

Temporary Traffic Control Layout Selection by Maintenance Activity

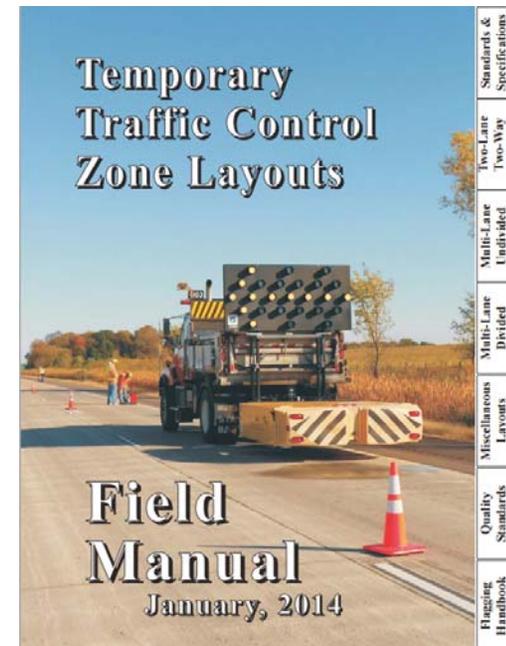
(Supplemental Guidebooks)

LOW VOLUME URBAN RESIDENTIAL STREET - JANUARY 2016

URBAN



The intent of this document is to **help local agencies identify the appropriate work zone layout based on the maintenance activity that will be performed.** This document is intended to be used as supplemental guidance to the *Temporary Traffic Control Zone Layouts Field Manual* (dated January 2014). The information presented here does not replace or override anything within the field manual. Agencies must follow the standards and guidance contained in the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD), including the Field Manual.



Temporary Traffic Control Zone Layouts Field Manual (dated January 2014).

This document represents the results of research conducted by the authors and does not necessarily represent the views or policies of the Minnesota Department of Transportation and/or the Center for Transportation Studies. This report does not contain a standard or specified technique.

The authors and the Minnesota Department of Transportation and/or Center for Transportation Studies do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to this report.

<http://www.dot.state.mn.us/research/TS/2016/2016RIC09B.pdf>

Criteria to use this document:

- Urban Residential Street
- Low Volume (<400 ADT)
- Mobile, Short Duration or Short Term work only
- Attended work zones
- 30 mph or less

This guidance was developed to aid in selecting appropriate temporary traffic controls for maintenance work on streets commonly referred to as residential streets. While the The Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) and Minnesota Statutes do not specifically define these streets these guidelines were developed for streets with a speed limit of 30 mph or less, that have a traffic volume less than 400 ADT, and have few if any businesses or commercial development. Many of these residential streets have limited pavement width and consideration should be given to working with local law enforcement to restrict parking on the streets where work is being planned. This will facilitate being able to provide safe passage of vehicles while providing work space exclusively for workers, equipment and materials. The MN MUTCD contains requirements to provide a minimum of 10 foot wide lanes for the passage of vehicles.

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How to use this document:

1. Identify your maintenance activity and work duration
2. Use the matrix on page 3 to select a layout to consider
3. Find the box that corresponds with the suggested layout on the following pages.
4. Read the “Notes from field manual” section and the questions under the section “Is this the appropriate layout?”
5. If the layout is not appropriate, use the guidance provided to identify a better layout.
6. Once the appropriate layout is identified, use the Field Manual for guidance on how to setup the work zone in the field, and the “Minimum Required Devices” section as guidance on the minimum devices needed when using the layout.

