REQUEST FOR BIDS
ADDENDUM NO. 1

Town of Springerville
Springerville Park Restrooms

March 14, 2016

The following revisions shall be incorporated into the Request for Bids for Springerville Park Restrooms:

1. 200 amp service & meter loop with weatherhead and drop pole to be included for service to local utility company on outside of building (See specs attached OVERHEAD SERVICE). Reference: Navopache Electric Company

Springerville Park Restrooms Addendum #1 is twenty-two pages.

OVERHEAD SERVICE

Table of Contents

OVERHEAD SEPVICE 0-600 VOLTS

General

1. The Cooperative reserves the right to determine all meter locations, including points of attachment.

2. The height of the point of attachment on the consumers building or structure for overhead service shall be adequate to provide vertical clearances between the service drop conductors and the ground.

In some cases the service attachment height may have to be higher than the required minimums in order to maintain the proper vertical clearance between service conductors and the ground.

3. Drip loops at the service conductors point of attachment shall have proper height above ground.

4. The point of service drop attachment on a building shall be located on an exterior wall nearest the Cooperative's pole line.

5. The service equipment riser shall be extended through the roof when the service equipment is mounted on the eave side of the building.

The riser must also be extended through the root when the service equipment is mounted on the gable end and within ten (10) feet of the corner of the building, (if the gable end of the building roof has an overhang).

6. A service support shall be provided to withstand a minimum 200 pounds of tension. The responsibility for furnishing a sufficiently substantial service support rests solely with the consumer. Lag bolts are not considered acceptable. In special cases, such as bus duct risers, attachment tensions greater than 200 pounds may be required. (Consult Cooperative).

7. Where the service conduit riser is used as a mast for supporting the service drop, it shall be two inches minimum size rigid steel or IMC steel conduit and contain no coupling or fittings which would be subject to strain by the service drop.

Exception: If necessary to use more than one 10 foot length of conduit, the full length (10') conduit shall be the upper

conduit, thereby putting the coupling below any strain. The riser shall be supported with pipe straps no more than thirty-six (36) inches apart.

8. In the event a mast type riser is required to attain the required height, it shall be of such construction and so supported that it will withstand the strain imposed by the service drop.

9. Service riser conduits shall be so located that the center of the point of attachment for the service drop will be within twelve (12) inches of the center of the weather head.

10. A maximum of three (3) service riser conduits may be supplied from one overhead service drop.

11. Risers must be constructed of either rigid or IMC steel conduit. Non-metallic sheathed cables, metallic sheathed cable (BX), flexible conduit, water pipe, gas pipe, etc. will not be accepted as substitutes.

12. No foreign attachments shall be permitted on a service riser conduit such as telephone or television service drops, etc.

13. Overhead riser shall not be enclosed by any wall.

14. In no case may consumer's metered circuit. be installed in the same conduit as service entrance conductors.

15. For 3-wire, 120/240 V services, the neutral conductor shall not be smaller than two trade sizes than the ungrounded conductors. For 3-wire, 120/208 V single phase services, the neutral conductor shall be the same size as the phase conductors.

16. For all other services, the neutral conductor shall be no less than 70% of the size of the phase conductors unless supported by actual engineering calculations supplied to the Cooperative by the consumer.

17. Wires from the weather head and from the main service switch or circuit breaker shall be properly made-up and connected to the meter socket by the consumer.

18. The top of an overhead riser must be equipped with a weather head and have at least 24" of each conductor extending there from, located within 12 inches of the center of the point of attachment.

19. The roof shall be properly sealed around the service entrance riser in a rain tight and workmanlike manner.

Maximum Service Entrance Conductor Size in Overhead Risers

Service entrance conductors installed by the consumer shall be sized per National Electrical Code Requirements. Maximum size conductor shall be 500 MCM with a maximum number of two conductors per phase. Capacities above 2-500 MCM per phase shall be bus bar.

If service riser conductors are to be paralleled, they shall be paralleled in separate conduits.

Exception: Parallel conductors may be installed in one riser provided the conduit is sized properly per National Electrical Code for the total amount of wire installed. Parallel conductors must terminate on a common bus (e.g., 8 conductors in one circuit for a four wire service. 2-ABCN).

Overhead Bus Duct Riser Requirements

Maximum number of conductors allowed in a riser shall be two per phase. Service entrance conductor requirements exceeding 2-500 MCM conductors per phase shall be bus bar construction. All bus bar cabinets shall be constructed in accordance with **Electric Utility Service Equipment Requirements** (EUSERC) and four (4) copies of proposed service section drawing submitted to the Cooperative's Engineering Department for approval before construction.

Identification of Conductors

Any neutral or delta power (high) leg of service entrance conductors, provided as required for various types of service, shall be permanently identified. The identification shall be applied on the open conductors (drip loop) extended from the weather head or on the bus stubs of a bus duct service head, whichever is applicable.

The neutral shall be **white** and the Delta Power (high) leg shall be **orange**.

Clearances Above Ground, Thoroughfares, Driveways, Etc.

Service drop conductors when not in excess of 300 volts, phase to ground, shall have the following minimum clearance at the lowest point of the span. **The height of the Point of attachment shall be governed by these clearances.**

Clearances are based on conductors supported on and cabled together with an effectively grounded messenger.

Crossing over areas accessible to pedestrians only----------12 ft.

Crossing over residential driveways---------12 ft.

Crossing over commercial areas, parking lots, agricultural or other areas subject to truck traffic (trucks are defined as any vehicle exceeding 8 feet in height)----------18 ft.

Crossing over commercial or industrial parking lots not subject to truck traffic. (truck height must be physically restricted)----------12 ft.

Crossing over public streets, alleys, or roads in urban or rural districts and driveways on other than residential property----------18 ft.

NOTE: In areas where oversize or elevated equipment is used or will travel, or for conditions not listed, consult with the Cooperative's Engineering Department for instructions before installing service entrance, conduit and other equipment.

