

KANSAS CORPORATION COMMISSION
OFFICE OF PUBLIC AFFAIRS & CONSUMER PROTECTION

FORMAL COMPLAINT

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Filed Date: 08/28/2019
Received on
State Corporation Commission
of Kansas
June 2017

AUG 28 2019

Note: Formal Complaints filed with the KCC become a public record and may be posted on the KCC's website. Any information you provide in a complaint or other documents related to the complaint, including, but not limited to, your name, address, city, state, zip code, telephone number, email address, and the facts of your case may be available online for public viewing.

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

IN THE MATTER OF THE COMPLAINT AGAINST

Westar Energy
(Respondent, name of utility company)

by
Lonnie & Patricia Dalrymple
(Complainant, your name)

For Commission
use only

DOCKET NO.

Please provide complainant (your) contact information:

Full Name(s): Lonnie & Patricia Dalrymple
Address: 17391 Hollingsworth Rd., Basehor, KS. 66007
Daytime Phone: 913-724-2526
E-mail Address (optional): _____

FORMAL COMPLAINT - See attached

(Your name)

states that the above-named respondent is a public utility providing service in Kansas and is subject to the jurisdiction of the State Corporation Commission.

The facts and circumstances surrounding the complaint are set out in detail below:
(Be specific and as brief as possible. If necessary, attach additional sheets.)

(Continued on the other side)

Formal Complaint *continued*

Complainant requests that the respondent utility be required to provide an answer to the complaint and requests the following action be ordered by the Commission. *(State action or result desired.)*

and for such further order or orders as the Commission may deem necessary.

VERIFICATION: I do solemnly, sincerely, and truly declare and affirm that the statements made in this complaint form are true and accurate to the best of my knowledge, and I do this under the pains and penalties of perjury.

I understand that Formal Complaints filed with the KCC become a public record and may be posted on the KCC's website. Any information provided in the complaint or other documents related to the complaint, including, but not limited to, my name, address, city, state, zip code, telephone number, email address, and the facts of the case may be available online for public viewing.

Lonnie Dalrymple

8/27/19

Patricia Dalrymple

8/27/19

Complainant's (your) signature

Date signed

FILING INSTRUCTIONS

This form may be filed in person at the Kansas Corporation Commission's Office or by mail. All formal complaints, whether filed by mail or delivered in person, must be directed to:

Secretary to the Commission
Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

For more information about the formal complaint process please refer to the instructions provided with this form or visit the KCC website: <http://kcc.ks.gov/>, Consumer Assistance, Filing a Complaint. You may also contact our Consumer Assistance staff toll-free at 1-800-662-0027 or by e-mail at public.affairs@kcc.ks.gov.

FORMAL COMPLAINT

Lonnie and Patricia Dalrymple (collectively referred to herein as "Consumer") hereby file this formal complaint against Westar Energy, Inc ("Westar") for violation of Westar's Commission-approved tariff and request the commission order Westar to abide by the tariff and consistently pay for the maintenance of all parts of their power delivery system ("Network"), rule on Westar's compliance with National Electric Code (NEC) safety standards (collectively, NESC) and order Westar to restore at their cost the permanent electric service to Consumer's residence.

1. Consumers own their residence in Leavenworth County, Kansas and receive electric service from Westar. Electric power is delivered via underground direct buried service line from a transformer on Westar pole to a junction box mounted on Consumer's house approximately 3 feet below Westar meter receptacle.

2. The underground direct buried service line was installed by Westar in or about 1980. Westar made the decision to install service line underground due to farm machinery crossing path relative to service line. Prior to underground installation, Westar specifications required a 12" x 15" x 6" enclosure attached to house and wired to a meter receptacle using 4/0 wire contained within 2" conduit. Consumer wired and installed the enclosure with meter receptacle on the house and then Westar trenched and buried underground service with connection made in customer provided enclosure.

3. Approximately 20 years ago Consumer complained to Westar of

dimming lights and was informed by Westar utility repair person of low voltage (114 volts) at the transformer. Prior to this and over a period of time, Consumer replaced a washing machine, a dishwasher, and a clothes dryer. All these appliances failed with electric motor failures. Frequent light bulb replacements alerted Consumer that something was wrong. A complaint was called in to Westar. Westar action to low voltage included graphing usage over a period of time and then installation of 50 KW transformer. The Westar employee monitoring the usage commented on the length of service from pole to house and the low voltage at transformer could not be increased because another Westar employee said an increase in voltage at the substation over excited the equipment. It is noted that the residence at the time of this complaint was "all electric", operating a heat pump with 30 KW of resistance heat. The design voltage drop at 190 feet with 4/0 aluminum wire barely meets minimum acceptable voltage ranges at supply of 120 volts. The introduction of the 50 KW transformer did not solve the dimming lights. However, the dimming lights went away years later.

4. Around 3 AM on Sunday, July 21, 2019, Consumer was awakened by noises from bedroom ceiling fan. They turned the fan off and noises stopped. At around 6 AM, it was discovered there was no tap water from the well system. Further investigation revealed one phase of the electrical service had failed. This gave reason for the noisy ceiling fan as the well pump pressure regulator provided an electrical path between phases, thus backfeeding current to the ceiling fan circuit. A partial powerout report was made to the Westar powerout call-in line. A Westar employee arrived and first diagnosed the problem as a

failed ground and then later changed assessment to a failed phase service line. No determination was made per the location of failure in service line. Two additional trucks with drivers arrived later and approximately 300 feet of temporary unprotected 4/0 triplex was laid on top of the ground and across farm service driveway, then routed through the face of the 12" x 16" enclosure and terminated at meter receptacle. Only the section of cable routed through the face of enclosure was protected with conduit. Westar violated safety requirements of National Electric Safety Code (NESC Section 311C) which says "For emergency installations, supply and communication cables may be laid directly on grade if they are guarded or otherwise located so that they do not unduly obstruct pedestrian or vehicular traffic and are appropriately marked." Even though Consumer expressed concern of unsafe condition to the Westar distribution designer and then their manager, it finally took a demand call to that manager 6 days after temporary install to get the cable protected and drive over protection in driveway. The workmanship of drive over protection is documented in Exhibit B. Exhibit B is a picture after one drive over by Consumer pickup. The vehicle had been blocked in by the rerouting of temporary service when cable was put in conduit. Consumer has not attempted to drive over again. Propane delivery is not possible at current time. Vehicle and farm machinery access to farm buildings and livestock facilities is significantly impacted.

