

**MINNESOTA COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES**  
**JUNE 2019 MEETING MINUTES**  
**ARDEN HILLS, ROOM 2**

Members				Guests			
Janelle Anderson	x	Howard Preston	x	Ken Johnson			
Chris Byrd		Ron Rauchle		Brandon Anderson			
Diane Colton	x	Mark Sehr					
Joe Gustafson	x	Tom Sohrweide	x				
Tiffany Kautz	x	Will Stein					
Jon Krieg	x	Josie Tayse					
Mike Martinez	x	Scott Thompson	x				
Tim Plath	x						

**Explained Absence:**

Will Stein  
Chris Byrd  
Josie Tayse

**Unexplained Absence:**

Ron Rauchle  
Mark Sehr

cc: Kristi Sebastian

**Introductions**

**Corrections/Updates to the Minutes**

**Announcements**

**Business from the Floor**

**Old Business**

1. **FHWA Updates** .....**Will Stein**  
None
2. **Requests for Experimentation Update** .....**Janelle Anderson**

Janelle provided a spreadsheet (attached) of Requests to Experiment. There are two currently active.

- 1) 2/2/2017 – Bicycle signal heads including solid circulars, Hennepin County and the City of Hopkins.
- 2) 7/10/2018 - The U of M and the City of St. Paul request to install in-street pedestrian signs on the Gateway. MnDOT is sponsoring this research.

## **New Business**

### **1. Membership:**

#### **a. Welcome Tiffany Kautz (taking over for Janelle Anderson - retiring).**

Welcome Tiffany. A short bio:

Tiffany has 17 years of engineering experience including cost estimating, preliminary design, signing, right of way, work zones and pavement markings, traffic safety, and project scheduling and resource management. Tiffany most recently worked with the Project Management Support group as the Metro Shared Service Center (SSC) Lead. While in this role, she created tools and reports to maintain and improve data integrity. She worked with customers at various levels within the District to understand their needs and supplied data to improve project and program delivery.

Tiffany has over five years of experience working in Metro Traffic. She was the South Metro Signing Engineer where she prepared signing plans and special provisions for stand-alone projects and for inclusion with larger design projects. In this role she answered many inquiries from the public, other government agencies and business owners. While serving in a work out of class position, Tiffany oversaw the Metro Work Zone and Pavement Marking Unit.

Janelle's last day at MnDOT is July 5<sup>th</sup>.

#### **b. Vacancies**

Currently there is one vacancy for an Urban Cities Engineer to replace Scott Poska who left the City of Minneapolis and is now working at Alliant Engineering. Tiffany will send out emails to HunWen Westman – City of St. Paul, Randy Newton – City of St. Paul and Mark Culver – City of Roseville to see if they might be interested. All had expressed interest in the past.

Howard Preston has retired leaving a member opening in the Consultant Category. Tiffany will contact Scott Poska to see if he might be interested.

The Committee voted to create one emeritus committee position. Howard Preston accepted this position.

**2. Accessible Pedestrian Signals (APS) on Rectangular Rapid Flashing Beacons (RRFB) (correspondence attached). Janelle Anderson**

**Jon was looking for guidance on whether or not APS are required on RRFB's.**

Correspondence from Duane Thomas FHWA:

Thanks for your question about RRFBs. We consider the use of accessible pedestrian signal features with flashing beacons (including RRFBs) very differently than with traffic signals.

The use of accessible pedestrian signal features with flashing beacons (including RRFBs) is addressed on the FAQ portion of the MUTCD website:

[https://mutcd.fhwa.dot.gov/knowledge/faqs/faq\\_part4.htm#fb](https://mutcd.fhwa.dot.gov/knowledge/faqs/faq_part4.htm#fb)

Click on "Flashing Beacons" (see below).

## Flashing Beacons

**1. Q: Can accessible pedestrian signal features be used in conjunction with pedestrian-activated flashing yellow LEDs in the border of a sign or with pedestrian-activated warning beacons?**

**A:** Some, but not all, of the accessible pedestrian signal features may be used at these locations. For example, it would be inappropriate to have a vibrotactile arrow or an audible walk interval message (rapid ticks or a speech walk message) since pedestrian signals are not present and a walk interval is never displayed to pedestrians. However, a pushbutton locator tone and an audible message when the yellow lights are flashing would be appropriate and may be used at these locations. If an audible message is used, it should repeat twice at the beginning of the flashing period, and it should be a speech message that says, "Yellow lights are flashing."

Janelle read bullet 7 of the MUTCD *Interim Approval for Optional Use of Pedestrian-Actuate Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks (IA-21)* dated March 2018

[https://mutcd.fhwa.dot.gov/resources/interim\\_approval/ia21/index.htm](https://mutcd.fhwa.dot.gov/resources/interim_approval/ia21/index.htm).

The document says **if** a speech pushbutton....is used - therefore it is optional.

7. Accessible Pedestrian Features:

- a. If a speech pushbutton information message is used in conjunction with an RRFB, a locator tone shall be provided.
- b. If a speech pushbutton information message is used in conjunction with an RRFB, the audible information device shall not use vibrotactile indications or percussive indications.
- c. If a speech pushbutton information message is used in conjunction with an RRFB, the message should say, "Yellow lights are flashing." The message should be spoken twice.

Discussion:

Jon – RRFBs can be in residential areas – the beeping can keep people awake.

Scott – District 7 has 12 RRFBs – only one of them with APS. Others are passively activated.

**Question - what should the message be.**

Tom – theirs say "Yellow Lights are Flashing"

See Flashing Beacons above. The last sentence states *"If an audible message is used, it should repeat twice at the beginning of the flashing period, and it should be a speech message that says, "Yellow lights are flashing."*

**Discussion regarding the lights on the sides.**

Jon: Wants pedestrians to know its flashing – if it's not flashing it could be malfunctioning – could then be reported by a pedestrian.

Scott: Lights can be covered so peds can't see it but motorists can.

**RRFB and the MUTCD**

Janelle read a 2013 letter from the FHWA. The letter states that the provisions of the MUTCD should include RRFBs – this was overlooked. The new MUTCD will clarify the provisions.

3. MN MUTCD 2B.59.1 last sentence change – remove “*The WEIGHT RESTRICTION AHEAD sign (W14-X3) should be installed in advance of the bridge weight limit signs*”. Josie Tayse, Janelle Anderson

Josie would like to remove the sentence above from the MN MUTCD. The Weight Restriction Ahead sign is too general while the R12-5 sign with supplements has specific information for drivers. MnDOT’s preferred way of signing is using the R12-5 sign with supplements (below - also see attached TEO Memo).



The committee voted to remove the sentence.

During the discussion many members felt the wording of part 2B.59.1 is confusing. Particularly the second STANDARD statement. Mike agreed to wordsmith the section and bring to the next meeting.

#### 4. Left on Red – Janelle Anderson

Janelle explained that the statement below was originally deleted from the 2010 re-write of the MUTCD because it was thought to conflict with Minnesota state law. Review of the statute (MN STS. 169.06 Subd. 5 (2) (iii)) showed that language permitting a right turn on a red arrow had been added to the Minnesota statute in 2005. This was overlooked during the 2010 re-write.

After much discussion, a majority of the committee voted for putting the Guidance statement into the MN MUTCD. Joe and Mike voted no – arguing that leaving the statement out is more restrictive and that the sign may dilute the meaning of a red arrow.

*Guidance:*

*<sup>07</sup> Where turns on red are permitted and the signal indication is a steady RED ARROW, the RIGHT (LEFT) ON RED ARROW AFTER STOP (R10-17a) sign (see Figure 2B-27) should be installed adjacent to the RED ARROW signal indication.*



R10-17a

**5. Review of revised Part 6, Chapter 6J. Long Term Temporary Traffic Control Zone Layouts – Ken Johnson (see attached). Ken Johnson**

Ken presented changes/updates to Chapter 6J of the MN MUTCD. The committee got through 9 of 25 layouts. Ken asked the members to review the layouts (attached) and we will continue reviewing at the next meeting.

**6. Round Robin**

**Happy Retirement to Janelle!**



Current Requests to Experiment

6/17/2019

Date Request to OTST	Date Request to FHWA	Date Approved or Denied	Approved or Denied (A/D)	Federal Ref. #	Name of Requestor	Entity of Requestor	Experimentation Requested	MUTCD Reference	Comments	Progress Reports?
5/16/2008	5/22/2008	6/4/2008	CA	2-644(Ex)-(CICAS-SSA)-MN	Ginny Crowson, Tom Peters	Mn/DOT OTSO	Cooperative Intersection Collision Avoidance Systems-Stop Sign Assist TH 52-CSAH 9		Approved for 4 years	
8/30/2010	9/7/2010	10/26/2010	CA	2-644(Ex)-(CICAS-SSA)-MN Amendment	Jon Jackels, Janelle Anderson	Mn/DOT OTSO	Amendment to add 2 intersections to original RTE Cooperative Intersection Collision Avoidance Systems-Stop Sign Assist TH 52-CSAH 9		Requested more information as to why the 2 add'l intersections will not have cross street detection consistent with the orig RTE	
4/4/2011	4/5/2011	6/30/2011	A	2(09)-14(E)	Joe Gustafson	Washington County	Vertical chevrons to reduce speed at vertical curves	2C		
4/15/2011	5/3/2011; rev. 7-20-11	8/17/2011	A	9(09)-21 (E)	Sandra Cullen	U of M Parking & Transportation Services	Green-colored Bicycle Boxes, Green colored Bicycle Lanes	9C	conditional approval: No Turn on Red signs shall be installed for the NB approach of Pleasant ST SE at University AVE SE and the SB approach of Pleasant St SE at Pillsbury Dr SE amended 8-14-15 to add three more locations.	
5/7/2012	5/7/2012	6/1/2012	A	9(09)-29 (E) - Green Shared Lanes and	Wayne Houle, City Engineer	Edina Engineering Department	Advisory Bike lane and Continuous colored background for shared lane markings.	9C	interim approval from FHWA on green bike lanes, FHWA requested some changes, revised RTE submitted 5-17-12	
5/29/2012	6/11/2012	7/26/2012	A	9(09)-30 (E) - Bike Signal Indications for	Steve Mosing	City of Minneapolis	Bicycle signal heads	4D.6		
6/18/2012	6/21/2012	8/10/2012	A	9(09)-31 (E) - Advisory Bike Lanes - Richfield,	William Klingbeil, Jeff Pearson	HR Green, Inc and City of Richfield	Advisory Bike lane	3D.2(F)		
11/1/2012	11/5/2012	2/28/2013	D	none	Steve Mosing	City of Minneapolis	Red flashing beacons supplementing crosswalk warning signs	4L.3	see email from Will Stein dated March 4, 2013	
3/5/2013	3/5/2013	6/6/2013	A	3(09)-22 (E)- Lined Longitudinal Bar	MnDOT, Don Obernolte	MnDOT	New zebra crosswalk design to reduce slips, falls		email from K. Dunn 3-23-13 requesting clarification and more info. Revised RTE submitted 5-16-13	
9/30/2013	10/1/2013	10/28/2013	A	Signal Faces and Two-stage Left Turn Queue Boxes-City of Minneapolis, MN	Steve Mosing	City of Minneapolis	two-stage left turn boxes and bicycle signal heads	4D.6		
11/19/2013	11/19/2013	12/24/2013	A	IA-16	Steve Mosing	City of Minneapolis	bicycle signal heads	4D.6	approval letter never received from FHWA, Interim Approval granted 12-24-2013	
5/30/2014	6/3/2014	9/9/2014	A	4(09)-44( E )	Steve Mosing	City of Minneapolis	Yellow/Red flashing Beacons at Crosswalks	4L.3, 4L.5	Revised request. Original RTE had only red flashing beacons actuated by push button at crosswalks. Revised RTE adds a flashing yellow phase prior to red flashing phase.	
7/2/2014	7/2/2014	10/9/2014	A	2(09)-107( E )	Mohammad Dehdashti and DeWayne Jones	MnDOT Metro District Maintenance	Gore diversion indicators	2C.63, 2C.64		
12/31/2014	1/5/2015	2/13/2015	D	2(09)-108( E )	Rob Williams	MnDOT Safety Rest Area Program	Rest Area Symbol Signs for Rest Areas on Freeways and Expressways	2I.3	see letter of denial dated 2-13-15	
7/14/2015 2/29/2016 5/4/2016	7/16/2015 3/02/2016 5/5/2016	5/12/2016	D D A	9(09)-84 ( E ) IA-16	Nathan Ellingson, James Grube, Steve Mosing	Hennepin County, City of Minneapolis	bicycle signal heads including solid circulars	4D.6	after discussions with FHWA, Hennepin Co. re-submitted the request March, 2016. After further discussion, Hennepin Co. re-submitted the request May, 2016	

Current Requests to Experiment

6/17/2019

Date Request to OTST	Date Request to FHWA	Date Approved or Denied	Approved or Denied (A/D)	Federal Ref. #	Name of Requestor	Entity of Requestor	Experimentation Requested	MUTCD Reference	Comments	Progress Reports?
7/14/2015 2/29/2016	7/16/2015 3/02/2016				James Grube, Steve Mosing	Hennepin County, City of Minneapolis	two-stage left turn boxes	9C		
9/21/2015	9/22/2015	10/1/2015	A	8(09)-20 ( E )	JoNette Kuhnau	Metro Transit, City of St. Paul	Flashing Blank-Out LRT warning sign for the Green Line LRT (W10-7)	8B.19		
3/11/2016	3/11/2016	3/16/2016	A	9(09)-82 ( E )	Kevin Nelson	City of St. Paul	two-stage turn bike box	9C	request arrived by mail	
4/12/2016 8/3/2016 1/13/2017	4/13/2016 8/3/2016 1/13/2017	2/8/2017	A	9(09)-96 ( E )	Kevin Nelson	City of St. Paul	Bicycle signal heads used with conflicting vehicle movements	4D.6	Bruce Friedman requested additional information on 5-10-16 1st Revision sent 8-3-16, 2nd revision sent 1-13-17	
8/23/2016 12/12/2016	8/24/2016 12/12/2016	2/20/2017	A	8(09)-25 ( E )	Brian Vitek	City of St. Paul	Flashing LRT Warning Signs for Pedestrians for the Green Line St. Paul, MN	8B.19		
2/2/2017	2/2/2017				Nathan Stanley, James Grube, Bryan Nemeth	Hennepin County, City of Hopkins	bicycle signal heads including solid circulars	4D.6		
3/6/2018	3/6/2018 Rev 5-31 rev 9-14-18	12/7/2018	A	9(09)-113( E )	Scott Poska	City of Minneapolis	Advisory bike lanes	9C		
6/25/2018	6/25/2018	11/29/2018	D		Michael Petesch	MnDOT	zigzag lines in advance of a crosswalk	3B.18	email from D. Kirschner (11-29-18) requiring other high-visibility crosswalk markings be installed and monitored before approving an RTE for non-compliant markings.	
7/10/2018	7/10/2018				Nichole Morris	U of M and City of St. Paul	Gateway installation of in-street pedestrian signs	2B.12	MnDOT is sponsoring this research	

need to convert to Conditional use

ongoing

## Colton, Diane (DOT)

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**From:** Anderson, Janelle (DOT)  
**Sent:** Thursday, June 06, 2019 8:41 AM  
**To:** Colton, Diane (DOT)  
**Subject:** FW: [External] RE: APS on RRFB's

Add this to the agenda for the meeting next week.

*Janelle*

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**From:** Jonathan J Krieg [mailto:Jonathan.Krieg@hennepin.us]  
**Sent:** Wednesday, March 27, 2019 7:45 AM  
**To:** Zarling, Susan (DOT) <susan.zarling@state.mn.us>; Anderson, Janelle (DOT) <janelle.anderson@state.mn.us>  
**Cc:** Barnes, Melissa (DOT) <melissa.barnes@state.mn.us>; Piper, Sonja (DOT) <sonja.piper@state.mn.us>; Turner Barga, Mackenzie M (DOT) <mackenzie.turnerbarga@state.mn.us>  
**Subject:** RE: [External] RE: APS on RRFB's

Thanks for the information.

Janelle – This may be a good item for our next MCUTCD meeting?

JK

Jon Krieg, P.E., P.T.O.E.  
Traffic Operations Engineer  
Transportation Operations Department  
Hennepin County Public Works  
1600 Prairie Drive; Medina, MN 55340  
612-596-0309  
[Jonathan.krieg@hennepin.us](mailto:Jonathan.krieg@hennepin.us)

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**From:** Zarlina, Susan (DOT) <[susan.zarling@state.mn.us](mailto:susan.zarling@state.mn.us)>  
**Sent:** Tuesday, March 26, 2019 2:58 PM  
**To:** Anderson, Janelle (DOT) <[janelle.anderson@state.mn.us](mailto:janelle.anderson@state.mn.us)>; Jonathan J Krieg <[Jonathan.Krieg@hennepin.us](mailto:Jonathan.Krieg@hennepin.us)>; Turner Barga, Mackenzie M (DOT) <[mackenzie.turnerbarga@state.mn.us](mailto:mackenzie.turnerbarga@state.mn.us)>  
**Cc:** Barnes, Melissa (DOT) <[melissa.barnes@state.mn.us](mailto:melissa.barnes@state.mn.us)>; Piper, Sonja (DOT) <[sonja.piper@state.mn.us](mailto:sonja.piper@state.mn.us)>  
**Subject:** [External] RE: APS on RRFB's

Jon, it was determined a few years ago that MnDOT was requiring the APS on the RRFB's. When the City of St. Paul was installing the RRFB's along Snelling Ave. we got an interpretation from FHWA and it was stated that we should be using the APS. The main reasoning for this is because there is the flashing yellow light that is visible to sighted pedestrians letting them know that the lights are flashing.

I believe that the button says "flashing yellow lights are on"

I have attached a copy of the correspondence we had with FHWA.

Sue

Sue Zarlina, P.E., PTOE  
MnDOT

Traffic Electrical Systems Engineer  
651-234-7052

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**From:** Anderson, Janelle (DOT)  
**Sent:** Tuesday, March 26, 2019 1:44 PM  
**To:** Jonathan J Krieg <[Jonathan.Krieg@hennepin.us](mailto:Jonathan.Krieg@hennepin.us)>; Turner Bargaen, Mackenzie M (DOT) <[mackenzie.turnerbargaen@state.mn.us](mailto:mackenzie.turnerbargaen@state.mn.us)>  
**Cc:** Barnes, Melissa (DOT) <[melissa.barnes@state.mn.us](mailto:melissa.barnes@state.mn.us)>; Zarling, Susan (DOT) <[susan.zarling@state.mn.us](mailto:susan.zarling@state.mn.us)>  
**Subject:** RE: APS on RRFB's

Attached is the last correspondence I have on this issue. A Tech memo on ADA Accessibility in MnDOT's R/W was issued (18-04-OP-01), but only addresses APS at signalized intersections and does not address RRFBs (that I could find).

Perhaps Sue Zarling has more recent information on this subject.

*Janelle*

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**From:** Jonathan J Krieg [<mailto:Jonathan.Krieg@hennepin.us>]  
**Sent:** Monday, March 18, 2019 9:18 AM  
**To:** Turner Bargaen, Mackenzie M (DOT) <[mackenzie.turnerbargaen@state.mn.us](mailto:mackenzie.turnerbargaen@state.mn.us)>  
**Cc:** Anderson, Janelle (DOT) <[janelle.anderson@state.mn.us](mailto:janelle.anderson@state.mn.us)>; Barnes, Melissa (DOT) <[melissa.barnes@state.mn.us](mailto:melissa.barnes@state.mn.us)>  
**Subject:** APS on RRFB's

Mackenzie

The question has come up a couple of times about adding APS to our RRFB's. They are required on traffic signals but as far as we know not on RRFB's. What is MnDOT's position on this?

Thanks!

JK

Jon Krieg, P.E., P.T.O.E.  
Traffic Operations Engineer  
Transportation Operations Department  
Hennepin County Public Works  
1600 Prairie Drive; Medina, MN 55340  
612-596-0309  
[Jonathan.krieg@hennepin.us](mailto:Jonathan.krieg@hennepin.us)

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\*\*\*CAUTION: This email was sent from outside of Hennepin County. Unless you recognize the sender and know the content, do not click links or open attachments.\*\*\*

**Disclaimer:** If you are not the intended recipient of this message, please immediately notify the sender of the transmission error and then promptly delete this message from your computer system.

**Colton, Diane (DOT)**

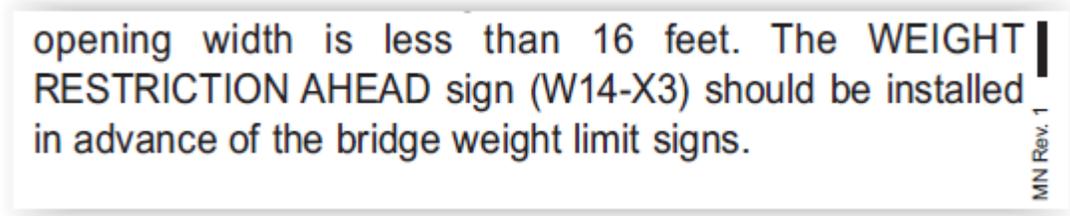
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**From:** Tayse, Josephine (DOT)  
**Sent:** Tuesday, June 11, 2019 1:05 PM  
**To:** Kautz, Tiffany (DOT); Anderson, Janelle (DOT); Colton, Diane (DOT)  
**Subject:** MUTCD topic  
**Attachments:** SigningTopicMemo\_#431 Weight Restriction Ahead.docx

Janelle,

I can't make tomorrow's MUTCD meeting but here is the topic I was hoping to discuss.

MN MUTCD 2B.59.1 last sentence of this section



I would like to remove this sentence. There is guidance on the top of the page that discusses where to place advance bridge restriction signs. Also see attached for MnDOT's preferred way to sign.

Can you bring this up tomorrow? I hope it is a quick discussion.

**Josie Tayse**  
State Signing Engineer | Office of Traffic Engineering

**Minnesota Department of Transportation**  
1500 West County Road B2  
Roseville, MN 55113  
651-234-7371  
[mndot.gov/](http://mndot.gov/)



TOPIC STATUS

*Signing Subcommittee:*

*February 21, 2019*

*Executive Committee:*

## Memo

To: Brian Sorenson  
Director, Office of Traffic Engineering

From: Josie Tayse  
State Signing Engineer

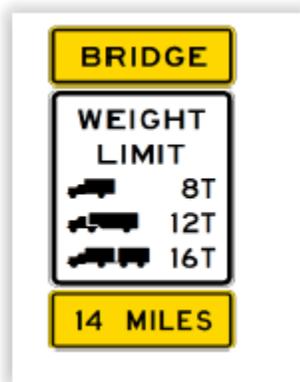
Date:

**RE: TEO Signing Committee Topic # 431  
Weight Restriction Ahead**

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On behalf of the TEO Signing Committee, I am requesting that the TEO Executive Committee review and approve the following recommendations regarding the Weight Restriction Ahead (W14-X3) sign guidance changes to the TEM.

According to the TEM, Weight Restriction Ahead (W14-X3) sign should be installed in advance of bridge weight limit signs. The TEO Signing Committee commented that none of the districts currently use this warning sign. Rather they use the R12-5 sign with supplements as the advance warning sign.



R12-5 with  
supplements



W14-X3

The Weight Restriction Ahead sign is too general while the R12-5 sign with supplements has specific information for drivers. The committee recommends that the R12-5 sign with supplements be used as the warning sign and the sections recommending the generic Weight Restriction Ahead section be removed from the TEM.

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### 6-5.03 Bridge Load Restrictions

Posting requirements for bridges on trunk highways are determined by [MnDOT's Office of Bridges and Structures](#).

1. Bridge Weight Limit Signs (R12-1a, R12-5a)

Additional Information on load posting is stated in the [LRFD \(Load and Resistance Factor Design\) Bridge Design Manual](#), Section 15.13. Use and application of the R12-1a sign is stated in the [MN MUTCD](#) Section 2B.59.1.

The R12-5a sign may be used when only the single unit truck (SHV) needs posting. When a bridge load rating is controlled by SHVs, the typical posting sign (R12-5) creates a problem with unregulated permit timber trucks from the "Timber Haulers Bill". The timber trucks **with loads greater than 40 tons** are associated with the two combinations vehicles, represented by the M 3S2 and M 3S3 posting sign figures. Our current MnDOT posting guidelines require that if the SHV governs the load rating and requires posting, then M 3S2 and M 3S3 will automatically be set at 40 tons maximum. This means that timber trucks are not allowed to cross the bridge, even though the **bridge load rating may be greater than allowable timber truck loads**. ~~for timber trucks show its okay.~~ With the new single unit posting sign (R12-5a), this will give the bridge owner an option to just post the bridge for the single unit truck.

Bridge Weight Limit signs shall be installed either on or immediately in advance of the bridge or structure that is restricted. On state highways, the posting notification is sent by memo from the State Bridge Engineer to the District Engineer. The District office must inform the Bridge Management Unit when the posting signs are in place. When a **bridge load** rating is completed and indicates a bridge is to be posted, the posting signs must be erected within 30 days after notification of their requirement. If there are significant changes in the bridge condition or in the posted weight, temporary signs should be erected in the interim.

2. BRIDGE WEIGHT LIMIT Supplement Sign (R12-5 Supplement)

Use and application of this sign is stated in the [MN MUTCD](#) Section 2B.59.1. The BRIDGE WEIGHT LIMIT supplement sign shall be installed well in advance of bridges or structures that are restricted. Signs should be placed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around.

### ~~3. WEIGHT RESTRICTION AHEAD Sign (W14-X3)~~

~~The WEIGHT RESTRICTION AHEAD sign should be installed in advance of bridge weight limit signs.~~

### ~~6-6.22 WEIGHT RESTRICTION AHEAD Sign (W14-X3)~~

~~See Section 6-5.03 Bridge Speed and Load Restrictions for use and application of the WEIGHT RESTRICTION AHEAD sign.~~

If approved, the changes made to the Weight Restriction Ahead section of the TEM will be included in the next update to Chapter 6 of the TEM.

Cc: TEO Executive Committee  
TEO Signing Committee  
Sign Supervisors  
Steve McBurney  
Brian Barrett  
Diane Colton

## **PART 6. TEMPORARY TRAFFIC CONTROL**

### **Chapter 6J. Long Term**

#### **Temporary Traffic Control Zone Layouts**

##### **6J-1 General**

###### **SUPPORT:**

This section illustrates typical layouts which provide additional guidance for individuals with traffic engineering expertise.

###### **GUIDANCE:**

These layouts should be used during the development of detailed traffic control plans. They should only be used under the direction of a traffic engineering professional. They should be combined with the principles and figures contained elsewhere in this manual.

###### **OPTION:**

Some of these layouts may be used on short term construction or maintenance projects.

###### **SUPPORT:**

The concepts shown in the following layouts are only intended to be guidelines.

## PART 6. TEMPORARY TRAFFIC CONTROL

### Chapter 6J. Long Term Temporary Traffic Control Zone Layouts

#### 6J-1 General

##### **SUPPORT**

This section illustrates typical layouts which provide additional guidance for individuals with traffic engineering expertise.

##### **GUIDANCE**

These layouts should be used during the development of detailed traffic control plans. They should only be used under the direction of a traffic engineering professional. They should be combined with the principles and figures contained elsewhere in this manual.

##### **OPTION**

Some of these layouts may be used on short term construction or maintenance projects.

##### **SUPPORT**

The concepts shown in the following layouts are only intended to be guidelines.