CLEARANCES ABOVE GROUND RESIDENTIAL
THESE MINIMUM CLEARANCES APPLY TO THE LOWEST POINT OF SERVICE DROP SAG

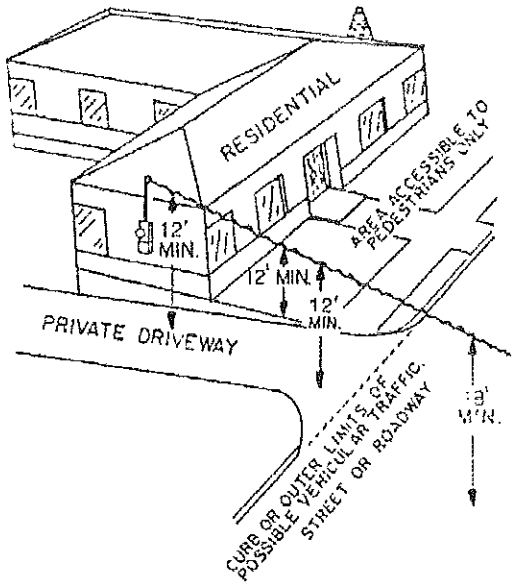
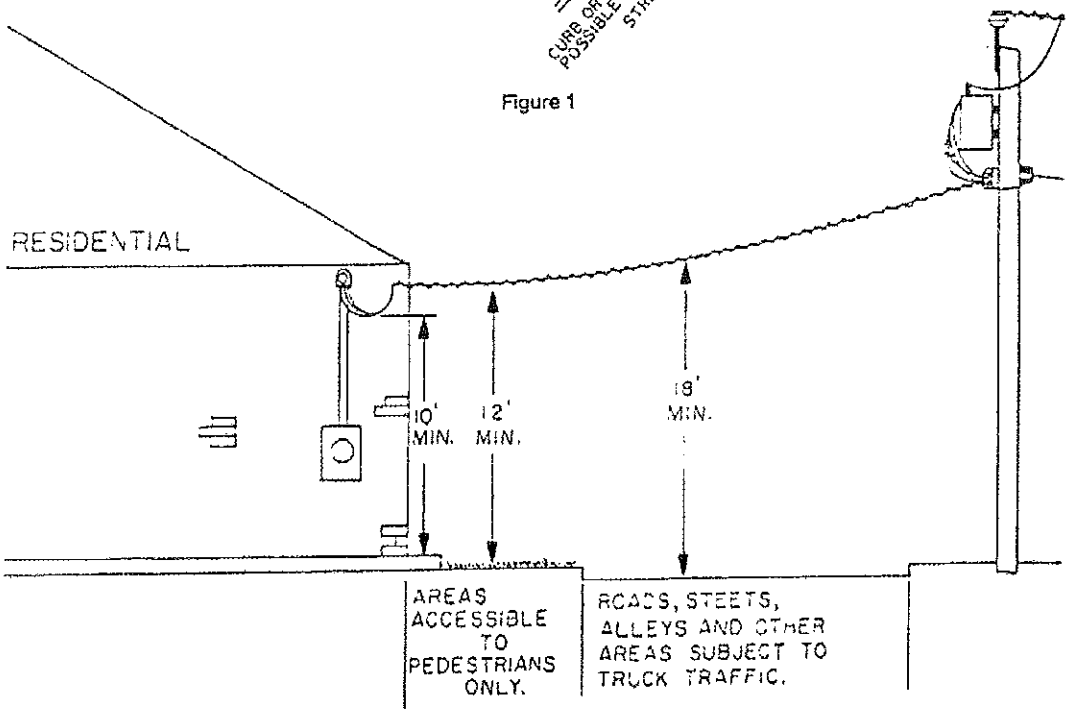


