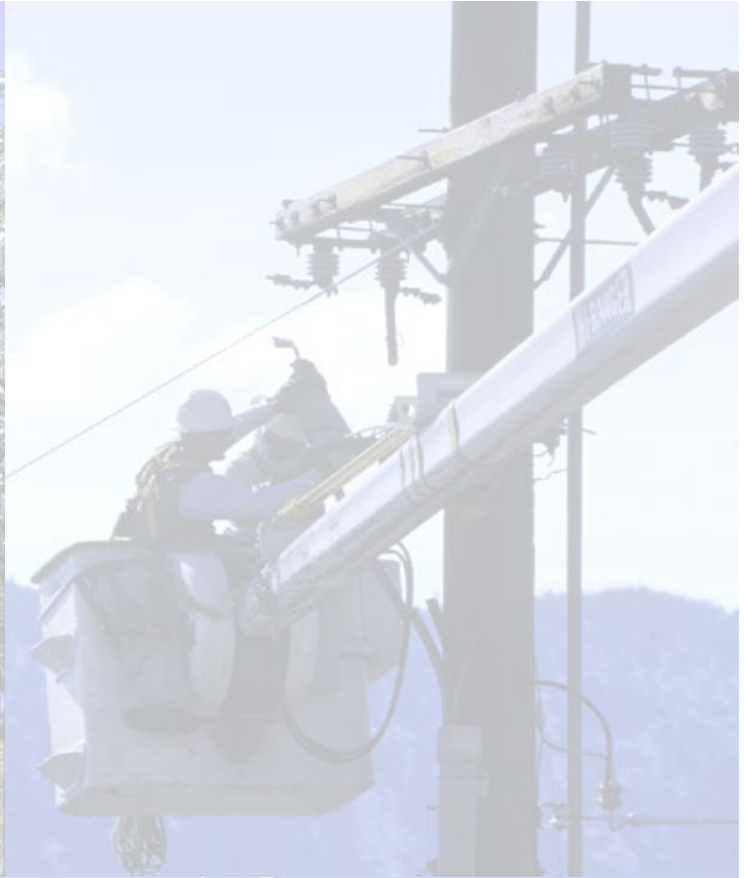


# RESIDENTIAL ELECTRICAL SERVICES

## Connection and General Information



CHELAN COUNTY  
**POWER**



September 2023

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Information found in this handbook supports Chelan County PUD Utility Service Regulations, Utility Service Policies, Electric Rate Schedules, and the Chelan County PUD Transmission and Distribution Department Construction Standards.

Copies are available on our website at [www.chelanpud.org/newservice](http://www.chelanpud.org/newservice), or by calling (509) 661-8400.

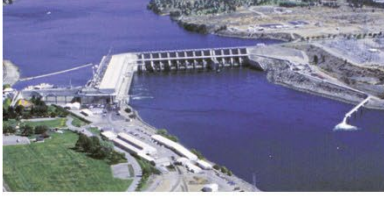
Additional information about Chelan County PUD's rates and policies can be found at <http://www.chelanpud.org/my-pud-services/rates-and-policies>

All conflicts between this handbook and the policies and regulations listed above shall comply with the most current Policies and Regulations approved by the Chelan County PUD Board of Commissioners. Revisions are subject to change without notification.

A request for any exception related to information found in the Residential Electric Services Connection and General Information book must be made in writing. The PUD will review the request for exception, and in the PUD's sole discretion, will determine if the exception is warranted. Approval of the exception must be provided to the customer or applicant in writing from the PUD.

The customer is responsible for all costs and materials necessary to provide power to a new or altered service unless otherwise determined by the PUD. If installation does not comply with PUD requirements, any and all corrections must be completed by the customer at the customer's expense.

In addition to PUD requirements, services must meet or exceed current NEC, NESC, Washington State Labor and Industries or other jurisdiction's requirements and must be bonded and grounded.



## PUBLIC UTILITY DISTRICT NO. 1 of CHELAN COUNTY

P.O. Box 1231, Wenatchee, WA 98807-1231 • 203 Olds Station Rd., Wenatchee, WA 98801

(509) 663-8121 • Toll free 1-888-663-8121 • [www.chelanpud.org](http://www.chelanpud.org)

To Our Customer:

Welcome to Public Utility District No. 1 of Chelan County. We look forward to working with you to provide electrical service to your property.

Our mission is *“To provide sustainable, reliable utility services that enhance the quality of life in Chelan County.”*

Enclosed please find:

- Chelan County PUD Contacts
- General Service Connection Information
- Underground, Overhead and Temporary Service Requirements

Copies of the Utility Service Regulations, Utility Service Policies, Fees & Charges, Electric Rate Schedules and forms are available on the web <http://www.chelanpud.org/my-pud-services/rates-and-policies> or by calling the Service Department at (509) 661-8400.

Thank you for your interest in electrical service with Chelan County PUD. We look forward to working with you.

Sincerely,

Your Customer Service Team



## CHELAN COUNTY

### CONTACTS

#### **Chelan County PUD – Application and Construction Services**

203 Olds Station Road  
Wenatchee, WA 98801

(509) 661-8400

### OTHER ELECTRICAL SERVICE CONTACTS

#### **Electrical Inspections**

Washington State Department of Labor and Industries  
519 Grant Road  
East Wenatchee, WA 98802

(509) 886-6500

24 hr. Inspection Line (509) 886-6520

#### **Northwest Utility Notification Center (Utility Locates)**

“Dig Council” (800) 424-5555 or “811”

As a reminder, please contact the appropriate service provider to inquire about fiber, gas, cable TV, water, wastewater (sewer) and / or internet services.

For inquiries for Chelan PUD fiber, more information can be found at:

<https://www.chelanpud.org/fiber>

**Have questions or need more information? Call (509) 661-8400.**

## GENERAL INFORMATION

*The general information section is intended to provide you with information and requirements that apply to most services. For additional information and requirements specific to your electrical service needs, refer to additional sections found within.*

Chelan County PUD is pleased to serve your electrical needs. Installing electrical service to your home or project is a joint effort between you and PUD. To begin the process to request service, you will need to submit an application. Applications can be found at [www.chelanpud.org/newservice](http://www.chelanpud.org/newservice). For electrical service needs in the Stehekin area, an additional evaluation(s) will be required.

### DEFINITION TABLE

<b>Rate Schedule</b>	The category/classification of a customer connection.
<b>Service Entrance Conductors (Wire)</b>	The wires between the service equipment and the connection to the service lateral/drop.
<b>Service lateral/Service Drop</b>	Wires from the main line to the service entrance wires, point of attachment or point of entrance.
<b>Point of Attachment/Point of Entrance</b>	The point where the service wire makes contact with the building.
<b>Disconnecting Means</b>	Usually a circuit breaker or switches/fuses to cut off the supply on the load (customer) side. All Customer-owned devices, such as emergency disconnects, must be installed on the Customer's side of the meter.
<b>Service Equipment</b>	The equipment on the load (customer) end of the service wires, which serve a customer, that make up the main control and shut off of the power supply.
<b>Service Point</b>	The point where the PUD's responsibility stops and the customer's starts. The PUD's Service Point.
<b>Service Conductors (Wires)</b>	Wires from the service point to the Service Disconnecting Means.
<b>PUD Connection Point</b>	A usable PUD transformer or connection point on or near your property to provide electrical service to your project.

## SERVICE & METER BASE GENERAL INFORMATION/ REQUIREMENTS

- Not more than one service of like voltage will be provided to any one building or structure unless granted special permission from the PUD and Washington State Department of Labor and Industries.
- The PUD will supply to a single customer 120/240V single phase service up to maximum service entrance equipment rating of 800 amps.
- Any service in excess of the 800 amps must be by three-phase service which must be balanced on both three-phase and single-phase loading.
- Self-contained meter bases can be used for residential services up to and including 400A single phase (Class 320 meter/meter base). All single phase residential services larger than 400 amps must have current transformer metering.
- Single phase motor services will be allowed up to 7.5 HP maximum.
- Meter bases cannot be enclosed. Removal of the meter base face (cover) cannot be hindered and must be accessible without tools. The meter base face must be visible and unobstructed to allow the meter to be read monthly.
- Any wiring installed without first contacting the PUD to determine the service entrance location is done at the risk of having to change the service location to conform to these requirements at the customer's expense.
- Advise the PUD of upgrades or conversions in the customer's facilities, whether it is a voltage, phase or load requirement, or service entrance location change. An application for changes, depending on the situation, may be required.
- The PUD will specify connection to PUD facility/equipment.
- All new service, upgrades, rewiring or conversion must be in compliance with PUD policies and procedures in effect at the time of the new service, upgrade, rewiring or conversion.
- It is the customer's responsibility to have all inspections performed by the representatives of the agencies having jurisdiction over said inspections.
- If a meter base or meter post is determined inadequate by PUD, the customer must replace the customer owned equipment. If a meter post is replaced, the Customer must transfer all customer owned service entrance equipment to the new post and upgraded to current standards.
- The customer must furnish and install an emergency disconnect as required by other agencies on the customer side of the meter base in a readily accessible exterior location that meets NEC standards and Washington State Labor and Industries requirements.
- Meter base location must be approved by the PUD and must not be longer than 150 feet of wire away from the appropriate PUD transformer.

## CHECKLIST

Steps for You or Your Electrician:

1. Go to <https://www.chelanpud.org/newservice> to obtain an application or call (509) 661-8400 to request an application.
2. Complete and submit the appropriate application.
3. Once received, a PUD engineer will reach out to you to discuss your project and determine fees.
4. Pay fees provided by the PUD engineer to begin your project.
5. Prepare site, dig ditch and install all materials for service as necessary according to PUD design standards. Call the PUD for trench inspection phone line for acceptance of ditch and electrical conduit prior to backfill at (509) 661-8011.



6. Provide and install meter base and all electrical wiring for your project. Coordinate new, altered and replacement installations with Washington State Department of Labor and Industries for electrical inspection.
7. The electrical inspector will typically notify the PUD when your meter base is approved for service.

## **PRIVATE GENERATORS**

- Customer owned stand-by generators are defined by the PUD as those units which are connected to or fed from wiring that is not owned by the PUD and is intended for occasional use to supply emergency or back-up power when PUD supplied power is unavailable.
- Customer owned stand-by generators will be allowed on the customer's side of the meter. All facilities on the customer side of the meter, including generators and transfer switches, must meet or exceed the requirements of the current National Electric Code, Washington Administrative Code, and the Washington State Department of Labor and Industries. It is the customer's responsibility to obtain the necessary size and type of equipment and to obtain the necessary approvals from the appropriate agencies.
- Customer owned and installed generators must be electrically isolated from the PUD's lines to prevent back feeding into the PUD's System. To accomplish this, a transfer or double throw switch must be installed so that the customer's load will be transferred from the PUD's service to the customer's generator upon operation of the switch. The switch must be equipped with interlocks so that simultaneous feed from both the PUD's service and the customer's generator is prevented.
- The PUD reserves the right to disconnect any service that can or does feed simultaneously from both the PUD's service and the customer's generator.
- The customer should consult an electrician and the Washington State Department of Labor and Industries prior to initiating any plan for stand-by generators.

## **QUALITY OF POWER – CUSTOMER RESPONSIBILITIES**

The characteristics of the customer's electrical equipment and devices must allow the PUD's distribution system to operate efficiently without undue interference to the PUD's service or to other customers.

- Prior to purchase, the customer must submit information to the PUD regarding any equipment that might cause interference with service to other customers and/or require additional PUD facilities for its satisfactory operation. The PUD reserves the right to inspect and test any equipment connected to its lines and to obtain any information necessary to determine the operational characteristics of the equipment.
- The customer must provide any power conditioning devices needed to obtain the "quality" of power necessary for optimum performance of voltage-sensitive equipment. Electric service supplied by the PUD may be subjected to voltage disturbances which will not normally affect the performance of typical electrical equipment. However, these disturbances may result in the improper operation of voltage-sensitive equipment such as computers or microprocessors. Voltage-sensitive equipment is defined as equipment which is adversely affected by power disturbances (i.e., sags, spikes, or interruptions) of less than 0.5 seconds in duration.
- Whenever a customer's equipment has characteristics which cause undue interference with PUD service to other customers, the customer must make changes in such equipment or provide, at customer expense, additional equipment to eliminate the interference.
- The effects of the design and operation of high-frequency equipment (such as electronic heating systems, spark discharge devices, radio transmitting equipment, etc., and equipment that generates harmonics, such as an induction furnace) must not create disturbances on the PUD's electrical system which interferes with any other customer's proper operation of communication, radio, television, remote control, or other equipment.
- Devices which can produce harmonic distortion (such as adjustable speed drives, electronic ballasts for fluorescent lighting, and switching power supplies for computers and electric vehicles) must be filtered in order that the harmonic distortion resulting from these devices are kept within the limits specified in IEEE 519-1992, Section 10.

# UNDERGROUND ELECTRICAL SERVICE REQUIREMENTS

Availability and location of PUD facilities for providing underground service will be determined by the PUD prior to the installation of service. For additional requirements refer to the General Information Section.

Both the PUD and the customer have responsibilities for underground services.

The PUD:

- Conducts a Trench Inspection
- The customer may choose to pay the PUD to supply and install secondary wire on their behalf.
- Provides connection at the meter socket (service point) and at the PUD connection point
- Provides the meter

The customer or customer's contractor is required, at minimum, to:

