

901 – GENERAL TRAFFIC CONTROL ELEMENTS

901.1 Standards

All traffic control devices shall conform to the Manual On Uniform Traffic Control Devices (MUTCD), latest edition, as developed and published by the Federal Highway Administration and to the Wisconsin Supplement to the Manual on Uniform Traffic Control Devices, latest edition.

901.2 Responsibility for Traffic Control Devices

The Contractor shall furnish, install and maintain all traffic control devices required until the project area is fully restored and all construction equipment and materials are removed. This shall not, however, relieve subcontractors of their responsibility to protect their work area.

901.3 Installation and Maintenance of Traffic Control Devices

All pertinent traffic control devices shall be furnished and installed by the Contractor and approved by the Engineer prior to the start of any construction or maintenance operations, and shall be removed or relocated when the work is finished or work conditions change.

The Contractor shall patrol the work site on a daily basis to ensure that all traffic control devices are properly located, visible, operating, and still needed.

The contractor shall inspect and maintain all traffic control devices daily.

Should any traffic control devices be found to be damaged, lost, or otherwise functioning improperly, said devices shall immediately be repaired or replaced by the Contractor. All flashers shall be in working order at the end of each working day.

The Contractor shall have on site an adequate number of traffic control devices to provide necessary protection and to replace damaged or lost units.

901.4 Traffic Control Between Work Phasing

Traffic control shall be maintained throughout the duration of the project. While work may be suspended for some period of time, the safety of the public shall be an ongoing concern of the Contractor.

If the project site is accessible to the public, whether intended or not, adequate traffic control devices shall be in place to alert motorists of unusual conditions (e.g. high manholes, soft subgrade, water, etc.). If work is not progressing for a period of time, the Contractor shall continue to maintain adequate traffic control measures until the project is complete and open to the public. Traffic control devices may include one or more of the following measures, in addition to others, as required to protect the public and the work.

1. Close the project area to all public access by use of Type III barricades at all points of access. This may be used for private developments or on street extensions where access is not required.
2. Close the end of the roadway with Type III barricades and with an end-of-road marker sign (MUTCD sign # OM 4-3). This is for the end of a street where the street extension is planned in a future project. This barricade shall be permanent.

The color of the stripes of the barricade shall be retro reflective red and retro reflective white.

3. Road construction signs shall be placed at all entrances to the project site when traffic cannot be fully restricted. These signs shall be supplemented by more restrictive traffic control devices as needed to alert the motorists to unusual conditions (e.g. high manholes, low pavement, etc.).
4. Advance warning signs shall be placed on all streets approaching the project site to alert motorists of the construction activity ahead.
5. A Type III barricade at all entrances to the project site to give additional notice of construction area.
6. Type I or II barricades or other approved devices shall be placed at all locations with unusual conditions (e.g. high manholes, trenches, etc.) if the project site is not closed to all traffic.
7. Flashing warning lights shall be required on all barricades placed within the right-of-way, if they will be in place during the hours of darkness.

901.5

Traffic Control Plan

The Contractor shall prepare and present a traffic control plan prior to the start of construction unless the Contract Documents contain a traffic control plan. Modifications to the traffic control plan will be allowed but are subject to review and approval by the Engineer.

The Contractor shall remain responsible for proper traffic control whether or not a traffic control plan is approved by the Engineer. The Contractor shall provide adequate traffic control should elements of the project change the requirements for traffic control.

902 - MATERIALS, EQUIPMENT, AND PROCEDURES

902.1

Barricades

A barricade is a portable or fixed device having from one(1) to three(3) rails with appropriate markings and is used to control traffic by closing, restricting, or delineating all or a portion of the right-of-way.

Barricades shall be either Type I, Type II or Type III. A Type I barricade has one rail, Type II barricade has two rails and a Type III barricade has three rails.

Type I and Type II barricades shall be used when traffic is maintained through an area of temporary traffic control.

Type III barricades shall be used when a road section is closed to traffic. Type III barricades shall be erected at the points of closure and shall be placed to prohibit access beyond the point of closure. Should access be required for construction vehicles a gate or movable section shall be provided which shall be closed and secured at the end of each working day.

Road Closed or Arrow signs may be placed on barricades. No other signs shall be placed on barricades.

If other signs are desired to direct traffic to businesses, etc., the signs shall be secured on posts or supplemental barricades and shall be so placed as not to obscure the traffic control signage.

