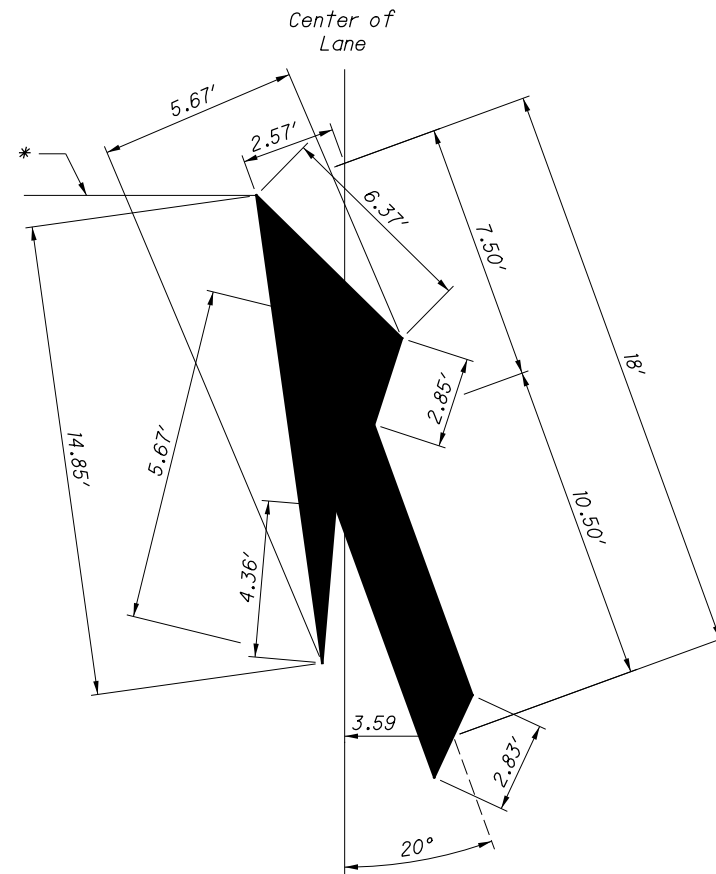
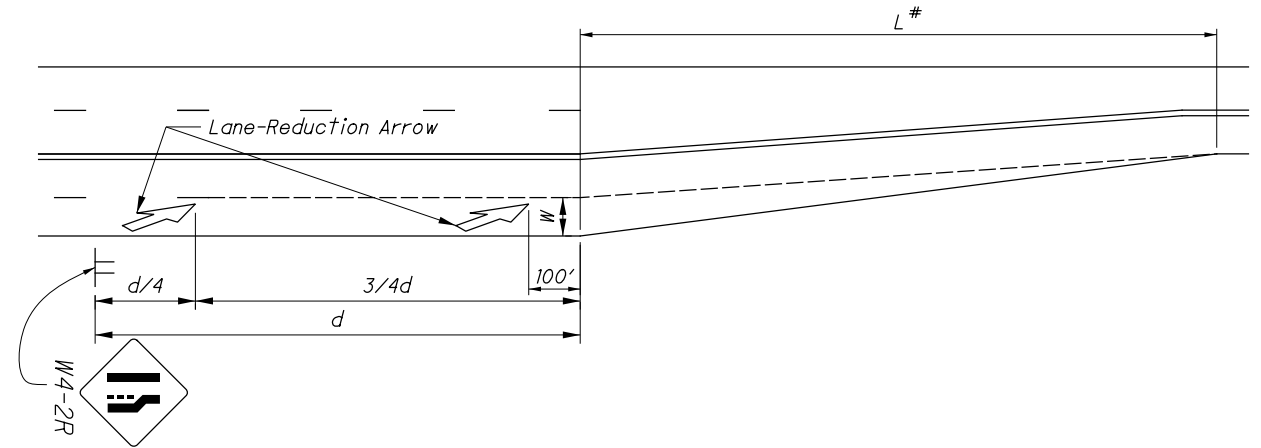


TURN ARROW
(Right Arrow Opposite)



