Public Utility District No. 1

Of Okanogan County

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Service and Meter Requirements

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1. GENERAL

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1.01 Purpose

A. Scope

1. This handbook covers District requirements and customer responsibilities for customer service installations.
2. Nothing in this manual shall be so interpreted as to conflict with the laws and regulations of the State of Washington or other regulatory bodies having jurisdiction.
3. All references to the Customer shall include Customer's agent or contractor.
4. Non-conforming services shall not be energized, or, if energized, shall be subject to disconnection.
5. Existing non-conforming services shall be dealt with on a case-by-case basis.

B. District Responsibilities

1. The District's Engineer shall provide the Customer with information and interpretations of these Requirements related to the Customer's specific installation.
2. The District shall require installations to conform to applicable laws and regulations.
3. The District shall require all installations to be inspected and approved by the State Electrical Inspector prior to energization.

C. Customer Responsibilities

1. The Customer shall contact the District's Engineer before beginning any construction of, modification of, or addition to an electric service. The Customer will be responsible for any changes required to work performed before such consultation.
2. The Customer shall provide all necessary easements, on forms provided by the District, providing suitable right-of-way for the construction and maintenance of District facilities.
3. The Customer shall provide and maintain safe and unobstructed access, as determined by the District, to all District facilities.
4. The Customer shall not open any District seals or locks, or in any way interfere with or tamper with a District installation.
5. The Customer shall not make any connection to the District's system.

2. SERVICES

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2.01 General

A. Available Service

1. The District offers service at:
   - Single-phase 120/240 volts
   - Single-phase 120/208 volts (network)
   - Three-phase 120/208 volts
   - Three-phase 120/240 volts
   - Three-phase 277/480 volts
2. All three-phase services shall be 4-wire connections.
3. In accordance with District rate schedules, service may be at primary voltages.

B. District Responsibilities

1. The District's Engineer shall determine the "Service Point" where District facilities will connect to Customer's facilities.
2. The District shall furnish, install and maintain transformers, secondary conductors, and meters to provide electrical energy to the "Service Point".
3. The District shall make any and all connections of Customer's facilities to the District's system.

C. Customer Responsibilities

1. The Customer shall furnish, install and maintain all facilities beyond the "Service Point".
2. The Customer shall be responsible for repair of any damaged or deteriorated Customer-furnished facilities (service mast and conductors, point of attachment, meter socket, etc.). Any repaired or modified facilities must be inspected and approved by the State Electrical Inspector before being re-energized.
3. Customer-owned metering equipment, switching devices, conduits, conductors, luminaries and basketball hoops, etc., shall not be installed on the District's poles.

2.02 Temporary Services

The District will provide temporary service, for construction sites and similar purposes, for a maximum of one year. Meter socket must be L&I approved. (See Drawings TS-1 & TS-2)

3.OVERHEAD SERVICE

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3.01 General

A. General

Overhead services must meet all vertical and horizontal clearance requirements of the NESC, NEC, WAC 296-46B, and any other applicable standards (DOT, County, City, etc.). (See Drawing OHS-1.)

B. District Responsibilities

1. The District's Engineer shall determine the location of the overhead service conductors.
2. The District's Engineer shall determine the requirements for, and the location of, any necessary poles, guy wires and anchors.
3. The District shall furnish, install and maintain the service conductors to the "service point".
4. The District shall make any and all connections of customer facilities to the District's electrical system.

C. Customer Responsibilities

1. The Customer shall furnish and maintain a point of attachment to Customer's premises (or meter pole) that provides the necessary clearances.
2. The Customer shall furnish, install and maintain the necessary service equipment (mast and conductors, weatherhead, meter socket, guy wires and bracing, etc.).
3. Installation of service masts shall conform to NEC, WAC 296-46B and District Drawings RS-1, RS-2 , MHS-1 and OHS-2.
4. Service masts shall support only power conductors.
5. The Customer shall furnish and maintain meter poles.
6. If the service drop will pass through trees or brush, the Customer must clear and maintain a three-foot path to allow service personnel to access the line, and allow lines to hang without contacting trees or limbs.
7. See section 5 for metering requirements.

4. UNDERGROUND SERVICE

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4.01 General

A. General

1. Prior to any construction of underground service facilities, the Customer shall contact the District's Engineer for specifications and approval.
2. The Customer shall be responsible for any changes necessary to work begun without District Engineering approval.

B. District Responsibilities

1. The District's Engineer shall determine the location of underground facilities.
2. The District's Engineer shall determine the need for easements and access.

C. Customer Responsibilities

1. The Customer shall furnish all required trenches.
2. The Customer shall furnish and install all required conduit to District specifications.
3. The Customer shall furnish, install and maintain all required service equipment (meter socket, disconnect, pedestal, etc. see drawing MHS-3, MHS-4, UGS-3.)
4. See section 5 for metering requirements.

4.02 Trenching

A. General

1. The Customer shall contact the One-Call Locating service (1-800-424-5555 or 811) at least 48 hours prior to any excavation. (RCW 19.122)
2. All excavation within 24 inches of any locate marking shall be done by hand.
3. A District representative shall inspect all trenches before backfill. Trenches covered before inspection will not be used for electrical service.
4. Joint use of trenches for other utilities such as telephone, cable TV, other electrical conductors and water lines is generally permitted. The District's Engineer shall be consulted prior to such joint use to insure conformance to District requirements.

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4.02 Trenching

B. Depth

1. Trenches on the District side of the "Service Point" shall be deep enough to provide a minimum of 36" of cover for the conduit. This applies to both primary and secondary conduits. (See Drawings UGS-1, UGS-2 and UGS-4.)
2. In rocky soil conditions, where bedding is required, the trench shall be an additional 6" deeper to allow placement of proper bedding under the conduit.

C. Bedding

1. Backfill material shall be a maximum 1" minus for a minimum of 6" above and below the conduit. The backfill material shall contain no sharp or foreign objects. Bedding sand would be the preferred material.
2. If the native backfill does not meet these requirements, Customer shall be responsible for furnishing and installing appropriate backfill for a minimum of 6" above and below the conduit.

4.03 Conduit

A. General

1. "Conduit" means listed, labeled, UL-approved electrical conduit, typically Sch. 40 or Sch. 80 PVC. Conduit is grey in color. Water pipe, sewer pipe and other round stock is not acceptable for electrical use.
2. "Sweep" means a large-radius conduit bend, typically either 90 degrees or 45 degrees, in PVC or fiberglass.
3. All secondary conductors shall be in conduit.
4. In general, primary (high-voltage) conductors will be installed in conduit. The District's Engineer may approve the use of CIC (Cable in Conduit) or other installations in specific cases.
5. The District's Engineer will determine the size and number of conduits to be placed.
6. A conduit run shall contain no more than 270 degrees of total bend, including at transformers and metering equipment.
7. Primary conduit runs of more than 200 feet in length, or which contain more than two sweeps, shall utilize fiberglass sweeps.

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4.04 Transformers, Equipment, Vaults

A. General

1. The District's Engineer shall determine the need for, and the location of, all transformers, vaults, and other primary-voltage equipment necessary to furnish underground service.
2. The District shall furnish, install and maintain all necessary transformers, vaults and other equipment. (See Drawings UGS-1, Vault-1, and Vault-3.)
3. Where necessary to protect above-ground equipment, the Customer shall furnish, install and maintain bollards. (See Drawing Bollard-1.)
4. In developments, the District, telephone and cable TV providers have agreed to a location standard for the placement of conduits and vaults/pedestals. The District's Engineer must approve any deviation from this standard. (See Drawing Vault-1.)

B. Transformers

1. The Customer shall maintain a clear working space around the transformer free from vegetation, landscaping, structures of any sort, or anything that would restrict District access for maintenance or repair. The clear working space shall be a minimum of 3' on all sides, and 10' on the front (the side with the lock). (See Drawing Vault-3 Figure “A”.)
2. The Customer shall insure that nothing is placed within the clear working space that would impede the free flow of cooling air over the transformer.

5. METERING

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5.01 General

A. Scope

1. This section covers District requirements and customer responsibilities for metering installations.
2. Nothing in this manual shall be so interpreted as to conflict with the regulations of the State of Washington or other regulatory bodies having jurisdiction.
3. All references to the Customer shall include the Customer's agent or contractor.

B. District Responsibilities

1. The District's Engineer shall provide the Customer with information and interpretations of these Requirements related to the Customer's specific installation.
2. The District shall require installations to conform to applicable laws and regulations.
3. The District shall require all installations to be inspected and approved by the State Electrical Inspector prior to energization.

C. Customer Responsibilities

1. The Customer shall contact the District's Engineer before beginning any construction of, or modification or addition to, an electric service. The Customer will be responsible for any changes required to work performed before such consultation.
2. The Customer shall provide the District Engineer with load calculations per NEC to allow proper sizing of service equipment.
3. The Customer shall provide and install, in accordance with the following requirements, the necessary equipment for the District's metering.
4. The Customer shall provide all necessary maintenance and repairs to the metering installation.
5. The Customer shall not break any District seals or locks, or in any way interfere with or tamper with a District metering installation.
6. The Customer shall not make any connection to the District's system.

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5.02 Location and Access

A. Location

1. Metering shall be installed in an acceptable location and approved by an Engineer.
2. Metering shall be installed on the outside wall of a structure.
3. Metering equipment installed in alleys or other exposed locations shall be protected from damage.
4. Metering equipment shall not be located in carports, breezeways, porches or other similar locations.
5. Metering equipment for mobile homes shall be located on the side of the home facing normal public access.
6. Metering equipment shall be surface mounted, or, if recessed, shall project at least 1" from the final building finish. Recessed metering equipment shall be listed and labeled for recessed installation.

B. Access

1. The Customer shall provide, as a condition of service, access to District facilities located on Customer's premises.
2. The Customer shall provide access, as required by WISHA, "free from recognized hazard". (Examples of hazards might include (but are not limited to) animals, traffic, machinery or industrial environments, height, chemicals, vegetation, unstable work surfaces, falling trees or rocks, etc.)
3. The Customer shall provide, as required by the National Electrical Code and WAC 296-46B, clear working space in front of the metering equipment, 36" deep, 30" (or the width of the equipment if greater) wide, and 6'8" high. This space will be maintained clear of all other equipment, vegetation, etc.
4. The working surface in front of metering equipment shall be reasonably level and graded to drain away from the equipment.
5. Customers with security requirements shall install a District-furnished lockbox, and furnish a key to allow District access.

C. Access Maintenance

1. The Customer shall maintain the required access to and clear working space about District facilities on Customer's property.
2. When District facilities on Customer's property are not readily accessible, in the opinion of the District, the Customer shall be responsible for necessary corrections.
3. When, in the opinion of the District, alterations on the Customer's property (remodeling, landscaping, etc.) interfere with ready access to District facilities, Customer shall be responsible for the cost of remedy.

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5.02 Location and Access

C. Access Maintenance (continued)

4. When, in the opinion of the District, pets, livestock, or other animals interfere with ready access to District facilities, Customer shall be responsible for installation of necessary barriers to remedy the problem. If relocation of District facilities becomes necessary, Customer shall be responsible for all costs.

5.03 Installation

A. General

1. All installations shall conform to the requirements of the National Electric Code, WAC 296-46B, and these Service Requirements.
2. Equipment to be installed shall be listed, labeled, manufactured in accordance with applicable standards, and suitable for the purpose.
3. Metering enclosures, switchgear, disconnects and other equipment which allows access to unmetered conductors shall be capable of being sealed using the District's normal seals and locks.
4. All metering connections will be made in sealed enclosures.
5. Equipment shall be installed level, plumb and securely fastened to a rigid surface not subject to excessive vibration. Meter sockets must be installed to withstand the forces imposed by installation and removal of meters.
6. Where used to support metering equipment, wood posts, dimensional lumber and plywood shall be pressure-treated lumber. Posts shall be a minimum 6" x 6" x 8'. Dimensional lumber shall be a minimum of 2"x 4", and plywood shall be a minimum of ¾".
7. Meters shall not be covered. (The District will install covers where necessary to prevent vandalism.)
8. Meter sockets shall not be used as a raceway.
9. Service conduits passing from the outside to the inside of a structure shall be sealed in accordance with the NEC 300.7 to prevent condensation in the meter socket.

B. Height

1. Meter sockets shall be installed at a height of 4' to 6' from the center of the meter to finished grade in front of the meter. See Drawings MHS-4 and UGS-2.
2. Mobile home pedestals shall be installed at a height of 4' to 6' from the center of the meter to finished grade in front of the meter. See Drawing UGS-2.

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5.03 Installation

B. Height (continued)

3. Multiple-occupancy metering equipment shall be installed with the lowest meter no lower than 3’ from the center of the meter to finished grade, and the highest meter no higher than 7’ from the center of the meter to finished grade in front of the meter.
4. Current transformer enclosures shall be installed at a height of 6’ from the top of the enclosure to finished grade in front of the enclosure.

5.04 Single-Phase 400-Ampere and Below

A. General

1. The meter socket shall be 4-jaw.
2. The meter socket may be ring-type or ringless.
3. Bypasses (link or lever) are required for non-residential services. Automatic bypasses are not permitted.
4. Locking-jaw meter sockets are permitted but not required.

B. Overhead

1. The Customer shall leave a minimum of 18” of service conductor at the weatherhead for connection.
2. The weatherhead shall be above the point of attachment of the service drop.

C. Underground

1. The supply conduit shall be installed in the bottom left knockout of the meter socket.
2. Where the service conductor length makes larger conductors necessary, the Customer shall furnish a socket capable of accepting a 3” conduit, and with lugs that will accept 350 MCM aluminum conductor. The District’s Engineer will advise the Customer of this situation.

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5.05 Three-Phase 200-Ampere and Below

A. General

1. The meter socket shall be 7-jaw.
2. The meter socket may be ring-type or ringless.
3. Bypasses (link or lever) are required. Automatic bypasses are not permitted.
4. Locking-jaw meter sockets are permitted but not required.
5. Where a service has a high leg (delta connection), the high leg shall be connected to the right-hand lugs in the meter socket, and taped orange.

VOLTAGE	HORSEPOWER	TYPE OF SOCKET
240	20 or less	100 amp self-contained
240	21 thru 60	200 amp self-contained
240	61 and above	CT
480	40 or less	100 amp self-contained
480	41 thru 125	200 amp self-contained
480	126 and above	CT

B. Overhead

1. The Customer shall leave a minimum of 18” of service conductor at the weatherhead for connection.
2. The weatherhead shall be above the point of attachment of the service drop.
3. Where a service has a high leg (delta connection), the high leg shall be taped orange.

