

Comments on Docket No. FHWA-2020-0001 National Standards for Traffic Control Devices; the *Manual on Uniform Traffic Control Devices for Streets and Highways*; Revision

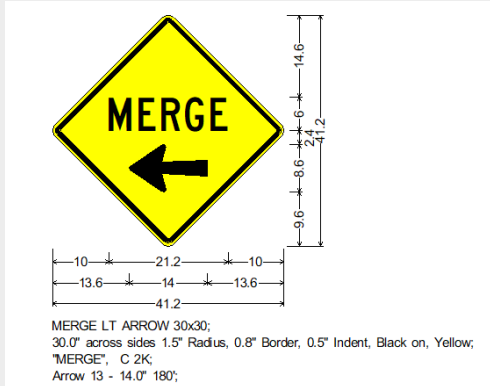
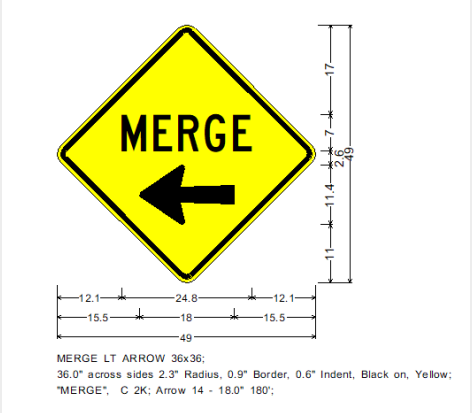
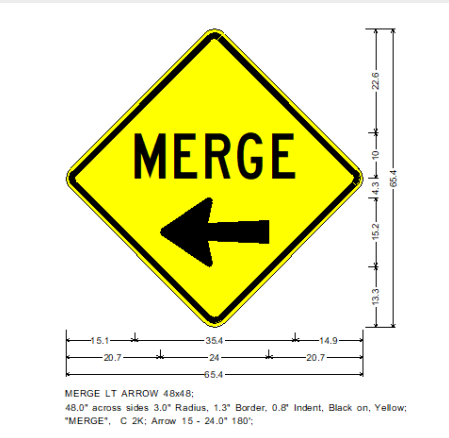
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Figures Part 3					Yes		For clarity and consistency regarding the use of ONLY pavement messages on figures, the MCUTCD recommends clearly identifying optional ONLY message (with an asterisk). Based on proposed Section 3B.21 (Word Pavement Messages), the ONLY messages in Figures 3D-2 and 3D-4 are not required and should be marked as optional. The MCUTCD recommend when an ONLY message is required by a Standard or Guidance statement, then, in addition to showing the ONLY message on the figure, the figure should include a note with information on the standard or guidance statement.
Proposed Rule; NPA for MUTCD	Item #102						<p>In #102 of the NPA, FHWA proposes that advance advisory weight limit signing with distance ahead plaques shall be installed in advance of structures (and roadways) with weight limits. In the Economic Impacts document, FHWA properly acknowledges the proposed requirement of installing advisory signs with distance ahead plaques are a substantive revision that will have quantifiable economic impacts to road authorities but concludes the benefits of the proposed change will be greater than the proposed costs. However, the FHWA arrives at this conclusion while stating the benefits of the change cannot be quantified. Further, the FHWA cost/benefit analysis places significant focus on weight limits at bridge locations and does not consider scenarios of weight limits being placed on linear roadway segments (Assessment of Economic Impacts of Notice of Proposed Amendment, FHWA, September 2020, pp. 25-26).</p> <p>The MCUTCD does not agree that advance advisory weight limit signing with distance ahead plaques should become a standard. We recommend this continue to be a guidance statement.</p>
Text-Mark-up	47	2A.08	48	48	Yes		<p>Remove "apostrophes" and "ampersands" from the text.</p> <p>There have been no reported problems with recognition of apostrophes or ampersands on signs in Minnesota. Apostrophes are often requested as part of a business name (Acknowledgement signs, Specific Service signs, etc.). Allowing the use of an apostrophe within a business name or similar provides opportunities to better reflect business names, etc. on signs and helps create goodwill with our partners. When used, the ampersand reduces the need for a larger sign. This will affect the following types of signs in MN: Move Over Law, specific service, HOV and supplemental guide signs.</p>
Text-Mark-up	74	2B.20	10	36		Yes	<p>The MCUTCD believes that flexibility is needed within Section 2B.20, In-Street and Overhead Pedestrian and Trail Crossing signs. Throughout Minnesota, In-Street Pedestrian Crossing (R1-6) signs have been used with positive results in several specific applications, which would be prohibited by the language in the proposed NPA. Some of these applications include:</p> <ol style="list-style-type: none"> 1) As a temporary educational measure at unmarked crosswalks, where a crosswalk legally exists but is not marked, and where permanent installation of crosswalk markings or warning signage is not justified. 2) In "gateway" treatments, with the signs installed on lane lines and/or the right-hand side of the roadway in addition to the centerline or median. 3) On roundabout approaches, where the installation of a W11-2 sign would cause sign clutter and obstruct drivers views of the yield sign. When installed behind a curb, it is common that these signs be post-mounted to reduce maintenance, though at a low height similar to flexible bases. <p>We recommend the following changes to Section 2B.20 (page 74, Text-Mark up):</p> <p>On Line 10, remove "at one of the following locations:"</p> <p>On Line 14, replace, "or, in the case of a one-way roadway application," with "or, on a lane line except when approach speeds exceed 35 mph".</p> <p>Remove Lines 16 and 17.</p> <p>Remove Lines 20 through 25.</p> <p>Lines 33 through 36, keep the Option statement.</p>