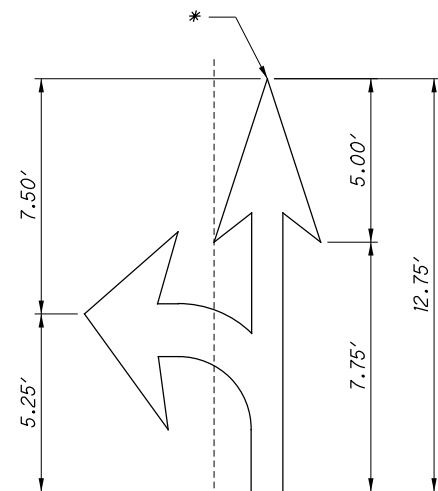
LANE-REDUCTION ARROW (RIGHT)
(For Left Lane, Use Mirror Image)



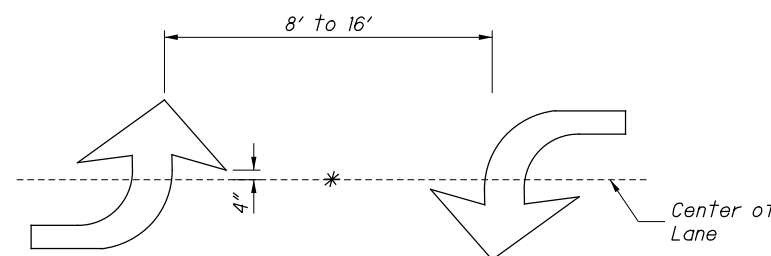
Speed (S) (MPH)	Lane Width (W) (FT)	Taper Length (L) # (FT)	Advance Warning Distance (d) (FT)
25	12	125	325
30	12	180	460
35	12	245	565
40	12	320	670
45	12	540	775
50	12	600	885
55	12	660	990
60	12	720	1100
65	12	780	1200
70	12	840	1250

Taper Length (L) shown is for 12 foot lane width (W).
Use formula for other lane widths.

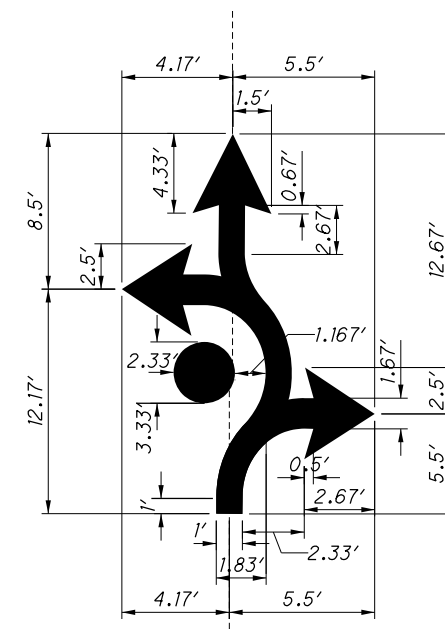
S - Posted, 85th-percentile or statutory speed, in MPH
W - Lane width or offset, in feet
L - Taper length in feet for Speed < 45 MPH = $WS^2/60$
L - Taper length in feet for Speed ≥ 45 MPH = WS
d - Advance Warning Distance, in feet



TURN AND THROUGH ARROW
(Three-Headed Directional
Arrows Can be Achieved by the
Combination of Turn Arrows.)

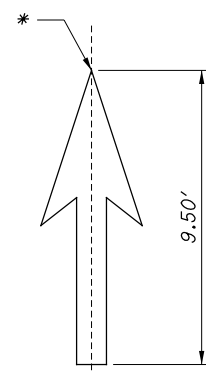


TWO-WAY LEFT-TURN ARROWS
(See Note 6)



OVERALL DIMENSIONS		
ELEMENTS INCLUDED	OVERALL WIDTH	OVERALL HEIGHT
1	6.5'	14.67'
1 & 2	6.5'	20.67'
1 & 3	9.67'	14.67'
1, 2 & 3	9.67'	20.67'
0 & 2*	4.5'	20.67'
0, 2 & 3*	7.67'	20.67'
2	3.833'	20.67'
2 & 3	7.0'	20.67'
3	6.0'	8.0'

* THE DOT (ELEMENT 0) IS ONLY USED
IN SYMBOLS FOR THE LEFTMOST LANE.



