

# Two-Lane, Two-Way Roads

**A road consisting of two opposing  
lanes of undivided traffic.**

Two-Lane  
Two-Way

*\*Drawings Not To Scale*



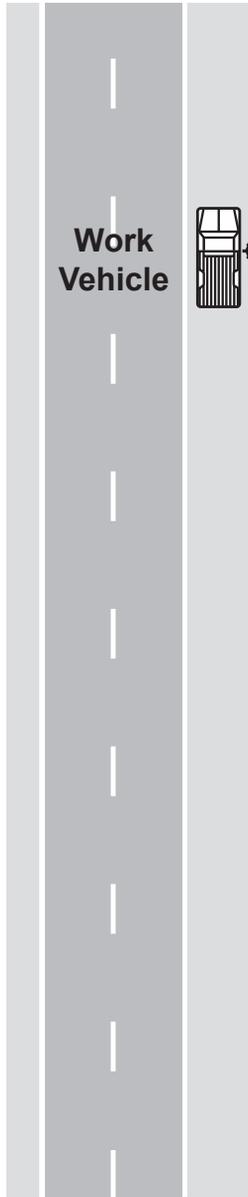
<b>TWO-LANE, TWO-WAY ROADS</b>				
<b>Intermediate Volume Up to 1500 ADT</b>	<b>MOBILE 15 Minutes or Less</b>	<b>SHORT DURATION 1 Hour or Less</b>	<b>SHORT TERM 12 Hours or Less</b>	<b>INTERMEDIATE TERM 3 Days or Less</b>
Lane Closure	11			
Flagger Control	26*		15*	
STOP Sign Control	14			
Work in Center of Road	27*			
<b>All ADTs</b>	<b>MOBILE 15 Minutes or Less</b>	<b>SHORT DURATION 1 Hour or Less</b>	<b>SHORT TERM 12 Hours or Less</b>	<b>INTERMEDIATE TERM 3 Days or Less</b>
Work Vehicle Parked on Shoulder	6		8	
Work on Shoulder	9		8	
Work off Shoulder	8			
Work off Roadway	10			
Shoulder or Parking Lane Closure	8			
Partial Shoulder Closure for Trailer Mounted Devices	7			
Lane Closure	12, 13*			
2 Flagger Control	16*			
Moving Work Spaces	17*			
Near Intersection	20*, 21*			
Near Railroad Xing	22*			
Pilot Car Operation	18*			
Flagging Crossroads and Blind Curves	19*			
Automated Flagger Assistance Device (AFAD)	24*			
Portable Signal Control	25			
Flagging Station Enhancements	23			
Work in Center of Road	28*			
Lane Shift	29			
Turn Lane Closures	33, 34			
Temporary Road Closure (15 minute intervals)	31*			
Temporary Road Closure	32			
Sidewalk Closure	88, 89			
Bike Lane Closure	87			
Gravel Road Maintenance	30			
Crossroad and Confirmation Signing	35			

See Low Volume Roads section for ADTs less than 400.

\* This layout may be used for nighttime operations only if the flagging stations are occupied and illuminated with portable lights.

**NOTES:**

1. The Work Vehicle should be pulled over as far off the roadway as possible, and shall display and operate a 360-degree flashing beacon.



**WORK VEHICLE PARKED ON SHOULDER**

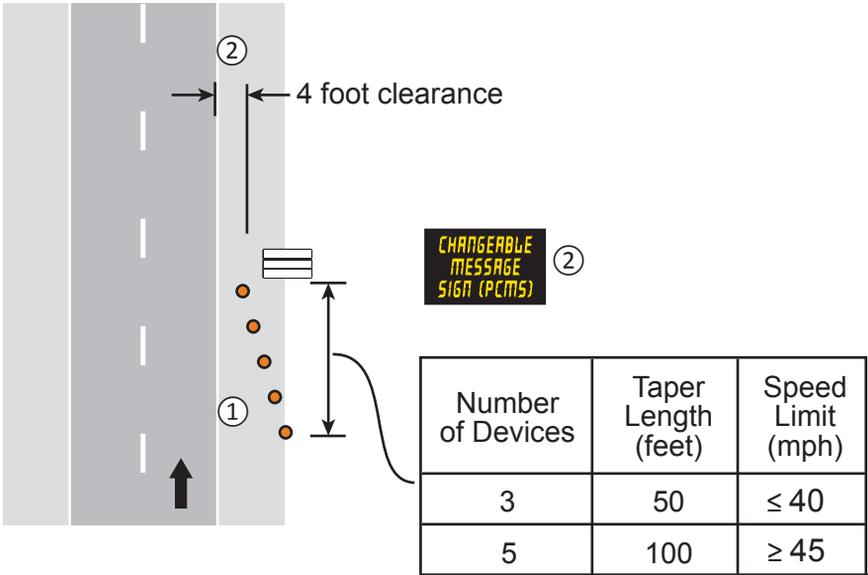
**1 HOUR or LESS**

6K-6

**LAYOUT 6**

**NOTES:**

- ① Type B channelizing devices shall be used in the shoulder taper regardless of the location on the shoulder or the width of the shoulder.
- ② Trailer mounted traffic control devices should be placed at least 4 feet from the traveled lane. If a 4 foot clearance cannot be met, then the taper length shall be doubled.



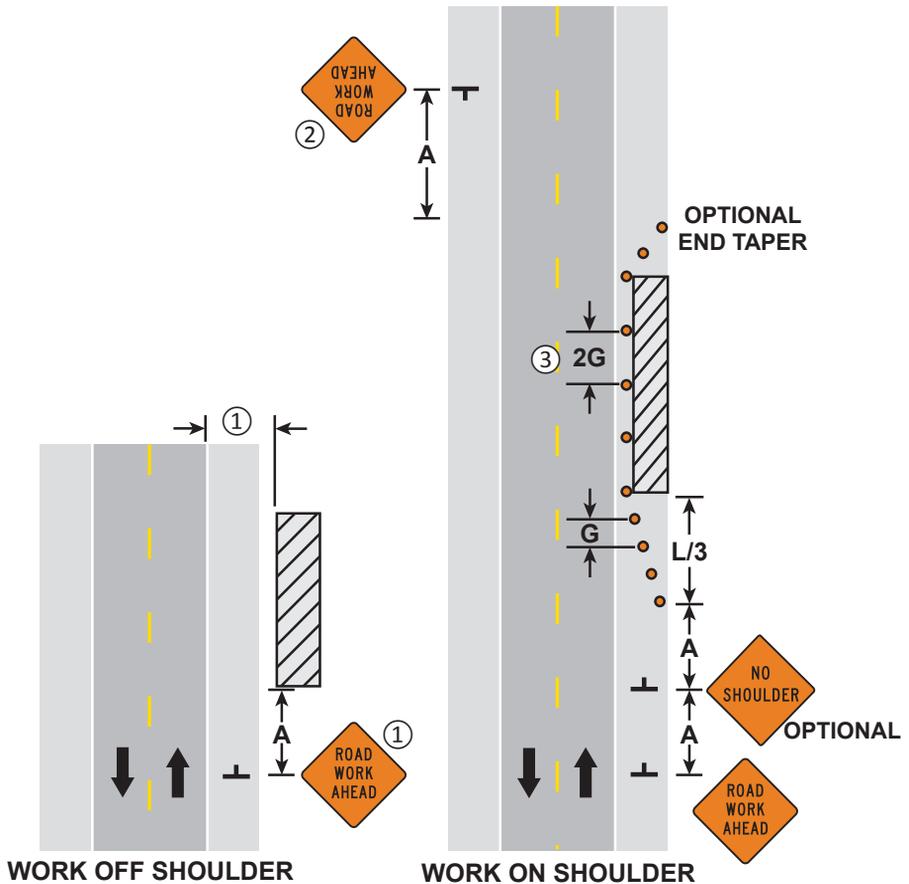
**PARTIAL SHOULDER CLOSURE**  
Trailer Mounted Devices on Shoulder

3 DAYS or LESS

LAYOUT 7

**NOTES:**

- ① The ROAD WORK AHEAD sign may be omitted for short term daylight operations if a vehicle is displaying and operating a 360-degree flashing beacon and:
  - a. The distance from curb face to the work space is at least 2 feet, or
  - b. The distance from the edge of the roadway to the work space is at least 15 feet.
- ② This ROAD WORK AHEAD sign shall be installed on two-lane, two-way roads if traffic control devices are installed for a work space in the opposite shoulder.
- ③ If this layout is used to close a parking lane that is normally open to vehicle travel during the time of day the closure will be in effect, the lane shall be considered a traveled lane and not a parking lane. [Layout 42](#) shall be used to provide traffic control for the lane closure.
4. If this layout is used to close a parking lane, channelizer spacing may be reduced from 2G to G in high volume areas.



**SHOULDER AND PARKING LANE CLOSURE**

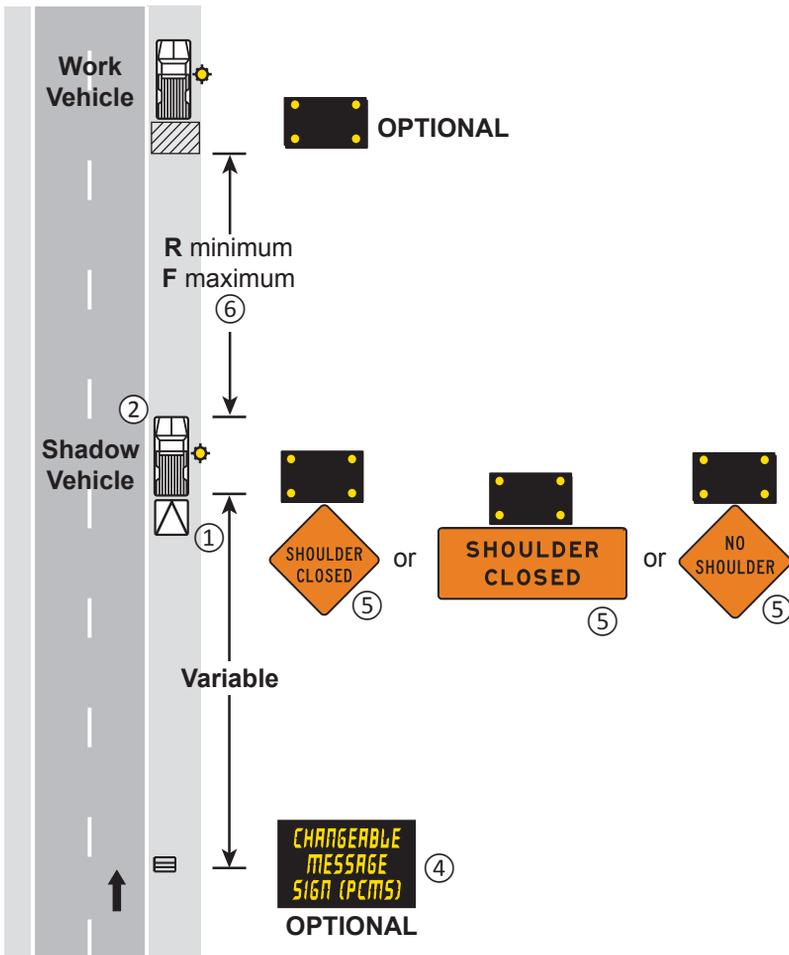
Work On or Near Shoulder

3 DAYS or LESS

LAYOUT 8

**NOTES:**

- ① Any Shadow Vehicle or Protection Vehicle operating totally or partially in a traffic lane should be equipped with a TMA.
- ② The Shadow Vehicle or Protection Vehicle may encroach into the traffic lane when the shoulder is too narrow to drive on.
- 3. Any vehicle not displaying a Flashing Arrow Board shall display high-intensity rotating, flashing, oscillating, or strobe lights.
- ④ The PCMS shall be used for nighttime operations.
- ⑤ When the PCMS is used, the SHOULDER CLOSED or NO SHOULDER sign becomes optional.
- ⑥ The distance between the work area and the Shadow Vehicle should be adjusted between **R** and **F** based on traffic volume and sight distance.



