

**CENTRAL TEXAS ELECTRIC COOPERATIVE, INC**

**386 Friendship Lane**

**P.O. Box 553.**

**Fredericksburg, Texas 78624**

**(830) 997-2126**

**WIRING SPECIFICATIONS**

Electrical Facilities will be installed and maintained in accordance with the National Electric code (or C.T.E.C. rules, whichever is the more stringent). C.T.E.C. is not obligated to inspect consumer wiring. Inspection by C.T.E.C. and/or provision of electric service does not indicate or certify that the consumer wiring is safe or adequate or meets code requirements.

If you have questions regarding meter loops, wiring, or electrical equipment, please contact a qualified electrician, equipment representative, or the nearest C.T.E.C. office at:

**Fredericksburg (830) 997-2126    Llano (325) 247-4191    Mason (325) 347-6314    Kingsland (325) 388-4542**

**1. General Requirements for meter loops**

- a. Meter loops must be built with the proper size conduit, EMT, or rigid metal conduit, have a main disconnect, and have a grounding electrode.
- b. A main disconnect may consist of 6 or less fusible switches or circuit breakers, so long as all can be operated from one accessible location and are installed on the load side of ( below or beside) the meter.
- c. Meter loops must have proper grounding. (NEC article 250)
- d. Size of copper or aluminum wires in meter loops will be determined by the load to be served and the National Electric Code. Temporary loops and meter loops on buildings should have at least #6 copper or #4 aluminum be rated for a minimum of 60 amps. C.T.E.C. recommends that the neutral conductor be the same size as the phase conductor, especially where power quality is an issue.
- e. Permanent meter loops serving any type of building or structure must have at least a 60 amp main and a panel capable of providing 240volt service. Nameplate ratings on manufactured homes will be followed.
- f. Meter sockets should be located between 5 and 6 feet above permanent ground line. There must be at least 10 feet of clearance to the conductor drip loop coming out of the weather head. Loops shall be tall enough to allow proper ground clearance for service drop wires (15 feet over residential areas and private driveways, 18 feet over alleys, commercial driveways, and land traversed by vehicles, 22 feet over public roads).
- g. The owner or builder must provide an adequate tie point for the service drop on metal or masonry buildings.
- h. A 2" diameter service mast of rigid metal conduit is the minimum when going through a roof for clearance. The mast and weather head may extend from 18" to 30" above the roof.
- i. All mains or weatherproof gutters installed above the meter should have provisions for locking with a Cooperative lock.
- j. Temporary meter loops should be weatherproof and have at least 10' of clearance to the drip loop wires coming out of the weather head. The post supporting a temporary construction loop should be set to a proper depth and be well braced. Ground-fault protection shall be provided for personnel at temporary service locations in accordance with article 305-6 of the National Electric Code.
- k. Large meter loops (300+ amps) may be built with the breaker boxes on each side of the meter base instead of below it.

**2. Wiring Guidelines**

- a. Proper cable, wiring, materials, and equipment will be used in all locations, including those that involve special conditions such as moisture, high temperature, explosion hazards, earth contact, or sensitive electrical devices.
- b. Circuit breakers and/or fuses will be sized according to the National Electric Code and to the load being served.
- c. Wires should not be exposed or unprotected. Proper connectors or clamps must be used at all boxes, panels, and mains. Raceways and conduits will be used where required.

## RESIDENTIAL SERVICE

### CONDUCTOR TYPES AND SIZES

TYPES RH-RHH-RHW-THHW-THW-THWN-XHHW CONDUCTORS

| MAIN DISCONNECT<br>PANEL RATING | COPPER<br>AWG | ALUMINUM OR COPPER<br>CLAD ALUMINUM AWG |
|---------------------------------|---------------|---|
| 60 AMP                          | #6            | #4                                      |
| 100 AMP                         | #4            | #2                                      |
| 125 AMP                         | #2            | #1/0                                    |
| 150 AMP                         | #1            | #2/0                                    |
| 200 AMP                         | #2/0          | #4/0                                    |
| 225 AMP                         | #3/0          | #250 MCM                                |
| 250 AMP                         | #4/0          | #300 MCM                                |
| 300 AMP                         | #250 MCM      | #350 MCM                                |
| 350 AMP                         | #350 MCM      | #500 MCM                                |
| 400 AMP                         | #400 MCM      | #600 MCM                                |

Refer to current version of the National Electric Code to determine conduit size necessary for type of conductor used.