Figure 1



OVERHEAD SERVICE
0-300 VOLTS
CLEARANCES ABOVE GROUND

CLEARANCES ABOVE GROUND
INDUSTRIAL & COMMERCIAL

THESE MINIMUM CLEARANCES APPLY TO THE LOWEST POINT OF SERVICE DROP SAG

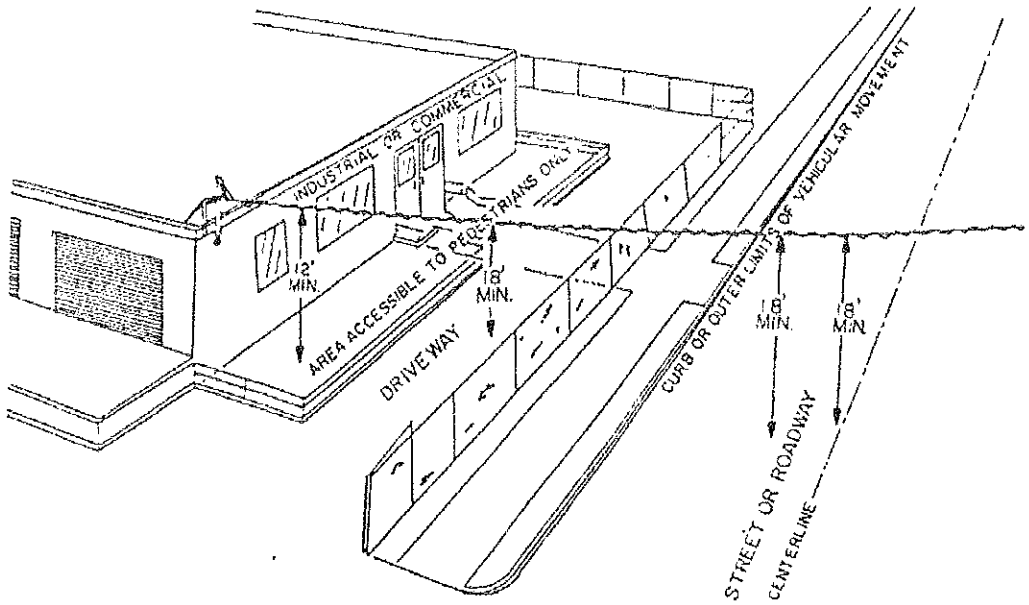


Figure 1

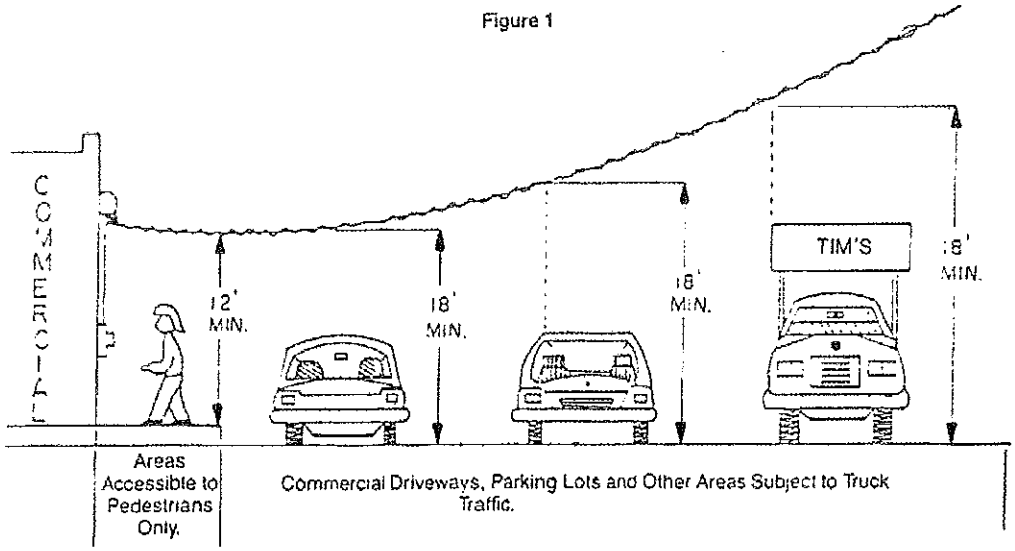


Figure 2

OVERHEAD SERVICE
0-300 VOLTS
CLEARANCES ABOVE GROUND

Clearance Over Buildings and Structures

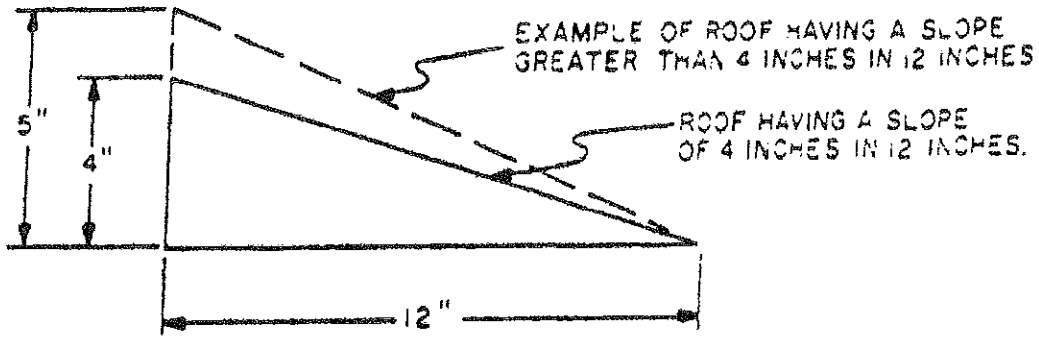
Service drop conductors shall not be readily accessible.

It shall be the consumers responsibility to provide a point of attachment so that Cooperative service drop conductors meet these requirements.

Clearance Over Roof

Service drop conductors shall have a clearance of not less than 8 feet from the highest point of roofs over which they pass, with the following exceptions.

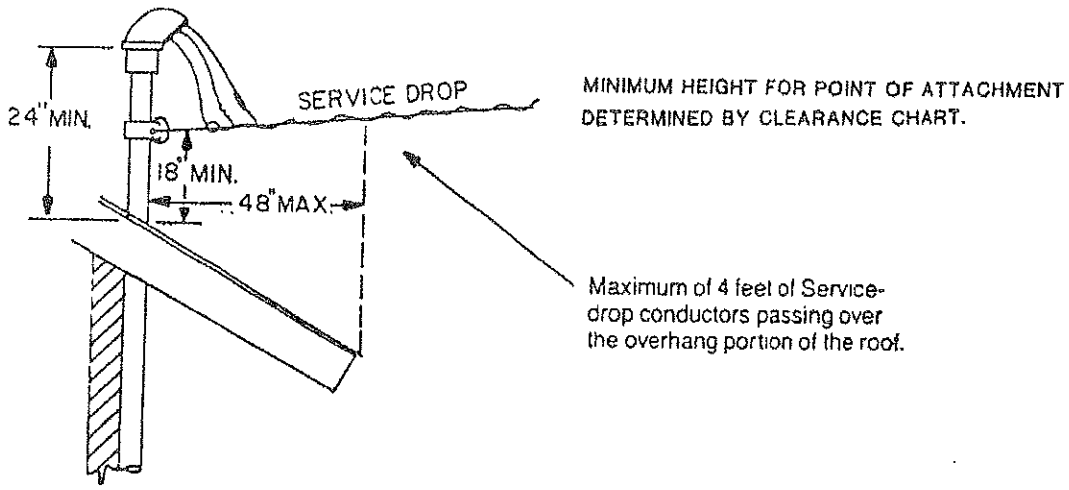
Exception No. 1: Where the voltage between conductors does not exceed 300 volts and the roof has a slope of not less than 4 inches in 12 inches, the clearance may be not less than 3 feet.



The intent of this exception is that where the roof has a slope 4 in. in 12 in., or greater, it is considered difficult to walk upon and the height of conductors could then be less than 8 ft. from the highest point over which they pass, but in no case less than 3 ft., except as permitted in Exception 2.

It is the intent of the Cooperative not to place service drops or any lines over any structure such as houses, sheds, mobile homes, etc, on new installations. the Cooperative will require that the meter location be such that crossing over such structures will be avoided.

Exception 2: Service drop conductors of 300 volts or less which do not pass over other than a maximum of 4 feet of the overhang portion of the roof for the purpose of terminating at a (through-the roof) service raceway or approved support may be maintained at a minimum of 18 inches from any portion of the roof over which they pass.