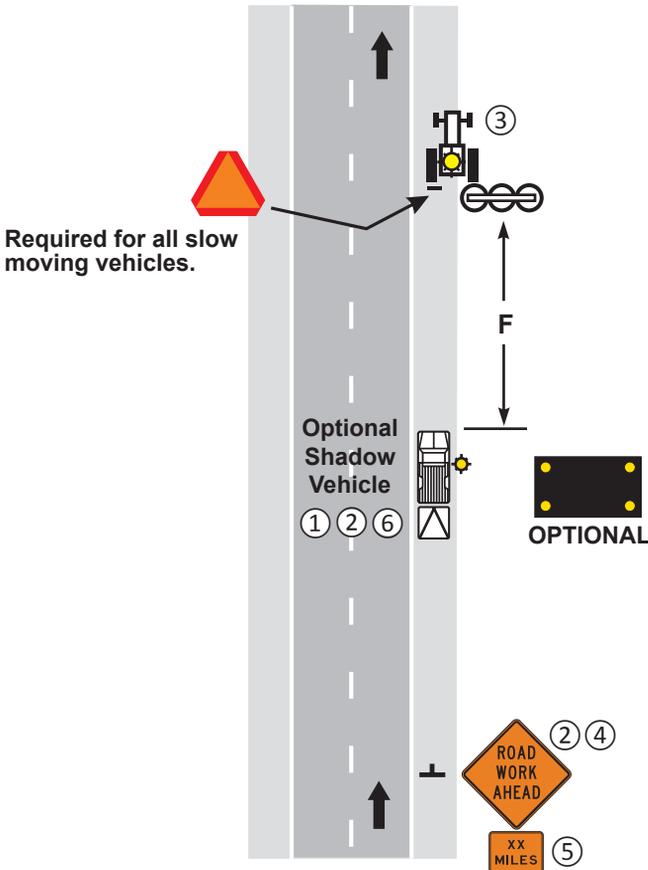
**SHOULDER CLOSURE**  
Mobile and Short Duration

1 HOUR or LESS

LAYOUT 9

**NOTES:**

- ① A Shadow Vehicle should be used on roadways where Decision Sight Distance (**D**) is frequently restricted and the equipment consistently encroaches within 3 feet of the traffic lane. The Shadow Vehicle may be omitted on roadways with speeds limits of 40 mph or less.
- ② On roadways of less than 400 ADT the Shadow Vehicle and ROAD WORK AHEAD sign may be omitted.
- ③ The vehicle should be as far off the roadway as possible, and shall display and operate a 360-degree flashing beacon.
- ④ The ROAD WORK AHEAD sign may be omitted when there is an adequate approach Decision Sight Distance (**D**) to the equipment along the majority of the route.
- ⑤ When advance warning signs are used, the signs should be no more than 3 miles from the equipment. The location of the signs should be determined by the sources of traffic, such as major cross roads. If the distance is 1 mile or greater, a XX MILES distance plaque should be used and placed directly below or on the lower side of the warning sign nearest traffic.
- ⑥ The Shadow Vehicle should be equipped with a TMA if it encroaches into the traffic lane.



**WORK OFF ROADWAY**

Mobile Operations Having Little or No Interference with Traffic

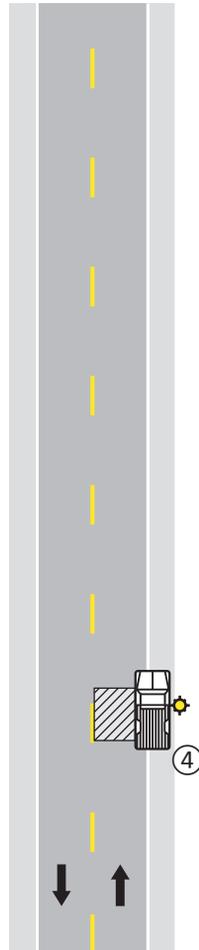
15 MINUTES or LESS

LAYOUT 10

**NOTES:**

1. If the approach sight distance is restricted, a spotter should be used.
2. If the visibility is poor or the operation does not move at least the Decision Sight Distance (**D**) every 15 minutes, the appropriate stationary layout should be used.
3. This layout may be used for nighttime operations only in locations where the posted speed limit is 40 mph or less.
- ④ The slow moving or stopped Work Vehicle should keep the traffic lane as wide as possible by using the shoulder space whenever possible.

**ONLY FOR ROADS  
LESS THAN  
1500 ADT**



**LANE CLOSURE  
TWO-LANE, TWO-WAY ROAD**

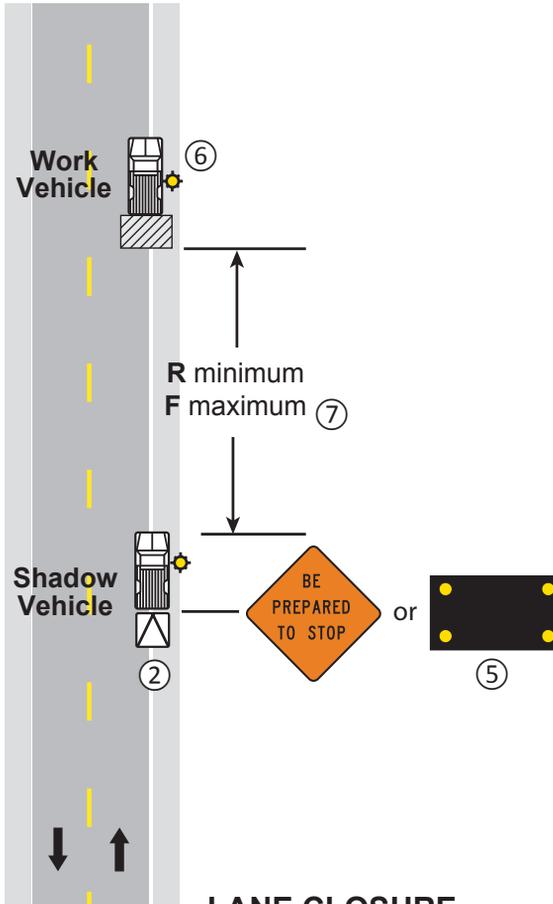
**15 MINUTES or LESS**

6K-11

**LAYOUT 11**

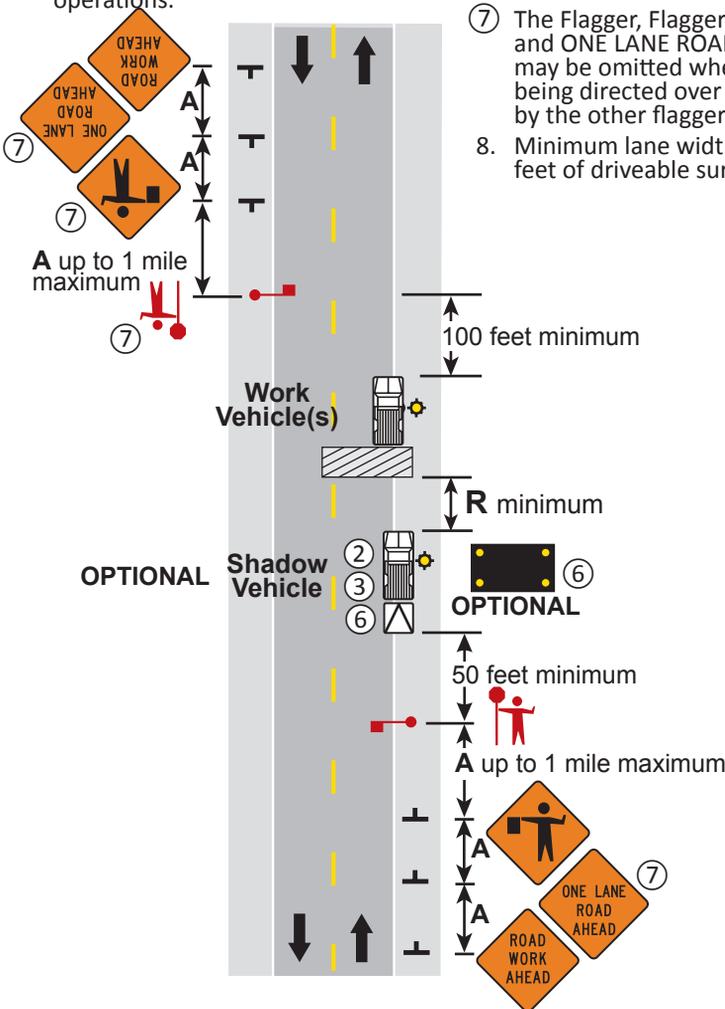
**NOTES:**

1. Use [Layout 13](#) under any of the following conditions:
  - If the work space is not visible for at least the Decision Sight Distance (**D**),
  - The motorists cannot see beyond the work space, or
  - Traffic volumes do not allow passage.
- ② Any Shadow Vehicle or Protection Vehicle operating totally or partially in a traffic lane should be equipped with a TMA.
3. If the work space does not move at least the Decision Sight Distance (**D**) every 15 minutes, the appropriate stationary layout should be used.
4. This layout may be used for nighttime operations only in locations where the posted speed limit is 40 mph or less.
- ⑤ For nighttime operations, the Flashing Arrow Board shall be used.
- ⑥ The slow moving or stopped Work Vehicle and Shadow Vehicle should keep the traffic lane as wide as possible by using the shoulder space whenever practical.
- ⑦ The distance between the work area and the Shadow Vehicle should be adjusted between **R** and **F** based on traffic volume and sight distance.



