## Section E  Maintenance of Traffic

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**Sign TS-2** (D)

- **Color:** Background - Fluorescent Orange (D)  Border and Letters - Black
- **Size:** 68” x 68”
- **Legend:** 6” Federal Series D
- **Mounting Holes:** 1/4” Dia., 4 Holes Spaced as Shown

**Sign TS-3**

- **Color:** Background - White Reflective (D)  Border and Letters - Black
- **Size:** 48” x 48”
- **Legend:** 6” Federal Series D
- **Mounting Holes:** 1/4” Dia., 4 Holes Spaced as Shown

**Sign TS-4**

- **Color:** Background - White Reflective (D)  Border and Letters - Black
- **Size:** 48” x 48”
- **Legend:** 6” Federal Series D
- **Mounting Holes:** 1/4” Dia., 4 Holes Spaced as Shown

**Supplemental Plate (C)**

- **Color:** Background - Fluorescent Orange (D)  Border and Letters - Black
- **Size:** 24” x 24”
- **Legend:** 4” Federal Series D
- **Mounting Holes:** 1/4” Dia., 2 Holes Spaced as Shown

**Notes:**
1. All lettering is designated by size and series in accordance with the latest edition of standards adopted by the U.S. Department of Transportation. Lettering and spacing shall be in accordance with this guide except where noted.
2. Symbols and arrows shall conform to the details shown in the latest edition of "Standard Highway Signs" as published by the U.S. Department of Transportation.
3. See the contract requirements for additional notes and specifications.
4. Reflective materials are based on a reaction in standard lettering spacing as shown below.
   - 1/2 spacing reduced by 50%
   - 1/4 spacing reduced by 40%
   - 1/8 spacing reduced by 50%

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**RAMP CLOSURE ADVANCE INFORMATION SIGN**

The variable message with dates for the bottom two lines shall be determined by the engineer and given to the contractor before the required field erection date.
ADVANCE SIGNING NOTES:

A. The advance signing shown on this standard shall apply any time the contractor closes one or more lanes; or is required to shift the lane alignment. The "road work ahead" or "road construction ahead" signs, work zone public information signs and portable changeable message sign are statutory.

B. The road construction ahead sign (W20-1A, with W6-3A supplemental plate) or road work ahead sign (W20-1, with W6-3A supplemental plate) shall be located up to 3 miles in advance of the project limits, with the location being determined by the engineer.

C. The work zone public information sign is not used by 4th level, the contractor shall obtain the camera-ready artwork required for the sign message by contacting IDOT's Central Bureau of Operations.

D. The portable changeable message sign shall be used to display the status of lane within the contract limits. The primary messages shall be: "left lane(s) closed" / "x miles ahead", "left lane(s) shifted" / "x miles ahead", "all lanes open".

E. The Illinois Tollway will furnish and install static project information signs in advance, through and at the end of the work zone. These signs shall be installed along the outside shoulder with the advance signs located beyond the portable changeable message sign. The contractor shall coordinate with the Illinois Tollway regarding the location of these signs and notify the Illinois Tollway of any change to the signs or supports.

LEGEND

- Arrow board
- Sign
- Direction indicator barricade with sequential flashing warning light
- Type II barricade, drum or
  → vertical barricade with light if required
  → see Article 700.05(a)(5)
- Flagger with traffic control sign
- Worker
- Lane closed
- Check barricade
- Truck mounted attenuator
LANE CLOSURE NOTES:

1. When closures are expected to produce traffic backups extending beyond the first warning sign shown on the details, additional upstream signs shall be placed so that the traffic control zone encompasses the anticipated backup zone.

2. Environmental conditions may be adjusted slightly to fit field conditions.

3. These details also apply to opposite hand lane closures by changing sign legends and arrow directions to indicate the appropriate direction.

4. For right lane closures, one type A warning light shall be installed above each of the signs and in advance of warning signs, for right lane closures, the lights may be omitted.

5. Where any lane closure, flashing arrow boards shall be required and in operation, all times, the flashing arrow boards in advance of the taper shall be provided with type 2 bars in barriquets at 50", 65", 76", and 110 feet.

6. Construction signs shall generally be post-mounted or attached to portable supports and shall be installed 5' to 8' from adjacent travel lane medians possible. No one sign shall be located to provide less than 2' clearance between edge of sign and adjacent travel lane.

