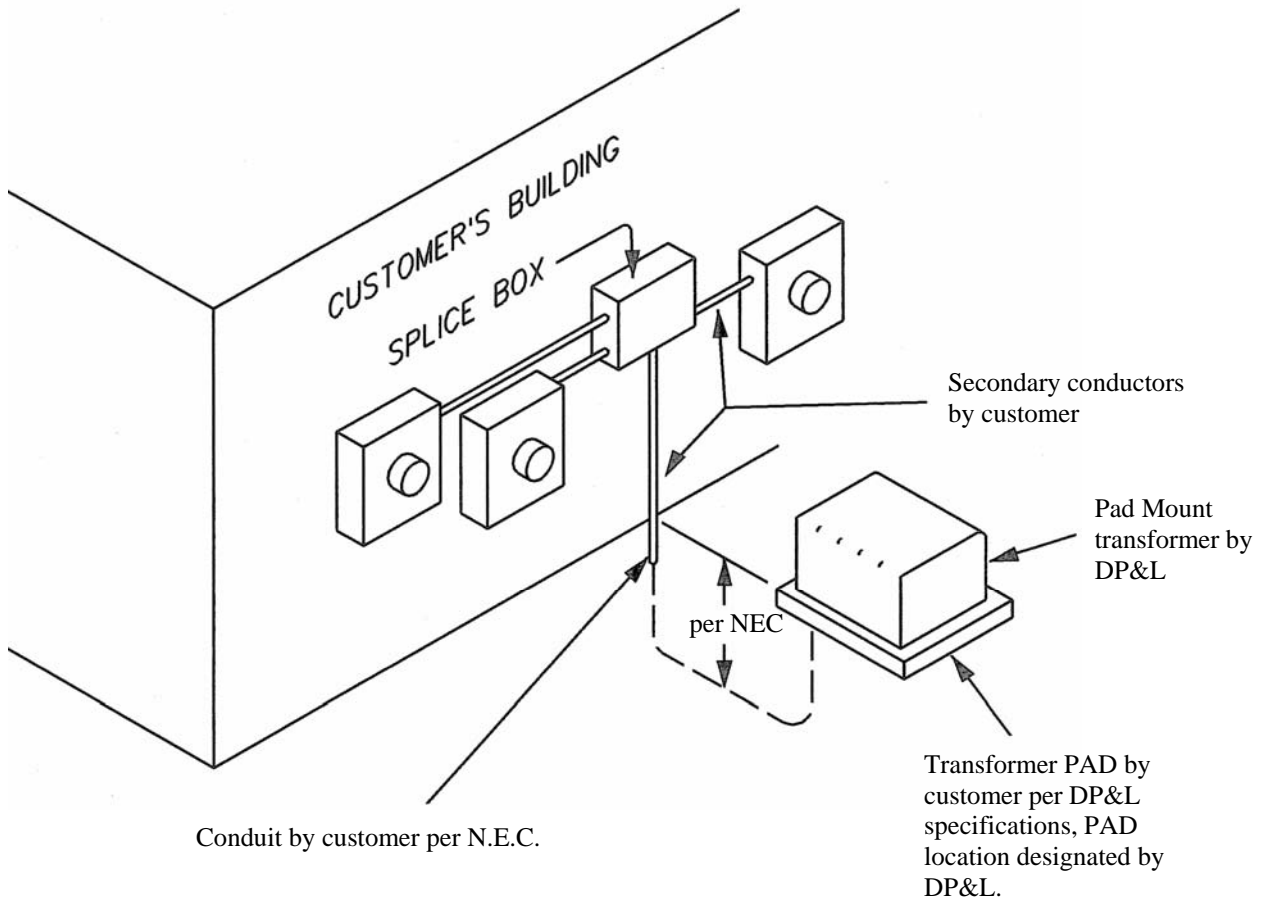
Section: Electric Service Handbook

Page No: **SH-10-040-02**

Rev. Jul-06

Replaces:

Pad-Mounted Transformer Service Multiple Meter Commercial Installation Aug-95



NOTES:

- A. The customer provides duct, if required for DP&L conductors.
- B. The number of conductors required to serve the building may dictate the use of a pad mounted splice box. Consult DP&L as to when a pad mounted splice box is required.
- C. Height from top of meter box to ground shall be 42" (min) to 66" (max).



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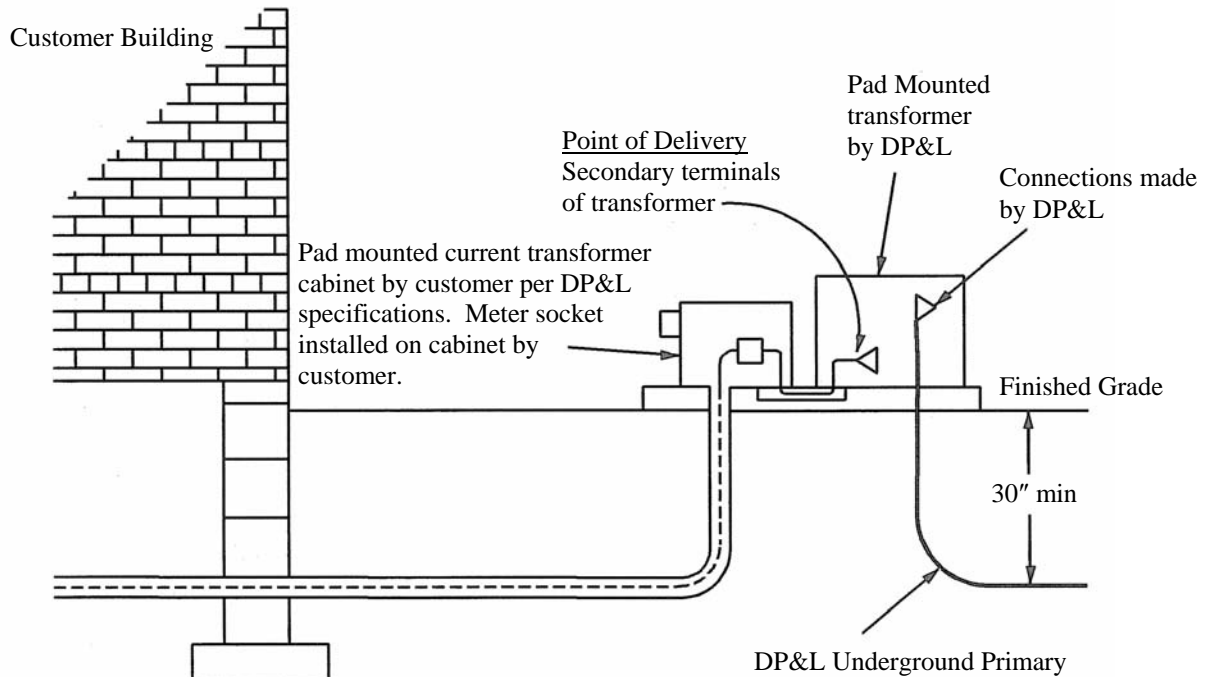
Page No: **SH-10-040-03**

Rev. Jul-06

Replaces:

Aug-95

**Commercial Pad-Mounted Transformer Service with a 5' X 5' X 30"
Metering Cabinet on PAD**



NOTES:

- A. The customer provides duct, if required for DP&L conductors.
- B. Height from top of meter box to ground shall be 42" (min) to 66" (max).



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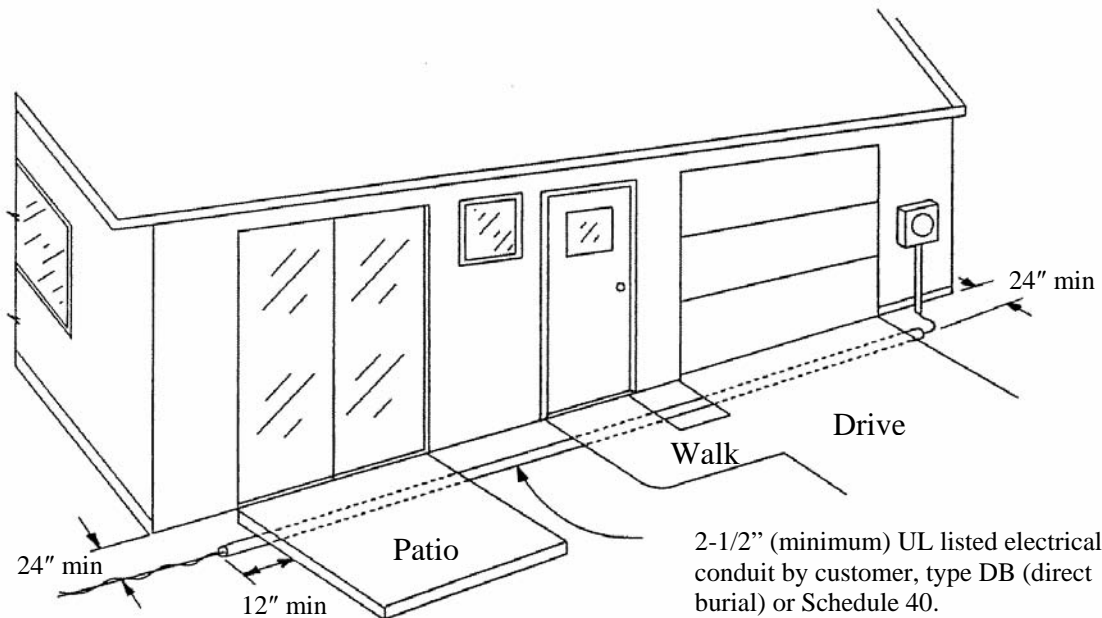
Page No: **SH-10-050-01**

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Replaces:

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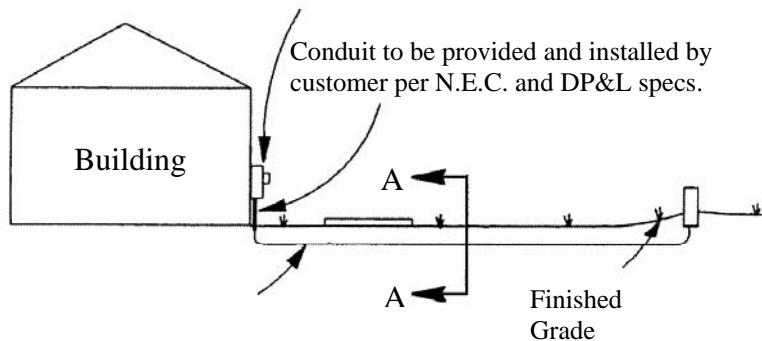
Duct and Trenching Secondary Cable Routing Residential Services



Customer to provide and install meter socket.