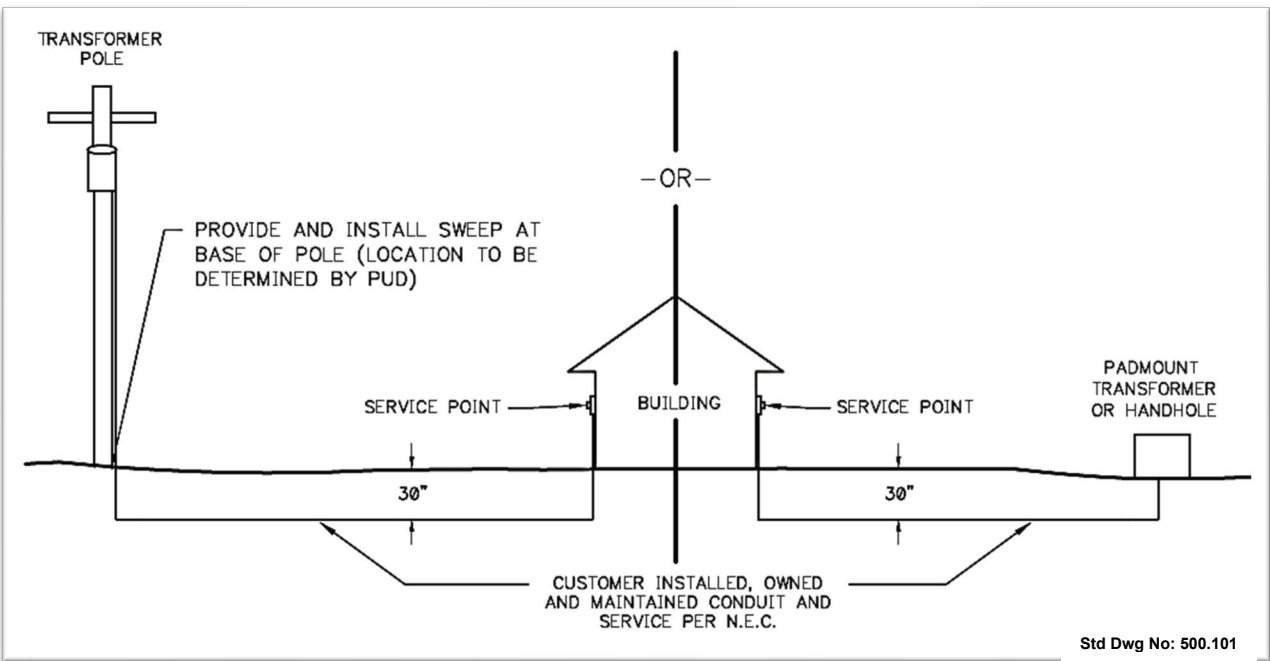
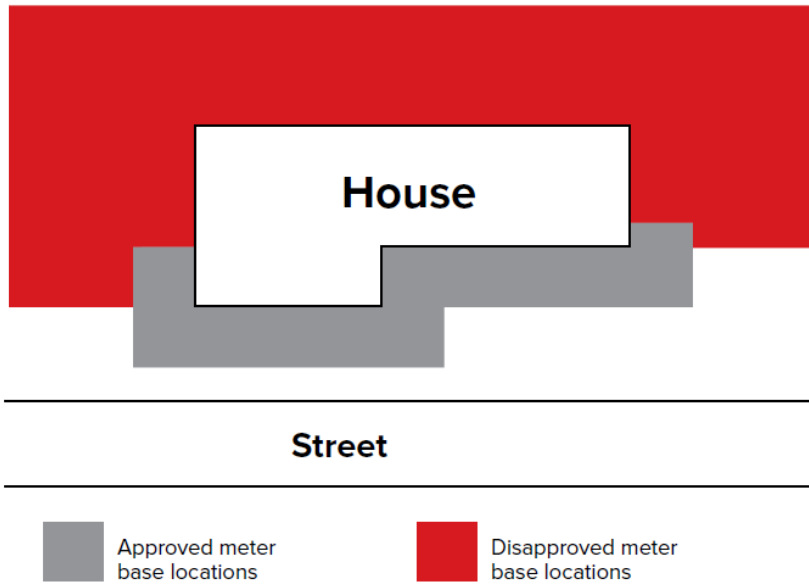
- Dig the trench
- Install conduit
- May choose to supply and install secondary wire by a licensed electrical contractor from the meter base and PUD determined connection point. Coordination with the PUD is required.
- Install the meter base
- Install CTs (if required)
- Obtain L&I Approval
- Install emergency disconnect as required by other agencies on the customer side of the meter base in a readily accessible exterior location

## METER BASE LOCATION

Your meter base must be located in an area that is accessible to utility personnel for accurate meter reading, maintenance and to access in case of a fire.

A meter base on a structure must be located:

- In a location approved by the PUD
- Outside
- On the front 1/3 of your home closest to normal public access
- In an area that is not subject to being landscaped, fenced, in or enclosed (patio, deck, carport, backyard)
- On a structure that is owned by you
- Meters must be mounted five to six feet above finish grade.
- Safe parking must be located within 50 feet of the meter.
- Must be approved by the PUD and be no longer than 150 feet of wire away from the appropriate PUD transformer.

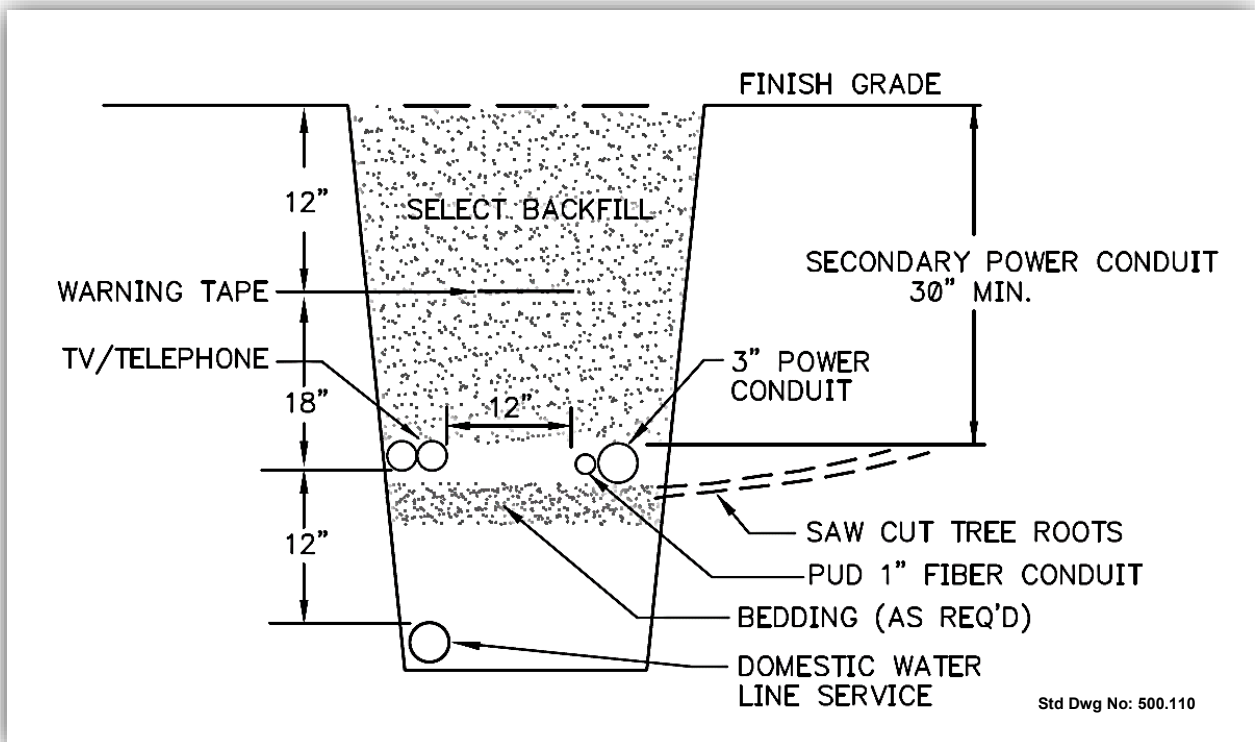


**Figure 1**  
**Underground Service Overview**

## TRENCH

All trenching, conduit installation, backfilling and restoration from your meter base to the PUD point of connection must be done by the customer or customer's contractor.

- Call the "Dig Council" (800) 424-5555 or "811" two business days prior to digging.
- The service route must be as straight as possible from the meter base to the PUD connection point. It cannot cross drainfields and must have a minimum 5 feet horizontal clearance from any drainfield. It cannot be installed under any permanent structures, such as foundations, building, etc.
- 3 inches of bedding material (sand, native rock-free material) must be used in areas with rocky soil and when backfilling trench.
- Provide all trenching to the edge of PUD transformer, handhole or transformer pole. Before digging near PUD facilities, ensure that utilities have been located in the area. Hand dig the last 3 (three) feet to the transformer or handhole and expose the base of the facility.
- Trenching and conduit installation must be inspected by the PUD prior to backfilling. Call (509) 661-8011 to schedule an inspection. A minimum of 48 hours notice is required.



**Figure 2**  
**Underground Trench View**

## CONDUIT

All trenching, conduit installation, backfilling and restoration from your meter base to the PUD point of connection must be done by the customer or customer's contractor.

- Call the PUD at (509) 661-4325 to schedule a serviceman to open PUD handholes and transformers and to coordinate installation of electrical conduit sweep. A minimum of 48 hours notice is required.
- Trenching and conduit installation must be inspected by the PUD prior to backfilling. Call (509) 661-8011 to schedule an inspection. A minimum of 48 hours notice is required.
- Service electrical conduit is required to be 3 inch, Schedule 40, gray electrical conduit and is supplied by the customer. For services over 400 amps, two runs, parallel, of 3 inch Schedule 40 PVC is required. For 3 phase services and single-phase services 600 amps or larger, contact the PUD for conduit requirements. See Figure 3 and Figure 4.
- Service fiber conduit must be 1-inch Schedule 40 conduit and must be only used for PUD fiber optic installation. For additional fiber requirements, contact your Service Provider.
- A maximum of three 90-degree bends are allowed in the conduit run. This includes the bend at the base of the meter and the bend at the PUD point of connection. If a riser is required, refer to Figure 5.
- All conduit sweeps are required to be 3 inch, Schedule 40 PVC 36-inch minimum radius.
- All conduit must be either 10 foot or 20 foot sections with one extended coupling.
- All couplings must be the "extended" type.
- Flexible conduit is not allowed.
- A maximum of 150' of wire is acceptable.
- Conduit must be bonded with cement that is compatible with the conduit on which it is used.
- Conduit must be continuous from the customer's service entrance to the PUD's point of service. Condulets, junction boxes, or devices that allow access to the service wire must not be used.
- Conduits that terminate at a PUD pole must be installed as shown in Figure 5 as required by the PUD.
- The customer must repair or replace any conduit that is improperly installed, crushed or defective for the life of the service with the exception of the riser installed on the PUD pole.
- When electrical conduits/wires cross over or under water, there must be a minimum of 12 inches vertical separation. Refer to NEC (National Electric Code) for separation requirements from gas and sewer lines for electrical wire/conduit.
- Install required PUD provided warning tape in trench 18 inches above power conduits.

**DO NOT ATTEMPT TO INSTALL CONDUIT AND/OR WIRE INTO ENERGIZED FACILITIES WITHOUT A PUD SERVICEMAN PRESENT.**

## WIRE

The customer has the option to pay the PUD for wire or provide and install PUD approved wire by an electrical contractor. A maximum of 150 ft of wire is acceptable.

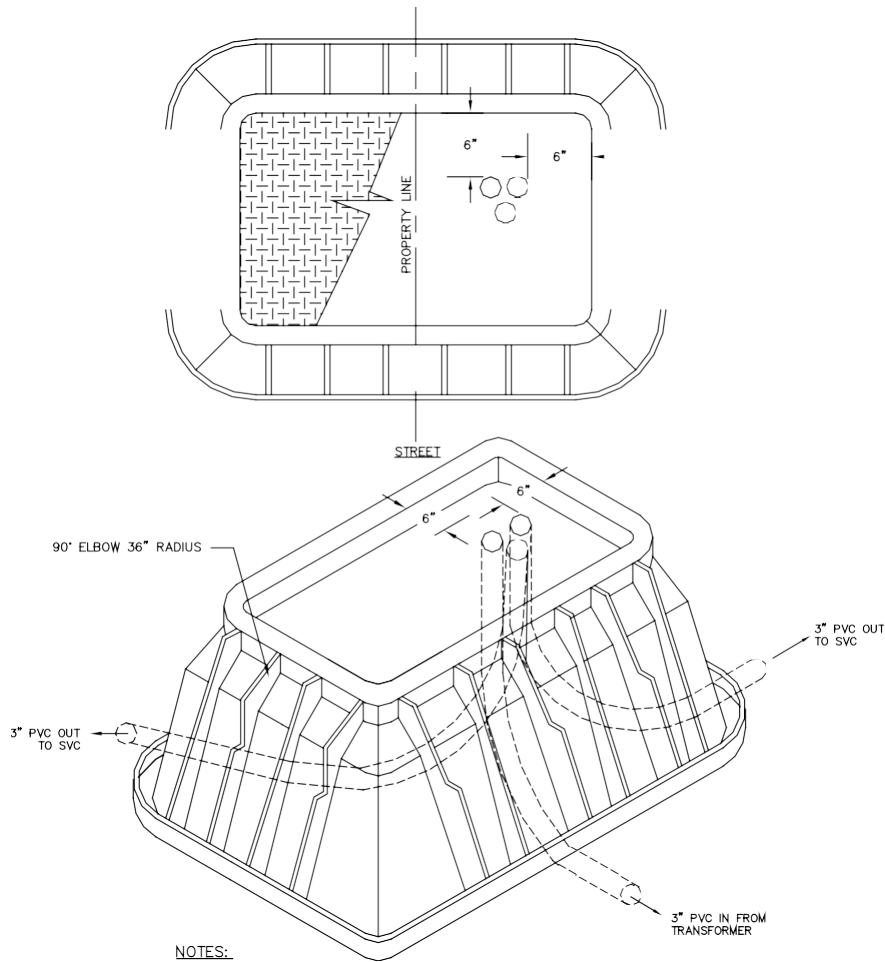
Options include:

1. You may pay the PUD to install wire on your behalf.
2. You may hire a licensed electrical contractor to supply and install PUD approved wire.
  - Verify wire size, type, and acceptable manufacturers with the PUD prior to installation.
    - Acceptable wire sizes include:
      - 200 amp 120/240V service = 4/0 – 4/0 – 2/0 aluminum URD triplex
      - 400 amp 120/240V service = 350kCM – 350kCM – 4/0 aluminum URD triplex
    - The following are not acceptable:
      - The PUD cannot terminate wire that is smaller than #6 size or larger than 500MCM. Any wire outside this range must be approved by the PUD prior to installation.
      - Compact wire is not acceptable.
  - Call the PUD Service Department at (509) 661-4325 to schedule a serviceman to open PUD handholes and transformers and to coordinate installation of electrical wire by an electrical contractor. A minimum of 2 business days' notice is required.
  - Verify adequate excess length of wire required at the connection point with the PUD.
  - PUD will provide connection at the meter socket (service point) and at the PUD connection point (Refer to Figure 1 - Underground Service Overview).

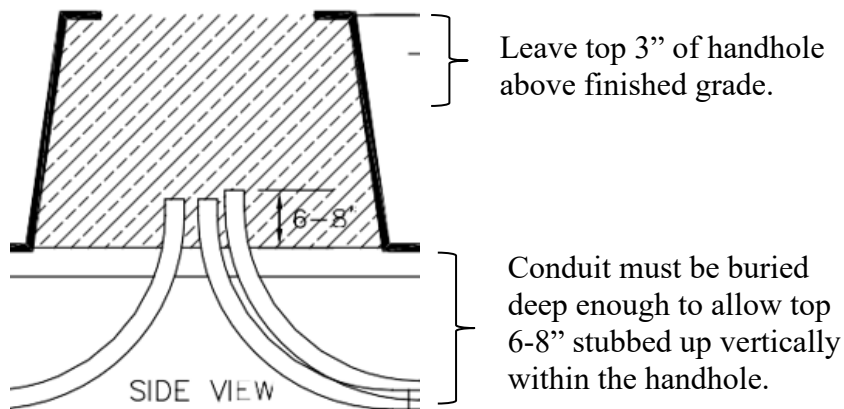
# HANDHOLE

The customer may be required, as determined by a Customer Service Engineer, to install a handhole to provide electrical service. The following is required:

