

**BELL SYSTEM PRACTICES**  
**Outside Plant Construction**  
**and Maintenance**

**SECTION G10.224.4**  
**Issue 1, February, 1956**  
**AT&T Co Standard**

## **GUARDING WORK AREAS**

### **UNDERGROUND AND BURIED CABLE PLANT**

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#### **1. GENERAL**

1.01 This section contains typical illustrations in the use of warning devices for guarding work areas such as underground and buried cable work operations, conduit and manhole excavations, etc. Most of these sketches show guarding work areas around open manholes but the same principles apply to all types of traffic obstructions.

1.02 Workmen should be familiar with the contents of Sections G10.224.1 through G10.224.3. Where a vehicle is illustrated as part of the guarding arrangement, reference should be made to Section G10.224.3 for factors to consider in deciding which direction to face the vehicle.

1.03 Recommended distances between traffic cones and from work area to initial warning signs, indicated by an asterisk (\*) are also contained in Section G10.224.3.

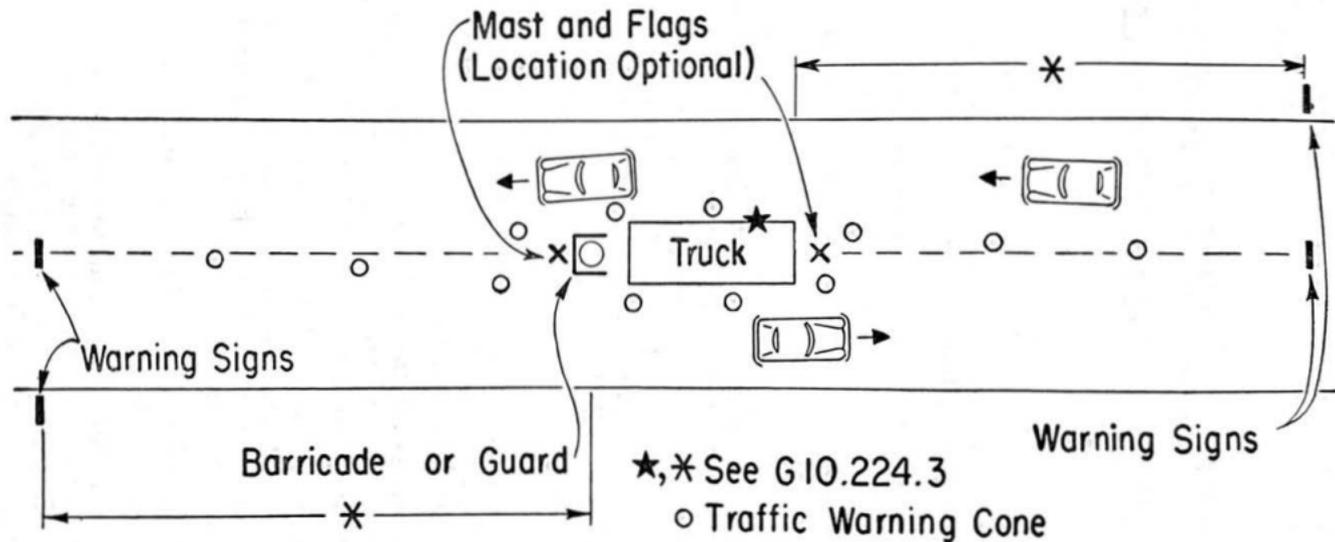
1.04 Where, because of hills, curves, and, etc., a vehicle driver cannot see the work area from the vicinity of the initial warning sign, a mast with flags and/or flasher should also be placed at this location.

1.05 Open manholes should be guarded at all times with a manhole guard or barricade.

1.06 Excavations for conduit, manholes, buried cable, dig-ups, splicing pits, etc., located in or adjacent to walkways, parkways, or pedestrian lanes should be guarded at all times with a manhole guard and/or barricades.

## 2. HIGH SPEED HIGHWAYS

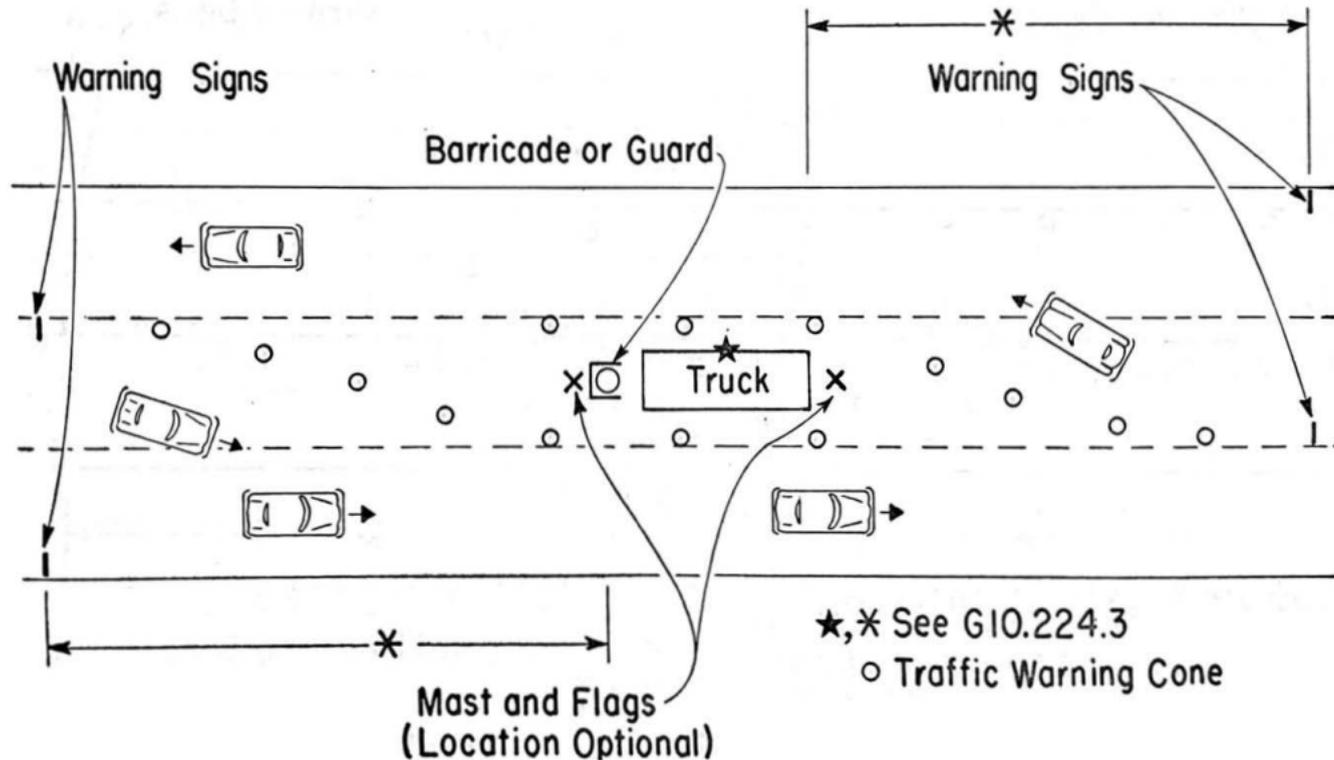
2.01 **Two-Lane Highway:** Where the work area is located near the center of a 2-lane highway, the warning devices should be placed as suggested below:



