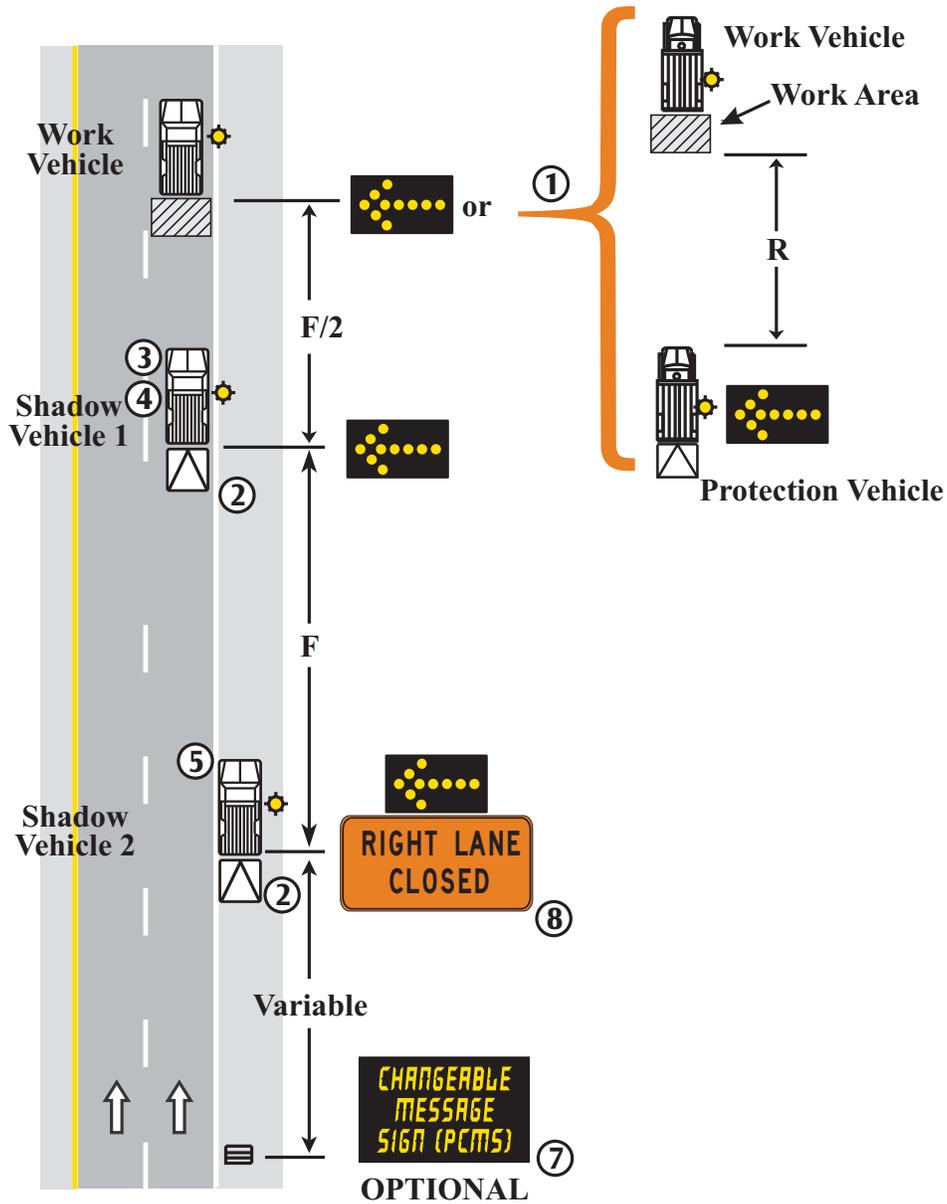


NOTES:

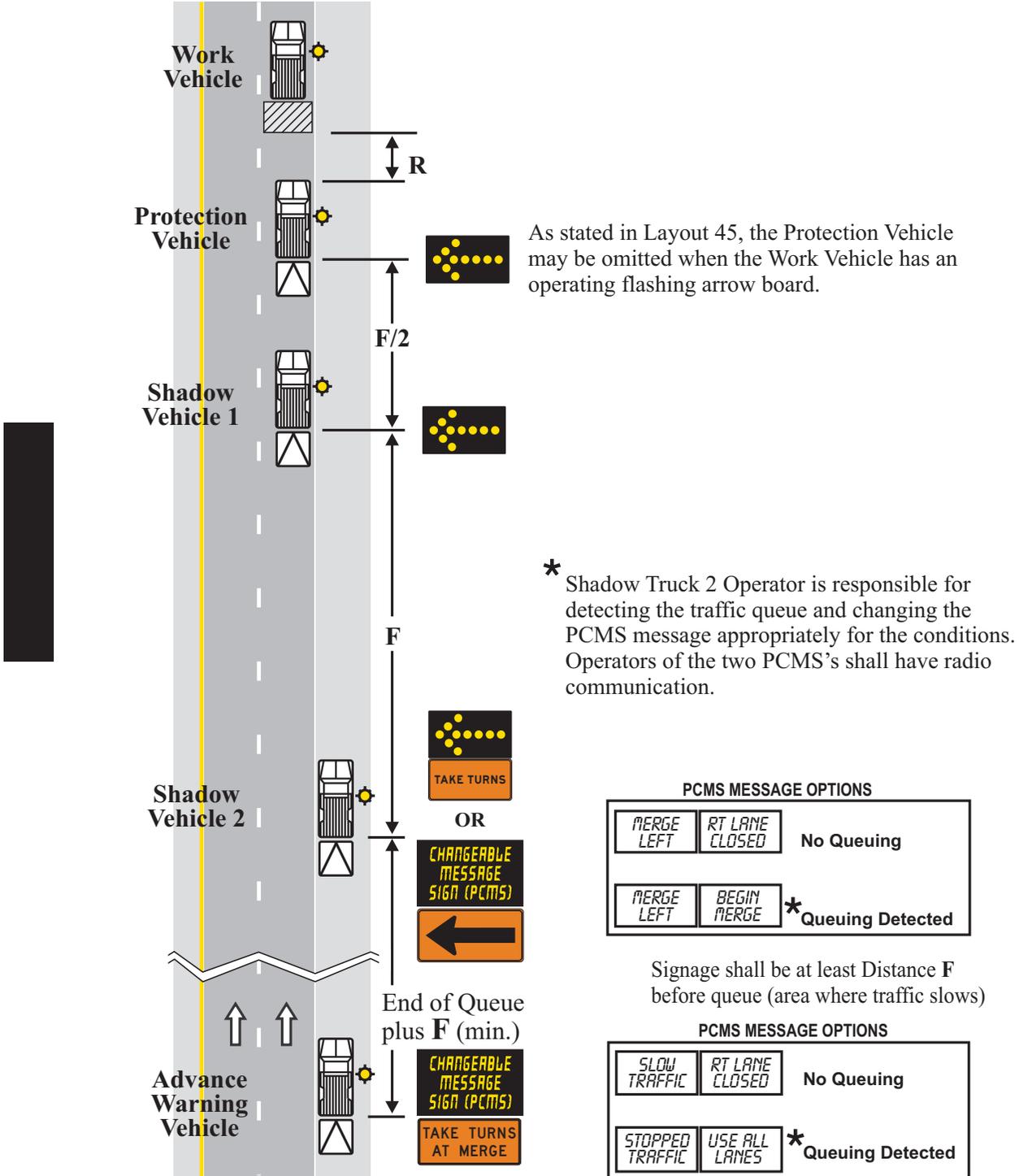
1. A work vehicle without a flashing arrow board shall be followed by a protection vehicle at a distance of **R**. The protecting vehicle shall be equipped with a flashing arrow board and should have a truck mounted attenuator.
2. All shadow vehicles operating totally or partially in a traffic lane should be equipped with a truck mounted attenuator.
3. The lateral placement of shadow vehicle 1 may be adjusted to create a taper when a Protection Vehicle is used.
4. Shadow Vehicle 1 may be omitted on non-freeway design roadways.
5. Shadow Vehicle 2 may encroach into the traffic lane when the shoulder is too narrow to drive on.
6. If the operation does not move at least the Decision Sight Distance (**D**) every 15 minutes, Layout 50 or the appropriate stationary layout should be used.
7. The PCMS shall be used for nighttime operations.
8. When the PCMS is used, the RIGHT LANE CLOSED sign becomes optional.



**MOBILE LANE CLOSURE
MULTI-LANE ROAD**

NOTES:

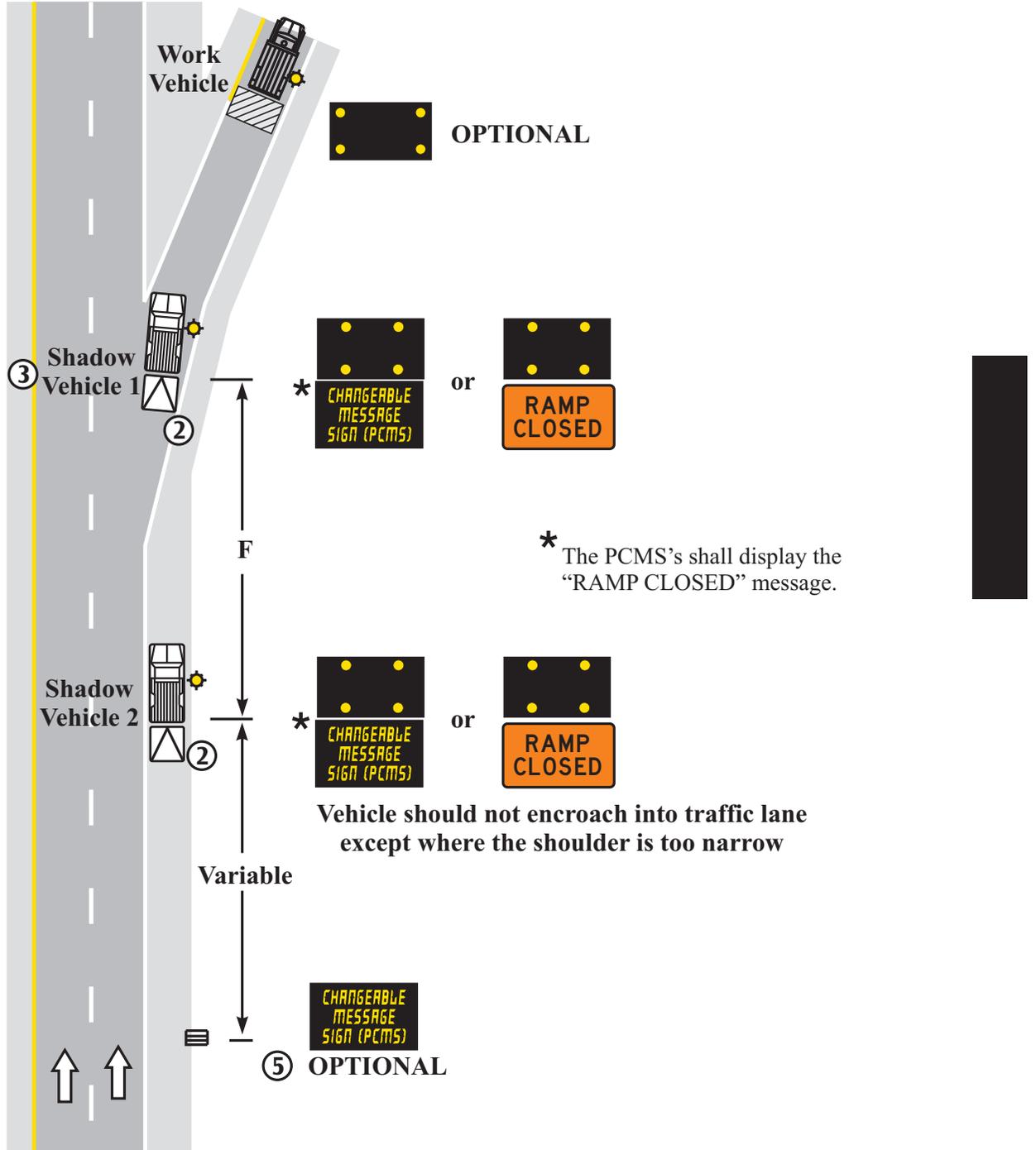
1. All shadow vehicles operating totally or partially in a traffic lane should be equipped with a truck mounted attenuator.
2. The lateral placement of shadow vehicle 1 may be adjusted to create a taper when a Protection Vehicle is used.
3. Shadow Vehicle 1 may be omitted on non-freeway design roadways.
4. Shadow Vehicle 2 may encroach into the traffic lane when the shoulder is too narrow to drive on.



MOBILE LANE CLOSURE WITH LATE MERGE MULTI-LANE ROAD

NOTES:

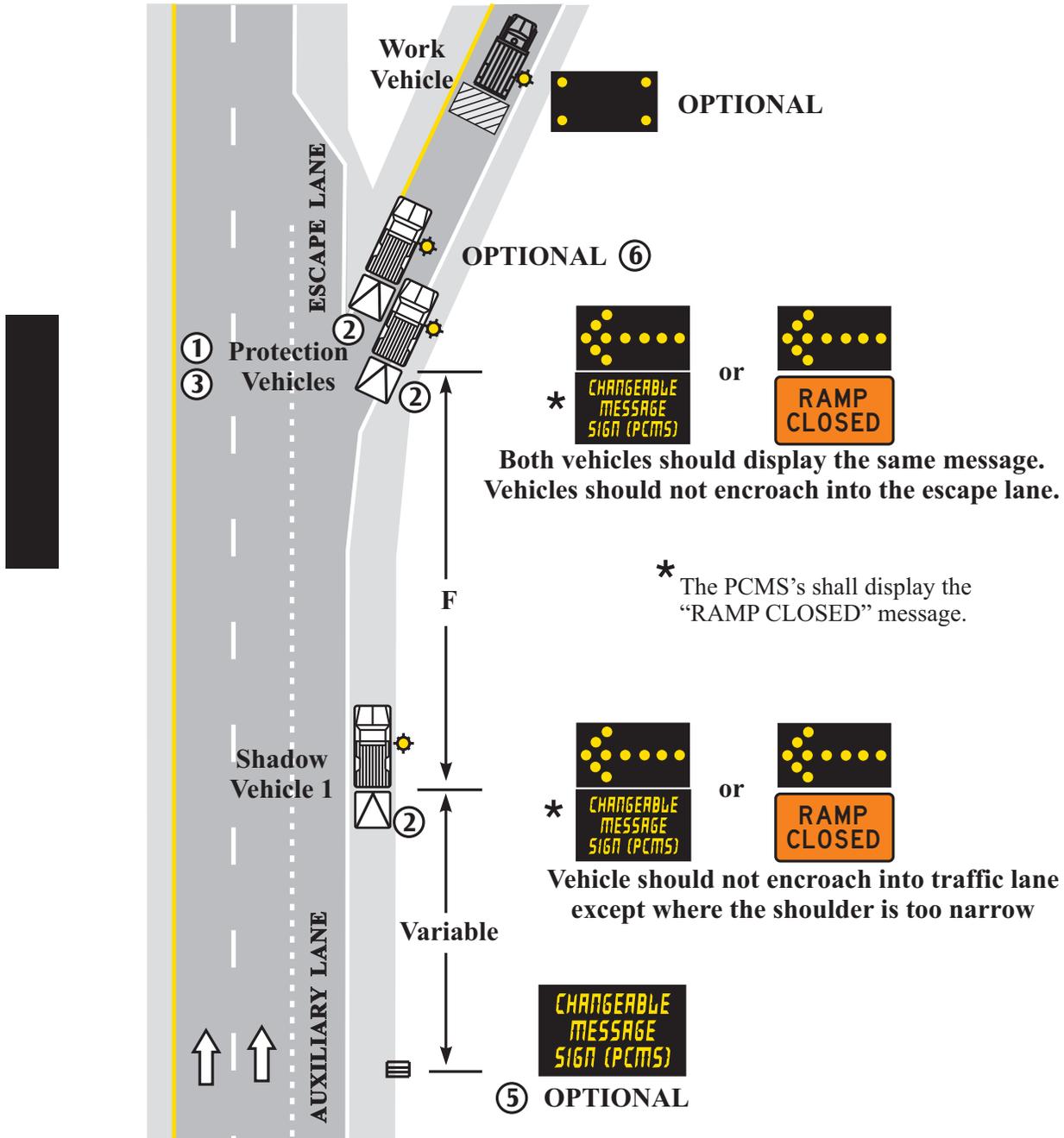
1. The protection vehicle should remain positioned near the ramp gore to prevent traffic from using the exit ramp. If a protection vehicle follows the work vehicle up the ramp, then it shall remain a minimum distance **R** from the work area.
2. Any shadow or protection vehicle operating totally or partially in a traffic lane should be equipped with a truck mounted attenuator.
3. The vehicles blocking the exit ramp should not encroach into lanes open to traffic.
4. If the ramp can not be reopened within 15 minutes, the appropriate stationary layout should be used.
5. The PCMS shall be used for nighttime operations.



**MOBILE RAMP CLOSURE
EXPRESSWAY/FREEWAY**

NOTES:

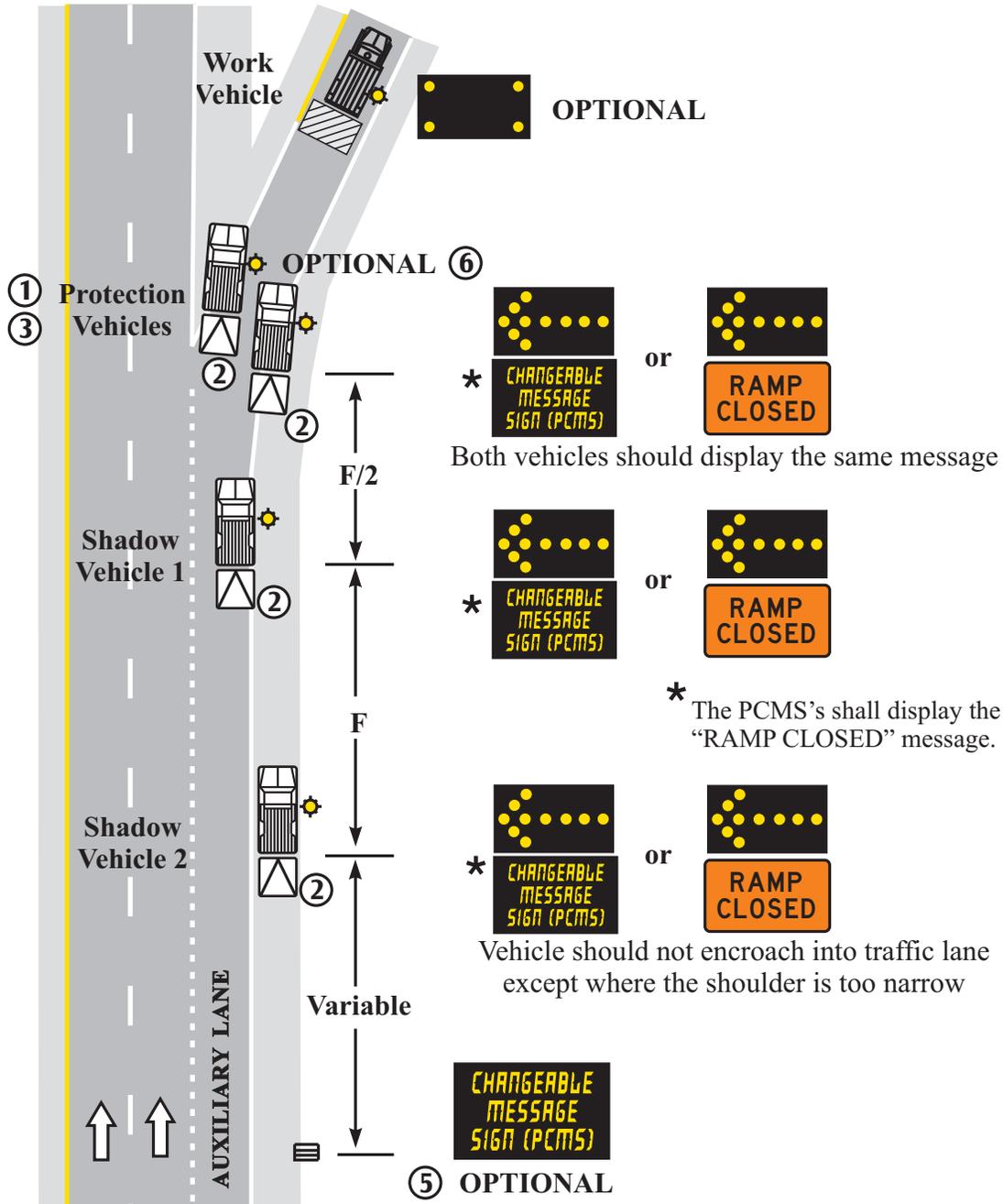
1. The protection vehicle should remain positioned near the ramp gore to prevent traffic from using the exit ramp. If the operation requires one protection vehicle to follow the work vehicle up the ramp, then it shall remain a minimum distance **R** from the work area.
2. Any shadow or protection vehicle operating totally or partially in a traffic lane should be equipped with a truck mounted attenuator.
3. The vehicles blocking the exit ramp should not encroach into lanes open to traffic and should allow traffic to use the escape lane.
4. If the ramp can not be reopened within 15 minutes, the appropriate stationary layout should be used.
5. The PCMS's shall be used for nighttime operations.
6. The optional second protection vehicle may be needed to block wider exit ramps.