**NOTES:**

1. The advance warning signs should be moved or reset after each major road intersection or after each mile whichever comes first.
- ② Any Shadow Vehicle or Protection Vehicle operating totally or partially in a traffic lane should be equipped with a TMA.
- ③ The slow moving or stopped Work Vehicle(s) and Shadow Vehicle should keep the traffic lane as wide as possible by using the shoulder space whenever practical.
4. If the work area does not move at least the Decision Sight Distance (**D**) every 15 minutes, the appropriate stationary layout should be used.
5. This layout may be used for nighttime operations only in locations where the posted speed limit is 40 mph or less.
- ⑥ The Shadow Vehicle with Flashing Arrow Board shall be used during nighttime operations.
- ⑦ The Flagger, Flagger Ahead sign, and ONE LANE ROAD AHEAD sign may be omitted when traffic is not being directed over the center line by the other flagger.
8. Minimum lane widths shall be 10 feet of driveable surface.



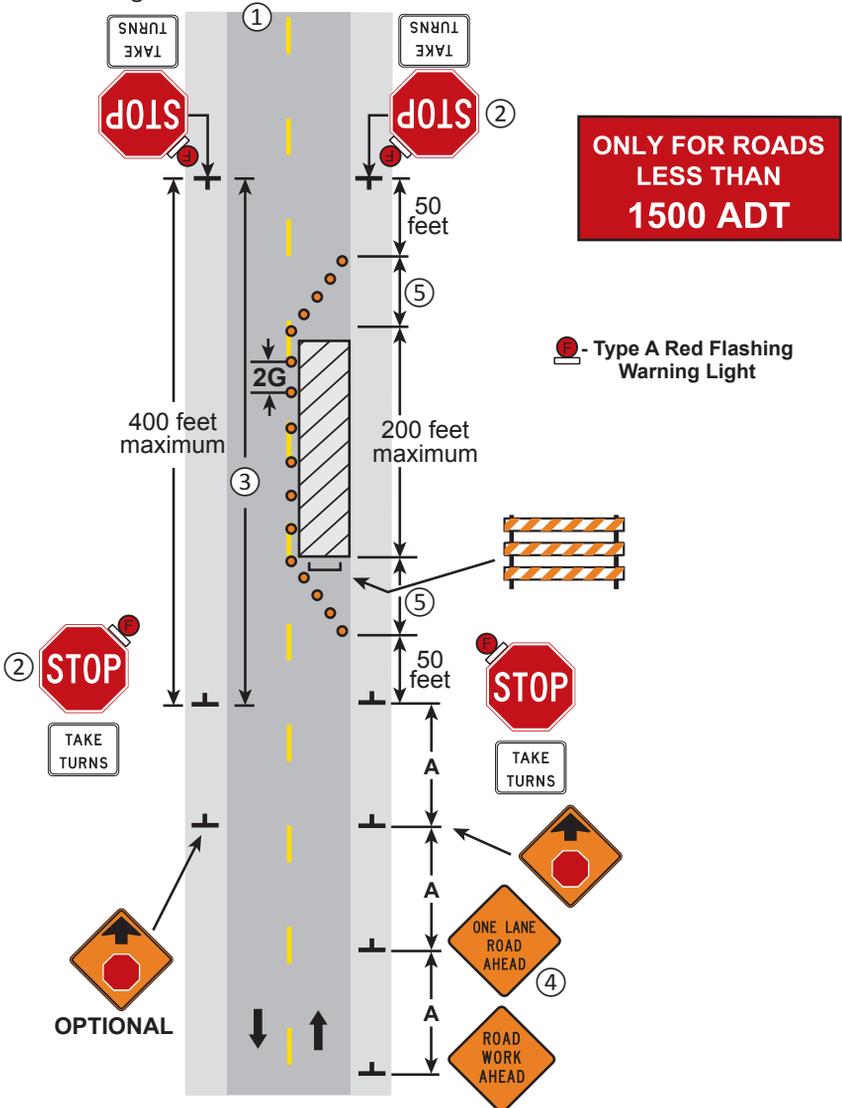
**LANE CLOSURE**  
**With a Moving Work Area**  
**TWO-LANE, TWO-WAY ROAD**

15 MINUTES or LESS

LAYOUT 13

**NOTES:**

- ① Approach signs are the same in both directions.
- ② STOP signs shall be 48 x 48 inches. The left-side STOP sign may be 30 x 30 inches.
- ③ If adequate sight distance is not available to recognize a stopped vehicle or traffic volume restricts vehicles from taking turns through the open lane, use Layout 16 or 25.
- ④ The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
- ⑤ The two-way taper should be 50 feet in length using 5 equally spaced channelizing devices.



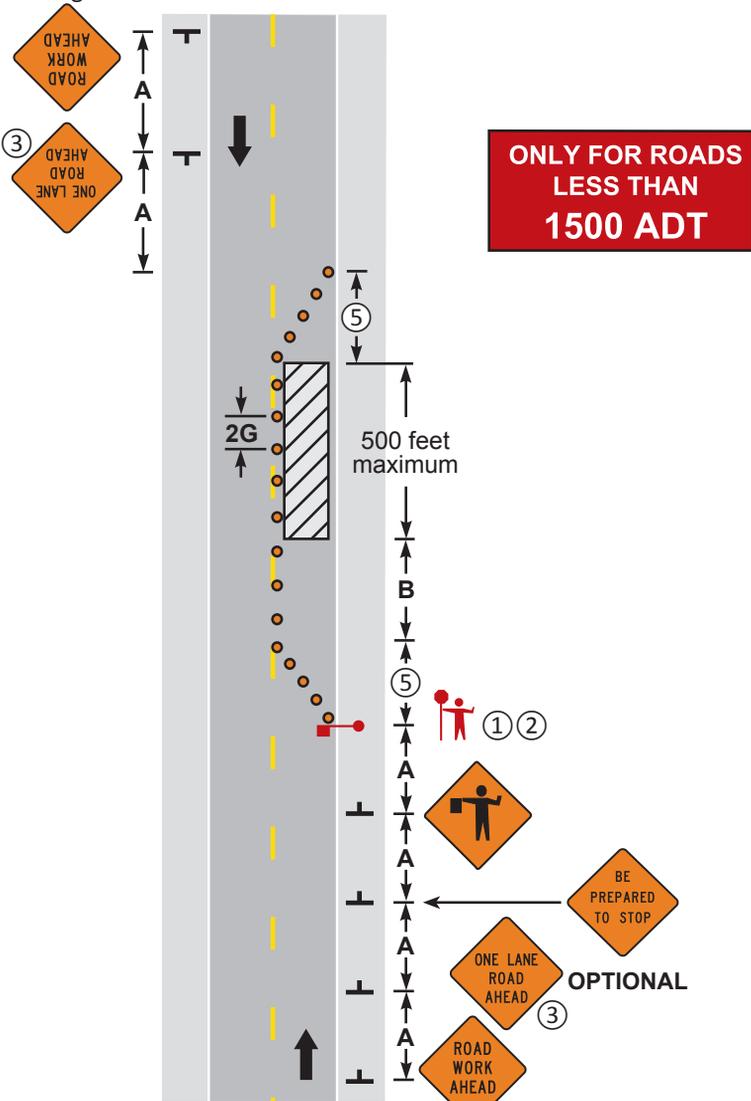
**LANE CLOSURE WITH STOP SIGNS  
TWO-LANE, TWO-WAY ROAD**

**3 DAYS or LESS**

**LAYOUT 14**

**NOTES:**

- ① The approach sight distance to the flagger shall be at least the Decision Sight Distance (**D**).
- ② If the flagger's ability to see oncoming motorists beyond the work space is less than the Decision Sight Distance (**D**), two flaggers shall be used - See [Layout 16](#).
- ③ The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
- 4. If the work space must be left unattended at night use [Layout 14](#).
- ⑤ The two-way taper should be 50 feet in length and using 5 equally spaced channelizing devices.



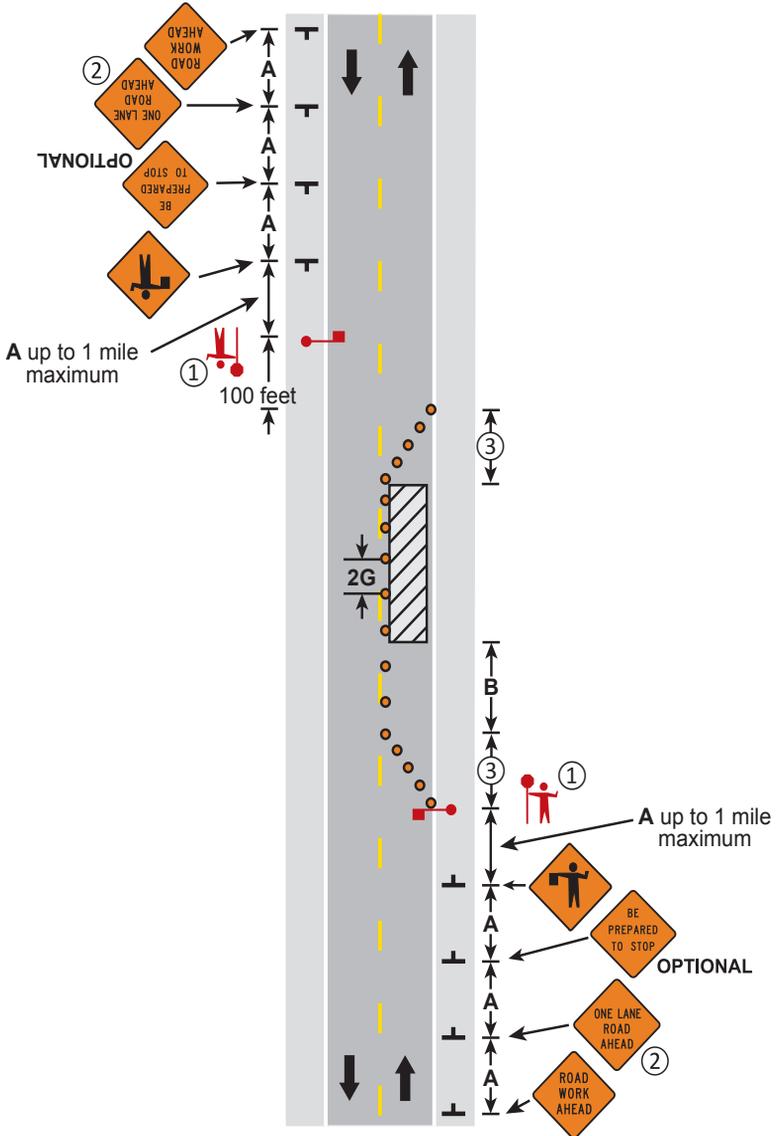
**LANE CLOSURE, ONE FLAGGER  
TWO-LANE, TWO-WAY ROAD**

**3 DAYS or LESS**

**LAYOUT 15**

**NOTES:**

- ① The approach sight distance to the flagger shall be at least the Decision Sight Distance (**D**).
- ② The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
- ③ The two-way taper should be 50 feet in length using 5 equally spaced channelizing devices.
4. If anticipating operational problems, the use of a Pilot Car (see [Layout 18](#)) may improve operations and safety.