THROUGH ARROW

TABLE 1 - LANE-USE ARROWS

ARROW TYPE	SIZE (FT)	AREA (SQ FT)
Turn Arrow	8.00	17
Through Arrow	9.50	13
Turn and Through Arrow	12.75	28
Lane-Reduction Arrow	18.00	46

* - Indicates Station Reference Point

LANE-REDUCTION ARROW MARKING DETAIL
(See Note 8)

FISH-HOOK ARROW (ROUNDBABOUTS)

TABLE 4 - LANE USE MARKINGS

ROADWAY TYPE	DIMENSIONS (FT)		
	A (MIN.)	B	C
RURAL	30	88	8
URBAN	10	66	6

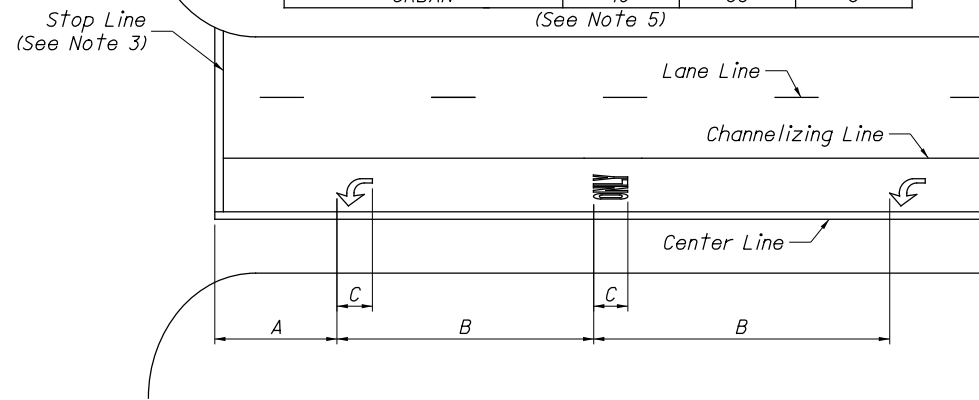
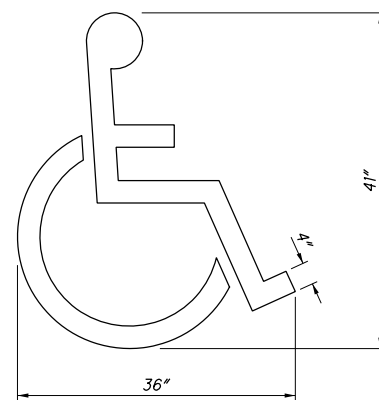
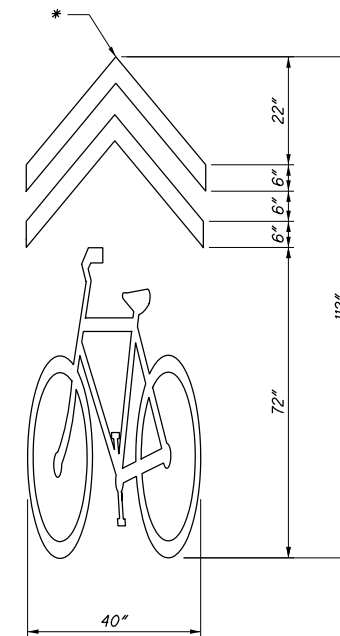


