

# Low Volume Roads: Rural and Urban

A Rural Highway with less than 400 ADT, and an  
Urban Residential Street with less than 400 ADT  
and speeds of 30 mph or less.

Low  
Volume

*\*Drawings Not To Scale*



<http://www.dot.state.mn.us/trafficeng/publ/fieldmanual/index.html>

# Low Volume Roadway

- Location
- Duration

## LOW VOLUME ROADS: RURAL AND URBAN

Low Volume Less than 400 ADT	MOBILE 15 Minutes or Less	SHORT DURATION 1 Hour or Less	SHORT TERM 12 Hours or Less	INTERMEDIATE TERM 3 Days or Less
Work Vehicle Parked On Shoulder	6			8
Work on Shoulder	9			8
Work off Roadway	10			
Work off Shoulder			8	
Shoulder and Parking Lane Closure			8	
Partial Shoulder Closure for Trailer Mounted Devices			7	
Lane Closure	11			
Uncontrolled			4	
One Flagger Control			4 *	
2 Flagger Control			16 *	
Moving Work Spaces		17 *		
Near Intersection			20, 21 *	
Pilot Car Operation			18 *	
Near Railroad Xing			22 *	
Portable Signal Control			25	
STOP Sign Control			14	
Turn Lane Closures			33, 34	
Lane Shift			29	
Work on Centerline		1 (30 mph or less only)		
Work in Center of Road			2	
Work in Intersection			3 (30 mph or less only)	
Road Closure Special Events			5	

\* This layout may be used for nighttime operations only if the flagging stations are occupied and illuminated with auxiliary lighting such as floodlights or balloon lighting except in emergency situations.

### Layout Selection Matrix by Maintenance Activity

The following are examples of situations where layouts may be used.  
Layouts may be used for other operations.

URBAN		WORK DURATION			
		MOBILE	SHORT DURATION	SHORT TERM	
MAINTENANCE ACTIVITY		15 Minutes or Less	1 Hour or Less	12 Hours or Less	
On Road	Asphalt Pavement Patching	11	4	4	
	Concrete Pavement Patching			4	
	Pothole Patching	11	4		
	Crack Filling		4	4, 16	
	Crack Sealing - Route and Seal			4, 16	
	Surface Treatment			4, 16	
	Sweeping - Residential	11			
	Utility Repair - Centerline	1	1	1, 2	
	Utility Repair - Center of Intersection	3	3	3	
	Road Closure (e.g. water main break)	31	31	31, 32	
	Road Closure (for Special Event)	5	5	5	
	Utility Maintenance (partial road closure)			4	
	Roadside	Mowing	10		
		Tree/Brush Removal	10, 11	4	4
Debris Removal - Routine (e.g. litter pickup)		8, 9, 11	8, 9		
Debris Removal - Large Item (e.g. couch, roadkill)		11			
Utility Repair - Shoulder		8, 9	8, 9	8	
Sign Repair		8, 9, 11	8, 9		
Snow Cleanup		8, 9, 11	8, 9		

### Layout Selection Matrix by Maintenance Activity

The following are examples of situations where layouts may be used.  
Layouts may be used for other operations.

