

2024

Single Family Residence Overhead Service





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Do Commercial Specs Apply to Our Project?

Commercial specs (i.e., commercial-grade wiring, transformers, or breakers) are generally required when the projected load requirements exceed normal residential limits, such as large homes with pools or home-based businesses (e.g., a commercial kitchen or workshop).

Residential buildings typically use standard residential electrical specifications, but certain conditions may require commercial-grade electrical specifications for new residential construction. These conditions can include:

1. **Large Load Demand:** If the building will have high electrical load demands, such as for large HVAC systems, multiple electric vehicle (EV) charging stations, or other high-power-consuming equipment, commercial-grade equipment may be required to handle the increased capacity.
2. **Mixed-Use Development:** If the building is part of a mixed-use development where there are both residential and commercial spaces (e.g., a residential unit above a retail store), commercial electrical standards might be applied to the entire structure or parts of it.
3. **Multifamily Residences:** Larger multifamily buildings, like apartment complexes, may require commercial electrical specifications due to the size and complexity of the electrical system needed to serve multiple units.
4. **Backup Generators or Solar Systems:** If the residence will have a backup generator, solar panel systems, or energy storage systems that integrate into the grid, commercial-grade specifications might be needed to ensure safety and compatibility with grid infrastructure.
5. **Zoning and Local Codes:** Local zoning laws or building codes may dictate the use of commercial-grade electrical components in certain residential developments, especially in high-density or urban areas.
6. **Building Size and Complexity:** For very large custom homes or luxury residences that are significantly larger or more complex than typical homes, commercial electrical standards might be applied to meet the increased needs for safety, power distribution, and capacity.

Overhead Meter Loop Information

What is a “Meter Loop”?

A **meter loop** is the complete electrical assembly that connects the power company's service line to a building's electrical system. It typically includes the meter base, **weatherhead**, service mast, and wiring necessary to safely route electricity from the utility's lines to the building. A **weatherhead** is a crucial part of the electrical system where the utility's power lines enter a building. It's a weatherproof, hood-like device installed at the top of the service mast to prevent water from getting into the electrical conduit. The weatherhead protects the electrical wires from rain, snow, and other elements, ensuring a safe and dry connection between the utility lines and the building's electrical system.

The meter loop is installed by the property owner's electrical contractor and is inspected by TNMP before connecting to the grid.

The **National Electrical Safety Code (NESC)** is a set of safety standards for the installation, operation, and maintenance of electrical power and communication systems in the United States. The NESC covers power lines, substations, electrical equipment, and communication lines, ensuring that electrical infrastructure is installed and maintained safely to protect workers and the public from hazards.

Overhead Meter Loop Installation Requirements

Overhead Service Checklist:

1. ___ The meter loop must be either on the front of the structure or on the side within 5 ft. from the front corner.
2. ___ The location of the meter loop must be approved by TNMP.
3. ___ Meter loop must be between 10 and 60 ft. from TNMP service or transformer pole.
4. ___ Meter socket (supplied by customer or contractor) must have a mounting height of not less than 4 and not more than 6 ft. from the center of the can to final grade.
5. ___ Meter socket must meet TNMP specifications for approved meter sockets.
6. ___ All other necessary materials must be supplied by the customer.
7. ___ Point of attachment will be 18 in. min., 36 in. max. above roof. (see Weatherhead sketch below)
8. ___ The point of attachment must have a minimum of 12 ft. service conductor clearance over yards. (see Weatherhead sketch below)
9. ___ The point of attachment must have a minimum of 16 ft. service conductor clearance over driveways. (see Minimum Height Clearances table below)
10. ___ The point of attachment should be strong enough to support service of 750 lb. transverse loading.
11. ___ There must be an 8 ft. driven ground rod with a minimum encased #6 cu ground wire and approved ground clamp as shown in Overhead Meter Loop Sketch.
12. ___ There must be a minimum of 2 ft. of wire out of the weatherhead.
13. ___ If the point of attachment passes through the roof, 2 in. rigid conduit schedule 80 is required.
14. ___ The outside disconnect device must be mounted on the load side of the meter.
15. ___ 200 Amp services require 2/0 copper or 4/0 aluminum in raceway.