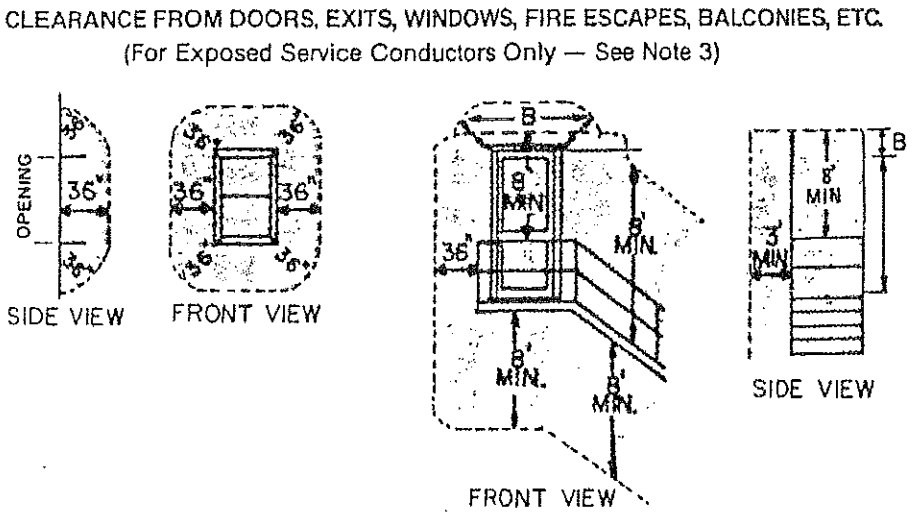
Service entrances shall not be located within a roofed-in area necessitating Cooperative personnel to walk on or place a ladder on roof to make attachment to riser conduit or support and to connect consumer's service.

CLEARANCE FROM DOORS, EXITS, WINDOWS FIRE ESCAPES, **BALCONIES ETC**
The vertical' horizontal and radial service drop conductor clearance from doors, exits, windows, fire
escapes, and other openings, at any of which human contact might be expected, shall not be less
than that specified and illustrated:

Minimum
Clearance

1. Vertically above and below surfaces of fire escapes, balconies, stairways and walkways.....8 Feet
2. Horizontally and radically from doors, exits, windows and other openings .....3 Feet
3 Horizontally and radically from the outer extremities of fire escapes, balconies,
stairways and walkways'' .... 3 Feet

CLEARANCE FROM DOORS, EXITS, WINDOWS FIRE ESCAPES, BALCONIES ETC
(For Exposed Service Conductors Only—See Note 3)



NOTES:

1. Service drop conductors not permitted within shaded zones.

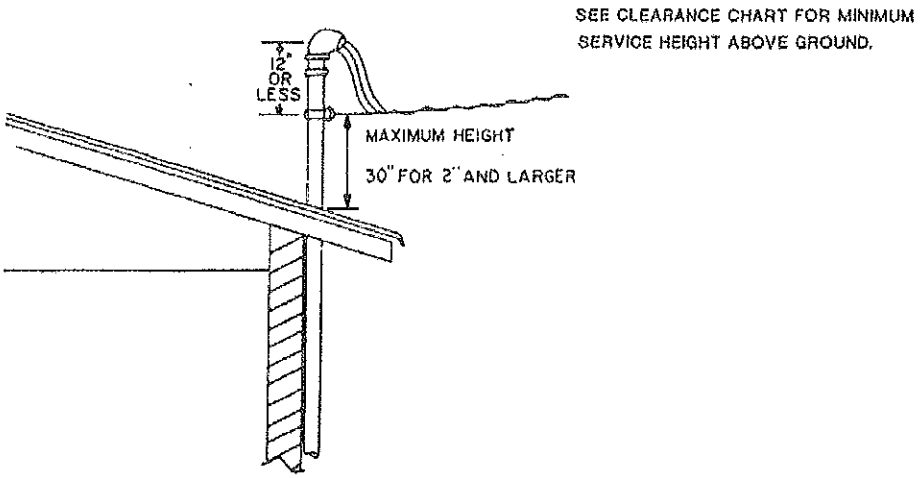
2. Dimension "B" may be less than 36 inches, provided it is a minimum of 12 inches above opening and the minimum B foot vertical clearances shown are obtained.

3. Conduit and meter cans may be inside shaded areas Service conductors, drip loops or any wire may not be inside shaded areas.

Riser Attachment

A riser attachment is a support for the purpose of providing a higher point of attachment for the service drop than is provided by the building itself.

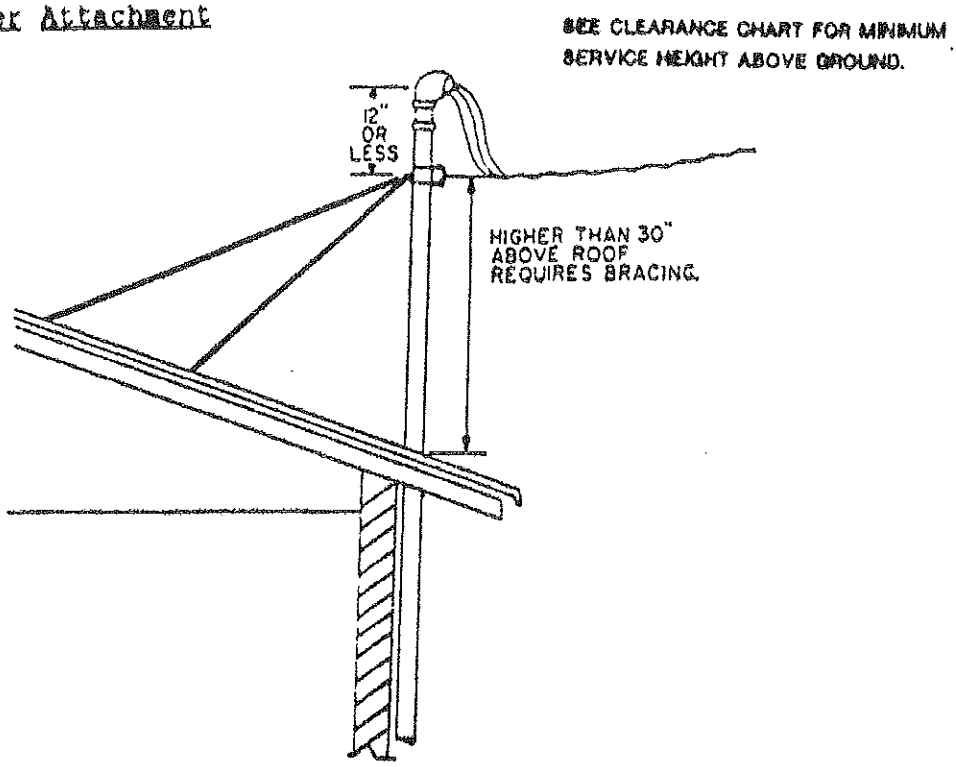
The riser shall be installed and maintained by the consumer and meet all applicable codes as to size and strength.



Where the service conduit riser is used as a mast for supporting the service drop, the point of attachment shall not be higher than 30" above the roof unless substantially braced (not guyed) to provide sufficient strength to support the strain of the service conductors, and to permit a man to work safely from a ladder bearing against the conduit.

