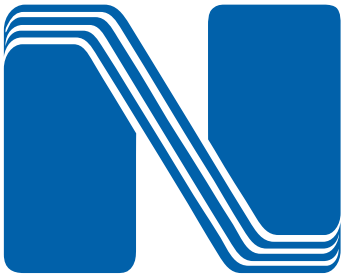
ELECTRIC SERVICE REQUIREMENTS MANUAL

2021 Edition



Nebraska Public Power District

Always there when you need us

VIEW ONLINE AT
www.nppd.com

SECTION 1 INTRODUCTION

SAFETY LETTER

At Nebraska Public Power District (NPPD), our number one priority is the **Safety** of our employees and the people we serve, including contractors who routinely work in the vicinity of energized electrical lines and equipment. This letter is intended to inform you of the imminent dangers associated with working near energized electrical facilities and to remind you that NPPD wants to be involved in planning and coordinating this type of work.

Each year, NPPD cooperates with many contractors to plan jobs so that work near energized electrical facilities can be completed safely and without incident. At the same time however, we continue to respond to construction sites where communications and pre-planning failed to prevent electrical contacts. In the best-case scenarios, electrical contacts result in service interruptions, schedule delays, and damage to equipment. In the worst cases, the contacts result in significant property damage, serious personal injuries, and in some cases, fatalities.

***According to OSHA Standard 1926, a minimum clearance of twenty (20) feet must be maintained between all cranes and derricks (including load line, rigging and lifting accessories) and any energized electrical line or piece of equipment. Visit the OSHA website osha.gov or* Call 1-800-321-OSHA (6742) for general information regarding OSHA standards.**

With the above information in mind, please practice the following electrical safety tips when working near and when preparing to work near electrical lines and equipment:

1. Look up and live! Often, the simple act of looking up before lifting a tool, a piece of equipment or a machine can mean the difference between life and death!

2. Never consider any electrical line to be de-energized, insulated, or grounded! Contact with energized lines and equipment can and often does lead to serious injury or death!

3. Contact Nebraska811 at 1-800-331-5666 or www.ne1call.com at least 48 hours prior to beginning excavation. Do not proceed until you have received positive confirmation that it is safe to dig.

4. Call **1-877-ASK-NPPD (275-6773)** to schedule a meeting with an NPPD representative to discuss clearance requirements and other options such as de-energizing, insulating, or re-routing the circuit. This meeting must take place a minimum of five (5) business days prior to scheduled work.

NPPD's intent is to cooperate with all contractors to make sure jobs near electrical facilities are completed safely and on time. It is our expectation that all contractors will contact NPPD early in the planning process for any work near electrical facilities so that the work can be planned appropriately and be completed safely.

Sincerely,

Arthur R. Wiese

Arthur Wiese
Vice President Energy Delivery
Nebraska Public Power District
PO Box 499
Columbus, NE 68602-0499

SECTION 1 INTRODUCTION

SECTION 2 REQUESTS FOR SERVICE

SECTION 3 SERVICE REQUIREMENTS

SECTION 4 METERING REQUIREMENTS

SECTION 5 INSPECTION REQUIREMENTS

SECTION A – CLEARANCES

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A. The purpose of this manual is to furnish Customers of the Nebraska Public Power District, their contractors, and all other interested parties, information concerning the **general requirements** of metering, service entrance specifications, and other pertinent instructions. *Individual requirements may vary.*

B. The District shall not be held liable for any misapplication of the information provided by this document or any of its drawings.

C. The contractor and the District have a common interest in efficiently satisfying the electrical requirements of their mutual Customer. It is essential that the District have knowledge of the following as far in advance as possible:

1. When a new facility is being constructed
2. When load is to be added
3. When facilities are to be changed

The addition or rearrangement of load may necessitate changes in the electrical system of the District. Advance knowledge of Customer plans will give the District an opportunity to ensure its distribution equipment is adequate to service the new or additional load at the time the Customer's wiring is completed.

D. To avoid misunderstanding and unnecessary expense, Customers, contractors, architects, and engineers **shall** contact the District during the planning stage of the project about electric service availability and the District's applicable rates and rules. To obtain the proper information contact the NPPD Customer Service Center by calling:

1-877-ASK NPPD

(1-877-275-6773)

E. Architects, consultants, builders, and contractors shall adhere to the District's Electric Service Requirements and should incorporate them in their own plans and specifications.

F. For questions involving energy efficiency or space conditioning, please contact the NPPD Energy Efficiency Department.

G. This Manual may be changed without notice. Visit www.nppd.com for current service requirements.

H. Access to District equipment shall be limited to authorized District personnel only. Call 1-877-ASK NPPD (275-6773) at least 48 hours prior to beginning any work. An NPPD representative will be scheduled to meet with you.

1-877-ASK NPPD

(1-877-275-6773)

ne1call.com

Nebraska811

Statewide: **1-800-331-5666** or **811**

www.ne1call.com

A. In 1994, the Nebraska Legislature passed a new law called **The One-Call Notification System Act**. It is found in the Revised Statutes of Nebraska from Sections 76-2301 to 76-2331. It says that **EVERYONE** who excavates must first call the state one-call notification center (Nebraska811) at least two business days... but not more than 10... before they start work (not counting Saturdays, Sundays, and holidays).

B. **Anyone excavating who fails to give notice** of an excavation, and who damages an underground facility by such excavation, shall be liable for the cost of all repairs to the facility.

C. APWA Uniform Color Code – for marking underground utility lines:

COLOR	UTILITY
Red	Electric power lines, cables, conduit and lighting cables
Yellow	Gas, oil, steam, petroleum or gaseous material
Orange	Communication, alarm or signal lines, cables or conduit
Blue	Potable Water
Green	Sewers and drain lines
Purple	Reclaimed water, irrigation and slurry lines
Pink	Temporary survey markings
White	Proposed Excavation

Unless otherwise indicated, the following terms are defined as follows.

- AHJ – Authority Having Jurisdiction.
- Allowable Investment Limit – The maximum investment, calculated in accordance with the Extension Policy, that the District shall make for a Line Extension in order to serve new or additional load.
- ANSI/IEEE - American National Standards Institute/ Institute of Electric and Electronics Engineers.
- APWA – American Public Works Association.
- Billing Demand – The kW demand upon which billing to a Customer is based, as specified in a Rate Schedule or contract.
- Contribution in Aid of Construction – A contribution amount required from the Customer equal to the difference between the Allowable Investment Limit and the estimated cost of construction, calculated by the District, in order to serve new or additional load.
- CT - Current Transformer.
- Customer - Any person, firm, partnership, association, or corporation (public or private), limited liability company, trust, estate, government or governmental agency requesting and/or taking retail electric service from the District at a specific location.
- Customer's Premise – The physical or geographical location where services are delivered and includes the entire contiguous property of the Customer.
- DER – Distributed Energy Resource, also known as DG.
- DG – Distributed Generation, also known as DER.

Call 1-877-ASK-NPPD for assistance

- District - Nebraska Public Power District acting through elected board members, agents, representatives, and employees within the scope of their duties and responsibilities.

- Electric Service Requirements – The District's manual specifying facility, equipment, and installation requirements and other information that property owners, electrical contractors, and Customers of the District must follow before service will be provided to the Customer at the Customer's Premises.

- District Property – Any property, including distribution and sub-transmission lines, transformers, metering equipment, services, and all other electric facilities used by the District in providing electric service to its Customers, whether owned or leased by the District. All similar references indicating "possession" by the District of any property, facilities, lines, metering, or other similar terms for electric facilities indicate it is either directly owned or leased by the District as is applicable in each specific situation.

- ESRM –Electric Service Requirements Manual.

- Extension Policy – The District's General Extension Policy for Retail Electric Services and Facilities that specifies the terms and conditions under which the District will make extensions or additions to electric facilities and determine the Customer's Contribution in Aid of Construction.

- Extraordinary Construction Costs – Costs associated with conditions that do not allow for the use of standard construction practices, such as making provisions for extraordinary clearances and atypical right-of-way acquisitions. Examples of extraordinary clearance provisions include: tree and stump removal, establishing site final grade, etc. Examples of atypical right-of-way acquisitions include: condemnation proceedings, governmental agency applications, etc.

- Full Voltage (Across-The-Line) Starting – Starting method used on motors in which the terminal voltage equals the line voltage, the motor current equals the line current and the starting torque equals the rated starting torque.

- HP - Horse Power.

- KO – Knock out.

Call 1-877-ASK-NPPD for assistance

- Loss-Of-Phase (Single Phasing) – The condition where a 3-phase load operates on only one or two phases due to the loss of voltage on one or two phases, also referred to as single phasing.

- Manufactured Home – A factory-assembled structure or structures transported in one or more sections, that is built on a permanent chassis and designed to be used as a dwelling with a permanent foundation acceptable to the authority having jurisdiction where connected to the required utilities, and includes the plumbing, heating, air-conditioning, and electric systems contained therein. (NEC® Article 550)

- Mobile Home - A factory-assembled structure or structures equipped with the necessary service connections and made so as to be readily movable as a unit or units without a permanent foundation.

- NEC® - National Electrical Code®.

- NESC® - National Electric Safety Code®.

- NPPD - Nebraska Public Power District.

- Point Of Delivery - The point ***designated by the District*** where the District's lines connect with the Customer's lines (point of attachment), without regard, necessarily, to the District's meter, transformer, or other apparatus. All wiring and equipment, exclusive of the District-owned metering equipment beyond this point, shall be furnished, installed and maintained by the Customer at their expense.

- Readily Accessible – A roof, balcony, porch, etc. is considered readily accessible to pedestrians if it can be casually accessed through a doorway, window, ramp, stairway, or permanently mounted ladder by a person, on foot, who neither exerts extraordinary physical effort nor employs tools or devices to gain entry.

- SDR – Standard Dimension Ratio is the nominal outside diameter divided by the minimum wall thickness of continuous conduit. The larger the SDR number, the thinner the wall thickness.

Call 1-877-ASK-NPPD for assistance

- Service – The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

- Service Conductors – The conductors from the service point to the service disconnecting means.

- Service Entrance Conductors (Overhead System) - The conductors between the terminals of the service equipment and a point usually outside the building, clear of building walls, where joined by tap or splice to service drop.

- Service Entrance Conductors (Underground System) - The service conductors between the terminals of the service equipment and point of connection to service lateral.

- Symmetrical Amps – Short circuit rating of low voltage breakers with no DC offset voltage applied.

- URD - Underground Residential Distribution.

Call 1-877-ASK-NPPD for assistance

SECTION 2 REQUESTS FOR SERVICE

A. Applications for electrical service design shall be made by the Customer. In certain instances, a contract or agreement may be required before electrical service is made available to the Customer.

B. Electric service is subject to service voltage availability. The District shall advise the Customer of the available phase and voltage for the service requested. The District must be consulted prior to electrical design. *(See Foreword)*

C. The District uses the following voltages in its distribution system:

OVERHEAD SERVICE

PHASE	VOLTAGE	NO. OF WIRES	CONFIGURATION
1Ø	120/240	3-WIRE	N/A
1Ø	120/208	3-WIRE	N/A
3Ø	120/240	4-WIRE	DELTA
3Ø	120/208	4-WIRE	WYE
3Ø	277/480	4-WIRE	WYE

UNDERGROUND SERVICE

PHASE	VOLTAGE	NO. OF WIRES	CONFIGURATION
1Ø	120/240	3-WIRE	N/A
1Ø	120/208	3-WIRE	N/A
3Ø	120/208	4-WIRE	WYE
3Ø	277/480	4-WIRE	WYE

CONSULT NPPD FOR AVAILABILITY PRIOR TO FINAL DETERMINATION.

Call 1-877-ASK-NPPD for assistance

NPPD/Customer Project Timeline

Lead time is required after receiving the Electric Service Design Application request form. Project Management includes Design, Survey, Property Research, Easement Preparation and Permits, and Site Meetings.

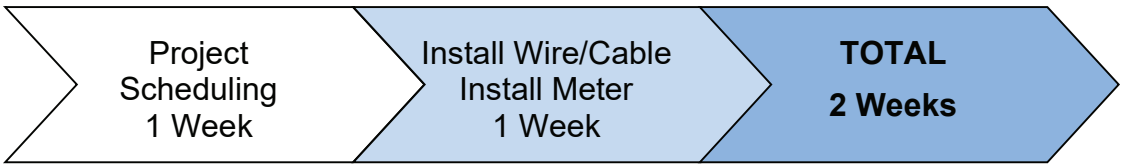
Project Scheduling includes Material Orders, Procurement, Delivery, Site Inspection, and Construction.

Prior to the start of construction, NPPD may require a Pre-Construction meeting with the owner/developer and electrical contractor to confirm customer readiness and adherence to NPPD requirements.

The following Project Timeline categories are provided as a guide only. Actual project time may be affected by labor and material availability, field conditions, extraordinary design/permit applications, and customer/developer or contractor readiness.

Service Installation

- Installation of new overhead service (on existing pole) with approved inspection.
- Installation of underground service (to existing transformer or pedestal) within an established subdivision, with approved inspection.
- Meter installation

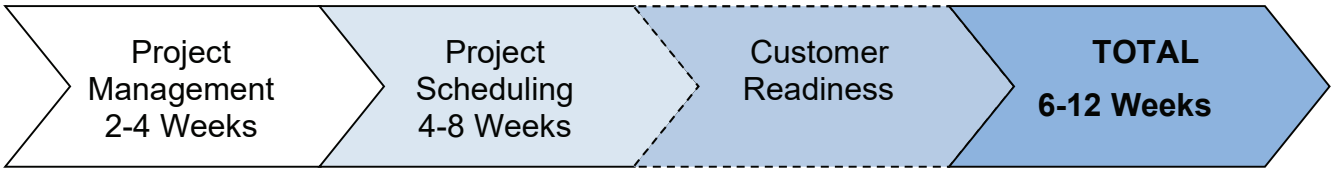


Small Scope Project

- New service with 1-Phase OH transformer on existing pole
- Relocation of existing OH service (not including poles)
- Relocation of existing UG residential service – trench and conduit provided by customer
- Temporary electric service to existing 1-Phase or 3-Phase transformer (no poles)

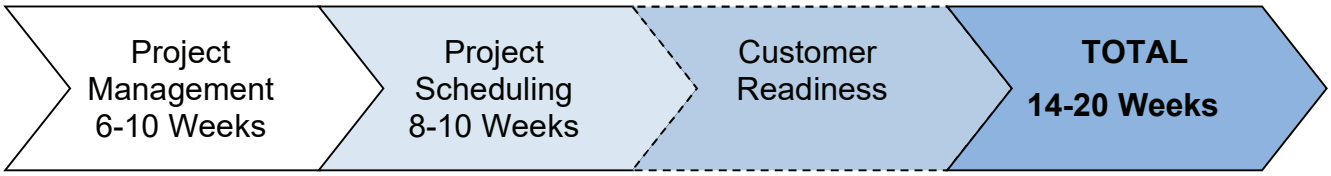
Medium Scope Project

- Set pole and install 1-Phase or 3-Phase transformer(s)
- Upgrade, install or remove 1-Phase or 3-Phase transformer(s) with pole
- Temporary service including setting pole and installing 1-Phase or 3-Phase transformer(s)
- Install 1-Phase or 3-Phase pad-mount transformer – trench and conduit provided by customer



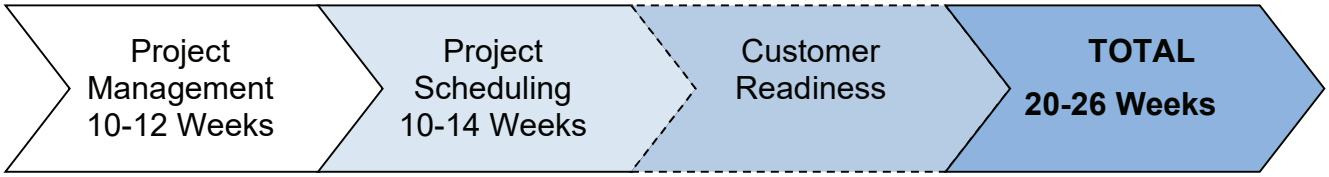
Large Scope Project

- Set or relocate multiple poles with equipment
- Relocate underground cable with conduit



Complex Scope Project

- New residential subdivision
- New commercial/industrial park



NPPD recognizes that customers may have projects with special requirements; we are committed to working with you to help meet your required service date.

Call 1-877-ASK-NPPD for assistance

SECTION 3 SERVICE REQUIREMENTS

A. At no time shall the Customer or Electrician remove any District owned electrical equipment including but not limited to, meters or connectors at the point of delivery, to de-energize Customer owned equipment.

B. In general, electric service shall be supplied to a Customer's premises through only one service, except where a separate service may be required for:

1. Fire pump
2. Emergency lighting purposes, or
3. Additional service of different voltage or characteristics.

C. Under normal circumstances, the District will furnish, install, and maintain overhead service conductors from the District's supply system to a point on, or adjacent to, the Customer's premises designated by the District as the Point of Delivery. All wiring and equipment, exclusive of the District owned metering equipment beyond this point, shall be furnished, installed, and maintained by the Customer at their expense.

D. The Customer shall provide and maintain, without cost to the District, a safe and substantial support and point of attachment for the District's overhead service conductors. In no case will the District be responsible for any damage caused by failure of, or defect in, such support or point of attachment. The support and point of attachment of the District's overhead service conductors to the building or other means of support shall be made so as to comply with the local, state, and national electric codes, including but not limited to, provisions regarding location, accessibility and clearance above ground, from building openings, and over roofs. *(See Section A)*

E. Parallel operation of the Customer's electric generating equipment or other sources of supply with the District's service shall comply with Nebraska Public Power District Standard OG-APM-PR-004, Distributed Generation (DG) Interconnection. Visit www.nppd.com to fill out the Customer Generation Connection Application, Form K450.

F. Where a bank of meter sockets are located on one building, each meter socket will be identified by permanent means with the service address which it serves. *(See Section C)*

G. The Customer shall obtain all necessary wiring permits or certificates, certifying that all wiring and conduit has been or will be inspected and conforming to local, state, and national electrical codes; with copies or notification of such being provided to the local District office before electric service will be supplied. The Customer shall pay any fees required for such permits or inspections. *(See Section 5-Inspection Requirements)*

H. Metering Equipment

1. Self-Contained Meter Installations: (residential, and/or small commercial). All metering equipment enclosures, meter sockets, conduits or raceways, and service entrance conductors included in the necessary service entrance, shall be furnished, installed, and maintained by the Customer at their expense and shall meet all local, state and national electrical codes and shall be of a type approved by the District. *(See Section B and Section C)*

2. Instrument Rated Meter Installations: (large commercial and/or industrial). All conduits or raceways, and service conductors included in the necessary service entrance, shall be furnished, installed, and maintained by the Customer at their expense and shall meet all local, state, and national electrical codes. All meter sockets and metering equipment enclosures shall be furnished and maintained by the District. Installation will be at the Customers expense when mounted on the Customer's building, poles, or other supports. *(See Section B and Section C)*

3. Service shall not be re-metered, resold, redistributed, or otherwise shared with other persons over whom the District has no control. Electric service supplied to an owner may be furnished in turn to a tenant or occupant, only when included as a part of the rent with no variation based on the quantity of electric service furnished; otherwise, electric service must be supplied by the District directly to each tenant through the District's individual meters. (*NPPD's Retail Service Rules & Regulations, 13-Redistribution or Resale of Service*)

I. Where the Customer's use of electric service is intermittent or causes unusual fluctuations, including but not limited to harmonics and flicker, or other detrimental effects on the service supplied to other Customers, the District reserves the right to require the Customer to furnish, install, and maintain, at the Customer's expense, suitable corrective equipment which will limit such fluctuations or disturbances in a reasonable manner. These fluctuations shall not exceed the recommended ANSI/IEEE standards or 3%, whichever is smaller.

J. The District is not responsible for property damage due to Loss-Of-Phase. Loss-Of-Phase protection is encouraged for 3-phase loads. Fusing and overload protection may not adequately protect a 3-phase motor from potential damage from Loss-Of-Phase operation. For questions concerning Loss-Of-Phase protection, contact the NPPD Energy Efficiency Department.

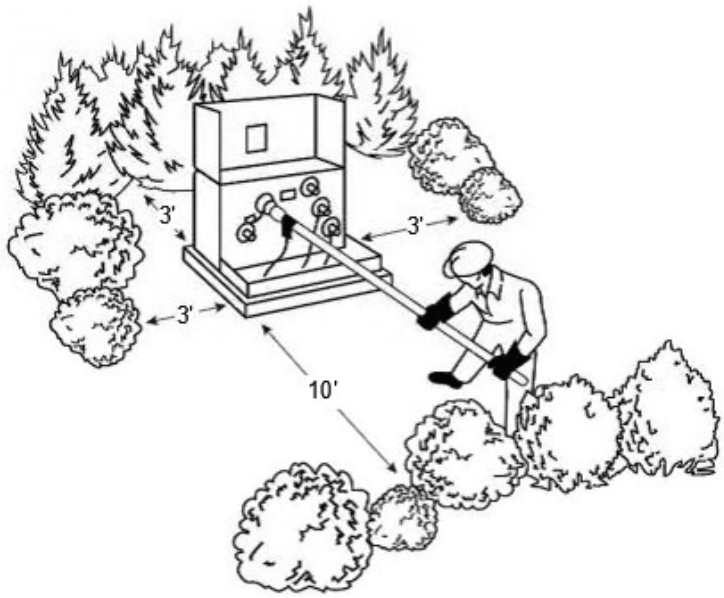
K. Motors

1. Full Voltage or Across-The-Line starting of motors in excess of thirty horsepower (30 HP) shall not be permitted except by express written permission from the District. Across-The-Line starting of motors shall not be permitted where objectionable voltage disturbance or annoying light flicker results. Special consideration shall be given by the District to each individual case where full voltage starting is desired.
2. Reduced voltage starting of motors shall, at the option of the District, be required for those conditions where limited line capacity or abnormal motor starting characteristics necessitate the use of reduced voltage controllers. Required equipment shall be furnished and installed by the Customer. The type of reduced voltage controller used in individual cases shall be subject to the District's approval.
3. Phase rotation at new installations or for added load on the load side of the metering equipment will be the responsibility of the Customer.

L. Additional Requirements for UNDERGROUND Service

1. District conductors to the Point of Delivery shall be installed in conduit. Refer to *Table 3.4.A* for conduit requirements.
2. Conduit shall not be installed underneath any part of building footings or foundations.
3. Construction of the service conduit shall include an expansion coupling and will be installed as shown on the applicable meter installation drawing. *(See Section C)*
4. The Customer shall either install or reimburse the District for all trench and conduit system for primary, secondary, streetlight and service conductors in accordance with District specifications and policies. In addition to trench and conduit, the Customer shall be responsible for installing secondary pedestals, equipment foundations, and ground rods.
5. All trenches and conduit installations to the Point of Delivery shall be inspected by the District prior to backfilling. *(See Section C)*
6. Customers requiring 3-phase service, in addition to the above requirements, shall :
    a. Prepare site for installation of 3-phase transformer box pad installed by the District. See Section C-13.
    b. Contact NPPD for installation requirements, as they will vary from installation to installation. *(See Foreword)*

7. The Customer is responsible for notifying other utilities (e.g., telephone or cable companies) if the trench is to be used jointly with the District.
8. The trenching contractor is responsible for maintaining separation of the different utilities' cables as per the District's specifications. *(See Section C)*
9. Customer shall maintain the following minimum clearances around all transformers,
   a. Front – 10 feet minimum.
   b. Rear/Sides - 3 feet minimum.



10. Customer shall not paint or otherwise modify the appearance of District owned equipment.

Call 1-877-ASK-NPPD for assistance

A. General Residential Requirements

1. In general, the District shall make permanent extensions of electric lines and facilities in accordance with the NPPD board approved Extension Policy. The District reserves the right to determine the advisability and legality of making any extension. Extensions made by the District shall remain the property of the District or the municipality in accordance with existing agreements.

2. For all new installations, review of final plat by the District is required to ensure proper easement route for District assets.

3. If 3-phase service is required, the additional 3-phase extension costs will be considered part of the Total District Investment and a Contribution In Aid of Construction, if applicable, will be determined.

4. The Customer shall be responsible for Extraordinary Construction costs and facilities where conditions exist that do not allow for use of standard construction practices.

5. All service equipment beyond the Point of Delivery is the responsibility of the Customer/Contractor/Developer (except metering equipment as noted in *Section B* and *Section C*).

6. Socket type metering equipment shall be installed outdoors, in a location which allows the District access to read and maintain the meter in an efficient manner, as well as to disconnect service in an emergency situation, and in accordance with *Sections 3.1 and 4.1*. *(See Section B and Section C)*

7. The District shall specify the installation and service requirements, and shall designate the location from which a Customer is to be served. All service equipment beyond the Point of Delivery shall be the responsibility of the Customer/Contractor/Developer (except metering equipment as noted in *Section B* and *Section C*).

Call 1-877-ASK-NPPD for assistance

B. Underground Residential Requirements

1. All conduits for the underground service must be installed prior to the placement of any concrete, building foundations or other hard surface areas, retaining walls, lawn sprinkler systems, sod, grass seed, trees, or shrubbery. No underground structure, swimming pool, hot tub, or wading pool shall be installed within five feet (5') of this conduit. The District shall not be responsible for any damage to the above listed items related to the installation of the underground service. The Customer is responsible for any future maintenance of the trench, i.e. settling, erosion, etc.

2. Conduit shall not be installed underneath any part of building footings or foundations.

3. The district shall specify the size of the transformer.

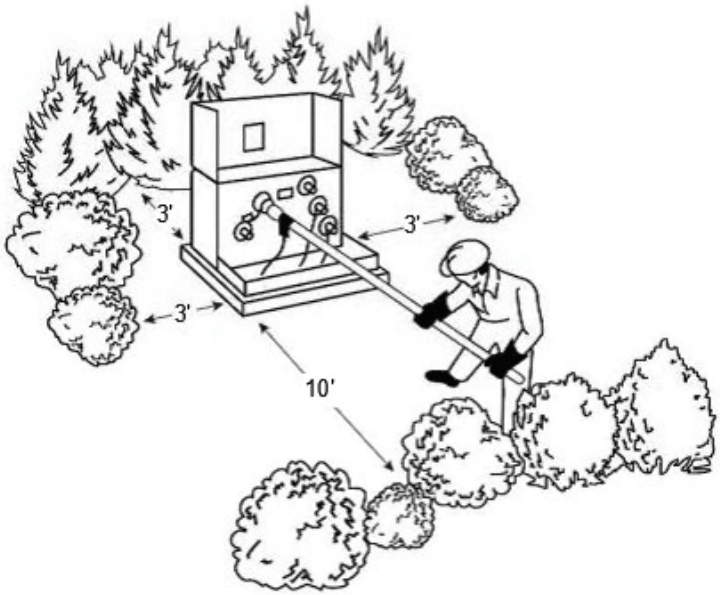
4. Customer is responsible for maintaining final grade such that all electrical equipment remains readily accessible and such that the required minimum depth of burial is maintained.

5. Customer shall maintain the following minimum clearances around all transformers,

   a. Front – 10 feet minimum.

   b. Rear/Sides - 3 feet minimum.

6. Customer shall not paint or otherwise modify the appearance of District owned equipment.



A. General Commercial Requirements

1. In general, the District shall make permanent extensions of electric lines and facilities in accordance with the NPPD board approved Extension Policy. The district reserves the right to determine the advisability and legality of making any extension. Extensions made by the District shall remain the property of the District or the municipality in accordance with existing agreements.

2. For all new installations, review of final plat by the District is required to ensure proper easement route for District assets.

3. The Customer shall be responsible for Extraordinary Construction costs and facilities where conditions exist that do not allow for use of standard construction practices.

4. All service equipment beyond the Point of Delivery shall be the responsibility of the Customer/Contractor/Developer (except metering equipment as noted in *Section B* and *Section C*).

5. Socket type metering equipment shall be installed outdoors, in a location which allows the District access to read and maintain the meter in an efficient manner, as well as to disconnect service in an emergency situation, and in accordance with *Section 3.1* and *Section 4.1*. *(See Section B and Section C)*

6. The District shall specify the installation, service requirements, and designate the location from which a Customer is to be served. All service equipment beyond the Point of Delivery shall be the responsibility of the Customer/Contractor/Developer (except metering equipment as noted in *Section B* and *Section C*.)

B. Underground Commercial Requirements

1. ALL conduits for underground service must be installed prior to the placement of any concrete, building foundations or other hard surface areas, retaining walls, lawn sprinkler systems, sod, grass seed, trees, or shrubbery. No underground structure, in-ground swimming pool, nor its auxiliary equipment, shall be installed within five feet (5') of this conduit. The District shall not be responsible for any damage to the above listed items related to the installation of the underground service. The Customer is responsible for any future maintenance of the trench, i.e. settling, erosion, etc.

2. Conduit shall not be installed underneath any part of building footings or foundations.

3. The District shall specify the size of the transformer.

4. Pad-mounted transformers will be subject to the following conductor limitations *(See Section C):*

   a. Single-phase pad-mounted transformer:
      - **Maximum of 6 conductors per phase**
      - **≤75KVA – Maximum conductor size of 350 kcmil**
      - **≥100KVA - Maximum conductor size of 500 kcmil**

   b. Three-phase pad-mounted transformer
      - **≤500kVA, Maximum of 6 conductors per phase**
      - **>500kVA, Maximum of 8 conductors per phase**
      - **Maximum conductor size of 750 kcmil**

NOTE: Contact the District to discuss options if the Customer requires more conductors than the District allows per this Standard.

5. The District shall terminate service conductors at the pad-mount transformer. Service conductors must extend at least 6-feet above the mounting surface of the box pad.

6. Customer shall be responsible for maintaining final grade such that all electrical equipment remains readily accessible and such that the required minimum depth of burial is maintained.

7. Customer shall maintain the following minimum clearances around all transformers,

   a. Front – 10 feet minimum.

   b. Rear/Sides - 3 feet minimum.

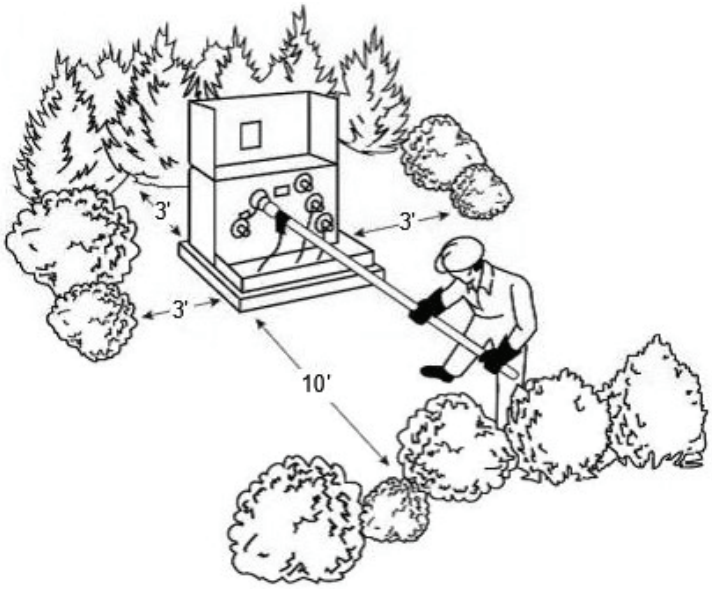


Table 3.4.A – Conduit Requirements			
Phase	**Customer**	**Service Entrance Size (Amps)**	**Number and Size of Conduits**
1Ø	Residential	200 or Less	One (1) - 2” conduit
1Ø	Residential	201 – 400	One (1) - 3” conduit
1Ø	Residential	>400	Consult **NPPD**
1Ø	Commercial	200 or Less	One (1) - 2” conduit
1Ø	Commercial	201 – 400	One (1) - 3” conduit
1Ø	Commercial	>400	Consult **NPPD**
3Ø	Commercial	200 or Less	One (1) - 3” conduit
3Ø	Commercial	201 – 400	One (1) - 4” conduit
3Ø	Commercial	>400	Consult **NPPD**

General Conduit Requirements

1. The number and size of conduits required shall be at the discretion of NPPD.
2. Conduit shall not be installed underneath any part of building footings or foundations.
3. Underground conduit shall be a minimum of Schedule 40 electrical grade PVC or approved equivalent. Exposed conduit shall be a minimum of Schedule 80 electrical grade PVC.
4. Empty conduits shall be capped on both ends with PVC caps. For CT metering applications, land any empty conduit at the CT enclosure.
5. **All conduits shall be cleaned and include a pull rope or twine with a break strength rating of at least 300 lbs.** The pull rope or twine shall be adequately secured and easily accessible at each end.
6. **The District shall inspect and approve ALL trenches and conduit installations prior to backfilling**.

Table 3.4.B – Elbow Size, Minimum Sweep Elbow Radius	
Conduit Diameter (inches)	Minimum Sweep Radius (inches)
1	24
2	36
3	36
4	48
6	48

1-877-ASK-NPPD for assistance

General Conduit Requirements(Continued)

7. **Fiberglass elbows shall be installed when the run of conduit exceeds 125 feet**.
8. Contact NPPD for use of steel elbows. When approved by the District, steel elbows shall be threaded and grounded when less than 18” below final grade. Steel elbows shall not be used where 3-phase cables each require their own conduit.

Continuous Conduit Requirements

1. Continuous conduit shall be high density polyethylene(HDPE) meeting ASTM D-3035 and intended for electrical applications with a minimum SDR equal to 13.5.
2. Conduit shall not be installed underneath any part of building footings or foundations.
3. Continuous conduit shall be co-extruded with three red stripes spaced 120 degrees apart.
4. **Fiberglass elbows shall be installed when the run of conduit exceeds 125 feet**.
5. With engineering approval, continuous conduit may be stubbed up into pad mounted equipment only and must be 12 inches above final grade.
6. PVC Schedule 80 conduit required for above final grade portions of continuous conduit installations.
7. **All conduits shall be cleaned and include a pull rope or twine with a break strength rating of at least 300 lbs.** The pull rope or twine shall be adequately secured and easily accessible at each end.
8. Empty conduits shall be capped on both ends with PVC caps.
9. **The District shall inspect and approve ALL trenches and conduit installations prior to backfilling**.
10. Contact NPPD for use of steel elbows. When approved by the District, steel elbows shall be threaded and grounded when less than 18” below final grade. Steel elbows shall not be used where 3-phase cables each require their own conduit.