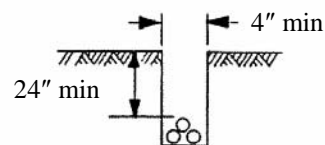
2-1/2" (minimum) UL listed electrical conduit by customer, type DB (direct burial) or Schedule 40.

Minimum depth of ducts & cable shall be adequate to provide 24" minimum cover at final grade.



DP&L to furnish and install secondary conductors for residential. See Section 98 for installation requirements. Customer to trench and backfill. First 4" of backfill to be loose soil or sand, no large stones or sharp objects.

Section "A - A"





Electric Construction

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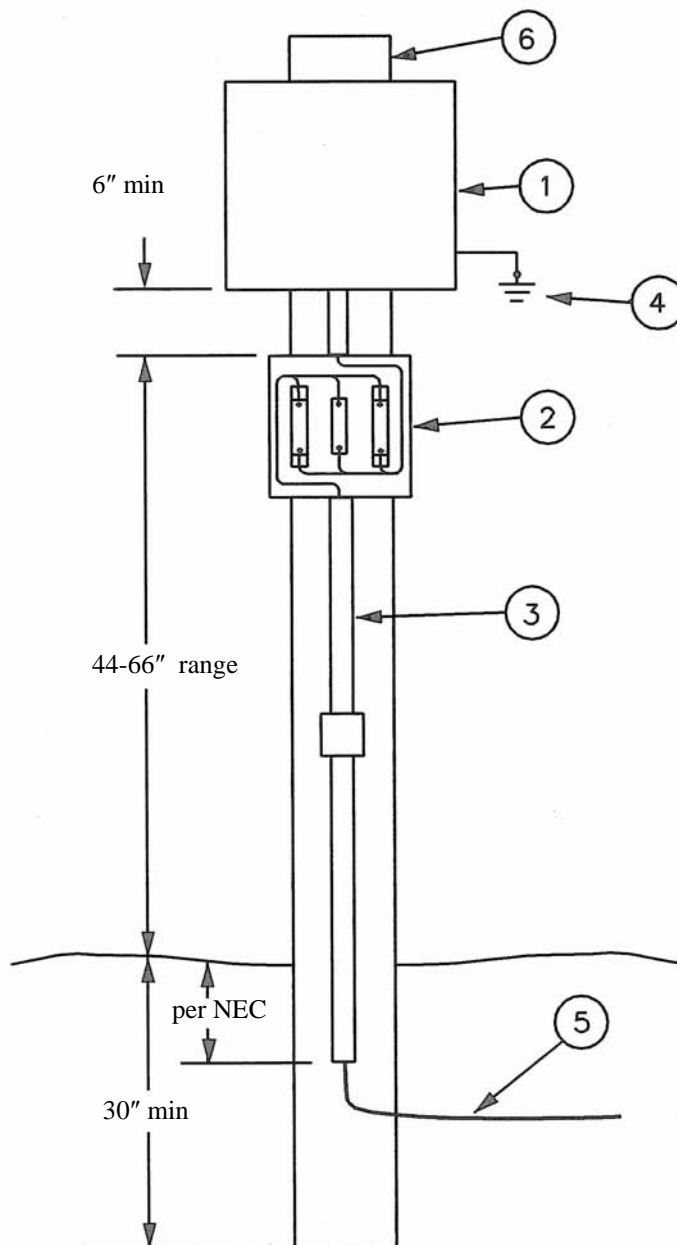
URD Temporary Service (1Ø, 3W)

Page No: **SH-10-050-02**

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Replaces:

Aug-95



Items Controlled by Local Inspection
Authority per N.E.C.

1. Customer Service switch /panel.
2. Meter socket supplied and installed by customer
3. Conduit
4. Grounding Conductor
5. Conductors supplied and installed by customer

Items Controlled by DP&L

6. 4 x 4 wood post by customer. Set 30" deep minimum. Provided by customer.

Notes:

- A. Trench must be within 2' of DP&L service device. Leave 2' of conductor past the service device for DP&L connection.
- B. If no service facilities exists, payment may be required to obtain temporary service. Call DP&L for details.



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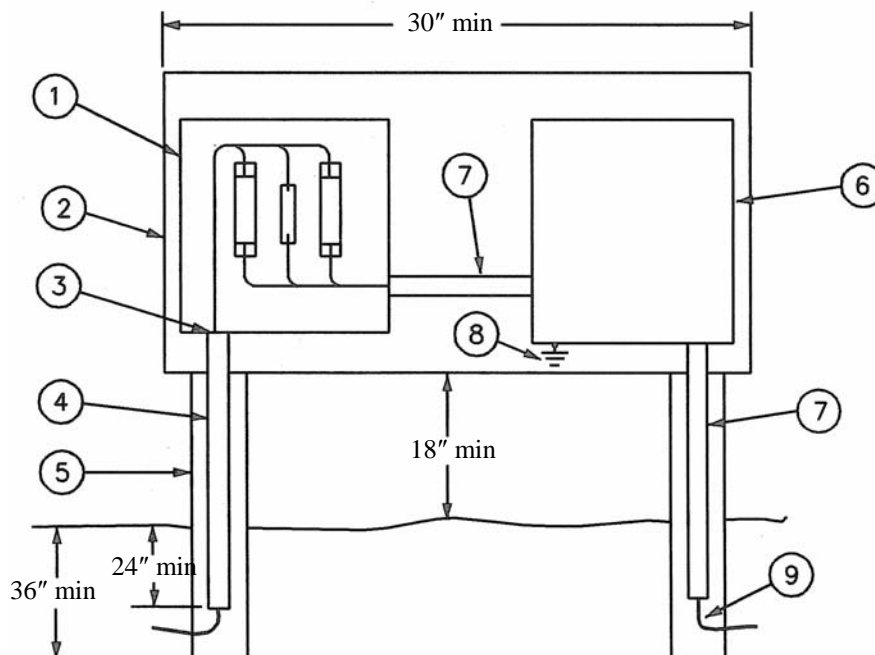
Replaces:
Aug-95

1Ø Residential 400 AMP and Smaller Free Standing and Trailer Installation - URD

1. Meter socket provided and installed by customer.
2. Exterior grade lumber by customer.
3. All metal raceways to be bonded per N.E.C.
4. Conduit to extend 24" below grade per N.E.C. and DP&L specifications.
5. 4" x 4" treated post by customer.
6. Main disconnect switch provided and installed by customer.
7. Conduit per N.E.C. provided and installed by customer.
8. Grounding conductor per N.E.C.
9. Power supply per N.E.C.

NOTES:

- A. Bottom of panels above grade per N.E.C.
- B. Customer to provide approved trench from DP&L facilities to metering point.
- C. Meter pedestals must be approved by DP&L Standards Department.



- CALL BEFORE YOU DIG -
1-800-362-2764



Electric Construction

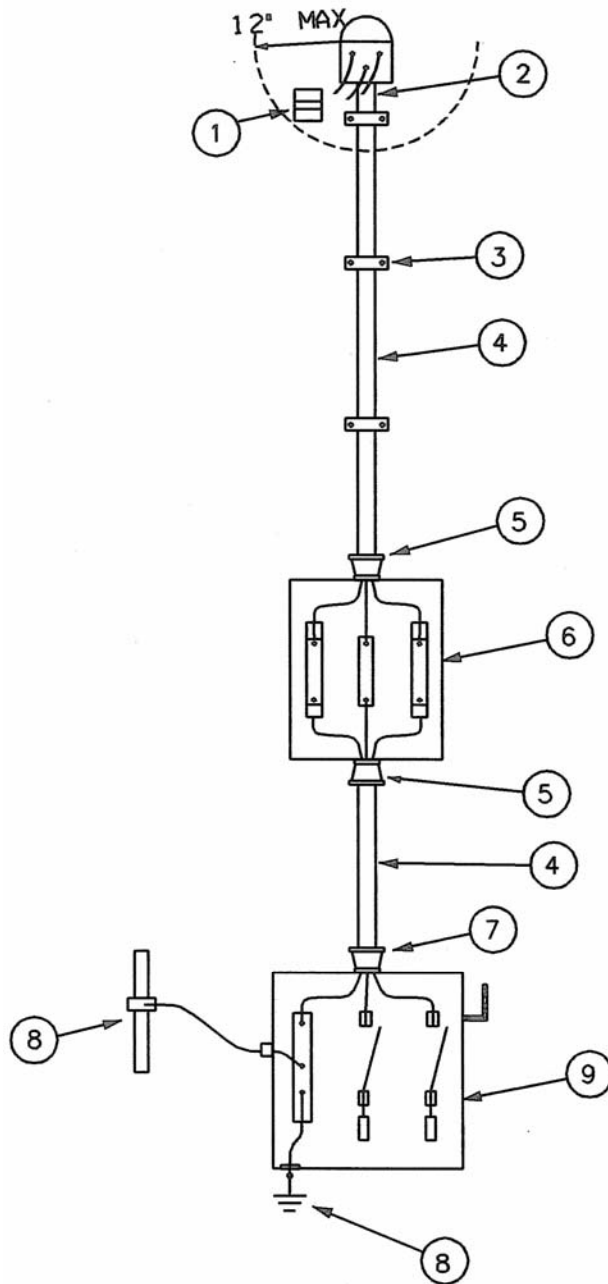
Section: Electric Service Handbook

200 AMP and Smaller (1Ø, 3W, OVHD W/O Mast)

Page No: **SH-11-010**

Rev. Jul-06

Replaces:
Aug-95



1. Clevis provided by DP&L and installed by customer in area shown.
2. Customer's conductors to extend 24" minimum beyond service head. DP&L to make connections to service drop.
3. Strap clamps per N.E.C.
4. Service conductor and conduit or service entrance cable per N.E.C.
5. Watertight connector.
6. Meter socket provided and installed by customer. Wire terminations by electrician.
7. Approved box connector per N.E.C.
8. Grounding conductor as per N.E.C.
9. Customer disconnect per N.E.C.

