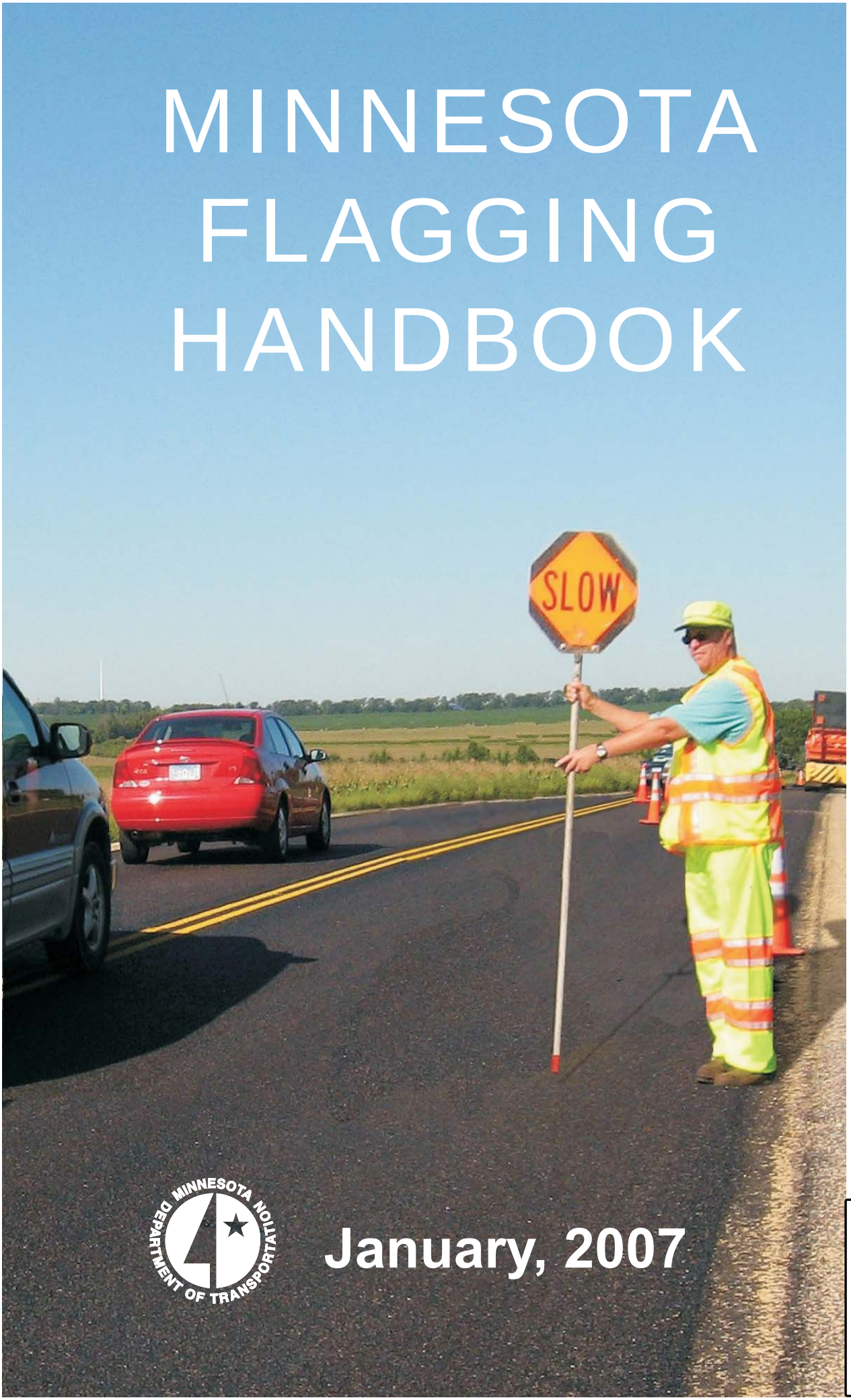
MINNESOTA FLAGGING HANDBOOK



MINNESOTA DEPARTMENT OF TRANSPORTATION

January, 2007

Flagging Handbook

This Flagger Handbook has been developed following the guidelines of the 2005 edition of the Minnesota Manual on Uniform Traffic Control Devices, including its latest update.