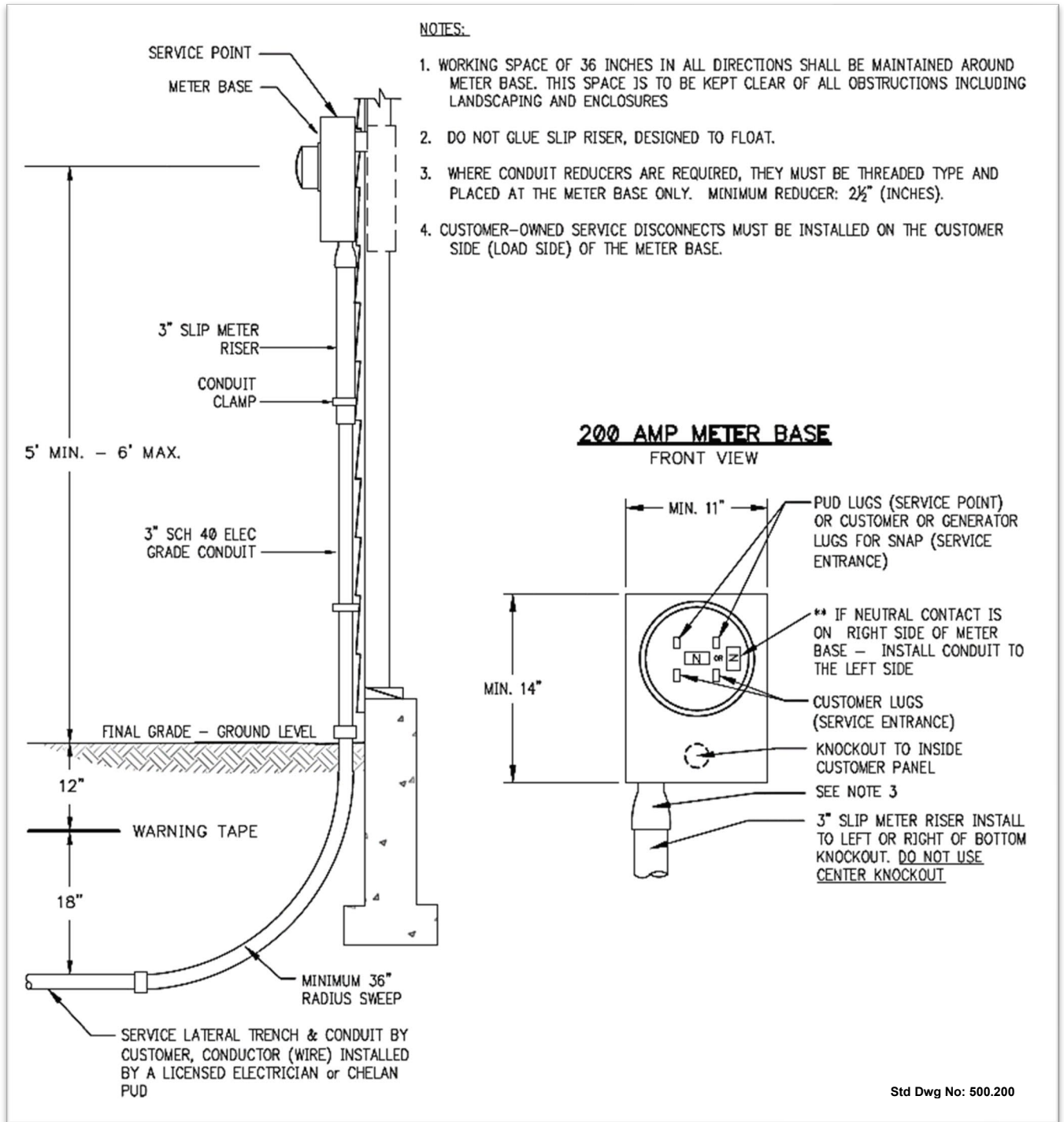
- All conduit to be grouped in back right corner from street and cap 4" above grade in vault bottom.
- Keep all conduit 6" from handhole sides and plumb vertical.
- Do not plumb conduits in middle of handhole.
- Integrity of handhole cannot be compromised by drilling or cutting.



NOTES:

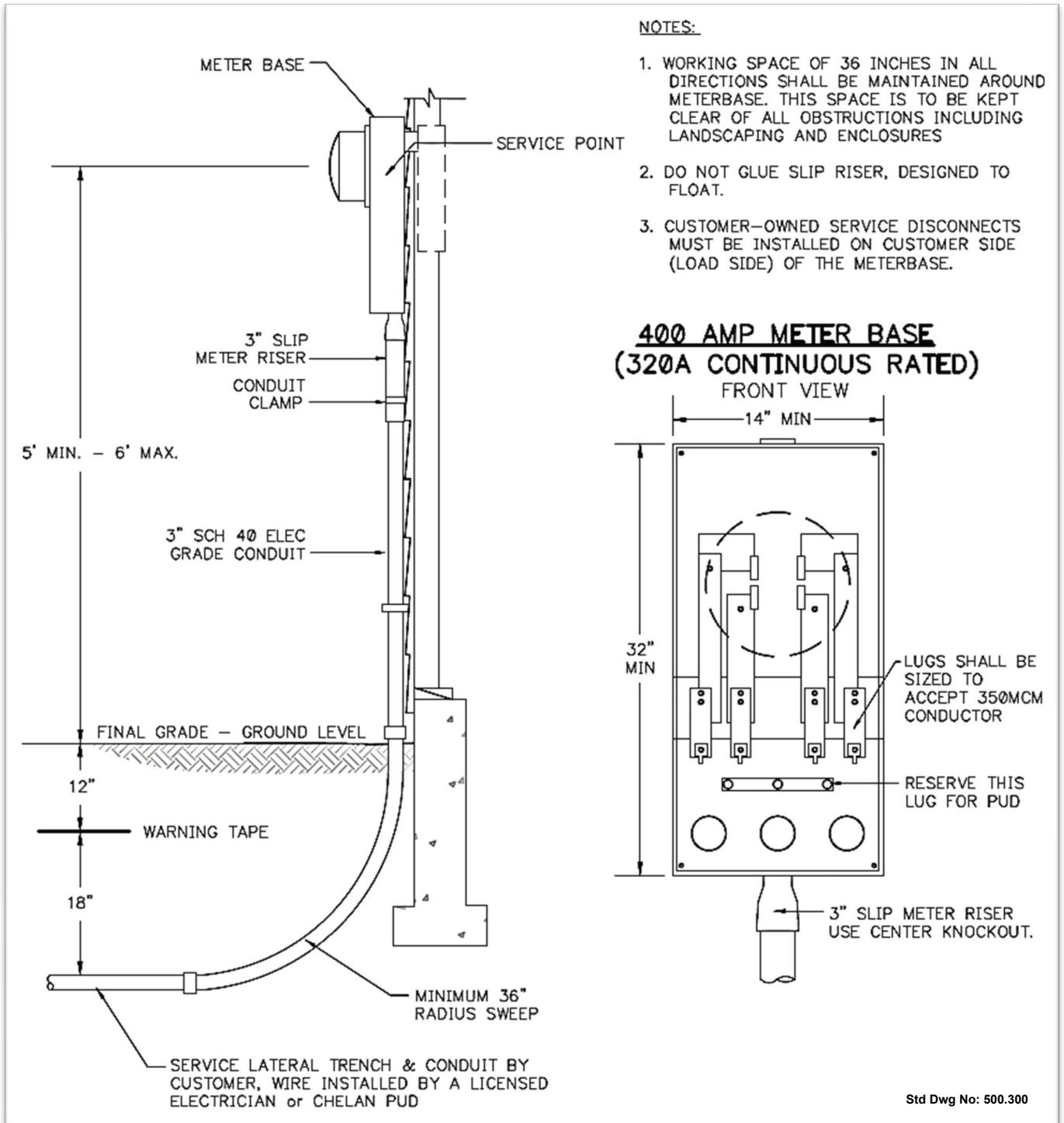


# UNDERGROUND METER BASE STANDARD DRAWINGS

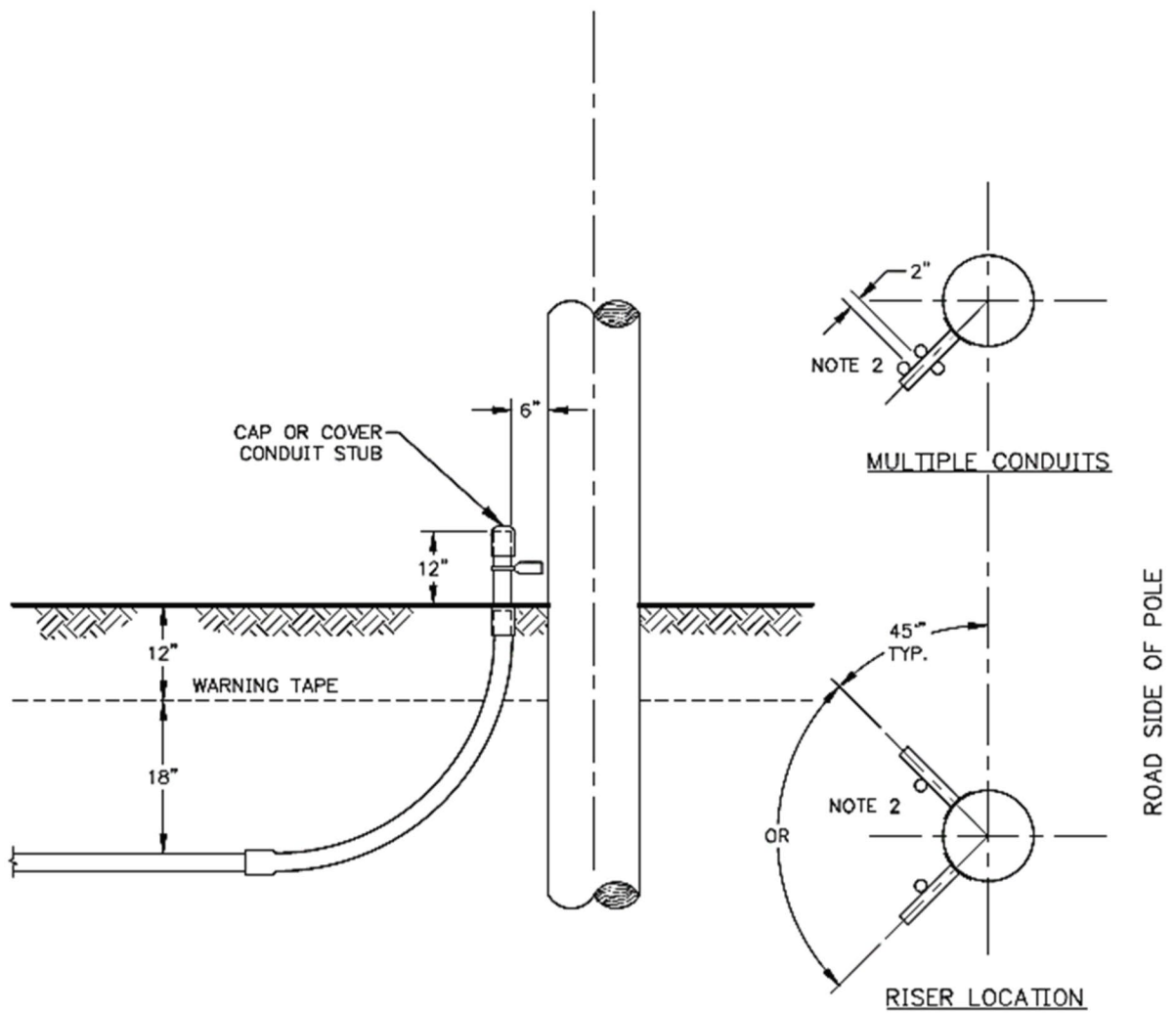


**Figure 3**  
**200 Amp Underground Residential Meter Installation**





**Figure 4**  
400 Amp Underground Residential  
Meter Installation



**NOTES:**

1. FUTURE CONDUIT STUBS SHALL BE CAPPED AT POLE & IN VAULT.
2. RISERS SHALL BE SUPPORTED BY STAND-OFF BRACKETS & CLAMPS. PLACE STUBS TO MATCH RISER CONFIGURATIONS.
2. IF RISER BRACKETS DO NOT EXIST, VERIFY PROPER QUADRANT FOR CONDUIT PLACEMENT WITH PUD.

Std Dwg No: 280.Riser-1

**Figure 5**  
Service Riser Installation

## UNDERGROUND REMOTE METER BASE

Remote metering is a meter base that is provided, owned and maintained by the customer and is mounted on a meter post not affixed to a structure. This includes Factory Built meter base pedestals.

Availability and location of PUD facilities for providing underground remote service will be determined by the PUD prior to the installation of service. For additional requirements refer to the General Information Section. Both the PUD and the customer have responsibilities for underground services.

The PUD:

- Conducts a Trench Inspection
- The customer may choose to pay the PUD to supply and install secondary wire on their behalf.
- Provides connection at the meter socket (service point) and at the PUD connection point
- Provides the meter

The customer or customer's contractor is required, at minimum, to:

- Dig the trench
- Install conduit
- May choose to supply and install secondary wire by a licensed electrician from the meter base and PUD determined connection point. Coordination with the PUD is required.
- Install the meter base
- Install CTs (if required)
- Obtain L&I Approval
- Install meter post
- Install emergency disconnect as required by other agencies on the customer side of the meter base in a readily accessible exterior location

## LOCATION

Your remote meter base must be located in an area that is accessible to utility personnel for accurate meter reading, maintenance and to access in case of a fire.

The remote meter base must be located:

- In a location approved by the PUD
- Outside and seen from the roadway
- On the front 1/3 of your property closest to normal public access
- In an area that is not subject to being fenced in or enclosed (patio, deck, carport, backyard, walkway, breezeway)
- On a property that is owned by you
- Safe parking must be located within 50 feet of the meter.
- Meter base must be installed a minimum of 10 feet from PUD equipment and be served with no more than 150 feet of wire (connection point to connection point) from the appropriate PUD transformer.
- 
- If installing a remote meter base or pedestal in a heavy snow area, contact the PUD for approval.
- When a pedestal is located in a parking area, it must be located that parked vehicles will not restrict meter accessibility or be damaged by vehicular traffic.

Meter post must meet the following requirements:

- 6" x 6" full treated timber or butt treated set at 48" minimum burial and tall enough to meet minimum clearance requirements
- 4"x13# steel I-beam, 7' long set in minimum 18"x18"x18" concrete foundation or (2) 2" x 2" x 3/16" steel angle irons set in minimum 18"x18"x18" concrete block buried minimum 30"

A meter post meeting the following criteria:

Pole Length	Pole Class	Setting Depth	Circumference 6' from Butt		Circumference at Top
			Fir	Cedar	
20 ft	4	4 feet	25"	27"	21"
25 ft	4	5 feet	28"	30"	21"
30 ft	4	5 ½ feet	30"	32.5"	21"