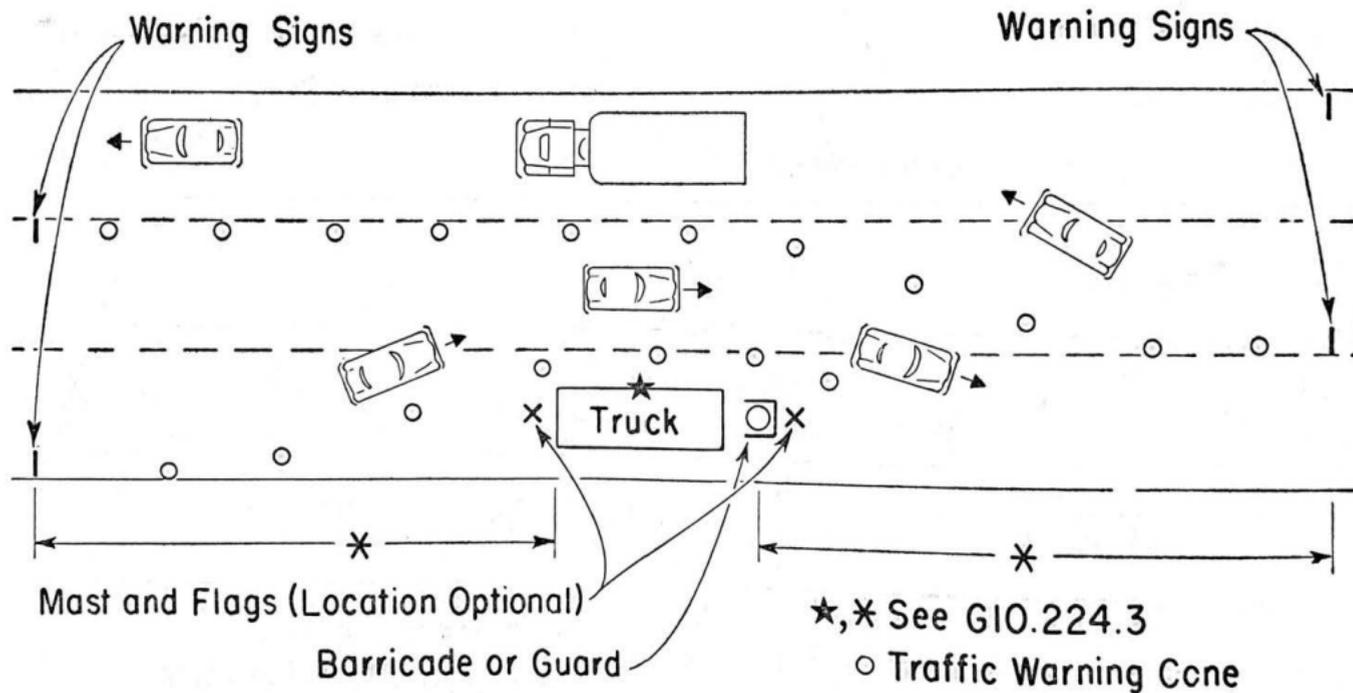
If one lane is partially blocked on a wide 2-lane highway, it may be feasible to employ the plan shown in Paragraph 2.02 (b). If one lane of a 2-lane highway is blocked and traffic is restricted to one lane, flagman shall be used.

2.02 **Three-Lane Highway.** Warning devices may be placed as suggested below:

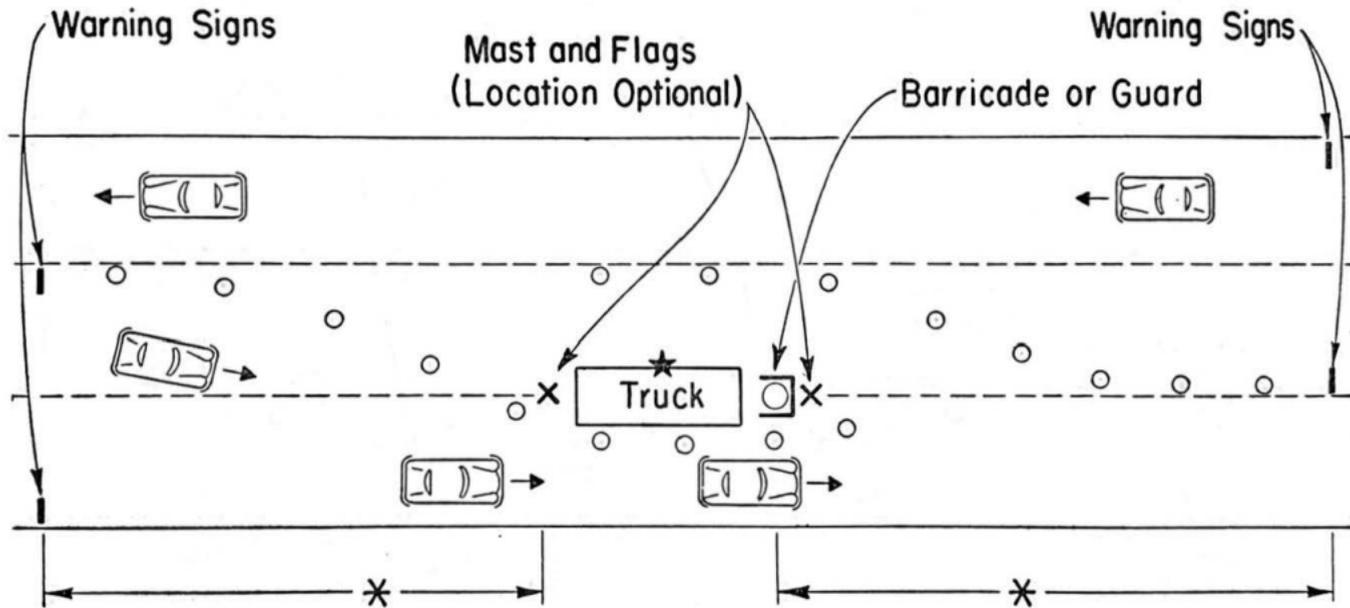
(a) Work area located in center lane.



