Attachment 13

NYSDOT Work Zone Traffic Control Drawings

Notes:

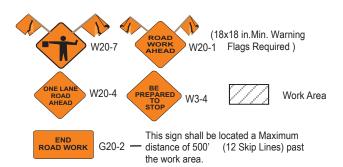
- 1. In urban conditions, advance warning sign spacings may be adjusted in order to accomodate side streets and driveways.
- 2. Centerline cones may be added to enhance the visibility of the flagger station. If cones are used, place them 100 ft. (minimum) from flagger.
- Flagger Symbol Sign (W20-7) and "ONE LANE ROAD AHEAD" Sign (W20-4) shall be removed, covered or turned away from road users when flagging operations are not occuring.
- 4. Should the traffic queue prior to the advance warning signs, the 'BE PREPARED TO STOP" sign can be added to the sign series at location shown or the entire advance warning sign series shall be moved to a location prior to the queued traffic.
- If condition warrants, Barrier Vehicle with appropriate roll ahead distance may be used in advance of the work area. To use Barrier Vehicle, Buffer Space shall be provided accordingly.
- 6. For moving flagging operation, refer to TAST-CMF.

TABLE 1 : ADVANCE WARNING SIGN SPACING				
Roadway	PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	DISTANO	CE BETWEE	N SIGNS
	PRECON: PO SPEED LI	A (FT.)	B(FT.)	C(FT.)
URBAN LOW (≤30 MPH)	30	100	100	100
URBAN	35	200	200	200
(35-40 MPH) URBAN HIGH (≥45MPH)	45	350	350	350
RURAL		500	500	500

		TABLE 2	
PRECONSTRUCTION POSTED	SPEED LIMIT (MPH)	LONGITUDINAL BUFFER SPACE IN FT	
25		155 (~4 Skip Lines)	
30		200 (~5 Skip Lines)	
35		250 (~6 Skip Lines)	
40		305 (~8 Skip Lines)	
45		360 (~9 Skip Lines)	
50		425 (~11 Skip Lines)	
55		495 (~13 Skip Lines)	

TABLE 3: REQUIRED SIGN SIZES*				
CONVENTIONAL HIGHWAY	FREEWAY/EXPRESSWAY			
36X36 in.	48X48 in.			
36X36 in.	48X48 in.			
36X36 in.	48X48 in.			
36X36 in.	48X48 in.			
36X18 in.	48X24 in.			
	CONVENTIONAL HIGHWAY 36X36 in. 36X36 in. 36X36 in. 36X36 in.			

*Freeway/Expressway sizes may be used on Conventional Highways, if space constraints do not exist.



