



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

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INSTRUCTIONAL BULLETIN NO. 18-11

Regarding Snowplowable Raised Pavement Markers, Rumble Strips, Rumble Stripes, and Table 4-3 of the Roadway Design Guidelines

Attached to this bulletin is the updated Table 4-3 from Chapter 4 of the Roadway Design Guidelines. Snowplowable Raised Pavement Markers will not be required for undivided state routes with speeds less than 45 mph. In addition, the threshold for deciding which pavement markers to use on local roads will now be an ADT of 2000 vpd, increased from 1000.

Finally, item descriptions for Snowplowable markers have been changed to all capitals to match formatting of other item descriptions and the word "raised" added:

716-01.21	SNOWPLOWABLE RAISED PAVEMENT MARKERS (BI-DIR) (1 COLOR)	EACH
716-01.22	SNOWPLOWABLE RAISED PAVEMENT MARKERS (MONO-DIR)(1 COLOR)	EACH
716-01.23	SNOWPLOWABLE RAISED PAVEMENT MARKERS (BI-DIR)(2 COLOR)	EACH

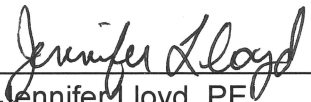
Effective March 29, 2019 letting (January 16, 2019 Turn-in), the following standard drawings have been revised.

Revised Standard Drawings:

DRAWING NUMBER	REVISION DATE	DESCRIPTION
T-M-2	08-02-18	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS
T-M-4	08-02-18	STANDARD INTERSECTION PAVEMENT MARKINGS
T-M-10	08-02-18	SIGNING AND PAVEMENT MARKINGS AT INTERSECTION CROSSINGS FOR SHARED-USE PATHS

T-M-11	08-02-18	SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANE OR ROUTES
T-M-15	08-02-18	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR INTERSTATE AND ACCESS CONTROLLED ROUTES
T-M-15A	08-02-18	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED RURAL ROUTES
T-M-16	08-02-18	ASPHALT SHOULDER RUMBLE STRIPE INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED RURAL ROUTES
T-M-16A	08-02-18	ASPHALT CENTERLINE RUMBLE STRIPE

The Roadway Design Guidelines available online do not reflect these changes; however, the updated sections are attached to this Instructional Bulletin.



Jennifer Lloyd, PE
Civil Engineering Director
Roadway Design Division

KJL:JDK:ADP:AKL
October 10, 2018

4-716.10 TEMPORARY PAVEMENT MARKINGS

Temporary pavement markings on the intermediate layers of pavement open to traffic will be installed to permanent standards daily with reflective tape or reflectorized paint.

The temporary pavement markings will be paid for under the following item numbers; 716-05.01 Painted Pavement Marking (4" Line) per L.M., 716-05.20 Painted Pavement Marking (6" Line) per L.M., or 716-05.02 Painted Pavement Marking (8" Barrier Line) per L.F.

On Local Roads with the ADT < 2000, no permanent striping is required on the final surface if item number 716-05.01 Painted Pavement Marking (4" Line) is used as the temporary striping for the intermediate layers (see Table 4-3).

If the permanent marking material is thermoplastic, the contractor may elect to mark the final layer of pavement with reflectorized paint to permanent standards daily and wait until the paving operation has been completed before the permanent markings are installed. In this case, the temporary markings for the final layer will not be measured and paid for directly, but the costs are to be included in the price bid for the permanent markings.

4-716.15 PERMANENT PAVEMENT MARKINGS (See 4-411.03 and 4-411.04)

Designers should refer to Table 4-3 for pavement marking guidelines for all interstate and state routes. In addition to pavement marking guidelines, Table 4-3 provides guidance for the placement of rumble strips and rumble stripes. This guidance shall be used on all new, reconstruction, and resurfacing projects except in areas which require special treatment as determined on the Construction Field Review and approved by the Director of the Roadway Design Division.

Items numbers for pavement markings are available on the TDOT web site at:

<https://www.tdot.tn.gov/APPLICATIONS/RoadwayItems>

For projects using an Open-Graded Friction Course (OGFC) for the surface layer, only Enhanced Flat Line Thermoplastic (Item No 716-12.01 or 716-12.02) may be used for the edge, center, skip and lane lines. Use the width of line specified in table 4-3. The designer shall footnote the Enhanced Flat Line Thermoplastic Quantity with the following note:
"Contractor shall use the ribbon method for application."

Permanent Pavement Markings, Raised Pavement Markers, Rumble Strip and Rumble Strip Guidelines														
Local Roads	ADT <2000	ADT ≥2000	Undivided State Route						Divided State Route Non-Freeway		Interstate or Other Freeway		Road Classification	
			V < 45			V ≥ 45			Edge Lines	Lane Lines	HOV Lane Lines	Edge Lines		Lane Lines
ADT <12,000		ADT ≥ 12,000		Edge Lines SHLD < 8'	Edge Lines SHLD ≥ 8'	CL / Lane Lines	Edge Lines SHLD < 2'	Edge Lines SHLD 2-8					X CL	
ADT <12,000		ADT ≥ 12,000							Edge Lines SHLD < 2'	Edge Lines SHLD 2-8	Edge Lines SHLD < 2'	Edge Lines SHLD 2-8		Edge Lines SHLD < 2'
Edge Lines		CL / Lane Lines		Edge Lines SHLD < 2'	Edge Lines SHLD 2-8	Edge Lines SHLD < 2'	Edge Lines SHLD 2-8	Edge Lines SHLD < 2'					Edge Lines SHLD 2-8	
All Lines		All Lines							X	X	X	X		X
All Lines		All Lines		X	X	X	X	X					X	
														716-12.02 6" Enhanced Flatline
														716-12.09 12" Enhanced Flatline
														716-13.01 4" Spray Thermo...
														716-13.02 6" Spray Thermo...
														716-05.01 4" Paint
														716-01.21 SRPM (Bi-Dir)(1-Color)
														716-01.22 SRPM (mono)(1-color)
														716-01.23 SRPM (Bi-dir)(2-color)
														411-12.02 16" Rumble Strip Non-continuous
														411-12.01 16" Rumble Strip Continuous
														411-12.03 8" Rumble Stripe
														411-12.04 4" Rumble Stripe
														411-12.05 CL Rumble Stripe
														Footnotes

Table 4-3 (Sheet 1 of 3)
Permanent Pavement Markings, Raised Pavement Markers,
Rumble Strip and Rumble Stripe Guidelines Notes

1. The contractor may elect to use either thermoplastic or preformed plastic for specialty striping items. These items include stop lines, cross walks, arrows, words, channelization, and other specialty striping items except lines.
2. The following footnote shall be added to all Specialty Striping Items: **“The contractor may elect to substitute Preformed Plastic for Thermoplastic. Preformed Plastic shall be paid for at the same unit price as bid for Thermoplastic.”**
3. Specialty striping items may be either paint or thermoplastic.
4. Snowplowable Raised Pavement Markers (SRPMs) shall conform to this guidance:
 - a. SRPMs located along centerlines of 2 direction roadways (Yellow Stripe) shall be paid for under Item No. 716-01.21 “Snowplowable Raised Pavement Markers (Bi-Dir) (1-Color)” per each. Lenses shall be yellow.
 - b. SRPMs on lane lines between lanes of the same travel (Broken White Stripes) direction on undivided roadways shall be paid under Item No. 716-01.22, “Snowplowable Raised Pavement Markers (Mono-Dir) (1-Color)” per each. Lenses shall be clear or white.
 - c. SRPMs on lane lines between lanes of the same travel (Broken White Stripes) direction on divided roadways shall be paid for under Item No. 716-01.23, “Snowplowable Raised Pavement Markers (Bi-Dir) (2-Color)” per each. Lenses shall be clear or white on the upstream side (facing traffic), lenses shall be red facing downstream side (facing wrong-way traffic).
 - d. Refer to T-M-series standard drawings for details. Three lane and multilane roads with 2-way traffic will normally require both mono-directional and bi-directional snowplowable raised pavement markers. Two lane roads will normally require bi-directional snowplowable raised pavement markers.
 - e. Payment for the removal of Snowplowable Raised Pavement Markers shall be paid for under Item number 716-01.30 (Removal of Snowplowable Reflective Marker, per each). The cost shall not be included in the cost of installing the following items for Snowplowable Reflective Marker: 716-01.21, 716-01.22, and 716-01.23.
5. Rumble strips are not required on ramps.
6. Centerline Rumble Stripes may only be used if justified by crash history and if the road meets the following conditions:
 - a. Design Speed of 45 mph or greater
 - b. ADT of 1500 or greater
 - c. Lane width of 12 feet or greater
 - d. Undivided Section
 - e. No passing or one way passing zone
7. For concrete shoulders, the rumble strip is to be placed in accordance with standard drawings RP-CS-1 or RP-CS-2. Item No. 501-03.10, Concrete Shoulder Rumble Strips, L.F. The length of scoring shall be measured as the actual length of pavement scored.
8. Rumble Strip for Interstate or Freeway, See STD DWG T-M-15
 Rumble Strip for Non-access controlled route, See STD DWG T-M-15A
 Edgeline Rumble Stripe, See STD DWG T-M-16
 Centerline Rumble Stripe, See STD DWG T-M-16A
9. See 4-411.03 and 4-411.04 for additional guidance regarding rumble strip and rumble stripe placement.
10. All resurfacing projects shall follow the guidance in Table 4-3 for pavement marking and rumble installations. Application of rumble shall be included on all rural roadway resurfacing projects if there is no existing rumble on the shoulder. Designers shall include rumble installations regardless of the pavement thickness. This should be included in the scope of resurfacing projects to assure the minimum roadway safety requirements are met. Pavement markings and rumble strips/stripes shall be applied to the roadway surface after it has been scraped clean of overgrown vegetation and swept of loose debris.

Table 4-3 (Sheet 2 of 3)

11. For STD DWGs TM-16 and TM-16A applications: The Designer or the Field Engineer may choose to alternate rumble stripe with profiled thermoplastic pavement marking when the following conditions exist:
- a. On roadways with rigid pavement shoulders, when it is not practical or desirable to install ground-in rumble stripes on the inside and outside edge line pavement markings.
 - b. Edge lines on two-lane roadways that do not have paved shoulders.
 - c. Edge lines on bridges with narrow shoulders as a safety countermeasure for bridge parapet impacts.

Table 4-3 (Sheet 3 of 3)

4-716.36 SNOWPLOWABLE RAISED PAVEMENT MARKERS ON STATE ROUTES

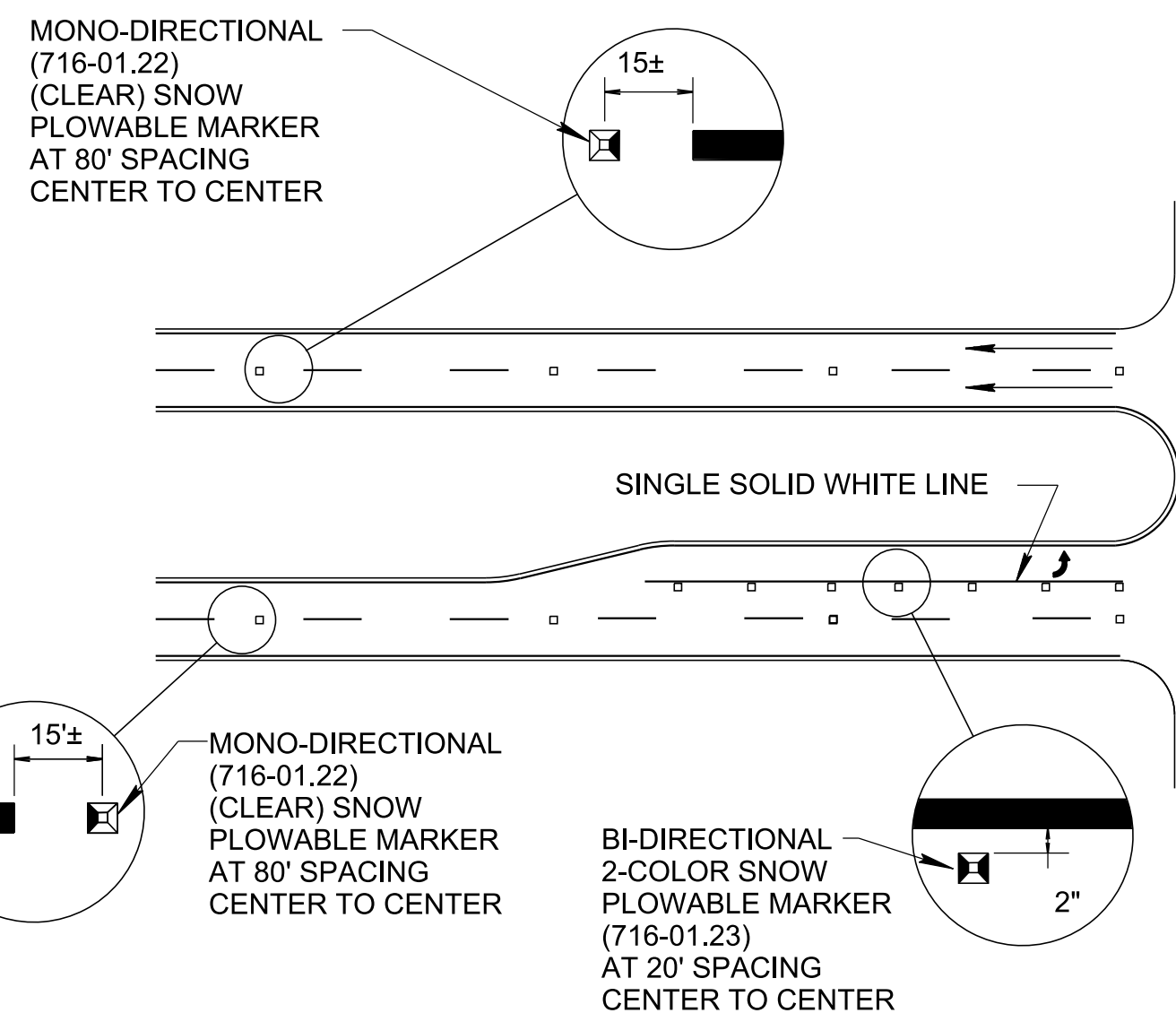
Snowplowable raised pavement markers should be included on state routes with the exception of undivided state routes with speed < 45 mph. Reflective pavement markers are to be placed in accordance with the T-M- series standard drawings and the current edition of the MUTCD.

On resurfacing projects, the designer shall be responsible for verifying the existence of snowplowable raised pavement markers and for computing the quantity of these markers for removal. The designer shall also compute the quantity for new snowplowable raised pavement markers to be installed for these projects.

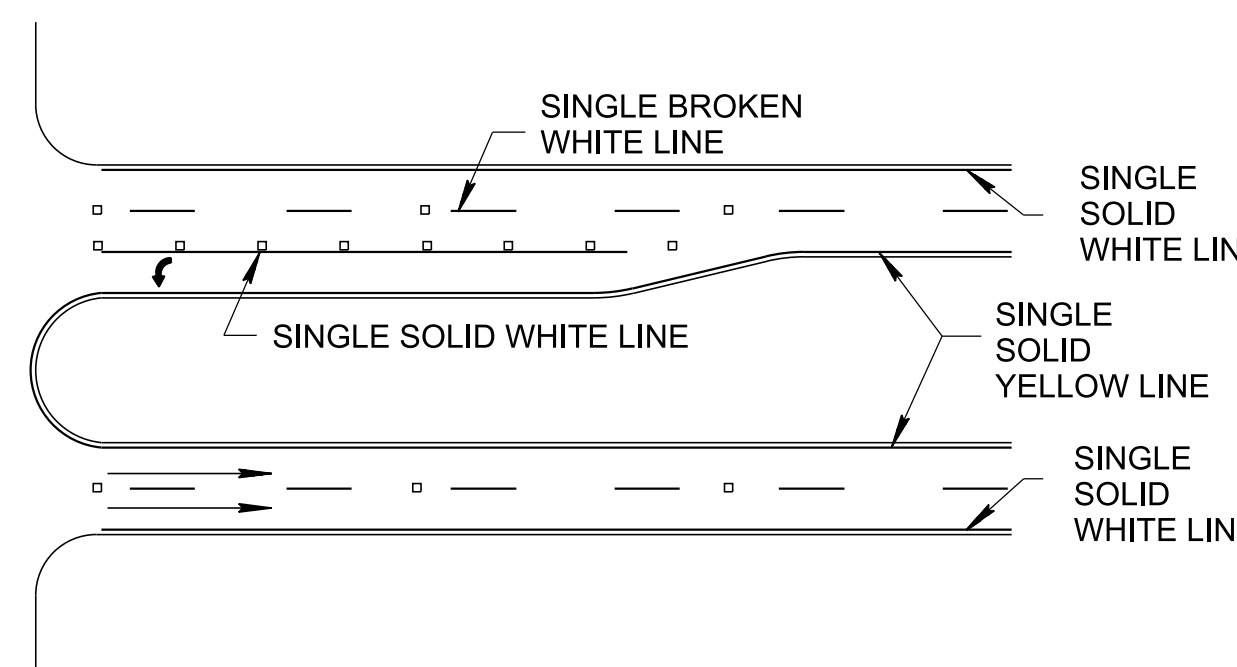
Spacing of raised pavement markers may be reduced or additional snowplowable raised pavement markers added in areas that require special treatment as determined by the design manager or at the construction field review. When additional snowplowable raised pavement markers are used, the markers shall be placed in accordance with the current edition of the MUTCD. Raised pavement markers may be omitted on urban roadways where roadway lighting is present. Raised pavement markers should not be used on the right edge line.