5. On Wednesday, July 24, 2019, a Westar Distribution Designer met with Consumer to discuss repair of service line. The designer informed Consumer that the install in 1980 is completely out of specification and Consumer will be responsible to comply with new

specification or be disconnected from the grid in 30 days. He also explained a reimbursement plan of up to \$1,000 is available to offset costs. The reimbursement, in effect, is a payment for an advance from customer at 0% interest on the installation upgrade. It is paid in bill credits provided Consumer continues to purchase electric service from Westar. Tariff Section 7.06.02 (c) (iv) says "The Company will provide a reasonable reimbursement to the customer to cover up to 135 feet of trenching and backfill costs associated with the underground service, not to exceed \$1,000. Reimbursements will normally be provided through bill credits for residential customers and through direct payment for landlords and mobile home park owners." At the very least, Tariff Section 7.06.02 (c) (iv) is discriminatory as it separates and treats residential customers different from mobile home park owners and landlords. Consumer made considerable effort to understand current Westar specifications and when specifications caused a permanent obstruction to lawn, alternatives were suggested. An impasse was reached when Designer claimed no knowledge on 2 different installations. One in the Westar territory of Eudora and another on the new construction adjoining Consumer's property. Since it was clear Consumer and Designer could not reach a mutual solution, Consumer requested the Designer go back to the office and email optional designs. Meanwhile Consumer asked the new construction owner next door about their Westar installation. The owner said the Westar designer and inspector was T. R. (initials), the same designer who met with Consumer. Consumer believes this confirmed a lack of transparency and presented a lack of good faith effort to expeditiously restore service. On July 25, 2019, Consumer received an

email with attachments from the designer. They are attached as Exhibit A. After reading that email on Friday, July 26, 2019, Consumer left voicemail for a return call on designer's phone. Consumer never received return call. Consumer tried multiple contacts to locate a Westar manager to invite for a face to face meeting to discuss solutions and show problems. Consumer was finally able to leave a voicemail for the designer's manager, C. F. (initials) in Shawnee. When Mr. F. returned the call, Consumer asked to have a meeting, but Mr. F. declined and stated he deals with about 1 a week of these failed service lines. He said the tariff is approved by the KCC; Consumer would need to contact them. Other discussion with Mr. F. was:

a.) Who is liable for injury from the triplex that has been laid in the open on top of the ground? Answer: he would contact their legal department and get back. He never followed up.

b.) The communication with Mr. R. per new construction install in Eudora and same next door. Concern was shared for denying any knowledge of construction next door. Mr. F. provided no comment.

c.) Mr. F. asked if Consumer needed KCC contact info. Even though Consumer said they can get the info, Mr. F. sent email with information. Consumer's impression is Mr. F. was not interested in solving the design. Only interested in passing Consumer to KCC. Consumer reached out to management. Management did not and would not meet to discuss design flaws.

6. In 1980, the service standards specified the customer must provide and install the 12" x 15" x 6" enclosure below installed meter receptacle with service wire connecting service entrance on one side

of receptacle and another service wire which ran in conduit from the other side of receptacle to the enclosure. The installation of temporary power established a new point of delivery. The point of delivery changed from the 12" x 16" enclosure to the meter receptacle. Informed consent was not given to any violations and/or deviation from Westar General Terms and Conditions Tariff (Section 1.08). Per Westar Tariff section 1.08 "Point of Delivery means the place where company's wires are joined to customer's wires or apparatus unless some other point of delivery is specified in the service agreement." In Consumer's installation, the customer wires included the service wire from receptacle to enclosure. This section of wire was uninstalled and taken by Westar employee. Westar has violated KSA 21-5801 (b)(4) (c)(2) Theft of: (4) property or services of the value of less than \$1,000 is a class A nonperson misdemeanor, (c) As used in this section: (2) "regulated scrap metal" means the same as in K.S.A. 2014 Supp. 50-6,109, and amendments thereto. Furthermore, without this section of wire, it is not possible to determine any information it might contribute to an analysis of the failed service line. Nor, is it known if the point of failure is within this section of wire.

7. The options presented in Exhibit A are flawed designs and shortsighted. The Flaws are:

a. Route 1 - This solution does not restore service to the point of delivery of failed service. Consumer's opinion of design is the designer can avoid the challenges of how to restore existing failed service simply by moving the point of delivery closer to the pole.

b. Route 2 - The combined segment length of 145 feet is in error. By counting the conduit sections of the temporary line, the actual ground

measurement is approximately 160 feet. When including risers from bottom of proposed trench, to transformer and meter receptacle, add another 30 feet which makes the total service line at approximately 190 feet. Another flaw in route 2 has to do with part 21 of email attachment in Exhibit A labeled "6 - Underground Construction" which states "The conduit shall be installed in a straight line if possible. Conduit runs are allowed no more than 3 bends." The failed direct buried line has a total of 4 bends, one more than the maximum specified in part 21. Another flaw is with using the existing meter receptacle. There is insufficient room in existing meter receptacle to provide strain relief for required conduit slip joint. NEC 300.5 (J) says "Where direct-buried conductors, raceways, or cables shall be arranged so as to prevent damage to the enclosed conductors or to equipment connected to the raceways." The conduit design conforms to NEC 300.5 (J), but the conductors do not. In the beginning of the email, the designer makes the statement, "It shall be known that any questions surrounding the meter can itself and downstream feeders will be on the customer to determine if the information is not present on our service spec sheets." This appears to be an effort to put the burden on Consumer of making the existing meter can work. Granted, Westar Tariff 7.06 states in part "Customer shall be responsible for the maintenance, replacement or repair of the meter receptacle after it is installed", but Consumer believes no reasonable person would believe that Westar is granted authority to change specifications with verbage (not required by standards organizations or other governing authorities) which create a significant burden and cost on Consumer to repair or modify their property to accomodate such change in

specification. In this case, the meter receptacle is insufficient in size to provide for strain relief, and if a larger receptacle is required, then deck and vinyl siding modifications must be performed. The elimination of the original 15" x 16" enclosure has also added vinyl siding modifications.

The shortsighted elements are:

a.) Route 1 only became a talking point because the designer presented a solution that required installation of an obstruction/eye-sore (pedestal) in the middle of lawn. Consumer discussed possibility of building a shop in the future that would require another meter with hopes the idea would spur a better solution to restore current residence service.

b.) Route 2 did not address any potential defects or weaknesses of 1980 design which aided the low voltage in the 90's. At the very least, a larger size cable specification would have been expected.

c.) Route 2a eliminates the pedestal, but no where does it eliminate other requirements such as pull rope requirements in part 19 of email attachment in Exhibit A labeled "6 - Underground Construction" which states "A pull rope shall be installed in all conduit runs by the customer. If the customer's pull rope breaks, it is the responsibility of the customer to pull in a new one." The 135 foot expected service length is 84% of the actual length and the risk of breaking the rope is much greater; putting Consumer at increased risk of additional expense, if the pull could even be accomplished with 4 conduit bends.

d.) General email introduction by designer states "If the customer is not willing to work with us, a disconnect notice is sent out". The

statement is very telling of how Westar desires to restore this service. Westar holds the keys to whether or not service can continue.

8. Over time, technology, materials, procedures, and methods of delivering electricity are sure to change. Likewise, change will occur on the usage side of that delivered electricity. Just as changes occur on the usage side (for example, availability of more energy efficient devices), the user of electricity must make choices and adapt/pay for those changes, if they so choose to implement. The same holds true on the delivery side. If the deliverer decides to make changes to technology, materials, procedures, or methods, they must consider and evaluate the cost of doing business. Almost 40 years ago (about the same time Consumer constructed residence), Westar charged Consumer's neighbor approximately \$20,000 to modify the overhead primary power line at the end of their private airfield (referred to as airfield) at 17271 Hollingsworth Rd, Basehor, KS. The modification included installation of primary direct buried cable on north end of airfield into a trench dug and backfilled by neighbor. In 2016, that buried cable failed. This caused an outage for 6 electric customers within quarter mile radius. To make the repair, Westar bored and pulled a new line with conduit under the airfield, removed one utility pole, and replaced one other utility pole. Consumer assumes this was all done in compliance with Westar Tariff section (7.07). The upgrade portion of repair included conduit, 1 pole removal, and 1 replaced pole. The primary difference between this upgrade and the upgrade required on Consumer's property is the proximity of failure to the point of delivery and the number of points of delivery serviced. Like

Consumer's repair, it required conduit and burial. It is not reasonable that the six customers serviced by the primary line failure on the airfield should pay to repair and upgrade the line in order to restore service. For the same reason, it is unreasonable to think Consumer should pay for repair and upgrade of their failed service line when the failure was due to nothing they did. These are examples of maintenance, pure and simple.