NYSDOT WORK ZONE TRAFFIC CONTROL

SHORT TERM STATIONARY
OPERATION INVOLVING

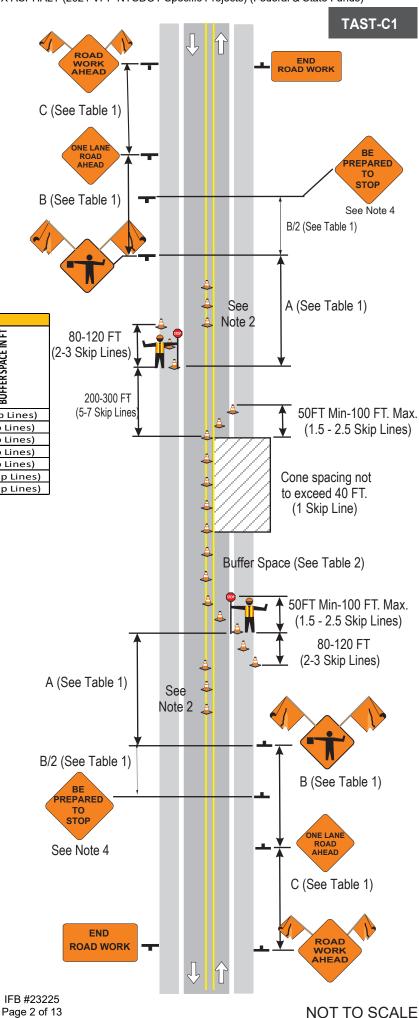
DAYTIME LANE CLOSURE WITH FLAGGERS

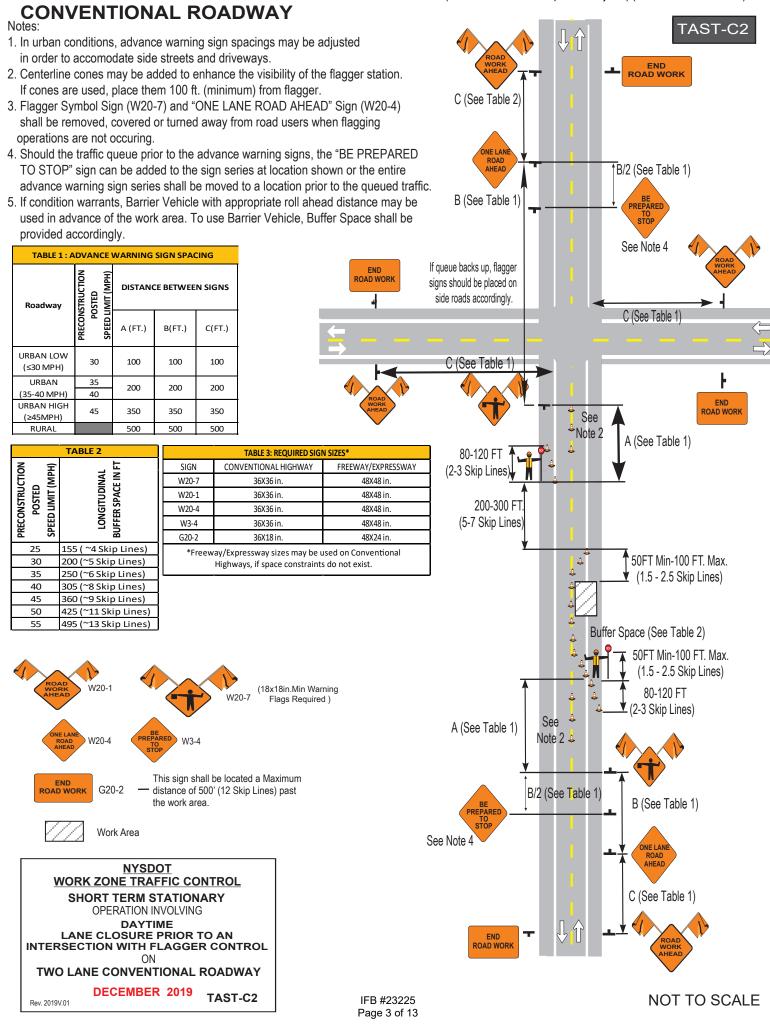
TWO LANE CONVENTIONAL ROADWAY

DECEMBER 2019

Rev. 2019V.01

TAST-C1





Notes:

- 1. In urban conditions, advance warning sign spacings may be adjusted in order to accomodate side streets and driveways.
- 2. This typical application shall be used with both Red/Yellow Lens Automated Flagger Assistance Devices (AFAD) and STOP/SLOW AFADs.
- 3. AFADs shall only be used in situations where there is only one lane of approaching traffic in the direction to be controlled.
- 4. The operator of the AFAD SHALL:
 - a. Be trained on the operation of the model AFAD they are using,
 - b. Have an unobstructed view of the AFAD.
 - c. Have an unobstructed view of approaching traffic in BOTH directions, and
 - d. Not leave the AFAD(s) unattended at any time while the AFAD(s) is being used.
- 5. The AFAD shall be placed on the shoulder adjacent to the travel lane ensuring that the gate arm reaches at least to the center of the lane being controlled.
- 6. Cones/drums may be placed on the shoulder and/or centerline to assist/guide road users with proper lane position/alignment.
- 7. The operator of the AFAD shall not display the AFAD's SLOW face or Yellow lens phase until all oncoming vehicles have cleared the one-lane portion of the work zone.
- 8. The operator of the AFAD shall maintain verbal and/or visual (in the absence of two-way radios) contact with the flagger.
- 9. "Flagger Symbol Sign" (W20-7), "BE PREPARED TO STOP" Sign (W3-4) and "ONE LANE ROAD AHEAD" Sign (W20-4) shall be removed, covered or turned away from road users when flagging operations are not occurring.
- 10. Appropriate flagger tools (STOP/SLOW paddle, red flag, high visibility apparel, etc.) shall be on-site, available and ready to use in the event of an AFAD malfunction or traffic volumes exceed the capability of the AFAD to effectively control traffic.