See Table 4-3 for guidance regarding type of markers to be used.

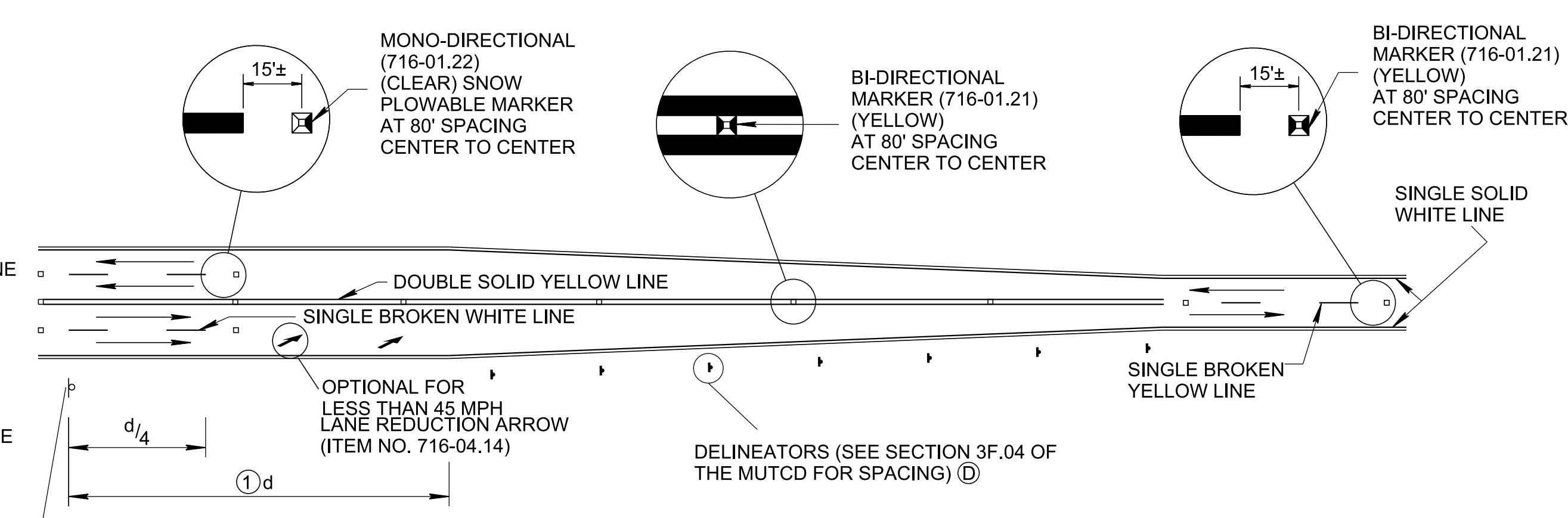
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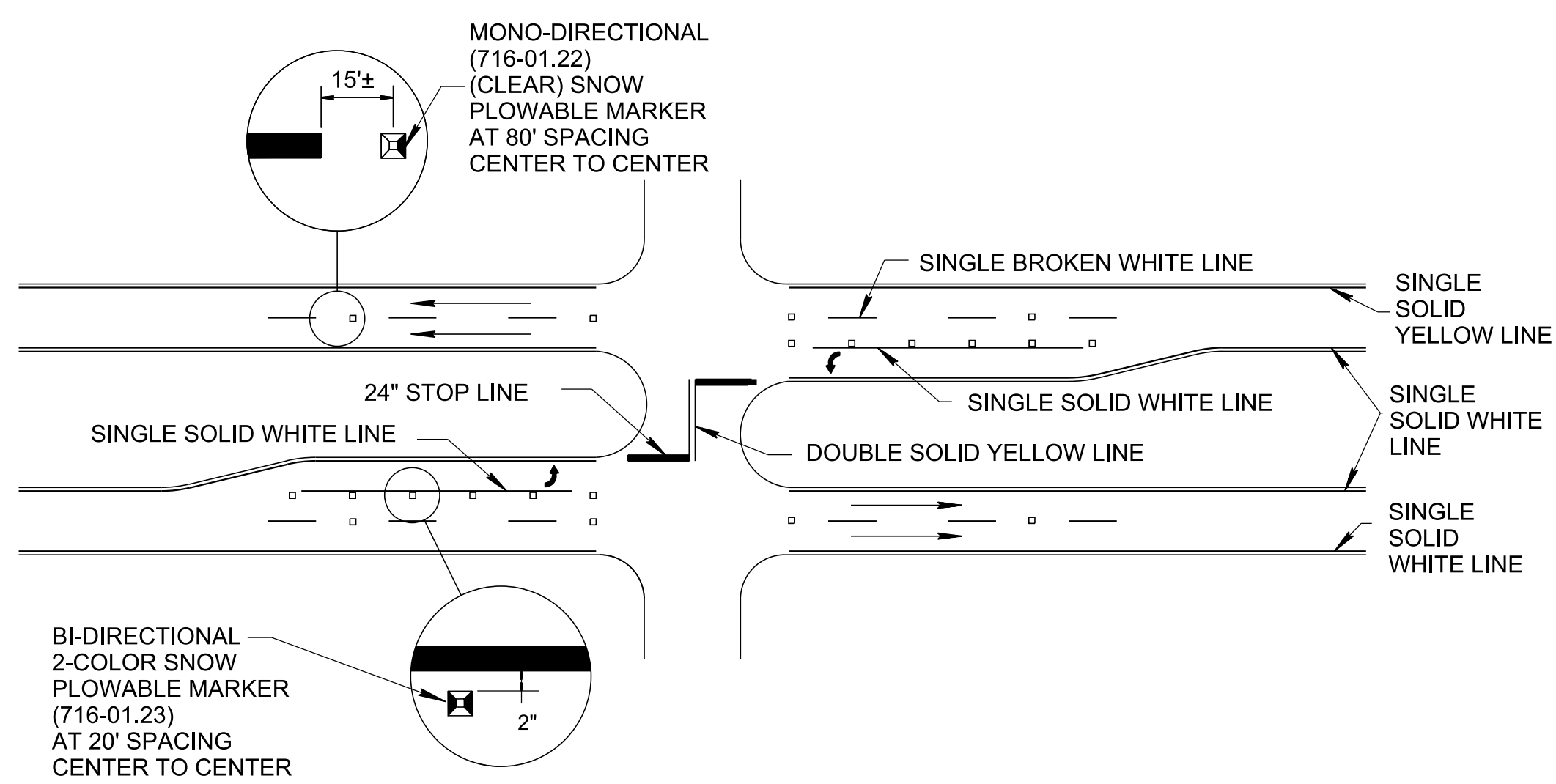
**TYPICAL MULTI-LANE WITH TURN LANE
 MEDIAN WIDTH LESS THAN 30 FEET**



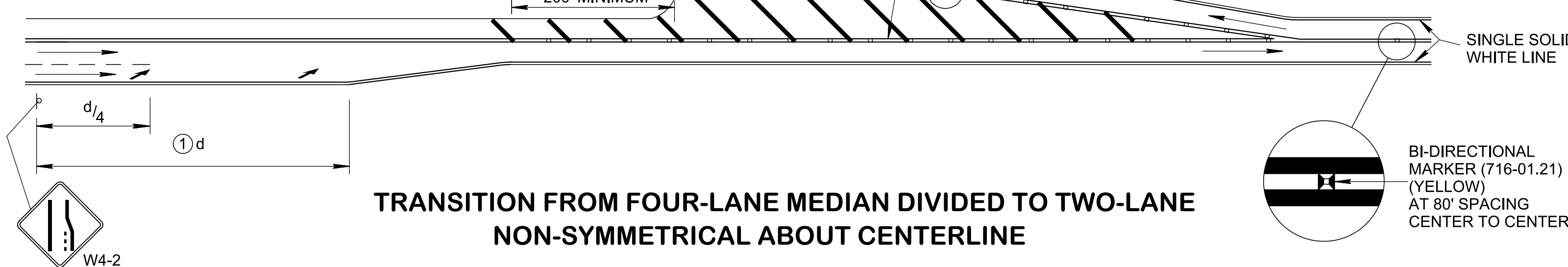
TRANSITION FROM FOUR-LANE TO TWO-LANE



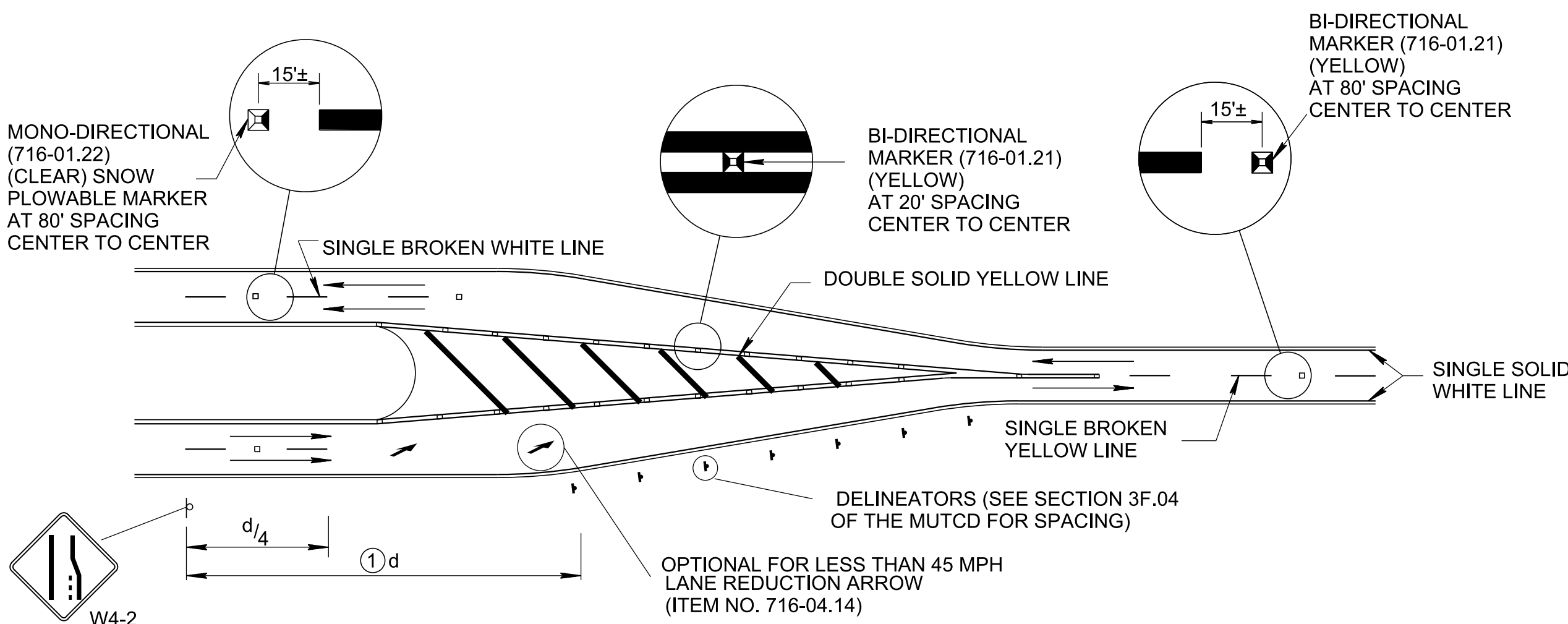
**TRANSITION FROM FOUR-LANE MEDIAN DIVIDED TO TWO-LANE
 NON-SYMMETRICAL ABOUT CENTERLINE**



**TYPICAL MULTI-LANE WITH TURN LANE
 MEDIAN WIDTH EQUAL TO OR GREATER THAN 30 FEET**



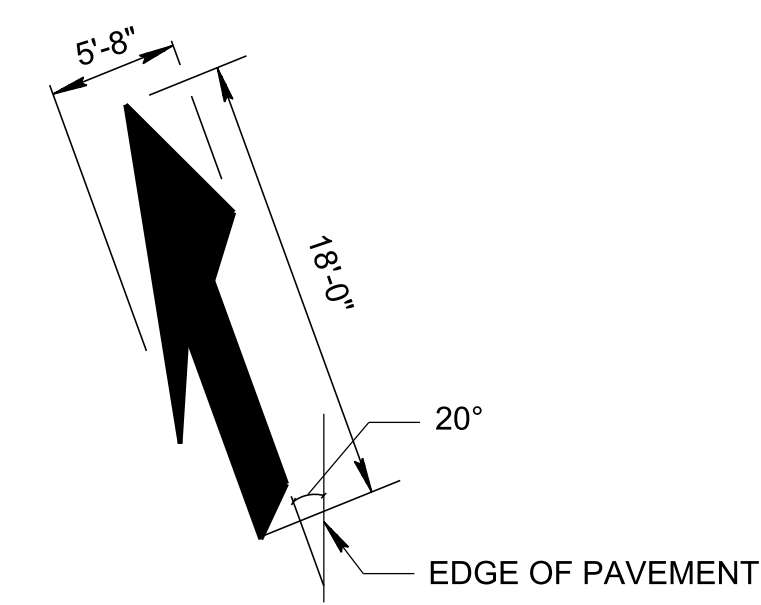
**TRANSITION FROM MULTI-LANE WITH TWO WAY
 LEFT TURN LANE TO FOUR-LANE**



**TRANSITION FROM FOUR-LANE MEDIAN DIVIDED TO TWO-LANE
 SYMMETRICAL ABOUT CENTERLINE**
 SIMILAR FOR MULTI-LANE WITH TWO WAY LEFT TURN LANE TO TWO-LANE

PAVEMENT MARKING TABLE		
DESIGN SPEED	EDGE LINE	LANE LINE
V ≥ 45 MPH	6" *	6"
V < 45 MPH	4"	4"

* IF SHOULDER IS LESS THAN 2' WIDE USE 4" LINE



LANE-REDUCTION ARROW

FOOTNOTE
 ① SEE TABLE 2C-4 OF PART 2 OF THE MANUAL ON UNIFORM TRAFFIC DEVICES (MUTCD) FOR GUIDELINES FOR ADVANCE PLACEMENT OF WARNING SIGNS DISTANCE d.

GENERAL NOTES
 (A) EDGE LINES ARE NOT REQUIRED FOR PAVEMENT WIDTH LESS THAN 16 FEET OR ON CURB AND GUTTER SECTIONS UNLESS SPECIFIED IN PLANS.
 (B) SEE STANDARD DRAWING NOS. T-M-3 AND T-M-4 FOR CHANNELIZATION MARKING AND INTERSECTION MARKING DETAILS.
 (C) PAVEMENT MARKERS ARE REQUIRED ONLY WHEN SPECIFIED IN THE PLANS.
 (D) SEE STD. DWG. T-S-11 FOR DETAILS OF DELINEATORS.