Table 3.4.C – Continuous Conduit Minimum Bend Radius(Supported)

Conduit Diameter (inches)	Minimum Bend Radius (inches)
1	24
2	36
3	39
4	50
6	73

1-877-ASK-NPPD for assistance

SECTION 4 METERING REQUIREMENTS

A. Meter Location

1. General

a. Self-contained meters shall not be installed on District owned poles or District owned underground secondary pedestals, without explicit written permission by the District.

b. Customer owned meter pole shall not be installed under Distribution/Transmission conductors.

c. Meter sockets shall meet ANSI C12.7-2014 Requirements for Watt-Hour Meter sockets.

d. Meter socket enclosures shall meet outdoor NEMA 3R rating.

2. Residential and Rural

a. The meter socket shall be located outdoors on all new or renovated installations, in a location which allows the District to read and maintain the meter in an efficient manner, as well as to safely disconnect service in an emergency situation.

b. It is the responsibility of the Customer to ensure that the meter socket meets District requirements. (See *Section 4.4*)
Call 1-877-ASK-NPPD for assistance.

c. The meter socket location shall not be above decks, porches, or patios and shall be a minimum of 3 feet from a gas meter and related equipment. The meter socket location shall not be below windows. It must be accessible to utility personnel. *(See Section B and Section C)*

d. Meter socket height shall be a minimum of 4 feet and a maximum of 6 feet above final grade, as referenced to the center of the meter socket. *(See Section B and Section C)*

e. Manufactured Homes may have the meter socket located on the structure, provided the service equipment installed is in a manner acceptable to the AHJ. NEC® Article 550.32(B).

f. Residential and rural locations may have the meter socket located on an out-building or on a Customer owned meter pole.

Call 1-877-ASK-NPPD for assistance

Residential and Rural(continued)

g. Mobile Homes shall not have service equipment mounted in or on the Mobile Home. Customer owned meter pedestal or Customer owned meter pole shall be located adjacent to the Mobile Home, to be in sight from and not more than 30 ft. from the exterior wall of the Mobile Home it serves; some exceptions may apply. NEC® Article 550.32(A). (*See Section C)*

h. Provide clear working space of at least 3'-6" deep and 3'-6" wide in front of meter socket as measured from the front of the meter. *(See Section B and Section C)*

i. Meter sockets shall have 3'-0" minimum clearance from windows, doors, fire escapes, or similar locations when attached to the building.

j. For CT enclosure working space clearances and grounding, see *Section B-2* and *Section C-8*.

3. Commercial and Industrial

a. The meter socket shall be located outdoors on all new or renovated installations except by explicit written permission by the District. The meter socket location shall allow the District to read and maintain the meter in an efficient manner, as well as to disconnect service in an emergency situation.

b. It is the responsibility of the Customer to ensure that the meter socket meets District requirements. (See *Section 4.4*) Call 1-877-ASK-NPPD for assistance.

c. The meter socket location shall not be above decks, porches, or patios and shall be a minimum of 3 feet from a gas meter and related equipment. The meter socket location shall not be below windows. It must be accessible to utility personnel. *(See Section B and Section C)*

d. Meter socket height shall be a minimum of 4 feet and a maximum of 6 feet above the final grade, as referenced to the center of the meter socket. *(See Section B and Section C)*

e. Provide clear working space of at least 3'-6" deep and 3'-6" wide in front of meter socket as measured from the front of the meter. *(See Section B and Section C)*

Call 1-877-ASK-NPPD for assistance

Commercial and Industrial(continued)

f. For CT enclosure working space clearance and grounding, see *Section B-2* and *Section C-8*.

g. Meter sockets shall have 3'-0" minimum clearance from windows, doors, fire escapes, or similar locations when attached to the building.

h. All indoor meter locations shall be approved by explicit written permission by the NPPD T&D Construction and Maintenance Manager. Where indoor locations are approved:

1. The District shall have unrestricted access to the metering at all times through a direct access door, without having to enter a tenant's premises. If the metering is located in a locked room, the District shall be issued a key to the room.
2. Metering shall be at ground level. That is, at no time shall District personnel be required to traverse stairs to reach the metering installation.

4. Hazardous Locations

a. Metering equipment shall not be installed in hazardous locations as defined by NEC® Article 500.5.

B. Meter Relocation

1. Indoor residential metering installations still exist on the District's system. Every effort should be made to relocate these meters outdoors.
2. The District retains the right to evaluate the safety of all meter installations.
3. If the District determines that any change in the location of metering equipment is necessary, the Customer shall pay all costs associated with relocating the metering equipment.

C. Grounding of Meter Enclosure

1. The Customer shall provide and install a ground rod at the metering location.
2. The ground wire (minimum #6 bare solid copper) shall be continuous from the neutral landing block of the meter enclosure to the driven ground rod.

Call 1-877-ASK-NPPD for assistance

Grounding of Meter Enclosure(continued)

3. Driven ground rod shall be 5/8” X 8’ (minimum) copper clad, or approved equivalent, in undisturbed soil.
4. Ground rod clamp shall connect ground wire securely to the ground rod.
5. No foreign attachments to meter enclosure are allowed. Utilities required to bond to the electric supply system shall use one of the following methods:
   a. Terminal Block – A UL listed Terminal Block attached to house, connected to the neutral landing block of the meter enclosure by Ground Wire described above or connected to the driven Ground Rod as defined by NEC® Article 250.94.
   b. Ground Wire –Exposed Ground Wire (minimum #6 bare solid copper) connected to neutral landing block inside meter enclosure at one end and protruding a minimum of 6 inches from bottom of meter enclosure at the other end.
   c. Ground Rod – Connect directly to driven Ground Rod.
6. The method of attachment shall not result in sharp projections, such as sheet metal screws, into the wire way, anywhere within the meter socket.

Call 1-877-ASK-NPPD for assistance

Table 4.2				
Phase	**Customer**	**Service Entrance Size (**Amps**)**	**Socket Type** Note 3	**Meter Class (**Amps**)**
1Ø	Residential	200 or less	200 amp S Base	200
1Ø	Residential	201 – 400	320 amp S Base	320
1Ø	Residential	>400	Instrument Rated	20
1Ø	Commercial	200 or less	200 amp S Base	320
1Ø	Commercial	201 – 400	320 amp S Base	320
1Ø	Commercial	>400	Instrument Rated	20
3Ø	Commercial <300V	200 or less	200 amp S Base	320
3Ø	Commercial <300V	201 – 400	320 amp S Base	320
3Ø	Commercial <300V	>400	Instrument Rated	20
3Ø	Commercial 480V	200 or less	200 amp S Base	200
3Ø	Commercial 480V	>200	Instrument Rated	20

Note 1 Service entrance size is based on the main breaker nameplate or size.

Note 2 It is the responsibility of the Customer to ensure that the meter socket meets District requirements. (See *Section 4.4*)

Note 3 For parallel conductor runs, the meter socket lugs must be designed to land multiple conductors.

Note 4 K-Base (Bolt-In) meter sockets are no longer accepted on the NPPD System. If there are concerns regarding use of a 320 amp S-Base meter socket, please contact NPPD.

A. 480 VOLT SELF CONTAINED METERING

1. See Section 4.1 for meter location requirements.
2. The Customer is responsible for providing and installing all disconnects on the line side of the meter as required by *Section B-5 and C-3*.
3. EXCEPTION: Irrigation locations require a disconnecting means on the *load* side of the meter, rather than the *line* side of the meter. *(See Section B-4 and C-4)*

Call 1-877-ASK-NPPD for assistance

A. GENERAL

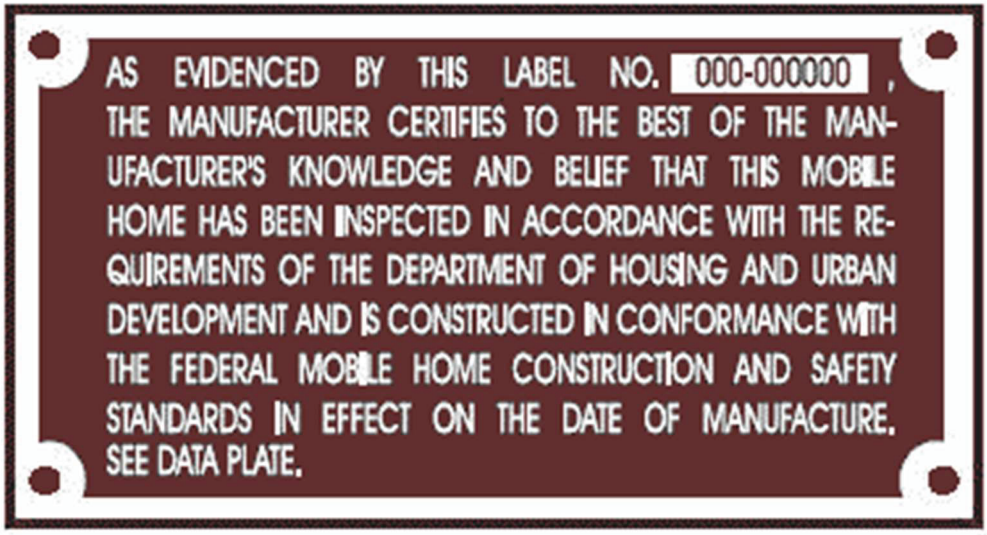
1. For all new installations, the District will own and maintain all primary and secondary facilities and its service conductors to the meter but will not take title to, own, or maintain any customer wiring beyond the meter.
2. Customer shall be responsible for furnishing and installing meter pedestal/pole, fittings, bushings, breakers, grounding system and all conduit to the meter pedestal/pole as required.
3. Meter pedestals must meet NPPD's meter socket requirements. (*See Section 4.4*)
4. Meter pedestals shall meet outdoor NEMA 3R rating.
5. Meter pedestals shall be UL listed.
6. The conductors that extend to the meter socket shall be connected at the service termination lugs independent of the connection for the service lateral conductors.
7. Meter socket height shall be a minimum of 4 feet and a maximum of 6 feet above the final grade, as referenced to the center of the meter socket. *(See Section B and Section C-2)*
8. The pedestal at grade line shall have a minimum cross sectional dimension of 4" x 8". The pedestal shall extend 24" below grade.
9. The meter pedestal shall be grounded in accordance with *Section 4.1C*.

B. LOCATION

1. Mobile homes shall not have service equipment mounted in or on the mobile home.
2. Mobile home service equipment shall be located adjacent to the mobile home, to be in sight from and not more than 30 ft. from the exterior wall of the mobile home it serves. NEC® Article 550.32(A). (*See Section C)*
3. Meter banks may be located elsewhere provided the disconnecting means for the mobile home it serves is in sight from and not more than 30 ft. from the exterior wall of the mobile home.
4. Meter location shall be located a minimum of 3 feet from Gas meters and associated Gas equipment. It must be readily accessible to utility personnel.
5. Metering equipment shall not be installed in hazardous locations as defined in NEC® Article 500.5.

C. Inspection Labels

1. Each Mobile/Manufactured and Modular home shall have an applicable inspection label approved by the AHJ.



H.U.D. MOBILE / MANUFACTURED HOME
INSPECTION LABEL

NEBRASKA MODULAR HOME INSPECTION LABEL

A. General

1) Meter sockets shall meet ANSI C12.7-2014 requirements for Watt-Hour Meter Sockets.
2) Meter enclosures shall meet NEMA 3R rating.
3) Meter sockets shall have Short Circuit current rating of at least 10,000 RMS Sym Amps at rated voltage.
4) Bypass must be rated for full nameplate current of the meter socket.
5) Meter socket enclosure shall be Ringless.
6) The following requirements apply for single position meter sockets. Contact NPPD for approval of multi-position/banked meter sockets prior to installation.
7) Residential and commercial installations under 300V may utilize a 320 Amp S-Base meter socket for service entrances up to and including 400 Amps. Service entrances over 400 Amps require Instrument Rated metering.
8) All 480V services over 200-Amps require Instrument Rated metering.

B. Single Phase – Self Contained Metering

1) 200A – 5 TERMINAL
   a. 5-terminal for 1Ø, 3W, 600V, 200A continuous duty
   b. 5th terminal installed in 9 o'clock position
   c. Line/Load/Neutral lugs up to 350 MCM Cu/Al
   d. Ground lug up to #2 Cu/Al
   e. OH/UG feed with OH hub opening and blank cover
   f. KO's in the following sizes and positions:
      i. Three (3) KO's up to 2 ½" on the bottom panel
      ii. One (1) KO up to 2 ½" on each side panel at the bottom
      iii. One (1) KO up to 2 ½" on the back panel at the bottom center
   g. KO for ½" equipment ground in bottom panel
      i. No bypass (horn or lever) required
      ii. Minimum enclosure size 11"W x 14"H x 4-1/8"D

2) 320A – BYPASS (OVERHEAD)
   a. 5-terminal for 1Ø, 3W, 600V, 320A continuous duty
   b. 5th terminal installed in 9 o'clock position
   c. Line connectors #4-600 MCM Cu/Al or (2) 1/0-250 MCM Cu/Al
   d. Load connections 3/8"–16 studs
   e. Ground lug up to 1/0 Cu/Al
   f. OH feed with hub opening
   g. KO's in the following sizes and positions:
      i. Three (3) KO's up to 3" on the bottom panel
      ii. One (1) KO up to 2 ½" on each side panel at the bottom
      iii. One (1) KO up to 3" on the back panel at the bottom center
   h. KO for ½" equipment ground on bottom panel
   i. Lever bypass required
   j. Minimum enclosure size 13"W x 28"H x 4-7/8"D

3) 320A – BYPASS (UNDERGROUND)
   a. 5-terminal for 1Ø, 3W, 600V, 320A continuous duty
   b. 5th terminal installed in 9 o'clock position
   c. Line connectors #4-600 MCM Cu/Al or (2) 1/0-250 MCM Cu/Al
   d. Load connectors 3/8"–16 studs
   e. Ground lug up to 1/0 Cu/Al
   f. UG feed
   g. KO's in the following sizes and positions:
      i. Three (3) KO's up to 3" on the bottom panel
      ii. One (1) KO up to 3" on each side panel at the bottom
      iii. One (1) KO up to 3" on the back panel at the bottom, right of center
   h. KO for ½" equipment ground on bottom panel
   i. Lever bypass required
   j. Minimum enclosure size 13"W x 28"H x 4-7/8"D

C. **Three Phase – Self Contained Metering**

1) 200A – 7 TERMINAL
   a. 7-terminal for 3Ø, 4W wye or delta, 600V, 200A continuous duty
   b. Line/Load/Neutral connectors 3/8"–16 studs
   c. Ground lug up to #2 Cu/Al
   d. OH/UG feed with OH hub opening and blank cover
   e. KO's in the following sizes and positions:
      i. Two (2) KO's up to 3" on the bottom panel
      ii. One (1) KO up to 2 ½" on each side panel at the bottom
      iii. One (1) KO up to 3" on the back panel at the bottom center
   f. KO for ½" equipment ground on bottom panel
   g. No bypass required
   h. Minimum enclosure size 13"W x 19"H x 4-7/8"D

2) 320A - BYPASS
   a. 7-terminal for 3Ø, 4W wye or delta, 600V, 320A continuous duty
   b. Side wire way
   c. Line/Load/Neutral connectors 3/8"–16 studs
   d. Ground lug up to 1/0 Cu/Al
   e. OH/UG feed with OH hub opening and blank cover
   f. KO's in the following sizes and positions:
      i. Two (2) KO's up to 4" on the bottom panel
      ii. One (1) KO up to 3" on each side panel at the bottom
   g. Lever bypass required
   h. KO for ½" equipment ground on bottom panel
   i. Minimum enclosure size 17"W x 31"H x 6"D

SECTION 5 INSPECTION REQUIREMENTS

A. Nebraska law requires electrical inspections of **all** residential, commercial, industrial, and public use buildings and associated facilities. In addition, many cities and counties in the state have adopted their own inspection law. State law adopts the National Electrical Code® (NEC®) as minimum requirements. Local laws take precedent over state laws except where they are less stringent than the state law. Contact the local AHJ to determine applicable inspection requirements.

B. Nebraska law also requires that electrical contractors be licensed to contract for the installation of electrical equipment in all commercial, industrial, and public use buildings and that electricians be licensed to install equipment in such facilities.

1. All commercial, industrial and public use buildings in Nebraska are covered by the State Electrical Act (Nebraska Revised Statute - Sections 81-2101 to 81-2143). Commercial, industrial and public use buildings and associated facilities, including state-owned buildings, public school buildings, family dwellings in excess of a single family living unit, mobile home parks (mobile home park shall mean a parcel of land so designated and improved to contain two or more mobile home lots available to the general public for the placement thereon of mobile homes for occupancy), recreational vehicle parks, municipal ball field lighting, and business establishments. Federally owned buildings and facilities owned by the Railroad are not subject to state inspection.

2. All new electrical installations for single residential applications requiring new electrical service equipment shall be subject to the inspection and enforcement provisions according to the State Electrical Act.

3. Temporary construction services used for temporary power during the construction phase of residential, commercial, industrial, and public use buildings must receive a final inspection permit from the local or State Inspector having jurisdiction ***prior to*** connection to the District's system.

4. Emergency connects, where human life or property is in jeopardy or in a situation where an electrical installer has made proper application for an inspection but a certified inspector is not available to make the inspection within the time prescribed by law (one week) and prior to the time the Customer is ready for service from the District, the following procedure shall be followed in the order given:

a. A District service technician may inspect the service entrance equipment and verify that it meets the District requirements as related to connections and grounding. The inspection will not be made beyond the service entrance.

b. The property owner shall be advised of the inspection requirements of the law.

c. After a. and b. of this section have been executed, the District may connect the new installation to its distribution system.

d. The District will immediately notify the local or State electrical authority of the above action.

C. It is the responsibility of the electrician or installer of electrical apparatus (including conduit) to apply for an inspection of that electrical installation through the local or state authority before commencement of any work and furnish a copy of such to the District.

D. Any installation condemned by a qualified inspector shall be disconnected from the District's system and shall not be re-connected until notice has been received from the inspector that the installation is safe. If, in the inspector's opinion, the NEC® non-compliance does not cause an immediate danger to life or property, the District may, at their discretion, leave the service connected for a reasonable length of time to allow the owner to comply with the NEC®. The Nebraska State Fire Marshall has the authority to condemn unsafe buildings that present a safety hazard to the public. When a condemnation order has been received, the District will refuse service without liability for such refusal until compliance with the NEC® has been met as determined by the certified inspector. The District will not be liable for any loss or damage to a Customer's property that has received final approval by a certified inspector.

E. The District shall inspect and approve all trenches and conduit installations prior to backfilling. *(See Section C)*

F. The District shall inspect and approve all transformer box pad installations prior to backfilling. *(See Section C)*

G. Please provide NPPD with at least 2 business days' notice when trench or equipment installation inspection is needed.

Call 1-877-ASK-NPPD for assistance

NOTES

A

SECTION A – CLEARANCES

Table A.1-Service Drop Clearances
For Plexed Conductor ≤ 750V

WHERE SERVICE DROP CROSSES OVER (Drip loops are part of the Service Drop)	MINIMUM REQUIRED CLEARANCE & POINT OF ATTACHMENT (FT)	NOTES
	VERTICAL	
1. Spaces and ways subject to pedestrians or restricted	12'–0"	4,6
2. Privately maintained driveways	16'–0"	3,4,5
3. Commercial areas not subject to truck traffic	16'–0"	3,4,10,12
4. Any publicly maintained street, road, way alley, parking lot, interstate, expressway, and highway	18'–0"	3,4,11,12
5. Windows, doors, or other openings	3'–0"	
6. Roofs, decks, or balconies not readily accessible to pedestrians	3'–0" (Service attached to building) 3'–6" (Service not attached to building)	4,7,8
7. Roofs, decks, or balconies readily accessible to pedestrians	11'–0"	4,7,8,9 4,7,8,9
	HORIZONTAL	
1. Windows, decks, balconies readily accessible to pedestrians	5'–0"	13
2. Walls, projections, windows	5'–0"	13,14

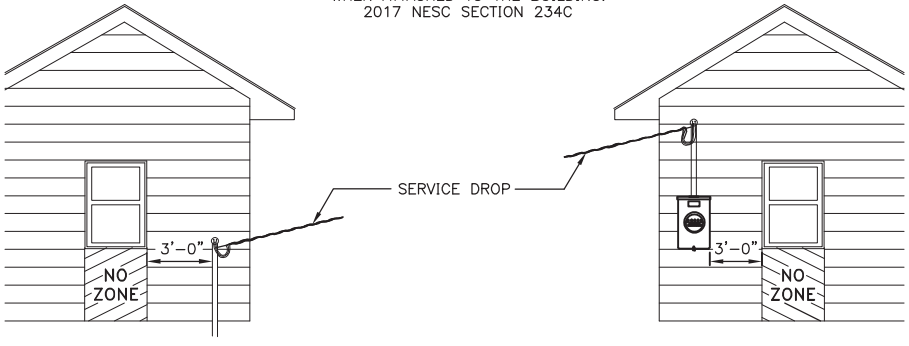
NOTES:

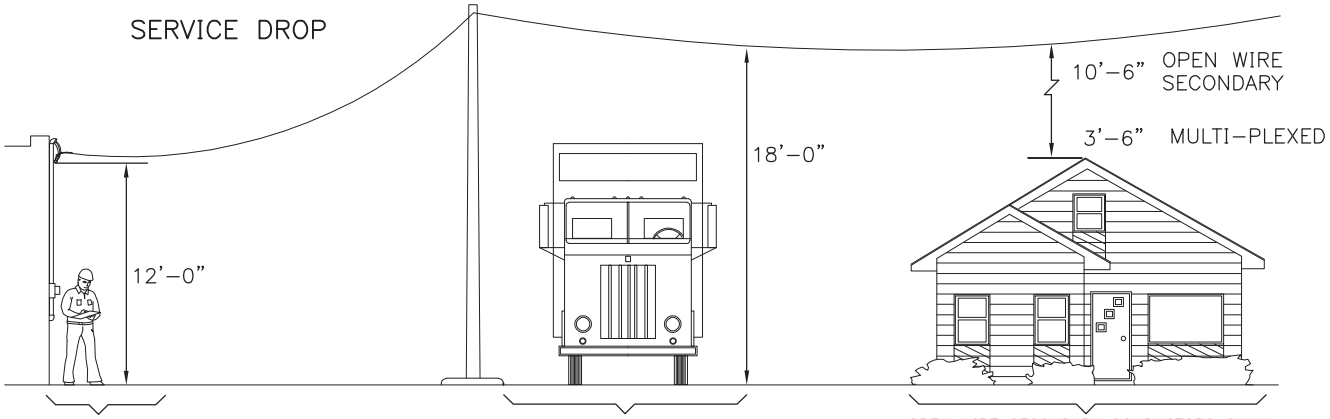
1. CLEARANCES ARE FOR MULTI–PLEXED CONDUCTOR UP TO 750 VOLTS.
2. CONTACT NPPD FOR USE OF OPEN WIRE SECONDARY SERVICES. 1–877–ASK–NPPD
3. DRIP LOOPS OVER AREAS SUBJECT TO VEHICLE TRAFFIC ARE REQUIRED TO MEET MINIMUM VERTICAL CLEARANCES. THE POINT OF ATTACHMENT AND/OR WEATHERHEAD MUST BE RAISED ACCORDINGLY.
4. WHERE LENGTH OF SERVICE DROP WILL CAUSE THE SAG TO VIOLATE THE ABOVE CLEARANCES, THE POINT OF ATTACHMENT MUST BE RAISED SO THAT THE LOW POINT OF THE SERVICE DROP MEETS THE MINIMUM REQUIRED VERTICAL CLEARANCE.
5. WHERE HEIGHT OF ATTACHMENT TO A RESIDENTIAL BUILDING DOES NOT PERMIT SERVICE DROP TO MEET THIS VALUE, THE CLEARANCE MAY BE REDUCED TO A MINIMUM OF 12 FEET WHEN LIMITED TO 150 VOLTS TO GROUND.
6. WHERE HEIGHT OF A RESIDENTIAL BUILDING DOES NOT PERMIT SERVICE DROP TO MEET THIS VALUE, THE CLEARANCE MAY BE REDUCED TO A MINIMUM OF 10 FEET WHEN LIMITED TO 150 VOLTS TO GROUND.
7. CLEARANCE IS MEASURED TO BOTTOM OF DRIP LOOP, OR SERVICE DROP, WHICHEVER IS LOWER.
8. A ROOF, BALCONY, OR SIMILAR AREA IS CONSIDERED READILY ACCESSIBLE TO PEDESTRIANS IF IT CAN BE CASUALLY ACCESSED THROUGH A DOORWAY, RAMP, WINDOW, STAIRWAY, OR PERMANENTLY MOUNTED LADDER.
9. IF THE SERVICE DROP CROSSES 6 FEET OR LESS AND THE POINT OF ATTACHMENT IS WITHIN 4 FEET OF THE EDGE OF THE ROOF, THE CLEARANCE MAY BE REDUCED TO A MINIMUM OF 18 INCHES. (THIS DOES NOT APPLY TO MOBILE HOME ROOFS.)
10. MINIMUM VERTICAL CLEARANCE TO DRIP LOOPS IS 14 FEET, IF NOTE 1 DOES NOT APPLY.
11. MINIMUM VERTICAL CLEARANCE TO DRIP LOOPS IS 16 FEET, IF NOTE 1 DOES NOT APPLY.
12. TRUCKS ARE DEFINED AS ANY VEHICLE EXCEEDING 8 FEET IN HEIGHT.
13. HORIZONTAL CLEARANCE SHALL NOT BE LESS THAN 3.5 FEET WITH A 6 LB/FT WIND APPLIES TO THE CONDUCTOR AT 60°F FINAL SAG.
14. MAY BE REDUCED TO 3'–0" PROVIDED COVERING OF ALL EXPOSED COMPONENTS PROVIDES SUFFICIENT DIELECTRIC STRENGTH TO LIMIT SHORT CIRCUIT IN THE EVENT OF MOMENTARY CONTACT WITH STRUCTURE.

CALL 1-877-ASK-NPPD FOR ASSISTANCE

CLEARANCE FROM BUILDING OPENINGS

CONDUCTORS SHALL HAVE A 3 FOOT MINIMUM CLEARANCE FROM WINDOWS, DOORS, FIRE ESCAPES, OR SIMILAR LOCATIONS WHEN ATTACHED TO THE BUILDING.
2017 NESC SECTION 234C



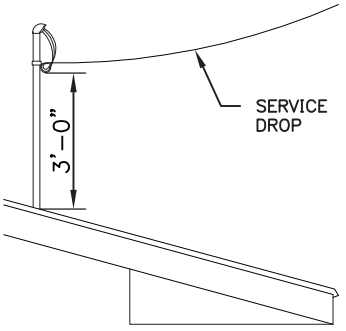


NOTES:

1. CLEARANCES ARE FOR MULTI–PLEXED CONDUCTOR UP TO 750 VOLTS UNLESS OTHERWISE NOTED.
2. CONTACT NPPD FOR USE OF OPEN WIRE SECONDARY SERVICES. 1–877–ASK–NPPD
3. SERVICE DROP CLEARANCE MAY BE REDUCED TO A MINIMUM OF 10 FEET WHEN VOLTAGE IS LIMITED TO 150 VOLTS TO GROUND.
4. 2017 NESC TABLE 232–1 AND 234–1.
5. VERTICAL CLEARANCES OF ALL SERVICE DROP CONDUCTORS SHALL BE BASED UPON LARGEST SAG.

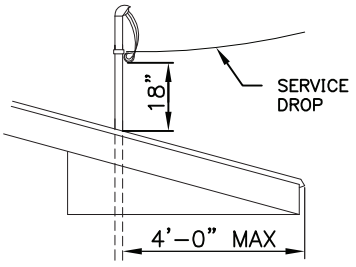
CALL 1-877-ASK-NPPD FOR ASSISTANCE

STANDARD



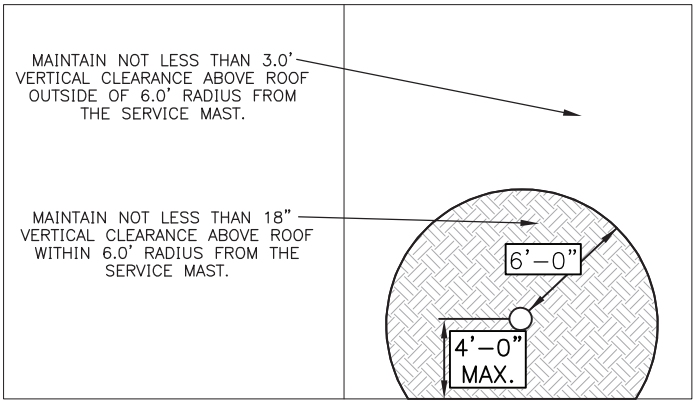
3 FT. MINIMUM CLEARANCE IS PERMITTED ABOVE ROOF OR BELOW SOFFIT FOR ALL CONDUCTORS.

EXCEPTION



18 IN. MINIMUM CLEARANCE IS PERMITTED ABOVE ROOF OR BELOW SOFFIT IF SERVICE MAST IS NOT LOCATED GREATER THAN 4 FT. FROM EDGE OF ROOF.

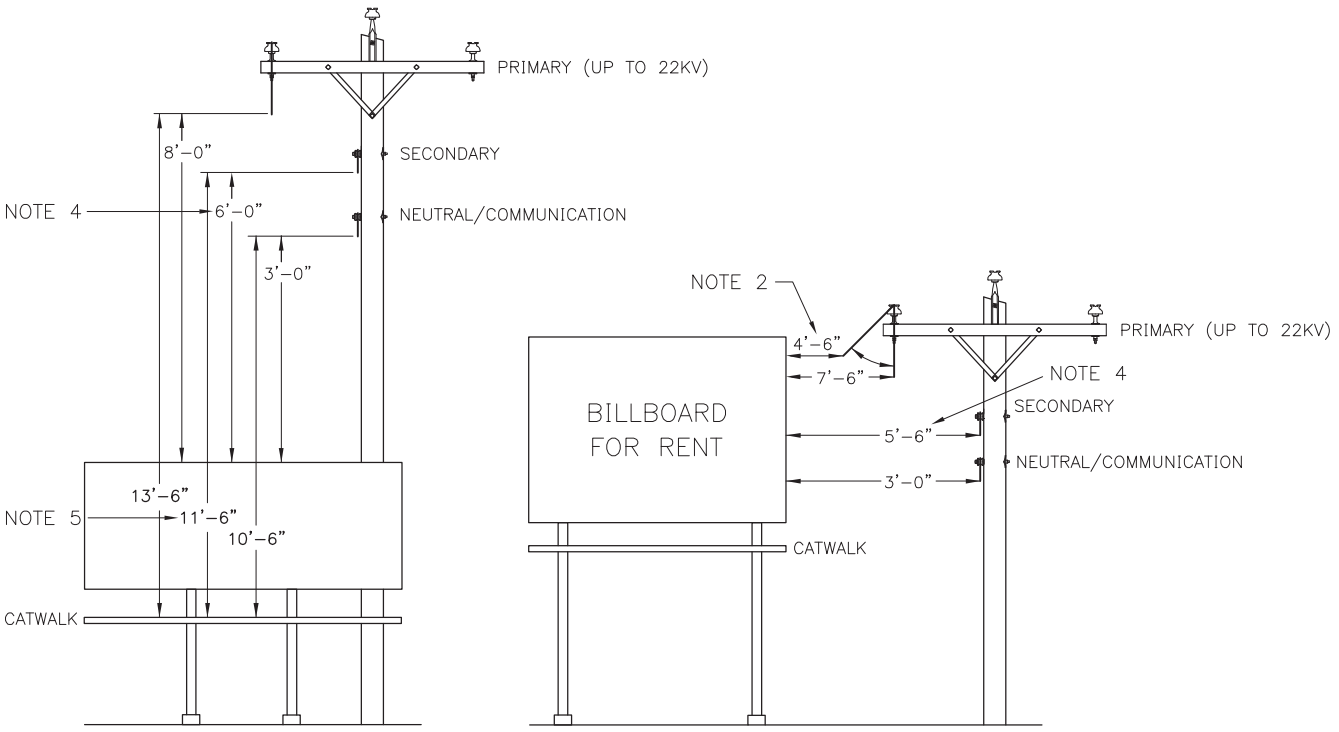
ROOF TOP VIEW



NOTES:

1. CLEARANCES ARE FOR MULTI–PLEXED SECONDARY CONDUCTOR UP TO 750 VOLTS UNLESS OTHERWISE NOTED.
2. CONTACT NPPD FOR USE OF OPEN WIRE SECONDARY SERVICES. 1–877–ASK–NPPD
3. CONDUCTORS SHALL NOT BE READILY ACCESSIBLE.
4. CLEARANCES APPLY UNDER WHICHEVER CONDITIONS PRODUCE THE CLOSEST APPROACH.
5. VERTICAL CLEARANCES OF ALL SERVICE DROP CONDUCTORS SHALL BE BASED UPON LARGEST SAG.