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Text-Mark-up	76	2B.21	19	23		Yes	<p>Remove "or expressways". On Line 19 to 20, change sentence to: When a speed limit within a speed zone is posted on freeways or roadways where the observed 85th-percentile speed is 40 mph or greater, the speed limit should be within 5 mph of the 85th-percentile speed of free-flowing traffic vehicles.</p> <p>Remove all text on Lines 21 to 23.</p> <p>The MCUTCD supports a more objective guidance statement. We believe the addition discussed above would be a more objective method and allows for further leeway on low speed roadways.</p>
Text-Mark-up	124	2C.08	33			Yes	<p>The MCUTCD believes that there is promising research regarding the use of sequential flashing patterns for Chevrons along a curve, sequential flashing patterns should be allowed and recommends removing the Standard statement: "LEDs shall not be flashed from one sign to the next along the curve or turn."</p>
Text-Mark-up	125	2C.10	32	33	Yes		<p>To allow for better visibility of the sign when used within the center island of a roundabout, the MCUTCD proposes adding the following Guidance statement:</p> <p>Where used on the central island of a roundabout, the mounting height of a One-Direction Large Arrow sign should be at least 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.</p>
Text-Mark-up	127	2C.13	42	44		Yes	<p>To provide flexibility in using these in temporary applications, the MCUTCD proposes the following change:</p> <p>Add an Option after the Standard on Lines 42-44, page 127 (Text Mark-up)</p> <p>Option: When used in a temporary application such as being mounted to a construction vehicle, portable trailer, or temporary structure, the W3-20P plaque may be utilized without an accompanying R2-1 sign.</p>
Text-Mark-up	128	2C.13	1	4		Yes	<p>On roadways throughout Minnesota, the speed displayed on Vehicle Speed Feedback signs flashes when a speed greater than the speed limit (but less than a maximum threshold speed) is detected. The MCUTCD believes this flashing brings an enhanced conspicuity to the sign for drivers going over the speed limit and is within the criteria outlined in proposed Section 2A.11, Enhanced Conspicuity for Standard Signs. We believe this may also be achieved with a color change of the dynamic number. To allow for flexibility, we recommend the following revision:</p> <p>Remove the Standard on Line 1-4, page 128 (Text Mark-up).</p> <p>Add Option: The vehicle speed displayed on the changeable portion of the sign may flash (see Section 2A.20) or display an alternate color when the displayed speed is in excess of the posted speed. The changeable portion of the sign may be configured to prevent display of speed readings significantly in excess of the posted speed limit and instead display a preset maximum value, a word message, or a blank display.</p>













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Text-Mark-up	142	2C.47	44	48		Yes	<p>The MCUTCD expected the proposed MUTCD to address dropped lanes at intersections.</p> <p>Issues with the language in 2C.42 (New 2C.47), P8 (Lane Ends Sign):</p> <ul style="list-style-type: none"> • Current standard says “In dropped lane situations, regulatory signs (see Section 2B.20) shall be used to inform road users that a through lane is becoming a mandatory turn lane. The W4-2, W9-1, and W9-2 signs shall not be used in dropped lane situations.” • The use of regulatory signs is insufficient for a dropped lane situation. Through traffic must be advised that the lane is ending as a mandatory turn with sufficient warning to execute a lane change in heavy traffic. A regulatory sign placed at such distance is often upstream of other streets or driveway access points and does not command sufficient attention from motorists. It is imperative to have a warning sign available for dropped lane situations on conventional roads, analogous to the function of the W9-7 sign available for freeways and expressways to supplement the R3-33 regulatory sign. • One potential option is to permit the use of a “Right/Left Lane Ends” sign for lane drop situations if accompanied by a supplementary plaque indicating the distance or location (e.g. “AT FIRST STREET” or “AT SIGNAL”)Delete the blue text from Line 45 (The W4-2 and W9-1 signs shall not be used in dropped lane situations). <p>Delete: “The W4-2 and W9-1 signs shall not be used in dropped lane situations.” (Blue Text) from line 45 (Text-Mark Up, page 142).</p> <p>Add Option: “The W4-2 and W9-1 signs may be used in advance of regulatory signs in dropped lane situations to provide road users with adequate time to execute a lane change in heavy traffic prior to the lane drop.”</p> <p>Add Guidance: "When the W4-2 and W9-1 are used in dropped lane situations, a supplementary plaque should be installed below the sign to indicate the distance to, or location of, the lane drop."</p>
