



LEGEND

- WORK AREA: [Hatched box symbol]
- DRUMS/CONES: [Three black dots symbol]
- REMOVE EXISTING MARKINGS: [XXX XXX symbol]
- 2-WAY LEFT-TURN MARKING: [Two curved arrows symbol]
- DIRECTION OF TRAVEL: [Arrow symbol]
- SHADOW VEHICLE WITH TMA: [Truck symbol]

TABLE I (SIGN SPACING)

ROAD TYPE	MINIMUM DISTANCE (FT)
	A
TWO-LANE (≤ 40 MPH)	100
TWO-LANE (45-50 MPH)	350
TWO-LANE (55 MPH)	500

TABLE II

SPEED LIMIT (MPH)	SHIFT TAPER RATE MINIMUM	SHOULDER TAPER RATE MINIMUM	MAXIMUM DRUM SPACING (FT)	BUFFER (D) (FT) MINIMUM
25	11:1	4:1	25	155
30	15:1	5:1	30	200
35	21:1	7:1	35	250
40	27:1	9:1	40	305
45	45:1	15:1	40	360
50	50:1	17:1	40	425
55	55:1	19:1	40	495

THIS DRAWING REPLACES MT-95.61 DATED 07-19-2013.

NOTES:

SIGNING

- 1A. The location of the Advance Warning signs should be adjusted to provide adequate sight distance for the existing vertical and horizontal roadway alignment. The distances shown are minimums.
- 1B. Sign spacing should be adjusted to avoid conflict with existing signs. Minimum spacing to existing signs shall be 200'.
- 1C. The Advisory Speed (W13-1P) plaque shall be used when specified in the plan.
- 1D. If the lane closure will exist for more than one day, existing Two-Way Left Turn Only (R3-9b) signs in the work area shall be removed or covered.
- 1E. END ROAD WORK (G20-2) signs are only required for lane closures of more than one day.
- 1F. 36" warning signs may be used when the approach speed limit is 40 mph or less.
- 1G. Where the shifted section is longer than 600', a Reverse Curve (W1-4) sign shall be used to show the initial shift and a second W1-4 sign shall be used to show the return to the normal alignment. Where the tangent distance along the shifted section is less than 600', the Double Reverse Curve (W24-1) sign should be used in place of the first W1-4 sign. The second W1-4 sign should be omitted.

FLASHING WARNING LIGHTS

- 2. Type A flashing warning lights shown on the Advance Warning Signs are required whenever a night lane closure is necessary, as follows:

ROAD WORK AHEAD (W20-1)
 CENTER LANE CLOSED AHEAD (W9-3)
 CENTER LANE CLOSED (W9-H3b)
 Reverse Curve (W1-4)
 Double Reverse Curve (W24-1)

Flashing warning lights are not required beyond the advance signs.

DRUMS / CONES

- 3A. Drum spacing shall be as follows:
 - a) The maximum drum spacing along tapers and along tangent sections shall be as shown in Table II.
 - b) A minimum of five drums shall be placed laterally at each end of the closed lane as shown in the drawing.
- 3B. Cones may be substituted for drums as follows:
 - a) Cones used for daytime traffic control shall have a minimum height of 28".
 - b) Cones used for nighttime traffic control shall have a minimum height of 42".
- 3C. Provisions shall be made to stabilize the cones and drums to prevent them from blowing over.
- 3D. Intermixing of channelizing devices within the same run will not be permitted. Either drums shall be used for the entire run of channelization, or cones shall be used for the entire run.

SHIFT TAPER

- 4. The minimum acceptable length for the shift taper shall be determined by multiplying the width of offset by the shift taper rate. The shift taper rate is provided in Table II.

PAVEMENT MARKING / RAISED PAVEMENT MARKERS (RPMs)

- 5. If the construction operation requires the lane closure for more than one day then the following shall be performed:
 - a) The existing conflicting reflectors from the RPMs shall be removed.
 - b) The appropriate color work zone edge lines shall be applied. Existing conflicting pavement markings shall be removed or covered as per Construction and Materials Specifications (CMS) 614.11 G.
 - c) Work zone pavement markings for transition areas (lane shifts) shall be as called for in the plans.
 - d) Work zone pavement markings which would conflict with the final traffic lanes shall be removable (CMS 740.06, Type I) tape unless the area will be resurfaced prior to project completion.
 - e) After completion of the work, pavement markings other than CMS 740.06, Type I shall be removed in accordance with CMS 641.10. The original markings and raised pavement marker reflectors shall be restored at no additional cost unless separately itemized in the plans.
 - f) Existing markings which will be covered by portable barrier do not need to be removed.

EQUIPMENT / MATERIALS STORAGE

- 6. All material and equipment shall be removed from the closure and the work area when no work is being done.

SHADOW VEHICLE

- 7A. The shadow vehicle shall be in place and unoccupied whenever workers are in the work area.
- 7B. The shadow vehicle shall be equipped with a high-intensity yellow rotating, flashing, oscillating, or strobe light(s).
- 7C. The shadow vehicle shall be equipped with a truck-mounted or trailer attenuator (TMA) in accordance with CMS 614.03 when called for in the plans.
- 7D. The shadow vehicle shall be removed from the pavement whenever workers are not in the work area.

THIS DRAWING REPLACES MT-95.61 DATED 07-19-2013.

STANDARD ROADWAY CONSTRUCTION DRAWING

CLOSURE OF THRU LANE OF THREE LANE SECTION WITH TWO-WAY LEFT TURN LANE

OFFICE OF ROADWAY ENGINEERING

STATE ENGINEER
Soisson

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