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Minimum Height Clearances (feet):

Weatherhead location	Pedestrian Traffic		Vehicular Traffic	
Voltage (line to ground)	1-300 V	> 300 V	1-300 V	> 300 V
Drip Loop	12'6"	12'6"	16'	16'

- 12-ft minimum service conductor clearance over yards.
- 16-ft service conductor clearance over driveways.
- The point of attachment should be strong enough to support service (750# transverse loading).
- 8-ft driven ground rod with a minimum encased #6 copper ground wire and approved ground clamp.
- Minimum 2-ft. of wire out of the weatherhead.
- Point of attachment will be between 18" and 36" above the roof.

Construction Guideline:

- 2-in. rigid conduit
- The outside disconnect device must be mounted outside of the load side of meter
- 100 A services - 4 cu. (Residential Only)
- 200 A services - 2/0 cu. (Residential Only)

All requirements meet NESC and are subject to NESC changes as they occur. Any changes from the above requirements are subject to approval by TNMP representative based on TNMP construction standards.

Local Municipalities may have additional codes or requirements.

Service Entrance Conductors

The service entrance conductors should be a minimum of 4/0 aluminum or 2/0 copper. Entrance conductors shall be installed in approved rigid metallic or non-metallic conduit or approved raceway. Approved service entrance cable may be used in lieu of conduit or raceway (subject to local code approval). The connection to the meter socket base shall be watertight and the service entrance shall be installed on the exterior of the building. In no instance shall service entrance conductors be run through attics, partitions or other enclosed places. No unsealable type fittings shall be installed in conduit or raceway ahead of the meter socket or metering enclosure.

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Grounding

1. All grounding shall comply with the National Electric Code.
1. The ground electrode conductors may originate in the meter base or the customer's service equipment panel (not required in both locations).
2. The grounding electrode conductor shall be sized according to the following table:

Size of Largest Service-Entrance Conductor or Equivalent Area for Parallel Conductors		Size of Grounding Electrode Conductor	
Copper	Aluminum or Copper-Clad Aluminum	Copper	Aluminum or Copper-Clad Aluminum
2 or smaller	1/0 or smaller	8	6
1 or 1/0	2/0 or 2/0	6	4
2/0 or 3/0	4/0 or 250 kcmil	4	2
Over 3/0 thru 350 kcmil	Over 250 kcmil thru 500 kcmil	2	1/0
Over 350 kcmil thru 600 kcmil	Over 500 kcmil thru 900 kcmil	1/0	3/0
Over 600 kcmil thru 1100 kcmil	Over 900 kcmil thru 1750 kcmil	2/0	4/0
Over 1100 kcmil	Over 1750 kcmil	3/0	250 kcmil

3. The grounding electrode shall be a rod or pipe no less than 8 ft. in length made of 3/4" or larger galvanized iron pipe, 1/2" or larger Copperweld rod, or 5/8" or larger iron or steel rod.

Meter Location

Meter locations must have prior approval of Texas-New Mexico Power Company (TNMP). Meters shall be located so they are readily accessible by TNMP personnel and not exposed to physical or environmental dangers. Where meter socket or enclosure and disconnecting means are mounted adjacent to each other, they should be separated by at least four (4) inches. Socket or enclosure shall be mounted level with vertical plane of the building and securely mounted to the building. Meter loop must be either on the front of the building or on the side within 5 feet from the front corner. Location of meter socket must be approved by TNMP representative, and TNMP must have permanent access to the meter socket.

Meter Socket or Enclosure Requirements

Meter sockets for service requirements of less than 400 amps will be purchased and installed by the customer. They must be UL-listed and rated for a minimum of 200 amps. Underground service requires underground enclosures, not universal or modified overhead enclosures, with a dedicated raceway on the left side. Three-phase underground service requires enclosures rated 320 amps or greater. For service requirements in excess of 400 amps please contact your local TNMP representative.

