

Signing 101

“Sigtology”

MDOT/ACEC Workforce Development
and Training

October 3rd, 2018

Introductions

- Alonso Uzcategui – Unit Manager
- Kim Ault – Non Freeway Signing Projects, TCOs
- Erin O'Brien - Non Freeway Signing Projects, TCOs
- Matt Niemi – Statewide Maintenance Superintendent

Overview of our Purpose

- When and why signs are replaced
 - Roughly every 15 years to meet federal retroreflectivity requirements
 - Safety benefits of updated placement, sheeting, addressing crash patterns
- Why we replace the supports also
 - To ensure that they are crashworthy
 - Impede traffic less frequently
 - Save money since Maintaining Traffic costs can be high

Overview of our Purpose, cont.

- Why we do blanket sign replacement contracts
 - Retroreflectivity test on a small number of signs to determine degradation over time
 - Replace the rest based on age to meet federal requirement
 - Saves money because there is Maintaining Traffic cost for one sign or many
- Costs?
 - 100% federal safety money
 - \$16M yearly including design and all construction costs for combined freeway and non-freeway sign projects

Common Misconceptions

MYTH: The signs look fine, why are we replacing them

Older signs that are visible during the day can be difficult to see at night



Common Misconceptions

MYTH: The signs look fine, why are we replacing them

TRUTH: They might look good during the day but aren't very reflective at night

<https://www.youtube.com/watch?v=DS8nHPrrMJk&feature=youtu.be>

Older signs that are visible during the day can be difficult to see at night



Common Misconceptions, cont

MYTH: We're wasting money by replacing supports



Common Misconceptions, cont

MYTH: We're wasting money by replacing supports

TRUTH: Supports degrade over time and it's cheaper to replace them at the same time as the sign than to come back later and pay for traffic control and mobilization again



Common Misconceptions, cont

MYTH: We can use small STOP signs on minor roads

Common Misconceptions, cont

MYTH: We can use small STOP signs on minor roads

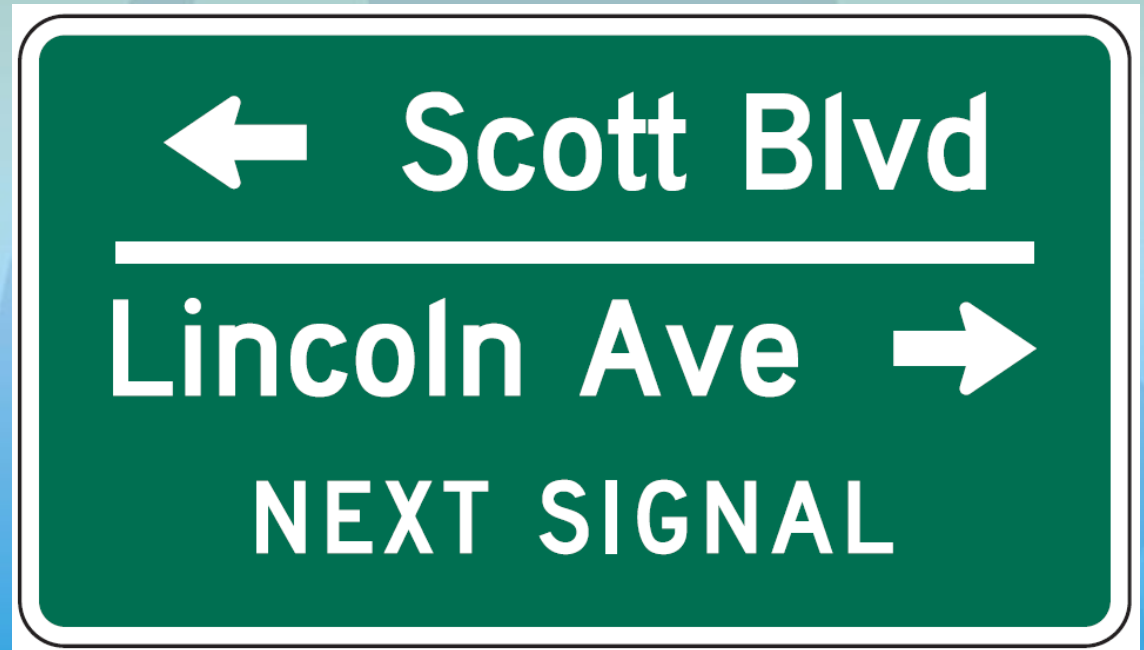
Truth: We have rules based on federal regulations, not just minor or major road

Where side roads intersect a multi-lane street or highway with a speed limit of 45 mph or higher, the minimum size of the STOP signs facing the side road approaches, even if the side road only has one approach lane, shall be 36 x 36 inches.

