

WHY IS SIGNING IMPORTANT ON LOCAL ROADS AND STREETS?

- 75% of Public Roads in the U.S are maintained by local agencies
- Most of the roads in Texas are local roads
- Crash rates are generally higher on these roads and streets



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WHY DO WE INSTALL SIGNS?

Required by TMUTCD?


NO

Engineering Decision?

YES!

Why?

**To help drivers
(including older)**


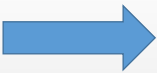



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MUTCDS

MUTCD = Manual on Uniform Traffic Control Devices

- National MUTCD
- Published by FHWA
- Agencies have 2 years to adopt National MUTCD
- Texas MUTCD
- Published by TxDOT
- Must be in substantial conformance with National MUTCD



2011 TMUTCD

- Texas Transportation Commission approved the current TMUTCD on November 17, 2011
- The 2011 TMUTCD became effective December 6, 2011.
- The 2011 TMUTCD was revised and approved by the Texas Transportation Commission in October 9, 2014
- The 2011 TMUTCD Rev. 2, governs the placement of signs, signals, and pavement markings on every public road in Texas and even on certain private property
- Under state law, each local road authority is required to follow the provisions of the 2011 TMUTCD Rev. 2



NEW MUTCD IN PROGRESS

A new version of the MUTCD has been revised based upon the new Federal MUTCD and Texas State laws. The Federal MUTCD was published in the Federal Register on Dec. 19, 2023, with an effective date of January 18, 2024. Texas has 2 years (24 months) from the effective date to adopt the new TMUTCD.

So.....Expect a new revised version for Texas this year.

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LEGALITIES OF THE TMUTCD

Only traffic engineering reference document with a legal basis

- TMUTCD shall be recognized as **the Texas standard** for all traffic control devices used on any street or private road open to public travel
- **State Law**, Texas Transportation Code, Chapter 544
- Local authorities may place TCDs on roads under their jurisdiction; TCDs **must conform to the TMUTCD**
- Local authorities may NOT place TCDs on a highway under TxDOT's jurisdiction **without permission** from TxDOT

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TMUTCD APPLIES TO PRIVATE ROADS THAT ARE "OPEN TO PUBLIC TRAVEL"



Toll roads and roads within shopping centers, airports, sports arenas, theme parks, and similar business or recreation facilities that are privately owned, but the public is allowed to travel without access restrictions

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- Clarification has been added to reflect the final rule in 2006 that modified the Code of Federal Regulations (23 CFR 655) language that now states an exception: “Gated Toll Roads, Private Gated Properties where Public Access is Restricted at all times, shall not be considered opened to Public Travel” (1A 13 Definition #159)

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IMPLICATIONS OF A NEW TMUTCD


- Do I have to immediately upgrade all my signs and markings to be in compliance with the 2011 TMUTCD Rev. 2?
*No. But new or reconstructed devices installed after Oct 9, 2014 **shall** be in compliance with the 2011 TMUTCD Rev 2*
- Existing non-compliant devices shall be brought into compliance as part of a systematic upgrading of traffic control devices
- However, specific compliance dates have been set for several items



COMPLIANCE DATES

TMUTCD
Page I-4

Section Number	Section Title	Section Description	Compliance Date
1-1.01	General Provisions	General Provisions for the construction of the project.	12/31/2024
1-1.02	Materials and Methods	Materials and Methods for the construction of the project.	12/31/2024
1-1.03	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.04	Quality Assurance	Quality Assurance for the construction of the project.	12/31/2024
1-1.05	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.06	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.07	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.08	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.09	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.10	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.11	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.12	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.13	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.14	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.15	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.16	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.17	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.18	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.19	Construction Methods	Construction Methods for the construction of the project.	12/31/2024
1-1.20	Construction Methods	Construction Methods for the construction of the project.	12/31/2024



