SHORT TERM URBAN DETOUR AND LANE CLOSURE ON A DIVIDED HIGHWAY LAYOUTS

NOTES

1. Variables
   \( V \) = Numerical value of speed limit or 85th percentile speed.
   \( S \) = Minimum length of taper, \( S \times W \) for freeway, expressway, and all other roads with speeds of 45 mph or greater, or \( S \times 0.5 \times V \) for other, residential, and other streets with speeds of 45 mph or less.
   \( B \) = Buffer space (feet) provided between the edge of the work zone and the road surface.

2. Use Type A on roadways with slow moving traffic speeds and low volume (25 mph or less and 750 ADT or less).
3. Use Type B on roadways with moderate traffic speeds and volumes (40 mph or less and 5000 ADT or less).
4. Use Type C on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).
5. Use Type D on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).

6. Determine the reduced speed limit based on the inbound speed limit before construction. Where speed reductions exceed 30 MPH, install a second speed limit sign with the desired speed reductions and a notice of the reduced speed limit. The posted speed limit sign at 3.6
7. Install flags on warning signs in urban areas where signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge of the sign that the flag does not touch the sign when in use.
8. Control work zone lighting on signal control systems.
9. Cover existing speed limit signs within a reduced speed zone.
10. Install flags on warning signs in urban areas when signs are not portable. Mount 24 inch square flags perpendicular to the edges of the sign, and at such a distance above the edge of the sign that the flag does not touch the sign when in use.
11. Installed physical controls on detour for Type Q when determined necessary by the engineer.
12. Use Type C. On roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).

WORK AREA

- **Type III barricade**
- **Work area**
- **Sequencing arrow panel**
- **Delineator Drum**
- **Tubular Markers**

ADVANCE WARNING SIGN SPACING

**Road Type**

- **Urban** - High Speed (over 50 mph to 65 mph)
- **Rural - High Speed (over 40 mph to 50 mph)
- **Urban - Low Speed (over 30 to 40 mph)
- **Urban - Low Speed (30 mph or less)

**Variables**

- \( W \times S \) \( \div 60 \) for urban, residential, and other streets with speeds of 40 mph or less.
- \( S \times W \) for freeways, expressways, and all other roads with speeds of 45 mph or greater.
- \( L \) = Minimum length of taper, \( S \times W \) for freeway, expressway, and all other roads with speeds of 45 mph or greater, or \( S \times 0.5 \times V \) for other, residential, and other streets with speeds of 45 mph or less.

**Notes**

- Recommended using 40 mph speed limit in vicinity of workers for Layout Type P, unless location and conditions dictate otherwise.
- Use Type B on roadways where slow moving traffic speeds and low volume (25 mph or less and 750 ADT or less).
- Use Type C on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT or less).
- Use Type D on roadways with high traffic speeds and volumes (over 40 mph or over 5000 ADT).

**Table**

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This document was originally issued and sealed by Roger Weigel, PE, on 08/17/17 and the original document is stored at the North Dakota Department of Transportation.