# CITY OF MERCER ISLAND

### **COMMUNITY PLANNING & DEVELOPMENT**

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# TRAFFIC CONTROL BARRICADING AND SIGNING ILLUSTRATIONS

The illustrations contained herein are meant to depict typical situations and use of traffic control devices. The use of traffic control devices for these specific situations is not intended to exclude the use of those traffic devices in other situations. Practices prescribed in this text shall be adhered to at all times. The following is a list of procedures for the placement of traffic control devices:

- 1. Advance warning signs may be placed on:
  - a. Portable sign supports
  - b. Posts
- 2. For night operations:
  - a. All channelizing devices shall be reflectorized. Cones shall not be utilized alone.
  - b. Arrow signs (TO19) must be spaced at 3S throughout the taper section (See Table XI-1)
  - c. All signs must be reflectorized, except those controlling parking and pedestrians.
  - d. Install a flashing yellow light on each high level warning device.
  - e. Horizontal barricade or vertical panels shall have a flashing or steady burning light attached.
- 3. General Notes:
  - a. Where possible, place a vehicle between the work area and the traffic flow.
  - b. Signs shall not be installed on Type I or Type II barricades.
  - c. The predominant color for channelizing devices shall be orange.
  - d. A high level warning device shall be required for all temporary work in the roadway.
- 4. Set-up (in order of occurrence):
  - a. Temporarily place a high level warning device at the side of the road.
  - b. Place advance warning signs.
  - c. Place channelizing devices for traffic diversions (moving in direction of traffic).
  - d. Adjust placement of high level warning device.
  - e. Protect the work area.
  - f. Place spoil or equipment between traffic flow and work area when practical.
- 5. Pick-up
  - a. Reverse set-up procedures indicated in #4 above.

Adapted from the City of Seattle Transportation manual Graphics are taken directly from the City of Seattle Transportation manual

Table XI-1

CLASS OF ROAD	WARNIN	IG SIGN S	PACING	TAPER L	ENGTH (L)	CHANNELIZII	maximum)	WARNING SIGN		
		IN FEET		IN	FEET	VEHICLE BARF	RICADES & DRUMS	ОТН	ER**	MIN. SIZE
	А	В	С	Lane	e Width	Taper (S)	Tangent	Taper (S)	Tangent	IN INCHES
				10'			4		,	
Ĺ	*			75	90	Speed limit	Speed limit X 2	15	30	30X30
Ш	150	150	75	150	200	Speed limit	Speed limit X 2	20	50	30X30
Ш	300	300	150	400	500	Speed limit	Speed limit X 2	30	80	48X48

## KEY:

## Road Class Definitions:

Class I- Central Business District Class II- Arterial Streets Class III- All partially or fully controlled access arterial streets

<sup>\*</sup>Advanced warning signs if feasible
\*\* Vertical barricades, cones, tubular guideposts





TRAFFIC SIGNS ( ARROW DIRECTION INDICATES SIGN ORIENTATION )



CHANNELIZING DEVICES (TRAFFIC CONES, DELINEATOR POSTS, DRUMS, VERTICAL PANELS, ETC.)



HIGH LEVEL WARNING DEVICE



FLAGGER ( COUNTERMANDING TRAFFIC SIGNALS REQUIRES OFF-DUTY LAW ENFORCE-MENT OFFICER )