**LANE CLOSURE, TWO FLAGGERS  
TWO-LANE, TWO-WAY ROAD**

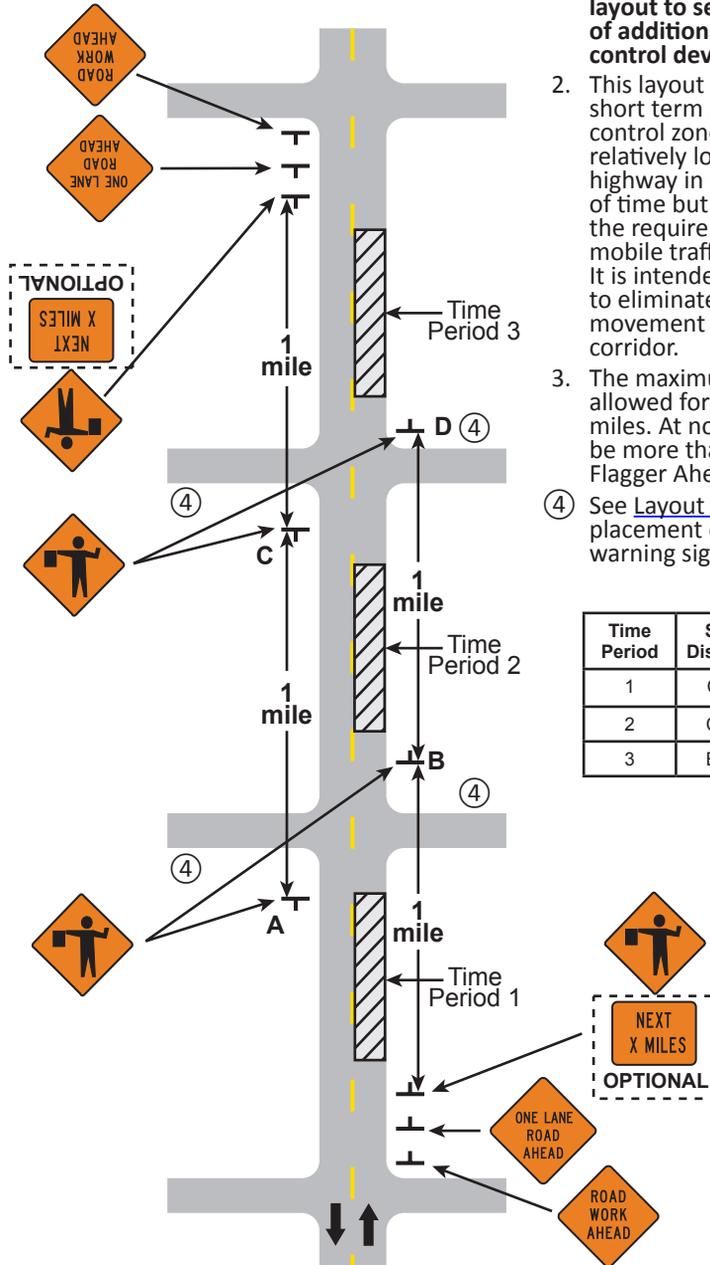
3 DAYS or LESS

6K-16

LAYOUT 16

**NOTES:**

1. This layout shall be used with the appropriate flagger layout to select the location of additional required traffic control devices.
2. This layout may be used for short term stationary traffic control zones that cover a relatively long segment of highway in a short period of time but do not meet the requirements for a mobile traffic control zone. It is intended to be used to eliminate the multiple movement of signs along a corridor.
3. The maximum distance allowed for this layout is 3 miles. At no time will there be more than 1 mile between Flagger Ahead signs.
- ④ See [Layout 35](#) for required placement of advance warning signs on crossroads.



Time Period	Signs Displayed	Signs Not Displayed
1	C & A	B & D
2	C & B	A & D
3	B & D	A & C

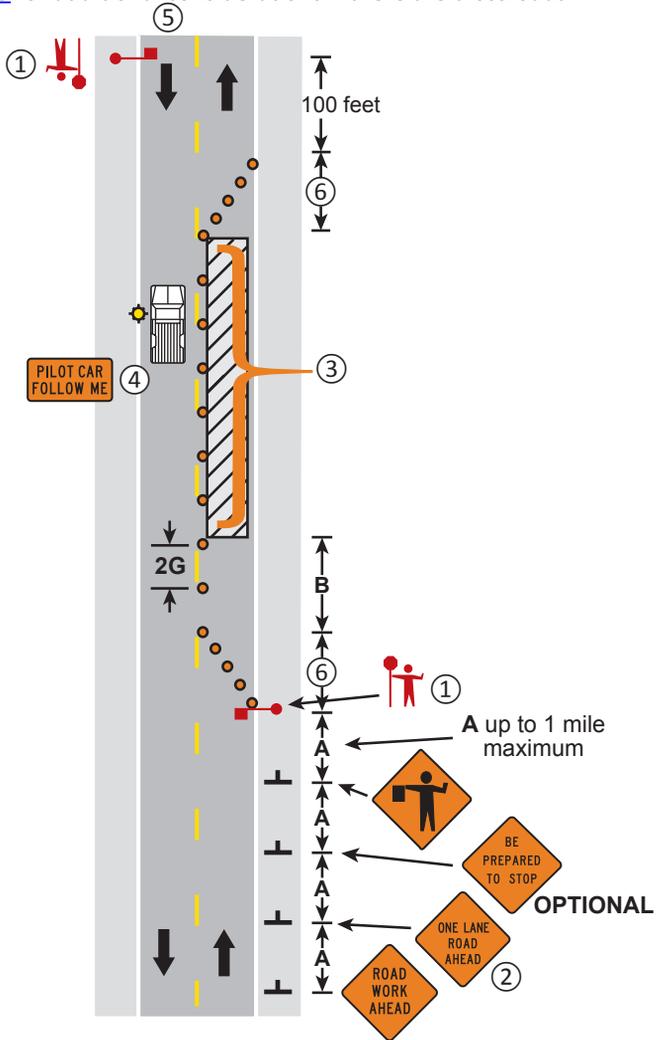
**MOVING WORK SPACES**

12 HOURS or LESS

LAYOUT 17

**NOTES:**

- ① The approach sight distance to the flagger shall be at least the Decision Sight Distance (**D**).
  - ② The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
  - ③ Channelizing devices along the edge of the work space may be omitted unless traffic is traveling next to longitudinal drop-offs that are greater than 4 inches.
  - ④ Pilot Cars should lead traffic through the work zone at a safe speed. See the Flagging Handbook for additional guidance.
  - ⑤ Advance warning signs are the same for both directions approaching the work area.
  - ⑥ The two-way taper should be 50 feet in length using 5 equally spaced channelizing devices.
7. See [Layout 19](#) for additional considerations if there are crossroads.



**LANE CLOSURE, PILOT CAR METHOD  
TWO-LANE, TWO-WAY ROAD**

3 DAYS or LESS

LAYOUT 18

**NOTES:**

- ① See [Layout 16](#) for advance signing and flagger setup. Approach signs are the same in both directions.
- ② When a flagger is positioned at an intersection, they:
  - Shall have 2-way communications with the Pilot Car,
  - Should use hand signals with a flag or flashlight with red glow cone to control traffic movements rather than the typical STOP/SLOW paddle in order to avoid displaying the SLOW paddle to the opposite approach, and
  - May need additional flaggers to direct traffic when the crossroad consistently has multiple vehicles per direction waiting each Pilot Car cycle.
- ③ A flagger may be placed at a blind curve, crest of a hill, or other site obstruction where traffic might enter from other driveways or entrances to warn the Pilot Car that there may be oncoming traffic. When used, the flagger:
  - Shall be located to clearly see traffic from both directions,
  - Shall not be positioned in the open traffic lane,
  - Shall have 2-way communications with the Pilot Car,
  - Shall have a flagger paddle; and
  - Should have a means to warn an errant driver such as an air horn.
4. Consider distributing brochures to local businesses and residents detailing Pilot Car operations.
- ⑤ PILOT CAR FOLLOW ME sign shall be mounted on the Pilot Car.
- ⑥ Channelizers shall be placed near intersections and flagging stations.
- ⑦ [Layout 18](#) indicates which channelizers are optional with Pilot Car operations.

