

# **Texas Department of Transportation**

## **North Tarrant Express Project Reference Information Document**

### **Signing Retroreflectivity Guidelines**

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**Retroreflectivity Values**

Sign Colors	Sheeting Type (ASTM D4956-04)				Additional Criteria
	I	II	III	VII, VIII, IX	
White on Green	W*; G _	W*; G 15	W*; G 25	W 250; G 25	Overhead
	W*; G 7	W 120; G 15			Ground-mounted
Black on Orange or Black on Yellow	Y*; O*	W _50; G 50			See Note 1
	Y*; O*	W 75; G 75			See Note 2
White on Red	W 35; R 7				See Note 3
Black on White	W 50				—
Notes:					
The minimum maintained retro-reflectivity levels shown in this table are in units of candelas per lux per square meter (cd/lx/m <sup>2</sup> ), measured at an observation angle of 0.2° and an entrance angle of -4.0°.					
1 For text and fine symbol signs measuring at least 1200 millimeters (mm) (48 inches) and for all sizes of bold symbol signs					
2 For text and fine symbol signs measuring less than 1200 mm (48 inches)					
3 Minimum Sign Contrast Ratio _ 3:1 (white retroreflectivity ÷ red retroreflectivity)					
* This sheeting type should not be used for this color for this application.					
Bold Symbol Signs					
W1-1, -2 – Turn and Curve	W3-1 – Stop Ahead	W11-2 – Pedestrian Crossing			
W1-3, -4 – Reverse Turn and Curve	W3-2 – Yield Ahead	W11-3 – Deer Crossing			
W1-5 – Winding Road	W3-3 – Signal Ahead	W11-4 – Cattle Crossing			
W1-6, -7 – Large Arrow	W4-1 – Merge	W11-5 – Farm Equipment			
W1-8 – Chevron	W4-2 – Lane Ends	W11-6 – Snowmobile Crossing			
W1-10 – Intersection in Curve	W4-3 – Added Lane	W11-7 – Equestrian Crossing			
W1-11 – Hairpin Curve	W4-5 – Entering Roadway Merge	W11-8 – Fire Station			
W1-15 – 270 Degree Loop	W4-6 – Entering Roadway Added Lane	W11-10 – Truck Crossing			
W2-1 – Cross Road	W6-1, -2 – Divided Highway Plaques Begins and Ends	W12-1 – Double Arrow			
W2-2, -3 – Side Road	W6-3 – Two-Way Traffic	W16-5p, -6p, -7p – Pointing Arrow Plaques			
W2-4, -5 – T and Y Intersection	W10-1, -2, -3, -4, -11, -12 – Highway-Railroad Advance	W20-7a – Flagger			
W2-6 – Circular Intersection		W21-1a – Worker			
Fine Symbol Signs – Symbol signs not listed as Bold Symbol Signs.					
Special Cases					
W3-1–Stop Ahead: Red retroreflectivity, 7					
W3-2–Yield Ahead: Red retroreflectivity, 7, White retroreflectivity, 35					
W3-3–Signal Ahead: Red retroreflectivity, 7, Green retroreflectivity, 7					
W3-5–Speed Reduction: White retroreflectivity,_50					
For non-diamond-shaped signs such as W14-3 (No Passing Zone), W4-4p (Cross Traffic Does Not Stop), and W13-1, -2, -3, -5 (Speed Advisory Plaques), use largest sign dimension to determine proper minimum retroreflectivity level.					