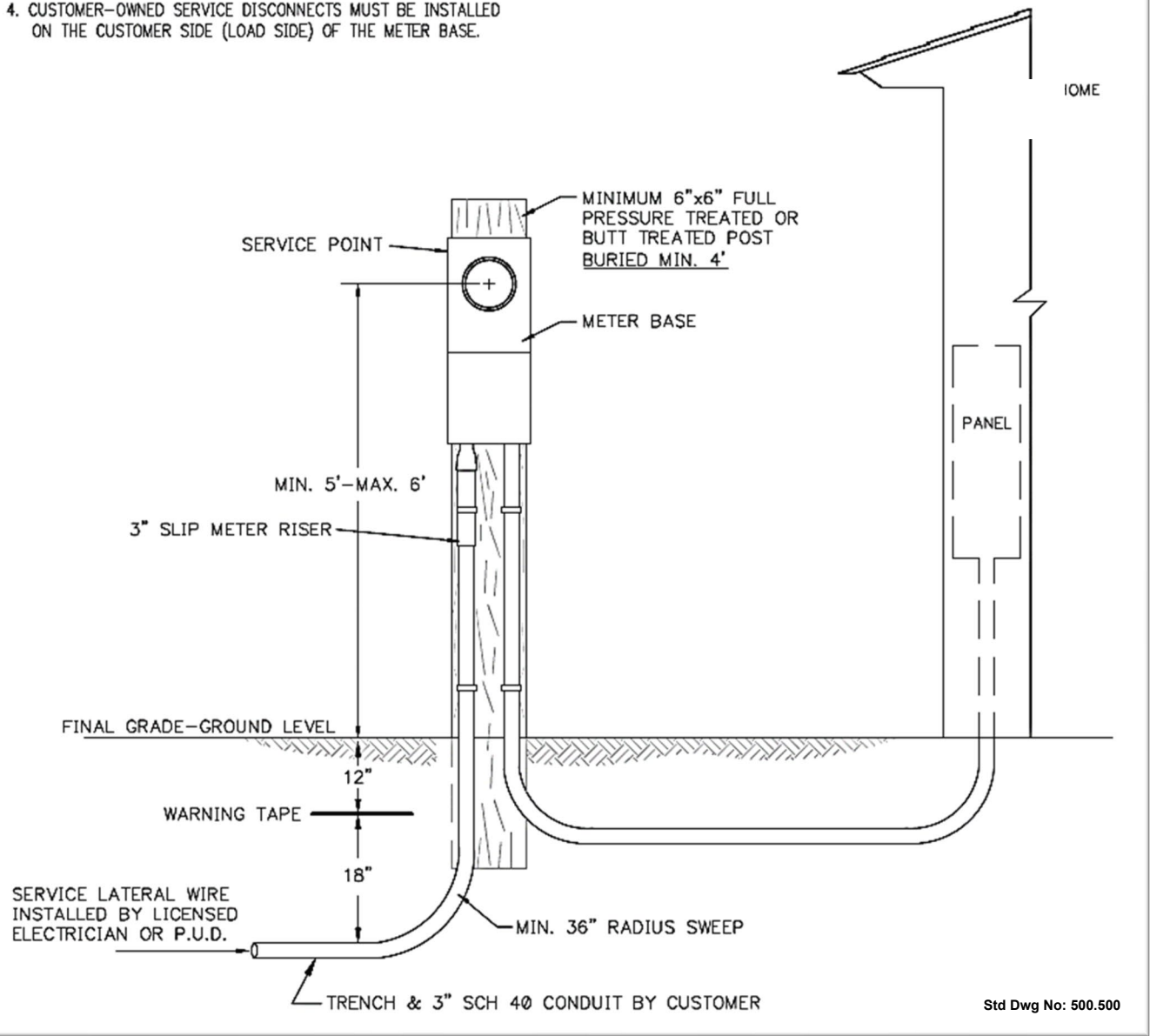
### INSTALLATION OPTIONS

- Custom-built meter post (Figure 6 - Option 1, 2 or 3)
  - a All meters must be mounted five to six feet above finish grade.
- Factory-built meter pedestal (Figure 7 - See restrictions)
  - a All meters must be mounted three to four feet above finish grade.

# UNDERGROUND REMOTE METER BASE STANDARD DRAWINGS

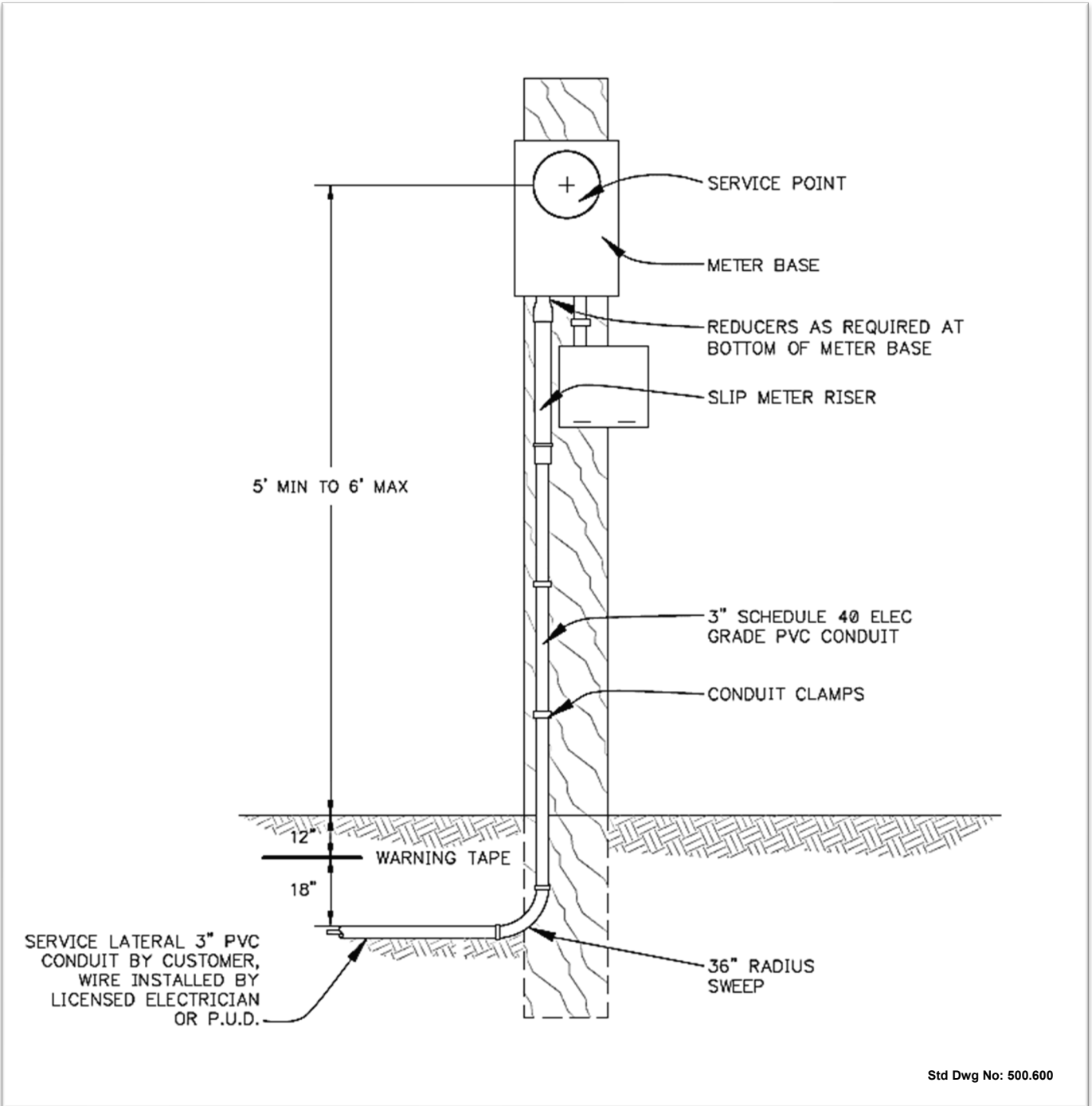
**GENERAL NOTES:**

1. WORKING SPACE OF 36 INCHES IN ALL DIRECTIONS SHALL BE MAINTAINED AROUND METER BASE. THIS SPACE IS TO BE KEPT CLEAR OF ALL OBSTRUCTIONS INCLUDING LANDSCAPING AND ENCLOSURES
2. DO NOT GLUE SLIP RISER, DESIGNED TO FLOAT
3. WHERE CONDUIT REDUCERS ARE REQUIRED, THEY MUST BE THREADED TYPE AND PLACED AT THE METER BASE ONLY. MINIMUM REDUCER: 2½" (INCHES)
4. CUSTOMER-OWNED SERVICE DISCONNECTS MUST BE INSTALLED ON THE CUSTOMER SIDE (LOAD SIDE) OF THE METER BASE.



Std Dwg No: 500.500

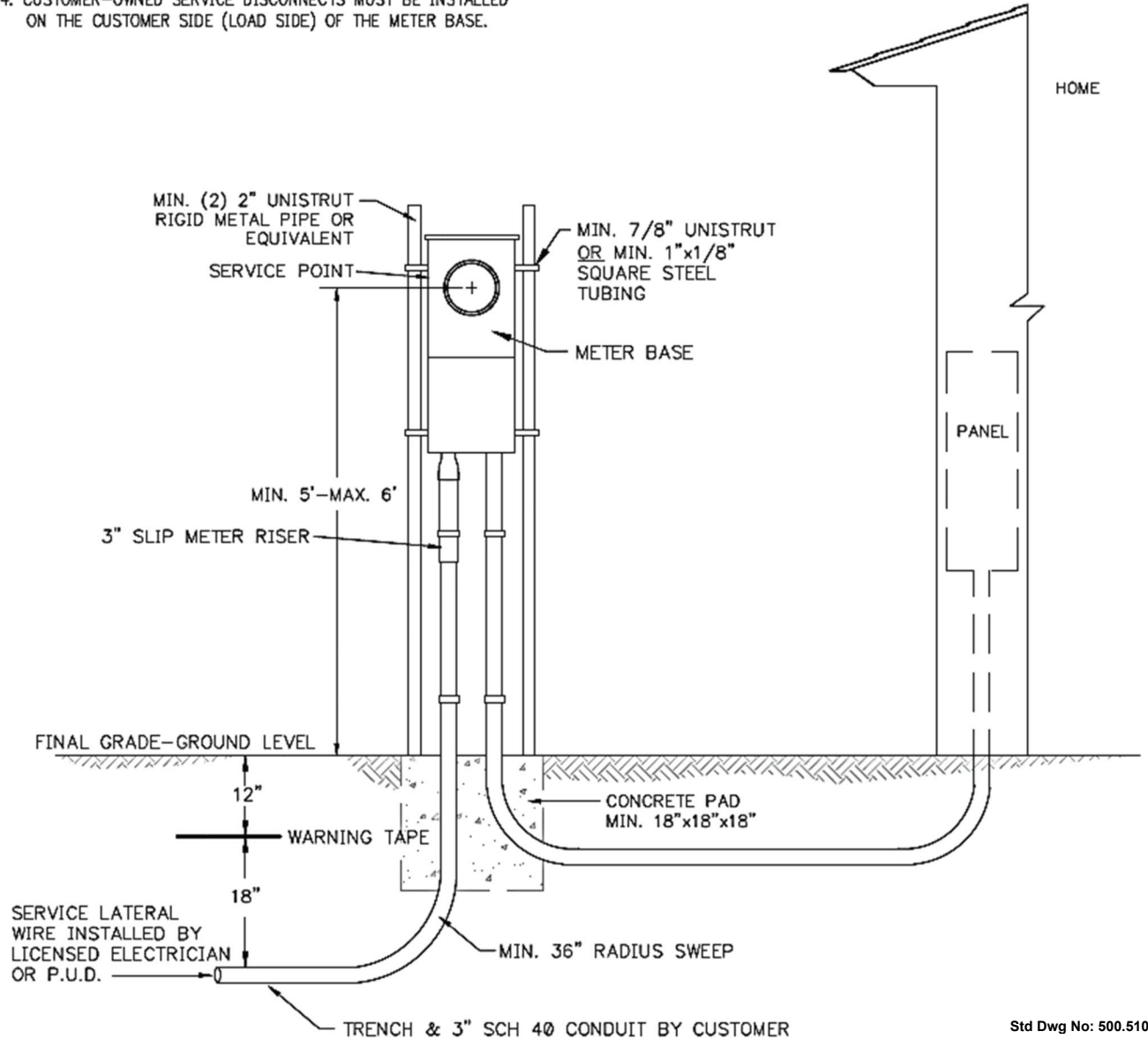
**Figure 6 – Option 1  
Custom Built Underground Residential  
Meter Post Installation**



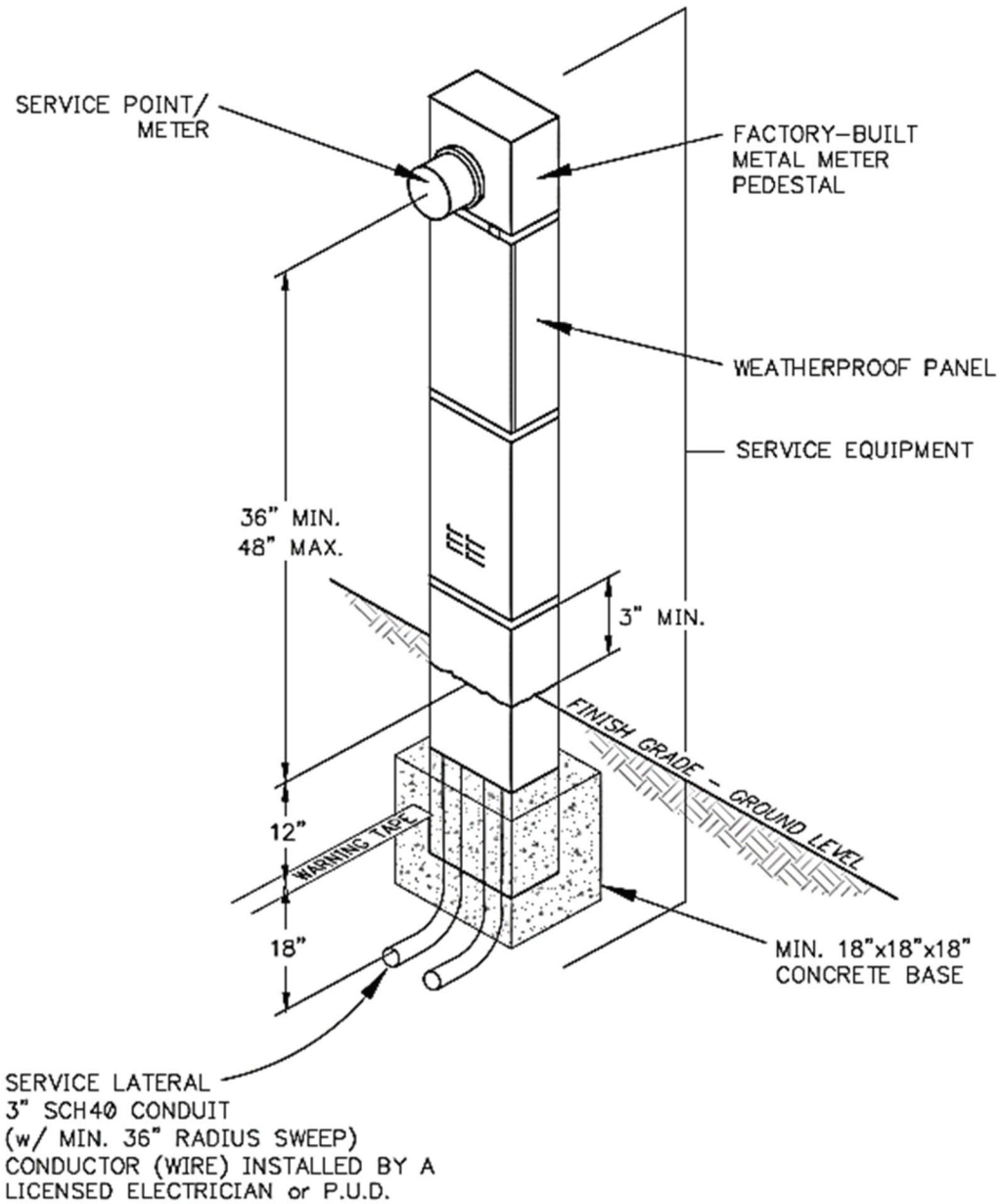
**Figure 6 – Option 2**  
**Custom Built Underground Residential**  
**Meter Post Installation**

GENERAL NOTES:

1. WORKING SPACE OF 36 INCHES IN ALL DIRECTIONS SHALL BE MAINTAINED AROUND METER BASE. THIS SPACE IS TO BE KEPT CLEAR OF ALL OBSTRUCTIONS INCLUDING LANDSCAPING AND ENCLOSURES
2. DO NOT GLUE SLIP RISER, DESIGNED TO FLOAT
3. WHERE CONDUIT REDUCERS ARE REQUIRED, THEY MUST BE THREADED TYPE AND PLACED AT THE METER BASE ONLY. MINIMUM REDUCER: 2½" (INCHES)
4. CUSTOMER-OWNED SERVICE DISCONNECTS MUST BE INSTALLED ON THE CUSTOMER SIDE (LOAD SIDE) OF THE METER BASE.



