

7 Single Family Service

7.1 General

The location of the service entrance on the Customer's premises is an important consideration. For clearance and location information see section 5 (*Clearances*).

- Consult the Power Company to determine the point of attachment for overhead service drops, underground service laterals, and meter locations.
- Position the service entrance and meter to make them more accessible from Power Company distribution lines and convenient for the installation, reading, and maintenance of Power Company meters.

The Customer will provide, install, and maintain all service equipment (including service entrance conductors for overhead services, enclosures, and meter sockets) to include rights-of-way and space for the installation and maintenance of the Power Company facilities. Some conditions include:

- The Customer must not terminate the principal grounding conductor in the Power Company's sealed termination compartment.
- Customer wires installed in meter bases must allow clear space for the installation of Power Company wires. Panel covers must be secured prior to energizing.
- See section 6 for underground and conduit requirements.
- The meter socket must not be used as a junction box.

Always use ring-type meter sockets, complete with a company approved sealable ring.

7.1.1 Residential Sockets

Single phase direct-connect residential sockets which have maximum current capacity of 200 and 400 amperes and are ANSI, UL, EUSERC, and Power Company approved may be used. All single phase 400 amp services require an approved manual link bypass meter base. Services rated less than 200 amperes requires prior approval by the Power Company to allow for proper conductor and conduit size. See figure 7-1.

Code calculated loads greater than 320 amperes require current transformer metering. The Customer must contact the Power Company for information and requirements.

7.2 Underground Service

Before preparation of underground service, the Customer or electrical contractor must obtain approval and specifications from the Power Company covering the proposed installation and the Customer's responsibilities.

The Customer is responsible to recognize potential surface and sub grade water flows and coordinate with Power Company to minimize potential run-off problems.

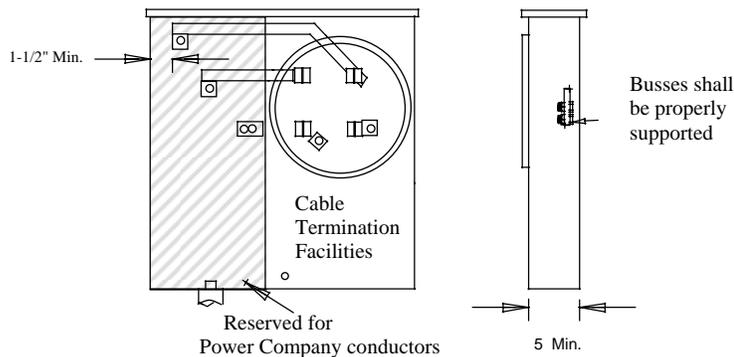
Customers adequately served by existing overhead distribution facilities, but desiring underground service, should contact the Power Company for details of the Power Company policy for conversions. Special rules may apply in core areas of cities where local ordinances specify underground service.

7.2.1 Underground Service Extension

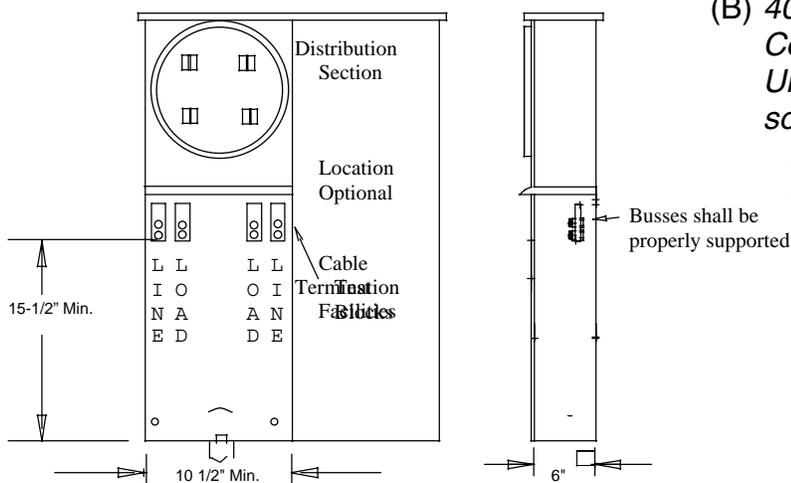
Figure 7-2 shows a typical installation of an underground service extension from the transformer to the house. Figure 7-3 shows a typical installation of a meter and associated hardware for surface and flush meter mounting methods. See section 6.3 for conduit requirements.