TMUTCD TERMINOLOGY

- **Standard:** required, mandatory or specifically prohibited; bold print; verb = **SHALL**
- **Guidance:** recommended but not mandatory; deviations allowed if engineering judgment or study permits; verb = **SHOULD**
- **Option:** permissive condition; carries no requirement or recommendation; verb = **MAY**
- **Support:** informational statements supporting Shall, Should and May

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TMUTCD

Part 1 General (Page 1)

- **Purpose** of TCDs is to promote highway safety and efficiency, and provide for the orderly movement of all road users
- **No advertising** on any TCD
- To be effective, a traffic control device should meet five basic requirements:
 - Fulfill a need;
 - Command attention;
 - Convey clear, simple meaning;
 - Command respect from road users; and
 - Give adequate time for proper response.



Convey a Clear,
Simple Message?



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TMUTCD POLICE

What are the consequences for non-compliance?

There are no TxDOT or FHWA sign police inspecting your work

From a risk management perspective, it is important to follow TMUTCD standards to minimize exposure to tort claims



About 30% of DOT law suits involve traffic signing

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SIGN CLASSIFICATION

Signs are classified into 3 categories:

- **Regulatory** – Give notice of traffic laws and regulations
- **Warning** – Give notice of situations that might not be readily apparent
- **Guide**- show Routes, Destinations, Directions, and any other Guidance Information

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TMUTCD COLOR ASSIGNMENTS (PAGE 10)			
BLACK regulation	WHITE regulation	RED stop or prohibited	YELLOW warning
FLUORESCENT PINK incident management	FLOURESCENT YELLOW-GREEN pedestrian warning, bicycle warning, playground warning, school bus and school warning	GREEN indicated movements permitted, direction guidance	ORANGE temporary traffic control
PURPLE Lanes restricted to use by vehicles with registered ETC accounts	BROWN recreational and cultural interest area guidance	BLUE road user services guidance, tourist information, evacuation route	

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REGULATORY SIGNS
Notice of Laws and Regulations

6F.05

⁰² Regulatory signs shall be authorized by the public agency or official having jurisdiction and shall conform with Chapter 2B.




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TMUTCD

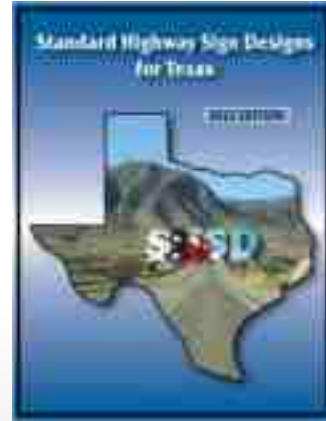
- Part 1 General (Page 2)

- All **symbols shall be unmistakably similar** to those shown in the Standard Highway Sign Designs (SHSD) for Texas

- The **2012 SHSD is available** on the TxDOT web site at:

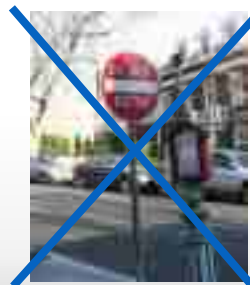
<https://www.txdot.gov/government/enforcement/signage/highway-signs.html>

- **Responsibility** for design, placement, operation and maintenance rests with public agency having jurisdiction



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SIGNS MOUNTED BACK-TO-BACK WITH STOP OR YIELD SIGNS SHOULD STAY WITHIN THE EDGES. THE SHAPE OF THESE CRITICAL SIGNS **SHALL BE RECOGNIZABLE.**



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TMUTCD CHAPTER 2A: GENERAL (PAGE 28)

- Design of Signs:
 - Desirable attributes:
 - High visibility day **and** night; and