Where side roads intersect a multi-lane street or highway with a speed limit of 40 MPH or lower, the minimum size of the STOP signs facing the side road approaches shall be as shown in the Single Lane or Multi-lane columns of Table 1 based on the number of approach lanes on the side street approach.

Common Misconceptions, cont

MYTH: We can use smaller font on advance street name signs for minor roads

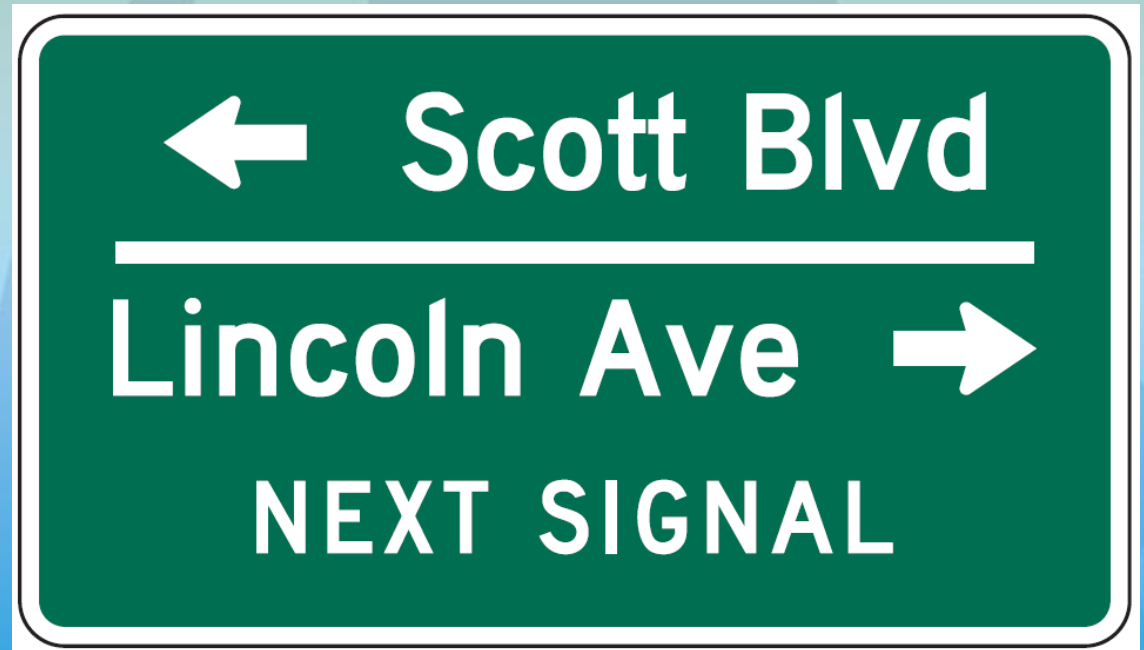


Common Misconceptions, cont

MYTH: We can use smaller font on advance street name signs for minor roads

TRUTH: Font size is based on the trunkline road speed only

SHS – D Guide Signs



Common Misconceptions, cont

MYTH: We could fill potholes/fix bridges/re-align roadways, etc. instead of replacing signs



Common Misconceptions, cont

MYTH: We could fill potholes/fix bridges/re-align roadways, etc. instead of replacing signs

TRUTH: Signing projects are funded with 100% federal safety money which can only be used for safety related projects



Common Misconceptions, cont

MYTH: We can design our own sign symbols, i.e. airplane for low flying planes



Common Misconceptions, cont

MYTH: We can design our own sign symbols, i.e. airplane for low flying planes

TRUTH: There is a federal process for approval of any new symbols



Common Misconceptions, cont

MYTH: If it's a standard sign, we can put it anywhere we want



Common Misconceptions, cont

MYTH: If it's a standard sign, we can put it anywhere we want

TRUTH: Placement rules are listed in the MMUTCD and the TSDPAG



Common Misconceptions, cont

MYTH: We can
invent new regulatory
signs



Common Misconceptions, cont

MYTH: We can invent new regulatory signs

TRUTH: Regulatory signs represent a law so we can't put symbols or words in black on white that aren't already a law



Clearview Font

- Clearview font is now being used for guide signs
- Not to be used with black font
- Destinations will remain in upper and lower case
- Cardinal directions and action words will still be in all upper case letters.
- Examples of action words:
 - NEXT RIGHT, EXIT _____, DOWNTOWN, CITY LIMIT, AND _____ MILES.

