
5 Traffic Control

Basic Setup

Continual Inspection

Temporary Pavement Markings

CHAPTER FIVE:

TRAFFIC CONTROL

The need for standard traffic control is essential during roadway construction to guide traffic safely and efficiently through what would otherwise be hazardous areas.

Traffic control procedures are used at work sites to:

- 1) Warn motorists of the hazards involved and to advise them of the proper manner for traveling through the area
 - 2) Inform the user of changes in regulations or additional regulations that apply to traffic traversing the area
 - 3) Guide traffic through and around the work site
 - 4) Delineate areas where traffic should not operate
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BASIC SETUP

The required basic traffic control setup depends on several factors. Is the work being performed under traffic or is the road closed? Is the road closed to through traffic, but residences and businesses are located within the work area for which access is required to be maintained? Is the work zone at a fixed location or is the work zone moving down the road? Is the work being performed on a two lane road or a multi-lane facility? Is the work being performed on a travel lane or a shoulder? Is the work area on an interstate only affected by infrequent ramps or on a roadway with a number of driveways and at-grade intersections? The above factors, along with others, all affect the required traffic control setup.

On individual projects, the following contract documents apply:

- 1) Indiana Manual on Uniform Traffic Control Devices
- 2) Maintenance of Traffic Plan Sheets, if included in the plans

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2)3) Standard Specifications Section **801**

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3)4) Section **801** Standard Drawings

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4)5) Special Provisions in the Contract Information Book

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Section **801.03** of the Standard Specifications outlines the requirements for the Certified Worksite Traffic Supervisor (CWTS). The CWTS is not required to be on the contract site on a daily basis; however, the CWTS is responsible for the layout and maintenance of all traffic control devices on a contract. The CWTS should be involved in the initial layout of traffic control devices as well as the layout associated with all construction phase shifts that occur during the life of the contract.

For the purposes of this discussion, the primary emphasis will be related to resurface work or other moving operations conducted on a travel lane under traffic. Many of the principles discussed apply to other work situations. The appropriate contract documents for the actual traffic control setups required for other types of work should be reviewed on each contract.

Two typical traffic control situations are illustrated in Figures 5-1 and 5-2. The sign layouts noted in each figure are associated with the moving operation only. Additional ground mounted signs are required at the contract limits as noted in the Maintenance of Traffic Plans or Section **801** Standard Drawings.

A basic setup for a two-lane roadway with two-way traffic is shown in Figure 5-1. This situation requires a flagger with advance warning signs at both ends of the work area. All of the signs for this situation are to be located in relation to the roadway in accordance with the Standard Drawing. As the moving operation progresses down the road, relocation of the signs to maintain proximity to the work area is necessary. If the operation is allowed to progress too far in advance of the warning signs, a motorist may conclude that there is no work being conducted. This may result in a dangerous situation when the driver ultimately encounters the work area.