Figure 7-1 Residential Underground

(Approved Meter Sockets)



(A) 200 amp maximum single phase
Underground service meter socket.
(EUSERC 301A) See 7.1.1
(EUSERC 301 acceptable)

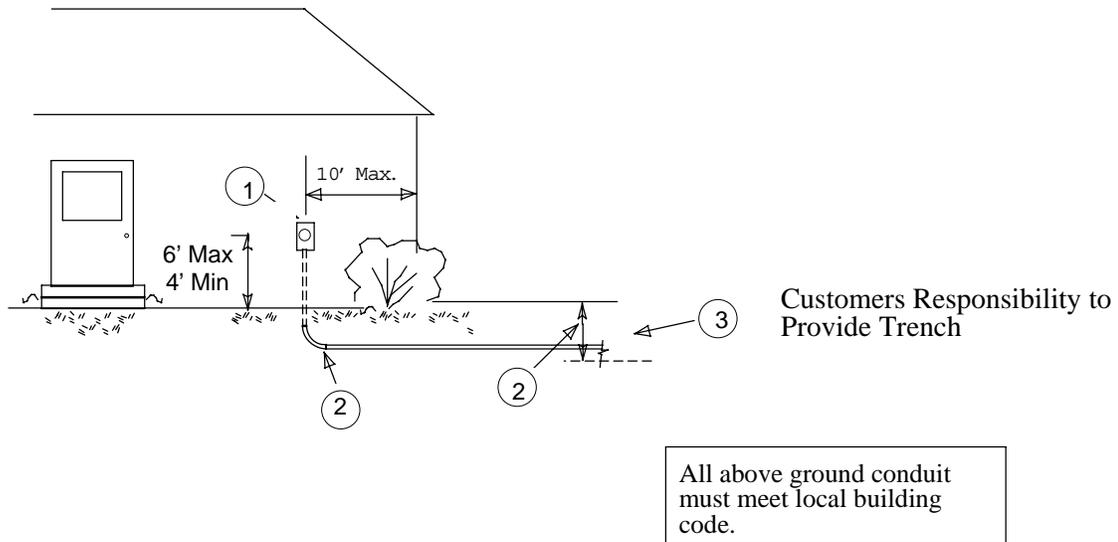


(B) 400 amps maximum (320 amp)
Continuous single phase
Underground service combination meter
socket, with approved Manual Link Bypass
(EUSERC 302B) See 7.1.1
(EUSERC 302 acceptable)

Notes:

- a. Hubs are not approved for use on the concentric knock-out of underground socket enclosures. Approved bushings, box adapters, or other conductor protection are required for these enclosures.
- b. The service entrance riser must be in line with left side of entrance knock-out (see figure 7-3).

Figure 7-2 Underground Conduit System



References:

1. The Customer will provide and install a Power Company approved meter base. The meter base must be located on the side of the house nearest to the Power Company transformer or junction box. The Power Company will determine the exact location of the meter.
2. See section 6 for underground and conduit requirements.
3. When the conduit terminates at a Power Company pole, vault, or junction box, consult the Power Company for exact conduit location.