9. Westar Tariff section(7.09) lists service lines as part of company facilities. The design of Exhibit A is in conflict with Tariff. The service standards required for Consumer's failed service line as stated in Exhibit A of 146 feet exceeds the specified cable length of 135 feet in Westar Tariff 7.06.02(c)(iii) which says "The company will provide, install in customer provided conduit, and terminate up to 135 feet of underground service line and reestablish permanent underground electric service."

10. For almost 40 years Consumer's service line delivered electricity. Sometime during that 40 years, Westar changed, at their own discretion, their required delivery specifications for receiving electric service. No one external to Westar directed or required such change. Consumer was not notified that service line to residence no longer complied with Westar specification. Consumer believes this lack of notice was an act of "Grandfathering". The eventual failure was inevitable; nothing lasts forever. To plan for its failure by requiring the customer to pay for and install conduit and at the time of failure to declare the installation is no longer Grandfathered is a convenient way to excuse Westar from its duty to provide facility for delivery of product. At the very least, Westar is redefining the

ownership and responsibility of the delivery facility by defining it as shared. Partially owned by customer and partially owned by Westar. A shared system will introduce more and more challenges concerning rate structure and tariff terms and conditions. Challenges like: Should the rate structure include partial payment for delivery to the customer? Not all customers now share the same ownership value in the delivery system. Then there is the question of who pays on future failures? Questions of failure fault...was it the fault of cable or was it conduit failure? What about the conduit attachment to pole? Tariff Section 7.09, which states "Customer shall not use any poles, wires, structures, or other company facilities for fastening objects....", presents conflicts. The service line / facility is part of the ability to furnish product, and is a part of Westar's statutory responsibilities under KSA 66-101b, which requires all electric utilities to "furnish reasonably efficient and sufficient service and facilities for the use of any and all products or services rendered, furnished, supplied or produced by such electric public utility...." Before the underground direct burial service line failure, delivery of electricity was being performed. Adding conduit may or may not increase the life of the service line. It will certainly have no effect on the day to day delivery of product, making the product better or worse, or anything else that adds value to the delivered product. It only benefits Westar by reducing maintenance costs and providing a no risk path to install the electric service line. A note worth mentioning is the fact that for Consumer, originally the service line was trenched and back filled by Westar. Westar tariff 7.06.02 (c) relieves Westar from performing that part of restoration. If the

conduit was not required, the restoration of the service line to its original condition would be expected to include trenching and backfill.

11. For the reasons set forth above, Consumer seeks the Commission's assistance with restoring failed service, at no expense to Consumer, to a working state that meets or exceeds the service commitments Westar agreed to in the beginning of this service. That would include a point of delivery at the same place as originally established. In restoring service, Consumer requests a design which improves and corrects voltage defects which was marginally acceptable per NEC 215.2(A)(1)(b) informational note No. 2 which says "Conductors for feeders, as defined in article 100, sized to prevent a voltage drop exceeding 3% at the farthest outlet of power, heating, and lighting loads, or combinations of such loads, and where the maximum total voltage drop on both feeder and branch circuits to the farthest outlet does not exceed 5 percent, will provide reasonable efficiency of operation." It takes more than wire to deliver electricity. The wire is supported by and works in conjunction with many other components in order to deliver electricity to a point of delivery. Westar has a duty to maintain all wire, components, and systems utilized to deliver electricity. That duty is a core cost of doing business in Kansas.

WHEREFORE, Lonnie & Patricia Dalrymple respectfully request the Commission find Westar in violation of its tariffs and Kansas law as alleged above, order Westar to restore permanent electric service to their residence, order Westar to apply the same maintenance and expense practices at all parts of their distribution system from product creation to product point of delivery, rule on Westar's

compliance with NESC section 311C, order Westar to be more responsive and proactive to creating and maintaining positive relationships with the customers they are to serve where in return they receive fair payment, and for any and all other such relief the Commission deems just and reasonable.

Respectfully Submitted,

A handwritten signature in cursive script, appearing to read "Lonnie Dalrymple".

Lonnie Dalrymple

A handwritten signature in cursive script, appearing to read "Patricia Dalrymple".

Patricia Dalrymple

From: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]

Subject: Westar Energy: 17391 Hollingsworth Rd., Basehor

Date: Thu, Jul 25, 2019 12:50 pm

Attachments: 10.15 Meter Stand(Rack) Installation.pdf (183K), MetercanSchematic&Clearances.pdf (246K),
6.A General Conduit Installation.pdf (82K), SS-43.1JunctionBox.pdf (83K)

Good Afternoon Lonnie,

There was a lot discussed yesterday at your property, so we'll do our best to organize and present the pertinent information needed to execute the best route for your current and future needs. Firstly, the meter can does not need to be changed out if the electrician or customer can situate a 3" slip joint under the meter can(left or right side). It shall be known that any questions surrounding the meter can itself and downstream feeders will be on the customer to determine if the information is not present on our service spec sheets.

In order for Westar Energy to remove the triplex laying on the ground, the customer must trench, install 3" conduit, and backfill all applicable segments of conduit runs. Please note that all Westar customers are given a 30 day period to make corrections. If the customer is not willing to work with us, a disconnect notice is sent out to the customer. However, if progress is being made at the property and they need more time, we will delay the disconnect order. Please see the specifics below for the 2 routes we discussed yesterday:

Route 1: Installation of a meter rack at the white flags I installed yesterday in the ground. **See documents: 10.15 Meter Stand(Rack) Installation.pdf, MetercanSchematic&Clearances.pdf, and 6.A General Conduit Installation.pdf**

Overall service length would be 98' of 3" SCHD 40 gray electrical PVC pipe – Customer responsible for all trenching/backfilling and 3" conduit from transformer pole to meter rack. Pipe shall be stood off at the transformer pole standoff in a plumb fashion. Everything downstream of the meter rack is owned and maintained by the customer. Westar Energy feeders shall not be fed out of a meter can, so that they interconnect to a second meter can. A pull box is not permissible at the base of a Westar Energy meter can. An applicable disconnect on the load side of the meter can is required with this setup. Westar Energy does allow the use of a combo meter can/disconnect which helps consolidate the equipment at the meter rack.

Route 2: Installation of a secondary pedestal so that 2 separate feeds can be routed to their respective meter cans (home and future barn). **See documents: MetercanSchematic&Clearances.pdf, 6.A General Conduit Installation.pdf, and SS-43.1JunctionBox.pdf**

Customer is responsible for all trenching/backfilling and 3" conduit from the transformer pole to the meter can, and excavating the secondary pedestal pit. The secondary pedestal pit dimensions are 26" by 26" by 10". Customer is also responsible for establishing a 5/8" by 8' ground rod near the conduit stubs within the pit. Westar Energy will install the secondary pedestal enclosure at the time of the cutover. The overall conduit segments are TBD due to an unknown location for the secondary pedestal, however, the overall length of both segments should be around 145'.

