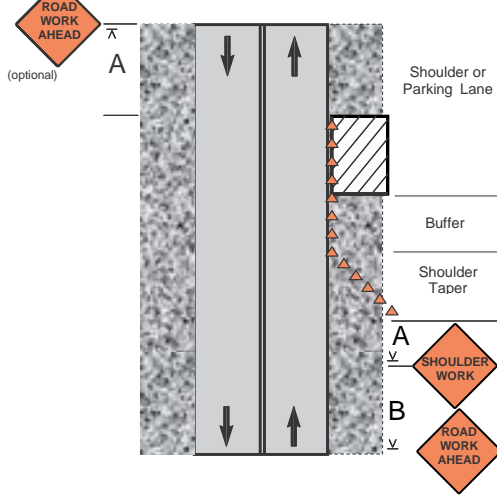


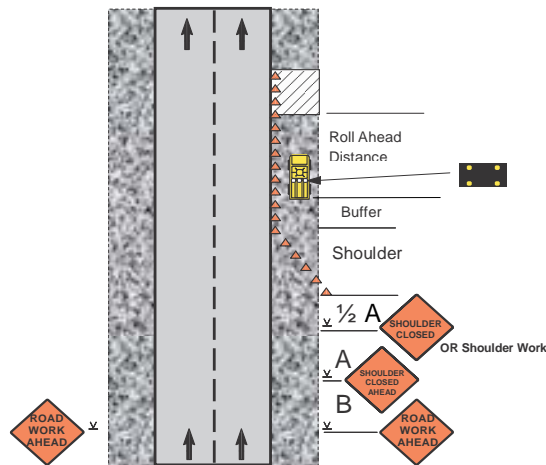
Indiana Department Of Transportation Permit Section Traffic Control Quick Reference Guide

Work on Paved Shoulders ≥8ft. or Parking Lanes



Note: WORKERS or UTILITY WORK AHEAD signs may be used instead of the SHOULDER WORK or ROAD WORK AHEAD signs.

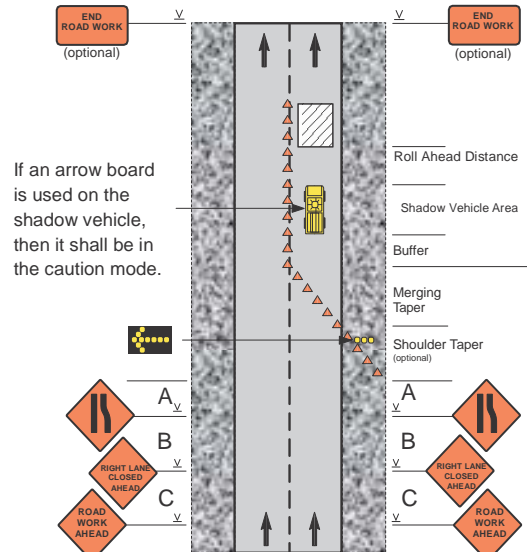
Paved Shoulder ≥8ft. Closed on Divided Roadway



- Notes:**
1. SHOULDER CLOSED signs should be used on limited-access highways where there is no opportunity for disabled vehicles to pull off the traveled way.
 2. UTILITY WORK AHEAD or WORKERS signs may be used instead of the ROAD WORK AHEAD sign.
 3. Use of an arrow display is optional. If used, it shall be operated in the caution mode.
 4. ≤40mph speed limit, shadow vehicle optional.

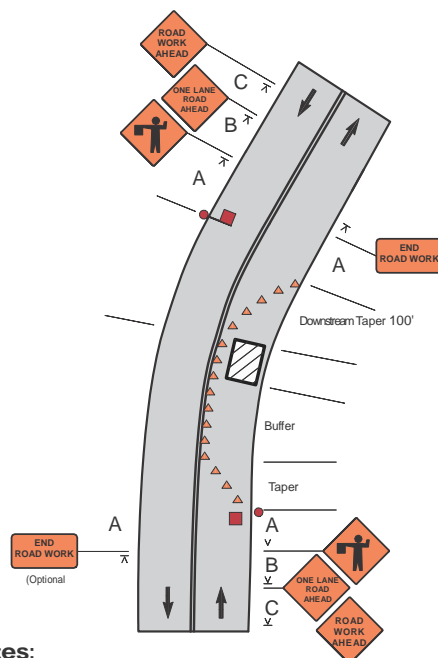
Shadow Vehicles **CANNOT** be used as work vehicles

Lane Closure on a Divided Roadway or One Way Street



- Notes:**
1. When a side road intersects the roadway within the work zone, additional devices shall be erected to channelize traffic to/from the side road, and a ROAD WORK AHEAD sign shall be placed on each side road approach.
 2. On non-freeway multi-lane roads in urban areas, the sign spacing may be reduced.
 3. ≤40mph speed limit, shadow vehicle optional.