Clearview Font

Conversion table for Standard Highway to Clearview font sizes

<u>SHS Standard Alphabet</u>	<u>Clearview "W" series</u>
Series B	Clearview 1-W
Series C	Clearview 2-W
Series D	Clearview 3-W
Series E	Clearview 4-W
Series E-Modified	Clearview 5-W and Clearview 5-W-R *
Series F	Clearview 6-W

Clearview Font

Standard Highway Font



Lincolnshyre Ln



Lincolnshyre Ln

Clearview Highway Font

Online Resources

- MDOT PR Finder
 - <http://www.mcgi.state.mi.us/prfinder/>
- MDOT Traffic & Safety Standards, Special Details & Guidance
 - <https://mdotjboss.state.mi.us/TSSD/tssdHome.htm>
- MDOT Standard Specifications for Construction
 - <https://mdotjboss.state.mi.us/SpecProv/specBookHome.htm>
- MDOT FUSPs
 - <https://mdotcf.state.mi.us/public/dessssp/spss/index.cfm?cookietest=true>

The background features a light blue-to-teal gradient. A faint world map is visible in the upper half. In the lower half, there are several overlapping silhouettes of people's heads and shoulders, rendered in a darker blue color.

**What's Wrong
with These
Signs?**



DETROIT
CITY LIMITS





ONE WAY







STOP

ALL WAY

STATE
LAW

STOP

FOR



WITHIN
CROSSWALK

BRASS
CAFE







Overhead Sign Fabrication

Statewide Sign Shop



Overhead Sign Fabrication Statewide Sign Shop



Overhead Sign Fabrication Statewide Sign Shop



Ground Mounted Sign Fabrication

Statewide Sign Shop



Ground Mounted Sign Fabrication

Statewide Sign Shop



Overhead Sign Fabrication

Unique Historical Sign









































HIGHWAY INFORMATION STATION

MICHIGAN DEPARTMENT
OF TRANSPORTATION



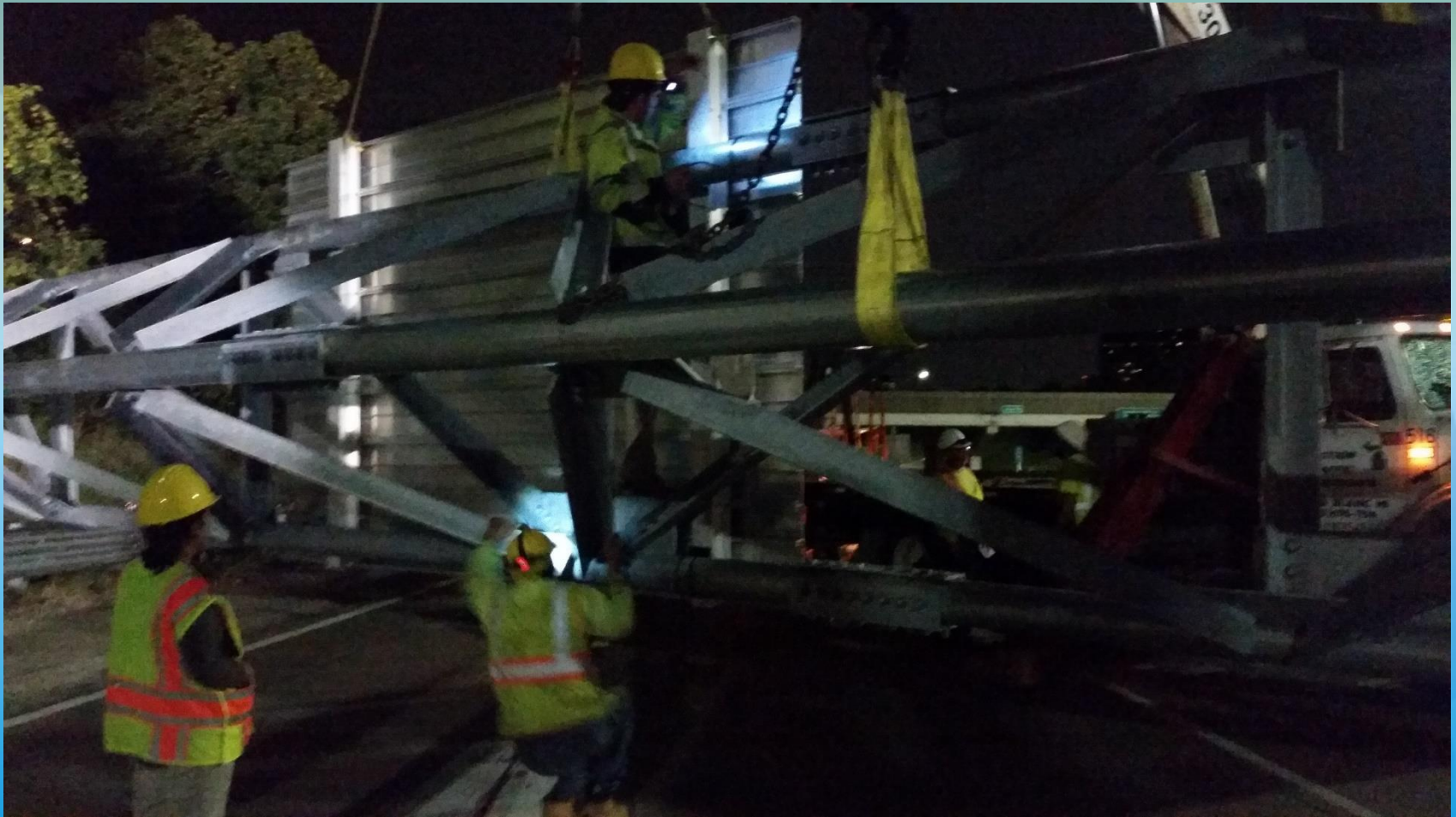
Sign Fabrication Video

<https://www.pbs.org/video/destination-michigan-season-6-episode-1-signs/>

Overhead Sign Installation Truss



Overhead Sign Installation Truss



Overhead Sign Installation Truss



Overhead Sign Installation Truss



Overhead Sign Installation Truss



Overhead Sign Installation Drilled Shaft Foundation



Overhead Sign Installation Cantilever



Overhead Sign Installation Cantilever



Overhead Sign Installation Cantilever



Ground Mounted Sign Installation



Ground Mounted Sign Installation



Ground Mounted Sign Installation



Ground Mounted Sign Installation



Ground Mounted Sign Installation



Ground Mounted Sign Installation



Ground Mounted Sign Installation



Bridge Mounted Sign Connection



Bridge Mounted Sign Connection



Sign Inventory

- Sign inventory helps us to meet and maintain retroreflectivity on our signs
- Current system is Michigan Traffic Sign Inventory System (MTSIS)

Future Sign Inventory & Design System