SURVEY RODMAN



SURVEY TRANSIT

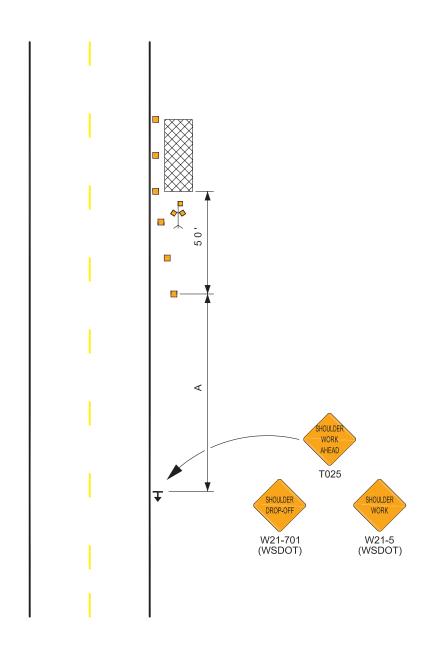


SEQUENTIAL ARROW PANEL

### NOTES:

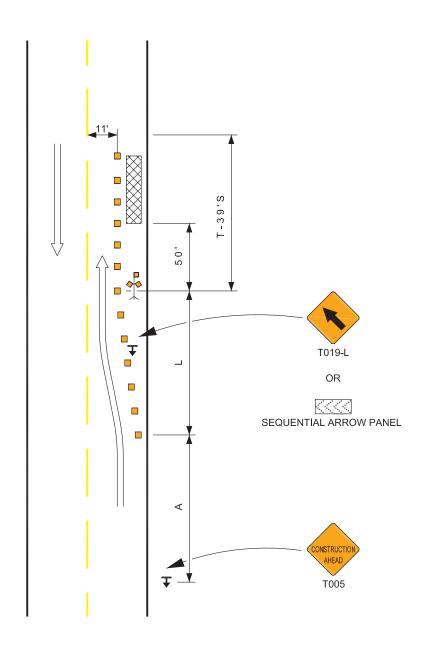
- 1. FOR NIGHT TIME USAGE, REFER TO "WARNING LIGHT APPLICATIONS DURING NIGHT TIME OPERATIONS", FIGURE X-17.
- ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES (SEQUENTIAL ARROWS, BARRICADES, STEEL PLATES)
   MAY BE REQUIRED.
- 3. CONTACT TRAFFIC SIGNAL OPERATIONS (684-5118)
  BEFORE CLOSURE OF ANY TRAFFIC LANES CONTROLLED
  BY SIGNAL LOOP DETECTORS.