<b>Symbols</b>	<b>Meaning</b>
	Flagger or Operator of Automated Flagging Assistance Device
 <b>AFAD</b>	Automated Flagging Assistance Device (AFAD)
	Flashing Arrow Board
	Portable Changeable Message Sign (PCMS)
	Portable Equipment - includes testing devices, detection, surveying, etc.
	Portable Traffic Signal
	360-Degree Yellow Flashing Vehicle Light(s)
	Longitudinal Channelizer
	Type III Barricade
	Traffic Control Sign
	Reboundable Sign Support
	Type A Flashing Warning Light
	Surface mounted delineator
	Channelizing Device.
	A combination of Type A and B channelizing devices
	Direction of Traffic
	See Note; i.e. See Note 6
	Work Space

**Figure 6J-1 Symbols Used in Typical Layouts**

Symbol	Meaning
	Audible Message Device (AMD)
	Channelizing Device
	Detectable Warning Surface (Truncated Domes)
	Direction of Traffic
	Flashing Arrow Board
	Portable Changeable Message Sign (PCMS)
	Pedestrian Channelizer
	Portable Equipment - Includes testing devices, detection, surveying, etc.
	Portable Traffic Signal
	Reboundable Sign Support
	See Note (i.e. See Note 6)
	Sidewalk Barricade
	Surface Mounted Delineator
	Temporary Attenuator
	Temporary Barrier
	Temporary Curb Ramp
	Temporary Walkway Surface
	Traffic Control Sign
	Type A Flashing Warning Light
	Type III Barricade
	Work Space

Figure 6J-1 Symbols Used in Typical Layouts

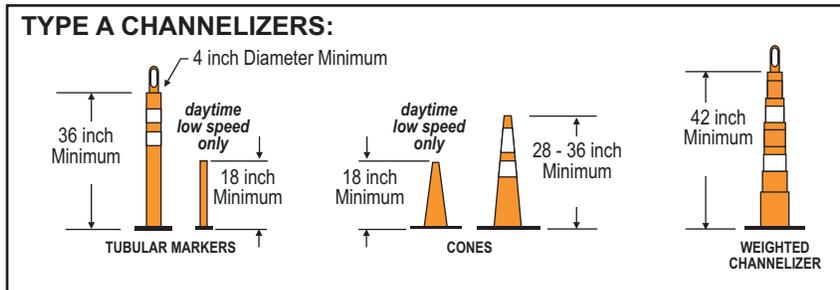
## Temporary Traffic Control Distance Charts

Posted Speed Limit Prior to Work Starting (mph)		Advance Warning Sign Spacing (A) feet	Decision Sight Distance (D) feet	Taper Length (12 ft lane) (L) feet	Shifting Taper (L/2) feet	Typical Shoulder Taper (L/3) feet	
0 - 30	G = 25 ft	250	550	200	100	75	
35 - 40		325	700	325	175	125	
45 - 50	G = 50 ft	600	900	600	300	200	
55		750	1200	700	350	250	
60 - 65		1000	1400	800	400	275	
70 - 75		1200	1600	900	450	300	

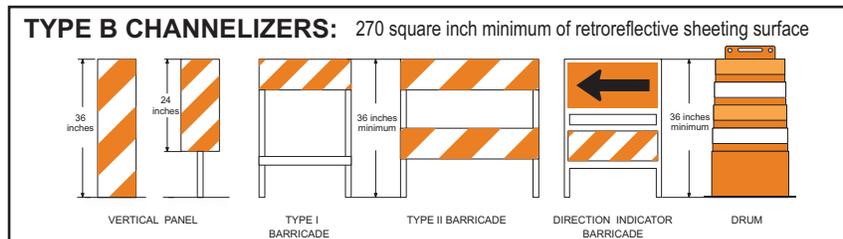
  

Posted Speed Limit Prior to Work Starting (mph)		Buffer Space (B) feet	Shadow Vehicle Following Distance (F) feet	Protection Vehicle Roll-Ahead Buffer Distance (with or without TMA) (R)	
				Moving (15 mph max) feet	Stopped feet
0 - 30	G = 25 ft	200	250 - 550	100	100
35 - 40		305	325 - 700	100	100
45 - 50	G = 50 ft	425	600 - 900	175	125
55		500	750 - 1200	175	125
60 - 65		650	1000 - 1400	225	175
70 - 75		820	1200 - 1600	225	175

Type A channelizing devices are typically used in attended temporary traffic control zones.\*



Type B channelizing devices shall be used if the temporary traffic control zone will be installed for more than 12 hours or if it is left unattended.\*



\* See the MN MUTCD, Part 6F for more details on application restrictions.

**Figure 6J-2 Temporary Traffic Control Devices and Distance Charts**

Posted Speed Limit Prior to Work Starting (mph)		Advance Warning Sign Spacing (A) feet	Decision Sight Distance (D) feet	Taper Length (12 ft lane) (L) feet	Shifting Taper (12 ft lane) (L/2) feet	Typical Shoulder Taper (L/3) feet	Buffer Space (B) feet
0-30	G = 25 ft.	100	550	200	100	75	200
35-40		325	700	325	175	125	305
45-50	G = 50 ft.	600	900	600	300	200	425
55		750	1200	700	350	250	500
60-65		1000	1400	800	400	275	650
70-75		1200	1600	900	450	300	820

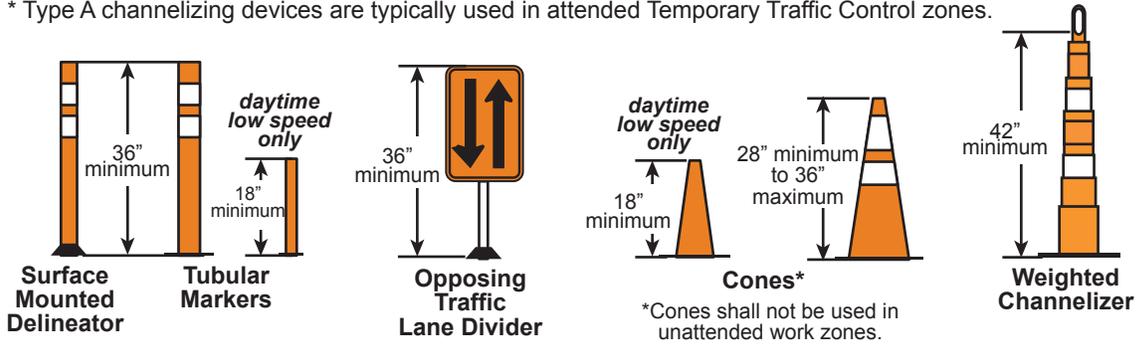
Posted Speed Limit Prior to Work Starting (mph)	Advance Warning Following Distance (F) feet	Roll Ahead Distance Charts				
		Recommended Spacing for Vehicles Weighing 9900 to 22,000 lbs GVW (R) feet		Recommended Spacing for Vehicles Weighing Greater than 22,000 lbs GVW (R) feet		
		Stationary Operation	Moving Operation 15 MPH max	Stationary Operation	Moving Operation 15 MPH max	
0-30	G = 25 ft.	100 - 550	100	100	75	100
35-40		325 - 700	100	100	75	100
45-50	G = 50 ft.	600 - 900	125	175	100	150
55		750 - 1200	125	175	100	150
60-65		1000 - 1400	175	225	150	175
70-75		1200 - 1600	175	225	150	175

Shadow and Protection Vehicle wheels should be pointed straight ahead.

Figure 6J-2 Temporary Traffic Control Distance Charts

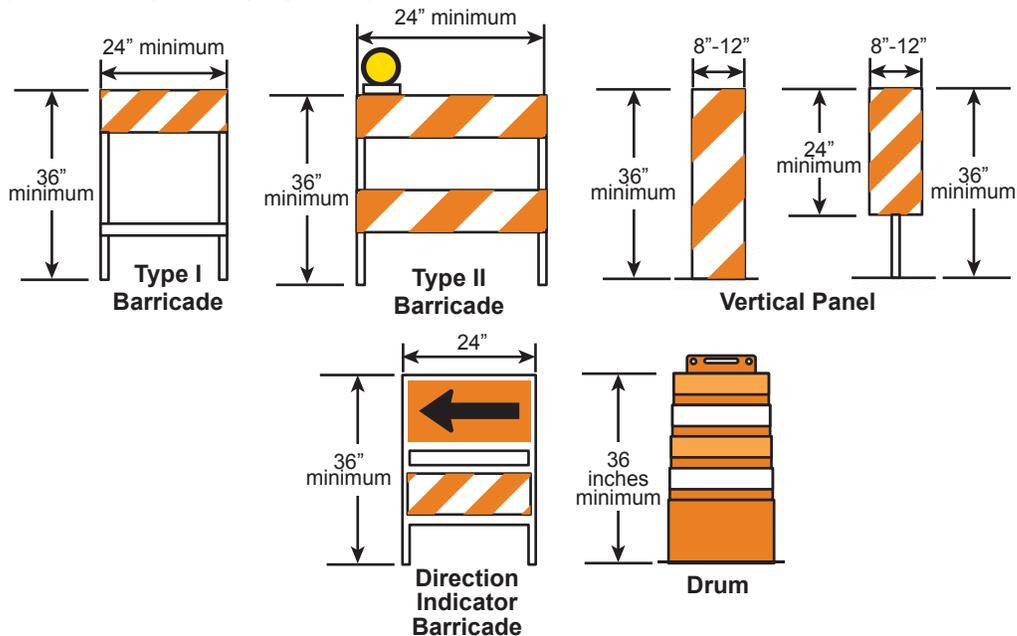
## TYPE A CHANNELIZERS

\* Type A channelizing devices are typically used in attended Temporary Traffic Control zones.



## TYPE B CHANNELIZERS

- Channelizers used on high speed roadways shall have a minimum of 270 square inches of retroreflective area facing road users.
- Orange diagonals shall slope down toward the traffic side.
- Type B channelizing devices shall be used if the Temporary Traffic Control zone will be installed for more than 12 hours or if it is left unattended. Weighted channelizers may be used in lieu of a Type B channelizer with the permission of the road authority.
- Type A Flashing Warning Lights may be used - place on the side with traffic.



## TYPE C CHANNELIZER

- Orange diagonals shall slope down toward the traffic side.
- Signs mounted on Type III barricades should not cover more than 50 percent of the top two rails or 33 percent of the total area of the three rails.
- Type A Flashing Warning Lights may be used - place on the side with traffic.

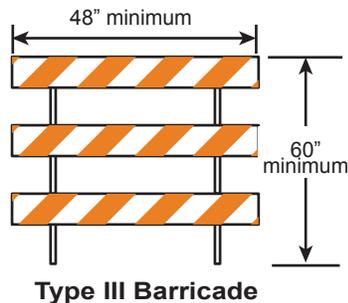
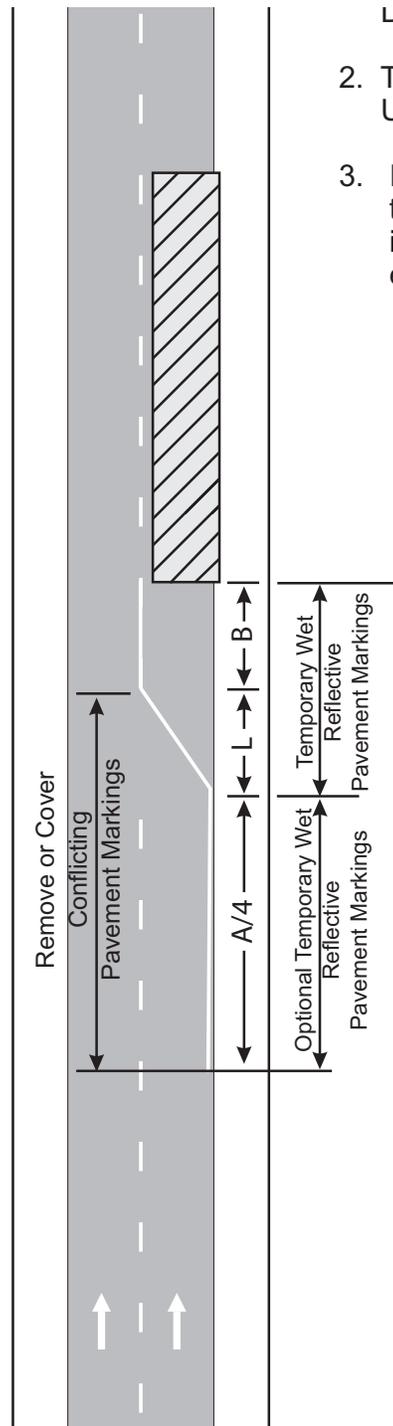


Figure 6J-3 Temporary Traffic Control Devices





Distance Charts.

2. Traffic control devices are not shown. Use appropriate lane closure.
3. Install 6" wet reflective edgelines through the transition and alignment change areas including lane closure tapers, sharp curves exits, shifts onto temporary roadways, etc.

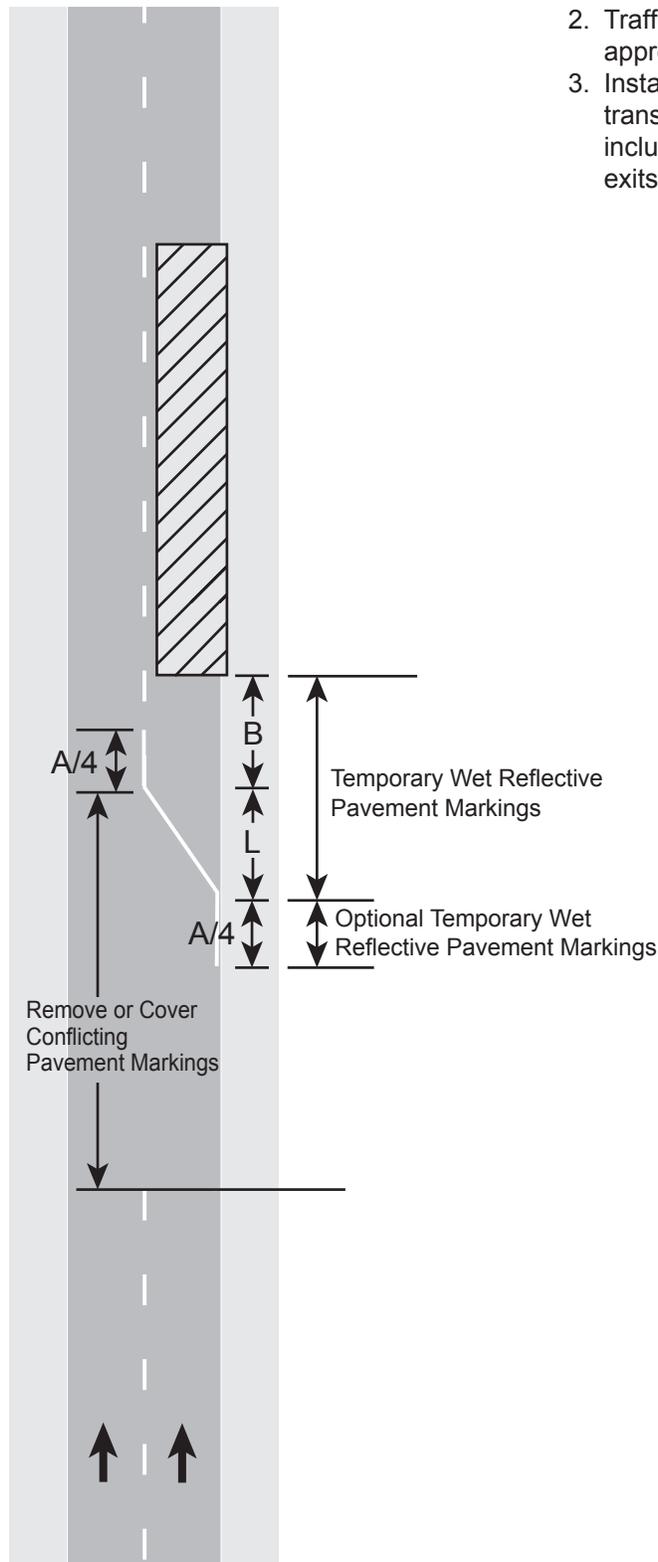
**TYPICAL STRIPING AND STRIPE REMOVAL FOR LANE CLOSURE MULTILANE DIVIDED ROAD**

LONG TERM

LAYOUT

NOTES:

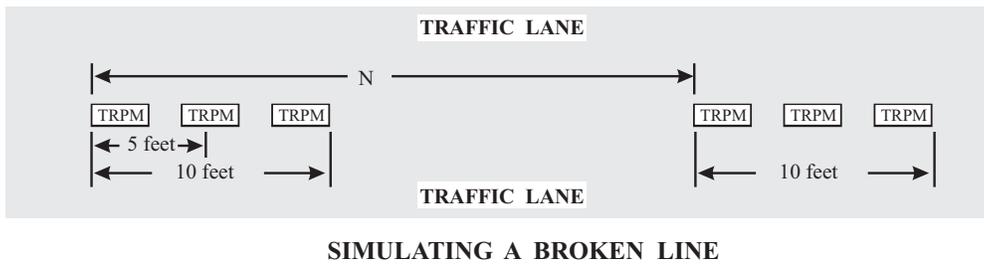
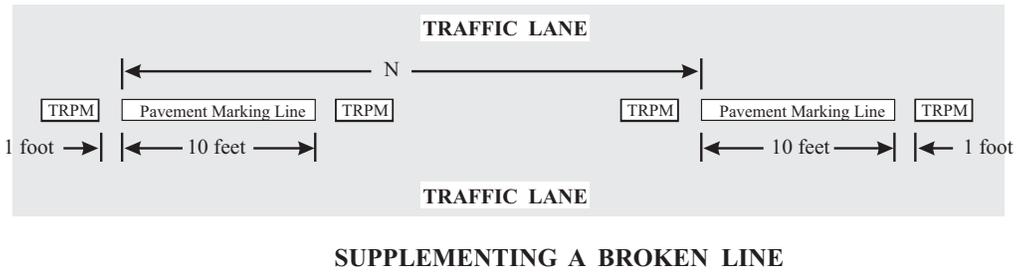
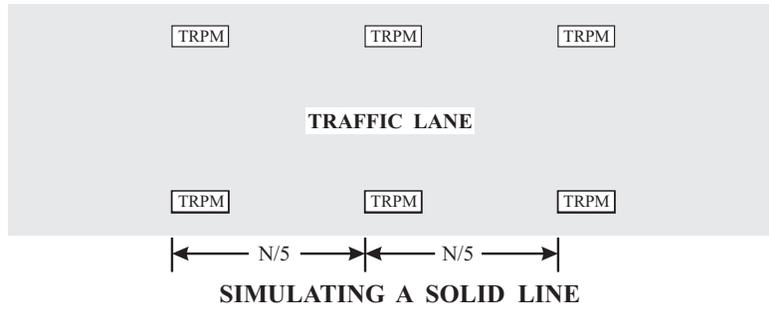
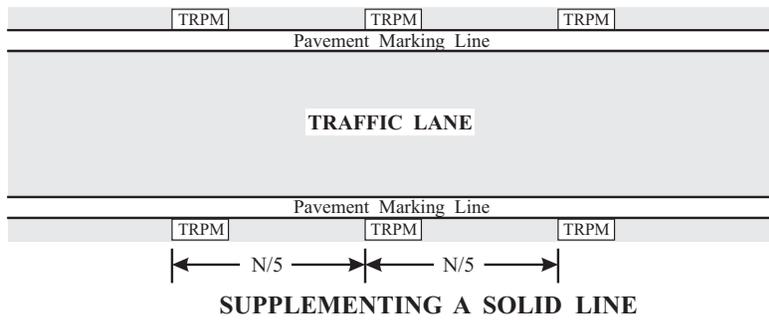
1. See page iii for Temporary Traffic Control Distance Charts.
2. Traffic control devices are not shown. Use appropriate lane closure.
3. Install wet reflective edgelines through the transition and alignment change areas including lane closure tapers, sharp curves, exits, shifts onto temporary roadways, etc.



**TYPICAL STRIPING AND STRIPE REMOVAL  
FOR LANE CLOSURE  
MULTILANE ROAD**

**LONG TERM**

**Layout 6J-1**



N = the length of one line segment plus one gap

## PLACEMENT AND SPACING OF TEMPORARY RAISED PAVEMENT MARKERS (TRPMs)

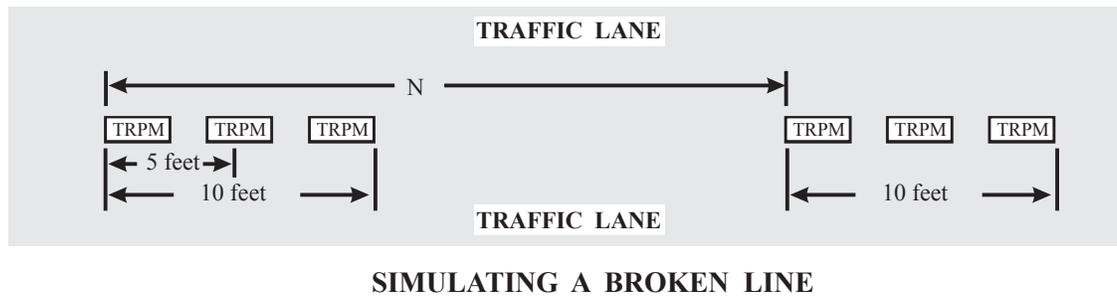
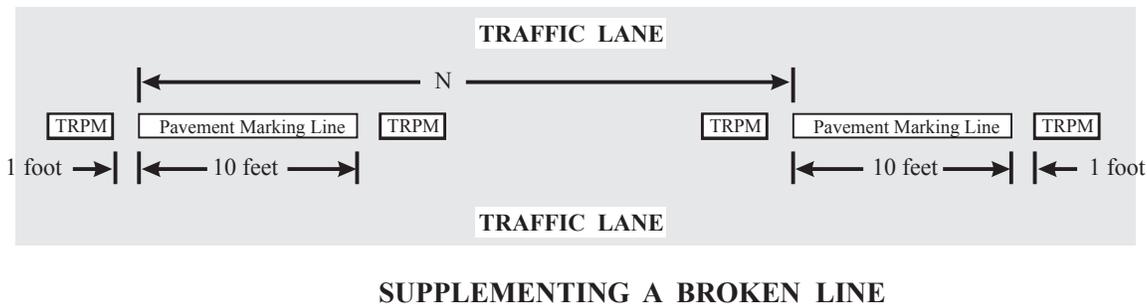
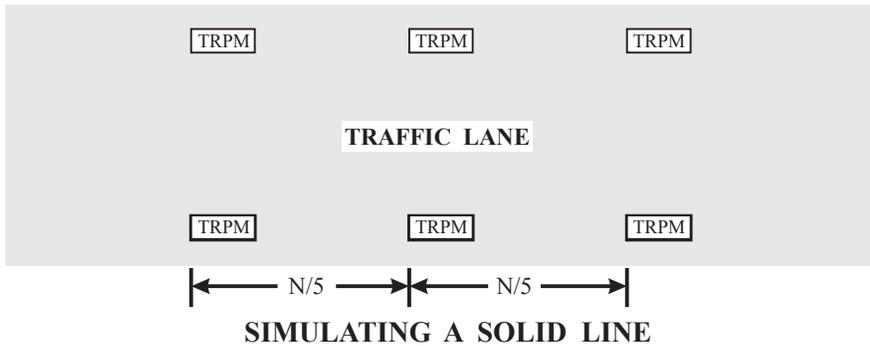
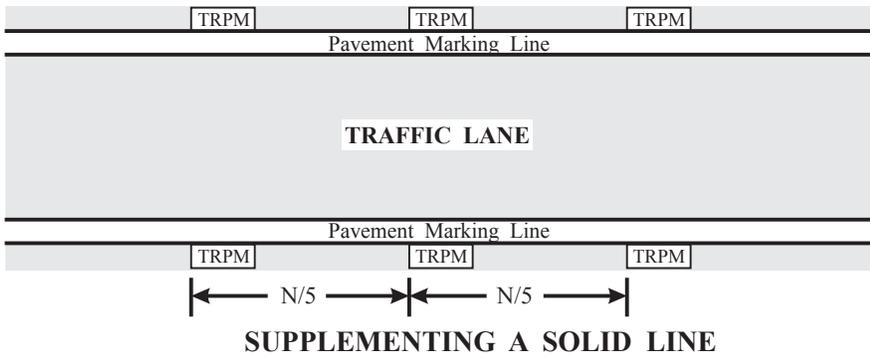
LONG TERM

LAYOUT 6J-2

**NOTES:**

1. N = the length of one line segment plus one gap (see Section 6F.79).
2. Retroreflective or internally illuminated raised pavement markers, or non-retroreflective raised pavement markers supplemented by retroreflective or internally illuminated markers, may be substituted for markings of other types in TTC zones.

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**PLACEMENT AND SPACING OF TEMPORARY RAISED PAVEMENT MARKERS (TRPMS)**

**LONG TERM**

**Layout 6J-2**

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NOTES:

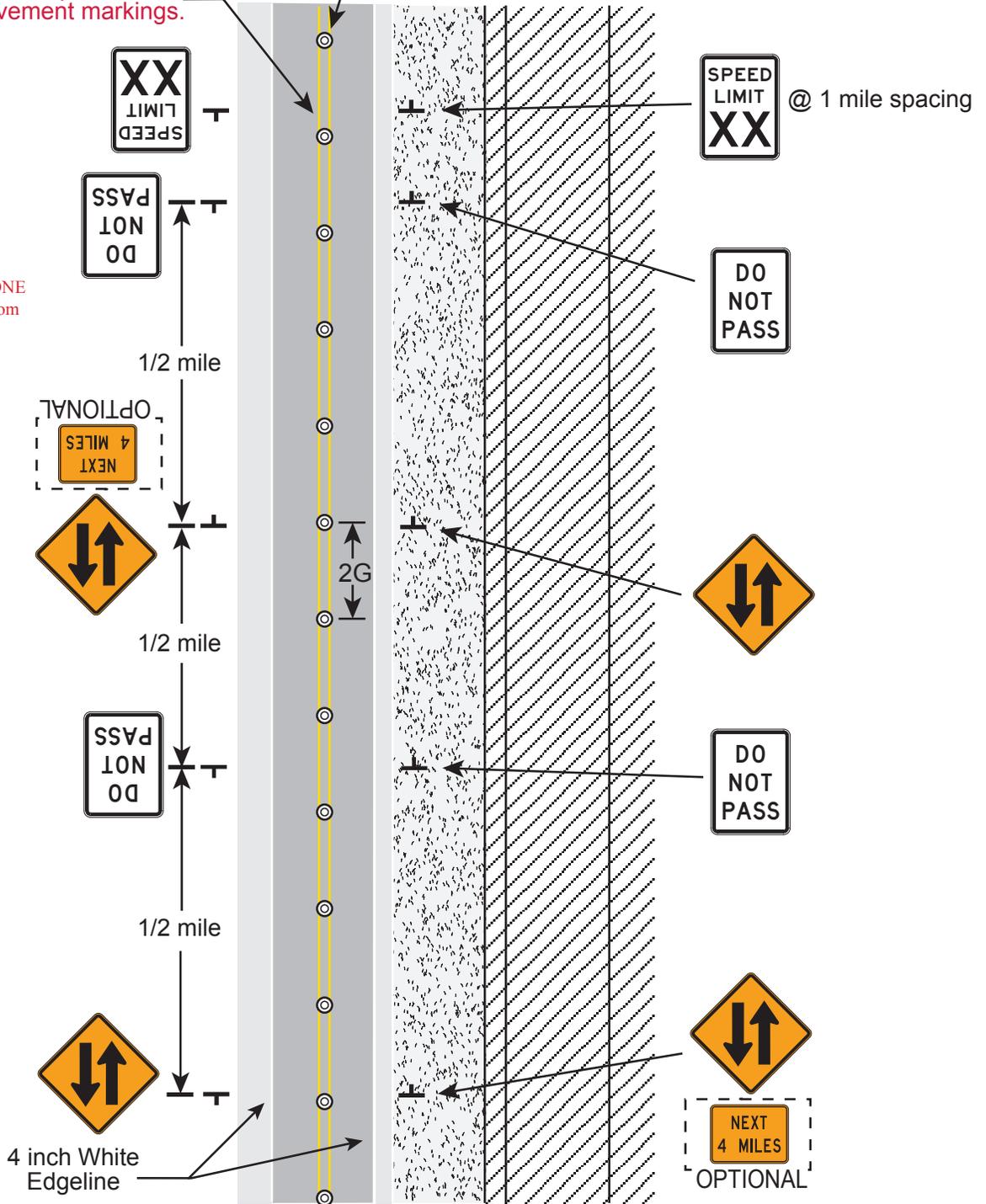
1. See page iii for Temporary Traffic Control Distance Charts.

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4 inch double yellow line and/or double line of yellow temporary raised pavement markers.  
 Cover or remove in place conflicting pavement markings.

Surface Mounted Delineators

Mn Rev. 7 2019  
 All NO PASSING ZONE pennants removed from diagram.