**FLAGGING CROSSROADS AND BLIND CURVES  
PILOT CAR OPERATIONS****3 DAYS or LESS****LAYOUT 19a****LAYOUT 19a & b**

6K-19a



### FLAGGING CROSSROADS AND BLIND CURVES PILOT CAR OPERATIONS

3 DAYS or LESS

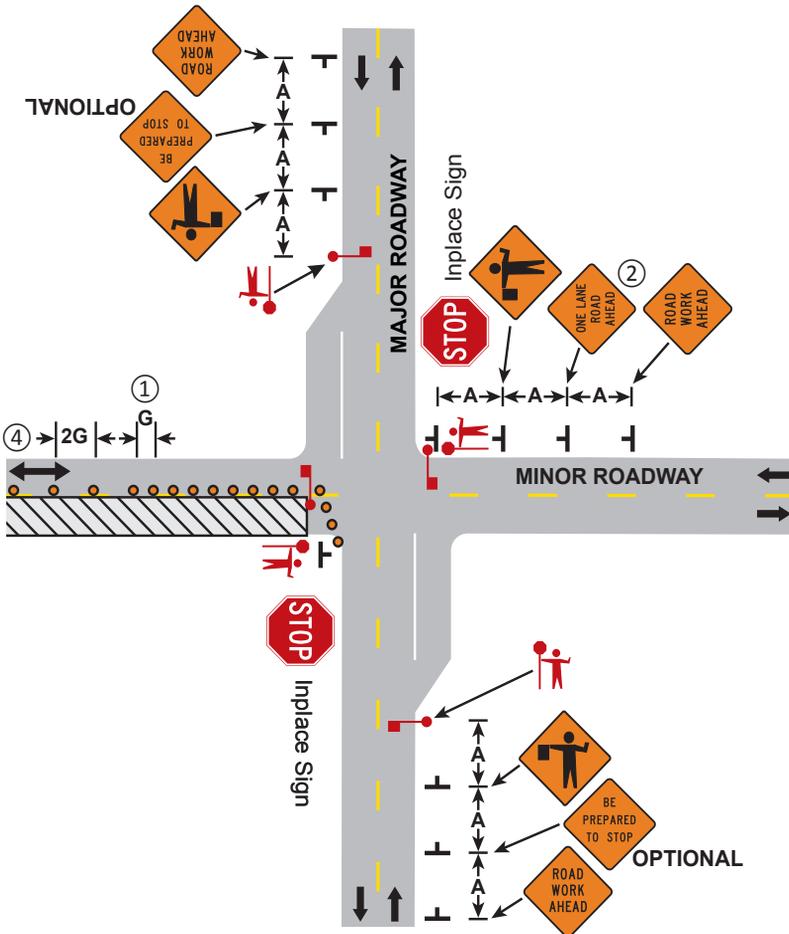
LAYOUT 19b

LAYOUT 19a & b

6K-19b

**NOTES:**

- ① The spacing between devices should be reduced to **G** or less when the work space is within 300 feet of the intersection. This will help keep motorists from entering into the work space near the intersection.
- ② The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
3. When the traffic volume of the minor roadway exceeds 1500 ADT or turning movements cause unsafe operations, the following steps should be considered:
  - a. Control traffic at the intersection with a law enforcement officer;
  - b. Restrict vehicle turns from the major roadway with flagging, signing, and/or closing the turn lanes;
  - c. Completely close a leg of the minor roadway until the work space has left the area near the intersection.
- ④ For other temporary traffic control devices in advance of the work space, see Layouts 4, 15, or 16.



**LANE CLOSURE ON MINOR ROAD**  
 Before Intersection of Major Road  
**TWO-LANE, TWO-WAY ROAD**

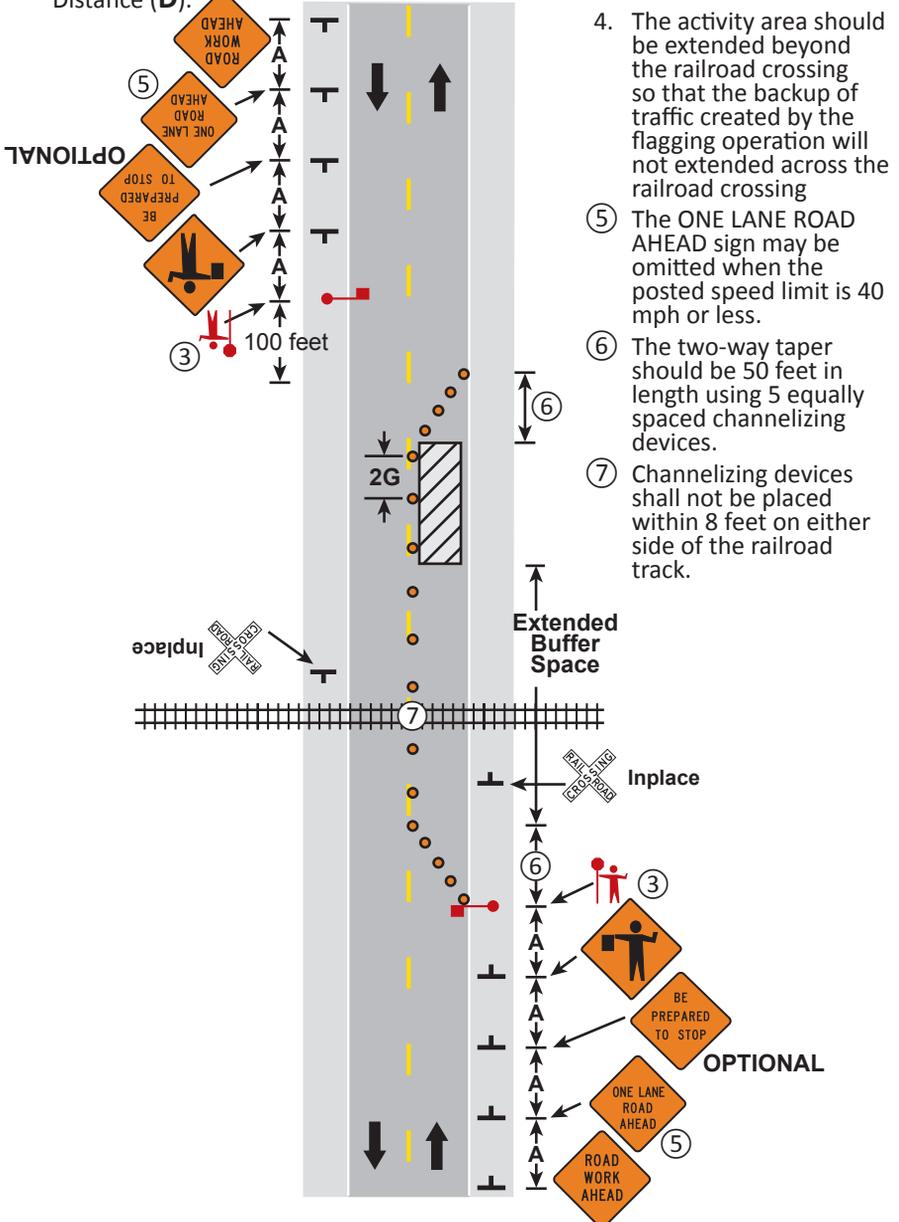
3 DAYS or LESS

LAYOUT 20



**NOTES:**

1. Users of this layout shall coordinate with the railroad.
2. If the backup of vehicles across active railroad tracks cannot be avoided, a law enforcement officer or a flagger shall be provided at the crossing to prevent vehicles from stopping within the railroad crossing even if automatic warning devices are in place.
- ③ The approach sight distance to the flagger shall be at least the Decision Sight Distance (**D**).



4. The activity area should be extended beyond the railroad crossing so that the backup of traffic created by the flagging operation will not be extended across the railroad crossing
- ⑤ The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
- ⑥ The two-way taper should be 50 feet in length using 5 equally spaced channelizing devices.
- ⑦ Channelizing devices shall not be placed within 8 feet on either side of the railroad track.

**LANE CLOSURE NEAR GRADE CROSSING  
TWO-LANE, TWO-WAY ROAD**

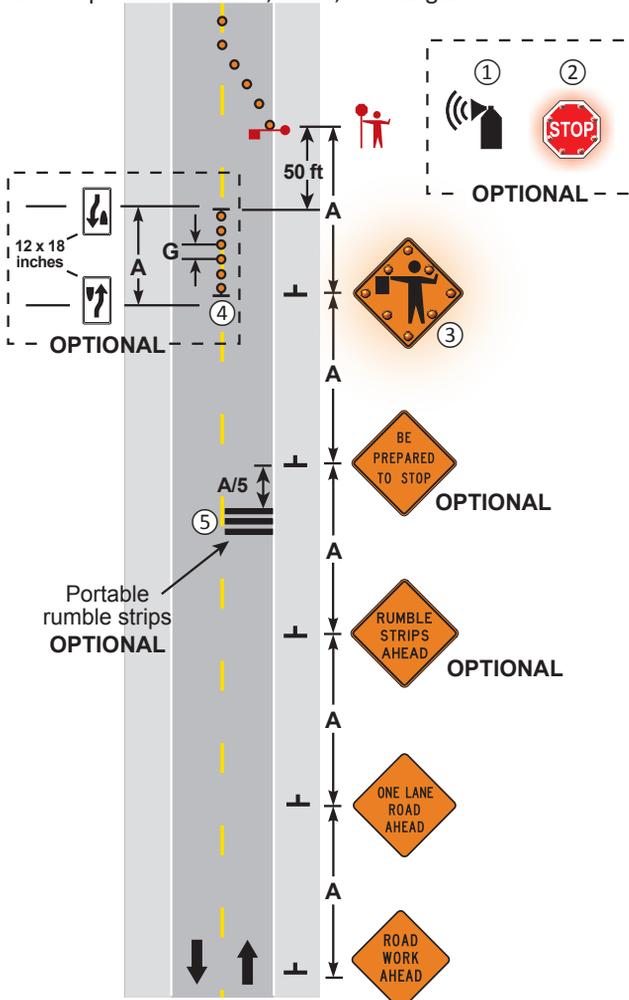
3 DAYS or LESS

LAYOUT 22

**NOTES:**

- ① The flagger may be equipped with an airhorn.
- ② The STOP/SLOW paddle may be enhanced with flashing conspicuity lights on the signs.
- ③ The Flagger Ahead sign may be enhanced with flashing conspicuity lights on it.
- ④ Keep Right signs and Type A channelizing devices such as weighted channelizers, cones, tubular markers, or centerline delineators are optional.
- ⑤ The portable rumble strips array should consist of 3 strips placed perpendicular to the direction of travel. Spacing of rumble strips should be from center of rumble to center of rumble and based on the posted speed limit:
  - 40 mph or less = 10 feet spacing
  - 45 to 55 mph = 15 feet spacing
  - 60 mph or greater = 20 feet spacing

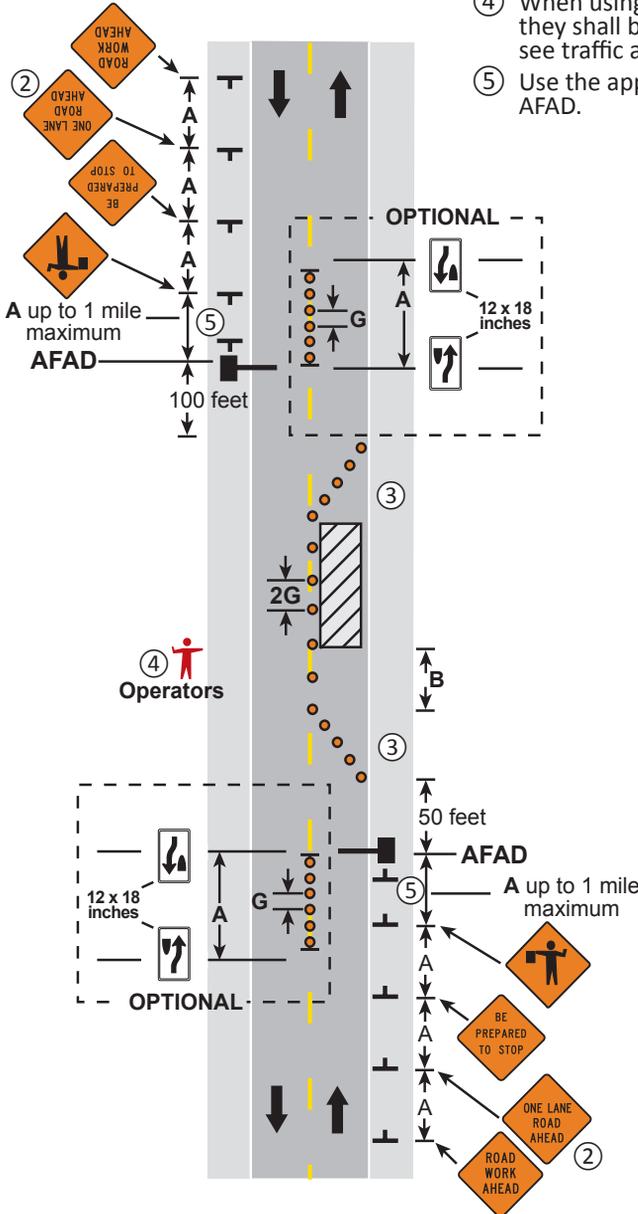
The rumble strips shall be white, black, or orange.