**MOBILE RAMP CLOSURE with ESCAPE LANE
EXPRESSWAY/FREEWAY**

NOTES:

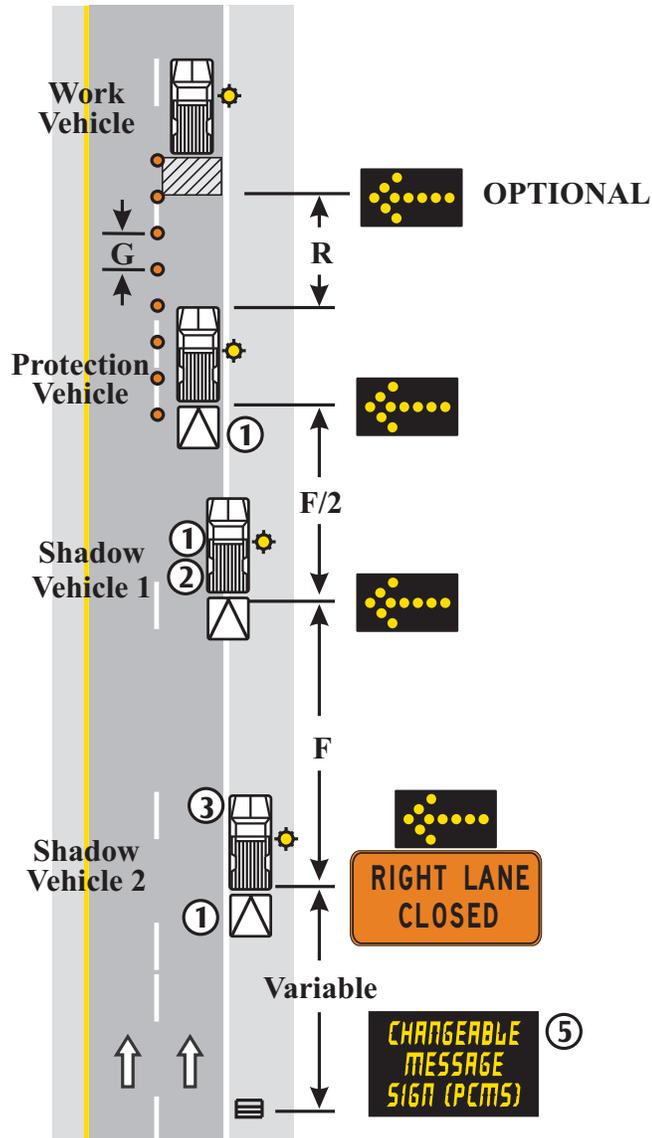
1. The protection vehicle should remain positioned near the ramp gore to prevent traffic from using the exit ramp. If a protection vehicle follows the work vehicle up the ramp, then the flashing arrow display shall change to the caution mode shall remain a minimum distance **R** from the work area.
2. Any shadow or protection vehicle operating totally or partially in a traffic lane should be equipped with a truck mounted attenuator.
3. The vehicles blocking the exit ramp should not encroach into lanes open to traffic.
4. If the ramp can not be reopened within 15 minutes, the appropriate stationary layout should be used.
5. The PCMS shall be used for nighttime operations.
6. The optional second protection vehicle may be needed to block wider exit ramps.



**MOBILE RAMP CLOSURE with LANE DROP
EXPRESSWAY/FREEWAY**

NOTES:

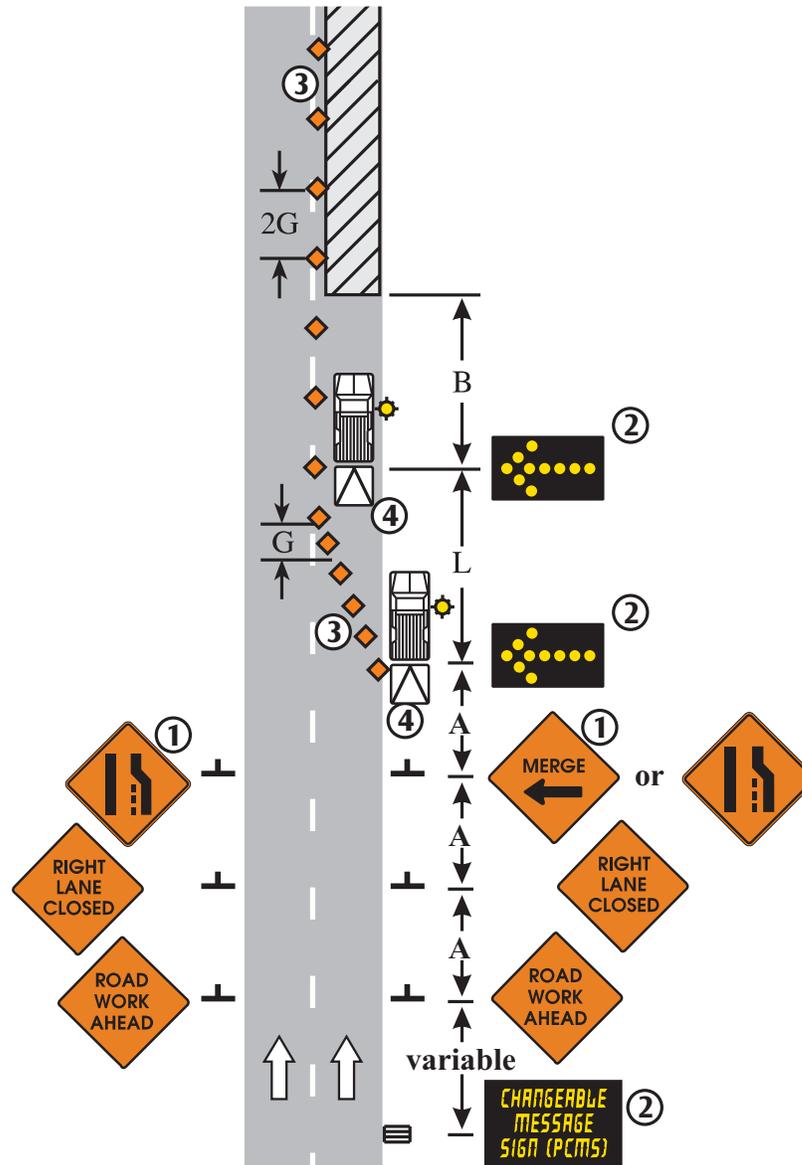
1. All Shadow and Protection Vehicles shall be equipped with a truck-mounted attenuator.
2. The lateral placement of Shadow Vehicle 1 may be adjusted to create a taper.
3. Shadow Vehicle 2 may encroach into the traffic lane when the shoulder is too narrow to drive on.
4. If the operation does not move at least the Decision Sight Distance once each hour, the appropriate stationary layout should be used.
5. A typical message should be ROAD WORK AHEAD and RIGHT LANE CLOSED.



**SHORT DURATION LANE CLOSURE
MULTI-LANE ROAD**

NOTES:

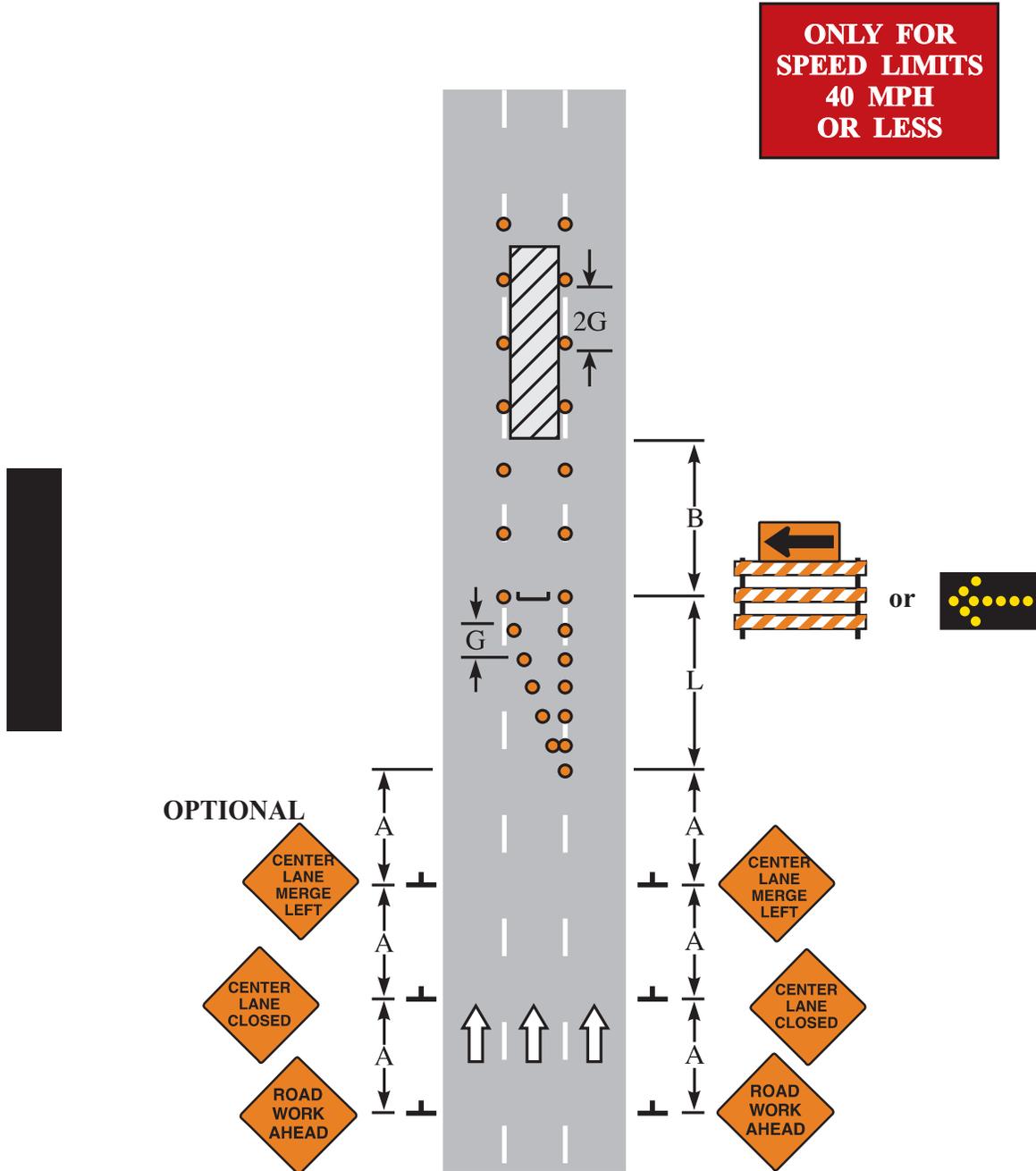
1. The Lane Reduction sign and the MERGE sign may be omitted when the posted speed limit is 40 mph or less.
2. In order to use this layout, two flashing arrow boards, at least one PCMS, and advance warning signs shall be used. If these devices are not available, either Layout 52 shall be used.
3. When using a combination of cones (28 inch minimum height) and Direction Indicator Barricades every third device in the merge taper and every tenth device in the tangent area shall be a Directional Indicator Barricade.
4. All shadow vehicles operating totally or partially in a traffic lane should be equipped with a truck mounted attenuator.