TABLE 2 - HANDICAP, BIKE & CHEVRON MARKINGS

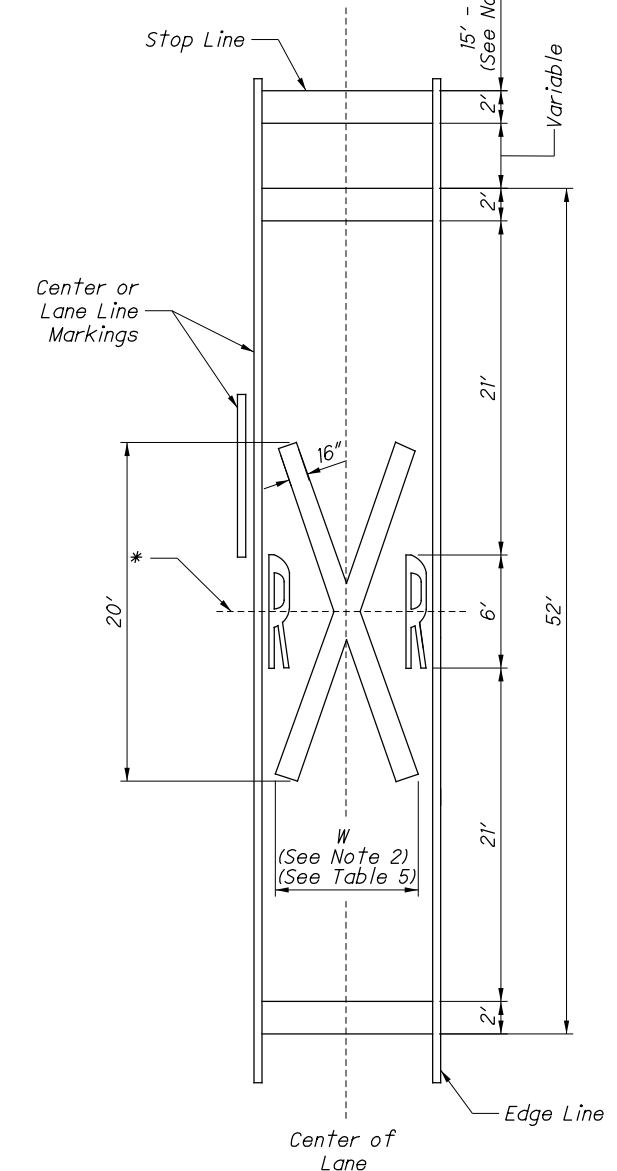
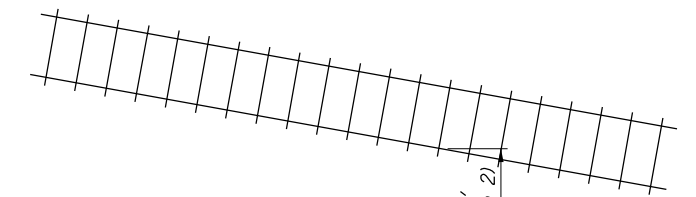
SYMBOL	HEIGHT (IN)	WIDTH (IN)	AREA (SQ FT)
HANDICAP	41	36	2.7
BIKE	72	40	16
CHEVRON	40	40	3.3 (.83 x 4)



HANDICAP SYMBOL MARKING



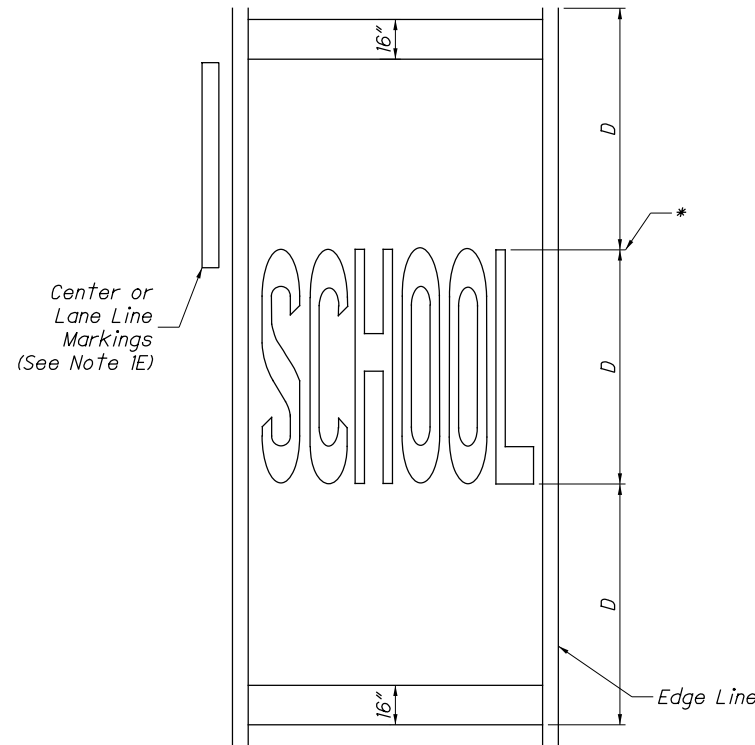
SHARED LANE MARKING
(See Note 7)