# TEMPORARY CONSTRUCTION SERVICE

C.T.E.C.  
Lineside

Complete installation must  
be weatherproof

Cust. to furnish 18" of wire  
remaining outside of weatherhead  
with neutral marked.

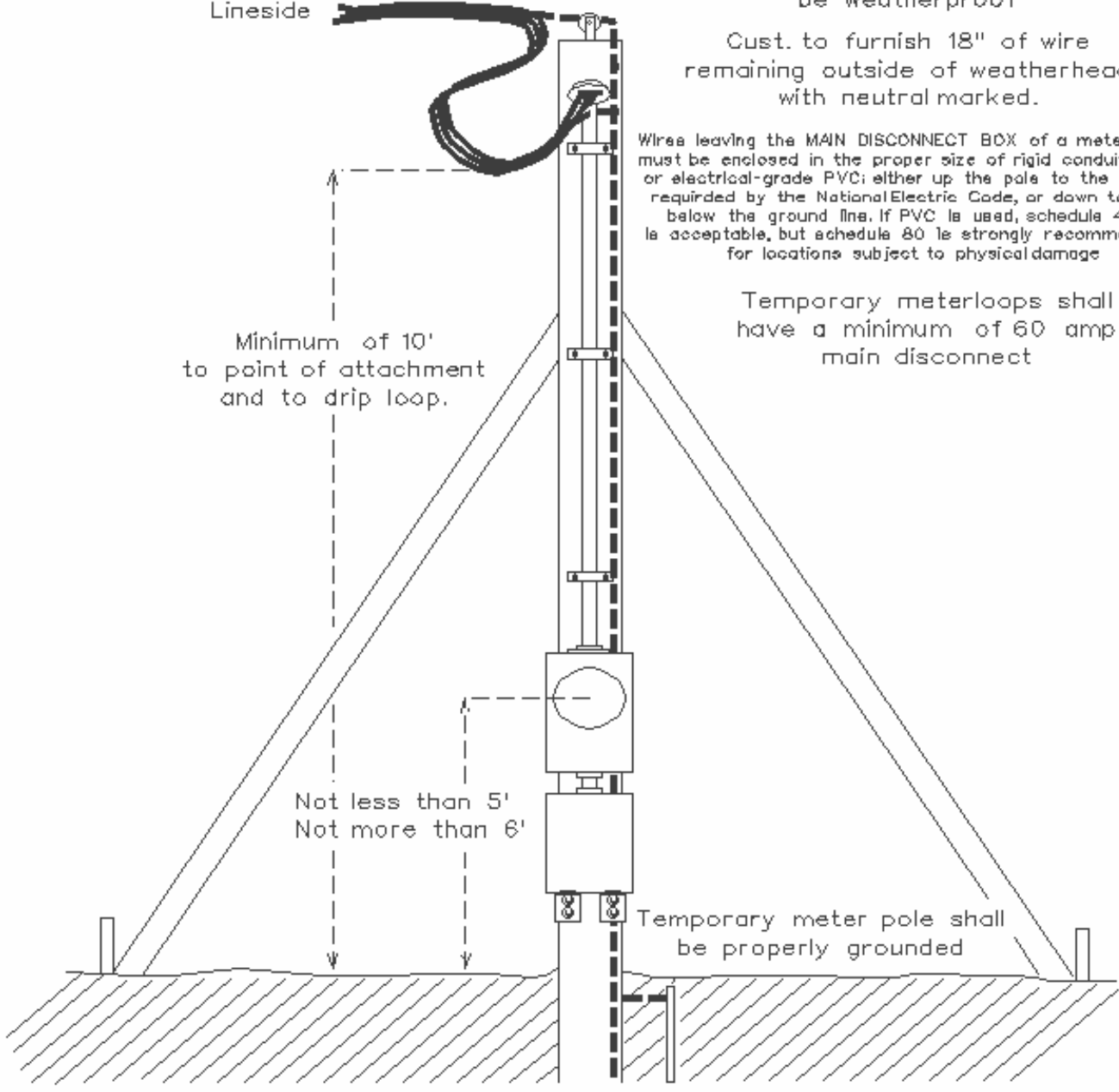
Wires leaving the MAIN DISCONNECT BOX of a meterloop  
must be enclosed in the proper size of rigid conduit, EMT,  
or electrical-grade PVC; either up the pole to the height  
required by the National Electric Code, or down to 18"  
below the ground line. If PVC is used, schedule 40  
is acceptable, but schedule 80 is strongly recommended  
for locations subject to physical damage

Minimum of 10'  
to point of attachment  
and to drip loop.