**LANE CLOSURE
OCCUPIED NIGHTTIME WORK SPACE
MULTI-LANE DIVIDED ROAD**

NOTE:

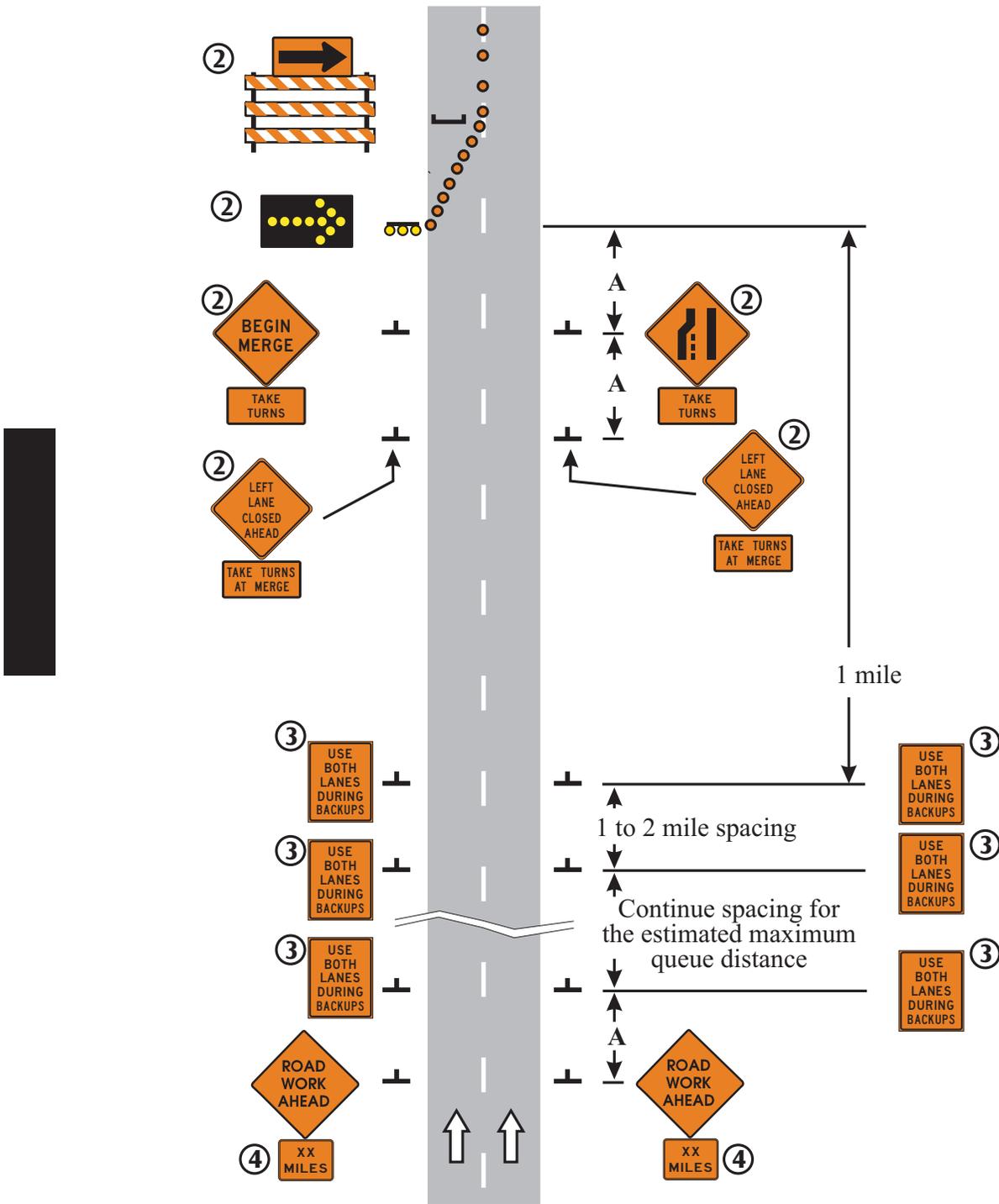
1. If traffic volumes are low, a double lane closure is preferred.



**CENTER LANE CLOSURE
MULTI-LANE DIVIDED OR ONE WAY ROAD**

NOTES:

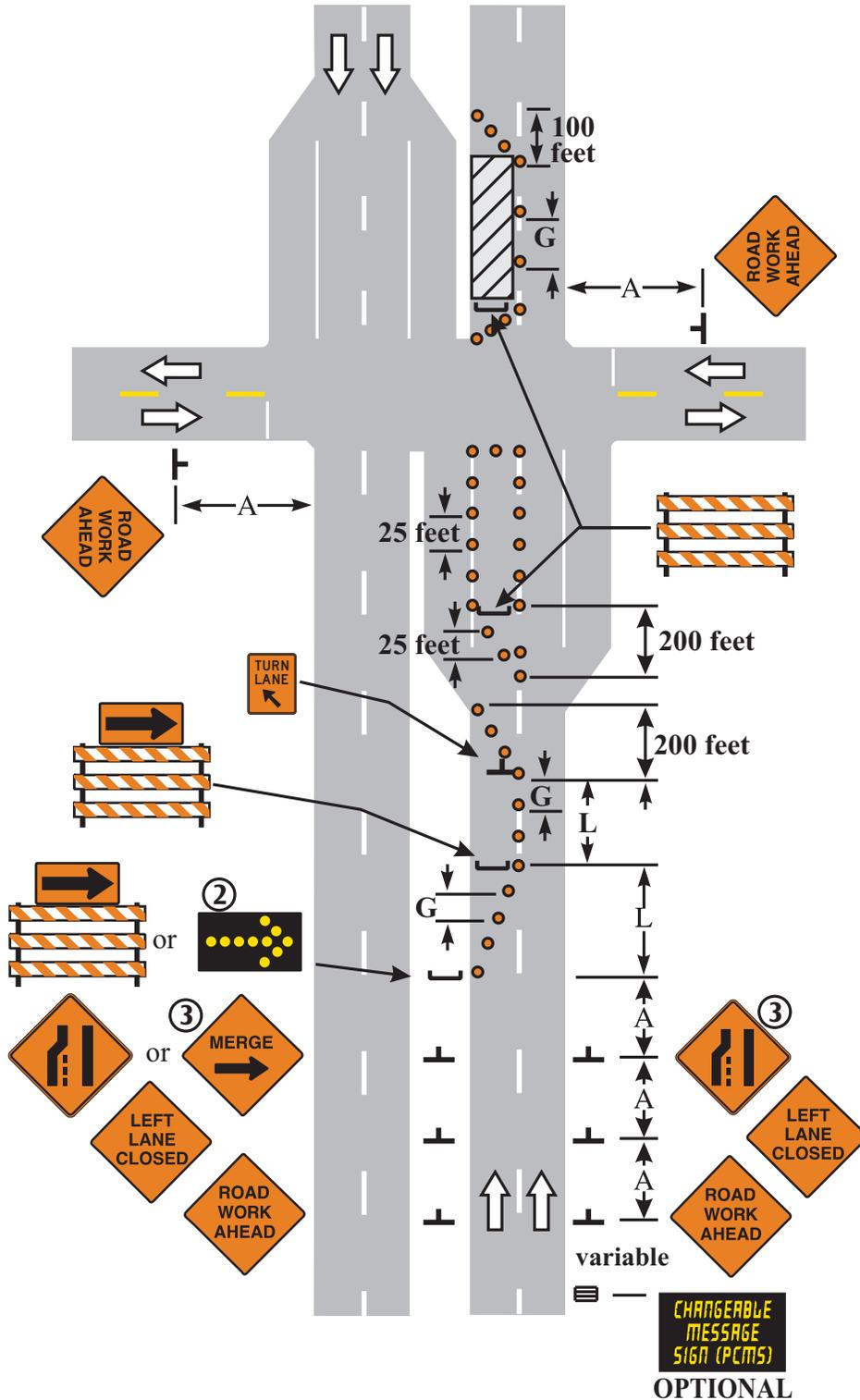
1. This layout should be used on high speed roadways where traffic queues may extend at least 0.5 mile upstream of the taper. If little or no queuing is anticipated, use the typical lane closure Layout 52.
2. Use the appropriate traffic control devices for a left lane closure.
3. A PCMS may be used in place of a pair of USE BOTH LANES DURING BACKUPS signs.
4. Distance plaques are recommended when the distance is 2 miles or more.