TYPICAL SECTION FOR  
 TWO-LANE, TWO-WAY OPERATIONS  
 MULTILANE DIVIDED ROAD

LONG TERM

Layout 6J-3



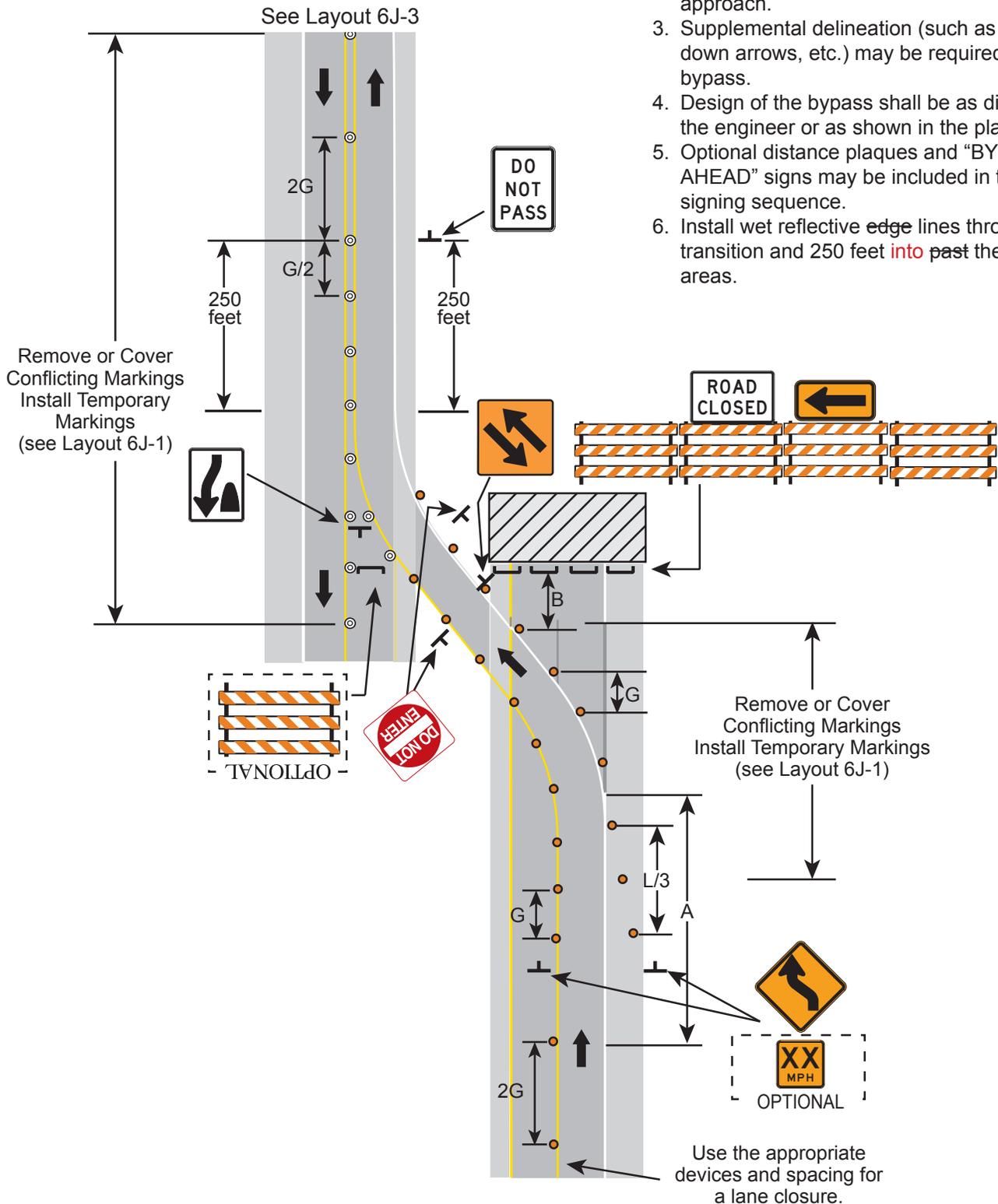
NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. Traffic controls devices are shown for only one approach.
3. Supplemental delineation (such as chevrons, down arrows, etc.) may be required in the bypass.
4. Design of the bypass shall be as directed by the engineer or as shown in the plans.
5. Optional distance plaques and "BYPASS AHEAD" signs may be included in the advance signing sequence.
6. Install wet reflective edge lines through the transition and 250 feet into past the tangent areas.

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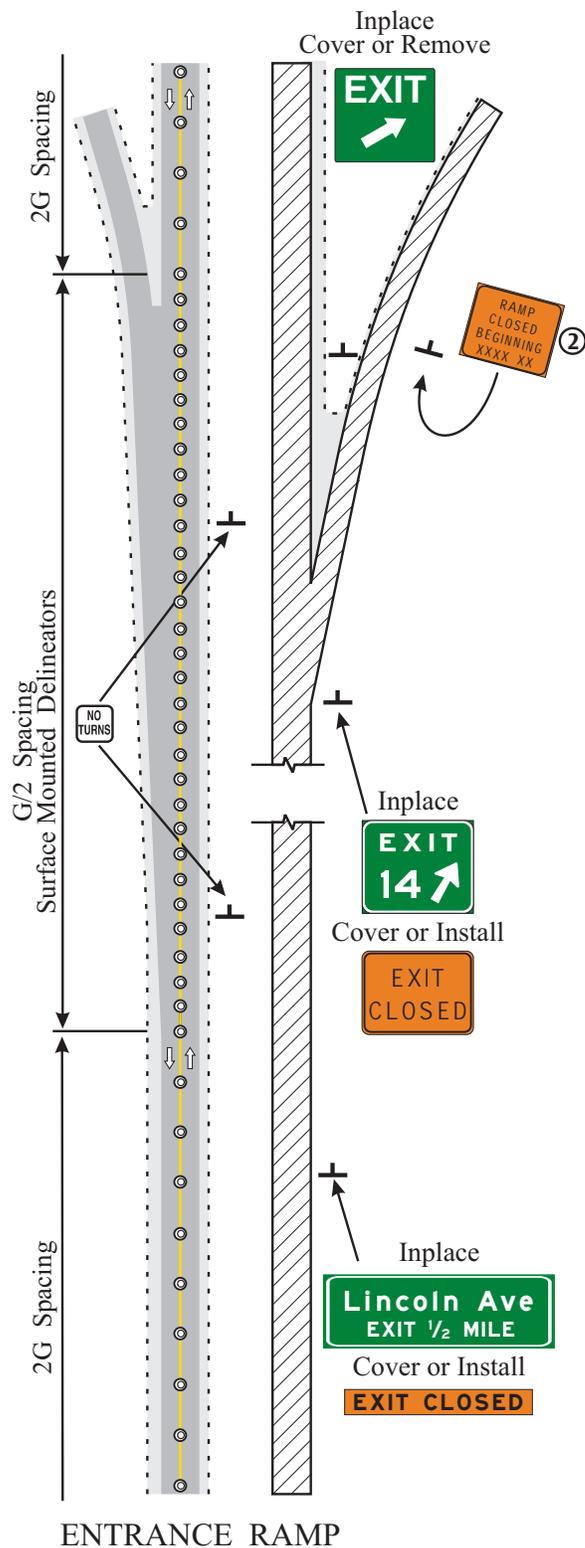
**TYPICAL CROSSOVER TO  
TWO-LANE, TWO-WAY OPERATIONS  
MULTILANE DIVIDED ROAD**

**LONG TERM**

**Layout 6J-4**

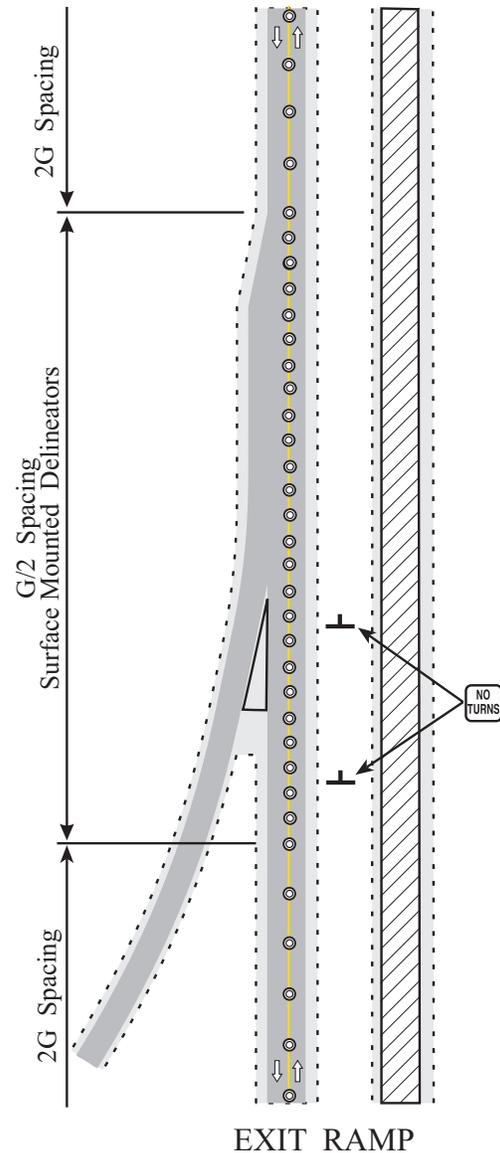






**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. Install at least 7 days prior to the start of work.



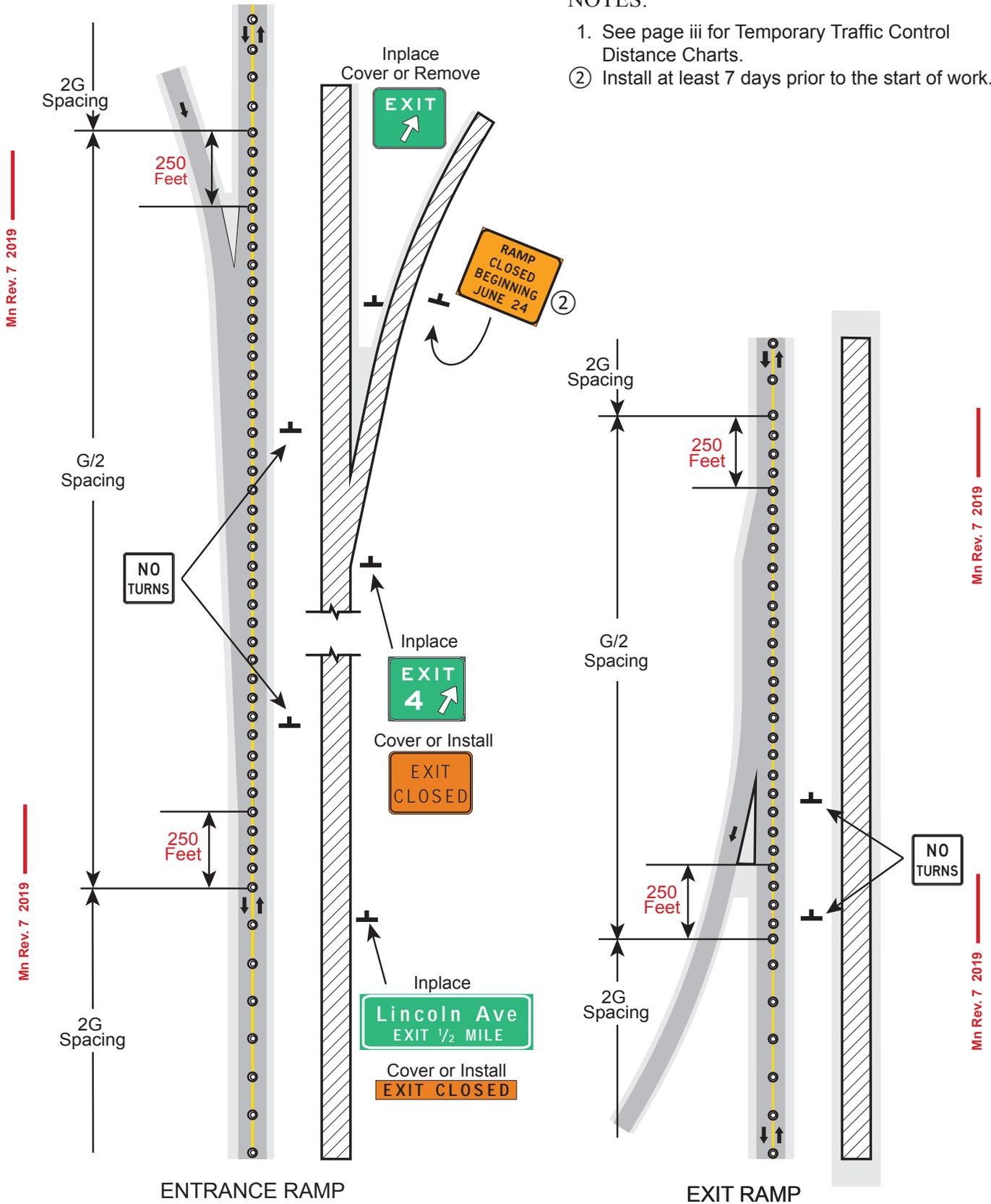
**TWO-LANE, TWO-WAY OPERATIONS  
AT RAMPS ON OPEN ROADWAY**

LONG TERM

LAYOUT 6J-6

NOTES:

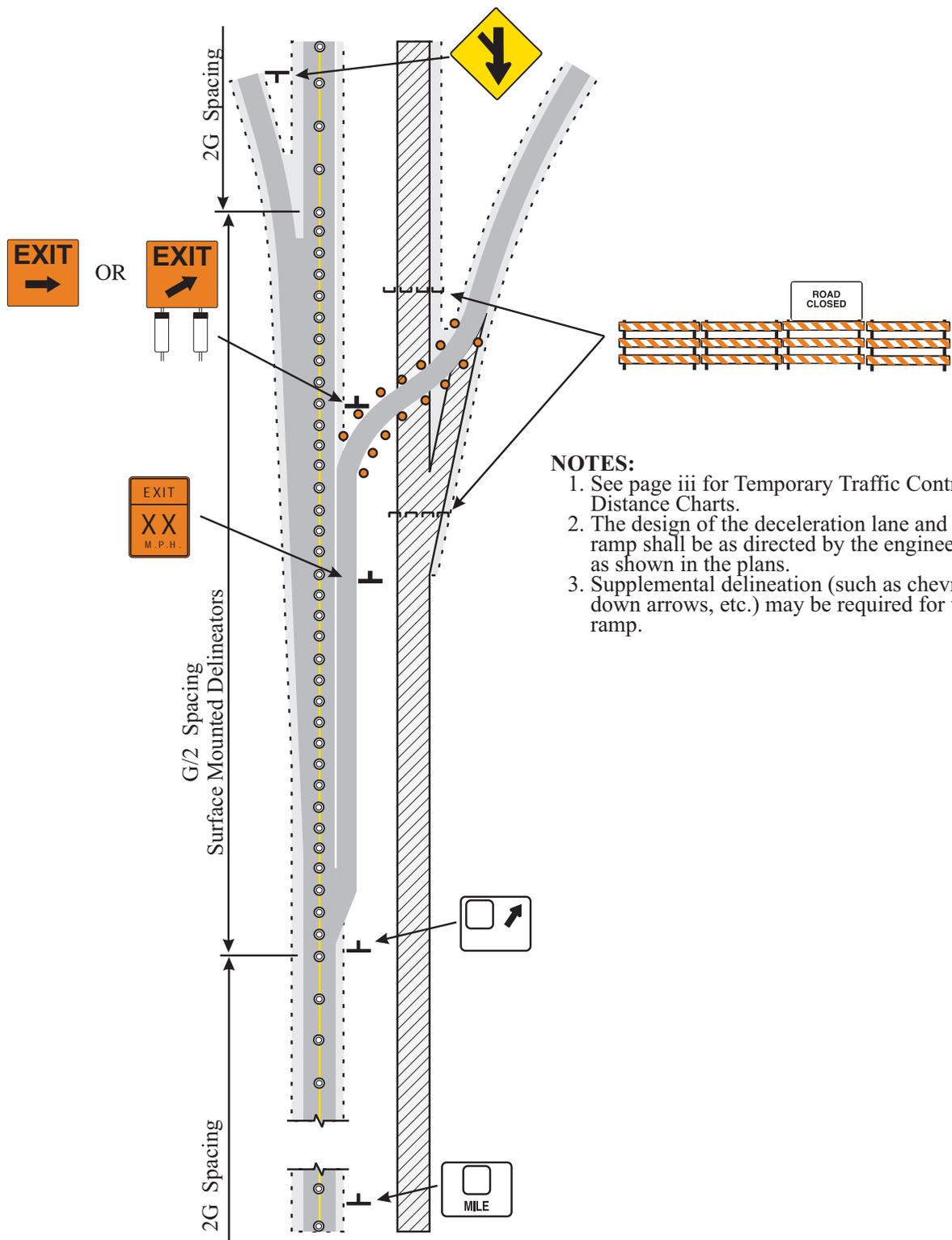
1. See page iii for Temporary Traffic Control Distance Charts.
- ② Install at least 7 days prior to the start of work.



**TWO-LANE, TWO-WAY OPERATIONS  
AT RAMPS ON OPEN ROADWAY**

**LONG TERM**

**Layout 6J-6**

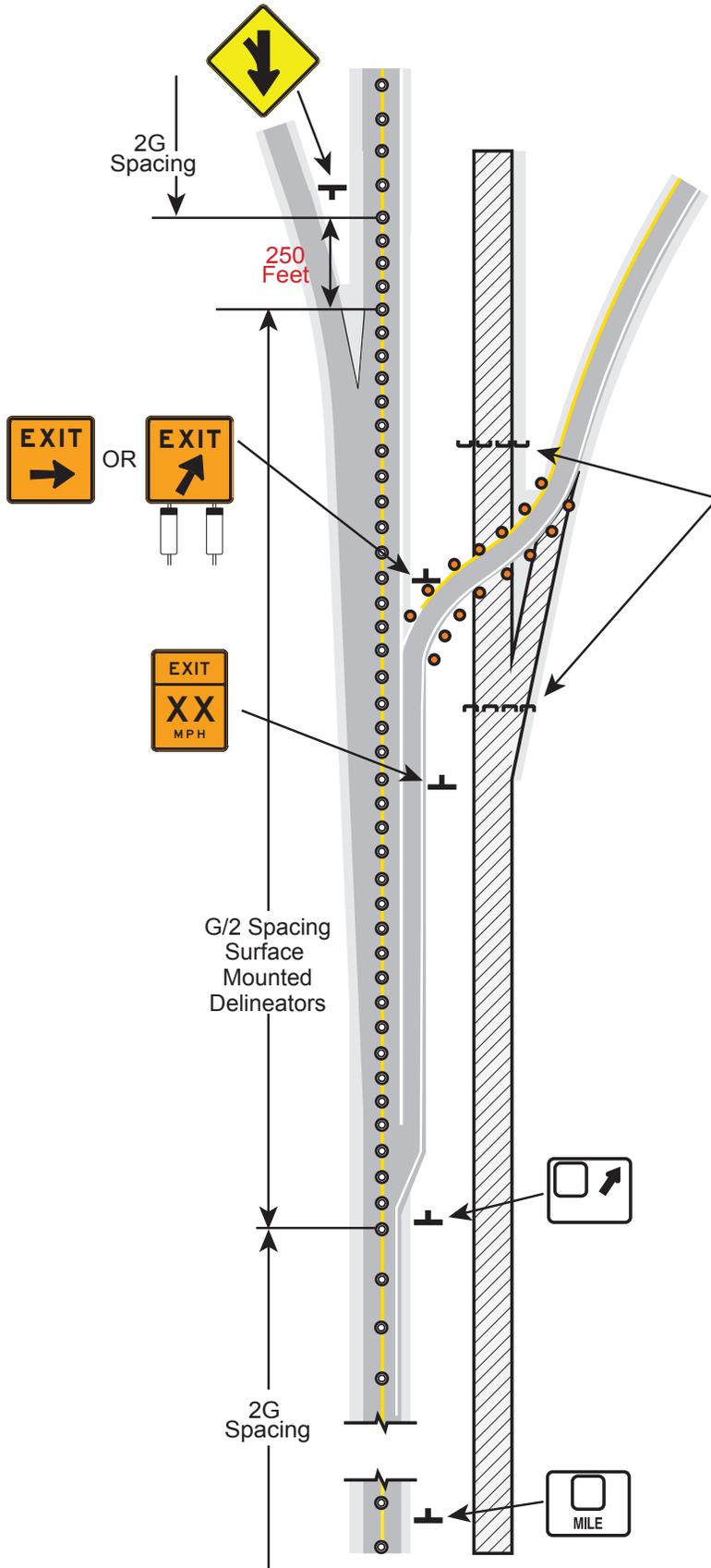


- NOTES:**
1. See page iii for Temporary Traffic Control Distance Charts.
  2. The design of the deceleration lane and exit ramp shall be as directed by the engineer or as shown in the plans.
  3. Supplemental delineation (such as chevrons, down arrows, etc.) may be required for the ramp.

**TWO-LANE, TWO-WAY OPERATION  
AT EXIT RAMP ACROSS CLOSED ROADWAY**

LONG TERM

LAYOUT 6J-7



NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. The design of the deceleration lane and exit ramp shall be as directed by the engineer or as shown in the plans.
3. Supplemental delineation (such as chevrons, down arrows, etc.) may be required for the ramp.



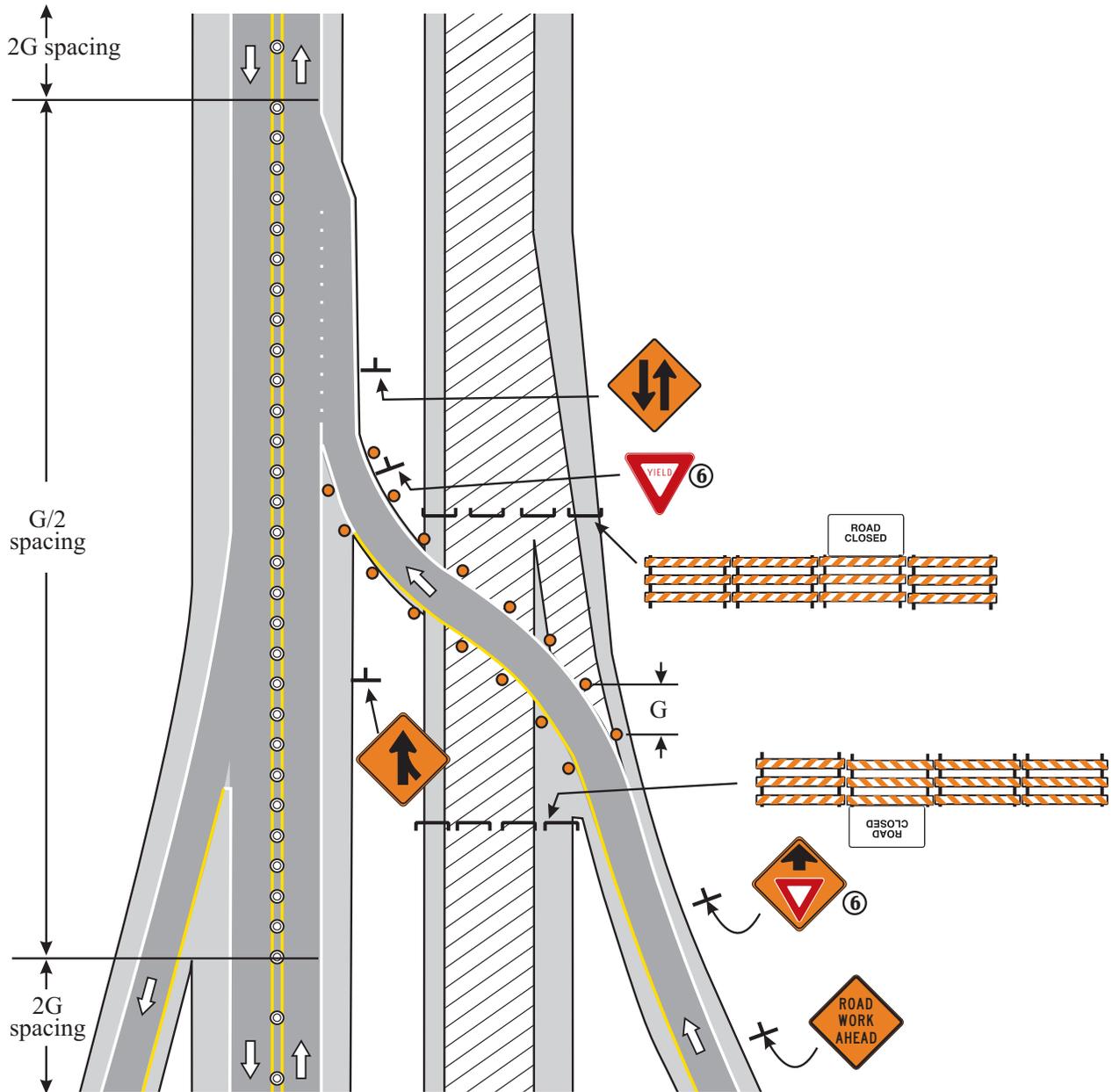
**TWO-LANE, TWO-WAY OPERATION  
AT EXIT RAMP ACROSS CLOSED ROADWAY**

**LONG TERM**

**Layout 6J-7**

**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. The design of the acceleration lane and entrance ramp shall be as directed by the engineer or as shown in the plans.
3. Supplemental delineation (such as chevrons, down arrows, etc.) may be required for the ramp.
4. The advance warning sign spacing is dependent on the ramp length and the location of inplace signing. The spacing should be as long as is practical.
5. Remove conflicting pavement markings and install temporary markings (see Figure 6J-1).
6. When an adequate acceleration lane is provided, this sign should be omitted.



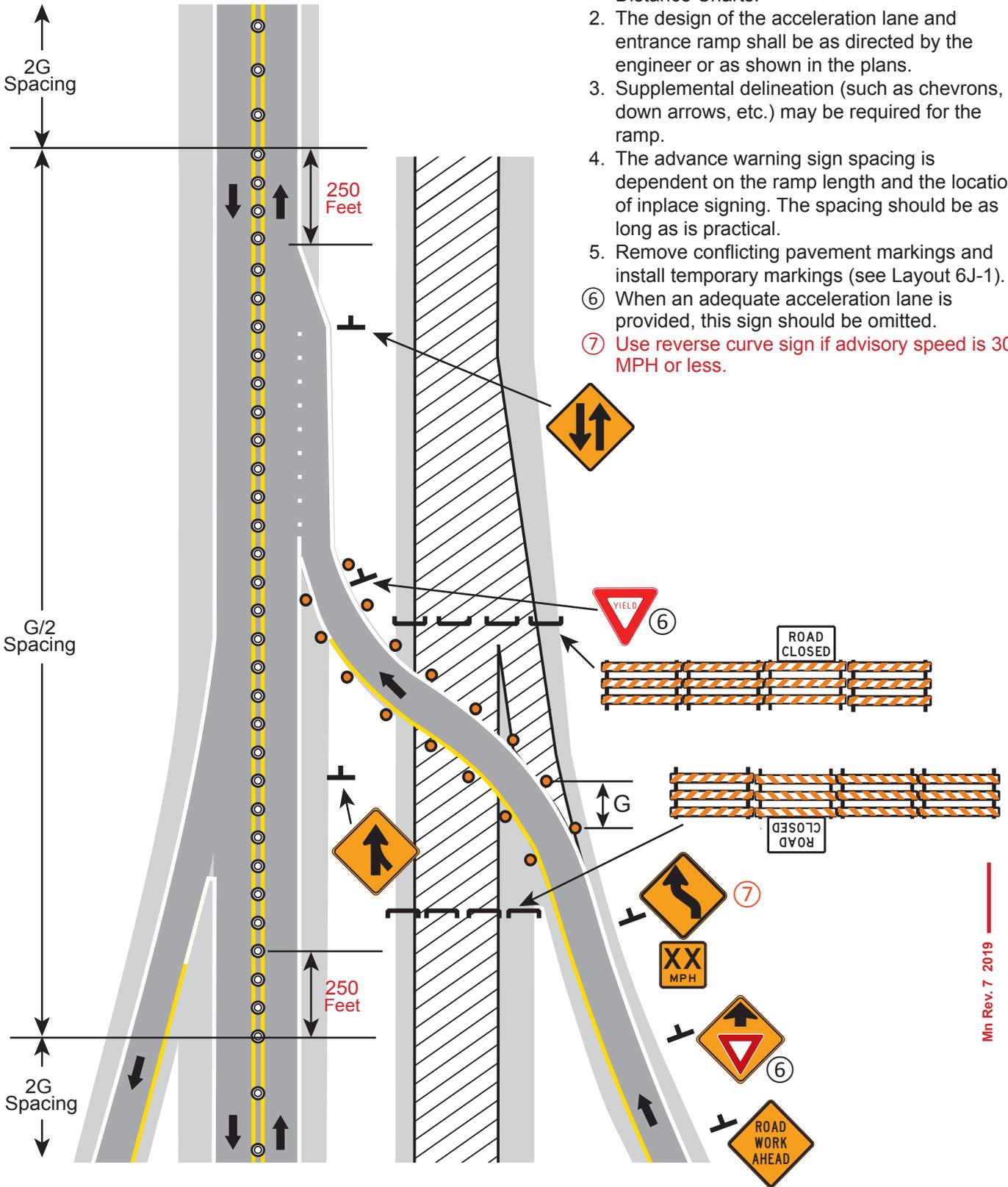
**TWO-LANE, TWO-WAY OPERATION  
AT ENTRANCE RAMP ACROSS CLOSED ROADWAY**

LONG TERM

LAYOUT 6J-8

NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. The design of the acceleration lane and entrance ramp shall be as directed by the engineer or as shown in the plans.
3. Supplemental delineation (such as chevrons, down arrows, etc.) may be required for the ramp.
4. The advance warning sign spacing is dependent on the ramp length and the location of inplace signing. The spacing should be as long as is practical.
5. Remove conflicting pavement markings and install temporary markings (see Layout 6J-1).
- ⑥ When an adequate acceleration lane is provided, this sign should be omitted.
- ⑦ Use reverse curve sign if advisory speed is 30 MPH or less.