CALL 1-877-ASK-NPPD FOR ASSISTANCE



NOTES:

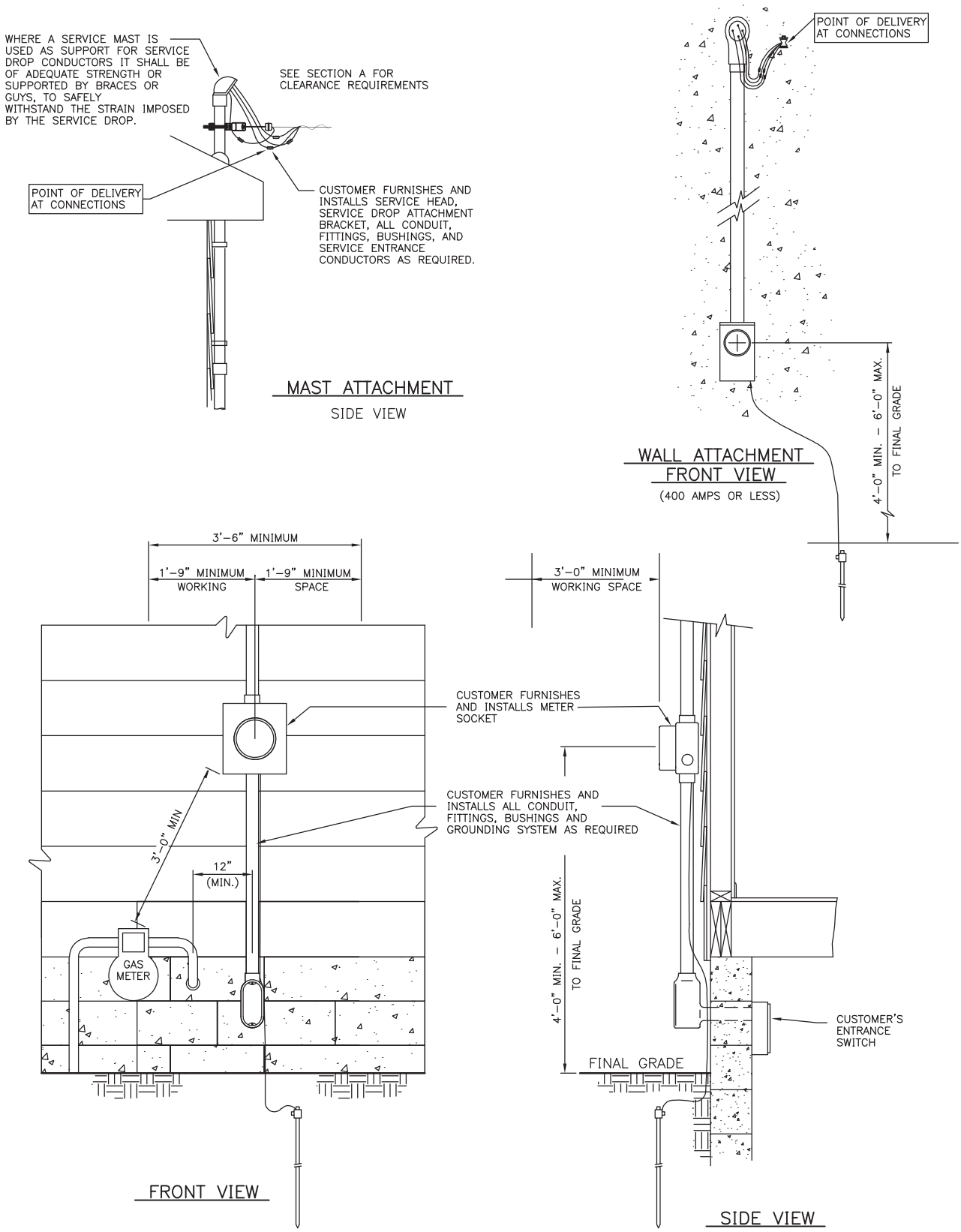
1. THESE CLEARANCES ARE FOR BILLBOARDS, SIGNS, CHIMNEYS, ANTENNAS, STORAGE TANKS, AND OTHER INSTALLATIONS NOT CLASSIFIED AS BUILDINGS OR BRIDGES AND NOT READILY ACCESSIBLE TO PEDESTRIANS.
2. HORIZONTAL CLEARANCE SHALL NOT BE LESS THAN 4.5 FEET WITH A 6 LB/FT WIND APPLIED TO THE CONDUCTOR AT 60°F FINAL SAG.
3. CLEARANCE FOR WIND NOT REQUIRED WHEN BILLBOARD IS PLACED DIRECTLY ACROSS FROM POLE, THE RIGID ATTACHMENT POINT.
4. MAY BE REDUCED TO 3'–6" WHERE MULTI–PLEXED SECONDARY CONDUCTOR IS USED.
5. MAY BE REDUCED TO 11'–0" WHERE MULTI–PLEXED SECONDARY CONDUCTOR IS USED.
6. THESE CLEARANCES ARE FOR UP TO 22kV.

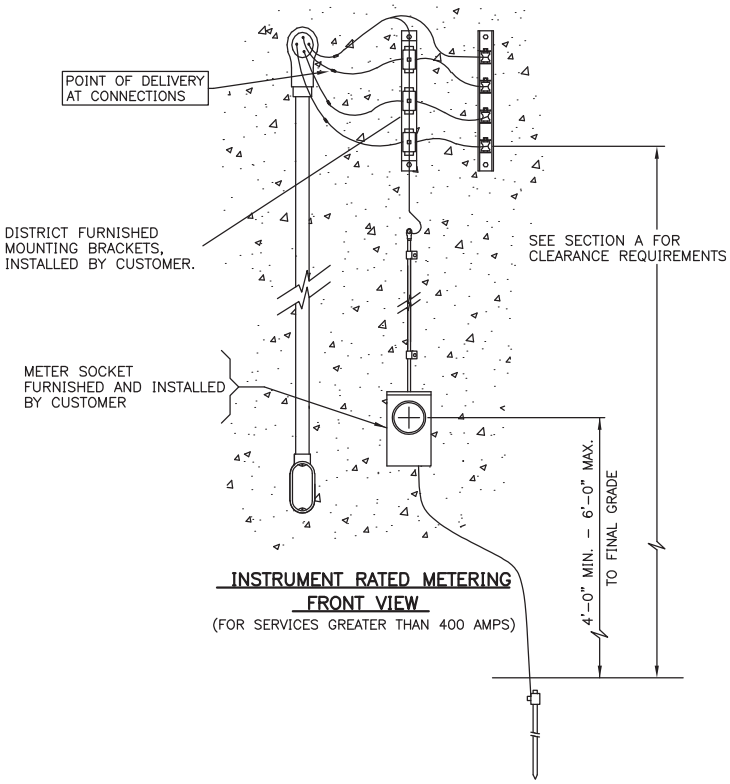
CALL 1-877-ASK-NPPD FOR ASSISTANCE

NOTES

B

SECTION B – OVERHEAD SERVICE

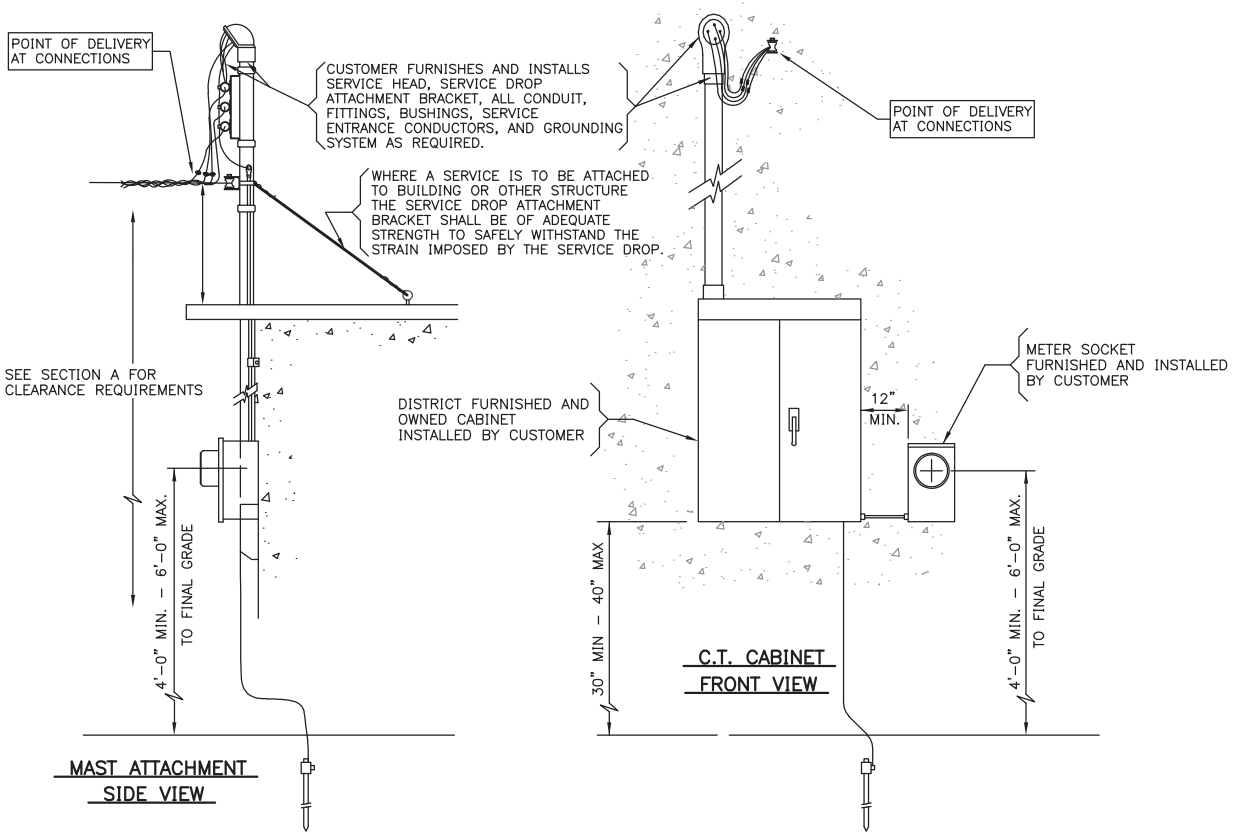




INSTRUMENT RATED METERING
FRONT VIEW
(FOR SERVICES GREATER THAN 400 AMPS)

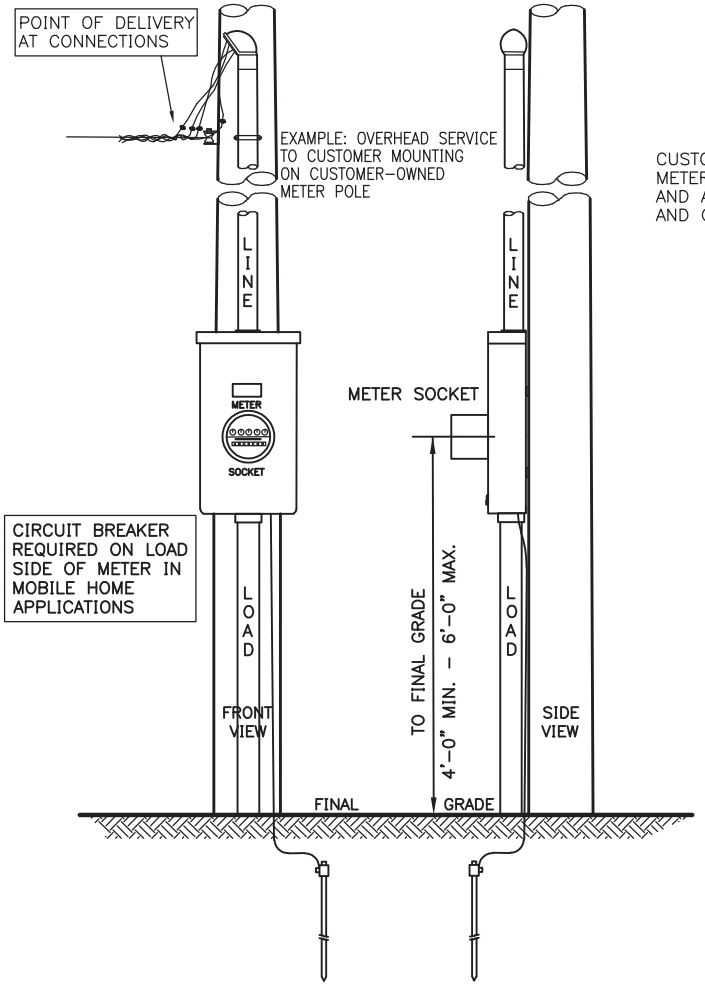
NOTES:

1. RIGHT AND LEFT CT CABINET EDGES SHALL BE 3 FEET FROM OPENINGS.
2. CT CABINET SHALL NOT BE MOUNTED BELOW WINDOWS.
3. CT CABINET WORKING SPACE DEPTH SHALL BE 3 FEET OR A MINIMUM OF WIDTH OF CT CABINET, WHICHEVER IS GREATER.
4. RIGHT AND LEFT METER SOCKET EDGES SHALL BE 3 FEET FROM OPENINGS.

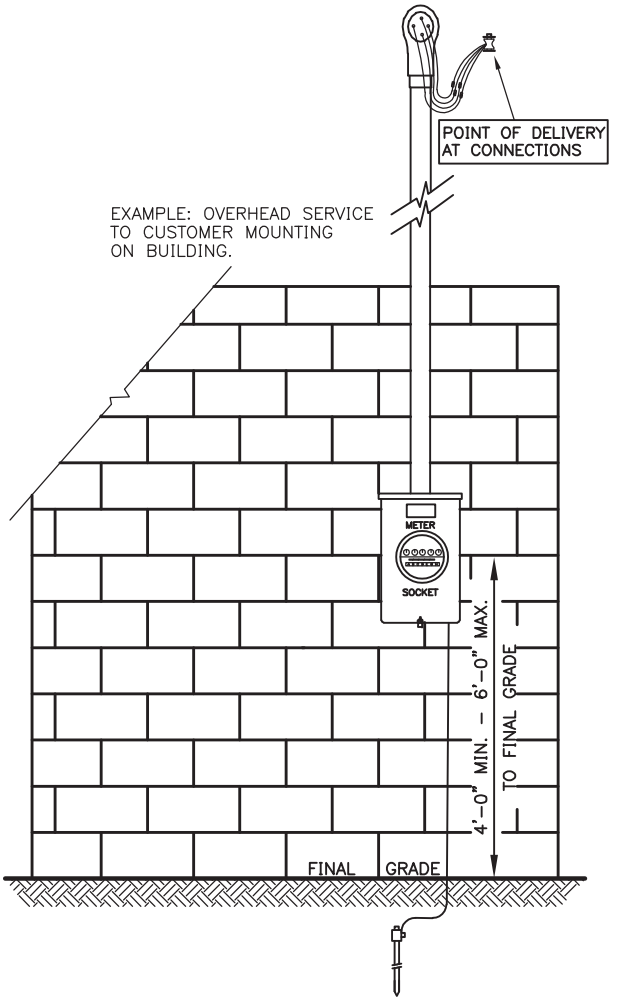


MAST ATTACHMENT
SIDE VIEW

C.T. CABINET
FRONT VIEW



CUSTOMER FURNISHES AND INSTALLS METER SOCKET, SERVICE CONDUCTORS AND ALL CONDUIT FITTINGS, BUSHINGS AND GROUNDING SYSTEM AS REQUIRED.



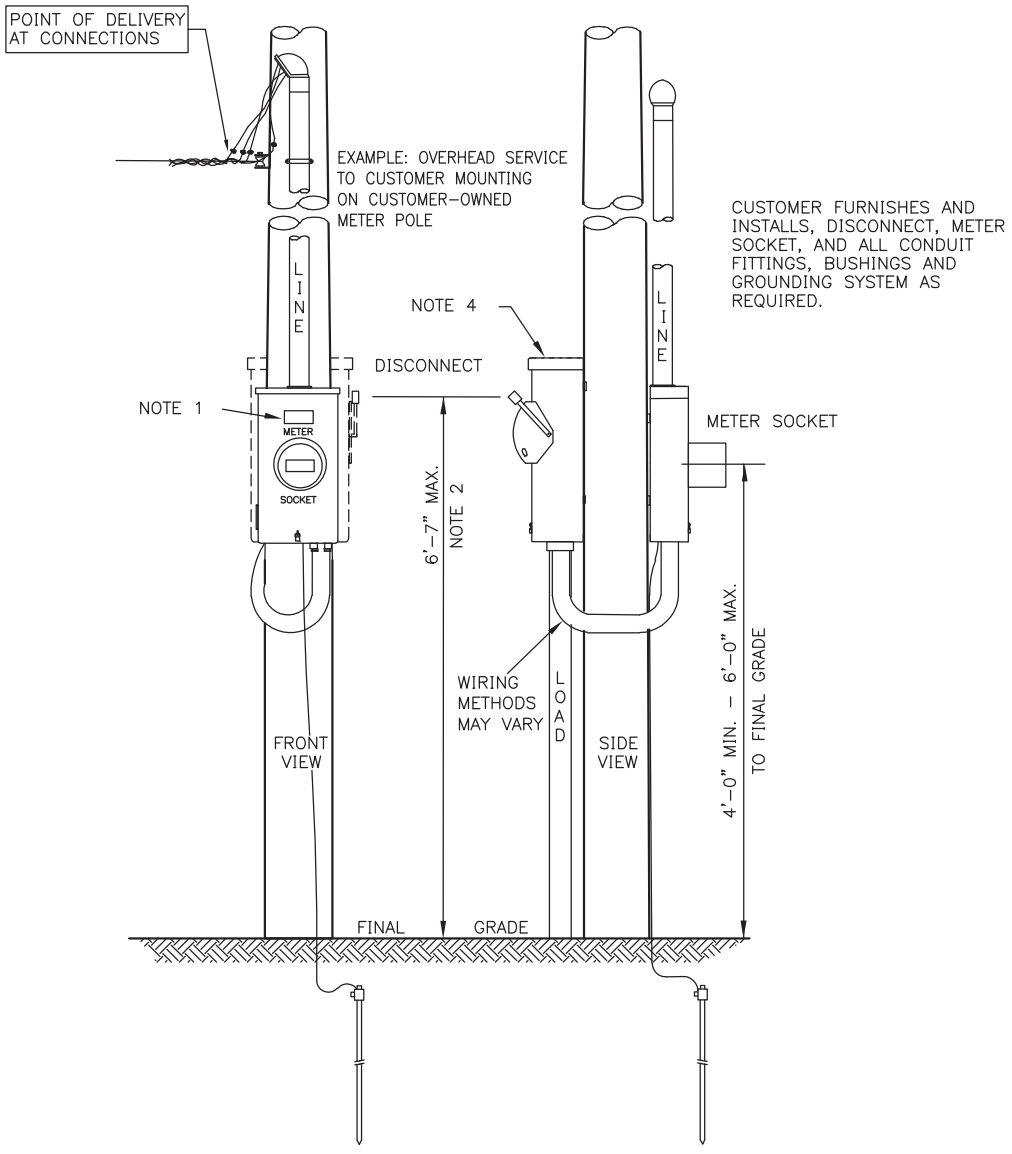
NOTES:

1. CUSTOMER IS RESPONSIBLE FOR LIGHTNING-PROTECTION OF CUSTOMER-OWNED EQUIPMENT.
2. CUSTOMER OWNED METER POLE SHALL NOT BE INSTALLED UNDER DISTRIBUTION/TRANSMISSION CONDUCTORS.
3. METER SOCKETS SHALL HAVE A CLEAR WORKING SPACE OF 1'-9" FROM CENTER OF METER ON EACH SIDE.
4. METER SOCKETS SHALL HAVE A 3'-0" MINIMUM CLEARANCE FROM WINDOWS, DOORS, FIRE ESCAPES OR SIMILAR LOCATIONS WHEN ATTACHED TO BUILDINGS.
5. METER SOCKETS SHALL NOT BE INSTALLED ABOVE OR BELOW WINDOWS, DOORS, FIRE ESCAPES OR SIMILAR LOCATIONS WHEN ATTACHED TO THE BUILDING.
6. A GROUND ROD MUST BE INSTALLED NEAR THE METER SOCKET WITH A CONTINUOUS EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.

Description
460004783

OVERHEAD SERVICE, 480V, 200 AMP OR LESS, IRRIGATION

2021



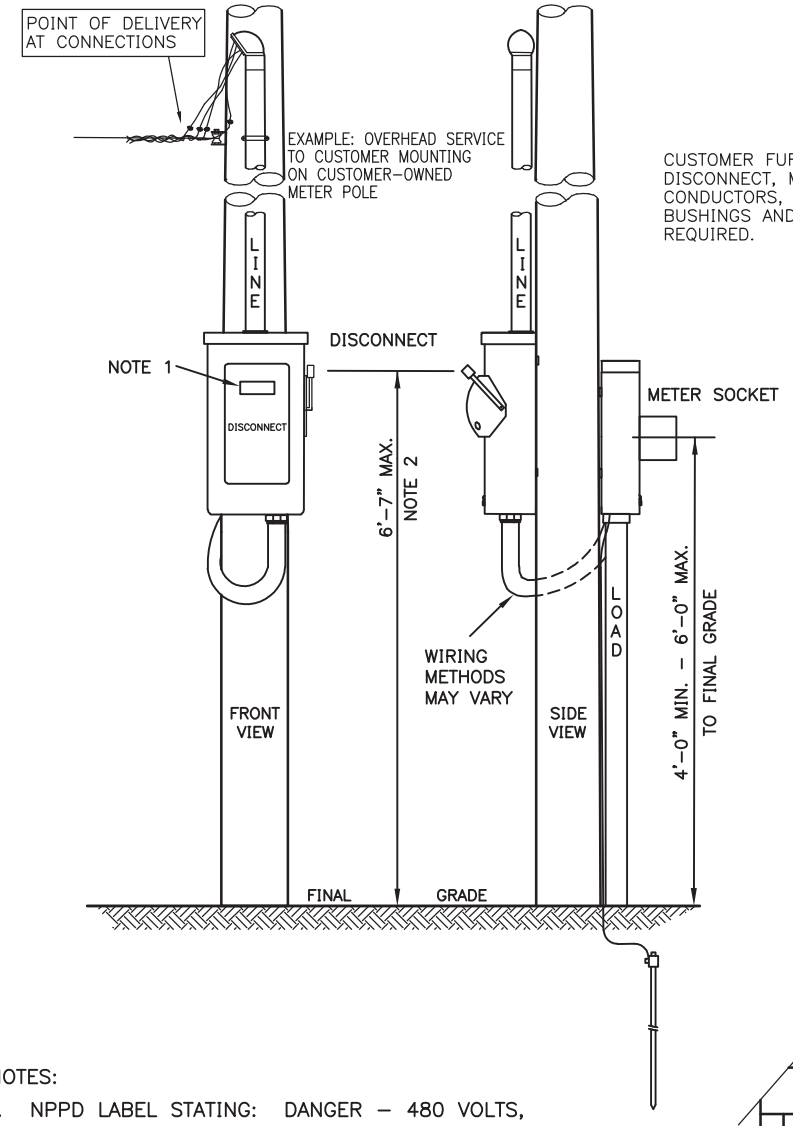
NOTES:

1. NPPD LABEL STATING: DANGER – 480 VOLTS, SOCKET MUST BE DE-ENERGIZED BEFORE REMOVING OR INSTALLING METER. SCN (1382331)
2. 6'-7" MAXIMUM TO CENTER OF GRIP OF OPERATING HANDLE WHEN IN ITS HIGHEST POSITION. Ref. NEC 404.8(A).
3. CUSTOMER IS RESPONSIBLE FOR LIGHTNING-PROTECTION OF CUSTOMER-OWNED EQUIPMENT.
4. IRRIGATION LOCATIONS REQUIRE A DISCONNECTING MEANS ON THE LOAD SIDE OF THE METER.
5. DISCONNECT SWITCHES MUST BE NOMINALLY RATED NOT IN EXCESS OF 1000 VOLTS AND HAVE A SHORT-CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE SHORT-CIRCUIT CURRENT. NEC 230.82(3).
6. CUSTOMER OWNED METER POLE SHALL NOT BE INSTALLED UNDER DISTRIBUTION/TRANSMISSION CONDUCTORS.

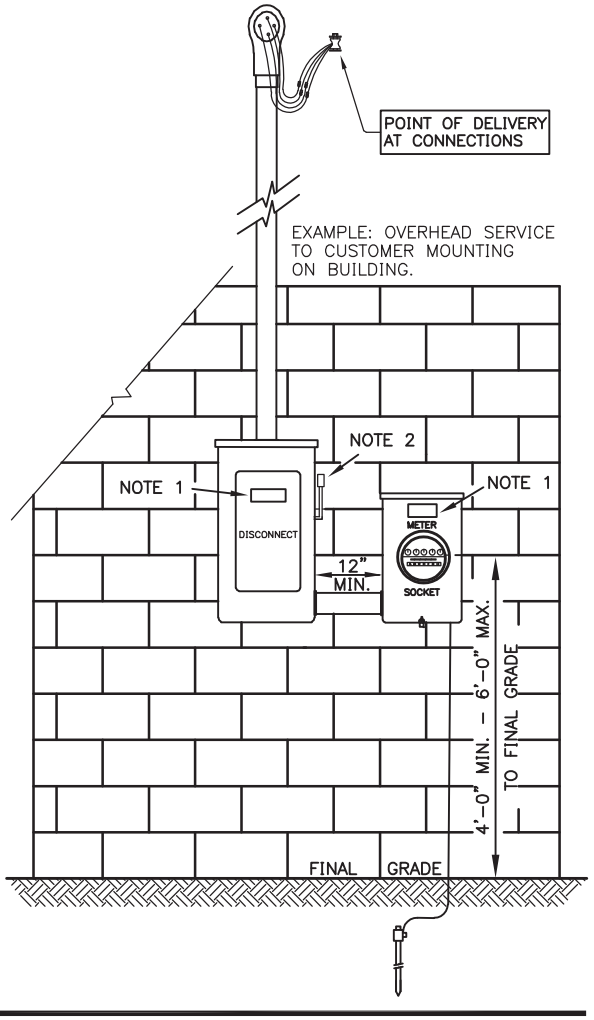
Description
460004782

OVERHEAD SERVICE, 480V, 200 AMP OR LESS

2021



CUSTOMER FURNISHES AND INSTALLS, DISCONNECT, METER SOCKET, SERVICE CONDUCTORS, AND ALL CONDUIT FITTINGS, BUSHINGS AND GROUNDING SYSTEM AS REQUIRED.

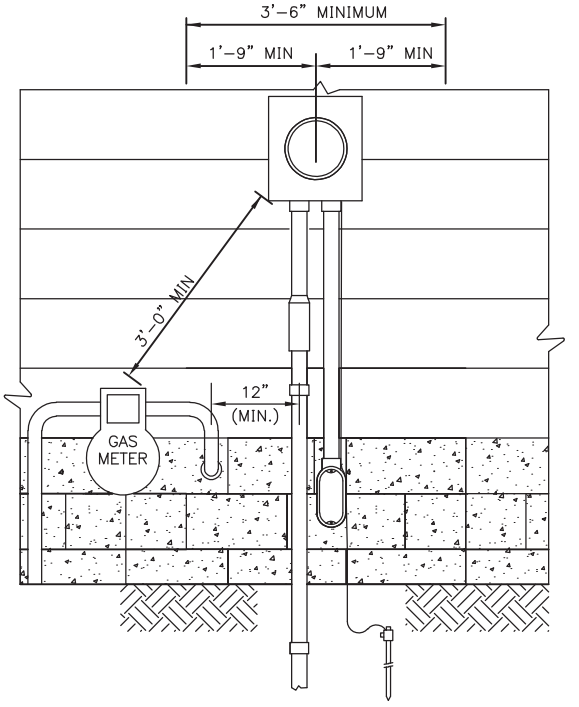


NOTES:

1. NPPD LABEL STATING: DANGER – 480 VOLTS, SOCKET MUST BE DE-ENERGIZED BEFORE REMOVING OR INSTALLING METER. SCN (1382331)
2. 6'-7" MAXIMUM TO CENTER OF GRIP OF OPERATING HANDLE WHEN IN ITS HIGHEST POSITION. Ref. NEC 404.8(a).
3. CUSTOMER IS RESPONSIBLE FOR LIGHTNING-PROTECTION OF CUSTOMER-OWNED EQUIPMENT.
4. IRRIGATION APPLICATIONS REQUIRE DISCONNECTING MEANS ON LOAD SIDE OF METER. SEE B-4.
5. DISCONNECT SWITCHES MUST BE NOMINALLY RATED NOT IN EXCESS OF 1,000 VOLTS AND HAVE A SHORT-CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE SHORT-CIRCUIT CURRENT. NEC 230.82(3)
6. CUSTOMER OWNED METER POLE SHALL NOT BE INSTALLED UNDER DISTRIBUTION/TRANSMISSION CONDUCTORS.

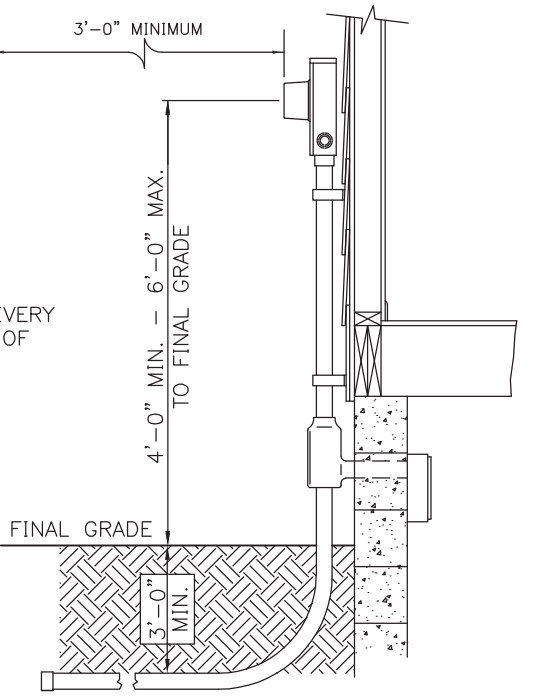
C

SECTION C – UNDERGROUND SERVICE



CONDUIT INSTALLED SERVICE
FRONT VIEW

POINT OF DELIVERY
AT LINE SIDE OF
METER

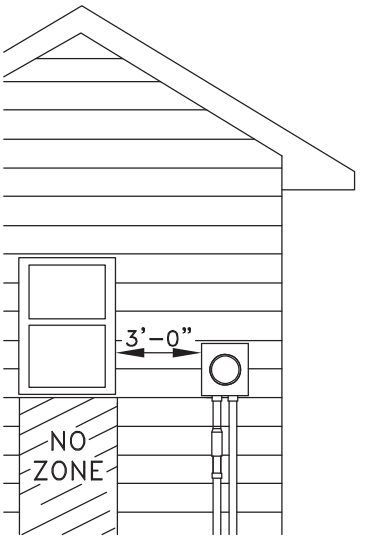


CONDUIT INSTALLED SERVICE
SIDE VIEW

CUSTOMER FURNISHES AND INSTALLS METER SOCKET, FITTINGS, BUSHINGS, EXPANSION COUPLING, GROUNDING SYSTEM AND ALL CONDUIT TO THE METER SOCKET AS REQUIRED.

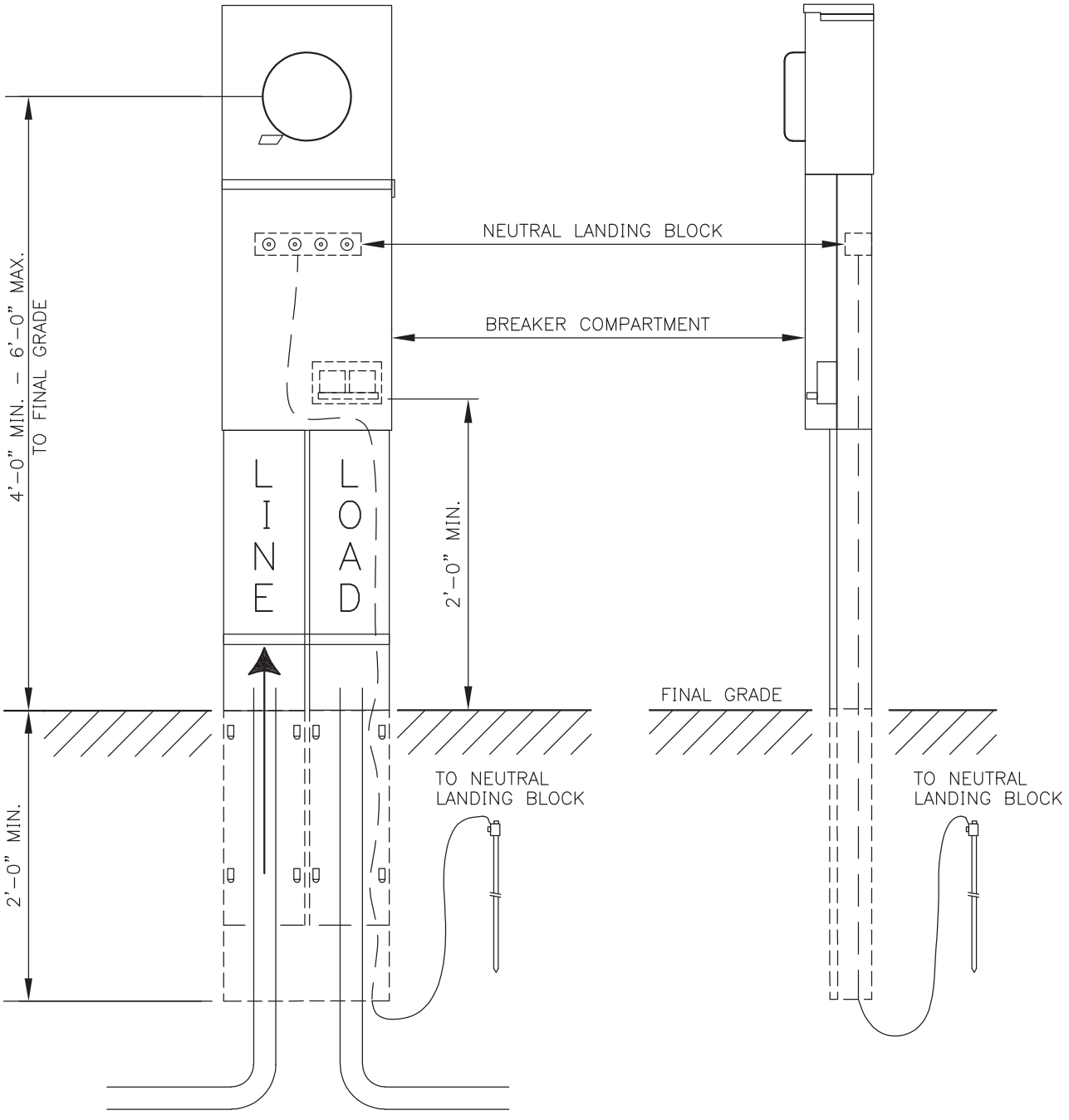
NOTES:

1. LIMIT OF FOUR 90° BENDS PER RUN FROM METER SOCKET TO THE DISTRICTS POINT OF DISTRIBUTION.
2. FOR SERVICE RUNS OVER 175', CONTACT NPPD FOR APPROVAL.
3. A GROUND ROD MUST BE INSTALLED NEAR THE METER SOCKET WITH AN EQUIPMENT GROUNDING CONDUCTOR RUNNING FROM THE GROUND ROD TO THE GROUNDING LUG PROVIDED IN THE METER SOCKET.
4. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300lbs.
5. METER SOCKETS SHALL HAVE A CLEAR WORKING SPACE OF 1'–9" FROM CENTER OF METER ON EACH SIDE.
6. METER SOCKETS SHALL HAVE 3'–0" MINIMUM CLEARANCE FROM WINDOWS, DOORS, FIRE ESCAPES, OR SIMILAR LOCATIONS WHEN ATTATCHED TO THE BUILDING.
7. METER SOCKETS SHALL NOT BE INSTALLED ABOVE OR BELOW WINDOWS, DOORS, FIRE ESCAPES, OR SIMILAR LOCATIONS WHEN ATTATCHED TO THE BUILDING.