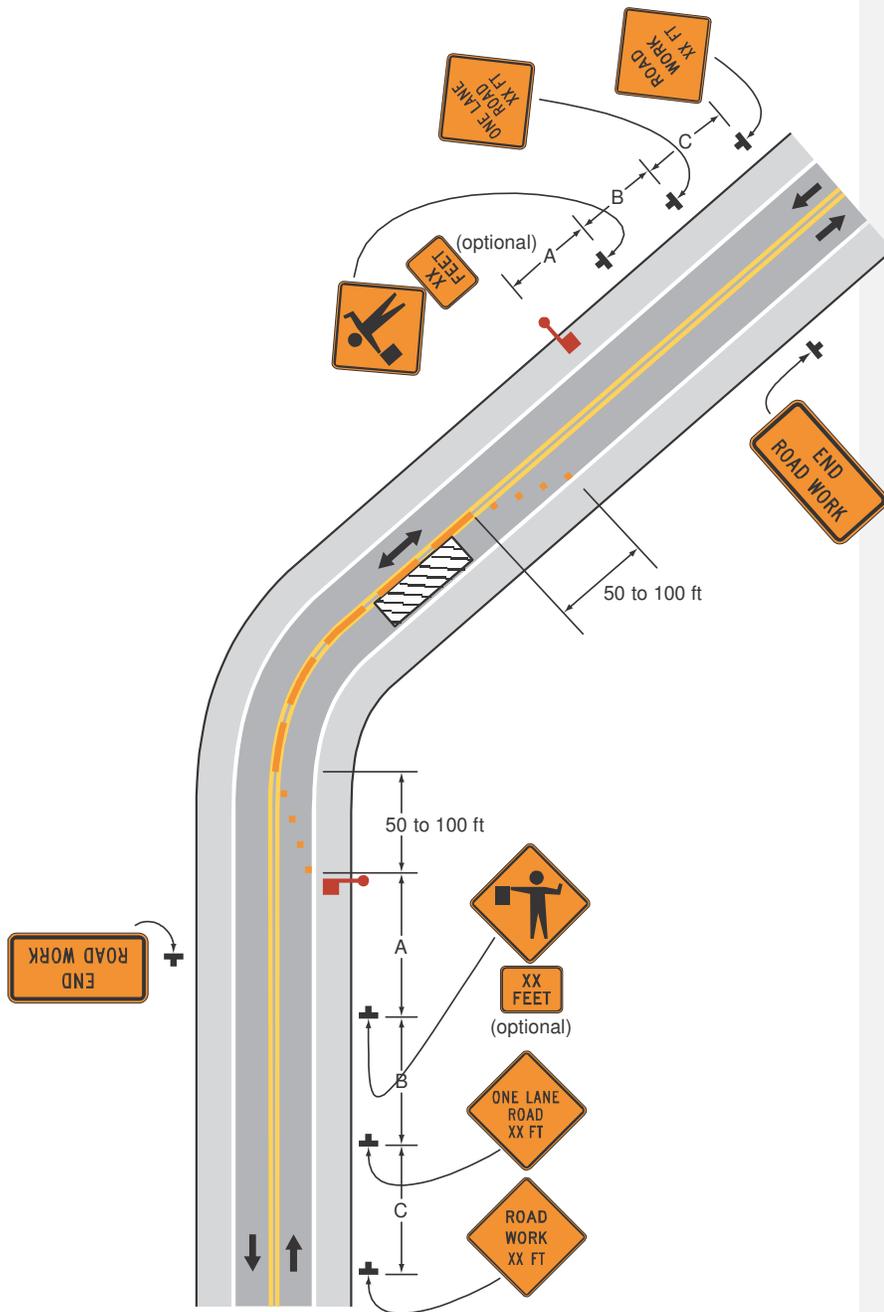


Figure 5-1. Lane Closure on a Two-Lane Roadway Using Flaggers

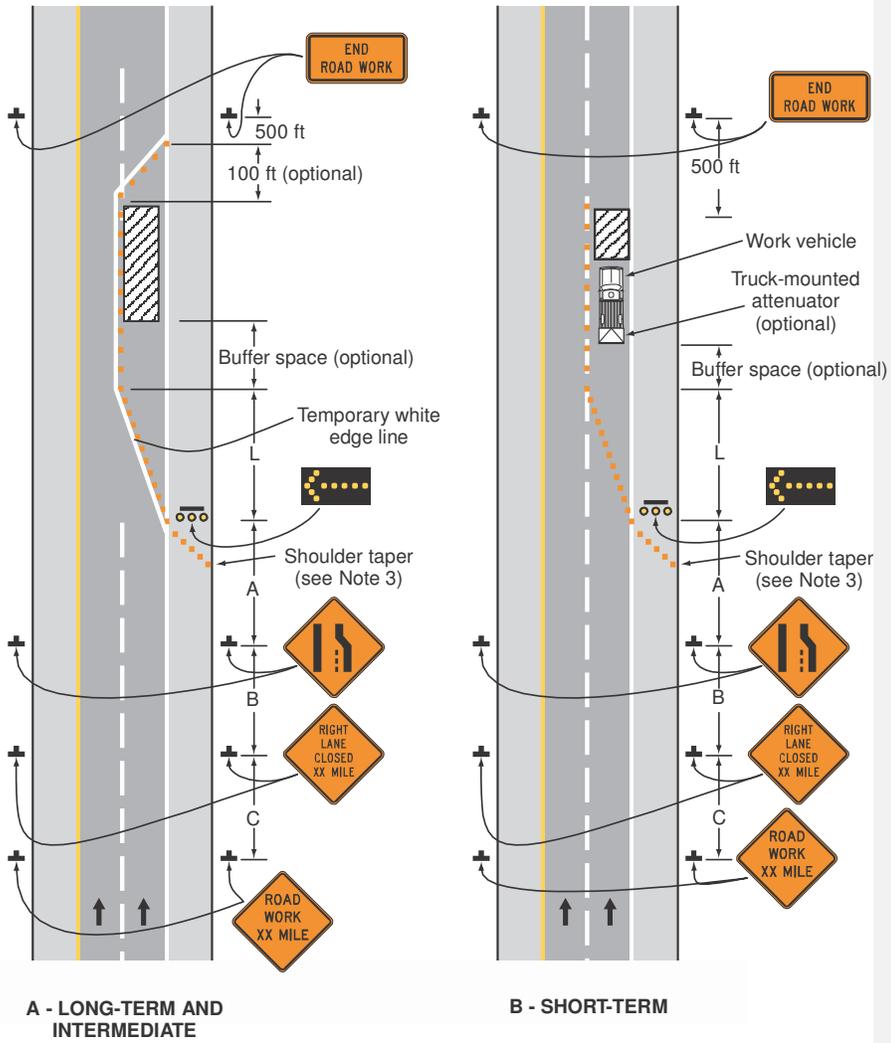


Figure 5-2. Stationary Lane Closure on a Divided Highway

Flaggers shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107-2004 publication entitled “American National Standard for High-Visibility Apparel and Headwear”. Flaggers are required to be equipped with 24 in. diameter STOP/SLOW paddles. The use of these paddles should be limited to emergency situations. Flaggers should also be equipped with two way radios if they will not be able to see each other.

Basic flagging procedures are shown in Figure 5-3. All flaggers are required to remain alert while conducting flagging duties. Additional personnel available to provide breaks for the flaggers may be necessary. The following additional requirements for the flagger are necessary:

1. Stand either on the shoulder adjacent to the road user being controlled or in the closed lane prior to stopping road users
2. Stand only in the lane being used by moving road users after the road users have stopped
3. Be clearly visible to the first approaching road user at all times
4. Be visible to other road users
5. Be stationed sufficiently in advance of the workers to warn them of approaching danger by out-of-control vehicles with an audible warning device such as a horn or whistle
6. Stand alone, away from other workers, work vehicles, or equipment

Flagger and other crew members should be alert for trucks associated with the work as they enter and leave the work area. Material delivery trucks entering or exiting the work zone are often moving slower than the through traffic and may cause traffic slowdowns. Also, motorists may follow these vehicles into the work area.

Other considerations when setting up flagging operations include intersections, driveways, and other site specific features within the work area. Flaggers should not stand in the center of an intersection. Additional flaggers may be necessary to prevent motorists from entering the available travel lane from an intersecting road or driveway.



Figure 5-3. Flagging Procedures

Properly Trained Flaggers

- give clear messages to drivers as shown
- allow time and distance for drivers to react
- coordinate with other flaggers

Properly Equipped Flaggers

- approved sign paddles
- paddles are not to be used in a signalized intersection
- approved Personal Protective Garments (PPE)
- brightly colored hat for better visibility
- retroreflective night equipment

Proper Flagging Stations

- good approach sight distance