NOTES:

- A) All metal raceways to be bonded per N.E.C.
- B) Responsibility of the customer to install a clevis that provides proper overhead clearance over the surfaces traversed by the DP&L conductor.
- C) The meter shall be installed so that the top of the meter box will be between a height of 42" (min) to 66" (max) above the ground.



Electric Construction

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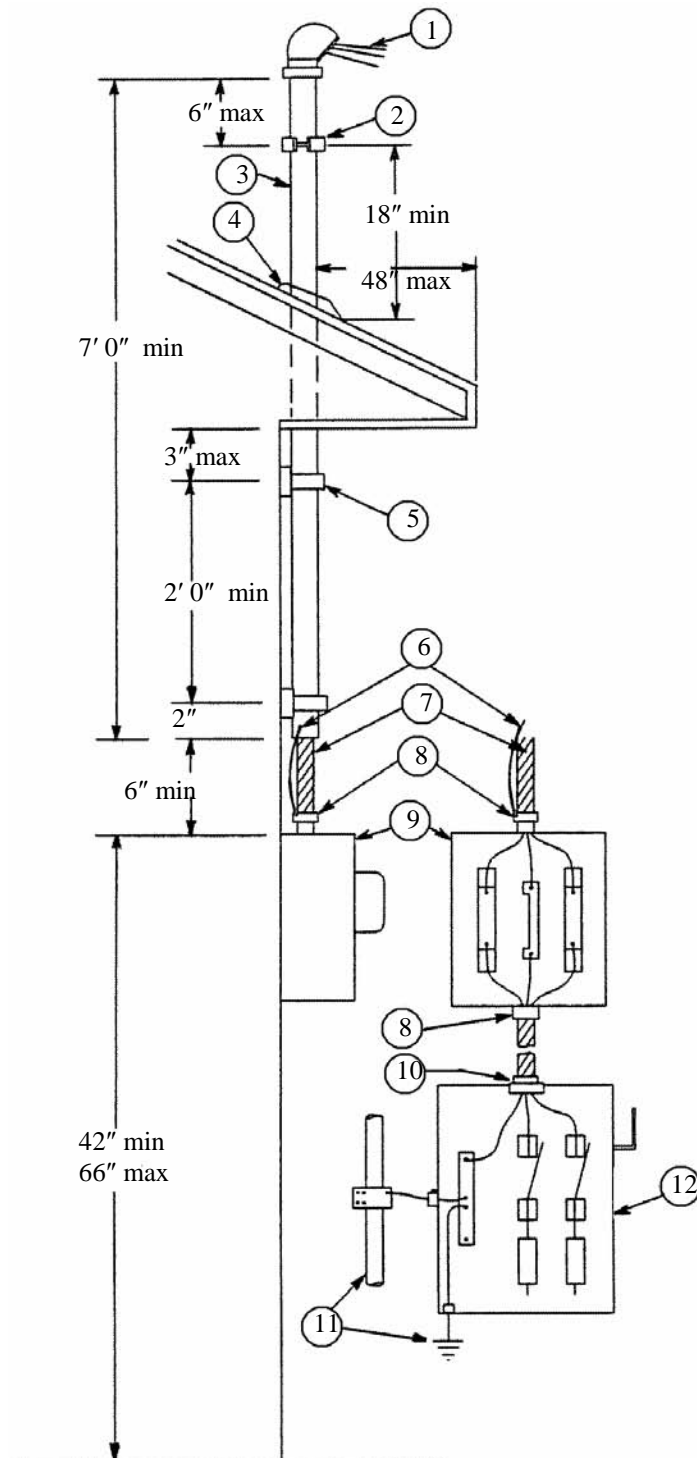
200 AMP and Smaller (1Ø, 3W, OVHD with Mast)

Page No: **SH-11-01-020**

Rev. Jul-06

Replaces:

Aug-95



1. Customer's conductors shall extend 24" minimum beyond the service head. DP&L to make connections to service drop.
2. Bracket to be furnished and installed by customer.
3. 2-1/2" (minimum at installation) galvanized standard weight steel pipe. Continuous piping 7' minimum length. Note: Pipe supports must be bolted to the studs or support wall on new houses. Masts longer than 10 feet require DP&L approval. Service mast must be installed high enough to allow the service drop to meet minimum clearance of 12' at it's lowest sag point.
4. Roof shield for 2-1/2" conduit.
5. Split ring type pipe support. When attaching to concrete block, this point would be at the bottom of the second course from the top. On existing structures 1/2" x 3" min lag bolts may be substituted. 2-1/2" min lag bolt engagement in stud is required.
6. If mast is isolated, local inspection authorities may require it to be bonded.
7. Service entrance cable size per N.E.C.
8. Watertight connectors are required for the top, bottom, and sides as applicable.
9. Meter socket provided and installed by customer. Wire terminations by electrician.
10. Box connector per N.E.C.
11. Grounding conductor as per N.E.C.
12. Custom disconnect per N.E.C.



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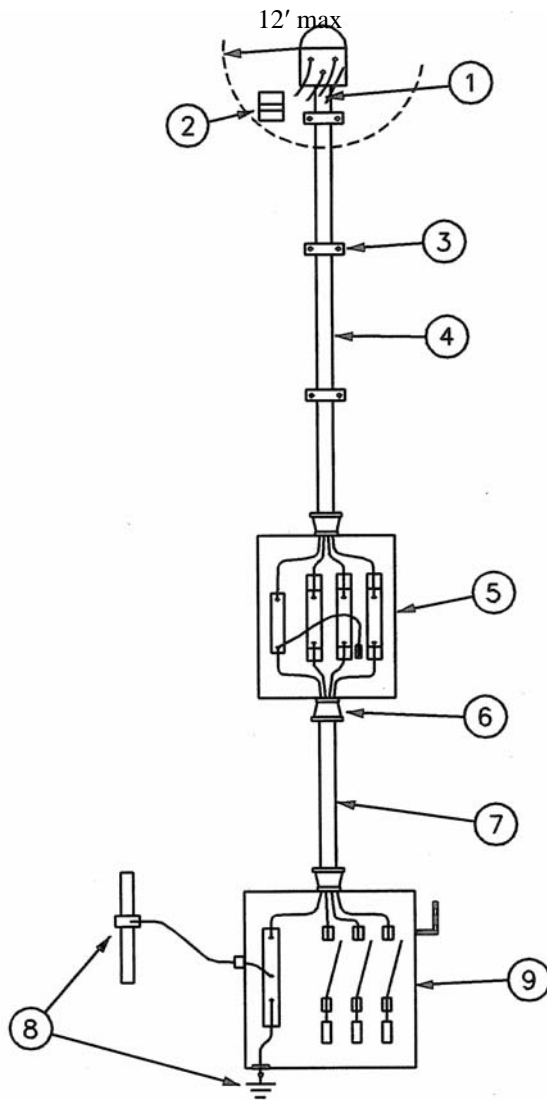
Page No: **SH-11-01-030**

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200 AMP and Smaller (3Ø, 4W, WYE OVHD)



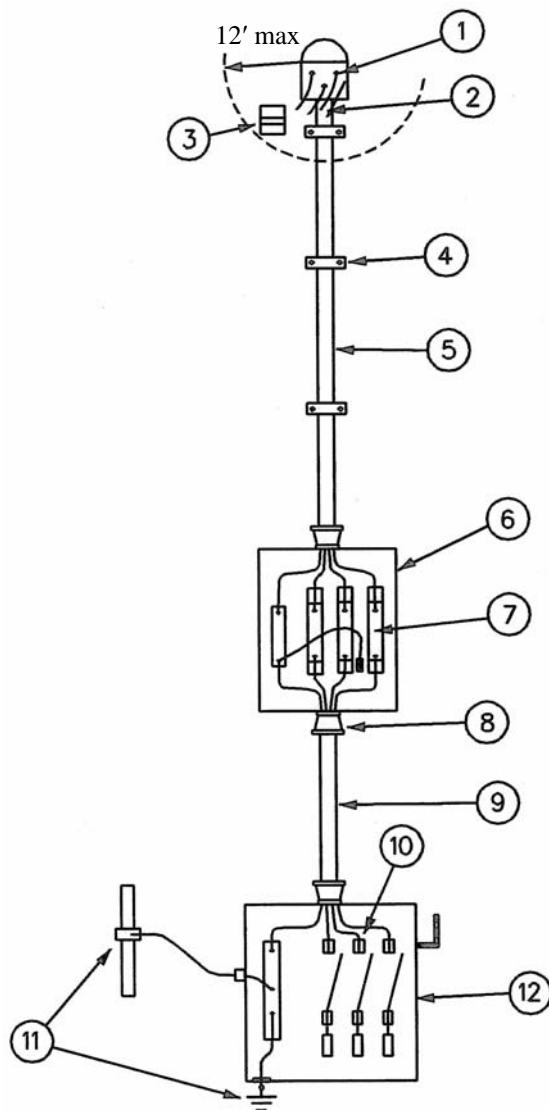
1. Customer's conductors to extend 24" minimum beyond service head. DP&L to make connections to service drop.
2. Clevis to be provided by DP&L and installed by customer in area shown.
3. Strap clamps as per N.E.C.
4. Conduit per N.E.C. provided by customer.
5. Meter socket provided and installed by customer. Wire terminations by electrician.
6. All bushings bonded when using metal conduit. Bonding conductors sized per N.E.C.
7. Conduit per N.E.C.
8. Grounding conductor as per N.E.C.
9. Customer disconnect per N.E.C.

NOTE:

The meter shall be installed so that the top of the meter box will be at a height of 42" (min) to 66" (max) above the ground.