Text-Mark-up	142	2C.47				Yes	<p>The MCUTCD believes the MUTCD should strive for a uniform, consistent use of all signs throughout all Parts of the MUTCD. Figure 2C-13, figure 3B-14, many figures in Chapter 6P and Section 2C.47 all show or discuss the W4-2 sign; but, the location of the W4-2 is not consistent nor uniform between all figures and sections of the proposed MUTCD. In the current MUTCD and as shown in Figures for Chapter 6P, the W4-2 is an advance warning signs (placed in advance of the taper). The proposed information in 2C.47 and as shown in Figure 2C-13 would place the sign at the taper in permanent installations. To avoid potential driver confusion and to meet driver expectations, the MCUTCD believes that use of the W4-2 signs should be consistent between permanent and temporary applications and should remain consistent with current practice of placing the W4-2 sign in advance of the taper. We do not agree with changing the location of the W4-2 sign to the taper as shown in 2C-13 and discussed in Section 2C.47, P3, for permanent application.</p> <p>The MCUTCD would like to propose in the inclusion of a Merge with Arrow (W4-X) sign. (See below for design). We believe that the Merge with Arrow (W4-X) sign could help create uniformity between temporary and permanent lane reduction applications. Research (see Research provided in the Minnesota Department of Transportation’s comments) has shown that the Merge with Arrow (W4-X) sign is understood by motorists and provides clear direction to the motorist. We believe that a Merge with Arrow (W4-X) sign should be placed at the start of the taper. In temporary application, the Merge with Arrow (W4-X) sign may be replaced with an Arrow board.</p> <p>In figure 2C-12 (page 63, Figures Part 2), we recommend adding the Merge with Arrow (W4-X) sign.</p> <p>In figure 2C-13 (page 64, Figures Part 2), we recommend showing the Merge with Arrow (W4-X) sign at the start of the taper and showing the W4-2 sign as an option.</p> <p>In section 2C.47, Line 9 to 19 (page 142, Text-Mark up), we recommend changing the proposed language to:</p>

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							<p>The Merge with Arrow (W4-X), Lane Ends (W4-2) and RIGHT (LEFT) LANE ENDS (W9-1) signs are used to warn of the reduction in the number of traffic lanes in the direction of travel on a multi-lane highway (see Figure 2C-12).</p> <p>The sequence of the W4-X or W4-2, and W9-1 signs is illustrated in Figure 2C-13.</p> <p>Guidance:</p> <p>The Merge with Arrow (W4-X) sign should be installed at the approximate location of the start of the lane taper.</p> <p>Option:</p> <p>The W4-2 sign may be used at the start of the taper instead of the Merge with Arrow (W4-X) sign.</p> <p>Guidance:</p> <p>The RIGHT (LEFT) LANE ENDS (W9-1) sign (see Figure 2C-12) should be used in advance of the Merge with Arrow (W4-X) sign to warn that a lane is ending and that a merging maneuver will be required. The W9-1 sign should be installed in accordance with Table 2C-3.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;">    </div>
Text-Mark-up	162	2D.11				Yes	<p>To provide additional flexibility and to allow for continued use blue pentagons with white numbers and white square County Route signs, the MCUTCD proposes adding 2 Option Statements:</p> <ul style="list-style-type: none"> Option: The route number on the County Route (M1-6) sign may be white for improved conspicuity. Option: Where established by local policy, a jurisdiction may utilize an alternative sign design for numbered county or township roadways which, if used, shall contain black numerals on a white rectangular background with a black border, and shall indicate the appropriate jurisdiction by name or jurisdictional level.