**LANE CLOSURE WITH LATE MERGE
MULTI-LANE DIVIDED ROAD**

NOTES:

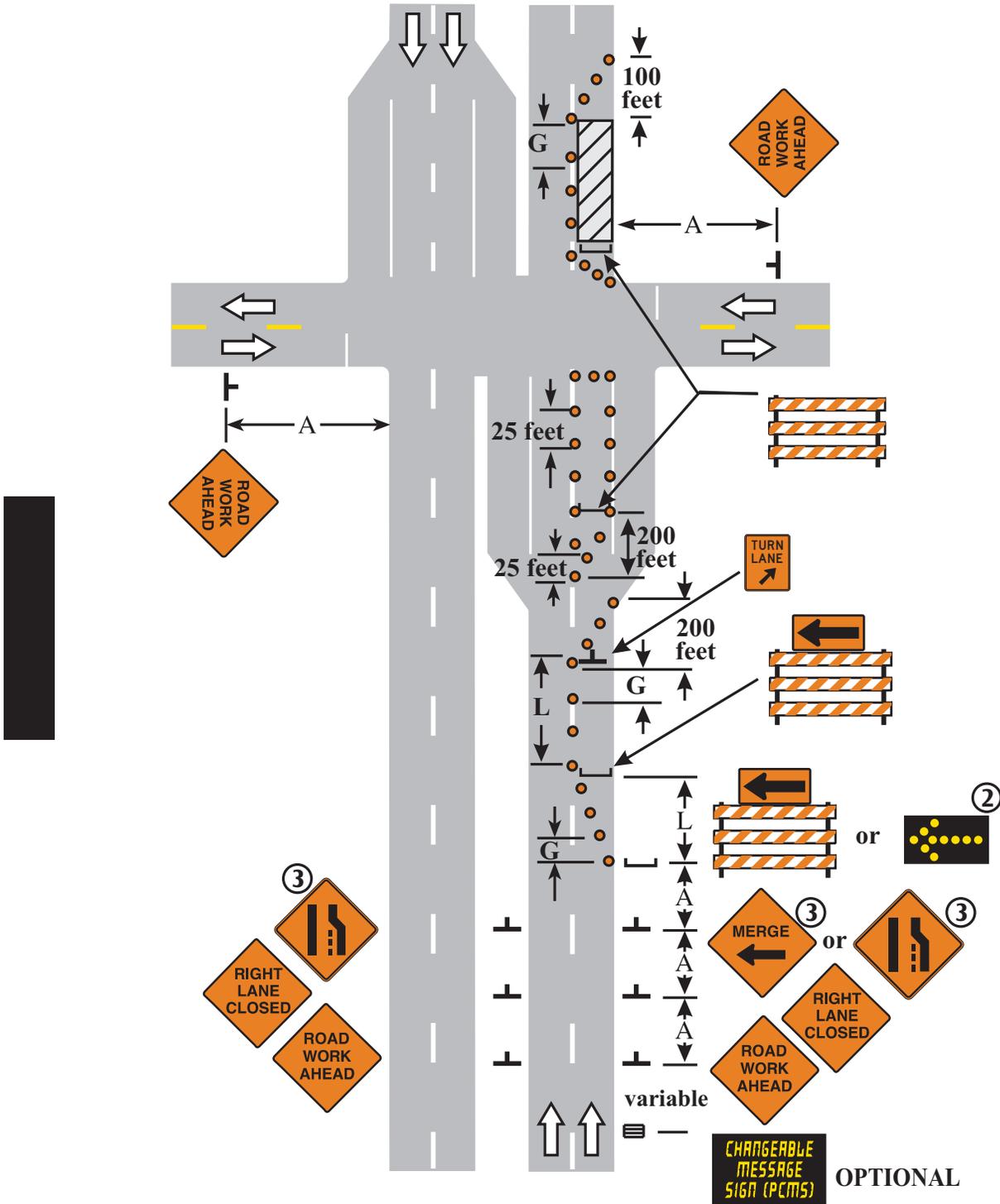
1. Use the appropriate advance warning sign spacing for the speed on the cross road.
2. The flashing arrow board shall be used when the posted speed limit is 45 or greater.
3. The Lane Drop symbol sign and the MERGE with Arrow sign may be omitted when the posted speed limit is 40 mph or less.



**LEFT LANE CLOSURE
WORK SPACE BEYOND INTERSECTION
MULTI-LANE DIVIDED ROAD**

NOTES:

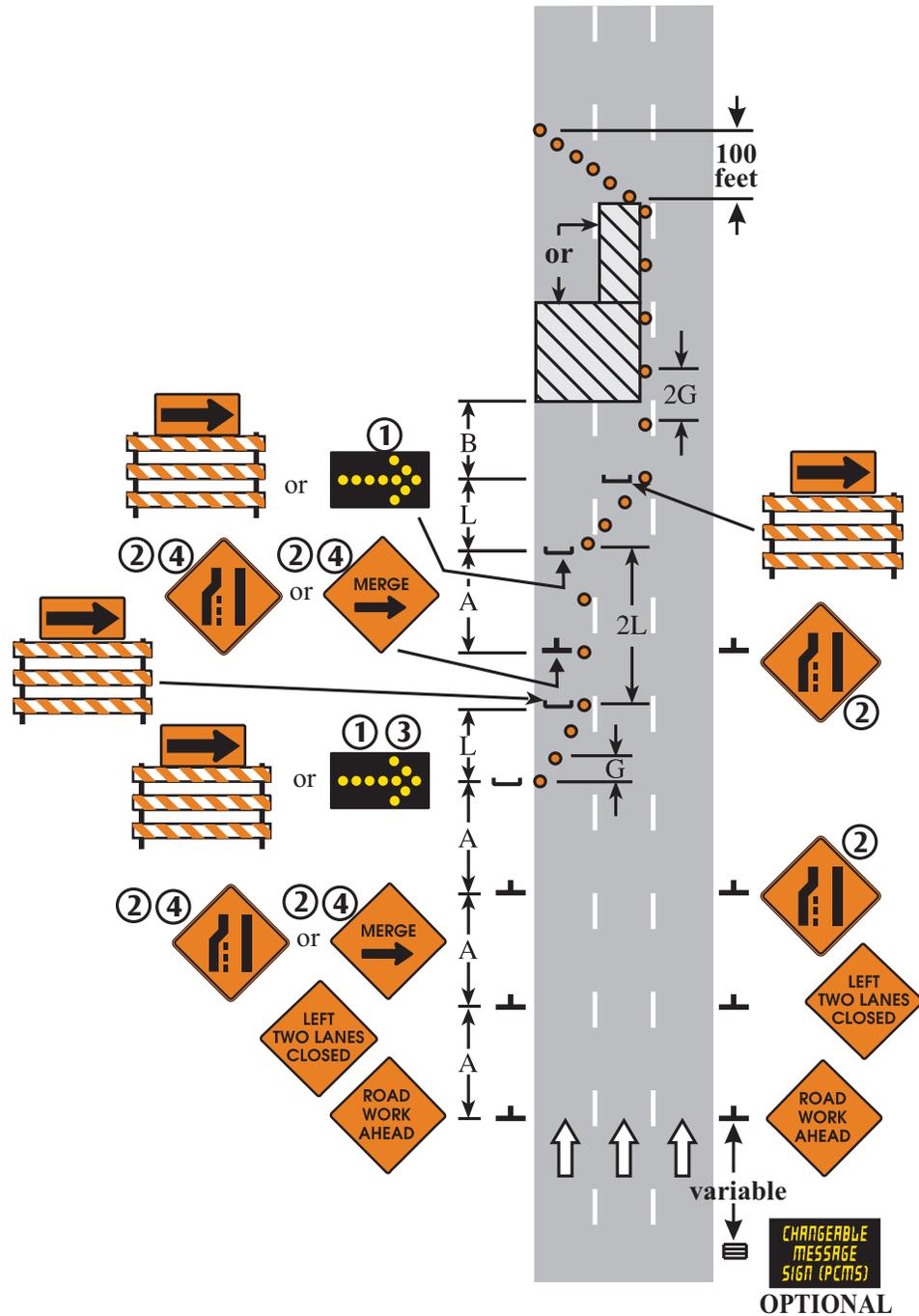
1. Use the appropriate advance warning sign spacing for the speed on the cross road.
2. The flashing arrow board shall be used when the posted speed limit is 45 mph or greater.
3. The Lane Drop symbol sign and the MERGE with Arrow sign may be omitted when the posted speed limit is 40 mph or less.



**RIGHT LANE CLOSURE
WORK SPACE BEYOND INTERSECTION
MULTI-LANE DIVIDED ROAD**

NOTES:

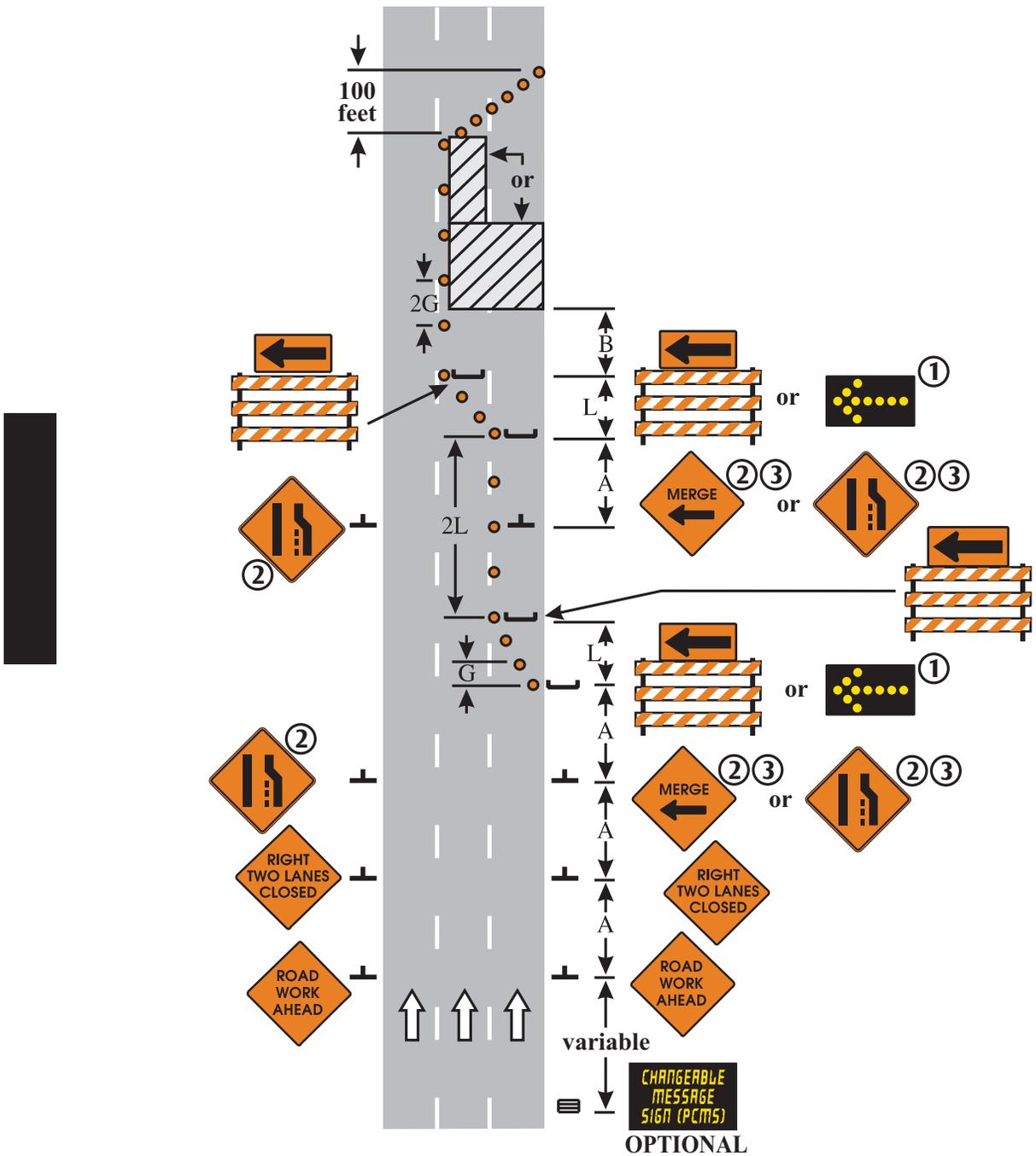
1. The flashing arrow board shall be used when the posted speed limit is 45 mph or greater.
2. The Lane Drop symbol signs, the Merge with arrow signs, and the arrow board may be omitted when the posted speed limit is 40 mph or less.
3. If the flashing arrow board will not fit entirely on the left shoulder, it should be placed behind the taper, encroaching on the lane as little as possible.
4. When the Lane Drop symbol sign or the MERGE with arrow sign is used, the same sign shall be used for both lane closures in each direction.



**LEFT TWO LANES CLOSED
MULTI-LANE DIVIDED ROAD**

NOTES:

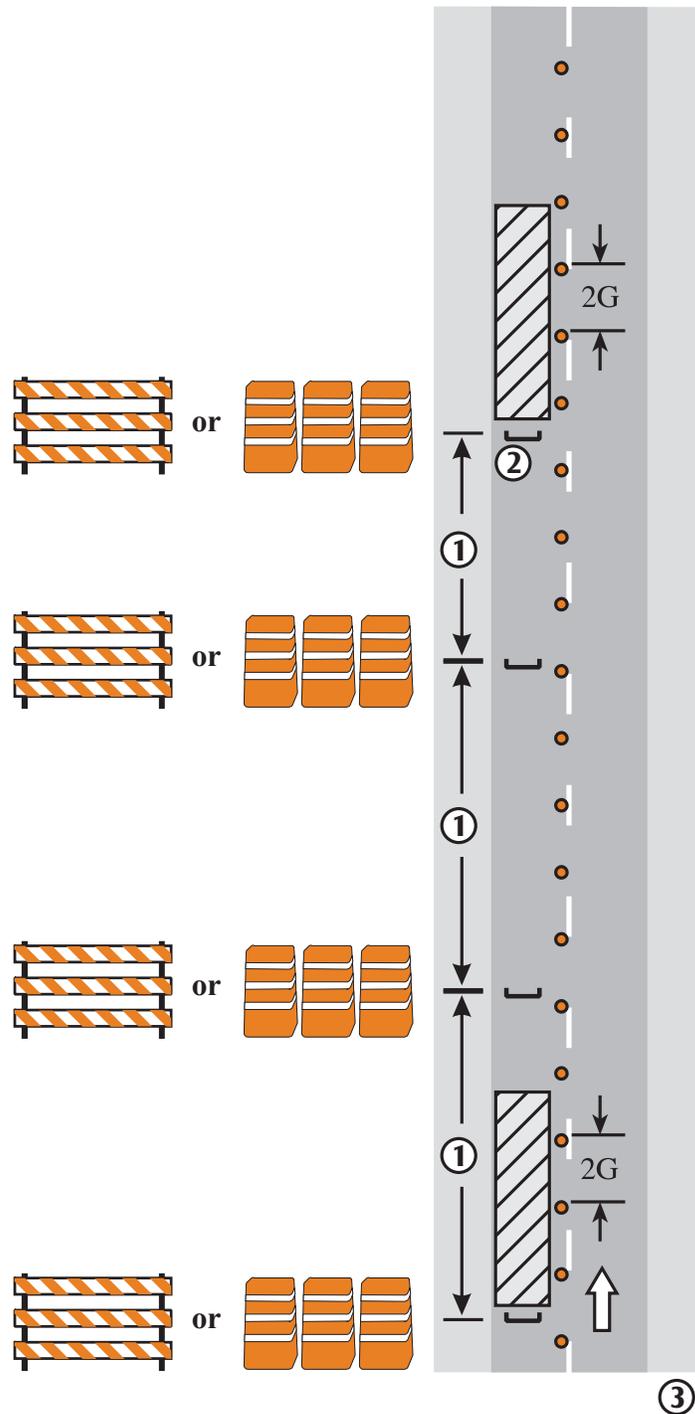
1. The flashing arrow board shall be used when the posted speed limit is 45 mph or greater.
2. The Lane Drop symbol sign and the Merge with arrow sign may be omitted when the posted speed limit is 40 mph or less.
3. When the Lane Drop symbol sign or the MERGE with arrow sign is used, the same sign shall be used for both lane closures in each direction.



**RIGHT TWO LANES CLOSED
MULTI-LANE DIVIDED ROAD**

NOTES:

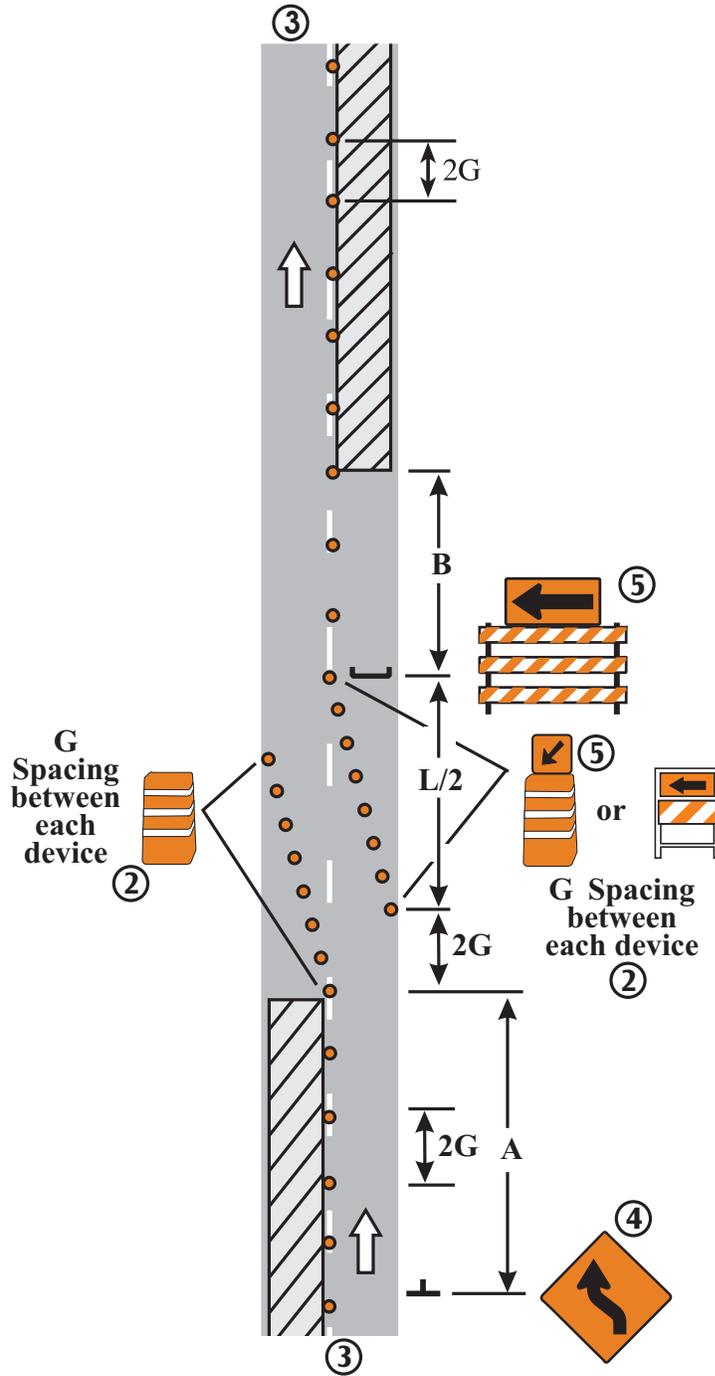
1. Install a Type III barricade at the beginning of each work space and at intervals from 500 feet minimum to 1000 feet maximum within the closed lane.
2. The Type III barricade within the work space may be omitted when the work space is occupied.
3. For advance signing, placement of traffic control devices, and lane taper, see the appropriate stationary layout.