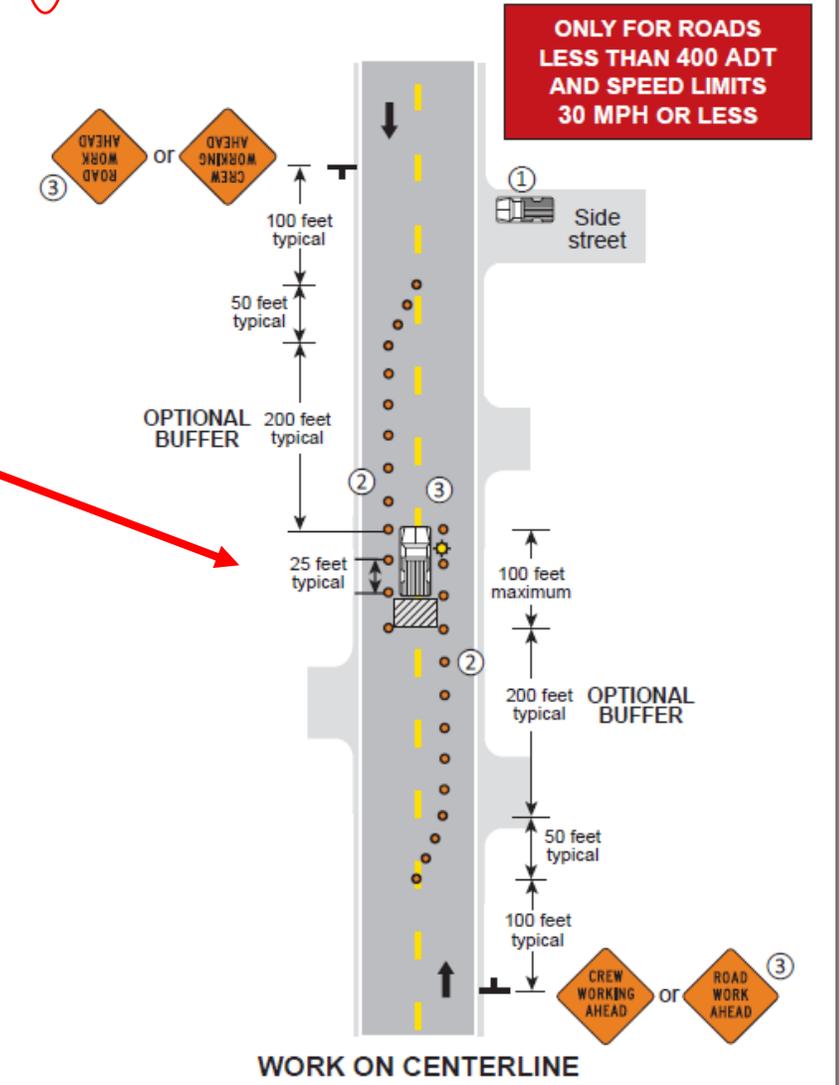
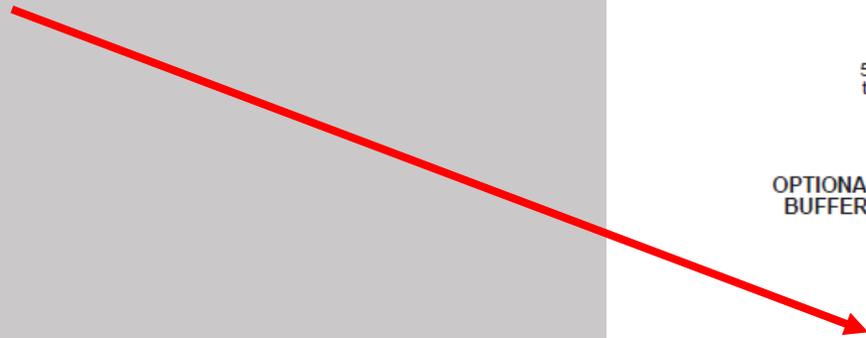
RURAL		WORK DURATION			
		MOBILE	SHORT DURATION	SHORT TERM	
MAINTENANCE ACTIVITY		15 Minutes or Less	1 Hour or Less	12 Hours or Less	
On Road	Asphalt Pavement Patching	11	4	4	
	Concrete Pavement Patching			4	
	Temporary Pothole Patching	11	4		
	Crack Filling		4	16	
	Crack Sealing - Route and Seal			16	
	Surface Treatment			16	
	Grading a Gravel Road	30			
	Road Closure (e.g. water main break)	31	31	31, 32	
	Culvert Maintenance (partial road closure)			4	
	Shouldering Shoulder Disking/Blading	10, 11			
	Roadside	Mowing	10		
		Tree/Brush Removal	10, 11	4	4
Debris Removal - Routine (e.g. litter pickup)		11	8		
Debris Removal - Large Item (e.g. couch, roadkill)		11			
Utility Repair - Shoulder		8	8	8	
Sign Repair		11	8		
Snow Cleanup		11			
Driveway Culvert Maintenance		8	8	8	
Ditch Maintenance (Partial Road Closure)			8		

**NOTES:**

- ① Additional Work Vehicle shall be parked off of the roadway. Do not obstruct the shoulder in the coned areas.
- ② A minimum of 10 feet of drivable surface outside of the channelizers should be maintained on all sides. Anything less than 10 feet shall be approved by the road authority.
- ③ Channelizers and ROAD WORK AHEAD signs are optional at 15 minutes or less.