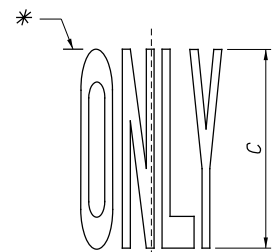
RAILROAD SYMBOL MARKING
(See Note 2)

TABLE 5 - R X R SYMBOL

WIDTH (W) (FT)	8	9	10	11	12
AREA (SQ FT)	67	68	70	71	72



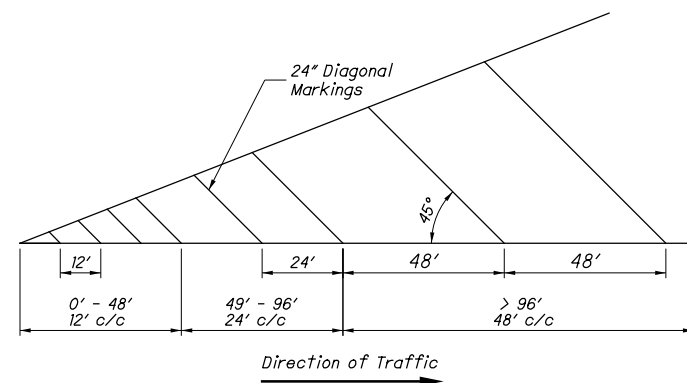
SCHOOL WORD MARKING
(See Note 1)



ONLY WORD MARKING
(See Note 4)

TABLE 3 - WORDS (SQ FT)

WORD	HEIGHT (C, D)		
	URBAN	RURAL	MULTI-LANE
ONLY (C)	17	23	N/A
SCHOOL (D)	27	37	90



TYPICAL SPACING DETAIL FOR 24" DIAGONAL MARKINGS

(Chevron Markings, Including a Spacing Table, are Shown on SCD TC-72.20.)

* - Indicates Station Reference Point

THIS DRAWING REPLACES TC-71.10 DATED 01-20-2017.

NOTES:

SCHOOL Marking

- 1A. The SCHOOL markings shall be installed on all paved approaches in advance of all School Zones.
- 1B. The SCHOOL markings should be placed at least 100' in advance of the School Zone. The preferred placement of the SCHOOL marking is adjacent to the School Zone Advance sign.
- 1C. On two-way, two-lane highways the following shall apply:
 - 1.) When the approach lane to the School Zone is 11' or more in width -
 - a.) The SCHOOL word marking and transverse lines shall be contained in, and centered in, the lane.
 - b.) The character height shall be 6' for urban areas and 8' for rural areas.
 - 2.) When the approach lane to the School Zone is less than 11' in width -
 - a.) One installation of the SCHOOL word marking and transverse lines shall extend across both lanes of traffic.
 - b.) The characters shall be 10' in height.
- 1D. On multi-lane approaches the following shall apply -
 - 1.) When the approach lanes to the School Zone are 11' or more in width -
 - a.) The SCHOOL word marking and transverse lines shall be contained in, and centered in, each lane.
 - b.) The character height shall be 6' for urban areas and 8' for rural areas.
 - 2.) When the approach lanes to the School Zone are less than 11' in width -
 - a.) One installation of the SCHOOL word marking shall extend to the width of two approach lanes.
 - b.) Transverse lines shall extend across all approach lanes of traffic.
 - c.) The characters shall be 10' in height.
- 1E. Center or lane lines shall not pass through the SCHOOL word marking.
- 1F. 6' and 8' high SCHOOL word marking shall be marked with 4" strokes.