- REV. 3-22-88: ADDED EDGELINES, NOTES, AND DETAILS FOR TRANSITION MARKING. CHANGED SHEET TITLE AND DRAWING NO. FROM T-M-8 TO T-M-2. ADDED DETAILS ON RIGHT OF SHEET.
- REV. 10-26-92: ADDED GENERAL NOTE (C)
- REV. 12-18-93: ADDED EDGELINES INSIDE MEDIAN CROSSOVERS FOR MEDIAN WIDTHS LESS THAN 44 FEET.
- REV. 1-19-94: CHANGED WIDTH CRITERION FOR MEDIAN WIDTH FROM 44 FEET TO 64 FEET.
- REV. 1-19-96: CHANGED DETAIL ON LEFT BOTTOM OF SHEET.
- REV. 4-15-04: CHANGED W4-2 SIGNS AND FOOTNOTE ① TO COMPLY WITH 2003 MUTCD.
- REV. 9-5-04: CHANGED FOOTNOTE ① TO COMPLY WITH 2003 MUTCD.
- REV. 11-1-11: ADDED DELINEATORS WITH NOTE AND LANE REDUCTION ARROWS WITH NOTE. ADDED PAY ITEM 716-04.14 AND GENERAL NOTE (D).
- REV. 1-12-12: CHANGED SNOW PLOWABLE MARKERS FROM MONO-DIRECTIONAL TO BI-DIRECTIONAL 2-COLOR.
- REV. 1-15-13: UPDATED MEDIAN DETAILS.
- REV. 7-24-14: ADDED PAVEMENT MARKING TABLE.
- REV. 7-5-17: ADDED ITEM NO'S TO BLOW-UP DETAIL DESCRIPTIONS. CORRECTED STD. DWG. NO. IN GENERAL NOTE (D).
- REV. 08-02-18: REVISED BI-DIRECTIONAL 2-COLOR SNOW PLOWABLE MARKER TO 20' SPACING ON DETAIL FOR TYPICAL MULTI-LANE WITH TURN LANE MEDIAN WIDTH LESS THAN 30 FEET AND TYPICAL MULTI-LANE WITH TURN LANE MEDIAN WIDTH EQUAL TO OR GREATER THAN 30 FEET. REDREW SHEET.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

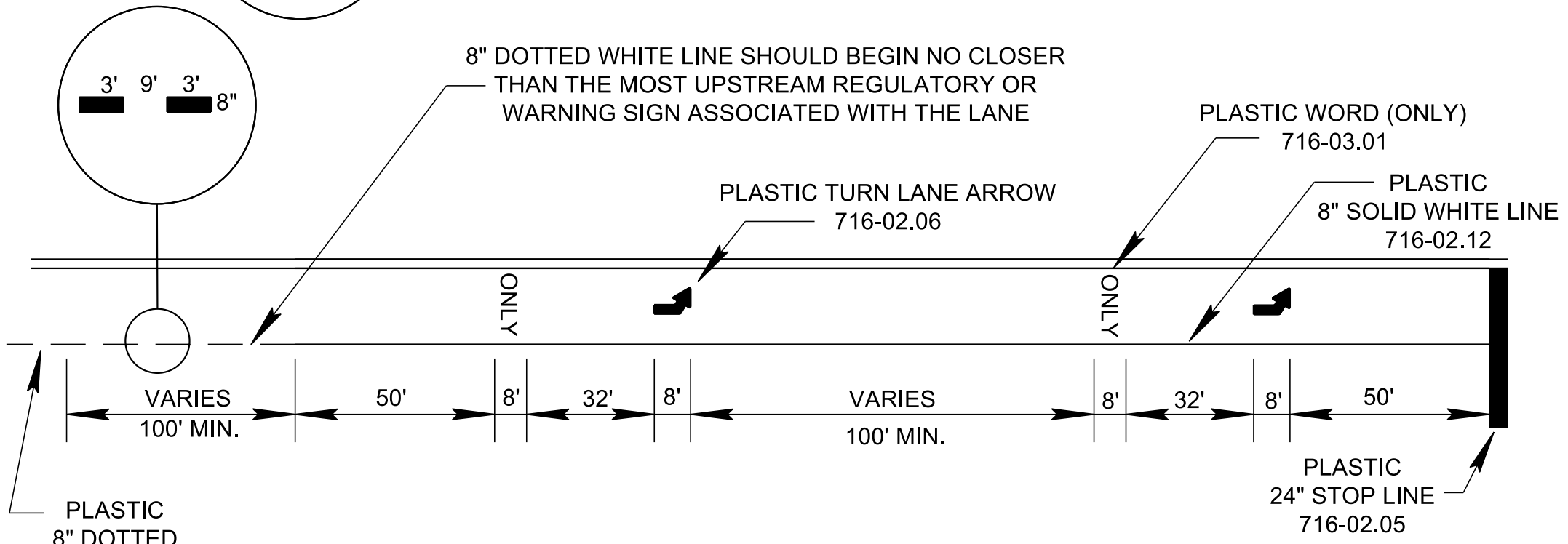
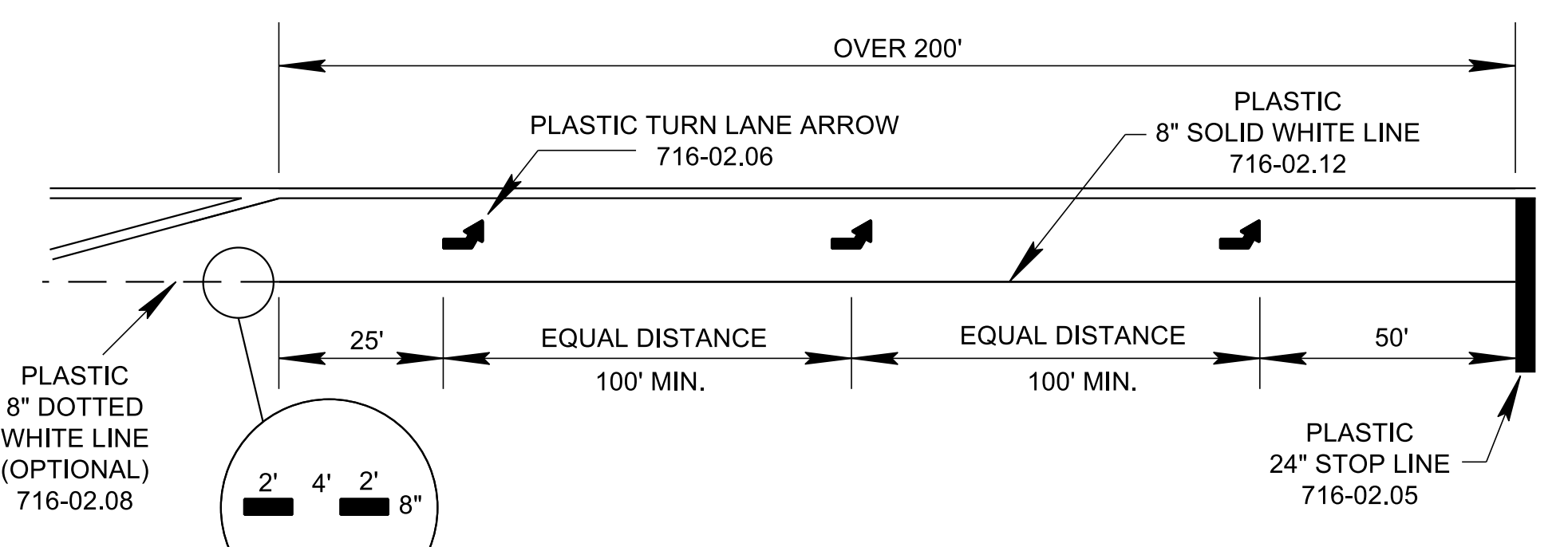
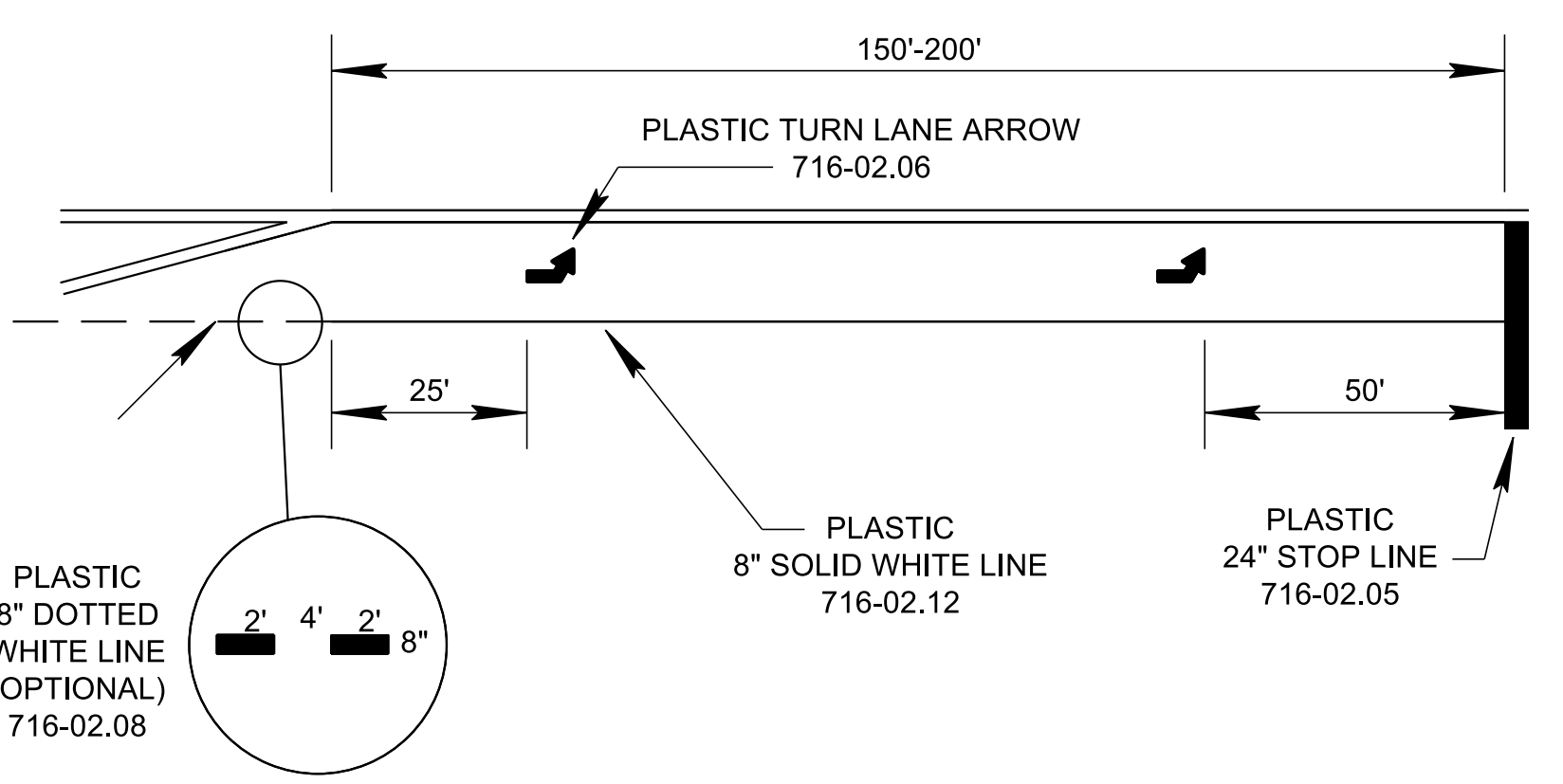
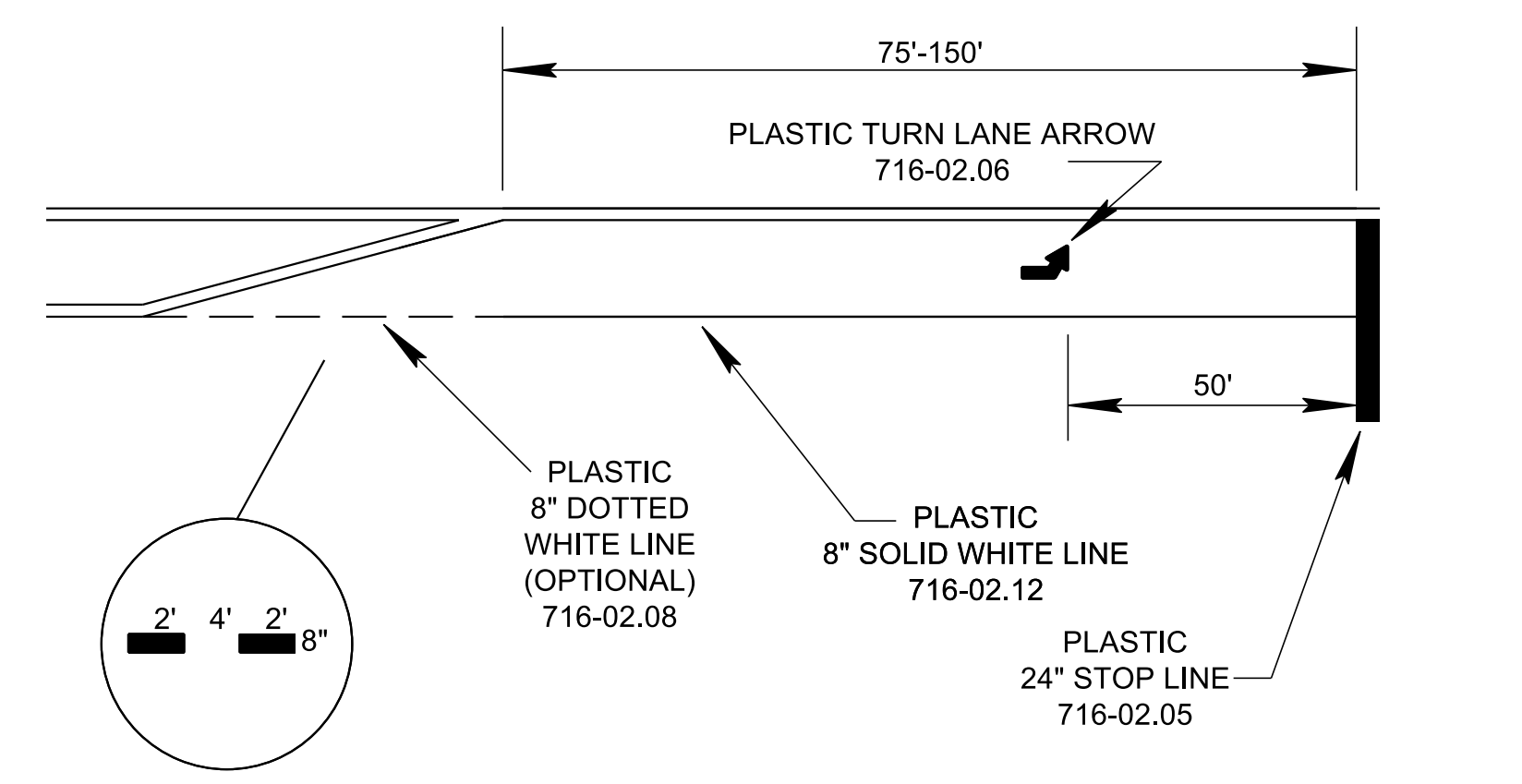
STATE OF TENNESSEE
 DEPARTMENT OF
 TRANSPORTATION

DETAILS OF
 PAVEMENT MARKINGS
 FOR CONVENTIONAL
 ROADS

T-M-2

NOT TO SCALE

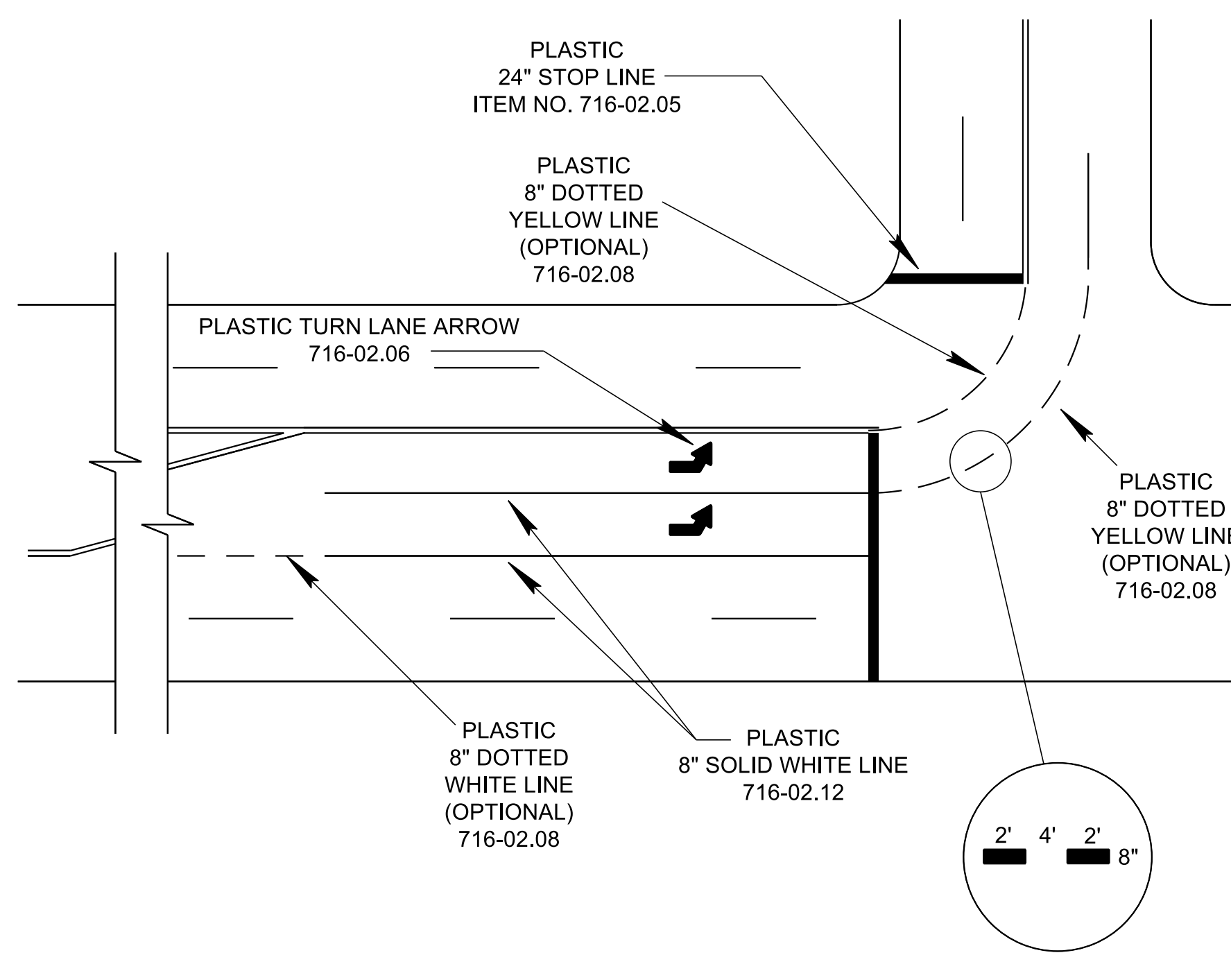
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TYPICAL MARKING FOR LEFT TURN LANES
 APPLICABLE FOR RIGHT TURN LANES