Service Requirements in Excess of 200 Amps

In accordance with local authority, services should have a service disconnect device, accessible by TNMP personnel, located on the exterior wall of the building adjacent to the meter socket. TNMP recommends a disconnect device for all customers. A remote-control device used to actuate the service disconnecting means may be located on the exterior of the building in lieu of the actual service disconnect. The remote-control device must be accessible by TNMP personnel. TNMP personnel shall have the right to operate the disconnected device to remove load from TNMP equipment for any legitimate purpose including but not limited to:

- Public safety concerns
- Compliance with TNMP personal safety procedures
- Routine maintenance of TNMP equipment

Energizing of Customer's Service

Only authorized employees of TNMP are to make and energize the connections between the company's service wire and the customer's service entrance conductors.

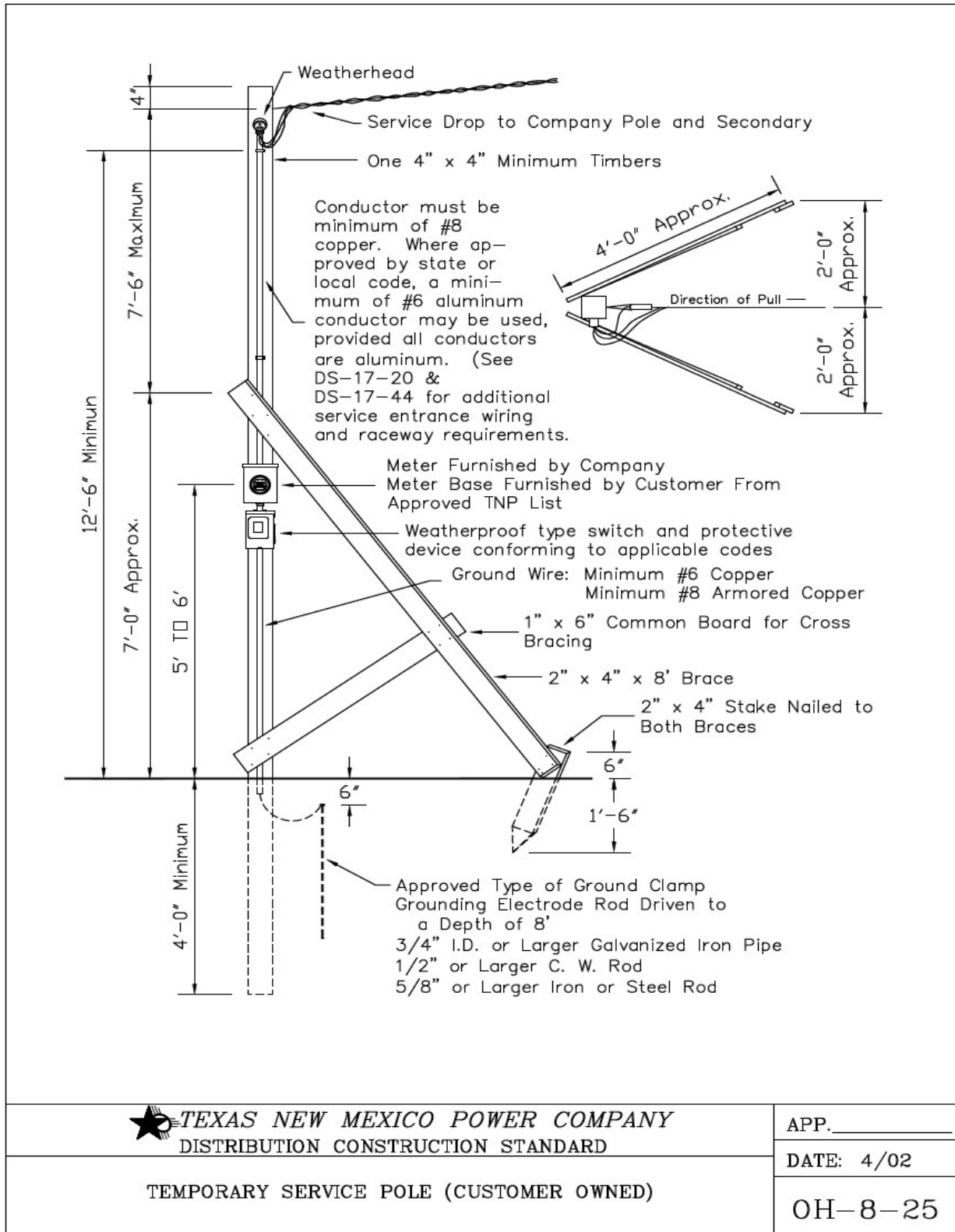
Residential O/H



Drawing Sets

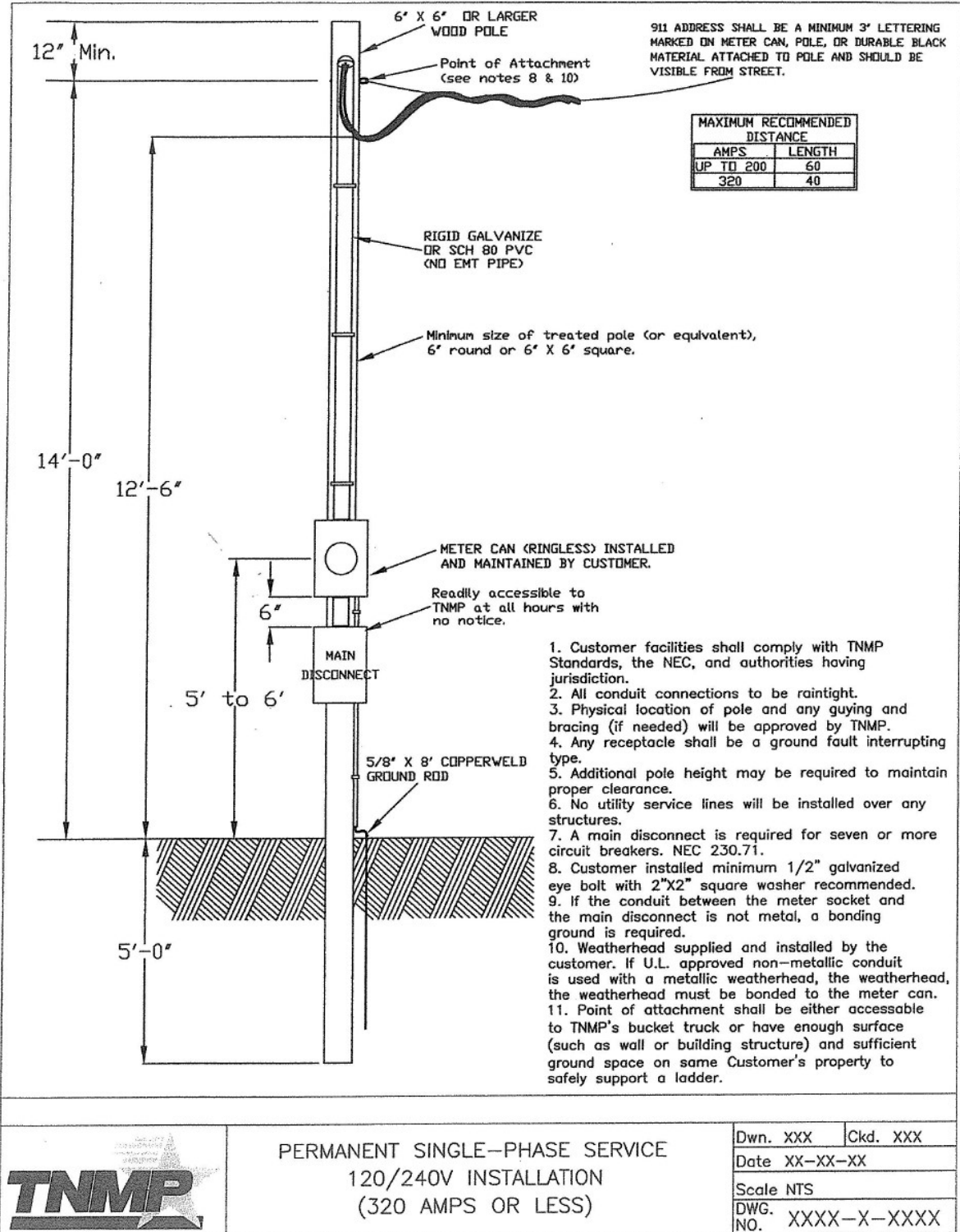
Residential O/H

Temporary Service Pole (Customer Owned) OH-8-25



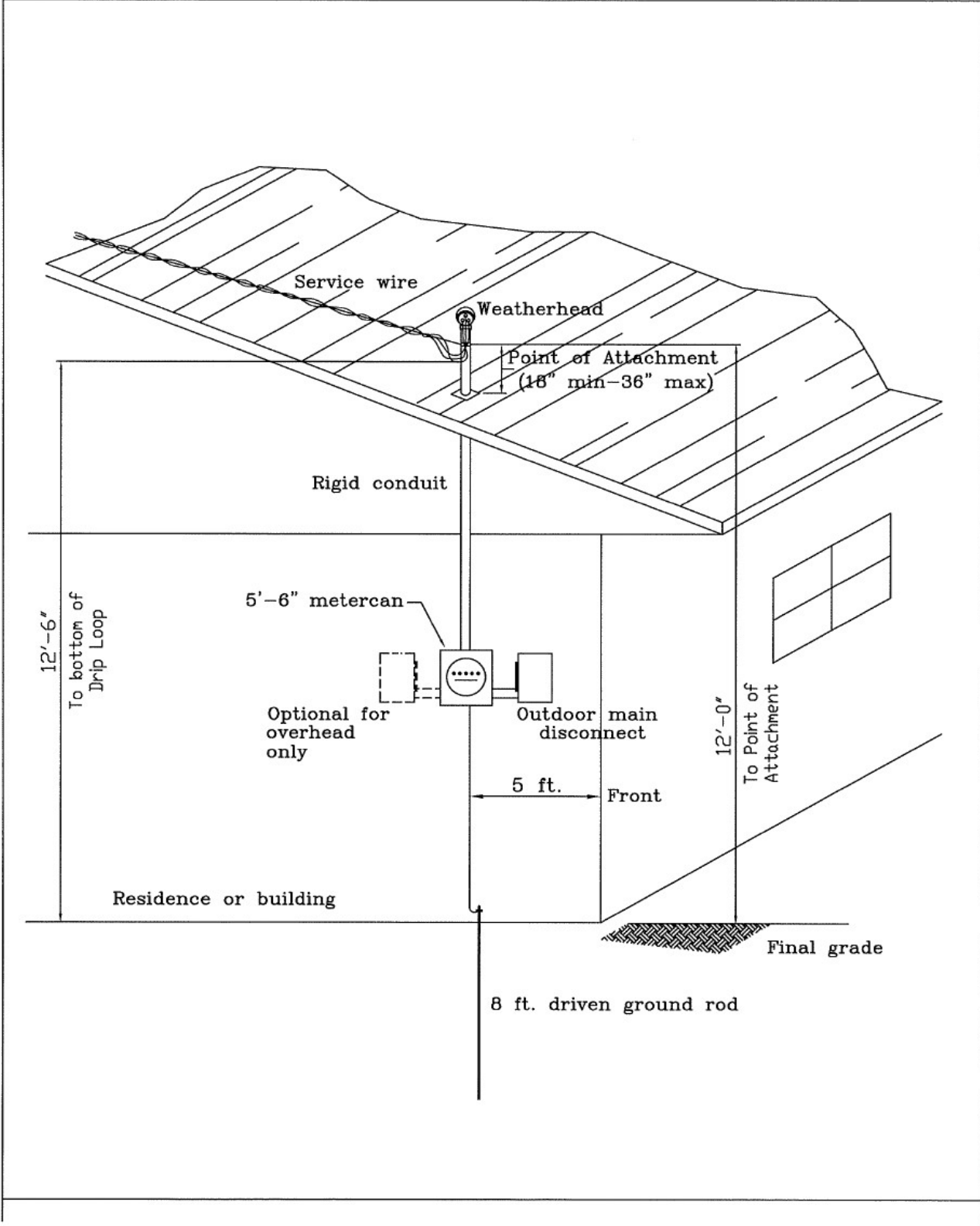
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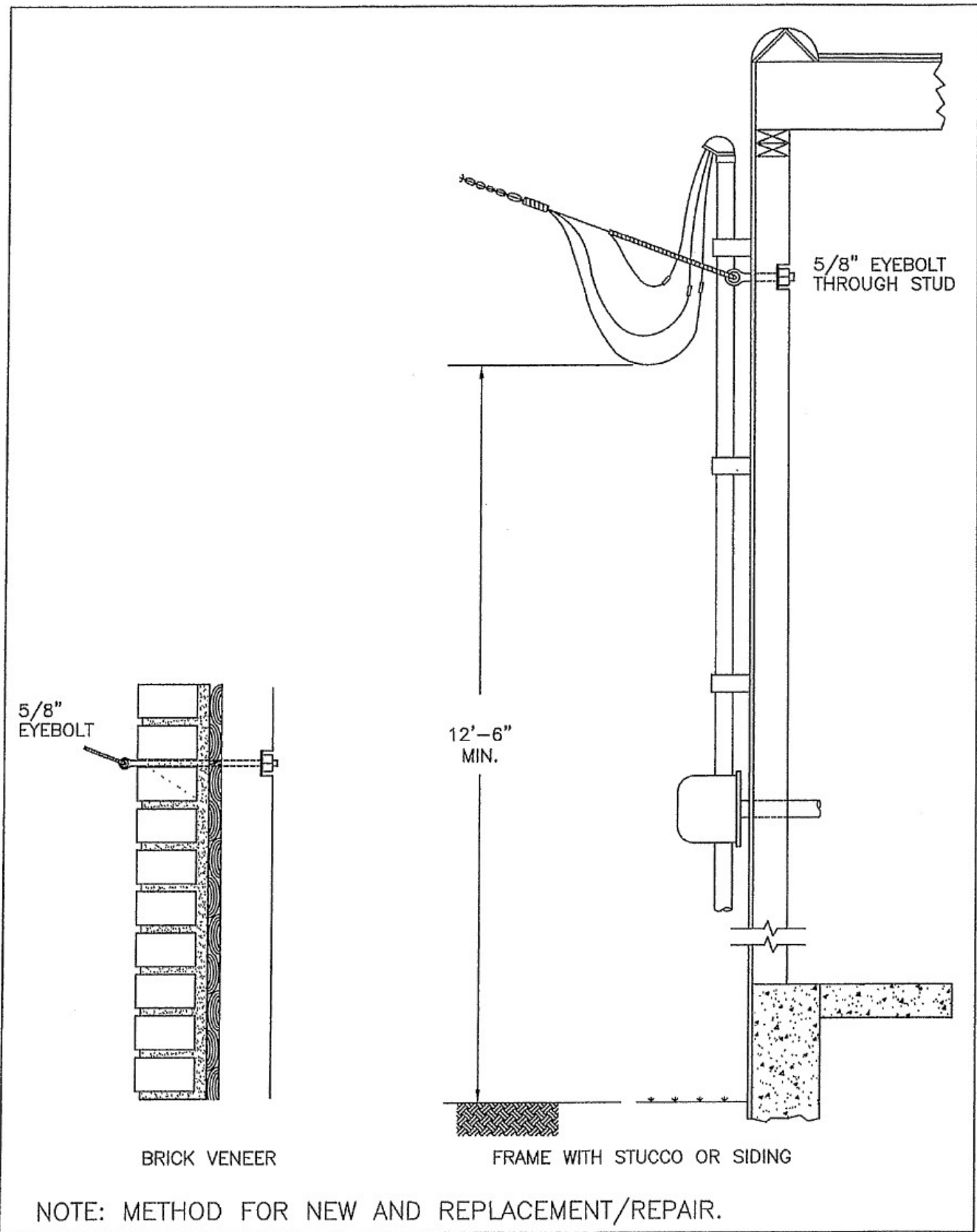
Permanent Single-Phase Service