Layout Selection Matrix by Maintenance Activity:

URBAN		WORK DURATION		
		MOBILE	SHORT DURATION	SHORT TERM
MAINTENANCE ACTIVITY		15 Minutes or less	One Hour or less	12 Hours or less
On road	Asphalt pavement patching	5	8	9
	Concrete pavement patching	-	-	9
	Pothole patching	5	8	-
	Crack Filling	-	8	9, 10, 13
	Crack sealing - Route and seal	-	-	9, 10, 13
	Surface treatment	-	-	9, 10, 13
	Sweeping - Residential	5	-	-
	Road closure (e.g. water main break)	81	80	80
	Utility maintenance (partial road closure)	-	-	9, 10
Roadside	Mowing	71	-	-
	Tree/Brush removal	5, 71	8	9, 10
	Debris removal - routine (e.g. litter pickup)	2	2, 3	-
	Debris removal - Large item (e.g. couch, roadkill)	5	-	-
	Utility repair - roadway	2, 3, 21	2, 3, 21	2, 3, 21
	Sign repair	2, 3, 5	2, 3	-
	Snow cleanup	2, 3, 5	3	-
	Utility repair - intersection	-	-	28

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LAYOUT 80

ROAD CLOSURE

SHORT OR INTERMEDIATE TERM

DAYLIGHT OR NIGHTTIME HOURS

STREETS

Maintenance Activities:

- Road closure

General Information:

Layout 80 is for a total closure that lasts less than 3 days

Notes from Field Manual:

1. The Road Authority will determine if a detour is required and specify the detour route.
2. Road Closure Notice sign should be installed seven days in advance of the closure.
3. Install at the last driveway or intersection beyond which there is no public access.

Is this the appropriate layout?

Will the closure be less than 3 days?

Can you meet all requirements of Layout 80?

If the answer is NO, a special temporary traffic control plan must be considered.

Minimum Required Devices for 30 MPH:

Description	Qty	Device
ROAD CLOSED TO THRU TRAFFIC or ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY signs	1	 or 
ROAD CLOSED AHEAD XXX FEET sign	1	
ROAD CLOSED AHEAD sign	1	
Type III Barricade	3*	

*with enough to completely close the road at point of closure.

Pedestrian Access

If an existing pedestrian route is impacted by a short-term or short-duration work zone that is attended with project personnel, establishing an alternate pedestrian route may not be necessary if the work can be stopped and pedestrians can navigate the work zone safely. Pedestrians may be delayed for a short period of time for project personnel to move equipment and material to facilitate passage. Work zone personnel may also provide assistance to the pedestrian as necessary.

If alternative pedestrian layouts are needed, Layouts 84 a&b and 85 a&b of the Field Manual should be considered.

Mobile Layouts

Since most of the speed limits on urban residential streets are 30 mph and the corresponding decision sight distance is 550 feet to meet this definition, the work space has to move at least 2200 feet per hour, or approximately 1/2 mile per hour.

Will your work move more than 550 feet every 15 minutes, or approximately 1/2 mile per hour?

If not, do not use a mobile layout and consider a stationary (short duration or short term) layout.

LAYOUT 28 CLOSURE IN CENTER OF INTERSECTION											
SHORT OR INTERMEDIATE TERM	DAYLIGHT OR NIGHTTIME HOURS										
ONLY FOR SPEED LIMITS 40MPH OR LESS	USE FOR ROADS LESS THAN 400 ADT ONLY										
<p>Maintenance Activities:</p> <ul style="list-style-type: none"> Utility repair - intersection 											
<p>General Information:</p> <p>Layout 28 is intended for use where work is in the center of the intersection and there is adequate space for traffic to drive around the closed area.</p> <p>Layout 28 is not restricted to short term (daylight hours and 12 hours or less) but can be used for 3 days or less (Intermediate term).</p>											
<p>Notes from Field Manual:</p> <ol style="list-style-type: none"> The minimum paved lane width from channelizing devices to the edge of the pavement or to the outside edge of the shoulder shall be 10 feet. 											
<p>Is this the appropriate layout?</p> <p>Can traffic drive around the closed area?</p> <p>Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles?</p> <p>Can you meet all requirements of Layout 28?</p> <p>If the answer to any of these is no, layout 29 must be considered.</p>	<p>Minimum Required Devices for 30 MPH:</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>ROAD WORK AHEAD sign</td> <td>4</td> <td></td> </tr> <tr> <td>18" cones for daytime low speed 28" cones or other channelizing device</td> <td>VARIES</td> <td></td> </tr> </tbody> </table>		Description	Qty	Device	ROAD WORK AHEAD sign	4		18" cones for daytime low speed 28" cones or other channelizing device	VARIES	
	Description	Qty	Device								
	ROAD WORK AHEAD sign	4									
18" cones for daytime low speed 28" cones or other channelizing device	VARIES										

