

**TABLE I
TAPER, BUFFER ZONE & SIGN SPACING CHART**

ROAD TYPE	POSTED SPEED MPH (S)	MINIMUM TAPER LENGTH (L)	LENGTH OF BUFFER (BZ)*	MINIMUM SIGN SPACING (SS)**			
		12 FT LANE CLOSURE FT	FT	A FT	B FT	C FT	D FT
FREEWAY/ EXPRESSWAY	65	780	645	1000	1640	2640	500
	70	840	730				
	75	900	820				
	80	960	910				

* THE LENGTH OF BUFFER (BZ) MAY BE REDUCED WITH THE APPROVAL OF THE ENGINEER
 ** MAXIMUM SPACING IS THE GIVEN VALUE (SS) MULTIPLIED BY 1.5

1- TAPER LENGTH FORMULAS

SPEED	FORMULA
FOR SPEEDS OF 45 MPH AND GREATER	L = WS

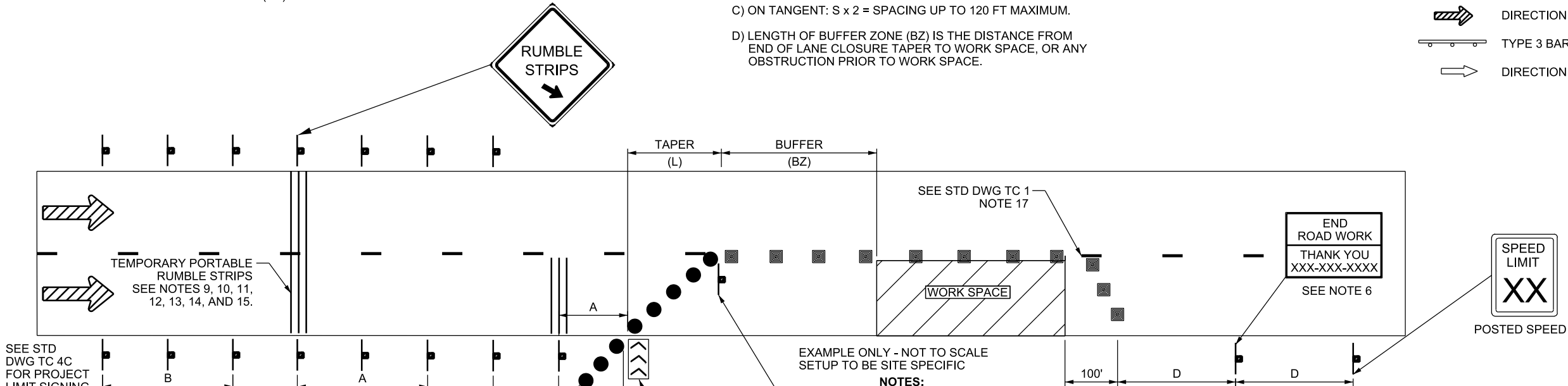
L = TAPER LENGTH IN FEET
 W = WIDTH OF OFFSET IN FEET
 S = SPEED IN MPH
 $\frac{1}{2}$ L = FOR SHOULDER CLOSURE TAPER
 $\frac{1}{3}$ L = FOR LANE SHIFT TAPER

CHANNELIZING DEVICES

- A) MERGING AND SHIFTING TAPERS: USE A MINIMUM OF ONE DEVICE PER FT OF LANE CLOSURE WIDTH, PLUS ONE ADDITIONAL DEVICE TO START.
- B) SHOULDER, ONE-LANE TWO-WAY, AND DOWNSTREAM TAPERS: USE A MINIMUM OF ONE DEVICE PER 3 FT OF WIDTH (OR PORTION THEREOF), PLUS ONE 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

- SIGN (FIXED OR PORTABLE)
- CHANNELIZING DEVICE (SEE STD DWG TC 2A)
- DRUMS OR DIRECTIONAL INDICATOR BARRICADE
- FLAGGING STATION
- ARROW BOARD
- BARRIER
- DIRECTION OF TRAFFIC
- TYPE 3 BARRICADE
- DIRECTION OF WORK VEHICLE