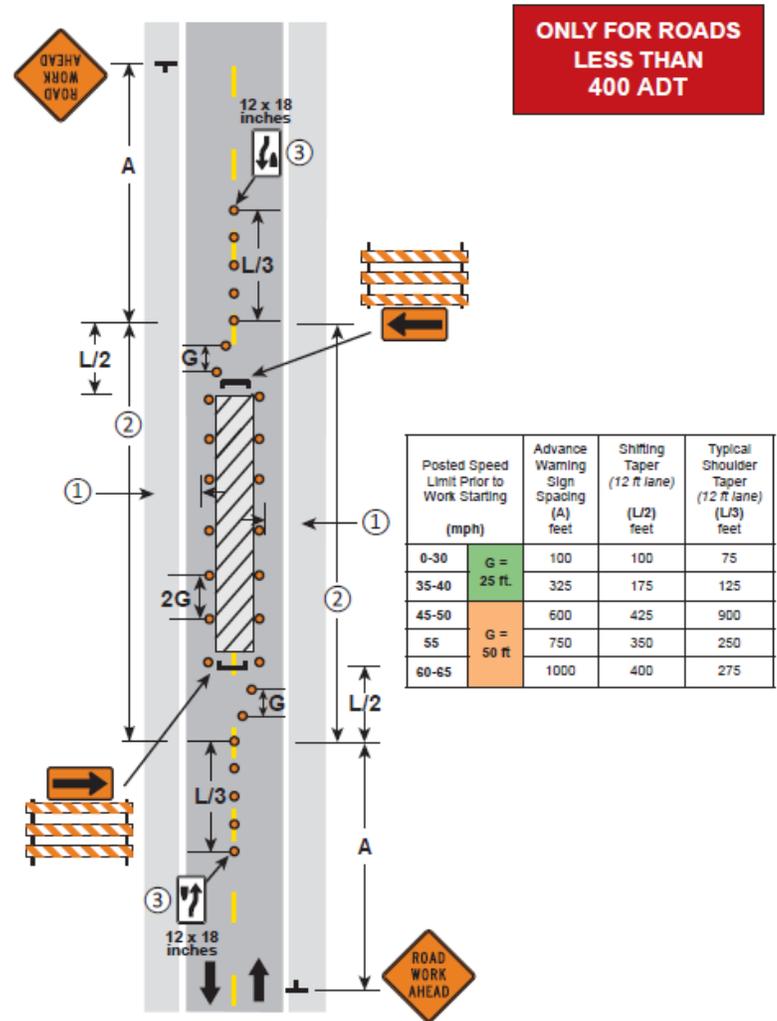
# New Layout for local agencies

- Cones at 25 foot spacing



**NOTES:**

- ① Minimum drivable surface outside of the channelizing devices shall be 10 feet.
- ② Parking and stopping should be prohibited along the work area and tapers.
- ③ Keep Right sign may be omitted if posted speed limit is 40 mph or less.



Posted Speed Limit Prior to Work Starting (mph)	Advance Warning Sign Spacing (A) feet	Shifting Taper (12 ft lane) (L/2) feet	Typical Shoulder Taper (12 ft lane) (L/3) feet
0-30	G = 100	100	75
35-40	25 ft	325	175
45-50	G = 600	425	900
55	750	350	250
60-65	1000	400	275

