Temporary Traffic Control During Operations

Any work performed in or near streets and roadways can expose the public and workers to hazardous safety conditions. Proper temporary traffic control should be a high priority in any agency. Good quality devices, apparel, training and supervisory support for all staff who work in streets and roadways are necessary. Development and use of a traffic control plan for many routine maintenance operations can be beneficial.

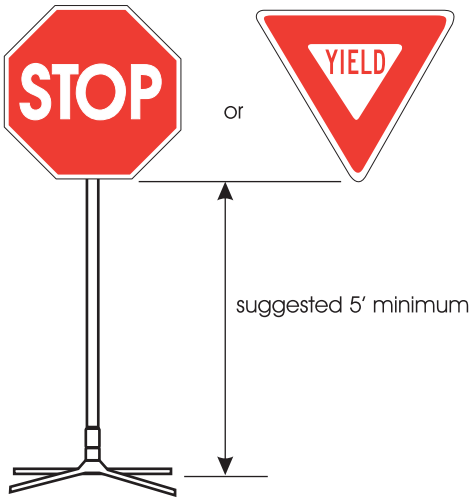
It is mandatory that temporary traffic control complies with the requirements of the *MUTCD* Part 6. Close referral to Part 6 is recommended prior to making any decisions for proper work zone traffic control. No one standard sequence of signs and devices can be applied in all situations due to wide variation in conditions and factors; judgement and common sense must be applied in selecting the most appropriate temporary traffic control for individual applications. However, some frequently used situations are included here.

In selecting the desired level of control, consider traffic volume and prevailing speed, time of exposure, degree of lane restriction, sight distance, time of day, and other elements.

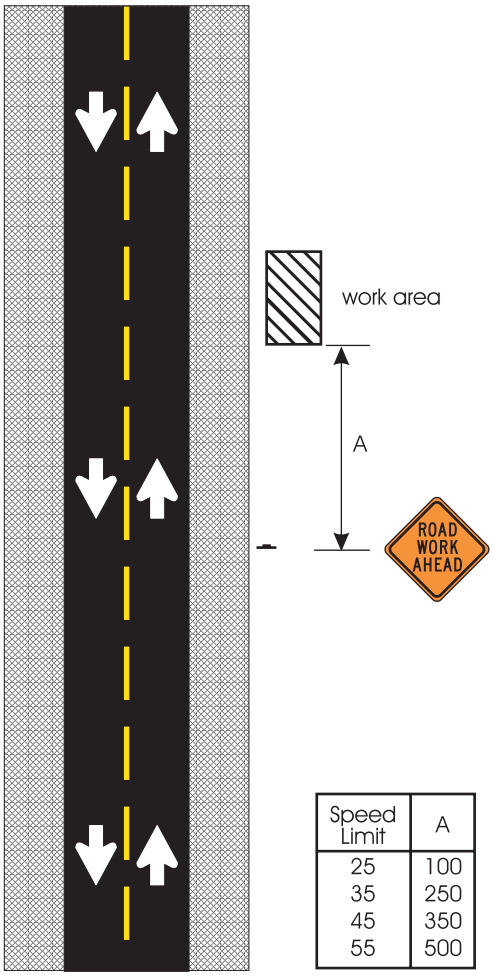
For short-term (less than an hour) exposure with relatively low traffic volumes and adequate sight distance, traffic control may only consist of an amber revolving light on the work vehicles. Longer duration work, more lane encroachment, inadequate sight distance, or higher speeds may all require additional temporary controls including signs, channelizing devices, and possibly one or more flaggers. The *MUTCD* and other resources should be carefully consulted for assistance in selecting any necessary traffic control.

Maintenance of signs and other devices presents unique considerations for temporary traffic control. An individual technician working independently often performs much of this work. This worker must exercise a good deal of judgement to maintain safe working conditions. Necessary signs, cones, and other devices as well as safety vests, hardhats, and other personal protective equipment should be carried in the truck at all times.

When repairing or replacing Stop or Yield signs, it is recommended that temporary stop or yield control be utilized. Many agencies have designed portable signs specifically for this purpose. If temporary Stop or Yield signs are not available, use of a flagger during this operation is suggested.