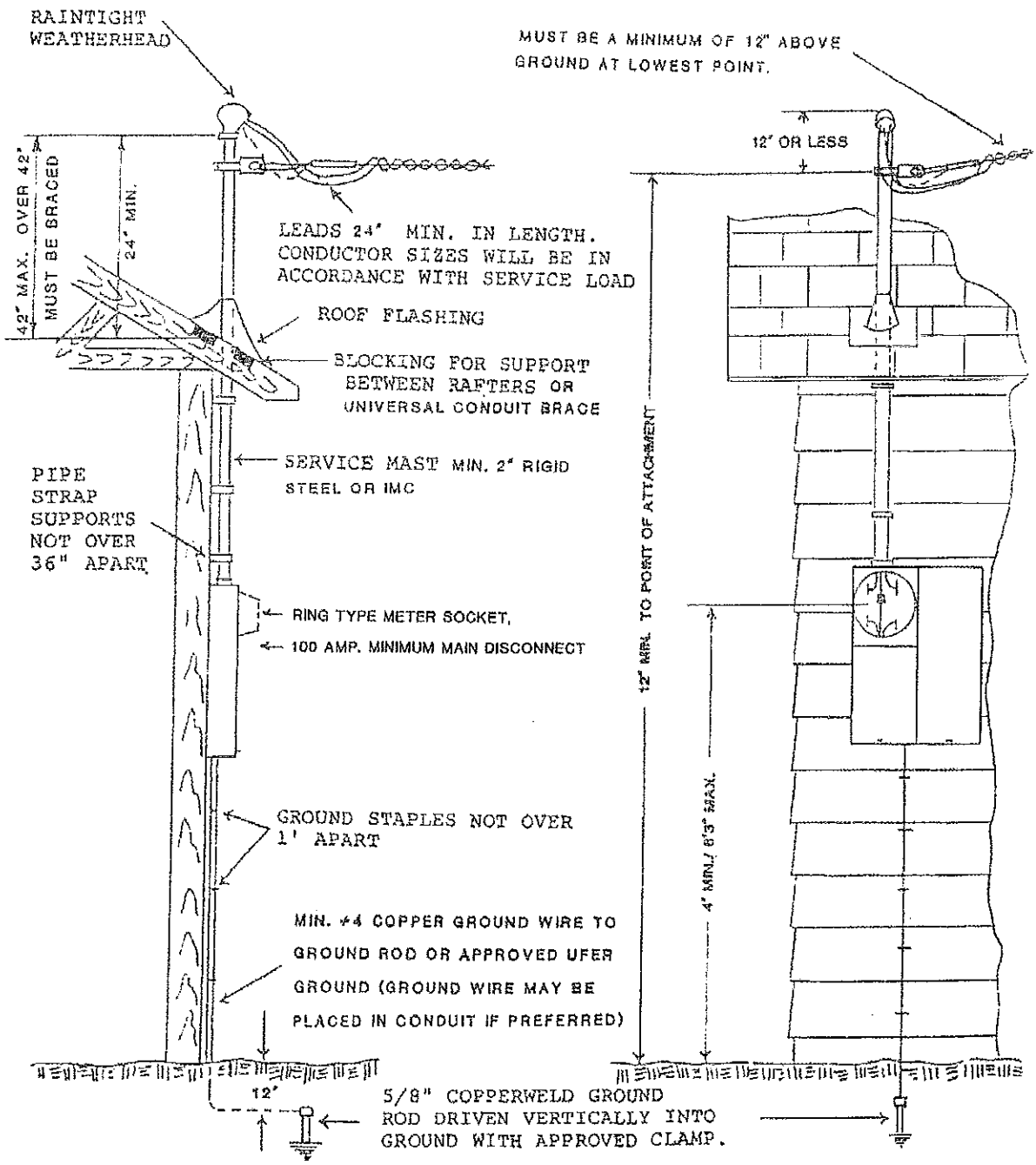
The Point of Attachment shall Be Not Less Than 18" Above the Roof