			, ,		
TABLE 1 : ADVANCE WARNING SIGN SPACING					
Roadway	PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	DISTANCE BETWEEN SIGNS			
	PRECON: PO SPEED LI	A (FT.)	B(FT.)	C(FT.)	
URBAN LOW (≤30 MPH)	30	100	100	100	
URBAN (35-40 MPH)	35 40	200	200	200	
URBAN HIGH (≥45MPH)	45	350	350	350	
RURAL		500	500	500	

	TABLE 2		
PRECONSTRUCTION POSTED SPEEDLIMIT (MPH)	LONGITUDINAL BUFFER SPACE IN FT		
25	155 (~4 Skip Lines)		
30	200 (~5 Skip Lines)		
35	250 (~6 Skip Lines)		
40	305 (~8 Skip Lines)		
45	360 (~9 Skip Lines)		
50	425 (~11 Skip Lines)		
55	495 (~13 Skip Lines)		

TABLE 3: REQUIRED SIGN SIZES*				
SIGN	CONVENTIONAL HIGHWAY	FREEWAY/EXPRESSWAY		
W20-7	36X36 in.	48X48 in.		
W20-1	36X36 in.	48X48 in.		
W20-4	36X36 in.	48X48 in.		
W3-4 36X36 in. 48X48 in.				
G20-2	36X18 in.	48X24 in.		
*Freeway/Expressway sizes may be used on Conventional Highways, if space constraints do not exist.				

Automated Flagger Device





Work Area

36x18 in.

This sign shall be located a Maximum distance of 500' (12 Skip Lines) past the work area





(18x18in.Min Warning

NYSDOT **WORK ZONE TRAFFIC CONTROL**

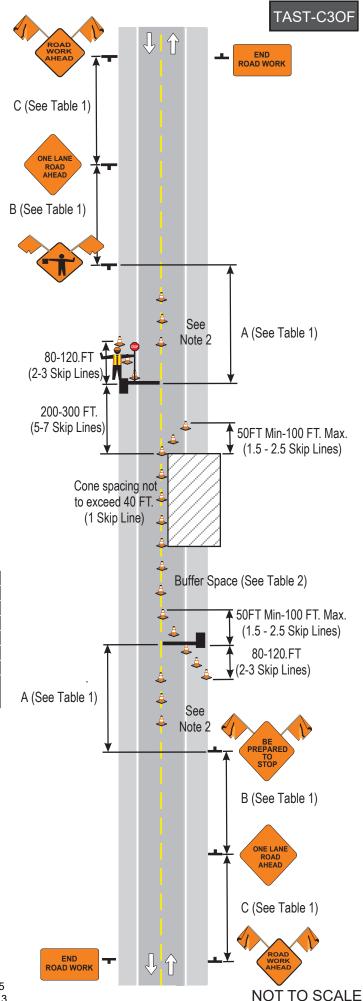
SHORT TERM STATIONARY OPERATION INVOLVING

DAYTIME LANE CLOSURE WITH ONE **AUTOMATED FLAGGER** ASSISTANCE DEVICE & ONE FLAGGER ON CONVENTIONAL ROADWAY

DECEMBER 2019 Rev. 2019V.01

TAST-C3OF

IFB #23225 Page 4 of 13



Notes:

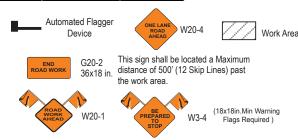
- In urban conditions, advance warning sign spacings may be adjusted in order to accomodate side streets and driveways.
- 2. This typical application shall be used with both Red/Yellow Lens Automated Flagger Assistance Devices (AFAD) and STOP/SLOW AFADs.
- 3. AFADs shall only be used in situations where there is only one lane of approaching traffic in the direction to be controlled.
- 4. The operator of the AFAD SHALL:
 - a. Be trained on the operation of the model AFAD they are using,
 - b. Have an unobstructed view of the AFAD,
 - c. Have an unobstructed view of approaching traffic in BOTH directions, and
 - d. Not leave the AFAD(s) unattended at any time while the AFAD(s) is being used.
- 5. The AFAD shall be placed on the shoulder adjacent to the travel lane ensuring that the gate arm reaches at least to the center of the lane being controlled.
- 6. Cones/drums may be placed on the shoulder and/or centerline to assist/guide road users with proper lane position/alignment.
- 7. The operator of the AFAD shall not display the AFAD's SLOW face or Yellow lens phase until all oncoming vehicles have cleared the one-lane portion of the work zone.
- 8. "BE PREPARED TO STOP" Sign (W3-4) and "ONE LANE ROAD AHEAD" Sign (W20-4) shall be removed, covered or turned away from road users when flagging operations are not occurring.
- Appropriate flagger tools (STOP/SLOW paddle, red flag, high visibility apparel, etc.) shall be on-site, available and ready to use in the event of an AFAD malfunction or traffic volumes exceed the capability of the AFAD to effectively control traffic.