Temporary Stop or Yield sign

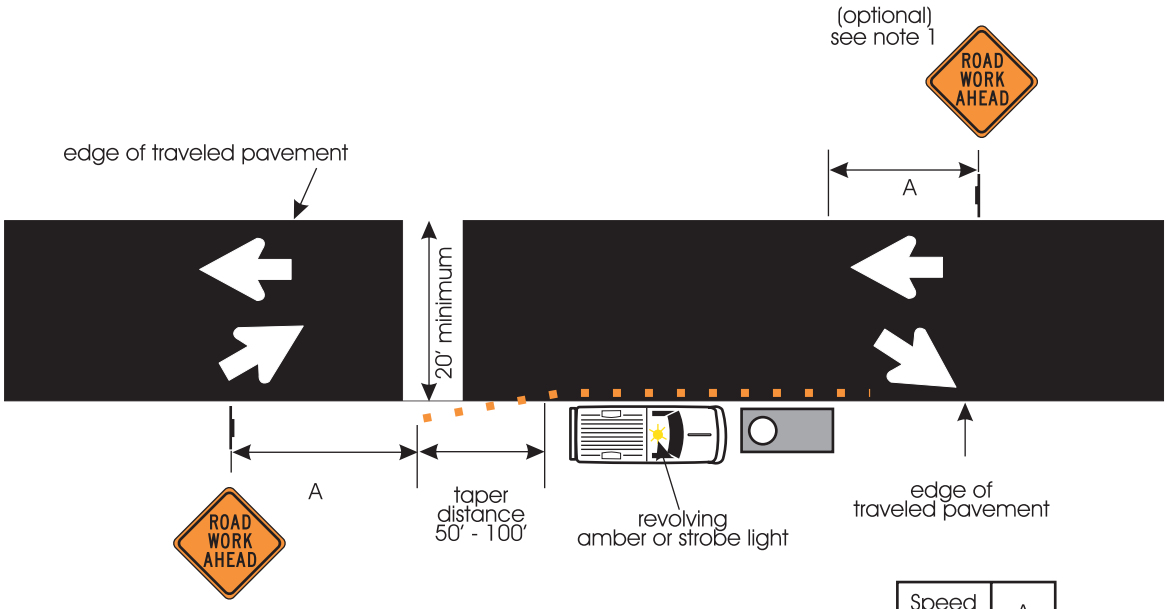


Speed Limit	A
25	100
35	250
45	350
55	500

Notes:

1. The sign illustrated in this figure is not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of the roadway.
2. The Road Work Ahead sign may be replaced with other appropriate signs, such as the Workers sign.
3. For short-term, short-duration, or mobile operation, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving amber or strobe light is used.

Work beyond the roadway

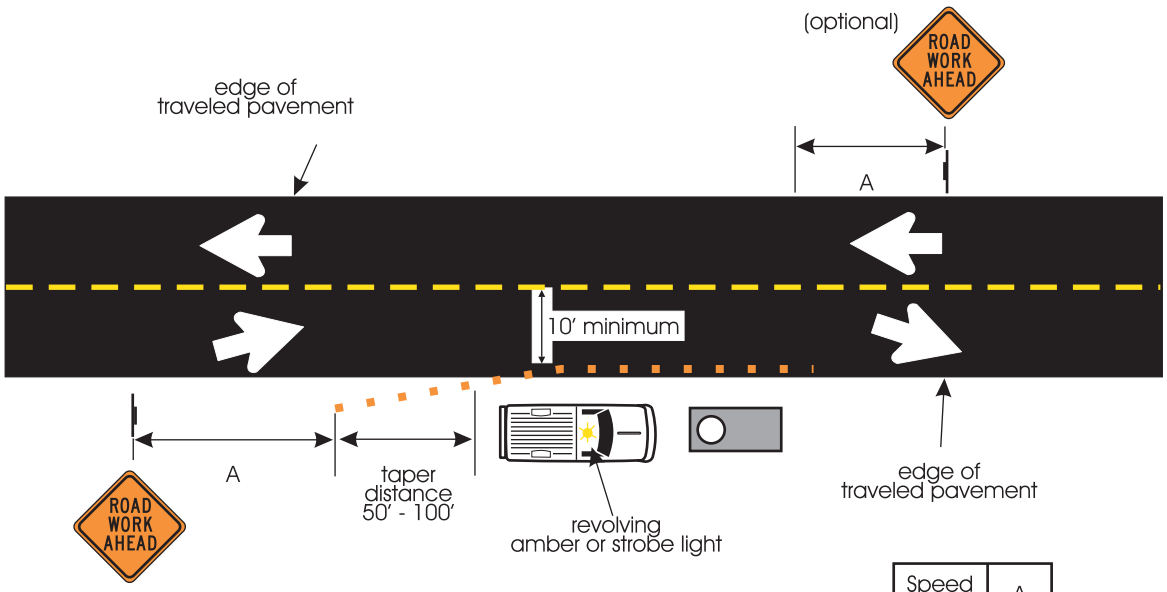


Speed Limit	A
25	100
35	250
45	350
55	500

Notes:

1. Sign required only when sight distance is restricted (typically a no passing zone in the workspace).
2. Flagger protection not required, provided bidirectional traffic can move freely at reduced speed through the workspace.
3. The number of channelizing devices is variable.
4. For short duration work of one hour or less, all signs and channelizing devices may be eliminated if work vehicle has a revolving yellow or amber light.

Minor encroachment on two-lane road <u>without</u> center line

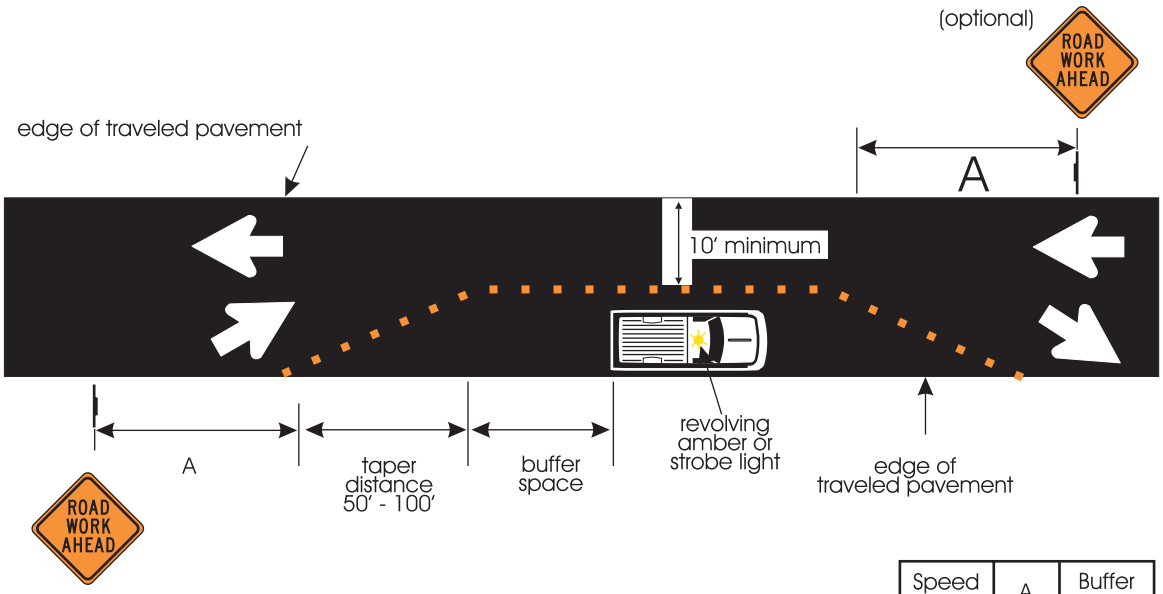


Speed Limit	A
25	100
35	250
45	350
55	500

Notes:

1. The lane encroachment should permit a remaining lane width of 10 feet or the lane should be closed. However, 9 feet is acceptable for short-term use on a low-volume, low-speed roadway for traffic that does not include commercial vehicles.
2. The number of channelizing devices is variable.