200 AMP and Smaller (3Ø, 4W, DELTA, OVHD)



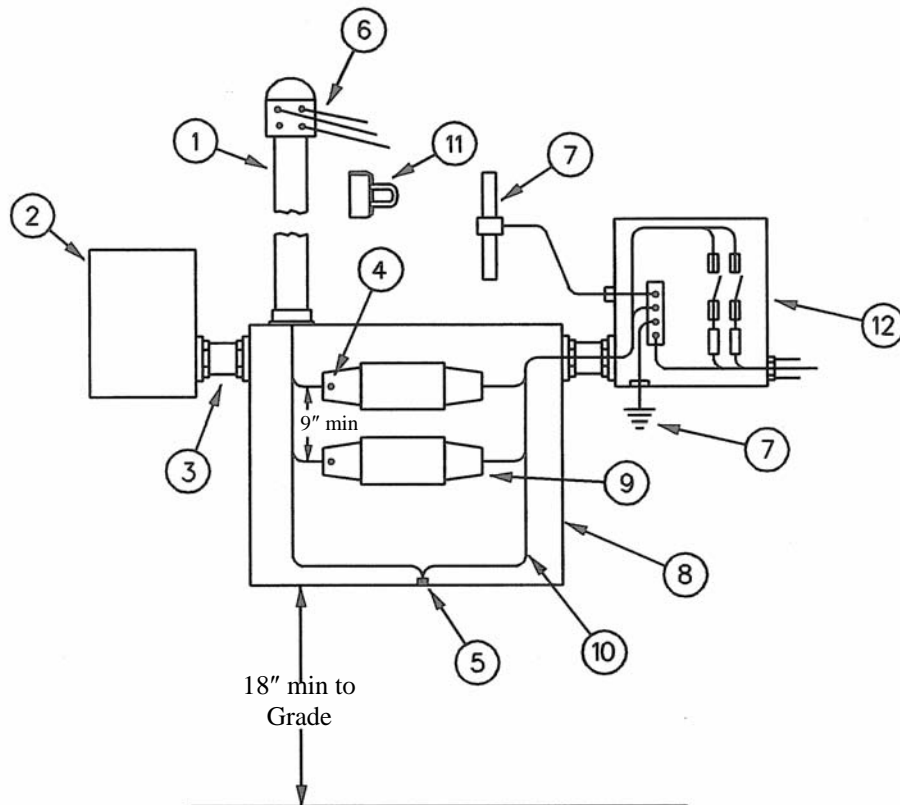
1. High phase (208 volts to ground) to be identified orange.
2. Customer's conductors to extend 24" minimum beyond service head. DP&L to make connections to service drop.
3. Clevis provided by DP&L and installed by customer in area shown.
4. Pipe straps per N.E.C.
5. Conduit per N.E.C. provided by customer.
6. Meter socket provided and installed by customer. Wire terminations by electrician.
7. High phase identified orange. Must be on right hand terminal.
8. All bushings bonded when using metal conduit. Bonding conductors sized per N.E.C.
9. Conduit per N.E.C.
10. High phase to be in center position as per N.E.C.
11. Grounding conductor as per N.E.C.

NOTE: The meter shall be installed so that the top of the meter box will be at a height of 42" (min) to 66" (max) above the ground.



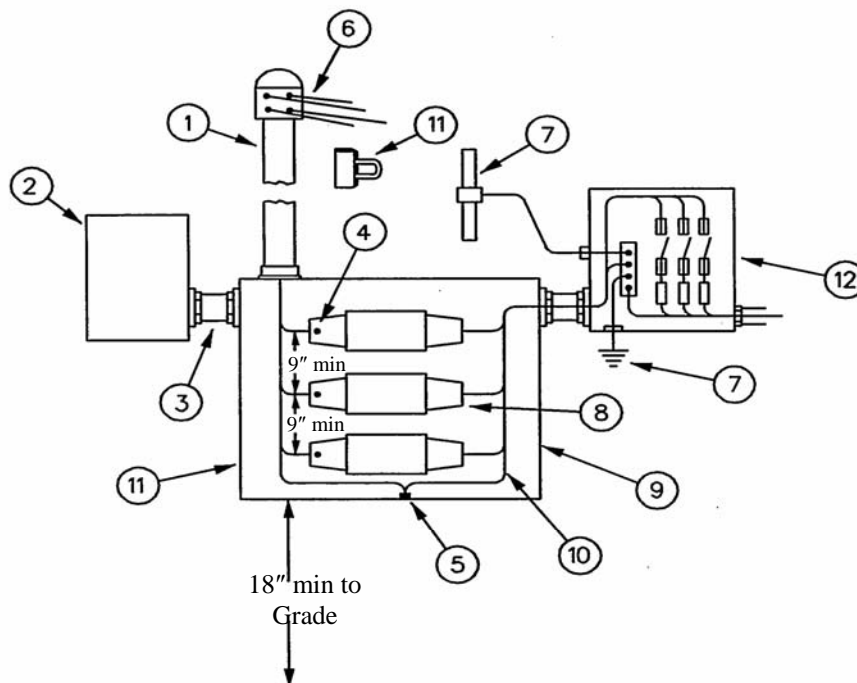
401 to 1200 AMP Current Transformer Service (1Ø, 3W, OVHD)

1. When used as a support mast, conduit must be 3" min., rigid galvanized steel. Conduit longer than 10 feet or with couplings requires DP&L approval.
2. Meter socket provided and installed by customer.
3. 1 1/4" rigid rated conduit per DP&L. All metal raceways to be bonded per N.E.C.
4. White polarity marking (install as shown).
5. Neutral shall be lugged to bottom of cabinet.
6. Customer's conductors to extend 24" minimum beyond service head. DP&L to make connections to service drop.
7. Grounding conductor as per N.E.C.
8. 24" X 32" X 10" minimum C/T cabinet by customer per DP&L specifications.
9. Current transformers furnished by DP&L and installed by customer. Transformers shall be securely mounted to 0.75" (3/4 inch) thick exterior grade wood backing board in the cabinet.
10. Conductor secured to board as needed.
11. When used clevis supplied by DP&L and installed by customer.



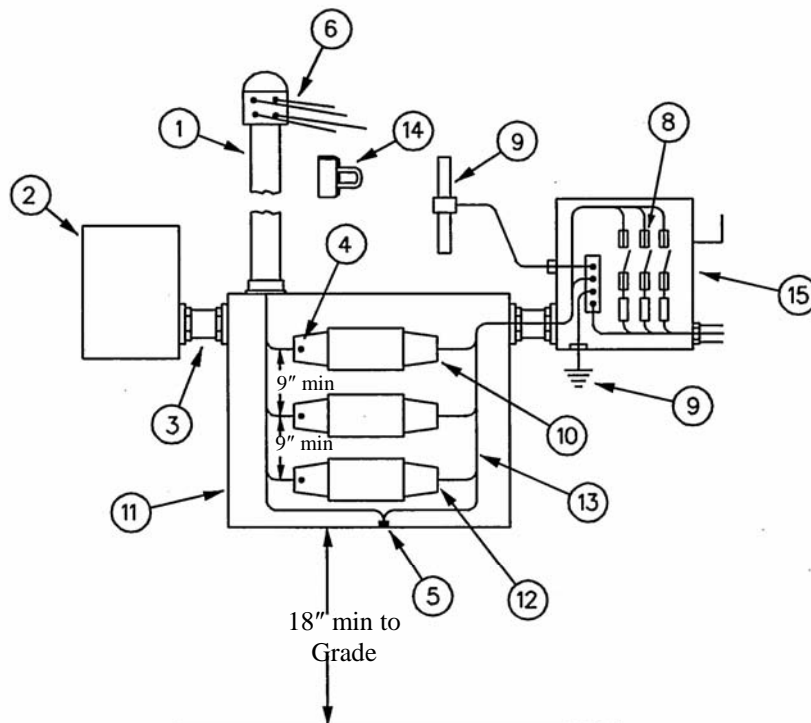


1. When used as a support mast, conduit must be 3" min., rigid galvanized steel. Conduit longer than 10 feet or with couplings requires DP&L approval.
2. Meter enclosure provided and installed by customer.
3. 1¼" rigid rated conduit per DP&L. All metal raceways to be bonded per N.E.C.
4. White polarity marking (install as shown).
5. Neutral shall be lugged to bottom of cabinet.
6. Customer's conductors to extend 24" minimum beyond service head. DP&L to make connections to service drop.
7. Grounding conductor as per N.E.C.
8. Current transformers furnished by DP&L and installed by customer. Transformers shall be securely mounted to 0.75" (¾ inch) thick exterior grade wood backing board in the cabinet.
9. 32" x 36" x 10" minimum C/T cabinet by customer per DP&L specifications.
10. Conductor secured to board as needed.
11. When used, clevis supplied by DP&L and installed by customer.
12. Disconnect per N.E.C.



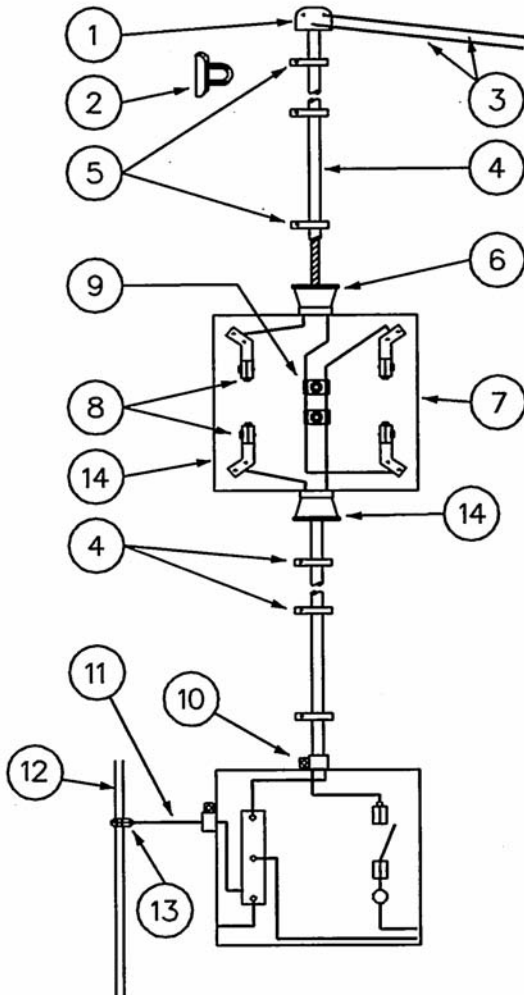


1. When used as a support mast, conduit must be 3" min., rigid galvanized steel. Conduit longer than 10 feet or with couplings requires DP&L approval.
2. Meter enclosure provided and installed by customer.
3. 1½" rigid rated conduit per DP&L. All metal raceways to be bonded per N.E.C.
4. White polarity marking (install as shown).
5. Neutral shall be lugged to bottom of cabinet.
6. High phase (208 volts to ground) to be identified orange.
7. Customer's conductors to extend 24" minimum beyond service head. DP&L to make connections to service drop.
8. High phase per N.E.C.
9. Grounding conductor as per N.E.C.
10. Current transformers furnished by DP&L and installed by customer. Transformers shall be securely mounted to 0.75" (¾ inch) thick exterior grade wood backing board in the cabinet.
11. 24" x 32" x 10" minimum C/T cabinet by customer per DP&L specifications.
12. High phase to be identified orange and located on bottom.
13. Conductors to be secured to 0.75" (¾ inch) thick exterior grade wood backing board in the cabinet as needed.
14. When used, clevis supplied by DP&L and installed by customer.
15. Disconnect per N.E.C.