According to Minnesota Statute 169.06, Subd. 4(e), a flagger is permitted to stop and hold traffic as necessary to ensure the safety of highway workers and the motoring public.

The Flagging Handbook as well as the Field Manual and other documents are available on the Mn/DOT, Traffic Engineering website at:

http://www.dot.state.mn.us/trafficeng/

INTRODUCTION

To You, the Flagger:

REMEMBER - *Your job is the most important one on the crew. The lives of all individuals in the work space depend on YOU!*

The following information is designed to give you some basic guidelines regarding flagging operations. Familiarize yourself with these procedures. If you have any questions or concerns, don't hesitate to ask your supervisor.

*For your personal safety as a flagger **NEVER** turn your back on or stand in the path of moving traffic.*

EQUIPMENT

Clothing

All clothing shall be in accordance with current Minnesota OSHA Rules and your agency's policies.

- Vest, shirt, or jacket and pants (when required) shall be orange, yellow, strong yellow-green or a fluorescent version of these colors.
- At night and in low visibility situations, the vest, shirt or jacket and pants shall be retroreflective.
- Pants shall be worn at night and in low visibility situations.
- A hat in the above colors is also recommended.
- Neat appearance

Retroreflective clothing

Retroreflective clothing shall:

- Be visible at a minimum distance of 1000 feet.
- Identify the wearer as a person through the full range of body motions.

Tools

- Standard STOP/SLOW paddle
  - 18” x 18” minimum octagon
  - 5 foot minimum staff (to the bottom of the sign) 7 foot is recommended
  - Fully reflectorized in standard colors
- Two-way radios for two flagger situations
- Floodlights and Flashlight with wand, if flagging at night.

FLAGGING POSITION

- Be alert, remain standing at all times
- **Face oncoming traffic - NEVER turn your back to oncoming traffic** or stand in the path of moving traffic. See Figure 1.
- **A flagger’s normal station is on the shoulder of the road.**
- Park your vehicle off the road, away from your station.
- Stand alone, do not mingle with the work crew or the public.
- Make sure you are visible to oncoming traffic, not standing where the sun is impeding visibility or in a shadow.
- Stand in a location that allows approaching traffic adequate time to respond. Use the Decision Sight Distance in the following chart to determine a good visibility location. The driver must be able to recognize you as a flagger for at least the Decision Sight Distance.

Decision Sight Distance

Posted Speed (mph)	Decision Sight Distance (feet)
0 - 30	550
35 - 40	700
45 - 50	900
55	1200
60 - 65	1400
70 - 75	1600

FLAGGING SITUATIONS

Prior to the start of flagging operations, all signing shall be inplace. A good visibility location is one where the sight distance is sufficient and the flagger is clearly visible to approaching motorists.

When the temporary traffic control zone covers a long segment of highway, additional flagger signs may be needed. In high speed areas, the maximum distance from the last sign to a point where the driver detects the flagger shall not exceed one mile.

When more than one flagger is being used, all communication procedures should be clear before any flagging begins. If there is a major intersection within the closed area, an additional flagger may be needed to control traffic entering the temporary traffic control zone from the major intersection.