C. Underground

1. The supply conduit shall be installed in the bottom left knockout of the meter socket.
2. The District’s Engineer shall advise the Customer of the service conductor size and material, to insure the Customer provides a socket with appropriate lugs.

5.06 Current Transformer Metering

A. General

1. Services from 401-800 amperes single-phase and 201-800 amperes three-phase shall be metered using current transformers (CTs).
2. CTs shall be installed using a District furnished CT mounting bracket in a listed CT enclosure.
3. CTs shall not be mounted on or in the mast, pole, wall or the utility's transformer.
4. The District shall furnish and install the CTs, CT wiring and meter.
5. Equipment location and mounting heights shall be per Sections 5.02 and 5.03.
6. See Drawings CTMETER-2, CTMETER-3, and CT Installation for details.

B. CT Enclosure

1. The Customer shall furnish and install a listed CT enclosure.
2. The minimum size shall be 36" x 36" x 11". Larger sizes are permitted.
3. Enclosures larger than 36" x 36" x 11" shall have a hinged cover. Piano hinges are not permitted.
4. Service conduits shall enter the enclosure from the top or bottom, grouped at either the left or right side.
5. The Customer shall bond the CT enclosure to the grounded service conductor, per NEC.
6. Customer conduits shall enter the enclosure through the top, bottom, or top ¼ or bottom ¼ of the back or sides of the enclosure. The middle ½ of the enclosure shall have no customer conduits.
7. The meter socket conduit (1") may enter the CT enclosure opposite the CTs. (See drawing.)

C. CT Mounting Bracket

1. The District shall furnish, and the Customer shall install, a CT mounting bracket.
2. The mounting bracket may be either top- or bottom-fed.
3. The Customer shall furnish and connect service conductors from the mounting bracket to the main service disconnect(s).
4. The District shall furnish and connect service conductors from the transformer to the mounting bracket.
5. Conductors shall not be routed through the area of the mounting bracket; conductors shall follow the walls of the CT enclosure.

5.06 Current Transformer Metering (continued)

D. Meter Socket and Conduit

1. The District shall furnish, and the Customer shall install, a meter socket.
2. The Customer shall install a 1” metallic (rigid, IMC, EMT) conduit between the CT enclosure and the meter socket.
3. This conduit shall be continuous from the enclosure to the socket, with no junction boxes, condulets or other fittings allowing access to the conductors.
4. This conduit shall have a maximum of 360 degrees of bend.
5. This conduit shall have a maximum length of 100’. (Contact the District’s Engineer for exceptional circumstances.)
6. Grounding and bonding of this raceway shall be per NEC.

5.07 CT Metering—Services Over 800 Amperes

A. General

1. Services rated over 800 amperes shall be metered by suitable equipment.
2. See Drawings CTMETER-4 for details.

B. District Responsibilties

1. The District shall provide and install, at Customers expense, metering equipment appropriate for the Customer’s load.
2. The District shall provide sufficient termination points or lugs on the metering equipment to accommodate the Customer’s service conductors.
3. The District shall install, at the Customers expense, any bollards, barricade or other protection necessary for the metering equipment.

C. Customer Responsibilities

1. The Customer shall furnish the District Engineer with load calculations per NEC.
2. The Customer shall inform the District Engineer of the size, number and material of service conductors that the customer will install, to allow for provisions of appropriate termination points in the metering equipment.
3. The Customer shall install conduit to a location determined by the District Engineer.
4. The Customer shall provide and maintain access to the metering equipment, as per section 5.02 Location and Access.
5. The Customer shall be responsible for all metering costs associated with any increase in load.

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5.08 Multiple Occupancy

A. General

1. Metering equipment for multiple-occupancy installations will be factory-manufactured solid-busbar switchgear. (Field installations of a wireway and multiple individual meter sockets will not be acceptable.)
2. The Customer shall submit manufacturer's drawings or cut sheets to the District for approval before installing the metering equipment.
3. All compartments and disconnects allowing access to unmetered conductors shall be capable of being sealed using the District's standard seal.
4. Meter sockets shall be ring-type, to accept locking rings.
5. Bypasses (link or lever) are required for non-residential services. Automatic bypasses are not permitted.

B. Single-Phase (120/240 volts)

1. The socket shall be 4-jaw.

C. Network (120/208 volts)

1. The socket shall be 5-jaw, with the 5th jaw in the 9-o'clock position.
2. All load will be balanced between phases within 10%.

D. Three-Phase

1. The socket shall be 7-jaw.

E. Identification

1. The Customer shall permanently identify each meter socket. ***Meters will not be installed nor services energized until identification is complete.***
2. Sockets will be identified by address and/or unit number permanently affixed to the entrance door of the unit. (Occupant or business name is ***not*** sufficient.)
3. Satisfactory permanent identification means include engraved plastic or metal tags attached with screws, bolts or rivets. (Permanent ink markers, label makers, etc. are not permitted as permanent identification. Adhesives may be used, but screws, bolts or rivets are still required.)
4. Engraved lettering shall be at least ½" high.
5. If unit identification changes, the Customer shall notify the District in writing immediately.
6. The District will record consumption and issue billings according to the Customer's identification of the units. Misidentification of a unit is the Customer's problem.

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5.09 Remote Meter Identification

A. General

1. Meters not installed on the structure which it is serving or load served shall be identified as described in 5.08(E).

6. POWER QUALITY

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6.01 Purpose

A. Scope

1. This section will cover District requirements that assure suitable power quality, and prevent interference with District service to other customers.

B. District Responsibilities

1. Insofar as is practical, as determined by the District, the District will endeavor to maintain standard voltages and frequency on its distribution systems, subject to variations within reasonable limits.
2. The District will furnish, upon request, information on available fault current at the serving transformer.

C. Customer Responsibilities

1. The Customer's equipment shall be designed to perform satisfactorily within the standard voltages ranges and frequency provided on the District's system.
2. The Customer's system shall be rated to withstand the fault current available at the serving transformer.
3. The Customer shall, upon request, provide the District with information regarding any equipment that might cause interference with service to other customers.
4. The Customer shall be responsible for mitigating, at Customer's expense, any interference to the District's service to other customers caused by Customer's equipment. Examples of such interference would include, but not be limited to, flicker, harmonic distortion, radio frequency interference, etc.
5. The Customer shall be responsible for providing any power conditioning or protective devices required by their particular equipment (uninterruptible power supplies, filters, power factor correction, harmonic suppression, etc.).

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6.02 Motors

A. Starting Load

The District's Engineer may require reduced-voltage starting on motors to reduce voltage fluctuations on the District's system caused by motor starting.

B. Harmonics

The Customer shall be responsible for limiting Total Harmonic Distortion caused by variable-frequency drives, soft-starters, and similar electronic equipment, to levels that are acceptable to the District per IEEE 519.

C. Motor Protection

It shall be the customer’s responsibility to provide all necessary protective devices for all three-phase motors to protect the motor from overload, under-voltage, over-voltage, phase loss or reversal, etc.

D. Power Factor Correction

The District recommends that the Customer install power factor correction equipment for three-phase motors.

6.03 Emergency and Standby Generators

A. General

1. Permanently-installed emergency or standby generators shall be connected to the District's system and the Customer's wiring system by a permanently-installed transfer switch installed in accordance with the requirements of the NEC and WAC 296-46B.
2. All transfer switch installations must meet all applicable codes and be approved by the State Electrical Inspector.
3. The transfer switch shall disconnect all District conductors, including the neutral wire, from the Customer's system prior to connecting the generator to the conductors supplying the load.
4. Portable generators shall not be connected to a Customer's permanent wiring system at any time, unless the interconnection is also made with a permanently installed transfer switch.

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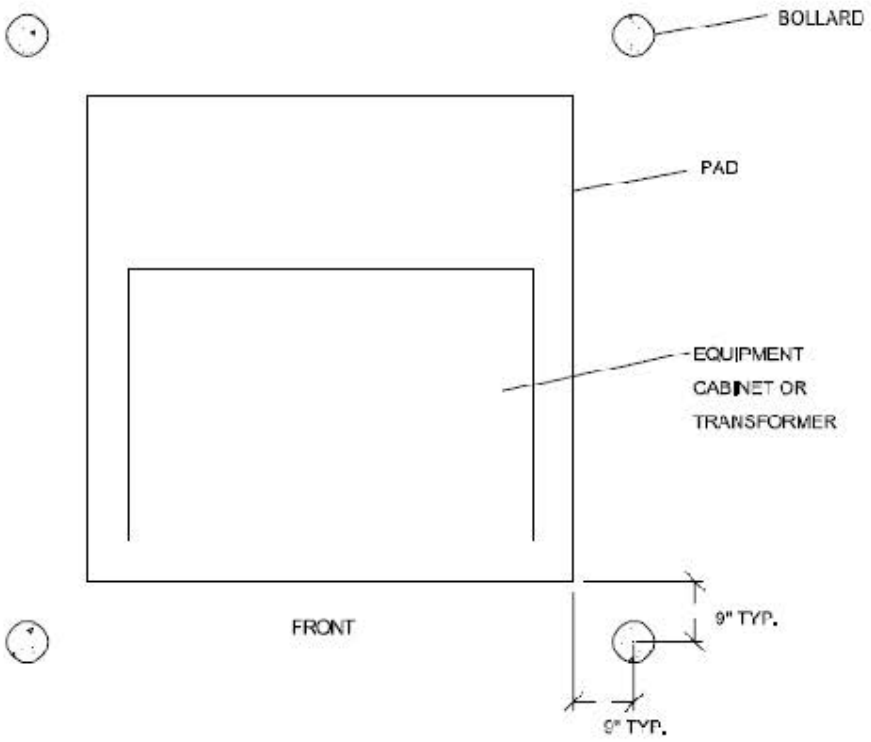

NOTES:

1. BOLLARDS SHALL BE 6" DIAMETER GALVANIZED PIPE FILLED WITH CONCRETE.
2. SETTING DEPTH IS 3' MINIMUM WITH 4' ABOVE GROUND.
3. LOCATION AND NUMBER OF BOLLARDS COULD VARY, CONSULT A PUD ENGINEER PRIOR TO INSTALLING.

OKANOGAN COUNTY P.U.D. NO. 1			
PROTECTIVE BOLLARDS FOR PADMOUNTED EQUIPMENT			
DATE	DRAWN BY	SCALE	DRAWING
Jan. 2008	LAFFERTY	NO SCALE	BOLLARD -1

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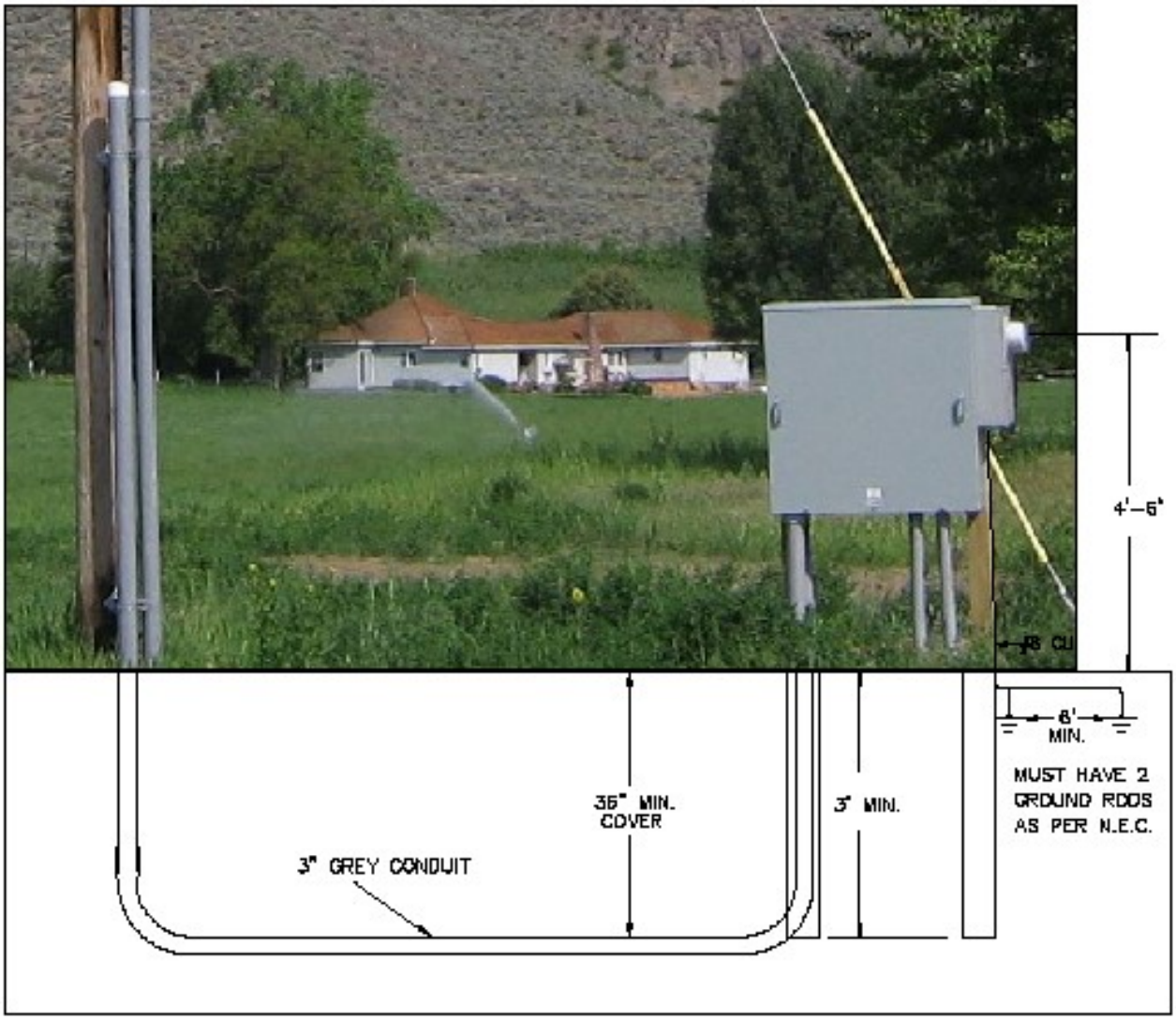

NOTES:

1. USE MINIMUM 6"x6"x8' PRESSURE–TREATED POST.
2. PUD WILL SUPPLY THE METER SOCKET FOR ALL CT METER INSTALLATIONS. THE CUSTOMER OR CONTRACTOR MUST INSTALL THE METER SOCKET AND ALL ASSOCIATED CONDUITS.
3. CENTER OF THE METER BASE SHALL BE LOCATED 4' TO 6' FROM FINISHED GRADE.
4. 3" GRAY ELECTRICAL SCHEDULE 40 PVC CONDUIT FROM TRANSFORMER TO CT CAN.
5. ALL CONDUIT TO BE SUPPORTED PER NEC.
6. PUD METERING DEPARTMENT WILL SUPPLY AND INSTALL CT'S, WIRES TO METERBSE, AND METER.
7. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
UNDERGROUND 1ø CT METER SOCKET REQUIREMENTS			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	CT METER–2

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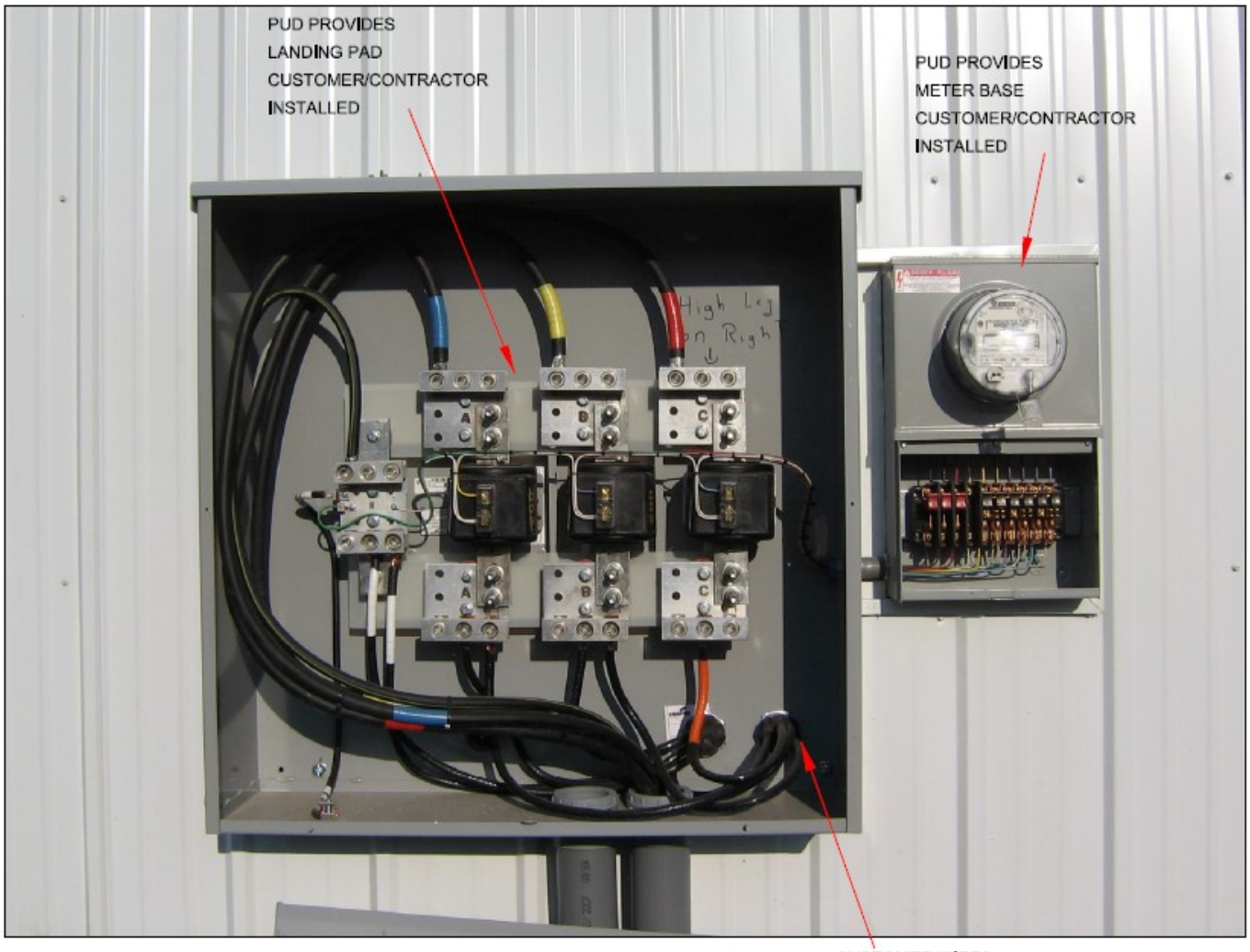

NOTES:

1. THE ABOVE DRAWING IS THAT OF A 3-PHASE SERVICE AND METERING. A 1-PHASE SERVICE WOULD BE SIMILAR, WITH TWO CT'S.
2. MINIMUM REQUIRED CAN SIZE IS 36" x 36" x 11".
3. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
CT CAN			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	CTMETER-3

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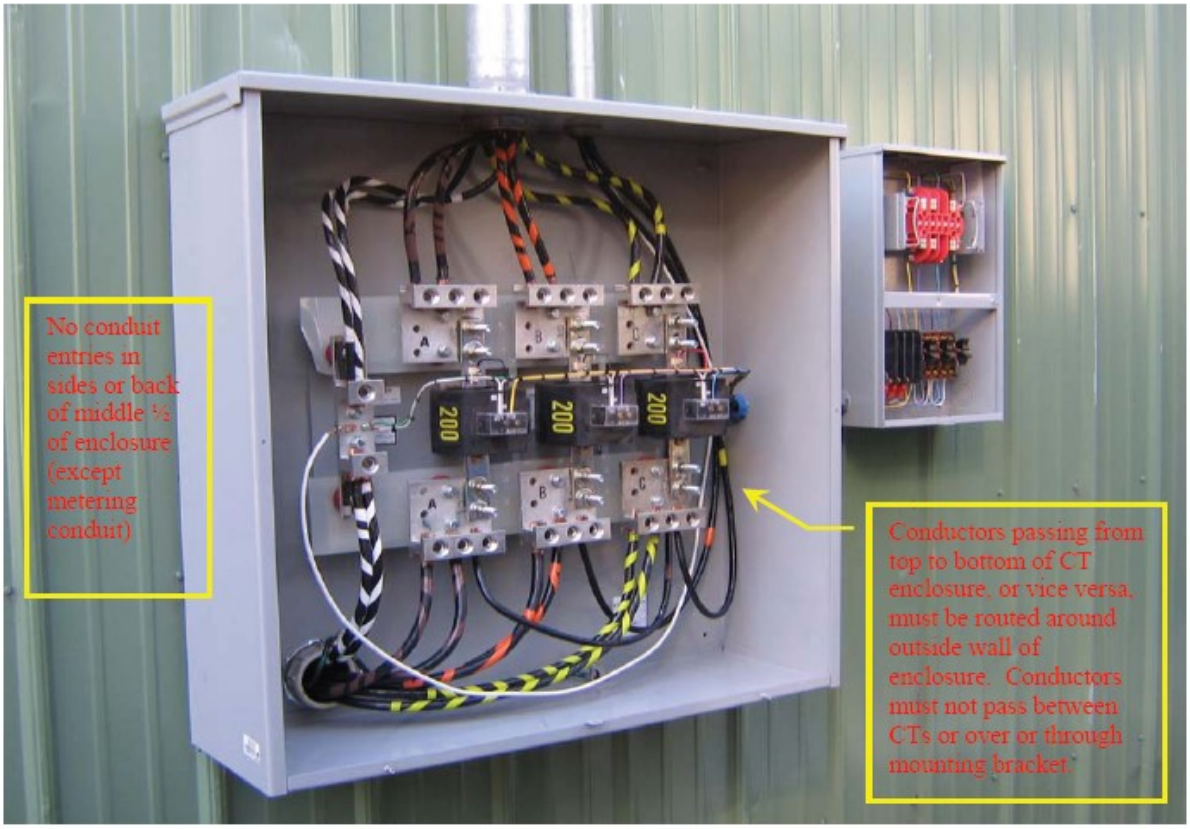
CT metering through 800 amps



CT enclosure to be sized for proper conductor bending space, min. 36" x 36" x 11", hinged cover if larger, NEMA 3R (raintight).

CT enclosure to be furnished and surface-mounted on building exterior by contractor in location acceptable to PUD Engineer.

Clear working space, as per NEC, will be maintained around metering equipment.

CT enclosure height 3' to bottom from finished grade.

Meter height 5' to 6' from finished grade to center of meter opening in socket.

Meter socket and CT mounting bracket to be furnished by PUD, installed by contractor.

Conduit between CT enclosure and meter socket to be 1" EMT or rigid metal. Grounding and bonding in accordance with NEC.

Contractor to provide appropriately-sized bonding jumper from grounded conductor (neutral) to CT enclosure, per NEC.

Conduit to meter socket will enter CT enclosure directly opposite CT mounting bracket.

Supply and load conductors will enter CT enclosure from top, bottom, or the top or bottom ¼ of the sides or back of the enclosure. These conductors WILL NOT enter the enclosure in the middle, not behind nor alongside the CT mounting bracket.

If conductors need to be routed from the top of the CT enclosure to the bottom, or vice versa, they will be routed around the outside wall of the CT enclosure. Conductors will not be permitted in the area of the CTs or mounting bracket.

Customer will install and make up load conductors. Load conductors may terminate on either the top or bottom set of lugs.

If this will be a delta service, the high leg will be terminated on the right, and will be taped orange per NEC.

PUD will install supply conductors and metering.

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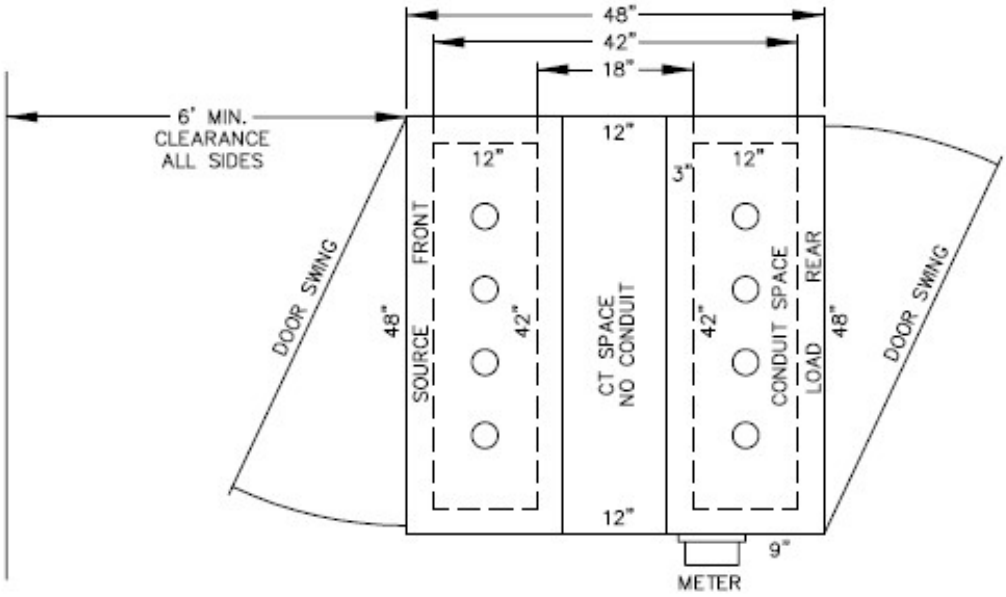
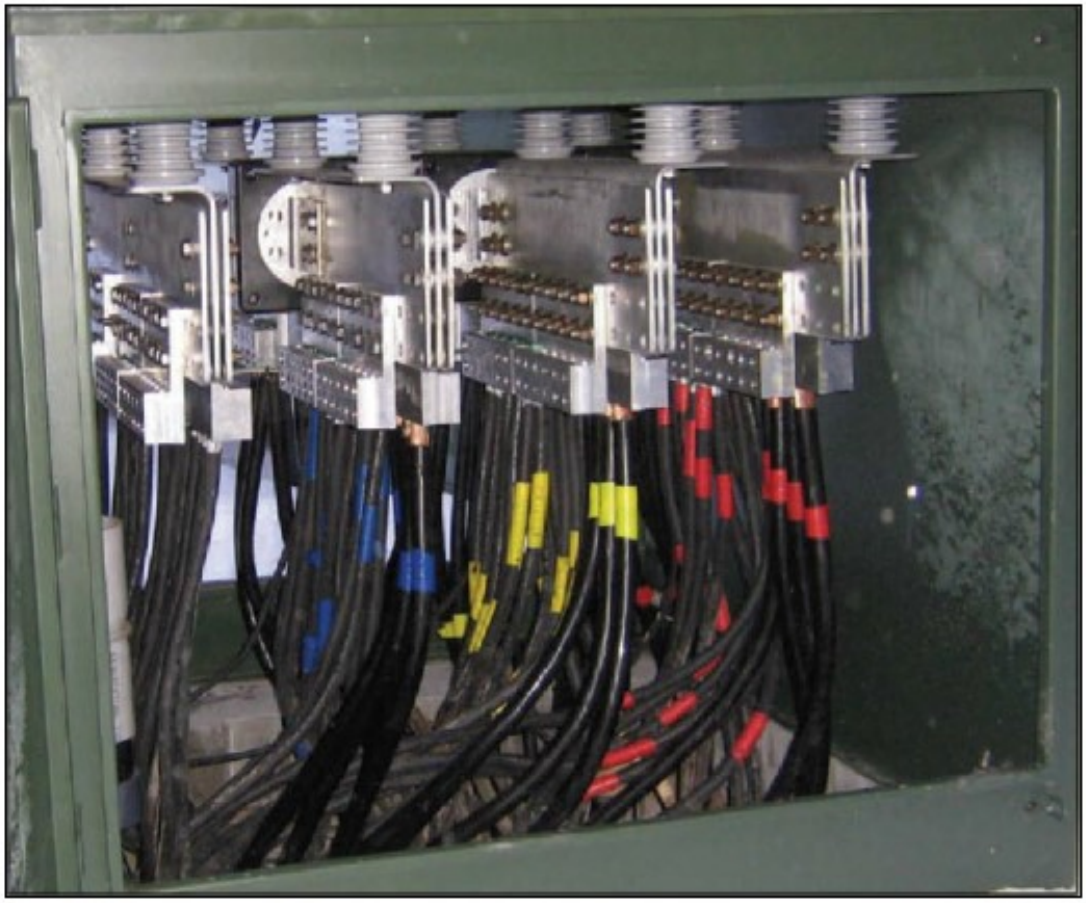


TOP VIEW SECONDARY CABINET



LOAD SIDE CONNECTIONS

NOTE:

1) FOR TRANSFORMER CLEARANCES SEE DRAWING VAULT-3
2) CUSTOMER WILL INSTALL CONDUITS AS SPECIFIED BY A DISTRICT ENGINEER.
3) CLEAR WORKING SPACE AS SHOWN
4) BOLLARDS OR BARRIERS AS NECESSARY TO PROTECT AND MAINTAIN CLEAR WORKING SPACE

OKANOGAN COUNTY P.U.D. NO. 1			
SECONDARY CABINET FOR SERVICE OVER 800 AMPS			
DATE	DRAWN BY	SCALE	DRAWING
OCT, 2018	BRATHEN	NO SCALE	CTMETER-4

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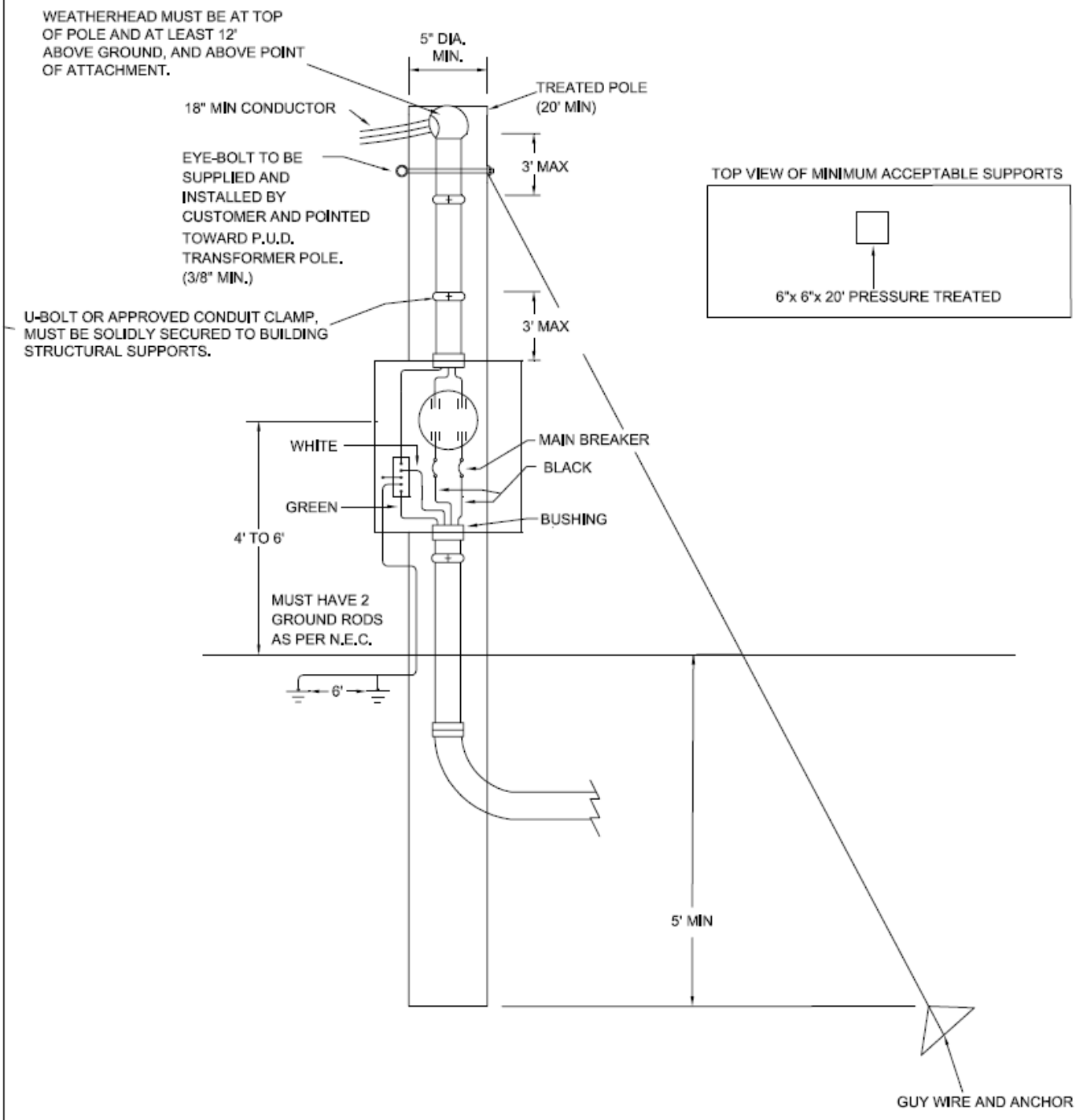

NOTES:

1. BEFORE INSTALLING METER POLE, CHECK WITH PUD ENGINEER FOR ACCEPTABLE LOCATION.
2. POLE MUST HAVE GUY WIRE, IF PUD SERVICE DROP IS OVER 75' IN LENGTH.
3. METER POLE MUST BE LOCATED WITHIN 30' OF MOBILE HOME, AS PER N.E.C.
4. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
OH TO UG SYSTEM FOR PERMANENT CONNECTED MOBILE HOMES			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	MHS-1

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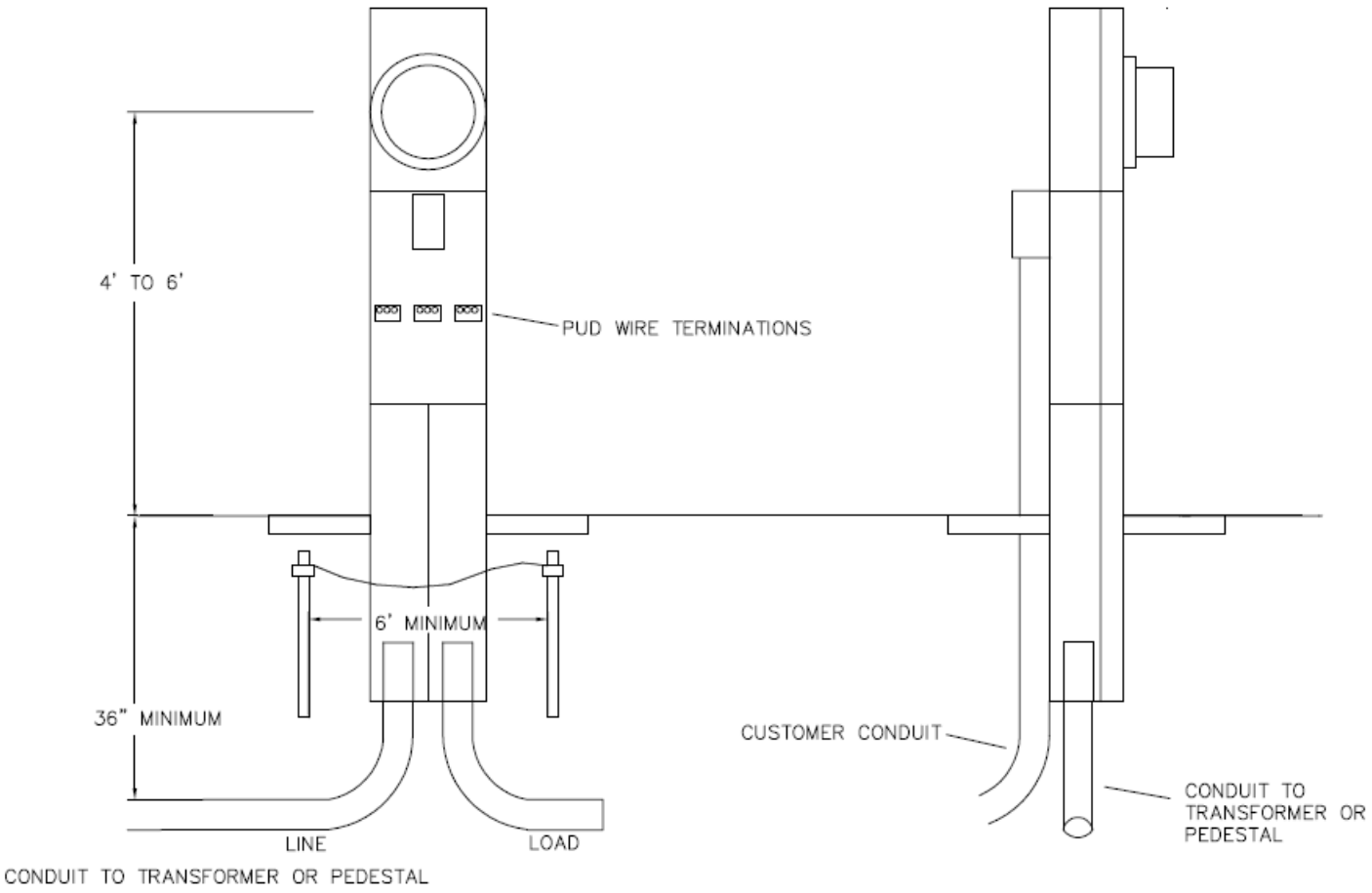

NOTES:

1. BEFORE INSTALLING METER BASE, CHECK WITH PUD FOR ACCEPTABLE LOCATION.
2. METER BASE MUST BE LOCATED WITHIN 30' OF MOBILE HOME, AS PER N.E.C.
3. PUD WILL NOT ACCEPT MIDWEST METERBASES WITH THE PRODUCT NUMBER M282CB1.
4. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
FACTORY-BUILT METER PEDESTAL FREE STANDING PEDESTAL			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	MHS-3

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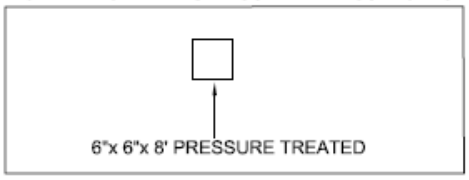
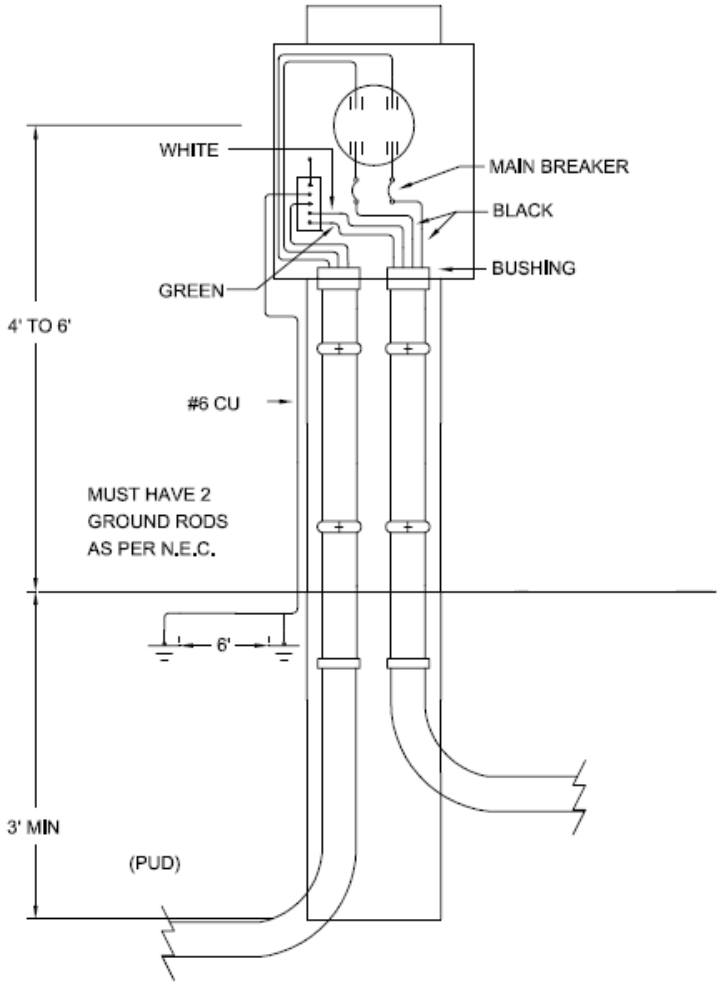
TOP VIEW OF MINIMUM ACCEPTABLE SUPPORTS





NOTES:

1. BEFORE INSTALLING METER POLE, CHECK WITH PUD FOR ACCEPTABLE LOCATION.
2. METER POLE MUST BE LOCATED WITHIN 30' OF MOBILE HOME, AS PER N.E.C.
3. METERBASES MUST BE UL LISTED.
4. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
UG SYSTEM FOR PERMANENT CONNECTED MOBILE HOMES			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	MHS-4