**FLAGGING STATION OPTIONS  
TWO-LANE, TWO-WAY ROAD**

**NOTES:**

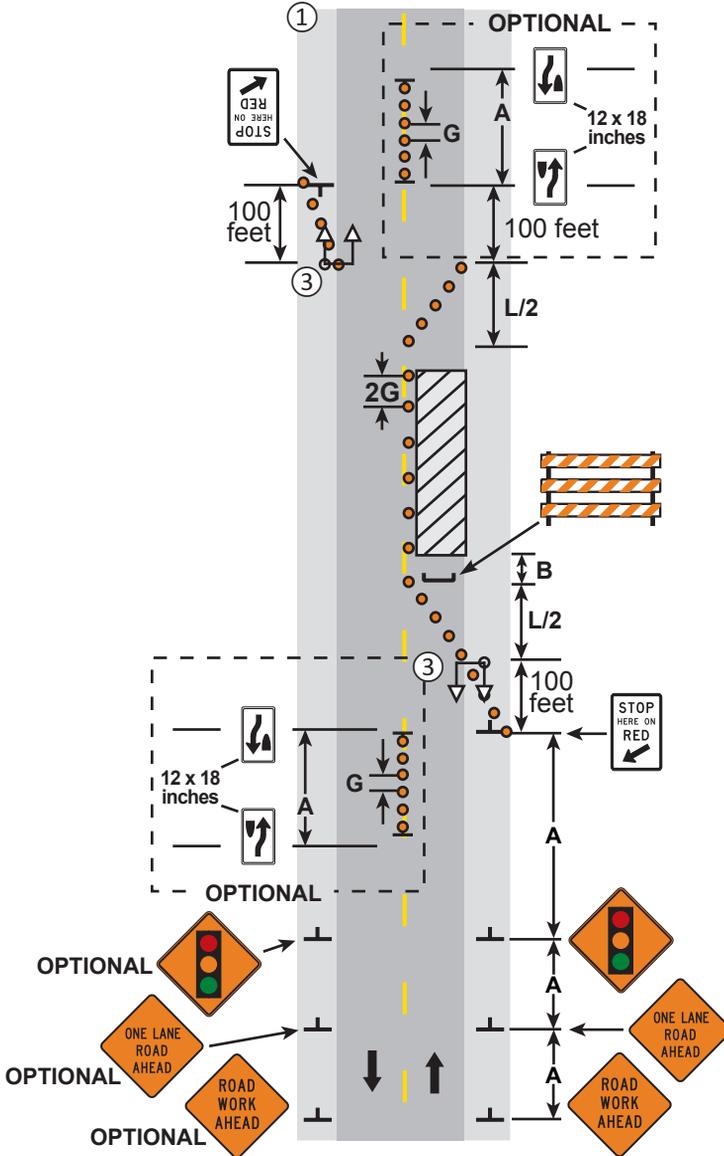
1. The approach sight distance to the Automated Flagging Assistance Device (AFAD) shall be at least the Decision Sight Distance (**D**).
- ② The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
- ③ The two-way taper should be 50 feet in length using 5 equally spaced channelizing devices.
- ④ When using a single operator, they shall be located so they can see traffic at both AFAD locations.
- ⑤ Use the appropriate sign on the AFAD.



**LANE CLOSURE, AUTOMATED FLAGGERS  
TWO-LANE, TWO-WAY ROAD**

**NOTES:**

- ① Approach signs are the same in both directions.
- 2. Signal timing and signal head locations shall be established by qualified personnel and approved by the road authority.
- ③ Two signal heads shall be installed per approach. The first shall be installed on the right shoulder. The second signal head may be installed on either the left shoulder or mounted overhead on the same structure as the first signal head.



**LANE CLOSURE WITH PORTABLE SIGNALS**  
**TWO-LANE, TWO-WAY ROAD**

3 DAYS or LESS

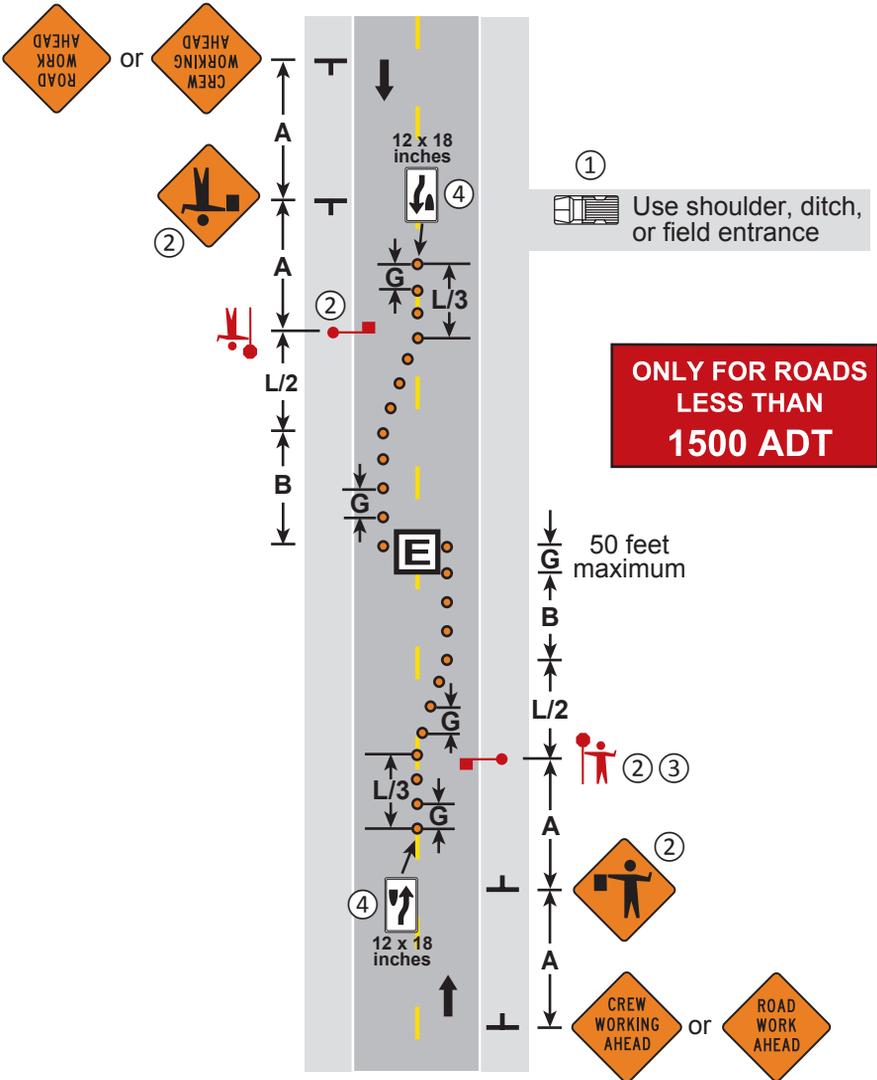
6K-25

LAYOUT 25



**NOTES:**

- ① The Work Vehicle shall be parked off of the roadway. Do not obstruct the shoulder in the coned areas.
- ② The Flaggers and the Flagger Ahead signs may be omitted if the posted speed limit is 40 mph or less and there is at least 10 feet of driveable surface outside of the channelizing devices.
- ③ The flagger shall be visible for at least the Decision Sight Distance (**D**).
- ④ The Keep Right sign may be omitted if the posted speed limit is 40 mph or less.



**EQUIPMENT ON CENTERLINE  
TWO-LANE, TWO-WAY ROAD**

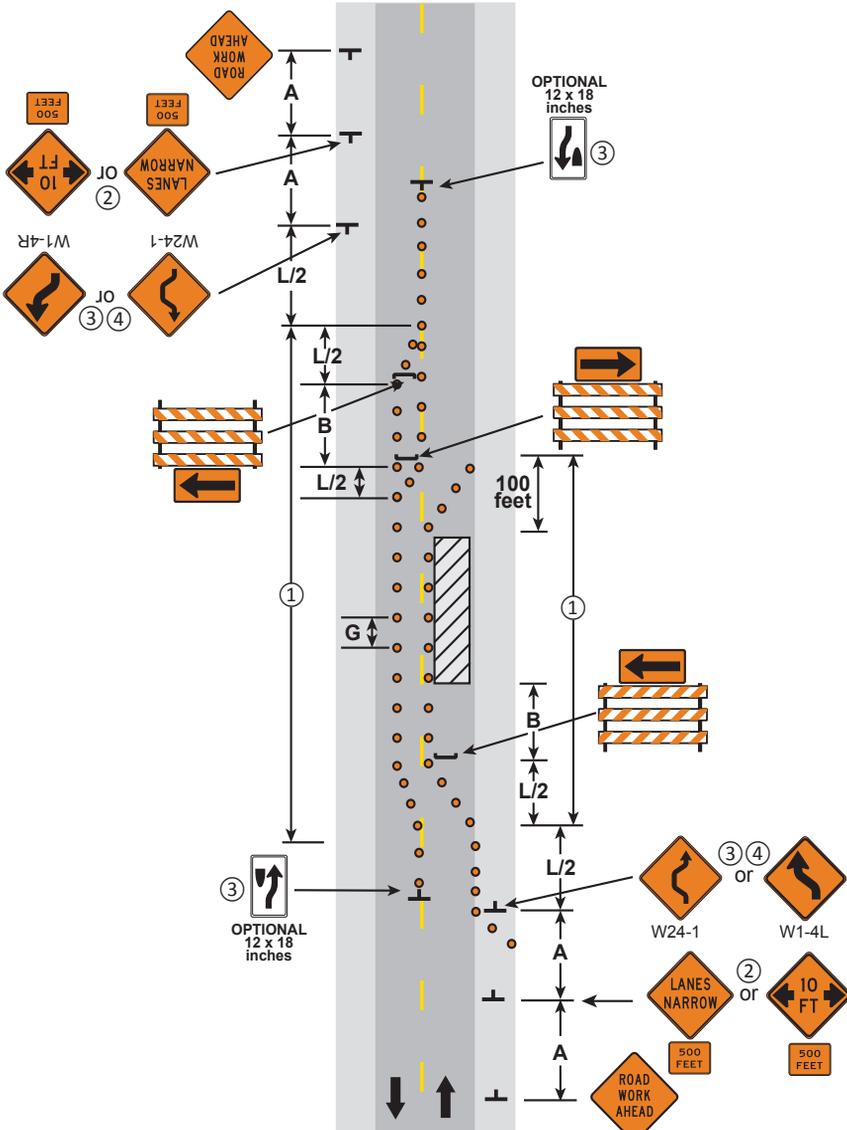
1 HOUR or LESS

LAYOUT 27



**NOTES:**

- ① Parking and stopping should be prohibited along the work area and tapers.
- ② Minimum lane widths shall be 10 feet of driveable surface. When temporary lane widths are less than existing lane widths a LANES NARROW sign or a Narrow Lane (width shown) sign with advisory plaque placed directly below or on the lower side of the warning sign nearest traffic should be used.
- ③ The Double Reverse Curve, Reverse Curve, and/or Keep Right signs may be omitted when the posted speed limit is 40 mph or less.
- ④ If tangent length of activity area is 600 feet or less, use the Double Reverse Curve sign.