LAYOUT 13

LANE CLOSURE, TWO FLAGGER – TWO-LANE TWO-WAY ROAD

SHORT OR INTERMEDIATE TERM	DAYLIGHT OR NIGHTTIME HOURS															
	ALL STREETS															
Maintenance Activities: <ul style="list-style-type: none"> Crack filling Crack sealing - route and seal Surface treatment 																
General Information: Layout 13 is not restricted to short term (daylight hours and 12 hours or less) but can be used for 3 days or less (Intermediate term). This layout contains some guidance on the application of Decision Sight Distance for flagger location and requires the use of two flaggers.																
Notes from Field Manual: <ol style="list-style-type: none"> The approach sight distance to the flagger shall be at least the Decision Sight Distance (D). The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less. The two-way taper should be 50 feet and using five equally spaced channelizing devices. 																
Is this the appropriate layout? Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles? Can you meet all requirements of Layout 13? If the answer to any of these is no, another layout must be considered	Minimum Required Devices for 30 MPH: <table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>ROAD WORK AHEAD sign</td> <td>2</td> <td></td> </tr> <tr> <td>FLAGGER AHEAD sign</td> <td>2</td> <td></td> </tr> <tr> <td>Flagger and STOP SLOW paddle</td> <td>2</td> <td></td> </tr> <tr> <td>18" cones for daytime low speed 28" cones or other channelizing device</td> <td>15*</td> <td></td> </tr> </tbody> </table> <p>*with an additional device for every 50 feet of work space.</p>	Description	Qty	Device	ROAD WORK AHEAD sign	2		FLAGGER AHEAD sign	2		Flagger and STOP SLOW paddle	2		18" cones for daytime low speed 28" cones or other channelizing device	15*	
	Description	Qty	Device													
ROAD WORK AHEAD sign	2															
FLAGGER AHEAD sign	2															
Flagger and STOP SLOW paddle	2															
18" cones for daytime low speed 28" cones or other channelizing device	15*															

LAYOUT 5

LANE CLOSURE – TWO LANE TWO WAY ROAD

MOBILE	Daytime all speeds Nighttime 40 mph or less					
WORK IN TRAVELED LANE RESIDENTIAL STREET	USE FOR ROADS LESS THAN 1500 ADT ONLY					
Maintenance Activities: <ul style="list-style-type: none"> Asphalt pavement patching Pothole Patching Sweeping - Residential Tree/brush removal Debris removal - Large item (e.g. couch, roadkill) Sign repair Snow cleanup 						
General Information: Layout 5 covers most of the mobile applications for residential street where work is conducted on the traveled lanes. This layout may be used for night time operations for roadways with posted speed 40 mph or less.						
Notes from Field Manual: <ol style="list-style-type: none"> If the approach sight distance is restricted, a spotter should be used to protect the work area and to warn the driver. If the visibility is poor or the operation does not move at least the Decision Sight Distance (D) every 15 minutes, the appropriate stationary layout should be used. This layout may be used for nighttime operations only in locations where the posted speed limit is 40 mph or less. The slow moving or stopped work vehicle should keep the traffic lane as wide as possible by using the shoulder space whenever possible. 	Minimum Required Devices for 30 MPH: There are no minimum required devices. The STANDARD that applies is: Mobile operations shall have appropriate devices on the equipment (that is, high-intensity rotating, flashing, oscillating, or strobe lights, signs, or special lighting), or shall use a separate vehicle with appropriate warning devices.					
	<table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>Flashing Vehicle Light</td> <td>1</td> <td></td> </tr> </tbody> </table>	Description	Qty	Device	Flashing Vehicle Light	1
Description	Qty	Device				
Flashing Vehicle Light	1					
Is this the appropriate layout? Can you meet all requirements for Layout 5 of the Field Manual? Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles? If the answer is NO, the appropriate stationary layout must be considered.						