Exhibit A pg 1

7/29/2019

Westar Energy: 17391 Hollingsworth Rd., Basehor

Route 2(a): Elimination of the secondary pedestal that would consist of a ~145' conduit run stretching from the transformer pole, all the way to the meter can. Not as ideal due to the need for a separate service in the future, but it's being presented to you to help keep above ground obstructions out of your yard.

Regards,

[REDACTED]

Westar Energy

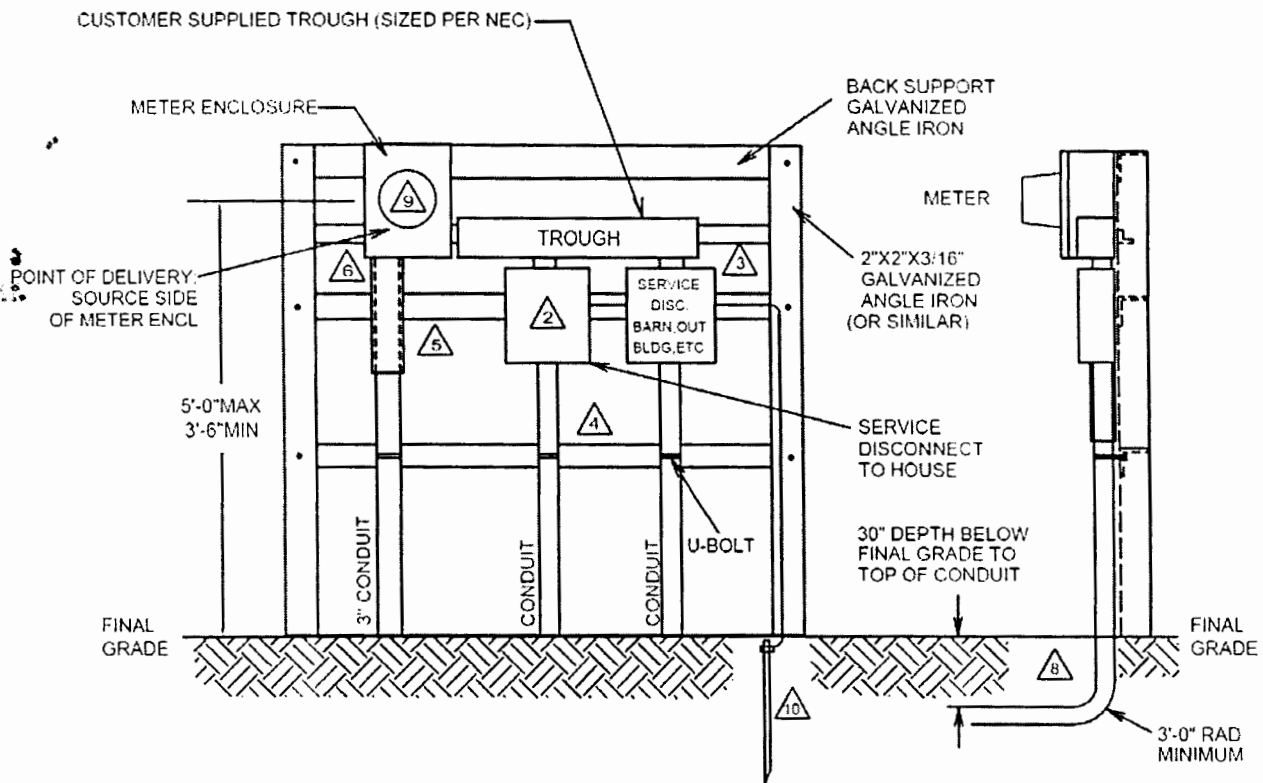
Distribution Designer

[REDACTED] [westarenergy.com](mailto:[REDACTED]@westarenergy.com)

O [REDACTED] 2727

If you've received this private message in error, I apologize for the inconvenience. Please don't distribute it. Instead, please just delete it and respond to let me know of my error. Then, have a wonderful day.

10.15 – Meter & Breaker Stand Installation



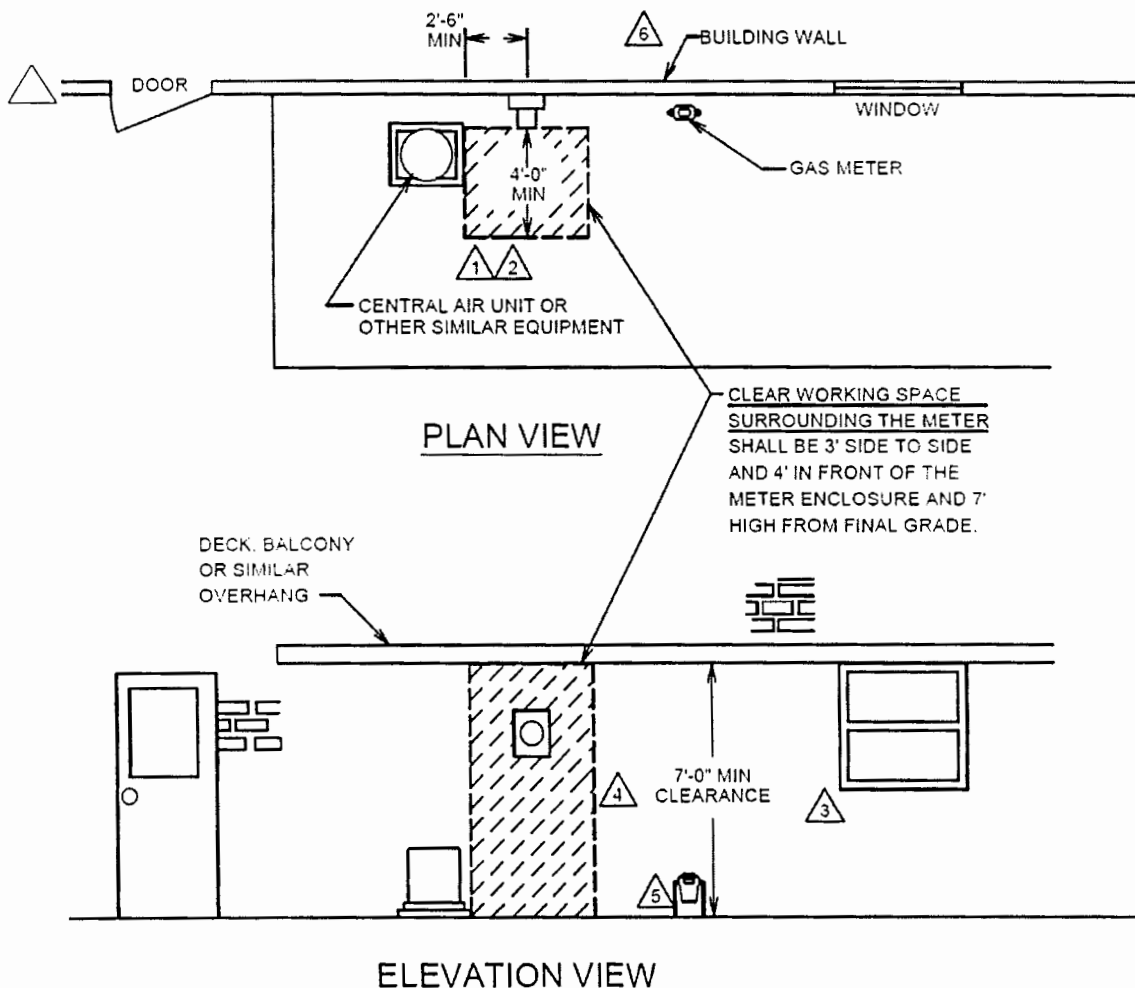
Notes:

1. This drawing shows a suggested meter & switch support scheme where the customer/developer is taking underground service and the meter is located away from buildings. Actual dimensions & equipment are left to the discretion of the customer/developer.
2. It is required that the customer/developer install a service disconnect at this location. (NEC 230.82)
3. Trough sized in accordance with NEC 312.6(A) & 366.
4. Customer/developer shall install service conductors from the meter to customer/developer's facilities in accordance with NEC. This usually consist of installing NEC approved conduit steel or gray PVC schedule 40 or 80 at a depth of 24".
5. The Company will provide and install one set of service conductors per meter, up to 135 feet in length, from the pole, secondary pedestal or padmount transformer to the meter enclosure.
6. Customer/developer shall provide slip joint NEC 300.5(J), all trenching, backfill and furnish and install NEC approved U.L. listed 3" conduit (gray PVC SCH 40) from the meter to the pole, pedestal, or padmount transformer. Conduit shall be installed in a straight line if possible. If horizontal turns are required, only one horizontal 90-degree turn shall be allowed. If the Company installs conduit, it shall be at the customer/developer's expense.

7. A pull rope shall be provided in the conduit by the customer/developer when customer/developer chooses to install conduit. If the customer/developer's pull rope breaks, it is the customer/developer's responsibility to pull in a new one.
8. Depth to top of conduit shall be a minimum of 30" below final grade. Where rock or extenuating circumstances are encountered see section 10.18
9. 200 amp and larger meter enclosures are required for underground services. No load conductors shall be out the top of the meter enclosure.
10. The service entrance shall be grounded in accordance with the NEC. See section 10.2 for grounding details.

Exhibit A 4

10.8 – Electric Meter clearance



1. Meter enclosure shall have 3 feet of clearance from swing doors, windows and other openings. The meter enclosure shall have a working space with 4 ft. min clearance in front of the meter enclosure. NEC 110.26(A)(1)(2).
2. Gas meters, air conditioning units and other equipment shall not be located within the clear working space surrounding the meter (shaded area shown above).
3. Pane windows that are specifically designed without any kind of a mechanism or means to open them may be treated like part of a wall for the purposes of the 3-foot clear working space, however no equipment shall be installed upon, nor conduit run directly on the outside of the window.
4. Meter enclosure shall be located in an area so that any building overhang is not less than 7 feet above final ground level. NEC T125-1
5. Gas meter shall be located 3 ft. from electrical equipment.
6. Meter enclosure shall have a minimum of 30 inches of working space from the center of the enclosure on at least one side of the meter enclosure.

10.14 – Metering for Underground Services

The Company must approve the type and size of the equipment in advance. All pulling space provided in the customer/developer's equipment for termination of The Company's service conductors shall conform to the size requirements set forth in the NEC covering pull boxes. In this case, the building owner or customer's agent will own and maintain the meter sockets and enclosures and The Company will own and maintain the meters.

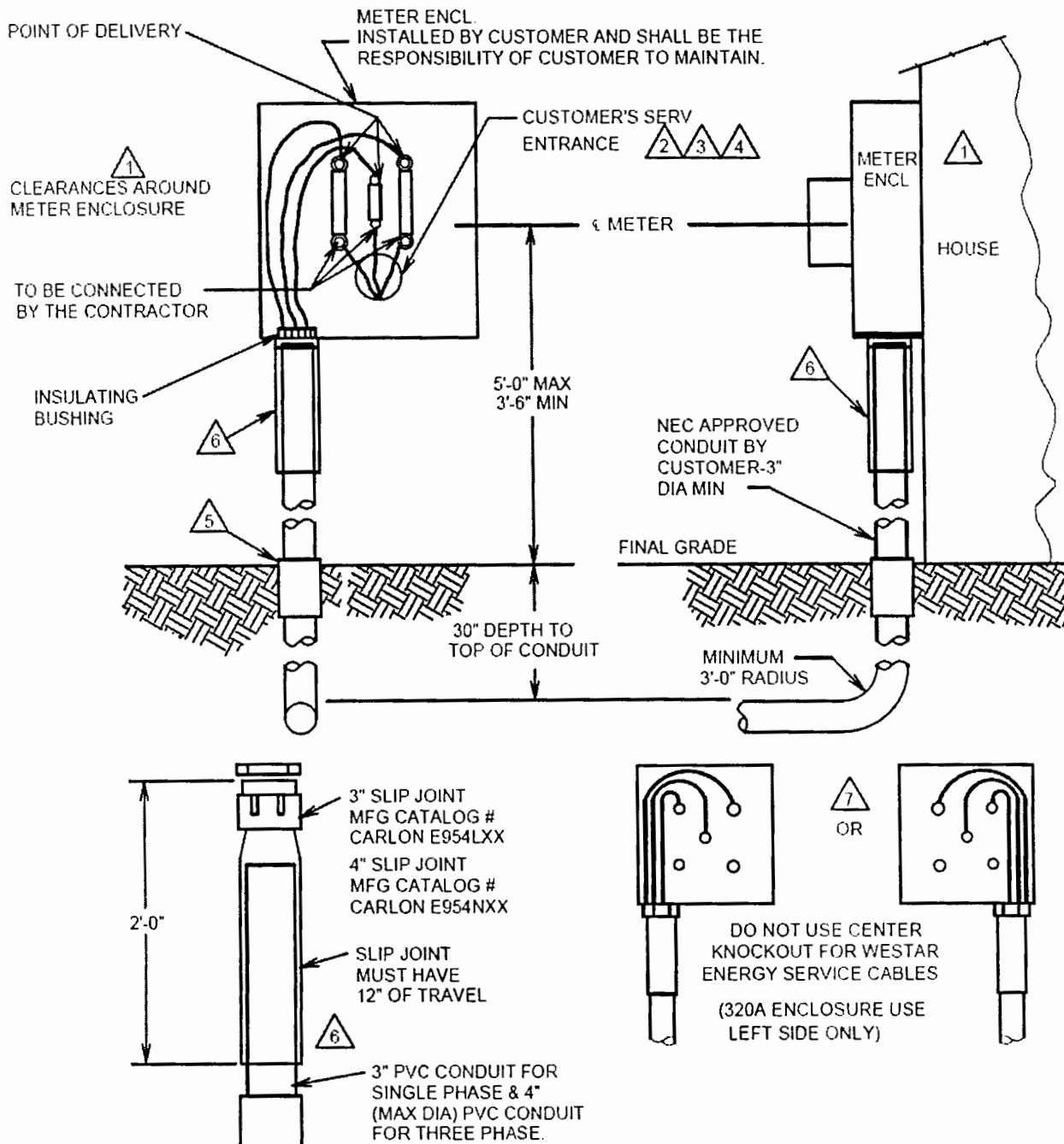
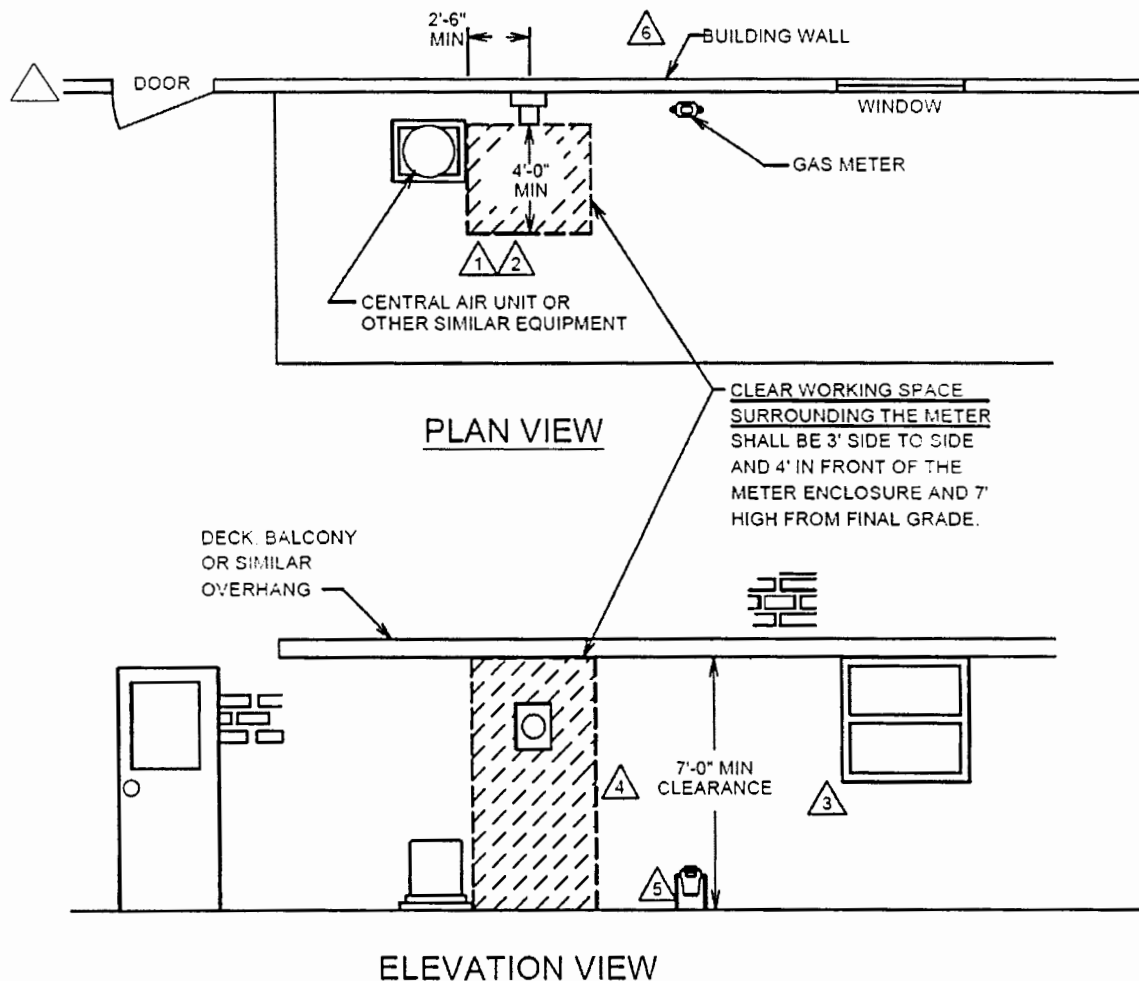