TABLE 1 : ADVANCE WARNING SIGN SPACING					
Roadway	PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	DISTANCE BETWEEN SIGNS			
	PRECON: PC SPEED LI	A (FT.)	B(FT.)	C(FT.)	
URBAN LOW (≤30 MPH)	30	100	100	100	
URBAN	35	200	200 200	200	
(35-40 MPH)	40	200	200	200	
URBAN HIGH (≥45MPH)	45	350	350	350	
RURAL		500	500	500	

	TABLE 2		
PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	LONGITUDINAL BUFFER SPACE IN FT		
25	155 (~4 Skip Lines)		
30	200 (~5 Skip Lines)		
35	250 (~6 Skip Lines)		
40	305 (~8 Skip Lines)		
45 360 (~9 Skip Lines)			
50 425 (~11 Skip Lines)			
55	495 (~13 Skip Lines)		

TABLE 3: REQUIRED SIGN SIZES*			
SIGN	CONVENTIONAL	FREEWAY/	
SIGN	HIGHWAY	EXPRESSWAY	
W20-7	36X36 in.	48X48 in.	
W20-1	36X36 in.	48X48 in.	
W20-4	36X36 in.	48X48 in.	
W3-4	36X18 in.	48X48 in.	
G20-2	36X18 in.	48X24 in.	
*5 /5 : 1 1			

*Freeway/Expressway sizes may be used on Conventional Highways



NYSDOT WORK ZONE TRAFFIC CONTROL

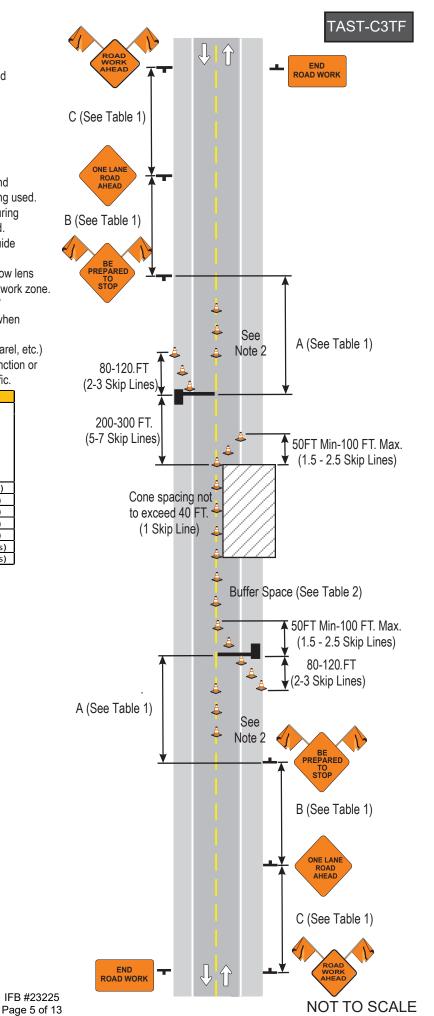
SHORT TERM STATIONARY
OPERATION INVOLVING

DAYTIME
LANE CLOSURE WITH TWO
AUTOMATED FLAGGER
ASSISTANCE DEVICES
ON CONVENTIONAL ROADWAY

DECEMBER 2019

Rev. 2019V.01

TAST-C3TF



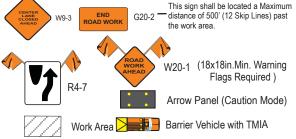
ROAD WORK

IFB #23225

Page 6 of 13

B (See Table 1)

NOT TO SCALE





Notes:

Notes:

- 1. Barrier vehicles are not required for flagging operations. A buffer space may be provided where traffic conditions allow
- 2. Centerline cones are required.
- 3. Flagger Symbol Sign (W20-7) and "ONE LANE ROAD AHEAD" Sign (W20-4) shall be removed, covered or turned away from road users when flagging operations are not occurring.
- 4. Should the traffic queue up prior to the advance warning signs, the "BE PREPARED TO STOP" sign can be added to the sign series and shall be moved to a location prior to the queued traffic.
- 5. LED stop/slow paddles are required for this operation.