LAYOUT 71

WORK OFF ROADWAY MOBILE OPERATIONS HAVING LITTLE OR NO INTERFERENCE WITH TRAFFIC

MOBILE	DAYLIGHT HOURS
LITTLE OR NO INTERFERENCE WITH TRAFFIC	ALL RESIDENTIAL STREETS

Maintenance Activities:

- Mowing
- Tree/brush removal

General Information:

Layout 71 is for work that is off the roadway where there is little or no interference with traffic. This layout can be used for all streets regardless of traffic volume.

Notes from Field Manual:

1. The operations should be scheduled and completed during daylight work shifts and have little or no interference with traffic. The work should be suspended during periods of poor weather or visibility.
2. All vehicles shall be equipped with a flashing vehicle light visible 360-degrees around the vehicle when viewed from a distance of 60 feet.
3. The ROAD WORK AHEAD sign may be omitted when there is an adequate approach decision sight distance to the equipment along the majority of the route.
4. When advance warning signs are used, the signs should be no more than 3 miles from the work vehicle. The location of the signs should be determined by the sources of traffic, such as major cross roads.
5. On roadways where decision sight distance is restricted and the equipment must encroach into the traffic lane routinely, a shadow vehicle may be used as shown.

Is this the appropriate layout?

Is your work area off the roadway with little or no interference with traffic?
 Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles?
 Can you meet all requirements of Layout 71?
 If the answer to any of these is NO, the appropriate stationary layout must be considered.

Minimum Required Devices for 30 MPH:

All vehicles shall be equipped with a flashing vehicle light visible 360-degrees around the vehicle when viewed from a distance of 60 feet.
 A SLOW MOVING vehicle sign is required for all slow moving vehicles operating on public roadways.

Description	Qty	Device
Flashing Vehicle Light	1	
SLOW MOVING sign	1	

LAYOUT 10

LANE CLOSURE, ONE FLAGGER – TWO-LANE TWO-WAY ROAD

SHORT OR INTERMEDIATE TERM	DAYLIGHT OR NIGHTTIME HOURS
500 FEET MAXIMUM WORK SPACE	USE FOR ROADS LESS THAN 400 ADT ONLY

Maintenance Activities:

- Crack filling
- Crack sealing - route and seal
- Tree/brush removal
- Surface treatment
- Utility maintenance

General Information:

Layout 10 has a maximum work space is 500 feet and it is restricted to use on roadways with <400 ADT. Layout 10 is not restricted to short term (daylight hours and 12 hours or less) but can be used for 3 days or less (Intermediate term). This layout contains some guidance on the application of Decision Sight Distance for flagger location and whether a second flagger is required.

Notes from Field Manual:

1. The approach sight distance to the flagger shall be at least the Decision Sight Distance (D).
2. If the flagger's ability to see oncoming motorists beyond the work space is less than the Decision Sight Distance, two flaggers shall be used - See Layout 13.
3. STOP signs shall be installed if the work space must be left unattended at night - see Layout 20.
4. The two-way taper should be 50 feet in length using 5 equally spaced channelizing devices.

Is this the appropriate layout?

Is the work space less than 500 feet long?
 Will traffic be able to be controlled by a single flagger?
 Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles?
 Can you meet all requirements of Layout 10?
 If the answer to any of these is no, layout 13 must be considered.