Exhibit A 6

Notes:

1. Meter enclosure shall be located free from obstructions with 30 inches on at least one side. Meter enclosure shall also have 3 feet of clearance from doors and windows, and have 4 feet of clearance in the front. NEC 110.26(A)(1), (2)
2. Only one service entrance conductor shall be allowed to each meter enclosure lug. Conductor sized per U.L. label (NEC 110.3).
3. A max of two sets of service entrance conductors shall be allowed in an approved meter enclosure with connector designed for two sets of service conductors (NEC 110.14(A)). Customer's disconnect shall be grouped at a common location and shall be within 15 ft. of building penetration unless local code specifies less than 15 feet.
4. Customer shall install adequate grounding in accordance with the NEC, NESC and local codes. See section 10.2 for grounding recommendations.
5. If concrete patio is poured, install sleeve around riser conduit.
6. Customer shall supply & install approved slip joint on all conduit risers. (NEC 300.5 (J))
7. Top of meter enclosure shall be dedicated for source conductors. Underground service source conductors shall use the right or left knockouts in bottom of enclosure. Metering enclosures equipped with a bypass handle, source conductors shall pass on the opposite side of the enclosure from the bypass handle.
8. Load conductors shall not cross over source conductors.

10.8 – Electric Meter clearance



1. Meter enclosure shall have 3 feet of clearance from swing doors, windows and other openings. The meter enclosure shall have a working space with 4 ft. min clearance in front of the meter enclosure. NEC 110.26(A)(1)(2).
2. Gas meters, air conditioning units and other equipment shall not be located within the clear working space surrounding the meter (shaded area shown above).
3. Pane windows that are specifically designed without any kind of a mechanism or means to open them may be treated like part of a wall for the purposes of the 3-foot clear working space, however no equipment shall be installed upon, nor conduit run directly on the outside of the window.
4. Meter enclosure shall be located in an area so that any building overhang is not less than 7 feet above final ground level. NEC T125-1
5. Gas meter shall be located 3 ft. from electrical equipment.
6. Meter enclosure shall have a minimum of 30 inches of working space from the center of the enclosure on at least one side of the meter enclosure.

10.14 – Metering for Underground Services

The Company must approve the type and size of the equipment in advance. All pulling space provided in the customer/developer's equipment for termination of The Company's service conductors shall conform to the size requirements set forth in the NEC covering pull boxes. In this case, the building owner or customer's agent will own and maintain the meter sockets and enclosures and The Company will own and maintain the meters.