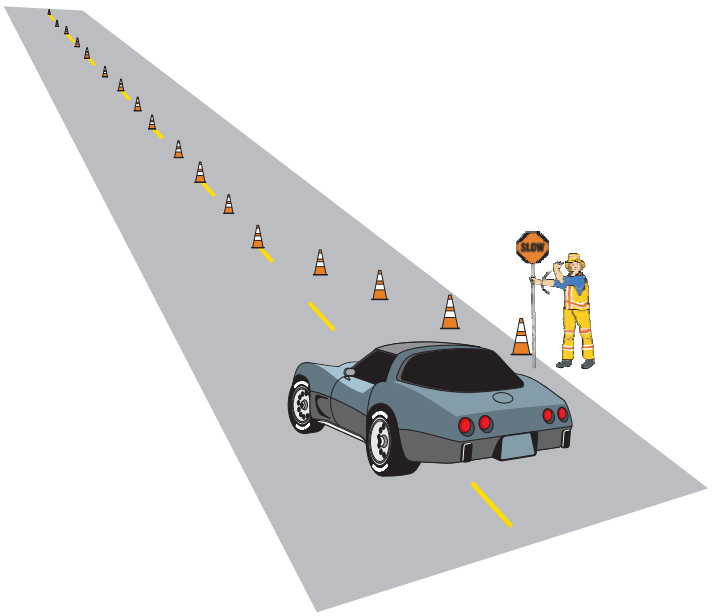
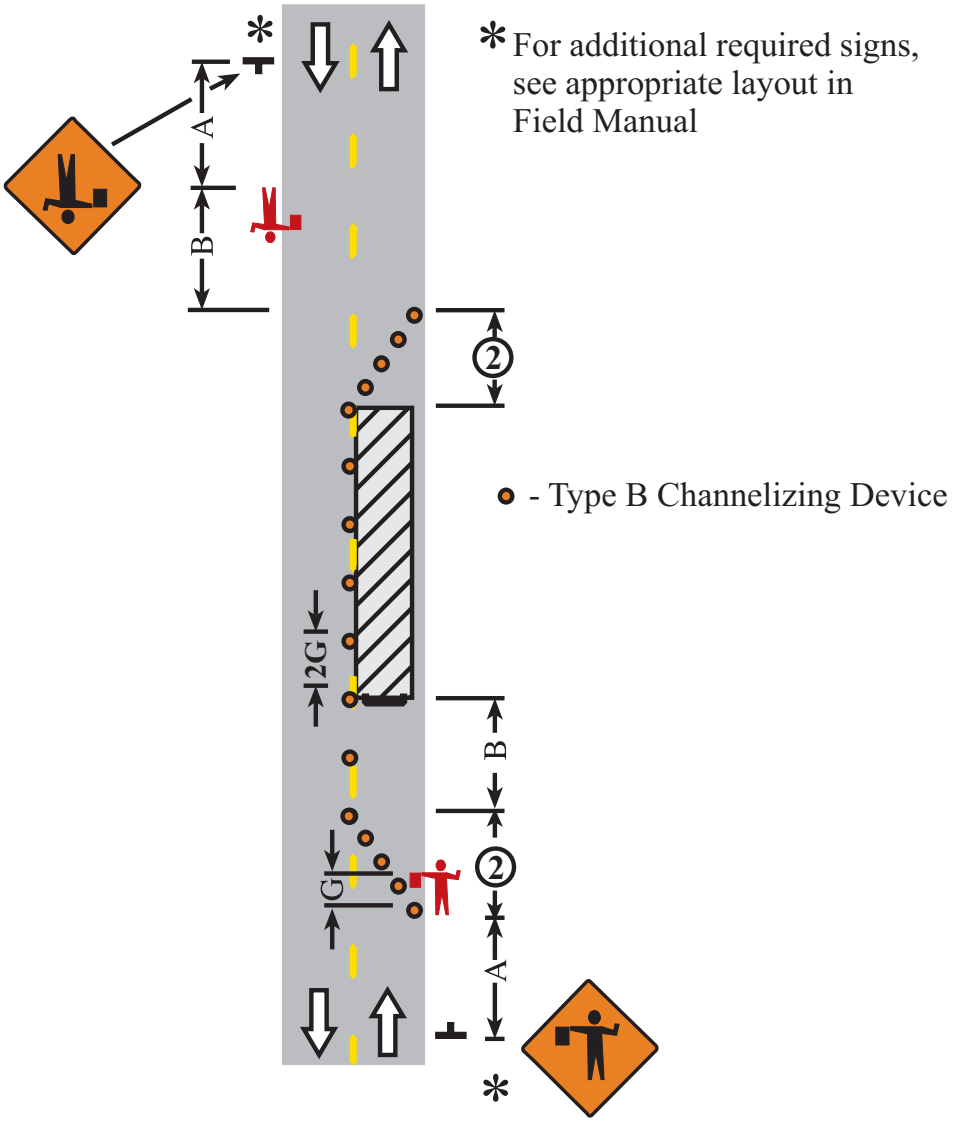


Figure 1
Preferred Flagging Position

Posted Speed Limit Prior to Work Starting (mph)	Advance Warning Sign Spacing (feet) (**A**)	Channelizing Device Spacing (feet) (**G**)	Buffer Space (feet) (**B**)	Decision Sight Distance (feet) (**D**)
0 - 30	250	25	85	550
35 - 40	325	25	170	700
45 - 50	600	50	280	900
55	750	50	335	1200
60 - 65	1000	50	485	1400
70 - 75	1200	50	670	1600



NOTES:

1. The approach sight distance to the flagger shall be at least the Decision Sight Distance.
2. The two-way taper should be 50 feet using 5 equally spaced channelizing devices.