**TWO-LANE, TWO-WAY OPERATION  
AT ENTRANCE RAMP ACROSS CLOSED ROADWAY**

LONG TERM

Layout 6J-8

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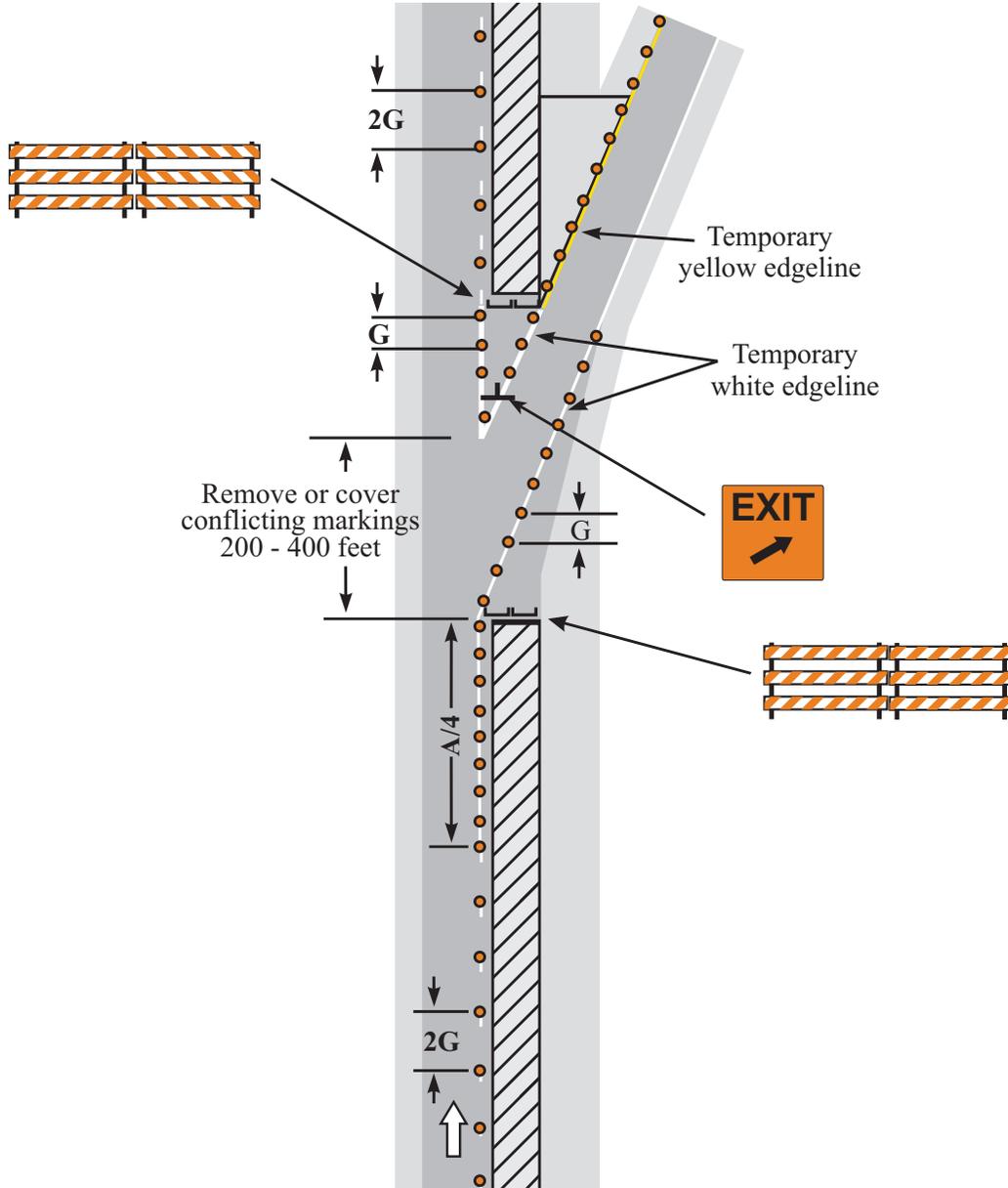
Mn Rev. 3 2013

Mn Rev. 3 2013

Mn Rev. 7 2019

**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. The design of the deceleration lane and the exit ramp shall be as directed by the engineer or as shown in the plans.
3. The advance warning sign spacing is dependent on the ramp length and the location of inplace signing. The spacing should be as long as is practical.



Use appropriate devices and spacing for lane closure.

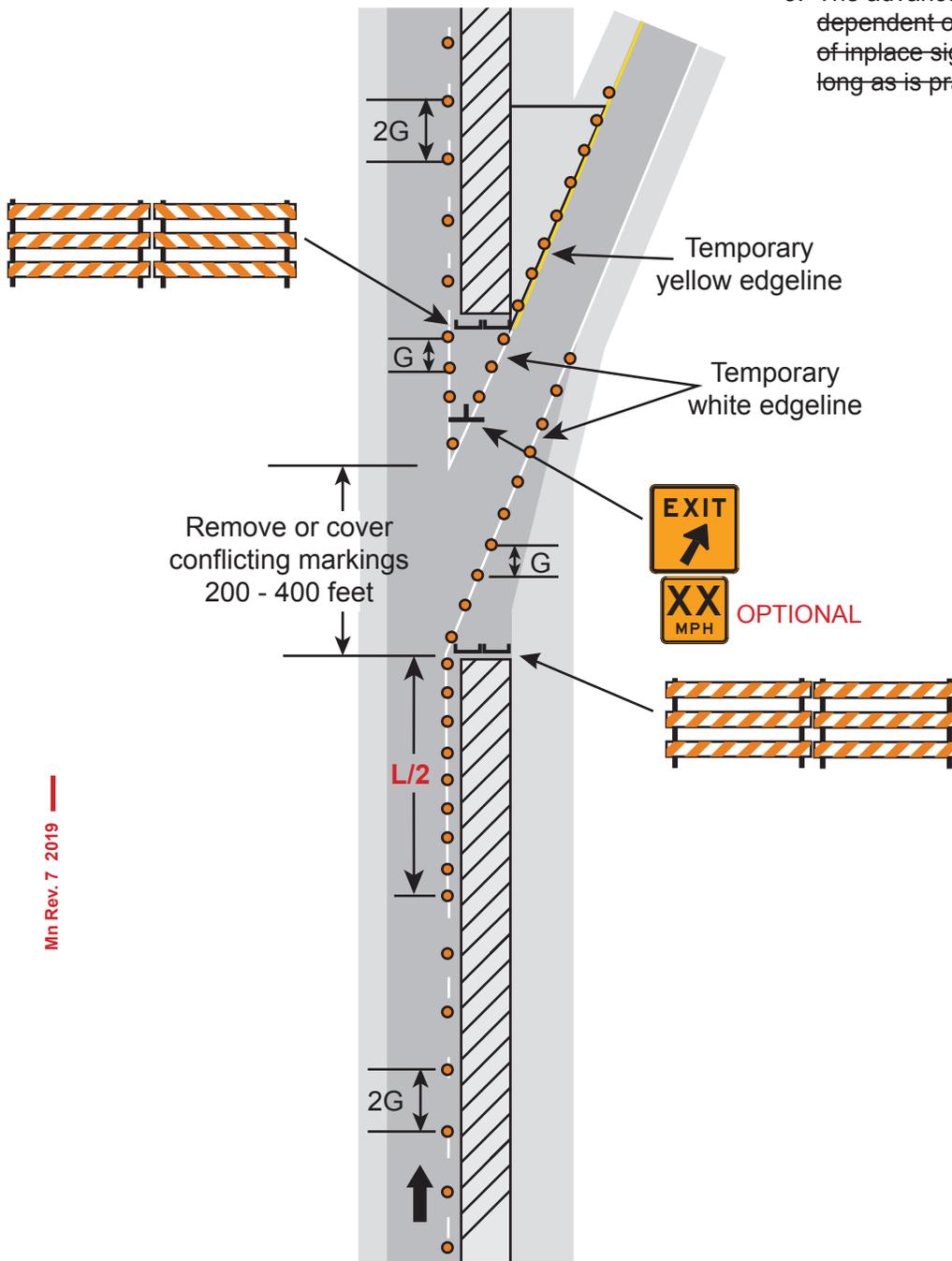
**MAINLINE RIGHT LANE CLOSED  
EXIT RAMP OPEN**

LONG TERM

LAYOUT 6J-9

NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. The design of the deceleration lane and the exit ramp shall be as directed by the engineer or as shown in the plans.
3. The advance warning sign spacing is dependent on the ramp length and the location of in-place signing. The spacing should be as long as is practical.



Use appropriate devices and spacing for lane closure.

**MAINLINE RIGHT LANE CLOSED  
EXIT RAMP OPEN**

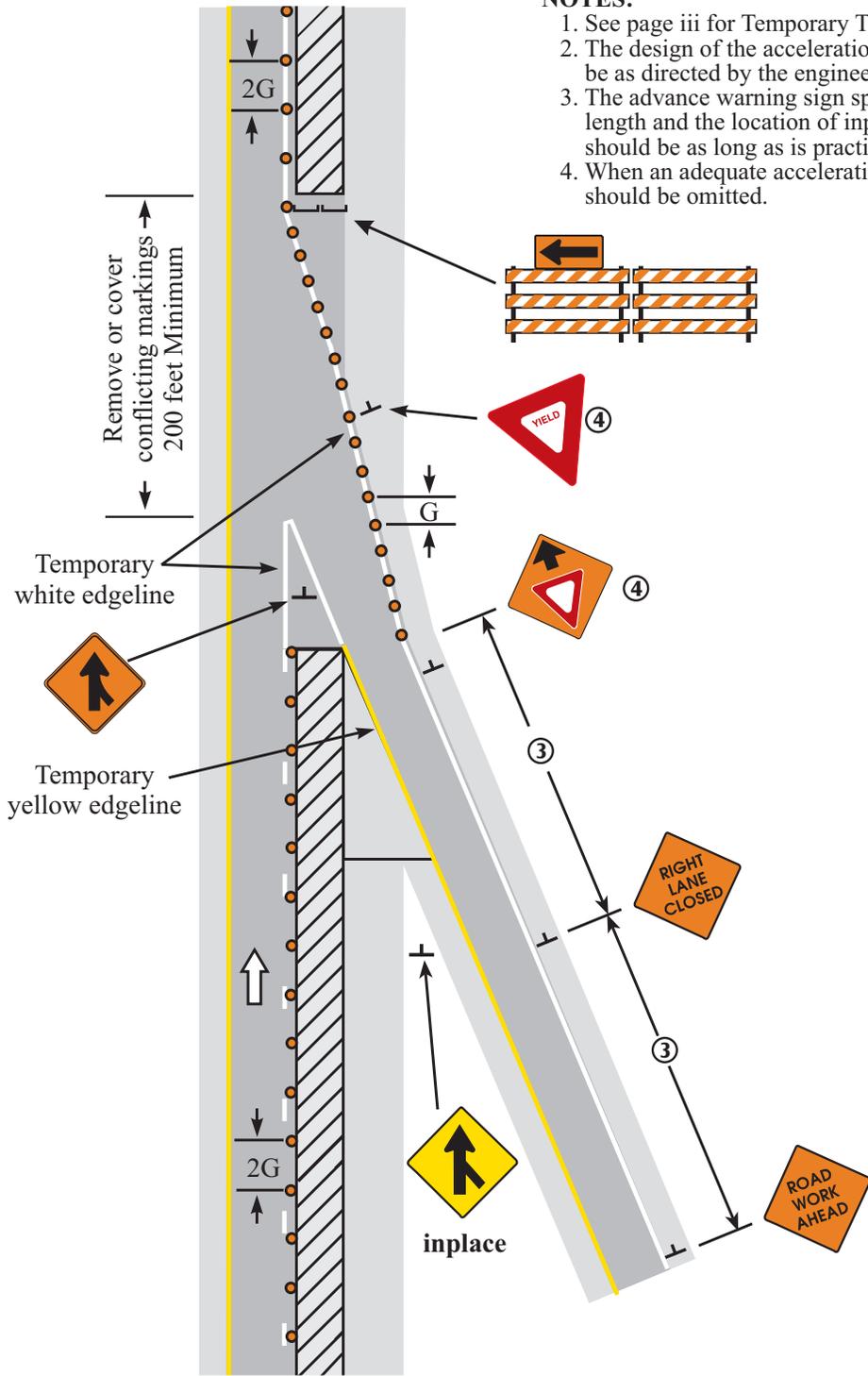
**LONG TERM**

**Layout 6J-9**

Min Rev. 7 2019

Min Rev. 7 2019

Min Rev. 7 2019



**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. The design of the acceleration lane and the entrance ramp shall be as directed by the engineer or as shown in the plans.
3. The advance warning sign spacing is dependent on the ramp length and the location of inplace signing. The spacing should be as long as is practical.
4. When an adequate acceleration lane is provided, this sign should be omitted.

Use the appropriate devices and spacing for a lane closure.

**MAINLINE RIGHT LANE CLOSED  
ENTRANCE RAMP OPEN**

LONG TERM

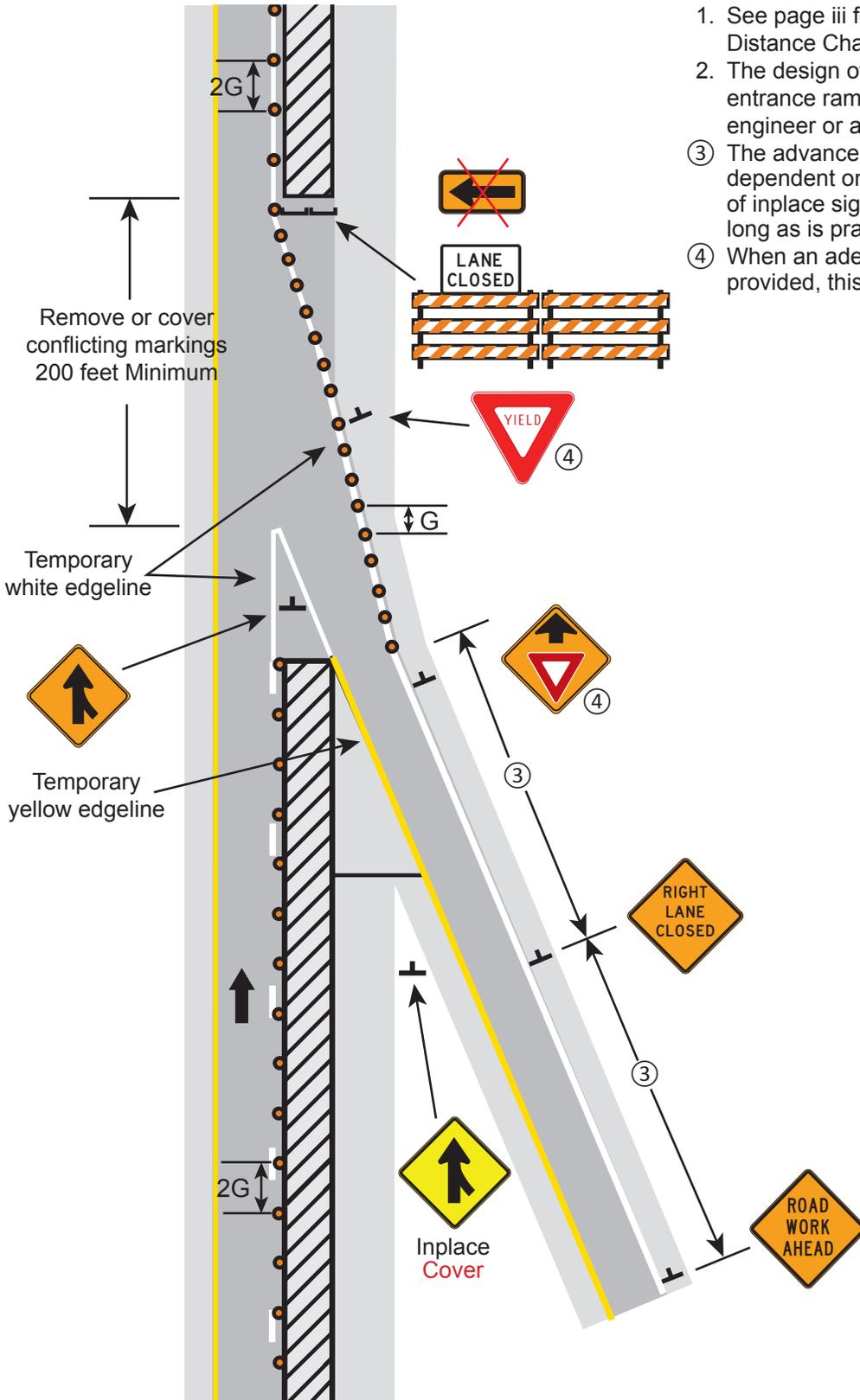
LAYOUT 6J-10

NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. The design of the acceleration lane and the entrance ramp shall be as directed by the engineer or as shown in the plans.
- ③ The advance warning sign spacing is dependent on the ramp length and the location of inplace signing. The spacing should be as long as is practical.
- ④ When an adequate acceleration lane is provided, this sign should be omitted.

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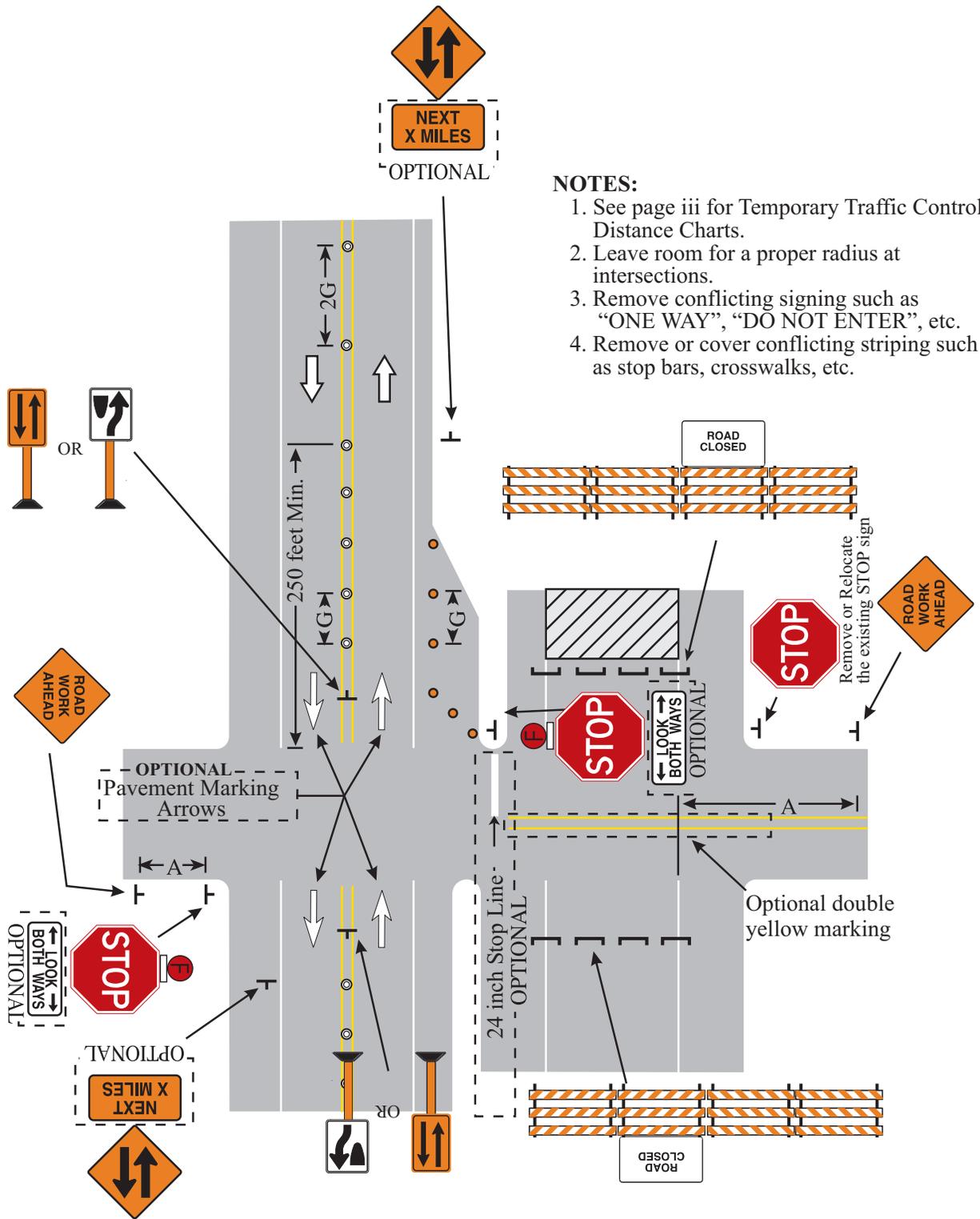
Use the appropriate devices and spacing for a lane closure.

**MAINLINE RIGHT LANE CLOSED  
ENTRANCE RAMP OPEN**

**LONG TERM**

**Layout 6J-10**

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**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. Leave room for a proper radius at intersections.
3. Remove conflicting signing such as "ONE WAY", "DO NOT ENTER", etc.
4. Remove or cover conflicting striping such as stop bars, crosswalks, etc.

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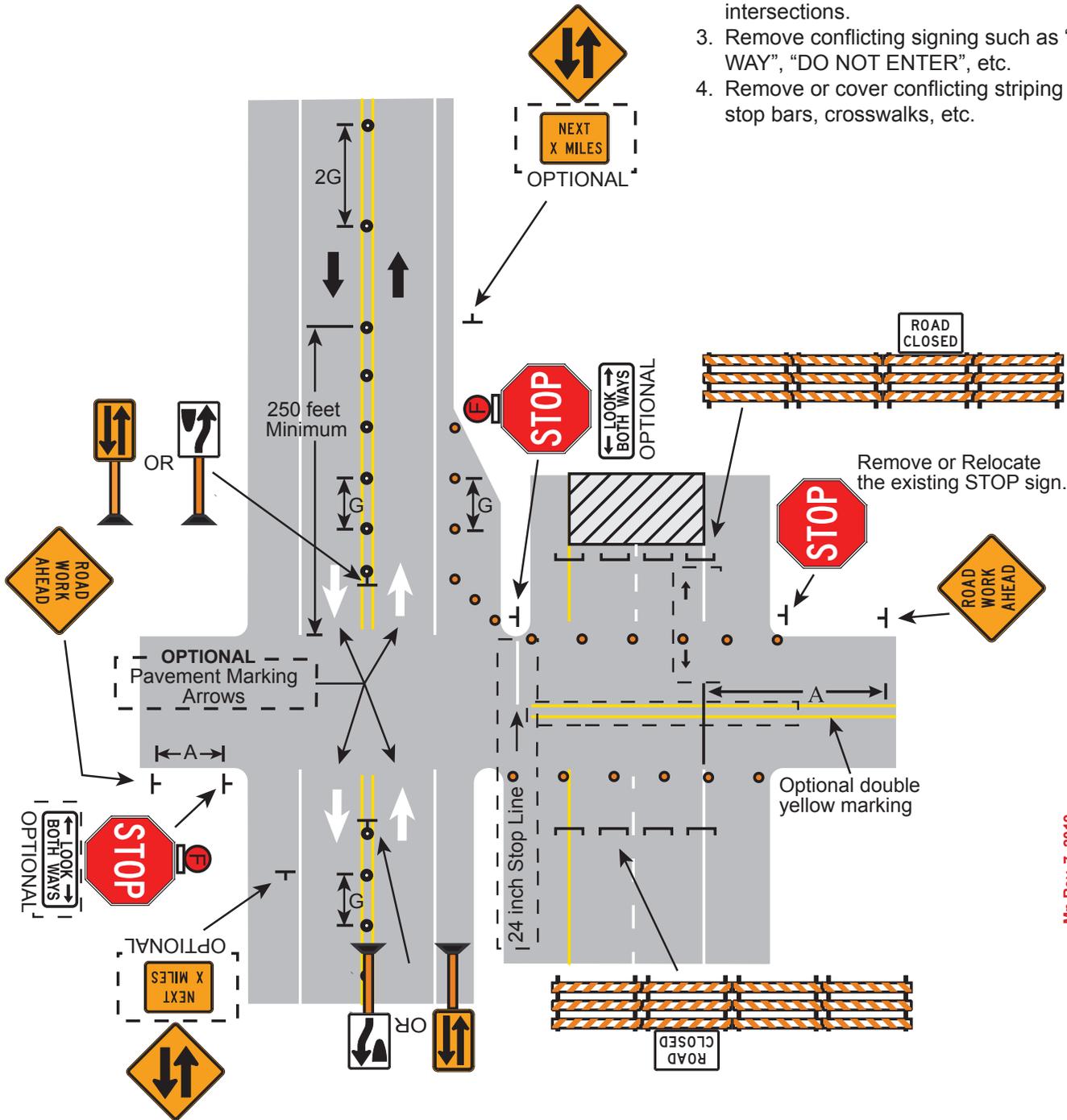
**TWO-LANE, TWO-WAY OPERATION THROUGH TYPICAL INTERSECTION**

LONG TERM

LAYOUT 6J-11

NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. Leave room for a proper radius at intersections.
3. Remove conflicting signing such as "ONE WAY", "DO NOT ENTER", etc.
4. Remove or cover conflicting striping such as stop bars, crosswalks, etc.