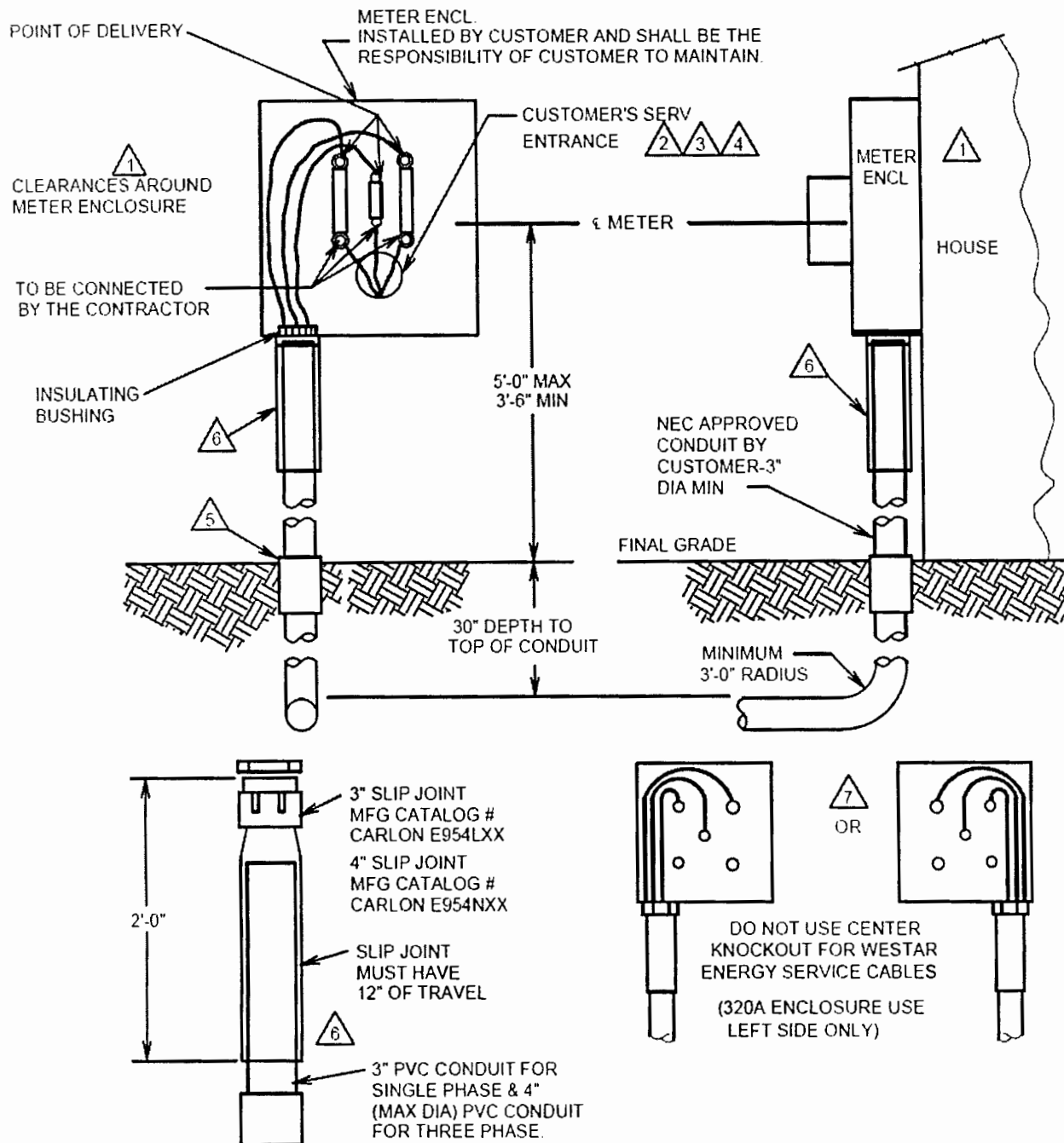


Exhibit A 9

Notes:

1. Meter enclosure shall be located free from obstructions with 30 inches on at least one side. Meter enclosure shall also have 3 feet of clearance from doors and windows, and have 4 feet of clearance in the front. NEC 110.26(A)(1), (2)
2. Only one service entrance conductor shall be allowed to each meter enclosure lug. Conductor sized per U.L. label (NEC 110.3).
3. A max of two sets of service entrance conductors shall be allowed in an approved meter enclosure with connector designed for two sets of service conductors (NEC 110.14(A)). Customer's disconnect shall be grouped at a common location and shall be within 15 ft. of building penetration unless local code specifies less than 15 feet.
4. Customer shall install adequate grounding in accordance with the NEC, NESC and local codes. See section 10.2 for grounding recommendations.
5. If concrete patio is poured, install sleeve around riser conduit.
6. Customer shall supply & install approved slip joint on all conduit risers. (NEC 300.5 (J))
7. Top of meter enclosure shall be dedicated for source conductors. Underground service source conductors shall use the right or left knockouts in bottom of enclosure. Metering enclosures equipped with a bypass handle, source conductors shall pass on the opposite side of the enclosure from the bypass handle.
8. Load conductors shall not cross over source conductors.

6 – Underground Construction

6.A – General Conduit Installation

The following specifications shall be followed to insure an acceptable installation:

1. Conduit shall be installed according to the design provided by the Company. Revisions or field changes are not allowed unless prior, documented approval is given by the Company.
2. Customer/Developer must contact utility one-call when trenching or digging. Contact the Company when trenching or digging near Company equipment.
3. Right-of-way and side property lines shall be marked for the Company employee to insure proper installation of conduit and placement of Company equipment, such as transformers, pedestals, and sectionalizers. Cul-de-sacs, curved streets, or rear property installations may require additional staking at the request of the Company employee.
4. Conduit shall be installed within proper utility easements.
5. The Company must inspect and approve the conduit installation, including street crossings, before installing the electrical facilities. Once requested by the customer/developer, the Company will make the inspection. Conduit trenches shall not be backfilled until approved by the Company employee.
6. The developer/customer shall correct conduit that is improperly installed, which includes outside of easements, improper depth, street crossings relative to lot lines, etc.
7. If changes to the conduit system or service equipment locations are required due to replatting or other modifications in the property lines, it is the customer's/developer's responsibility to make these changes before the Company will install any cable or equipment.
8. The developer is required to obtain a properly marked survey showing the utility easement so that the Company can verify that all conduits are within the utility easement. Plats must be recorded and monies paid before the Company will install any cable or equipment in the conduit system.
9. Any relocation of Company facilities after they have been installed will be at the customer's/developer's expense.
10. The Customer/Developer shall provide conduit, connectors, and bends. The Customer/Developer shall install all concrete bases and conduit systems. Transformer pads, sectionalizers, ground rods, and service pedestals will be provided by the Company and shall be installed by the Customer/Developer.
11. PVC conduit joints shall be glued together with PVC cement. Bands, clamps, or other connecting devices are not allowed. Polyethylene conduit joints shall be made with fittings designed for use with polyethylene. Glue and fittings should be designed for use on polyethylene.
12. PVC pipe pre-glued prior to installation and plowed/pulled under tension will NOT be acceptable to the Company.
13. Conduits, including street crossings, shall be installed deep enough to allow a minimum of 41" of cover for primary and secondary conduits when measured from final grade. Service Conduits should be a minimum of 30". Different depths may be required for switchgears, sectionalizers, etc). In areas of solid rock or obstructions which make these trench depths impractical, the depth may be reduced to 12", provided 2" of red concrete is poured on top of the conduit. Conduit should be installed when grade is within 6" of final grade. See sections 10.17 and 10.18.
14. Conduit at transformers, service pedestals, and sectionalizer locations shall turn up as shown on Company service drawings using pvc 36" radius bends. Long radius 36" elbows shall be used on all horizontal bends, such as around corners or at a change in direction.