(b) Work area located in outside lane.



(c) Work area located between two lanes.

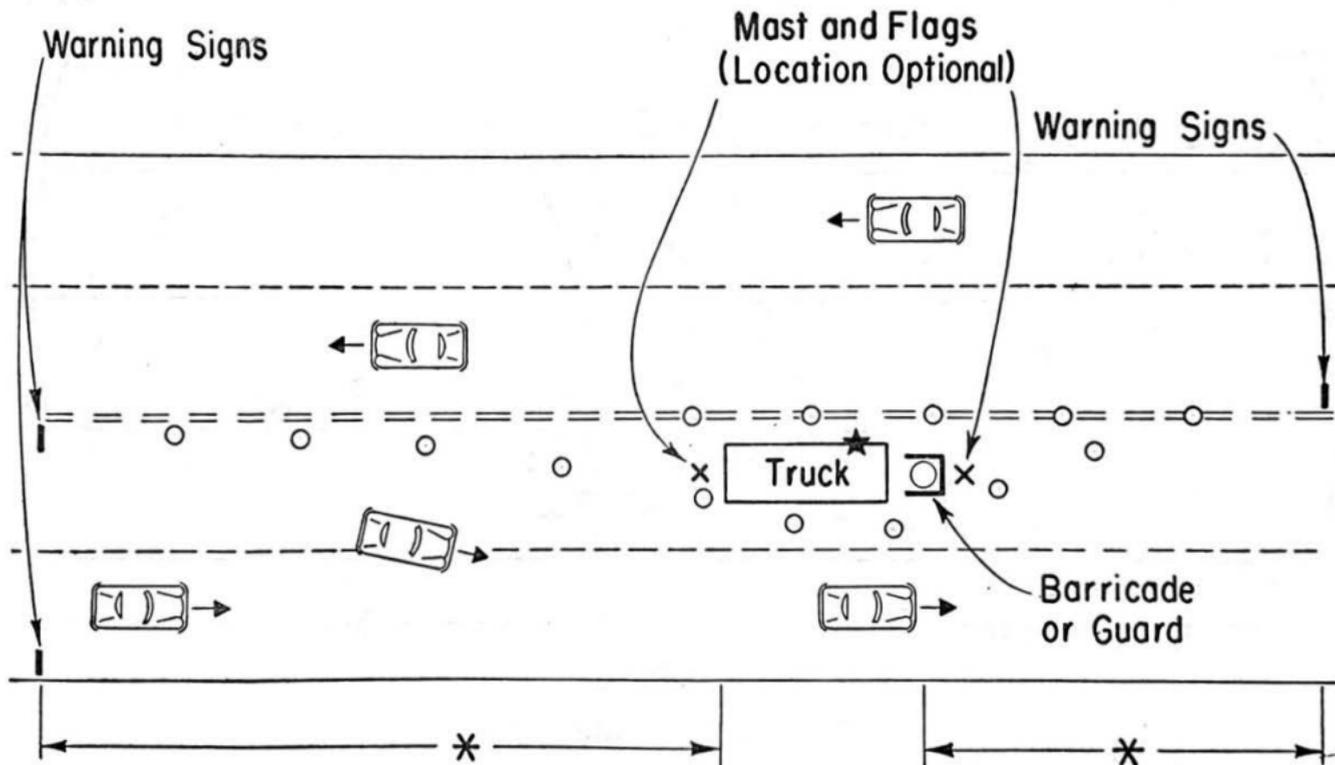


★,\* See G10.224.3

○ Traffic Warning Cone

2.03 **Four-Lane Highway:** Warning devices may be placed as suggested below:

(a) Work area in inside lane.