Figure 2
Flagger Location for a Lane Closure

Traffic backing up over long distances due to flagging operations may cause potentially dangerous situations. These situations may include traffic backing up through an intersection, up an exit ramp onto the freeway, or stopping prior to the first warning signs. When the flagger observes this type of situation occurring, they should notify their immediate supervisor. To reduce traffic backups, the flagger may be given instructions on how to help maintain a shorter backup of vehicles.

Single Flagger

There are two different applications of the single flagger situation.

1. On a intermediate volume road (less than 1500 ADT) with good visibility, a single flagger may be used to control one direction of traffic while the other direction flows free. In this situation, the flagger is positioned in the closed lane at the beginning of the taper. The flagger stops the traffic approaching in the closed lane. When the open lane is clear, the flagger allows traffic to proceed. If the Decision Sight Distance is not available beyond the work space for the flagger to detect oncoming traffic, two flaggers shall be used. Two flaggers may also be required during high peak traffic periods or if there is a major intersection near the activity area.
2. A single flagger may also be used to stop traffic in a lane while that lane is closed. An example would be a truck depositing material off the edge of the roadway. In this situation, the flagger would stop the traffic in this lane while the other lane flows free. When the lane is open again, the flagger allows the traffic to proceed in their normal lane. After stopped traffic is allowed to proceed, the flagger should turn the flagger paddle parallel to traffic so that no message is displayed to either direction of traffic.

Two Flaggers

When two flaggers are required, lines of communication must be established prior to the start of flagging operations. The two flaggers must be able to see each other or have two-way radios designated for proper communication. One flagger should be the lead flagger and coordinate all activities.

Figure 3
Two Flagger Operation

When two flaggers are used and two-way radios are unavailable, the flag transfer method may be used. The driver of the last vehicle proceeding into the one lane section is given a flag (or other token object) and instructed to deliver it to the flagger at the other end. The opposite flagger then knows that it is safe to allow traffic to move in the other direction. The flag (or token object) being carried should always be clean and dry.

Two flaggers may also be used in conjunction with a pilot car. In this situation, the flagger stops the traffic until the pilot car arrives and has pulled into position to lead the traffic through or around the activity area. The flagger then releases traffic to follow the pilot. When a large gap in traffic or a pre-determined length of time occurs, as instructed by the supervisor, traffic is stopped. During pilot car operations, traffic should follow the pilot car and remain in a tight group to prevent traffic from separating along the route. To help keep the traffic group tight, flaggers should not allow additional cars to follow the group if last car in the group has proceeded more than 300 feet from the flagging location. The flagger shall then stop and hold all traffic until the pilot car has returned for the next trip.