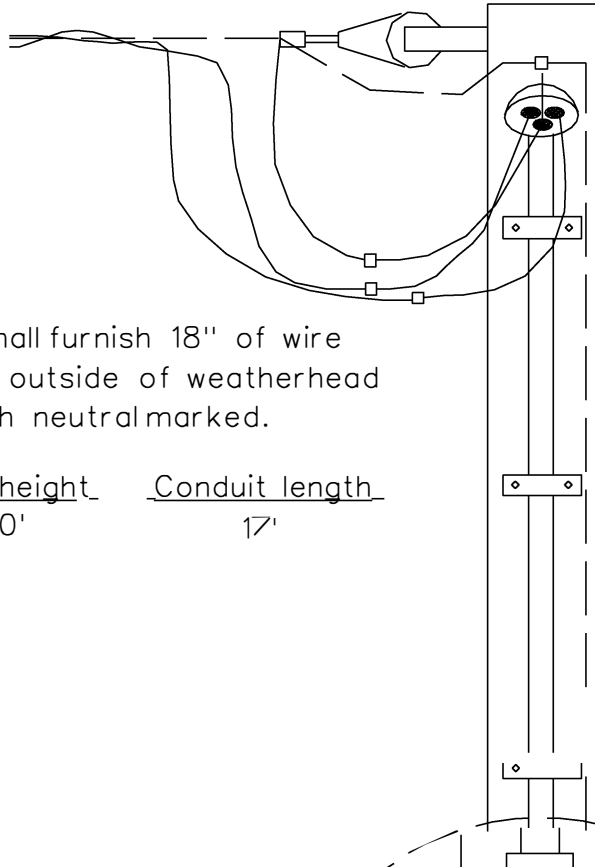
Temporary meterloops shall  
have a minimum of 60 amp  
main disconnect

Not less than 5'  
Not more than 6'

Temporary meter pole shall  
be properly grounded



METERLOOP MOUNTED ON POLE



Cust. shall furnish 18" of wire remaining outside of weatherhead with neutral marked.

Pole height      Conduit length  
30'                      17'

Pole furnished and set by C.T.E.C.  
Complete installation must be weatherproof

Size of conduit to be determined by number and size of conductors.  
(Rigid metal conduit, I.M.C. or E.M.T.)

Note: Three conduit straps and stand-offs (when needed) shall be furnished by customer

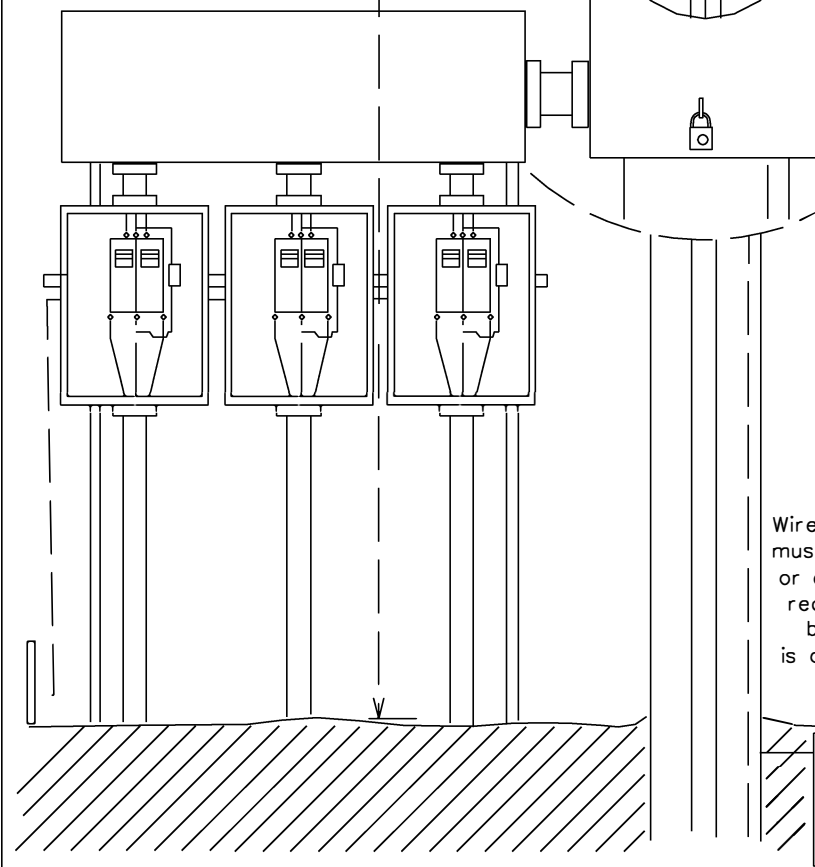
Not less than 5'  
Not more than 6'