Speed Limit	Buffer Space
30	200' (5 Skip Lines)
35	250' (~6 Skip Lines)
40	305' (~8 Skip Lines)
45	360' (9 Skip Lines)
50	425' (~11 Skip Lines)
55	495' (~13 Skip Lines)

ROAD WORK

G20-2 This sign shall be located a maximum 36x18 in. distance of 500' (13 Skip Lines) and minimum of 100' (2.5 Skip Lines) past the work area.







work area



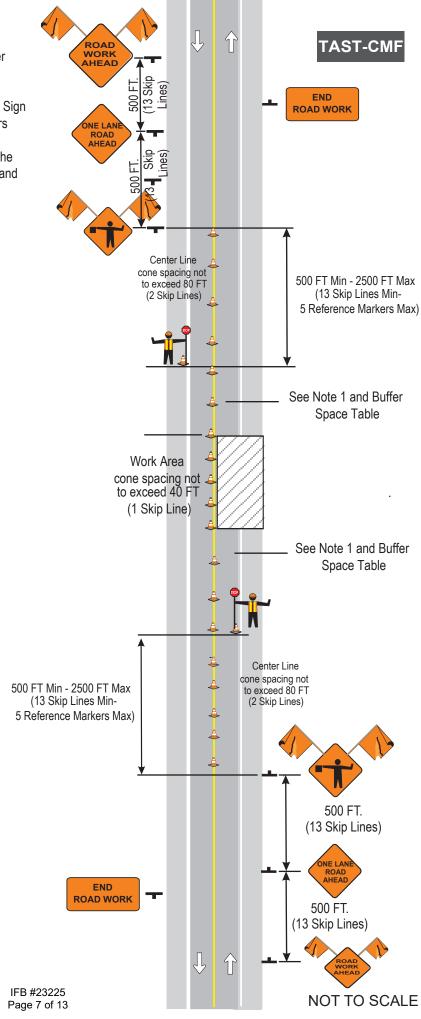


NYSDOT WORK ZONE TRAFFIC CONTROL SHORT-TERM STATIONARY OPERATION INVOLVING DAYTIME LANE CLOSURE WITH MOVING **FLAGGERS** ON RURAL **TWO-LANE TWO-WAY CONVENTIONAL ROADWAY**

Rev. 2019V.02

OCTOBER 2019

TAST-CMF



GROUP 31503 - BITUMINOUS CONCRETE - HOT MIX ASPHALT (2021 VPP NYSDOT Specific Projects) (Federal & State Funds) **ALL ROADWAYS** TAST-CE1 Notes: 1. Short-term stationary is daytime work that occupies a location for more than 1 hour within a single daylight period. 2. In urban conditions, advance warning sign spacings may be adjusted in order to accomodate side streets and driveways. ROAD WORK 3. There shall be no workers, equipment or other vehicles in the buffer space or the roll ahead distance. 4. The Barrier Vehicle (and Advance Warning Vehicle(s) where appropriate) shall maintain the appropriate Roll-Ahead Distance, be an unoccupied truck, positioned parallel to traffic, parking brake set, placed in 2nd gear (Park / Neutral), have the wheels aligned with the lane striping and lane to maintain lane discipline and to stay in lane if struck. 50FT Min-100 FT. Max. 5. Barrier Vehicle and TMIA are required if speeds are 45 mph or greater. Barrier Vehicle (1.5 - 2.5 Skip Lines) is required and TMIA is recommended if speeds are less than 45 mph. Cone spacing not TABLE 1: ADVANCE WARNING SIGN SPACING to exceed 40 FT (1 Skip Line) Spotter DISTANCE BETWEEN SIGNS SIGN LEGEND Recommended POSTED SPEED LIMIT (A (FT.) B(FT.) C(FT.) YY Roll Ahead Distance (See Table 2) URBAN LOW 30 100 100 100 (≤30 MPH) AHEAD AHEAD URBAN 35 200 200 200 (35-40 MPH) Vehicle #2 is required for URBAN HIGH 45 350 350 350 AHFAD (≥45MPH) .000 FT paved shoulder 8FT. or wider. RURAL 500 500 1500 FT 1000 FT Veh #1 Expressway 1000 1500 2640 1 MILE 1/2 MILE /Freeway LANE CLOSED Veh #24 ROLL AHEAD LANE TAPER : L (IN FT.) HOULDER TAPER : L/3 (IN FT. Buffer Space (See Table 2) /# SKIP LINES/# OF CONES DISTANCE /# SKIP LINES/# OF CONES POSTED LONGITUDINAL FOR SHOULDER WIDTH FOR LANE WIDTH BUFFER SPACE IN F 8 FT OR MAX Less than 8 FT 10 FT 11 FT 12 FT WIDER (MIN) 155 (~4 Skip Lines) 20/1/2 - 40/1/2 25 120/3/4 120/3/4 140/3/5 40/1/2 200 (~5 Skip Lines) 100 20/1/2 - 40/1/2 40/1/2 30 180/5/6 180/5/6 35 250 (~6 Skip Lines) 220/6/7 240/6/7 260/7/8 40/1/2-60/2/3 80/2/3 L (See Table 2) 40 300/8/9 - 60/2/3 80/2/3 45 360 (~9 Skip Lines) 160/12/12 500/13/13 540/14/14 60/2/3 - 100/3/4 120/3/4 150 50 425 (~11 Skip Lines) 500/13/14 600/15/1 80/2/3 - 100/3/4 140/4/5 495 (~13 Skip Lines) 560/14/15 620/16/17 660/17/1 80/2/3 - 120/3/4 160/4/5 55 200 645(~16 Skip Lines) 660/17/18 720/18/19 780/20/2 100/3/4 - 140/4/5 180/5/6 65 CONVENTIONAL FREEWAY/ SIGN EXPRESSWAY HIGHWAY W20-1 36X36 in 48X48 in. Shoulder Taper (See Table 2: L/3) W20-5R 36X36 in. 48X48 in. W4-2R 36X36 in 48X48 in NYW8-33 48x24 in 48x24 in A (See Table 1) 48X24 in 36X18 in *Freeway/Expressway sizes may be used on Conventional Highways, if space constraints do not exist This sign shall be located a Maximum distance of 500' (12 Skip Lines) past the work area W4-2R W20-1 (18x18in.Min. Warning B (See Table 1) Flags Required) NYW8-33 W20-5R RIGH: Arrow Panel CLOSED Work Area Barrier Vehicle C (See Table 1) **NYSDOT** WORK ZONE TRAFFIC CONTROL