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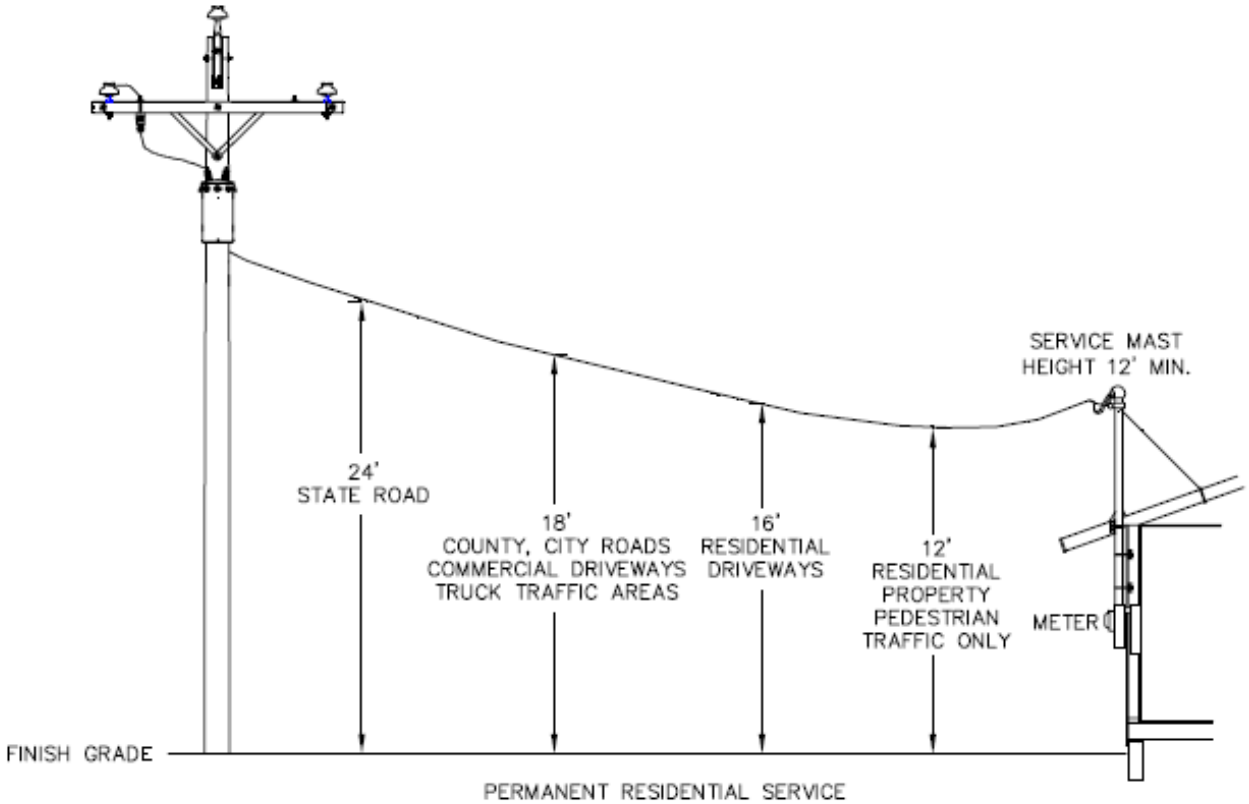
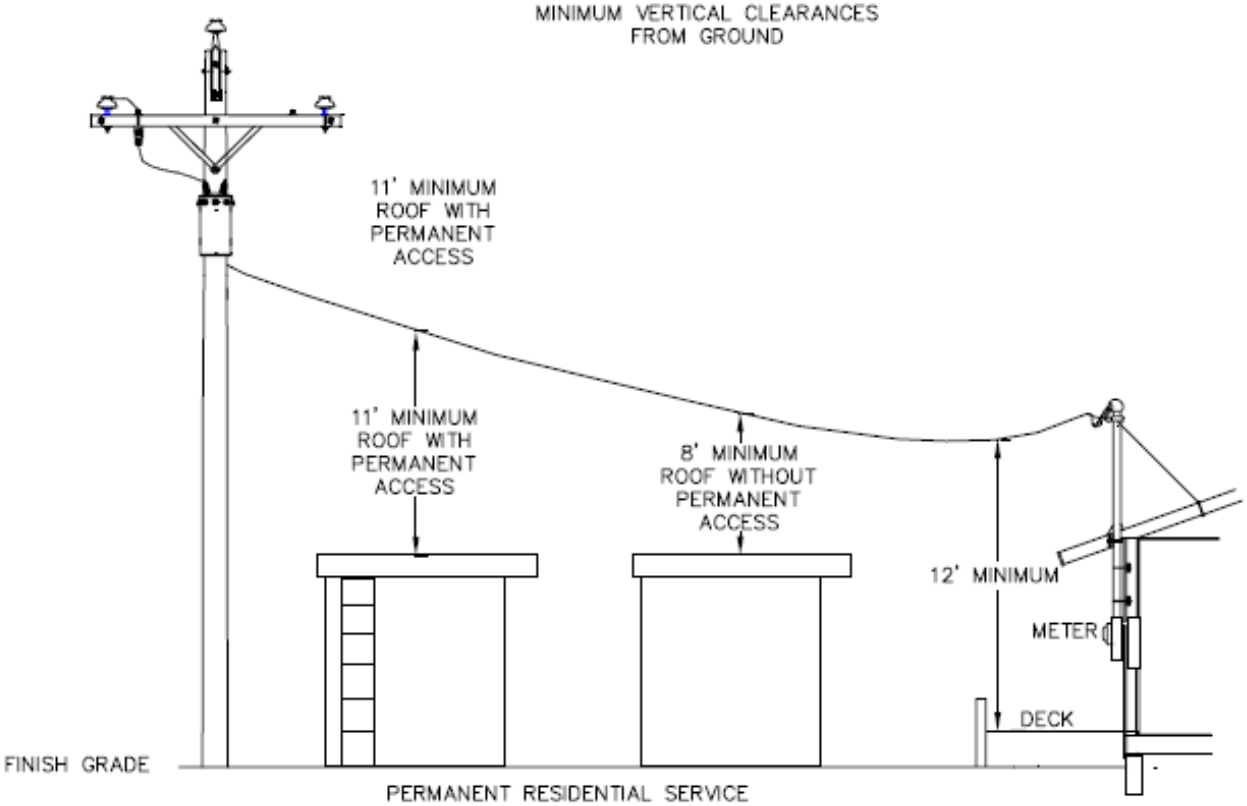


PERMANENT RESIDENTIAL SERVICE
MINIMUM VERTICAL CLEARANCES
FROM GROUND



PERMANENT RESIDENTIAL SERVICE
MINIMUM CLEARANCES OVER
OTHER STRUCTURES

OKANOGAN COUNTY P.U.D. NO. 1			
CLEARANCES FOR OVERHEAD SERVICES			
DATE	DRAWN BY	SCALE	DRAWING
Aug, 2013	LAFFERTY	NO SCALE	OHS-1

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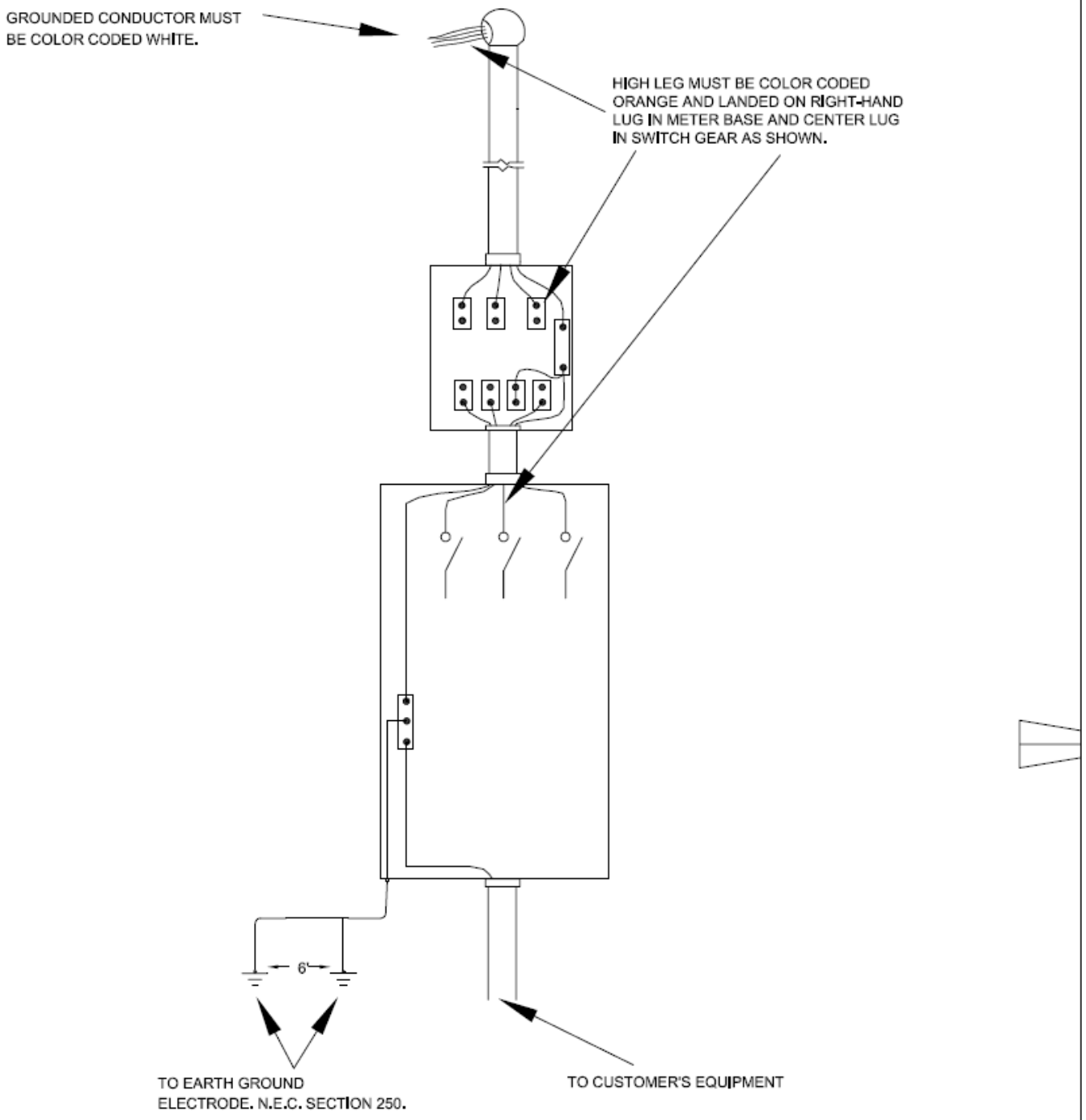

NOTES:

1. METER SOCKET REQUIREMENTS:
   240 V. - 3 PHASE - 4 WIRE UP TO 60 HP.
   480 V. - 3 PHASE - 4 WIRE UP TO 125 HP.
2. METER BASE MUST BE 7 JAW. LINK OR LEVER BYPASS FOR COMMERCIAL INSTALLATIONS.
3. GROUNDING AND BONDING PER N.E.C.
4. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
3Ø OVERHEAD SERVICE			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	OHS-2

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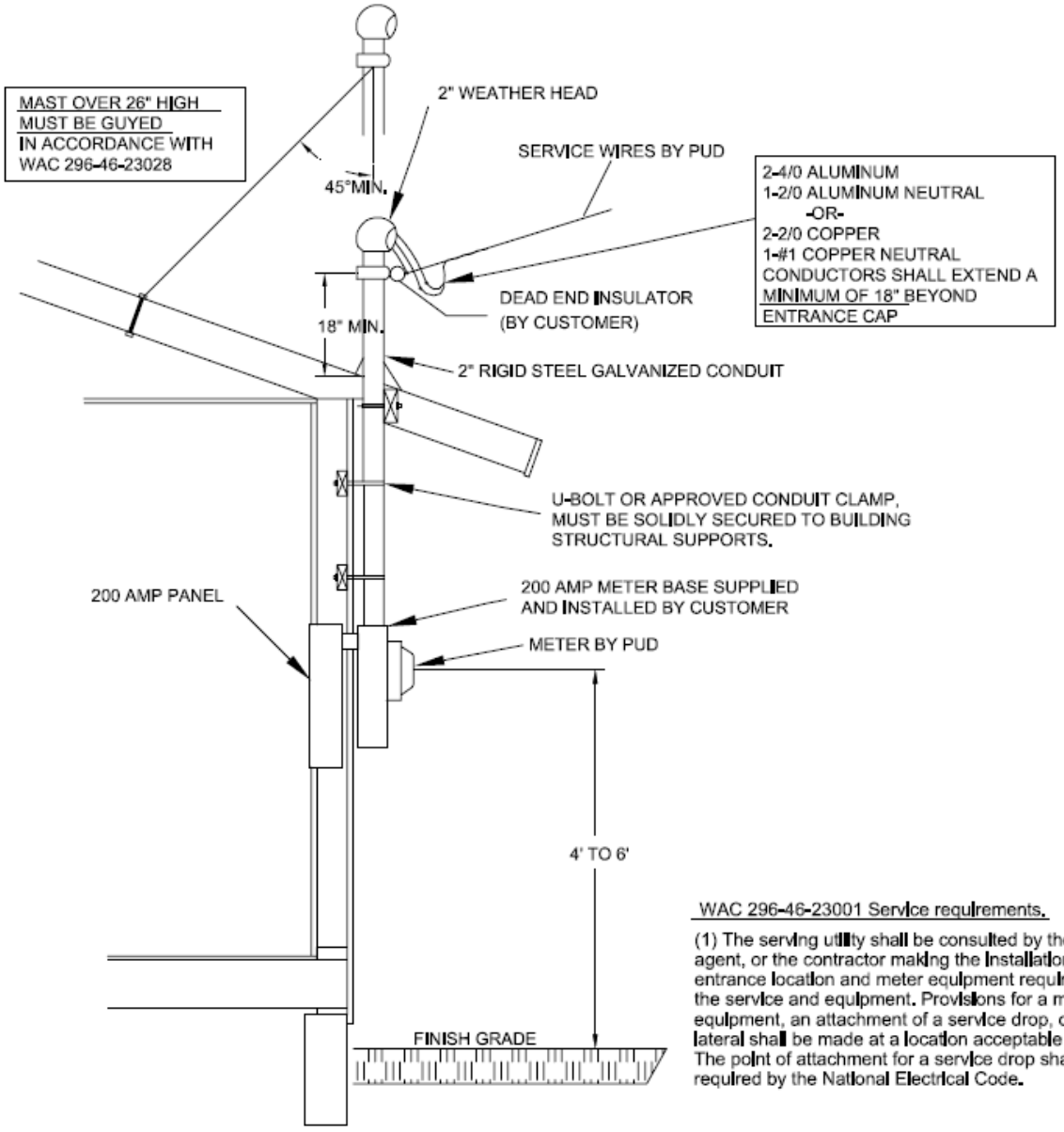
TYPICAL 200 AMP

OVERHEAD RESIDENTIAL ELECTRIC SERVICE

SURFACE MOUNTED WITH MAST THROUGH ROOF



WAC 296-46-23001 Service requirements.

(1) The serving utility shall be consulted by the owner, the owners agent, or the contractor making the installation regarding the service entrance location and meter equipment requirements before installing the service and equipment. Provisions for a meter and related equipment, an attachment of a service drop, or an underground service lateral shall be made at a location acceptable to the serving utility. The point of attachment for a service drop shall permit the clearances required by the National Electrical Code.