**Figure 6 – Option 3**  
**Custom Built Underground Residential**  
**Unistrut Meter Post Installation**



Std Dwg No: 500.520

**Figure 7**  
**Factory Built Underground Residential**  
**Meter Pedestal Installation**



# OVERHEAD ELECTRICAL SERVICE REQUIREMENTS

Availability and location of Chelan County PUD facilities for providing overhead service will be determined by the PUD prior to the installation of service. For additional requirements refer to the General Information Section. Both the PUD and the customer have responsibilities for overhead services.

The PUD:

- The customer pays the PUD to supply and install secondary wire.
- Provides connection at the meter socket and at the PUD connection point. The weatherhead is the “service point” location.

The customer or customer’s contractor is required, at minimum, to:

- Install the meter base
- Provides a connection point
- Install CTs (if required)
- Obtain L&I Approval
- Install emergency disconnect as required by other agencies on the customer side of the meter base in a readily accessible exterior location

Additional Requirements:

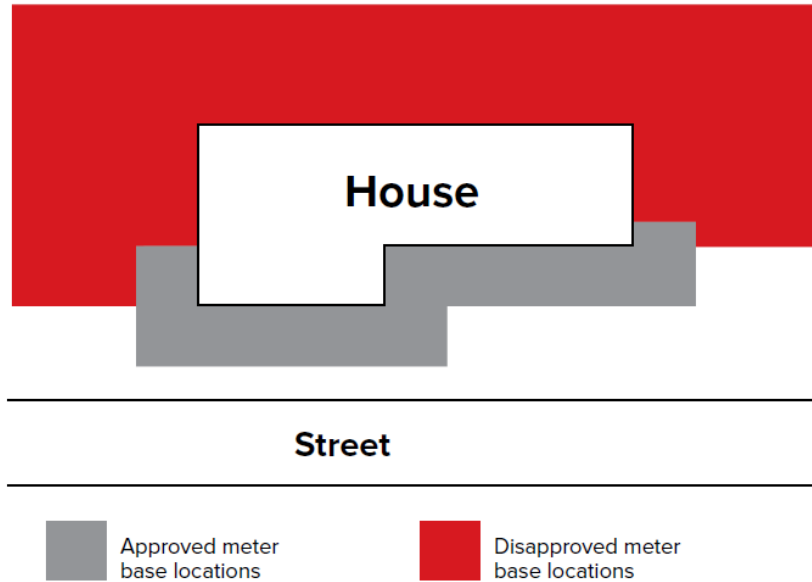
- If overhead service length is 75 feet or more from the PUD point of connection, a customer meter post must be guyed, unless otherwise determined by the PUD engineer. Service masts extending higher than 26 inches above the roof or with overhead services longer than 50 feet must be guyed.
- If overhead service is over 75 feet from PUD point of connection or crosses a road, a PUD installed service pole, as determined by the PUD and paid for by the customer, may be required to maintain clearances.
- If the service will pass through trees or brush, a three-foot path must be cleared and maintained to allow service personnel to access the line, and to allow lines to hang without contacting trees or limbs. Maintaining this clear path is the customer’s responsibility.
- The customer must furnish and install a substantial point of attachment for wall or mast mounting that meets NEC requirements.
- For a duplex or larger building where only one strike to the building is permitted by state law but more than one weatherhead is desired, the weatherheads must terminate within eighteen (18) inches of one another.
- Attaching service brackets to the barge board and fanning the wires above the edge of the roof to connect to a service mast and service brackets attached directly to the roof are not accepted.

## METER BASE LOCATION

Your meter base must be located in an area that is accessible to utility personnel for accurate meter reading, maintenance and to access in case of a fire.

A meter base on a structure must be located:

- In a location approved by the PUD
- Outside
- On the front 1/3 of your home closest to normal public access
- In an area that is not subject to being landscaped, fenced, in or enclosed (patio, deck, carport, backyard)
- On a structure that is owned by you
- Meters must be mounted five to six feet above finish grade.
- Safe parking must be located within 50 feet of the meter.
- Meter base must be installed a minimum of 10 feet from PUD equipment and be served with no more than 150 feet of wire (connection point to connection point) from the appropriate PUD transformer.

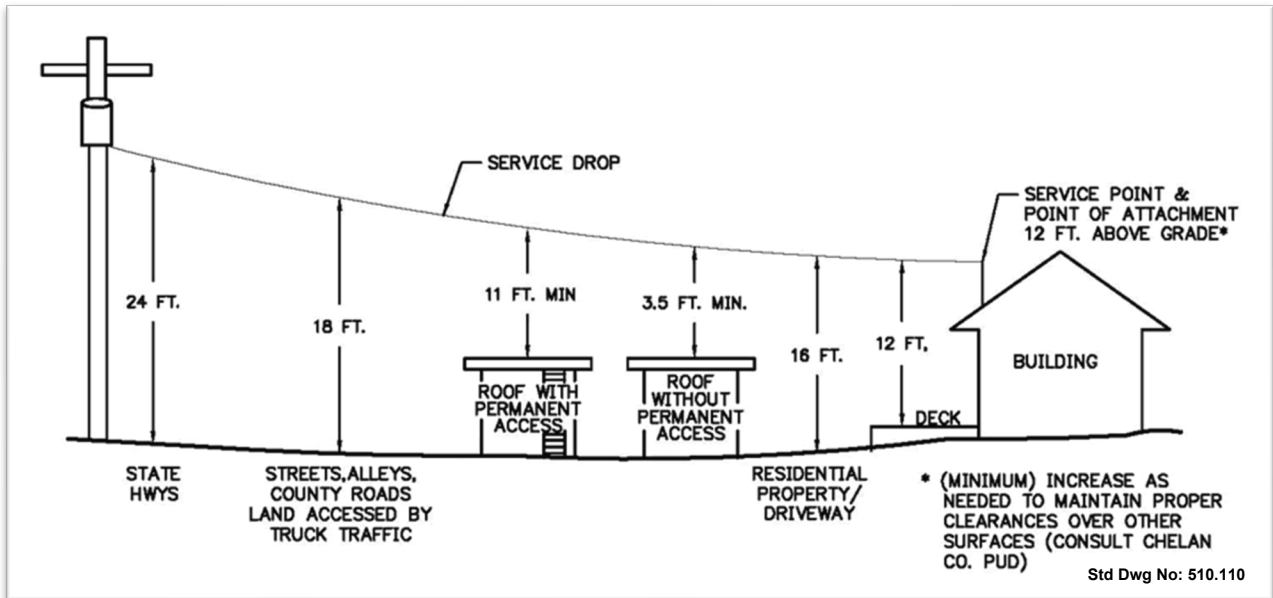


## OVERHEAD CLEARANCE AND ATTACHMENT REQUIREMENTS

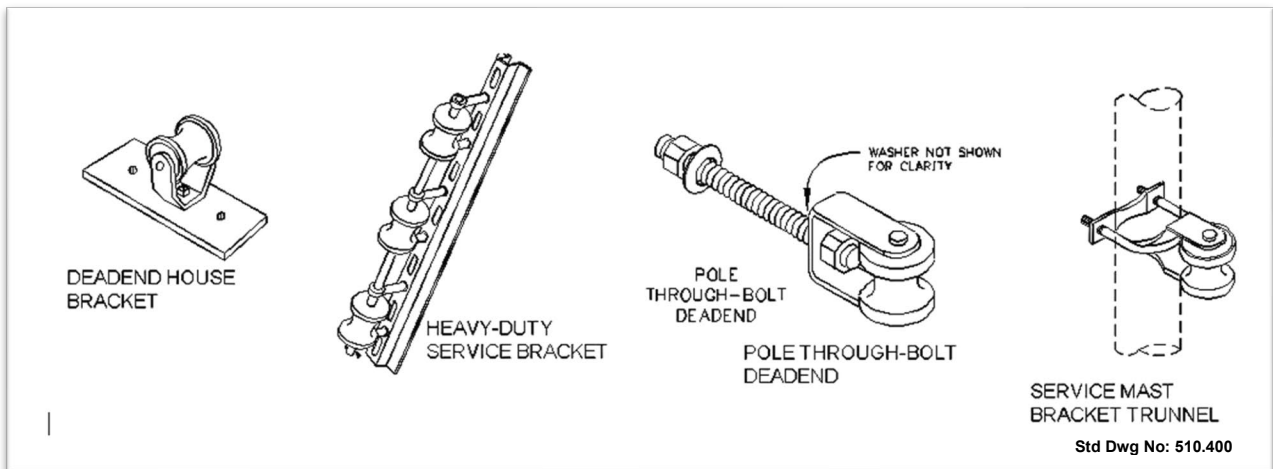
The National Electric Code (NEC) and the National Electric Safety Code (NESC) establish minimum clearance requirements to maintain safe height distances for electrical wires over various terrain. The service drop from a PUD pole to a service pole must meet clearances. Refer to Figure 8.

The PUD supplies and installs the overhead wire to the point of attachment. The customer must provide a point of attachment that will allow the PUD to meet the clearance requirements. Refer to Figure 9.

Additional mast supports, typically a guy or a brace, are required for any service line over 50 feet in length.

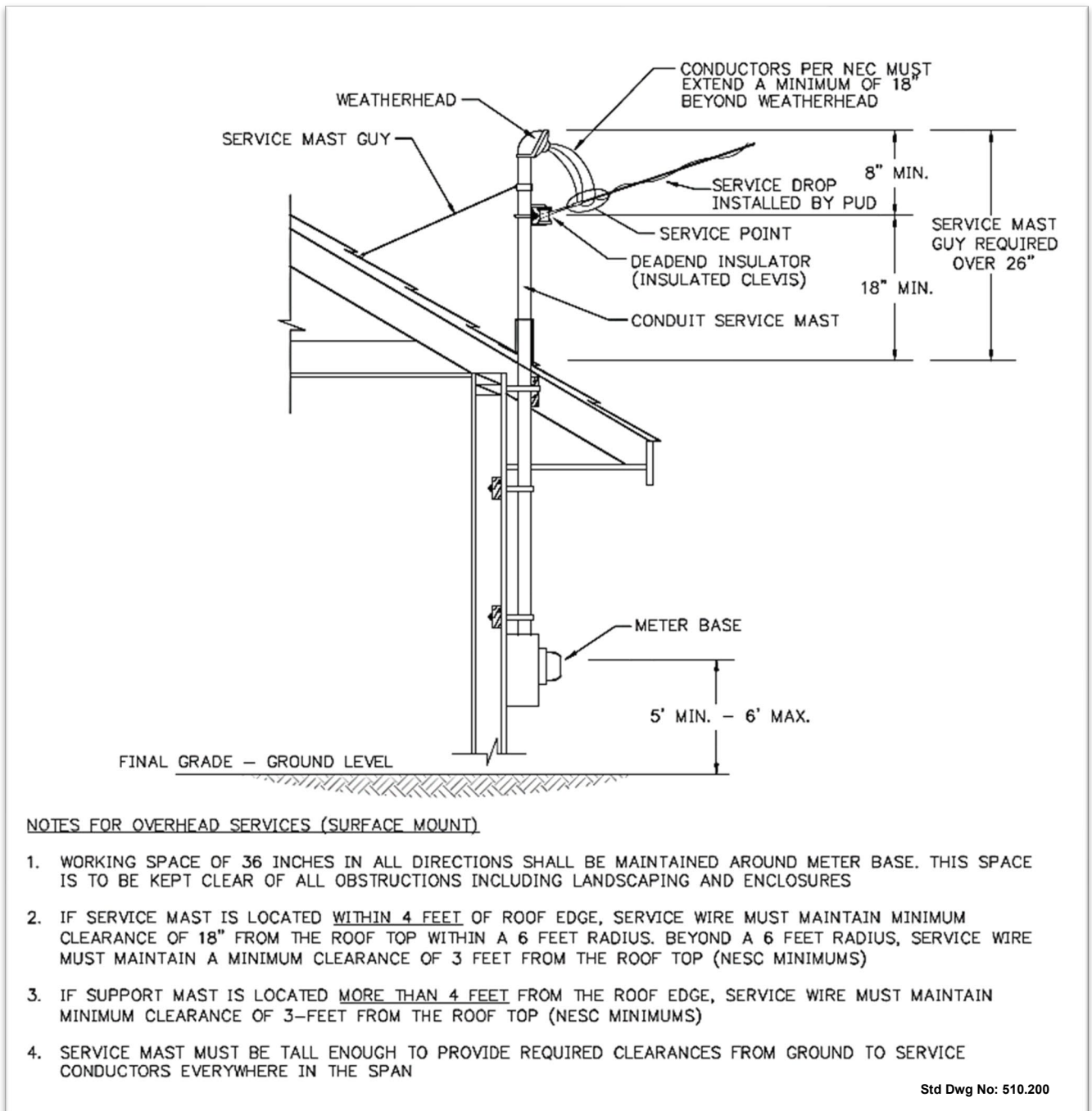


**Figure 8**  
Minimum Clearances per NEC/NESC

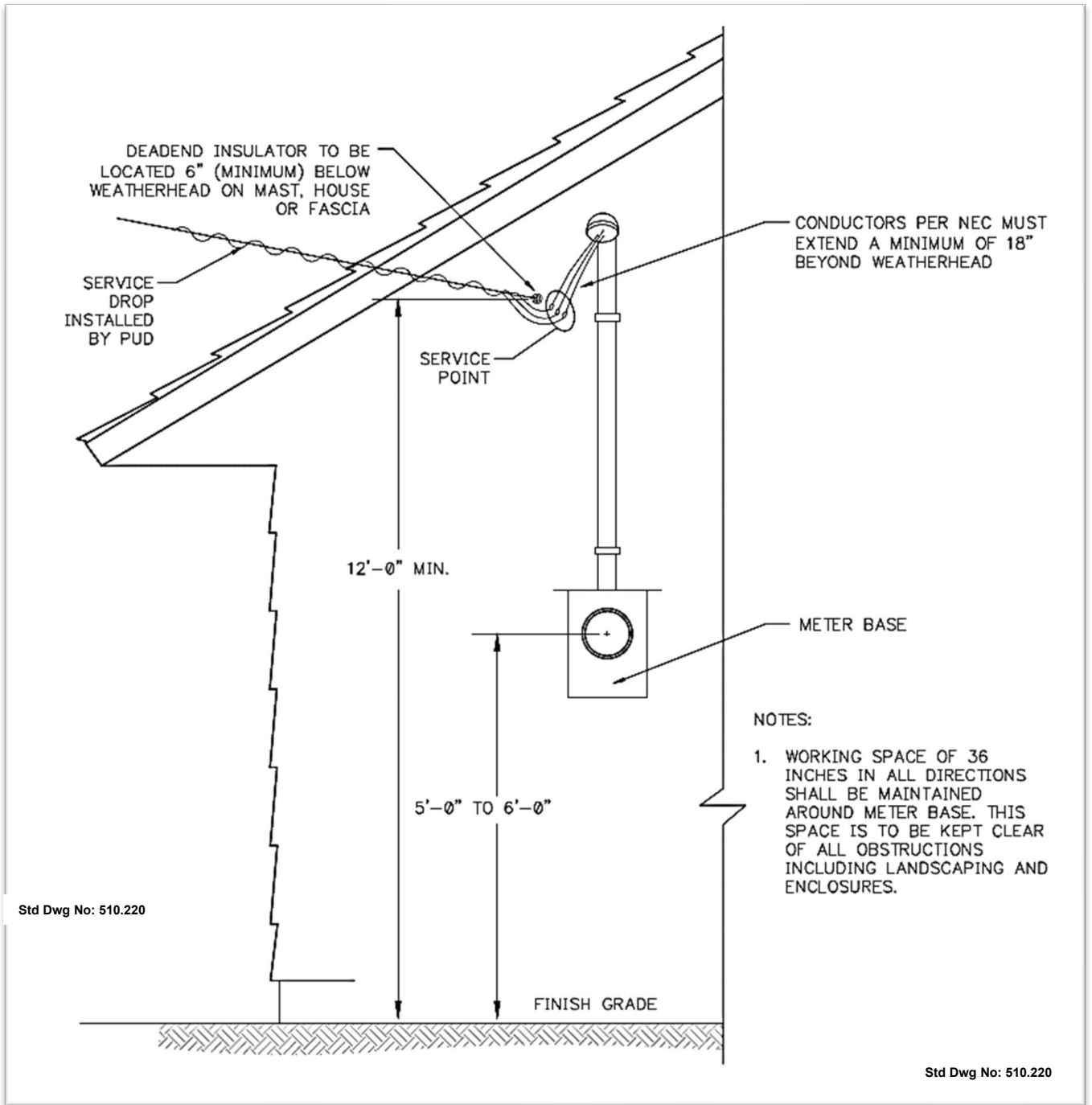


**Figure 9**  
Approved Dead-end Bracket Types

## OVERHEAD METER BASE STANDARD DRAWINGS



**Figure 10**  
**200 Amp Overhead Residential Meter**  
**Base and Weatherhead Installation**



**Figure 11**  
**200 Amp Overhead Residential Service**  
**Gable End Installation**

## **OVERHEAD REMOTE METER BASE**

Remote metering is a meter base that is provided, owned and maintained by the customer and is mounted on a meter post not affixed to a structure.