Daytime

Many cues available
Driver task relatively easy

**Night-time**

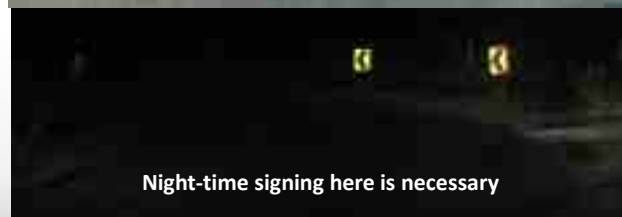
Few cues remain
Task more difficult



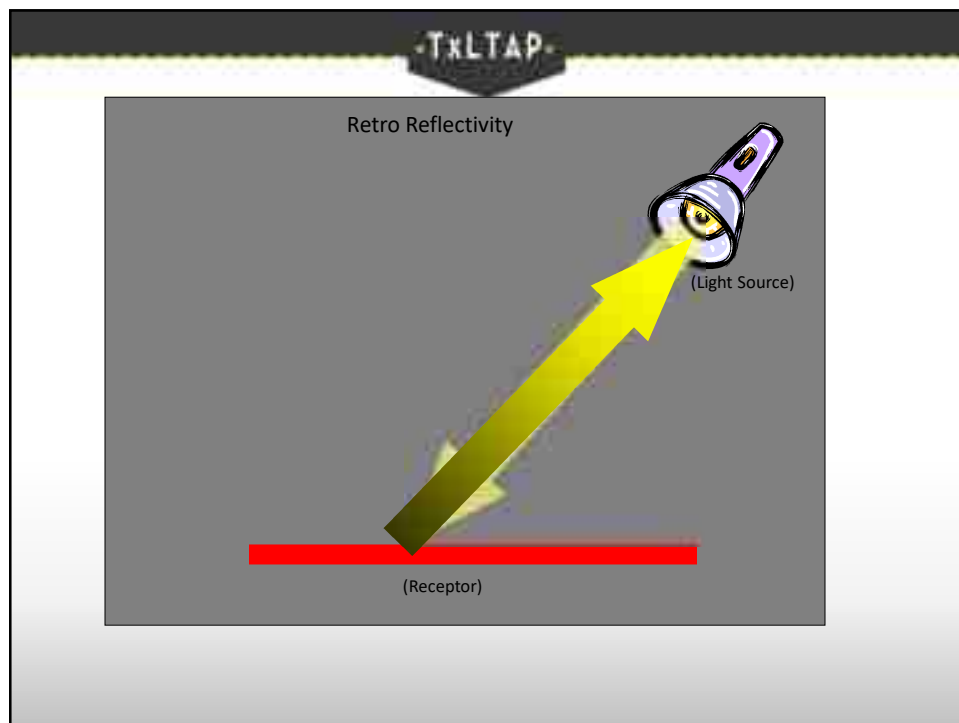
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IMPORTANCE OF RETROREFLECTIVE SIGNS

Daytime signing here is complementary



Night-time signing here is necessary



-TxLTAP-

WHICH SIGNS NEED REPLACING?



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HOW MANY DID YOU GET RIGHT?



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LOSS OF RETROREFLECTIVITY

- Exposure to sunlight
- Natural color fading, discoloration
- Replace immediately



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COMPLIANCE DATE

(PAGE I-4)

June 13, 2014

Implementation and continued use of an assessment or management method that is designed to maintain **regulatory and warning** sign retroreflectivity at or above the established minimum levels



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SECTION 2A.08 MAINTAINING MINIMUM RETROREFLECTIVITY

<u>Assessment Methods</u>	<u>Management Methods</u>
<ul style="list-style-type: none"> • Visual Nighttime Inspection <ul style="list-style-type: none"> • Calibration Signs • Comparison Panels • Consistent Parameters • Measured Sign Retroreflectivity 	<ul style="list-style-type: none"> • Expected Sign Life • Blanket Replacement • Control Signs


*Future methods are allowed if documented with an engineering study
Combining methods is encouraged*

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SECTION 2A.08 MAINTAINING MINIMUM RETROREFLECTIVITY

- “Support:
Compliance... is achieved by having a method in place and using the method to maintain the minimum levels established in Table 2A-3. Provided that... a method is being used, an agency would be in compliance... even if there are some individual signs that do not meet the... levels at a particular point in time.

Documenting the that the method is being used is an important aspect to protecting your agency in the case of a lawsuit



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RETROREFLECTOMETER



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RETROREFLECTIVITY POLICE

What are the consequences for having signs up with inadequate retro?