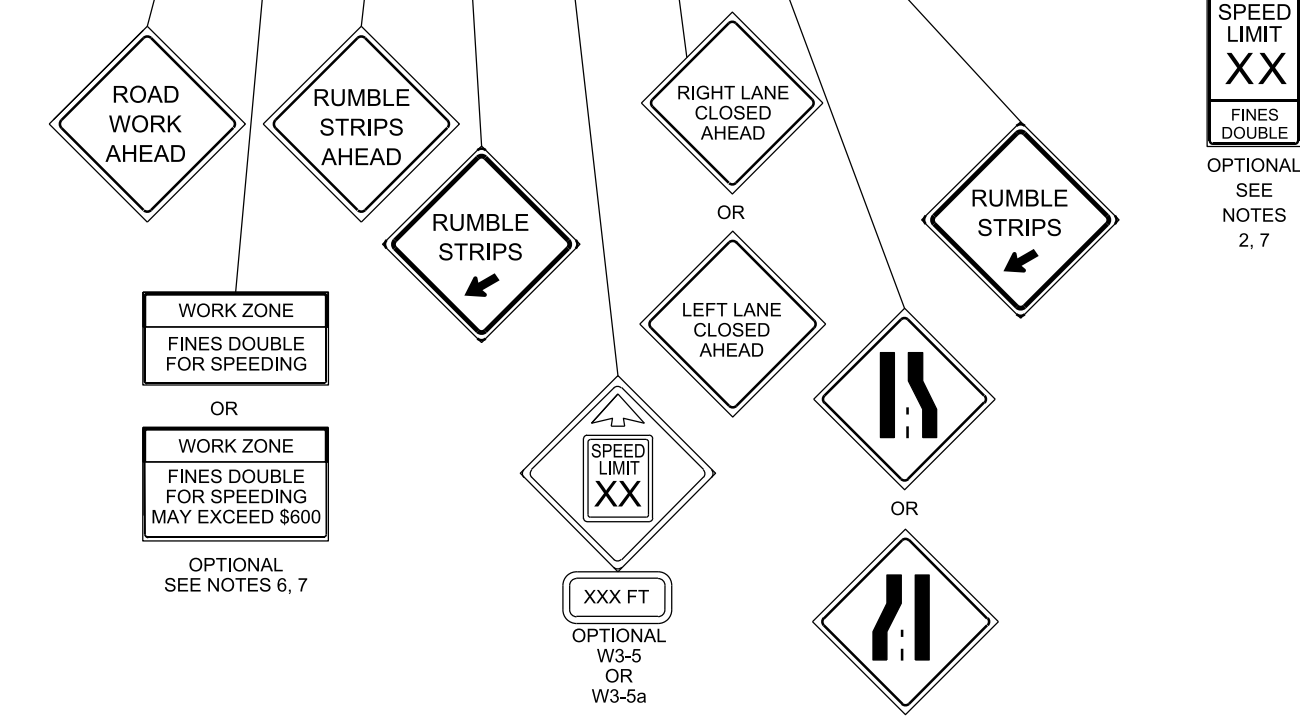


SEE STD DWG TC 4C FOR PROJECT LIMIT SIGNING

EXAMPLE ONLY - NOT TO SCALE
 SETUP TO BE SITE SPECIFIC

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 DISTANCE. USE THE POSTED SPEED LIMIT DURING WORK TO DETERMINE THE TANGENT SPACING FOR CHANNELIZING DEVICES.
2. SIGN MAY BE USED IN WORK ZONES WHERE SPEED LIMIT IS NOT REDUCED.
 A. REPLACE EXISTING SPEED LIMIT SIGNS WITH RS2-6c ASSEMBLIES.
 B. PLACE ADDITIONAL WORK ZONE SPEED LIMIT ASSEMBLIES (RS2-1a), FINES DOUBLE (RS2-6c), AND FINES DOUBLE WITH FINE NOTIFICATION (RS2-6d) SIGNS AT ALL MAJOR INTERSECTIONS AND INTERCHANGES WITHIN THE PROJECT WHEN REDUCED SPEEDS AND THE FINES DOUBLE OR THE FINES DOUBLE WITH FINE NOTIFICATION SIGNING OPTION IS USED.
3. PLACE ARROW BOARD ON SHOULDER WHEN AVAILABLE. PLACE ARROW BOARD IN FIRST 1/3 OF TAPER IN THE CLOSED LANE WHEN NO ADEQUATE SHOULDER IS AVAILABLE.
4. USE SHOULDER TAPER WHEN ARROW BOARD IS PLACED ON SHOULDER.
5. USE THE IDENTICAL LEGEND SUPPLEMENTAL LEFT SIDE SIGNING FOR HIGH-SPEED DIVIDED HIGHWAYS.
6. SEE TC 4D SERIES STD DWGS FOR SIGN DESIGN AND LAYOUT.
7. FINES DOUBLE (RS2-6c) AND FINES DOUBLE WITH FINE NOTIFICATION (RS2-6d) SIGNS MAY BE USED INTERCHANGEABLY.
8. TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE TRANSVERSELY PLACED RUMBLE STRIPS EVENLY SPACED AT 40 FT ON CENTER.
9. PLACE WS28-1 RUMBLE STRIPS AHEAD SIGN PRIOR TO PLACING TEMPORARY PORTABLE RUMBLE STRIPS.
10. REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO REMOVING WS28-1 RUMBLE STRIPS AHEAD SIGN.
11. RESET THE TEMPORARY PORTABLE RUMBLE STRIPS AS NECESSARY TO MAINTAIN PROPER ALIGNMENT, SPACING, AND LOCATION. REFER TO SPECIAL PROVISION 01554M FOR MAINTENANCE OF TEMPORARY PORTABLE RUMBLE STRIPS.
12. DO NOT USE TEMPORARY PORTABLE RUMBLE STRIPS ON HORIZONTAL CURVES UNLESS APPROVED BY THE ENGINEER.
13. DO NOT PLACE TEMPORARY PORTABLE RUMBLE STRIPS DURING SNOW EVENTS.
14. PLACE ONE TEMPORARY PORTABLE RUMBLE STRIP ARRAY IN EACH TRAVEL LANE.
15. PLACE ONE TEMPORARY PORTABLE RUMBLE STRIP ARRAY AT DISTANCE "A" (SEE TABLE 1) IN ADVANCE OF EACH LANE CLOSURE TAPER IN EACH LANE THAT IS BEING CLOSED.
16. RELOCATE THE TEMPORARY PORTABLE RUMBLE STRIPS AND ASSOCIATED SIGNING WHEN VEHICLE QUEUES ARE EXPECTED OR OCCUR IN ADVANCE OF TEMPORARY PORTABLE RUMBLE STRIPS.
17. REDUCED SPEEDS WILL NOT BE ALLOWED WITHOUT THE APPROVAL OF THE ENGINEER. USE THE REDUCED SPEED LIMIT AHEAD SIGN, THE FINES DOUBLE SPEED LIMIT SIGN, AND THE SPEED LIMIT SIGN.
18. USE THE STANDARDS FOUND ON THIS DRAWING ON RURAL TWO LANE FREEWAYS.



NO.	DATE	APPR.	REMARKS
1	6/28/18		
RT			REPLACED WS28-2 AND W16-7 ASSEMBLY WITH NEW WS28-2 SIGN.

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

RECOMMENDED FOR APPROVAL

 CHAIRMAN STANDARDS COMMITTEE
 APPROVED

DEPUTY DIRECTOR

JUNE 28, 2018
 DATE

JUNE 28, 2018
 DATE

TEMPORARY PORTABLE RUMBLE STRIPS FREEWAY

STANDARD DRAWING TITLE

STD. DWG. NO. **TC 4B2**

SUPPLEMENTAL DRAWING