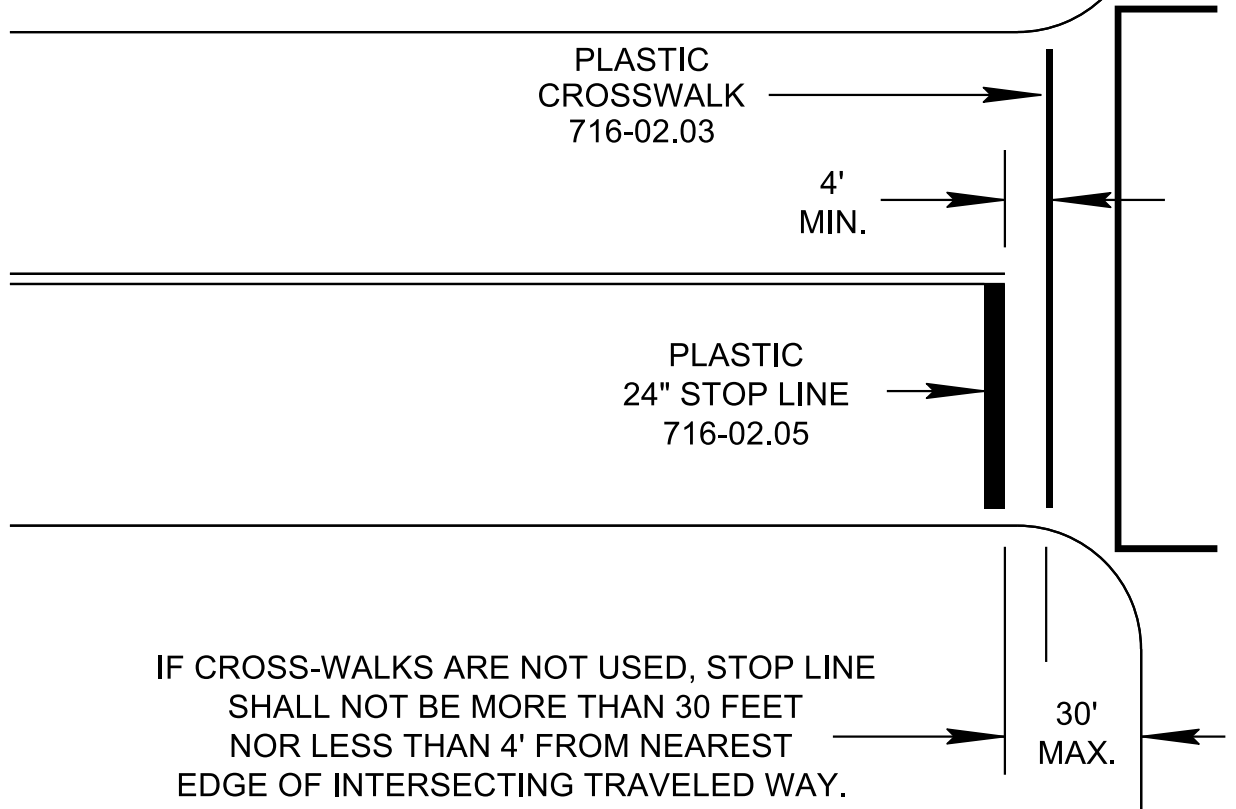
IF A THROUGH LANE BECOMES AN EXCLUSIVE LEFT TURN LANE, AN "ONLY" MESSAGE IS REQUIRED FOR EACH ARROW. THE "ONLY" MESSAGE SHALL BE PAID FOR UNDER ITEM NO. 716-03.01, PLASTIC WORD PAVEMENT MARKING (ONLY), PER EACH.

NOT TO SCALE



TYPICAL MARKING FOR DOUBLE LEFT TURN LANES

LEFT TURN ARROWS SHALL BE PAID FOR UNDER ITEM NO. 716-02.06, PLASTIC PAVEMENT MARKING (TURN LANE ARROW), PER EACH. 8" DOTTED WHITE LINE SHALL BE PAID FOR UNDER ITEM NO. 716-02.08, PLASTIC PAVEMENT MARKING (8" DOTTED LINE), PER LINEAR FOOT.



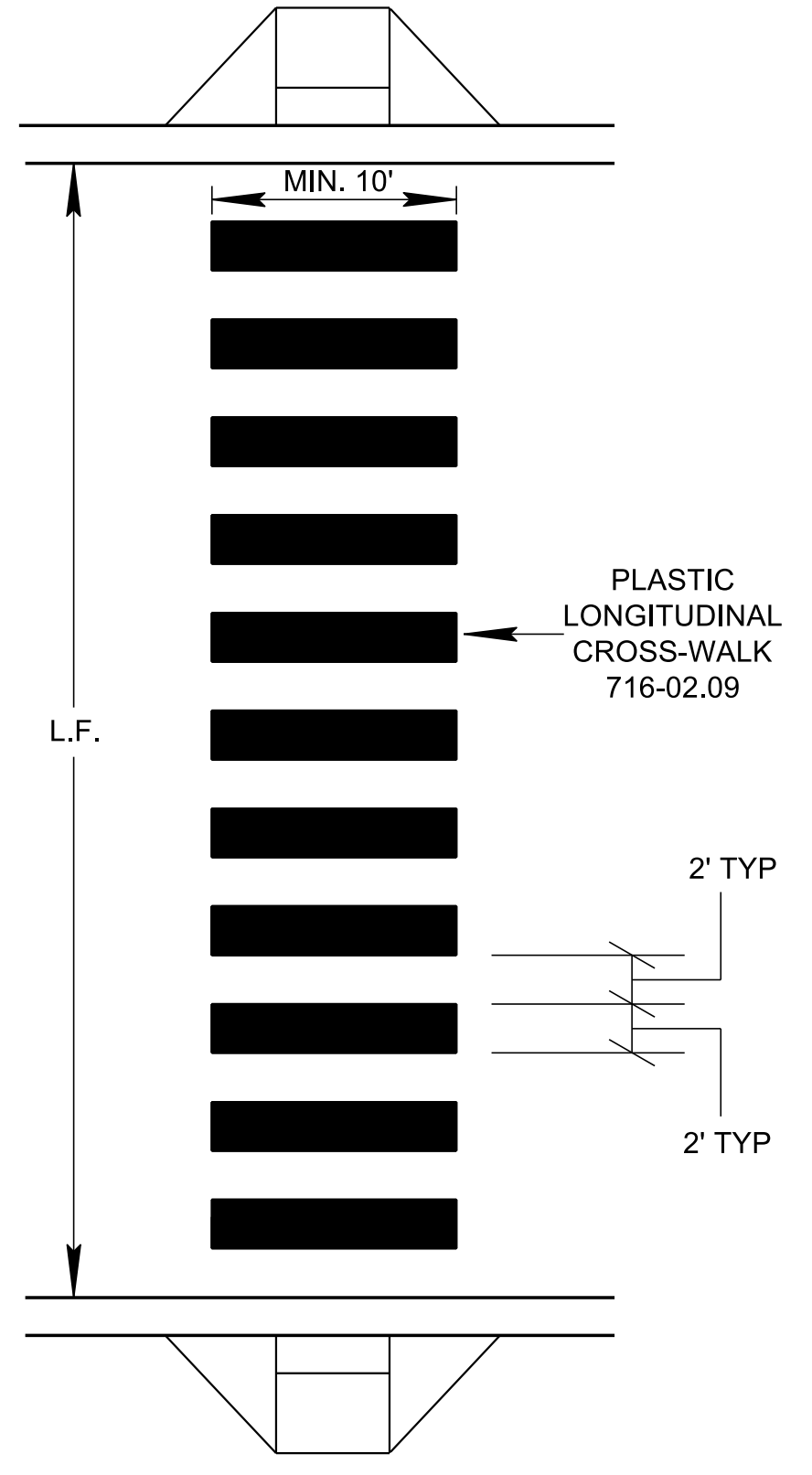
TYPICAL MARKING FOR STOP LANE

IF CROSS-WALKS ARE NOT USED, STOP LINE SHALL NOT BE MORE THAN 30 FEET NOR LESS THAN 4' FROM NEAREST EDGE OF INTERSECTING TRAVELED WAY.

STOP LINE PLACEMENT NOTES

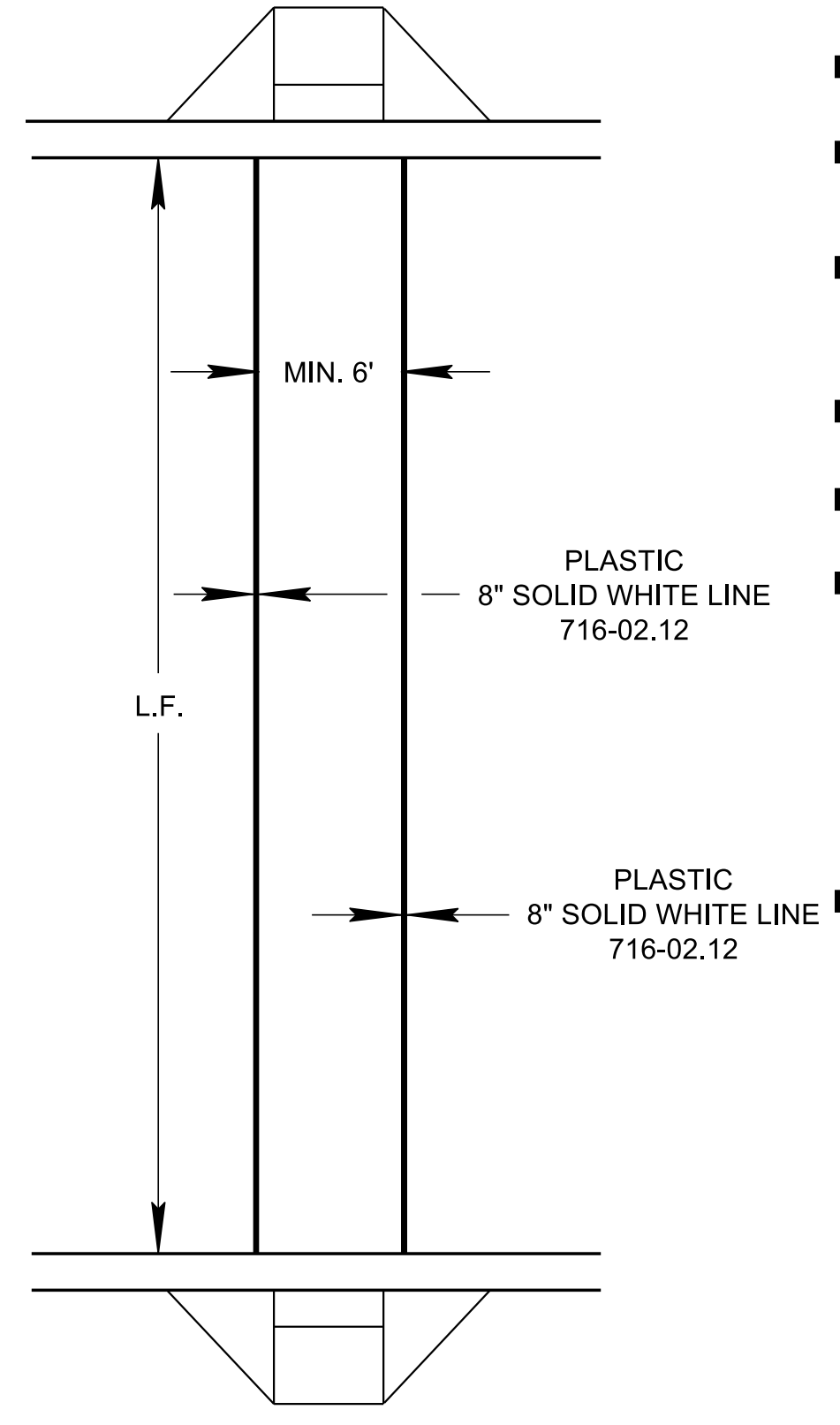
- (A) LOCATION SHALL BE DETERMINED BY VEHICLE TURNING PATHS FROM INTERSECTION ROADWAY, AND IF SIGNALIZED, ITS POSITION RELATIVE TO SIGNAL HEADS, PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- (B) STOP LINES SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBER: 716-02.05, PLASTIC PAVEMENT MARKING (STOP LINE), PER L.F.
- (C) STOP LINES REQUIRED ONLY ON APPROACHES CONTROLLED BY STOP SIGNS OR TRAFFIC SIGNALS.

LONGITUDINAL CROSS-WALK MARKING
 (FOR SPECIAL EMPHASIS)
 TO BE USED WHERE V>45 MPH



PAVEMENT MARKINGS SHALL BE PAID FOR UNDER ITEM NO. 716-02.09 PLASTIC PAVEMENT MARKING (LONGITUDINAL CROSS-WALK) PER L.F. ON LOCAL ROADS WITH ADT<1000, PAVEMENT MARKINGS COULD ALTERNATIVELY BE PAID FOR UNDER ITEM NO. 716-05.22 PAINTED PAVEMENT MARKING (LONGITUDINAL CROSS-WALK) PER L.F. MEASUREMENT IS CALCULATED AS THE FULL WIDTH OF PAVEMENT.

TRANSVERSE CROSS-WALK MARKING



PAVEMENT MARKINGS SHALL BE PAID FOR UNDER ITEM NO. 716-02.03 PLASTIC PAVEMENT MARKING (CROSSWALK) PER L.F. ON LOCAL ROADS WITH ADT<1000, PAVEMENT MARKINGS COULD ALTERNATIVELY BE PAID FOR UNDER ITEM NO. 716-05.03 PAINTED PAVEMENT MARKING (CROSS-WALK) PER L.F. MEASUREMENT IS CALCULATED AS THE FULL WIDTH OF PAVEMENT.

PAVEMENT MARKING TABLE

DESIGN SPEED	EDGE LINE	LANE LINE
V ≥ 45 MPH	6" *	6"
V < 45 MPH	4"	4"

* IF SHOULDER IS LESS THAN 2' WIDE USE 4" LINE

CROSS-WALK NOTES

- (A) SPECIAL PAVERS AND PAVEMENT TEXTURES ARE NOT ACCEPTABLE CROSS-WALK MARKINGS. THEREFORE, SPECIAL PAVERS AND PAVEMENT TEXTURES SHALL ONLY BE USED IN CONJUNCTION WITH TRANSVERSE CROSS-WALK MARKINGS. SPECIAL PAVERS ARE TO BE DESIGNED TO MEET PAVEMENT DESIGN SCHEDULE AND DESIGN LOADING. ON STATE ROUTES, DETAILS SHALL BE REVIEWED AND APPROVED BY THE DEPARTMENT.
- (B) IF SPECIAL PAVERS, PAVEMENT TEXTURES, OR ANY OTHER ARCHITECTURAL PAVEMENT MATERIALS ARE USED, THE ARCHITECTURAL PAVEMENT MATERIALS SHALL PROVIDE A SMOOTH, WITHOUT JOINT, WALKABLE/RIDEABLE, STABLE, FIRM AND SLIP-RESISTANT SURFACE PER ADA STANDARDS.
- (C) ARCHITECTURAL PAVEMENT SHALL BE PAID FOR UNDER ITEM NO. 701-01.08 CONCRETE PAVERS (CROSS-WALK) PER. S.F.

REV. 2-22-88: REVISED DETAIL LEFT TURN LANE MARKING. ADDED NOTE FOR STOP LINE TO BE PARALLEL TO CROSS-WALK. NOTED LONGITUDINAL CROSS-WALK LINES TO BE WHITE. CHANGED DWG. NO. FROM T-M-11 TO T-M-4. ADDED DETAIL FOR DOUBLE LEFT TURN LANE.

