

Temporary Traffic Control Layout Selection by Maintenance Activity

(Supplemental Guidebooks)

LOW VOLUME RURAL STREET OR HIGHWAY - JANUARY 2016

RURAL

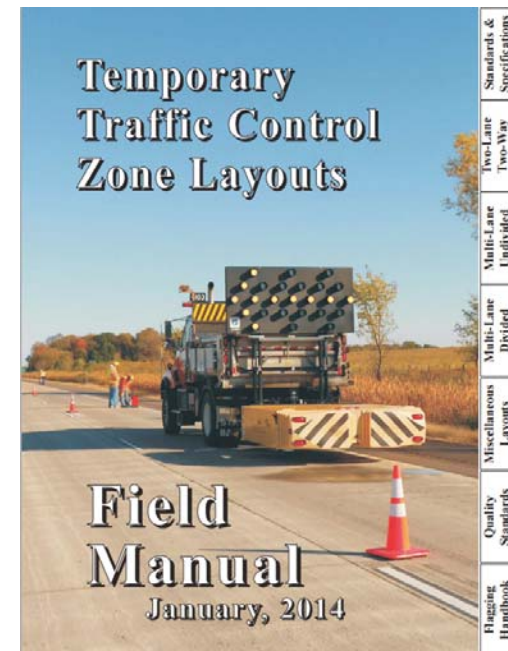


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<http://www.dot.state.mn.us/research/TS/2016/2016RIC09A.pdf>

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).

LAYOUT 80 ROAD CLOSURE

| SHORT OR INTERMEDIATE TERM | DAYLIGHT OR NIGHTTIME HOURS | | | | | | | | | | | | | | | |
|---|-----------------------------|--|-----|--------|--|---|--|---------------------------------|---|---|------------------------|---|---|--------------------|----|---|
| | ALL ROADWAYS | | | | | | | | | | | | | | | |
| Maintenance Activities: <ul style="list-style-type: none"> Road closure | | | | | | | | | | | | | | | | |
| General Information: Layout 80 is for a total closure that lasts less than 3 days | | | | | | | | | | | | | | | | |
| Notes from Field Manual: <ol style="list-style-type: none"> The Road Authority will determine if a detour is required and specify the detour route. Road Closure Notice sign should be installed seven days in advance of the closure. 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 55 MPH: <table border="1"> <thead> <tr> <th>Description</th> <th>Qty</th> <th>Device</th> </tr> </thead> <tbody> <tr> <td>ROAD CLOSED TO THRU TRAFFIC or ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY signs</td> <td>1</td> <td> or </td> </tr> <tr> <td>ROAD CLOSED AHEAD XXX FEET sign</td> <td>1</td> <td></td> </tr> <tr> <td>ROAD CLOSED AHEAD sign</td> <td>1</td> <td></td> </tr> <tr> <td>Type III Barricade</td> <td>3*</td> <td></td> </tr> </tbody> </table> <p>*with enough to completely close the road at point of closure.</p> | | 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* |  |
| 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* |  | | | | | | | | | | | | | | |

Layout Selection Matrix by Maintenance Activity:

| | | WORK DURATION | | |
|--------------------------|--|--------------------|------------------|------------------|
| | | MOBILE | SHORT DURATION | SHORT TERM |
| RURAL | | 15 Minutes or less | One Hour or less | 12 Hours or less |
| MAINTENANCE ACTIVITY | | | | |
| On road | Asphalt pavement patching | 5 | 8 | 9 |
| | Concrete pavement patching | - | - | 9 |
| | Temporary pothole patching | 5 | 8 | - |
| | Crack Filling | - | 8 | 13 |
| | Crack sealing - route and seal | - | - | 13 |
| | Surface treatment | - | - | 13 |
| | Grading a gravel road | 72 | - | - |
| | Road closure | 81 | 80 | 80 |
| | Culvert maintenance (partial road closure) | - | - | 9, 10 |
| | Shouldering | 5, 71 | - | - |
| Shoulder disking/blading | 5, 71 | - | - | |
| Roadside | Mowing | 71 | - | - |
| | Tree/Brush removal | 5, 71 | 8 | 9, 10 |
| | Debris removal - routine (e.g. litter pickup) | 5 | 2 | - |
| | Debris removal - Large item (e.g. couch, roadkill) | 5 | - | - |
| | Utility repair | 2 | 2 | 2 |
| | Sign repair | 5 | 2 | - |
| | Snow cleanup | 5 | - | - |
| | Driveway culvert maintenance | 2 | 2 | 2 |
| | Ditch maintenance (partial road closure) | - | - | 2 |