120-volt, 1-phase, 2-wire service-entrance and meter installation, using service-entrance

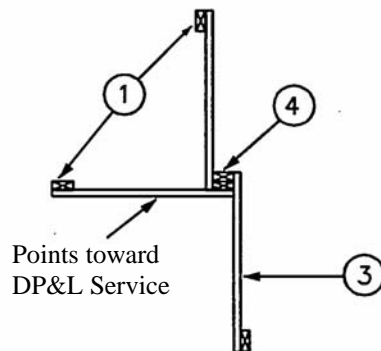


1. Weatherhead
2. When used clevis supplied by DP&L and installed by customer.
3. Customer's conductors shall extend 24" minimum beyond the weatherhead. DP&L to make connections to service drop.
4. Service-entrance cable per N.E.C.
5. Service-cable straps per N.E.C.
6. Watertight connector, of the rubber grommet type, with 1-1/4" threads.
7. Meter socket with 1-1/4" threaded hub in top.
8. Socket jaws.
9. Neutral lugs. Neutral conductors shall be continuous through neutral lugs, as shown.
10. Box connector.
11. Grounding conductor as per N.E.C.
12. Grounding electrode as per N.E.C.
13. Ground clamp per N.E.C.
14. If service entrance cable and water tight are not used, a conduit nipple may be used between meter socket and service equipment. Nipple shall be not less than 1" by 5" and shall be bonded to cabinet. Arrangement of socket wiring shall be as shown

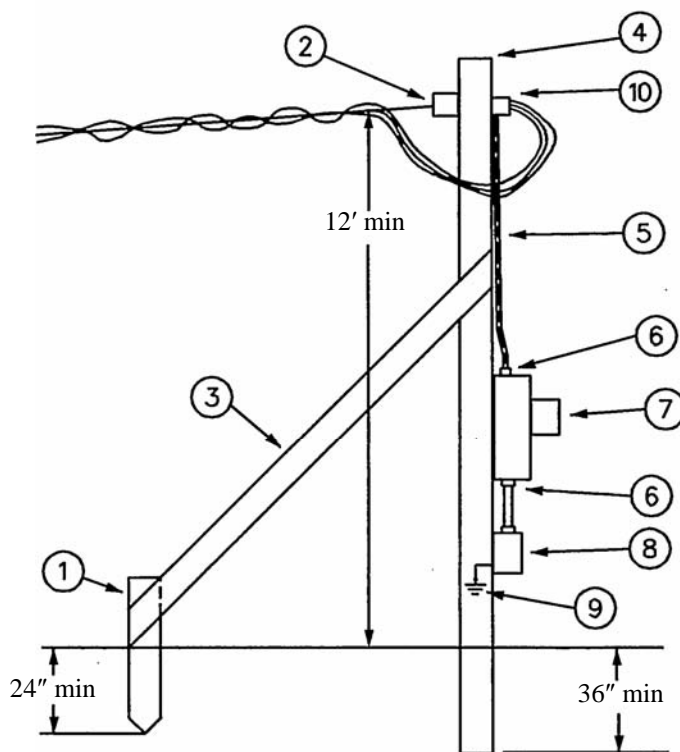
NOTE: Meter sockets shall be furnished and installed by customer in an accessible location, not more than 66", not less than 42" from top of socket to the floor or ground line. Sockets shall be securely mounted with screws and must be plumb, with the socket jaws vertical, as shown. Location of sockets is subject to DP&L approval.



Overhead Temporary Service



Top View

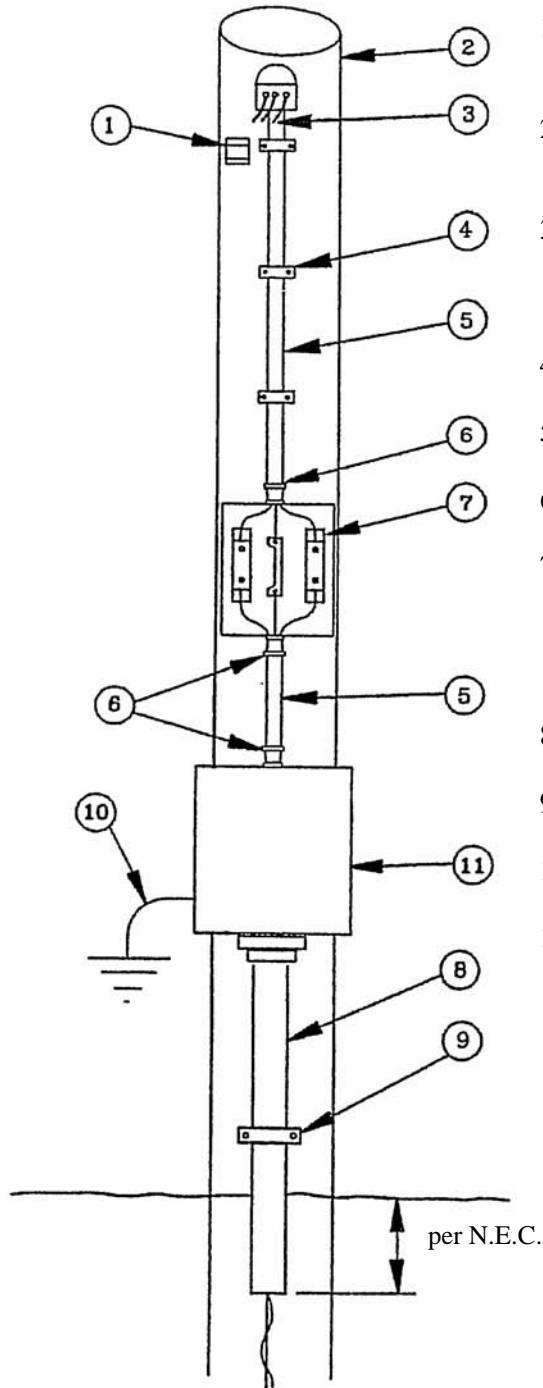


Side View

1. 2"x 4" stakes driven either vertically or in line with brace for a minimum of 24" into the ground.
2. Clevis provided by DP&L and installed by customer.
3. 3 - 2" x 4" braces (see top view)
4. Temporary service pole (two 2 x 6's joined together or 4' x 4' min. 16' long) provided and installed by customer. Braces will be required on all temporary poles. Location and height of pole to be specified by DP&L engineering department.
5. Service entrance cable by customer sized per N.E.C. to extend 24" minimum beyond the service head. DP&L to make connections to service drop.
6. Watertight connector.
7. Meter socket provided and installed by customer. (From top of meter to ground 42" min to 66" max)
8. Main disconnect switch by customer.
9. Grounding conductor as per N.E.C.



Overhead Trailer Installation



1. Clevis provided by DP&L and installed by customer.
2. Utility pole, minimum overall length of 25', provided and installed by customer.
3. Customer's conductors per N.E.C., to extend 24" minimum beyond service head. DP&L to make connections to the service drop.
4. Cable straps as per N.E.C.
5. Service entrance conductors sized per N.E.C.
6. Watertight connector per DP&L specs.
7. Meter socket provided and installed by customer. Wire termination by electrician. (height from ground shall be 42" min to 66" max)
8. Conduit per N.E.C.
9. Pipe strap as per N.E.C.
10. Grounding conductor as per N.E.C.
11. Disconnect per N.E.C.