902.2

Drums

Drums shall be specially designed plastic drums set on end and used as an expedient method for traffic channelization. Drums shall not be weighted with any material that would make them hazardous to motorists. Markings on drums shall be horizontal, circumferential, orange and white reflectorized stripes, four (4) inches to eight (8) inches wide. There shall be at least two (2) orange and two (2) white stripes on the drum. Non-reflective spaces between the reflectorized stripes shall be no more than two (2) inches wide. Drums shall not be placed in roadways without advance warning signs.

902.3

Warning Lights

Warning Lights are portable, lens directed, enclosed lights. Warning lights shall be yellow in color and may be used in either a steady-burn or flashing mode. Warning lights shall be in accordance with the current ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights, with regard to color, size of lens, flash rate, and minimum on-time.

Type A Low Intensity Flashing Warning lights are most commonly mounted on barricades, drums, vertical panels or advance warning signs and are intended to continually warn drivers that they are approaching or proceeding within a hazardous area.

Type B High Intensity Flashing Warning lights are normally mounted on the advance warning signs or on independent supports or barricades. Extremely hazardous site conditions within the construction area may require that the lights are effective in

daylight as well as dark. The lights shall be designed to operate twenty-four (24) hours per day.

Type C Steady-Burn lights are intended to be used to delineate the edge of the traveled way on detour curves, on lane changes, on lane closures and on other similar conditions.

Warning lights on barricades shall be installed to a minimum mounting height of thirty-six (36) inches as measured from the ground surface to the bottom of the lens.

The contractor shall sufficiently maintain Type A Low Intensity Flashing Warning Lights and Type C Steady Burn Warning Lights so as to be capable of being visible on a clear night from a distance of 3,000 feet. The contractor shall sufficiently maintain Type B High Intensity Flashing Warning Lights so they are visible on a sunny day when viewed without the sun directly on or behind the device from a distance of 1000 feet.

Warning lights may be required on Type III barricades marking the temporary end of a street.

902.4

Advance Warning

All roadway traffic control zones shall have advance warning signs. The primary devices used in this area are the diamond shaped warning signs in the black and orange series specified for construction and maintenance sites (e.g. W20-1, Road Construction Ahead).

At a minimum, one (1) "Road Work Ahead" sign shall be placed on each approach to the work site. The placement of these signs shall meet the requirements set forth in the MUTCD.

902.5

Night Signage

All traffic control signs and barricading used at the site during night periods shall be reflectorized with a material having a smooth sealed outer surface. Painted panels with or without reflective beads in their paint shall not be used.

902.6

Flagging

A number of hand signaling (flagging) devices, such as "STOP/SLOW" paddles, and red flags are used in controlling traffic through work zones. The sign paddle bearing the clear messages "STOP" and "SLOW" provide motorists with more positive guidance than flags and should be the primary hand-signaling device. Flag use should be limited to emergency situations and at spot locations which can best be controlled by a single flagger.

Sign paddles should be at least eighteen (18) inches wide with letters at least six (6) inches high. A rigid handle should be provided. This combination sign may be fabricated from sheet metal or other light semi-rigid material. The background of the "STOP" face shall be red with white letters and border. The background of the "SLOW" shall be orange with black letters and border. When used at night the "STOP" face shall be reflectorized red with white reflectorized letters and border, and the "SLOW" face shall be reflectorized orange and black letters and border.

Flags used for signaling purposes shall be minimum of twenty-four by twenty-four (24 X 24) inches in size, made of good grade of red material securely fastened to a staff approximately three (3) feet in length. The free edge should be weighted to insure that

the flag will hang vertically, even in heavy winds.

Flaggers shall be provided at worksites to stop traffic intermittently as necessitated by the work or to maintain continuous traffic past a worksite at reduced speeds to help protect the work crew. For both of these functions the flagger must, at all times, be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging instructions, and to permit traffic to reduce speed before entering the worksite. In positioning flaggers consideration must be given to maintaining color contrast between the work area background and the flagger's protective garments.

Flaggers and operators of construction machinery or trucks should be made to understand that every reasonable effort must be made to allow the driving public the right-of-way and prevent excessive delays.

Where traffic in both directions must, for a limited distance, use a single lane, provision should be made for alternate one-way movement to pass traffic through the constricted section. At a "spot" obstruction, such as an isolated pavement patch, the movement may be self-regulating. However where the one-lane section is of a length that would cause a problem for approaching motorists to determine if it is safe to proceed on the available pavement width, there should be some means of coordinating movements at each end so that vehicles are not simultaneously moving in opposite directions in the section and so that delays are not excessive at either end. Control points at each end of the route should be chosen so as to permit easy passing of opposing lines of vehicles.