Text-Mark-up	337	3A.04	29	29		Yes	<p>The Minnesota Committee on Uniform Traffic Control (MCUTCD) agrees that 6" lines should be used on all freeways, expressways, and ramps. We have concerns with the requirement for 6 inch lines for all other roadways. Minnesota has jurisdictions with low volume roads (particularly on our rural county road network). Section 3B.02 Warrants for Yellow Center Lines and 3B.10 Warrants for Use of Edge Lines allow for Center Lines and Edge Lines to be omitted on low volume roads. We are concerned that a jurisdiction may choose to omit center and edge lines, instead of installing a 6" marking. But if given a choice, the jurisdiction may choose to install 4" center line and edge line markings over no markings. We believe installation of 4" marking is a better choice than eliminating the center and edge line marking altogether. We request that 4" center and edge markings be allowed on low volume roads (as discussed in proposed section 3B.02 and 3B.10) and make the following recommendation:</p>

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							<p>Standard: A. Normal width line- 6 inches wide for freeways, expressways, and ramps; 4 to 6 inches for all other roadways.</p> <p>Guidance: A 6-inch normal width line should be used on all roadways with speed limits greater than 40 mph.</p>
Text-Mark-up	357	3B.19	13	14		Yes	<p>In Minnesota, ramp metering is only provided during certain times of the days and/or days of the week based on an engineering study. For the majority of the day, these ramp control signals (which based on the definitions in Section 1C.02 would be considered a traffic control signal) operate in a yellow flash mode and do not require motorists to stop. Adding a stop bar at ramp control signals, which for the majority of the day do not require motorists to stop, may cause confusion and may lead to safety issues. Historically, MnDOT, the only Minnesota jurisdiction that has ramp control signals within its system, has not installed a stop line at these locations; this omission has not led to safety concerns or issues. In previous MUTCDs, Minnesota has received permission from our Minnesota Division Office to include an option statement within the Minnesota MUTCD to allow for the omission of stop lines a ramp control signals. For uniformity, the MCUTCD ask that the following Option Statement be added to the National MUTCD:</p> <p>Option: Stop lines may be omitted at ramp control signals.</p> <p>An alternate approach would be clarify/modify the Ramp Control Signal definition in section 1C.02 so that a Ramp Control Signal is not a highway traffic signal, instead it could be a traffic control device. But MnDOT believes this direction would require additional modification to other sections of the proposed National MUTCD.</p>
Text-Mark-up	357	3B.19	14			Yes	<p>Historically, the Minnesota MUTCD has included an option which allows for the omission of a stop line at a traffic control signal if longitudinal bar markings are installed on the approach. For jurisdictions that do not currently install the stop line (under this option) and use loops, the loops might not be placed in the appropriate location if a stop line is installed. The MCUTCD requests that the following Option be added after Line 14 (page 357, Text Mark-up version):</p> <p>Option: A stop line may be omitted on an approach to a traffic control signal if a high-visibility crosswalk is in place for the approach.</p>
Text-Mark-up	367	3C.11	37				Figure 3B-29 is missing and needs to be provided.