Minor encroachment on two-lane road <u>with</u> a marked center line

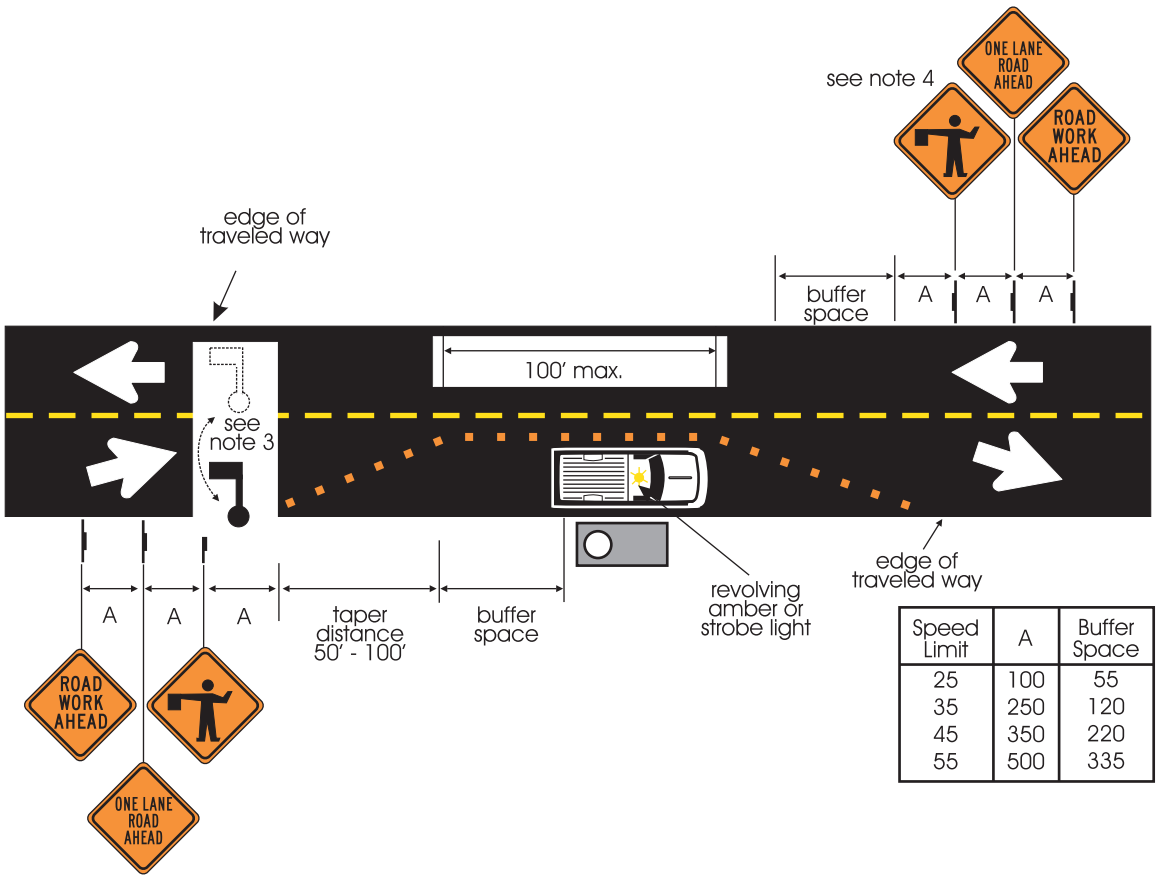


Speed Limit	A	Buffer Space
25	100	55
35	250	120
45	350	220
55	500	335

Notes:

1. Conditions represented are for work that requires closing a lane of traffic during daylight hours only.
2. No parking for work vehicles on opposite shoulder within 500 feet of work area.
3. A flagger may be required if visibility is restricted or potential traffic conflict exists.
4. A 2-foot safety zone is suggested between the cones and the truck when access to the truck is necessary on the side exposed to traffic.
5. The number of channelizing devices is variable.