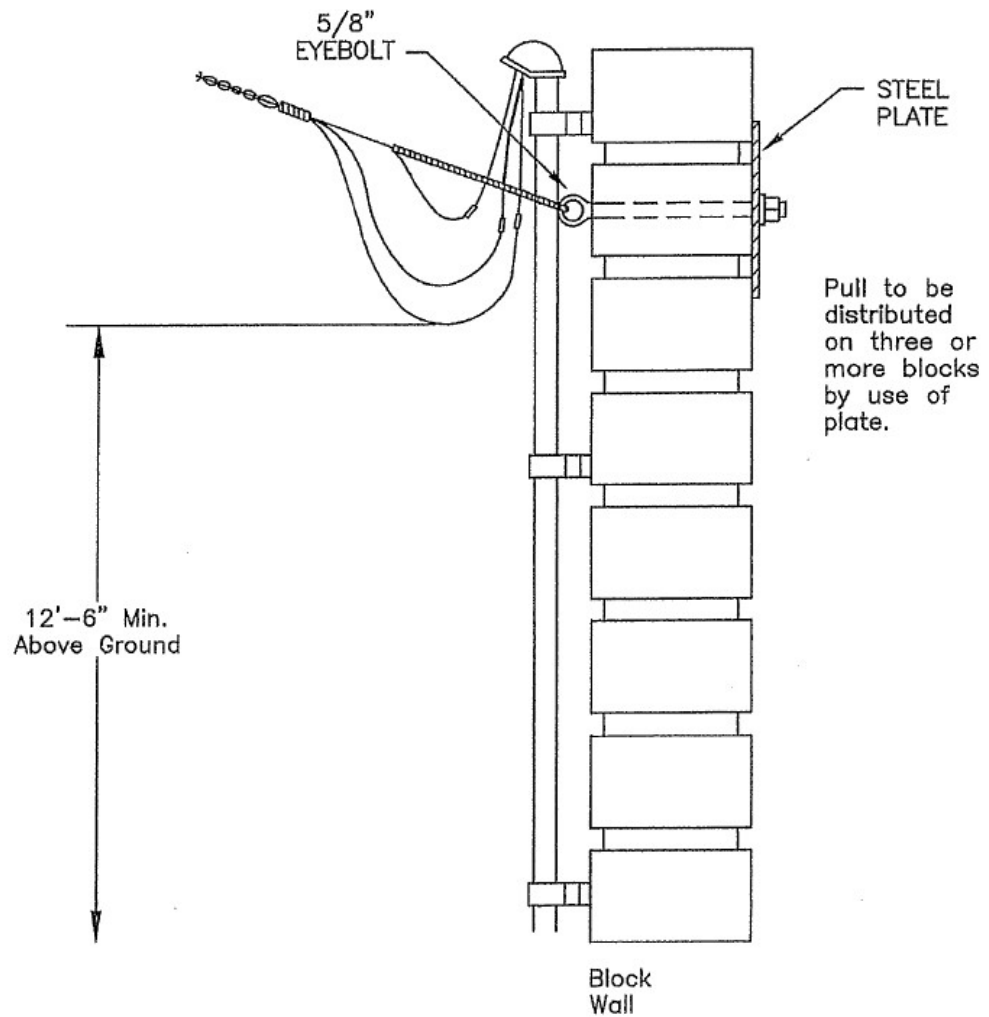
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Weatherhead Sketch





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NOTE:
METHOD FOR NEW AND REPLACEMENT/REPAIR