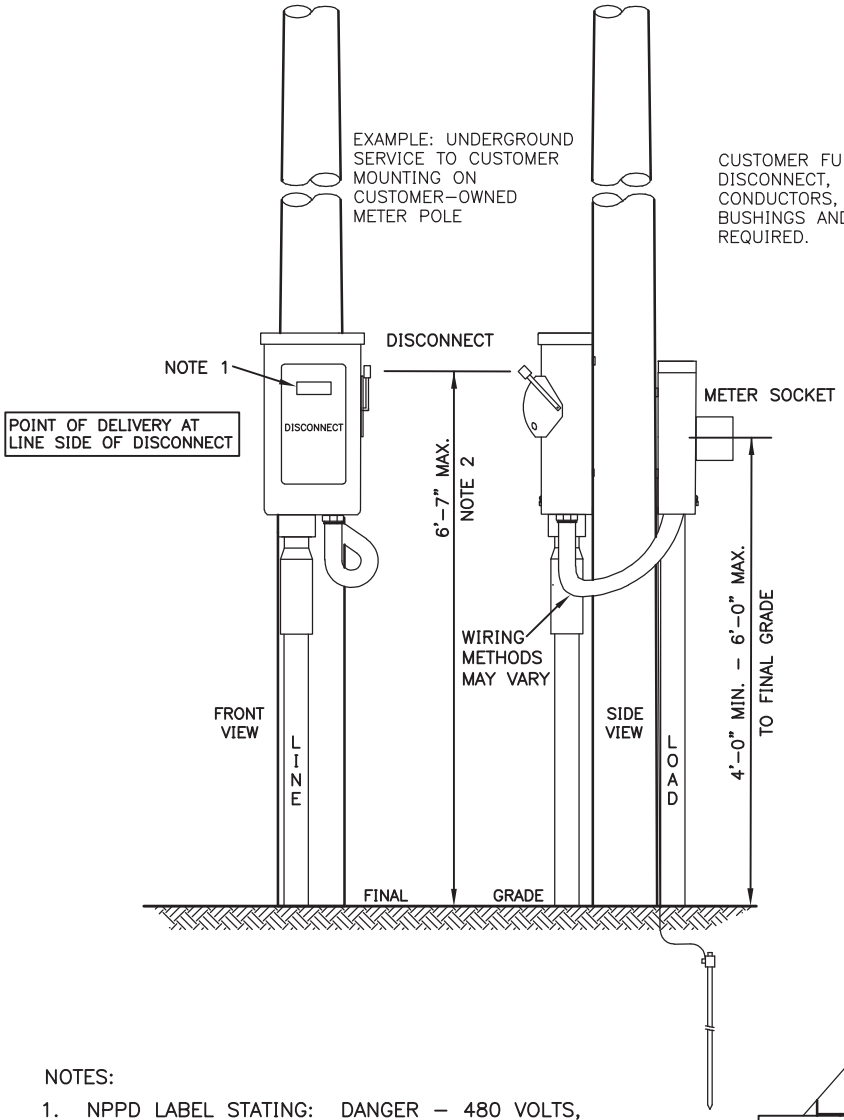


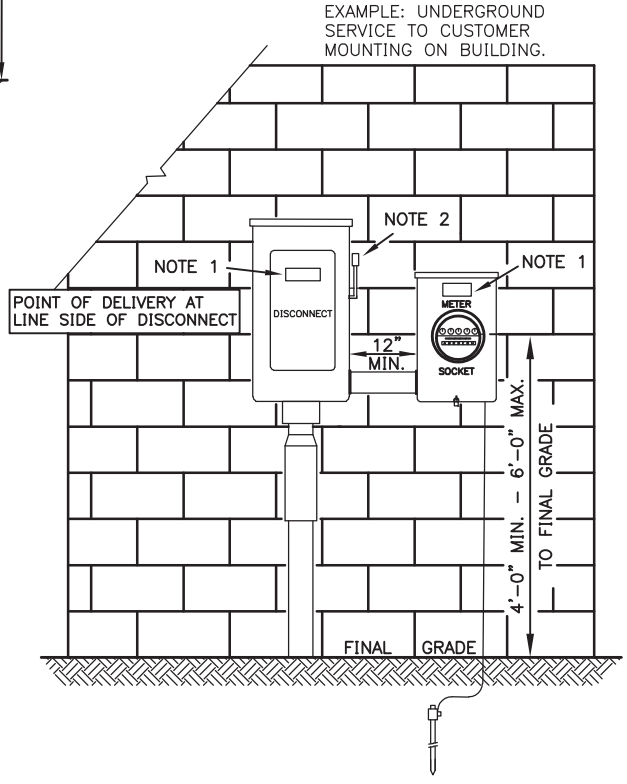
Description
MOBILE HOME UNDERGROUND SERVICE, 1PH 120/240 VOLT, 200 AMP

460004796
2021



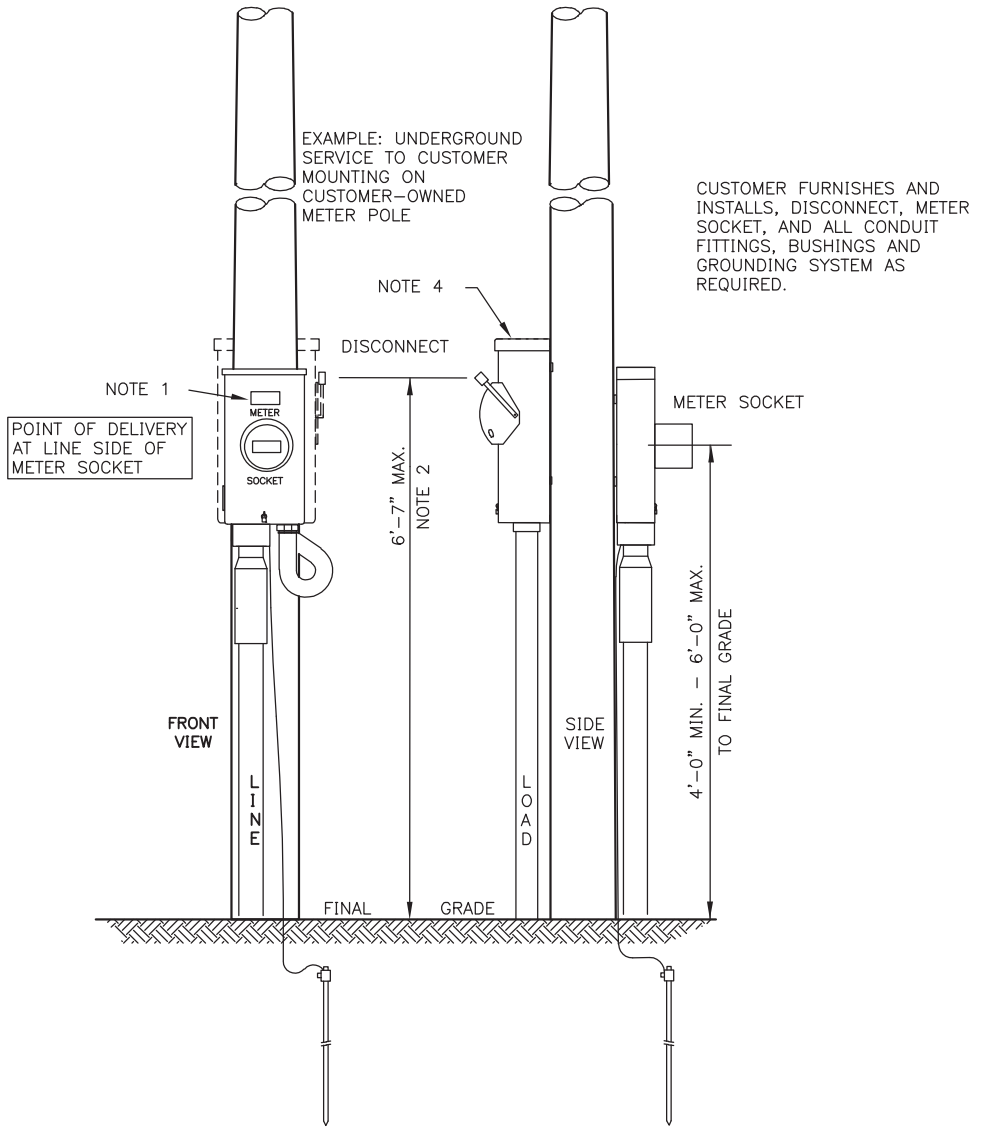
1. CUSTOMER FURNISHES AND INSTALLS METER PEDESTAL, FITTINGS, BUSHINGS, BREAKERS, GROUNDING SYSTEM AND ALL CONDUIT TO THE METER PEDESTAL AS REQUIRED.
2. METER SHALL NOT BE MOUNTED IN OR ON MOBILE HOME.
3. SEE SECTION 3.4 FOR CONDUIT REQUIREMENTS.
4. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
5. SEE SECTION 4.3 FOR GROUNDING REQUIREMENTS.





NOTES:

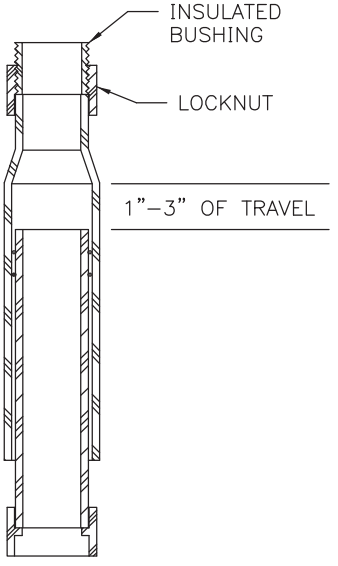
1. NPPD LABEL STATING: DANGER – 480 VOLTS, SOCKET MUST BE DE–ENERGIZED BEFORE REMOVING OR INSTALLING METER. SCN (1382331)
2. 6'–7" MAXIMUM TO CENTER OF GRIP OF OPERATING HANDLE WHEN IN ITS HIGHEST POSITION. Ref. NEC 404.8(A).
3. CUSTOMER IS RESPONSIBLE FOR LIGHTNING–PROTECTION OF CUSTOMER–OWNED EQUIPMENT.
4. IRRIGATION APPLICATIONS REQUIRE DISCONNECTING MEANS ON LOAD SIDE OF METER. SEE C–4.
5. DISCONNECT SWITCHES MUST BE NOMINALLY RATED NOT IN EXCESS OF 1,000 VOLTS AND HAVE A SHORT–CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE SHORT–CIRCUIT CURRENT. NEC 230.82(3)



NOTES:

1. NPPD LABEL STATING: DANGER – 480 VOLTS, SOCKET MUST BE DE–ENERGIZED BEFORE REMOVING OR INSTALLING METER. SCN (1382331)
2. 6'–7" MAXIMUM TO CENTER OF GRIP OF OPERATING HANDLE WHEN IN ITS HIGHEST POSITION. Ref. NEC 404.8(A).
3. CUSTOMER IS RESPONSIBLE FOR LIGHTNING–PROTECTION OF CUSTOMER–OWNED EQUIPMENT.
4. IRRIGATION LOCATIONS REQUIRE A DISCONNECTING MEANS ON THE LOAD SIDE OF THE METER.
5. DISCONNECT SWITCHES MUST BE NOMINALLY RATED NOT IN EXCESS OF 1000 VOLTS AND HAVE A SHORT–CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE SHORT–CIRCUIT CURRENT. NEC 230.82(3).
6. CUSTOMER OWNED METER POLE SHALL NOT BE INSTALLED UNDER DISTRIBUTION/TRANSMISSION CONDUCTORS.

CUSTOMER FURNISHES AND INSTALLS METER SOCKET, FITTINGS, BUSHINGS, EXPANSION COUPLING, GROUNDING SYSTEM AND ALL CONDUIT TO THE METER SOCKET AS REQUIRED.

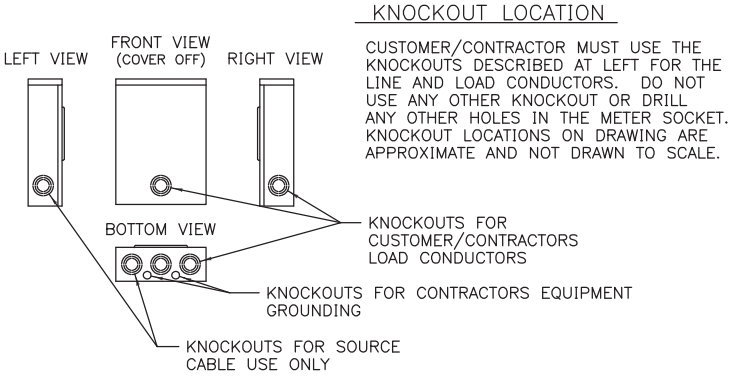


PVC EXPANSION COUPLING

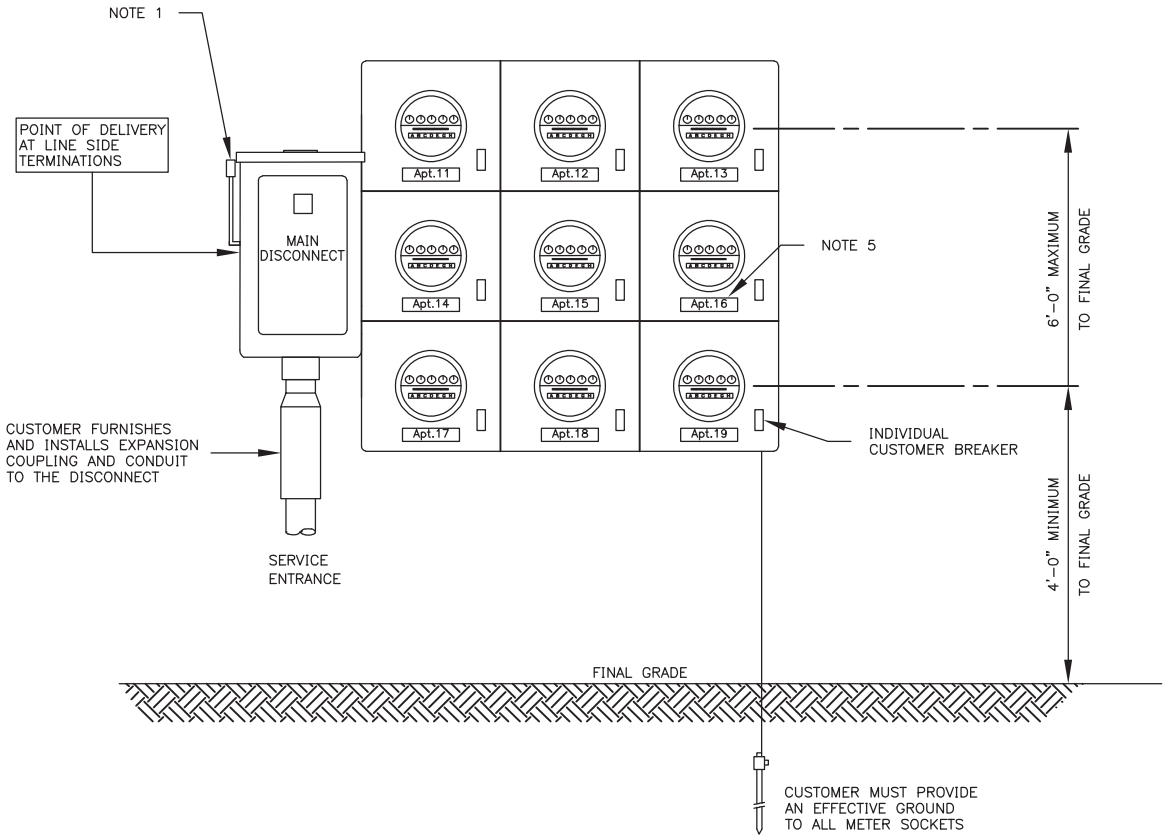
LENGTH: 8" MINIMUM– 24" MAXIMUM
INSTALL 1"–3" FROM FULLY COMPRESSED POSITION

NOTES:

1. EXPOSED CONDUIT MUST BE SCHEDULE 80.
2. EXPANSION COUPLING MUST BE UL LISTED.
3. ANY MANUFACTURED PRODUCT OTHER THAN A UL LISTED EXPANSION COUPLING MUST BE APPROVED BY NPPD PRIOR TO INSTALLATION.
4. NOT FOR USE IN AREAS SUBJECT TO VEHICLE TRAFFIC.



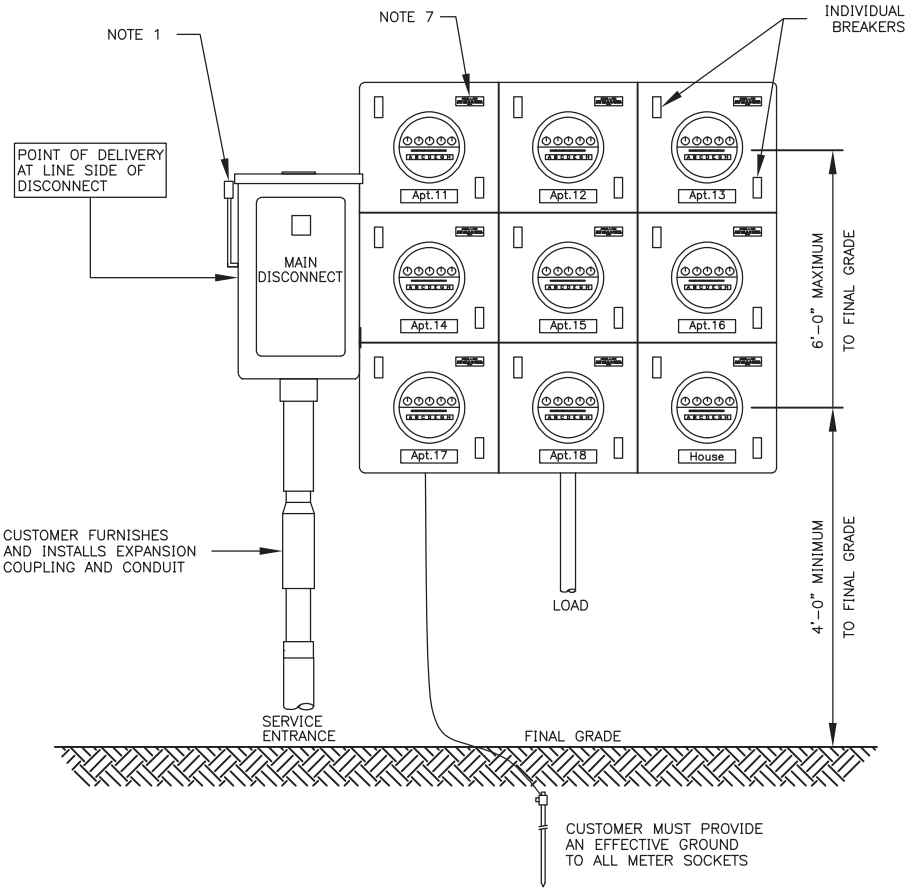
MANUFACTURED MULTIPLE METER ASSEMBLY
(ACTUAL CONFIGURATION MAY VARY)



NOTES:

1. IF EQUIPPED WITH A DISCONNECT SWITCH, 6'–7" MAXIMUM TO CENTER OF GRIP OF OPERATING HANDLE WHEN IN ITS HIGHEST POSITION. Ref. NEC 404.8(A).
2. CUSTOMER IS RESPONSIBLE FOR LIGHTNING PROTECTION OF CUSTOMER OWNED EQUIPMENT.
3. DISCONNECT SWITCHES MUST BE NOMINALLY RATED NOT IN EXCESS OF 600 VOLTS AND HAVE A SHORT–CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. NEC 230.82(3)
4. CUSTOMER FURNISHES AND INSTALLS METER SOCKETS, ALL CONDUIT, FITTINGS, BUSHINGS, DISCONNECTS, AND GROUNDING SYSTEM AS REQUIRED
5. CUSTOMER SHALL PROVIDE PERMANENT IDENTIFICATION OF METER AT THE METER LOCATION.

ACTUAL CONFIGURATION MAY VARY



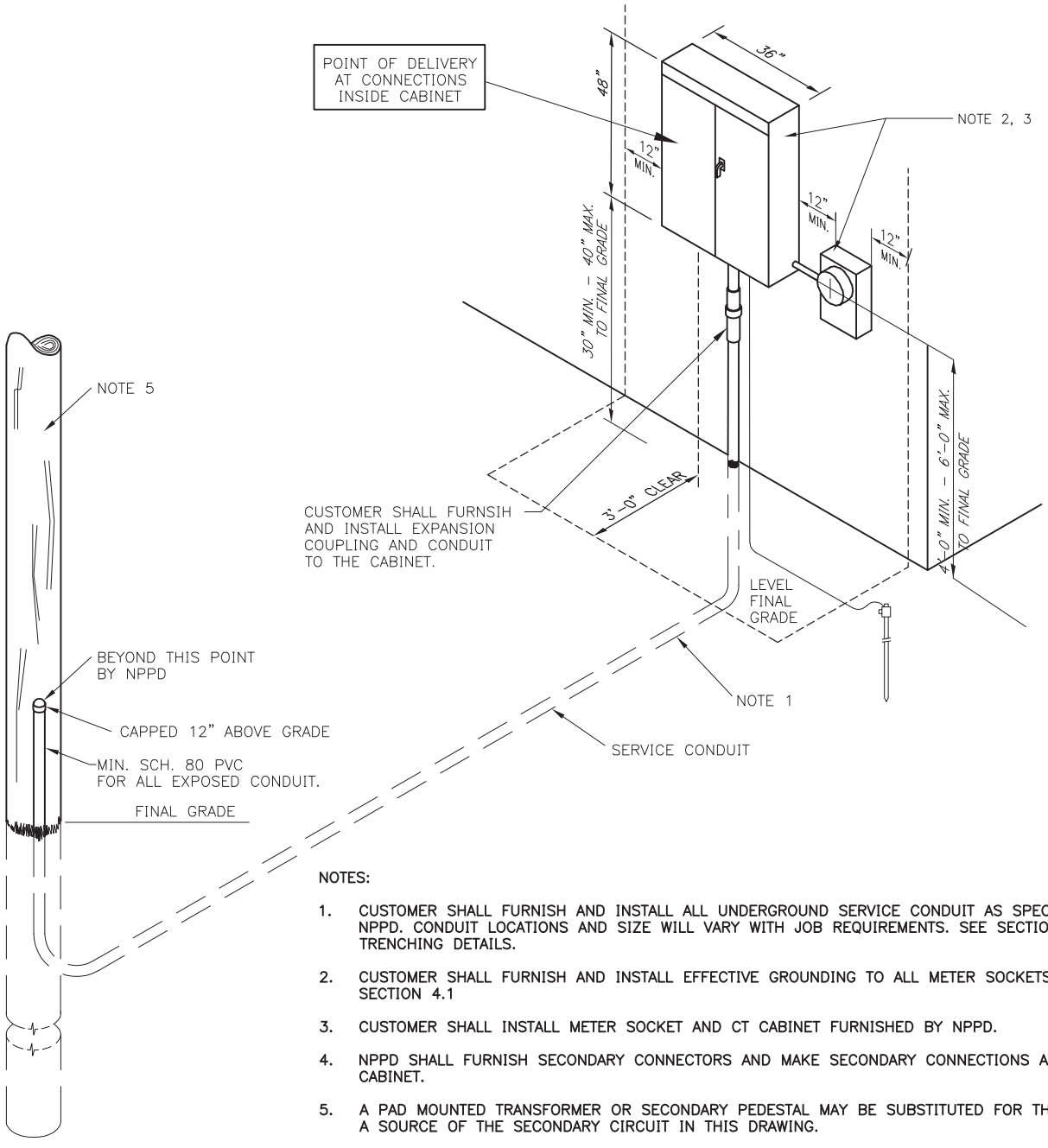
NOTES:

1. 6'–7" MAXIMUM TO CENTER OF GRIP OF OPERATING HANDLE WHEN IN ITS HIGHEST POSITION. Ref. NEC 404.8(A).
2. CUSTOMER IS RESPONSIBLE FOR LIGHTNING PROTECTION OF CUSTOMER OWNED EQUIPMENT.
3. DISCONNECT SWITCHES MUST BE NOMINALLY RATED NOT IN EXCESS OF 1000 VOLTS AND HAVE A SHORT–CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT. NEC 230.82(3)
4. CUSTOMER FURNISHES AND INSTALLS METER SOCKETS, ALL CONDUIT, FITTINGS, BUSHINGS, DISCONNECTS, AND GROUNDING SYSTEM AS REQUIRED
5. CONFIGURATION MAY VARY BASED ON INSTALLATION.
6. CUSTOMER SHALL PROVIDE PERMANENT IDENTIFICATION OF METER AT THE METER LOCATION.
7. NPPD LABEL STATING: DANGER–480 VOLTS, SOCKET MUST BE DE–ENERGIZED BEFORE REMOVING OR INSTALLING METER.

Description
460004787

UNDERGROUND SERVICE, 3PH CT CABINET ON BUILDING

2021



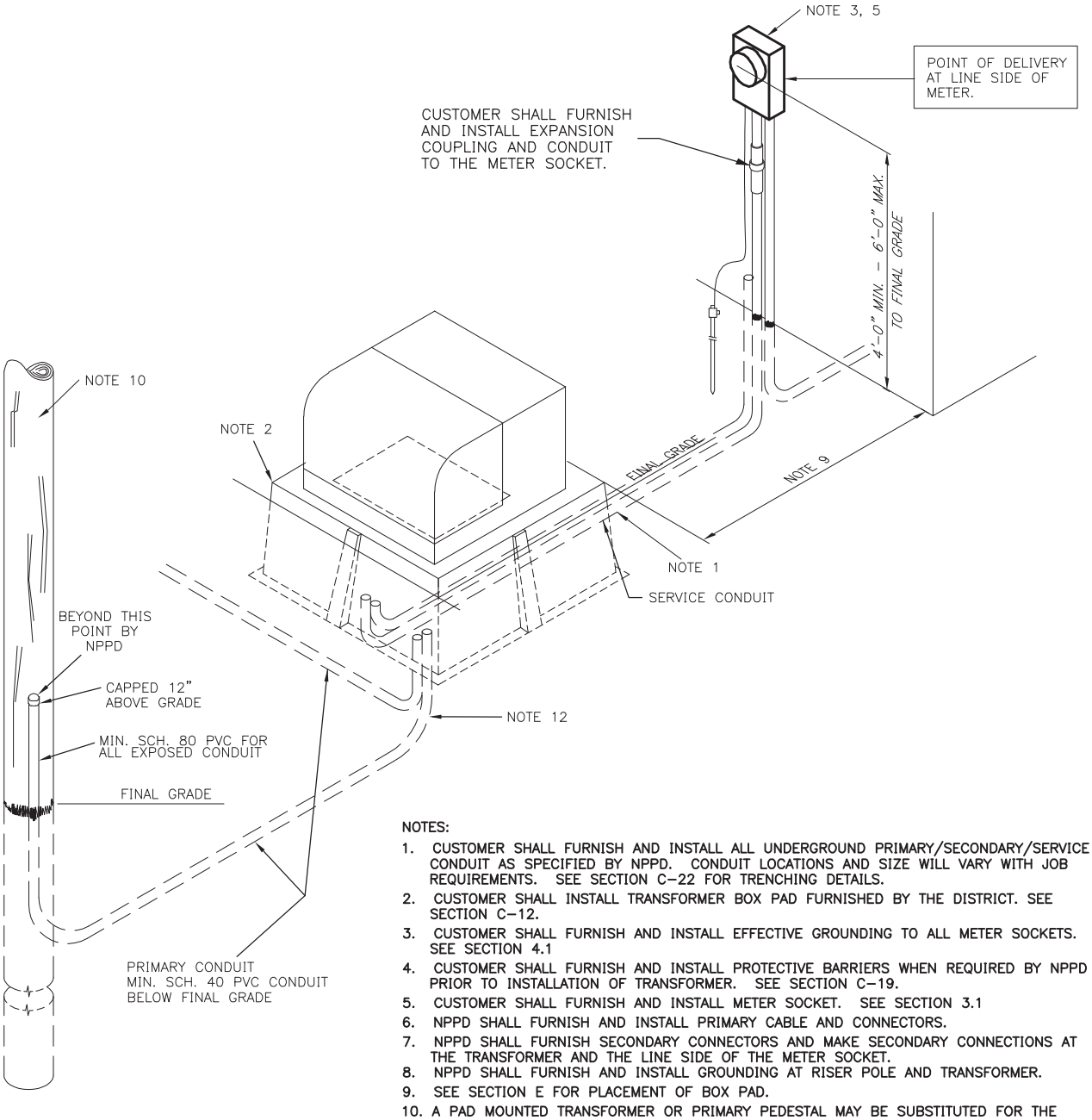
NOTES:

1. CUSTOMER SHALL FURNISH AND INSTALL ALL UNDERGROUND SERVICE CONDUIT AS SPECIFIED BY NPPD. CONDUIT LOCATIONS AND SIZE WILL VARY WITH JOB REQUIREMENTS. SEE SECTION C–22 FOR TRENCHING DETAILS.
2. CUSTOMER SHALL FURNISH AND INSTALL EFFECTIVE GROUNDING TO ALL METER SOCKETS. SEE SECTION 4.1
3. CUSTOMER SHALL INSTALL METER SOCKET AND CT CABINET FURNISHED BY NPPD.
4. NPPD SHALL FURNISH SECONDARY CONNECTORS AND MAKE SECONDARY CONNECTIONS AT THE CT CABINET.
5. A PAD MOUNTED TRANSFORMER OR SECONDARY PEDESTAL MAY BE SUBSTITUTED FOR THE POLE AS A SOURCE OF THE SECONDARY CIRCUIT IN THIS DRAWING.
6. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
7. SEE SECTION 3.4 FOR CONDUIT/ELBOW SIZING AND OTHER REQUIREMENTS.
8. CLEAR WORKING SPACE OF 12–INCHES SHALL BE MAINTAINED TO THE SIDES OF THE CT ENCLOSURE AND METER SOCKET ENCLOSURE.
9. CLEAR WORKING SPACE OF 3'–0" SHALL BE MAINTAINED IN FRONT OF CT AND METERSOCKET ENCLOSURES.
10. CT AND METER SOCKET ENCLOSURES SHALL BE MOUNTED ABOVE LEVEL FINAL GRADE.
11. CT AND METER SOCKET ENCLOSURES SHALL BE MOUNTED A MINIMUM OF 3–FEET FROM ANY BUILDING OPENINGS (DOORS AND WINDOWS).

Description
460004788

UNDERGROUND SERVICE, 1PH TRANSFORMER, SC METER ON BUILDING

2021



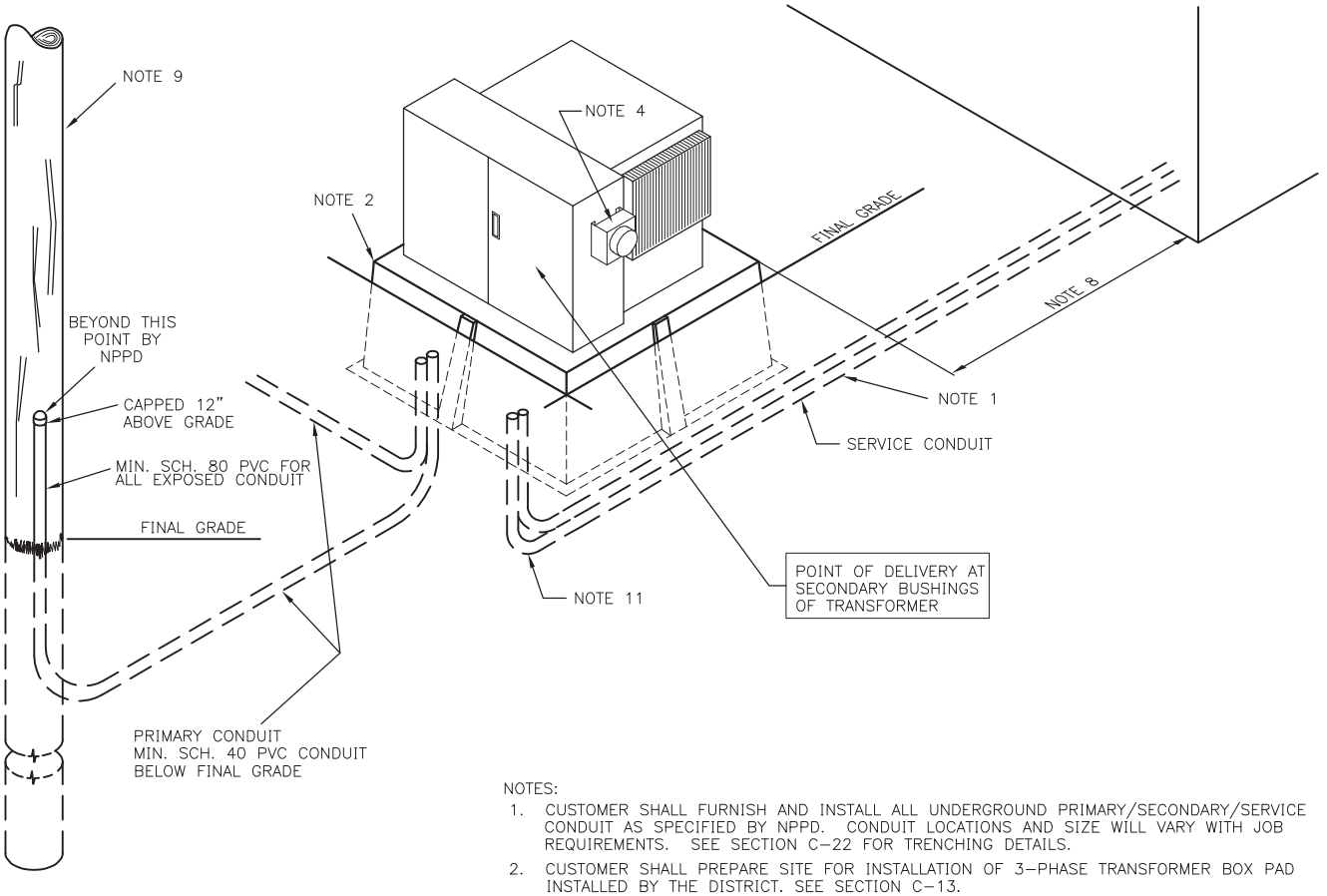
NOTES:

1. CUSTOMER SHALL FURNISH AND INSTALL ALL UNDERGROUND PRIMARY/SECONDARY/SERVICE CONDUIT AS SPECIFIED BY NPPD. CONDUIT LOCATIONS AND SIZE WILL VARY WITH JOB REQUIREMENTS. SEE SECTION C–22 FOR TRENCHING DETAILS.
2. CUSTOMER SHALL INSTALL TRANSFORMER BOX PAD FURNISHED BY THE DISTRICT. SEE SECTION C–12.
3. CUSTOMER SHALL FURNISH AND INSTALL EFFECTIVE GROUNDING TO ALL METER SOCKETS. SEE SECTION 4.1
4. CUSTOMER SHALL FURNISH AND INSTALL PROTECTIVE BARRIERS WHEN REQUIRED BY NPPD PRIOR TO INSTALLATION OF TRANSFORMER. SEE SECTION C–19.
5. CUSTOMER SHALL FURNISH AND INSTALL METER SOCKET. SEE SECTION 3.1
6. NPPD SHALL FURNISH AND INSTALL PRIMARY CABLE AND CONNECTORS.
7. NPPD SHALL FURNISH SECONDARY CONNECTORS AND MAKE SECONDARY CONNECTIONS AT THE TRANSFORMER AND THE LINE SIDE OF THE METER SOCKET.
8. NPPD SHALL FURNISH AND INSTALL GROUNDING AT RISER POLE AND TRANSFORMER.
9. SEE SECTION E FOR PLACEMENT OF BOX PAD.
10. A PAD MOUNTED TRANSFORMER OR PRIMARY PEDESTAL MAY BE SUBSTITUTED FOR THE POLE AS A SOURCE OF THE PRIMARY CIRCUIT IN THIS DRAWING.
11. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
12. SEE SECTION 3.4 FOR CONDUIT/ELBOW SIZING AND OTHER REQUIREMENTS.
13. THIS DRAWING APPLIES TO SINGLE CUSTOMERS BEING SERVED FROM A SINGLE PAD MOUNTED TRANSFORMER.