Major encroachment on low-volume residential street or rural gravel roadway

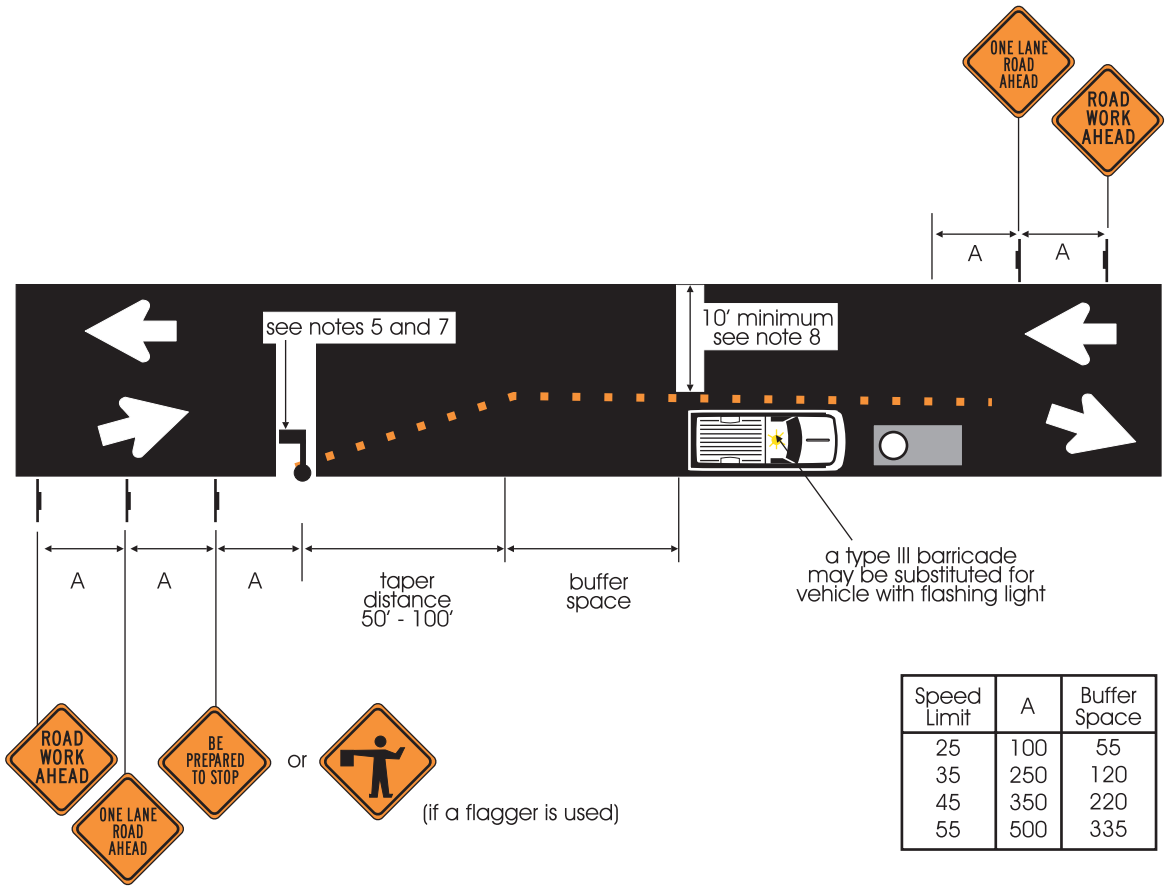


Speed Limit	A	Buffer Space
25	100	55
35	250	120
45	350	220
55	500	335

Notes:

1. This layout is intended for traffic volumes less than 2,000 vehicles per day.
2. No parking on opposite shoulder within 500 feet of work area.
3. Traffic in the open lane shall be allowed to flow freely. The flagger shall stop the first vehicle in the closed lane from the position shown, then cross the traffic lane to stop other vehicles.
4. A second flagger and sign may be required:
   a. if the flagger's view of approaching traffic in the open lane is less than 1/4 mile or the work site is in an area of restricted sight distance (such as a no passing zone); or
   b. if excessive traffic delays are encountered.
5. The number of channelizing devices is variable. Some devices may be eliminated if they interfere with the work.

