PURPOSE

This subject was developed to provide guidance to improvement project inspectors as well as Department and County field and maintenance crews for the installation, service and maintenance of all types of highway signs and pavement markings on the State Highway network. The goal for this is manual is to install signs and pavement markings to provide a safe, understandable and efficient system of guidance to the motoring public.

These guidelines are intended to provide a framework of policies and practices for the systematic reporting and handling of signing and pavement marking installation and replacement or sign repair activities done by others under the direction of the Wisconsin Department of Transportation through its Regions. It is inherent these guidelines that the basic thrust be to promote safety of the motorist, safety for the improvement and maintenance crews and standardization of practices toward uniform application and appearance statewide.

Improvement project crews and maintenance crews will perform their operations in accordance with the Wisconsin Manual on Uniform Traffic Control Devices, Traffic Guidelines Manual and other Department policies as referenced within.

The Department recognizes these guidelines may require adjustments and revision as they are implemented.

SIGN TYPES

There are two types of signs that are installed and maintained for the DOT:

- Type I signs are on an extruded aluminum base material, typically mounted on steel I-beams.
- Type II signs consist of direct applied message on either plywood or sheet aluminum base material, typically mounted on wood or steel posts.

SIGN CLASSIFICATIONS

Regulatory signs give notice of traffic laws and convey the rules of the road. Regulatory signs typically have a red or white background. Examples are stop signs, speed limit signs, wrong way signs, etc.

Warning signs alert the attention of the driver to special conditions on or adjacent to a roadway that may require an important driving decision or action. Warning signs typically have a fluorescent yellow background. Examples include curve warning signs, no passing zone signs, stop ahead signs etc.

School signs are used to alert the motorist to school locations and the posted school speed limit. School Signs typically have a fluorescent yellow/green background.

Guide signs are directional and informational. They are used to direct the motorist to their destination and to inform them about various service facilities and other points of interest along the highway. Guide Signs typically have a green background, and directional assemblies are typically black on white background or white on blue background.

Recreational signs are informative for the traveling public not familiar to an area to get to their destination. Recreational Signs typically have a brown background. Examples are historical marker signs and boat landing signs.

Tourist information signs are informative signs used to guide motorists to service type areas. Tourist Informational Signs typically have a blue background. Examples of these signs are TODS.

STORAGE & HANDLING OF SIGNS

Signs shall be shipped with the sign face protected either by cardboard or slip-sheeting paper taped to the sign. Signs shall be stored vertically on edge.

Signs that may be stored at County shops:

- Mandatory (max of 6)
  - Stop Signs (30x30 and 36x36)
  - Yield (36x31)

Signs shall not be stored at the Region except those necessary for the electricians. Scrap aluminum signs shall be returned to the Distribution County. The Distribution County will return all scrap aluminum signs to BSI.
SIGN VERIFICATION

Check all signs in against the sign shipper received at the time of delivery. Call and/or email you region rep or BTO Shop Coordinator with any questions.

a. Acceptable Abbreviations

<table>
<thead>
<tr>
<th>Highway</th>
<th>Hwy</th>
<th>Circle</th>
<th>Cir</th>
<th>Lane</th>
<th>Ln</th>
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<tbody>
<tr>
<td>Parkway</td>
<td>Pkwy</td>
<td>Road</td>
<td>Rd</td>
<td>Trail</td>
<td>Tr</td>
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<tr>
<td>Boulevard</td>
<td>Blvd</td>
<td>Street</td>
<td>St</td>
<td>Court</td>
<td>Ct</td>
</tr>
<tr>
<td>Avenue</td>
<td>Ave</td>
<td>Place</td>
<td>Pl</td>
<td>Drive</td>
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<td>Terrace</td>
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</tr>
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</table>

