

Typical Traffic Control
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.1)

NOTES

Guidance:

1. Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.
2. Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.

Option:

3. Where Right-of-Way or geometric conditions prevent the use of 48" x 48" signs, 36" x 36" signs may be used.

Standard:

4. Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).
5. All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).
6. Cone spacing shall be based on the posted speed and the values in Table 6H-4 on Page 6H-6.
7. A shadow vehicle with at least one high intensity amber rotating, flashing, or oscillating light shall be parked 80'-120' in advance of the first work crew.

Option:

8. A supplemental flagger may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.

Guidance:

9. If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign then the signs, and if used the portable temporary rumble strips (PTRS), should be readjusted at greater distances.
10. When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-56 for additional information on highway-rail crossings).

Standard:

11. At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08).

Option:

12. Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
13. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).

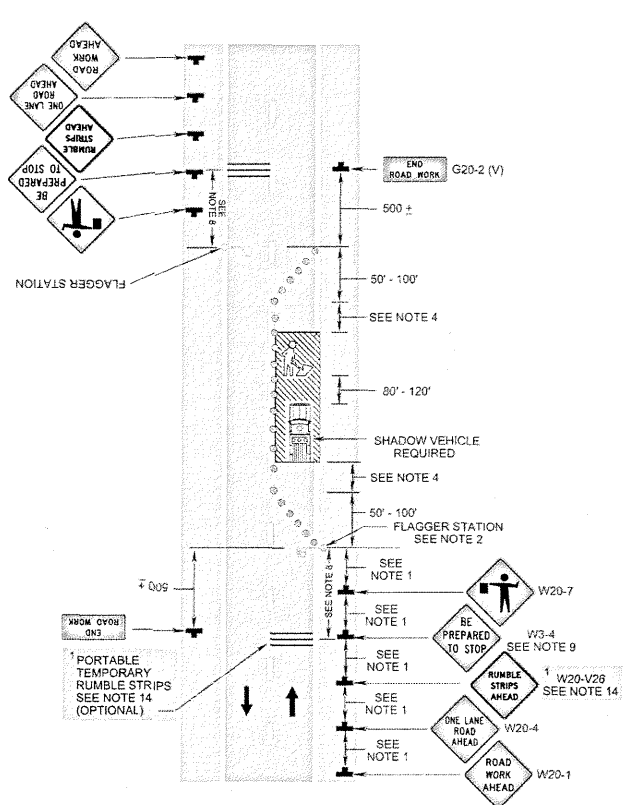
Standard:

14. When approved for use, three portable temporary rumble (PTRS) strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The portable temporary rumble strips shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be utilized.

Posted Speed	0 - 35 mph	36 - 55 mph
PTRS Spacing (Center to Center)	5 Feet	8 Feet

1: Revision 1 - 4/1/2015

Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.1)



1: Revision 1 - 4/1/2015

9 CLOSURE ON A TWO-LANE ROADWAY USING FLAGGERS DETAIL
SCALE: N.T.S.

Typical Traffic Control
Lane Closure Operation - Far Side of an Intersection
(Figure TTC-27.1)

NOTES

Guidance:

1. Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.

Standard:

2. On divided highways having a median wider than 8', right and left sign assemblies shall be required.
3. Taper length (L) and channelizing device spacing shall be:

Taper Length (L)		Lane Width (Feet)			
Speed Limit (mph)		9	10	11	12
25		95	105	115	125
30		135	150	165	180
35		185	205	225	245
40		240	270	295	320
45		405	450	495	540
50		450	500	550	600
55		495	550	605	660
60		540	600	660	720
65		585	650	715	780
70		630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.					
Shoulder Taper = 1/2 L Minimum					

Channelizing Device Spacing		Speed Limit (mph)	
Location		0 - 35	36 +
Transition Spacing		20'	40'
Travelway Spacing		40'	80'

On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

Guidance:

4. If room permits, a shadow vehicle with at least one amber rotating, oscillating, or high intensity flashing light should be parked 80'-120' in advance of the first work crew.

Standard:

5. If the posted speed limit is 45 mph or greater, the shadow vehicle shall have a truck-mounted attenuator.
6. For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or high intensity amber flashing or oscillating lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals shall be used.