### **LOCATION**

Your remote meter base must be located in an area that is accessible to utility personnel for accurate meter reading, maintenance and to access in case of a fire.

The remote meter base must be located:

- In a location approved by the PUD
- Outside and seen from the roadway
- On the front 1/3 of your property closest to normal public access
- In an area that is not subject to being fenced in or enclosed (patio, deck, carport, backyard, walkway, breezeway)
- On a property that is owned by you
- Safe parking must be located within 50 feet of the meter.
- Meter base must be installed a minimum of 10 feet from PUD equipment and be served with no more than 150 feet of wire (connection point to connection point) from the appropriate PUD transformer.
- If installing a remote meter base in a heavy snow area, contact the PUD for approval.
- When a meter base is located in a parking area, it must be so located so that parked vehicles will not restrict accessibility or the meter base will not be damaged by vehicular traffic.

## POST REQUIREMENTS

Meter post must meet the following requirements:

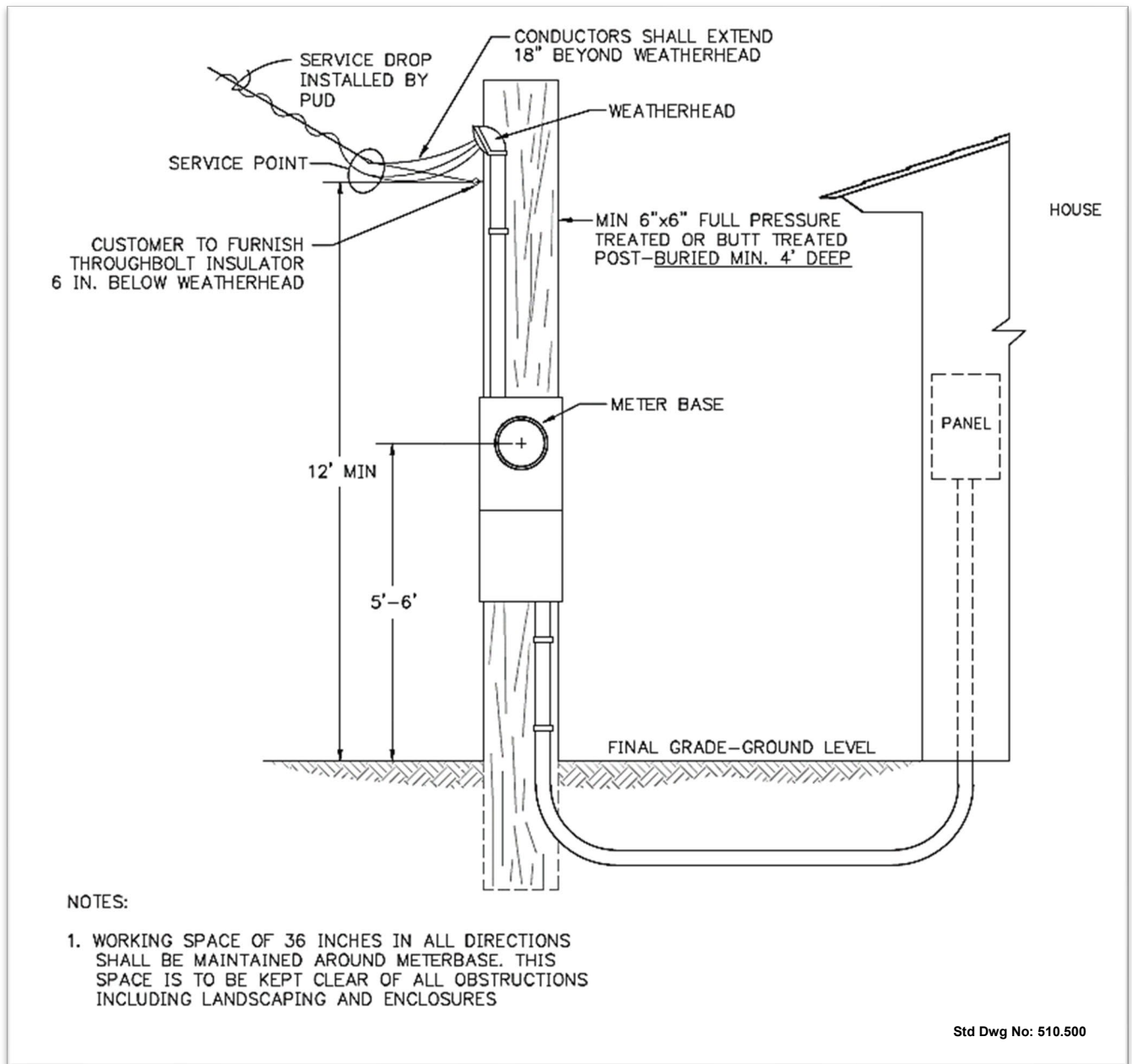
- 6" x 6" full treated timber or butt treated set at 48" minimum burial and tall enough to meet minimum clearance requirements
- 4"x13# steel I-beam, 7' long set in minimum 18"x18"x18" concrete foundation or (2) 2" x 2" x 3/16" steel angle irons set in minimum 18"x18"x18" concrete block buried minimum 30"

A meter post must meet the following criteria:

Pole Length	Pole Class	Setting Depth	Circumference 6' from Butt		Circumference at Top
			Fir	Cedar	
20 ft	4	4 feet	25"	27"	21"
25 ft	4	5 feet	28"	30"	21"
30 ft	4	5 ½ feet	30"	32.5"	21"

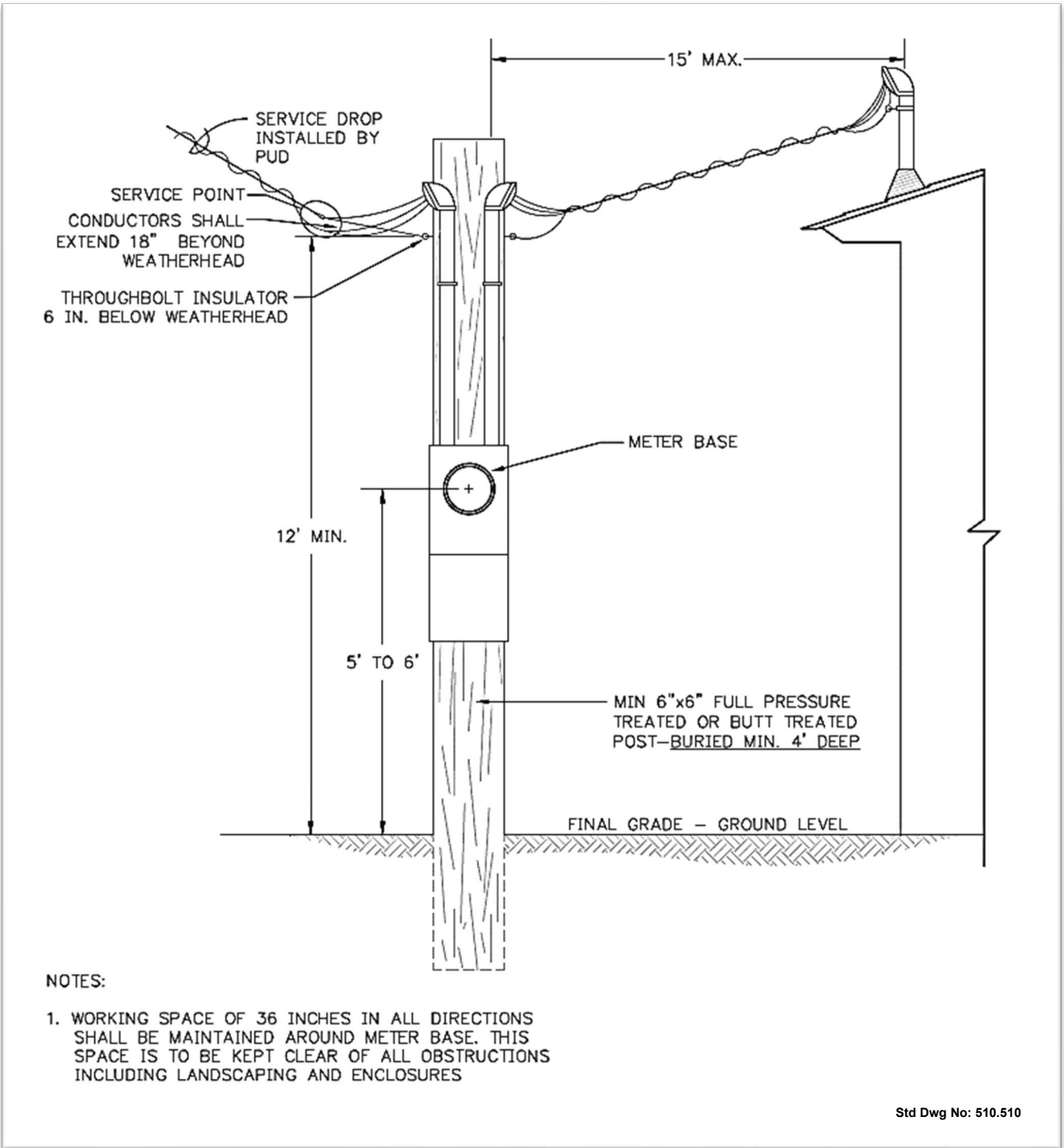
- All meter posts, guys and anchoring must be supplied, installed, maintained and are owned by the Customer.
- All meters must be mounted five to six feet above finish grade.
- The PUD will not connect to any customer installed meter post that is unstable and does not conform to PUD standards.
- If a meter post is determined inadequate by PUD, and must be replaced, the customer must, at their expense, transfer all customer owned service entrance equipment to the new post and upgrade to current standards as necessary.
- Install emergency disconnect as required by other agencies on the customer side of the meter base in a readily accessible exterior location

# OVERHEAD REMOTE METER BASE STANDARD DRAWINGS



**Figure 12**  
**200 Amp Remote Service**  
**Underground Panel**





**Figure 13**  
**200 Amp Remote Service**  
**Overhead Panel**

# TEMPORARY ELECTRICAL SERVICE REQUIREMENTS

Temporary Electric Service is defined as single phase or three phase power required for construction use or other operations that are not considered permanent and is not be construed as seasonal or recurring. This temporary service is limited to 12 months unless work is actively and continuously in progress. Refer to PUD Regulation 43: TEMPORARY ELECTRIC SERVICE for all requirements.

Availability and location of PUD facilities for providing temporary service will be determined by the PUD prior to the installation of service. Customers may be required to pay certain costs incurred by the PUD for installation and removal of temporary services including service poles.

For additional requirements refer to the General Information Section. Both the PUD and the customer have responsibilities for temporary services.

The PUD:

- Determines what electrical supply is available, overhead or underground. This will determine the type of meter base necessary to provide service
- Provides connection at the meter socket and at the PUD connection point. The weatherhead is the "service point" location.
- Provides the meter.
- Provides overhead wire if an overhead service.

The customer or customer's contractor is required, at minimum, to:

- Install the meter base
- Install meter post
- Provides underground wire if an underground service.
- Obtain L&I Approval
- Install emergency disconnect as required by other agencies on the customer side of the meter base in a readily accessible exterior location

# OVERHEAD TEMPORARY SERVICES

## LOCATION

Your temporary meter base must be located in an area that is accessible to utility personnel for accurate meter reading, maintenance and to access in case of a fire.

The temporary meter base must be located:

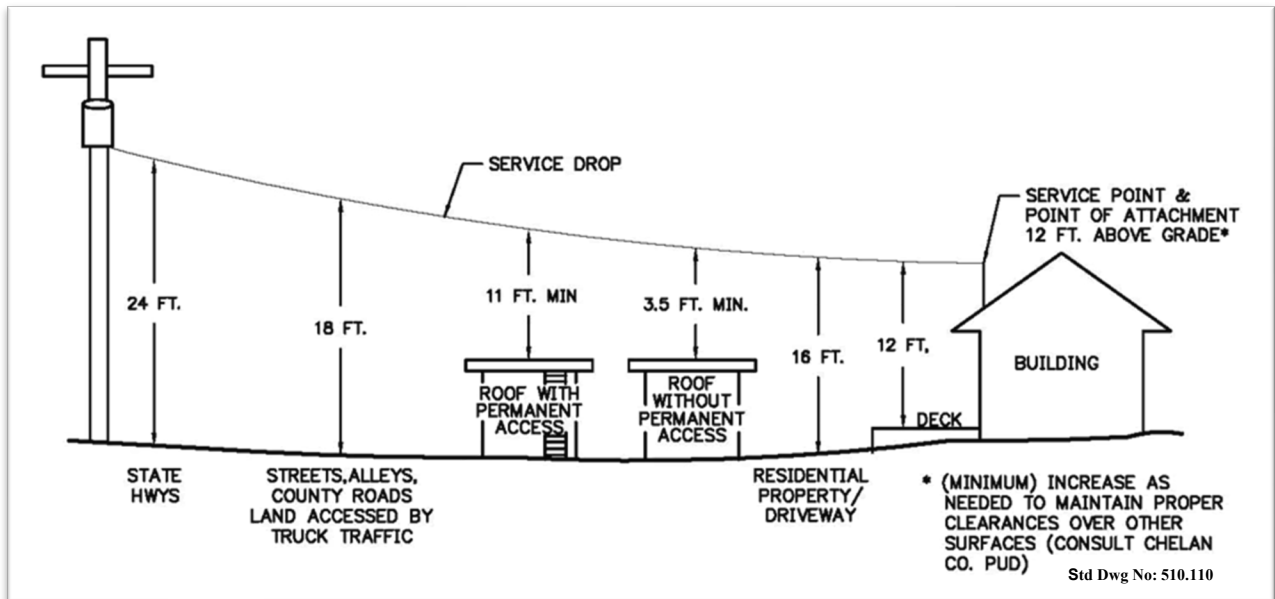
- In a location approved by the PUD
- Outside and seen from the roadway
- On the front 1/3 of your property closest to normal public access
- In an area that is not subject to being fenced in or enclosed (patio, deck, carport, backyard, walkway, breezeway)
- Safe parking must be located within 50 feet of the meter.
- Meter base must be installed a minimum of 10 feet from PUD equipment and be served with no more than 75 feet of wire (connection point to connection point) from the appropriate PUD transformer.
- When a meter base is located in a parking area, it must be so located so that parked vehicles will not restrict accessibility, or the meter base will not be damaged by vehicular traffic.
- Temporary overhead services must be a minimum of 10 feet horizontally and not more than 75 feet from the PUD connection point. Guying and anchoring may be required based on installation.
- If an overhead temporary service will pass through trees or brush, a three-foot path must be cleared and maintained to allow service personnel to access the line and allow lines to hang without contacting trees or limbs. Maintaining this clear path is the customer's responsibility.