Anytime that the work requires reduction of traffic to one lane for more than five (5) minutes a flag person shall be provided by the Contractor who shall be dedicated to the sole purpose of only directing traffic, until such time as traffic can be restored to two lanes. Should the area of restrictive traffic require more than one flag person the Contractor shall likewise provide an adequate number of people to safely control traffic around and through the work area.

902.7 Placement of Traffic Control Devices

All construction or maintenance warning signs are to be placed facing the approaching traffic. The signs shall be clean, legible and mounted to resist displacement. Location of signs shall be adequate to allow for a safe reduction in speed by the motorist going through the work area.

902.8 Tapers

A taper is used to divert traffic from one lane to another out of its normal path or to merge into another traffic lane.

The positioning and length of the taper and the number and type of warning devices used in the taper shall be in accordance with MUTCD.

903 - TRAFFIC RESTRICTIONS

903.1 Access to Businesses

The Contractor shall maintain access to all businesses. When work must take place immediately at the point of access to a business, the Contractor shall provide temporary access to the entrance and phase his work to maintain an area of safe access.

Where a business has multiple accesses which are available to the public, the Contractor may close one access if he indicates by signage the location of an alternate entrance.

The Contractor shall consult with the business owner at least forty-eight (48) hours prior to closing or disrupting any access.

Work taking place immediately in front of an entrance shall be expedited to minimize disruption of pedestrian access.

Where access must be temporarily eliminated and only one public access point exists, the Contractor shall schedule his work to maintain access until such time as he and the business owner agree to close access. He shall expedite the work required to allow at least temporary access to be restored as soon as possible.

903.2 Parcel Access

Unless otherwise specified in the contract documents, the Contractor shall maintain ingress and egress to all parcels during construction. This may require phasing of the work or provisions for alternate points of access.

Whenever construction requires the temporary closing of access to a parcel, the Contractor shall notify the property owner at least forty-eight (48) hours prior to the need to prohibit access. The Contractor shall allow the property owner to remove any vehicles located on the property prior to closing access. The Contractor shall then expedite the work requiring the loss of access and restore access as soon as possible. The Contractor shall further place and maintain material to allow safe ingress and egress until the access can be fully restored.

Access shall not be prohibited overnight to any occupied parcel without prior approval of the Engineer and knowledge of the property owner.

903.3 Elimination of On Street Parking

Should it be necessary to prohibit on street parking in order to complete the project, the Contractor shall advise the Engineer at least forty-eight (48) hours prior to restricting parking. The Engineer will notify the Police Department of the proposed restriction.

Elimination of parking lane use shall be limited to the immediate work area, and the Contractor shall expedite the work in that area to permit the restoration of the parking lane as soon as possible.

If the Contractor intends to restrict parking, he shall furnish and install parking restriction signs at least thirty-six (36) hours in advance of the need of the restriction. The Contractor shall indicate the applicable days of the parking restriction on the sign.

In business areas the Contractor shall notify all businesses, immediately effected by the restriction, of the need for the restriction as well as the duration of the restriction.

903.4 Pedestrian Access

The Contractor shall assure safe pedestrian access through and/or around the work area. When it is necessary to restrict pedestrian access to the project area, the Contractor shall provide adequate warning and traffic control.

If a walkway must be closed during construction the Contractor shall provide signage at the nearest crosswalk to direct the pedestrians out of the work area to a safe walkway. The Contractor shall direct pedestrians to cross streets at an established crosswalk.

903.5 Material and Equipment Storage

No equipment or materials shall be parked or stored within the driving lanes of any street open to traffic. Equipment and materials shall be kept as far from moving traffic as practical to reduce the impact on traffic.

When working in a business district the Contractor may temporarily utilize parking stalls with the approval of the Engineer. However, the minimizing of the impact on the abutting businesses by reducing the number of parking stalls used and by moving equipment and materials as the work progresses will be a condition of approval.

903.6 Trench Bridging

Trench bridging (steel plating) shall be provided when traffic provisions require an unobstructed flow of traffic. The bridging must be secured against displacement by using cleats, angle bolts, or other methods to prevent movement. Hand rails shall be installed on all trench bridging used for pedestrian ways, and the walking area shall have a nonslip surface.

Temporary paving materials approved by the Engineer prior to placement shall be used to feather the edge of the plate to minimize wheel impact.

- END OF SECTION 900 -