Duration of Work Definitions
















Since low volume roads with less than 400 ADT are two-lane two-way highways, the first and most important decision for temporary traffic control is to ensure you select a layout with the proper duration of work. The Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) defines Duration as follows:

Duration - the length of time any work operation occupies a specific location or causes a traffic obstruction without changing the location. This time is measured from the first disruption to traffic until the total clearing of the area. The following durations are defined in overlapping intervals since Temporary Traffic Control (TTC) layouts for longer durations may always be used for shorter durations, especially when roadway attributes such as traffic volume and speed, and the work space location may warrant higher levels of traffic control.

- **Mobile** - when an operation is continuously moving or stopped in one location for periods of 15 minutes or less. The traffic control devices are typically vehicle-mounted. The work area should change by at least the decision sight distance for it to be considered a change in location.
- **Short Duration** - when an operation stays in one location during daylight conditions from 15 minutes to one hour, such that minimal TTC devices are deployed.
- **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.
- **Intermediate Term/Night** - when an operation stays in one location during daylight conditions from 15 minutes to no more than 3 days, or stays in one location during hours of darkness. Advance signing and larger channelizing devices (Type B) are required.
- **Long Term** - when an operation stays in one location for more than 3 days. A project specific Traffic Control Plan is typically required.













Required Devices

Although cones are the typical channelizer for short term operations, they cannot be used in unattended work zones (Section 6F-64 of MN MUTCD). If leaving a lane closure or marking work when the workers are not present a higher level channelizer, such as a drum or barricade must be used.

| LAYOUT 13 LANE CLOSURE, TWO FLAGGER – TWO-LANE TWO-WAY ROAD | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|--------|----------------------|---|---|--------------------------|---|---|--------------------|---|---|------------------------------|---|---|--|-----|---|--|
| SHORT OR INTERMEDIATE TERM | DAYLIGHT OR NIGHTTIME HOURS | | | | | | | | | | | | | | | | | | | |
| | ALL TWO-LANE TWO-WAY ROADWAYS | | | | | | | | | | | | | | | | | | | |
| 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"> 1. The approach sight distance to the flagger shall be at least the Decision Sight Distance (D). 2. The ONE LANE ROAD AHEAD sign may be omitted when the posted speed limit is 40 mph or less. 3. The two-way taper should be 50 feet and using five equally spaced channelizing devices. | | | | | | | | | | | | | | | | | | | | |
| Is this the appropriate layout? Can you meet all requirements of Layout 13? If the answer to any of these is no, a special temporary traffic control plan must be considered. | Minimum Required Devices for 55 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>ONE LANE ROAD 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>28" cones or other channelizing device</td> <td>15*</td> <td></td> </tr> </tbody> </table> | Description | Qty | Device | ROAD WORK AHEAD sign | 2 |  | ONE LANE ROAD AHEAD sign | 2 |  | FLAGGER AHEAD sign | 2 |  | Flagger and STOP SLOW paddle | 2 |  | 28" cones or other channelizing device | 15* |  | |
| | Description | Qty | Device | | | | | | | | | | | | | | | | | |
| | ROAD WORK AHEAD sign | 2 |  | | | | | | | | | | | | | | | | | |
| | ONE LANE ROAD AHEAD sign | 2 |  | | | | | | | | | | | | | | | | | |
| | FLAGGER AHEAD sign | 2 |  | | | | | | | | | | | | | | | | | |
| Flagger and STOP SLOW paddle | 2 |  | | | | | | | | | | | | | | | | | | |
| 28" cones or other channelizing device | 15* |  | | | | | | | | | | | | | | | | | | |
| *with an additional channelizer for every 100 feet of work space. | | | | | | | | | | | | | | | | | | | | |