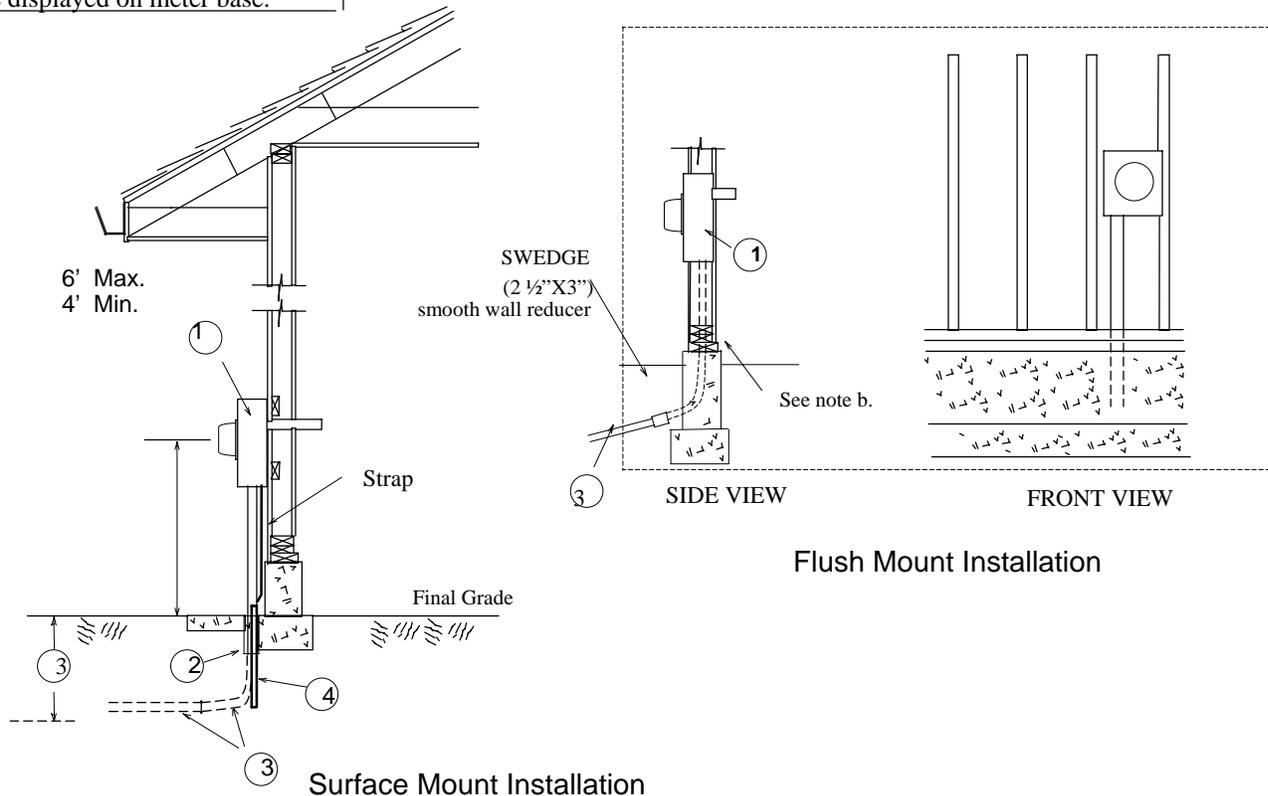
Notes:

- a. Always display the electrical label or permit on the meter base.
- b. The Customer is required to provide a minimum 3' x 3' x 3' access hole for the Power Company to make connections.
- c. See clearance section for other requirements.

“Call Before You Dig”

Figure 7-3 Underground Service
(Direct-connect metering)

Electrical label or permit must be displayed on meter base.