- Developing a new system
 - Partially map based
 - Web based
 - Ability to create reports in pdf or excel format
 - Will have tools to aid in the design and placement of signs in new projects

Traffic Control Orders

- TCOs are important to the designer because they determine the proper placement of:
 - Speed Limit signs
 - Stop signs
 - Parking control signs

Traffic Control Orders

- MDOT participates with the Michigan State Police (MSP) in the setting of traffic regulations on state trunklines for speed, parking, and stop control.
- Traffic Control Order (TCO) documents provide the legal basis for modified speed limits and parking restrictions instituted on state trunkline.

Traffic Control Orders, cont.

- The Michigan Vehicle Code (MVC) provides the basis for modified speed limits in Section 257.628, and parking restrictions in Section 257.675.

Traffic Control Orders, cont.

- TCOs are issued following a traffic engineering investigation conducted jointly by MDOT and MSP representatives.
- Although not required by law, a representative from the local affected agency should be invited to participate in the investigation

Traffic Control Orders, cont.

- A TCO becomes effective upon placement of the necessary regulatory signs. If the signs are already in place, the regulation becomes effective on the date the TCO document is signed.
- All TCO documents are filed with the county clerk of the county in which the roadway is located.

Traffic Control Determinations

- The Michigan Vehicle Code (MVC) specifies in Section 257.651 that Stop, Yield, or Merging Traffic signs are required at all entrances to state trunkline from intersecting highways and streets unless approved traffic signals are used for the control of traffic.
- Traffic Control Determination (TCD) documents provide the legal basis for such traffic preference when co-signed by the directors of MDOT and MSP.

Temporary Traffic Control Orders

- Temporary traffic regulatory restrictions can also be instituted on state trunkline highway per Section 257.628 of the MVC when a temporary traffic control order is signed by the MDOT Director, or as designated.

Traffic Control System

- Request access from MiLogin for MDOT Traffic Control System

Top 10 Concerns

1. Incorrect panel size
2. Using advisory speed panels alone
3. Incorrect placement of chevrons and target arrows
4. Replace in kind designs
5. Clustering signs together that aren't allowed
6. Not checking TCOs
7. Not checking supports
8. Experimental products without coordination
9. Lack of communication
10. Not following guidance

Questions?