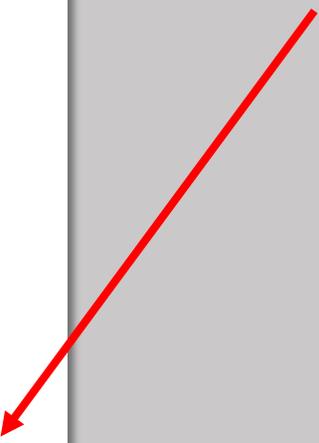
**WORK SPACE IN CENTER OF ROAD  
TWO-LANE, TWO-WAY ROAD**

3 DAYS or LESS

6K-2

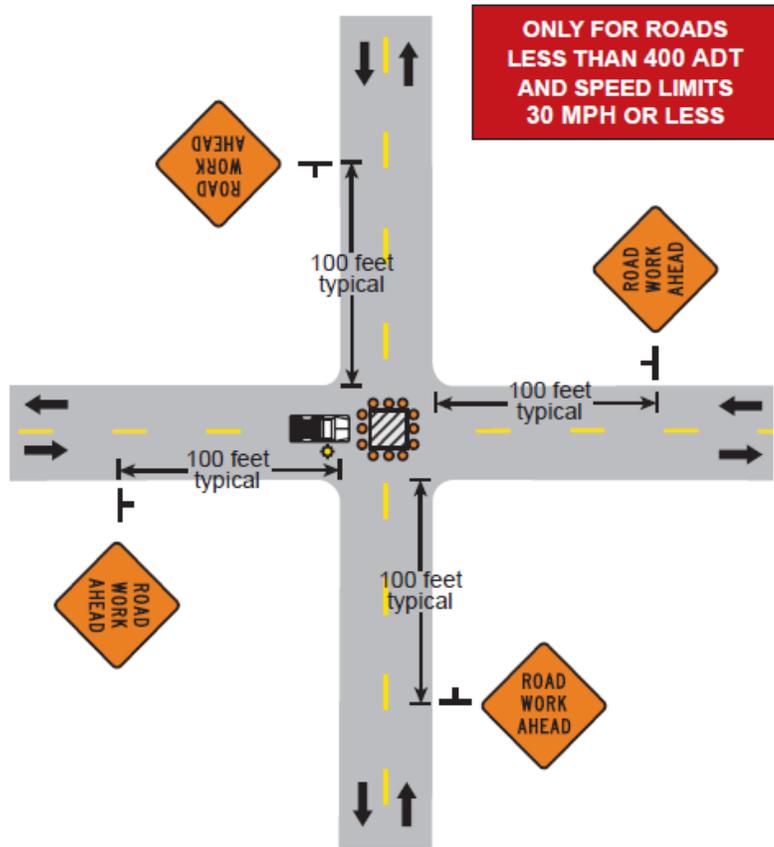
LAYOUT 2

- Notes 1-3 are new or different
- Chart on the layout



**NOTES:**

1. A minimum of 10 feet of drivable surface outside of the channelizers shall be maintained such that traffic can self-regulate.