Braced Riser Attachment

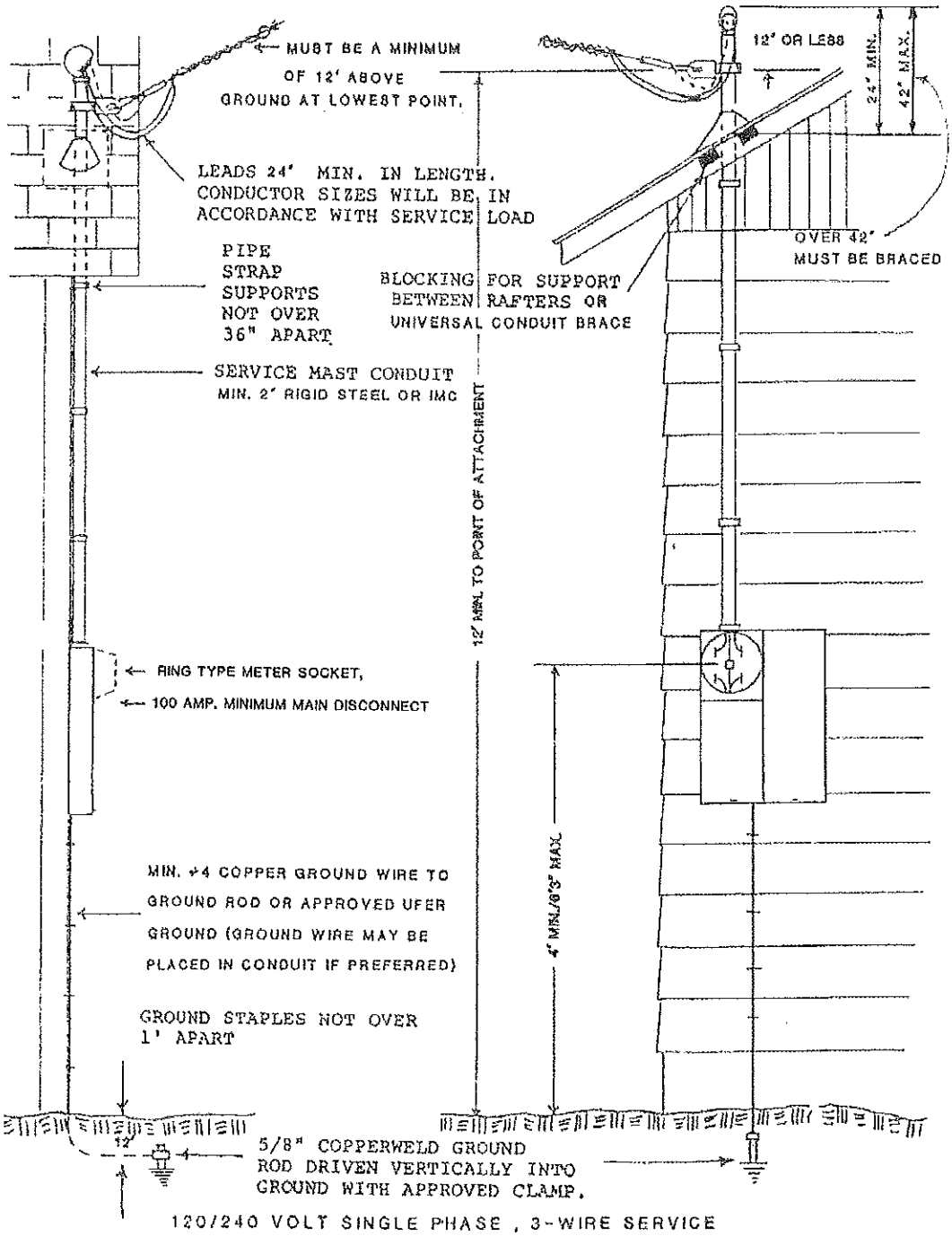


Risers that are required to be braced shall be braced against the pull of the service drop conductors. Bracing shall consist of two steel members installed at approximately a 90 degree spread. Minimum size braces shall be 3/4" rigid galvanized steel pipe or 1-1/4" X 1-1/4" X 1/8" steel angle.

Exception: Residential and Commercial, 200 ampere service or less: 3/4" electrical metallic tubing (EMT) may be used for braces if used to pull against the load as shown in the braced riser attachment drawing.



120/240 VOLT SINGLE PHASE 3-WIRE SERVICE METER LOOP WITH CONDUIT THRU EAVE



120/240 VOLT SINGLE PHASE, 3-WIRE SERVICE
METER LOOP FOR GABLE END ONLY

Permanent Service Pole Installation

The Cooperative reserves the right to determine or approve consumer's service pole location before setting.

When it is necessary for the service point of attachment and service entrance to be made to a pole instead of the residence or building, that pole is to be provided and installed by the consumer.

Cooperative poles shall not have consumer's metering equipment or attachments mounted on them.

The pole hole must have a minimum depth as shown on Service pole Size Chart, and be uniform in diameter. When setting the pole, the backfill material shall be thoroughly tamped beginning at the bottom of the hole, and the pole should be keyed against the tension of the service conductors to prevent the pole from leaning.

SERVICE POLE REOUIREMENTS

All service poles shall meet the requirements specified as to length, size and depth of setting.

All wood poles shall be manufactured and be full length pressure treated with pentachlorophenol, creosote, or an R.E.A. approved waterborne preservative.

Used poles may be used as consumer service poles, without being retreated if:

(A) The pole is eight (8) years of age or less and

(b) The butt has not been cut off or damaged by abrasion or penetration.

If the top of the pole has been cut off, a commercial wood preservative (such as creosote) must be applied to the cut to prevent water penetration and resultant pole deterioration. If the pole is over eight (8) years old or the butt has been removed, the pole must be re-treated by a full-length pressure treatment per R.E.A. Specification DT-5C. This can only be done by a commercial plant especially designed to perform this treatment. Surface

applications of preservatives will not meet the specifications.

Steel Pole

A steel pole may be used as a service pole if desired. It shall meet the requirements specified as to length, size, gauge of steel and depth of setting. Steel poles shall be set in a hole at the depth specified and a minimum of 18 inches in diameter and encased in concrete.

The steel pole shall be properly bonded to the metering equipment.

Point of Attachment

On service poles, the Cooperative will furnish and install the point of attachment.

Exception

On a steel service pole, the consumer must provide a minimum 3/4 inch hole bored completely through and within 6 inches of the top of the steel pole and in line with the proposed service drop
conductors.

Welded attachment points are not acceptable.

SERVICE POLE SPECIFICATIONS

(WOOD POLES)

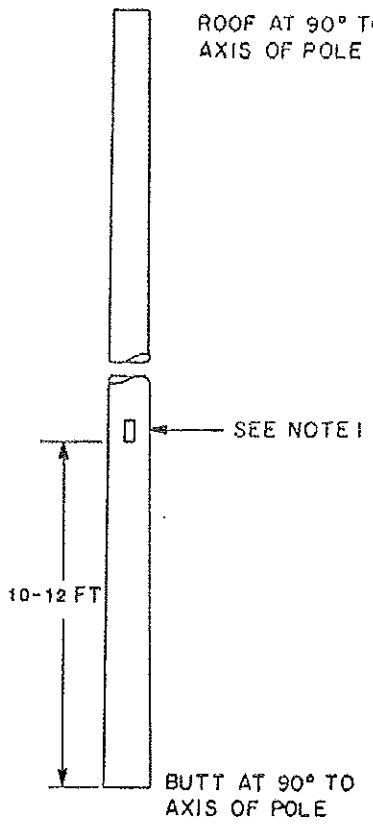
Clearance Above Ground (Feet)	Length of Pole (Feet)	Minimum Circumference at Top (Inches)	Minimum Circumference at 6 Feet from Butt (Inches)	Minimum Setting Depth (Feet)
20	25	19	28.0	5
25	30	19	30.0	5

(STEEL POLES)

Clearance Above Ground (Feet)	Length of Pole (Feet)	Minimum Setting Depth (Feet)*	Minimum Dia. (Inches)	Minimum Gauge (Inches)
20	25	5	5	.258
25	30	5	5	.258

Steel poles shall be treated with corrosive resistant paint 3" above grade and completely below grade and encased in concrete