SYMBOLS AND LEGENDS



NOTE : REFER TO TABLE X-I FOR TYPICAL DIMENSIONS OF A

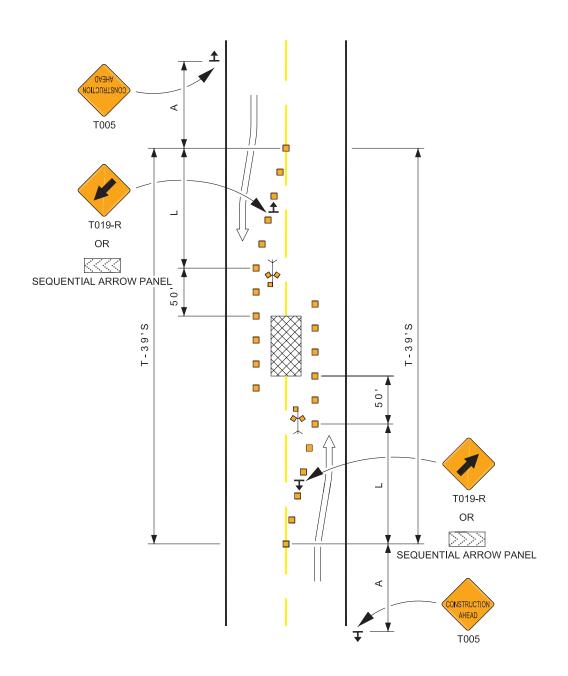
### SHOULDER WORK



NOTE : REFER TO TABLE X-I FOR TYPICAL DIMENSIONS OF A & L

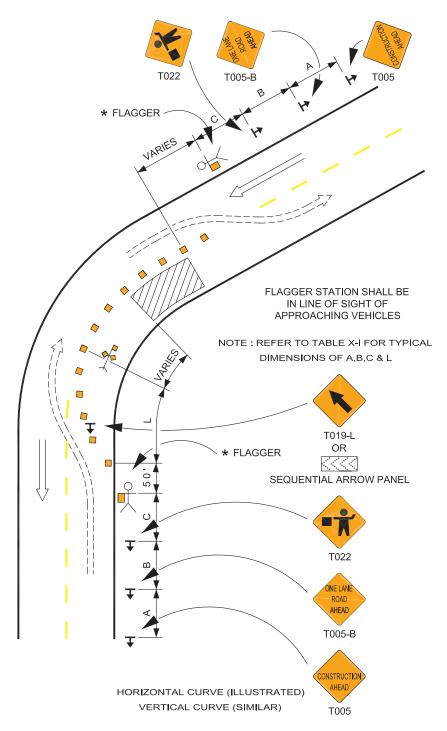
# WORK AREA ON RIGHT SIDE OF STREET MINOR ARTERIAL

FIGURE X-3

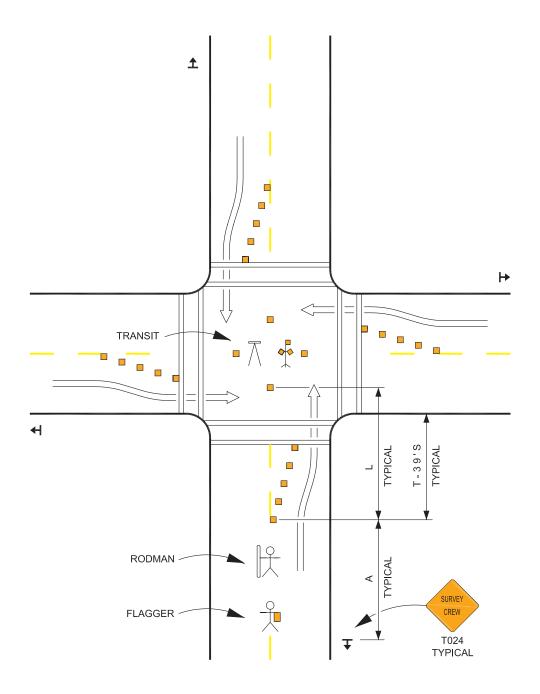


NOTE : REFER TO TABLE X-I FOR TYPICAL DIMENSIONS OF A & L

### WORK AREA IN CENTER OF STREET



ONE LANE, TWO-WAY OPERATION



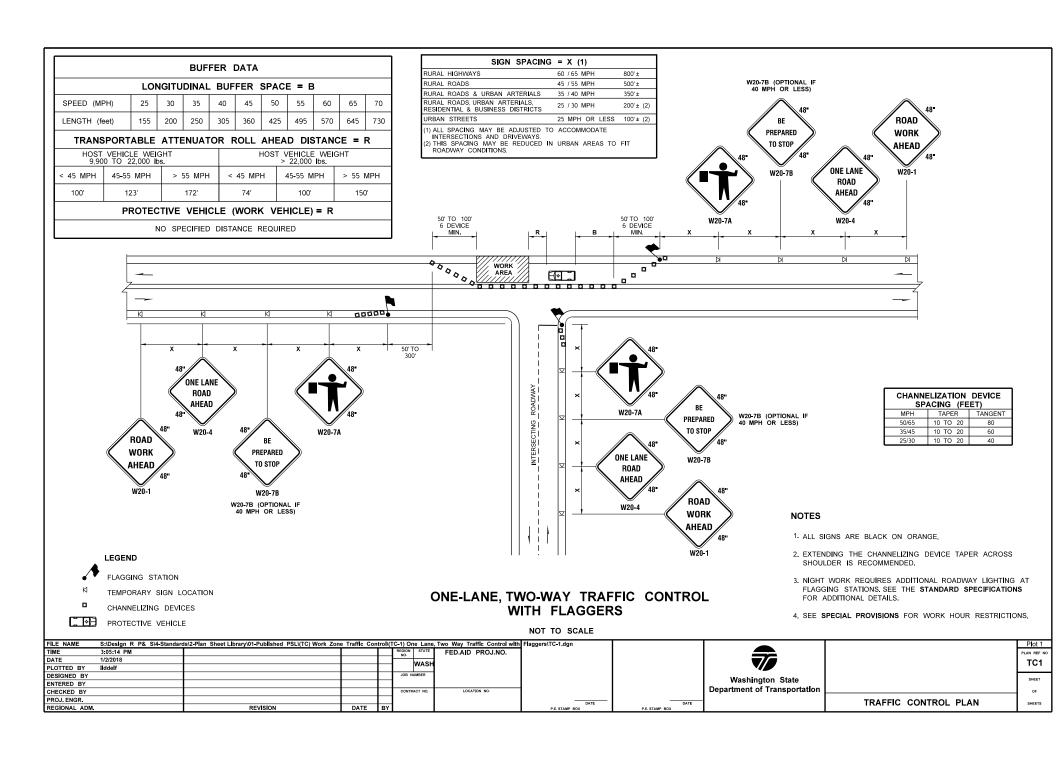
NOTE : REFER TO TABLE X-I FOR TYPICAL DIMENSIONS OF A & L