NOTES:

1. ALL METERING INSTALLATIONS SHALL BE BONDED AND GROUNDED PER CURRENT N.E.C. AND LOCAL JURISDICTION AGENCY REQUIREMENTS.
2. WORKING SPACE OF 36 INCHES (ALL DIRECTIONS) SHALL BE MAINTAINED AROUND METER BASE. THIS SPACE IS TO BE KEPT CLEAR OF ALL OBSTRUCTIONS INCLUDING LANDSCAPING AND ENCLOSURES.
3. OKANOGAN PUD WILL NOT MAKE CONNECTIONS UNDER EAVES.
4. PUD MAY REQUIRE THE MAST TO BE GUYED ON LONG SERVICES.
5. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
OVERHEAD SERVICE RESIDENTIAL			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	RS-1

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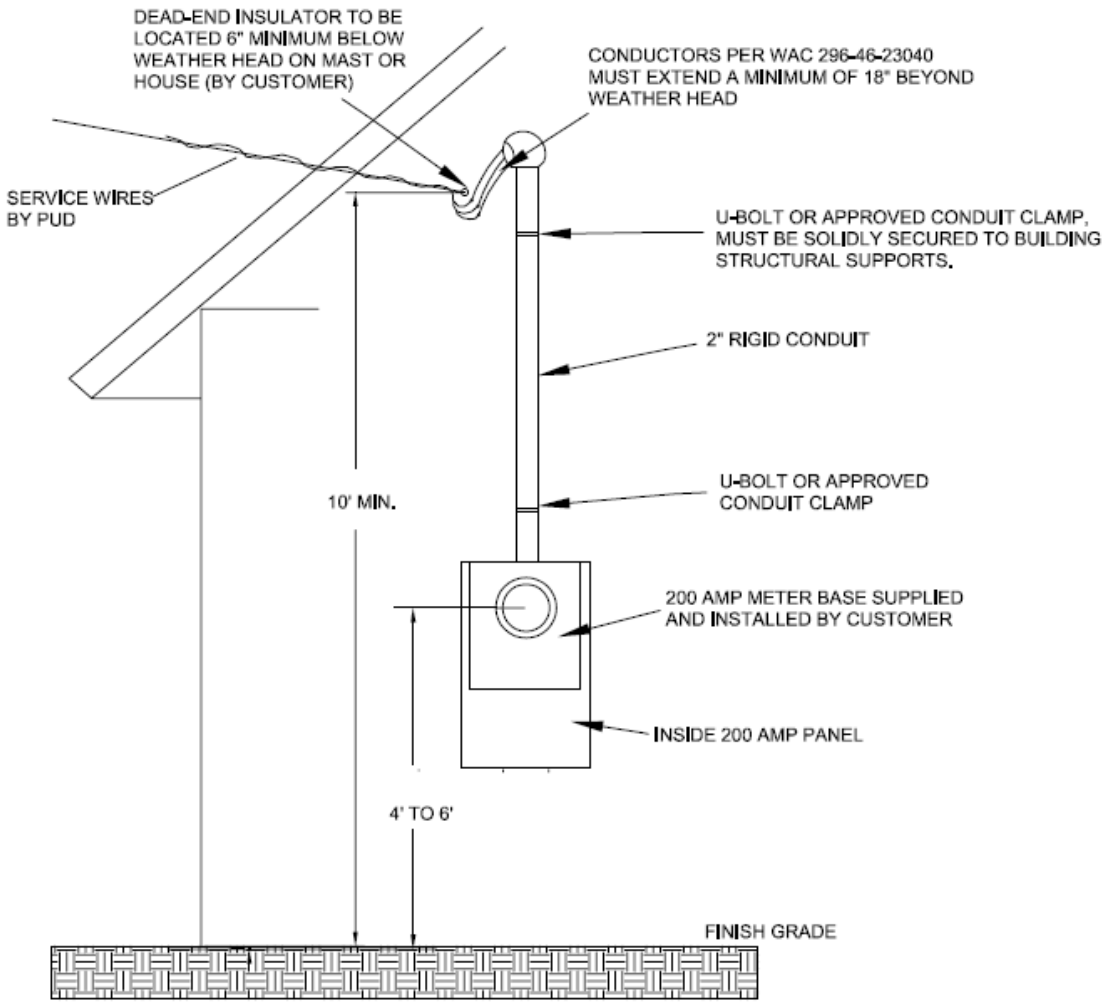
TYPICAL 200 AMP

OVERHEAD RESIDENTIAL ELECTRIC SERVICE

MOUNTED ON GABLE END



WAC 296-46-23001 Service requirements.

(1) The serving utility shall be consulted by the owner, the owners agent, or the contractor making the installation regarding the service entrance location and meter equipment requirements before installing the service and equipment. Provisions for a meter and related equipment, an attachment of a service drop, or an underground service lateral shall be made at a location acceptable to the serving utility. The point of attachment for a service drop shall permit the clearances required by the National Electrical Code.

NOTES:

1. ALL METERING INSTALLATIONS SHALL BE BONDED AND GROUNDED PER CURRENT N.E.C. AND LOCAL JURISDICTION AGENCY REQUIREMENTS.
2. WORKING SPACE OF 36 INCHES (ALL DIRECTIONS) SHALL BE MAINTAINED AROUND METER BASE. THIS SPACE IS TO BE KEPT CLEAR OF ALL OBSTRUCTIONS INCLUDING LANDSCAPING AND ENCLOSURES.
3. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
OVERHEAD SERVICE RESIDENTIAL			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	RS-2

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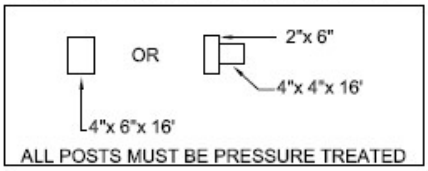
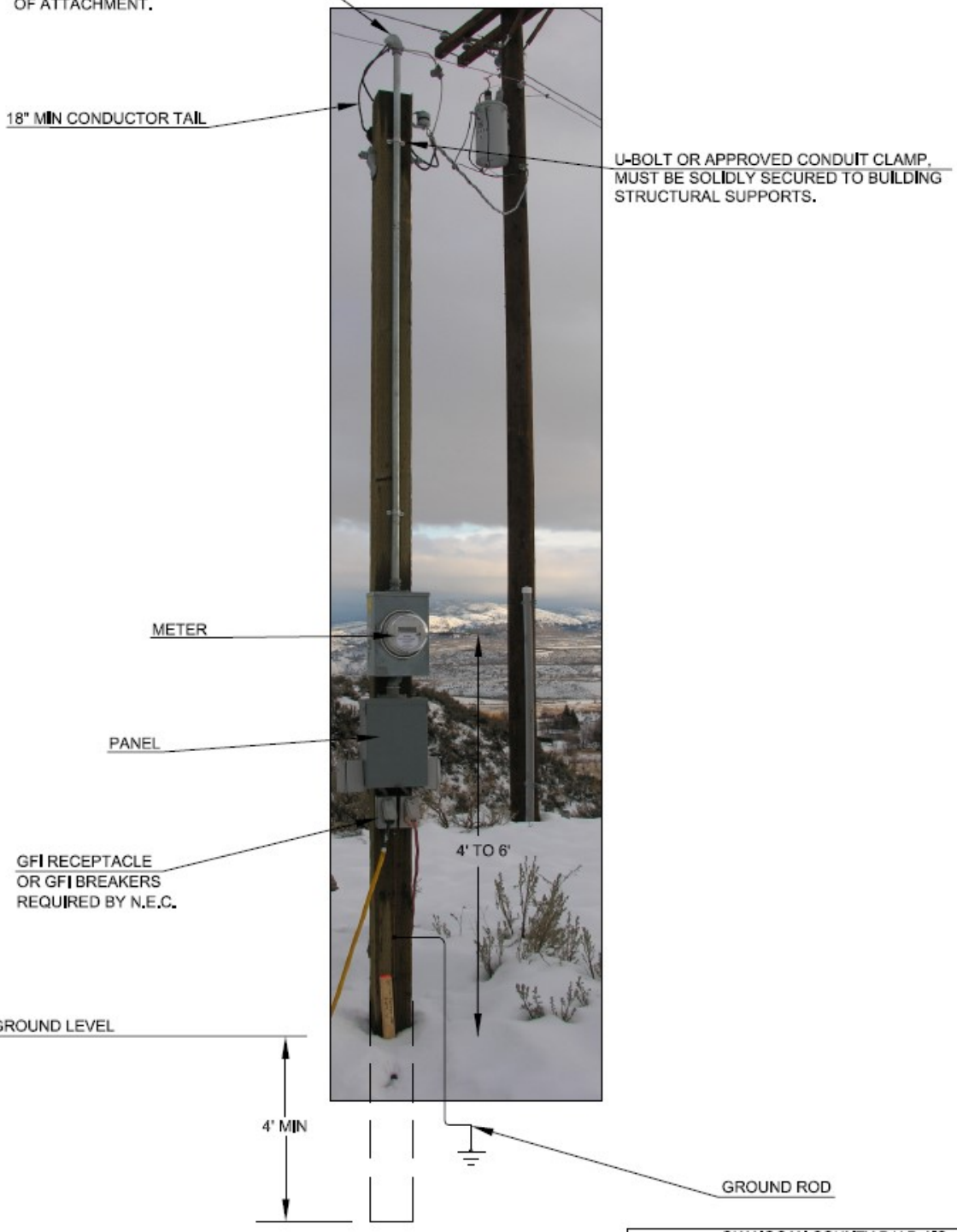
TOP VIEW OF ACCEPTABLE SUPPORTS



ALL POSTS MUST BE PRESSURE TREATED



NOTES:

1. THE DISTRICT WILL NOT CONNECT ANY TEMPORARY SERVICE, WHICH IS DEEMED INADEQUATE TO SUPPORT A LADDER OR ATTACHED EQUIPMENT.
2. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1

OVERHEAD TEMPORARY SERVICE POLE

DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	TS-1

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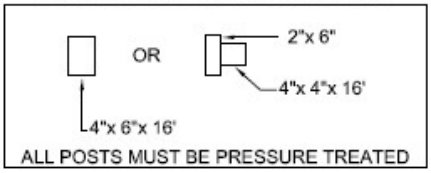
TOP VIEW OF ACCEPTABLE SUPPORTS



ALL POSTS MUST BE PRESSURE TREATED

NOTES:

1. THE DISTRICT WILL NOT CONNECT ANY TEMPORARY SERVICE, WHICH IS DEEMED INADEQUATE TO SUPPORT A LADDER OR ATTACHED EQUIPMENT.
2. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
UNDERGROND TEMPORARY SERVICE POLE			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	TS-2

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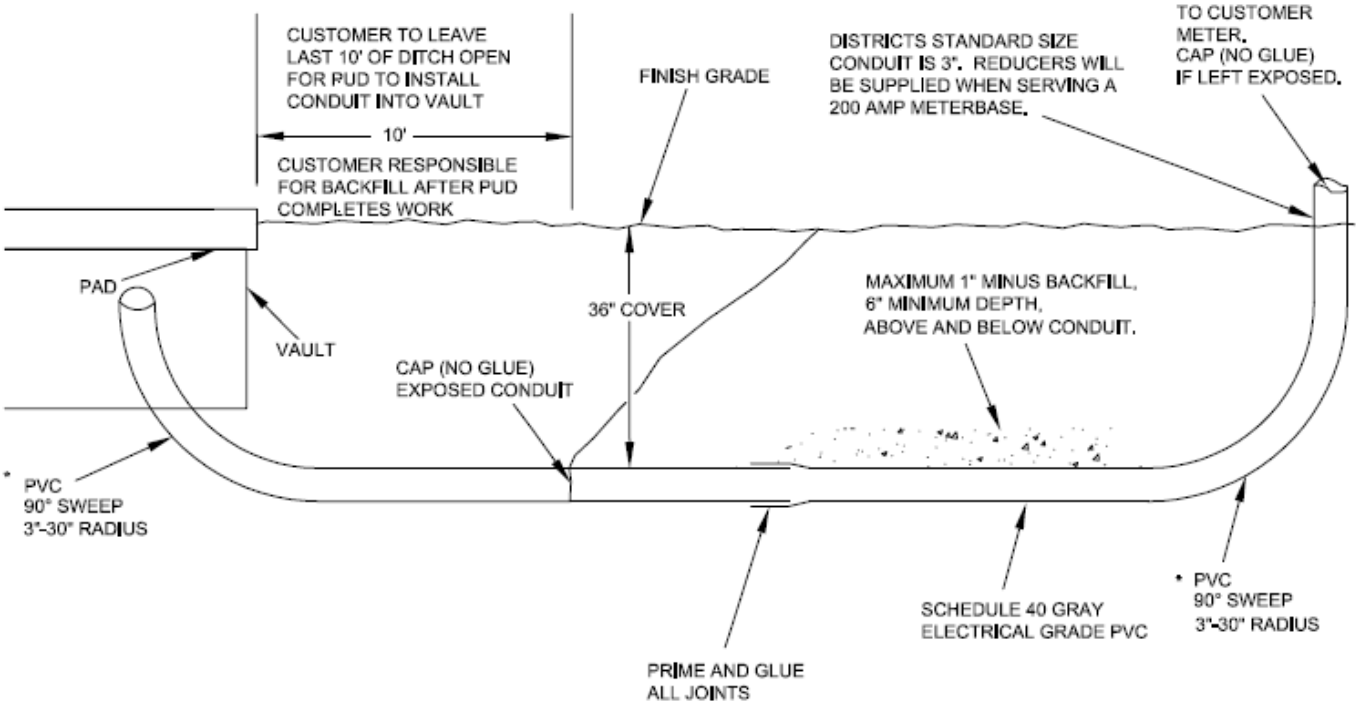

NOTES:

1. THE CUSTOMER IS RESPONSIBLE FOR CALLING IN LOCATES PRIOR TO DIGGING.
2. DISTRICT MUST BE CONTACTED FOR INSPECTION PRIOR TO BACKFILLING.
3. SEE SECTION 4.02 FOR MORE INFORMATION.