There are no retroreflectivity sign police inspecting your signs

Lawyers may be checking them in the area of a crash

Documenting that you are maintaining sign retroreflectivity will be important to protect your agency from potential law suits



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LED SIGNS

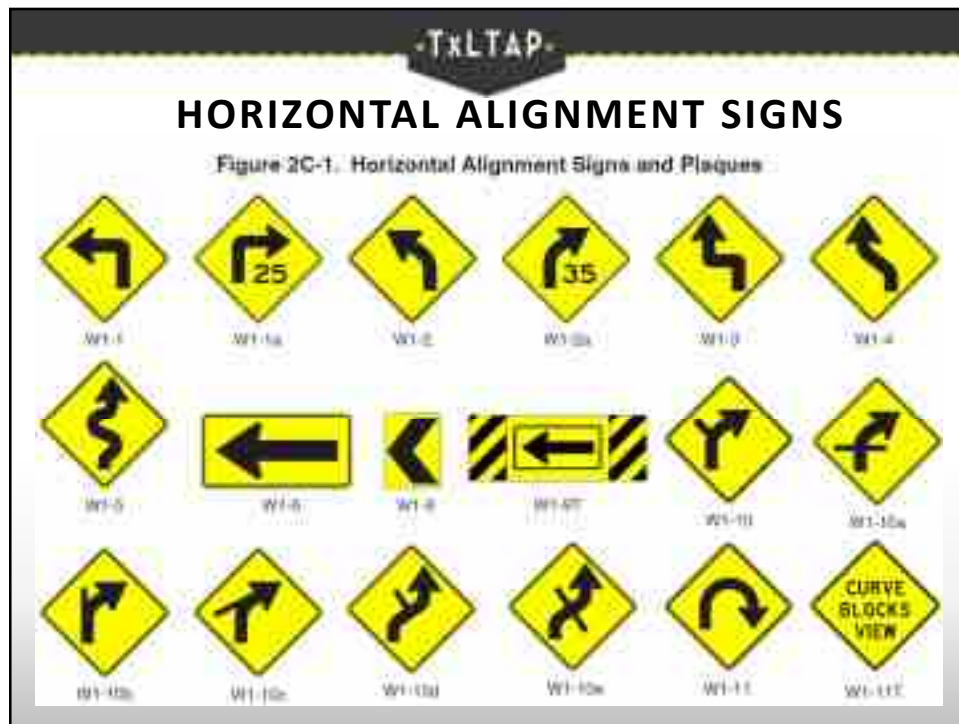
- LEDs can be used within the border, legend, or symbol of traffic signs



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WARNING SIGNS

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Annually,
28% of
Fatalities
occur in
Horizontal
Curves



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WHEN DO I NEED CROSSROAD OR SIDEROAD SIGNING?

- Minimum visibility distance – approaching through traffic is not visible to driver on the side-street
- Crash history showing a need