Description
460004789

UNDERGROUND SERVICE, 3PH TRANSFORMER, METER ON TRANSFORMER

2021



NOTES:

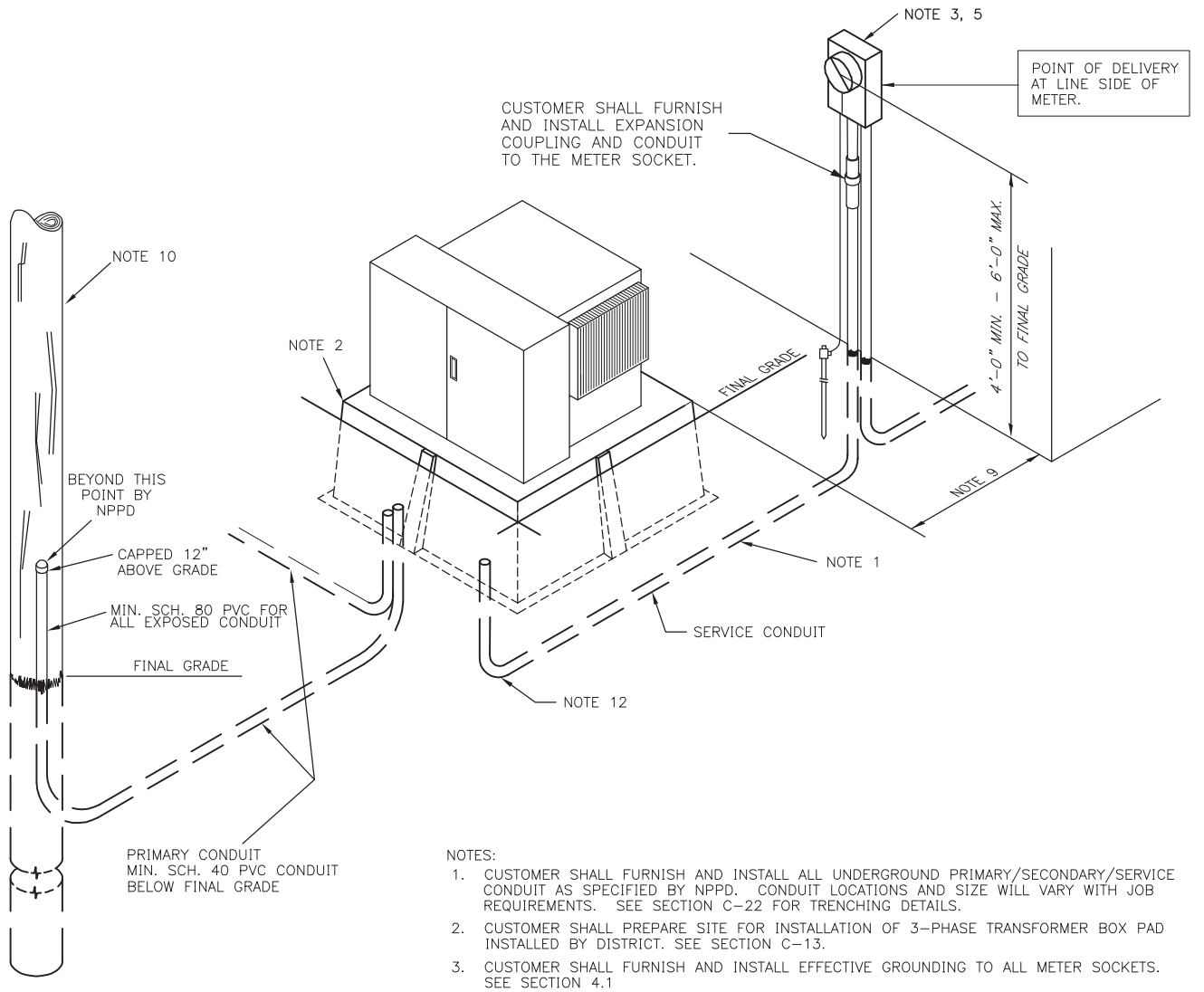
1. CUSTOMER SHALL FURNISH AND INSTALL ALL UNDERGROUND PRIMARY/SECONDARY/SERVICE CONDUIT AS SPECIFIED BY NPPD. CONDUIT LOCATIONS AND SIZE WILL VARY WITH JOB REQUIREMENTS. SEE SECTION C–22 FOR TRENCHING DETAILS.
2. CUSTOMER SHALL PREPARE SITE FOR INSTALLATION OF 3–PHASE TRANSFORMER BOX PAD INSTALLED BY THE DISTRICT. SEE SECTION C–13.
3. CUSTOMER SHALL FURNISH AND INSTALL PROTECTIVE BARRIERS WHEN REQUIRED BY NPPD PRIOR TO INSTALLATION OF TRANSFORMER. SEE SECTION C–19.
4. NPPD SHALL INSTALL METERING. SEE SECTION 4.1
5. NPPD SHALL FURNISH AND INSTALL PRIMARY CABLE AND CONNECTORS.
6. NPPD SHALL FURNISH SECONDARY CONNECTORS AND MAKE SECONDARY CONNECTIONS AT THE TRANSFORMER.
7. NPPD SHALL FURNISH AND INSTALL GROUNDING AT RISER POLE AND TRANSFORMER.
8. SEE SECTION E FOR PLACEMENT OF BOX PAD.
9. A PAD MOUNTED TRANSFORMER OR PRIMARY PEDESTAL MAY BE SUBSTITUTED FOR THE POLE AS A SOURCE OF THE PRIMARY CIRCUIT IN THIS DRAWING.
10. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
11. SEE SECTION 3.4 FOR CONDUIT/ELBOW SIZING AND OTHER REQUIREMENTS.
12. THIS DRAWING APPLIES TO SINGLE CUSTOMERS BEING SERVED FROM A SINGLE PAD MOUNTED TRANSFORMER.

Description

UNDERGROUND SERVICE, 3PH TRANSFORMER, SC METER ON BUILDING

460004791

2021



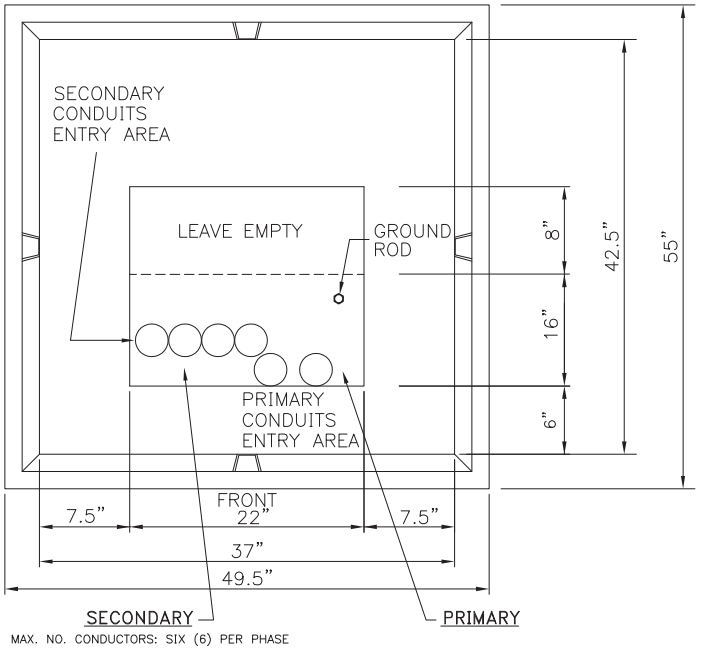
NOTES:

1. CUSTOMER SHALL FURNISH AND INSTALL ALL UNDERGROUND PRIMARY/SECONDARY/SERVICE CONDUIT AS SPECIFIED BY NPPD. CONDUIT LOCATIONS AND SIZE WILL VARY WITH JOB REQUIREMENTS. SEE SECTION C–22 FOR TRENCHING DETAILS.
2. CUSTOMER SHALL PREPARE SITE FOR INSTALLATION OF 3–PHASE TRANSFORMER BOX PAD INSTALLED BY DISTRICT. SEE SECTION C–13.
3. CUSTOMER SHALL FURNISH AND INSTALL EFFECTIVE GROUNDING TO ALL METER SOCKETS. SEE SECTION 4.1
4. CUSTOMER SHALL FURNISH AND INSTALL PROTECTIVE BARRIERS WHEN REQUIRED BY NPPD PRIOR TO INSTALLATION OF TRANSFORMER. SEE SECTION C–19.
5. CUSTOMER SHALL FURNISH AND INSTALL METER SOCKET. SEE SECTION 3.1
6. NPPD SHALL FURNISH AND INSTALL PRIMARY CABLE AND CONNECTORS.
7. NPPD SHALL FURNISH SECONDARY CONNECTORS AND MAKE SECONDARY CONNECTIONS AT THE TRANSFORMER AND THE LINE SIDE OF THE METER SOCKET.
8. NPPD SHALL FURNISH AND INSTALL GROUNDING AT RISER POLE AND TRANSFORMER.
9. SEE SECTION E FOR PLACEMENT OF BOX PAD.
10. A PAD MOUNTED TRANSFORMER OR PRIMARY PEDESTAL MAY BE SUBSTITUTED FOR THE POLE AS A SOURCE OF THE PRIMARY CIRCUIT IN THIS DRAWING.
11. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
12. SEE SECTION 3.4 FOR CONDUIT/ELBOW SIZING AND OTHER REQUIREMENTS.
13. THIS DRAWING APPLIES TO SINGLE CUSTOMERS BEING SERVED FROM A SINGLE PAD MOUNTED TRANSFORMER.

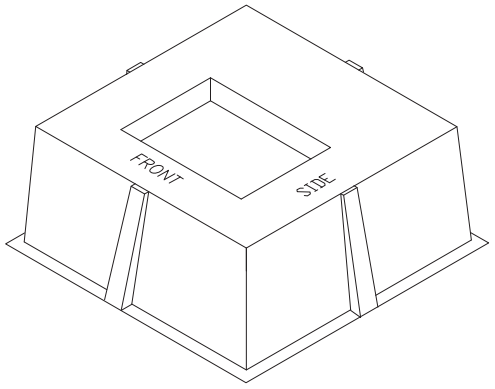
Description
UNDERGROUND SERVICE, 1PH BOX PAD

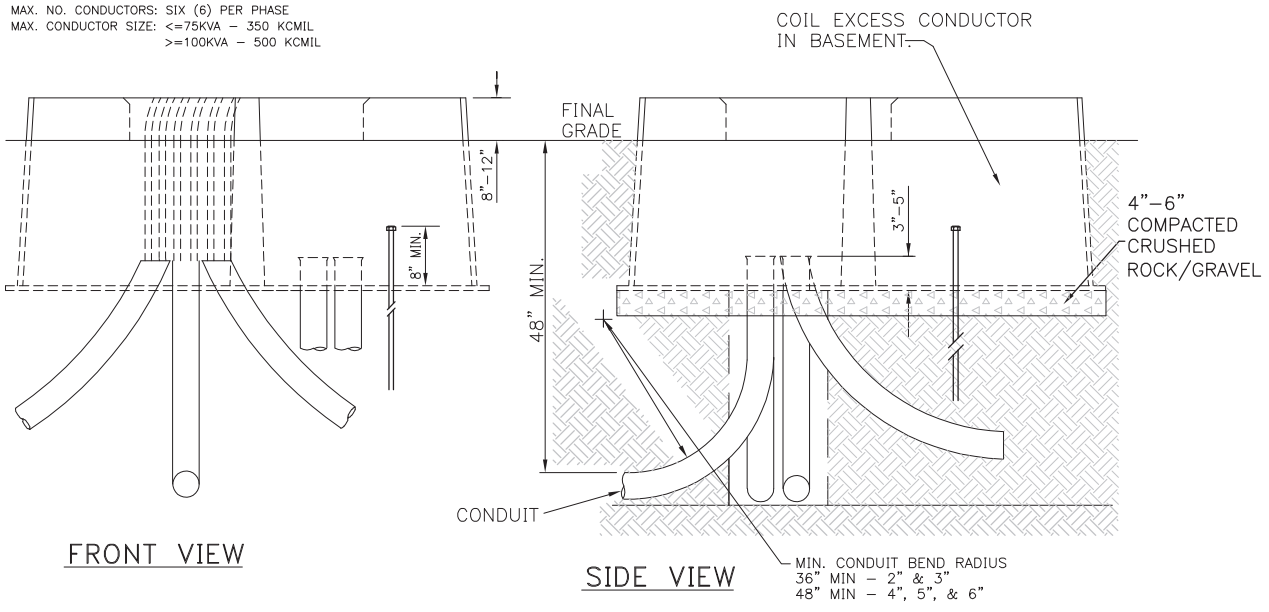
460004792
2021

TOP VIEW



MAX. NO. CONDUCTORS: SIX (6) PER PHASE
MAX. CONDUCTOR SIZE: <=75KVA – 350 KCMIL
>=100KVA – 500 KCMIL





FRONT VIEW

SIDE VIEW

NOTES:

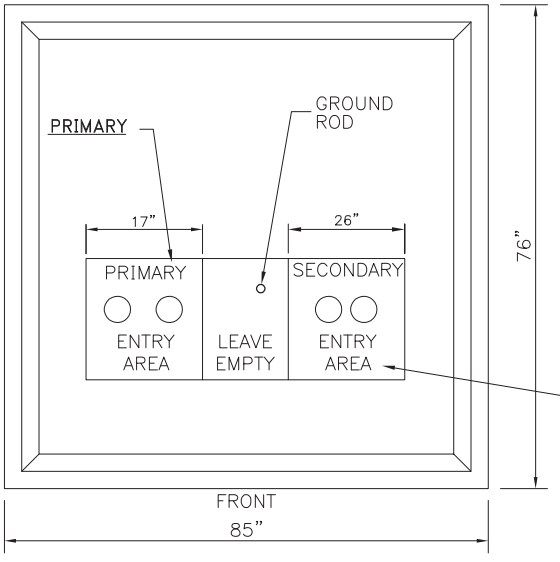
1. MINIMUM CLEARANCE AROUND PAD
   BACK=36"
   SIDES=36"
   FRONT=120"(FOR HOT STICK MAINTENANCE)
   PAD LOCATIONS MUST ALSO MEET NEC, ARTICLE 450–27 AND NESC, SECTION 15, ARTICLE 152–A.2. REFER TO SECTION E FOR GUIDELINES REGARDING OUTDOOR LOCATION OF OIL INSULATED EQUIPMENT NEAR BUILDINGS.
2. TRANSFORMERS LOCATED IN AREAS EXPOSED TO VEHICULAR TRAFFIC SHALL BE PROTECTED ON ALL EXPOSED SIDES. SEE SECTION C–19.
3. CUSTOMER SHALL FURNISH ALL CONDUIT BEYOND THE POINT OF DELIVERY. CONDUIT TO BE ELECTRICAL GRADE. PRIMARY CONDUIT ELBOWS OR BENDS TO BE AS SPECIFIED BY NPPD.
4. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
5. SERVICE CONDUCTORS SHALL EXTEND AT LEAST SIX (6) FEET ABOVE THE MOUNTING SURFACE OF THE PAD.
6. GROUND ROD TO EXTEND 8" ABOVE THE COMPACTED CRUSHED ROCK/GRAVEL BASE.
7. FIBERGLASS BOX PAD SHALL BE PLACED ON 4"–6" OF COMPACTED CRUSHED ROCK OR GRAVEL. THE CRUSHED ROCK OR GRAVEL SHALL BE NO LARGER THAN THE 3/4" SIEVE SIZE. CRUSHED CONCRETE, PEA GRAVEL, AND SAND ARE NOT ACCEPTABLE FOUNDATION MATERIALS.
8. NPPD SHALL SPECIFY TRANSFORMER SIZE.

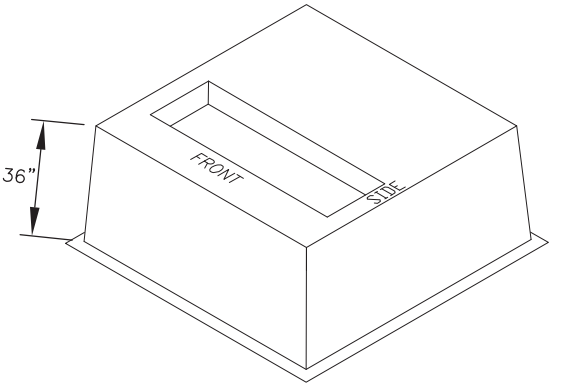
Description
460004793

UNDERGROUND SERVICE, 3PH BOX PAD

2021

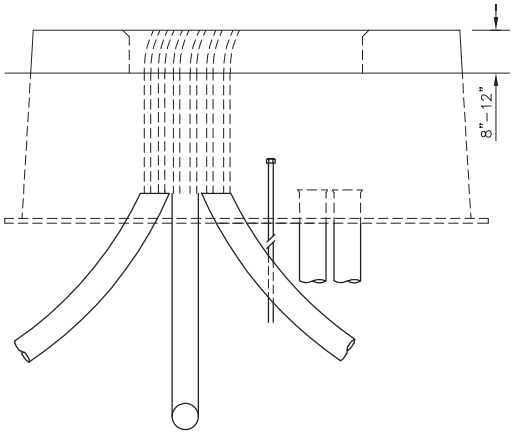
TOP VIEW



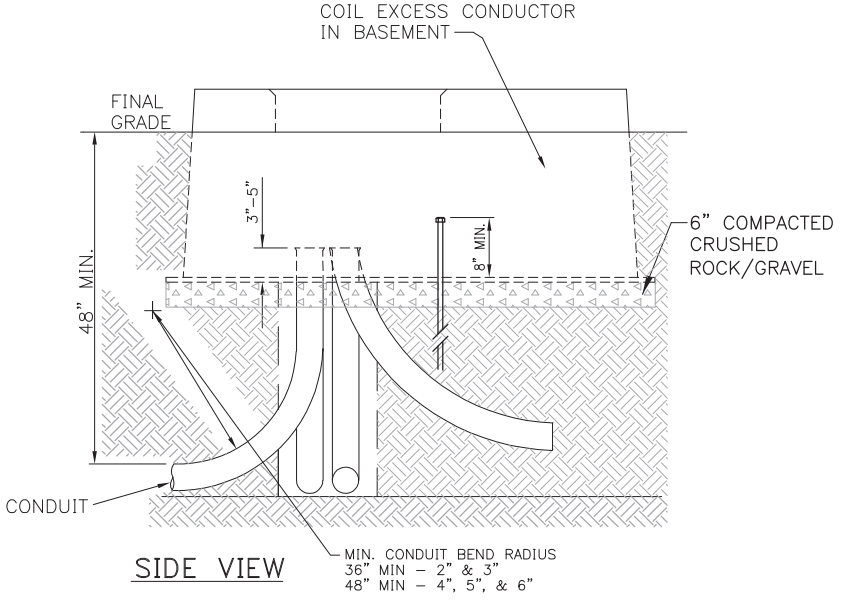


SECONDARY

MAX. NO. CONDUCTORS: <= 500KVA SIX (6) PER PHASE
MAX. NO. CONDUCTORS: > 500KVA EIGHT (8) PER PHASE
MAX. CONDUCTOR SIZE: 750 kcmil
MAY ONLY BE PLACED IN THE SECONDARY ENTRY AREA



FRONT VIEW

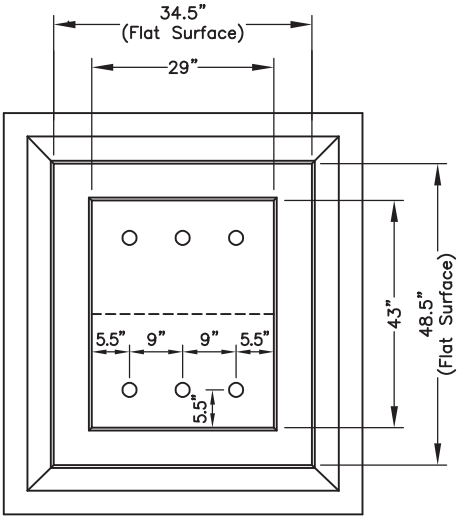


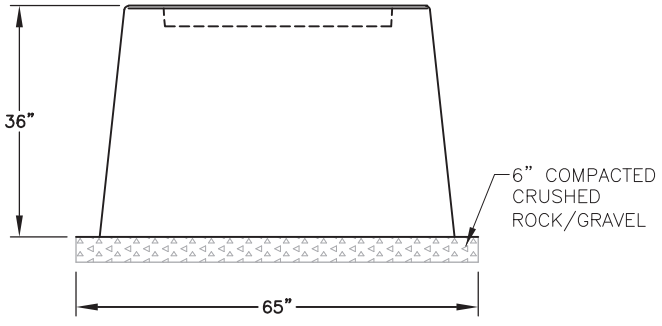
SIDE VIEW

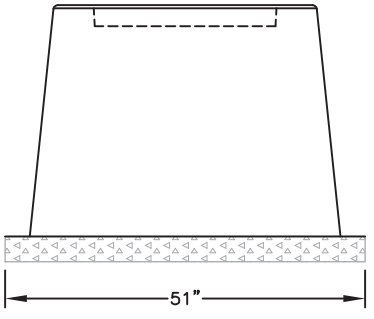
NOTES:

1. MINIMUM CLEARANCE AROUND PAD
   BACK=36"
   SIDES=36"
   FRONT=120"(FOR HOT STICK MAINTENANCE)
   PAD LOCATIONS MUST ALSO MEET NEC, ARTICLE 450-27 AND NESC, SECTION 15, ARTICLE 152-A.2. REFER TO SECTION E FOR GUIDELINES REGARDING OUTDOOR LOCATION OF OIL INSULATED EQUIPMENT NEAR BUILDINGS.
2. TRANSFORMERS LOCATED IN AREAS EXPOSED TO VEHICULAR TRAFFIC SHALL BE PROTECTED ON ALL EXPOSED SIDES. SEE SECTION C-19.
3. CUSTOMER SHALL FURNISH ALL CONDUIT BEYOND THE POINT OF DELIVERY. CONDUIT TO BE ELECTRICAL GRADE. PRIMARY CONDUIT ELBOWS OR BENDS TO BE AS SPECIFIED BY NPPD. SEE SECTION 3.4.
4. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
5. SERVICE CONDUCTORS SHALL EXTEND AT LEAST SIX (6) FEET ABOVE THE MOUNTING SURFACE OF THE PAD.
6. GROUND ROD TO EXTEND 8" ABOVE THE COMPACTED CRUSHED ROCK/GRAVEL BASE.
7. CONCRETE BOX PAD SHALL BE PLACED ON 6" OF COMPACTED CRUSHED ROCK OR GRAVEL. THE CRUSHED ROCK OR GRAVEL SHALL BE NO LARGER THAN THE 3/8" SIEVE SIZE. CRUSHED CONCRETE, PEA GRAVEL, AND SAND ARE NOT ACCEPTABLE FOUNDATION MATERIALS.
8. NPPD SHALL SPECIFY TRANSFORMER SIZE.

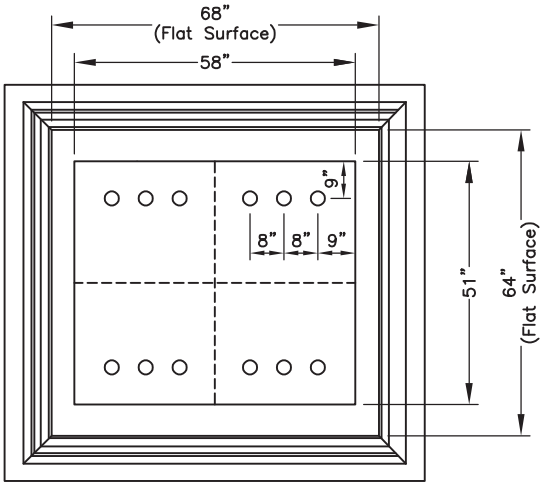
PMH 03/04

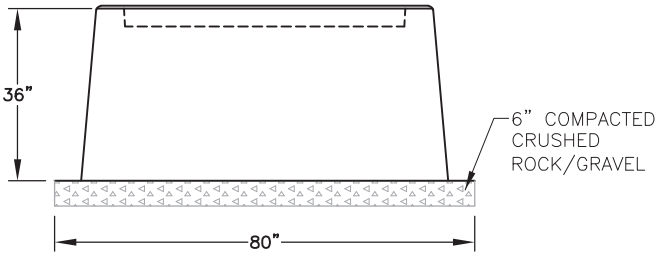


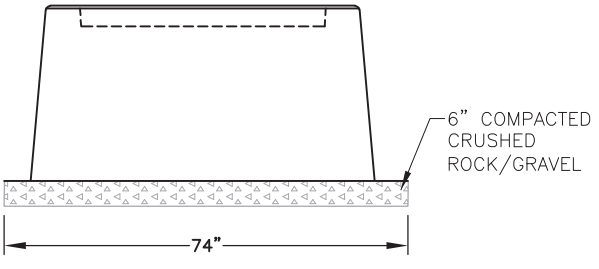




PMH 09/12







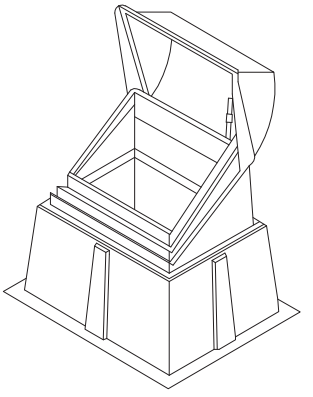
NOTES:

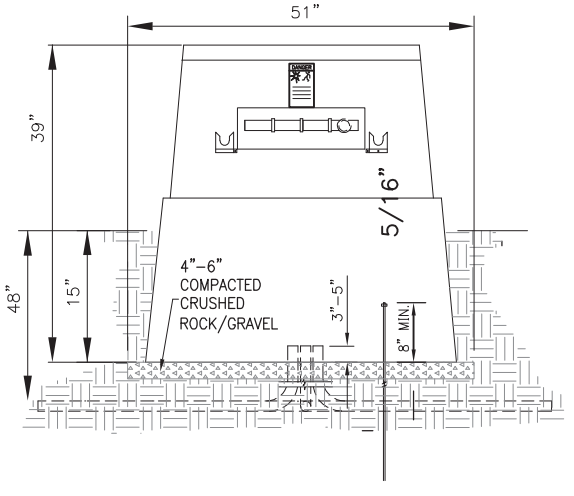
1. MINIMUM CLEARANCE AROUND PAD
   BACK=120" (FOR HOT STICK MAINTENANCE)
   SIDES=36"
   FRONT=120"(FOR HOT STICK MAINTENANCE)
   PAD LOCATIONS MUST ALSO MEET NEC, ARTICLE 490 AND NESC, SECTION 18.
2. SWITCHGEAR LOCATED IN AREAS EXPOSED TO VEHICULAR TRAFFIC SHALL BE PROTECTED ON ALL EXPOSED SIDES. SEE SECTION C-21.
3. CUSTOMER SHALL FURNISH ALL CONDUIT BEYOND THE POINT OF DELIVERY. CONDUIT TO BE ELECTRICAL GRADE. PRIMARY CONDUIT ELBOWS OR BENDS TO BE AS SPECIFIED BY NPPD. SEE SECTION 3.4.
4. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
5. SERVICE CONDUCTORS SHALL EXTEND AT LEAST SIX (6) FEET ABOVE THE MOUNTING SURFACE OF THE PAD.
6. GROUND ROD TO EXTEND 8" ABOVE THE COMPACTED CRUSHED ROCK/GRAVEL BASE.
7. CONCRETE BOX PAD SHALL BE PLACED ON 6" OF COMPACTED CRUSHED ROCK OR GRAVEL. THE CRUSHED ROCK OR GRAVEL SHALL BE NO LARGER THAN THE 3/8" SIEVE SIZE. CRUSHED CONCRETE, PEA GRAVEL, AND SAND ARE NOT ACCEPTABLE FOUNDATION MATERIALS.
8. NPPD SHALL SPECIFY SWITCHGEAR TYPE.

Description
460005342

UNDERGROUND SERVICE, 1PH JUNCTION MODULE

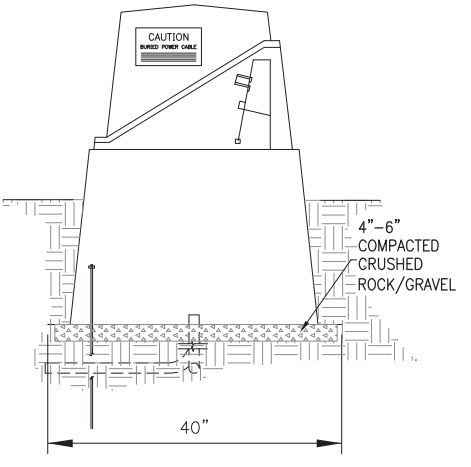
2021





FRONT VIEW
(DOOR REMOVED)

FINAL GRADE



SIDE VIEW

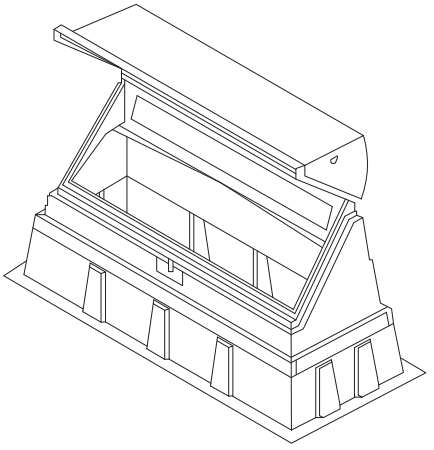
NOTES:

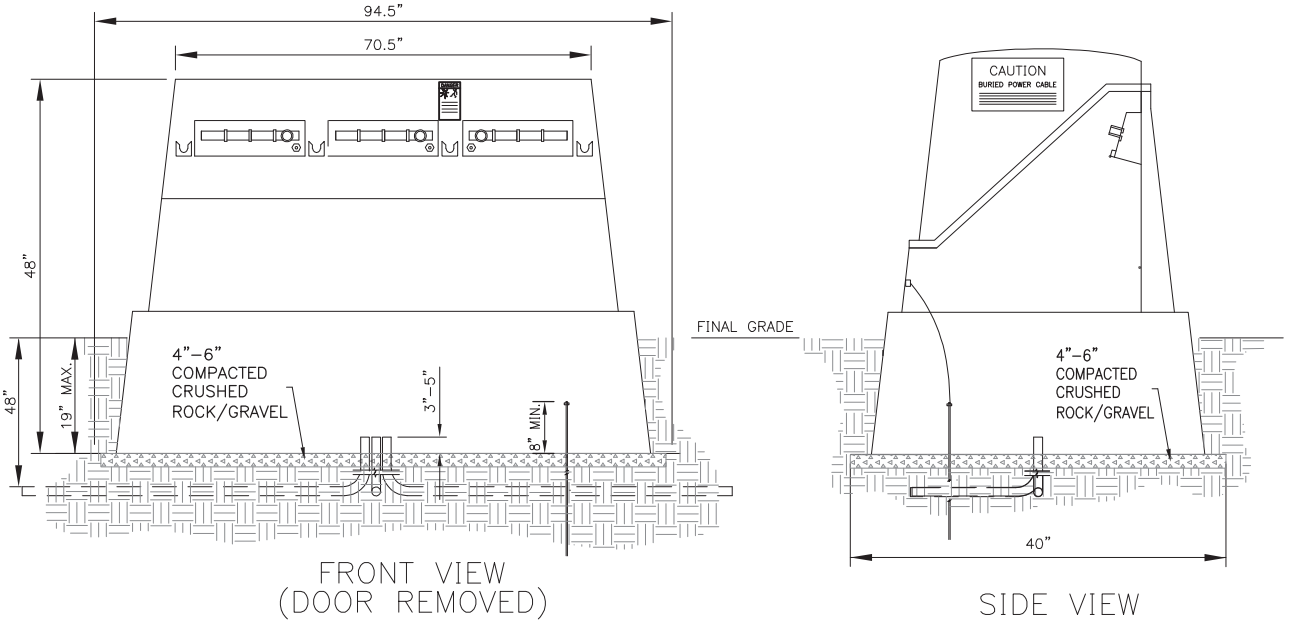
1. MINIMUM CLEARANCE AROUND PAD
   BACK=36"
   SIDES=36"
   FRONT=120"(FOR HOT STICK MAINTENANCE)
2. JUNCTION MODULES LOCATED IN AREAS EXPOSED TO VEHICULAR TRAFFIC SHALL BE PROTECTED ON ALL EXPOSED SIDES SUPPLIED & INSTALLED BY THE CUSTOMER AS PER SECTION C–20.
3. CONDUIT TO BE ELECTRICAL GRADE. PRIMARY CONDUIT ELBOWS OR BENDS TO BE AS SPECIFIED BY NPPD.
4. CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
5. CONDUCTORS SHALL EXTEND AT LEAST FOUR (4) FEET ABOVE THE COMPACTED CRUSHED ROCK/GRAVEL.
6. GROUND ROD TO EXTEND 8" ABOVE THE COMPACTED CRUSHED ROCK/GRAVEL.
7. JUNCTION MODULE SHALL BE PLACED ON 4"–6" OF COMPACTED CRUSHED ROCK OR GRAVEL. THE GRAVEL SHALL BE NO LARGER THAN THE 3/4" SIEVE SIZE. CRUSHED CONCRETE, PEA GRAVEL, AND SAND ARE NOT ACCEPTABLE FOUNDATION MATERIALS.