REV. 3-20-91: REDREW AND REORGANIZED SHEET. ADDED PAY ITEMS AND THEIR DESCRIPTIONS.

REV. 5-27-01: CHANGED DESCRIPTION IN ITEM NO. 716-02.09.

REV. 9-5-01: CHANGED DESCRIPTION IN ITEM NO. 716-02.03.

REV. 1-19-05: CHANGED HANDICAP RAMP DETAIL SHOWN ON CROSS-WALK MARKING DETAILS.

REV. 3-15-07: REVISED TO REFER THE HANDICAP RAMP STANDARDS TO DETERMINE THE MINIMUM WIDTH OF CROSS-WALK MARKINGS.

REV. 6-1-09: TYPICAL STOP LINE PLACEMENT NOTE REVISED.

REV. 11-1-11: REVISED PAVEMENT MARKINGS FOR LEFT TURN DETAILS.

REV. 7-24-14: REVISED CROSS-WALK TO SHOW LONGITUDINAL LINES AS PREFERRED OPTION. ADDED PAVEMENT MARKING TABLE.

REV. 10-10-16: ADDED DETAIL FOR CROSS-WALK MARKING. UPDATED ITEM NUMBERS FOR CROSS-WALK MARKING. UPDATED NOTES FOR STOP LINE PLACEMENT AND CROSS-WALK MARKING.

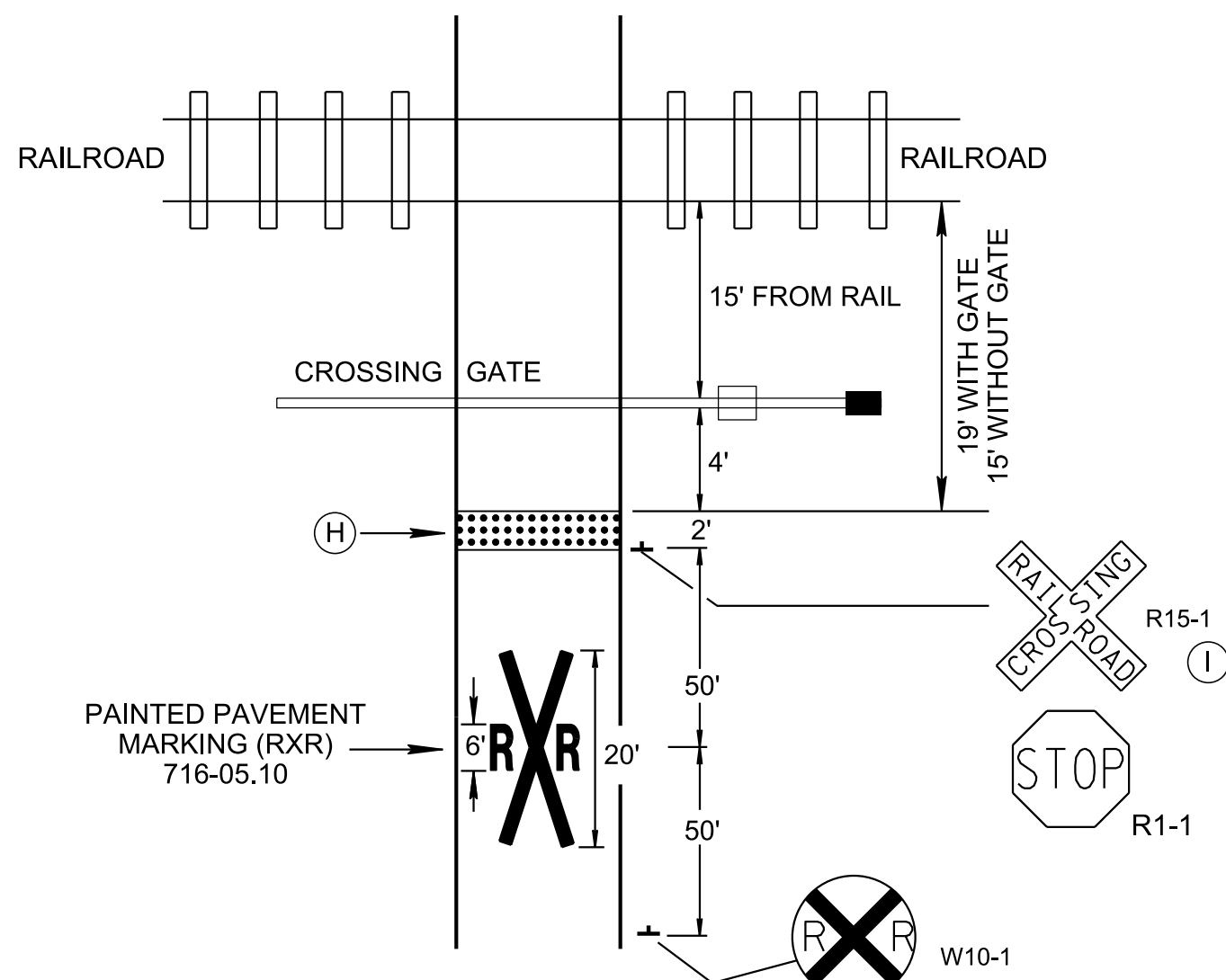
REV. 08-02-18: MODIFIED NOTE (A) ADDED ALTERNATIVE PAY ITEMS FOR PAINTED CROSS-WALK MARKINGS. ADDED NOTE (C) TO THE CROSS-WALK NOTES. REDREW SHEET.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

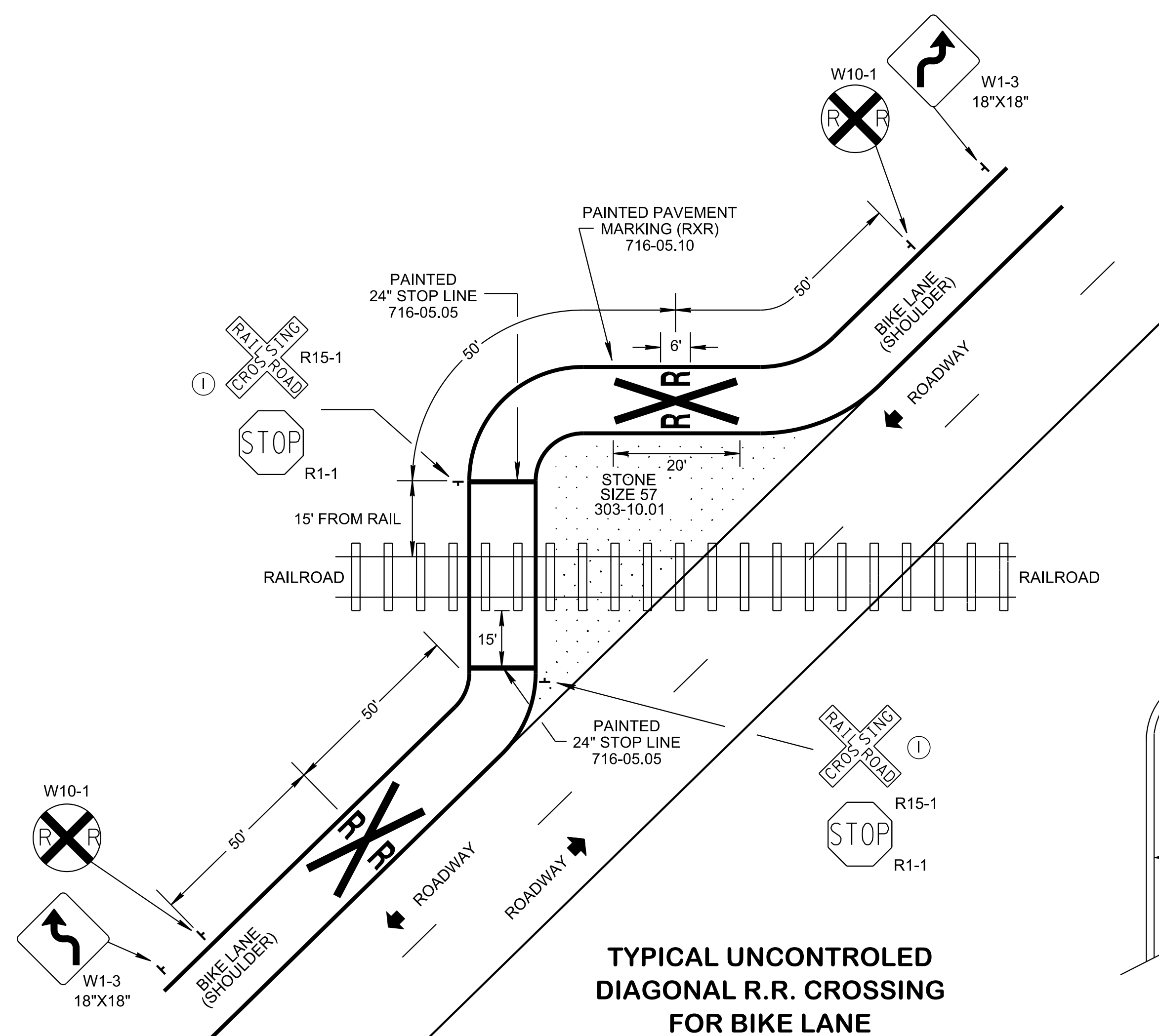
STATE OF TENNESSEE
 DEPARTMENT OF
 TRANSPORTATION

STANDARD
 INTERSECTION
 PAVEMENT
 MARKINGS

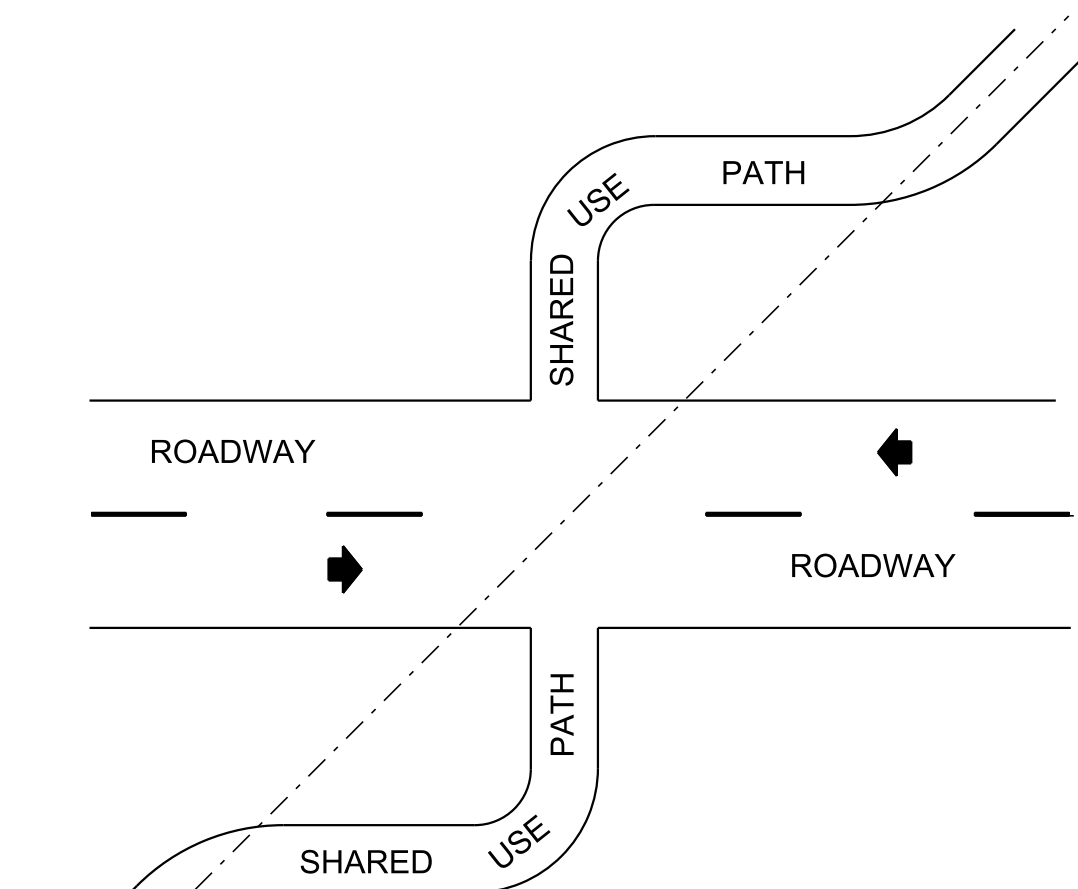
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PERPENDICULAR RAILROAD CROSSING FOR SHARED-USE PATH
 TYPICAL FOR BOTH SIDES

