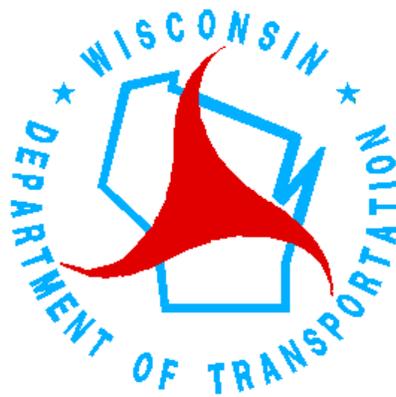


SECTION 4

**IMPROVEMENT &
REFURBISHMENT
PROJECTS**



I. SIGNING PROJECTS

Project signing work requires some of the same preparation as daily work. In addition, the work plans are reviewed to evaluate the need for special or unusual requirements, extra personnel and/or crew coordination, assignment and coordination of special equipment, extra traffic control devices, coordination with utilities, and other project related concerns. Area Signing Coordinators and/or the Regional Traffic/Signing Engineers are available to meet with project staff with any concerns. The Project Manager's responsibility is to make sure signs have been done to WisDOT standards.

II. FIELD REVIEW OF DETOUR AND CONSTRUCTION SIGNING

The Regional traffic section will review detour and construction signing and will report any signing deficiencies to the Project Manager. It is the intent of our traffic section to provide the Project Manager with assistance to help answer the questions they *may* have. Contact your Regional representative for assistance.

1. Preparation. Advance notice **shall** be given to the Regional Signing Coordinator prior to the installation of detour signing. Detour and construction signing on local roads **shall** comply with TGM 6-10-20. (See Exhibit 19)
2. Coordination. Project Managers *should* contact the Regional Signing Coordinator prior to the opening of any detour to arrange for coordination and review. Any detour used for longer than two weeks **shall** have all signs on that route upgraded to Department standards, which includes but not limited to the placement of no passing zones.
3. Temporary Installation of Signs and Posts. Signs and posts used for detour and construction projects are to be installed with the proper sign height, offset and breakaway standards as is required in Part 6 of the MUTCD. This kind of signing often creates hazardous situations since the regular traffic is unfamiliar with it. It is therefore important to use signs in good condition and that they are properly installed to convey a clear message to the motorist during the night and day. Consideration *should* be made to the needs that the existing signs in the field *may* need to be moved or relocated to properly convey a clear message to the motorist.

See Part 6 of the MUTCD, the Wisconsin Supplement and standard detail drawings 15C2-4A through 15C2-4C for reference to typical signing used for detours.

III. PERMANENT PROJECT SIGNING

A. INITIAL REVIEW OF PROJECT WITH REGIONAL SIGN SHOP

1. The Project Manager **shall** include a representative from the Regional Sign Shop and/or Regional Traffic/Signing Engineer in the project pre-construction meeting when the project involves replacement of permanent signs.
2. The Project Manager **shall** make every effort to review project plans with a representative from the Regional Sign Shop and/or Regional Traffic/Signing Engineer and project signing contractor prior to the installation of permanent signs on the project. This could include review of contractor staking of sign locations.

B. INSPECTION OF SIGNS AND POSTS

1. The Project Manager **shall** ensure all wood or steel posts used meet specifications as outlined in the Wisconsin DOT Standard Specifications for Highway and Structure Construction, latest edition as bid. Signs **shall** be inspected for proper spelling, letter and overall sign size as shown on the plan details and that the sign sheeting material is in conformance with what is on the attached detail(s). Unless specified in the project, all permanent signs, posts and associated mounting hardware **shall** be new.
2. The Project Manager **shall** ensure that a date and sheeting identification code sticker has been affixed properly to the back of the sign and that the vandalism sticker has been affixed correctly to the front of the sign (see standard detail drawing).
3. For Type I signs, the Project Manager **shall** ensure that all extruded panel attachment bolts are in place according to plans and specifications.
4. Texts and borders **shall** be riveted on Type I signs in accordance with the Wisconsin DOT Standard Specifications for Highway and Structure Construction, latest edition as bid.

C. INSTALLATION OF SIGNS AND POSTS

1. Attaching 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 SDD A4-8) Care is needed to be sure not to over tighten bolts used in attaching signs to the posts to avoid damaging the reflective face. Especially when using power equipment such as electric impact wrenches.

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.

When attaching 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.

When banding signs to posts, the Project Manager **shall** ensure that the work is being done in accordance with SDD A5-9 Sign Banding Details.

2. Setting the Post. The Project Manager **shall** ensure that post is set to the correct depth (see SDD's 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.

Breakaway holes **shall** be drilled on all 4"X6" wood posts (see SDD A4-11). The breakaway holes do not need to be drilled if the posts are located behind a concrete barrier or guardrail.

Attached in Exhibit 36 is a project checklist that *should* be used by Project Personnel in the inspection of permanent signing on improvement projects.

D. RETURN OF OLD SIGNS TO REGIONS

All Type II signs that are removed on improvement projects are property of the DOT and **shall** be returned to the Regional Sign Shop by the contractor, unless otherwise specified in the plan. The contractor **shall** contact the Regional Sign Shop a minimum of three (3) working days in advance to coordinate return of signs. Signs **shall** be separated by plywood or aluminum and returned to the Region banded to pallets or they *may* be placed directly into recycle bins.

E. REPAIRING/REPLACING KNOCKDOWN SIGNS

All signs broken or knocked down by the contractor **shall** be replaced/repared in accordance with DOT Standards by the contractor at their expense. For knockdown and replacement of signs, the contractor **shall** follow the priorities of action found on page 2-1 of this manual.