**CLOSURE IN CENTER OF INTERSECTION**

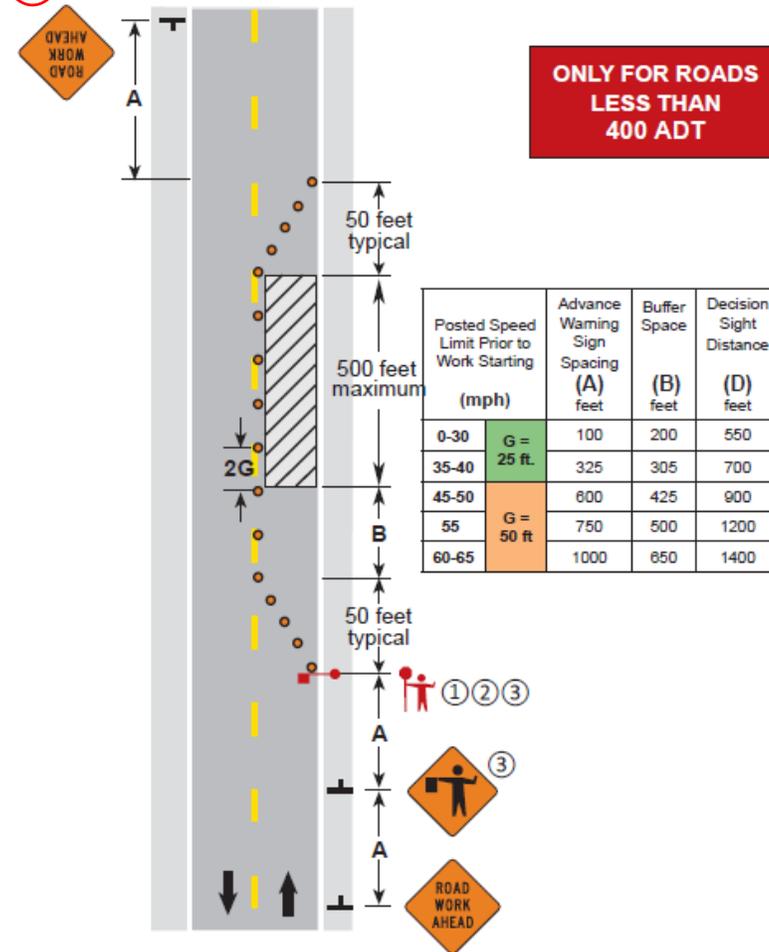
3 DAYS or LESS

6K-3

LAYOUT 3

**NOTES:**

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 (D), two flaggers shall be used - See Layout 16.
3. The Flagger and Flagger Ahead sign may be omitted if the operation is during daylight hours, 12 hours or less, and traffic is able to self-regulate.
4. If the work space must be left unattended at night use Layout 14.



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

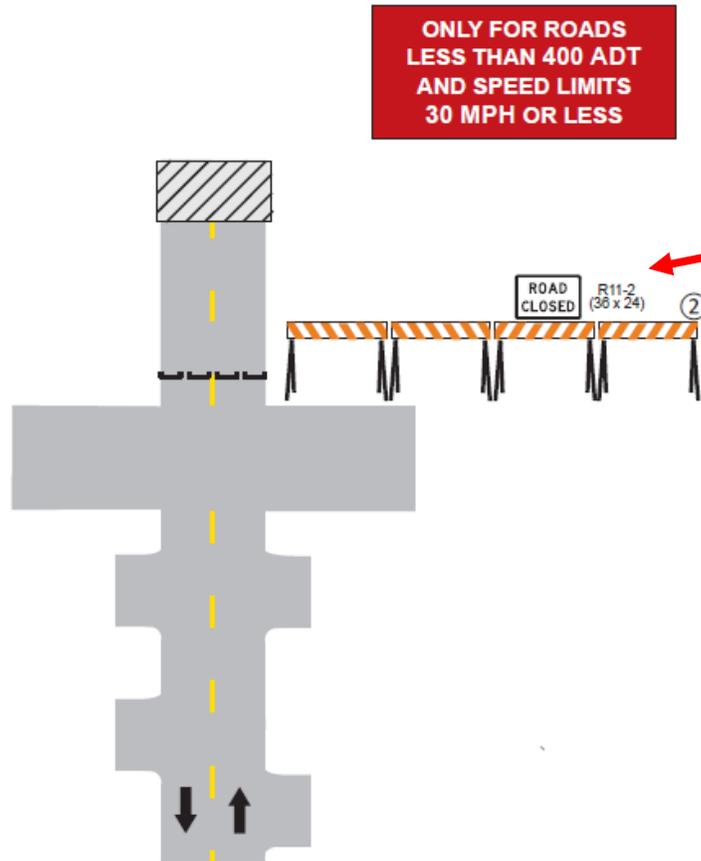
3 DAYS or LESS

6K-4

LAYOUT 4

**NOTES:**

1. The road authority shall be contacted prior to closure and may provide requirements related to detours and/or additional temporary traffic control.
- ② Install Type I barricades at the last driveway or intersection beyond which there is no public access. Barricades shall span the entire roadway including traversable shoulders. All signs and barricades used at night shall be retroreflective.



- New layout for special events only
- Type I Barricades shall span entire width of roadway
- Note the smaller sign (only place this is allowed)