Major encroachment on higher volume urban street with marked center line

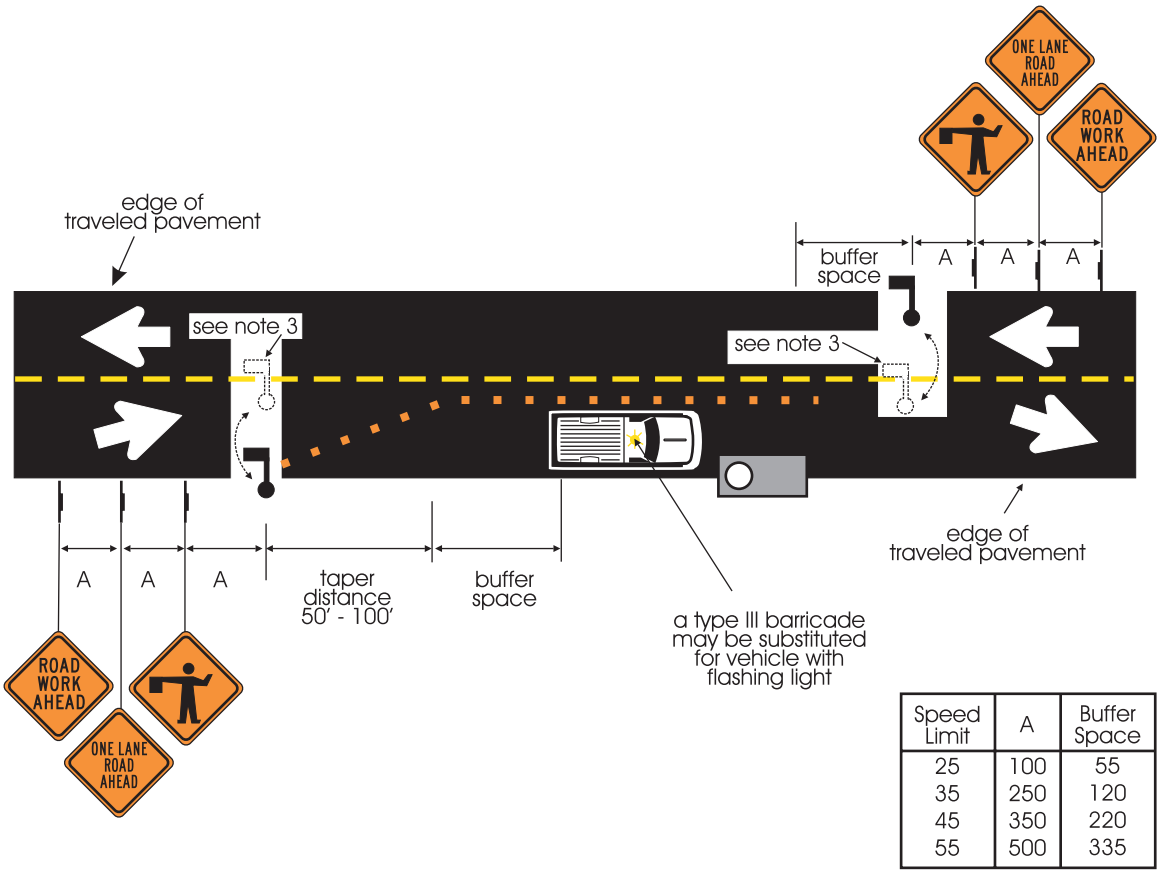


Speed Limit	A	Buffer Space
25	100	55
35	250	120
45	350	220
55	500	335

Notes:

1. Conditions represented are for work that requires closing the traffic lane during daylight hours only.
2. This layout is intended for traffic volumes of less than 2,000 vehicles per day.
3. No parking on opposite shoulder with 500 feet of workspace.
4. Traffic in the open lane shall be allowed to flow freely.
5. A flagger shall be required if visibility is less than 1/4 mile or the work space is in an area of restricted sight distance.
6. The number of channelizing devices is variable.
7. If traffic volume is more than 15 vehicles in any given 15 minutes, a flagger may be required.
8. The lane encroachment should permit a remaining lane width of 10 feet. However, 9 feet is acceptable for short-term use on low-volume, low-speed roadway for traffic that does not include longer and heavier commercial vehicles.

One-lane closure of a higher volume two-lane gravel roadway

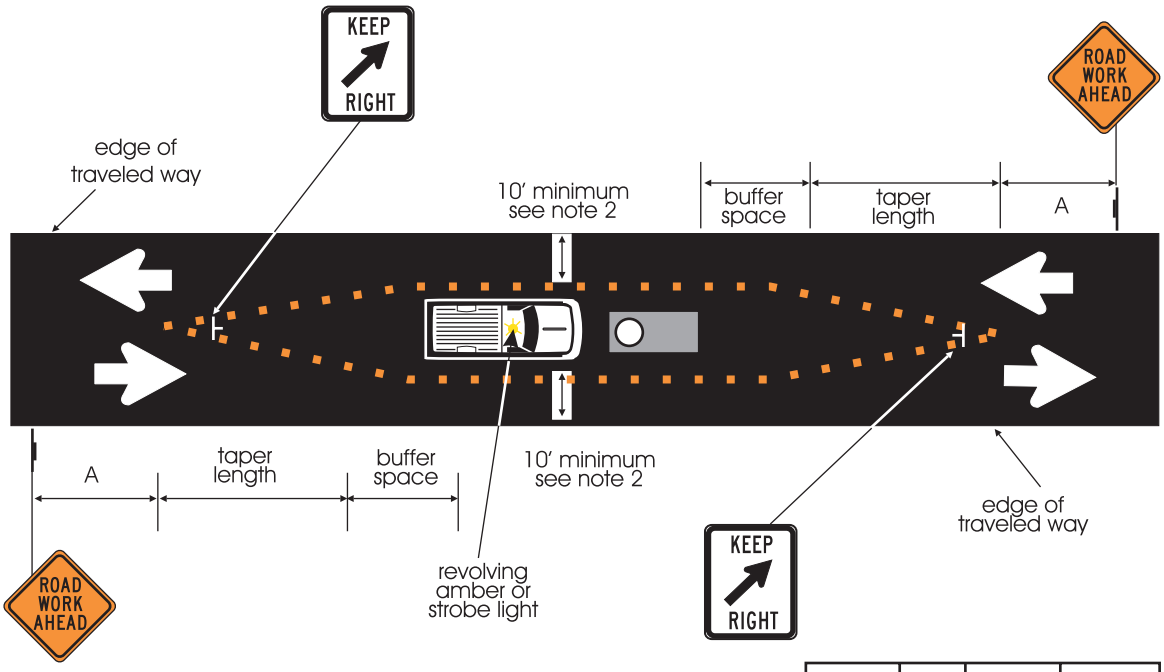


Speed Limit	A	Buffer Space
25	100	55
35	250	120
45	350	220
55	500	335

Notes:

1. Conditions represented are for daylight hours only.
2. No parking on opposite shoulder within 500 feet of work area.
3. The flagger shall stop the first vehicle from the position shown, then cross traffic lane to stop other vehicles.
4. Channelizing devices in taper are required at all times. The number of channelizing devices is variable.
5. A Be Prepared to Stop sign (W20-7b) may be added to the advance warning series.