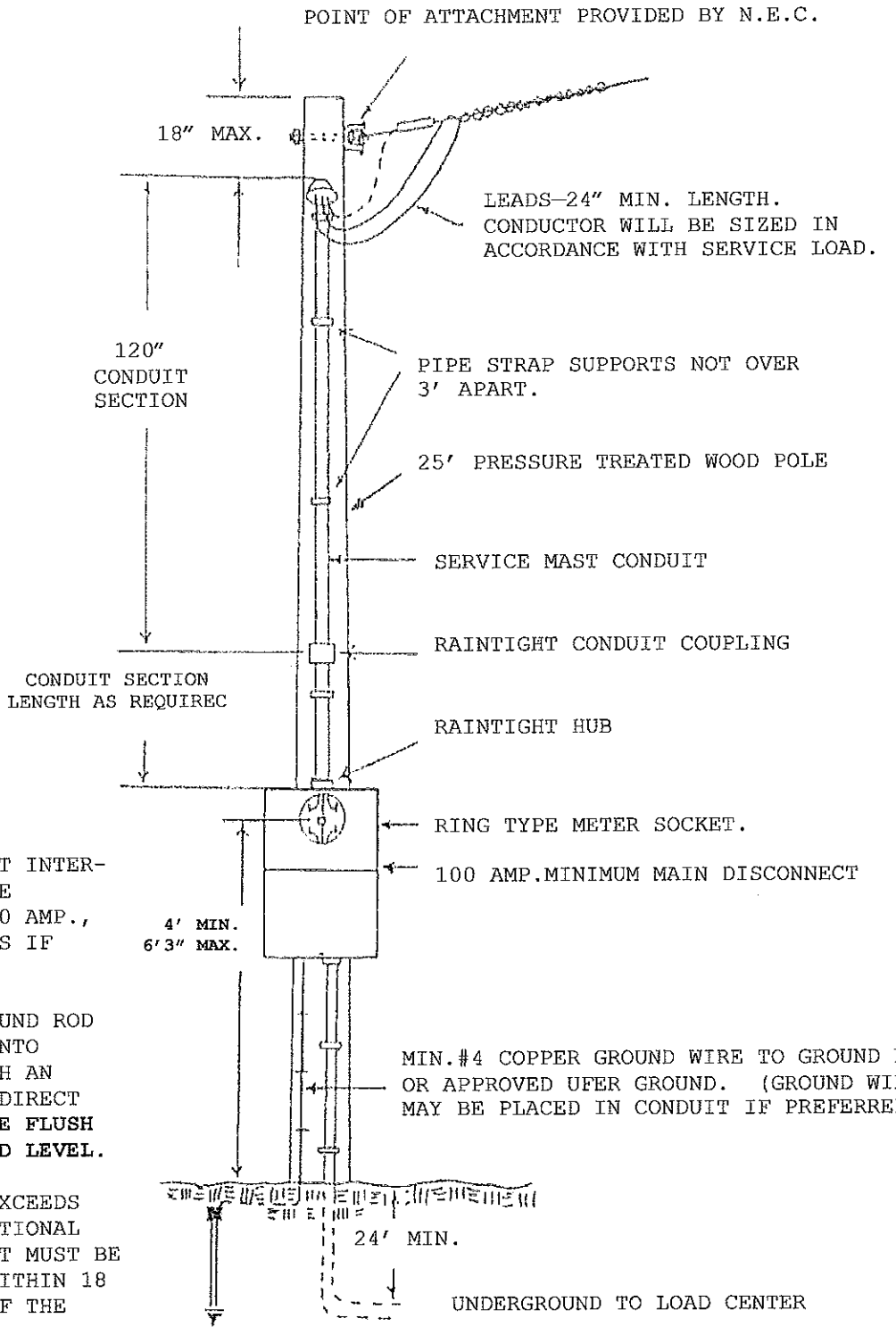
SERVICE POLE REQUIREMENTS (WOOD)



NOTES:

1. The following information shall be burn branded into the face of pole at a distance of 10-12 feet from the butt.

   A — Supplier's Code or Trade Mark
   B — Year purchased or treated
   C — Species and preservative code
   D — Pole class and height



NOTE:

1. GROUND FAULT CURRENT INTER-RUPTANCE DEVICES ARE REQUIRED FOR 15 & 20 AMP., 120 VOLT RECEPTACLES IF INSTALLED.

2. 5/8" COPPERWELD GROUND ROD DRIVEN VERTICALLY INTO GROUND ATTACHED WITH AN APPROVED CLAMP FOR DIRECT BURIAL. **ROD MUST BE FLUSH WITH OR BELOW GROUND LEVEL.**

3. WHEN SERVICE POLE EXCEEDS 25' IN LENGTH, ADDITIONAL SERVICE MAST CONDUIT MUST BE USED TO EXTEND TO WITHIN 18 INCHES OF THE TOP OF THE POLE.

120/240 VOLT SINGLE PHASE, 3-WIRE SERVICE, 25 FOOT
POLE MOUNTED PERMANENT SERVICE INSTALLATION

TEMPORARY OVERHEAD SERVICE

When service is required for construction, or other temporary uses, the consumer shall provide a suitable location and anchorage for the Cooperative's service conductors and installation of the meter. The service entrance must conform to the specifications outlined with exceptions as noted.

Temporary service means this type of service nay be used for construction or other temporary purposes for **NO LONGER THAN A TWELVE MONTH PERIOD**. The Cooperative reserves the right to demand that a meter loop intended for this purpose, but used for a period exceeding twelve months be changed out to a permanent type installation as covered by these specifications.

Temporary meter loops may be attached to a tree which has a reasonably straight, erect and vertical trunk has a minimum diameter of 12 inches at a distance of 6 feet above the ground level, has sufficient height to provide a solid point of attachment at least 19 feet 6 inches above ground level, and shall be trimmed to give working and conductor clearance.

Ground wire must be either connected to a 5/8 inch copper-clad ground rod driven vertically a minimum of 6 feet into the ground or at an oblique angle not to exceed 45 degrees from the vertical or shall be buried in a trench that is at least 2 1/2 feet deep or be a minimum No. 4 AWG bare copper wire with four coils butt-wound down the pole. The ground must be capable of having a resistance of 25 OHMS or less.