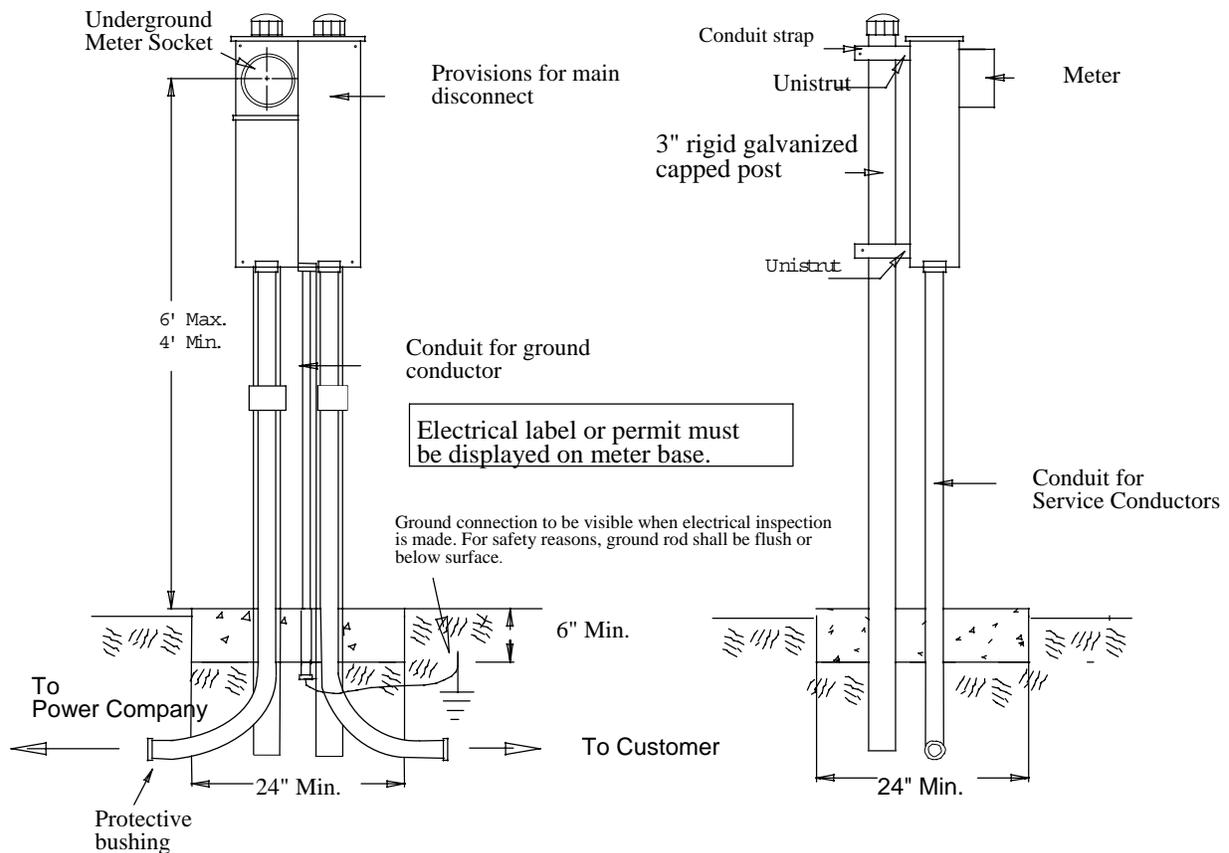
References:

1. Meter base and conduit must be securely attached to the structure. Meter socket must be plumb when inspected. The Power Company will determine the exact location of the meter. Refer to Figure 5-1 (*Meter Socket Clearance Requirements*). 2" x 4" back supports are required, see figure 5-1.
2. Conduit and sleeve is required when passing through paved area adjacent to building foundations.
3. See section 6 for underground and conduit requirements.
4. Ground in accordance with latest issue of NEC (Article 250 Grounding).

Notes:

- a. Display the electrical label or permit on the meter base.
- b. No bends will be allowed in the conduit riser between the meter base and the underground sweep. If local codes do not allow conduit in the foundation and/or footings, a surface mounted meter must be installed.
- c. If a paved area is adjacent to the building foundation, install the conduit past the edge of the pavement.
- d. For brick veneer or concrete block, use 1/4" x 3 1/4" lead sleeve expansion bolt in joint, in place of lag screws on anchor straps.

**Figure 7-4 Free Standing Residential Meter Pedestal
(Post Mounted)**



- Meter socket enclosure (underground type)
- Pedestal hardware
- Conduit (See section 6.3)
- Right-of-way
- Trench excavation and backfill
- Grounding per NEC
- Concrete Pad
- Long radius sweep

Notes:

- a. The installation of this type of residential service configuration is at the option of the Power Company. Before installation the customer must obtain approval from the Power Company.
- b. The meter pedestal will normally be located adjacent to or in the easement close to the driveway. The Power Company will specify location of the meter.
- c. Refer to section 6 for underground and conduit requirements.
- d. Figure 9-2 (*Alternate Underground Service*) is acceptable for residential meter pedestals.
- e. Service conduit must be plumb in all directions.