Major encroachment on higher volume road or street

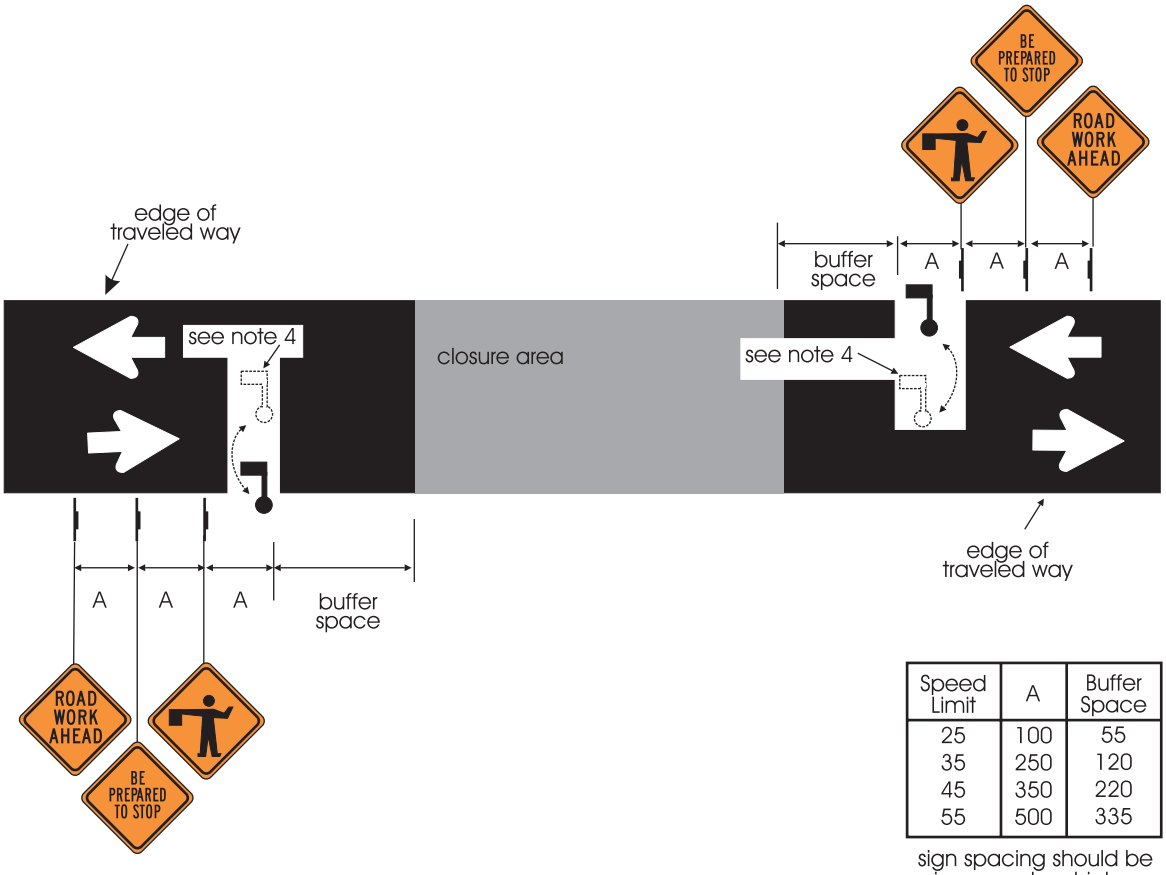


Speed Limit	A	Taper Length	Buffer Space
25	100	25	55
35	500	45	120
45	700	90	220
55	1000	110	335

Notes:

1. Street parking should be removed within limits of work area.
2. The lane encroachment should permit a remaining width of 10 feet or the lane should be closed. However, 9 feet is acceptable for short-term use on low-volume, low-speed roadways for traffic that does not include heavy commercial vehicles.
3. The number of channelizing devices is variable.
4. On low-volume roads, tapers may be eliminated if work vehicle has a revolving yellow or amber light.

Work zone in center of two-lane urban street



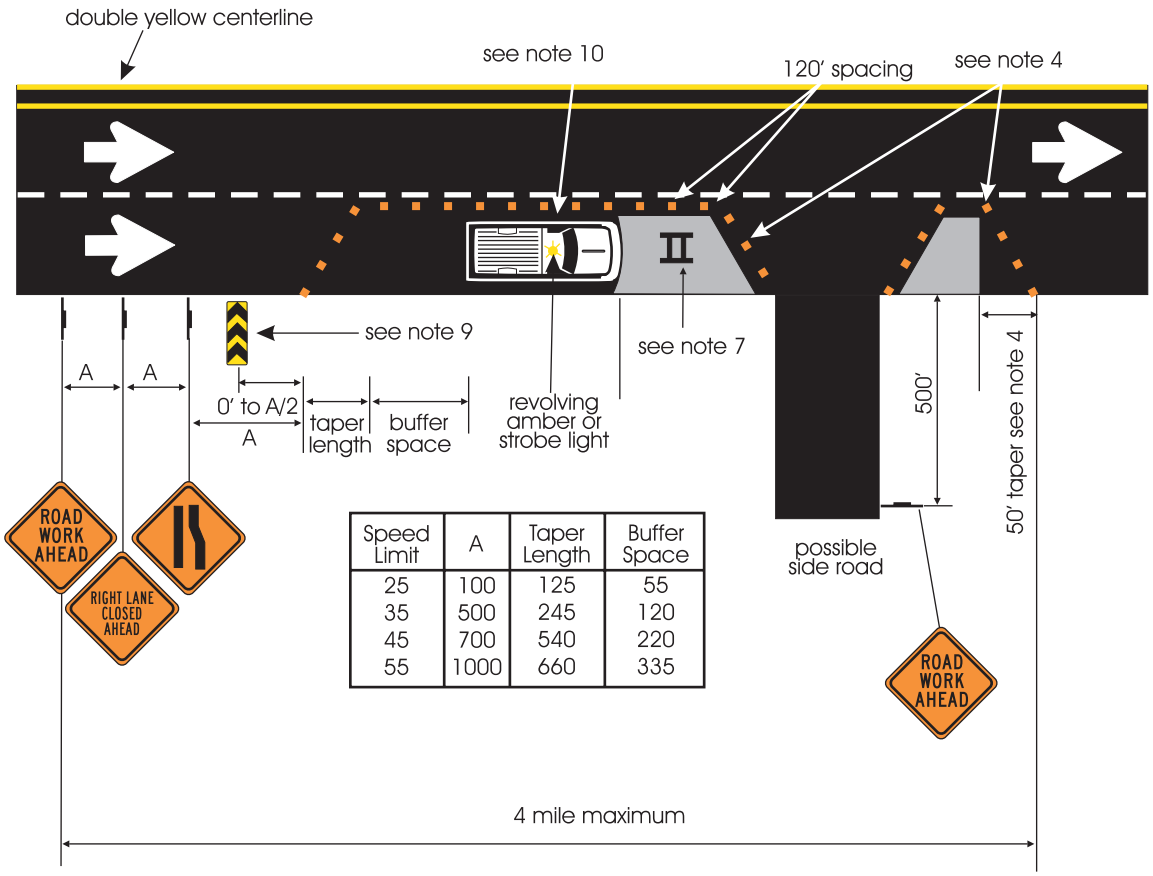
Speed Limit	A	Buffer Space
25	100	55
35	250	120
45	350	220
55	500	335