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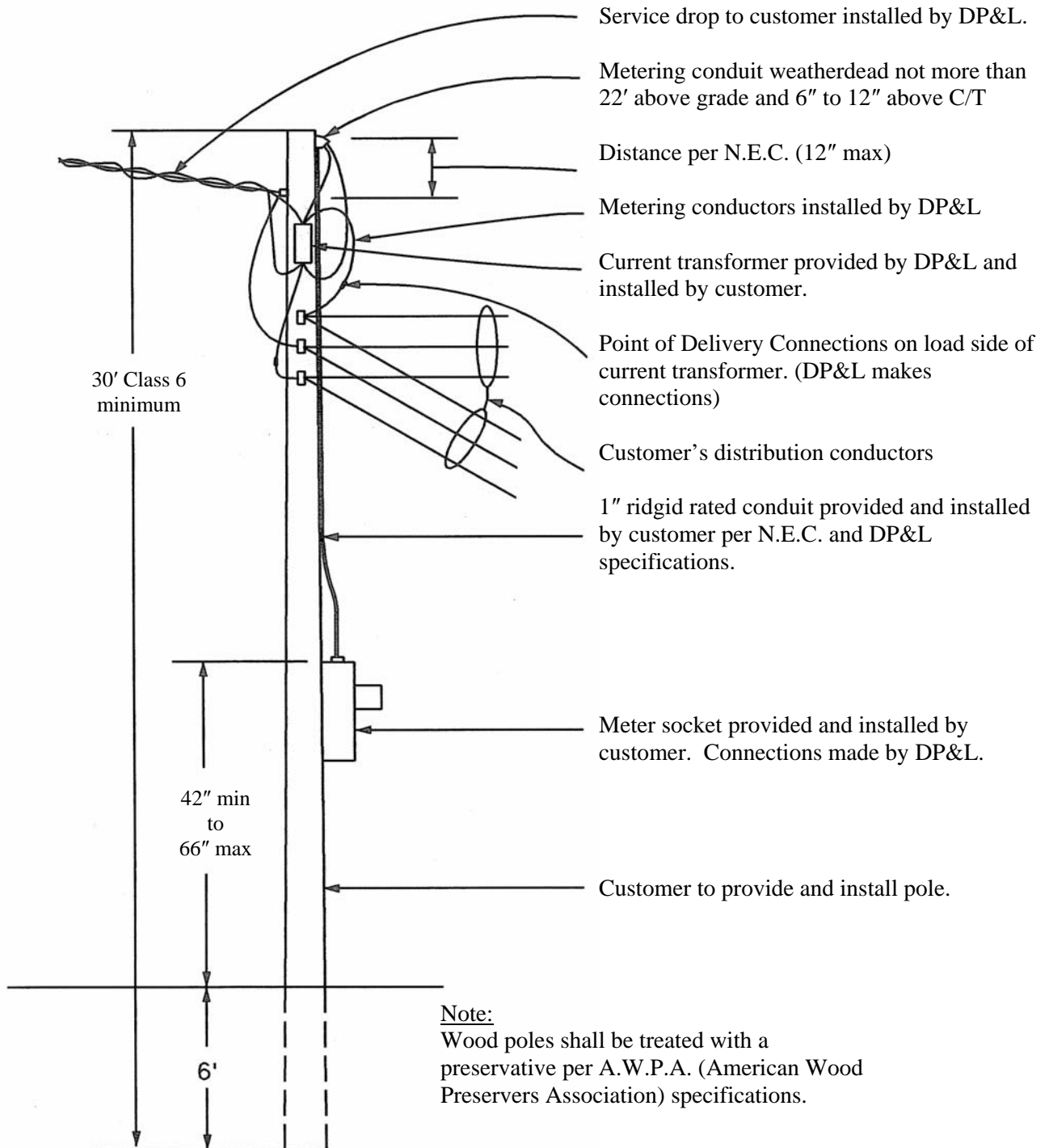
Page No: **SH-12-010**

Rev. Jul-06

Replaces: 13-1

Aug-95

Customer Center Pole Transformer Rated Metering





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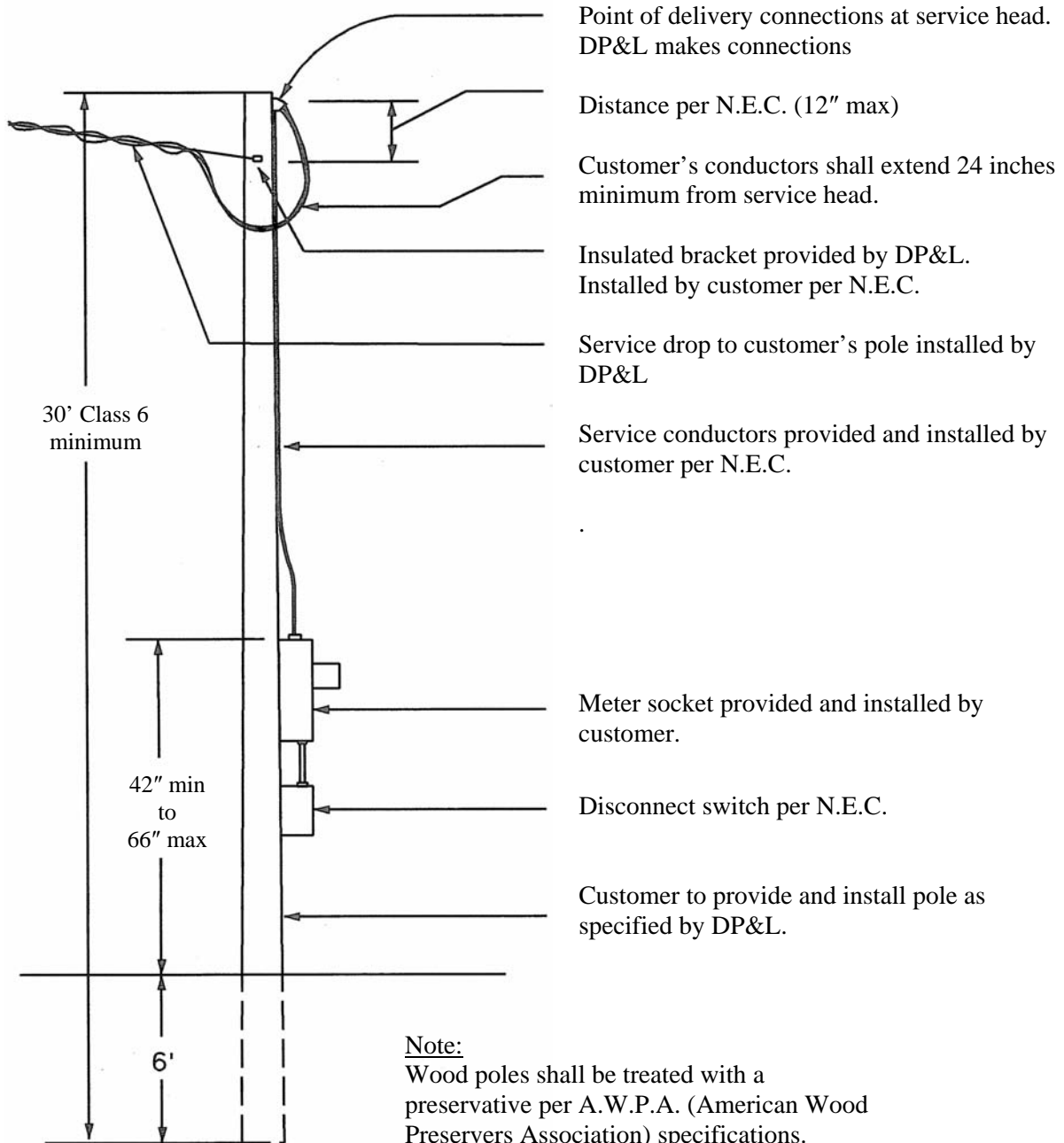
Page No: **SH-12-020**

Rev. Jul-06

Replaces: 13-2

Aug-95

Customer's Meter and Service Pole Meter Self-Contained Installation





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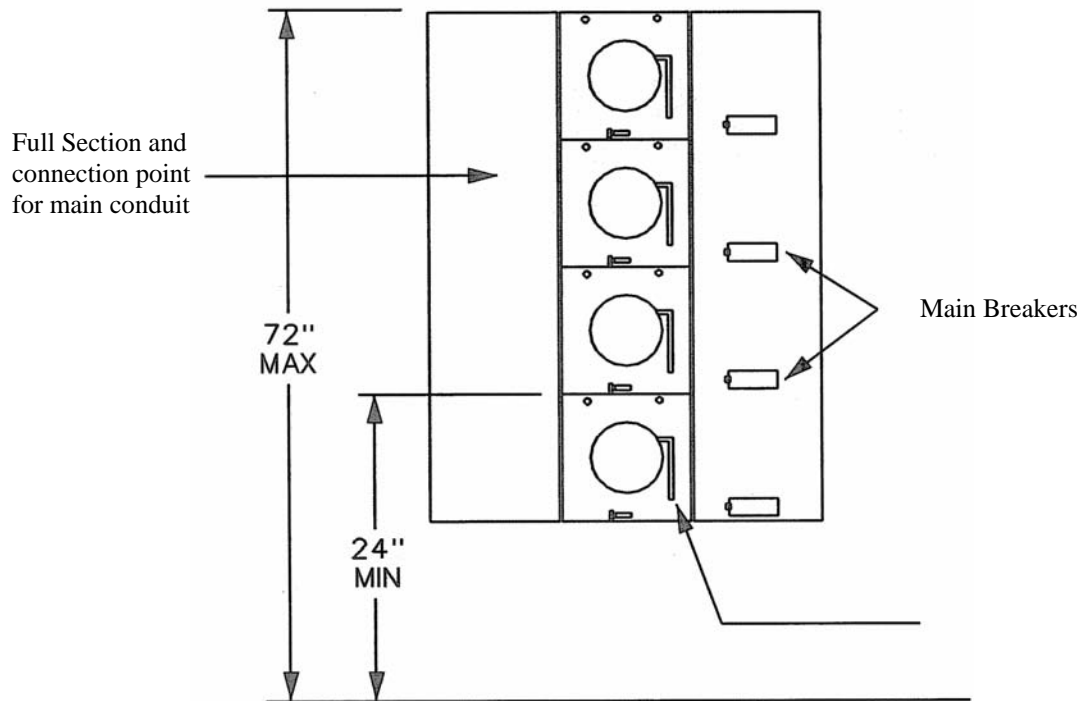
Page No: **SH-13-010**

Rev. Jul-06

Replaces: 14-1

Aug-95

Commercial Grouped Meter Centers 200A and Less



NOTES:

- A. All 1Ø and 3Ø commercial grouped meter centers will have a bypass handle for each meter. This applies to overhead and underground services.
- B. Permanent weatherproof mastic back tags shall be attached for identification on each meter position. The actual area served must be identically marked before meter is installed.
- C. Each meter must have its own individual, sealable cover plate. There shall be no cover plates common to two (2) or more meter positions.
- D. For additional specifications, contact the DP&L Electric Meter Department.



