

# TAPER, BUFFER ZONE & SIGN SPACING CHART

ROAD TYPE	POSTED SPEED MPH (S)	MINIMUM TAPER LENGTH(L)	LENGTH OF BUFFER(BZ)	MINIMUM SIGN SPACING (SS)				ONE LANE TWO-WAY FLAGGING
		12 FT LANE CLOSURE FT	DESIREABLE FT	A FT	B FT	C FT	D FT	TAPER LENGTH FT
CONVENTIONAL	30 AND LOWER	180	200	100	100	100	100	50
	35	245	250	350	350	350	175	
	40	320	305					
	45	540	360					100
	50	600	425	500	500	500	250	
	55	660	495					
	60	720	570					
FREEWAY/ EXPRESSWAY	65	780	645					[Cross-hatched area]
	70	840	730	1000	1640	2640	500	
	75	900	820					
	80	960	910					

## 1- TAPER LENGTH FORMULAS

SPEED	FORMULA
FOR SPEEDS OF 40 MPH AND LESS	$L = \frac{WS^2}{60}$
FOR SPEEDS OF 45 MPH AND GREATER	$L = WS$

L = TAPER LENGTH IN FEET  
 W = WIDTH OF OFFSET IN FEET  
 S = SPEED IN MPH

1/3 L = FOR SHOULDER CLOSURE TAPER  
 1/2 L = FOR LANE SHIFT TAPER

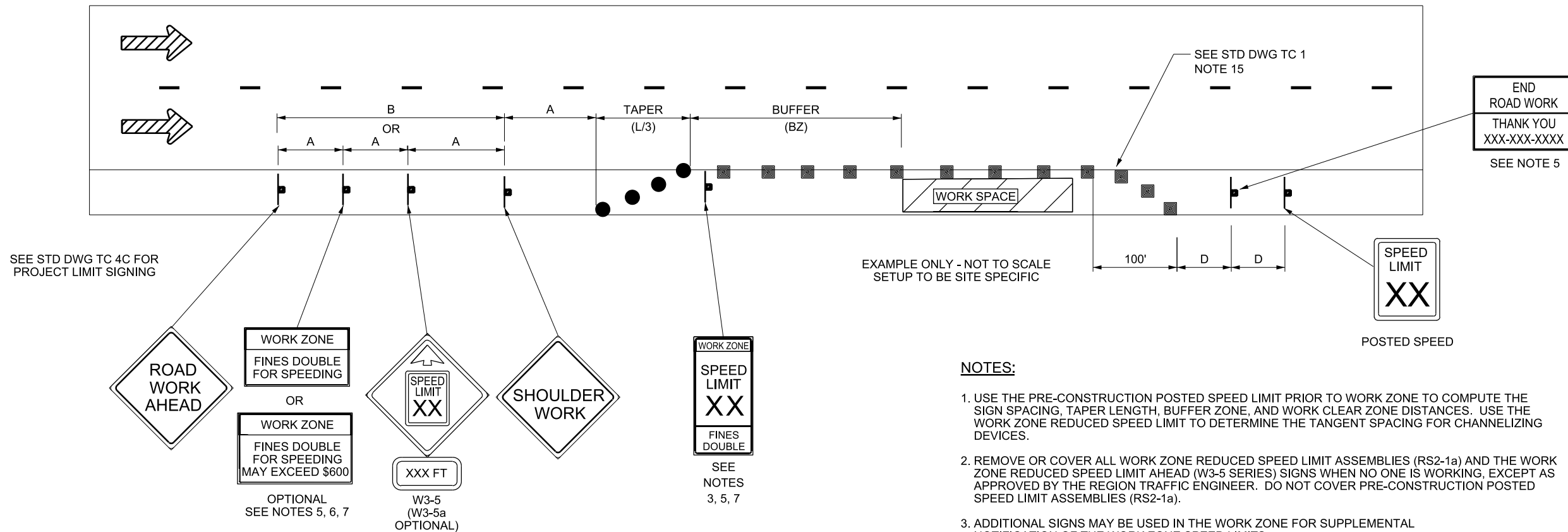
## 2- CHANNELIZING DEVICES

- A) MERGING AND SHIFTING TAPERS: USE A MINIMUM OF 1 DEVICE PER FT OF LANE CLOSURE WIDTH, PLUS 1 ADDITIONAL DEVICE TO START.
- B) SHOULDER, ONE-LANE TWO-WAY, AND DOWNSTREAM TAPERS: USE A MINIMUM OF 1 DEVICE PER 3 FT OF WIDTH (OR PORTION THEREOF), PLUS 1 ADDITIONAL DEVICE TO START.
- C) ON TANGENT:  $S \times 2 =$  SPACING UP TO 120 FT MAXIMUM.
- D) LENGTH OF BUFFER ZONE (BZ) IS THE DISTANCE FROM END OF LANE CLOSURE TAPER TO WORK SPACE, OR ANY OBSTRUCTION PRIOR TO WORK SPACE.

## TRAFFIC CONTROL DEVICE LEGEND

- [Symbol] SIGN (FIXED OR PORTABLE)
- [Symbol] CHANNELIZING DEVICE (SEE STD DWG TC 2A)
- [Symbol] DRUMS OR DIRECTIONAL INDICATOR BARRICADE
- [Symbol] FLAGGING STATION
- [Symbol] ARROW BOARD
- [Symbol] BARRIER
- [Symbol] DIRECTION OF TRAFFIC
- [Symbol] TYPE III BARRICADE