sign spacing should be increased on higher volume roadways

Notes:

1. Use of this layout may require contact with schools, law enforcement, and emergency services.
2. Conditions represented are for work that requires closings during daylight hours only.
3. This application is intended for a planned temporary closing not to exceed 15–20 minutes.
4. The flaggers shall stop the first vehicle from the position shown, then move to the center line to stop approaching traffic.
5. Distance from flaggers to flagger signs may be increased to provide space for anticipated number of vehicles to be stopped.

Temporary road closure

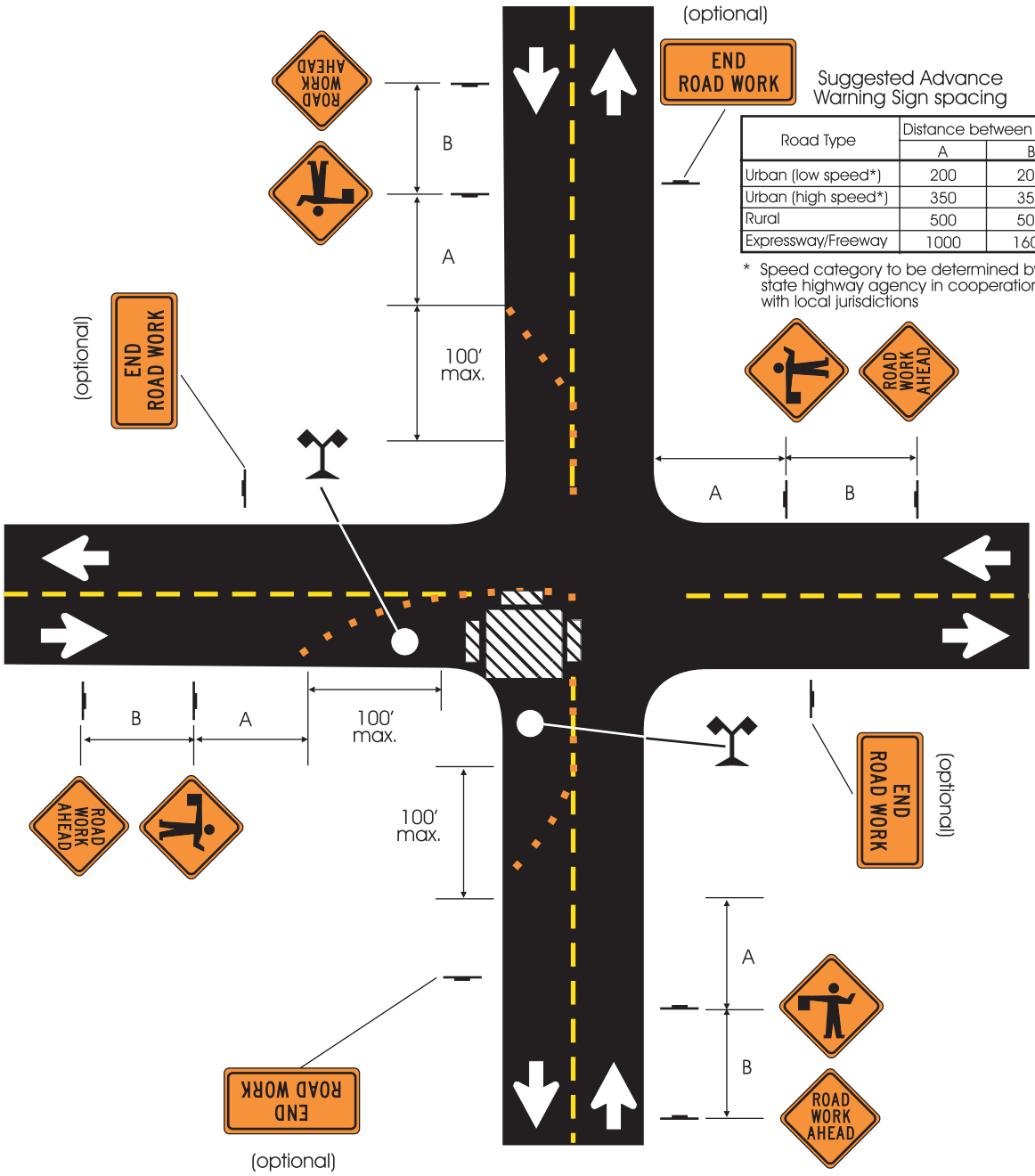


Speed Limit	A	Taper Length	Buffer Space
25	100	125	55
35	500	245	120
45	700	540	220
55	1000	660	335

Notes:

1. This layout is intended for short-term use.
2. Cones may be used as channelizing devices in the tapers and along the lane line during daylight hours only.
3. The maximum spacing between channelizing devices in a merging taper shall be equal in feet to the speed limit.
4. Downstream tapers shall contain a minimum of five channelizing devices.
5. "Speed Limit" refers to the legally established speed limit.
6. Channelizing device types shall not be intermixed on the lane line through the work area.
7. Type II barricades may be placed in the closed lane at a 1,000-foot interval.
8. A flagger may be used to alert motorists when equipment or workers encroach within 2 feet of an open lane. The flagger shall be posted adjacent to the open traffic lane and immediately upstream of each operation. Encroachment shall be held to a minimum.
9. The use of an arrow panel is optional. When there is no shoulder area, the arrow panel shall be placed within the closed lane behind the channelizing devices and as close to the beginning of the taper as practical.
10. A Type III barricade may be substituted for the vehicle with an amber rotating or strobe light.
11. Channelizing devices may be placed up to two feet beyond the lane line only at specific locations where actual work activity is taking place. The devices shall be returned to the lane line when the work activity has passed.