- highly visible to traffic
- never stand in moving traffic lane
- always have an escape route

Proper Advance Warning Signs

- always use warning signs
- allow reaction distance from signs
- remove signs if not flagging

Flags should only be used in emergency situations or when a paddle would present a conflicting message to the motorist. Flags shall be a minimum of 24in. x 24in., red in color, and mounted on a staff about 3ft long.

The basic setup for a multi-lane roadway is shown in Figure 5-2. A flagger is not normally required in this situation since advance warning signs are sufficient to warn motorists. A set of signs is required to be located on both the outside and inside shoulders and installed in relation to the roadway in accordance with the Standard Drawing. The flashing arrow sign is placed on the pavement shoulder a calculated distance from the beginning of the work area. Channelizing devices are required to direct motorists from the lane to be closed to the adjacent open lane. For daylight operations, the use of cones or tubular markers for the channelizing devices is acceptable. For protection of nighttime work areas, drums or cones with a minimum height of 2 ft-4 in. are typically required.

CONTINUAL INSPECTION

All traffic control devices used at roadway work sites are required to be inspected daily to ensure the safety of the work force, the traveling public, pedestrians, as well as to protect the freshly placed mat. While the performance of these duties may be delegated to anyone, the CTWS is ultimately responsible for the inspection and maintenance of all traffic control devices on the contract. If an inspection determines that individual traffic control devices require reinstallation or replacement, the individual making that inspection is required to know how to contact the CTWS or designee to facilitate the repair or replacement of the defective devices.

TEMPORARY PAVEMENT MARKINGS

As the paving operation progresses down the road, any pavement markings that are covered by the newly placed mat are required to be replaced by temporary markings. The temporary pavement markings are required to be placed prior to reopening the work area to traffic. Section **801.12** of the Standard Specifications includes the requirements associated with temporary pavement markings. This information includes which markings are required and which marking materials are appropriate. There are also requirements associated with the length of time that the temporary markings will be in place and for situations where the traffic markings are used to indicate no passing zones.