Lane Closure on a Two-Lane Road (Two Flagger Operation)



- Notes:**
1. The flagger or flaggers shall use approved flagging procedures according to the MUTCD.
 2. If there is a side road intersection within the work area, additional traffic control, such as flaggers and appropriate signage, may be needed on the side road approaches.

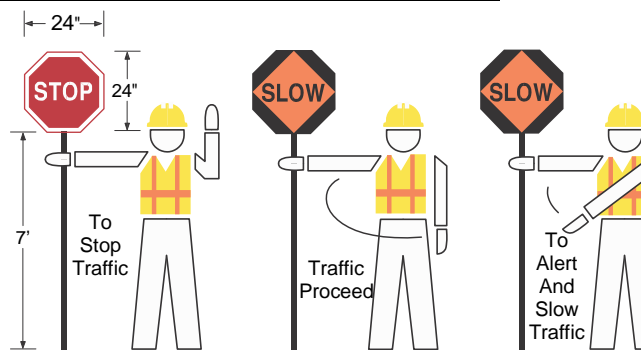
Legend

	Channelizing Device		Portable Sign Support		Work Area
	Arrow Board Display		Arrow Board Display Symbol		Warning Sign
	Flagger Symbol		Shadow Vehicle With Flashing Light		

Flagger Standards and Procedures

If flaggers are used they must be properly trained and equipped at all times.

Only 24" Diameter Stop/Slow paddles are allowed while flagging on State Right-Of-Way



Acceptable Channelizing Devices

1. Stripes on barricade rails slope downward at an angle of 45 degrees toward the direction traffic is to pass.
2. Barricade rail stripe widths shall be 6 inches except where rail lengths are less than 36 inches, then 4 inch wide stripes may be used.
3. The sides of barricades facing traffic shall have retroreflective rail faces.
4. All channelizing devices shall meet AASHTO Manual for Assessing Safety Hardware (MASH) Requirements.

Spacing
On Tapers: The distance in feet equal to the speed limit in mph, Alongside the work area: The distance in feet equal to 2.0 times the speed limit in mph.
Alternatively, the spacing for straight-aways may be as follows:

- 20 to 40 mph: 1 cone for every 40' (every skip)
- 40 to 55 mph: 1 cone for every 80' (every other skip)
- 60 mph & above: 1 cone for every 120' (every 3 skips)

	Sign Spacing (feet)				
	25-30 mph	35-40 mph	45-55 mph	Multilane Divided 50 mph or higher	Expressway/Freeway
A	100	350	500	1000	1000
B	100	350	500	1600	1600
C	100	350	500	2640	2640

Distances shown are approximate. Sign spacing should be adjusted for curves, hills, intersections, driveways, etc., to improve sign visibility.

OPTIONAL SKIPS BASED TAPERS (For a 12 Ft Wide Closure)													
Speed (MPH)	Shoulder Tapers				Shifting Tapers				Merging Tapers				
	L	#S	CS	#C	L	#S	CS	#C	L	#S	CS	#C	
Low Speed	20	80	2	20	5	80	2	20	5	160	4	20	9
	25	80	2	20	5	80	2	20	5	160	4	20	9
	30	80	2	20	5	120	3	20	7	200	5	20	11
	35	120	3	20	7	160	4	20	9	280	7	20	15
High Speed	40	120	3	40	4	160	4	40	5	320	8	40	9
	45	200	5	40	6	280	7	40	8	560	14	40	16
	50	200	5	40	6	320	8	40	9	600	15	40	17
	55	240	6	40	7	360	9	40	10	680	17	40	18
	60	240	6	60	5	360	9	60	7	720	18	60	13
	65	280	7	60	6	400	10	60	8	800	20	60	15
	70	280	7	60	6	440	11	60	9	840	21	60	15

2-Way & Downstream Tapers are always 100/2.5/20/7

L = Length (ft)	#S = Number of Skips	CS = Cone Spacing (ft)	#C = Number of Cones
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Guidelines for Buffer Lengths and Distance of Flagger Station in Advance of the Workspace

Speed (mph)	MUTCD Based Buffer Length (ft)	Optional Skips Based	
		Buffer Length (ft)	Number of Skips
20	115	120	3
25	155	160	4
30	200	200	5
35	250	280	7
40	305	320	8
45	360	360	9
50	425	440	11
55	495	520	13
60	570	600	15
65	645	680	17
70	730	760	19

Roll-ahead Distances

Speed	Stationary	Mobile
≤ 45 mph	100 ft	150 ft
50 - 55 mph	150 ft	200 ft
60 - 65 mph	200 ft	275 ft
70 mph	225 ft	325 ft

DISCLAIMER... The purpose of this document is to present guidelines for work zone traffic control. This covers the basic requirements set forth in Part VI of the Indiana Manual on Uniform Traffic Control Devices (MUTCD) as it pertains to Right-Of-Way Permit work. Any changes or additions of traffic control of protection can be requested per the INDOT District Permit Sections. This document MUST accompany the Right-Of-Way Permit Application.

Created By INDOT, Work Zone Safety Section, June 2011.