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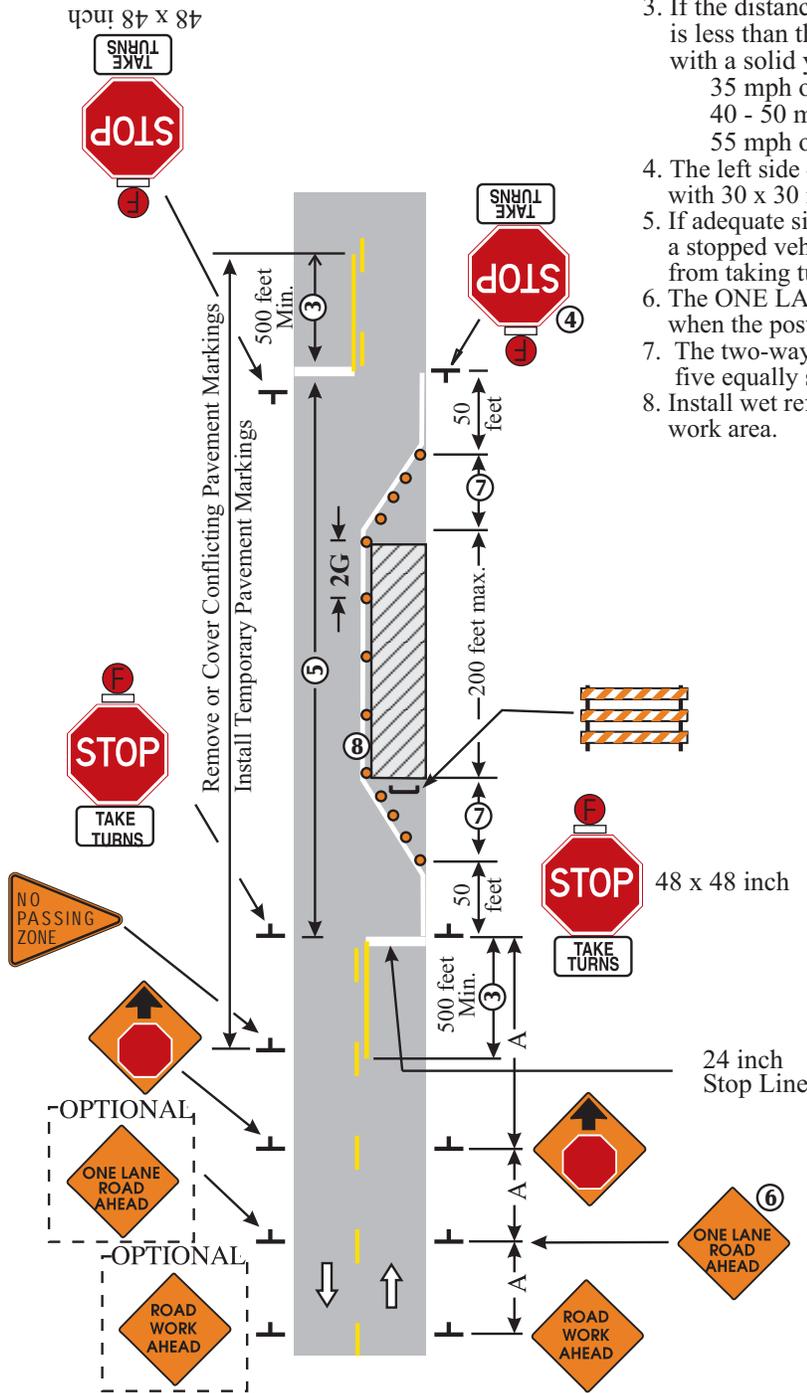
**TWO-LANE, TWO-WAY OPERATION THROUGH TYPICAL INTERSECTION**

**LONG TERM**

**Layout 6J-11**

**NOTES:**

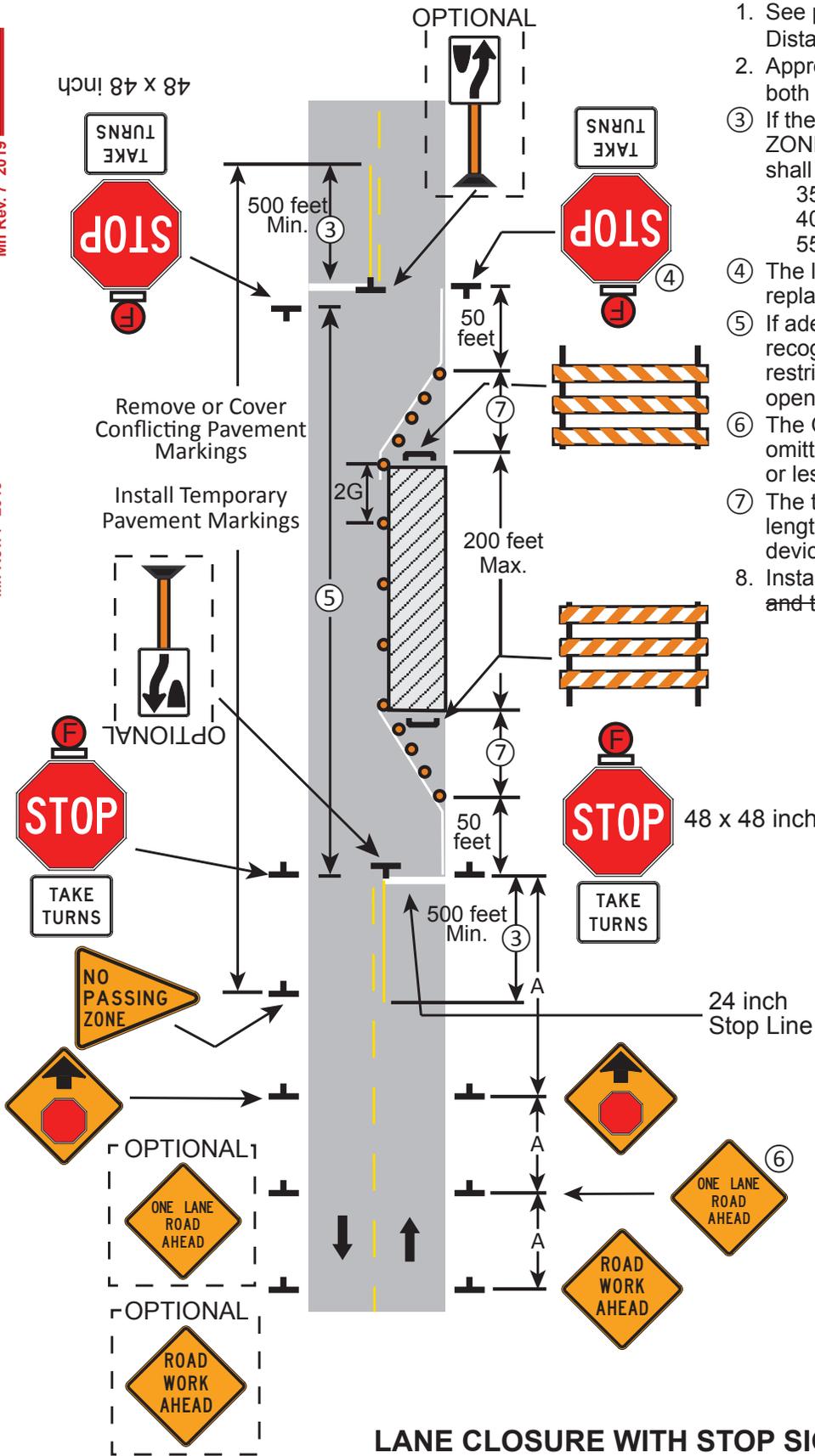
1. See page iii for Temporary Traffic Control Distance Charts.
2. Approach signs and marking is the same in both directions.
3. If the distance from an in-place "NO PASSING ZONE" is less than the following, the zones shall be connected with a solid yellow line:
  - 35 mph or less - 500 feet
  - 40 - 50 mph - 600 feet
  - 55 mph or greater - 800 feet
4. The left side 48 x 48 inch STOP signs may be replaced with 30 x 30 inch STOP signs.
5. If adequate sight distance is not available to recognize a stopped vehicle or traffic volume restricts vehicles from taking turns through the open lane, use Layout 6J-13.
6. The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
7. The two-way taper should be 50 feet in length using five equally spaced channelizing devices.
8. Install wet reflective edgeline through tapers and the work area.



**LANE CLOSURE WITH STOP SIGNS  
TWO-LANE, TWO-WAY ROAD**

LONG TERM

LAYOUT 6J-12



LANE CLOSURE WITH STOP SIGNS  
TWO-LANE, TWO-WAY ROAD

NOTES:

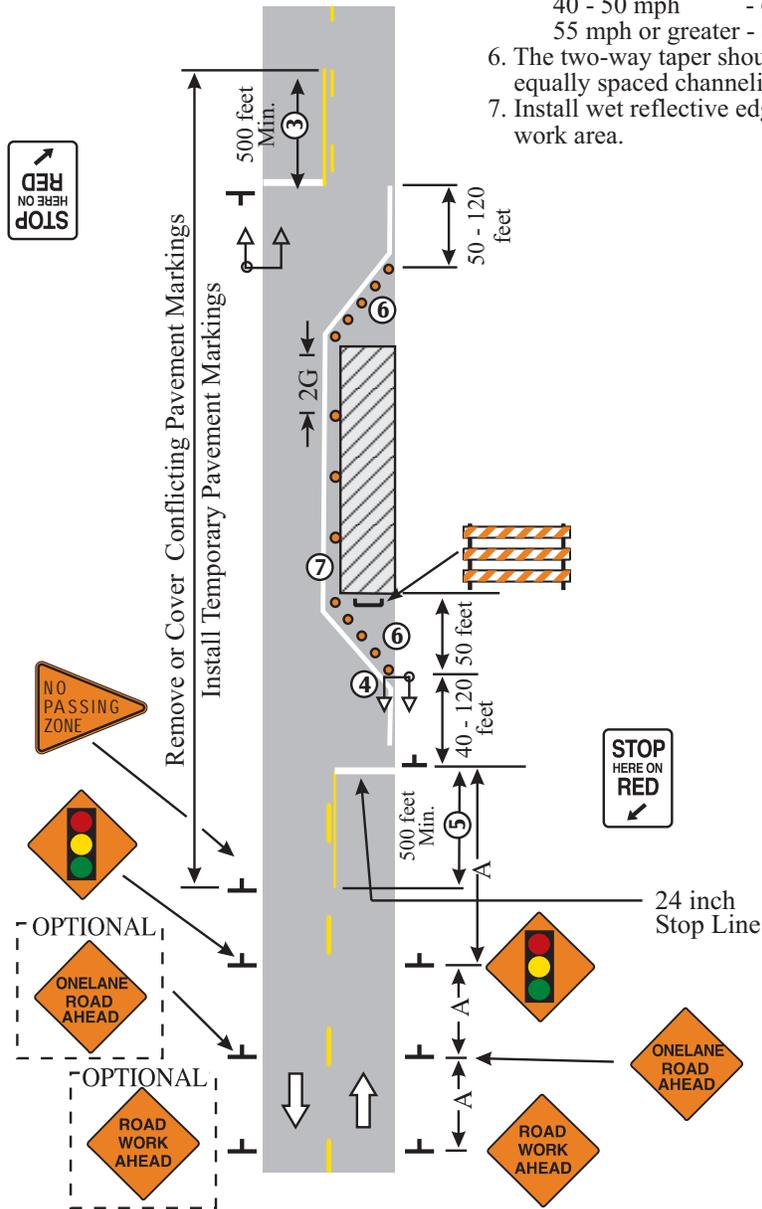
1. See page iii for Temporary Traffic Control Distance Charts.
2. Approach signs and marking is the same in both directions.
- ③ If the distance from an in-place "NO PASSING ZONE" is less than the following, the zones shall be connected with a solid yellow line:  
 35 mph or less - 500 feet  
 40 - 50 mph - 600 feet  
 55 mph or greater - 800 feet
- ④ The left side 48 x 48 inch STOP signs may be replaced with 30 x 30 inch STOP signs.
- ⑤ If adequate sight distance is not available to recognize a stopped vehicle or traffic volume restricts vehicles from taking turns through the open lane, use Layout 6J-13.
- ⑥ The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less.
- ⑦ The two-way taper should be 50 feet in length using five equally spaced channelizing devices.
8. Install wet reflective edgeline through tapers and the work area.

LONG TERM

Layout 6J-12

**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. Approach signing and marking is the same in both directions.
3. Signal timing shall be established by qualified personnel.
4. Two signal heads shall be installed per approach. The first shall be installed on the right shoulder. The second signal head may be installed on either the left shoulder or mounted over head on the same structure as the first signal head.
5. If the distance from an in-place "NO PASSING ZONE" is less than the following, the zones shall be connected with a solid yellow line:
  - 35 mph or less - 500 feet
  - 40 - 50 mph - 600 feet
  - 55 mph or greater - 800 feet
6. The two-way taper should be 50 feet in length using five equally spaced channelizing devices.
7. Install wet reflective edgeline through tapers and the work area.

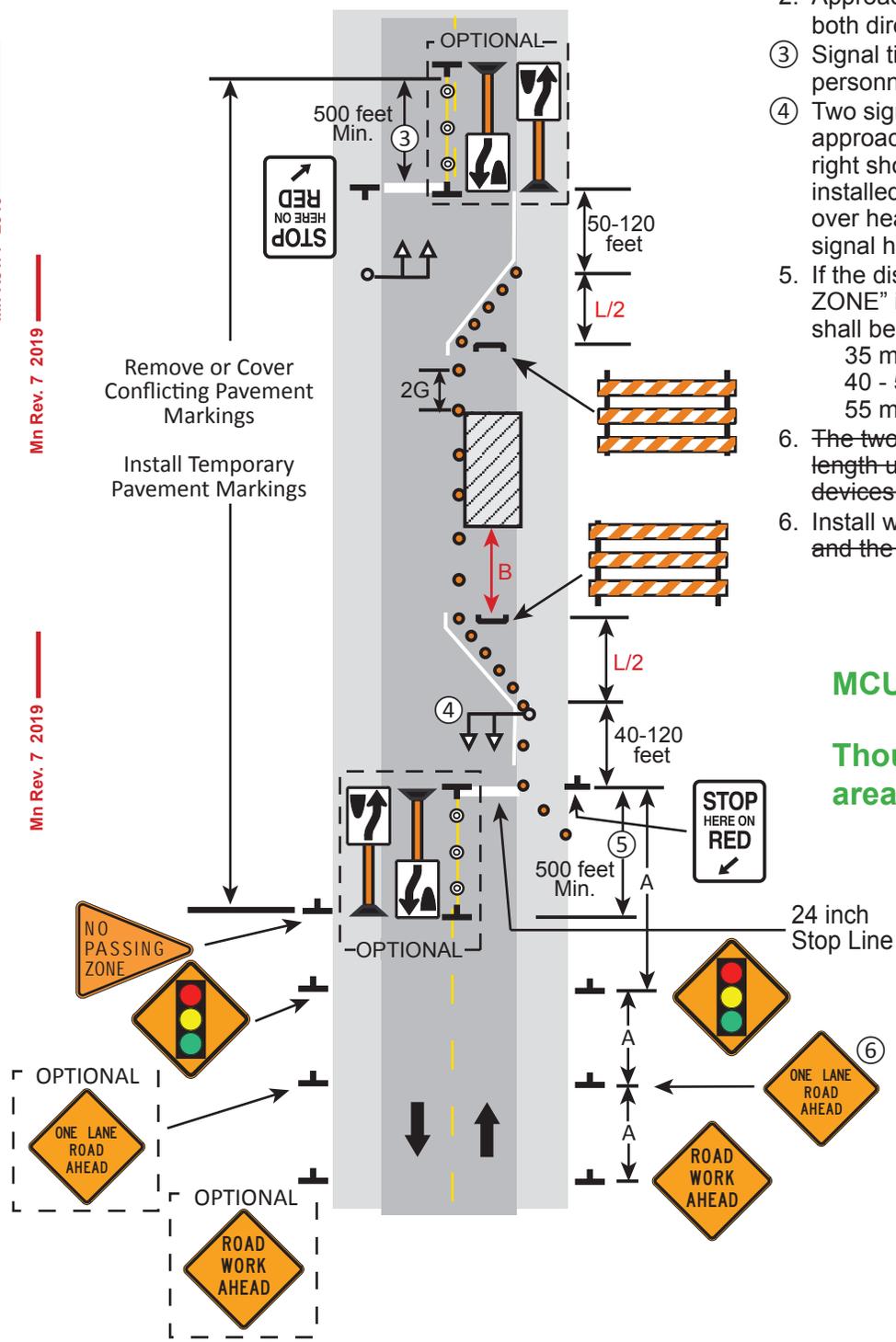


**LANE CLOSURE WITH SIGNALS  
TWO-LANE, TWO-WAY ROAD**

LONG TERM

LAYOUT 6J-13

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NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. Approach signs and marking is the same in both directions.
- ③ Signal timing shall be established by qualified personnel.
- ④ Two signal heads shall be installed per approach. The first shall be installed on the right shoulder. The second signal head may be installed on either the left shoulder or mounted over head on the same structure as the first signal head.
5. If the distance from an in place "NO PASSING ZONE" is less than the following, the zones shall be connected with a solid yellow line:
  - 35 mph or less - 500 feet
  - 40 - 50 mph - 600 feet
  - 55 mph or greater - 800 feet
6. The two-way taper should be 50 feet in length using five equally spaced channelizing devices.
6. Install wet reflective edgeline through tapers and the work area.

MCUTCD:

Thoughts on line around work area?

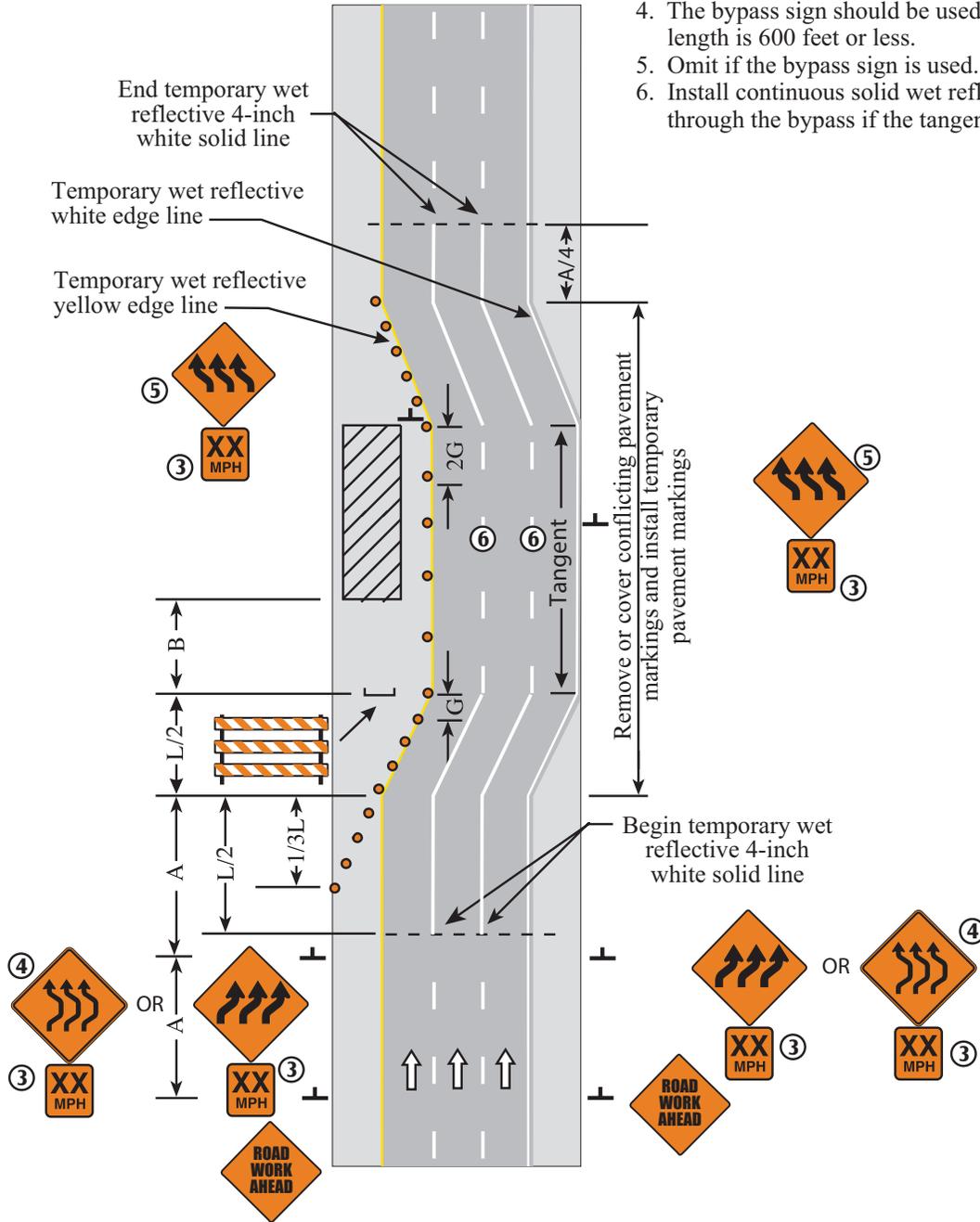
LANE CLOSURE WITH SIGNALS  
TWO-LANE, TWO-WAY ROAD

LONG TERM

Layout 6J-13

**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. The minimum lane width shall be 10 feet.
3. The curve advisory speed will be determined by the Road Authority at the time of installation.
4. The bypass sign should be used when the tangent length is 600 feet or less.
5. Omit if the bypass sign is used.
6. Install continuous solid wet reflective lane lines through the bypass if the tangent is 600 feet or less.



**LANE SHIFT  
MULTILANE DIVIDED ROAD**

LONG TERM

LAYOUT 6j-14

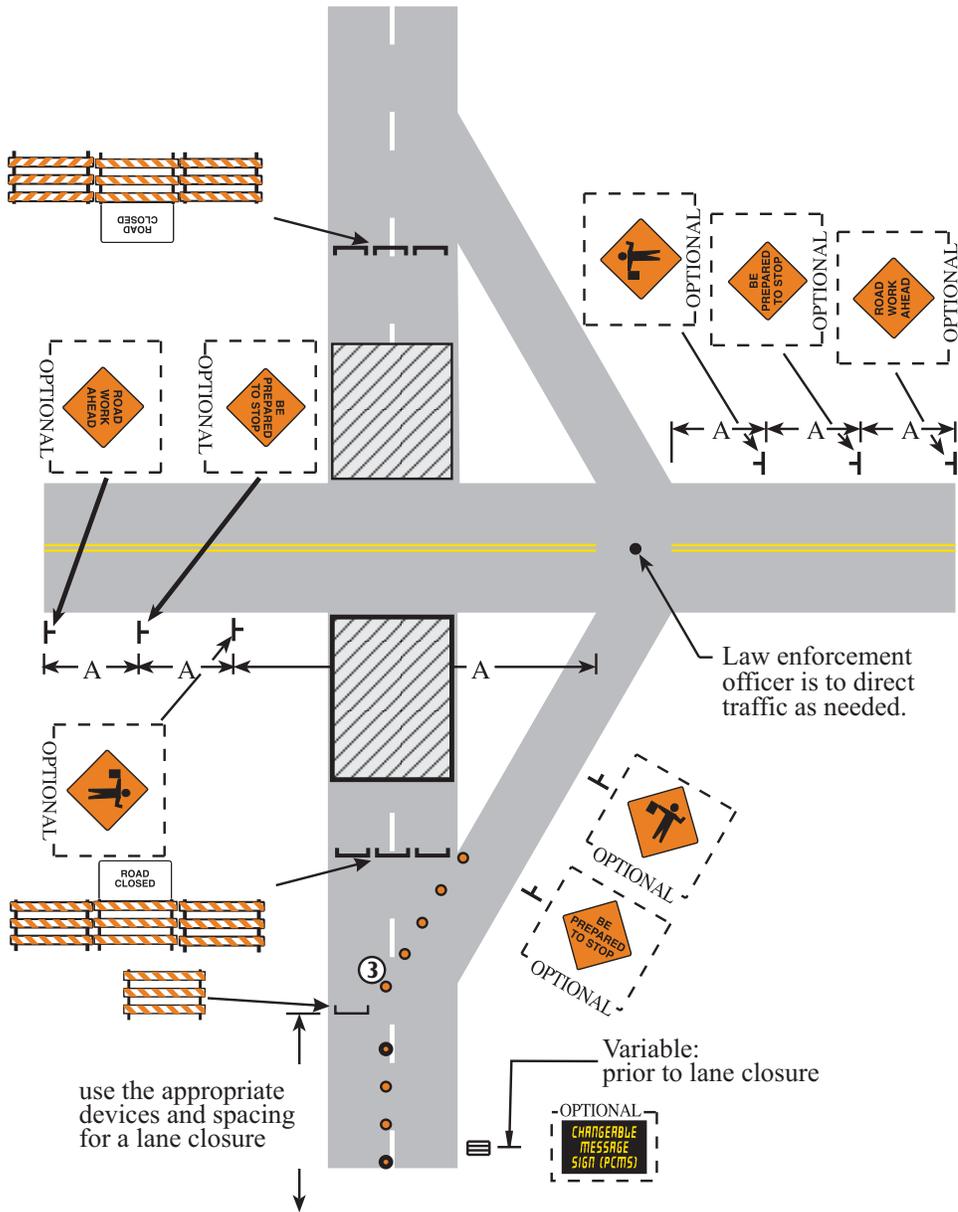


**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. The closed road volume should be below 800-1000 vehicles per hour.
3. Supplemental delineation such as chevrons, down arrows, etc. may be required in the bypass.

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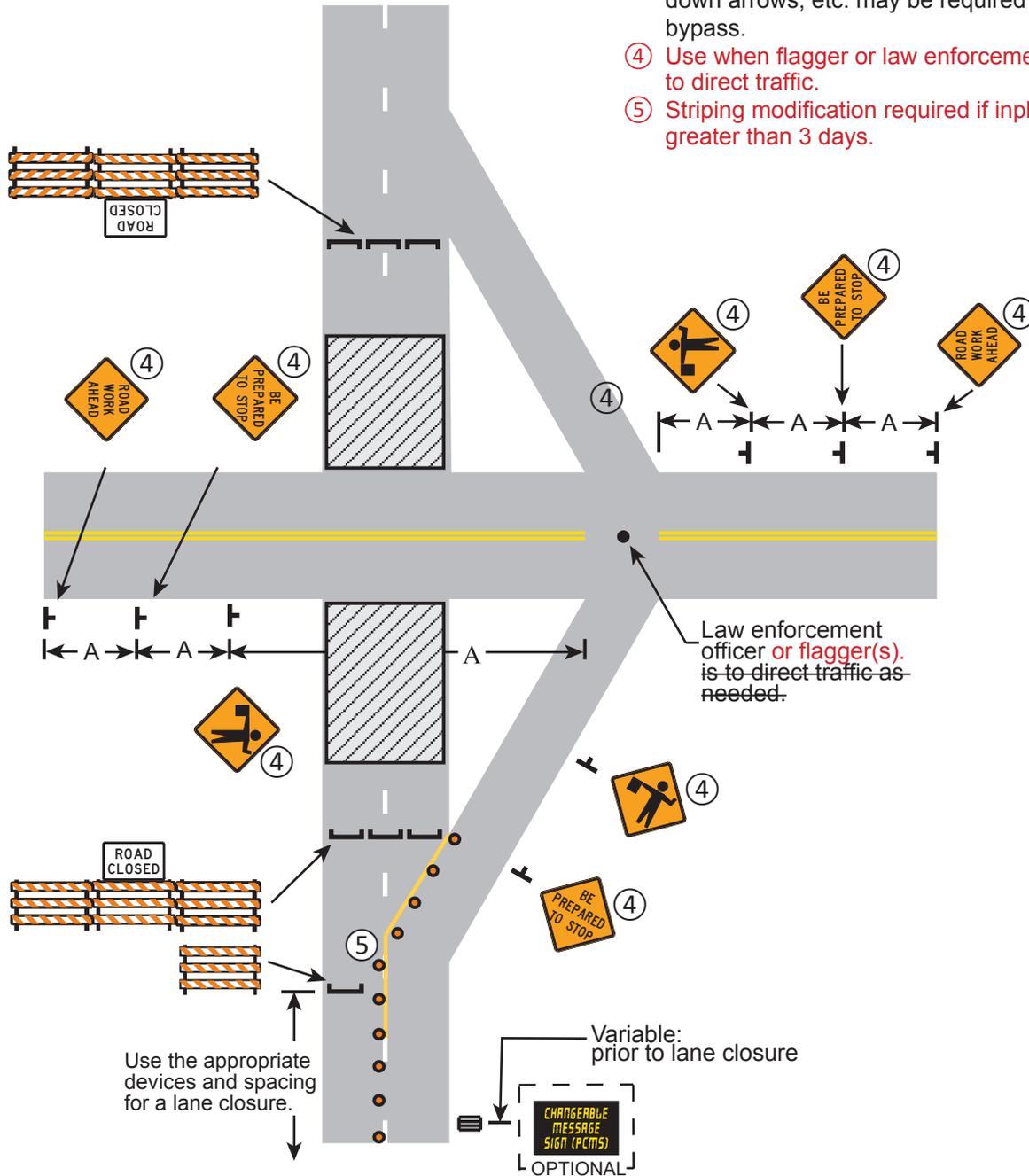
MN Rev. 3



**ROAD CLOSURE AT INTERCHANGE**

SHORT TERM  
LONG TERM

LAYOUT 6J-15



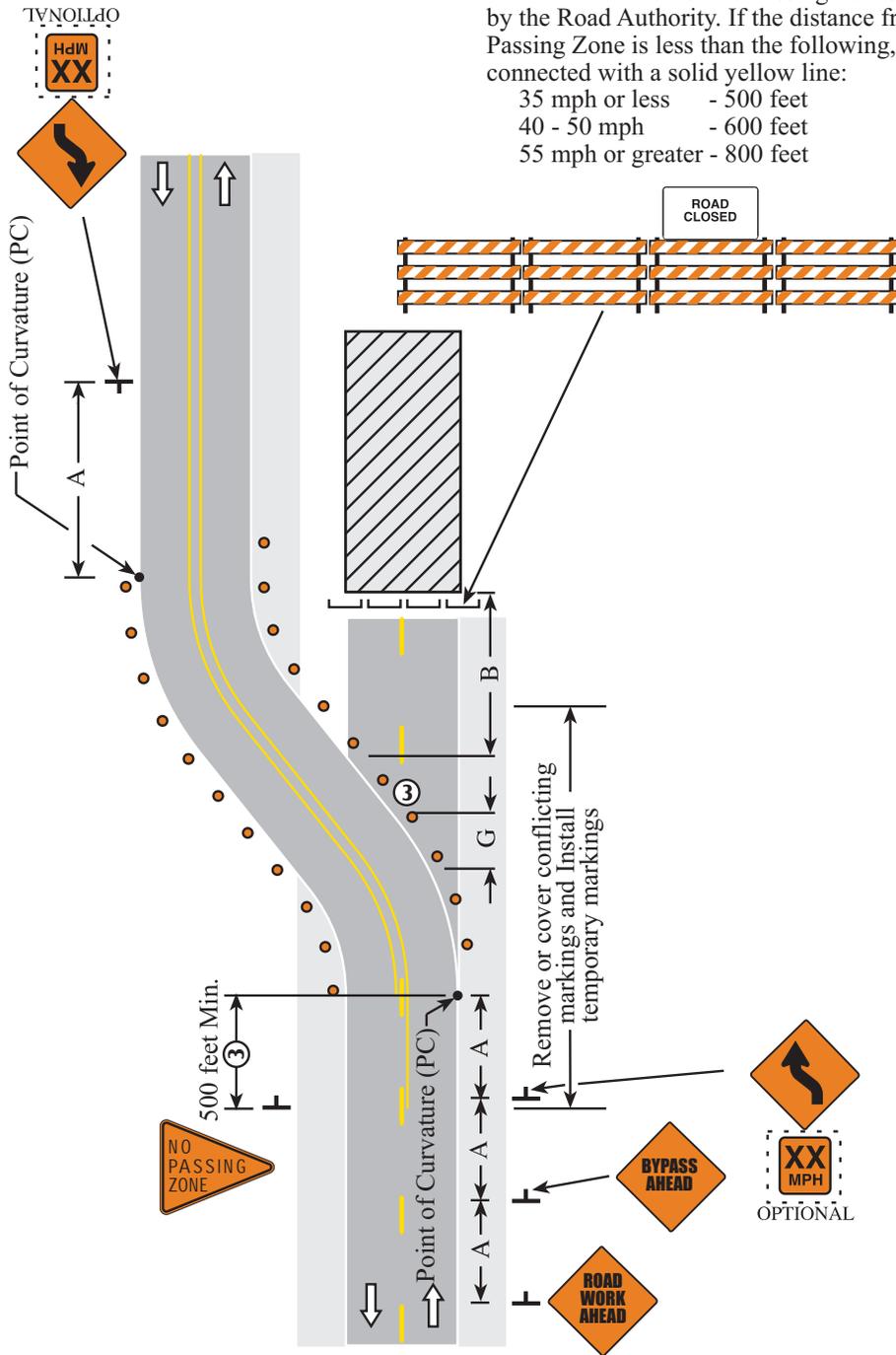
NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. The closed road volume should be below 800-1000 vehicles per hour. Consider traffic control modifications at the intersection based on expected traffic.
3. Supplemental delineation such as chevrons, down arrows, etc. may be required in the bypass.
- ④ Use when flagger or law enforcement is used to direct traffic.
- ⑤ Striping modification required if in place for greater than 3 days.