Description
460005341

UNDERGROUND SERVICE, 3PH JUNCTION MODULE

2021



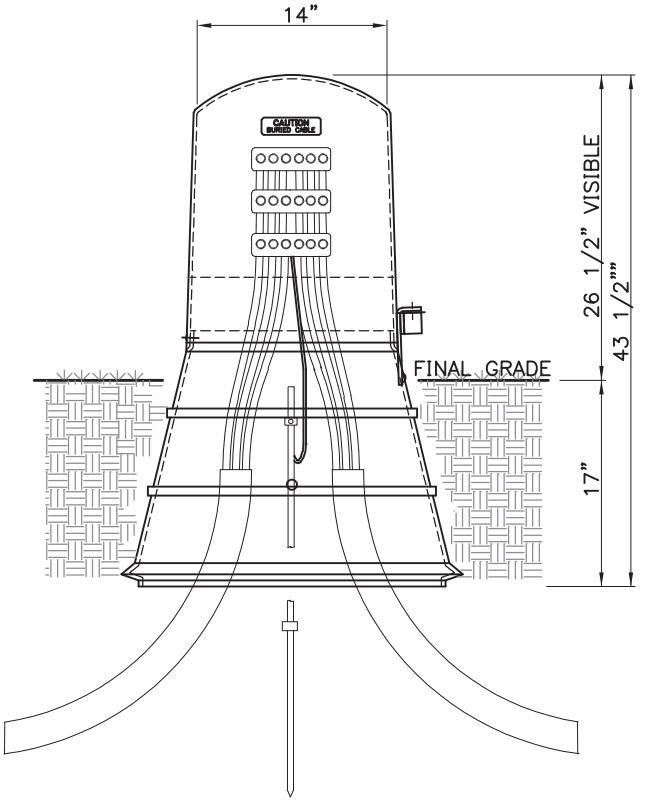


FRONT VIEW
(DOOR REMOVED)

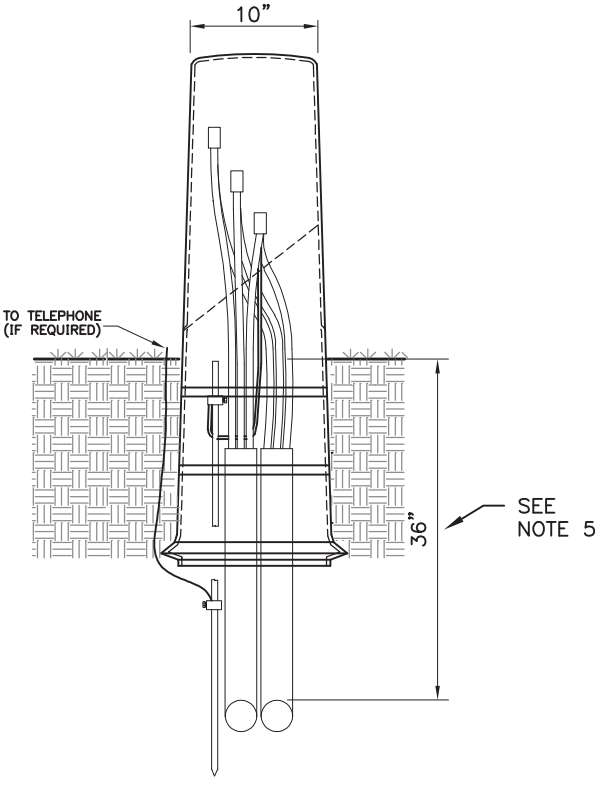
SIDE VIEW

NOTES:

1. MINIMUM CLEARANCE AROUND PAD
   BACK=36"
   SIDES=36"
   FRONT=120"(FOR HOT STICK MAINTENANCE)
2. JUNCTION MODULES LOCATED IN AREAS EXPOSED TO VEHICULAR TRAFFIC SHALL BE PROTECTED ON ALL EXPOSED SIDES SUPPLIED & INSTALLED BY THE CUSTOMER AS PER SECTION C–20.
3. CONDUIT TO BE ELECTRICAL GRADE. PRIMARY CONDUIT ELBOWS OR BENDS TO BE AS SPECIFIED BY NPPD.
4. CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
5. CONDUCTORS SHALL EXTEND AT LEAST FOUR (4) FEET ABOVE THE COMPACTED CRUSHED ROCK/GRAVEL.
6. GROUND ROD TO EXTEND 8" ABOVE THE COMPACTED CRUSHED ROCK/GRAVEL.
7. JUNCTION MODULE SHALL BE PLACED ON 4"–6" OF COMPACTED CRUSHED ROCK OR GRAVEL. THE CRUSHED ROCK OR GRAVEL SHALL BE NO LARGER THAN THE 3/4" SIEVE SIZE. CRUSHED CONCRETE, PEA GRAVEL, AND SAND ARE NOT ACCEPTABLE FOUNDATION MATERIALS.



FRONT VIEW



SIDE VIEW

SECONDARY SERVICE PEDESTAL

FOR #350 KCMIL SECONDARY CABLE
WITH UP TO 4–#4/0 SERVICES

NOTES:

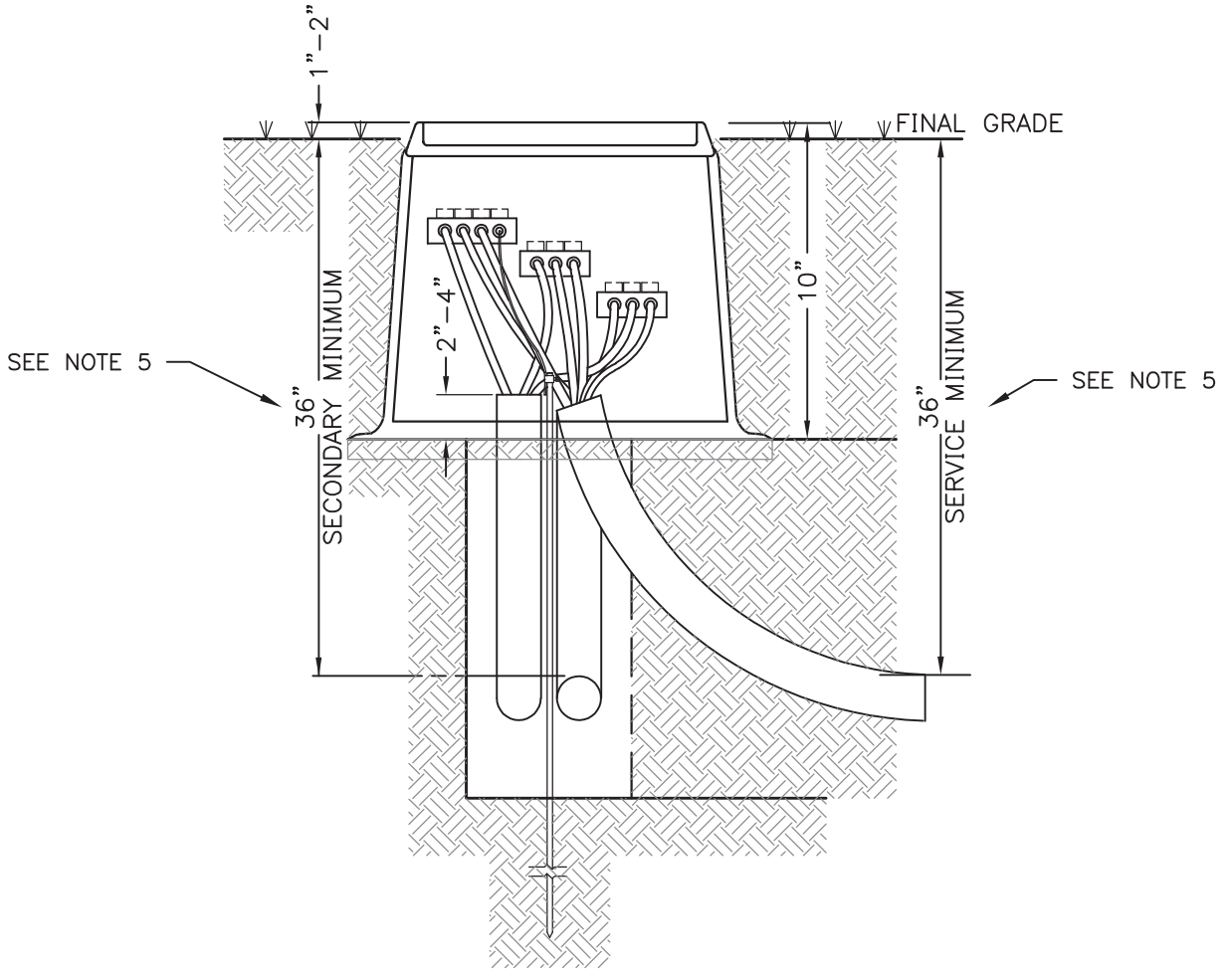
1. MINIMUM CLEARANCE AROUND PEDESTAL
   BACK=36"
   SIDES=36"
   FRONT=36"

2 CONDUIT SHALL BE ELECTRICAL GRADE. ELBOWS OR BENDS AS SPECIFIED IN SECTION 3.4.

3. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.

4. GROUND ROD TO EXTEND 8" ABOVE GRADE.

5. MAY BE REDUCED TO 24 INCHES WHEN USED IN STREETLIGHT APPLICATIONS. SEE C–22.



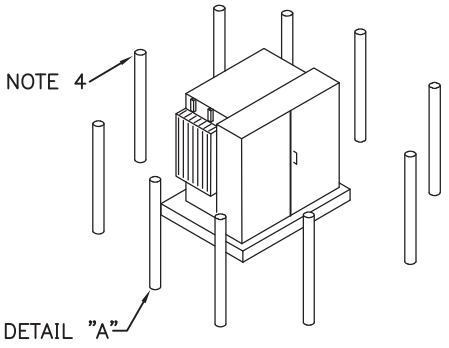
END VIEW

NOTES:

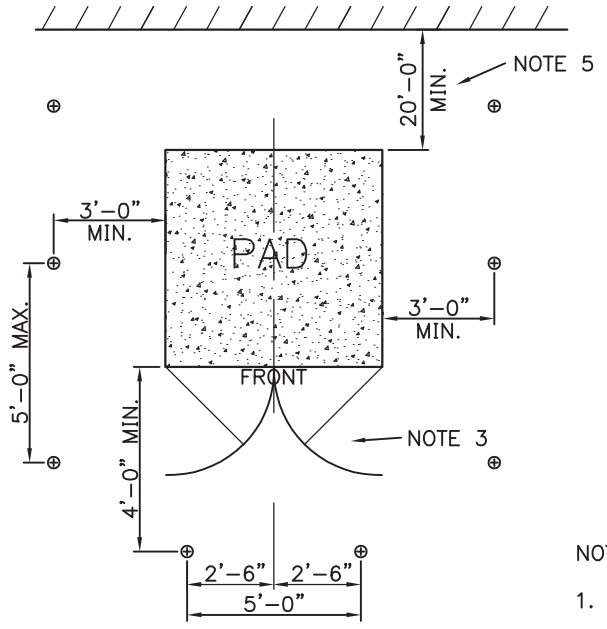
1. MINIMUM CLEARANCE AROUND PAD=24".
2. CONDUIT SHALL BE ELECTRICAL GRADE. ELBOWS OR BENDS AS SPECIFIED IN SECTION 3.4.
3. ALL CONDUITS SHALL INCLUDE A PULL ROPE OR TWINE WITH A BREAK STRENGTH RATING OF AT LEAST 300 LBS.
4. GROUND ROD TO EXTEND 4" ABOVE GRADE.
5. MAY BE REDUCED TO 24 INCHES WHEN USED IN STREETLIGHT APPLICATIONS. SEE C–22.
6. THIS UNIT IS NOT SUITABLE FOR VEHICULAR TRAFFIC.

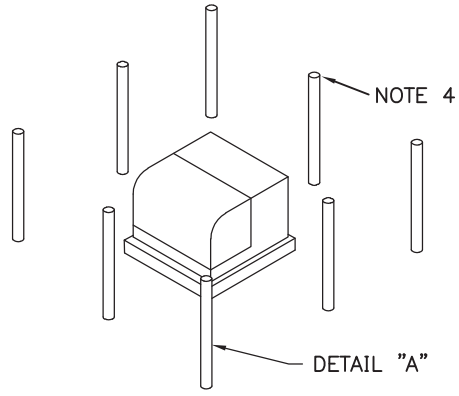
Description
UNDERGROUND SERVICE, PAD TRANSFORMER PROTECTIVE BARRIER

460004794
2021

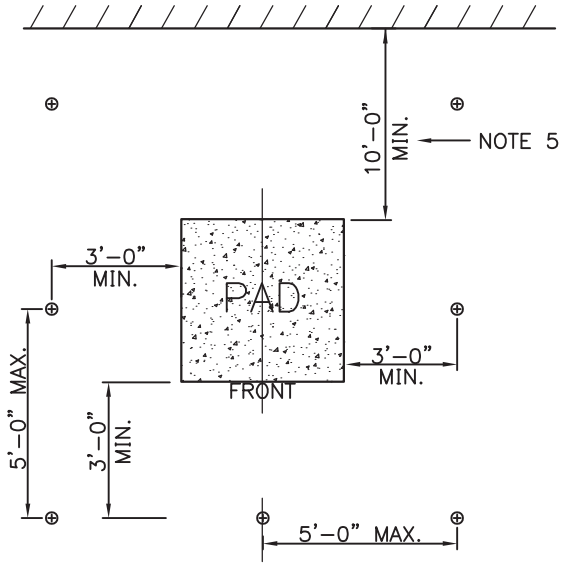


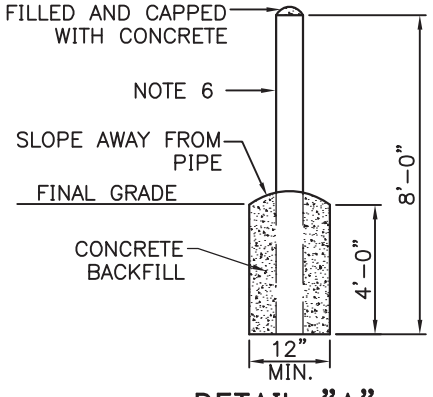
3ø PADMOUNTED TRANSFORMER





1ø PADMOUNTED TRANSFORMER

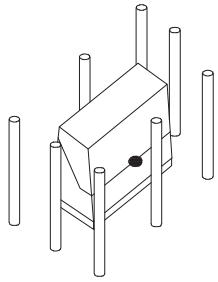




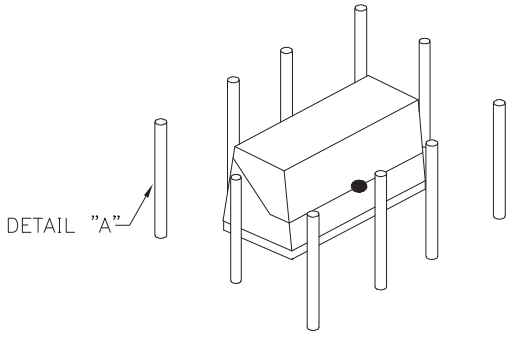
DETAIL "A"

NOTES:

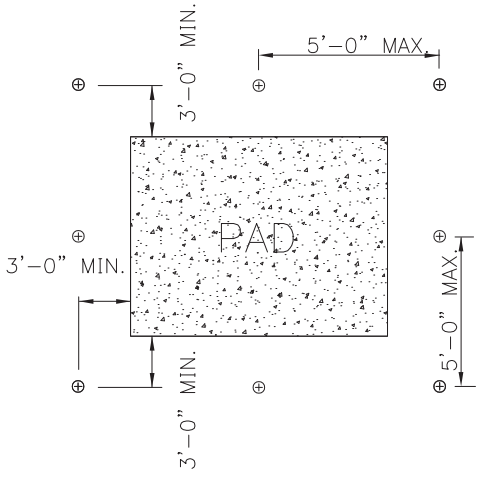
1. CHANGES TO BARRIER LOCATION MUST BE DISTRICT APPROVED BY LOCAL DISTRIBUTION SUPERINTENDENT. THE NUMBER OF BARRIERS MAY CHANGE BASED ON FIELD CONDITIONS.
2. SEE SECTION E FOR GUIDELINES REGARDING OUTDOOR LOCATION OF OIL INSULATED EQUIPMENT NEAR BUILDINGS.
3. AREA WITHIN PROTECTIVE BARRIERS MUST REMAIN CLEAR FOR OPENING OF EQUIPMENT DOORS AND MAINTENANCE.
4. BOLLARDS AT REAR OF TRANSFORMER MAY BE REMOVED WHEN DISTANCE BETWEEN BUILDING AND TRANSFORMER BOX PAD IS LESS THAN 5 FEET.
5. MINIMUM CLEARANCE MAY BE REDUCED TO 3' IF WALL HAS A FIRE RESISTANCE RATING OF 3 HOURS OR GREATER.
6. USE 4 INCH SCHEDULE 40 IPS STEEL PIPE FILLED WITH CONCRETE.
7. 6" "I" BEAMS INSTALLED IN THE SAME MANNER ARE ALSO ACCEPTABLE. END CUTS MUST BE ROUNDED.

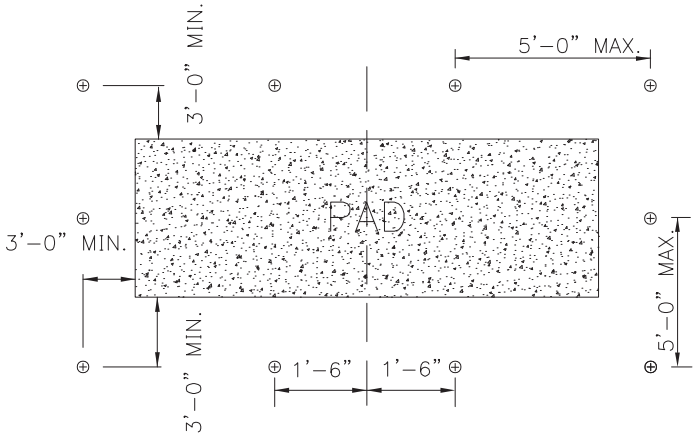


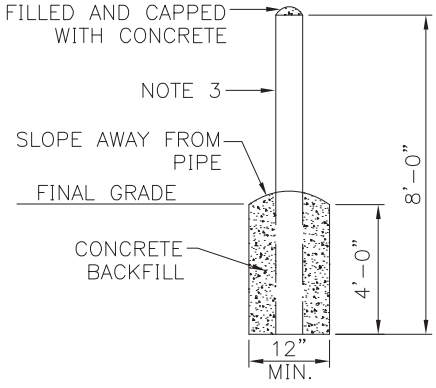
1ø JUNCTION MODULE



3ø JUNCTION MODULE



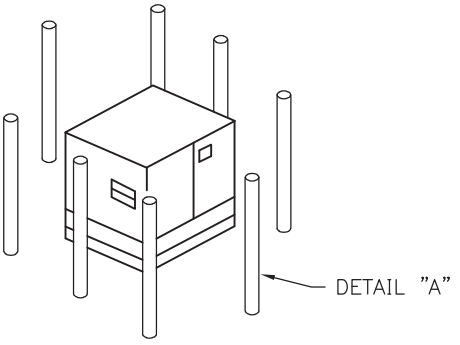




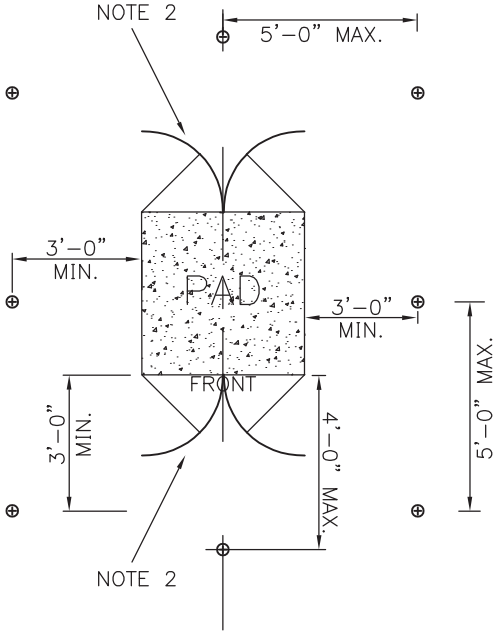
DETAIL "A"

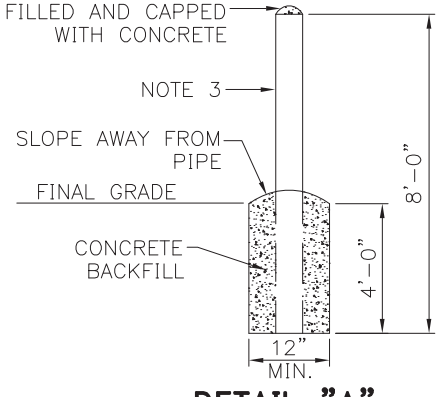
NOTES:

1. CHANGES TO BARRIER LOCATION MUST BE DISTRICT APPROVED BY LOCAL DISTRIBUTION SUPERINTENDENT. THE NUMBER OF BARRIERS MAY CHANGE BASED ON FIELD CONDITIONS.
2. AREA WITHIN PROTECTIVE BARRIERS MUST REMAIN CLEAR FOR OPENING OF EQUIPMENT DOORS AND MAINTENANCE.
3. USE 4 INCH SCHEDULE 40 IPS STEEL PIPE FILLED WITH CONCRETE.
4. 6" "I" BEAMS INSTALLED IN THE SAME MANNER ARE ALSO ACCEPTABLE. END CUTS MUST BE ROUNDED.



SWITCHGEAR

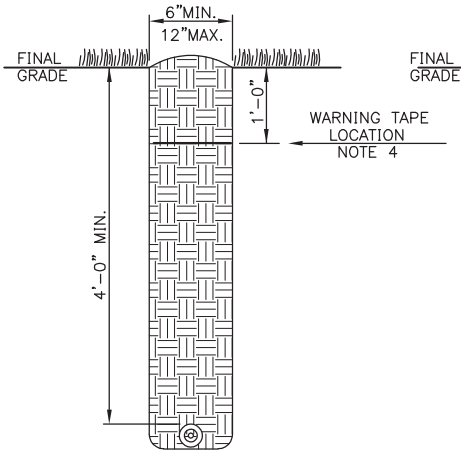




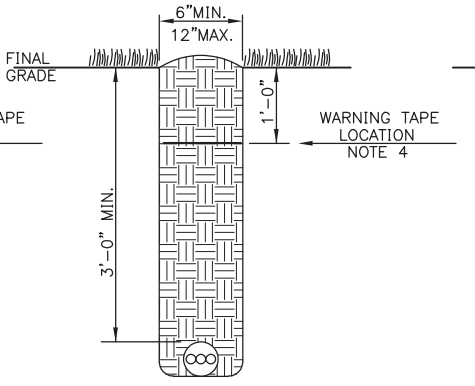
DETAIL "A"

NOTES:

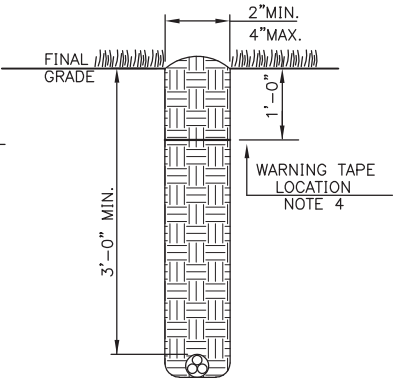
1. CHANGES TO BARRIER LOCATION MUST BE DISTRICT APPROVED BY LOCAL DISTRIBUTION SUPERINTENDENT. THE NUMBER OF BARRIERS MAY CHANGE BASED ON FIELD CONDITIONS.
2. AREA WITHIN PROTECTIVE BARRIERS MUST REMAIN CLEAR FOR OPENING OF EQUIPMENT DOORS AND MAINTENANCE.
3. USE 4 INCH SCHEDULE 40 IPS STEEL PIPE FILLED WITH CONCRETE.
4. 6" "I" BEAMS INSTALLED IN THE SAME MANNER ARE ALSO ACCEPTABLE. END CUTS MUST BE ROUNDED.



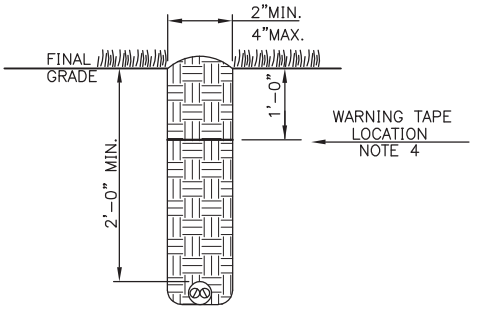
DETAIL "A"
PRIMARY ONLY



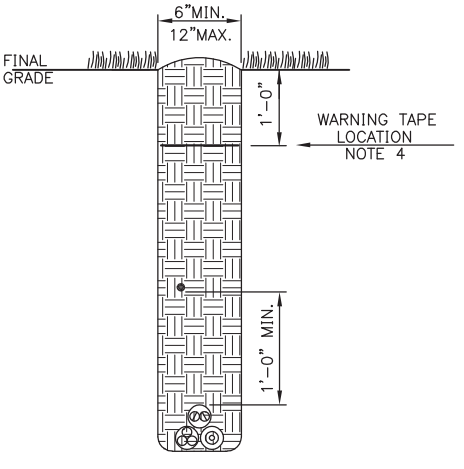
DETAIL "B"
SECONDARY ONLY



DETAIL "C"
SERVICE



DETAIL "D"
STREET LIGHT



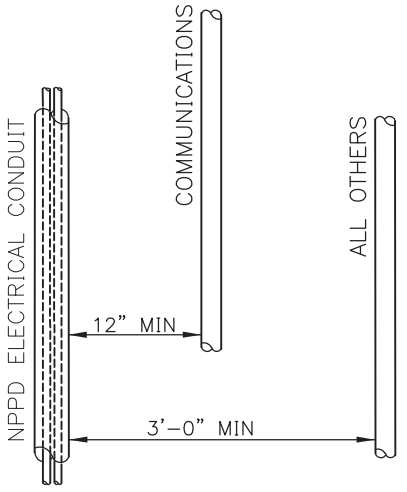
DETAIL "E"
JOINT SEPARATION

NOTES:

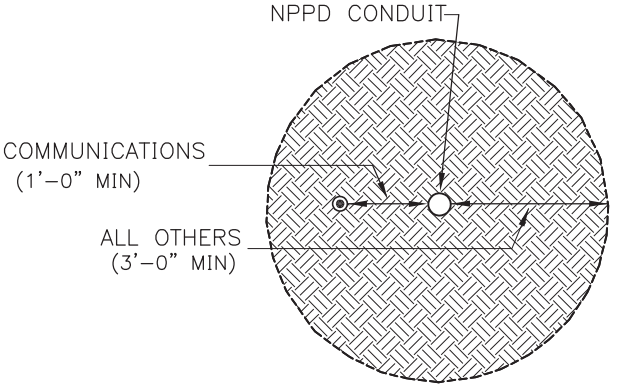
1. SMOOTH GRADING OF THE BOTTOM OF THE TRENCH IS ESSENTIAL.
2. THE TRENCH WIDTH MAY BE VARIED TO SUIT TRENCHING EQUIPMENT AND SOIL CONDITIONS PROVIDED THAT MINIMUM CABLE SEPARATIONS ARE OBSERVED.
3. THE SYMBOL "●" IS SHOWN TO INDICATE COMMUNICATIONS IN A JOINTLY USED TRENCH. THE COMMUNICATION UTILITY STANDARDS WILL SPECIFY THE CABLE ARRANGEMENT & SEPARATION REQUIREMENTS.
4. WARNING TAPE (STOCK CODE 1349035) TO BE LOCATED ONE FOOT BELOW GROUND LINE.
5. THE DISTRICT SHALL INSPECT AND APPROVE ALL TRENCHES AND CONDUIT INSTALLATIONS PRIOR TO BACK FILL.

LEGEND

- ◎ PRIMARY CABLE
- ○○○ SECONDARY CABLE
- SERVICE CABLE
- ⊘⊘ STREET LIGHT CABLE, MULTIPLE
- ● COMMUNICATIONS
- COMPACTED BACKFILL



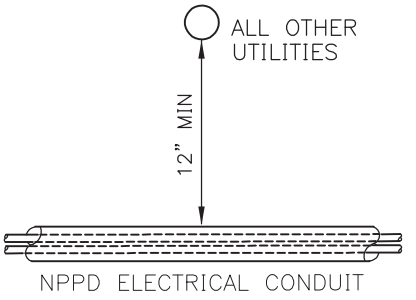
PARALLEL LAY CONDUIT



RADIAL SEPARATION OF PARALLEL LAY CONDUIT

CROSSOVER

MAINTAIN 12" MINIMUM SEPARATION AT ALL POINTS WHERE UTILITIES CROSS OVER EACH OTHER.



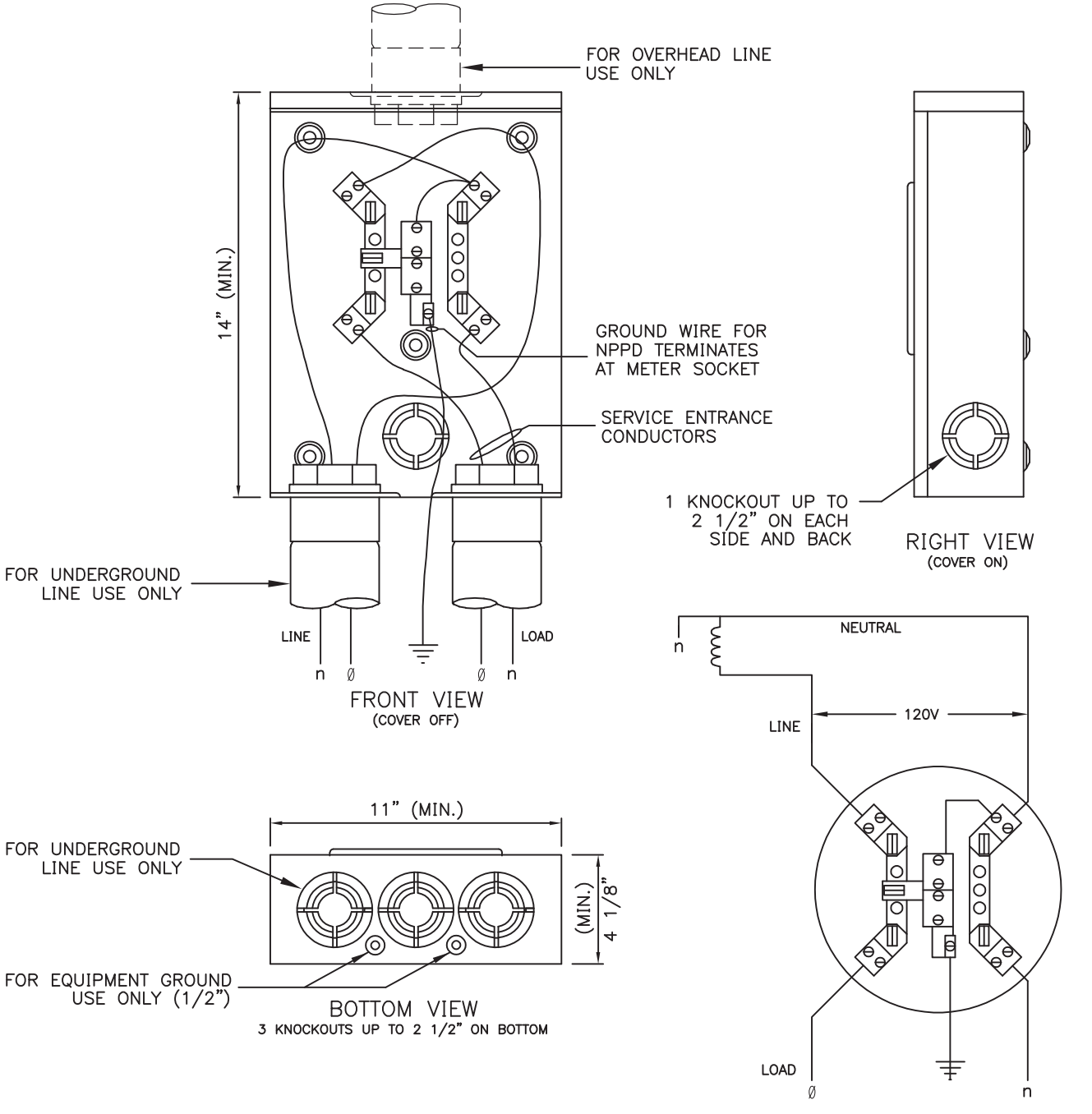
NOTES:

1. EVERY EFFORT MUST BE MADE TO OFFSET PARALLEL RUNS AS MUCH AS POSSIBLE. EXCEPTIONS WITH NPPD ENGINEERING APPROVAL ONLY.
2. THE BOTTOM OF THE TRENCH SHALL BE FREE OF DEBRIS AND FINE GRADED BY HAND TO REMOVE SHARP, EMBEDDED ROCKS AND LOOSE STONES OVER 1/2" IN SIZE.
3. THE TRENCH WIDTH MAY BE VARIED TO SUIT TRENCHING EQUIPMENT AND SOIL CONDITIONS PROVIDED THAT MINIMUM CABLE SEPARATIONS ARE OBSERVED.
4. WARNING TAPE (STOCK CODE 1349035) TO BE LOCATED ONE FOOT BELOW GROUND LINE.
5. THE DISTRICT SHALL INSPECT AND APPROVE ALL TRENCHES AND CONDUIT INSTALLATIONS PRIOR TO BACK FILL.
6. JOINT USE OF TRENCHES REQUIRE AGREEMENT BETWEEN ALL INVOLVED UTILITIES.

