

## OUTSIDE PLANT PRECAUTIONS UNDERGROUND AND BURIED WORK

### 1. GENERAL

**1.01** This section outlines the precautions to follow when working on underground and buried cables.

**1.02** This section is reissued to revise information pertaining to location of employees during cable placing and removal operations.

### 2. BURIED AND SUBSURFACE WORK

**2.01** Buried cable placing frequently involves the use of heavy equipment not normally used in other phases of telephone work. Work operations should be conducted in accordance with standard practices covering this type of work and in such a manner as to minimize the accident hazard to both employees and the public.

**2.02** All open manholes, trenches, excavations, holes, etc, shall be protected with guards, barricades, covers, flags, or other suitable warning devices at all times as covered in other sections in Division 620. Where traffic conditions warrant, it is preferable to provide more protection than may appear necessary rather than to underprotect.

**2.03** Prior to commencing digging operations, become familiar with Sections 620-135-010, 620-135-011, and 629-100-010 Buried Plant Precautions. Determine the location or route of existing buried or underground telephone cables and foreign underground plant in the immediate vicinity or along the route of work. Make every effort to avoid exposing or making contact with the underground plant belonging to other utilities, municipalities, etc. In general a *pipe locator* as described in Section 634-220-501 should be used ahead of trenching, plowing, or pipe pushing operations in urban areas. *The pipe locator will not locate any plastic facilities.*

**2.04** Other companies should be requested to establish the location of their buried or

underground facilities and to expose, identify, and suitably protect their interest while work is in progress.

**2.05** In some areas, other utility companies bury plastic pipe (gas pipe, water pipe, etc). To prevent damage, these facilities must be located, exposed, and protected while work is in progress, since there is no test equipment available to locate plastic pipe.

**2.06** In areas where combustible gases or liquids are piped or stored, such as gasoline service stations, the atmosphere of trenches shall be tested for combustible mixtures in accordance with Section 620-140-501 before acetylene torches, furnaces, or open flames are used.

**2.07** If combustible mixtures are present, no work with an open flame shall be done until the workman's supervisor has been notified and arrangements made to clear the atmosphere of the combustible mixture.

**2.08** Trenches or other excavations four or more feet deep in which craftsmen are required to work shall be supported by shoring in accordance with Section 622-300-200.

### 3. GAS AND ELECTRIC LINE HAZARDS

**3.01** When foreign objects are encountered while digging, plowing, trenching, or pipe pushing, stop operations immediately. Expose with wood handled hand digging tools, and investigate them with caution. Do not cut, chop through, or break off underground obstructions without first determining if they serve a useful purpose. Under no circumstances should underground electrical plant or pipe line (gas or other) be disturbed.

**3.02** Telephone plant should not be placed in the same manhole with power cables or conductors unless separated by a brick or concrete wall. Where special cases involve work in joint-use manholes,

such as privately owned manholes on private property, no work shall be done until your supervisor arrives on the job to supervise and ensure that the following precautions are observed in addition to those contained in Part 4:

(a) Temporary protection (insulating blankets) from contact with power conductors, cables, or apparatus has been placed by an authorized representative of the owner of the manhole. Where it will be more convenient, only the power cable(s) need be covered with blankets. Except for splicing operations, covering should be as complete as may be practical to obtain. When only splicing is involved, cover need only extend for a distance of approximately two feet beyond the splice (in both directions). If power cables are on the opposite wall, they should be covered for a distance of approximately 5 feet. If the sheath of any power cable has been cut back, that portion should be covered with insulating blankets regardless of where it is located.

(b) **Do not move power conductors:** Any power conductors, cables, or apparatus requiring removal to gain access to telephone plant, must be moved only by an authorized representative of their owner.

(c) **Do not connect bonds to power cable sheath.** Where bonds have to be placed, connection to the power cable sheath shall be placed by either the customer's electrician or the power company. The removal of a bond from the **telephone cable**, where necessary, may be made by the telephone craftsman after testing satisfactorily with a B Voltage Tester. Insulating gloves shall be worn for this operation. **Do not attempt to test any power cable with a B Voltage Tester.**

**3.03** If a gas line should be broken or damaged:

- (a) Leave the hole open to allow gas to dissipate into atmosphere.
- (b) Warn residents and the public in the vicinity.
- (c) Notify local fire department.
- (d) Notify local gas company.
- (e) Keep the public clear of the area until condition is cleared.

(f) Notify your supervisor.

**3.04** If an electric line should be broken or damaged:

- (a) Barricade location until condition has been cleared.
- (b) Notify the local electric company.
- (c) Keep the public clear of the hazardous area.
- (d) Notify your supervisor.

**3.05** If a pipe line, other than gas, should be broken or damaged:

- (a) If a liquid is noticed which appears to be volatile, such as gasoline, follow instructions in 3.03.
- (b) Notify the utility, municipality, etc, to which it belongs.
- (c) Notify your supervisor.

#### **4. UNDERGROUND WORK**

**4.01** Manholes and cable vaults shall be tested and ventilated as described in Section 620-140-501.

**4.02** Exercise caution when entering and leaving manholes particularly those located on traveled thoroughfares. Always use a ladder when entering or leaving manholes. Keep hands free of materials or tools when ascending or descending ladders.

**4.03** The precautions to take with open flames, torches, lighted cigars, cigarettes, or pipes around manholes are described in Section 620-140-501.

**4.04** The precautions to take in using lighting equipment in and around manholes are also described in Section 620-140-501.

**4.05** The precautions to take to prevent exhaust fumes of vehicles or engines from entering manholes are described in Section 628-200-208.

**4.06** Use standard platform supports and planks or approved substitutes for erecting working platforms in manholes. Platform planks should have adequate strength to support all loads to

which they may be subjected, including the extreme loads incurred during cable bending and racking operations.

**4.07 ♦ *Employees should not remain in manholes during cable placing and removal operations:***

Should it be necessary to check for proper alignment

of equipment prior to starting the pulling operation the employee can enter the manhole if:

- (a) He remains clear of the equipment and outside the angle formed by the pulling line.
- (b) The winch line has only enough tension to provide normal alignment of the equipment.♦