Text-Mark-up	368	3C.01	3	12		Yes	<p>The MCUTCD has concerns with the new Standard on Line 4, page 368 (Text-Mark up). The concern is that the Standard may be misinterpreted and require installation of crosswalk markings at non-intersection locations where pedestrians cross resulting in misuse of the Standard requiring jurisdictions to install crosswalks at undesired, non-intersection locations. We recommend the following:</p> <p>Remove the standard on Line 4, page 368 (Text-Mark up).</p> <p>Keep Line 12: "At non-intersection locations, crosswalk markings legally establish the crosswalk".</p>
Text-Mark-up	370	3C.03	23	25		Yes	<p>While Minnesota agrees that curb ramps should be within the extension of the crosswalk markings, meeting this Standard on existing curb ramps may lead to the crosswalk marking being installed at an inferior location. To accommodate and allow for flexibility for existing curb ramp, the MCUTCD recommends changing the Standard statement in Section 3C.03, page 370 (Text-Mark up), Lines 23 to 25, from a standard to a Guidance statement.</p>

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Text-Mark-up	371	3C.05	18	19		Yes	<p>Vehicles approaching a single lane roundabout are often looking for the fastest path. By placing two full and one half of a double-paired crosswalk (as shown in the photos below), crosswalk marking may be installed to avoid the wheel path.</p> <p>To help minimize crosswalk marking wear and increase crosswalk marking longevity at roundabout approaches, the MCUTCD is recommending removal of the sentence in lines 18-19 (page 371, Text-Mark up): "For the double-paired crosswalk design (see Section 3C.08), a coupling set of two longitudinal bars shall be considered to be one individual longitudinal element".</p> <table border="1" data-bbox="1162 580 2728 1729"> <tr> <td data-bbox="1162 580 1961 620">Before (showing partial wear of the longitudinal bars):</td> <td data-bbox="1970 580 2728 620">After:</td> </tr> <tr> <td data-bbox="1162 620 1961 1185"></td> <td data-bbox="1970 620 2728 1185"></td> </tr> <tr> <td data-bbox="1162 1211 1961 1251">Before (these two had worn off completely):</td> <td data-bbox="1970 1211 2728 1251">After (this one shows the tire track glare pretty well, even away from the crosswalk):</td> </tr> <tr> <td data-bbox="1162 1251 1961 1729"></td> <td data-bbox="1970 1251 2728 1729"></td> </tr> </table>	Before (showing partial wear of the longitudinal bars):	After:			Before (these two had worn off completely):	After (this one shows the tire track glare pretty well, even away from the crosswalk):		
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Text-Mark-up	371	3C.05	20	22		Yes	<p>Keeping crosswalk markings outside of wheel paths helps minimize crosswalk marking wear and increases marking longevity (resulting in reduced maintenance costs). To provide flexibility so that crosswalk markings may be placed outside of wheel paths, the MCUTCD is recommending removal of the Standard in Section 3C.05, page 371 (Text-Mark up), Lines 20 to 22.</p> <p>Lines 23-25, page 371 appears to allow for flexibility when the crosswalk goes through a median but does not offer the same flexibility when a crosswalk goes in front of a median. If our understanding of Lines 20 to 25 is different than FHWA intended, then the MCUTCD recommends that FHWA provide additional clarifying language.</p>
Text-Mark-up	371	3C.06	37	38	Yes		<p>Many jurisdictions within Minnesota use longitudinal bar crosswalk markings that are 36 inches wide, as shown in MnDOT's pavement marking detail sheet: http://www.dot.state.mn.us/trafficeng/pavement/typicaldetail/crosswalks.pdf. This approach allows agencies to better line up the markings so that the space area lines up with the wheel path of vehicular traffic. We believe that the larger width is more visible to motorists. We request that the Standard in 3C.06, page 371 (Text-Mark Up) be changed to:</p> <p>The width of an individual longitudinal bar shall not be less than 12 inches or greater than 36 inches.</p>
Text-Mark-up	371	3C.05				Yes	<p>The MCUTCD believes that an engineering study should be completed for both Basic Crosswalks and High-Visibility Crosswalks. In Section 3C.05, we recommend adding an Option statement (similar to the Option statement found in Section 3C.04) for an engineer study.</p>
Text-Mark-up	372	3C.08	30			Yes	<p>To provide for flexibility in the location of crosswalk markings and to help keep crosswalk markings outside of wheel paths, the MCUCTD is recommending the removal of Line 30, Section 3C.08, page 372 (Text-Mark up): "Longitudinal bar pair crosswalks shall not be installed with accompanying transverse lines".</p>