## CLEARANCE AND ATTACHMENT REQUIREMENTS

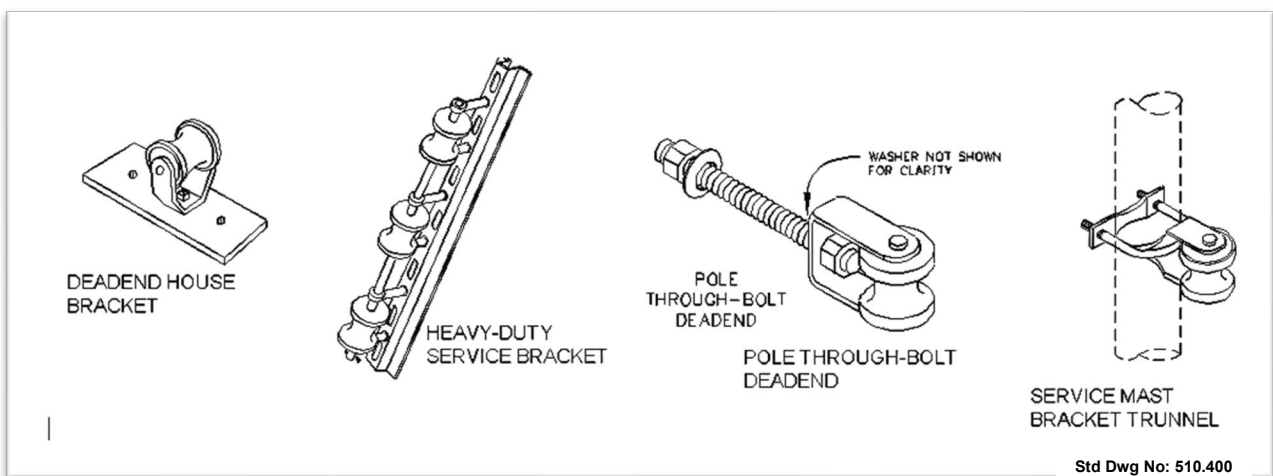
The National Electric Code (NEC) and the National Electric Safety Code (NESC) establish minimum clearance requirements to maintain safe height distances for electrical wires over various terrain. The service drop from a PUD pole to a service pole must meet clearances. Refer to Figure 14.

The PUD supplies and installs the overhead wire to the point of attachment. The customer is required to provide a point of attachment that will allow the PUD to meet the clearance requirements. Refer to Figure 15.

Additional mast supports, typically a guy or a brace, are required for any service line over 50 feet in length.



**Figure 14**  
Minimum Clearances per NEC/NESC



**Figure 15**  
Approved Dead-end Bracket Types

## POST REQUIREMENTS

Meter post must meet the following requirements:

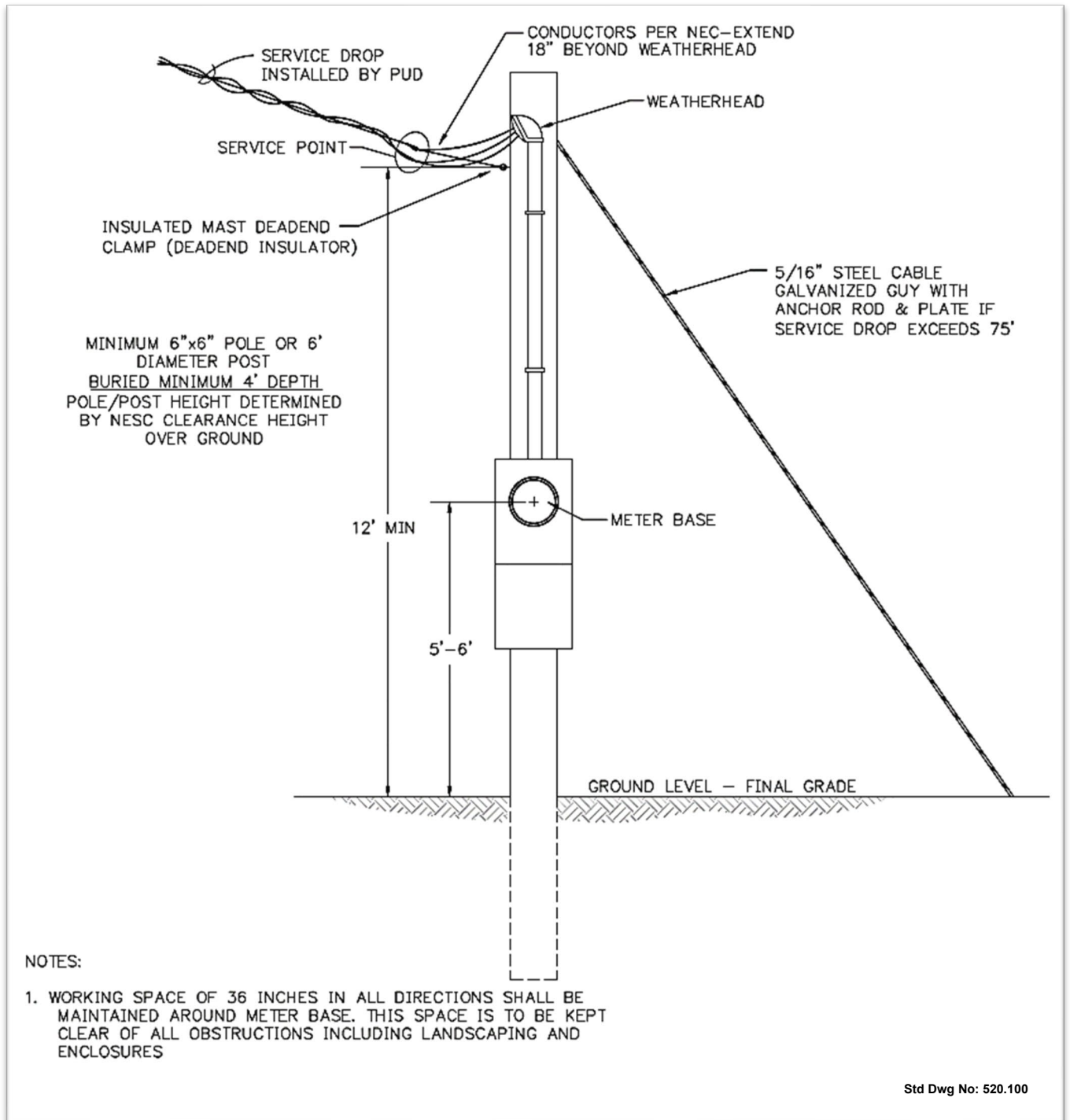
- 6" x 6" full treated timber or butt treated set at 48" minimum burial and tall enough to meet minimum clearance requirements
- 4"x13# steel I-beam, 7' long set in minimum 18"x18"x18" concrete foundation or (2) 2" x 2" x 3/16" steel angle irons set in minimum 18"x18"x18" concrete block buried minimum 30"

A meter post must meet the following criteria:

Pole Length	Pole Class	Setting Depth	Circumference 6' from Butt		Circumference at Top
			Fir	Cedar	
20 ft	4	4 feet	25"	27"	21"
25 ft	4	5 feet	28"	30"	21"
30 ft	4	5 ½ feet	30"	32.5"	21"

- All meter posts, guys and anchoring must be supplied, installed, maintained and are owned by the Customer.
- All meters must be mounted five to six feet above finish grade.
- The PUD will not connect to any customer installed meter post that is unstable and does not conform to PUD standards.
- If a meter post is determined inadequate by PUD, and must be replaced, the customer must, at their expense, transfer all customer owned service entrance equipment to the new post and upgrade to current standards as necessary.

**TEMPORARY OVERHEAD METER BASE STANDARD DRAWING**



**Figure 16**  
**Overhead Temporary Service**

# UNDERGROUND TEMPORARY SERVICES

## LOCATION

Your temporary meter base must be located in an area that is accessible to utility personnel for accurate meter reading, maintenance and to access in case of a fire.

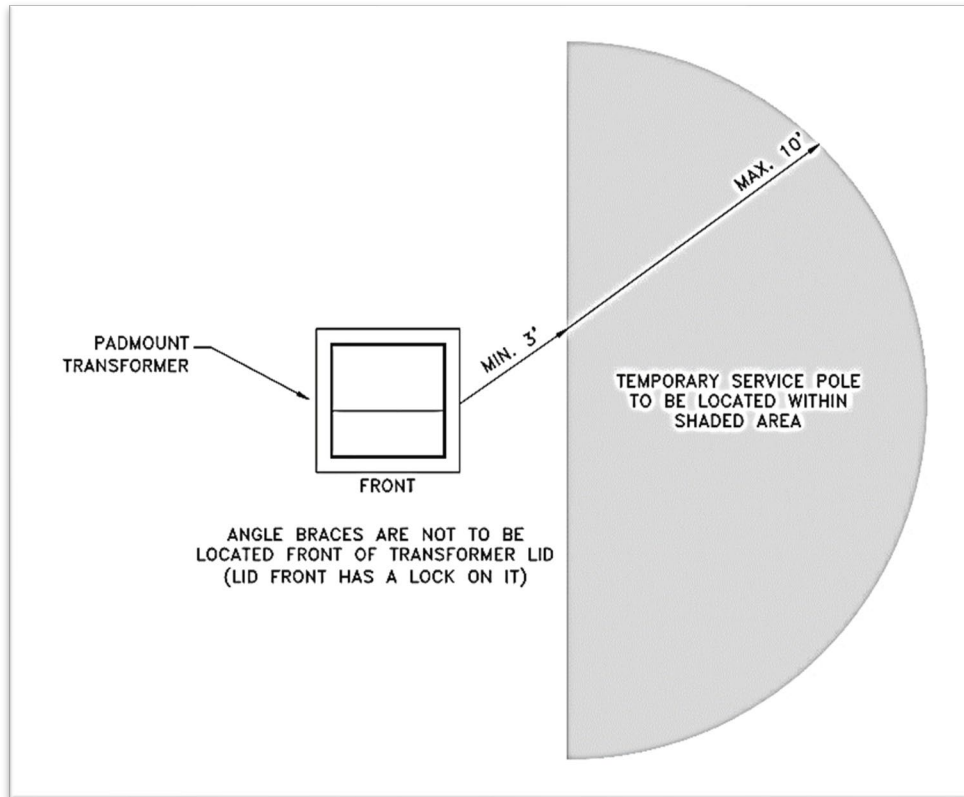
The temporary meter base must be located:

- In a location approved by the PUD
- Outside and seen from the roadway
- On the front 1/3 of your property closest to normal public access
- In an area that is not subject to being fenced in or enclosed (patio, deck, carport, backyard, walkway, breezeway)
- Safe parking must be located within 50 feet of the meter.
- Meter base must be installed within 3 feet minimum and 10 feet maximum away from the appropriate PUD transformer or electrical facility.
- When a meter base is located in a parking area, it must be so located so that parked vehicles will not restrict accessibility or the meter base will not be damaged by vehicular traffic.
- Temporary underground services must be within 10 feet horizontally from a PUD transformer.

## TEMPORARY UNDERGROUND REQUIREMENTS

- Provide appropriately sized wire from your meter base to the PUD connection point. Provide sufficient wire to reach the transformer or handhole plus an additional 6 feet of wire to make connections. PUD servicemen will route your wire into PUD equipment and make connections.
- If the wire is too short to be connected in the transformer or handhole, it is the customer's responsibility to provide the amount of wire necessary for connection. Note: The PUD does not splice customer wire.
- Provide all trenching and backfill to the edge of the PUD transformer or handhole and leave your wire exposed. The trench must be a minimum of 24 inches deep for proper burial of wire and deep enough to enter underneath PUD facilities.
- Underground temporary wire must not be installed in conduit intended for permanent wire.

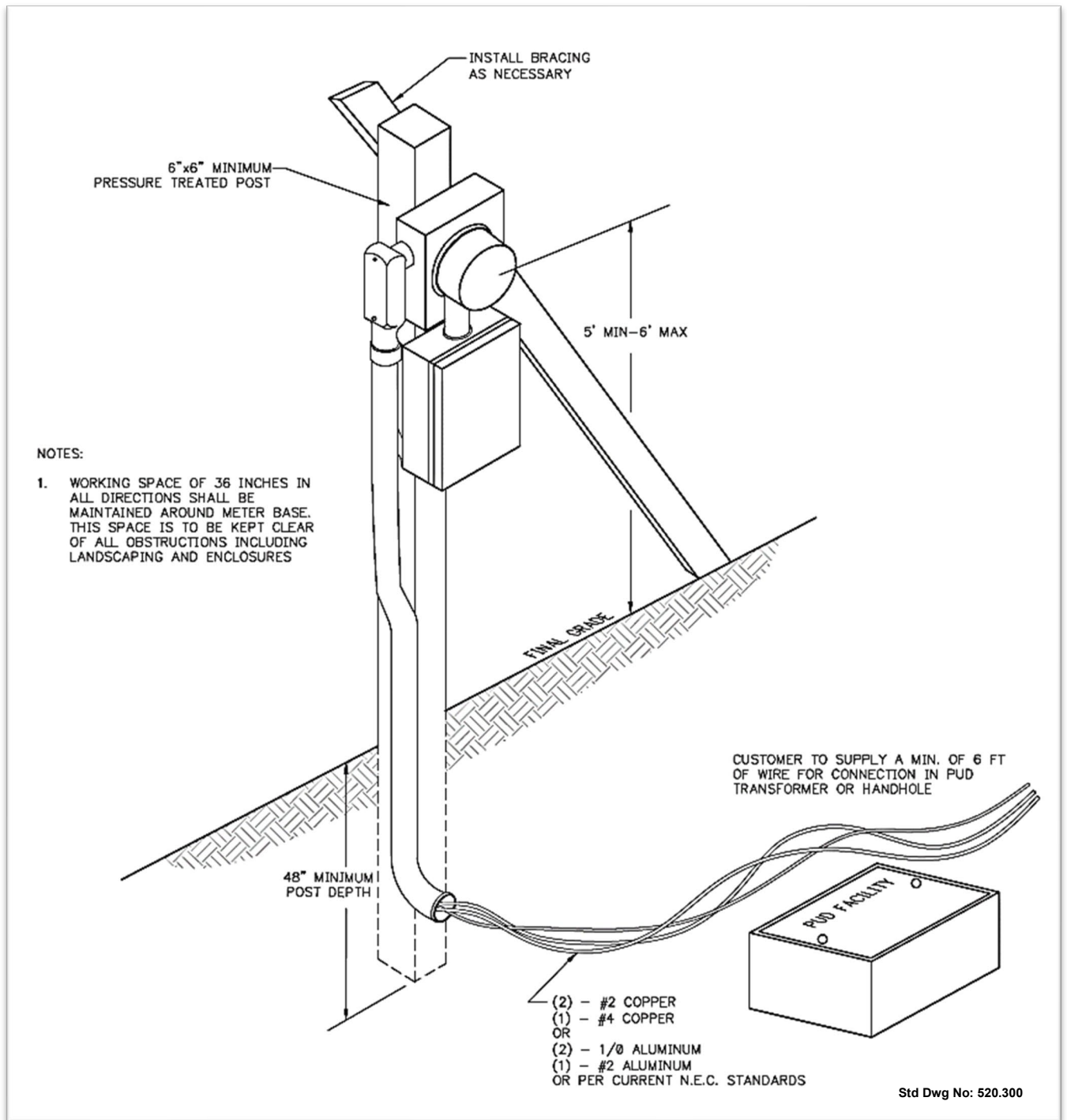
**DO NOT ATTEMPT TO INSTALL WIRE INTO ENERGIZED FACILITIES WITHOUT A PUD  
SERVICEMAN PRESENT**



**Figure 17**  
**Underground Temporary Meter Pole Location**



# TEMPORARY UNDERGROUND METER BASE STANDARD DRAWING



**Figure 18**  
**Underground Temporary Service**

# METERS AND SERVICE ENTRANCE EQUIPMENT

This section provides information on the PUD's metering requirements including requirements that pertain to all meter installations such as meter location, clearances, and multiple meter installations and information on Self-Contained Metering and Current Transformer Metering.