Guidance:

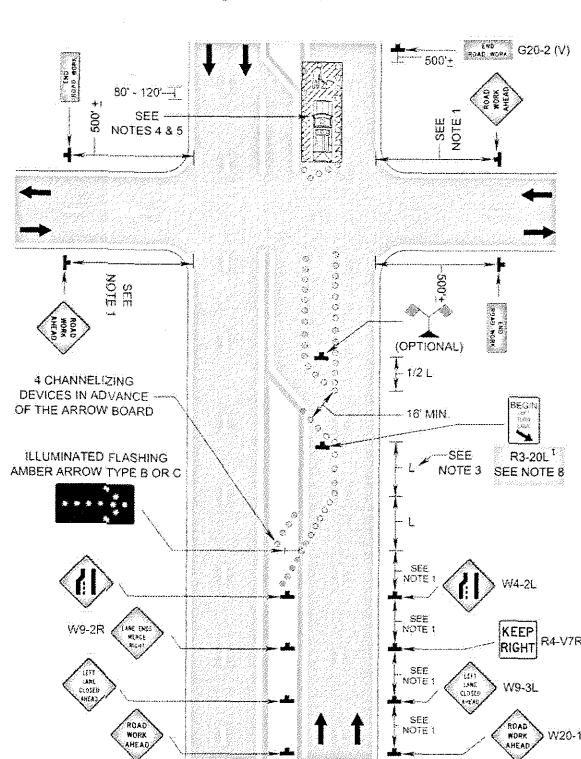
7. If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.

Standard:

8. If the left turn lane is closed a NO LEFT TURN (Symbol) (R3-2) shall be used.

1: Revision 1 - 4/1/2015

Lane Closure Operation - Far Side of an Intersection
(Figure TTC-27.1)



1: Revision 1 - 4/1/2015

11 LANE CLOSURE OPERATION - FAR SIDE OF AN INTERSECTION DETAIL
SCALE: N.T.S.

Typical Traffic Control
Lane Closure Operation - Near Side of an Intersection
(Figure TTC-26.1)

NOTES

Guidance:

1. Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.

Standard:

2. On divided highways having a median wider than 8', right and left sign assemblies shall be required.
3. Taper length (L) and channelizing device spacing shall be:

Taper Length (L)		Lane Width (Feet)			
Speed Limit (mph)		9	10	11	12
25		95	105	115	125
30		135	150	165	180
35		185	205	225	245
40		240	270	295	320
45		405	450	495	540
50		450	500	550	600
55		495	550	605	660
60		540	600	660	720
65		585	650	715	780
70		630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.					
Shoulder Taper = 1/2 L Minimum					

On three or more lane roadways, the merging tapers shall be installed as shown in TTC-18.

Guidance:

4. If room permits, a shadow vehicle with at least one rotating, oscillating, or amber strobe light should be parked 80'-120' in advance of the first work crew.

Standard:

5. If the posted speed limit is 45 mph or greater, the shadow vehicle shall have a truck-mounted attenuator.
6. For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or two high intensity amber flashing or oscillating lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals shall be used.

Guidance:

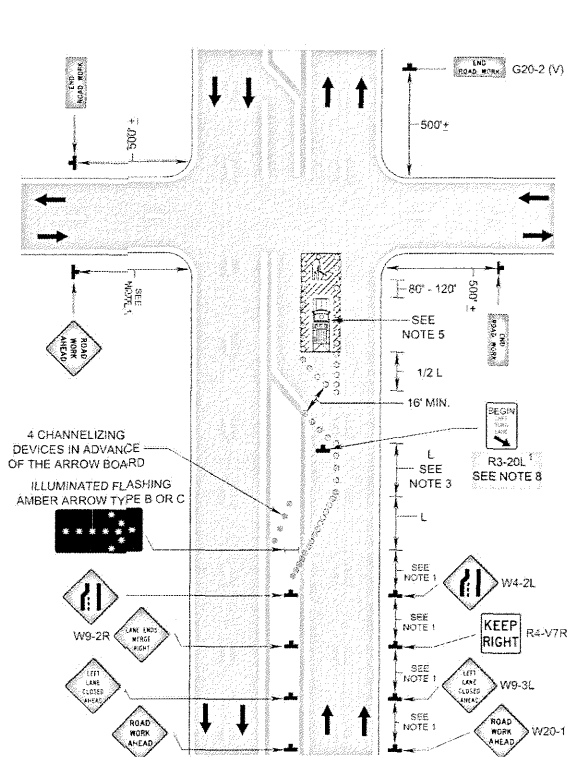
7. If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.