7.3 Overhead Service

For Customers in an overhead service area, the Power Company will install an overhead service drop from Power Company overhead distribution lines to the service entrance on the Customer's residence, building, or structure.

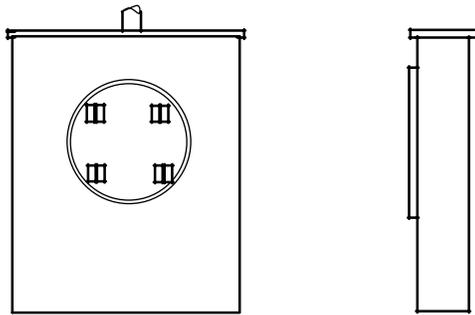
Consult the Power Company for location of meter socket before rewiring service. (See section 3.6 *Relocation of Services and Facilities*.)

The Customer must provide a single attachment point within two feet of the weatherhead which can be reached with a single span of service drop cable from an adjacent Power Company line. For service mounted on a Power Company-owned service pole, locate the weatherhead within two feet of the top of the pole. The point of attachment must be high enough above finished grade and in proper position to provide minimum clearances as specified in Table 5-1 (*Minimum Clearances*). It is important to reduce overhang of service drop above adjacent property and provide a service drop route without obstruction by buildings, trees, or other objects. Position the point of attachment on the building wall facing the nearest Power Company line or on a service mast capable of withstanding the tension of the service drop. Extend and tie supports for service drops from and into the main structural members of the building. *Extend the service mast through the roof* on a typical single-story building unless adequate clearance exists at the gable end of the building. (Also refer to Figure 5-2 *Residential Clearance for Overhead Service*.)

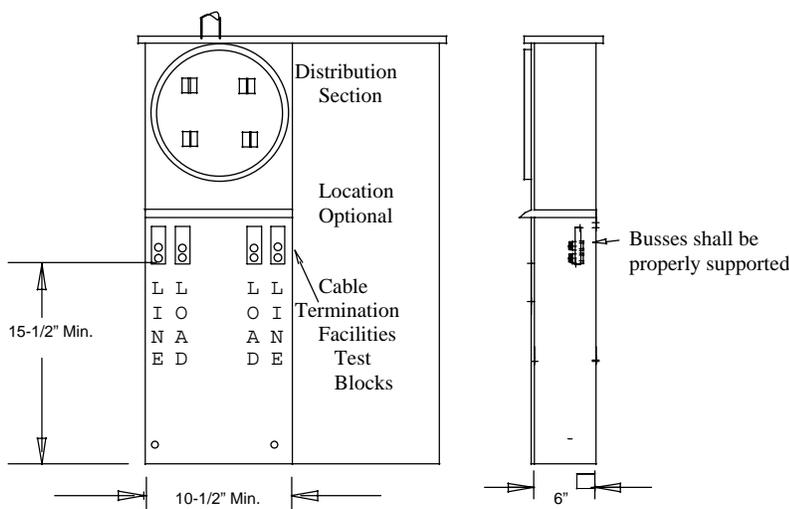
Use a rigid metal pipe clamp for the point of attachment on guy wire for a service mast. Use a 3/8-inch eyebolt connected to a significant structural member for the point of attachment on a building.

If a Member encounters problems in meeting these clearances, the Power Company will provide assistance in determining specific requirements that will comply with codes.

Figure 7-5 Residential Overhead
(Approved Meter Sockets)



(A) 200 amp maximum
single phase overhead service
meter socket only.
(EUSERC 301)