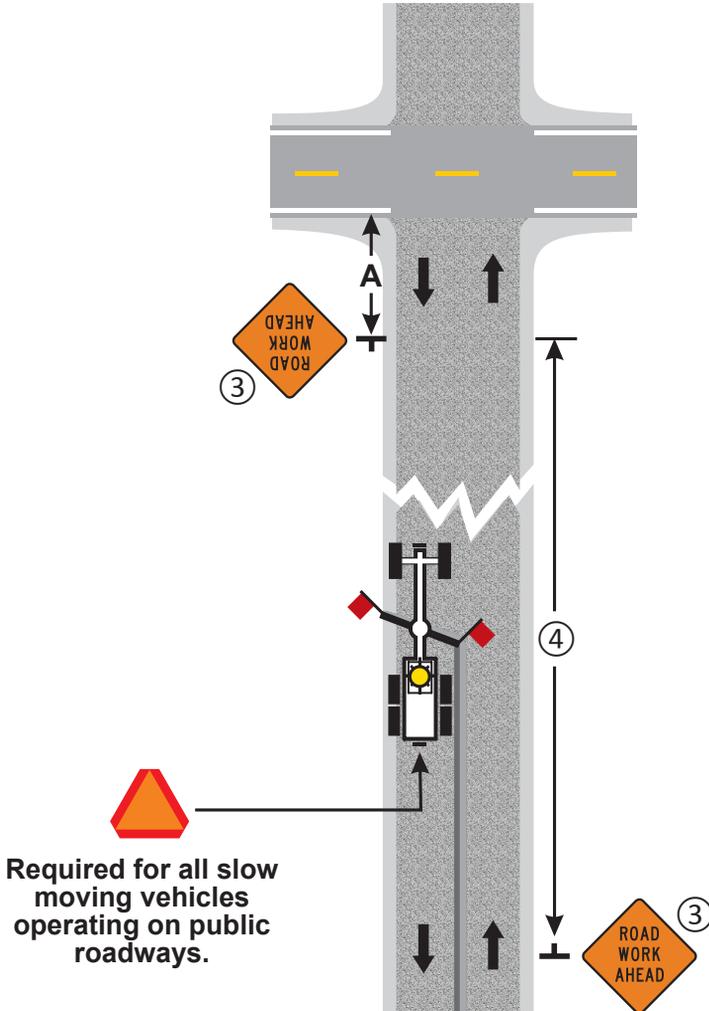
**WORK SPACE OCCUPIES ONE HALF OF ROAD  
TWO-LANE, TWO-WAY ROAD**

3 DAYS or LESS

LAYOUT 29

**NOTES:**

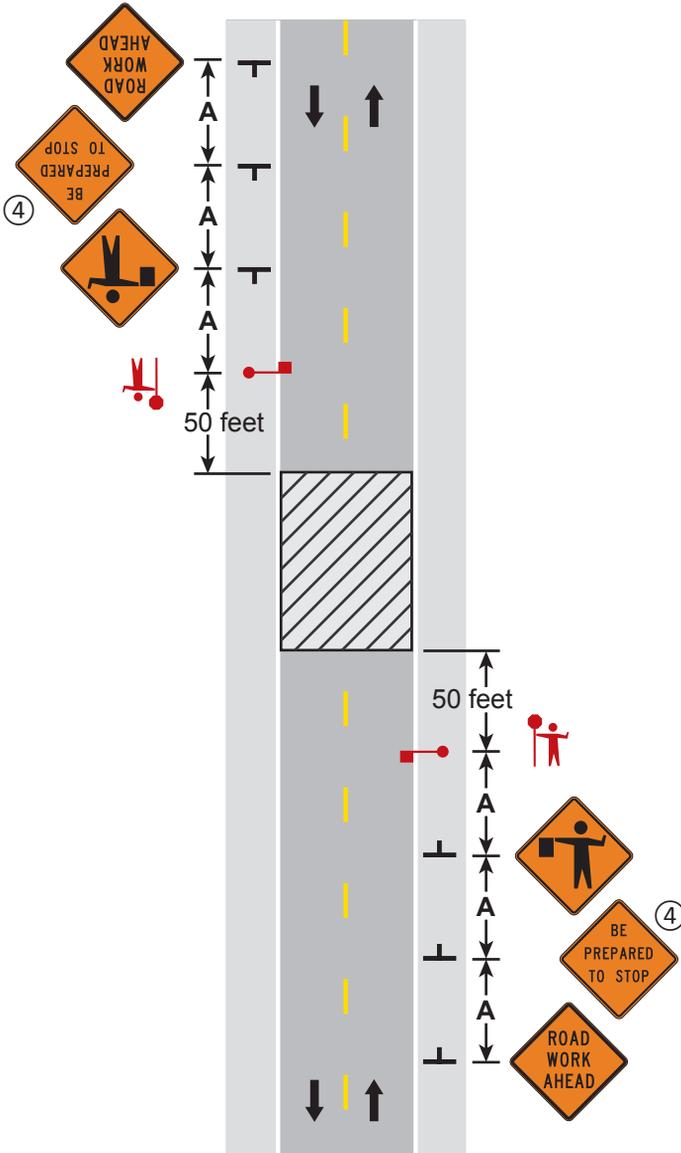
1. Motor Graders shall be equipped with operating vehicle warning lights visible for 360 degrees around the vehicle at a minimum height of 3 1/2 feet and a radius of 60 feet or greater.
2. Motor Grader blade end(s) may be marked with red or orange flags to provide additional warning and make the equipment more visible to passing vehicles.
- ③ The ROAD WORK AHEAD signs may be omitted when there is an adequate approach Decision Sight Distance (**D**) to the Motor Grader along the majority of the route.
- ④ When advance warning signs are used, the signs should be no more than 3 miles from the Work Vehicle. The location of the signs should be determined by the sources of traffic, such as major cross roads.



**GRAVEL ROAD MAINTENANCE**  
 Grading Operations  
 TWO-LANE, TWO-WAY ROAD

**NOTES:**

- 1. Road authority shall be contacted prior to closure.
- 2. If the volume is less than 400 ADT, traffic control devices may be substituted with law enforcement.
- 3. Traffic should not be stopped for intervals of greater than 15 minutes.
- ④ The BE PREPARED TO STOP sign may be omitted when the posted speed limit is 40 mph or less.



**TEMPORARY ROAD CLOSURE  
TWO-LANE, TWO-WAY ROAD**

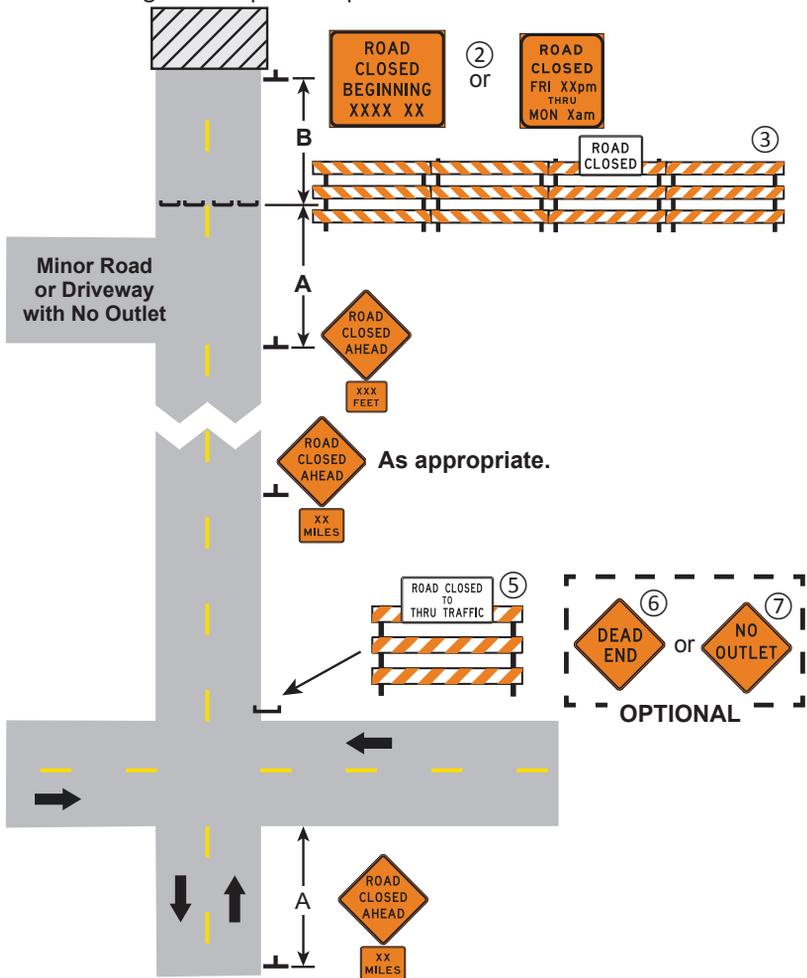
**12 HOURS or LESS**

6K-31

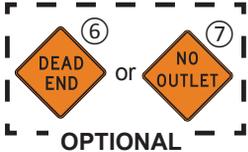
**LAYOUT 31**

**NOTES:**

1. The road authority shall be contacted prior to closure. The road authority may provide requirements related to sign placement, detours, emergency services, etc.
- ② A Road Closure Notice sign should be installed in advance (timewise) as required by the road authority.
- ③ Install Type III barricade at the last driveway or intersection beyond which there is no public access. Barricade shall span the entire roadway including traversable shoulders.
4. Road user safety and usability must be maintained up to the full closure.
- ⑤ ROAD CLOSED TO THRU TRAFFIC barricade assembly may be placed on the center line; stripes on barricade shall slope downward toward the appropriate traffic direction (for both directions of the roadway).
- ⑥ DEAD END sign shall be used only when there is a dead end and there are no alternate through routes past this point.
- ⑦ NO OUTLET sign shall be used only when there are no outlets and there are no alternate through routes past this point.