Text-Mark-up	388	3G.04	8	9	Yes		<p>Change "8 feet" to "12 feet" on both lines.</p> <p>Because delineators are only being moved 4 feet, the effects to the entrance and observation angle will have negligible effects to drivers. MnDOT Maintenance crews damage 1/10th mile markers during plowing and mowing seasons. These posts are located in the 12 foot wide mowed area MnDOT maintains through the summer and are damaged by airborne snow or wing blades in the winter. Damaged posts leave stubs in the ground which damage tires of maintenance vehicles. Repairs often must take place in the field and require unnecessary exposure of MnDOT personnel. This increases safety risks for MnDOT and the public.</p> <p>The MCUTCD supports an option that would allow delineators to be placed at "12 feet", if the reflective surface is increased from 3 to 4 inches. An increase of the reflective surface would compensate for visibility issues (but as mentioned above, a 4 foot move would have negligible effects on the entrance and observation angles of the device).</p>
Text-Mark-up	431	4E.01	10	11		Yes	<p>Minnesota uses preemption confirmation lights. These lights may be located directly adjacent to the Signal Head. The preemption confirmation lights only illuminate during Preemption Control of a Traffic Control Signal. Preemption confirmation lights have the following meaning: A solid preemption confirmation light indicates a preemption call has been received by the signal and the approach (with the solid light) has been given priority. A flashing preemption confirmation light indicates that a preemption call has been received by a different approach and priority has not been granted to the approach with a flashing light. A flashing preemption confirmation light can also indicate the preemption of the signal by a train.</p> <p>The MCUTCD believes that flashing preemption lights are important. If multiple emergency vehicles approach a signalized intersection, the preemption confirmation lights provide information to all the approaching emergency vehicles and helps clarify which approach has preemption control. This information is important to the orderly and safe movement of emergency vehicles through signalized intersections. The confirmation light does not assign any right of way at the intersection. The driver of the emergency vehicle is required to respond to the traffic control signal indication.</p> <p>We recommend keeping "and the preemption confirmation lights" as part of the Standard on Line 10-11, page 431 (Text Mark-up).</p>
Text-Mark-up	457	4F.17	37	39		Yes	<p>The 7 seconds for left turn movement as discussed <i>Guidelines for Determining Traffic Signal Change and Clearance Intervals: A Recommended Practice of the Institute of Transportation Engineers</i> is not being used. The MCUTCD has concerns that jurisdiction may choose to adopt the 7 seconds maximum and create inconsistency between jurisdiction, which may lead to a violation of driver expectations. The MUTCD recommends removing <i>Guidelines for Determining Traffic Signal Change and Clearance Intervals: A Recommended Practice of the Institute of Transportation Engineers</i> on lines 38-39, page 457, Text-Mark up, and reinstate the red overstrike <i>ITE's Traffic Control Devices Handbook</i> and in <i>ITE's "Manual of Traffic Signal Design"</i> on line 37, page 457, Text-Mark up</p>

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Text-Mark-up	458	4F.17	9	9		Yes	The 7 seconds for left turn movement as discussed <i>Guidelines for Determining Traffic Signal Change and Clearance Intervals: A Recommended Practice of the Institute of Transportation Engineers</i> is not being used by agencies/jurisdiction in Minnesota. The MCUTCD has concerns that jurisdiction may choose to adopt the 7 seconds maximum and create inconsistency between jurisdiction, which may lead to a violation of driver expectations. The MUTCD recommends removing "for through movements and 7 seconds for turning movements." on line 9, page 458, Text-Mark up.
Text-Mark-up	546	6F.02	1	7		Yes	<p>Minnesota has used 30 days as standard practice for portable sign supports and recommends that 30 days be allowed in section 6F.02. In Minnesota's experience, there have been no negative repercussions to this practice – no complaints have been received about the visibility of signs and Minnesota continues to have a lower incidence of work zone crashes than other states.</p> <p>In the Estimated Statewide Fiscal Impact if Change Not Made, contractors invested heavily into crashworthy sign supports that met the height requirements of the 2003 Federal MUTCD between 2006 and 2010. This investment is essentially wasted as the sign supports would only be able to be used for projects less than 3 days.</p> <p>Also, temporary sign structures need to meet MASH-16 requirements. There are limited temporary sign structures that would allow for mounting heights of 5' or 7' and meet MASH-16 requirements.</p> <p>The MCUTCD recommends the following change in Section 6F.02, page 564 (Text-Mark up), Lines 1 to 7:</p> <p>Guidance: Except as provided in Paragraph 12, signs mounted on portable sign supports that do not meet the minimum mounting heights provided in Part 2 should not be used for a duration of more than 30 days.</p> <p>Option: The R9-8 through R9-11a series, R11 series, W1-6 through W1-8 series, M4-10, E5-1, or other similar type signs (see Figures 6G-1, 6H-1, and 6I-1) may be used on portable sign supports that do not meet the minimum mounting heights provided in Part 2 for longer than 30 days.</p>