D

SECTION D – METER SOCKETS

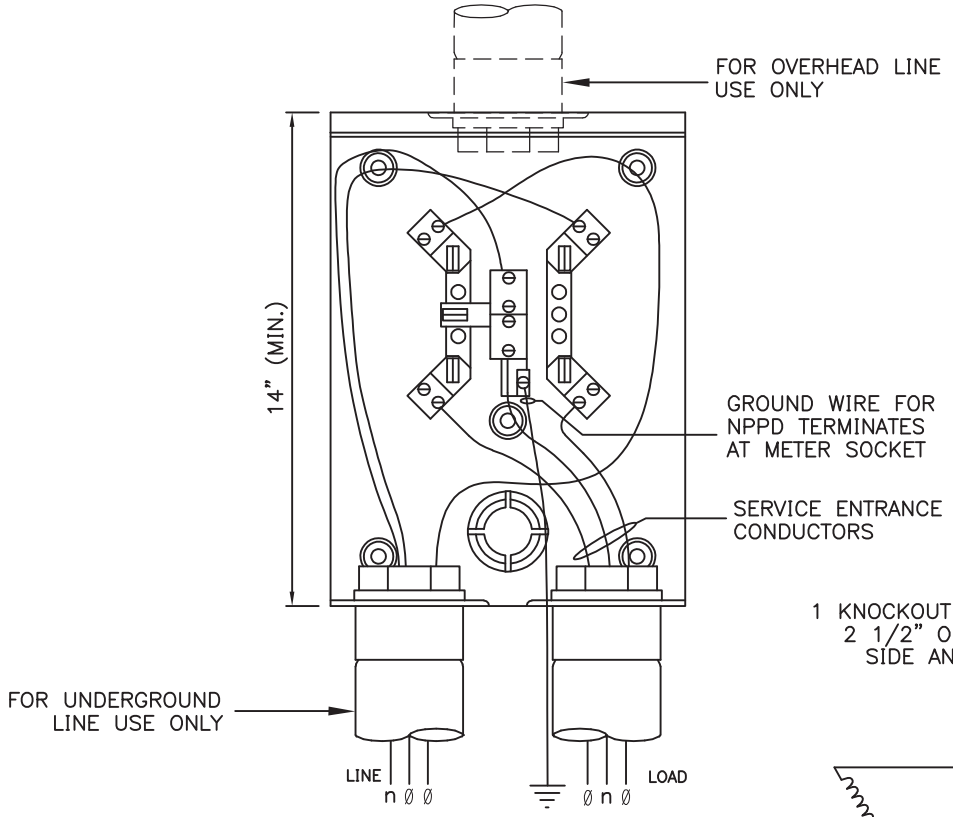
UNDERGROUND/OVERHEAD SERVICE



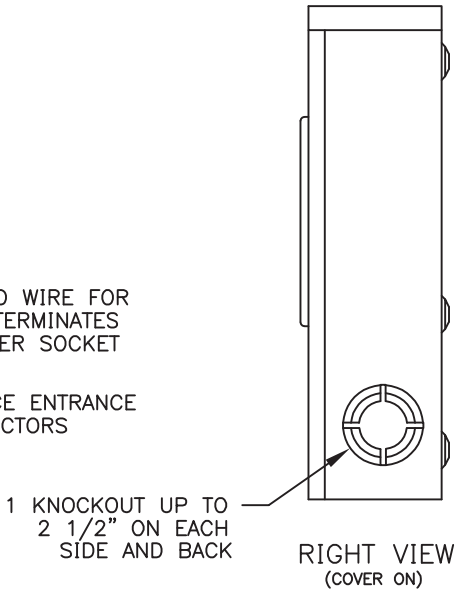
NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION B AND SECTION C FOR INSTALLATION REQUIREMENTS.

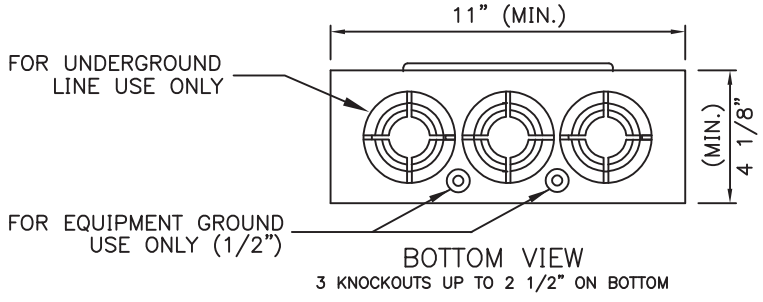
UNDERGROUND/OVERHEAD SERVICE



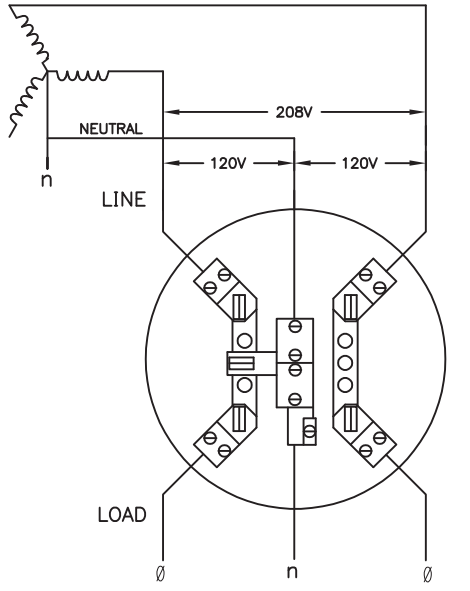
FRONT VIEW
(COVER OFF)



RIGHT VIEW
(COVER ON)



BOTTOM VIEW
3 KNOCKOUTS UP TO 2 1/2" ON BOTTOM

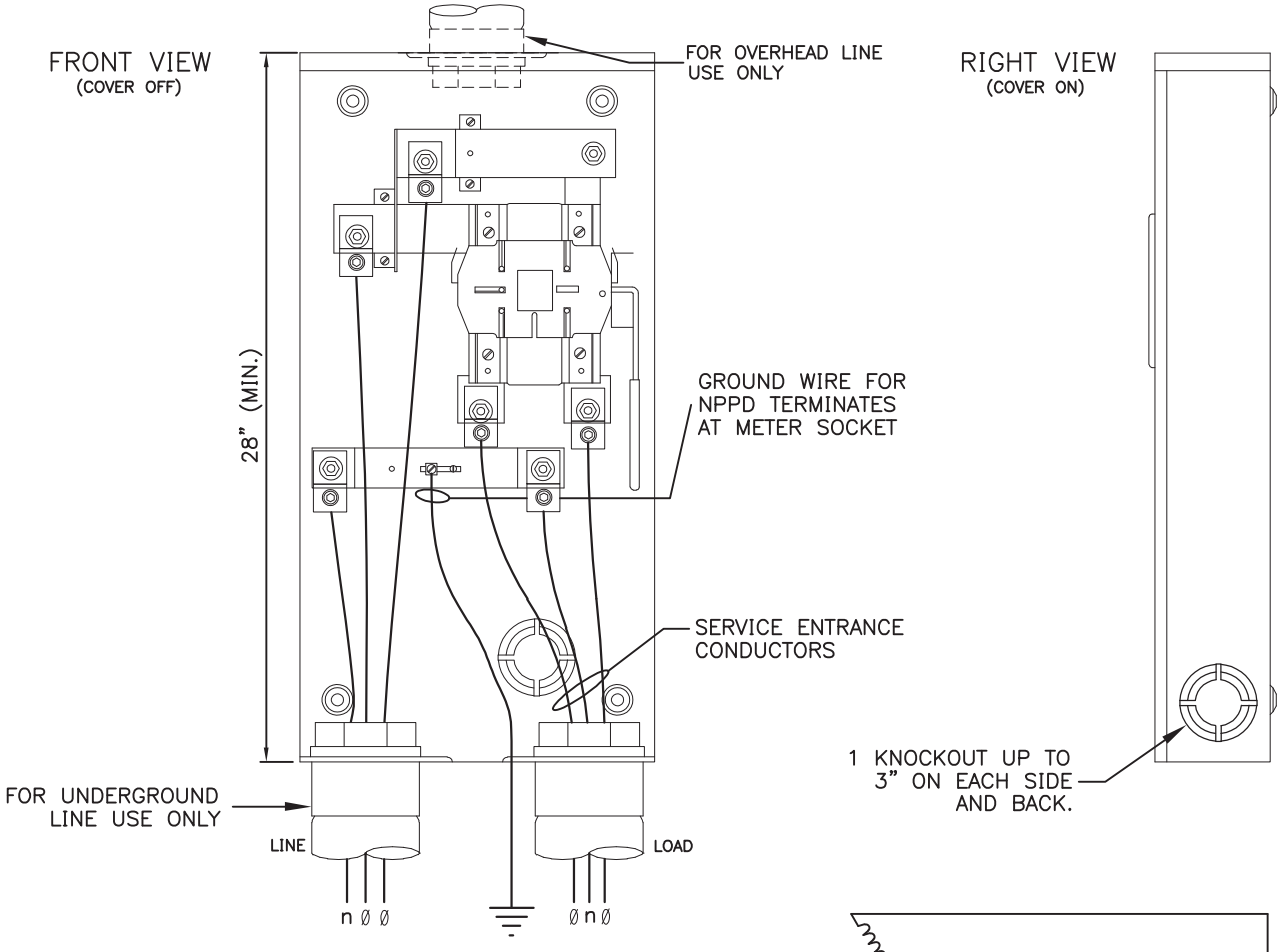


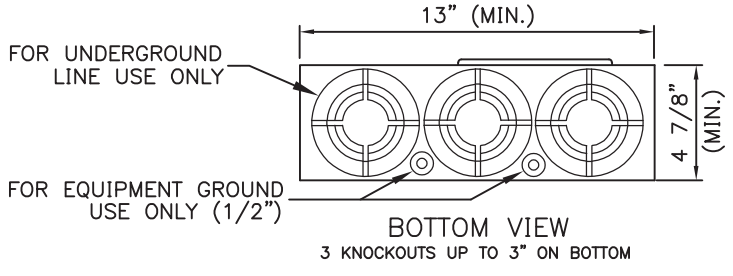
3 WIRE NETWORK 120/208 VOLT
SINGLE PHASE SELF CONTAINED

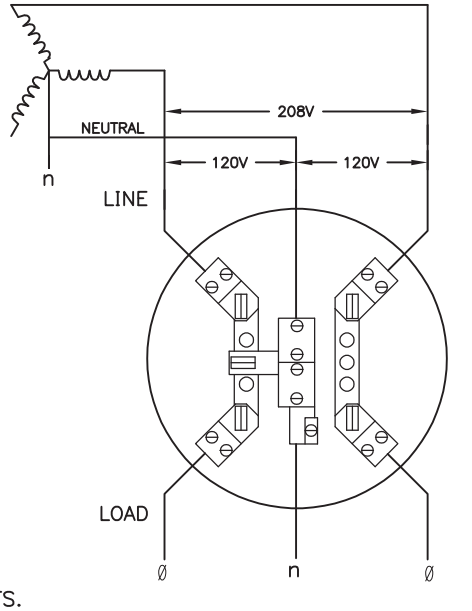
NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION B AND SECTION C FOR INSTALLATION REQUIREMENTS.

UNDERGROUND/OVERHEAD SERVICE





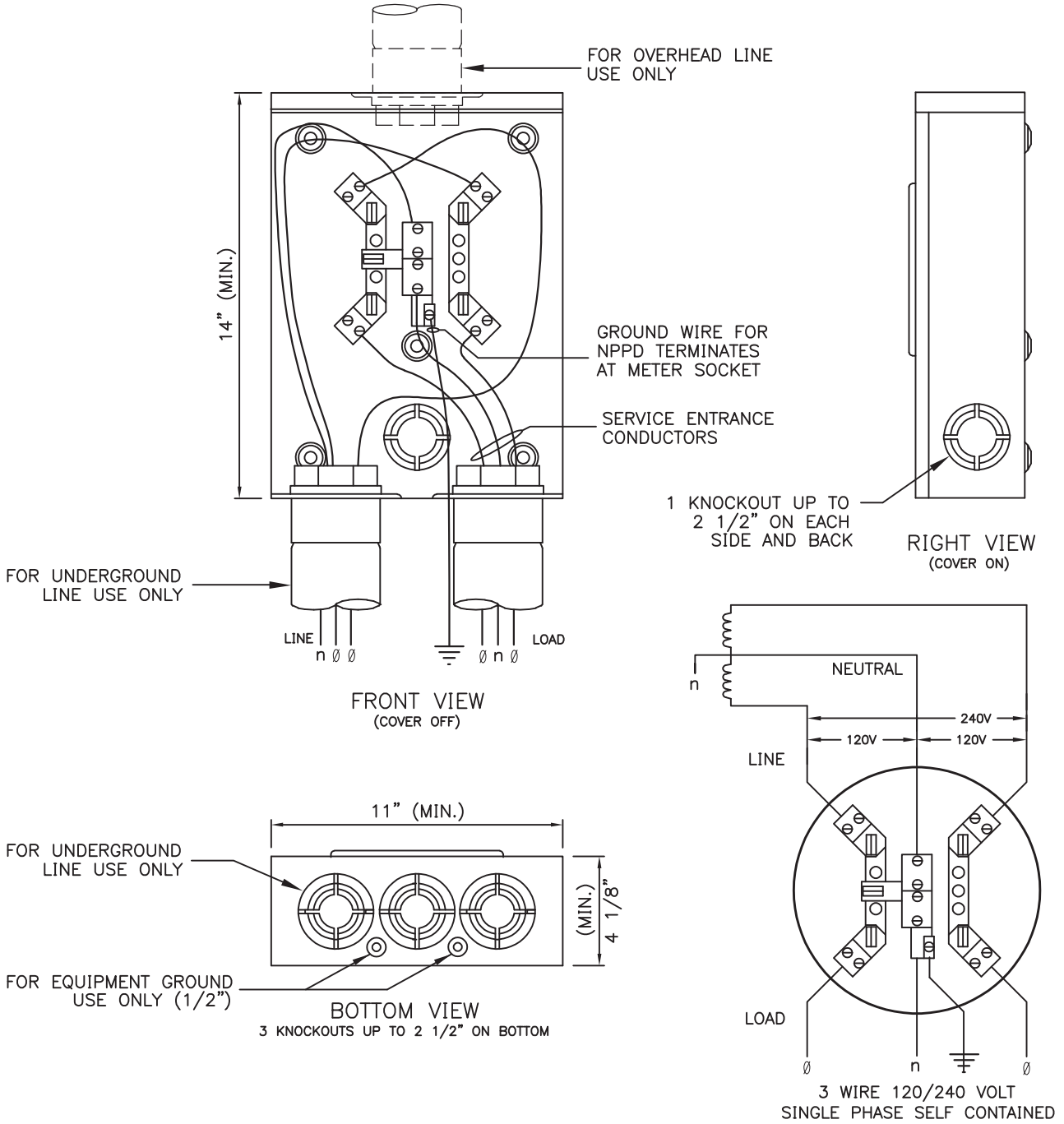


3 WIRE NETWORK 120/208 VOLT SINGLE PHASE SELF CONTAINED

NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION C FOR INSTALLATION REQUIREMENTS.

UNDERGROUND/OVERHEAD SERVICE



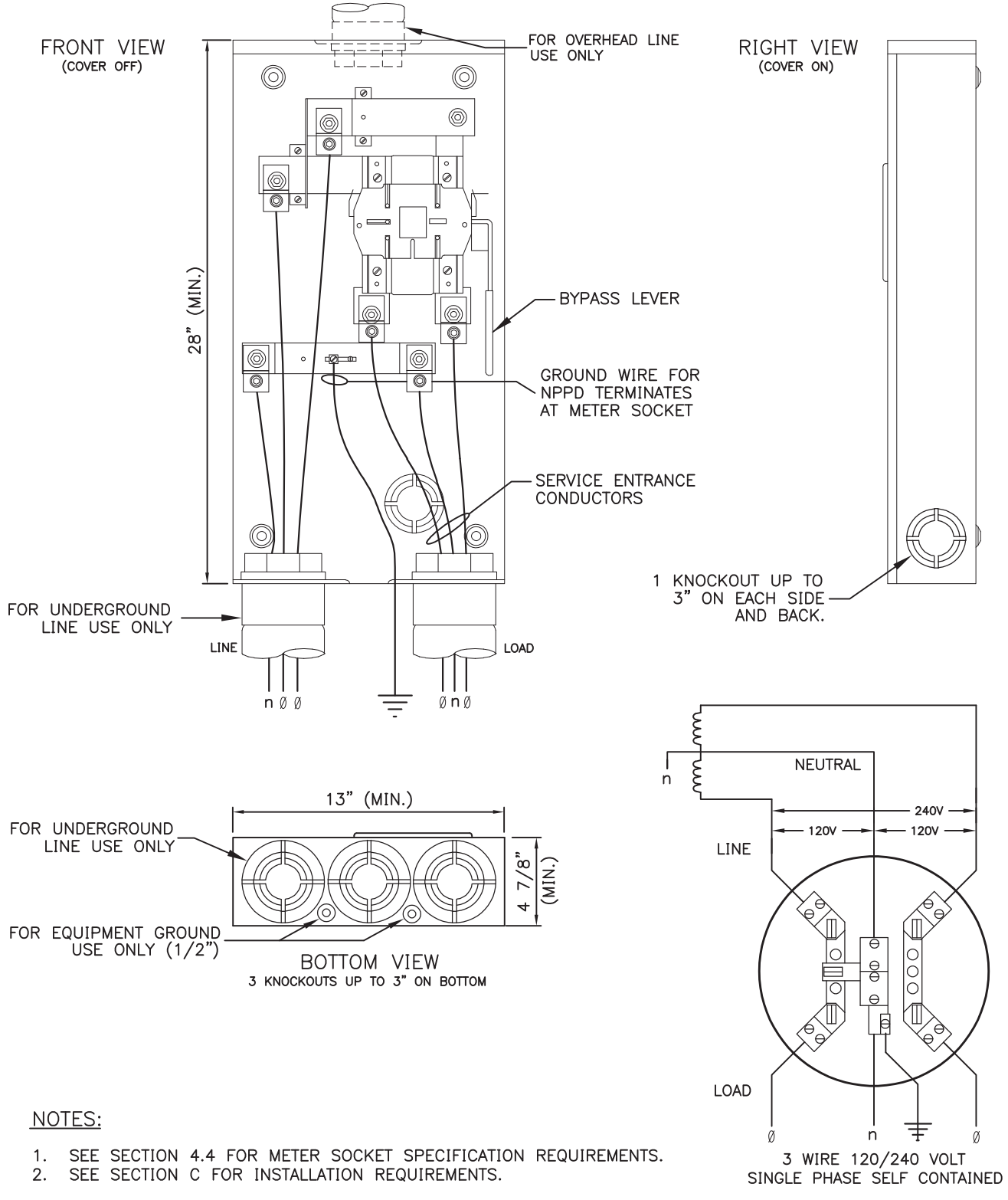
NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION B AND SECTION C FOR INSTALLATION REQUIREMENTS.

Description
1PH, 120/240 VOLT, 320 AMP METER SOCKET

460004798
2021

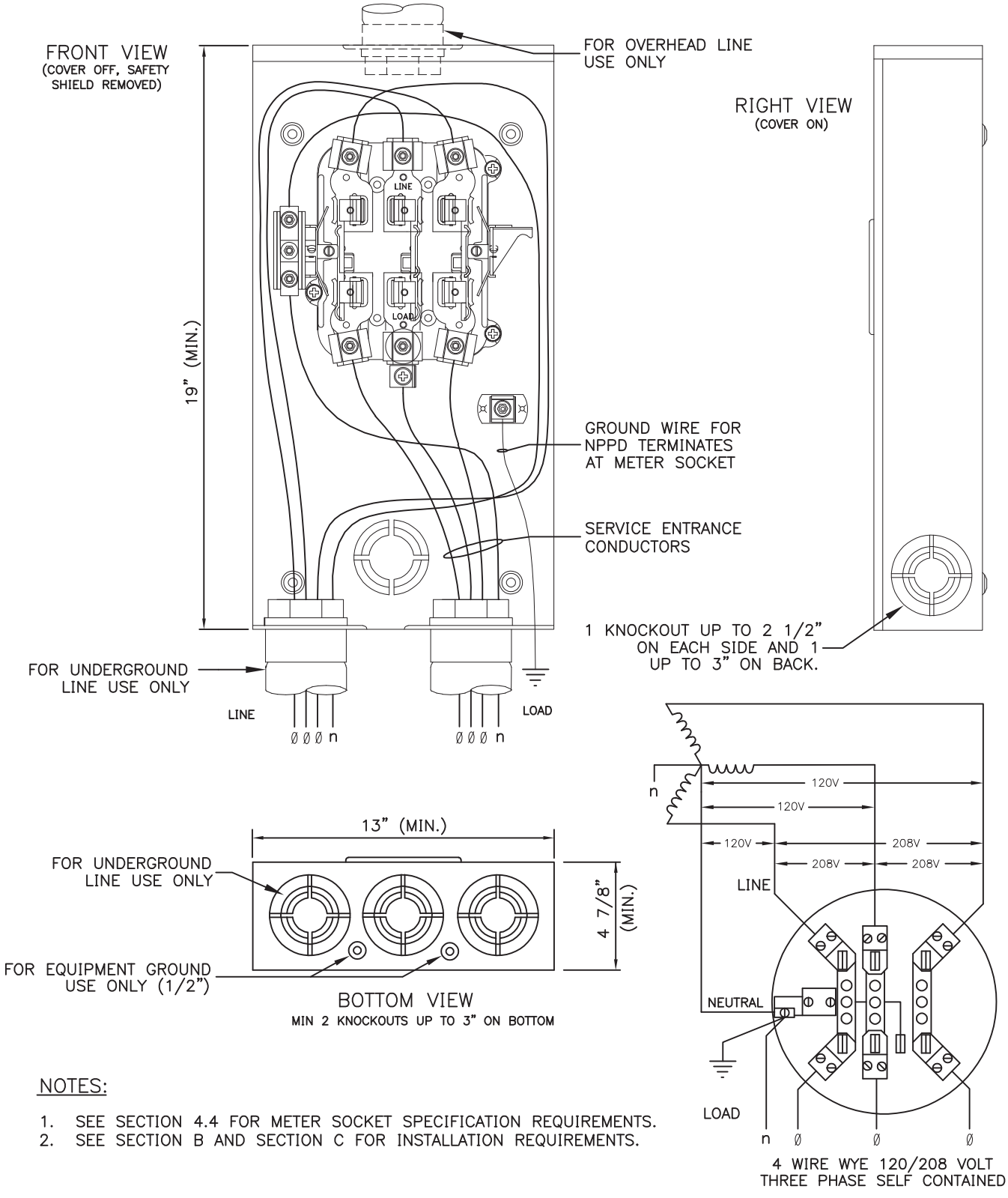
UNDERGROUND/OVERHEAD SERVICE



NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION C FOR INSTALLATION REQUIREMENTS.

UNDERGROUND/OVERHEAD SERVICE



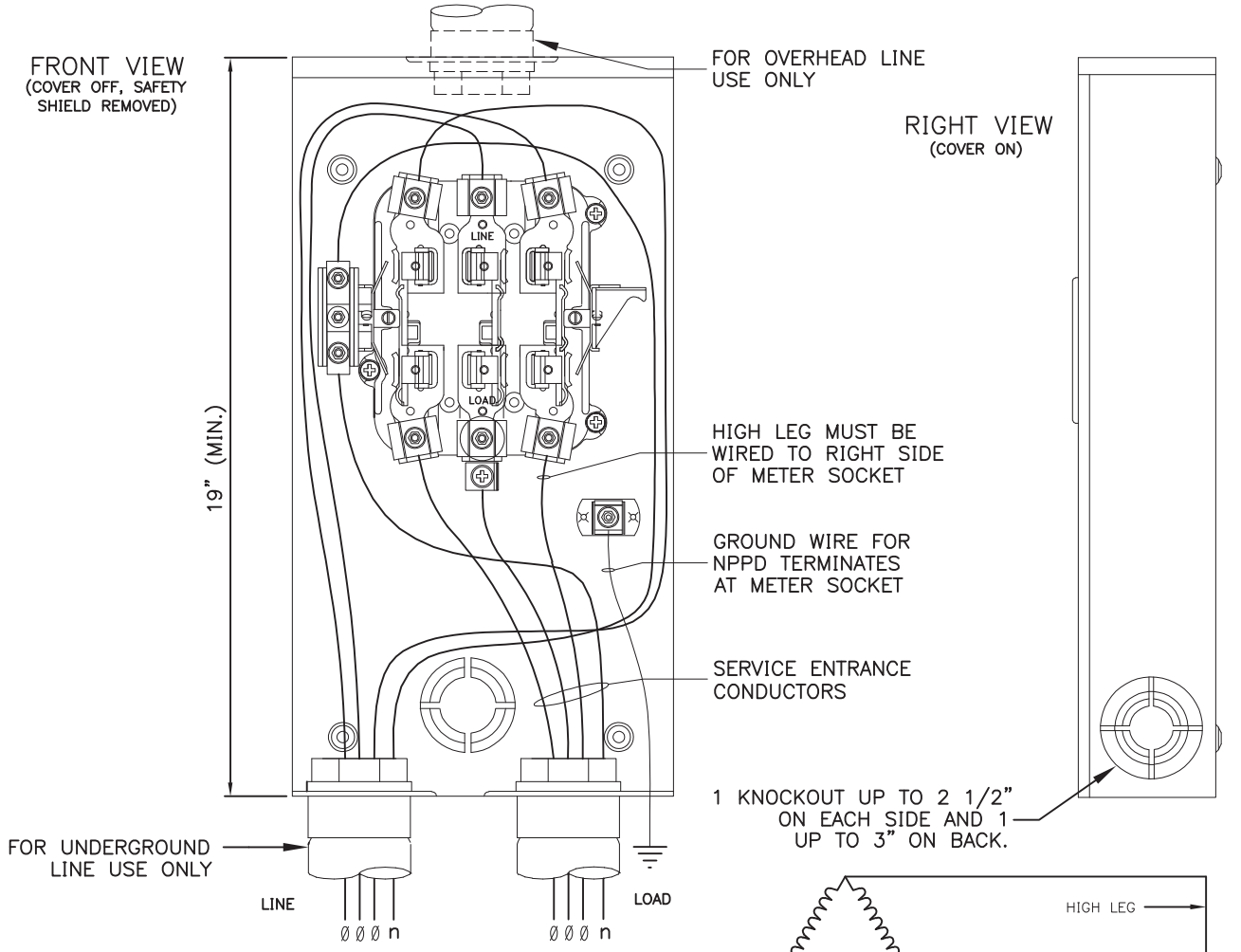
NOTES:

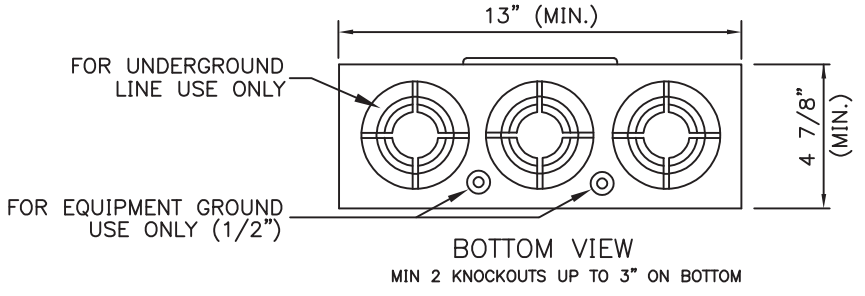
1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION B AND SECTION C FOR INSTALLATION REQUIREMENTS.

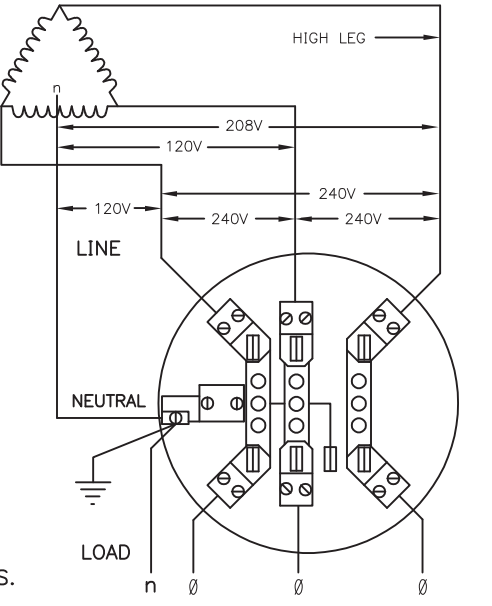
Description
3PH, 120/240 VOLT, 200 AMP METER SOCKET

460004814
2021

UNDERGROUND/OVERHEAD SERVICE





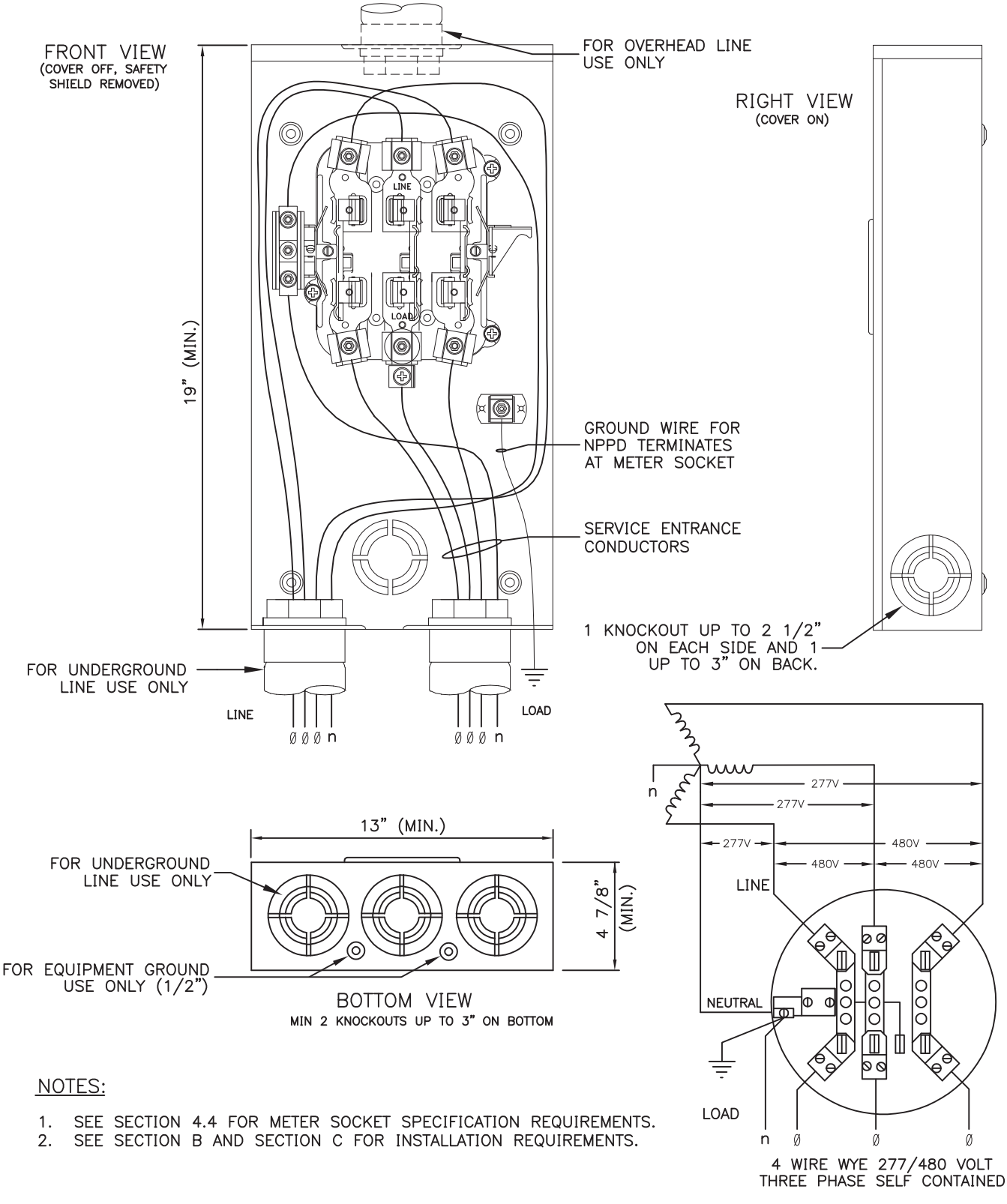


4 WIRE DELTA 120/240 VOLT
THREE PHASE SELF CONTAINED

NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION B AND SECTION C FOR INSTALLATION REQUIREMENTS.
3. HIGH LEG SHOULD BE IDENTIFIED WITH ORANGE MARKING.