7. Pavement marking tape and removal or obliteration of existing markings shall be removed when the closure time exceeds four days. This work shall be measured and paid for separately.

8. When a flagger is not on duty, the flagger signs shall be promptly removed, covered, or turned to face away from traffic. All sign signs shall be moved as necessary to maintain the required spacing between the signs and the workers in each separate work activity, for the Illinois Tollway Supplemental Specifications.

9. For work zone speed limit signs, there shall be placed adjacent to the open traffic lanes, work zone speed signs should be moved an necessary to maintain the required spacing between signs and the workers in each separate work activity, for the Illinois Tollway Supplemental Specifications.

10. Direction indicator barricades shall be used in lane closures.

11. For closures other than minor term signs (1 hour before sunset to 1 hour after sunrise), the minimum height of the sign from shoulder elevation shall be 7'-0".

12. Cones may be used by lieu of barricades in the buffer and work areas, when the closure is for maintenance operating.

13. Barricades are to be located at joint line when work area exceeds 10 feet unless otherwise shown on the plans.

14. See maintenance of traffic drawings for additional signing in this area.

15. Check Barricades shall be placed in each closed lane and shoulder at 1000 foot centers.

16. A 1/2" temporary road barrier shall be provided between edge of pavement lane marking to the edge of the traffic control device.

17. See standard E1 for additional sign required when work zone speed limit is reduced by more than 20 MPH, the speed limit shall be transferred to the specified work zone speed limit 2000 feet before the first sign.

18. When no positive protection is provided, workers or equipment may be placed within 2'-0" of the edge of traveled way, the lane open to traffic shall be temporarily closed or shifted during work activities.

19. In work zones with no positive protection, a truck mounted attenuator (TMA) shall be provided with a buffer area between the front of the TMA and workers or equipment. The buffer area shall be 300 feet unless otherwise determined, where workers or equipment are present behind the work area, in addition, traffic shall be provided to each work area, a work area is defined as starting at the end of the buffer area, extending 3000 feet beyond this point.

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**One Lane Closure with Barricade**

- **Taper Rates**
  - Work Zone Speed Limit
  - Barriquet Height
  - Barriquet Spacing
  - Barriquet Width

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**Legend**

- **Arrow Board**: See Article 2E2-09
- **Sign**: See Article 2E2-09
- **Direction Indicator Barricade**: See Article 2E2-09
- **Type A Warning Light**: See Article 2E2-09
- **Flasher with Traffic Control Sign**: See Article 2E2-09
- **Check Barricade**: See Article 2E2-09
- **Speed Limit**: See Article 2E2-09
- **Type A Barricade**: See Article 2E2-09

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**Standard E2-09**

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**Sheet 2 of 3**
STAY IN YOUR LANE

TS-3

W-4 4" (4"

1000' WIDTH

W-4 4" (4"

500' WIDTH

ADVANCE WARNING SEQUENCE

OFFSET

6"-4" 6"-4" 14"-0" 6"-4" 6"-4" 14"-0" 6"-4" 6"-4" 14"-0"

TEMPORARY PAVEMENT MARKING

14"-0" 14"-0" 14"-0" 14"-0" 14"-0" 14"-0" 14"-0" 14"-0"

BENEFITS REQUIRED

FOR SINGLE LANE TRAFFIC FLOW

ADVANCE WARNING

SEQUENCE

GENERAL NOTES:

1. REVERSE CURVE INFORMATION CAN BE USED FOR SINGLE LANE OR MULTILANE TRAFFIC FLOWS, SHIFTING LEFT TO LEFT-LANE SHOWN OR RIGHT TO RIGHT BY CHANGING TO THE APPROPRIATE ADVANCE WARNING SEQUENCE.

2. THE REVERSE CURVE SHALL NOT BE USED OUTSIDE THE ACTIVITY AREA. LANE SHIFTS IN ADVANCE OF OR ON THE APPROACH TO THE ACTIVITY AREA SHALL BE IMPLEMENTED WITH A SHIFTER RATE OF 65%.