ROAD CLOSURE AT INTERCHANGE

**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. Typical traffic control is shown for one approach only.
3. Supplemental delineation (such as chevrons, down arrows, etc.) may be required on the bypass.
4. The exact location of No Passing Zones is to be determined by the Road Authority. If the distance from an in-place No Passing Zone is less than the following, the zones shall be connected with a solid yellow line:
  - 35 mph or less - 500 feet
  - 40 - 50 mph - 600 feet
  - 55 mph or greater - 800 feet



**ROAD CLOSURE WITH DIVERSION (BYPASS)  
TWO-LANE, TWO-WAY ROAD**

LONG TERM

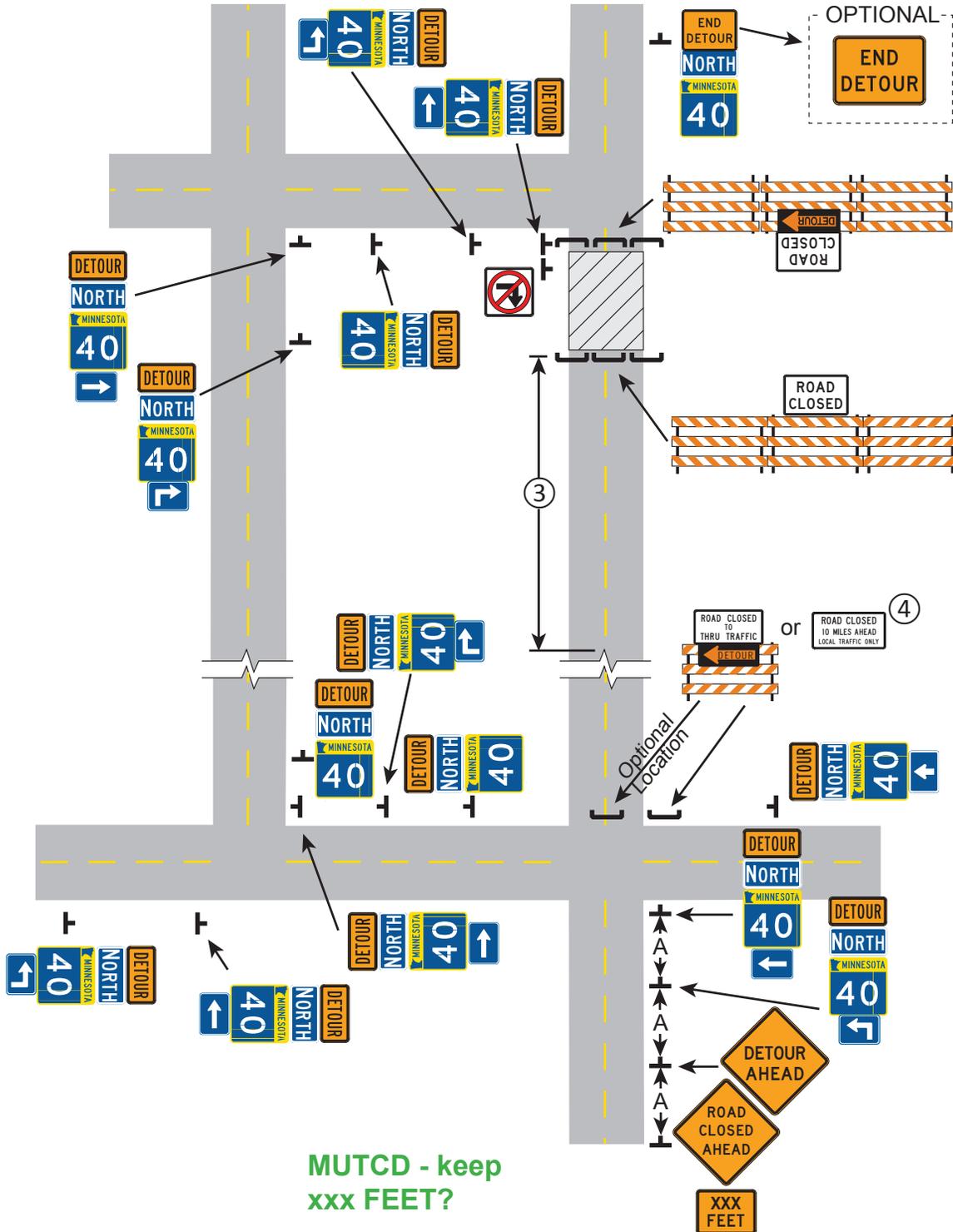
LAYOUT 6J-16





NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. Detour signing is shown for one direction only. The other direction shall be similar.
- ③ See Long Term Layout 6J-20 for devices and spacing.
- ④ Use this sign when it is 2 miles or greater to the road closure.
- ⑤ When the Detour Arrow (M4-10) is used the ROAD CLOSED sign should be placed above the top rail with the detour arrow placed below.



**ROAD CLOSURE WITH DETOUR**

Mn Rev. 7 2019

Mn Rev. 7 2019

Mn Rev. 7 2019

Mn Rev. 3 2013

Mn Rev. 3 2013

Mn Rev. 7 2019

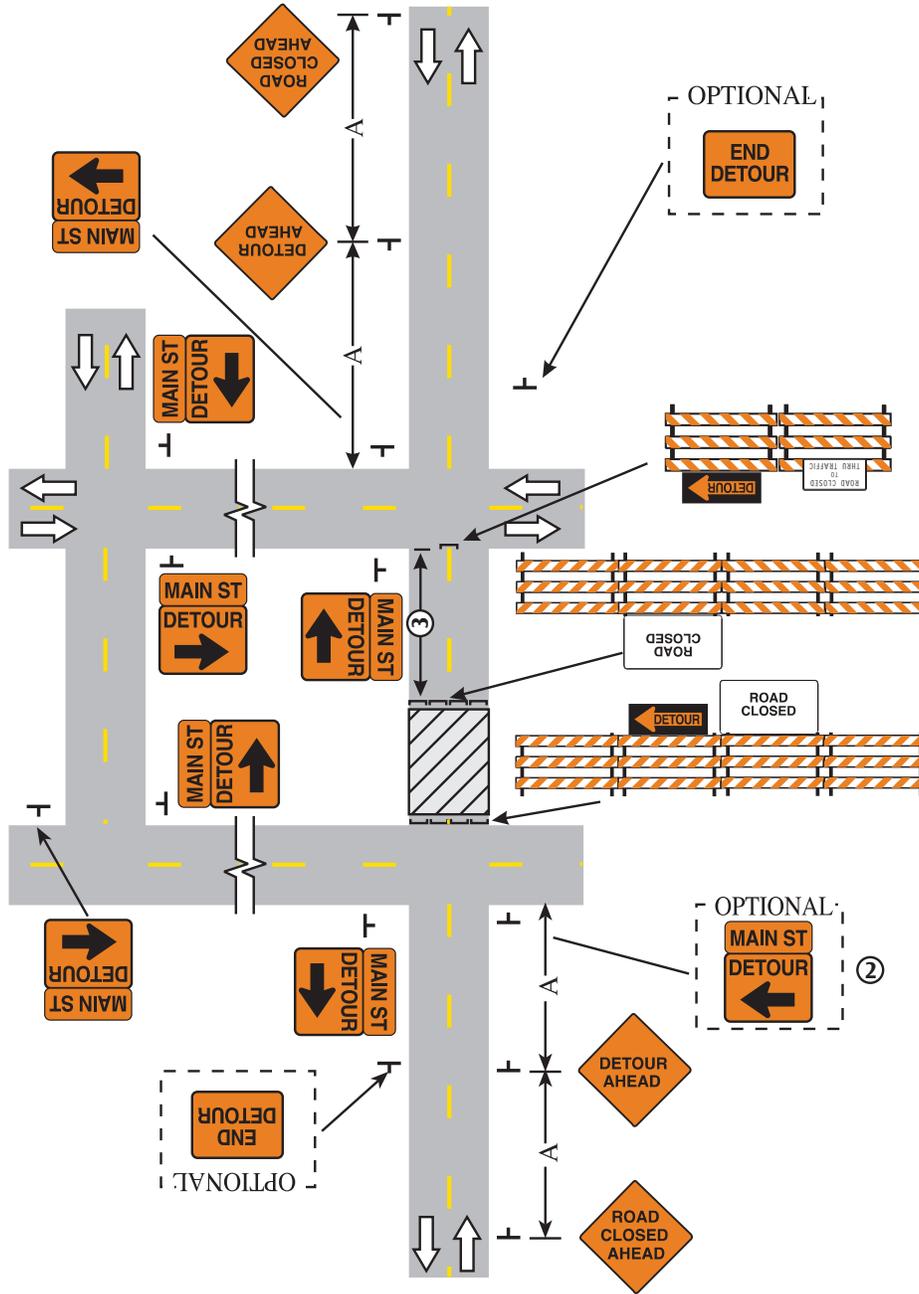
Mn Rev. 3 2013

Mn Rev. 2 2013

Mn Rev. 7 2019

**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. A M4-9 Detour Sign with an advance turn arrow may be used in advance of a turn. On multi-lane streets, such signs should be used.
3. See Long Term Layout 6J-20 for devices and spacing.



MIN Rev. 3

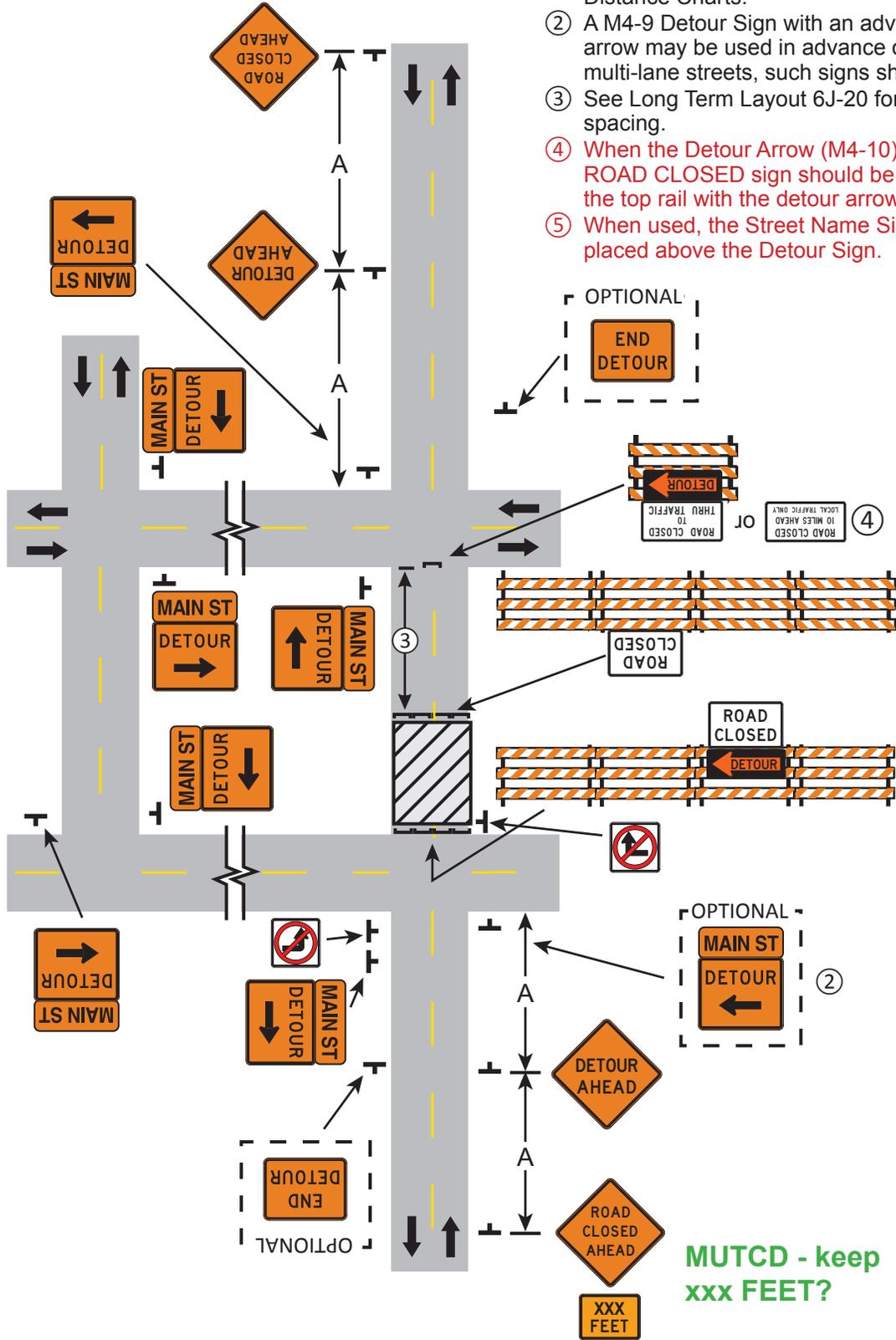
**DETOUR FOR CLOSED STREET**

LONG TERM

LAYOUT 6J-18

NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
- ② A M4-9 Detour Sign with an advance turn arrow may be used in advance of a turn. On multi-lane streets, such signs should be used.
- ③ See Long Term Layout 6J-20 for devices and spacing.
- ④ When the Detour Arrow (M4-10) is used the ROAD CLOSED sign should be placed above the top rail with the detour arrow placed below.
- ⑤ When used, the Street Name Sign shall be placed above the Detour Sign.



DETOUR FOR CLOSED STREET

LONG TERM

Layout 6J-18

Mn Rev. 7 2019

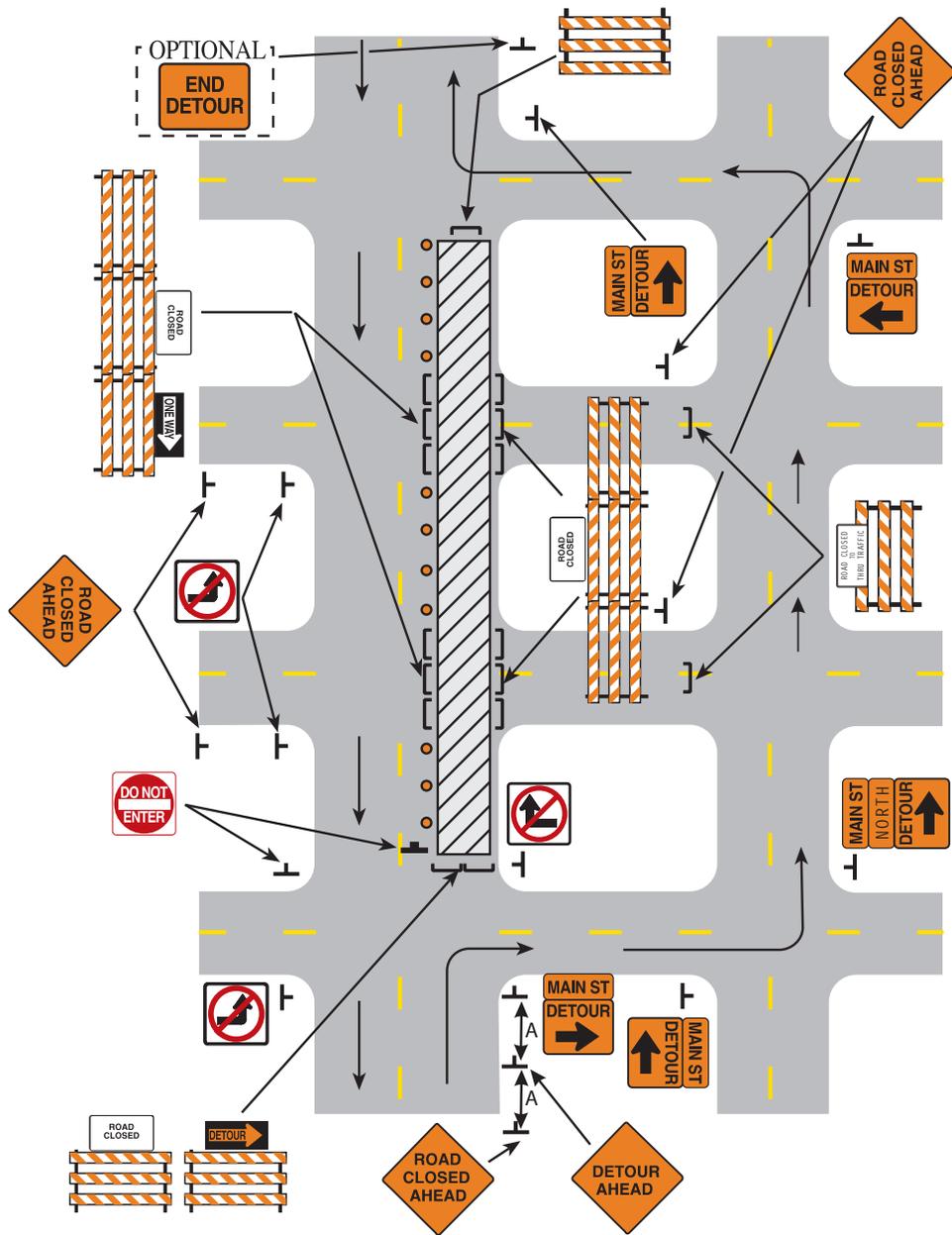
Mn Rev. 7 2019

Mn Rev. 7 2019  
Mn Rev. 3 2013

Mn Rev. 7 2019  
Mn Rev. 7 2019  
Mn Rev. 3 2013

Mn Rev. 7 2019

3. For sidewalk and crosswalk closures, see Layouts 6K-88 and 6K-89.
4. Additional side street signs may be required.



**DETOUR FOR ONE TRAVEL DIRECTION**

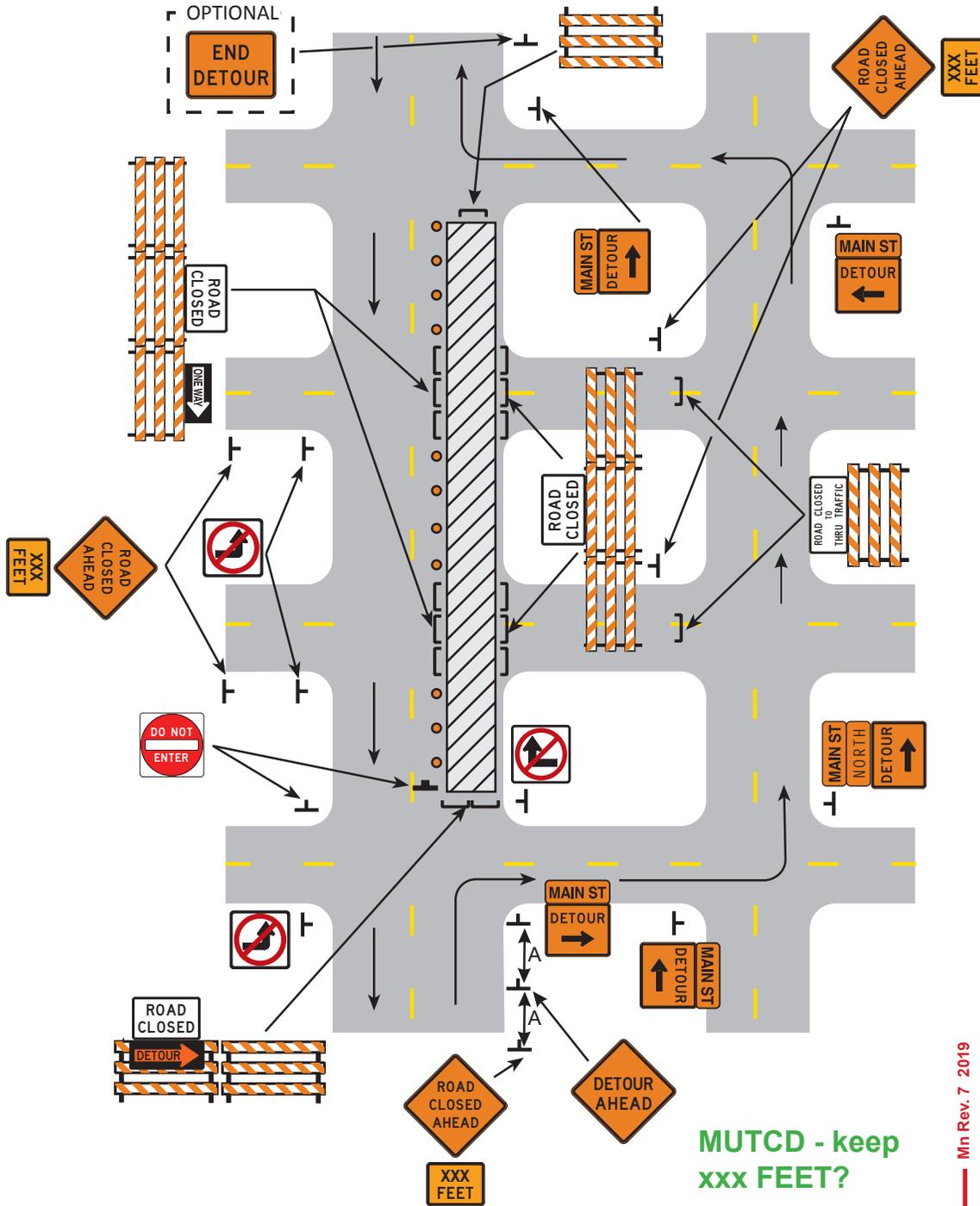
LONG TERM

LAYOUT 6J-1

MIN Rev. 3

NOTES:

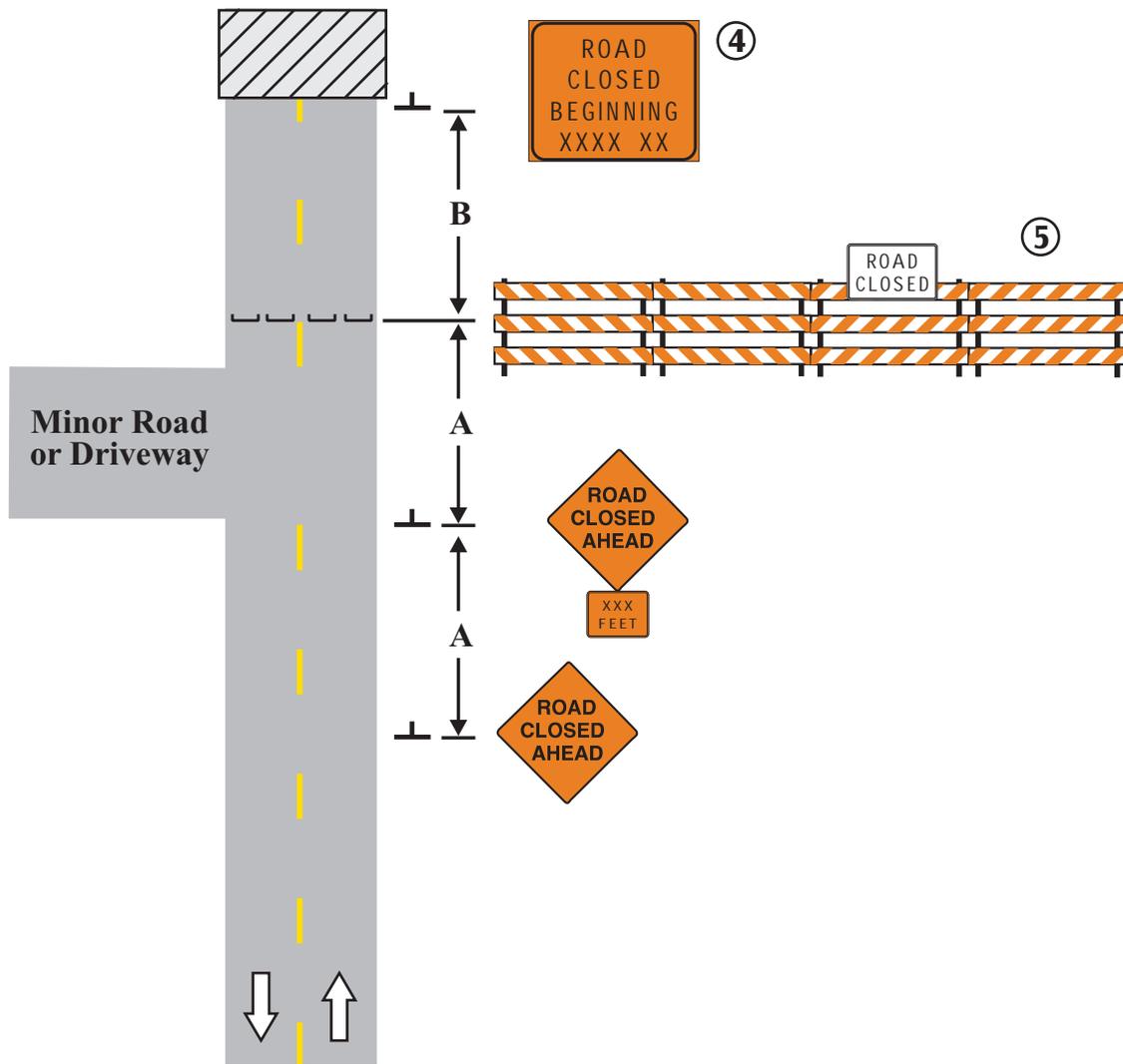
1. See page iii for Temporary Traffic Control Distance Charts.
2. Additional "DO NOT ENTER" signs may be desirable at intersections with intervening streets.
3. For sidewalk and crosswalk closures, see Layouts 6K-24 and 6K-25.
4. Additional side street signs may be required.
5. When the Detour Arrow (M4-10) is used the ROAD CLOSED sign should be placed above the top rail with the detour arrow placed below.



DETOUR FOR ONE TRAVEL DIRECTION

**NOTES:**

1. See page iii for Temporary Traffic Control Distance Charts.
2. All devices are shown for one direction. Devices for the other direction should be similar.
3. The Road Authority will determine if a detour is required and specify the detour route.
4. Advance warning signs should be used seven days in advance of the closure.
5. Install at the last driveway or intersection beyond which there is no public access.