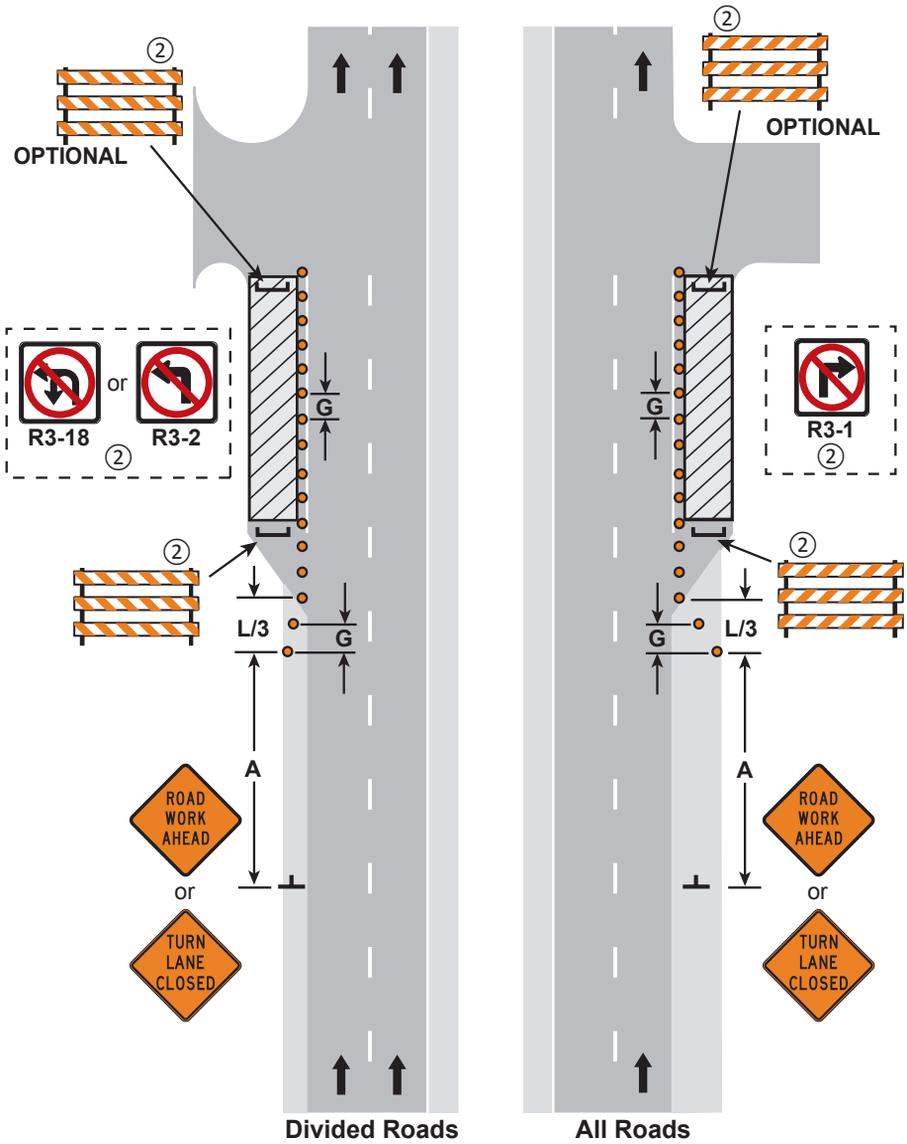


As appropriate.



**NOTES:**

1. Contact the appropriate road authority for signal timing modifications before beginning work at any signalized intersection.
- ② Optional R3-1, R3-2, or R3-18 signs may be placed on sign stand or top of barricades on side closest to traffic. Signs are required if turns are prohibited.



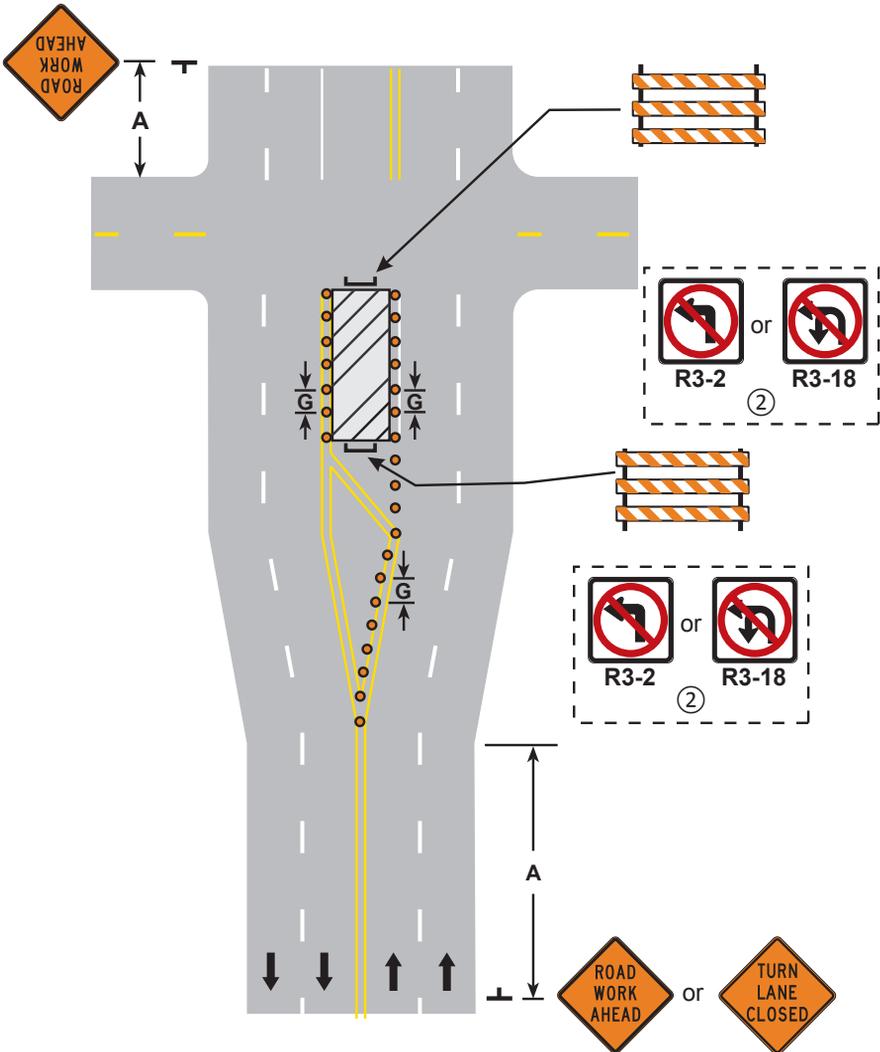
**TURN LANE CLOSURES**

3 DAYS or LESS

LAYOUT 33

**NOTES:**

1. Contact the appropriate road authority for signal timing modifications before beginning work at any signalized intersection.
- ② Optional R3-2 or R3-18 signs may be placed on sign stand or top of barricades on side closest to traffic. Signs are required if turns are prohibited.



**LEFT TURN LANE CLOSURE**  
**TWO-LANE, TWO-WAY or**  
**MULTI-LANE UNDIVIDED ROAD**

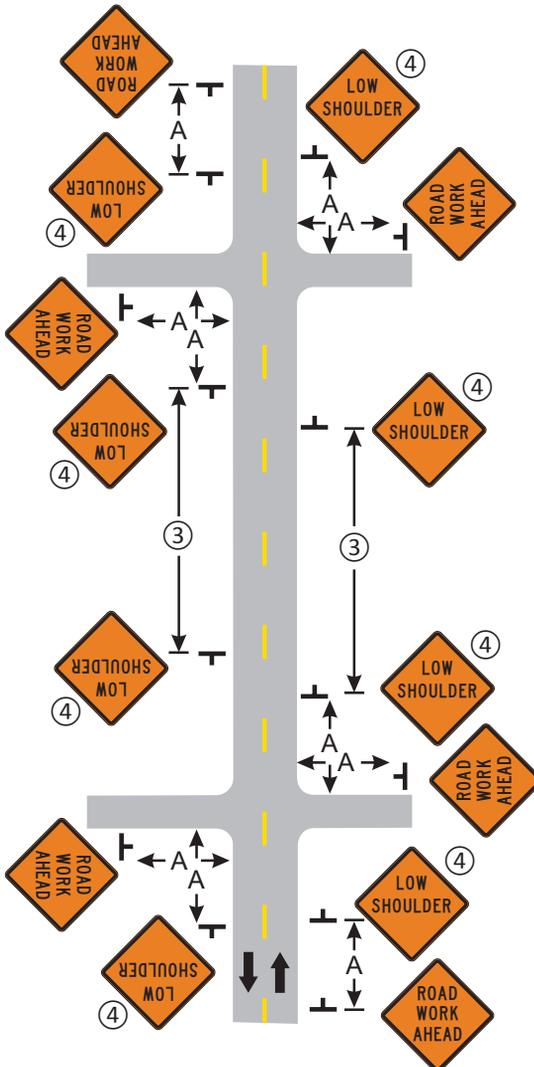
3 DAYS or LESS

6K-34

LAYOUT 34

**NOTES:**

1. This layout should be used for those stationary temporary traffic control zones that extend over a relatively long segment of roadway.
2. The appropriate layout shall be used for the active work space (such as re-surfacing operations, area of paving, etc).
- ③ Confirmation signing for a continuous condition should be placed after every intersection and approximately 1 mile spacing for speeds 45 mph or greater, or 1/4 mile spacing for speeds 40 mph or less.
- ④ Use the appropriate advance warning sign for the roadway condition, i.e. GROOVED PAVEMENT, LOOSE GRAVEL, ROUGH ROAD. An advisory Motorcycle plaque may be placed directly below or on the lower side of the warning sign nearest traffic if the warning is directed primarily to motorcyclists.
5. Consider delineating raised structures (manhole covers, etc.)



**CROSSROAD & CONFIRMATION SIGNING**

Traffic Control Zone

3 DAYS or LESS

LAYOUT 35