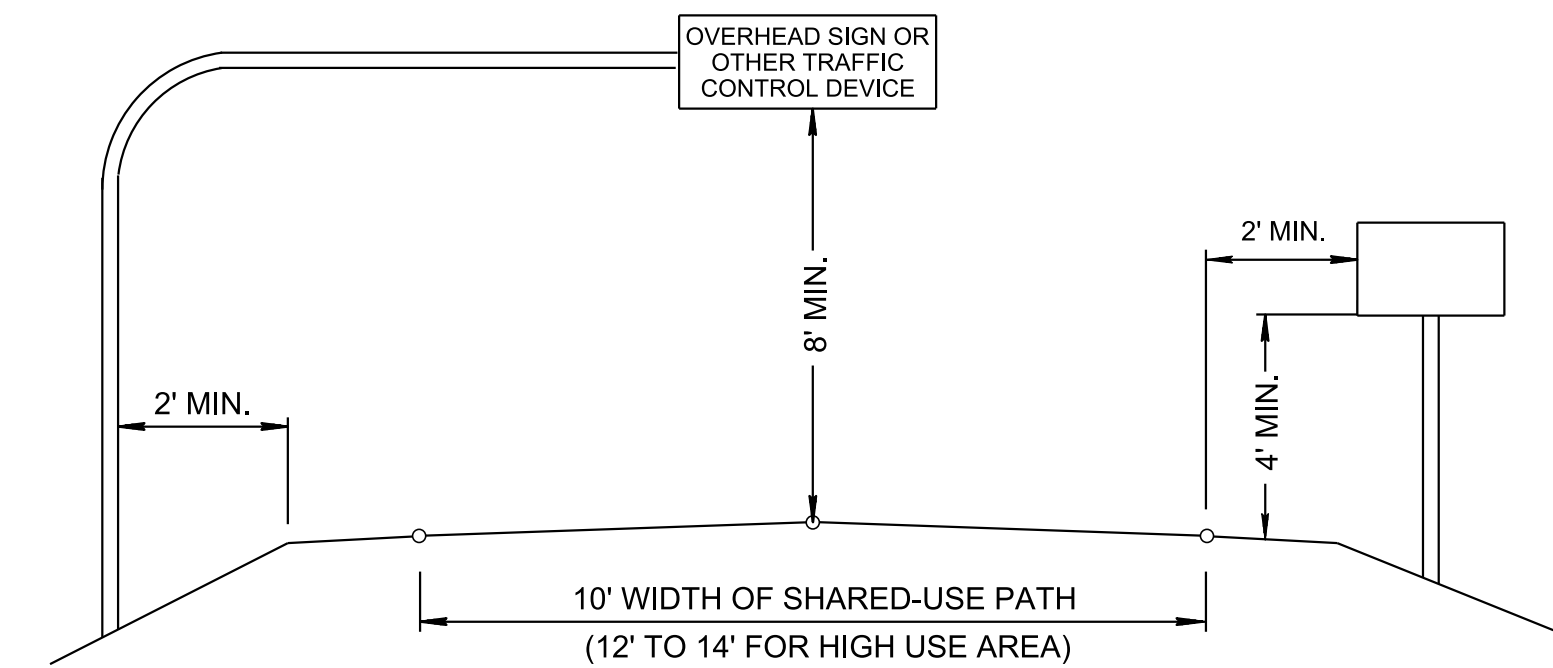


TYPICAL UNCONTROLLED DIAGONAL R.R. CROSSING FOR BIKE LANE

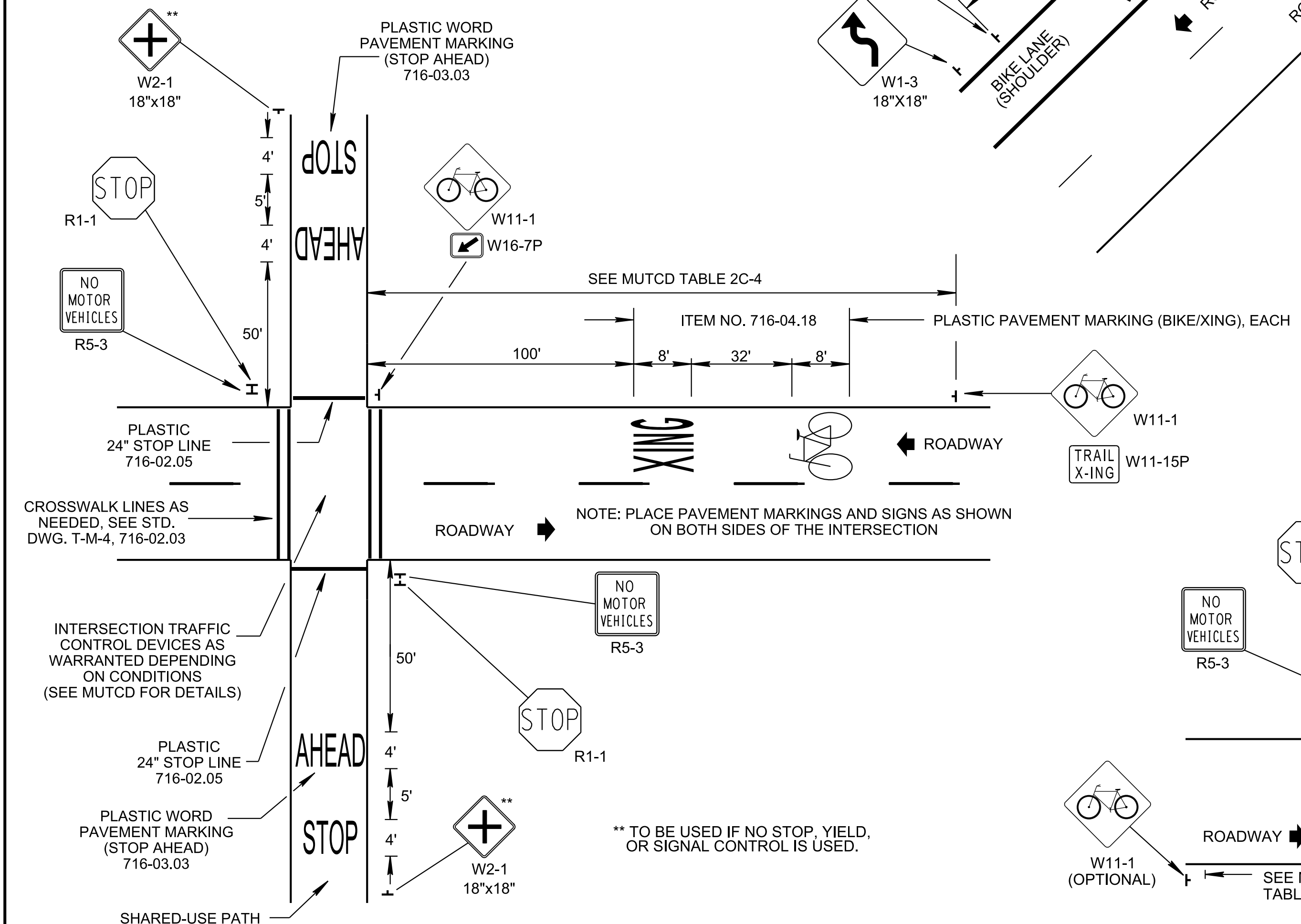


TYPICAL REDESIGN OF A DIAGONAL ROAD CROSSING

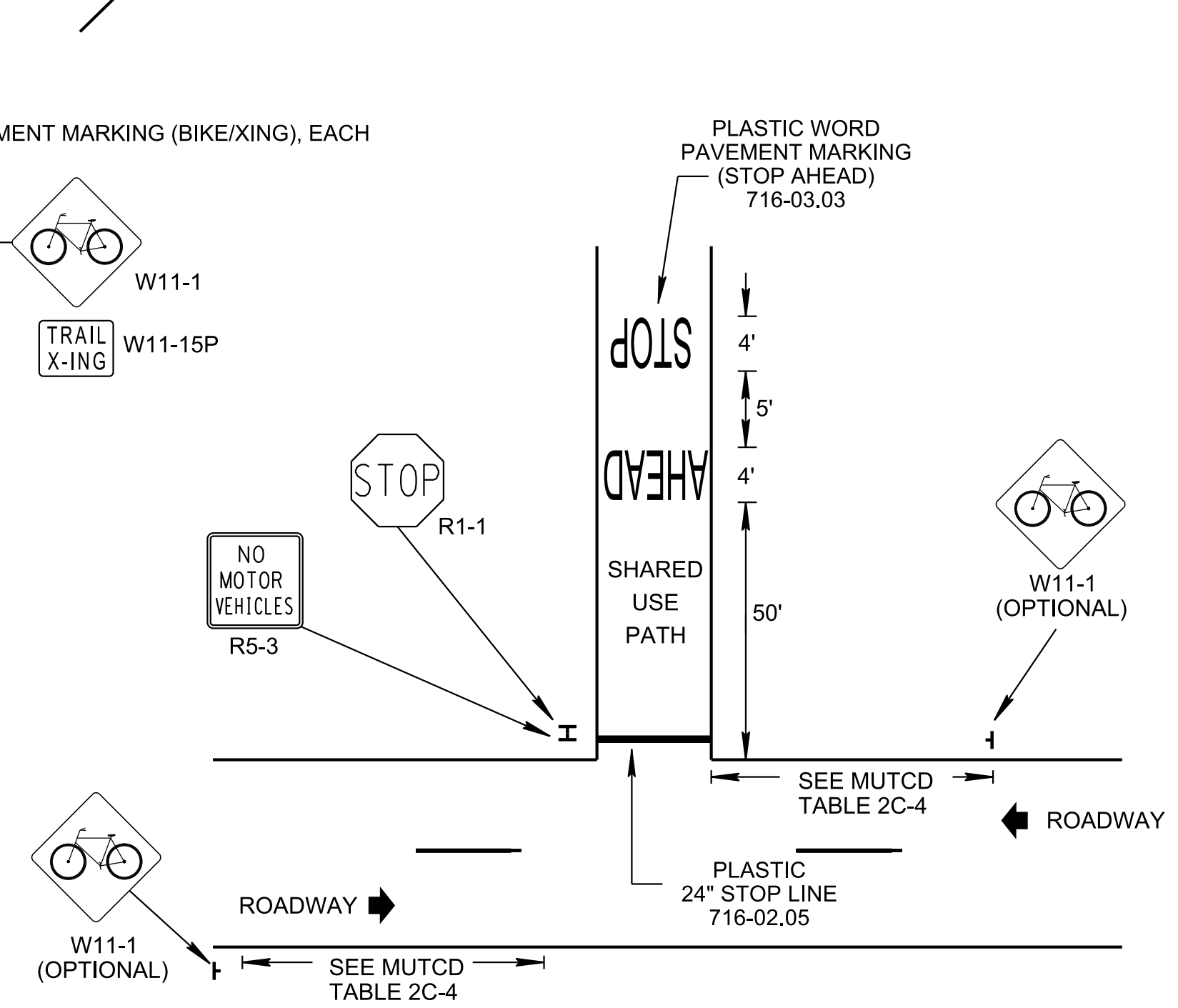
SEE BEGINNING AND END OF A DESIGNATED BICYCLE ROUTE ON A SHARED-USE PATH DETAIL FOR SIGN PLACEMENT AND PAVEMENT MARKING DETAILS.



SIGN PLACEMENT ON SHARED-USE PATHS
 (SEE RD11-TS-8 FOR TYPICAL CROSS SECTION DETAILS)



ROADWAY CROSSING FOR SHARED-USE PATH



BEGINNING AND END OF A DESIGNATED BICYCLE ROUTE ON A SHARED-USE PATH

- GENERAL NOTES**
- (A) WHEN OVERHEAD SIGNS ARE USED ON SHARED-USE PATHS, THE CLEARANCE FROM THE BOTTOM EDGE OF THE SIGN TO THE PATH SURFACE, DIRECTLY UNDER THE SIGN SHALL BE A MINIMUM OF 8 FEET.
 - (B) WHEN PLACEMENT OF STOP OR YIELD SIGNS IS CONSIDERED, PRIORITY AT SHARED-USE PATHS/ROADWAY INTERSECTION SHOULD BE ASSIGNED WITH CONSIDERATION OF THE FOLLOWING:
 1. RELATIVE SPEEDS OF SHARED-USE PATH AND ROADWAY USERS;
 2. RELATIVE VOLUMES OF SHARED-USE PATH AND ROADWAY TRAFFIC; AND
 3. RELATIVE IMPORTANCE OF SHARED-USE PATH AND ROADWAY.
 - (C) WHEN ENGINEERING JUDGMENT DETERMINES THAT THE VISIBILITY OF THE INTERSECTION IS LIMITED ON THE SHARED-USE PATH APPROACH, INTERSECTION WARNING SIGNS SHOULD BE USED. INTERSECTION WARNING SIGNS SHOULD NOT BE USED WHERE THE SHARED-USE PATH APPROACH TO THE INTERSECTION IS CONTROLLED BY A STOP SIGN, YIELD SIGN, OR A TRAFFIC CONTROL SIGNAL.
 - (D) A SOLID WHITE LINE MAY BE USED ON SHARED-USE PATHS TO SEPARATE DIFFERENT TYPES OF USERS. THE R9-7 SIGN MAY BE USED TO SUPPLEMENT THE SOLID WHITE LINE. SMALLER SIZE LETTERS AND SYMBOLS MAY BE USED ON SHARED-USE PATHS. FIXED OBJECTS ADJACENT TO SHARED-USE PATHS MAY BE MARKED WITH OBJECT MARKERS.
 - (E) THE MINIMUM SIGN SIZES FOR SHARED-USE PATHS, SHALL BE THOSE SHOWN IN TABLE 9B-1 IN MUTCD, PART 9 AND SHALL BE USED ONLY FOR SIGNS INSTALLED SPECIFICALLY FOR BICYCLE TRAFFIC APPLICATIONS. THE MINIMUM SIGN SIZES FOR BICYCLE FACILITIES SHALL NOT BE USED FOR SIGNS THAT ARE PLACED IN A LOCATION THAT WOULD HAVE ANY APPLICATION TO OTHER VEHICLES.
 - (F) SEE T-M-12 FOR OTHER SIGNING AND PAVEMENT MARKINGS.
 - (G) IF ACTIVE WARNING DEVICES ARE AT THE ROADWAY CROSSING, THEN ACTIVE DEVICES SHOULD ALSO BE AT THE BIKE LANE.
 - (H) THE TYPICAL FOR PERPENDICULAR RAILROAD CROSSING FOR SHARED-USE PATH THE DETECTABLE WARNING SURFACE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE SHARED-USE PATH AT RAILROAD GRADE CROSSINGS. ALL COST OF FURNISHING AND INSTALLATION THE DETECTABLE WARNING SURFACE SHALL BE INCLUDED IN OTHER ITEMS OF CONSTRUCTION OF THE SHARED-USE PATH.
 - (I) RAILROAD CROSS-BUCK SIGN AND SUPPORT SHALL BE INSTALLED IN ACCORDANCE WITH STD. DWG. T-S-16, REFER TO STD. DWG. T-S-16A AT PASSIVE RAILROAD GRADE CROSSINGS FOR STOP SIGN OR YIELD SIGN INSTALLATION.

REV. 11-1-11: REVISED OVERHEAD SIGN DETAIL. DELETED NOTE (E) REGARDING 4" SBYL ADDED SIGNS D11-1, M4-6, M6-1 AND M6-4. DELETED SIGNS M4-12, M7-1 AND M7-5. REASSIGNED NOTE (E) AND ADDED GENERAL NOTE (F)

REV. 6-15-12: REVISED INTERSECTION SIGNING FOR 2012 EDITION OF GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES.

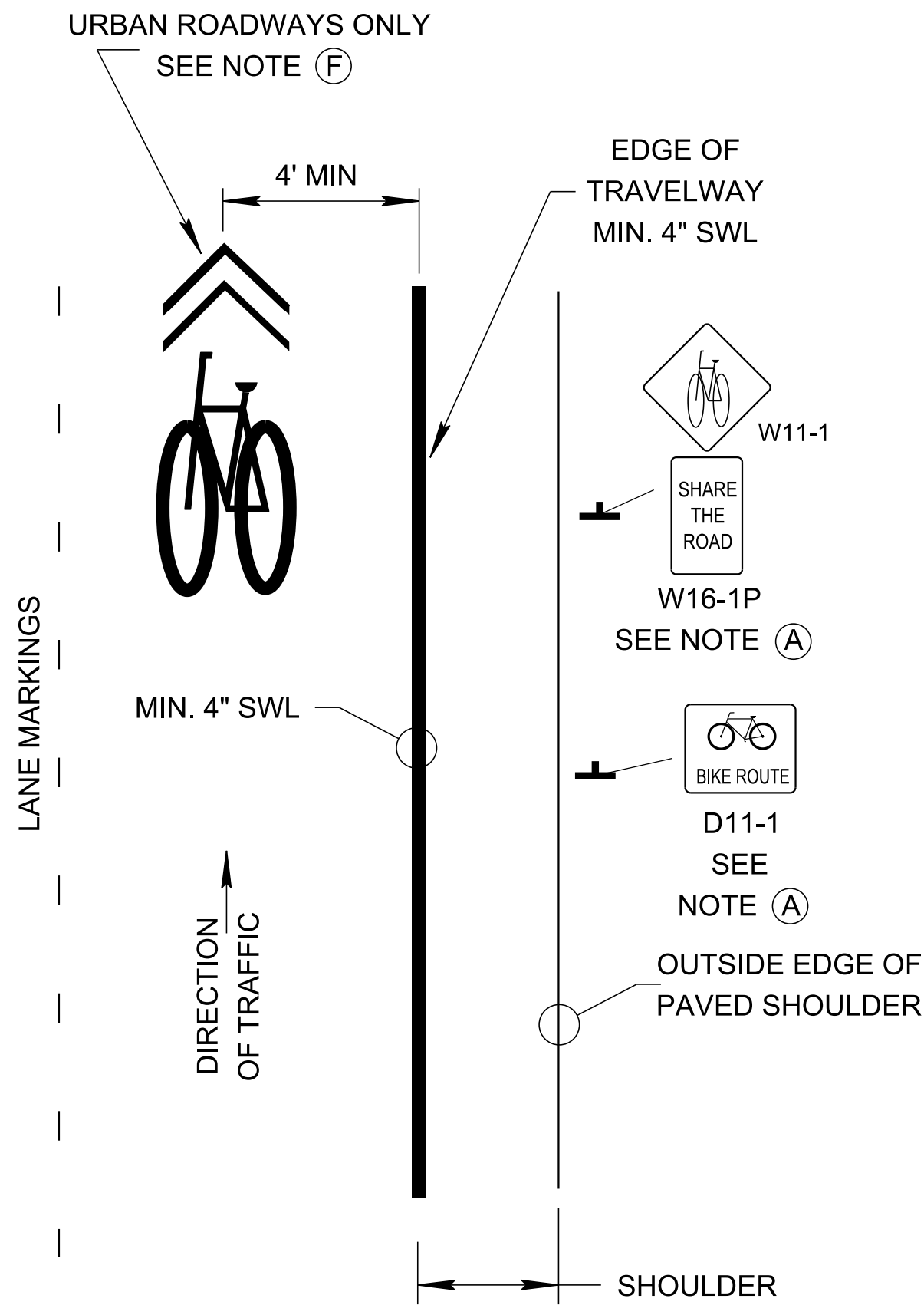
REV. 08-02-18: ADDED DIAGONAL R.R. CROSSING. CHANGED NAME OF T-M-10 TO INCLUDE "AT INTERSECTION CROSSINGS". REMOVED "BIKE ROUTE" SIGNS. UPDATED REFERENCE TO RD11-TS-8. ADDED SIGN W11-15P. ADDED GENERAL NOTE NOS. (G), (H), AND (I). REDREW SHEET.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