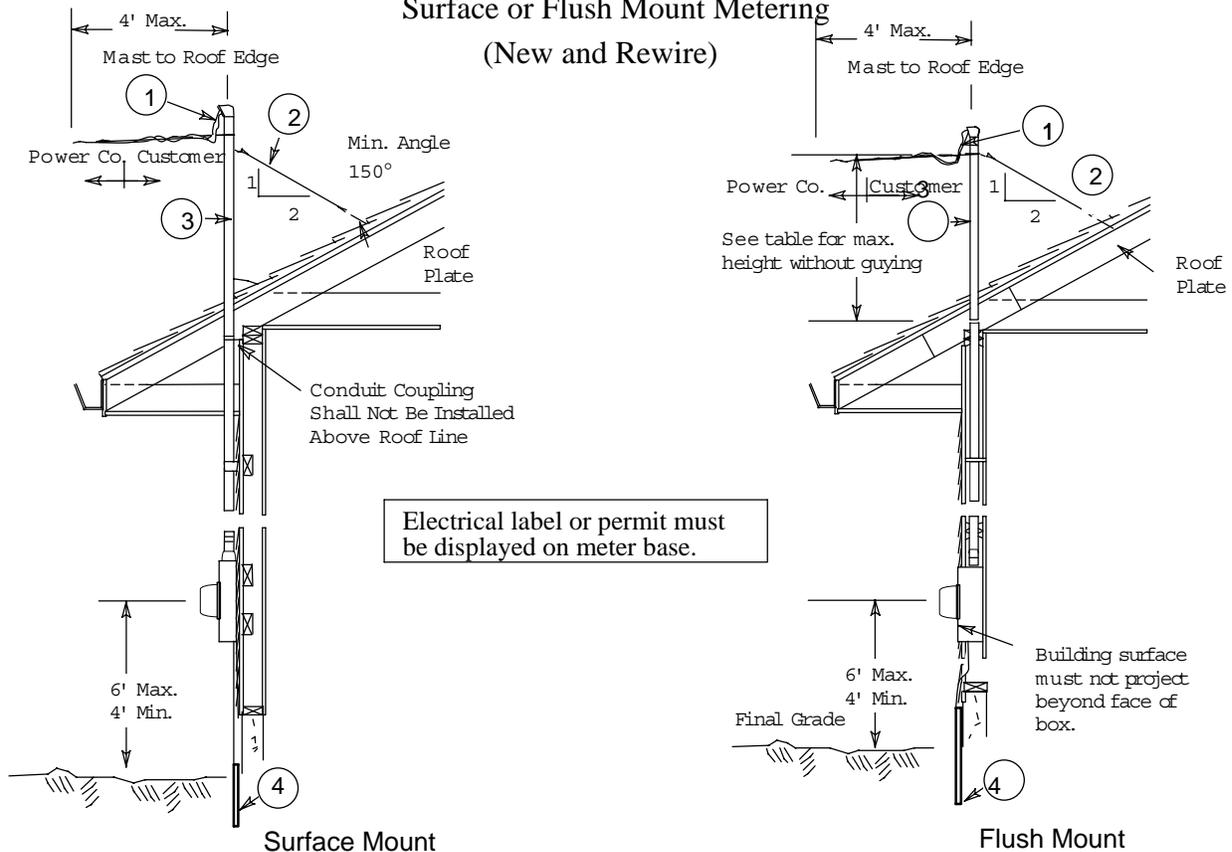
(B) 400 amps maximum (320 amp
continuous) single phase overhead
service with approved Manual Link
Bypass (EUSERC 302B)

Notes:

- a. See figure 5-1 and 5-2 for additional information.

Figure 7-6 Overhead Service

**Surface or Flush Mount Metering
(New and Rewire)**



Conduit Size Guying Recommendations

Service Mast Rigid Conduit	Service Size	Utility Service Length	Length of Unsupported Mast
2 inch	200 Amp Service	Less Than 100 ft.	24 inches
2 1/2 inches	201-400 Amp Service	Less Than 80 ft.	24 inches

References:

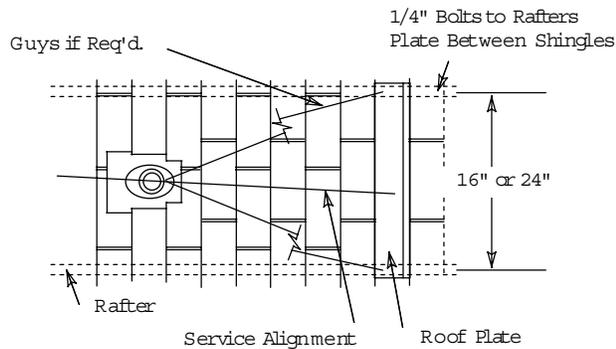
1. Allow 24 inch conductor leads for connection to service drops.
2. Service mast guying shall be 1/4 inch common galvanized steel strand or equal (two guys required).
3. Service entrance mast must be rigid conduit, NEC approved, and securely attached.
4. Grounding per NEC (Article 250 Grounding).