IFB #23225

Page 8 of 13

NOT TO SCALE

OPERATION INVOLVING
RIGHT LANE CLOSURE
ON
MULTI-LANE DIVIDED ROADWAY

Rev. 2019V.01
DECEMBER 2019 TAST-CE1

SHORT TERM STATIONARY

GROUP 31503 - BITUMINOUS CONCRETE - HOT MIX ASPHALT (2021 VPP NYSDOT Specific Projects) (Federal & State Funds) **ALL ROADWAYS** TAST-CE2 1. Short-term stationary is daytime work that occupies a location for more than 1 hour within a single daylight period. 2. In urban conditions, advance warning sign spacings may be adjusted in order ROAD WORK **ROAD WORK** to accomodate side streets and driveways. 3. There shall be no workers, equipment or other vehicles in the buffer space or the 50FT Min-100 FT. Max. roll ahead distance. 4. The Barrier Vehicle (and Advance Warning Vehicle(s) where appropriate) shall (1.5 - 2.5 Skip Lines) maintain the appropriate Roll-Ahead Distance, be an unoccupied truck, positioned parallel to traffic, parking brake set, placed in 2nd gear (Park / Neutral), have the wheels Spotter aligned with the lane striping and lane to maintain lane discipline and to stay in lane Cone spacing not to exceed 40 FT. Recommended 5. Barrier Vehicle and TMIA are required if speeds are 45 mph or greater. Barrier Vehicle (1 Skip Line) is required and TMIA is recommended if speeds are less than 45 mph. TABLE 1 : ADVANCE WARNING SIGN SPACING SPEED LIMIT (MPH DISTANCE BETWEEN SIGNS PRECONSTRUCTI SIGN LEGEND POSTED Roll Ahead Distance (See Table 2) A (FT.) B(FT.) C(FT.) хx Veh #1 Veh #2 Veh #3 URBANTOW 30 100 AHEAD AHEAD Vehicle #3 is required for 35 paved shoulder 8FT. or wider. (35-40 MPH) 40 URBAN HIGH 45 350 350 350 AHFAD (≥45MPH) 1000 FT. 500 500 500 1000 FT Expressway 1000 1500 2640 1 MILE 1/2 MILE **Buffer Space** (See Table 2) TABLE 2 LONGITUDINAL BUFFER SPACE IN FT AHEAD LANE TAPER : L (IN FT.) HOULDER TAPER : L/3 (IN FT. DISTANCE /# SKIP LINES/# OF CONES /# SKIP LINES/# OF CONES IN FT FOR LANE WIDTH FOR SHOULDER WIDTH L (See Table 2) MIN MAX Less than 8 FT 10 FT 11 FT 12 FT WIDER 155 (~4 Skip Lines) 20/1/2 - 40/1/2 120/3/4 120/3/4 140/3/5 40/1/2 200 (~5 Skip Lines) 160/4/5 180/5/6 180/5/6 20/1/2 - 40/1/2 40/1/2 220/6/7 260/7/8 40/1/2-60/2/3 305 (~8 Skip Lines) 280/7/8 300/8/9 320/8/9 40/1/2 - 60/2/3 80/2/3 L (See Table 2: 12FT) 500/13/13 540/14/14 360 (~9 Skip Lines) 160/12/1 60/2/3 - 100/3/4 425 (~11 Skip Lines) 600/15/16 495 (~13 Skip Lines) 560/14/1 620/16/17 660/17/18 80/2/3 - 120/3/4 160/4/5 645(~16 Skip Lines) 660/17/18 720/18/19 780/20/21 100/3/4 - 140/4/5 CONVENTIONAL FREEWAY/ HIGHWAY EXPRESSWAY 36X36 in. 48X48 in. L (See Table 2: 12FT) 36X36 in. 48X48 in 36X36 in. 48X48 in. 48x24 in. 48x24 in 48X24 in 36X18 in *Freeway/Expressway sizes may be used on Conventional Highways, if space constraints do not exist This sign shall be located a Maximum G20-2 distance of 500' (12 Skip Lines) past L (See Table 2) the work area. W20-5aR Shoulder Taper (See Table 2: L/3) (18x18in.Min. Warning W4-2R Flags Required) A (See Table 1) NYW8-33 Work Area Arrow Panel Barrier Vehicle with TMIA (Caution Mode) B (See Table 1) **NYSDOT** WORK ZONE TRAFFIC CONTROL SHORT TERM STATIONARY C (See Table 1) OPERATION INVOLVING **RIGHT TWO LANE CLOSURE MULTI-LANE DIVIDED ROADWAY DECEMBER 2019** IFB #23225 TAST-CE2 NOT TO SCALE Page 9 of 13