SURVEY CREW ARTERIAL STREET

FIGURE X-16

# **WSDOT Traffic Control Plans**

The following traffic control plans are taken directly from WSDOT.



	MINI	MUM	LANE	CLOS	JRE T	APER	LENG1	rH = L	_ (feet)	)	
LANE WIDTH		Posted Speed (mph)									
(feet)	25	30	35	40	45	50	55	60	65	70	
10	105	150	205	270	450	500	550	-	-		
11	115	165	225	295	495	550	605	660	-	-	
12	125	180	245	320	540	600	660	720	780	840	

	MIN	MUMIN	SHOU	JLDER	TAPE	R LEN	NGTH	= L/3	(feet)				
SHOULDER WIDTH		Posted Speed (mph)											
(feet)	25	30	35	40	45	50	55	60	65	70			
8'	40	40	60	90	120	130	150	160	170	190			
10'	40	60	90	90	150	170	190	200	220	240			
USE A MINIMUM 3 DEVICES TAPER FOR SHOULDER LESS THEN 8'.													

**LEGEND** 

TEMPORARY SIGN LOCATION

SEQUENTIAL ARROW SIGN

TRANSPORTABLE ATTENUATOR

PORTABLE CHANGEABLE MESSAGE SIGN

TRAFFIC SAFETY DRUM

W20-5R

N

 $\bowtie >$ 

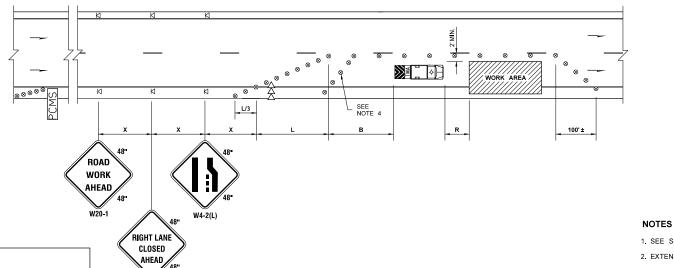
PCMS

SIGN SPACIN	IG = X (1)	
FREEWAYS & EXPRESSWAYS	55 / 70 MPH	1500' ±
RURAL HIGHWAYS	60 / 65 MPH	800'±
RURAL ROADS	45 / 55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS & URBAN ARTERIALS	25 / 30 MPH	200' ± (2)
RESIDENTIAL & BUSINESS DISTRICTS		
URBAN STREETS	25 MPH OR LESS	100'± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS AND DRIVEWAYS. (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