Conductor size and breaker sizes will be in accordance with service load.

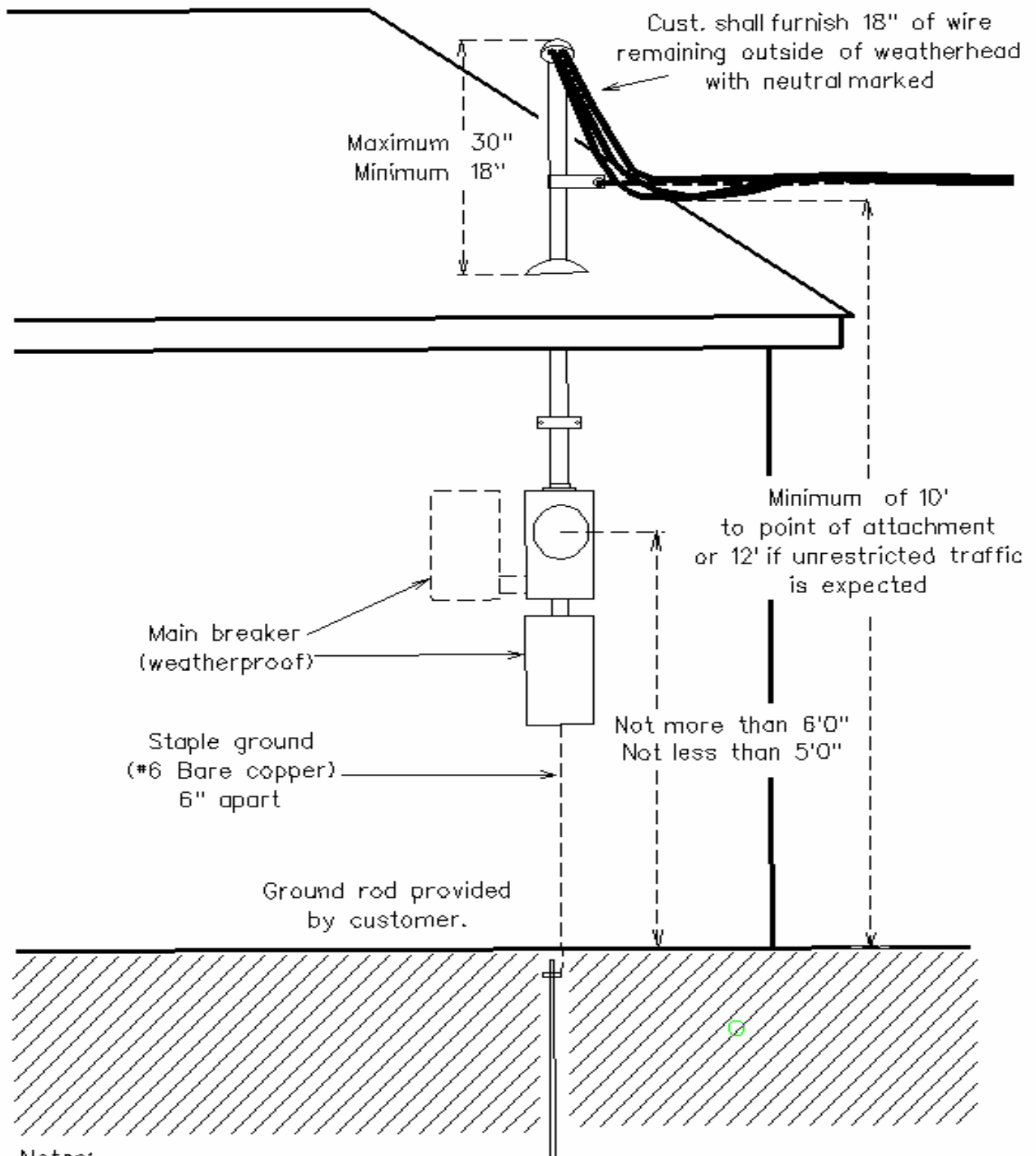
Cust. to furnish a minimum of 12" of #6 bare copper extending out of breaker box to be connected to neutral bar, for grounding. Bar must be grounded to breakerbox.