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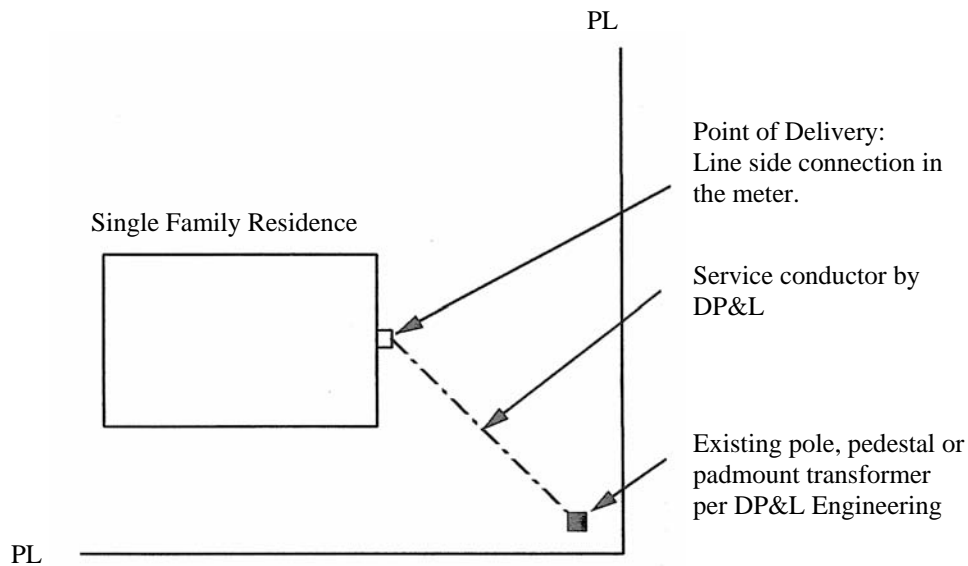
Page No: **SH-98-010**

Rev. Jul-06

Replaces:

Aug-95

Service Lateral Requirements for Residential – 1 Family URD



- A. Point of service to be designated by DP&L.
- B. Meter socket provided and installed by customer.
- C. Customer trenches and backfills.
- D. DP&L to install service conductor.
- E. Customer to furnish and install laced conduits under decks, paved areas and concrete, size to be specified by DP&L.



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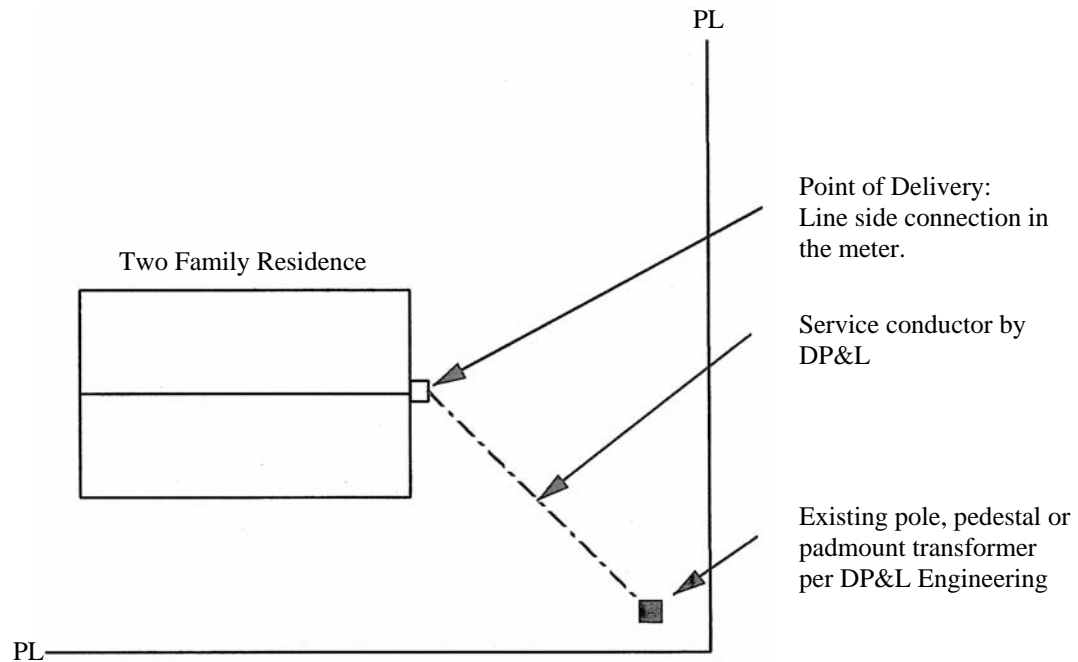
Page No: **SH-98-020**

Rev. Jul-06

Replaces:

Aug-95

Service Lateral Requirements for Residential – 2 Family URD



- A. Point of service to be designated by DP&L.
- B. Meter center furnished and installed by customer. Installation and location approved by DP&L
- C. Customer trenches and backfills.
- D. DP&L to install service conductor.
- E. Consumer to furnish and install laced conduits under decks, paved, and concrete areas, size to be specified by DP&L



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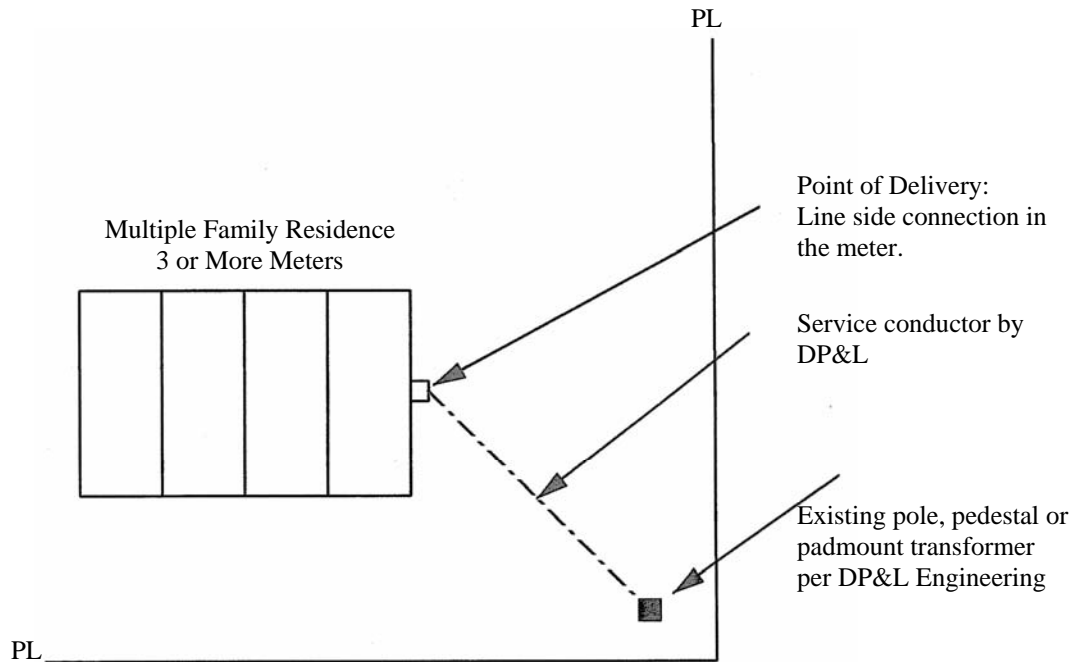
Section: Electric Service Handbook

Page No: **SH-98-030**

Rev. Jul-06

Replaces:

Service Lateral Requirements for Residential – Multiple Meter Center-URD Aug-95



- A. Point of service to be designated by DP&L.
- B. Meter center provided and installed by customer. Installation and location to be approved by DP&L.
- C. Main disconnect (when used) furnished and installed by customer.
- D. Customer trenches and backfills.
- E. DP&L to install service conductor.
- F. Point of delivery becomes line side terminals of main line disconnect switch if installed by customer ahead of the meter center.
- G. Customer to furnish and install laced conduits under decks, concrete and paved areas, size to be specified by DP&L.
- H. Permanent weatherproof mastic back tags shall be attached for identification on each meter position. The actual area served must be identically marked before meter is installed.



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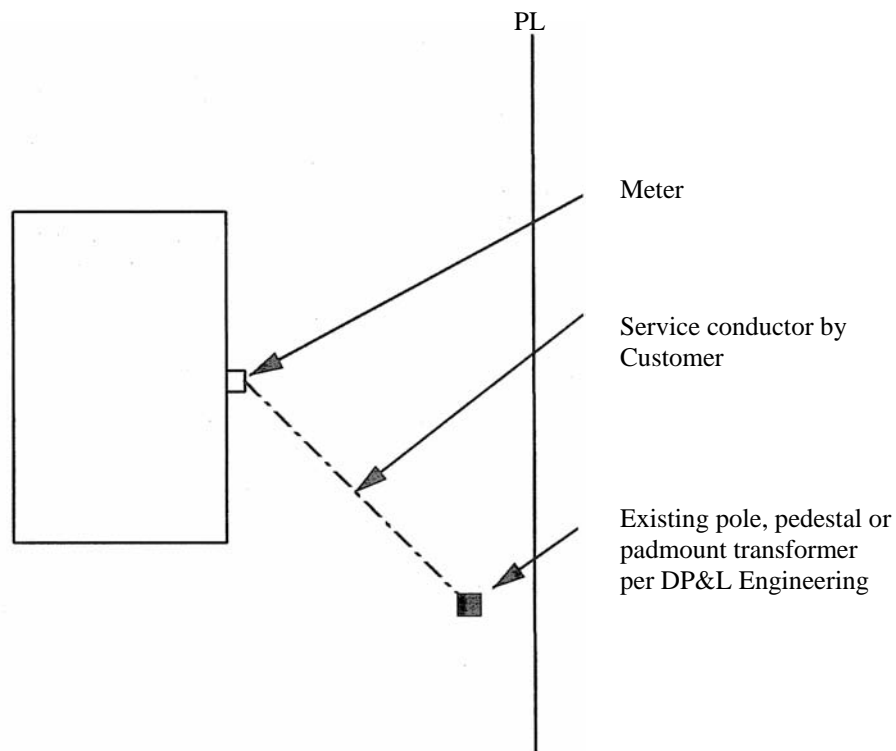
Replaces:

Customer Service Lateral Requirements Commercial, Single Meter-URD

Aug-95

Commercial Industrial and Governmental
Single Meter from Existing Facilities

Self Contained Meter or CT Installations



- A. Meter installation and location to be approved by DP&L.
- B. Point of delivery is DP&L equipment where customer service conductors are connected by DP&L.
- C. Customer trenches and backfills.
- D. Service conductor provided and installed by customer.