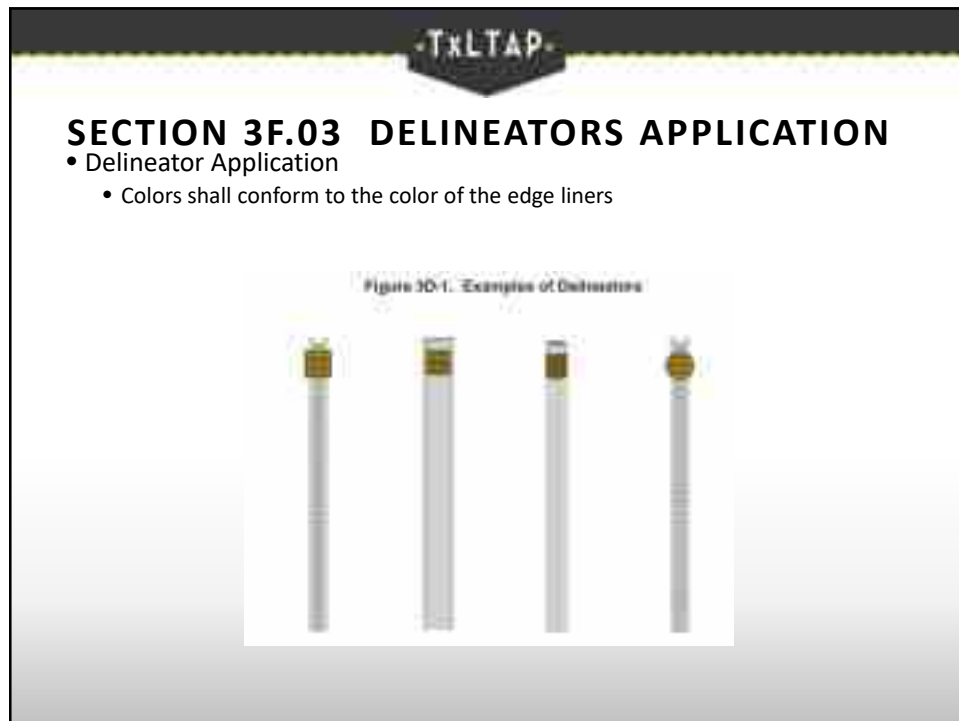


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MINIMUM VISIBILITY

- 25 MPH – 280 feet
- 30 MPH – 335 feet
- 35 MPH - 390 feet
- 40 MPH – 445 feet
- 45 MPH – 500 feet
- 50 MPH – 555 feet
- 55 MPH – 610 feet
- Based on intersection sight distance – left turn from stop (per AASHTO manual)





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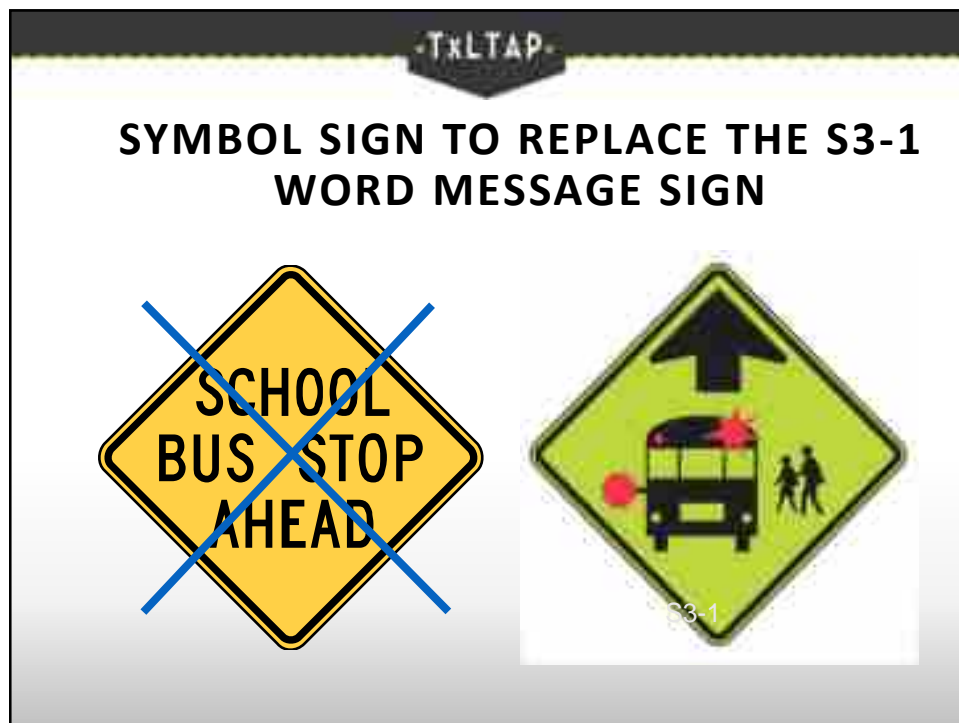
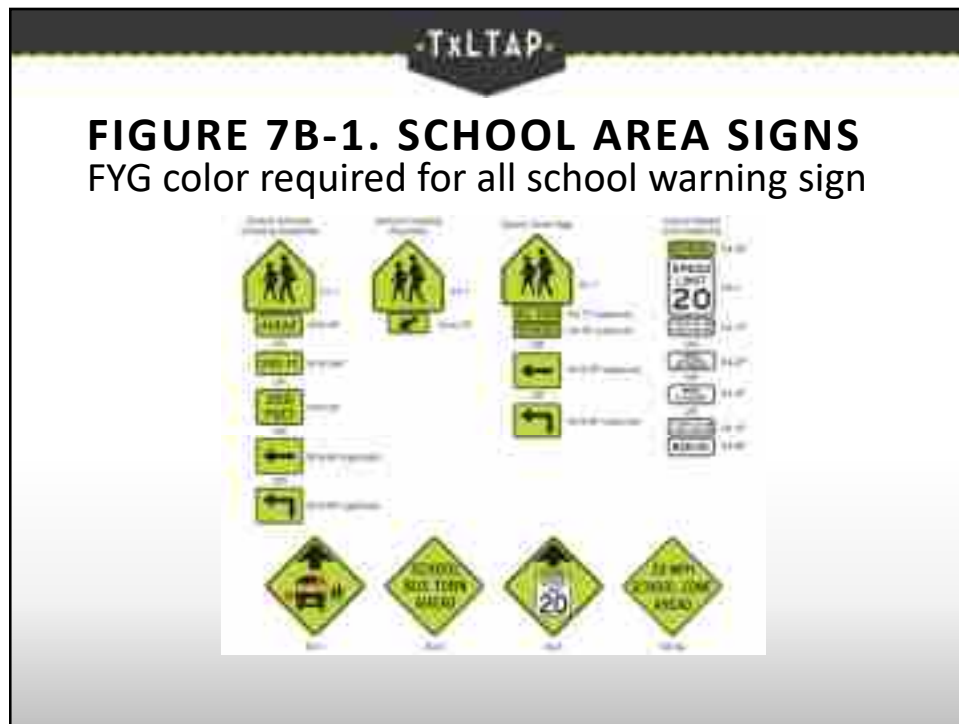
CHAPTER 3F: DELINEATORS