3. LANE SHIFTS FOR DEPARTURES OUT OF THE ACTIVITY AREA SHALL BE IMPLEMENTED WITH A SHIFTER RATE OF 65%.

CHORD OFFSET SKETCH

DISTANCE IS MEASURED
ALONG CHORD A-B

OFFSET IS MEASURED
PERPENDICULAR FROM THE
CHORD AT THE DISTANCE
MEASURED

E4-OT

MAINTENANCE OF TRAFFIC
REVERSE CURVE

SHEET 1 OF 2
TYPICAL APPLICATION OF TEMPORARY EXIT
CORE DELINEATION AND SIGNING

TYPICAL APPLICATION OF TEMPORARY ENTRANCE
CORE DELINEATION AND SIGNING

NOTES:
1. WHEN TEMPORARY PAVEMENT MARKING IS NOT REQUIRED, TEMPORARY GORES MAY BE DELINEATED BY DRUMS WITH STEADY BURNING LIGHT OR VERTICAL BARRICADES OF THE TYPE SPECIFIED. SEE ARTICLE 701.05(D)(5)
2. THE TAPER LENGTHS ARE MINIMUMS, EXISTING ACCELERATION, DECELERATION, AND TAPER LENGTHS SHOULD BE PRESERVED TO THE EXTENT POSSIBLE.

LEGEND
- Work Area
- Sign
- 6" Skip-2' Dash Temporary Pavement Marking (White)
- 8" Inlet Temporary Pavement Marking (White)
**NOTES:**

1. SIGNS DESIGNATED FOR THIS ACCESS TO WORK AREA SHALL BE COVERED OR TURNED AWAY FROM THE TRAFFIC WHEN THE FLAGGER IS NOT ON STATION AND THE ACCESS OPENINGS ARE NOT IN USE.

2. THE FLASHING WARNING LIGHT SHALL MEET THE REQUIREMENTS OF ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS, SECTION 704.

3. WHEN THREE LANES OR MORE ARE OPENED TO TRAFFIC, ADVANCE WARNING SIGNS AND ASSEMBLIES SHALL BE PROVIDED ON BOTH SIDES OF TRAVELED WAY.

4. WHEN CONTRACTOR ACCESS TO WORK AREA IS ON OPPOSITE SIDE FROM SHOWN, SIGNS AND ASSEMBLIES SHALL BE PROVIDED ON BOTH SIDES OF TRAVELED WAY.

5. FOR NEGATIVE OPERATIONS, TEMPORARY LITIGATION OF CONSTRUCTION ACCESS TO WORK AREA SHALL BE PROVIDED.

6. TEMPORARY PAVEMENT MARKINGS SHALL BE REPLACED AS OFTEN AS NECESSARY TO DELINATE OPENING.

7. IF POSSIBLE, LANE CLOSURES SHALL BE UTILIZED TO ELIMINATE THE MERGING OF CONSTRUCTION TRAFFIC INTO THROUGH TRAFFIC LANES.


9. “TRUCKS ENTERING HIGHWAY” SIGN MAY BE SUPPORTED BY Optional POST OR STAND MOUNTED DEVICES AND POSITIONED BEHIND TEMPORARY CONCRETE BARRIER.

10. A TEMPORARY EXCEPTION TO THE 3’ MINIMUM CLEARANCE BETWEEN EDGE OF TRAVELED WAY AND EDGE OF ATTENUATOR MAY BE REQUESTED FOR PIECE WORK OPERATIONS WHEN THIS CONFIGURATION DOES NOT PROVIDE 4’ OF CLEARANCE BETWEEN BACK OF ATTENUATOR AND THE PROPERLY EDGE OF THE LANE BEING CONSTRUCTED IN THE CURRENT STAGE. THE DURATION OF REQUIRED CLEARANCE SHALL BE LIMITED TO 24 HOURS.

11. CONTRACTOR ACCESS LOCATIONS SHALL BE SPACED NO CLOSER THAN 2,500 FEET BETWEEN AREAS, EXCEPT FOR BRIDGE WORK WHERE 1 ACCESS LOCATION MAY BE PROVIDED ON EACH SIDE OF THE STRUCTURE. AT THESE LOCATIONS, ONLY 1 ACCESS LOCATION AT A TIME WILL BE ALLOWED TO BE OPEN FOR USE.