**LANE CLOSURE EXTENSION
MULTI-LANE DIVIDED OR ONE WAY ROAD**

NOTES:

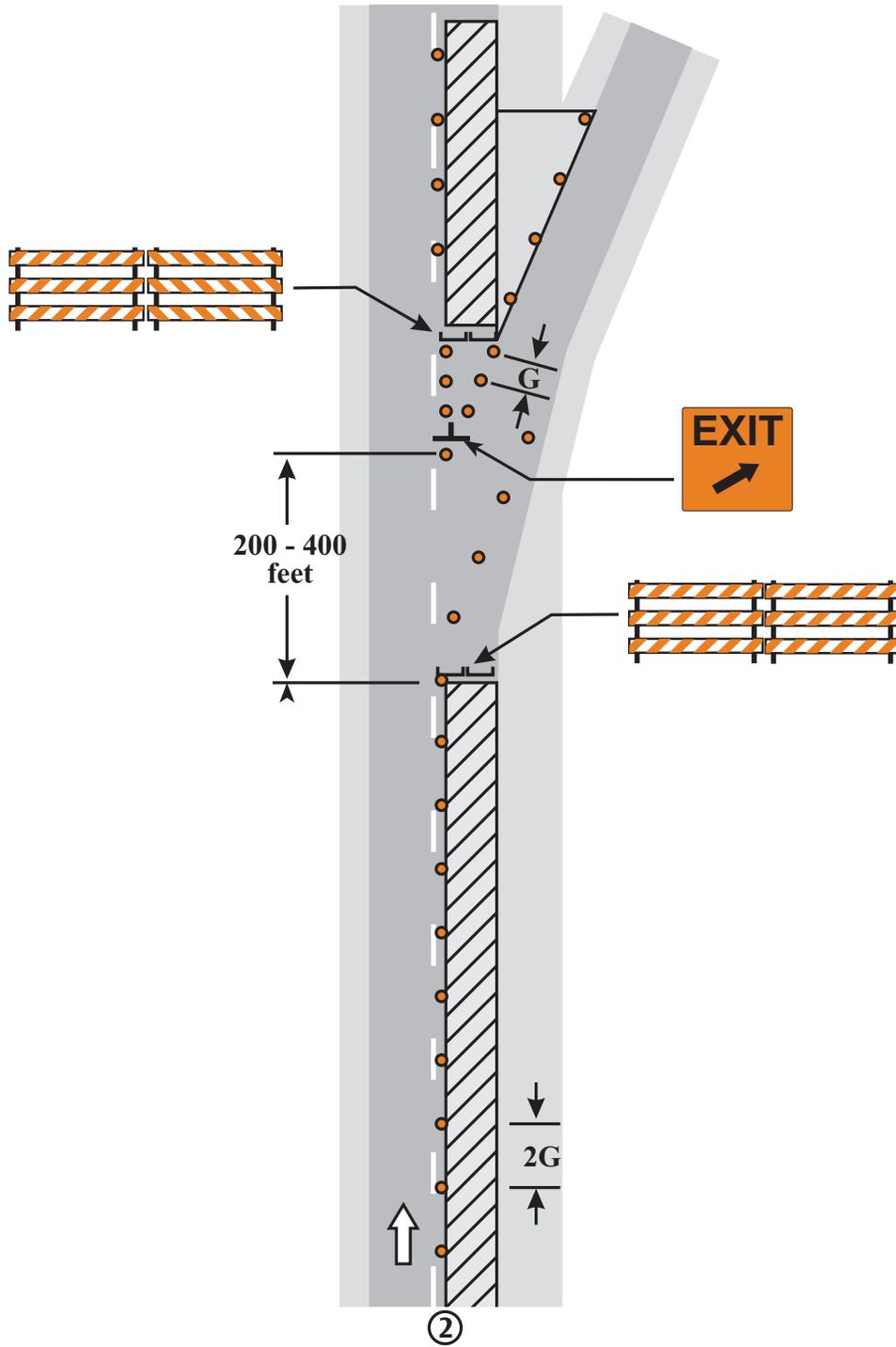
1. For one lane of traffic only.
2. Continue the pattern and the spacing of devices for additional lateral shift.
3. For advance signing, placement of traffic control devices, lane taper, see the appropriate stationary layout.
4. The Lane Shift sign may be omitted when the posted speed limit is 40 mph or less.
5. Directional arrows shall be used on either the drums or the Type III barricade



**LANE SHIFT
MULTI-LANE DIVIDED OR ONE WAY ROAD**

NOTES:

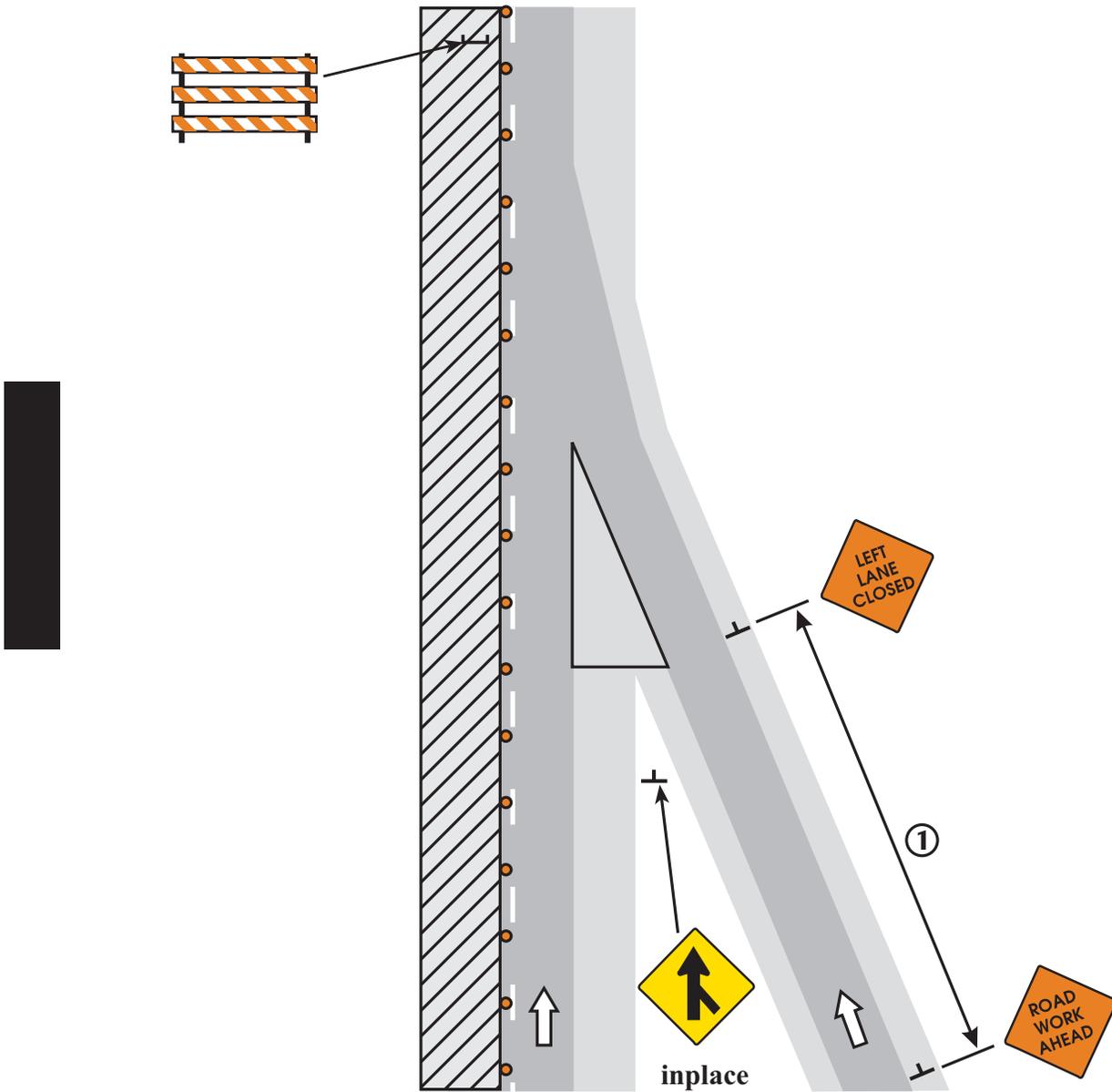
1. Adjust the ramp exit to fit the conditions.
2. For advance signing, placement of traffic control devices, and lane closure, see the appropriate stationary layout.



**MAINLINE RIGHT LANE CLOSED
EXIT RAMP OPEN**

NOTES:

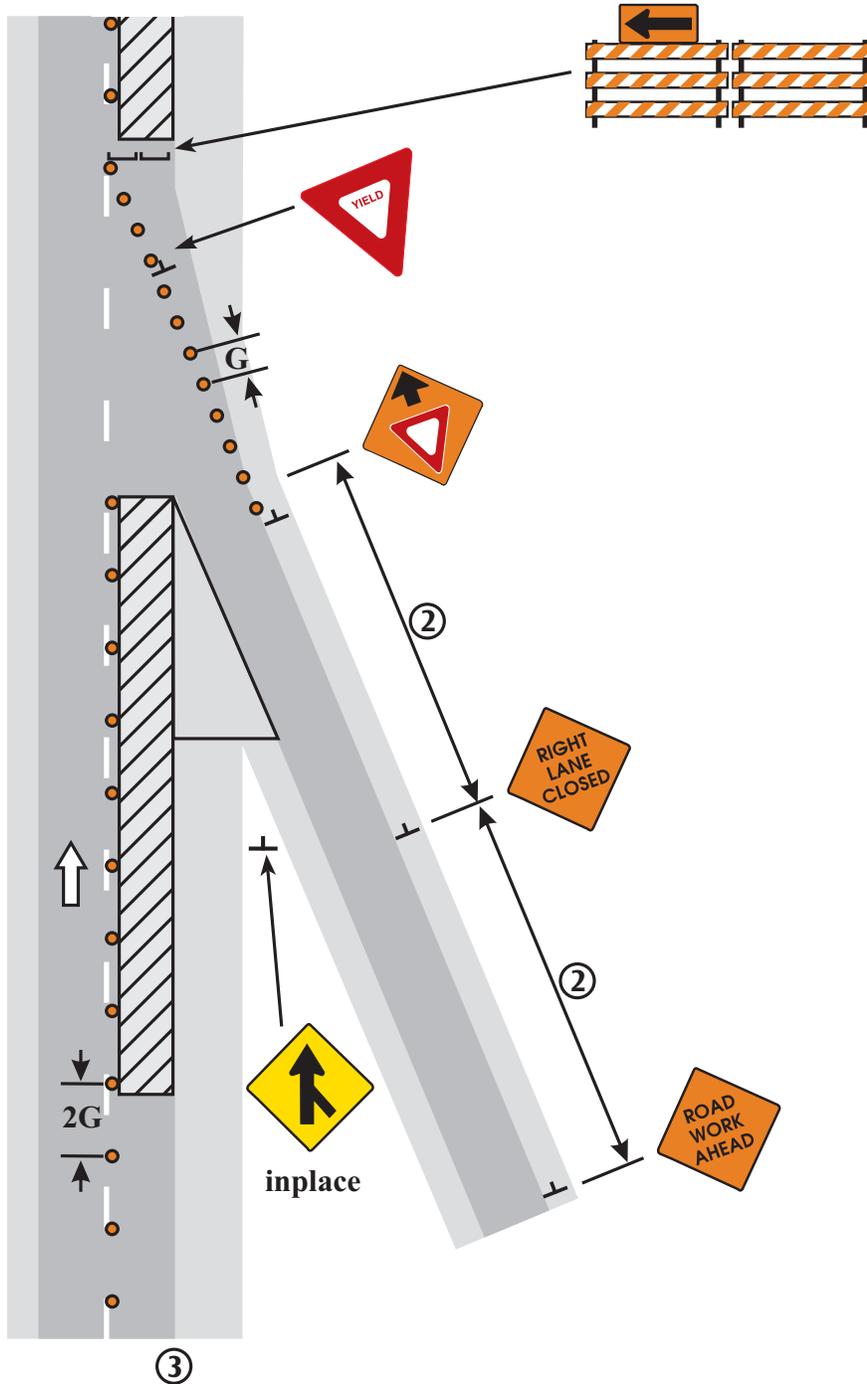
1. The advance warning sign spacing is dependent on the ramp length and the location of inplace signing. The spacing should be as long as is practical.