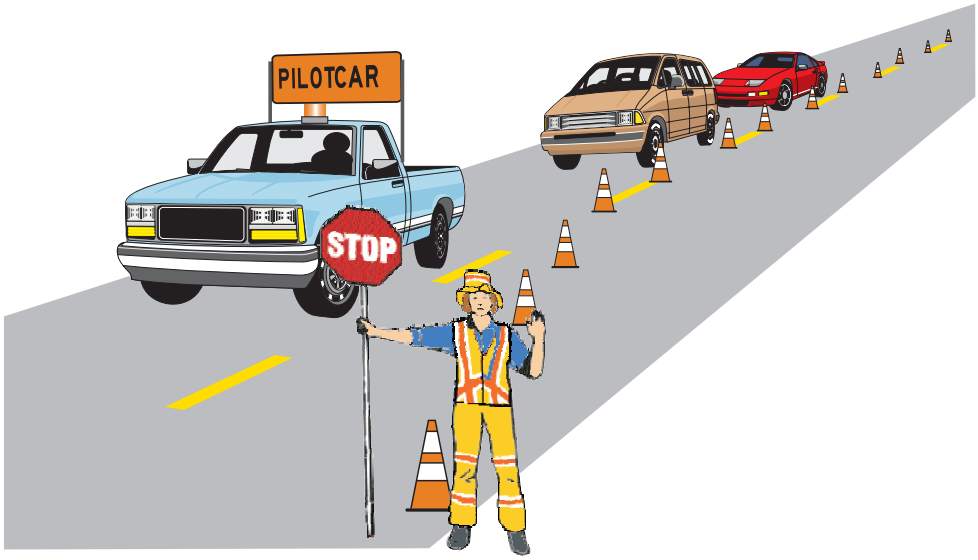


Figure 4
Use of a Pilot Vehicle

Advance Flagger

An advance flagger may be used where there is limited sight distance to the activity area or where long lines of traffic form. In a situation such as limited sight distance, the advance flagger should stop each vehicle and inform the driver of the situation ahead. Where there are long lines of stopped traffic waiting to proceed, the advance flagger should move down the line and inform each driver of the reason for the delay and the approximate length of the delay.

FLAGGING PROCEDURES

To Stop Traffic

Stand on the shoulder of the road, away from moving traffic. Face traffic and extend the STOP paddle in a stationary position with the arm extended horizontally away from the body. The free arm should be raised with the palm toward approaching traffic. Look directly at the approaching driver. Make sure that you make direct eye contact with this driver!

Remain on the shoulder of the road after the first vehicle has stopped. Always make certain that the flagger and the paddle are visible to the drivers of all stopped vehicles. The flagger should never stand in the traffic lane unless, in the flagger's opinion, the drivers of the stopped vehicles are unaware of the flagger's presence. If it is necessary for the flagger to stand in the traffic lane, the flagger may only stand near the centerline and never cross it. When the flagger is satisfied that the drivers of all stopped vehicles are aware of his/her presence, the flagger should return to the shoulder of the road.

NOTE: Anytime the flagger is required to take a position near the centerline of the traffic lane, the flagger should remain aware of the traffic traveling in the opposite direction.

To Direct Stopped Traffic to Proceed

Remain at the flagger station on the shoulder. If the flagger is in the stopped traffic lane, return to the shoulder. Face traffic and turn the SLOW paddle to face traffic. Hold the SLOW paddle in a stationary position with the arm extended horizontally away from the body. The flagger may motion with the free hand for traffic to proceed. Do not wave the paddle.

To Alert or Slow Traffic

Stand on the shoulder of the road and face traffic with the SLOW sign paddle held in a stationary position with the arm extended horizontally away from the body. The flagger may motion up and down with the free hand, palm down, indicating that the vehicle should slow down. Never stand in the path of oncoming traffic.

AUTOMATED FLAGGING DEVICES

Automated Flagging Assistance Devices (AFADs) enable the operator to be positioned out of the lane of traffic and are used to control road users through temporary, one-lane, two-way traffic control zones. These devices are capable of displaying a STOP message followed by a SLOW message without the need for a flagger in the immediate vicinity of the sign or on the roadway. They can be remotely operated by a one operator at a central location or by separate operators near each device location. A single operator may only be used on roadways with unobstructed sight lines, less than 1500 ADT, and less than 1000 feet between the devices.

NIGHTTIME FLAGGING

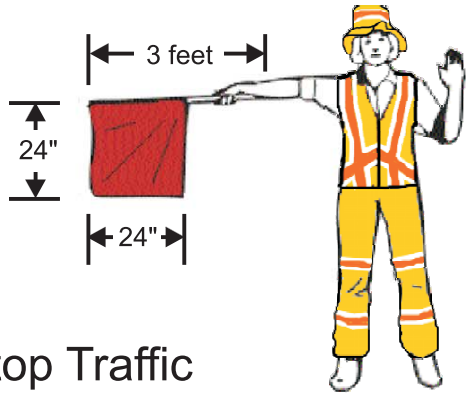
At night, flagger stations should be well illuminated. The flagger shall wear retroreflective pants, and vest, shirt or jacket. Reflective channelizing devices shall be used.

EMERGENCY SITUATIONS

In emergency situations a minimum size 24” x 24” red flag may be used in lieu of a paddle until a paddle is available. However, as soon as a STOP/SLOW paddle is available it shall be used.