b. Arrow Abbreviations

- **Left Arrow**  ← [LA]  Right Arrow  → [RA]
- **Tilt Left Arrow**  ↗ [TL]  Tilt Right Arrow  ↑ [TR]
- **Up Arrow**  ↑ [UA]  Double Arrow  ↔ [DBA]
- **Down Left Arrow**  ↘ [DL]  Down Right Arrow  ↖ [DR]
- **Left Turn Arrow**  ↙ [LT]  Right Turn Arrow  → [RT]
- **Left Bent Arrow**  ↘ [LB]  Right Bent Arrow  → [RB]
- **Ahead & Left Arrow**  ← [U/LA]  Ahead & Right Arrow  → [U/RA]
- **Left and Tilt Right**  ← [LA/TR]  Tilt Left and Right  ↗ [TL/RA]
- **Ahead and Tilt Left**  ↗ [UA/LT]  Ahead and Tilt Right  → [UA/TR]
- **Tilt Down Left and TR**  ↘ [DL/TR]  TL and Tilt Down Right  ↘ [TL/DR]

c. J-panels

How to organize J-panels (Refer to A2-1s for the correct codes):

1. **Direction of arrow:**

   AND

2. **IH, USH, STH, CTH, Business Routes, Alt Routes, To, Tours, Hospitals**

3. **Number (lowest number first)**
INSTALLING SIGNS

County Maintenance Agreements

Counties will be given segments of the signs and/or posts needing replacement from the Region. For locations of new signs the work order will be provided by a Regional contact, the area then will be staked by the DOT. Crews shall contact Digger’s Hotline prior to digging. Crews need to check to make sure sign is facing in the proper direction for traffic and at proper heights, offsets and use of proper mounting hardware.

The scheduling of the sign replacements will be left to the county. Counties will then be able to schedule their crew(s) to what best fits their needs, but work shall be completed in a timely matter. WisDOT, however, is requiring that all sign replacements of the CMA be done by November 15 of the year contracted unless another date is agreed upon.

A detailed breakdown of county costs including county labor, equipment, number of signs, and number of posts shall be shown on all invoices.

The following signing activities can be classified into the following county maintenance agreements (XX denotes county unless otherwise noted):

1. Adams
2. Ashland
3. Barron
4. Bayfield
5. Brown
6. Buffalo
7. Burnett
8. Calumet
9. Chippewa
10. Clark
11. Columbia
12. Crawford
13. Dane
14. Dodge
15. Door
16. Douglas
17. Dunn
18. Eau Claire
19. Florence
20. Fond du Lac
21. Forest
22. Grant
23. Green
24. Green Lake
25. Iowa
26. Iron
27. Jackson
28. Jefferson
29. Juneau
30. Kenosha
31. Kewaunee
32. La Crosse
33. Lafayette
34. Langlade
35. Lincoln
36. Manitowoc
37. Marathon
38. Marinette
39. Marquette
40. Milwaukee
41. Monroe
42. Oconto
43. Oneida
44. Outagamie
45. Ozaukee
46. Pepin
47. Pierce
48. Polk
49. Portage
50. Price
51. Racine
52. Richland
53. Rock
54. Sawyer
55. Sauk
56. St. Croix
57. Shawano
58. Sheboygan
59. Taylor
60. Trempealeau
61. Vernon
62. Vilas
63. Washburn
64. Washington
65. Waukesha
66. Waupaca
67. Waushara
68. Winnebago
69. Wood
70. Menominee

Activity Code 081 for Permanent Sign Repair and 085 Temporary/Emergency Sign Repair

- RMA 00XX-01-62 Damaged signs on Interstates without a break ticket and Adopt a Highway
- RMA 00XX-01-61 Damaged signs on non-interstate without a break ticket and Adopt a Highway
- Damage Claim 0077-0x-00 Damage Claim Damage Claim with break ticket (X designates the number for your region)
  1. Madison
  2. Waukesha
  3. Green Bay
  4. Wisconsin Rapids
  5. La Crosse
  6. Eau Claire
  7. Rhinelander
  8. Superior
- 0080-02-63 White Arrowboards*
- 0080-02-53 TODS Signing*
- 0080-02-61 Ski Area Signing

Activity Code 086 Permanent Sign Replacement

- RMA 00XX-01-65 Routine Maintenance
- DMA 00XX-58-22 Discretionary Maintenance Agreements

*For White Arrowboards and TODS signs the County should collect the checks made payable to the Wisconsin Department of Transportation. The applicant should send the checks to: Wisconsin Department of Transportation, Attn: Jeannie Silver, 3609 Pierstorff St, Madison, WI 53704. The County should only repair damaged White Arrowboards or TODS signs when directed to do so by the sign owner.
Improvement/Refurbishment Projects

A listing of signs will be provided by the Signing Coordinator to the designer to be included in the construction project plan. The listing should identify location on respective improvement project in both directions of travel. A special ID is set up for all improvement projects.

