Typical Traffic Control Stationary Operation on a Shoulder (Figure TTC-4.0) NOTES

Page 6II-14

## 1. For long-term stationary work (more than 3 days) on divided highways having a median wider than 8', sign assemblies on both sides of the roadway shall be required as shown (ROAD WORK AHEAD (W20-1), RIGHT SHOULDER CLOSED AHEAD (W21-5bR)), even though only one shoulder is being closed. For operations less than 3 days in duration, sign assemblies will only be required on the side where the shoulder is being closed and a RIGHT SHOULDER CLOSED

AHEAD (W21-5bR) sign shall be added to that side. 2. Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign

spacing should be 500'-800' where the posted speed limit is greater than 45 mph. and 350'-500' where The SHOULDER WORK (W21-5) sign on an intersecting roadway may be omitted where drivers
emerging from that roadway will encounter another advance warning sign prior to this activity area.

 For short duration operations of I hour or less, all signs and channelizing devices may be eliminated if a
yehicle with activated high-intensity amber rotating, flashing, oscillating, or strobe lights is used. 5. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, oscillating, or strobe lights. Vehicle hazard warning signals can be used to

Taper Length (L)				Channelizing Device Spacing				
Speed Limit	L	Lane Width (Feet)			1	Speed Limit (m		
(mph)	9	10	11	12	Location	0 - 35	36	
25	95	105	115	125	Transition Spacing	20'	40	
30	135	150	165	180	Travelway Spacing	40'	80	
35	185	205	225	245	Construction Access*	80'	12	
40	240	270	295	320	* Spacing may be incr			
45	405	450	495	540	but shall not exceed o			
50	450	500	550	600	On roadways with pay			
55	495	550	605	660	width of 8 feet or mon shall be used to c	•		
60	540	600	660	720	advance of the me			
65	585	650	715	780	vehicular traffic to ren	nain within	the tra	

7. The buffer space length shall be as shown in Table 6II-3 on Page 6II-5 for the posted speed limit. 8. A shadow vehicle shall be used whenever a person is required to operate equipment mounted on or in the work vehicle such as buckets, augers, post drivers, etc. For work operations on the shoulder with a duration greater than I hour where workers are present, a shadow vehicle shall be used. A truck-mounted attenuator (TMA) shall be used on the shadow vehicle on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45

highways shall be 1000 feet.

9. When a side road intersects the highway within the temporary traffic control zone, additional

## SHADOW VEHICLE TMA REQUIREMENT SEE NOTE 8 ILLUMINATED FLASHING TYPE B OR C SEE NOTE 7 SEE NOTE 6 SEE NOTE 2

Stationary Operation on a Shoulder

(Figure TT C-4.0)

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## Typical Traffic Control Shoulder Operation with Minor Encroachment (Figure TTC-5.0)

1. On divided highways having a median wider than 8', right and left sign assemblies shall be

Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should he 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where

3. When work takes up part of a lane on a high volume roadway; vehicular traffic volumes, vehicle mix, speed and capacity should be analyzed to determine whether the affected lane should be closed. Unless the lane encroachment analysis permits a remaining lane width of 10 feet, the lane should be closed. If the closure operation is on a Limited Access highway, the minimum lane width is 11 feet.

4. The ROAD WORK AHEAD (W20-1) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.

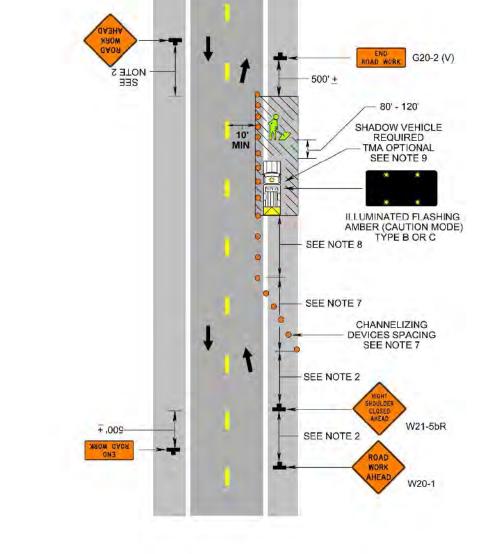
A shadow vehicle with either an arrow board operating in the caution mode, or at least one high-intensity amber rotating, flashing, oscillating, or strobe light shall be parked 80' - 120' in advance of the first work crew.

6. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, oscillating, or strobe lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, oscillating, or strobe lights.

Taper Length (L)				Channelizing Device Spacing			
Speed Limit	L	Lane Width (Feet)			Location Speed	Speed Limit	
(mph)	9	10	11	12	0 - 35	3	
25	95	105	115	125	Transition Spacing 20'		
30	135	150	165	180	Travelway Spacing 40'		
35	185	205	225	245	Construction Access* 80'		
40	240	270	295	320	* Spacing may be increased to ti		
45	405	450	495	540	but shall not exceed one access		
50	450	500	550	600	On roadways with paved should		
55	495	550	605	660	width of 8 feet or more, channel shall be used to close the		
60	540	600	66C	720	advance of the merging tap		
65	585	650	715	780	vehicular traffic to remain withir	the t	
70	630	700	770	840	way.		

8. The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit. 9. A truck-mounted attenuator (TMA) shall be used on Limited Access highways and multi-lane

traffic control devices shall be placed as needed.



Shoulder Operation with Minor Encroachment

Fage 6II-17

roadways with posted speed limit equal to or greater than 45 mph. 10. When a side road intersects the highway within the temporary traffic control zone, additional

8		August 2011	
	Typical Traffic Control		
	Outside Lane Closure Operation on a Four-Lane Roadway		
	(Figure TTC-16.0)		

1. On divided highways having a median wider than 8', right and left sign assemblies shall be

 Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph. and 350'-500' where the posted speed limit is 45 mph or less.

3. Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6II-3. For Limited Access highways a minimum of 1000' is desired. 4. All vehicles, equipment, workers, and their activities should be restricted to one side of the pavement.

Taper Length (L)					Channelizing Device Space		
peed Limit	Lane Width (F			et)	Location	Speed Li	
(mph)	9	10	11	12	Location	0 - 35	
25	95	105	115	125	Transition Spacing	20'	
30	135	150	165	180	Travelway Spacing	40'	
35	185	205	225	245	Construction Access*	80.	
40	240	270	295	320	* Spacing may be increased to this		
45	405	450	495	540	but shall not exceed on	e access	
50	450	500	550	600	On roadways with pave		
55	495	550	605	660	width of 8 feet or more, shall be used to do		
60	540	600	660	720	advance of the merg		
65	585	650	715	780	vehicular traffic to rema	in within	
70	630	700	770	840	way.		
Minimum tapi highwa		ns for Li I be 100		ccess			
Shoulde	r Taner	= 1/3 L N	Ainimum	1			

6. An arrow board shall be used when a lane is closed. When more than one lane is closed, a separate arrow board shall be used for each closed lane (see Figure TTC-18).

7. The buffer space length shall be shown in Table 6H-3 on Page 6H-5 for the posted speed limit. 8. A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one high intensity amber rotating, oscillating, or amber strobe light shall be parked 80'-120' in advance of the first work crew. When the posted speed limit is 45 mph or greater, a truck-

9. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, oscillating, or strobe lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, oscillating, or strobe lights. 10. When a side road intersects the highway within the TTC zone, additional TTC devices shall be

mounted attenuator shall be used.

Outside Lane Closure Operation on a Four-Lane Roadway SHADOW VEHICLE REQUIRED — (TMA REQUIREMENT SEE NOTE 8) ILLUMINATED FLASHING (AMBER CAUTION MODE) SEE NOTES 3 & 6 SHOULDER TAPER

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