- Delineators
 - Retroreflective devices used when changes in horizontal alignment or pavement width transitions exist
 - Considered as guidance rather than warning devices
- Delineator Design
 - Retroreflective devices mounted above the roadway surface and along the side of the roadway.
 - Consist of retroreflector units capable of clearing retroreflecting light from a distance of 1,000 ft.
 - Minimum dimension of 2 ¾ inches for retroreflective elements

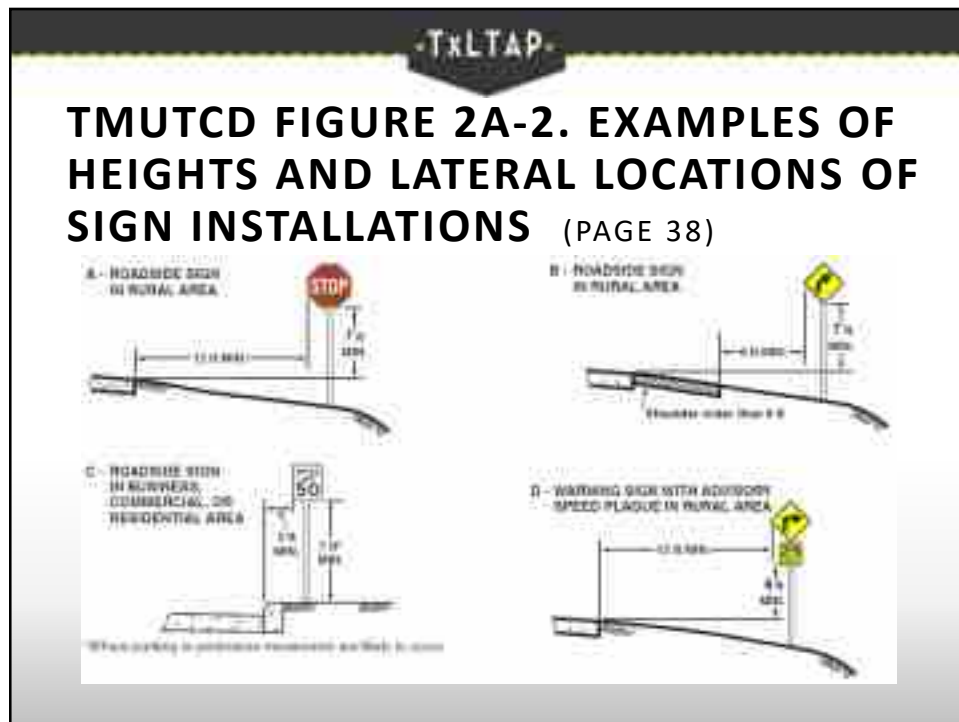
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WARNING SIGNS FOR ROAD FLOODING