## METERS AND SERVICE ENTRANCE EQUIPMENT REQUIREMENTS

- The customer is required to supply, install, and maintain meter mounting equipment acceptable to the PUD including:
  - Meter socket
  - Current Transformer Enclosures & Landing Pads
  - Conduit
- The customer must provide sufficient space around PUD equipment.
- The customer or their contractor must connect their equipment to keep the load under normal operating conditions and balanced within plus or minus 10% of the average load across the phase wires.
- The PUD provides, installs and maintains revenue meters. Current Transformers (CTs) is provided and connected by the PUD meter department. Contractor / Licensed electrician are responsible for picking up and installing the CTs.
- For meter socket classifications and descriptions refer to NEMA Standards.

## METER SOCKET ARRANGEMENT & REQUIREMENTS

- Meter socket and socket enclosures must meet or exceed the standards of the Electric Utility Service Equipment Requirements Committee (EUSERC).
- Socket forms or arrangements to provide correct metering for the various systems used in the PUD are illustrated in Figure 19 of this section.
- Sockets must be mounted plumb and be securely fastened to the structure to withstand forces of the installation or removal of the meter.
- The PUD prohibits the use of meter sockets with automatic circuit closing devices. Manual block bypass devices may be installed on self-contained meter bases only. These sockets must be clearly marked. (No lever bypass)
- Terminals must marked with a wire range for aluminum or copper wires. When aluminum wire are used, the socket must be approved and clearly marked by the manufacturer that it is acceptable for aluminum wire.
- Taps are not allowed in meter sockets
- The line supply wires to a socket must be connected to the top terminals and the load supply wires must be connected to the bottom terminals.
- The neutral service wire must be bonded to the meter base using the grounding screw or bonding terminal.
- Meter sockets containing energized equipment must be covered and sealed with a transparent cover plate if a meter is not installed.
- Installation of three (3) meters or less must be on the outside lines of the building and grouped in such a manner that a single service drop may serve all meters.
- All unused openings of the meter socket enclosure must be closed with plugs (rain-tight, if outside) that are secured tightly in place from inside the enclosures before a meter is installed.
- All meter equipment exposed to weather must be rain-tight according to the National Electrical Manufacturer's Association (NEMA) 3R minimum.

## **METER RETAINING RINGS**

Meter retaining rings will be provided and installed by the PUD.

## **SEQUENCE OF SERVICE ENTRANCE EQUIPMENT**

The sequence of service equipment must be meter-switch-fuse or meter-circuit breaker-load unless not allowed by Code. When code requires sequence of service equipment to disconnect-meter load, PUD approved locking provisions must be provided on all access to wires that are ahead of the meter.

## **SELF-CONTAINED RESIDENTIAL METERING EQUIPMENT REQUIREMENTS**

- Ring style meter bases will have the cover attached or latched in such a way to prevent removal of the cover with the meter in place. Sheet metal or self-tapping screws are not acceptable.
- All ringless bases will have a sealable latch or tab made of durable corrosion resistant material. The latch or tab will be capable of accepting a standard padlock.
- All two-part meter base covers will have a sealable latch or tab on the lower section of the cover. The latch or tab will be made of durable corrosion resistant material and be capable of accepting a standard padlock. The upper cover section must meet ring style meter base requirements.
- No lever by-pass bases allowed. Manual by-pass or "safety sockets" are acceptable if approved in writing by the PUD. Meter bases with a lever handle for activating locking jaws only are acceptable if approved in writing by the PUD.
- All bases will have lugs installed by the customer to accept incoming wire from the PUD.
- All meter bases that are dual rated for both underground and overhead services will have a hub cover installed by customer when used on an underground service.
- 100 and 200 amp single phase meter bases being used on underground services need to be deep enough to accept 3" conduit. A 2 1/2" reducer can be used only when the 100 or 200 amp single phase meter base cannot accept 3" conduit.
- Pedestal style meter bases such as those used in mobile home and remote meter base applications must have a tab on the pull section that will accept a standard padlock. The service main disconnect and power outlet section must have barriers installed to prevent access to the service cable pull and termination sections and to unmetered wires which connect to the socket.
- Recessed or flush mounted bases are not allowed. The PUD only accepts surface mounted bases.
- Customer must furnish and install an emergency disconnect as required by other agencies on the customer side of the meter base in a readily accessible exterior location that meets NEC standards and Washington State Labor and Industries requirements.

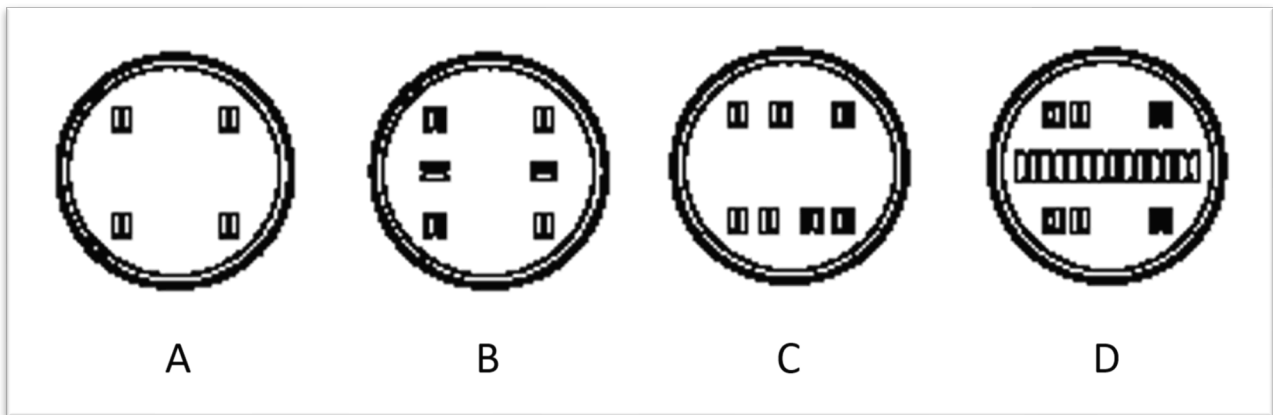
## **METER SOCKETS –LIMITATIONS**

Limitations of meter sockets by Style:

- Use of the Style 2 socket is limited to installations where the size of service entrance wires does not exceed #2 AWG copper or #1/0 aluminum
- Use of the Style 3-socket is limited to installation where the size of the service entrance wires does not exceed 2/0 copper or 4/0 aluminum
- Style 4 sockets may be used in multi-meter installations of two (2) or more meters.

**FIGURE 19 – METER SOCKET REQUIREMENTS**

Voltage	Wires	Service Capacity	Equal to PUD connection fees	No. of Terminals	Meter Socket Config.*	Manual Block Bypass Acceptable?	Socket / Comment
<b>SINGLE-PHASE RESIDENTIAL</b>							
<b>120/240</b>	3	up to 200	≤ 200 amps	4	A	Yes	Self-contained socket
<b>120/240</b>	3	201 to 320	201-400 amps	4	A	Yes	Self-contained 320 Amp Socket
<b>120/240</b>	3	above 320	≥ 401 amps	6	B	n/a	Instrument transformer rated with provision for test switch – CTs required
<b>ALL THREE-PHASE</b>							
<b>120/208</b>	4	up to 200	≤ 200 amps	7	D	Yes	Self-contained socket
<b>120/208</b>	4	above 200	≥ 201 amps	13	E	n/a	Instrument transformer rated with provision for test switch
<b>277/480</b>	4	up to 200	≤ 200 amps	7	D	Yes	Self-contained socket
<b>277/480</b>	4	above 200	≥ 201 amps	13	E	n/a	Instrument transformer rated with provision for test switch



Three phase four-wire services require the neutral tap to be connected to the terminal second from the right on the bottom or load side. In the case of four-wire delta services, the high voltage-to-ground phase wire is required to be connected to the right hand terminal, top and bottom, and be properly color coded.

## METER CLEARANCES AND METER HEIGHT

- A level standing and working surface must be provided and maintained in front of each metering installation. A clear and unobstructed working space must be provided above this surface.
- Should the metering installation be on a working platform then the platform must be accessible by a permanent stairway that conforms to OSHA/WISHA regulations.

### FIGURE 20 - METERING CLEARANCE REQUIREMENTS

*NOTE: The center of the meter socket is the point of reference unless otherwise noted.*

For:	Clearance
Socket Height	5 feet minimum to 6 feet maximum above finished grade or floor  In metering rooms 3 feet minimum and 6 feet maximum
Current Transformer Enclosures	Bottom of device must be no less than 12" above finished grade, floor or working platform. Top of enclosure no more than 8' from finished grade, floor or working platform
Working Space	<ul style="list-style-type: none"> <li>▪ Minimum 3 feet wide and 3 feet deep measured from the front of the current transformer enclosure or meter face.</li> <li>▪ Plants, shrubs and trees must not be planted in this area</li> <li>▪ All meter socket enclosures must be accessible and unobstructed to allow the removal of cover, retaining ring, and meter.</li> <li>▪ Minimum distance between socket centers is 16" vertical and 10" horizontal</li> </ul>
Meter Pedestals (RV, Manufactured Home, remote)	Refer to Remote Metering Section

## METER IDENTIFICATION

Where the installation requires more than one meter for service to the premises, each meter socket and corresponding disconnection must be identified with permanent labeling to properly identify the portion of the premises being serviced. Acceptable permanent labeling will consist of an engraved tag with minimum 1/4" high letters that is securely attached by screws, rivets or a secure adhesive. Embossed tags may also be used. Painting and flat identification tags or printed labeling is not allowed. These requirements are intended to prevent the identification(s) from being obscured by painting of the building and/or attached service equipment.

- All remote service panels should have corresponding labeling to help with identification.
- When adding a new meter to an existing service location, all meter and corresponding disconnects must be labeled properly identify the portion of the premises being served by each meter and corresponding disconnect.
- The identification numbering must be the same as the duplex, townhouse, suite, trailer, RV space, etc., actually served through the socket and the corresponding disconnect.

## MULTIPLE METER INSTALLATIONS

On residential multimeter panels, the minimum spacing between socket centers must be 7-1/2 inches horizontally, 8-1/2 inches vertically leaving not less than 1 inch clearance on the top and sides of the meters, and 2" clearance on the bottom. All meters must be identified per the requirements in the Meter Labeling/Identification section.

## CT METERING INSTALLATIONS

Single phase residential services over 400A or three phase services over 200A

### GENERAL INFORMATION

- All current transformer installations must be in acceptable enclosures (CT cans).
- All current transformer enclosures in residential services will be mounted on the outside of the building or surface mounted on an outside wall so that access to the enclosure is from outside of the building only.
- The customer must provide a 50,000 Amp fault current rated "Landing Pad" for mounting of CT's.
- Current transformers (CT's) are furnished by the PUD for services over 400 amps self-contained type and three phase services over 200 amps and will remain the property of the PUD. Either type must be installed by the customer and may be obtained directly from the PUD.
- Transformer enclosures must contain only the supply wires and transformers. The enclosure must not be used as a junction box for other wires or conduits.
- Space requirements for meter socket and associated equipment must be adequate for mounting, access and safe working of all equipment. All doors must be able to be completely removed or opened to 180° if hinged.
- Meters must not be mounted on panels covering compartments which contain fuses, switches, or any other devices that will require servicing, changing, or adjusting, necessitating the breaking of seals on meter panels

The minimum size of metal instrument transformer cabinets or enclosures (CT Can) must be as follows:

**FIGURE 21 - CT METERING CABINET SIZE REQUIREMENTS**

REQUIRED CT's		CABINET DIMENSIONS		
Service Size	Number Of CT's	Width	Height	Depth
Single Phase, 401 – 800 Amps	2	24"	36"	11"
Three Phase, 201 – 800 Amps	3	36"	48"	11"
	Requires Hinged Cover			
801 Amps +	Requires Switchgear			

The PUD will terminate all metering points on current transformer installations.

## **CT METERING REQUIREMENTS**

- Current transformer enclosures must be grouped with the meter base and attached via conduit.
- A minimum of one (1) inch conduit is required to connect meter base to CT enclosure. Enclosures and conduit must be bonded by approved methods.
- Conduit is not to exceed fifteen (15) feet in length and must not have more than three (3) 90° bends. Flexible conduit, Condulets or LBs are not allowed.
- The PUD will complete the terminal connections from the secondary side of the current transformers to the metering equipment.

## **SWITCHBOARD METERING – SERVICES OVER 801 AMPS AND ABOVE**

The PUD must approve equipment drawings prior to the manufacture of the switchgear to determine the type of meter or meters that will be used, and arrangements for mounting. Switchboards must conform to EUSERC Standards.

When the customer's factory-built switchgear is manufactured and installed, current transformers will be installed, provided and wired by the PUD. Additionally, wiring from the CT's to the meter hub will be completed by the PUD. Current transformers will remain the property of the PUD.

On switchboards, the current transformers must be installed in such a manner as to be readily accessible after all bussing is in place. Installation plans regarding size of cubicle and placement of equipment must be approved by the PUD before switchboard manufacturing. Neutral connections for metering must be readily accessible and sealable.

Working spaces in back of a freestanding switchboard may not be less than thirty-six (36) inches from the panel to the rear wall with provisions for safe exit.

The cover of the current transformer enclosure on switchgear must be free of meters or equipment; however, the meter connected to the current transformer may be mounted on the cover provided that the cover is hinged, sealable, and removable.



**Know what's below.  
Call 811 before you dig.**

**Call two full working days before you dig!**

**It's required by law,  
and you could be held liable for any  
damages to utility services.**

***1-800-424-5555 or "811"***

At no charge to you, Northwest Utility Notification Center (Dig Council) will mark where power, water, gas lines, and other utilities are located on your property, using the following color codes:

<b>RED</b>	.....	Electric
<b>YELLOW</b>	.....	Gas – Oil
<b>ORANGE</b>	.....	Telephone – CATV
<b>BLUE</b>	.....	Water
<b>GREEN</b>	.....	Sewer
<b>PURPLE</b>	.....	Reclaimed Water
<b>PINK</b>	.....	Survey
<b>WHITE</b>	.....	Proposed excavation