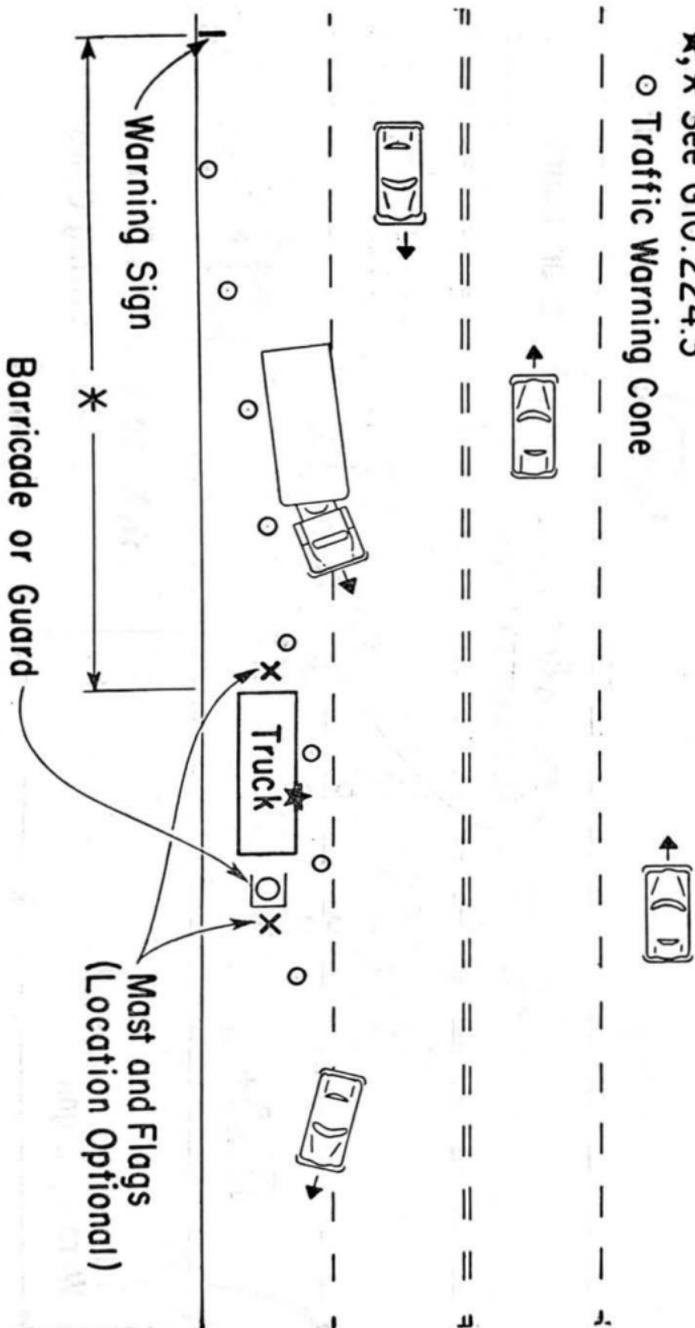
★,\* See GIO.224.3

○ Traffic Warning Cone

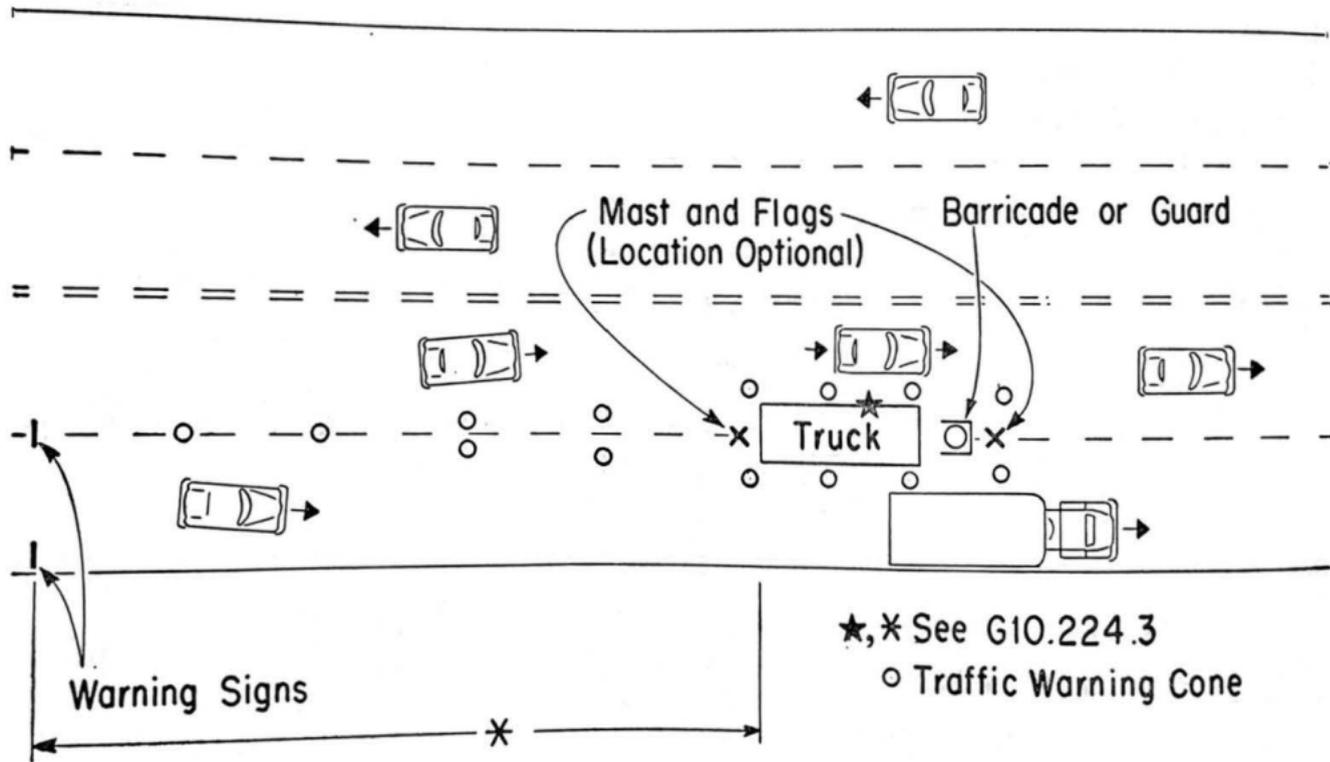
(b) Work area in outside lane.

★, \* See G10.224.3

○ Traffic Warning Cone

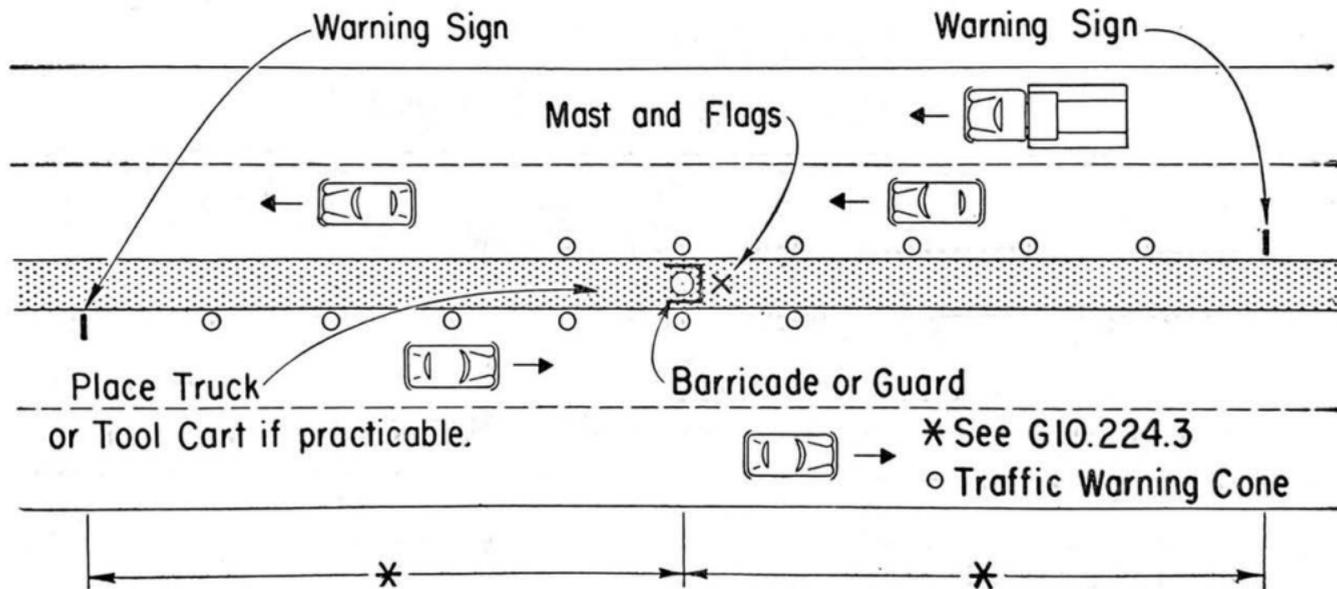


(c) Work area located between inside and outside lanes.