Notes:

if struck.

(≤30 MPH)

URBAN

RURAL

/Freeway

POSTED

40

55

65

SIGN

W20-1

W20-5al

W4-2R

NYW8-33

ROAD WORK

IFB #23225

Page 10 of 13

NOT TO SCALE

Notes:

Roadway

URBAN

RURA

Ξ

SPEED

25

30

40

45

50

55

SIGN

W20-1

W20-5R

W4-2R

G20-2

NYW8-33

OPERATION INVOLVING RIGHT LANE CLOSURE THRU INTERSECTION ONE-WAY CONVENTIONAL ROADWAY

DECEMBER 2019

Rev. 2019V.01

TAST-C8

FREEWAY OR EXPRESSWAY

Notes:

- 1. Short-term stationary is daytime work that occupies a location for more than 1 hour within a single daylight period.
- 2. The Barrier Vehicle (and Advance Warning Vehicle(s) where appropriate) shall maintain the appropriate Roll-Ahead Distance. be an unoccupied truck, positioned parallel to traffic, parking brake set, placed in 2nd gear (Park / Neutral), have the wheels aligned with the lane striping and lane to maintain lane discipline and to stay in lane if struck.
- 3. There shall be no workers, equipment, or other vehicles in the buffer space or the roll ahead distance.

Speed Limit (mph)	Buffer Space	
50	425' (~11 Skip	
	Lines	
55	495' (~13 Skip	
3	Lines	
65	645' (~16 Skip	
05	Lines	



G20-2

This sign shall be located a Maximum distance of 48x24 in. 500' (12 Skip Lines) past the work area.





18"x18" (Minimum) Warning Flags





Arrow Panel (Caution Mode)



Work Area



Barrier Vehicle with TMIA

NYSDOT WORK ZONE TRAFFIC CONTROL

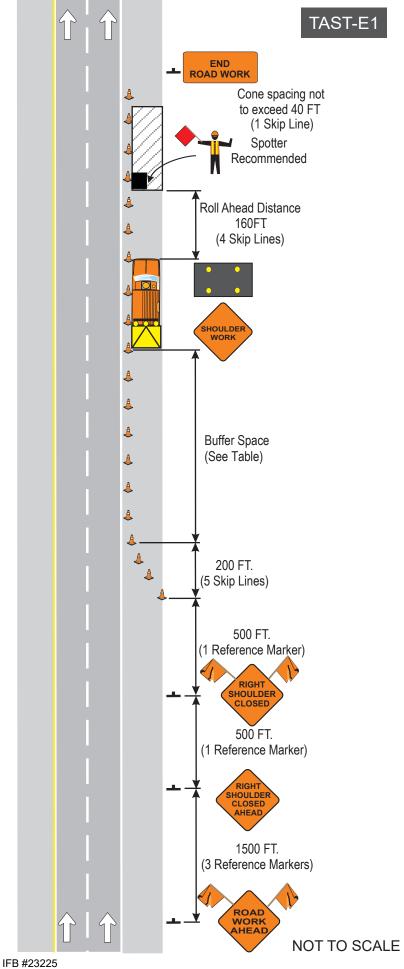
SHORT-TERM STATIONARY OPERATION INVOLVING SHOULDER CLOSURE (PAVED SHOULDER 8 FT. OR WIDER)