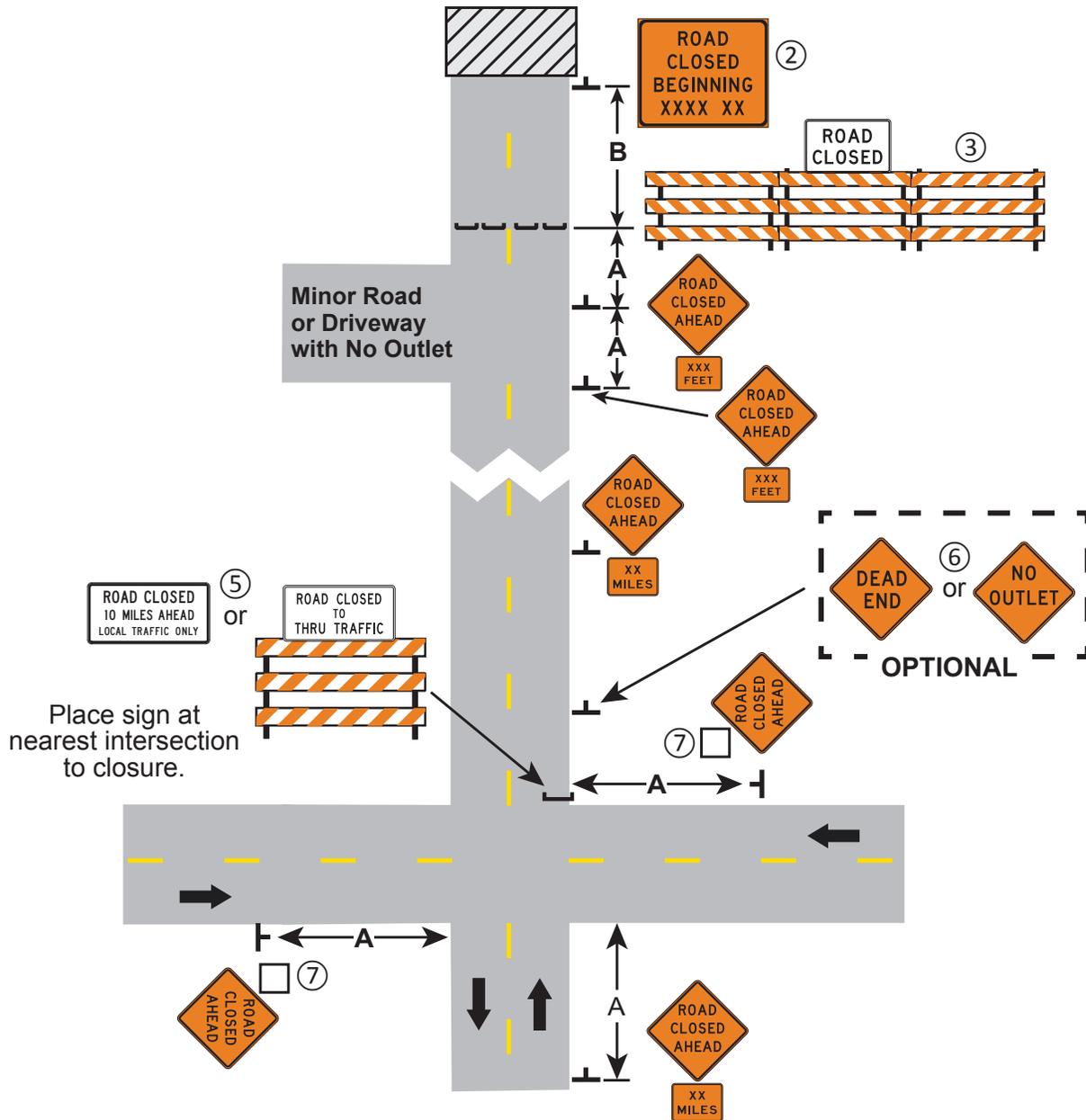
**TYPICAL SIGNING FOR ROAD CLOSURE**

LONG TERM

LAYOUT 6J-20

NOTES:

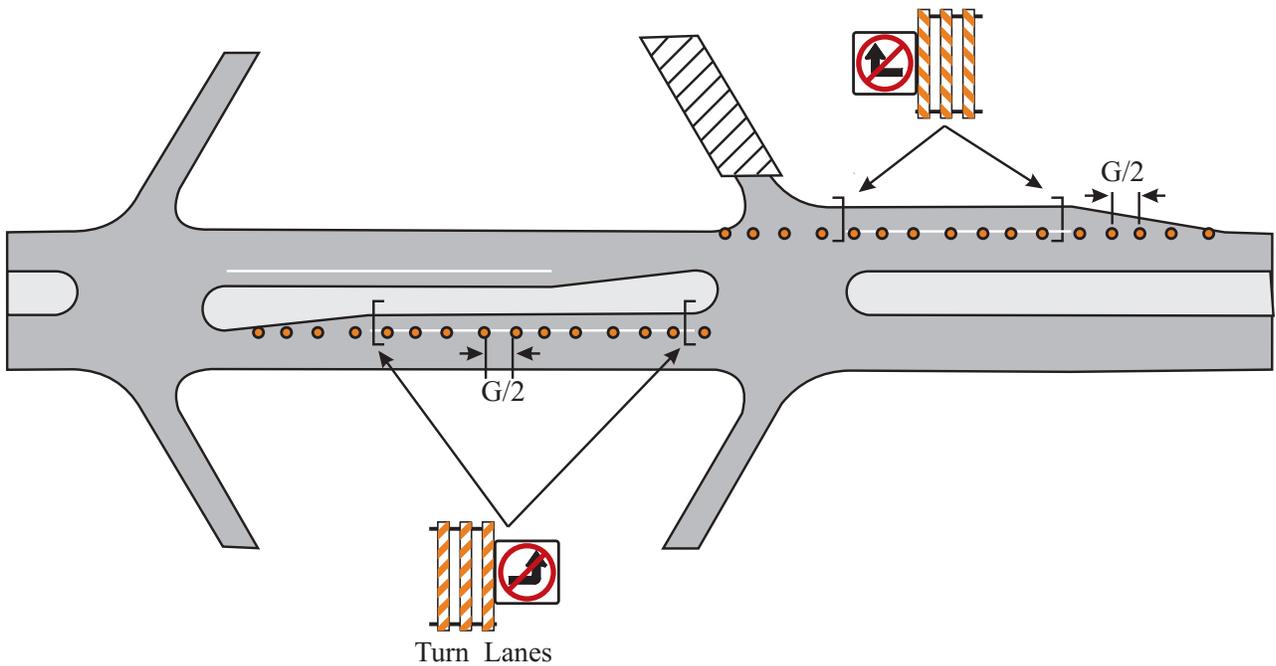
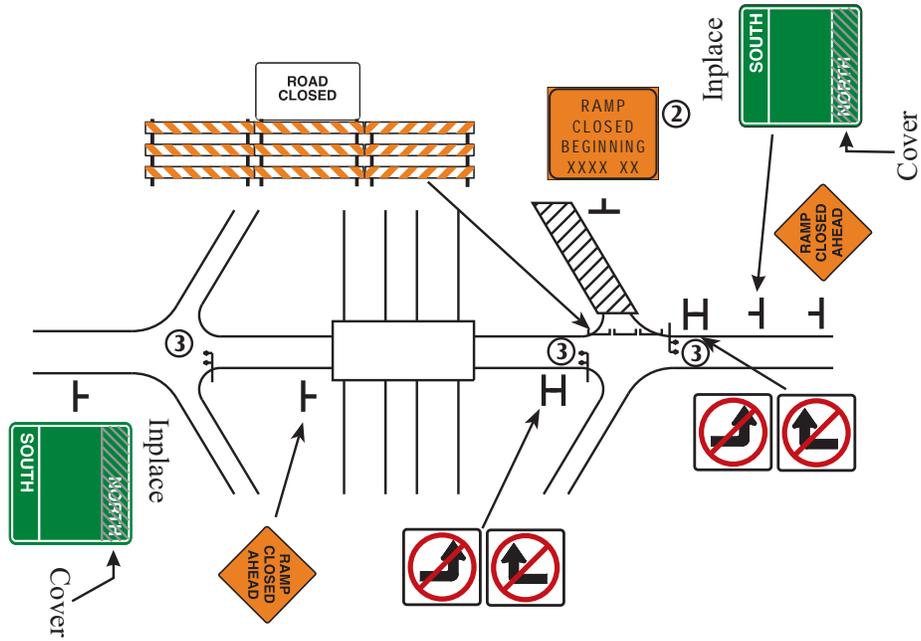
1. The road authority shall be contacted prior to closure. The road authority may provide requirements related to sign placement, detours, emergency services, etc.
- ② A Road Closure Notice sign should be installed in advance (timewise) as required by the road authority.
- ③ Install Type III barricade at the last driveway or intersection beyond which there is no public access. Barricade shall span the entire roadway including traversable shoulders.
4. Road user safety and usability must be maintained up to the full closure.
- ⑤ ROAD CLOSED TO THRU TRAFFIC barricade assembly may be placed on the center line; stripes on barricade shall slope downward toward the appropriate traffic direction (for both directions of the roadway).
- ⑥ Signs shall only be used when there are no alternative thru routes past this point.
- ⑦ Designation for street name (route) that is closed.



TYPICAL SIGNING FOR ROAD CLOSURE

**NOTES:**

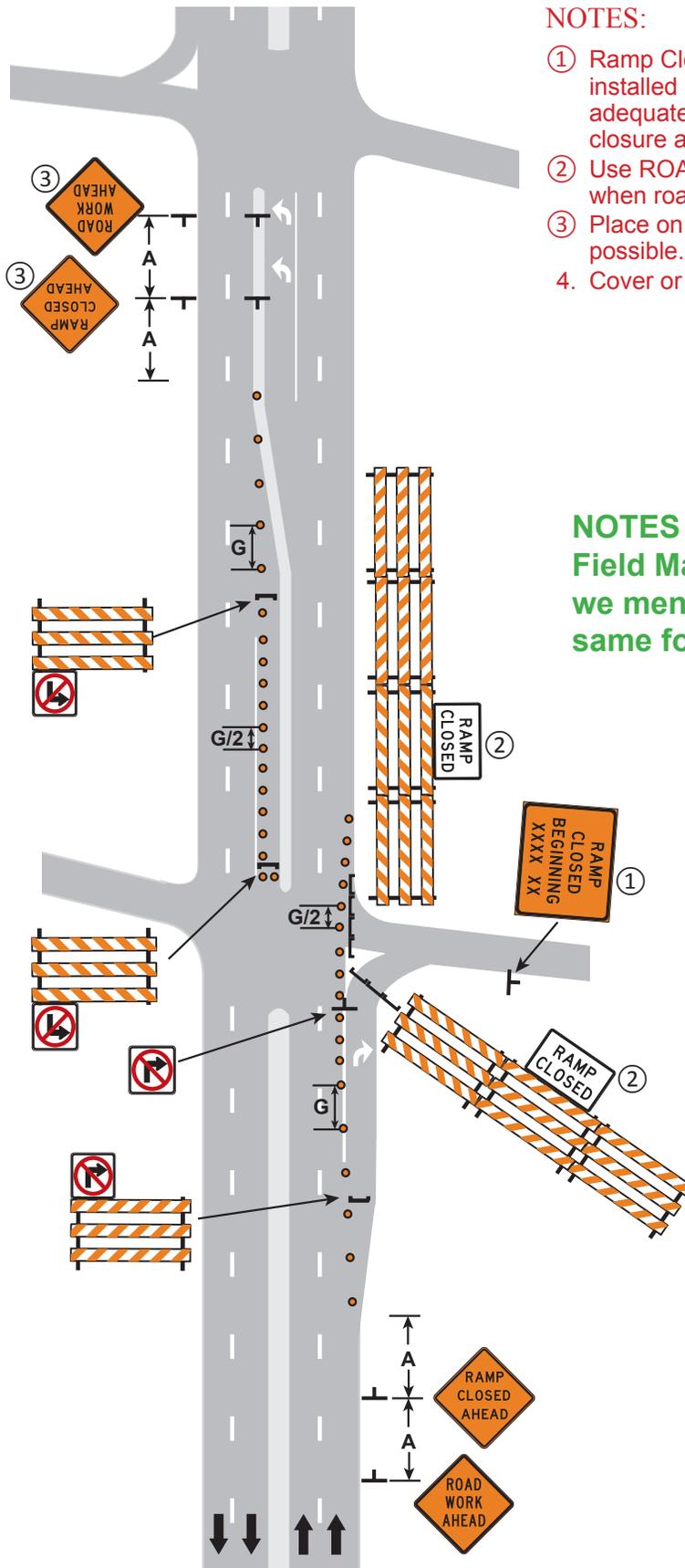
1. See page iii for Temporary Traffic Control Distance Charts.
2. Advance warning signs should be used seven days in advance of the closure.
3. Cover all directional signing for the closed ramp.



**ENTRANCE RAMP CLOSURES**

LONG TERM

LAYOUT 6J-21

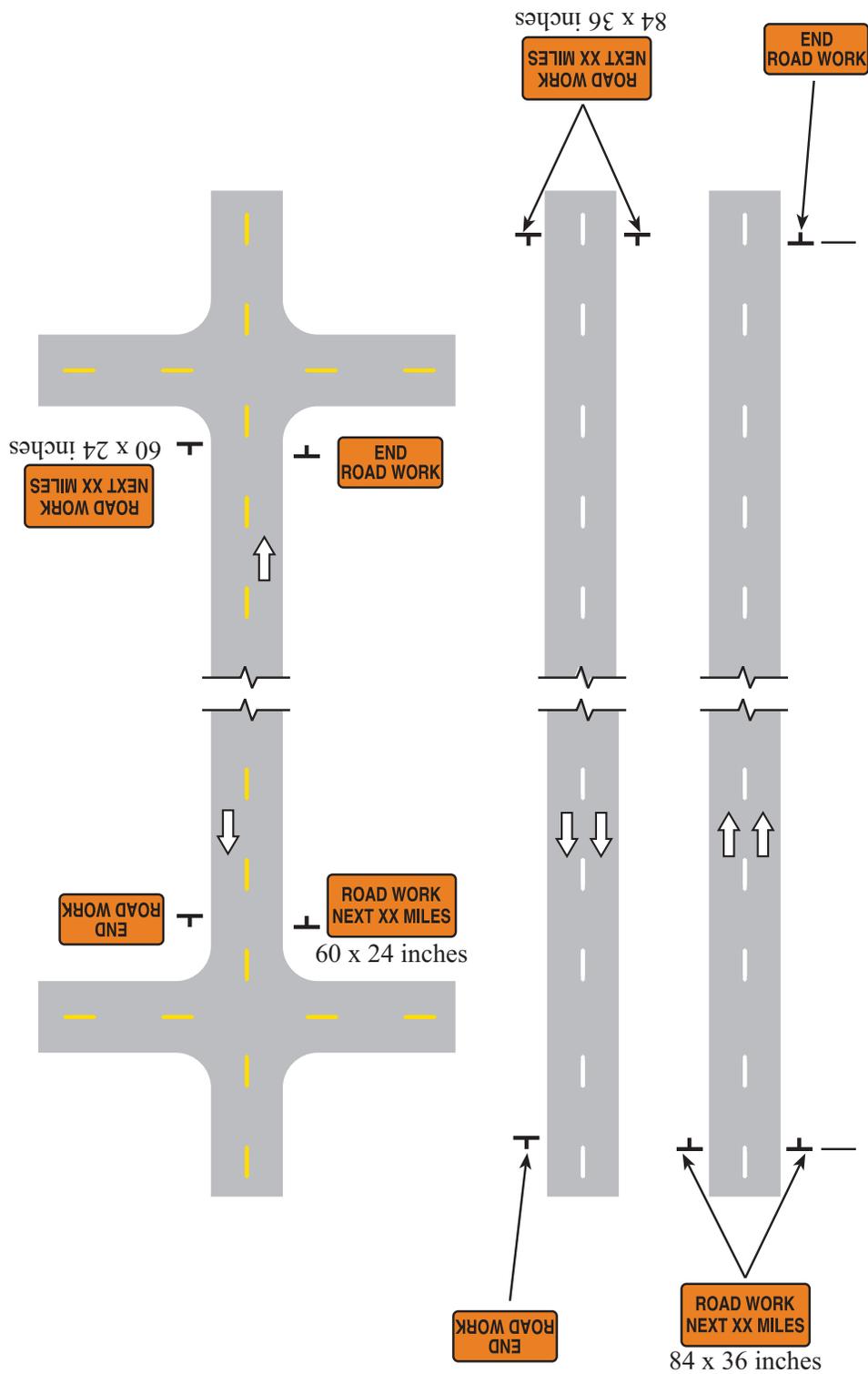


NOTES:

- ① Ramp Closure Notice sign should be installed in advance (timewise) to provide adequate notification of upcoming closure as required by the road authority.
- ② Use ROAD CLOSED (R11-2M) (R11-2) when road is closed.
- ③ Place on left shoulder/median when possible.
- 4. Cover or remove all conflicting signing.

NOTES ok?? From Field Manual. Should we mention that it is the same for short term?

ENTRANCE RAMP CLOSURES

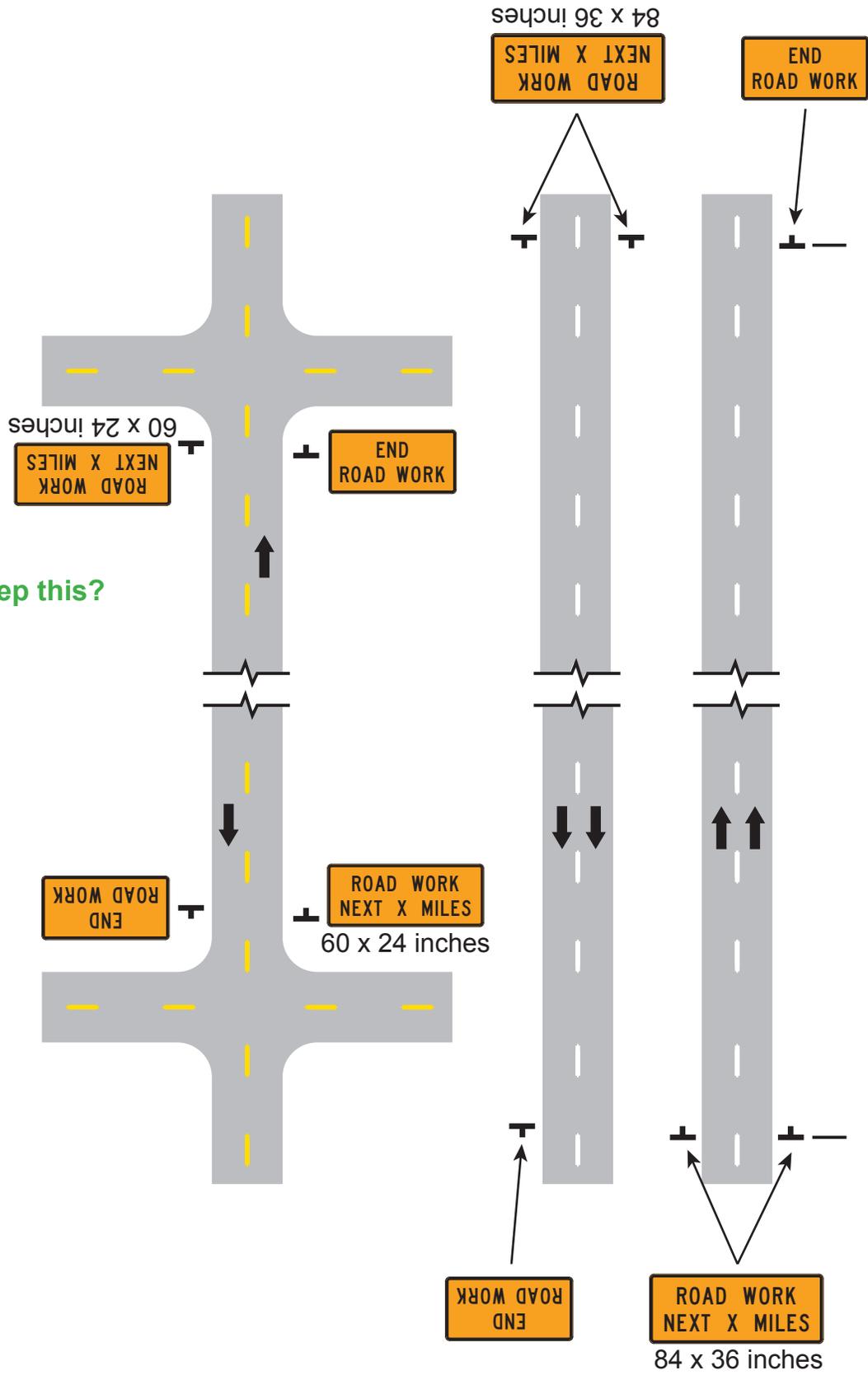


## TYPICAL TERMINI SIGNING

LONG TERM

LAYOUT 6J-22

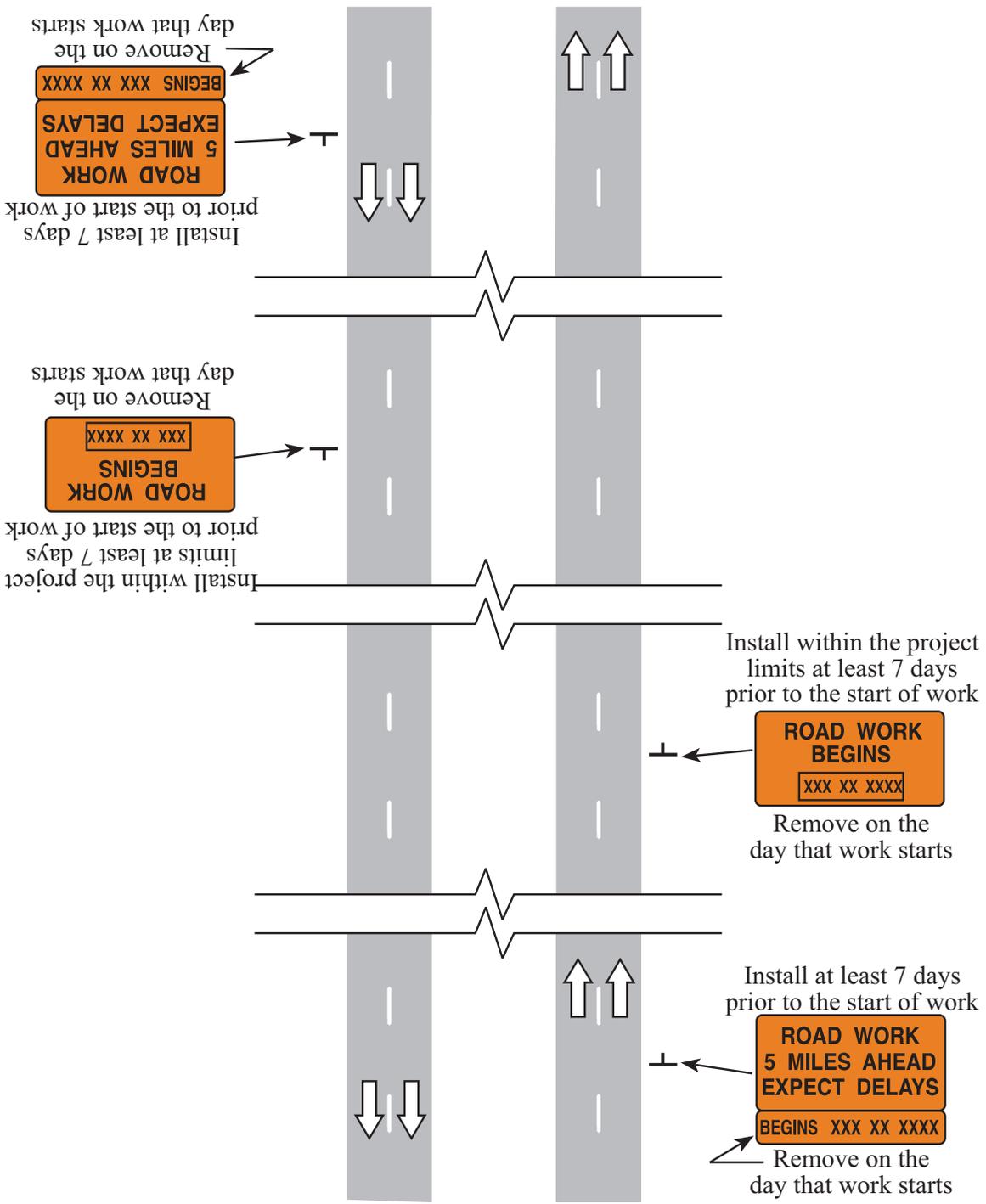
MCUTCD - Keep this?



### TYPICAL TERMINI SIGNING

LONG TERM

Layout 6J-22



## TYPICAL ADVANCE SIGNING

LONG TERM

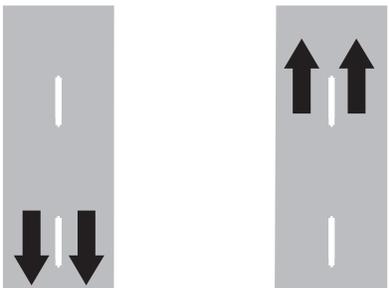
LAYOUT 6J-23

Install at least 7 days prior to the start of work

**ROAD WORK**  
5 MILES AHEAD  
EXPECT DELAYS

BEGINS XXX XX XXXX

Remove on the day that work starts



**MCUTCD -**  
Do you want to keep this layout?

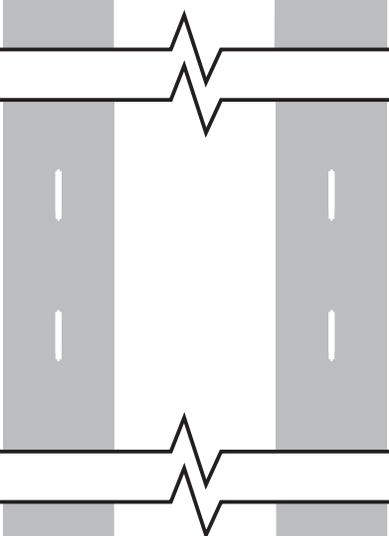
Also - do you want to include a Layout like #35 of the Field Manual (see last page of this doc).

Install within the project limits at least 7 days prior to the start of work

**ROAD WORK**  
BEGINS

XXX XX XXXX

Remove on the day that work starts

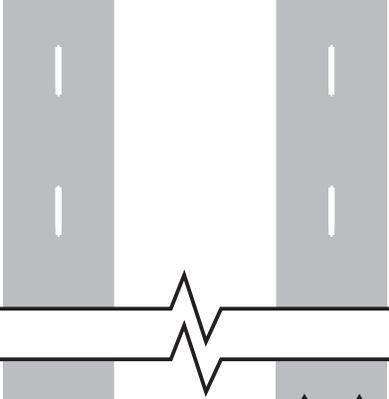


Install within the project limits at least 7 days prior to the start of work

**ROAD WORK**  
BEGINS

XXX XX XXXX

Remove on the day that work starts

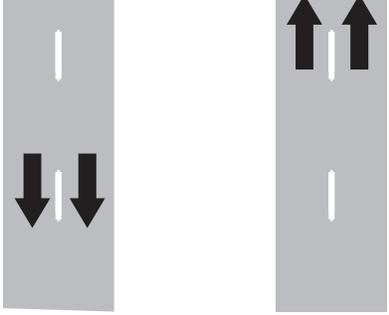


Install at least 7 days prior to the start of work

**ROAD WORK**  
5 MILES AHEAD  
EXPECT DELAYS

BEGINS XXX XX XXXX

Remove on the day that work starts



**TYPICAL ADVANCE SIGNING**

**LONG TERM**

**Layout 6J-23**

## NOTES:

1. When crosswalks, sidewalks or other pedestrian facilities are blocked, closed or relocated, temporary facilities shall include accessibility features consistent with the features present in the existing pedestrian facility.
2. The examples show only key typical dimensions. Refer to the MnDOT "Temporary Pedestrian Access Route" (TPAR) website (<http://www.dot.state.mn.us/trafficeng/workzone/tpar.html>) for standards, guidance and options when blocking, closing, or relocating pedestrian facilities.
3. Only traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets.
4. An approved audible message device or tactile message should be provided for sight-impaired pedestrians. When used, a message device should provide a complete physical description of the temporary pedestrian detour including duration, length of (and/or distance to) the bypass, any restrictions or hazards and project information as listed in note 5 below. The number and location of devices should be determined for each project prior to starting work. Devices may be placed prior to sidewalk work to warn regular users of the planned work.
5. Typical sign message for a temporary pedestrian detour should include information such as the duration of the walkway restrictions (beginning and/or end dates) and a project contact number for 24/7 questions or reporting hazards.
6. The International Symbol of Accessibility should be displayed when any walkway through a work zone has been determined to be TPAR compliant. The Symbol of Accessibility shall not be displayed if persons with disabilities should not use the primary temporary pedestrian detour. The reason for the non-compliance should be posted and an alternate route should be posted when the primary temporary pedestrian detour is non-complaint to TPAR standards.
7. Conditions that are beyond recommended standards should be documented. A walkway is non-compliant if it is missing key ADA elements such as curb ramp(s), truncated domes, and detectable edging. Other restrictions or hazards may include insufficient width or pinch-point widths, traffic conflicts, steep grades, non-continuous railings, tripping hazards, or uneven/rough/soft surface conditions, etc.
8. Pedestrian traffic signal displays controlling closed crosswalks shall be covered. Temporary pedestrian signals should be considered when creating a new crossing location.
9. Curb marking shall be prohibited for a minimum of 30 feet in advance of the mid-block pedestrian crossing. Crosswalk marking shall be installed and conflicting marking removed or covered. Curb ramps with detectable warnings shall be provided to transition from the sidewalk to the crosswalk.
10. Pedestrian detour trailblazing signs should be used if the pedestrian detour is located someplace other than across the street from the sidewalk closure.