2.04 **Divided Highways:** Use plans as indicated in Paragraph 2.03(a), (b) and (c) for work areas so located. For a work area located in the divided section between two inside lanes use the plans below:

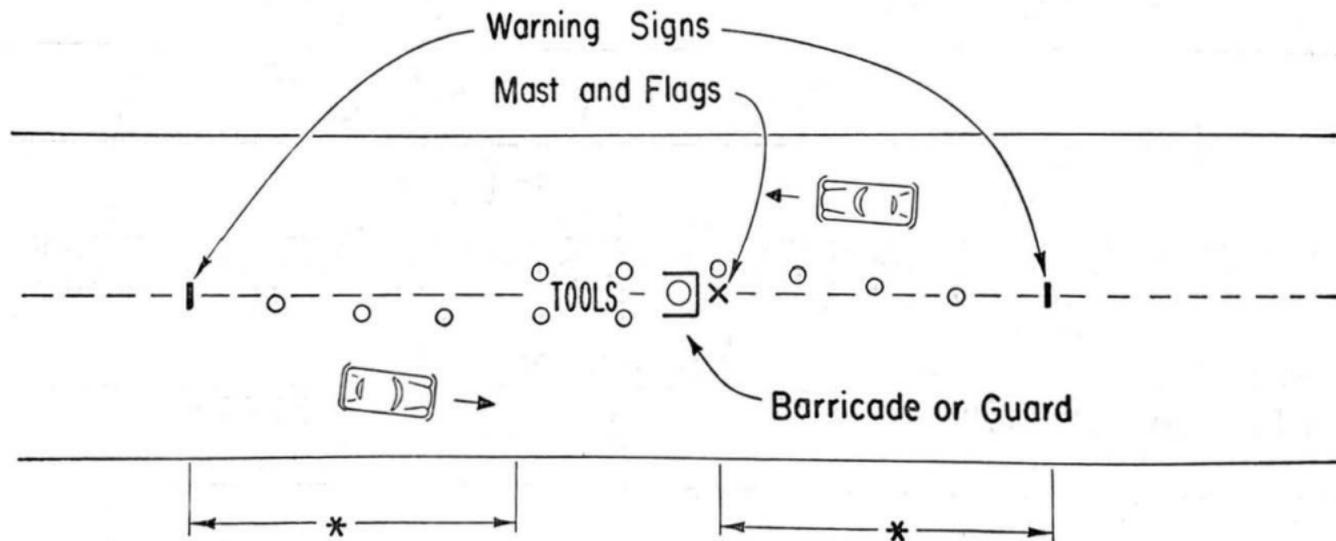
(a) If the dividing strip is narrow.



(b) If the dividing strip is wide and the work area is adjacent to one of the inside lanes, warning devices will generally be required on only one side.

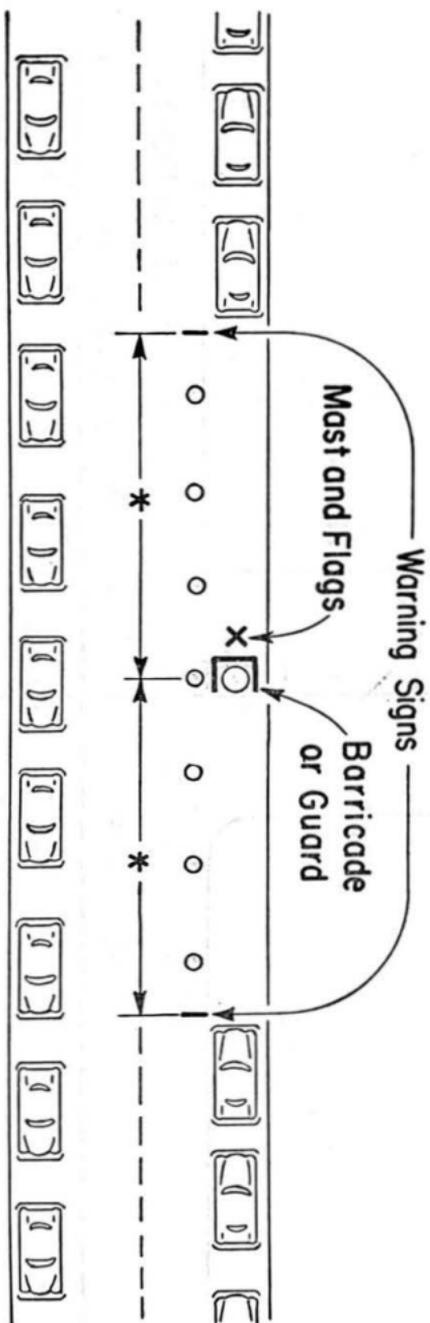
### 3. CITY STREETS AND ALLEYS

3.01 In general, the illustrations shown in Part 2 for protecting work areas on highways may be used for city streets and alleys between corners, except where it is not practical to park the truck at the manhole then the plans below may be used:



\* See G10.224.3

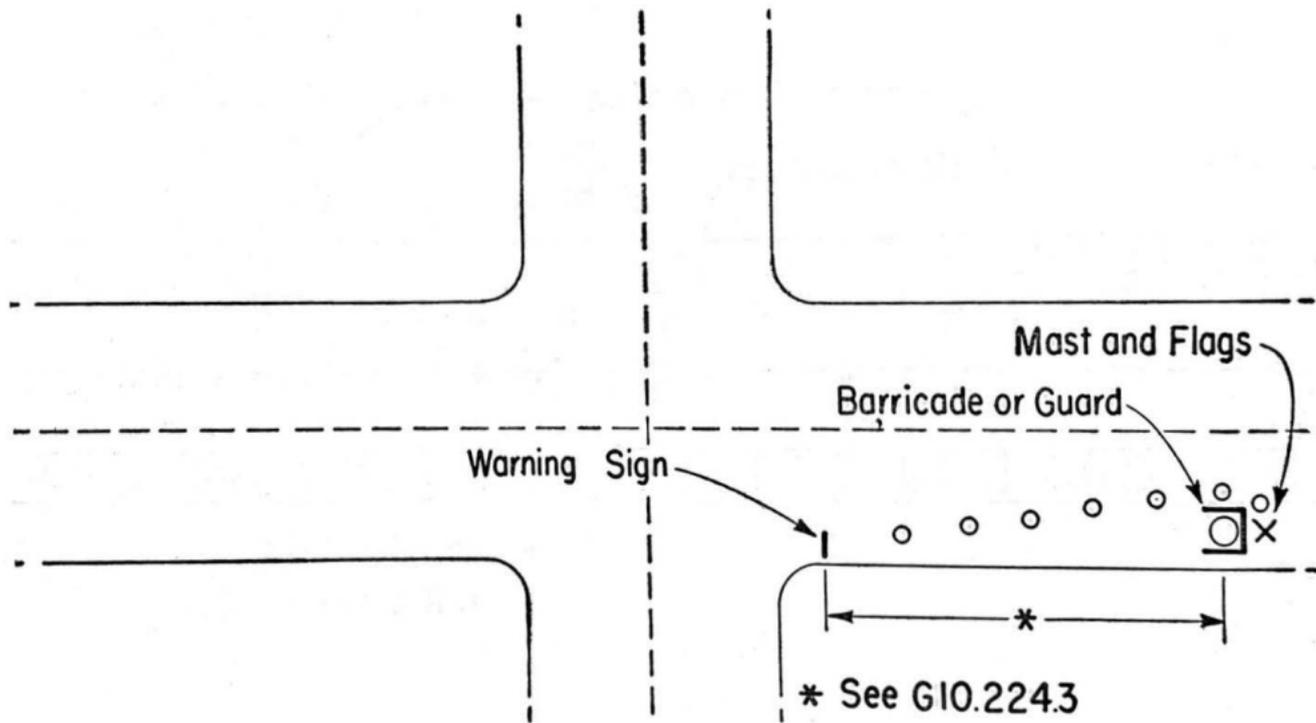
○ Traffic Warning Cone



\* See G10.224.3

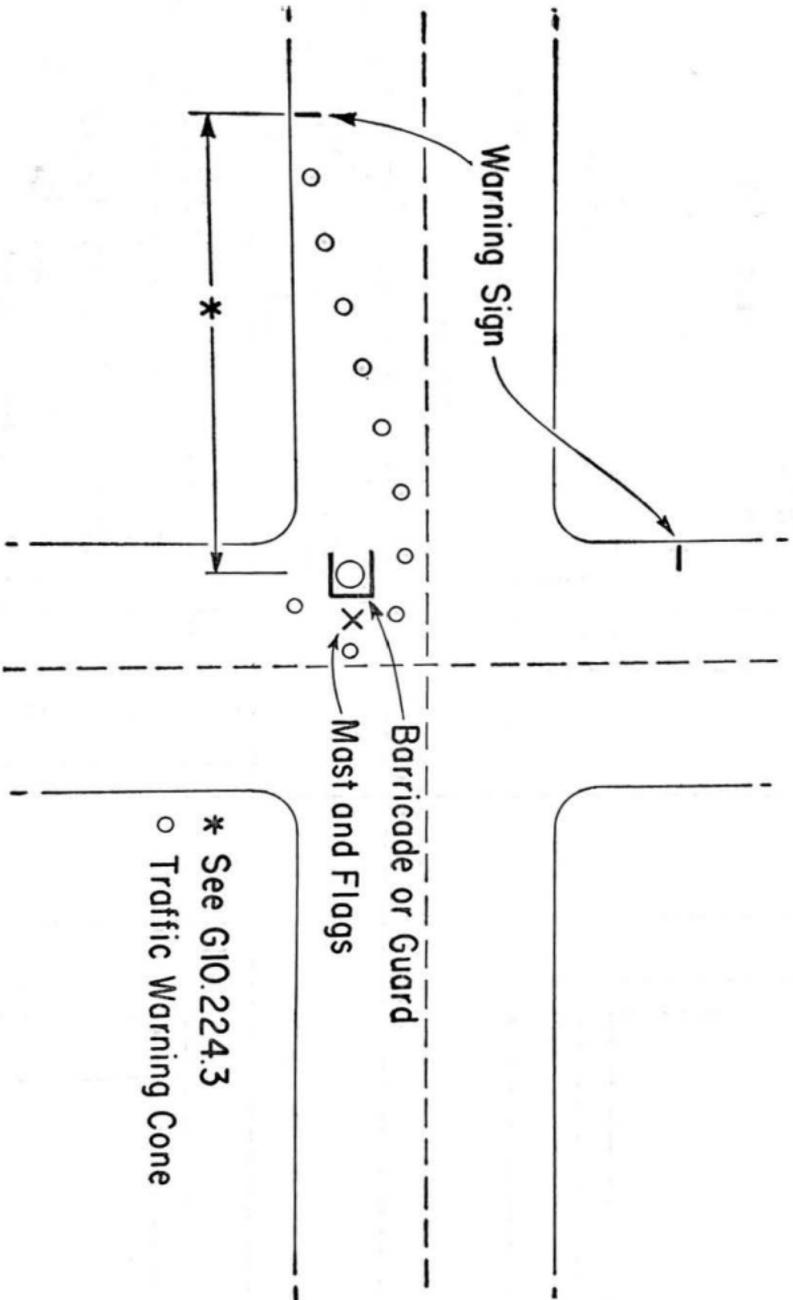
○ Traffic Warning Cone

3.02 The following sketches indicate plans that may be used for protecting work areas at or adjacent to street corners:

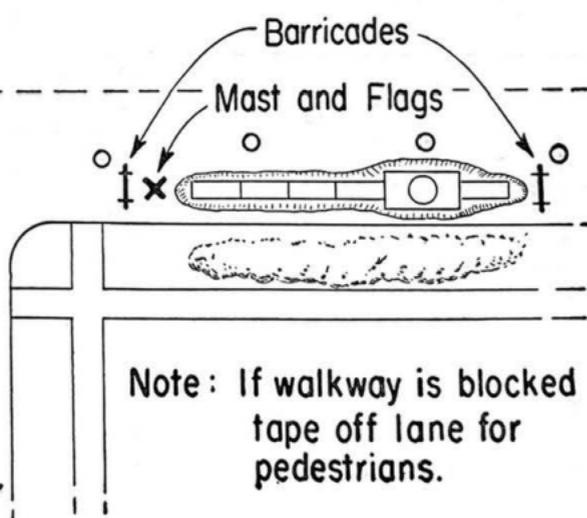
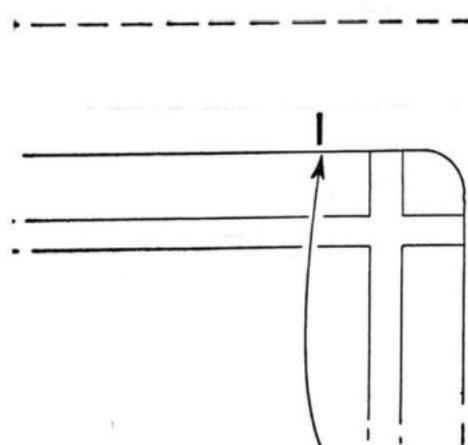
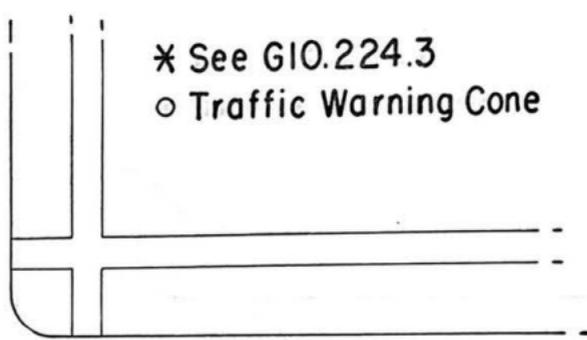
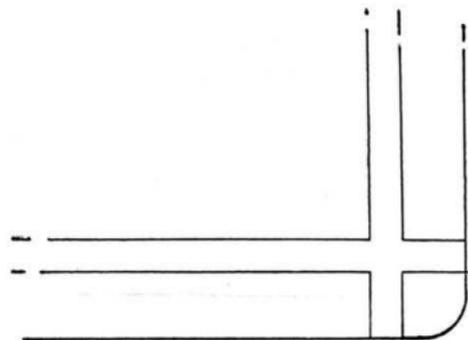


\* See G10.224.3

○ Traffic Warning Cone



\* See G10.224.3  
 ○ Traffic Warning Cone



Warning Signs

\* See GIO.224.3  
o Traffic Warning Cone

Barricades

Mast and Flags

Note: If walkway is blocked  
tape off lane for  
pedestrians.