FIELD OPERATIONS

WisDOT shall provide all permanent signs. It shall be the responsibility of the County to provide all necessary posts and mounting hardware for installation of the signs, unless other arrangements have been made with the Region. All signs removed are the property of the DOT and arrangements shall be made for the delivery of signs back to the Central Office Sign Shop. Signs shall be returned banded on pallets or on red carts. Any signs put on a cart for transport back to Madison shall be placed so the back of the sign is against the metal protect the face of the sign from further damage.

Routine Maintenance Sign Installation Activities

1. Patrol

Crews generally have a daily work plan, which establishes the route to be traveled each day. Knockdown temporary repairs will be the responsibility of the Counties. NO CREW SHALL LEAVE THE SITE OF A DOWNED STOP OR YIELD SIGN, A TEMPORARY OR PERMANENT REPAIR SHALL BE MADE IMMEDIATELY.

Field and maintenance crews should be watchful for and report findings to Regional Signing Coordinator and/or CO Sign Shop:

- missing signs
- signs showing face material failures,
- obsolete signs or signs which are not needed
- vandalized signs or posts (defaced, gunshot or broken)
- maintenance or contractor damaged signs or posts
- bent or leaning posts
- correctness of installation (height, offset, location, visibility, plumbness)
- sign meets WMUTCD specifications

2. Installing Signs

Signs are attached to the posts using lag bolts or machine bolts. Signs are to be mounted so as to project 1” to 1-1/2” above the top of the post. All signs shall have a nylon washer used under the metal washer to reduce damage caused by the twisting of the sheeting under the pressure of tightening the bolts (See Sign Plate A4-8). Do not over tighten bolts.

Standard signs are fabricated using sheet aluminum or high-density plywood. Aluminum signs are usually pre-drilled with mounting holes. Plywood signs usually have to be drilled before mounting. When drilling plywood signs be sure to find the center of the sign prior to drilling. Drill mounting holes should be 7/16” in diameter and typically be 2’ from the top and bottom edge of the sign. Aluminum signs 78” or more in width shall have channel steel stringers installed.

Ensure that post is set to the correct depth (see Sign Plate A4-2 through A4-4). Once the post is placed in the hole check to see that the sign is the proper height and the sign is square with the roadway, facing the proper direction for traffic the sign is intended. The posts shall be back filled with suitable materials, and tamped in place, using 6” layers while keeping the post plumb. It is recommended that a level be used in this process.

When attaching the sign to the post it is important to keep the sign square on the post. Attach the bolt to the top of the sign first. Then square the sign on to the post before attaching the lower bolt. Predrilling of the post while squaring the sign is recommended.

Breakaway holes shall be drilled on all 4”x 6” wood posts (see Sign Plate A4-11). The breakaway holes do not need to be drilled if the posts are located behind a concrete barrier or guardrail.

PRIORITY OF ACTION FOR KNOCKDOWNS

1. STOP and YIELD Signs.

These signs are the most important signs. If a STOP or YIELD sign is reported down it is to be considered life threatening and extreme steps shall be taken to get it back up, even if it means using temporary supports. This includes overtime, nighttime, weekends and holidays. Whatever is necessary to get the sign back up as quickly
as possible **shall** be done. A temporary repair **shall** be made immediately and a permanent repair **shall** be made within 10 working days, or as agreed upon with Regional Traffic Section.