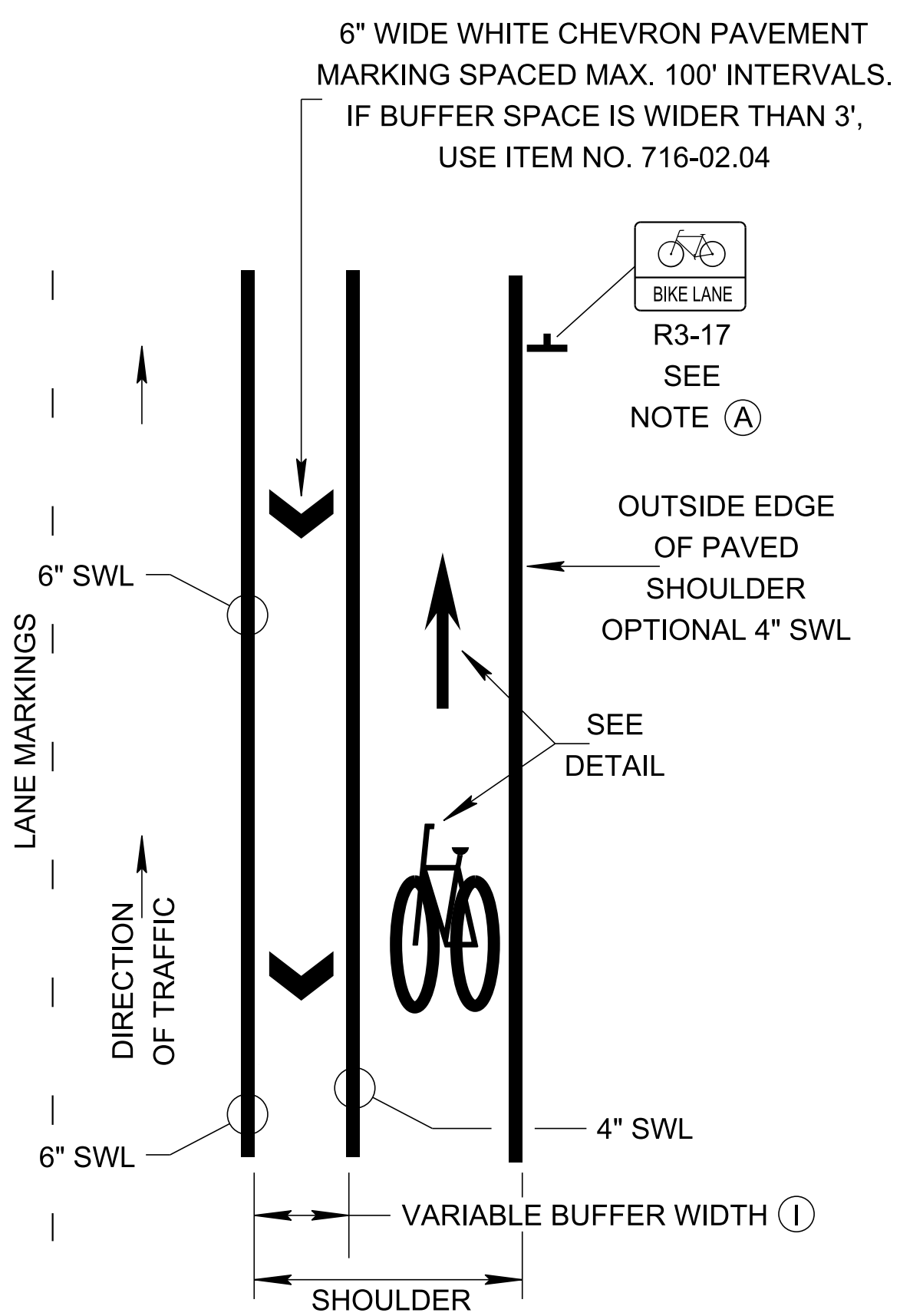
STATE OF TENNESSEE
 DEPARTMENT OF
 TRANSPORTATION

SIGNING AND PAVEMENT MARKINGS
 AT INTERSECTION CROSSINGS FOR SHARED-USE PATHS

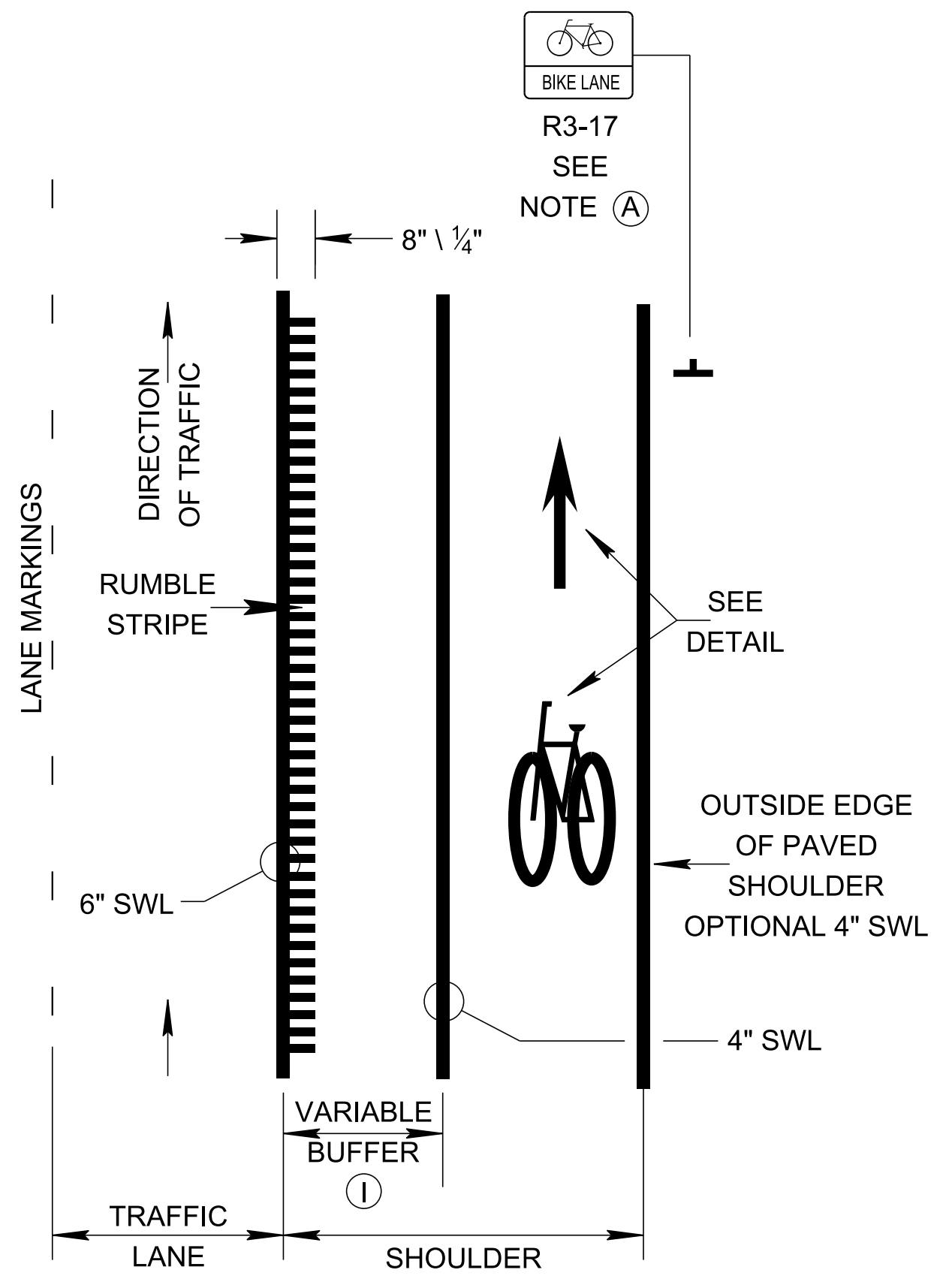
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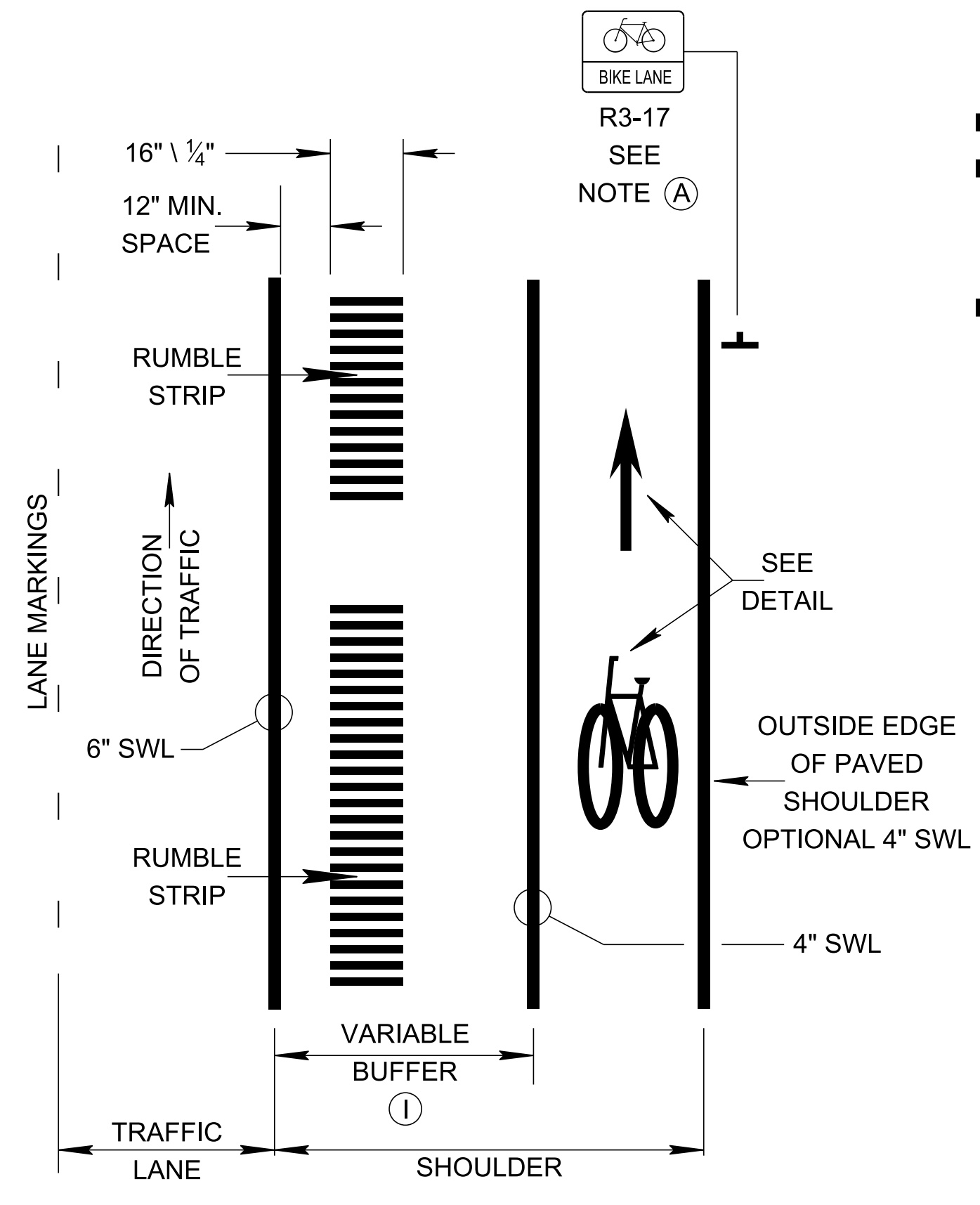
BIKE ROUTE MARKING AND SIGN DETAILS



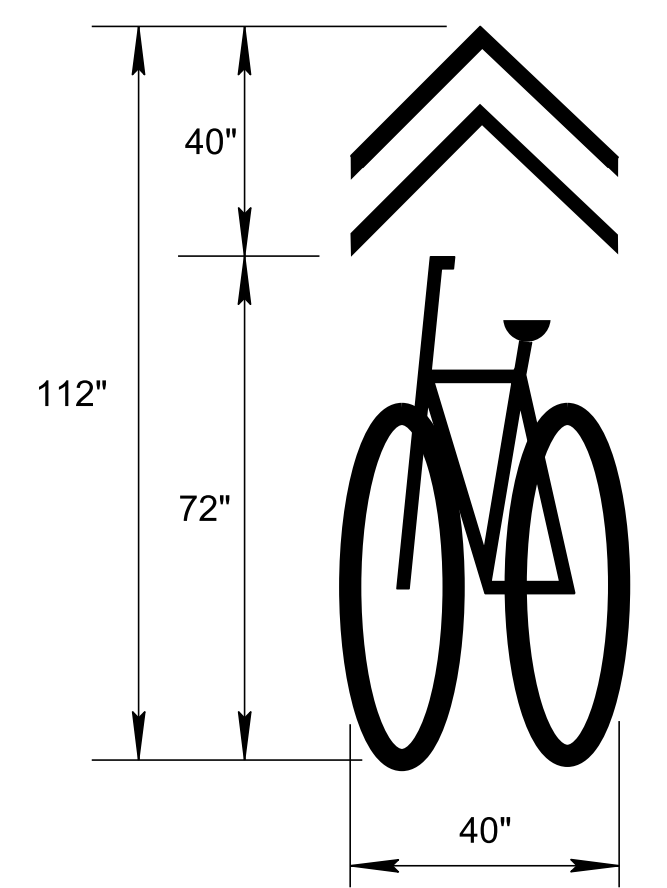
TYPICAL BIKE LANE ON MAJOR SUBURBAN ROADWAY



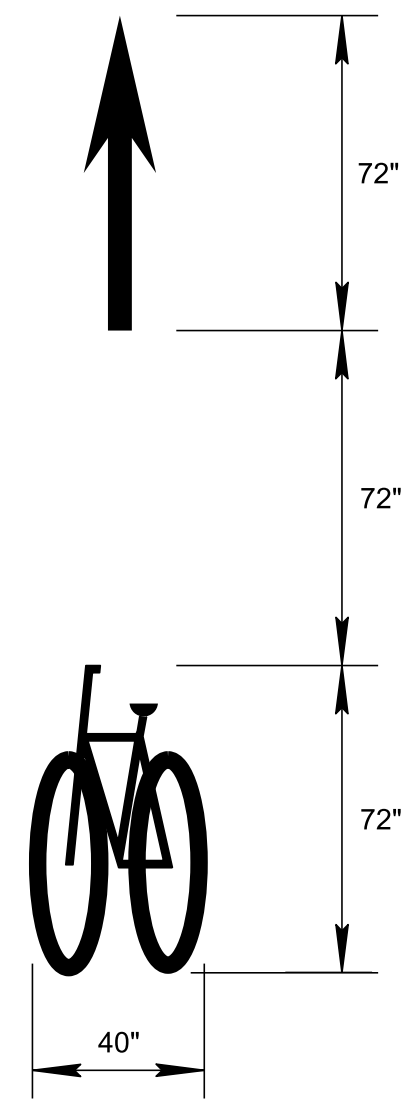
TYPICAL BIKE LANE/RUMBLE STRIPE DETAIL



TYPICAL BIKE LANE/RUMBLE STRIP DETAIL



TYPICAL PAVEMENT MARKING FOR BICYCLE ROUTES
 ITEM NO. 716-04.15
 SEE NOTE (F)



TYPICAL PAVEMENT MARKING FOR BICYCLE LANES
 ITEM NO. 716-04.13
 NOTE: SPACED AT INTERVALS NOT GREATER THAN 1000 FEET

GENERAL NOTES

- (A) SIGNS SHOULD BE PLACED APPROXIMATELY EVERY 0.25 MILE, AT EVERY TURN, AND AT ALL SIGNALIZED INTERSECTIONS. WHERE MULTIPLE SIDE ROADS/TURNS EXIST, IT IS NOT REQUIRED TO LOCATE SIGNS AT EVERY TURN; HOWEVER, SIGN SPACING SHOULD NOT EXCEED 0.25 MILE. SIGN SPACING SHOULD NOT EXCEED ONE MILE ON RURAL ROADS.
- (B) SEE T-M-15A AND T-M-16 IF RUMBLE STRIP OR RUMBLE STRIPE IS PROPOSED IN CONJUNCTION WITH BIKE ROUTE.
- (C) BIKE LANES AND BIKE ROUTES ARE NOT PERMITTED ON ACCESS CONTROLLED FACILITIES.
- (D) IF BIKE LANE IS PROPOSED ON PAVED SHOULDER, RUMBLE STRIPS SHOULD NOT BE USED WHEN THEIR INSTALLATION WOULD LEAVE A CLEAR SHOULDER PATHWAY LESS THAN 4' WIDE (OR LESS THAN 5' WIDE IF THERE IS AN OBSTRUCTION SUCH AS A CURB OR GUARDRAIL) TO THE RIGHT OF THE RUMBLE STRIP FOR BICYCLE USE.
- (E) SEE MUTCD SECTIONS 9B.04, 9B.06, 9B.18, 9B.19, 9B.20, 9C.04 AND 9C.07, AND MUTCD TABLE 9B-1 FOR ADDITIONAL SIGNING AND PAVEMENT MARKING INFORMATION.
- (F) SHARED BIKE LANE MARKINGS SHOULD NOT BE PLACED ON ROADWAYS THAT HAVE A SPEED LIMIT ABOVE 35 MPH. MARKING TO BE PLACED IMMEDIATELY AFTER AN INTERSECTION AND SPACED AT INTERVALS NOT GREATER THAN 250 FEET.
- (G) IF USED, RUMBLE STRIP TO BE PAID FOR UNDER ITEM:
 411-12.02, SCORING SHOULDERS (NON-CONTINUOUS) (16IN WIDTH), PER LINEAR MILE.
 AND RUMBLE STRIPE TO BE PAID FOR UNDER ITEM:
 411-12.03, SCORING FOR RUMBLE STRIPE (NON-CONTINUOUS) (8IN WIDTH), PER LINEAR MILE.
- (H) PAVEMENT MARKINGS FOR BICYCLE LANES OR ROUTES TO BE PAID FOR UNDER ITEMS:
 716-04.13, PLASTIC PAVEMENT MARKING (BIKELANE SYMBOL & ARROW), PER EACH.
 716-04.15, PLASTIC PAVEMENT MARKING-BIKE SYMBOL/ARROW SHARED, PER EACH.
- (I) ON MAJOR ROADWAYS APPROACHING URBAN AREAS, A BUFFERED BIKE LANE MAY BE USED, CONTACT THE TDOT BIKE COORDINATOR FOR GUIDANCE.
- (J) SEE T-M-12 THROUGH T-M-14 FOR ADDITIONAL BIKE LANE GUIDANCE.
- (K) RUMBLES SHOULD NOT TYPICALLY BE INSTALLED AT $V < 45$ MPH.