Right-lane closure on a four-lane roadway



Suggested Advance Warning Sign spacing

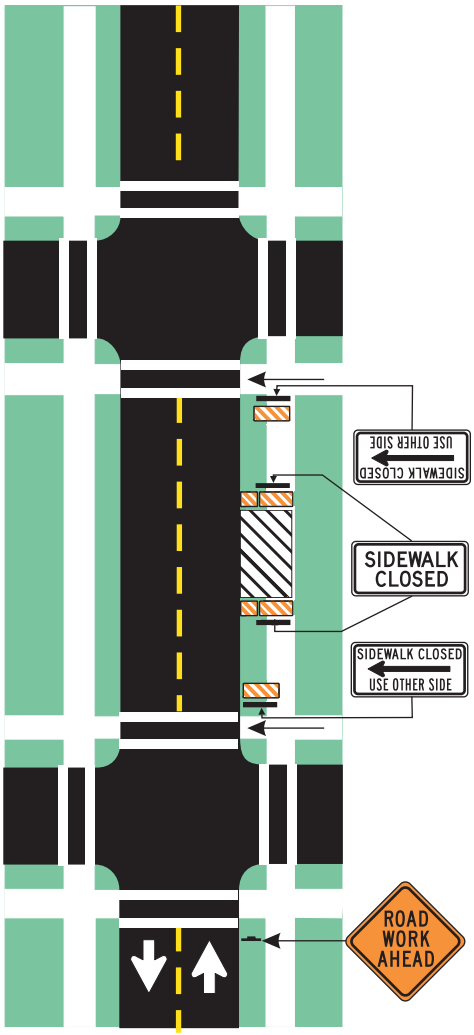
Road Type	Distance between signs	
	A	B
Urban (low speed*)	200	200
Urban (high speed*)	350	350
Rural	500	500
Expressway/Freeway	1000	1600

* Speed category to be determined by state highway agency in cooperation with local jurisdictions

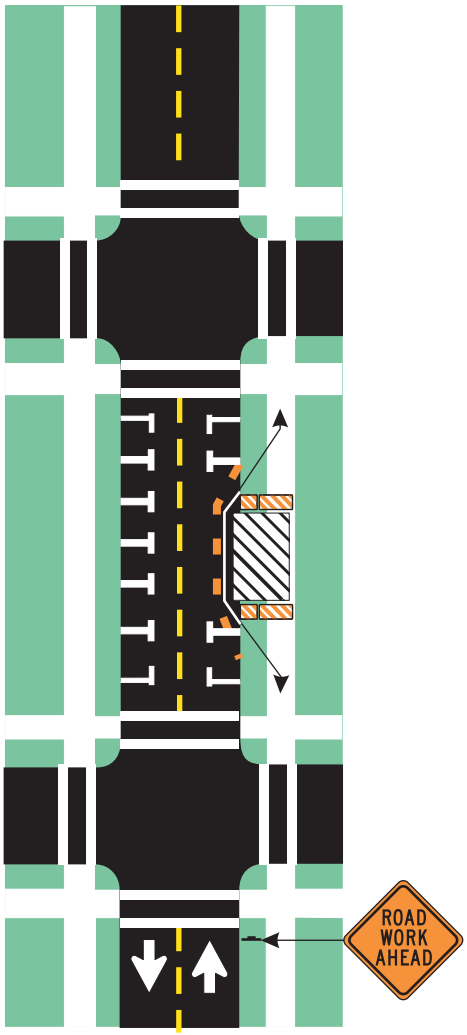
Notes:

1. For low traffic volumes and intersecting two-lane streets, one flagger positioned in the center of the intersection may suffice.
2. For high traffic volumes or when a four-lane street is involved, additional flaggers or law enforcement personnel may be used.
3. A One-Lane Road Ahead sign may also be necessary to provide adequate advance warning.
4. The situation depicted can be simplified by closing one or more of the intersection approaches. If this cannot be done and/or when capacity is a problem, consideration should be given to diverting through traffic to other roads or streets.
5. Flashing warning lights and/or flags may be used to call attention to the advanced warning signs.
6. Traffic signals or other permanent devices should be removed, covered, or deactivated if conflicting with temporary traffic control.

Closure at side of intersection



Pedestrian detour



Walkway provided

Notes:

1. Additional advance warning may be necessary.
2. Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing or Road Narrows signs, as needed.
3. Street lighting should be considered.
4. For nighttime closures, Type A flashing warning lights may be used on barricades supporting signs and closing walkways. Type C steady-burn lights may be used on channelizing devices separating the temporary walkway from vehicular traffic.
5. Where high speeds may be anticipated, use a barrier to separate the temporary walkway from vehicular traffic.
6. Signs may be placed along a temporary walkway to guide or direct pedestrians. Examples include Keep Right and Keep Left signs.
7. Provisions shall be made for disabled pedestrians.

Sidewalk closures and bypass walkway