Standard:

8. If the left turn lane is closed a NO LEFT TURN (Symbol) (R3-2) shall be used.

1: Revision 1 - 4/1/2015

Lane Closure Operation - Near Side of an Intersection
(Figure TTC-26.1)



1: Revision 1 - 4/1/2015

10 LANE CLOSURE OPERATION - NEAR SIDE OF AN INTERSECTION DETAIL
SCALE: N.T.S.

Typical Traffic Control
Lane Closure Operation in an Intersection
(Figure TTC-28.1)

NOTES

Guidance:

1. The control of traffic through the intersection in order of preference should be:
 - a. Obtain the services of law enforcement personnel.
 - b. Detour the effective routes to other roads and streets as approved and directed by the Regional Traffic Engineer.
 - c. Place a state certified flagger on each leg of the intersection controlling a single lane of traffic. Appropriate signing as shown should be used for law enforcement and flagging operations. For detour signs see Figure TTC-34.
2. Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.

Standard:

3. Channelizing device spacing shall be on 20' centers or less.

Guidance:

4. If room permits, a shadow vehicle with at least one rotating amber light or high intensity amber flashing or oscillating light should be parked 80'-120' in advance of the first work crew.

Standard:

5. For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or high intensity amber flashing or oscillating lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals shall be used.

Guidance:

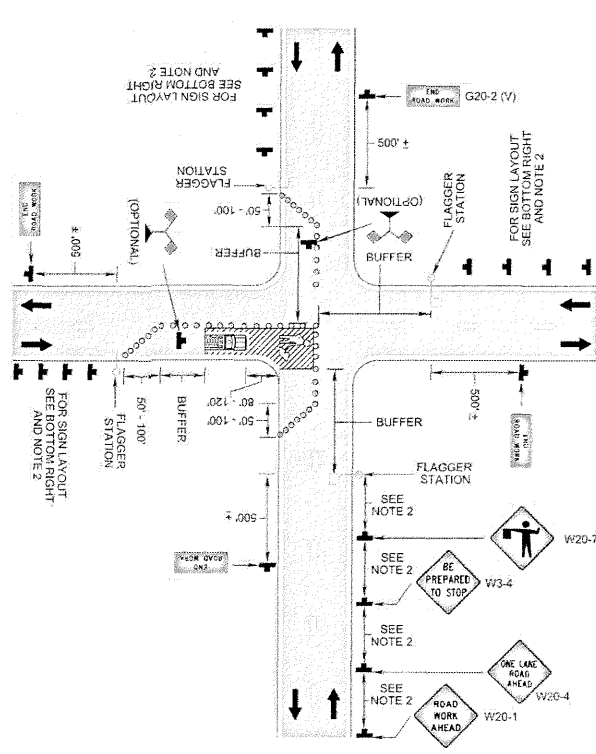
6. If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.

Support:

7. Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles.

1: Revision 1 - 4/1/2015

Lane Closure Operation in an Intersection
(Figure TTC-28.1)

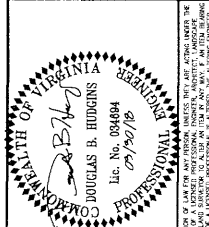


12 LANE CLOSURE OPERATION IN A INTERSECTION DETAIL
SCALE: N.T.S.



WESTERN VIRGINIA WATER AUTHORITY

ROANOKE, VIRGINIA



WESTERN VIRGINIA WATER AUTHORITY

WILLIAMSON ROAD SANITARY SEWER REPLACEMENT

ROANOKE, VIRGINIA

No.	Summary / Revision	By	Date
1	ISSUE	MBH	3/30/18
2	CONSTRUCTION ISSUE	DBH	01/24/19

TRAFFIC CONTROL DETAILS
SHEET 2 OF 5

Designed By:	Drawn By:	Checked By:
MBH	MBH	DBH
Issue Date:	Project No:	Scale:
3-30-18	33336	AS SHOWN

Drawing No.:

C-603