	LIZATION ACING (fe	
MPH	TAPER	TANGENT
50/70	40	80
35/45	30	60
25/30	20	40

	BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B											
SPEED (MPH)         25         30         35         40         45         50         55         60         65         70											
LENGTH (feet) 155 200 250 305 360 425 495 570 645 730									730		
TRANSP	ORTAE	BLE A	TTEN	UATO	R RO	LL A	HEAD	DIST	ANCE	= R	
	VEHICI 0 TO 2					ŀ		/EHICLE 22,000		SHT	
< 45 MPH 45-55 MPH > 55 MPH					<	45 MPI	н	45 <b>-</b> 55 N	IPH	> 55 MPH	
100'		172'		74'		100'		150	)'		



1. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

RIGHT

LANE CLOSURE

2.0 SEC

2

1 MILE

AHEAD

2.0 SEC

FIELD LOCATE 1 MILE ± IN ADVANCE OF LANE CLOSURE SIGNING.

- 2. EXTEND DEVICE TAPER AT L/3 ACROSS SHOULDER.
- 3. DEVICES SHALL NOT ENCROACH INTO THE ADJACENT LANE.
- 4. USE TRANSVERSE DEVICES IN CLOSED LANE EVERY 1000'(FT) (RECOMMENDED).
- 5. DEVICE SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20' (FT).
- 6. ALL SIGNS ARE BLACK ON ORANGE.

### SINGLE-LANE CLOSURE FOR MULTI-LANE ROADWAYS

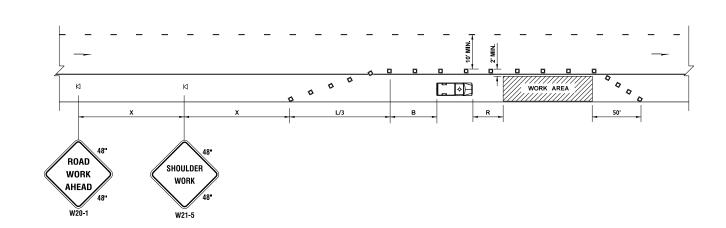
NOT TO SCALE

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SIGN SPACING	= X (1)	
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200'± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)
(1) ALL SPACING MAY BE ADJUSTED TO INTERSECTIONS AND DRIVEWAYS.	ACCOMMODATE	
(2) THIS SPACING MAY BE REDUCED IN ROADWAY CONDITIONS.	URBAN AREAS TO	FIT

	MININ	IUM S	HOUL	DER T	APER	LENG	TH = 1	L/3 (fe	et)	
SHOULDER Posted Speed (mph)										
WIDTH (feet)	25	30	35	40	45	50	55	60	65	70
8'	40	40	60	90	-	-	-	-	-	-
10'	40	60	90	90	-	-	-	-	-	-
	USE A 3 DEVICES TAPER FOR SHOULDERS LESS THEN 8'									

				BUF	FER I	DATA					
		LOI	NGITU	DINAL	. BUF	FER	SPAC	E = E	3		
SPEED (MF	PH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet) 155 200 250 305 360 425 495 570 645 730								730			
TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R											
	VEHICI 0 TO 2					ı		/EHICLE 22,000		HT	
< 45 MPH	45-55	MPH	> !	55 MPH	<	45 MP	Н	45-55 N	IPH	> 55 I	МРН
100'	100' 123' 172' 74' 100' 150'										
PROTECTIVE VEHICLE (WORK VEHICLE) = R											
	NO SPECIFIED DISTANCE REQUIRED										



	CHANNELIZATION DEVICE SPACING (feet)											
MPH	TAPER	TANGENT										
35/40	30	60										
25/30	20	40										

#### LEGEND

M TEMPORARY SIGN LOCATION

CHANNELIZING DEVICES

PROTECTIVE VEHICLE

# SHOULDER CLOSURE - LOW SPEED

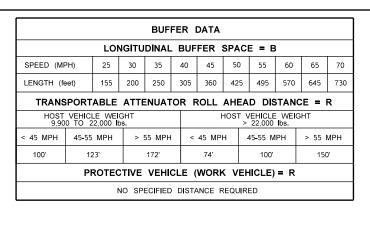
(40 MPH OR LESS)

NOT TO SCALE

### NOTES

- 1. DEVICE SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20'(FT).
- 2. ALL SIGNS ARE BLACK ON ORANGE.