**MAINLINE LEFT LANE CLOSED
ENTRANCE RAMP OPEN**

NOTES:

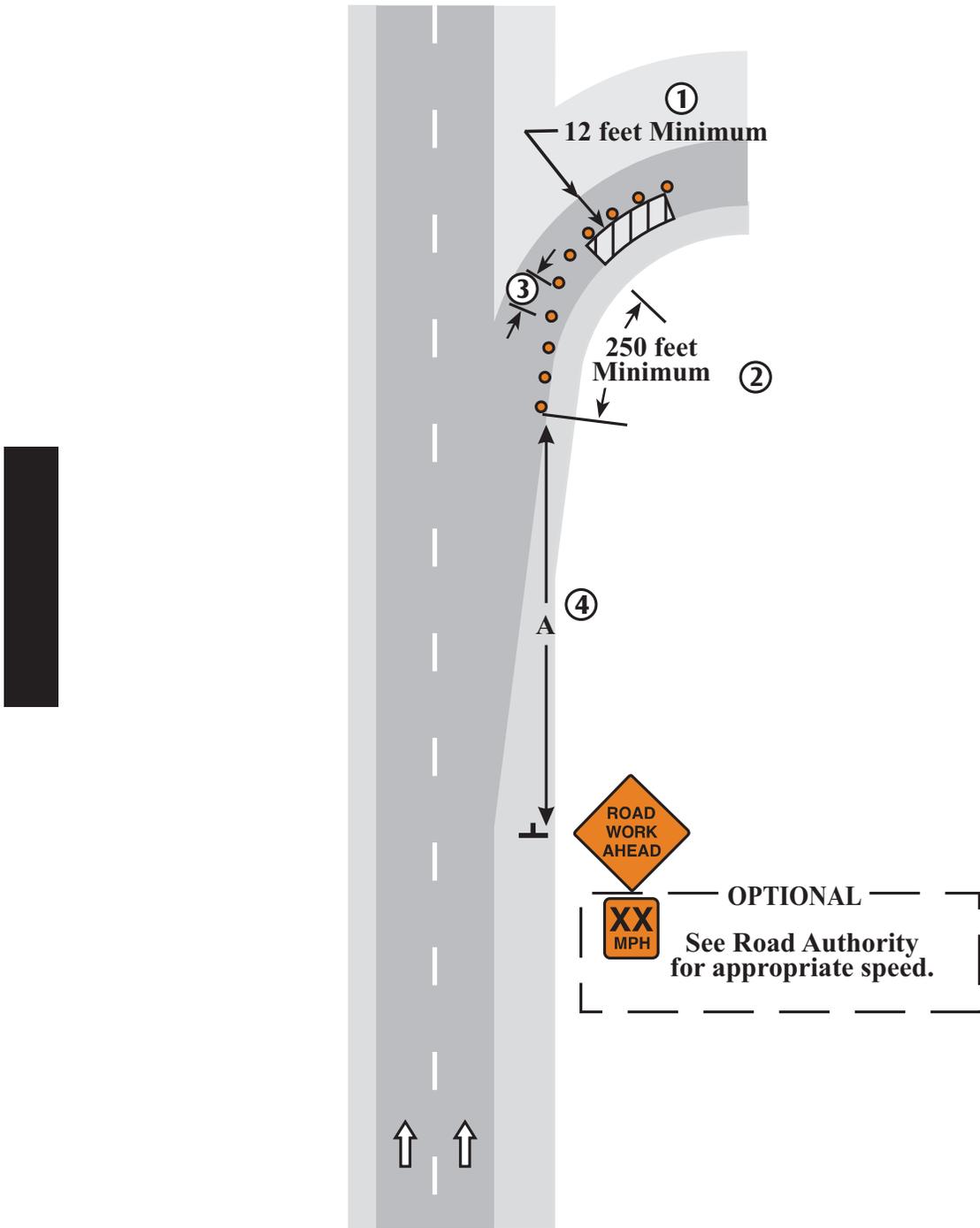
1. Adjust the ramp entrance to fit the conditions.
2. The advance warning sign spacing is dependent on the ramp length and the location of inplace signing. The spacing should be as long as is practical.
3. For advance signing, placement of traffic control devices, and lane closure, see the appropriate stationary layout.



**MAINLINE RIGHT LANE CLOSED
ENTRANCE RAMP OPEN**

NOTES:

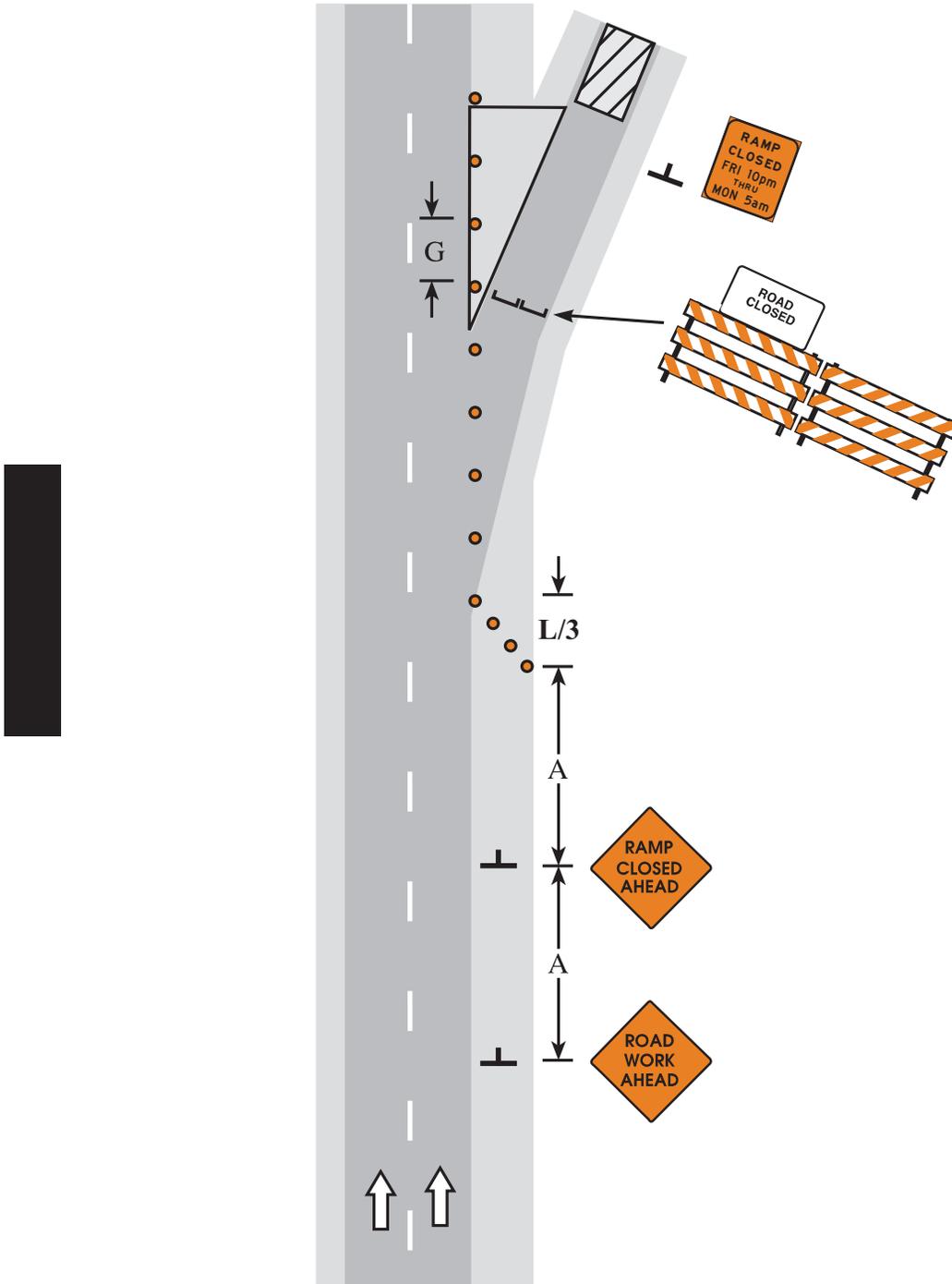
1. Truck off-tracking should be considered when determining whether the 12 foot minimum lane width is adequate.
2. Use a minimum of a 250 foot taper.
3. For Loops use 25 foot spacing between devices.
For Ramps use 50 foot spacing between devices.
4. The spacing for advance warning signs is dependent on the design of the interchange, and the location of inplace signing.



PARTIAL RAMP CLOSURE

NOTES:

1. Detour signing should be considered if the ramp is closed for an hour or greater.



EXIT RAMP CLOSURE