TEMPORARY SERVICE- FEE

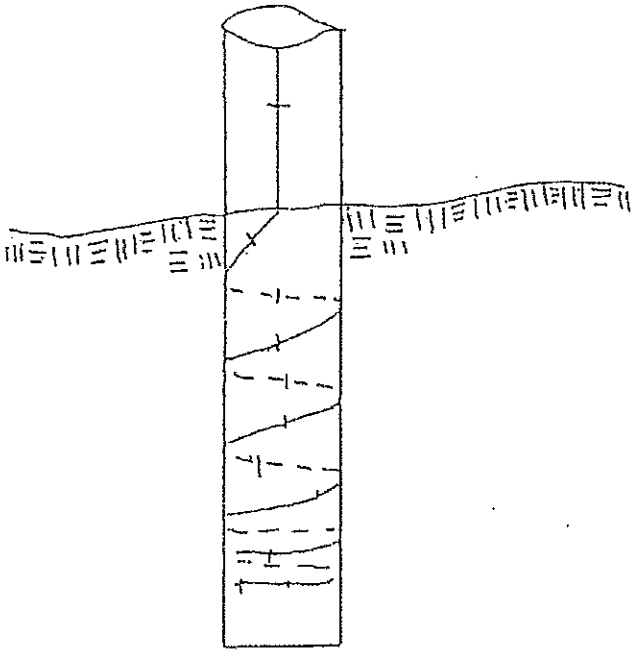
The consumer will be required to pay the appropriate installation and user charges in effect at the time. Check with the Cooperative's Service Representative for these charges.

NOTE:

1. THESE ARE THE MINIMUM REQUIREMENTS FOR A TEMPORARY SERVICE METER LOOP. TEMPORARY LOOPS ARE FOR TEMPORARY SERVICE ONLY, AND MAY NOT BE USED AS A PERMANENT INSTALLATION.

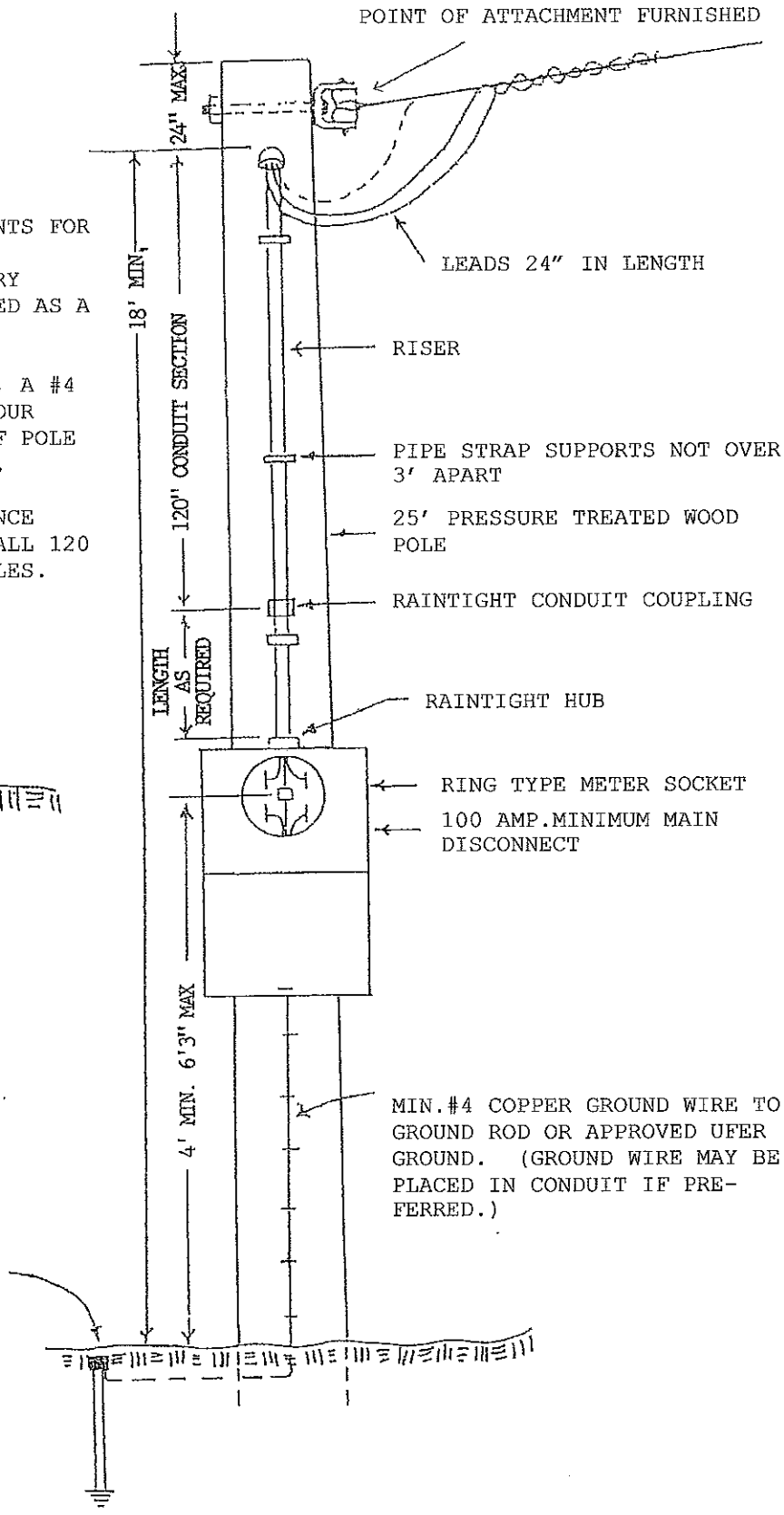
2. IN LIEU OF USING THE GROUND ROD, A #4 AWG COPPER WIRE WITH AT LEAST FOUR COILS BUTT-WOUND DOWN TO BUTT OF POLE MAY BE USED. SEE DRAWING BELOW.

3. GROUND FAULT CURRENT INTERRUPTANCE (G.F.C.I.) DEVICES REQUIRED ON ALL 120 VOLT, 15 AND 20 AMPERE RECEPTACLES. (N.E.C. SECT. 210-8)



"BUTT WOUND COILS"

5/8" COPPERWELD GROUND ROD DRIVEN 8' MINIMUM VERTICALLY INTO GROUND..... ATTACHED BY AN APPROVED CLAMP FOR DIRECT BURIAL. **ROD MUST BE FLUSH WITH OR BELOW GROUND LEVEL.**



120/240 VOLT SINGLE PHASE TEMPORARY 3-WIRE SERVICE
(TO BE USED AS TEMPORARY SERVICE ONLY)
25 FOOT POLE