2. Regulatory, Warning and School Signs.

Second priority goes to Regulatory, Warning and School Signs. These signs, when reported damaged or knocked down, require prompt scheduling of repairs. Signs that are recognized as being critical to motorist safety are those that require the motorist to be alert to a specific change in the road or a potential hazard. Temporary repair **shall** be made immediately, during normal business hours.


Guide signs are directional and informational type signs. They are less critical with respect to scheduling damage repairs. Every effort **shall** be made to ensure temporary repairs last until permanent repairs are made.

4. Recreational & Tourist Signs.

Repairs to these signs **shall** be made as the crews schedule permit. Efforts *should* be made to protect sign from further damage.

All signs that have been damaged *should* be replaced, contact your Region Sign Coordinator for these signs. All temporary sign repairs **shall** meet National Cooperative Highway Research Program (NCHRP) 350 Crash Test Requirements. Temporary repairs **shall** be made to try and achieve same standards as for permanent repairs.

**DETOUR AND CONSTRUCTION SIGNING**

The majority of detours are planned and will be done by contract. Small and emergency type detours performed by the counties need to be in accordance with the WMUTCD. The Department will provide signs for these detours.

**REPORTING SYSTEMS**

Repair Records for Accidents/Broken Posts and Signs are to be filled out and sent to the Regional shops monthly or as agreed upon with your Region.

Annual Sign and Post Replacement List will be given to the Counties. As the County completes the work, they **shall** send an updated copy of the list to the Regional.

The Regions *may* periodically provide the Counties with a new sign and post work order. These forms need to be filled out and sent to the Region upon completion.

Any counties with repair charges for vehicle damage with accident claim tag numbers **shall** fill out the County Charges Worksheet form DT 1785 and send it to the Region as soon as practical. Forms can be obtained from your Regional Signing Coordinator.

Knockdown and Repair Report is a way to record incoming calls for knockdowns or repairs and Diggers Hotline ticket information on a single form. This form is provided for your convenience and does not need to be returned to the Regional Sign Shop.

**REQUIRED NUMBER OF POSTS**

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<tr>
<td><strong>Number of Posts</strong></td>
<td><strong>Length (Rectangle/Square)</strong></td>
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<tr>
<td>1</td>
<td>L ≤ 48&quot;</td>
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<td>2</td>
<td>48&quot; &lt; L ≥ 120&quot;</td>
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<tr>
<td>3</td>
<td>120&quot; &lt; L ≥ 168&quot;</td>
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<tr>
<td>4</td>
<td>L &gt; 168&quot;</td>
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<table>
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<th>4x6 Wood Posts</th>
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<tr>
<td><strong>Number of Posts</strong></td>
<td><strong>Diamond</strong></td>
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<td>24&quot;, 30&quot;, 36&quot;</td>
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<tr>
<td>2</td>
<td>48&quot;</td>
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<th>2x2 Square Steel Posts</th>
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<td><strong>Number of Posts</strong></td>
<td><strong>Area (SF)</strong></td>
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<tr>
<td>1</td>
<td>≤9</td>
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<tr>
<td>2</td>
<td>9&lt;x≤18</td>
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<tr>
<td>3</td>
<td>18&lt;x≤27</td>
</tr>
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</table>
STANDARD INSTALLATION

**ABOVE:** Rural & Urban highways with a posted speed of 55 mph or less. URBAN installation is 7 ft measured off the top of the curb.

**BELOW:** is the standard installation for Freeways, Expressways & Urban highways.

- **Size 2 & 2M:** J-Panel post(s) 12" in from edge.
- **Sizes 3,4,5:** J-Panel posts 18" in from edge.

Breakaway Holes = 1.5" dia. Drilled at 4" & 14" above ground level.

Minimum of 42" between posts on center.