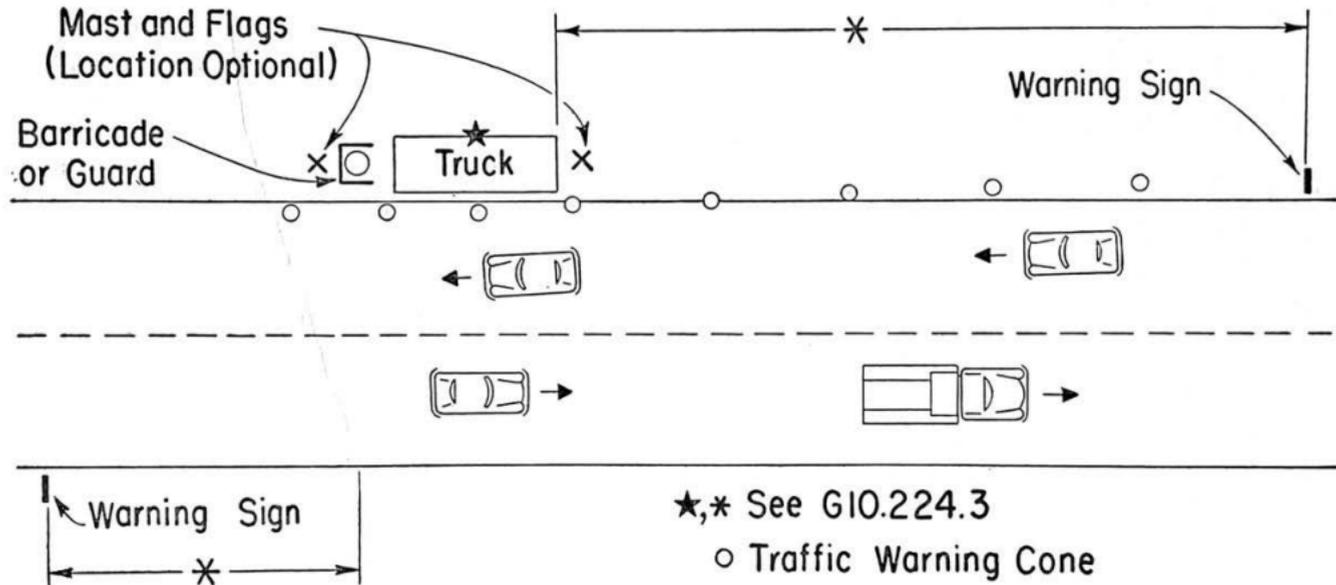
#### **4. OFF ROAD LOCATIONS**

4.01 All manholes or excavations on private property, pedestrian lanes, or parkways should be guarded by barricades or manhole guards equipped with warning flags and signs or otherwise taped off with white tape and with warning flags and signs prominently displayed.

4.02 When it is necessary to open manholes or excavate on busy sidewalks, barricades, one-inch cotton tape, etc., should be placed in such a manner that will channel the pedestrians past the obstruction.

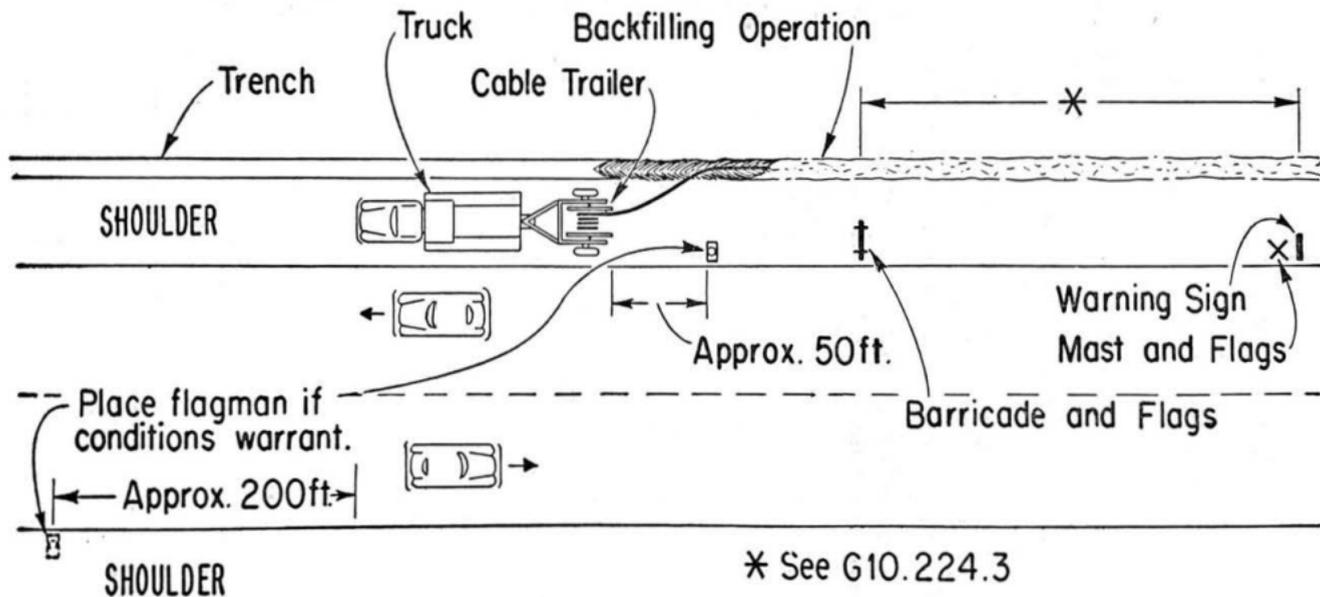
4.03 All manholes or excavations on private property, pedestrian lanes, or parkways should be closed either permanently or temporarily where practical before leaving them unattended. If this is impracticable, the holes should be fenced to prevent people or animals from falling into them.