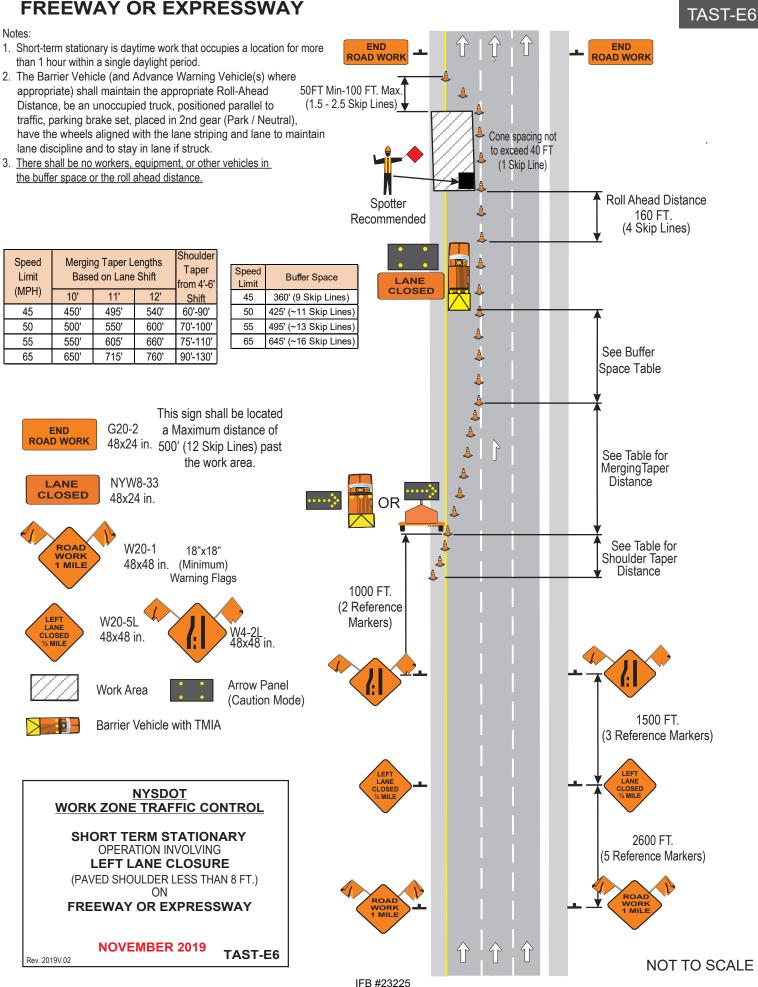
FREEWAY OR EXPRESSWAY

Rev 2019V 03

MAY 2019

TAST-E1





IFB #23225 Page 12 of 13

FREEWAY OR EXPRESSWAY

Notes:

- 1. Short-term stationary is daytime work that occupies a location for more than 1 hour within a single daylight period.
- The Barrier Vehicle (and Advance Warning Vehicle(s) where appropriate) shall maintain the appropriate Roll-Ahead Distance, be an unoccupied truck, positioned parallel to traffic, parking brake set, placed in 2nd gear (Park / Neutral), have the wheels aligned with the lane striping and lane to maintain lane discipline and to stay in lane if struck
- 3. There shall be no workers, equipment, or other vehicles in the buffer space or the roll ahead distance.

Speed Limit	Merging Taper Lengths			Shoulder Taper from 4'-6'
(MPH)	10'	11'	12'	Shift
45	450'	495'	540'	60'-90'
50	500'	550'	600'	70'-100'
55	550'	605'	660'	75'-110'
65	650'	715'	760'	90'-130'

Speed Limit	Buffer Space
45	360' (9 Skip Lines)
50	425' (~11 Skip Lines)
55	495' (~13 Skip Lines)
65	645' (~16 Skip Lines)

LANE CLOSED NYW8-33 48x24 in.

END ROAD WORK G20-2
48x24 in.

This sign shall be located a Maximum distance of 500' (12 Skip Lines) past the work area.



18"x18" (Minimum) Warning Flags



W20-5aL 48x48 in.





Work Area



Arrow Panel (Caution Mode)



Barrier Vehicle with TMIA

NYSDOT WORK ZONE TRAFFIC CONTROL

SHORT TERM STATIONARY
OPERATION INVOLVING
LEFT TWO LANE CLOSURE
(PAVED SHOULDER LESS THAN 8 FT.)

ON FREEWAY OR EXPRESSWAY

NOVEMBER 2019

Rev. 2019V.02

TAST-E7