All heights are measured from the top of the pavement not the ground except for the breakaway holes.
# Examples of Correct vs. Incorrect Installations

<table>
<thead>
<tr>
<th>Incorrect</th>
<th>Correct</th>
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<tr>
<td><img src="image1.png" alt="Incorrect Sign 1" /></td>
<td><img src="image2.png" alt="Correct Sign 1" /></td>
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<td><img src="image9.png" alt="Incorrect Sign 5" /></td>
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## CONTACTS

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<thead>
<tr>
<th>Region</th>
<th>Contact Person</th>
<th>Number</th>
<th>Email</th>
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<tbody>
<tr>
<td>WisDOT CO Sign Shop</td>
<td>Jon Eldridge</td>
<td>608-246-3270</td>
<td><a href="mailto:jonathan.eldridge@dot.wi.gov">jonathan.eldridge@dot.wi.gov</a></td>
</tr>
<tr>
<td></td>
<td>Jay Hille</td>
<td>608-243-5981</td>
<td><a href="mailto:jay.hille@dot.wi.gov">jay.hille@dot.wi.gov</a></td>
</tr>
<tr>
<td></td>
<td>Jeannie Silver</td>
<td>608-246-5408</td>
<td><a href="mailto:jeannie.silver@dot.wi.gov">jeannie.silver@dot.wi.gov</a></td>
</tr>
<tr>
<td>SW Region- La Crosse</td>
<td>Iver Peterson</td>
<td>608-785-9060</td>
<td><a href="mailto:iver.peterson@dot.wi.gov">iver.peterson@dot.wi.gov</a></td>
</tr>
<tr>
<td></td>
<td>Eric Glindinning</td>
<td>608-785-9909</td>
<td><a href="mailto:eric.glindinning@dot.wi.gov">eric.glindinning@dot.wi.gov</a></td>
</tr>
<tr>
<td></td>
<td>Kory Keppel</td>
<td>608-792-6204</td>
<td><a href="mailto:kory.keppel@dot.wi.gov">kory.keppel@dot.wi.gov</a></td>
</tr>
<tr>
<td>SW Region- Madison</td>
<td>Jeff Holloway</td>
<td>608-246-3268</td>
<td><a href="mailto:jeffrey.holloway@dot.wi.gov">jeffrey.holloway@dot.wi.gov</a></td>
</tr>
<tr>
<td></td>
<td>Tim Punzel</td>
<td>608-246-5352</td>
<td><a href="mailto:timm.punzel@dot.wi.gov">timm.punzel@dot.wi.gov</a></td>
</tr>
<tr>
<td>SE Region- West Allis</td>
<td>Dennis Newton</td>
<td>414-750-0257</td>
<td><a href="mailto:dennis.newton@dot.wi.gov">dennis.newton@dot.wi.gov</a></td>
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<tr>
<td>NE Region- Green Bay</td>
<td>Tom Tilleman</td>
<td>920-492-4135</td>
<td><a href="mailto:thomas.tilleman@dot.wi.gov">thomas.tilleman@dot.wi.gov</a></td>
</tr>
<tr>
<td></td>
<td>Mike Frewerd</td>
<td>920-492-5653</td>
<td><a href="mailto:michael.frewerd@dot.wi.gov">michael.frewerd@dot.wi.gov</a></td>
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<tr>
<td>NC Region- Wis Rapids</td>
<td>Randy Dankemeyer</td>
<td>715-421-8370</td>
<td><a href="mailto:randal.dankemeyer@dot.wi.gov">randal.dankemeyer@dot.wi.gov</a></td>
</tr>
<tr>
<td></td>
<td>George Nicolaus</td>
<td>715-421-8006</td>
<td><a href="mailto:george.nicolaus@dot.wi.gov">george.nicolaus@dot.wi.gov</a></td>
</tr>
<tr>
<td>NC Region- Rhinelander</td>
<td>Randy Dankemeyer</td>
<td>715-421-8370</td>
<td><a href="mailto:randal.dankemeyer@dot.wi.gov">randal.dankemeyer@dot.wi.gov</a></td>
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<td><a href="mailto:George.Nicolaus@dot.wi.gov">George.Nicolaus@dot.wi.gov</a></td>
</tr>
<tr>
<td>NW Region- Spooner</td>
<td>Steven Allard</td>