Wires leaving the MAIN DISCONNECT BOX of a meterloop must be enclosed in the proper size of rigid conduit, EMT, or electrical-grade PVC; either up the pole to the height required by the National Electric Code, or down to 18" below the ground line. If PVC is used, schedule 40 is acceptable, but schedule 80 is strongly recommended for locations subject to physical damage

Ground rod provided by C.T.E.C.



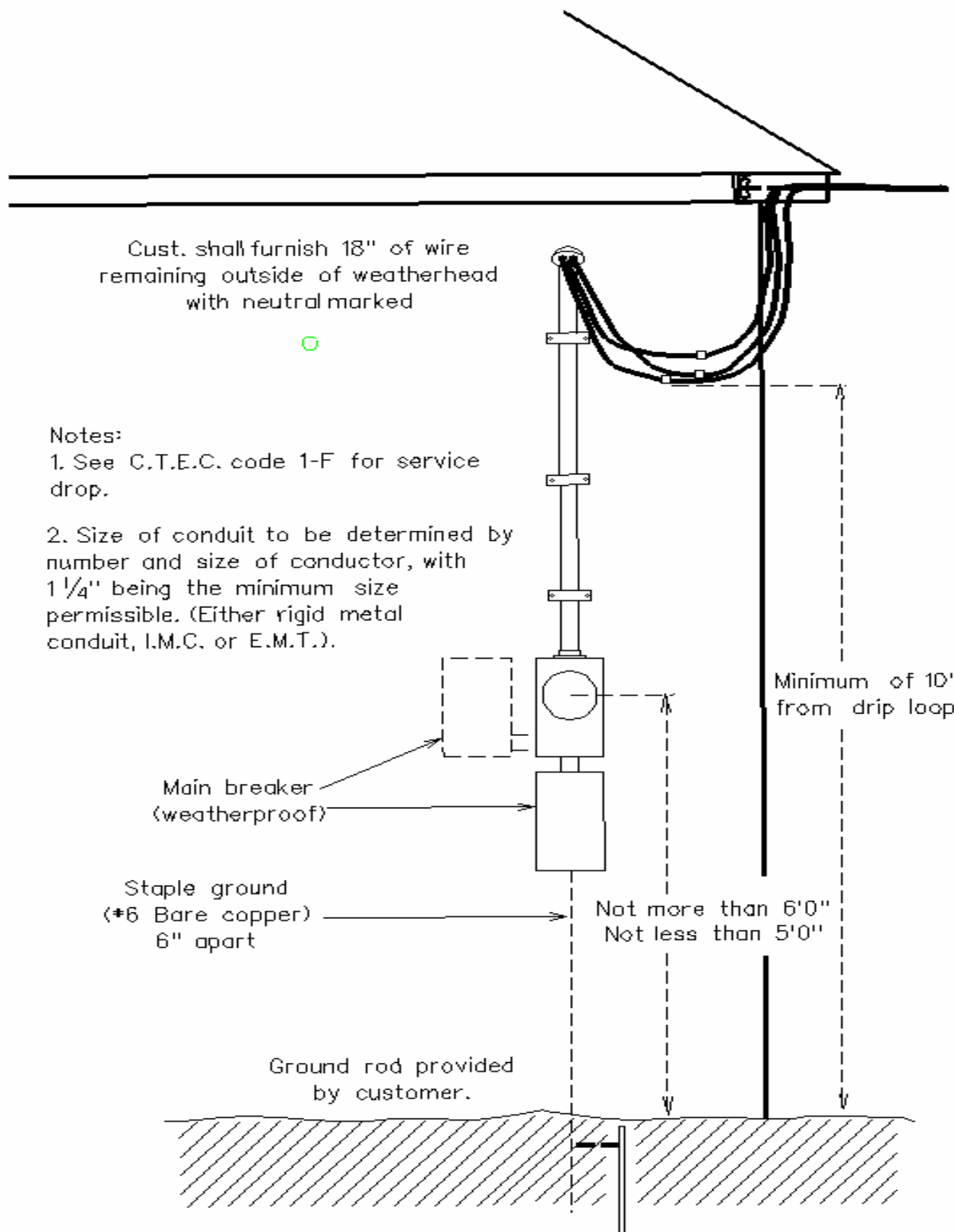
## SERVICE TO RESIDENTIAL OR COMMERCIAL BUILDING