- [Symbol] DIRECTION OF WORK VEHICLE

## REDUCED SPEED SHOULDER WORK ZONE SIGNING



### NOTES:

1. USE THE PRE-CONSTRUCTION POSTED SPEED LIMIT PRIOR TO WORK ZONE TO COMPUTE THE SIGN SPACING, TAPER LENGTH, BUFFER ZONE, AND WORK CLEAR ZONE DISTANCES. USE THE WORK ZONE REDUCED SPEED LIMIT TO DETERMINE THE TANGENT SPACING FOR CHANNELIZING DEVICES.
2. REMOVE OR COVER ALL WORK ZONE REDUCED SPEED LIMIT ASSEMBLIES (RS2-1a) AND THE WORK ZONE REDUCED SPEED LIMIT AHEAD (W3-5 SERIES) SIGNS WHEN NO ONE IS WORKING, EXCEPT AS APPROVED BY THE REGION TRAFFIC ENGINEER. DO NOT COVER PRE-CONSTRUCTION POSTED SPEED LIMIT ASSEMBLIES (RS2-1a).
3. ADDITIONAL SIGNS MAY BE USED IN THE WORK ZONE FOR SUPPLEMENTAL NOTIFICATION OF THE WORK ZONE SPEED LIMITS.
4. USE SUPPLEMENTAL LEFT SIDE SIGNING FOR HIGH-SPEED DIVIDED HIGHWAYS.
5. SEE TC 4D SERIES STD DWGS FOR SIGN DESIGN AND LAYOUT.
6. FINES DOUBLE (RS2-6c) AND FINES DOUBLE WITH FINE NOTIFICATION (RS2-6d) SIGNS MAY BE USED INTERCHANGEABLY.
7. PLACE ADDITIONAL WORK ZONE SPEED LIMIT ASSEMBLIES (RS2-1a), FINES DOUBLE (RS2-6c), AND/OR FINES DOUBLE WITH FINE NOTIFICATION (RS2-6d) SIGNS AT ALL MAJOR INTERSECTIONS AND INTERCHANGES WITHIN THE PROJECT WHEN REDUCED SPEEDS AND/OR THE FINES DOUBLE OR THE FINES DOUBLE WITH FINE NOTIFICATION SIGNING OPTION IS USED.

SUPPLEMENTAL DRAWING

NO.	DATE	APPR.	REMARKS
1	08/30/12		

UTAH DEPARTMENT OF TRANSPORTATION  
 STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
 SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL  
 [Signature]  
 CHAIRMAN STANDARDS COMMITTEE

DATE: AUG.30.2012  
 DEPUTY DIRECTOR: [Signature]  
 DATE: AUG.30.2012

REDUCED SPEED SHOULDER  
 WORK ZONE SIGNING  
 GENERAL

STD. DWG. NO.  
 TC 4B2

STANDARD DRAWING TITLE