10' high SCHOOL word marking shall be marked with 8" strokes.
- 1G. The area of the transverse lines varies with the width of the pavement; therefore, the area must be added to the value in Table 3 (sheet 2).

Railroad Crossing Markings

- 2A. On multi-lane approaches, markings shall be as follows -
 - a.) The RXR symbol shall be placed in each approach lane.
 - b.) Transverse lines used with the railroad symbols shall extend across all approach lanes.
- 2B. The railroad symbol should be located so that the Railroad Advance Warning (W10-1) sign is within the two transverse boundary lines of the railroad symbol.
- 2C. The stop line shall be located for best sight distance between 15' - 50' of the near edge of the tracks.
- 2D. The stop line shall be approximately 8' from a gate (if present).
- 2E. Width (W) of the "X" will vary according to the lane width.
- 2F. The height of the "R" shall be 6'.
- 2G. The area of the transverse lines and stop lines varies with the width of the pavement; therefore the area must be added to the value in Table 5 (sheet 2).

Stop Line Marking

- 3A. Except as specified in Notes 3B and 3C, the stop line should be placed as follows:
 - a.) The stop line should be placed where cross-corner vision is maximum.
 - b.) In no case shall the stop line be placed more than 30' or less than 4' from the nearest edge of the intersecting roadway.
 - c.) For normal intersections the maximum distance should be 10'.
- 3B. If a marked crosswalk is present the stop line should be placed 4' in advance of, and parallel to, the nearest crosswalk line.
- 3C. For signalized intersections the stop line should be placed at a minimum distance of 40' from the nearest signal head.

ONLY Word Marking

- 4A. The ONLY word marking is optional.
- 4B. Where used, the spacing between ONLY and arrow markings should be based on Table 4 (sheet 2).
- 4C. When lane-use arrow markings are used and the ONLY marking is not, an additional lane-use arrow should be used in its place to retain the spacing as shown in Table 4 (sheet 2).

Lane-Use Arrow Markings

- 5A. Lane-use arrow markings are optional except where a through traffic lane(s) approaching an intersection becomes a mandatory turn lane(s).
- 5B. Where used, the spacing between markings should be based on Table 4 (sheet 2). However, based on the turn lane length, the spacing between the markings may be adjusted.

Two-Way Left-Turn Only (TWLTO) Arrows

- 6A. Arrow sets should be longitudinally spaced at intervals of:
 - a.) 500' - 1000' for speeds less than or equal to 40 mph,
 - b.) 1000' - 1500' for speeds over 40 mph
- 6B. In addition, an arrow set should be placed:
 - a.) 100' - 200' from the near edge of an intersecting roadway, or
 - b.) Inside both ends of TWLTO lanes.

Shared Lane Marking

- 7A. When chevron markings are used, its area must be added to the value of the bike symbol markings (see Table 2 on sheet 1).
- 7B. When used, the shared lane marking should be placed immediately after an intersection and spaced at intervals not greater than 250' thereafter.

Lane-Reduction Arrow Markings

- 8A. Lane-reduction arrow markings should be placed where a lane reduction transition occurs on a roadway as follows:
 - a.) Lane-reduction arrow markings may be placed for speeds of less than 45 mph, if determined to be appropriate based on engineering judgement.
 - b.) Lane-reduction arrow markings should be placed for speeds of 45 mph or over.
 - c.) Lane-reduction arrow markings may be placed in long acceleration lanes.
 - d.) Where lane-reduction arrows are used, they should be placed as follows:
 - i.) First lane-reduction arrow 100' in advance of the 'Begin Taper' point.
 - ii.) Second lane-reduction arrow placed at the 3/4d point.