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: <ul style="list-style-type: none"> • Culvert maintenance (partial road closure) • Tree/brush removal | | | | | | | | | | | | | | | | |
| 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: <ol style="list-style-type: none"> 1. The approach sight distance to the flagger shall be at least the Decision Sight Distance. 2. If the flagger's ability to see oncoming motorists beyond the work space is less than the Decision Sight Distance (D), 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? 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 55 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>1</td> <td></td> </tr> <tr> <td>Flagger and STOP SLOW paddle</td> <td>1</td> <td></td> </tr> <tr> <td>28" cones or other channelizing device</td> <td>15*</td> <td></td> </tr> </tbody> </table> | Description | Qty | Device | ROAD WORK AHEAD signs | 2 |  | FLAGGER AHEAD signs | 1 |  | Flagger and STOP SLOW paddle | 1 |  | 28" cones or other channelizing device | 15* |  |
| | Description | Qty | Device | | | | | | | | | | | | | |
| | ROAD WORK AHEAD signs | 2 |  | | | | | | | | | | | | | |
| | FLAGGER AHEAD signs | 1 |  | | | | | | | | | | | | | |
| Flagger and STOP SLOW paddle | 1 |  | | | | | | | | | | | | | | |
| 28" cones or other channelizing device | 15* |  | | | | | | | | | | | | | | |
| *With an additional channelizer for every 100 feet of work space. | | | | | | | | | | | | | | | | |

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 rural low volume roadways are 55 mph and the corresponding decision sight distance is 1200 feet, to meet this definition the work space has to move at least 4800 feet per hour, or approximately one mile per hour.







Will your work move more than 1200 feet every 15 minutes, or approximately one mile per hour?

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

| 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 Culvert maintenance (partial road closure) Tree/brush removal | | | | | | | | | | | |
| 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"> When traffic cannot regulate itself through the length of the work space, use Layout 10. STOP signs shall be installed if the work space must be left unattended at night - see Layout 20. 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? 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 55 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>28" cones or other channelizing device</td> <td>15*</td> <td></td> </tr> </tbody> </table> | Description | Qty | Device | ROAD WORK AHEAD signs | 2 |  | 28" cones or other channelizing device | 15* |  | |
| | Description | Qty | Device | | | | | | | | |
| ROAD WORK AHEAD signs | 2 |  | | | | | | | | | |
| 28" cones or other channelizing device | 15* |  | | | | | | | | | |
| *Minimum number of cones for a 500 foot work space is 19. | | | | | | | | | | | |




LAYOUT 2

SHOULDER CLOSURE WORK ON OR NEAR SHOULDER

| SHORT OR INTERMEDIATE TERM | DAYLIGHT HOURS | | | | | | | | | |
|--|---|---|-----|--------|-----------------------|--------|---|--|----|---|
| OFF TRAVELED ROADWAY | ALL ROADWAYS | | | | | | | | | |
| Maintenance Activities: <ul style="list-style-type: none"> Debris removal - routine (e.g. litter pickup) Utility repair Sign repair Driveway culvert maintenance Ditch maintenance | | | | | | | | | | |
| 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. | | | | | | | | | | |
| 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? Will the work zone be entirely off the traveled lanes? 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. | Minimum Required Devices for 55 MPH: No Devices are required if less than one hour with little or no interference with traffic. For all other conditions: <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>1 or 2</td> <td></td> </tr> <tr> <td>28" cones or other channelizing device</td> <td>6*</td> <td></td> </tr> </tbody> </table> *with an additional channelizer for every 100 feet of shoulder closure | Description | Qty | Device | ROAD WORK AHEAD signs | 1 or 2 |  | 28" cones or other channelizing device | 6* |  |
| Description | Qty | Device | | | | | | | | |
| ROAD WORK AHEAD signs | 1 or 2 |  | | | | | | | | |
| 28" cones or other channelizing device | 6* |  | | | | | | | | |