Minimum Required Devices for 30 MPH:

Description	Qty	Device
ROAD WORK AHEAD signs	2	
FLAGGER AHEAD signs	1	
Flagger and STOP SLOW paddle	1	
18" cones for daytime low speed 28" cones or other channelizing device	15	

*Minimum number of cones for a 500 foot work space is 24.

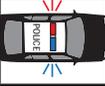
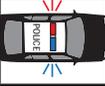
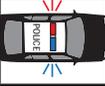
LAYOUT 9

LANE CLOSURE, NO FLAGGER – TWO-LANE TWO-WAY ROAD

SHORT TERM	DAYLIGHT HOURS									
500 FEET MAXIMUM WORK SPACE	USE FOR ROADS LESS THAN 400 ADT ONLY									
Maintenance Activities: <ul style="list-style-type: none"> • Asphalt pavement patching • Concrete pavement patching • Crack filling • Crack sealing-route and seal • Tree/brush removal • Surface treatment • Utility Maintenance 										
General Information: Layout 9 has a maximum work space length of 500 feet and is for short term (daylight hours and 12 hours or less) application. There is not specific guidance on determining when traffic is unable to self-regulate included in this layout.										
Notes from Field Manual: <ol style="list-style-type: none"> 1. When traffic cannot regulate itself through the length of the work space, use Layout 10. 2. STOP signs shall be installed if the work space must be left unattended at night - see Layout 20. 3. The two-way taper should be 50 feet in length using 5 equally spaced channelizing devices. 										
Is this the appropriate layout? Is the work space less than 500 feet long? Will traffic be able to self-regulate without the use of a flagger? Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles? Is the work during daylight hours? Can you meet all requirements of Layout 9? If the answer to any of these is no, Layout 10 must be considered.	Minimum Required Devices for 30 MPH: <table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>ROAD WORK AHEAD signs</td> <td>2</td> <td></td> </tr> <tr> <td>18" cones for daytime low speed</td> <td>15*</td> <td></td> </tr> </tbody> </table> <p>*Minimum number of cones for a 500 foot work space is 24</p>	Description	Qty	Device	ROAD WORK AHEAD signs	2		18" cones for daytime low speed	15*	
Description	Qty	Device								
ROAD WORK AHEAD signs	2									
18" cones for daytime low speed	15*									

LAYOUT 81

TEMPORARY ROAD CLOSURE – TWO LANE TWO WAY ROAD

MOBILE	DAYLIGHT OR NIGHTTIME HOURS																														
TOTAL CLOSURE 15 MINUTES OR LESS	ALL ROADWAYS																														
Maintenance Activities: <ul style="list-style-type: none"> • Road closure 																															
General Information: Layout 81 is for a total closure that last less than 15 minutes																															
Notes from Field Manual: <ol style="list-style-type: none"> 1. The traffic from both lanes should not be stopped for more than 15 minutes. 2. Conditions represented are for work during daytime hours only. 3. For night closures, the following should be used: <ol style="list-style-type: none"> a. Law enforcement officers with squad car for flaggers. b. A changeable message sign in each direction. 4. The BE PREPARED TO STOP sign may be omitted when the posted speed limit is 40 mph or less. 																															
Is this the appropriate layout? Will the closure be less than 15 minutes? Can you meet all requirements of Layout 81? If the answer is NO, the appropriate stationary layout must be considered.																															
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DAYLIGHT HOURS	NIGHTTIME HOURS																														
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Description	Qty	Device																													
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PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)	2																														

Short Duration Layouts

Short Duration - when an operation stays in one location during daylight conditions from 15 minutes to one hour, such that minimal TTC [temporary traffic control] devices are deployed.

Will your operation stay in one location for less than one hour?

Is your operation during daylight conditions?

If the answer is NO, consider the use of the appropriate Short Term or Intermediate Term layout.