OKANOGAN COUNTY P.U.D. NO. 1			
UNDERGROUND LINE INSTALLATION TO PADMOUNT			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	UGS-1

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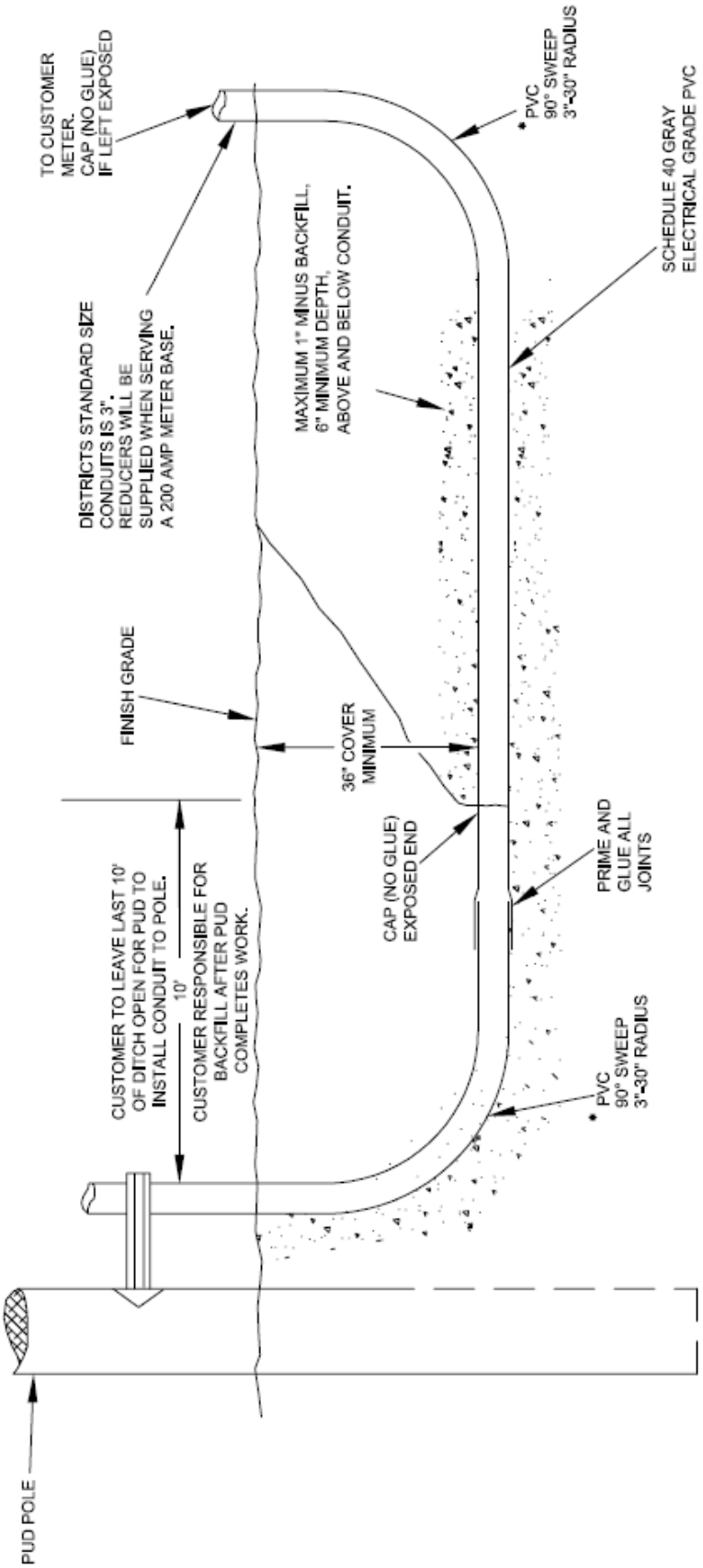

NOTE:

1. CUSTOMER IS RESPONSIBLE FOR LOCATING BURIED FACILITIES PRIOR TO DIGGING.
2. DISTRICT MUST BE CONTACTED FOR INSPECTION PRIOR TO BACKFILLING.
3. DITCH TO BE CENTERED ON POLE TO ACCOMADATE ALTERNATE CONDUIT ATTACHMENT POINTS.
4. SEE SECTION 4.02 FOR MORE INFORMATION.

OKANOGAN COUNTY P.U.D. NO. 1			
UNDERGROUND LINE INSTALLATION TO RISER			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	UGS-2

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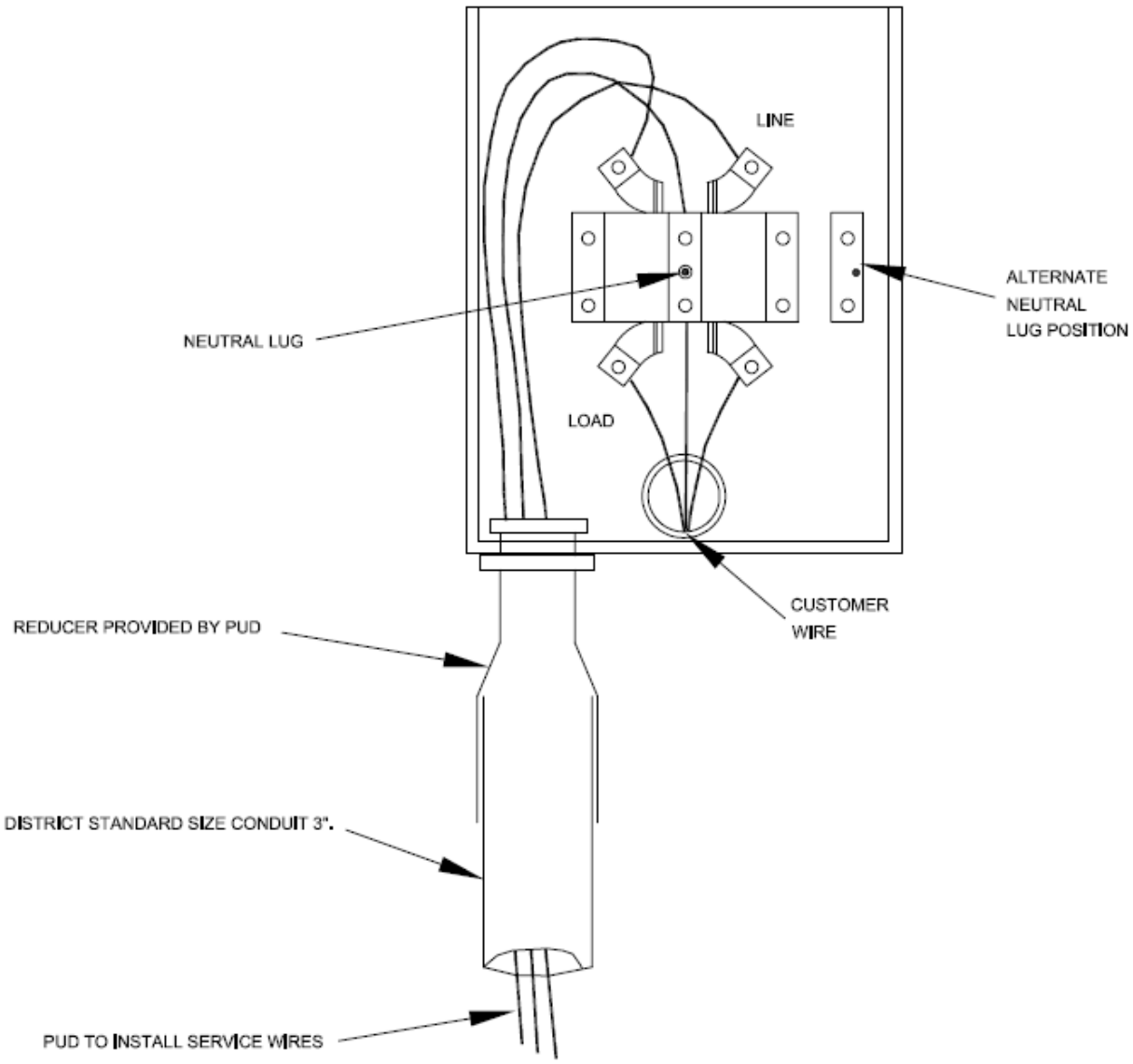

NOTES:

1. THE CONDUIT SHOULD BE INSTALLED IN THE LOWER LEFT CORNER OF THE METER SOCKET.
2. USE LUGS (ELECTRICAL CONNECTORS) THAT ARE MARKED TO ACCEPT 4/0 ALUMINUM CONDUCTORS.
3. MUST BE U.L. LISTED UNDERGROUND METER SOCKET.
4. METERBASE MUST BE APPROVED BY WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES.

OKANOGAN COUNTY P.U.D. NO. 1			
200 AMP UG METER SOCKET			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	UGS-3

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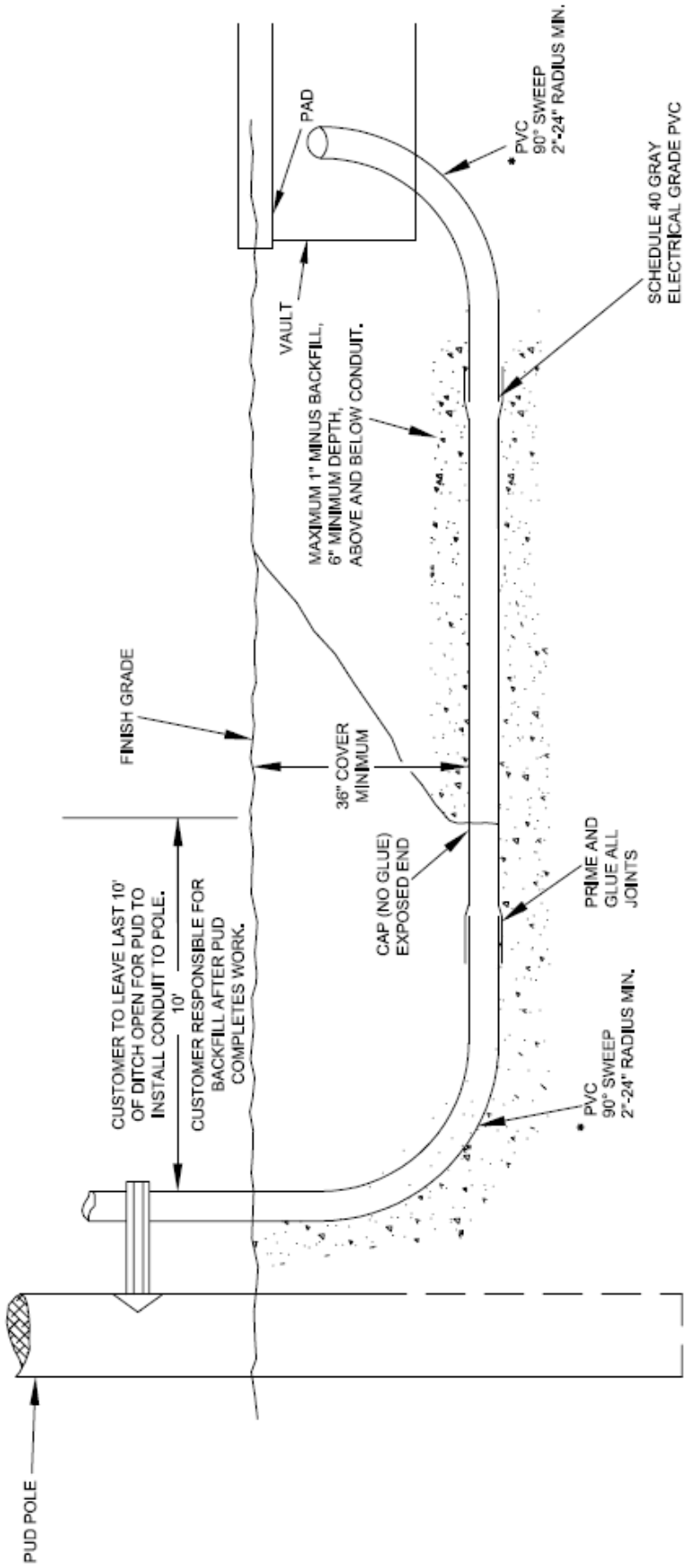

NOTE:

1. * FIBERGLASS SWEEPS REQUIRED ON ALL RUNS WITH MORE THAN 2 SWEEPS, OR ON RUNS LONGER THAN 200'
2. CUSTOMER IS RESPONSIBLE FOR LOCATING BURIED FACILITIES PRIOR TO DIGGING.
3. DISTRICT MUST BE CONTACTED FOR INSPECTION PRIOR TO BACKFILLING.
4. DITCH TO BE CENTERED ON POLE TO ACCOMADATE ALTERNATE CONDUIT ATTACHMENT POINTS.
5. SEE SECTION 4.02 FOR MORE INFORMATION.

OKANOGAN COUNTY P.U.D. NO. 1			
UNDERGROUND PRIMARY INSTALLATION			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	UGS-4

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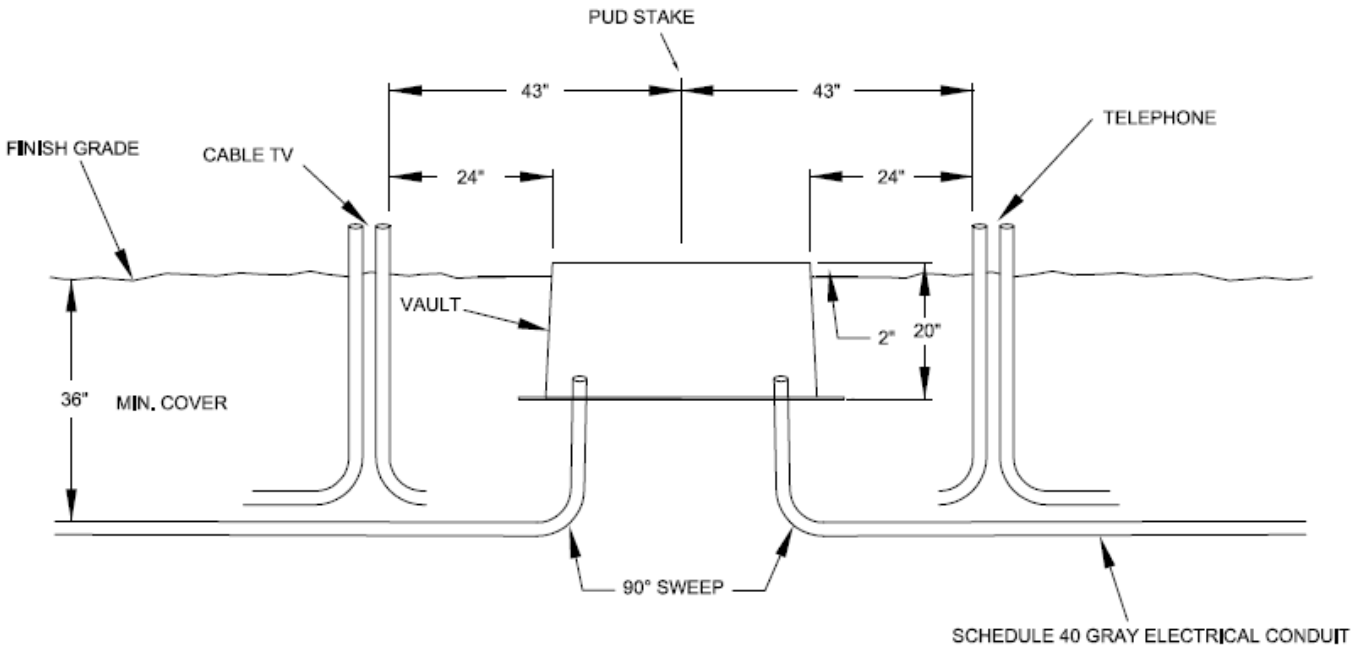