<td>715-855-7671</td>
<td><a href="mailto:steven.allard@dot.wi.gov">steven.allard@dot.wi.gov</a></td>
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<tr>
<td></td>
<td>Gary Eisold</td>
<td>715-450-9093</td>
<td><a href="mailto:gary.eisold@dot.wi.gov">gary.eisold@dot.wi.gov</a></td>
</tr>
<tr>
<td>NW Region- Eau Claire</td>
<td>Steven Allard</td>
<td>715-855-7671</td>
<td><a href="mailto:steven.allard@dot.wi.gov">steven.allard@dot.wi.gov</a></td>
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<td></td>
<td>Gary Eisold</td>
<td>715-450-9093</td>
<td><a href="mailto:gary.eisold@dot.wi.gov">gary.eisold@dot.wi.gov</a></td>
</tr>
<tr>
<td>County</td>
<td>Contact Person</td>
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<tr>
<td>Iowa</td>
<td>Randy Sudmeier</td>
<td>608-574-2936</td>
<td><a href="mailto:randy.sudmeier@iowacounty.org">randy.sudmeier@iowacounty.org</a></td>
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<td></td>
<td></td>
<td>1215 N. Bequette St.</td>
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<td>1425 S. Wisconsin Drive</td>
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<tr>
<td></td>
<td></td>
<td>Jefferson, WI 53549</td>
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<tr>
<td>Washington</td>
<td>Jeff Spaeth</td>
<td>262-335-4435</td>
<td><a href="mailto:Jeff.Spaeth@co.washington.wi.us">Jeff.Spaeth@co.washington.wi.us</a></td>
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<td>262-483-3081</td>
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<tr>
<td></td>
<td>Jan Holytz</td>
<td>414-257-6566</td>
<td><a href="mailto:janet.holytz@milwaukeeCountyWI.gov">janet.holytz@milwaukeeCountyWI.gov</a></td>
</tr>
<tr>
<td>Milwaukee</td>
<td></td>
<td>10190 West Watertown Plank Rd</td>
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<tr>
<td></td>
<td></td>
<td>Wauwatosa, WI 53226</td>
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<tr>
<td>Racine</td>
<td>David Prott</td>
<td>262-534-6400</td>
<td><a href="mailto:david.prott@goracine.org">david.prott@goracine.org</a></td>
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<tr>
<td></td>
<td></td>
<td>14200 Washington Ave.</td>
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<td>Sturtevant, WI</td>
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<tr>
<td>Winnebago</td>
<td>Hank Mitchell</td>
<td>920-232-1718</td>
<td><a href="mailto:HMitchell@co.winnebago.wi.us">HMitchell@co.winnebago.wi.us</a></td>
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<tr>
<td></td>
<td></td>
<td>920-420-9412</td>
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<tr>
<td></td>
<td>Greg Grotegut</td>
<td>920-683-4345</td>
<td><a href="mailto:Gregorygrotegut@co.manitowoc.wi.us">Gregorygrotegut@co.manitowoc.wi.us</a></td>
</tr>
<tr>
<td></td>
<td>Dan Neuser</td>
<td>920-662-2176</td>
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<td>Vanessa Peters</td>
<td>920-834-6885</td>
<td><a href="mailto:vanessa.peters@co.oconto.wi.us">vanessa.peters@co.oconto.wi.us</a></td>
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<tr>
<td></td>
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<td>202 Van Dyke St</td>
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PERSONAL SAFETY