FILE NAME	S:\Design R P& S\4-Standard	s\2-Plan Sheet Library\01-Published PSL\(TC) Work Zon	e Traffic Co	ntrol\(T	C-5) Shou	ulder C	losure - Low Speed (40 MPH	or Less)\TC-5.dgn				Plot 1
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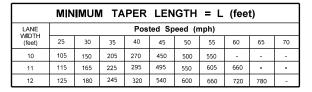
LEFT LANE CLOSED

AHEAD

W20-5L

SIGN SPA	CING = X (1)
RURAL HIGHWAYS	60 / 65 MPH 800' ±
RURAL ROADS	45 / 55 MPH 500' ±
RURAL ROADS & URBAN ARTER	ALS 35 / 40 MPH 350' ±
RURAL ROADS & URBAN ARTER	ALS 25 / 30 MPH 200' ± (2)
RESIDENTAL & BUSINESS DISTRI	CTS
URBAN STREETS	25 MPH OR LESS 100'± (2)
(1) ALL SPACING MAY BE ADJUS RAMPS, AT-GRADE INTERSECTI	TED TO ACCOMMODATE INTERCHANGE

RESIDENTAL & BUSINESS DISTRICTS		
URBAN STREETS	25 MPH OR LESS	100' ± (2)
(1) ALL SPACING MAY BE ADJUSTED	TO ACCOMMODATE INT	ERCHANG
RAMPS, AT-GRADE INTERSECTIONS	AND DRIVEWAYS	





CHANNELIZATION DEVICE SPACING (feet)								
MPH	TAPER	TANGENT						
50/60	40	80						
35/45	30	60						
25/30	20	40						



FIELD LOCATE IN ADVANCE OF TEMPORARY SIGNS.

PCMS #2						
1	2					
LANE SHIFTS LEFT	1 MILE AHEAD					
2.0 SEC	2.0 SEC					

FIELD LOCATE IN ADVANCE OF TEMPORARY SIGNS.

		B/W			W1-4(L)
T II		20	<u>R</u>	L/2 X	X
		D D		000	
_			WORK AREA		
7 - 77					- 47 7
-		<del>                                      </del>	<del></del>		
a N N N				İ	
# 0	L B	L/2	DEVICE SPACING 1/2 DISTANCE FOR	_L/3	
	1	-1-	OPPOSING TRAFFIC DEVICES	1 -	
ROAD WORK AHEAD 48" W20-1 W4-2R					

ROADWAY CONDITIONS.

#### NOTES

- 1. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.
- 2. FOR SPEED LIMIT OF 30 MPH OR LESS, USE SIGN W1-3 IN LIEU OF SIGN W1-4.
- 3. RECOMMENDED EXTENDING DEVICE TAPER (L/3) ACROSS SHOULDER.
- 4. ALL SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE DESIGNATED.

### LANE SHIFT - THREE LANE ROADWAY

**PCMS** PORTABLE CHANGEABLE MESSAGE SIGN TEMPORARY SIGN LOCATION (5'MOUNTING HEIGHT)

TEMPORARY SIGN LOCATION

CHANNELIZING DEVICES

TRANSPORTABLE ATTENUATOR

SEQUENTIAL ARROW SIGN

**LEGEND** 

K

NOT TO SCALE

FILE NAME	S:\Design R P& S\4-Standar	ds\2-Plan Sheet Library\01-Published PSL\(TC) Work Zone	e Traffic Con	trol\(TC-	12) Lane	Shift - Three Lane Roadway\TC-1	2 dgn				Plot 1
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PROJ. ENGR.		1	$\overline{}$	П			DATE	DATE	'	TRAFFIC CONTROL PLAN	SHEETS
REGIONAL ADM.	4.	REVISION	DATE	BY			P.E. STAMP BOX	P.E. STAMP BOX		TRAITIO CONTROL TEAN	SHEETS