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SECTION 2A.18 MOUNTING HEIGHT (PAGE 42)

- Signs at side of the road in rural areas shall be at least **7 ft** measured from the bottom of the sign to the near edge of the pavement
- Where parking or pedestrian movement occurs, clearance to the bottom of the sign shall be at least **7 ft**
- Height to bottom of plaque mounted below a sign may be **1 ft less** than above height
- Where signs are 30 ft or more from edge of the traveled way, the height to the bottom of such signs may be **5 ft** above the edge of the pavement edge
- Overhead signs shall provide a clearance of not less than **17 ft 6 inches** over the entire width of the pavement and shoulders

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SECTION 2A.19 LATERAL OFFSET

(PAGE 43)

- Ground-mounted signs shall be **12 ft** from edge of traveled way
- If shoulder wider than 6 ft exists, the minimum lateral clearance shall be **6 ft** from edge of shoulder
- Where permitted, signs may be placed on existing supports used for other purposes (traffic signals, highway lighting, utility poles)
- If signs are placed on existing supports, they shall meet other placement criteria contained in the TMUTCD
- In areas where lateral offsets are limited, a minimum offset of **2 ft** may be used

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YIELD OR STOP SIGNS REQUIRED AT PASSIVE HIGHWAY-RAIL GRADE CROSSINGS (DEC. 31, 2019 COMPLIANCE DATE)



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STOP SIGN SIZES ARE GROWING!

- 36 inches for any STOP sign facing a multi-lane approach
- 36 inches for any multi-lane side road approach to a multi-lane road
- 36 inches for any side road approach to a multi-lane road with a speed limit of 45 mph or higher
- If Speed Limit < 40 mph, minimum size is 30 inches

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**THE USE OF 2-WAY,
3-WAY, AND
4-WAY PLAQUES IS
PROHIBITED**

**ALL-WAY PLAQUE
REMAINS AS A
"SHALL" IF STOP
SIGNS ARE USED ON
ALL APPROACHES**



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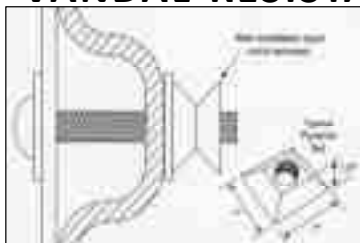
VANDALIZED SIGNS

- Over-painted or stickered
- Missing signs
- Gunshot/Bullet holes
- Mr. Clean Eraser Pad to clean paint gun marks on signs

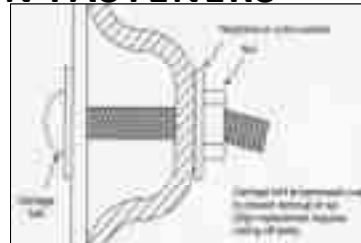


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VANDAL-RESISTANT SIGN FASTENERS



Shear off heads



Bent over bolts



Fluted nuts
(double pyramid shapes)



ANY QUESTIONS?

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