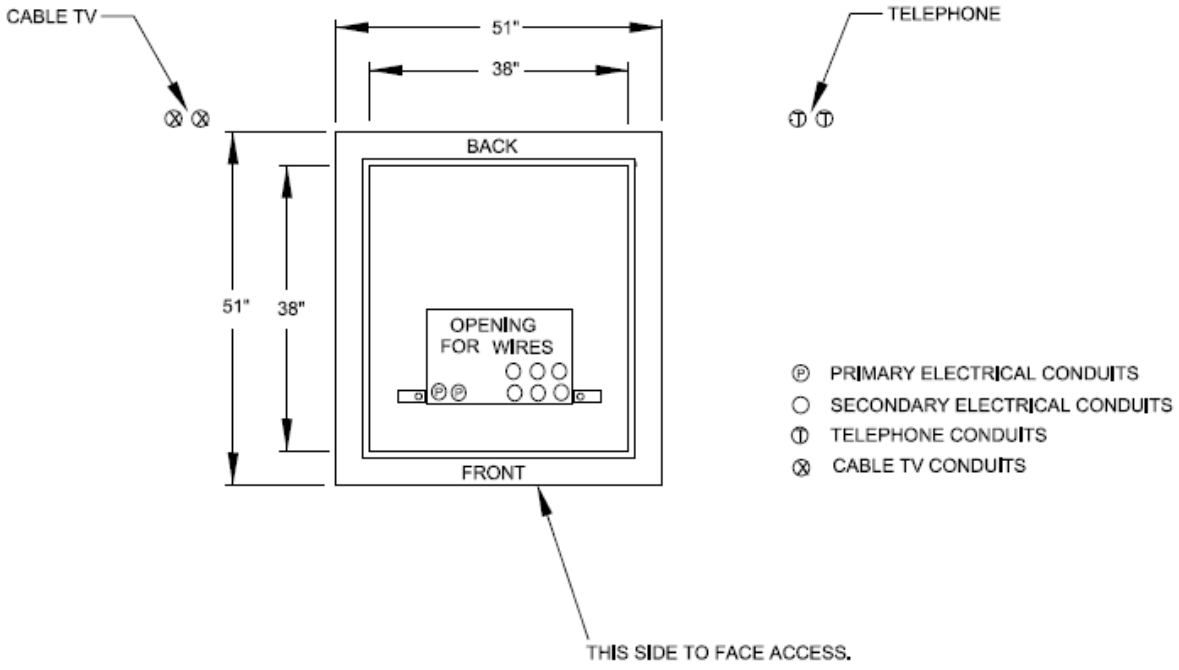

NOTES:

1. BEFORE INSTALLING VAULT, CHECK WITH PUD ENGINEER FOR ACCEPTABLE LOCATION.
2. ALL CONDUITS TO LOCATED ON ACCESS SIDE OF OPENING.
3. PRIMARY ON THE LEFT AND SECONDARY CONDUITS ON THE RIGHT IF LOOKING AT FRONT OF VAULT.

OKANOGAN COUNTY P.U.D. NO. 1			
FIBERGLASS TRANSFORMER VAULT INSTALLATION			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	VAULT-1

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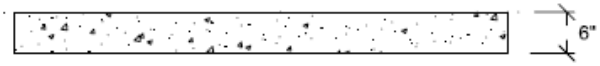
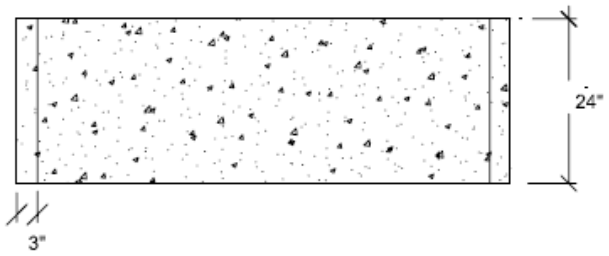
SIDE VIEW

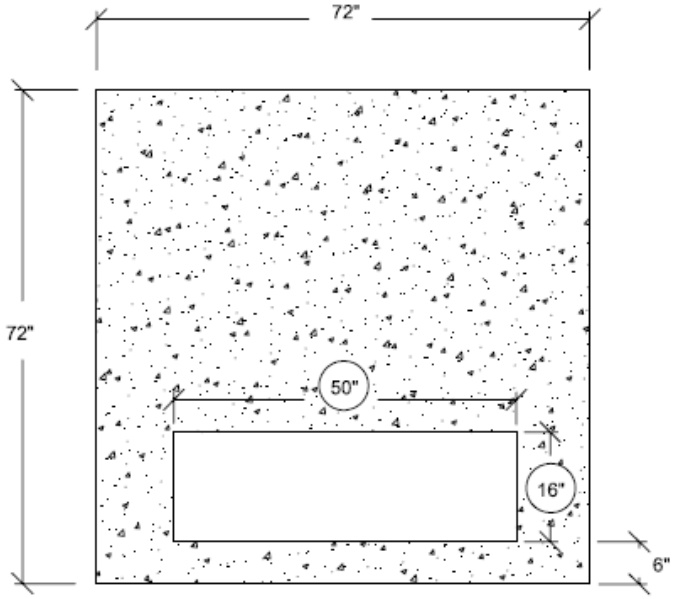


3 PHASE TRANSFORMER PAD

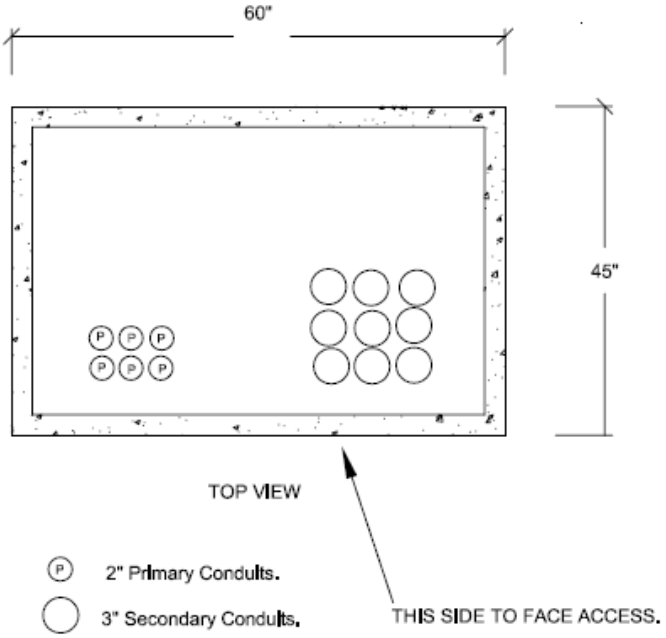
SIDE VIEW



3 PHASE VAULT
(TRANSFORMER OR SWITCH)



TOP VIEW



TOP VIEW

(P) 2" Primary Conduits.

3" Secondary Conduits.

THIS SIDE TO FACE ACCESS.

OKANOGAN COUNTY P.U.D. NO. 1			
3Ø VAULT			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	VAULT-2

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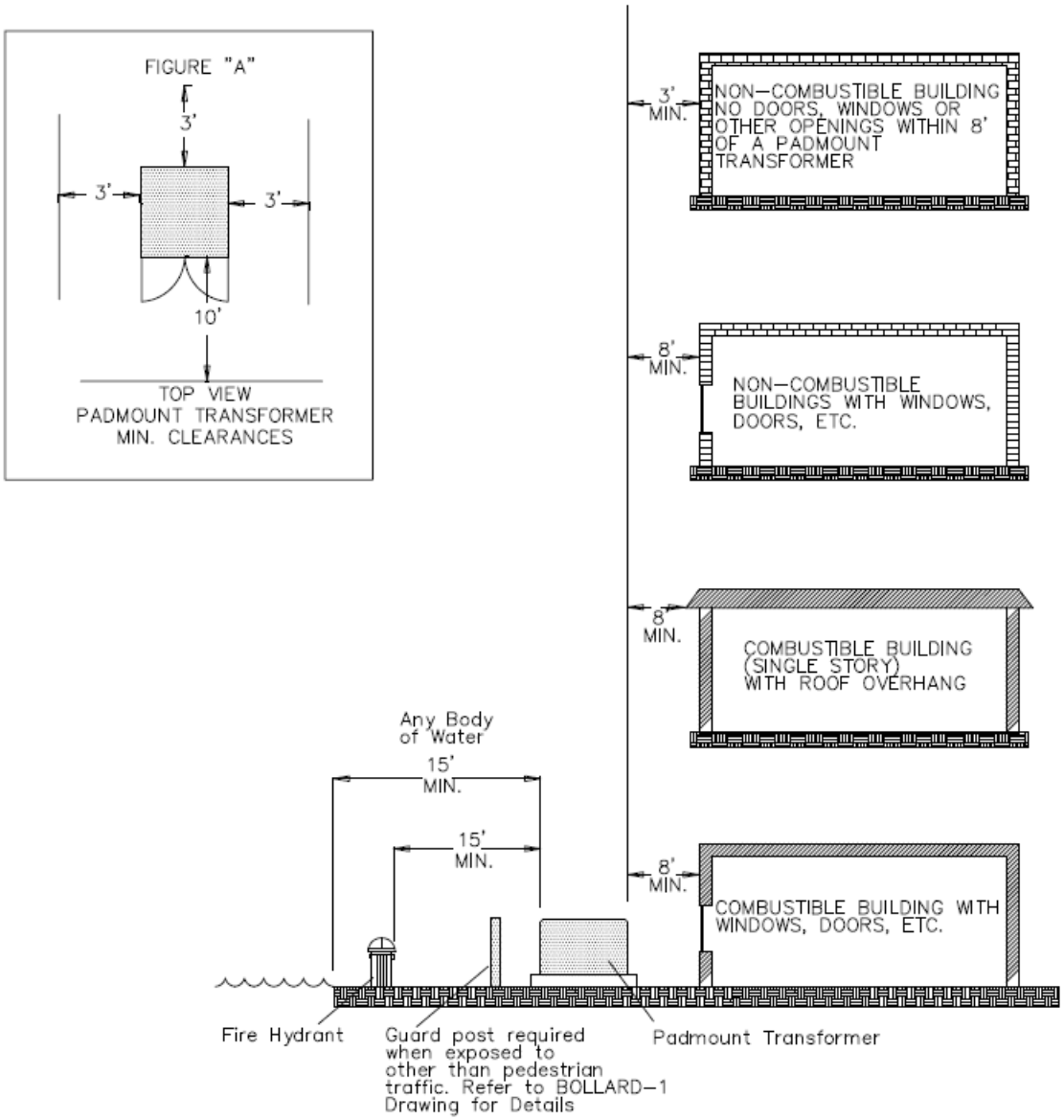

NOTES:

1. ALL MEASUREMENTS ARE FROM THE NEAREST METAL PART OF THE TRANSFORMER.
2. FOR VARIATIONS, CONSULT THE ENGINEERING DEPARTMENT.
3. NON-COMBUSTIBLE CONSTRUCTION MATERIALS INCLUDE BRICK, CONCRETE, STONE AND STEEL.
4. TRANSFORMERS SHALL NOT BE LOCATED WITHING 20' OF FACILITIES USED TO STORE OR DISPENSE COMBUSTIBLE LIQUIDS OR GASES (I.E. SERVICE STATIONS PUMPS AND TANKS, PROPANE TANKS, ETC.
5. REFER TO FIGURE "A" FOR MINIMUM WORKING SPACE REQUIRMENTS AROUND PADMOUNTED TRANSFORMERS, LANDSCAPING WHICH DOES NOT INTERFERE WITH THE OPERATION AND MAINTENANCE OF THE TRANSFORMER IS ALLOWED.
6. FINISHED GRADE AT THE TRANSFORMER LOCATION MUST BE SUCH THAT LEAKING OIL WILL FLOW AWAY FROM THE BUILDING.

OKANOGAN COUNTY P.U.D. NO. 1			
CLEARANCES FROM PADMOUNT ENCLOSURES			
DATE	DRAWN BY	SCALE	DRAWING
Jan, 2008	LAFFERTY	NO SCALE	VAULT-3

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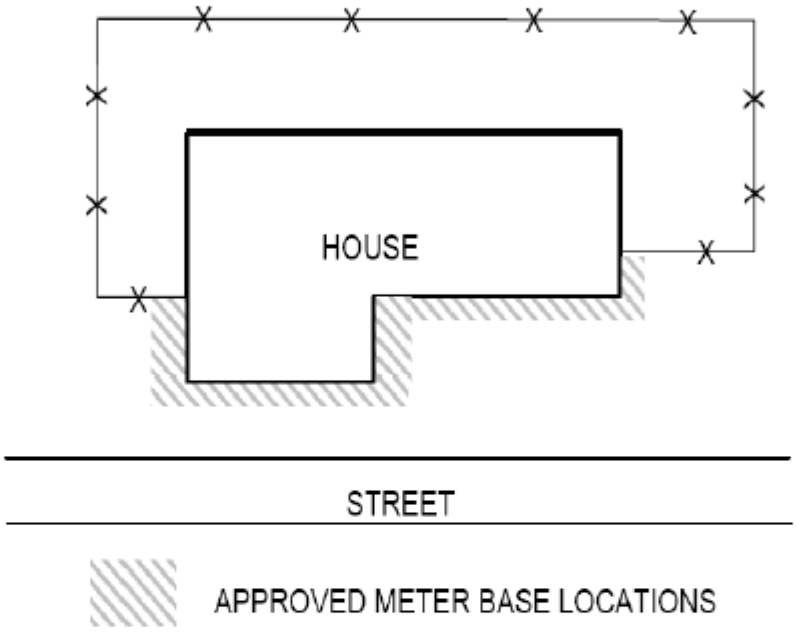
METER BASE LOCATION



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

The meter base must be located:

- Outside.
- On the front 1/3 of your home closest to normal public access.
- In an area that is **not** subject to being fenced in or enclosed (patio, deck, carport, backyard, etc.
- On a structure that is owned by you.
- All meters must be mounted 4' – 6' above **finished grade.**

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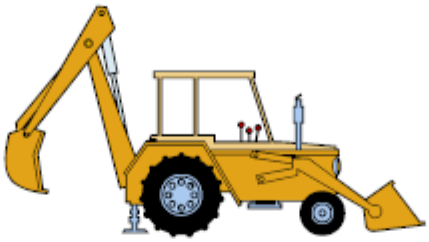
CALL BEFORE YOU DIG!!!



Call three (3) full **working days** before you dig!

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

1-800-424-5555
Or
Just dial 811
Or
Go online to www.callbeforeyoudig.org

At no charge to you, **The Utility Notification Center**, will mark where power, water, and other utilities are located on your property, using the following color codes:

RED	Electric
YELLOW	Gas – Oil
ORANGE	Telephone – CATV
BLUE	Water
GREEN	Sewer
PURPLE	Reclaimed Water
PINK	Survey
WHITE	Proposed Excavation