Notes:

- a. Mount service mast on side nearest distribution pole. Avoid service wire overhang over roof or provide clearance required over roof.
- b. For brick veneer or concrete block, use 1/4" x 3 1/4" lead sleeve expansion bolt in joint, in place of lag screws on anchor straps.
- c. See figure 7-7 for guying and anchoring mast.
- d. The Power Company will determine the exact location of the meter for new and rewire installations.

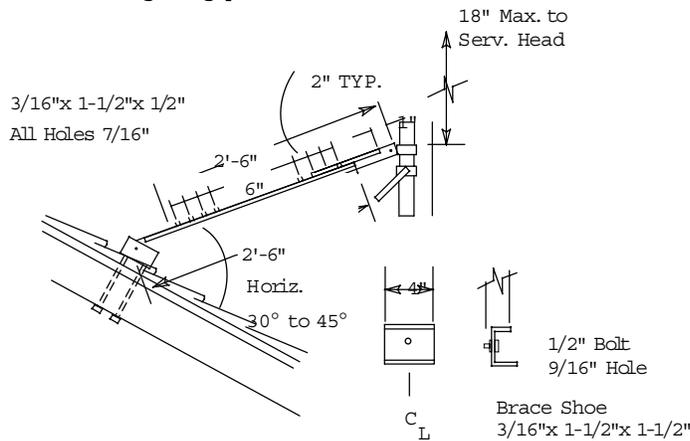
Figure 7-7 Mast Guying and Anchoring

GUYING & BRACING

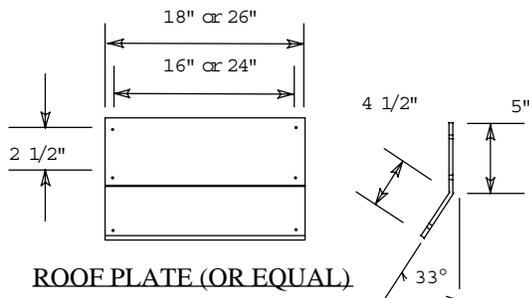


GUY DETAIL

Roof plate must be installed so that service alignment extension falls within angle of guys.

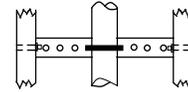


PUSH BRACE (2 REQ'D)
(OR EQUAL)

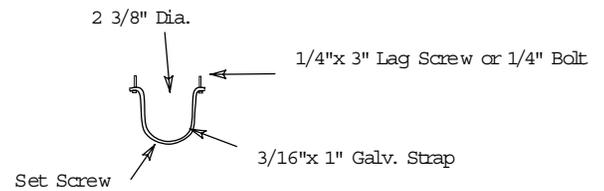


ROOF PLATE (OR EQUAL)

MAST ANCHOR

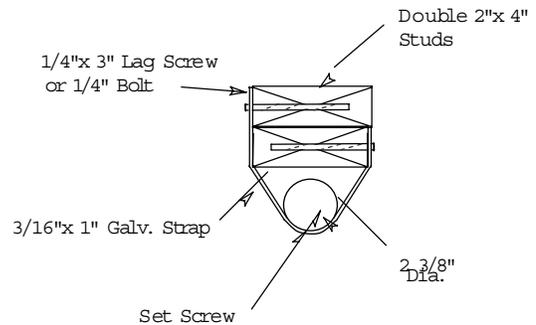


METAL BRACKET
(OR EQUAL)



ANCHOR STRAP NO. 1
(OR EQUAL)

3/8" eye bolts and washers with header block between rafters are acceptable, but eye lags are not acceptable.



ANCHOR STRAP NO. 2
(OR EQUAL)

Notes:

- a. Service mast must be mounted on side nearest distribution pole. Consult Power Company for rear of lot service lines. Refer to section 5 (*Clearances*) to provide clearance required over roof.