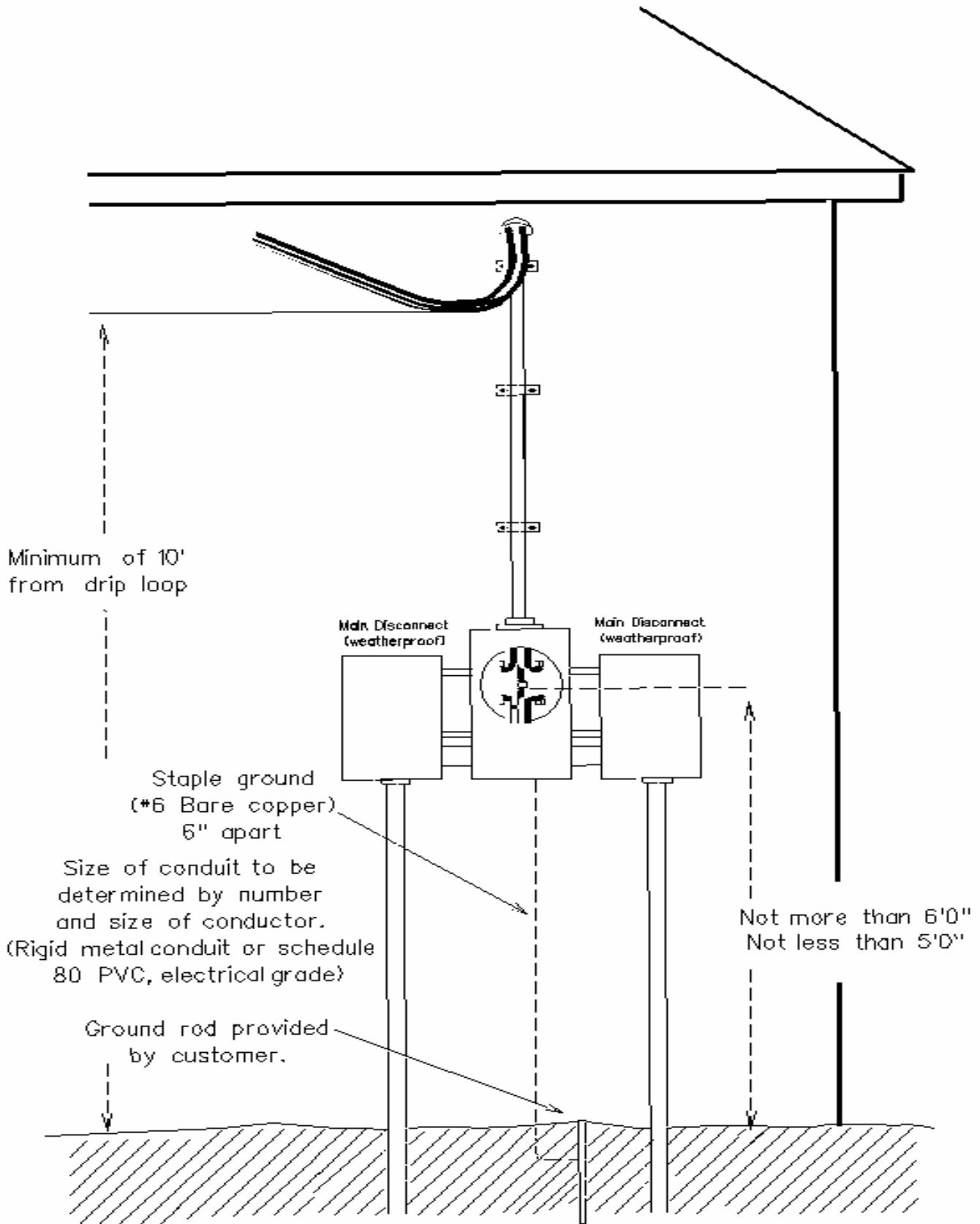
### Notes:

1. See C.T.E.C. code 1-F for service drop.
2. Size of conduit to be determined by number and size of conductor and service strain, with 2" being the minimum size permissible. (Must be rigid metal conduit).

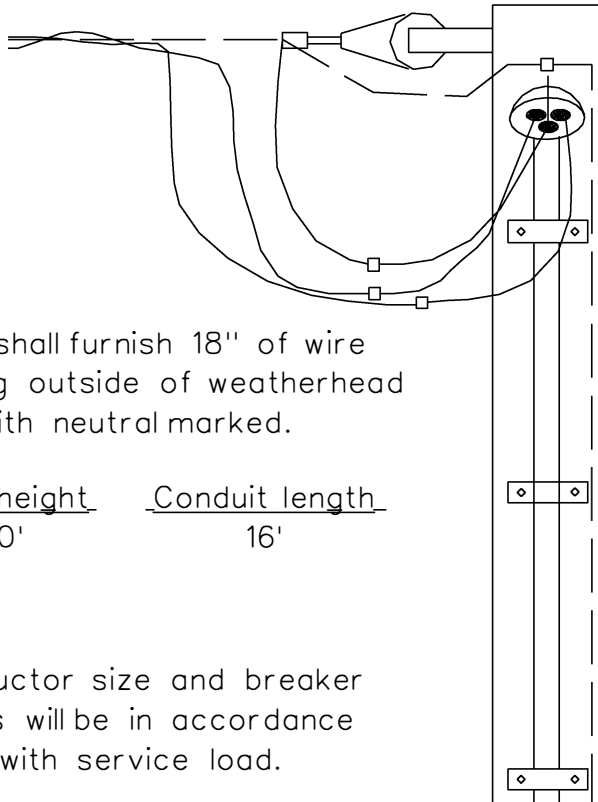
# SERVICE TO RESIDENTIAL OR COMMERCIAL BUILDING WITH HIGH EAVES



# OVERHEAD SERVICE TO RESIDENTIAL OR COMMERCIAL BUILDING



300 - 400 AMP SERVICE MOUNTED ON POLE



Pole furnished and set by C.T.E.C.  
Complete installation must be weatherproof

Size of conduit to be determined by number and size of conductors.  
(Rigid metal conduit, I.M.C. or E.M.T.)

Note: Three conduit straps and stand-offs (when needed) shall be furnished by customer

Cust. shall furnish 18" of wire remaining outside of weatherhead with neutral marked.

|                    |                       |
|--------------------|-----------------------|
| <u>Pole height</u> | <u>Conduit length</u> |
| 30'                | 16'                   |

Conductor size and breaker sizes will be in accordance with service load.

Main Disconnect (weatherproof)

Not less than 5'  
Not more than 6'

Ground rod provided by C.T.E.C.

Cust. to furnish a minimum of 12" of #6 bare copper extending out of breaker box to be connected to neutral bar, for grounding. Bar must be grounded to breakerbox.

Wires leaving the MAIN DISCONNECT BOX of a meterloop must be enclosed in the proper size of rigid conduit, EMT, or electrical-grade PVC; either up the pole to the height required by the National Electric Code, or down to 18" below the ground line. If PVC is used, schedule 40 is acceptable, but schedule 80 is strongly recommended for locations subject to physical damage