12. EXITING THE WORK ZONE AT ANY PLACE OTHER THAN AT WORK ZONE EXIT OPENING WILL BE PROHIBITED.

13. ALL VEHICLES SHALL USE THEIR TURN SIGNALS TO WARN MOTORISTS WHEN ENTERING AND EXITING THE WORK ZONE OPENINGS.

14. FLAGGERS SHALL NOT STOP TRAFFIC OR DIRECT TRAFFIC INTO AN ADJACENT LANE.

15. IN WORK ZONES WITH NO POSITIVE PROTECTION, A TRUCK MOUNTED ATTENUATOR THAT SHALL BE PROVIDED WITH A BUFFER AREA BETWEEN THE FRONT OF THE TMA AND WORKERS OR EQUIPMENT. THE BUFFER AREA SHALL BE 200 FEET UNLESS OTHERWISE DETERMINED WHERE WORKERS OR EQUIPMENT ARE PRESENT BEYOND THE WORK AREA, AN ADDITIONAL TMA SHALL BE PROVIDED FOR EACH WORK AREA, A BUFFER AREA IS DEFINED AS STARTING AT THE END OF THE BUFFER AREA, EXTENDING 1000 FEET BEYOND THIS POINT.

**ACCESS IDENTIFICATION SIGN**

COLOR: BACKGROUND-WHITE (REFLECTIONIZED)

BORDER AND LETTERS-BLACK

**TAPER RATES**

- **COLOR**: BACKGROUND-WHITE (REFLECTIONIZED)
- **INSIDE**: ALPHABET LETTER
- **OUTLINE**: BLACK

**SIGN TRAILER**

**LETTERING**: 8" CAPS

**DATE**: 3-01-2012

**FLASHING LIGHTS**

- **REMOTE CONTROL**: FLATHEAD FA1-000-00-00
- **LIGHTS**: 96" (CAPS)

**SIGN DETAILS**

- **LETTERING**: 8" (CAPS)
- **SIZE**: 36"x30"
MINIMUM 1500' TO UPSTREAM

ENTRANCE RAMP, EXIT RAMP, EMERGENCY PULL-OUT OR CROSSOVER ON EITHER SIDE

MINIMUM 1000' TO DOWNSTREAM

EDGE LINE OR EDGE OF CLOSED LANE

LEGEND

○ FLAGGER

▪ SPOTTER

TRUCK MOUNTED ATTENUATOR IN ADVANCE OF FLAGGER

CONTRACTOR ACCESS TO WORK AREA WITHOUT BARRIER WALL

TRUCK MOUNTED ATTENUATOR AND SPOTTER WITH EACH OPERATION

SEE NOTE 15

EDG LINE RAMP, EXIT RAMP, EMERGENCY PULL-OUT OR CROSSOVER ON EITHER SIDE

MINIMUM 200' OPENING

TRUCK MOUNTED ATTENUATOR (TMA) IN ADVANCE OF FLAGGER

SEE NOTE 6

4" TEMPORARY PAVEMENT MARKING

W16-2P(O) W20-7(O)-48

FEET 500

WATCH FOR SLOW TRAFFIC

WORK AREA DIRECTION OF TRAFFIC FLOW

LETTERING:

8" (CAPS)

LEGEND

WORK AREA

DRUM WITH LIGHT IF REQUIRED.

SEE ARTICLE 701.05(d)(5)

SPOTTER AND TMA AT WORK AREA

TRUCK MOUNTED ATTENUATOR (TMA) (ROLL WITH MOVING OPERATION)

SEE NOTE 15

CONSTRUCTION SIGN ON SUPPORT PER ILLINOIS TOLLWAY STANDARD UNLESS NOTED

DIRECTION OF TRAFFIC FLOW

LETTERING:

8" (CAPS)

LETTERING:

8" (CAPS)

LETTERING:

8" (CAPS)

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**Emergency Pull-Out Area**

**Notes:**

1. Pull-out area spaced per contract documents.
2. Engineer to determine emergency assist sign's information for direction-route sign/post once the location has been accepted.
3. A 1'-0" minimum/2'-0" desirable shy distance shall be provided, measured between edge of pavement lane marking to the edge of the traffic control device.
4. Flexible delineators to be 48" in height above base. Tubular posts (orange with 360 degrees full view two-tone fluorescent orange reflectorized tape bands. Flexible delineators to be capable of bending under repeated impacts and return to an upright position without damage to the impacting vehicle or the delineators. The delineator's base shall be securely mounted to the roadway surface. The posts shall be removable from the bases to permit replacement of damaged units as required.

**Legend:**

- Temporary concrete barrier (with barrier delineators on traffic side)
- Vertical panels @ 100 ft centers along roadway (tangent) and 50 ft centers along tapers.
- Work area
- Flexible delineator posts
- Direction of traffic flow
- Construction sign on support for Illinois Tollway standard unless noted.