LAYOUT 5

LANE CLOSURE – TWO LANE TWO WAY ROAD

| MOBILE | DAYLIGHT HOURS | | | | | | |
|---|---|---|-----|--------|------------------------|---|---|
| WORK IN TRAVELED LANES | USE FOR ROADS LESS THAN 1500 ADT ONLY | | | | | | |
| Maintenance Activities: <ul style="list-style-type: none"> Asphalt pavement patching Temporary pothole patching Shouldering Shoulder diskings/blading Tree/brush removal Debris removal - routine (e.g. litter pickup) Debris removal - large item (e.g. couch, roadkill) Sign repair Snow cleanup | | | | | | | |
| General Information: Layout 5 covers most of the mobile applications for low volume roads where work is conducted on the traveled lanes. | | | | | | | |
| 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 55 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? 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 ROADWAYS | | | | | | | | | |
| Maintenance Activities: <ul style="list-style-type: none"> • Shouldering • Shoulder disking/blading • 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 highways regardless of traffic volume. | | | | | | | | | | |
| Notes from Field Manual: <ol style="list-style-type: none"> 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? 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 55 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. | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #A9A9A9;">Description</th> <th style="background-color: #A9A9A9;">Qty</th> <th style="background-color: #A9A9A9;">Device</th> </tr> </thead> <tbody> <tr> <td>Flashing Vehicle Light</td> <td style="text-align: center;">1</td> <td style="text-align: center;"></td> </tr> <tr> <td>SLOW MOVING sign</td> <td style="text-align: center;">1</td> <td style="text-align: center;"></td> </tr> </tbody> </table> | | Description | Qty | Device | Flashing Vehicle Light | 1 |  | SLOW MOVING sign | 1 |  |
| Description | Qty | Device | | | | | | | | |
| Flashing Vehicle Light | 1 |  | | | | | | | | |
| SLOW MOVING sign | 1 |  | | | | | | | | |





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.

| LAYOUT 8 | | | |
|--|--|---|---|
| EQUIPMENT IN TRAFFIC LANE – TWO-LANE TWO-WAY ROAD | | | |
| SHORT DURATION | DAYLIGHT HOURS | | |
| 50 FEET MAXIMUM WORK SPACE | USE FOR ROADS LESS THAN 1500 ADT ONLY | | |
| Maintenance Activities: <ul style="list-style-type: none"> Asphalt pavement patching Crack Filling Temporary Pothole Patching 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? Will the work zone be in place for one hour or less? 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. | Minimum Required Devices for 55 MPH: | | |
| | Description | Qty | Device |
| | ROAD WORK AHEAD signs | 2 |  |
| | FLAGGER AHEAD signs | 1 |  |
| | Flagger and STOP SLOW paddle | 1 |  |
| 28" cones or other channelizing device | 10 |  | |

| LAYOUT 72 | | | |
|--|---|-----|---|
| GRAVEL ROAD MAINTENANCE GRADING OPERATIONS – TWO-LANE TWO-WAY ROAD | | | |
| MOBILE | DAYLIGHT HOURS | | |
| ROAD GRADING OPERATIONS | GRAVEL ROADS | | |
| Maintenance Activities: <ul style="list-style-type: none"> Grading a gravel road | | | |
| General Information: Layout 72 is specific to grading gravel roads. | | | |
| Notes from Field Manual: <ol style="list-style-type: none"> Grading operations should be scheduled and completed during daylight work shifts. Work should be suspended during poor weather or visibility conditions. Motor Graders shall be equipped with a flashing vehicle light visible 360 degrees around the vehicle when viewed from a distance of 60 feet. Motor grader blade end(s) may be marked with red or orange flags to provide additional warning and make the equipment more visible to passing vehicles. The ROAD WORK AHEAD signs may be omitted when there is an adequate approach decision sight distance to the motor grader along the majority of the route. 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. | | | |
| Is this the appropriate layout? Can you meet all requirements of Layout 72? If the answer to any of these is NO, the appropriate stationary layout must be considered. | Minimum Required Devices for 55 MPH: | | |
| | Motor Graders 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 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 lasts less than 15 minutes | | | | | |
| Notes from Field Manual: | | | | | |
| <ol style="list-style-type: none"> The traffic from both lanes should not be stopped for more than 15 minutes. Conditions represented are for work during daytime hours only. For night closures, the following should be used: <ol style="list-style-type: none"> Law enforcement officers with squad car for flaggers. A changeable message sign in each direction. 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. | | | | | |
| Minimum Required Devices for 55 MPH: | | | | | |
| DAYLIGHT HOURS | | | NIGHTTIME HOURS | | |
| Description | Qty | Device | Description | Qty | Device |
| ROAD WORK AHEAD signs | 2 |  | ROAD WORK AHEAD signs | 2 |  |
| BE PREPARED TO STOP signs | 2 |  | BE PREPARED TO STOP signs | 2 |  |
| FLAGGER AHEAD signs | 2 |  | FLAGGER AHEAD signs | 2 |  |
| Flagger and STOP/SLOW paddle | 2 |  | Law Enforcement with Squad Car | 2 |  |
| | | | 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 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.