LAYOUT 3 PARKING LANE CLOSURE									
SHORT OR INTERMEDIATE TERM	DAYLIGHT OR NIGHTTIME HOURS								
PARKING LANE	ALL STREETS (NO LIMIT ON ADT)								
Maintenance Activities: <ul style="list-style-type: none"> • Utility repair - roadway • Sign repair • Snow cleanup • Debris removal-routine 									
General Information: Layout 3 is for work on the parking lane for all types, speeds and volumes of streets and highways. Even so, the requirements and options presented in this layout make it appropriate for off roadway operations on residential streets. Layout 3 is not restricted to short term (daylight hours and 12 hours or less) but can be used for 3 days or less (Intermediate term).									
Notes from Field Manual: <ol style="list-style-type: none"> 1. This layout is intended for use where a parking lane is closed. If this parking lane is normally open to vehicle travel during the time of day this closure will be in effect, the lane shall be considered a traveled lane and not a parking lane. The appropriate layout shall then be used to provide traffic control for the lane closure. 									
Is this the appropriate layout? Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles? Can you meet all requirements of Layout 3? If the answer to any of these is NO, the appropriate short term stationary layout must be considered.	Minimum Required Devices for 30 MPH: <table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>18" cones for daytime low speed</td> <td rowspan="2">4*</td> <td rowspan="2"></td> </tr> <tr> <td>28" cones or other channelizing device</td> </tr> </tbody> </table>		Description	Qty	Device	18" cones for daytime low speed	4*		28" cones or other channelizing device
	Description	Qty	Device						
18" cones for daytime low speed	4*								
28" cones or other channelizing device									
*With an additional channelizer for every 50 feet of parking lane closure.									

LAYOUT 2 SHOULDER CLOSURE WORK ON OR NEAR SHOULDER			
SHORT OR INTERMEDIATE TERM		DAYLIGHT OR NIGHTTIME HOURS	
OFF TRAVELED ROADWAY		ALL ROADWAYS	
Maintenance Activities:			
<ul style="list-style-type: none"> Debris removal - routine (e.g. litter pickup) Utility repair - roadway 		<ul style="list-style-type: none"> Sign repair Snow cleanup 	
General Information:			
Layout 2 is for work on the shoulder or off of the traveled roadway for all types, speeds and volumes of streets and highways. Even so, the requirements and options presented in this layout make it appropriate for many shoulder and off roadway operations on low volume roadways. This layout is for use on rural designs where there is no curb and gutter, typically has ditches, and there is a shoulder present. If your work area is in an urban design with curb and gutter and parking lanes, you must consider use of Layout 3 (Intermediate Term Section). Layout 2 is not restricted to short term (daylight hours and 12 hours or less) but can be used for 3 days or less (Intermediate term).			
Notes from Field Manual:			
<ol style="list-style-type: none"> All signs, barricades and channelizing devices may be omitted when the work occupies an isolated shoulder location for less than one hour and it has little or no interference with traffic. An operation which moves between work spaces that are less than the decision sight distance along the shoulder should use a stationary or mobile shoulder closure. The ROAD WORK AHEAD sign may be omitted for short term daylight operations if: <ol style="list-style-type: none"> the distance from curb face to the work space is at least 2 feet, or the distance from the edge of the roadway to the work space is at least 15 feet and a vehicle displaying a 360-degree flashing beacon is operating. This ROAD WORK AHEAD sign shall be installed on 2-lane, 2-way roads if traffic control devices are installed for a work space in the opposite shoulder. 			
Is this the appropriate layout?		Minimum Required Devices for 30 MPH:	
Will the work zone be entirely off the traveled lanes? Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles? Can you meet all requirements of Layout 2? If the answer to any of these is NO, the appropriate short term stationary layout must be considered. If your work area is in an urban design with curb and gutter and parking lanes, you must consider use of Layout 3 (Intermediate Term Section).		No Devices are required if less than one hour with little or no interference with traffic. For all other conditions:	
		Description	Qty
		ROAD WORK AHEAD signs	1 or 2
		18" cones for daytime low speed 28" cones or other channelizing device	6*
		*with an additional channelizer for every 100 feet of shoulder closure	