The Use of Hand Signalling Devices by a Flagger

To Stop Traffic



Traffic Proceed

To Alert and
Slow Traffic

Figure 5
Preferred Flagging Method
Using a Paddle.

Figure 6
Alternate Flagging Method
Using a Flag.

FLAGGING AT INTERSECTIONS

A flagging operation within a non-signalized intersection may override STOP and YIELD signs in the intersection. When traffic signals are set to flash red for all approaches, or turned off and temporary STOP signs are installed, the intersection may be treated as a non-signalized intersection. Only a licensed uniformed law enforcement officer may override a fully operating traffic control signal system.

When flagging in an intersection, consider the following:

- The flagger should use hand signals with a flag or light wand to control traffic movements rather than the typical STOP/SLOW paddle.
- The flagger may direct vehicles to proceed through a STOP sign controlled condition while holding traffic on other approaches. Although the flagger may urge motorists to continue through the STOP, the flagger has no authority to prevent traffic from stopping and must allow for this stopping within the operation.
- The flagger should be aware of traffic conditions at adjacent intersections and should coordinate their operations to minimize traffic backups.
- High-volume intersections, large intersections, or complicated situations may require additional flaggers. The flaggers shall coordinate their flagging operations to eliminate conflicts.

PROPER CONDUCT

- Do not abandon your post for any reason until the work is finished or a replacement flagger arrives.
- Do not engage in extended conversations with motorists or lean on vehicles. Be polite, but brief.
- Do not argue with a motorist. Be courteous.
- If a driver refuses to obey instructions, record a description of the car, driver, license plate and the circumstances. Report this information to your supervisor as soon as possible.
- Remove or cover all signs indicating the presence of a flagger, when a flagger is not actually flagging. This includes lunch and breaks.
- Be alert for emergency vehicles. They have "priority rights". Allow them to pass as quickly as possible.

NOTES TO THE SUPERVISOR

- All flaggers should be properly instructed prior to the start of work. Training or certification of flaggers is recommended.
- The importance of the job should be impressed upon the flagger. They are responsible for all workers safety.
- Arrange for the flagger to have rest breaks.
- Drive through the temporary traffic control zone after all signs, devices and the flagger are inplace. Check the visibility of the signs, flagger and the activity area.

Refer to Sections 6C and Section 6E of the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) for further information on flaggers and flagging procedures.

CHECKLIST FOR FLAGGER TRAINING

Contractor: _____

Name of Mn/DOT Qualified Trainer: _____

Qualification #: _____

☐ **Remember your job is the most important one on the crew. The lives of all individuals in the work space depend on <u>YOU!</u>**

☐ **For your personal safety as a flagger <u>NEVER</u> turn your back on or stand in the path of moving traffic.**

☐ Clothing

- Any flagger on a Mn/DOT project shall be attired with high visibility, retro-reflective vests, pants and cap that are in accordance with current high visibility apparel contracts approved by Mn/DOT's safety director.

☐ Tools

- Standard STOP/SLOW paddle (in good condition)
  - 18" x 18" minimum octagon
  - 5 foot minimum staff (to bottom of the sign) 7 foot is recommended
  - Fully reflectorized in standard colors
- Two-way radios for two flagger situations
- Floodlights and flashlights with wand for night flagging
- Warning signs posted in proper position ahead of the flagger

Continued on next page.

☐ Flagging position on the road way:

- Be alert, remain **STANDING** at all times
- Face oncoming traffic **NEVER** turn your back to oncoming traffic or stand in the path of moving traffic
- A flagger's normal station is on the shoulder of the road
- Park your vehicle off the road, away from your station. A flagger is difficult to see when next to a vehicle. Never sit in or on your vehicle while flagging.
- Know proper hand and flag signals as shown in the Minnesota Flagger Handbook.
- Stand alone, do not mingle with the work crew or motorists.
- Make sure you are visible to approaching traffic, not standing where the sun is obstructing visibility or in a shadow.
- Review the decision sight distance chart in the Minnesota Flagger Handbook. The driver should be able to recognize you as a flagger for at least the decision sight distance. Avoid blind spots past curves in the roadway or just over hills.
- **Emergency vehicles** have “priority rights”. Allow them to pass as quickly and safely as possible.

*Flagger Signature*_____

Date _____