4.04 Where the work area is just off the traveled part of a 2-lane highway, the warning devices should be placed as indicated in the following sketch:



Use the same protection on a 3-lane highway. For a 4-lane highway or larger, or for a divided lane highway, use the same protection but omit the warning sign on the side of the highway opposite the work operations. If the work area is some distance off the traveled part of the highway, barricades or guards will generally be adequate.

4.05 **Buried Cable and Wire:** Where cable or wire is being buried in the shoulder adjacent to the traveled portion of a highway the plan below may be used. The length of open trench or disturbed earth in case of plowing should be kept to the minimum practical.



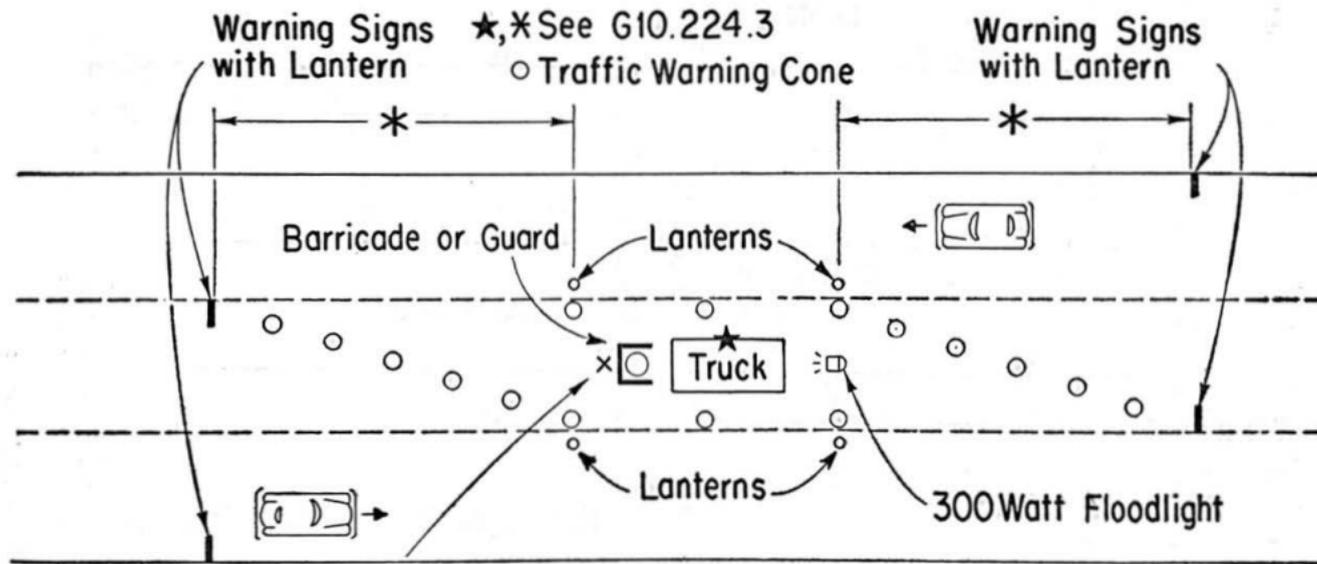
Note: As operations proceed, add additional warning devices as required.  
When backfilling operations or ground closing operations in case of plowing, are completed, move barricade and initial warning sign forward.

## 5. DURING HOURS OF DARKNESS

5.01 On dark days or during the hours of darkness the following additional warning devices should generally be employed:

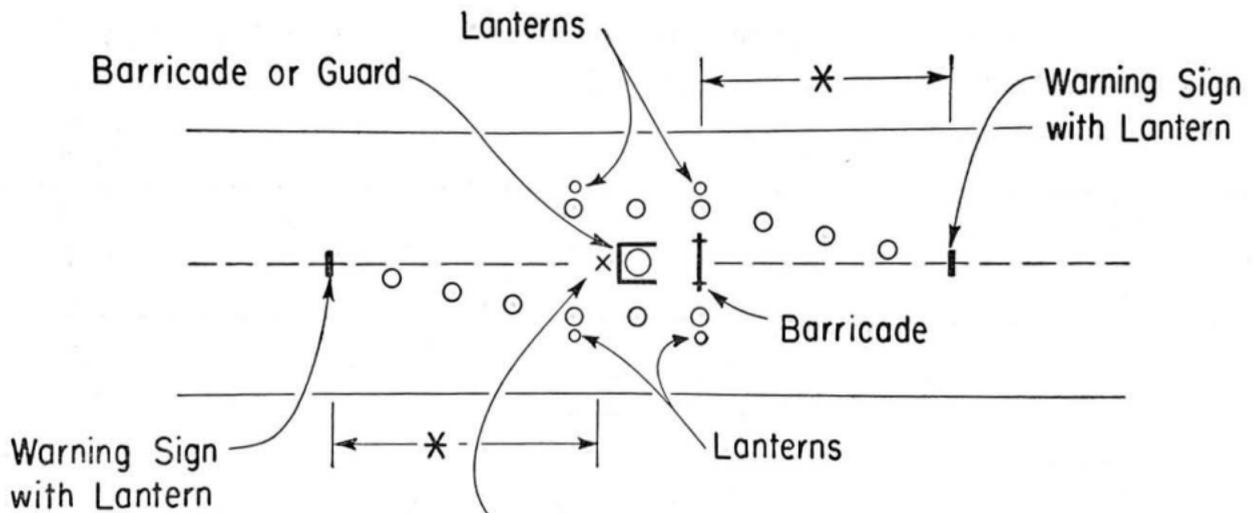
- (a) Place flasher or flashers at the work area location which will warn traffic from all directions being cautioned by initial warning signs.
  - (b) Where, because of hills, curves, etc., a mast is located at the initial warning sign, in accordance with Paragraph 1.04, equip the mast with a flasher.
  - (c) Use flood lights to illuminate the work area where practicable, placed in such a manner that they will adequately light the work area but will not glare in the face of traffic approaching from either direction.
- 5.02 The following are typical illustrations of lighting work areas after darkness, under the above conditions.

(a) Three-lane highway, middle lane blocked, vehicle available.



Mast, 360° flasher or 2 directional flashers and B  
Floodlight adjusted to light up work area behind truck.

(b) Two-lane highway, vehicle not available.



- \* See GIO.224.3
- Traffic Warning Cone

Mast, 360° flasher or 2 directional flashers and B Floodlight adjusted to shine down on work area.

## **6. TOOL CARTS**

6.01 Splicers' tool carts should be placed where they will not interfere with traffic and will provide a safe place to work.