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Page No: **SH-98-050**

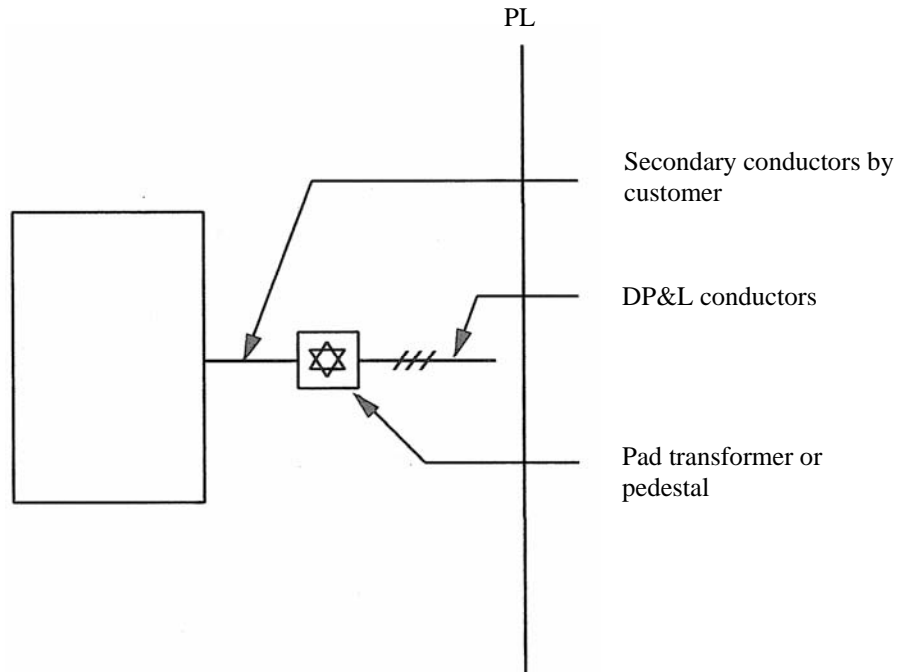
Rev. Jul-06

Replaces:

Customer Service Lateral Requirements Commercial, Single Meter-URD

Aug-95

Commercial Industrial and Governmental
Single Meter from New Facilities



- A. Customer installs a transformer pad per DP&L standards. DP&L approves location.
- B. The point of delivery is the secondary terminals of the transformer or pedestal.
- C. DP&L installs transformer or pedestals and makes all connections in DP&L equipment.
- D. Secondary conductors provided and installed by customer per N.E.C..
- E. Meter Socket and/or CT cabinet furnished and installed by customer.
- F. Customer to furnish and install laced conduits under decks, concrete and paved areas for DP&L conductors, size to be specified by DP&L.

NOTE: Meter installation and location to be approved by DP&L.



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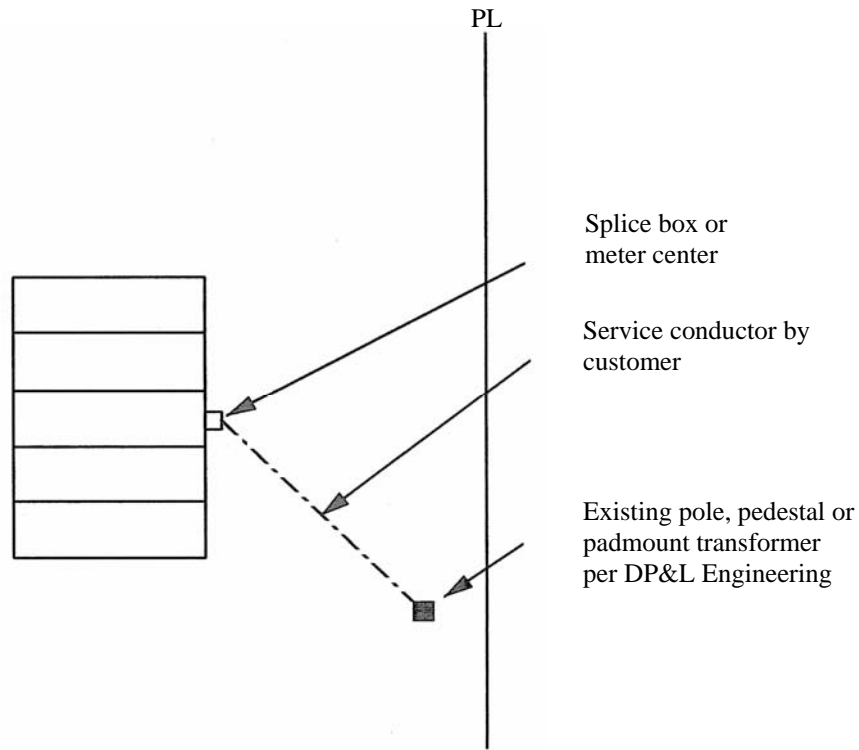
Rev. Jul-06

Replaces:

Aug-95

**Customer Service Lateral Requirements Commercial, Multi Meter
Center-URD**

Commercial Industrial and Governmental
Multi Meter from Existing Facilities



- A. Meter installation and locations to be approved by DP&L.
- B. Splice box or meter center furnished and installed by customer.
- C. Customer trenches and backfills.
- D. Service conductor provided and installed by customer per N.E.C.. DP&L makes all connections at the transformer or pedestal.



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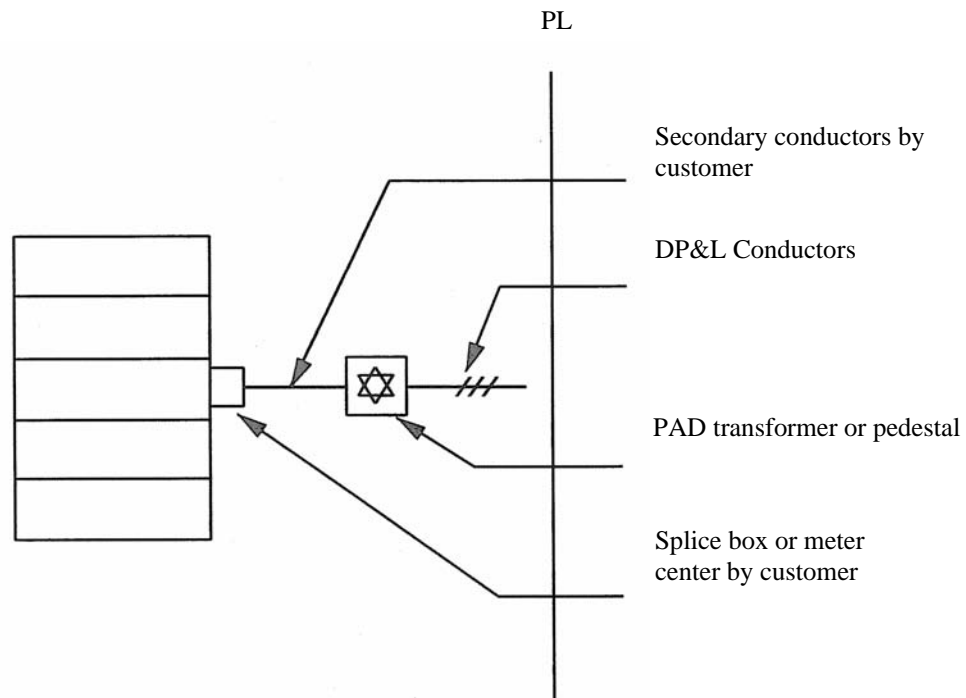
Rev. Jul-06

Replaces:

Aug-95

**Customer Service Lateral Requirements Commercial, Multi Meter
Center-URD**

Commercial Industrial and Governmental
Multi Meter from New Facilities



- A. Customer installs a transformer pad per DP&L standards. DP&L approves location.
- B. Meter installation and locations to be approved by DP&L.
- C. Secondary conductors provided and installed by the customer per N.E.C. DP&L makes all connections at the transformer or pedestal.
- D. Customer to furnish and install laced conduits under decks, concrete and paved areas for DP&L conductors, size to be specified by DP&L.



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Page No: **SH-98-080**

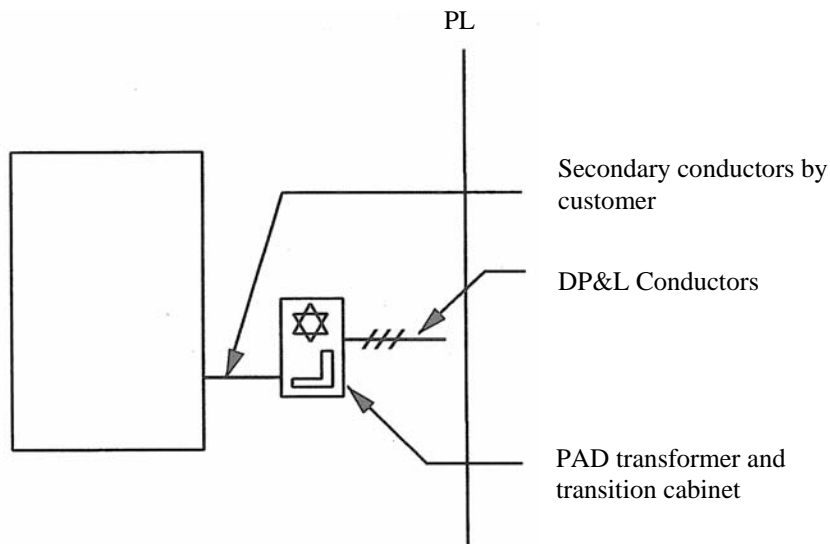
Rev. Jul-06

Replaces:

Aug-95

Customer Service Lateral Requirements Commercial, Many Service Conductors

Commercial Industrial and Governmental
When the Number of Service Conductors Exceeds
The Physical Limitations of the Padmount Transformer



- A. Customer installs a pad per DP&L standards. DP&L approves location.
- B. Transition cabinet by customer per DP&L standards.
- C. The point of delivery is the secondary terminals of the transformer.
- D. DP&L installs primary conductors and transformer and makes all connections in the transformer.
- E. Customer to provide and install conductors from transformer to transition cabinet. DP&L to specify conductor size.
- F. Secondary conductors from transition cabinet to Service entrance equipment provided and installed by customer per N.E.C.
- G. Customer to furnish and install laced conduits under decks, concrete and paved areas for DP&L conductors, size to be specified by DP&L.
- H. Meter installation and location to be approved by DP&L.