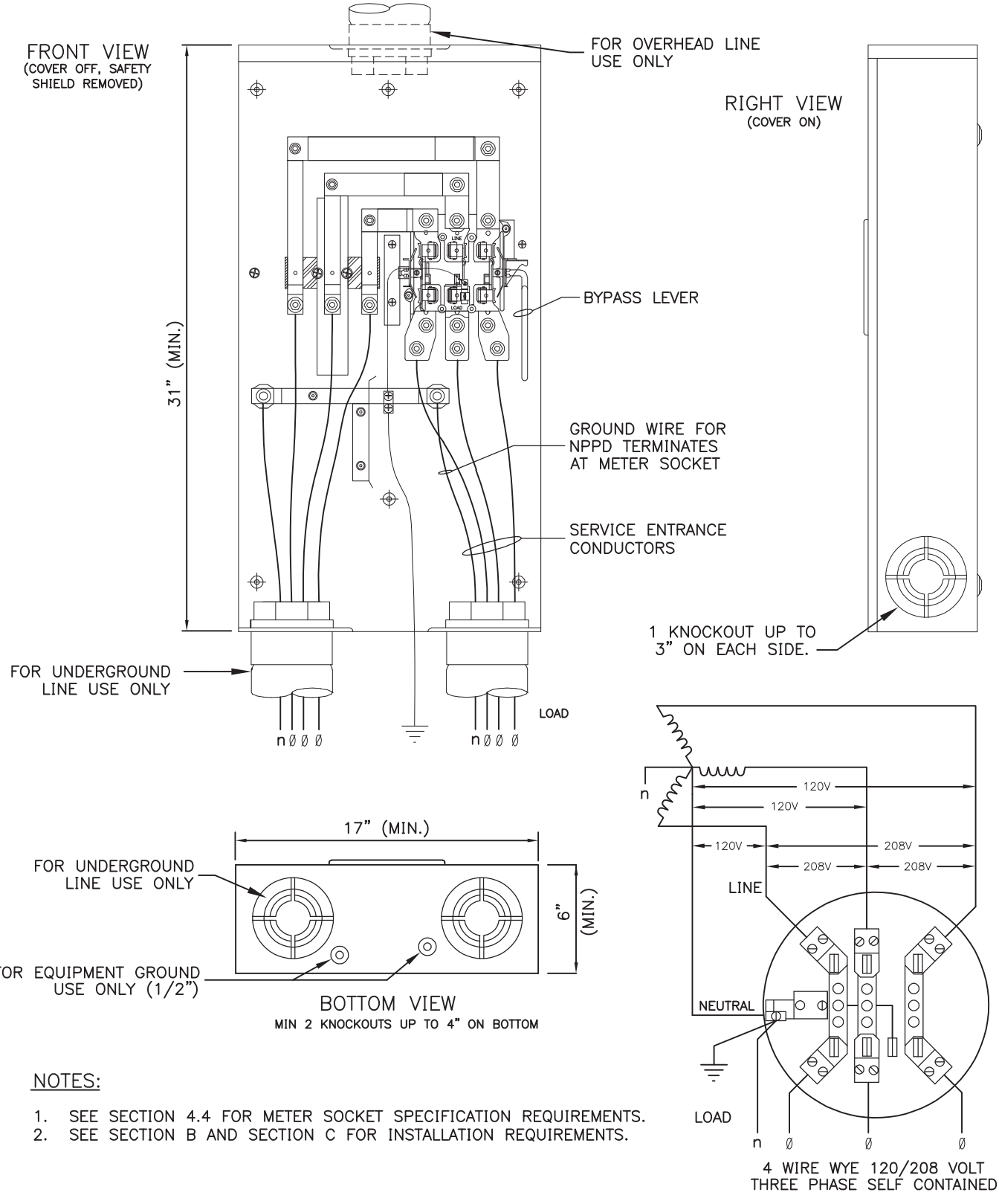
UNDERGROUND/OVERHEAD SERVICE



NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION B AND SECTION C FOR INSTALLATION REQUIREMENTS.

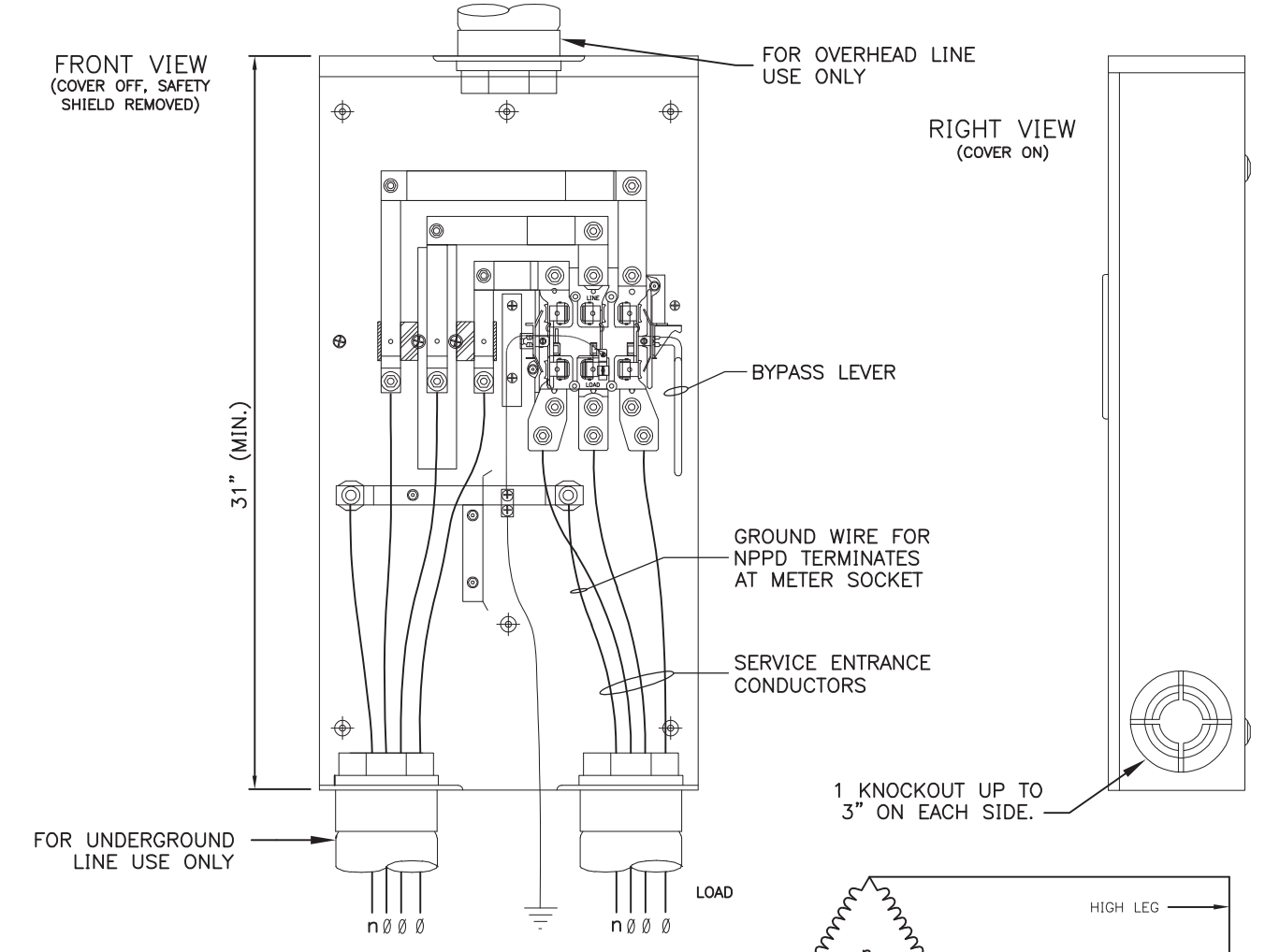
UNDERGROUND/OVERHEAD SERVICE

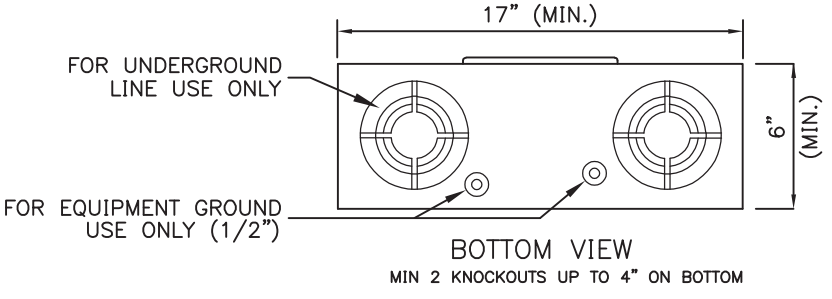


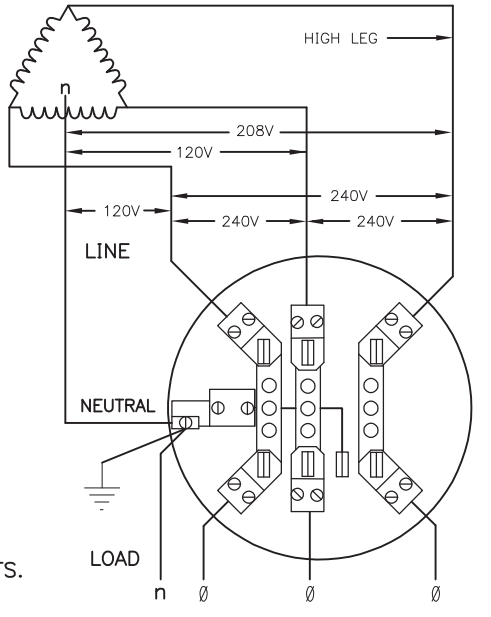
NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION B AND SECTION C FOR INSTALLATION REQUIREMENTS.

UNDERGROUND/OVERHEAD SERVICE







4 WIRE DELTA 120/240 VOLT
THREE PHASE SELF CONTAINED

NOTES:

1. SEE SECTION 4.4 FOR METER SOCKET SPECIFICATION REQUIREMENTS.
2. SEE SECTION B AND SECTION C FOR INSTALLATION REQUIREMENTS.
3. HIGH LEG SHALL BE IDENTIFIED WITH ORANGE MARKING.

NOTES

E

SECTION E – MISCELLANEOUS

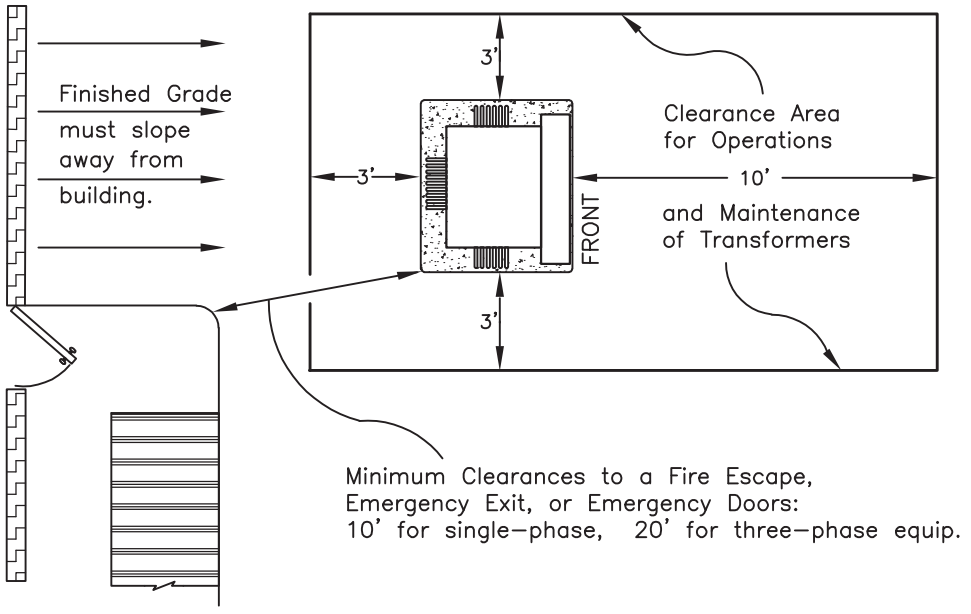
General:

Combustible material, combustible buildings, door and window openings shall be safeguarded from fires in oil–insulated transformers. Methods of achieving this are space separation, fire resistant barriers, automatic water spray and enclosures to confine oil from a ruptured transformer.

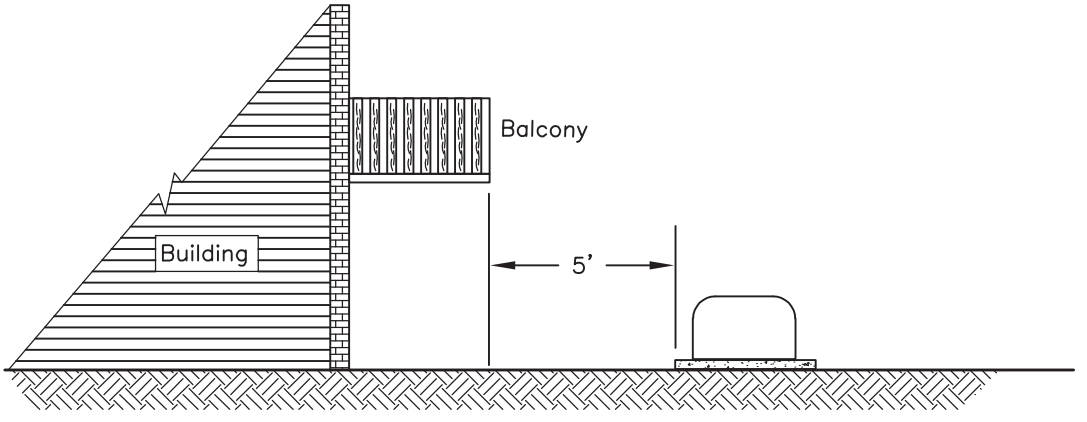
The following requirements shall be maintained for the location of NPPD's oil–filled equipment, including pad–mounted transformers. The methods are to be in accordance with national, state and local building codes for the protection of buildings adjacent to oil–filled equipment. The following practices when combined with the minimum clearances outlined in section E–1 will be considered adequate.

Minimum Practices:

1. General



2. Transformers and switchgear are not to be installed under any overhang, eave, or balcony that will prevent the use of equipment normally used for installation and/or changeout.

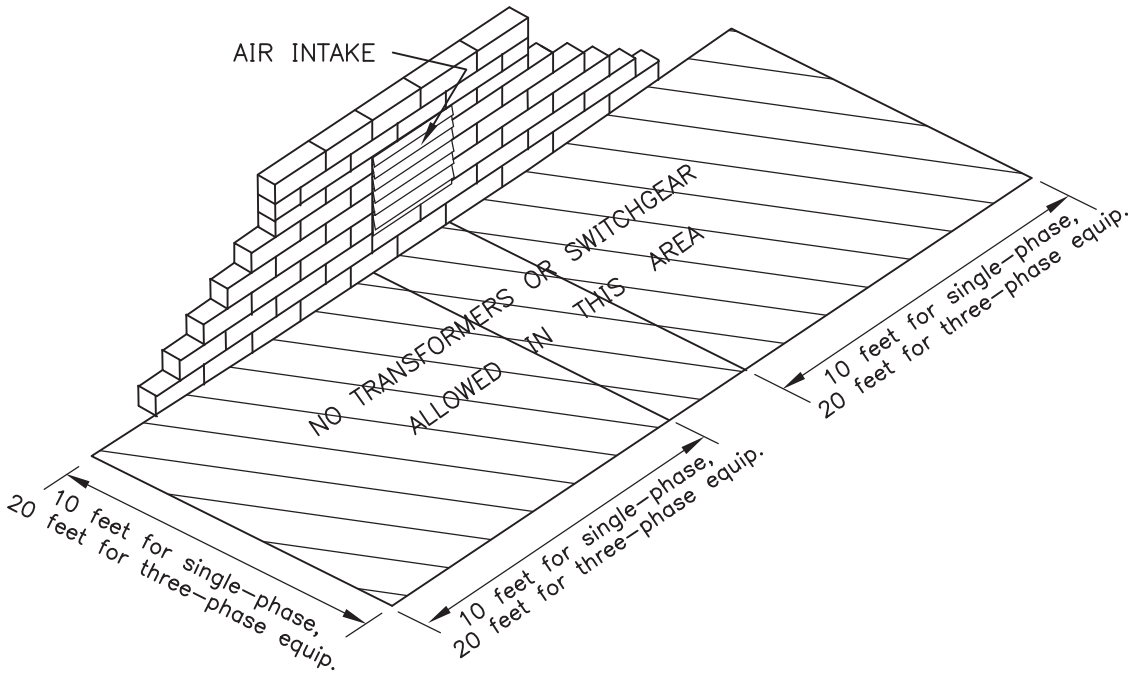


Oil–Filled Equipment may not be located closer than the above defined zone.

3. Note Specifications for Transformer Pads and Protective Barriers in Section C.

4. A. All windows are considered combustible.
   B. No oil–filled equipment shall be placed below an operating window; there shall be no exceptions.

5. Transformers and switchgear are not to be located within the defined clearance zone from air intake or ventilation systems.



6. Definitions

   Fire Resistance Rating – The time that Building Construction Material can withstand exposure to fire without igniting or suffering structural damage. This is normally given in hours.

   Fire Resistance Construction – Building Construction which has a "fire–resistive rating" of at least 3 hours.

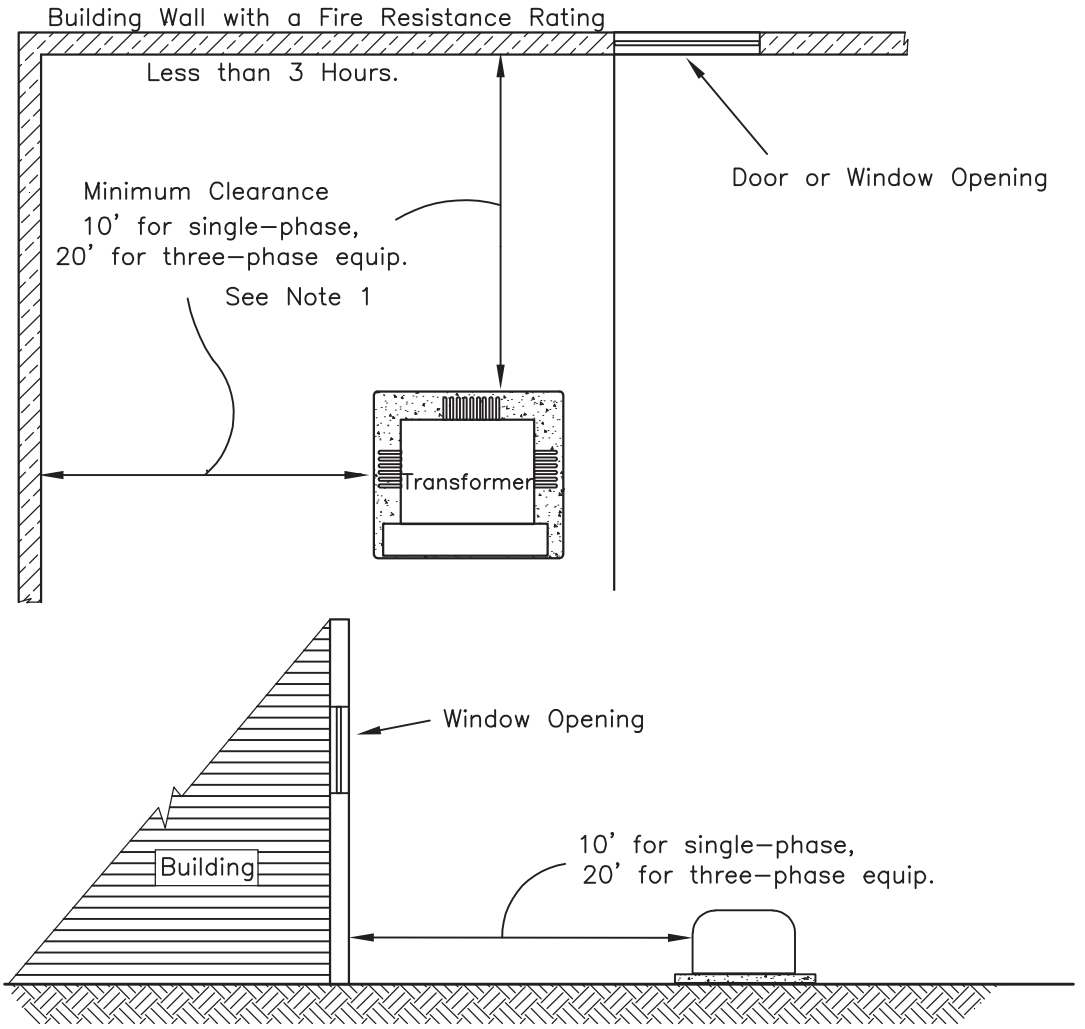
   Combustible Wall – Building wall with a "fire resistive rating" of less than 3 hours.

Preferred Method:

The preferred method of locating oil–filled equipment provides a minimum clearance between the building and transformer as follows:

1) 10 feet for single phase pad–mounted transformers and not directly in front of a door.

2) 20 feet for three–phase pad–mounted transformers and not directly in front of a door.



Oil–Filled Equipment may not be located closer than the above defined zone.

Notes

1. Minimum clearance may be reduced to 3' if building wall has a Fire Resistance Rating of 3 hours or greater or other approved method.
2. Use of less flammable liquid filled transformer for reduced clearance must be pre approved by NPPD.

FIRE RESISTANT BARRIER

WHEN THE PREFERRED CLEARANCES CANNOT BE ATTAINED AND ALTERATIONS TO THE BUILDING ARE NOT DESIRABLE, A FIRE BARRIER WALL SHALL BE CONSTRUCTED AT THE CUSTOMER'S EXPENSE (FIGURES 1, 2, AND 3). THE FIRE RESISTANT BARRIER SHALL HAVE THE FOLLOWING MINIMUM CHARACTERISTICS:

1) BE SEPARATE FROM THE BUILDING.

2) HAVE A FIRE RESISTANCE MINIMUM RATING OF 3 HOURS.

3) PROTECT ALL EXPOSED COMBUSTIBLE BUILDING COMPONENTS AS DEFINED BY STATE AND LOCAL BUILDING CODES WITHIN THE MINIMUM DISTANCE SPECIFIED BELOW.

4) BE CONSTRUCTED OF ONE OF THE FOLLOWING OR APPROVED EQUIVALENT:

   a) 8" OF BRICK (2 COURSES)
   b) 6" OF REINFORCED CONCRETE
   c) 8" OF CONCRETE BLOCK (BLOCK MUST BE FILLED WITH APPROVED MATERIAL)

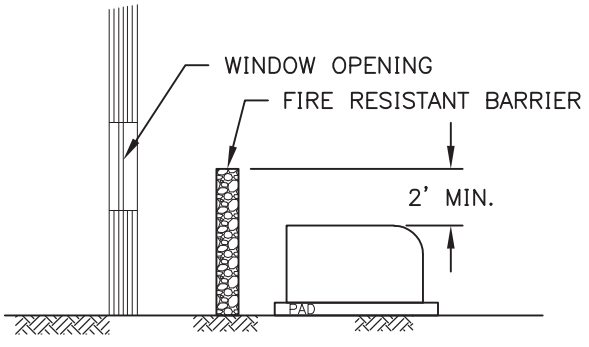


Figure 1.

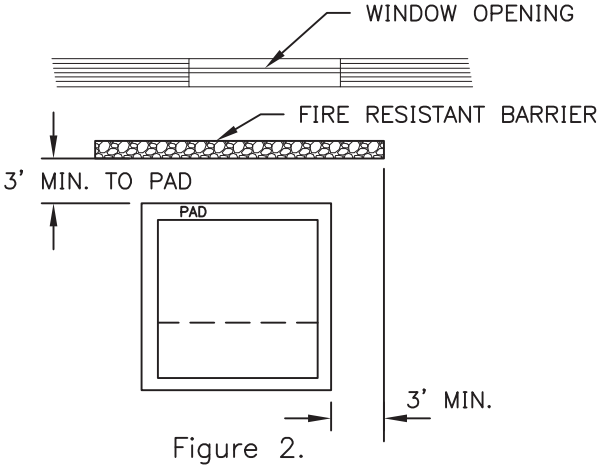


Figure 2.

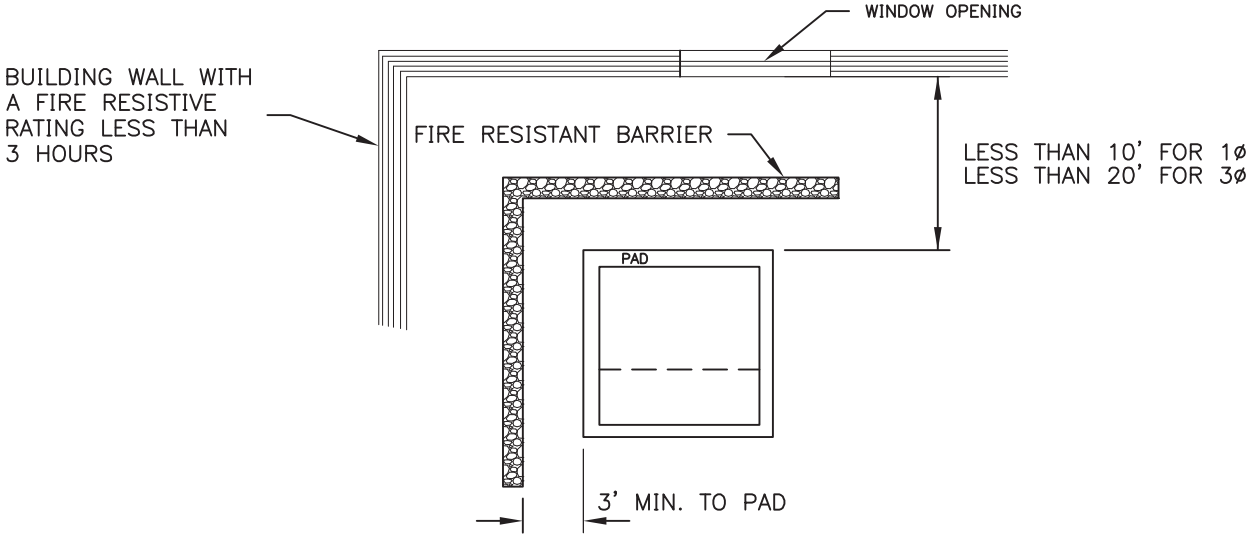


Figure 3.

Planting Trees Near Overhead Power Lines

Planting tall-growing trees under and near overhead power lines eventually requires your utility to prune them to maintain safe clearance from the wires. This pruning may result in the tree having an unnatural appearance, a shortened life span, and making it more susceptible to insects and disease.

Proper selection and placement of trees in and around overhead power lines can eliminate potential public safety hazards, reduce expenses for utilities and their rate payers, and improve the appearance of landscapes.

NPPD recommends that homeowners and landscapers planting trees near 12.5kV overhead power lines choose trees with mature heights of 20 feet or less. Trees near street light conductor or service conductor shall maintain a clearance of 3 feet.

- Medium Zone – This area extends from 12 feet to 50 feet in either direction of the overhead power lines. Medium-growing trees with mature heights of less than 40 feet should be planted in the medium zone.

- Tall Zone – The tall zone is any area 50 feet or more from the overhead power lines on either side. Any height tree may be planted in the tall zone.

DISTRIBUTION LINES

Medium Tree Zone	Trees less than 40' in height
Large Tree Zone	Trees more than 40' in height

Planting Trees Near Underground Power Lines

It is also important to plant trees a safe distance from underground power lines and utility equipment. Avoiding the area near underground power lines and utility equipment will prevent problems while digging and can help prevent a tree's root system from growing around and damaging underground power lines. Trees can be seriously damaged when the roots are cut to dig and repair an underground power line.

Since a tree's root system can be as wide as the tree canopy itself, and in some cases wider, NPPD recommends following the low, medium, tall zone guidelines when planting trees near underground power lines. However, if the low zone area around buried power lines is kept clear of trees, there will be no risk to any tree root systems if an underground power line needs to be repaired.

See *Section 1.3* for information on how to contact Nebraska1Call to locate underground power lines prior to digging and planting.

For more information contact your local County Extension Office or:

The National Arbor Day Foundation
211 N. 12th St.
Lincoln, NE 68508

Call 1-877-ASK-NPPD for assistance

NOTES

NEBRASKA PUBLIC POWER DISTRICT
ELECTRIC SERVICE DESIGN APPLICATION

SERVICE DETAILS

Project Name: _____

Service Address: _____
Street City State Zip

Primary Contact for changes/decisions on this project? _____
First Mi. Last

Cell Phone: _____ Fax Number: _____

Email: _____

Address: _____
Street City State Zip

Permanent Date Required: _____	**Temporary** Date Required: _____	**Upgrade** Date Required: _____
☐ Underground ☐ Overhead	☐ Underground ☐ Overhead	☐ Underground ☐ Overhead

Construction Type

☐ Single	☐ Duplex	☐ Triplex	☐ Accessory Dwelling Unit	# of Lots _____
☐ Apartment	☐ Multi-Lot	☐ Mixed	☐ Commercial/Industrial	# of Buildings _____
☐ Condominium	☐ Townhouses	☐ Subdivision	☐ Building Infrastructure	# of Units _____

SERVICE VOLTAGE (CHECK ONE)

☐ 120/240V 1-phase, 3-wire ☐ 120/208V 3-phase, 4-wire

☐ 120/240V 3-phase, 4-wire ☐ 277/480V 3-phase, 4-wire

OTHER ITEMS (CHECK ALL THAT APPLY)

☐ New Construction: _____ Sq. Ft. ☐ Building Addition/Renovation: _____ Sq. Ft.

☐ Relocation of Existing Service Entrance

☐ Multi-Unit Area Per Unit: _____ Sq. Ft. Number of Units: _____

Date of Ground Breaking (est.): _____ **Date of Final Grade (est):** _____

Hours of Operation Per Day: ☐ 8 ☐ 12 ☐ 24 ☐ Other _____

Switch/Main Size (Amps): _____ A (If switchgear is 1200 Amps or larger, Customer must submit drawings for NPPD approval)

Number of Conductors: _____ **Size:** _____ **Type:** ☐ **CU** ☐ **AL**

ELECTRIC LOAD DETAILS

Heating Type: ☐ Electric ☐ Gas ☐ Other ☐ Street Lights Required

Generation: ☐ For Parallel or Back-Up Generation, please refer to NPPD Form K450

If Electric:	# Units	Load			
Heat(wall)			kW	Largest Motor	hp
Furnace			kW	Starts/8hrs	
Baseboard Heat			kW	Locked Rotor Amps	Amps
Dryer			kW	Connected Motor Load	kW
Water Tank			kW		
Range			kW	Other	kW
Hot Tub/Sauna			kW		
Heat Pump			kW	Total Single Phase	kW
Air Conditioner			kW	Total Three Phase	kW
Tankless Water Heater			KW	Total Connected Load	kW
Elec. Car Charger			KW		

Comments: _____

Nebraska Public Power District

Use this form for all residential, commercial, subdivision, and temporary service requests.
A REQUEST FOR SERVICE form and requested documents must be submitted to NPPD prior to an Estimate or Design being completed. Incomplete forms or missing documentation may delay this process.

The following documents may be required with your Request for Service Application:

1. Preliminary Plat of Survey with legal description of property (for easement, if required)
2. Site Plan showing building relative to property lines-mark service entrance location(s)
3. Civil drawings (showing water, sewer, gas, phone, electric, pavement, grading etc.)
4. Complete electrical drawings, one-line diagrams, and load detail sheets

CONTACT INFORMATION

Owner : _____ Office Phone: _____
First Mi. Last

Cell Phone: _____ Fax Number: _____

Email: _____

Address: _____

Linco Street City State Zip

General Contractor: _____ Office Phone: _____
First Mi. Last

Cell Phone: _____ Fax Number: _____

Email: _____

Address: _____

Street City State Zip

Electrical Contractor: _____ Office Phone: _____
First Mi. Last

Cell Phone: _____ Fax Number: _____

Email: _____

Address: _____

Street City State Zip

NPPD/Customer Project Timeline: Please refer to NPPD Electric Service Requirements Manual for Project Definitions.
The total NPPD Project time is a guide only and does not include Customer Preparation time.

Service Installation	Project Scheduling 1 Week	Install Wire/Meter 1 Week	Customer Readiness	**Total 2 Weeks**
Small Scope Project	Project Management 1-2 Weeks	Project Scheduling 1-3 Weeks	Customer Readiness	**Total 2-5 Weeks**
Medium Scope Project	Project Management 2-4 Weeks	Project Scheduling 4-8 Weeks	Customer Readiness	**Total 6-12 Weeks**
Large Scope Project	Project Management 6-10 Weeks	Project Scheduling 8-10 Weeks	Customer Readiness	**Total 14-20 Weeks**
Complex Scope Project	Project Management 10-12 Weeks	Project Scheduling 10-14 Weeks	Customer Readiness	**Total 20-26 Weeks**

Note: This Design Application will be used for the sole purpose of project design. To set up an account for billing, including permanent and temporary services, please contact an NPPD Customer Service Representative at 1-877-ASK-NPPD (1-877-275-6773).

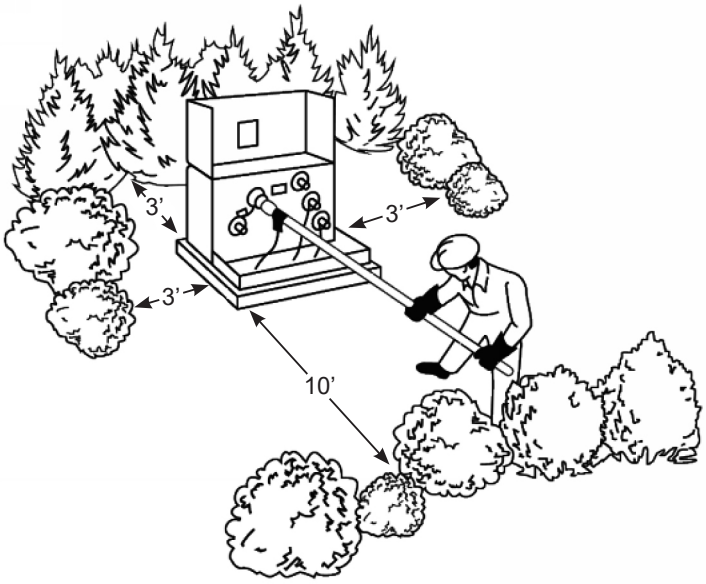
I agree that the information on this application is correct to the best of my knowledge. I understand that any changes made to the above information or attached documents may increase the time and costs required for Nebraska Public Power District to provide service to the project. Applications that are incomplete after 60 Days may be discarded.

APPLICANT SIGNATURE: _____ *DATE :* _____

Nebraska Public Power District

NOTICE

DO NOT OBSTRUCT



We need room to work safely on this device.

Please keep shrubs and structures 10 feet away from front side and 3 feet from other sides.

Obstruction will cause delays when restoring electric services.

Before you dig, call your local utility company for location of underground cable and planting instructions.

Nebraska Public Power District

Always there when you need us