All Department of Transportation (DOT) personnel and any personnel working for the state are required to follow the safety policies stated in the DOT Transportation Administrative Manual (TAM). DOT, county, and contractor personnel shall wear:

- **Eye Protection:** (TAM SD 36)
  - Safety glasses with attached shields
- **Foot Protection:** Steel-toe boot or shoe (TAM SD 30)
- **Protective Headgear:** (TAM SD 51)
  - Hard hat
- **High Visibility Safety Apparel:** (TAM SD 57)
  - Reflectorized Safety Vest at all times on or along the roadway
  - Reflectorized Safety Pants during nighttime hours.

Hazard Warning Information - Treated Wood Management (See Exhibit 5)
(Material Safety Data Sheets should be requested from the wood post vendor)

EMPLOYEE RECOMMENDED TRAINING

All agencies doing work for the DOT should make sure their employees are properly trained in the following areas:
1. Field Operations Awareness
2. Shop Tools
3. Major Equipment Operations
4. Utilities Locate. Call Diggers Hotline 811
5. Retraining
6. Vehicle Safety and Inspection
WORK AREA TRAFFIC CONTROL

All traffic control shall be in compliance with the WMUTCD and Departmental policies. See Standard detail drawings.

Vehicles used in highway signing operations shall be equipped with at least two (2) yellow, high intensity rotating beacons, clearly visible from the front, rear and both sides of the vehicle. These beacons shall be placed as high as possible on each vehicle. Vehicles shall have all warning lights operating when stopped, or moving slowly along any highway. Warning lights SHALL NOT be displayed while the vehicle is traveling at highway speeds or when traveling between jobs.

When conditions are less than ideal, additional advance warning signs or devices should be added to the traffic control layouts. In some cases, the work should be deferred until the conditions are more favorable.

All lane closures on two lane roadways require flagging of traffic as well as advance signing and cone placement in the work area. Remember that all flaggers shall use stop/slow paddles.

An encroachment into a lane of traffic may require cones and/or flagging. The amount of encroachment, the volume and speed of passing vehicles will determine traffic control measures required. For example, a cone may be sufficient to mark the point where an outrigger makes contact with the pavement outside the overall width of the truck.

PUBLIC SAFETY

Workers shall park vehicles off the road as far as practical. Care should be taken to not block the vision of existing traffic control devices such as stop signs and signals. Work activities should be performed with an assumption the motorist does not know what the workers are going to do.

UTILITIES

Utility Locates. Diggers Hotline (811) shall be called and located before any work is performed. They should be given at least a 3 working day notice.

The following is a five-point plan for utility locates before digging in the highway right-of-way, which covers the routine steps required by Diggers Hotline:

1. Prepare a plan or work location sketch or drawing. Indicate a 25 foot radius around the stake or lath for "MARKING INSTRUCTIONS" for Diggers Hotline.
2. At each locate site, mark with a stake or by painting the pavement or shoulder of the highway. White or pink are the approved colors for ribbons, flags or paint when marking sign locations for utility locates.
3. Identify the exact location by measuring the distance from the nearest intersecting street or highway. Indicate which side of the highway the locate is on.
4. Contact Diggers Hotline to request the area to be located. Retain ticket number for a minimum of six years after work is completed.
5. Investigate the possibility of other utilities having services at the locate site.

Utility Damage Procedure. Damage prevention is the ultimate goal. As stated above it is essential to get clearance from utilities before doing any digging.

- BEFORE YOU DIG, CONFIRM UTILITIES HAVE BEEN LOCATED

IF UTILITY DAMAGE OCCURS:

- CALL THE UTILITY FROM A SAFE LOCATION AS SOON AS POSSIBLE.
- CLEAR AREA IF NECESSARY.
- EXTINGUISH ALL FIRE SOURCES; BE MINDFUL OF LOSS OF LIFE.
- NOTIFY EMERGENCY SERVICES (IF NECESSARY).
- NOTIFY SUPERVISOR.
- BE AVAILABLE ON OR NEAR THE SITE UNTIL REPAIR CREW ARRIVES.

MAJOR EQUIPMENT OPERATIONS

It is recommended that field operations that involve digger derricks or bucket trucks will NOT be performed with fewer than two crew persons on the job site.
HAVING A UTILITY LOCATE CLEARANCE DOESN'T NECESSARILY MEAN ALL DANGER HAS BEEN REMOVED.

Derrick operators must be aware of overhead lines to be certain the boom or its attachments remain the required distance away from the overhead lines.

ACRONYMS & DESCRIPTIONS
HMA - Hot Mix Asphalt
MSDS - Material Safety Data Sheets
PCC - Portland Cement Concrete
PMC - Pavement Marking Coordinator
TMA - Transportation Maintenance Agreement
Type H Sheeting - Prismatic High Intensity
Type F Sheeting - Prismatic High Intensity Fluorescent Sheeting