15. Open ends of conduit shall be capped without pvc glue or covered with duct tape to prevent debris and wildlife from entering.
16. Conduit shall be of proper size as noted on Company construction drawings.
17. Backfill shall be clean and adequately tamped to prevent future settling.
18. Care should be taken during backfilling not to damage conduit or disturb arrangement of vertical conduit that has been turned up at transformers, pedestals, or sectionalizer locations.
19. A pull rope shall be installed in all conduit runs by the customer. If the customer's pull rope breaks, it is the responsibility of the customer to pull in a new one.
20. If the Company is unable to install cable in conduit due to plugged, broken or otherwise damaged conduit after it has been inspected and backfilled, it is the developer's/customer's responsibility to make repairs.
21. The conduit shall be installed in a straight line if possible. Conduit runs are allowed no more than 3 bends total. Only two vertical 90° bends are allowed. If a horizontal turn is needed, one horizontal bend up to 90°.
22. Red danger tape will be installed 6" – 12" below final grade
23. Multiple conduit installations shall have the conduits separated by no more than 4 inches between conduits.
24. Where customers installed conduit interconnects with the Company's conduit, customer shall not use half sizes (I.E. 2 ½', 3 ½', Etc.) The conduits shall be free of burrs and have clean bores.
25. Primary, secondary, service conduits shall be NEC approved conduit, such as UL listed rigid schedule 40 gray PVC or electrical grade SDR13.5 black polyethylene with red stripe.
26. Riser conduits shall be gray UL listed rigid PVC schedule 40 or schedule 80.
27. Primary Conduit bends shall have 36" radius sweeps and specified as below.
 - A. Westar – NEC approved rigid metal
 - B. KCP&L – NEC approved PVC conduit
28. Secondary and service conduit bends shall have 36" radius sweeps and NEC approved PVC conduit.
29. Slip Joints are required for meter risers.
30. Conduit Sizing
 - A. Service Cable Conduit

Service Entrance Size	Minimum Conduit Requirements			
	3-Wire 1 Phase		4-Wire 3 Phase	
	Qty	Min Size	Qty	Min Size
200A	1	3"	1	3"
400A	1	3"	1	4"
600A	2	3"	2	4"
800A	2	4"	2	4"
1200A	3	4"	3	4"
Sizes Not Listed Above – Contact The Company				

This chart shall not mandate the Company to install service cables to meet the ampacity of the customer installed service entrance. However, the Company shall keep that option available.

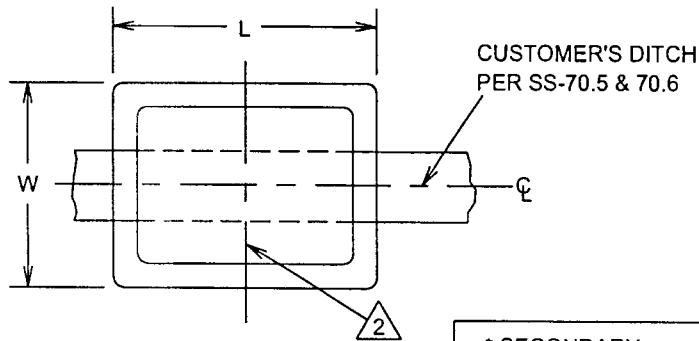
- B. Primary Cable and Secondary Cable Conduit – Contact the company for the correct design/layout.

ELECTRIC SERVICE STANDARDS

SS-43.1

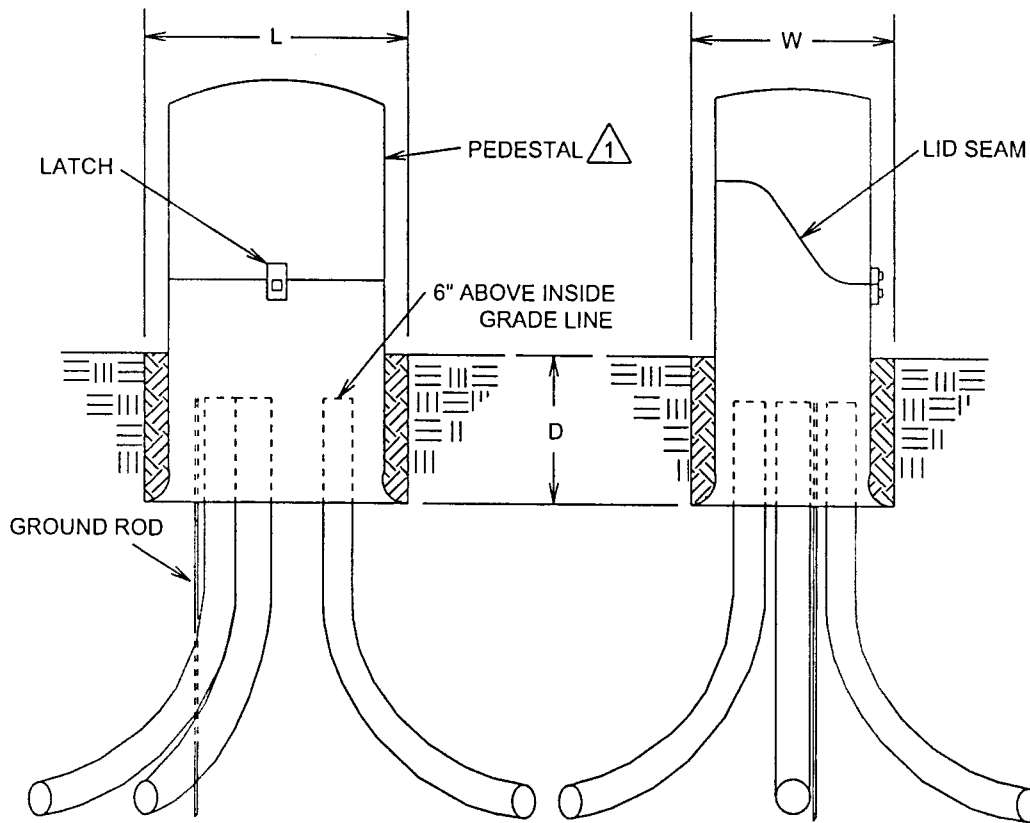


Know what's below.
Call before you dig.



TOP VIEW

* SECONDARY
PEDESTAL SHOWN



FRONT VIEW

SIDE VIEW

NOTES:

- 1 PEDESTAL PROVIDED AND INSTALLED BY WESTAR ENERGY AT CUSTOMERS EXPENSE.
- 2 THE CUSTOMER SHALL PROVIDE AN EXCAVATION IN THE CENTER LINE OF THE DITCH AT THE PROPER LOCATION FOR INSTALLATION OF PEDESTALS.
- 3 MAXIMUM LENGTH OF SERVICE 135 FEET
SECONDARY IS 175 FEET.
- 4 LENGTH TO RUN PARALLEL WITH TRENCH.
- 5 FOR CONDUIT SIZING USE SS-70.6
- 6 THE CUSTOMER SHALL PROVIDE NATIVE EARTH
BACKFILL AFTER THE PEDESTAL IS INSTALLED.

EXCAVATION DIMENSIONS

PEDESTAL TYPE	LENGTH -L-	WIDTH -W-	DEPTH -D-
SECONDARY PEDESTAL	26"	26"	10"
SINGLE PH. PEDESTAL	60"	51"	15"
THREE PH. PEDESTAL	88"	57"	15"

RESIDENTIAL - UNDERGROUND
PEDESTAL INSTALLATION DIAGRAM

► DENOTES LATEST REVISION

Exhibit A 13

REV	DATE	DESCRIPTION	BY	CHECK	APPROVED
9	10/10/16	ADDED NOTE #6 FOR NATIVE EARTH BACKFILL REQUIREMENTS	MCG	JJR	RO
8	11/07/14	MODIFIED EXCAVATION DIMENSIONS.	TN	JJR	BB
7	03/02/09	MODIFIED CONDUIT CUTOFF HEIGHT REQUIREMENT.	VHT	SKT	RO

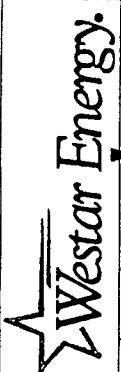




Exhibit B