## CROSSWALK CLOSURES AND PEDESTRIAN DETOURS

LONG TERM

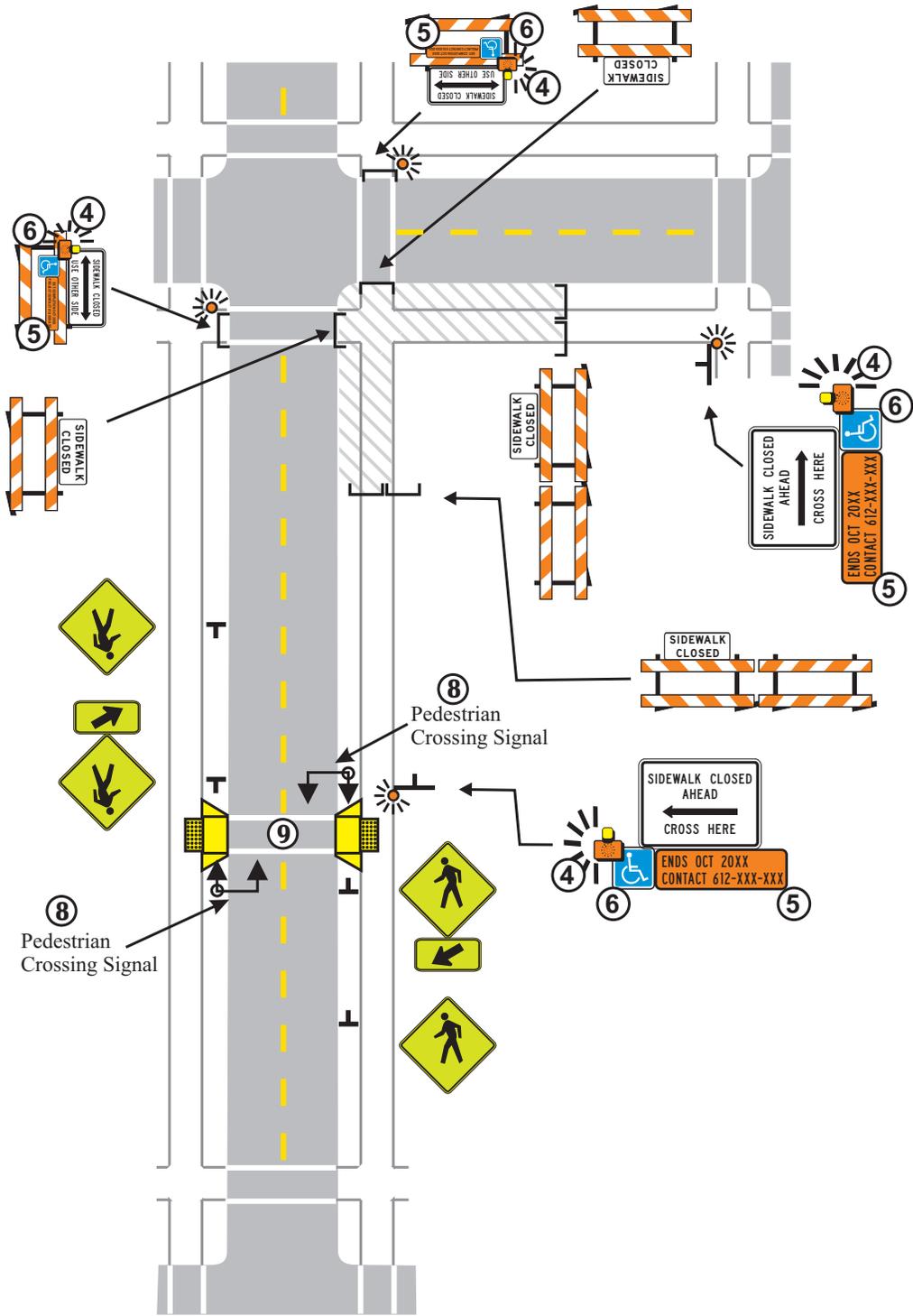
LAYOUT 6J-24a

NOTES:

1. When crosswalks, sidewalks or other pedestrian facilities are blocked, closed or relocated, temporary facilities shall include accessibility features consistent with the features present in the existing pedestrian facility.
2. The examples show only key typical dimensions. Refer to the MnDOT "Pedestrian Accommodations Through Work Zones website (<http://www.dot.state.mn.us/trafficeng/workzone/apr.html>) for standards, guidance and options when blocking, closing, or relocating pedestrian facilities.
3. Only traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets.
- ④ An approved audible message device or tactile message should be provided for sight-impaired pedestrians. When used, a message device should provide a complete physical description of the temporary pedestrian detour including duration, length of (and/or distance to) the bypass, any restrictions or hazards and project information as listed in note 5 below. The number and location of devices should be determined for each project prior to starting work. Devices may be placed prior to sidewalk work to warn regular users of the planned work.
- ⑤ Typical sign message for a temporary pedestrian detour should include information (timewise) such as the duration of the walkway restrictions (beginning and/or end dates) and a project contact number for 24/7 questions or reporting hazards.
- ⑥ The International Symbol of Accessibility should be displayed when any walkway through a work zone has been determined to be TPAR compliant. The Symbol of Accessibility shall not be displayed if persons with disabilities should not use the primary temporary pedestrian detour. The reason for the non-compliance should be posted and an alternate route should be posted when the primary temporary pedestrian detour is non-complaint to TPAR standards.
7. Conditions that are beyond recommended standards should be documented. A walkway is non-compliant if it is missing key ADA elements such as curb ramp(s), truncated domes, and detectable edging. Other restrictions or hazards may include insufficient width or pinch-point widths, traffic conflicts, steep grades, non-continuous railings, tripping hazards, or uneven/rough/soft surface conditions, etc.
- ⑧ Pedestrian traffic signal displays controlling closed crosswalks shall be covered. Temporary pedestrian signals should be considered when creating a new crossing location.
- ⑨ ~~Curb marking shall be prohibited for a minimum of 30 feet in advance of the mid-block pedestrian crossing.~~ Crosswalk marking shall be installed and conflicting marking removed or covered. Curb ramps with detectable warnings shall be provided to transition from the sidewalk to the crosswalk. **Stop Bar should be located 20 to 50 feet prior to the crosswalk. Restrict parking between the stop bar and the crosswalk. On two-way roadways, restrict parking both prior to and after the crosswalk for both directions. Consider lighting to enhance pedestrian conspicuity.**
10. Pedestrian detour trailblazing signs should be used if the pedestrian detour is located someplace other than across the street from the sidewalk closure.

**MCUTCD:**  
**How do you feel about directing to MnDOT website?**

**CROSSWALK CLOSURES AND PEDESTRIAN DETOURS**

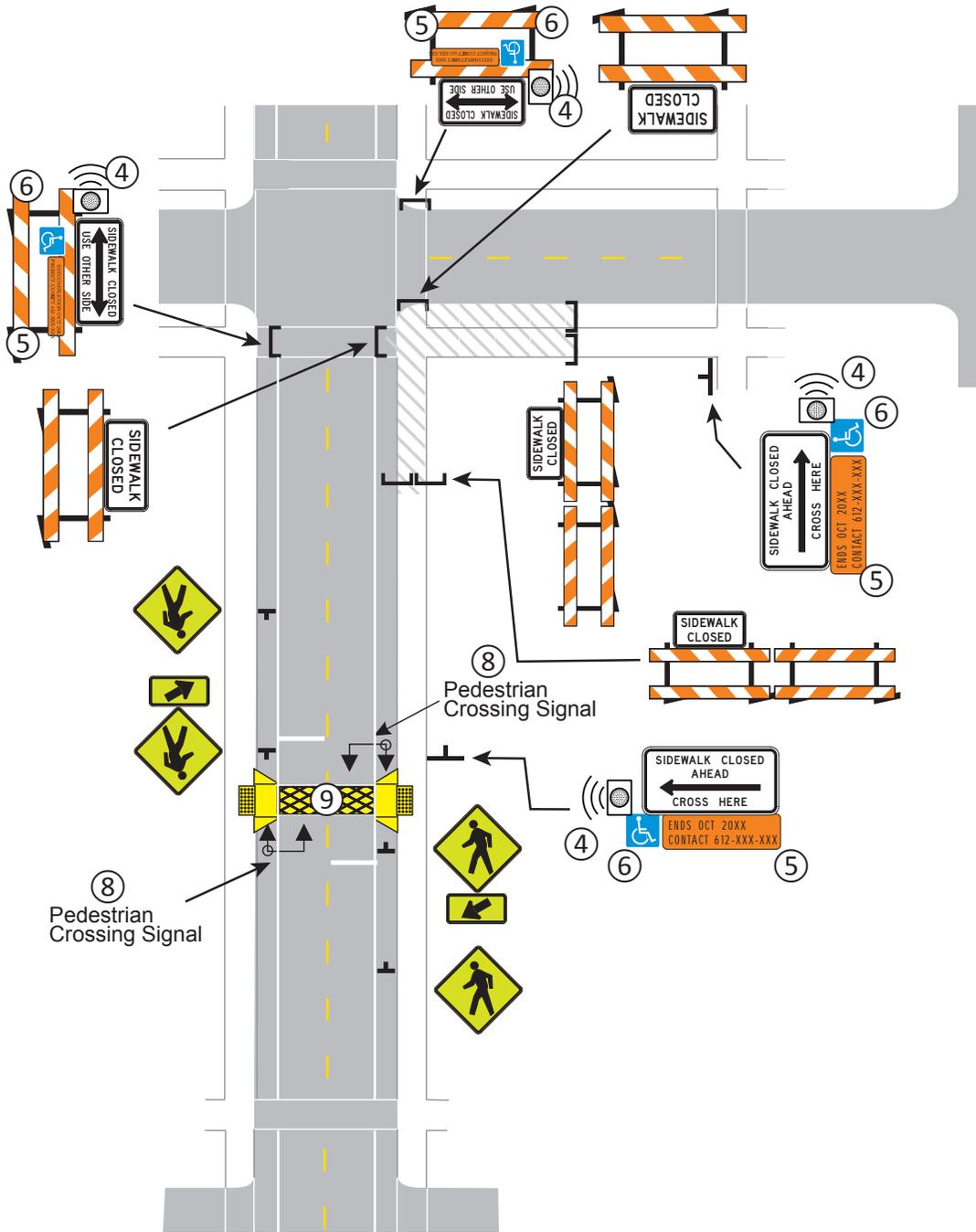


## CROSSWALK CLOSURES AND PEDESTRIAN DETOURS

LONG TERM

LAYOUT 6J-24b

Mn Rev. 7 2019



### CROSSWALK CLOSURES AND PEDESTRIAN DETOURS

LONG TERM

Layout 6J-254b

## NOTES:

1. When crosswalks, sidewalks or other pedestrian facilities are blocked, closed or relocated, temporary facilities shall include accessibility features consistent with the features present in the existing pedestrian facility.
2. The examples show only key typical dimensions. Refer to the MnDOT "Temporary Pedestrian Access Route" (TPAR) website (<http://www.dot.state.mn.us/trafficeng/workzone/tpar.html>) for standards, guidance and options when blocking, closing, or relocating pedestrian facilities.
3. Where high speeds and/or high traffic volumes are anticipated, barrier should be used to separate the temporary pedestrian walkway from vehicular traffic. When used, barriers shall be installed as detailed in the MN MUTCD, Part 6F.
4. Only traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets.
5. When both sides of a temporary pedestrian bypass require channelizing devices, then the devices should be a similar type (railing system, barricade, or fencing system), excluding when TTC barrier (such as concrete barrier) is used to protect pedestrians from an open traffic lane.
6. An approved audible message device or tactile message should be provided for sight-impaired pedestrians. When used, a message device should provide a complete physical description of the temporary pedestrian by-pass including duration, length of (and/or distance to) the bypass, any restrictions or hazards and project information as listed in note 7 below. The message device(s) may also describe an alternate route. The number and location of devices should be determined for each project prior to starting work. Devices may be placed prior to sidewalk work to warn regular users of the planned work.
7. Typical sign message for a temporary pedestrian bypass should include information such as the duration of the walkway restrictions (beginning and/or end dates) and a project contact number for 24/7 questions or reporting hazards.
8. The International Symbol of Accessibility should be displayed when any walkway through a work zone has been determined to be TPAR compliant. The Symbol of Accessibility shall not be displayed if persons with disabilities should not enter the temporary pedestrian bypass. An alternate route should be posted when the temporary pedestrian bypass is non-complaint to TPAR standards.
9. Conditions that are beyond recommended standards should be documented. A walkway is non-compliant if it is missing key ADA elements such as curb ramp(s), truncated domes, and detectable edging. Other restrictions or hazards may include insufficient width or pinch-point widths, traffic conflicts, steep grades, non-continuous railings, tripping hazards, or uneven/rough/soft surface conditions, etc.
10. When a sidewalk is closed but workers are present who will provide assistance or directions to pedestrians, then the devices as shown are not required.

**SIDEWALK BYPASS**

LONG TERM

LAYOUT 6J-25a

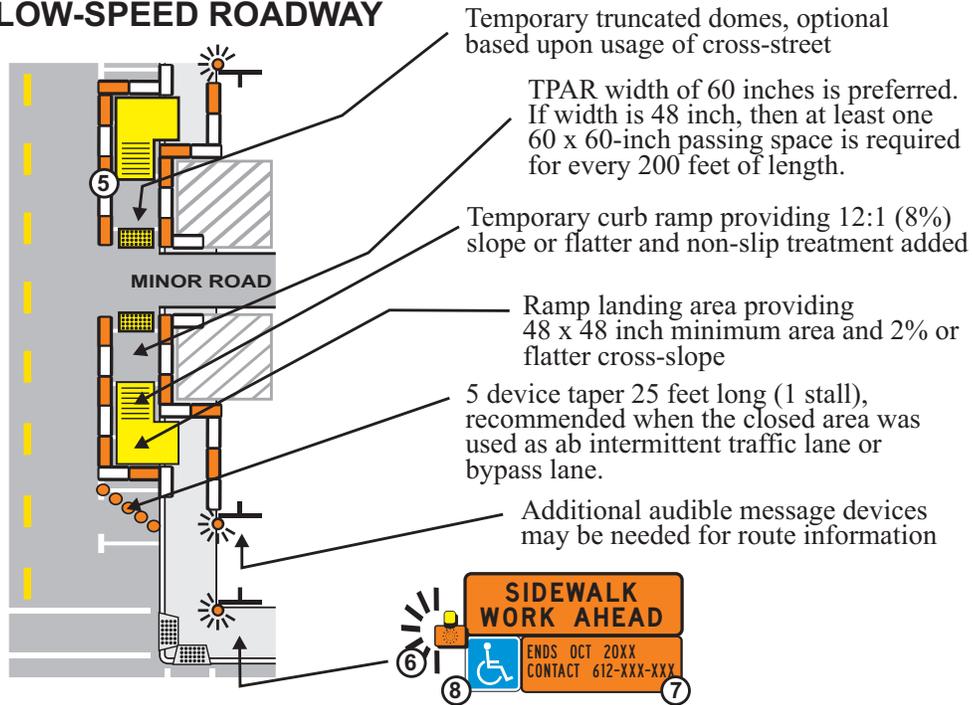
NOTES:

1. When crosswalks, sidewalks or other pedestrian facilities are blocked, closed or relocated, temporary facilities shall include accessibility features consistent with the features present in the existing pedestrian facility.
2. The examples show only key typical dimensions. Refer to the MnDOT "Pedestrian Accommodations Through Work Zones website (<http://www.dot.state.mn.us/trafficeng/workzone/apr.html>) for standards, guidance and options when blocking, closing, or relocating pedestrian facilities. **When the temporary route is required to be fully accessible it is called a Temporary Pedestrian Access Route (TPAR).**
- ③ **TPAR width of 60 inches is preferred. If width is 48 inches, then at least one 60 x 60 inch passing space is required for every 200 feet of length.**
- ~~3. Where high speeds and/or high traffic volumes are anticipated, barrier should be used to separate the temporary pedestrian walkway from vehicular traffic. When used, barriers shall be installed as detailed in the MN MUTCD, Part 6F.~~
4. Only traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets.
- ⑤ When both sides of a temporary pedestrian bypass require channelizing devices, then the devices should be a similar type (railing system, barricade, or fencing system), excluding when TTC barrier (such as concrete barrier) is used to protect pedestrians from an open traffic lane.
- ⑥ An approved audible message device or tactile message ~~should~~ **may** be provided for sight-impaired pedestrians. When used, a message device should provide a complete physical description of the temporary pedestrian by-pass including duration, length of (and/or distance to) the bypass, any restrictions or hazards and project information as listed in note 7 below. The message device(s) may also describe an alternate route. The number and location of devices should be determined for each project prior to starting work. Devices may be placed prior to sidewalk work to warn regular users of the planned work.
- ⑦ Typical sign message for a temporary pedestrian bypass should include information such as the duration of the walkway restrictions (beginning and/or end dates) and a project contact number for 24/7 questions or reporting hazards.
- ⑧ The International Symbol of Accessibility should be displayed when any walkway through a work zone has been determined to be TPAR compliant. The Symbol of Accessibility shall not be displayed if persons with disabilities should not enter the temporary pedestrian bypass. An alternate route should be posted when the temporary pedestrian bypass is non-complaint to TPAR standards.
9. Conditions that are beyond recommended standards should be documented. A walkway is non-compliant if it is missing key ADA elements such as curb ramp(s), truncated domes, and detectable edging. Other restrictions or hazards may include insufficient width or pinch-point widths, traffic conflicts, steep grades, non-continuous railings, tripping hazards, or uneven/rough/soft surface conditions, etc.
10. ~~When a sidewalk is closed but workers are present who will provide assistance or directions to pedestrians, then the devices as shown are not required.~~

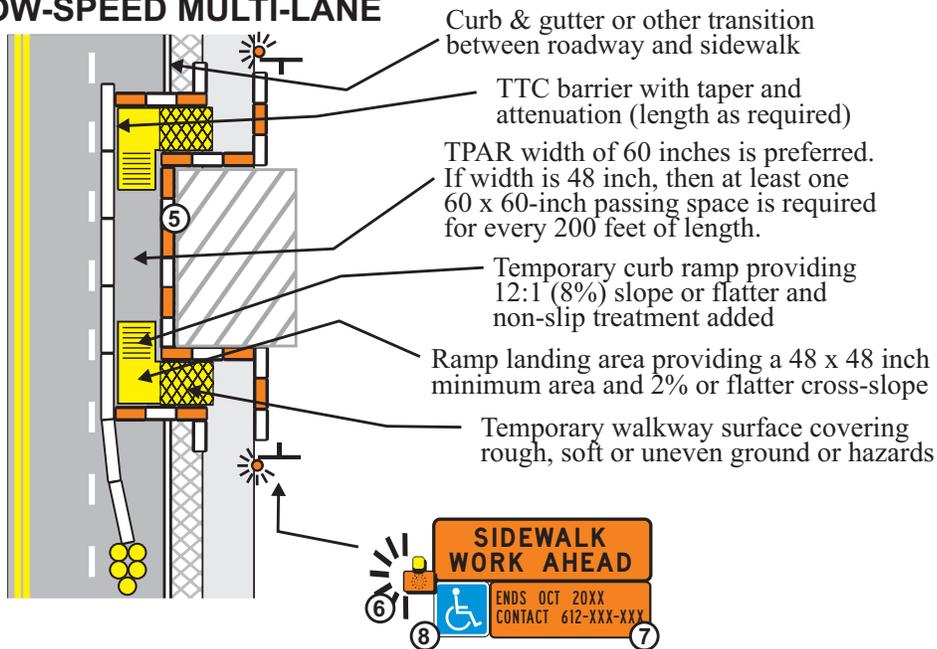
**MCUTCD:**  
**How do you feel about directing to MnDOT website?**

**SIDEWALK BYPASS**

## LOW-SPEED ROADWAY



## HIGH-SPEED ROADWAY or LOW-SPEED MULTI-LANE

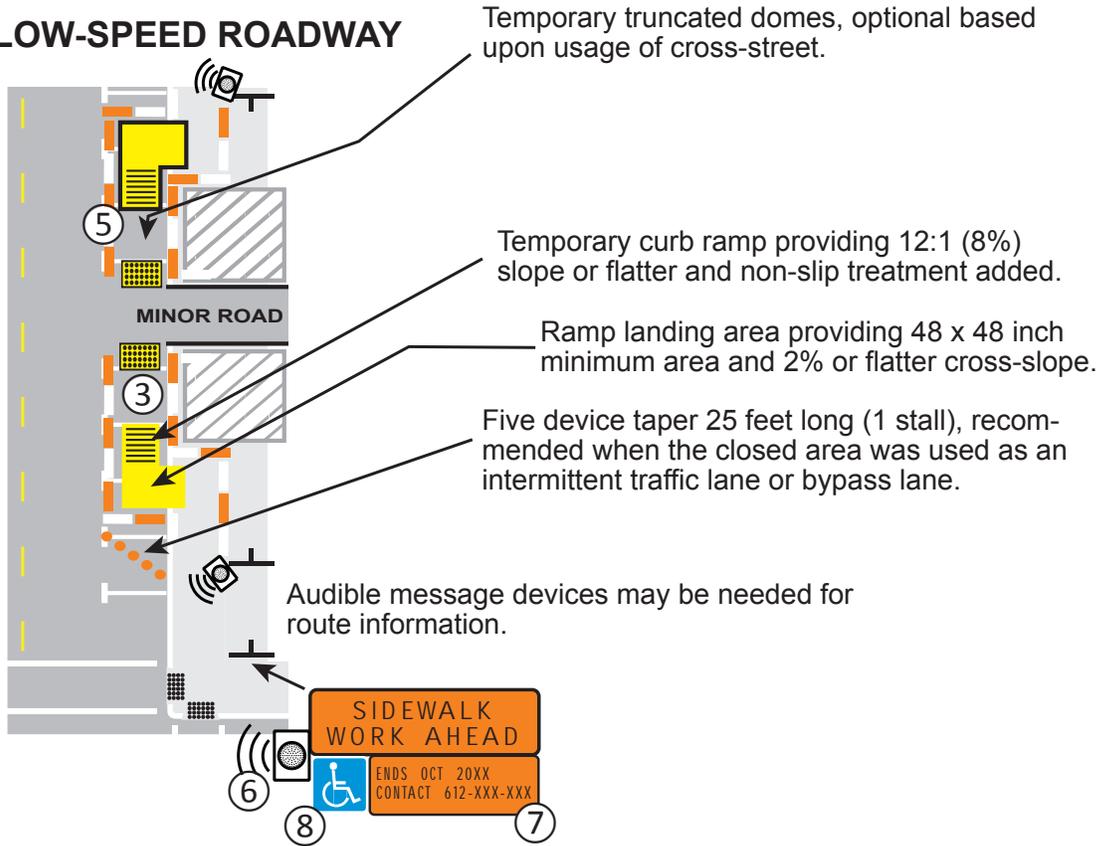


## SIDEWALK BYPASS

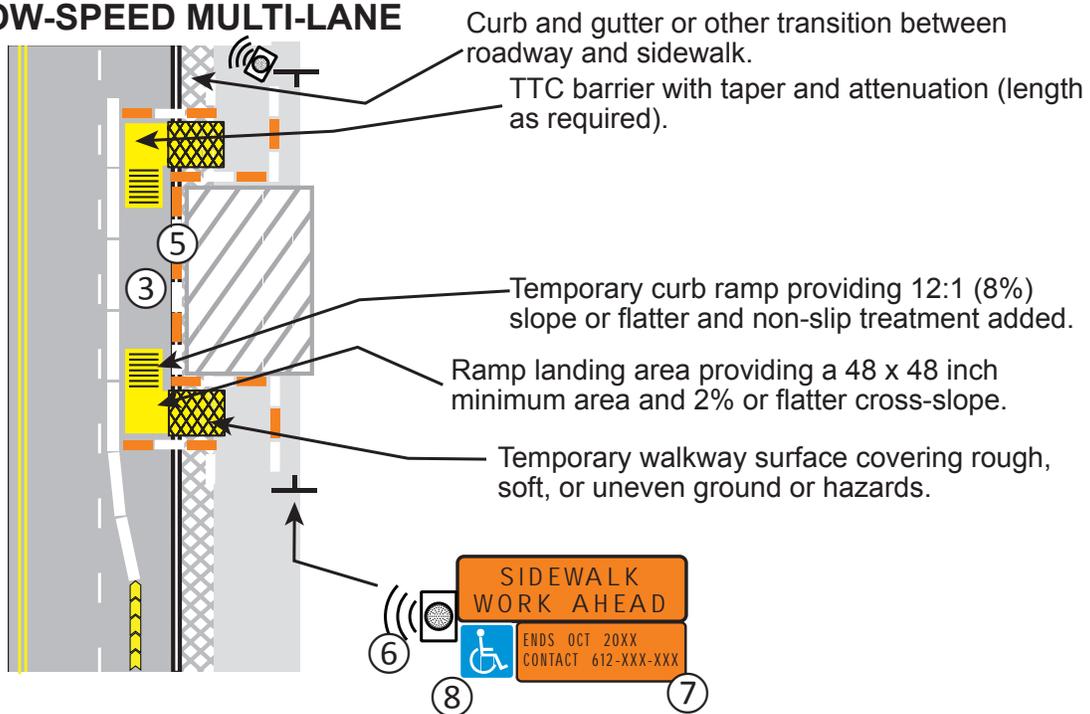
LONG TERM

LAYOUT 6J-25b

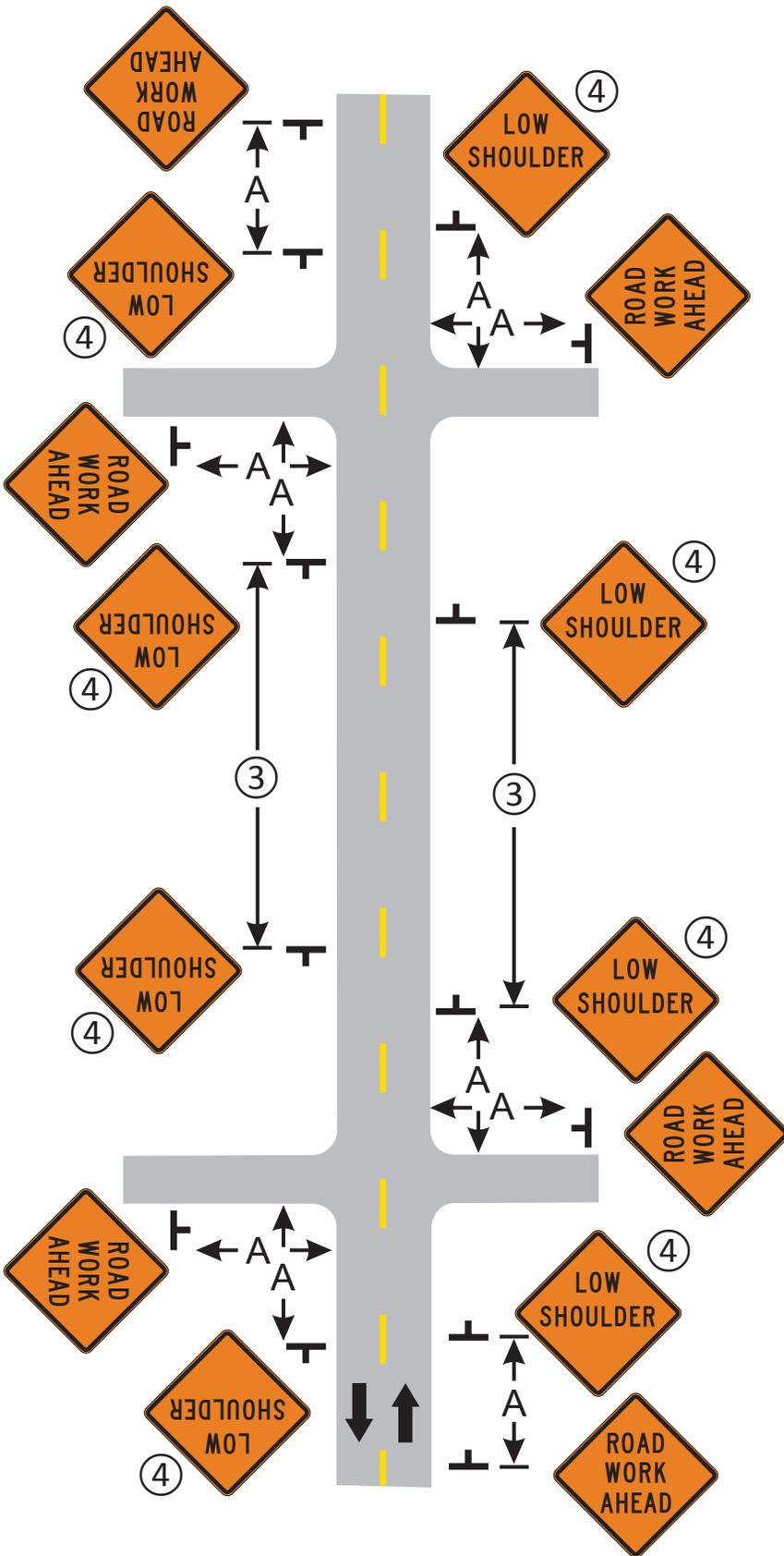
### LOW-SPEED ROADWAY



### HIGH-SPEED ROADWAY or LOW-SPEED MULTI-LANE



### SIDEWALK BYPASS



**NOTES:**

1. This layout should be used for those stationary temporary traffic control zones that extend over a relatively long segment of roadway.
2. The appropriate layout shall be used for the active work space (such as re-surfacing operations, area of paving, etc).
- ③ Confirmation signing for a continuous condition should be placed after every intersection and approximately 1 mile spacing for speeds 45 mph or greater, or 1/4 mile spacing for speeds 40 mph or less.
- ④ Use the appropriate advance warning sign for the roadway condition, i.e. GROOVED PAVEMENT, LOOSE GRAVEL, ROUGH ROAD. An advisory Motorcycle plaque may be placed directly below or on the lower side of the warning sign nearest traffic if the warning is directed primarily to motorcyclists.
5. Consider delineating raised structures (manhole covers, etc.)

Notes are from Field Manual

MCUTCD -

Do you want to include a Layout like this (#35 of the Field Manual).

**CROSSROAD & CONFIRMATION SIGNING**  
Traffic Control Zone

LONG TERM

Layout 6J-26