LAYOUT 8 EQUIPMENT IN TRAFFIC LANE – TWO-LANE TWO-WAY ROAD			
SHORT DURATION		DAYLIGHT HOURS	
RESIDENTIAL STREET 50 foot MAXIMUM WORK SPACE		USE FOR ROADS LESS THAN 1500 ADT ONLY	
Maintenance Activities:			
<ul style="list-style-type: none"> Asphalt pavement patching Pothole patching 		<ul style="list-style-type: none"> Crack filling Tree/brush removal 	
General Information:			
Layout 8 has a maximum work area length of 50 feet which, along with the one hour time restriction, limits the use of this layout to very specific work types. There is not specific guidance on determining when traffic is unable to self-regulate included in this layout.			
Notes from Field Manual:			
<ol style="list-style-type: none"> The work vehicle shall not be parked on the shoulder opposite of the coned area. The flagger and the Flagger Ahead symbol sign may be omitted when traffic volumes do not restrict traffic's ability to regulate itself through the length of the work space. The two-way taper should be 50 feet in length using 5 equally spaced channelizing devices. 			
Is this the appropriate layout?		Minimum Required Devices for 30 MPH:	
Will the work zone be in place for one hour or less? Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles? Can you meet all requirements of Layout 8? If the answer to any of these is NO, the appropriate short term stationary layout must be considered.		Description	Qty
		ROAD WORK AHEAD signs	2
		FLAGGER AHEAD signs	1
		Flagger and STOP SLOW paddle	1
		18" cones for daytime low speed 28" cones or other channelizing device	10

LAYOUT 21 EQUIPMENT ON CENTERLINE – TWO-LANE TWO-WAY ROAD																
SHORT DURATION	DAYLIGHT HOURS															
RESIDENTIAL STREET 50 foot MAXIMUM WORK SPACE	USE FOR ROADS LESS THAN 1500 ADT ONLY															
Maintenance Activities: <ul style="list-style-type: none"> • Utility repair - roadway 																
General Information: Layout 21 has a maximum work area length of 50 feet which, along with the one hour time restriction, limits the use of this layout to very specific work types.																
Notes from Field Manual: <ol style="list-style-type: none"> 1. The work vehicle shall be parked off of the roadway. Do not obstruct the shoulder in the coned areas. 2. The flagger and Flagger Ahead sign may be omitted if there is at least 10 feet of roadway and shoulder available to safely pass the work equipment on the centerline of the roadway. 																
Is this the appropriate layout? Will the work zone be in place for one hour or less? Has parking been restricted to allow for a minimum 10 foot lane for safe passage of vehicles? Can you meet all requirements of Layout 21? If the answer to any of these is NO, the appropriate short term stationary layout must be considered.	Minimum Required Devices for 30 MPH: <table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>ROAD WORK AHEAD signs</td> <td>2</td> <td></td> </tr> <tr> <td>FLAGGER AHEAD signs</td> <td>2</td> <td></td> </tr> <tr> <td>Flagger and STOP SLOW paddle</td> <td>2</td> <td></td> </tr> <tr> <td>18" cones for daytime low speed 28" cones or other channelizing device</td> <td>20</td> <td></td> </tr> </tbody> </table>	Description	Qty	Device	ROAD WORK AHEAD signs	2		FLAGGER AHEAD signs	2		Flagger and STOP SLOW paddle	2		18" cones for daytime low speed 28" cones or other channelizing device	20	
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Short Term Layouts

Short Term - when an operation stays in one location during daylight conditions from 15 minutes to twelve hours, such that advance signing and channelizing devices are required.

Will your operation stay in one location for less than 12 hours?

If the answer is NO, consider the use of the appropriate Intermediate Term layout.

Many of the short term layouts in the field manual are also intermediate term layouts which can remain in place for up to three days and during night time conditions. For these situations remember cones cannot be used in unattended work zones.