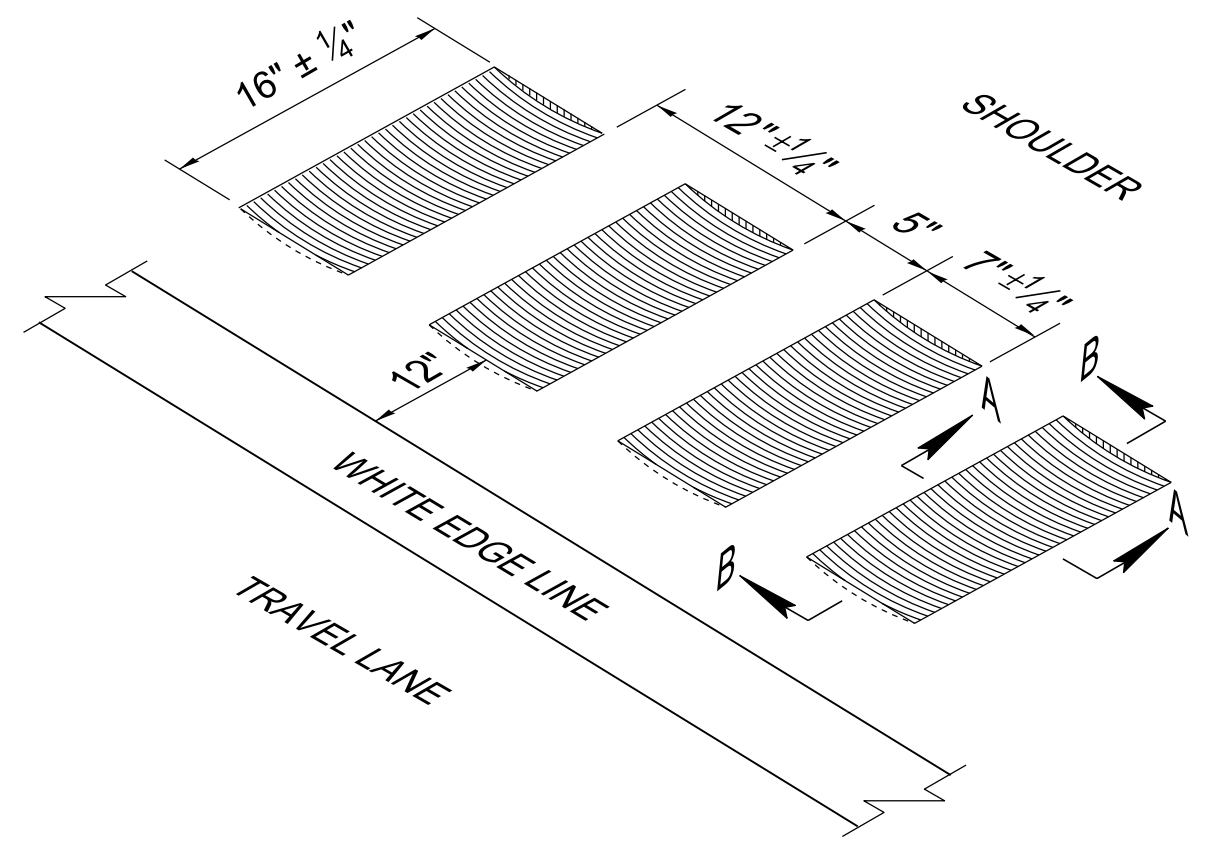
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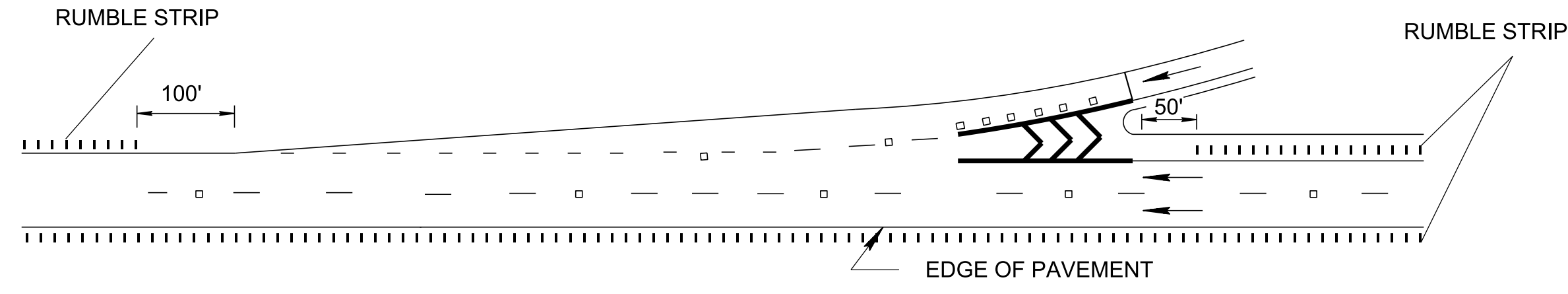
SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANE OR ROUTES

REV. 12-1-09: REMOVED RUMBLE DETAILS TO T-M-15 AND T-M-15A.
 REV. 11-1-11: REVISED GENERAL NOTE (B). ADDED GENERAL NOTE (E) AND (F). UPDATED PLAN VIEW, AND ADDED BIKE SYMBOL/ARROW SHARED LANE MARKING DETAIL.
 REV. 6-15-12: ADDED NOTE (G).
 REV. 10-24-13: ADDED NOTE (H).
 REV. 12-1-14: ADDED BUFFERED LANE DETAILS.
 REV. 10-10-16: REVISED GENERAL NOTES. ADDED DETAIL NOTES.
 REV. 08-02-18: ADDED GENERAL NOTE (K) AND REDREW SHEET.

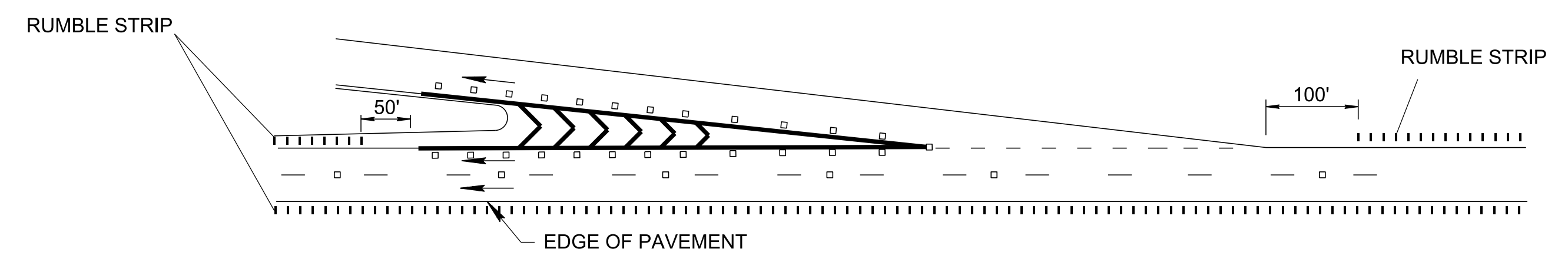
TYPICAL RUMBLE STRIP INSTALLATION DETAILS FOR INTERSTATES AND ACCESS CONTROLLED ROUTES



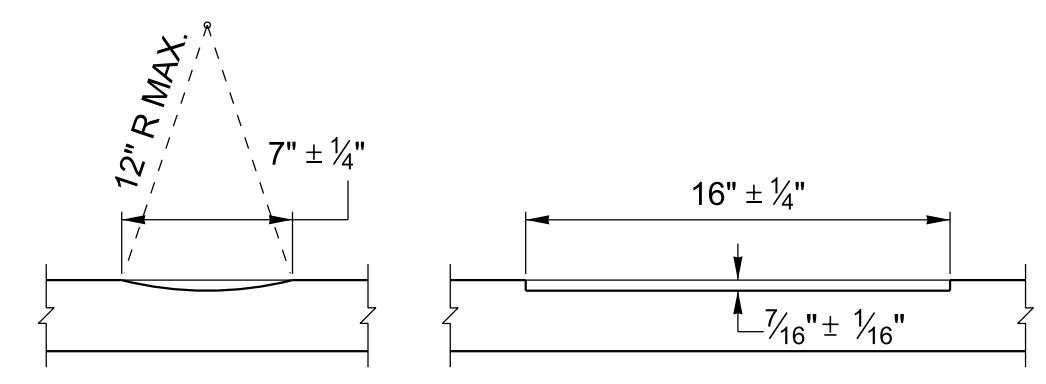
ISOMETRIC VIEW



ENTRANCE RAMP RUMBLE STRIP INSTALLATION DETAILS

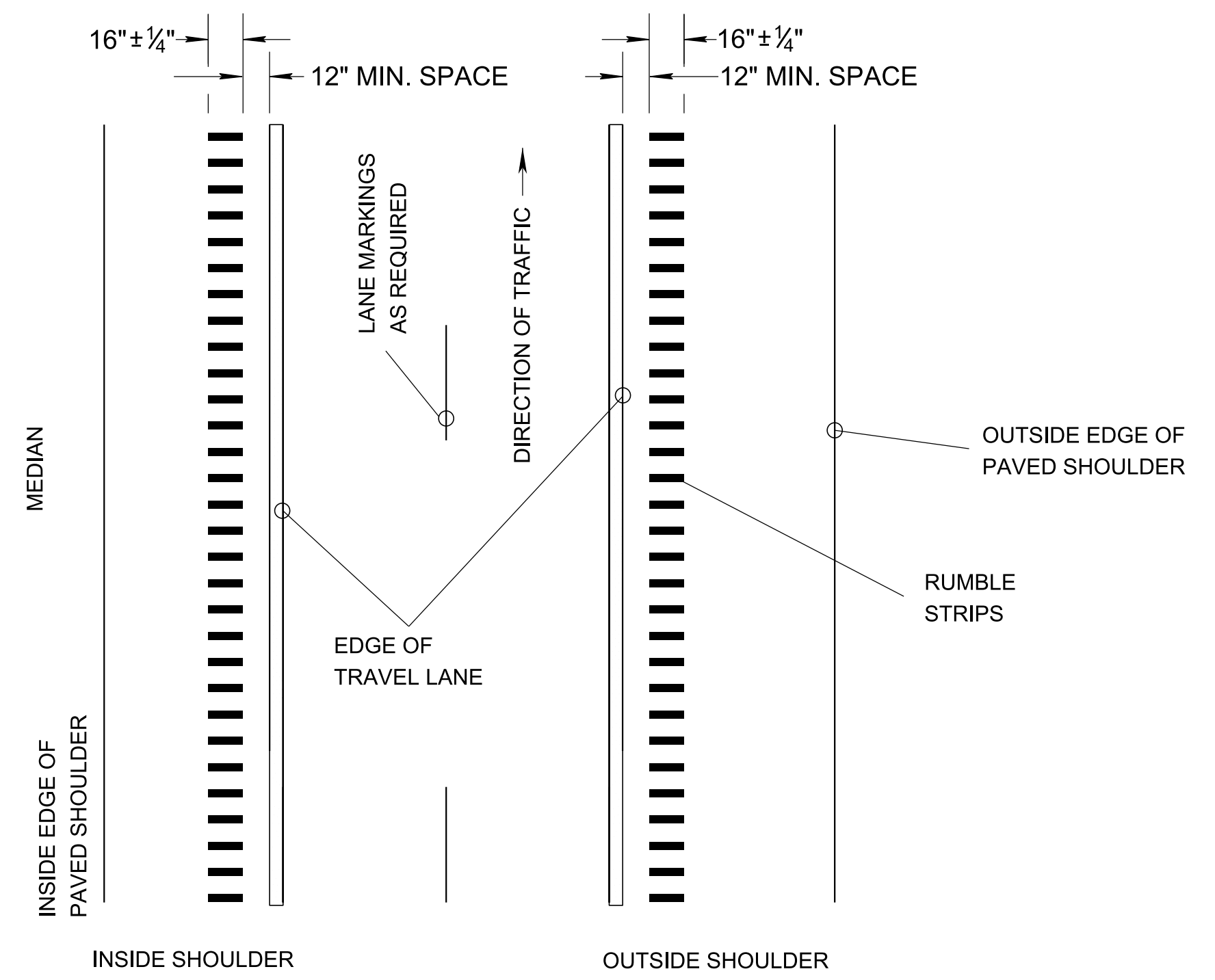


EXIT RAMP RUMBLE STRIP INSTALLATION DETAILS

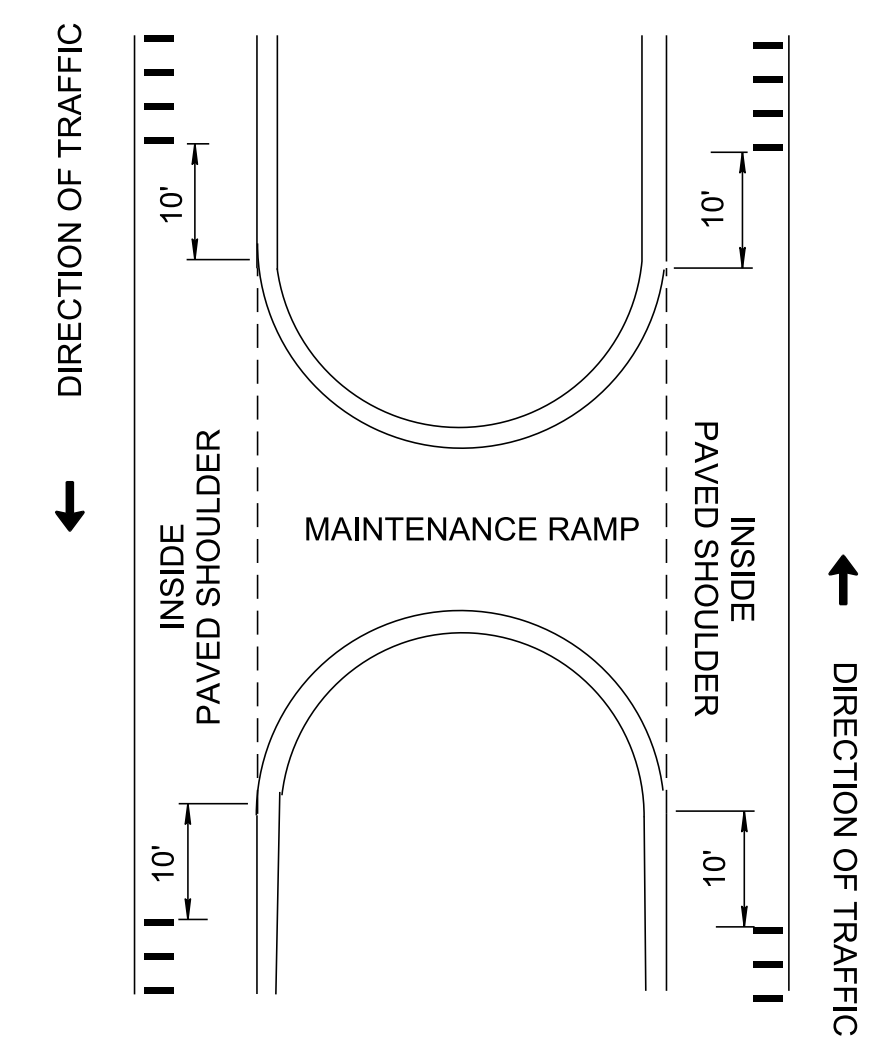


SECTION A-A SECTION B-B

TYPICAL RUMBLE STRIP INSTALLATION DETAILS



PLAN VIEW



MAINTENANCE RAMP RUMBLE STRIP INSTALLATION DETAILS

RUMBLE STRIP GENERAL NOTES	
(A)	MILLED-IN RUMBLE STRIP WITH 7" ± 1/4" GROOVES, 1/16" ± 1/16" DEEP, ON 12" ± 1/4" SPACING.
(B)	RUMBLE STRIP, ALL COST OF INSTALLATION SHALL BE INCLUDED IN ITEM NO. 411-12.01, SCORING SHOULDERS (CONTINUOUS) (16IN WIDTH), PER L.M.

MINOR REVISION – FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

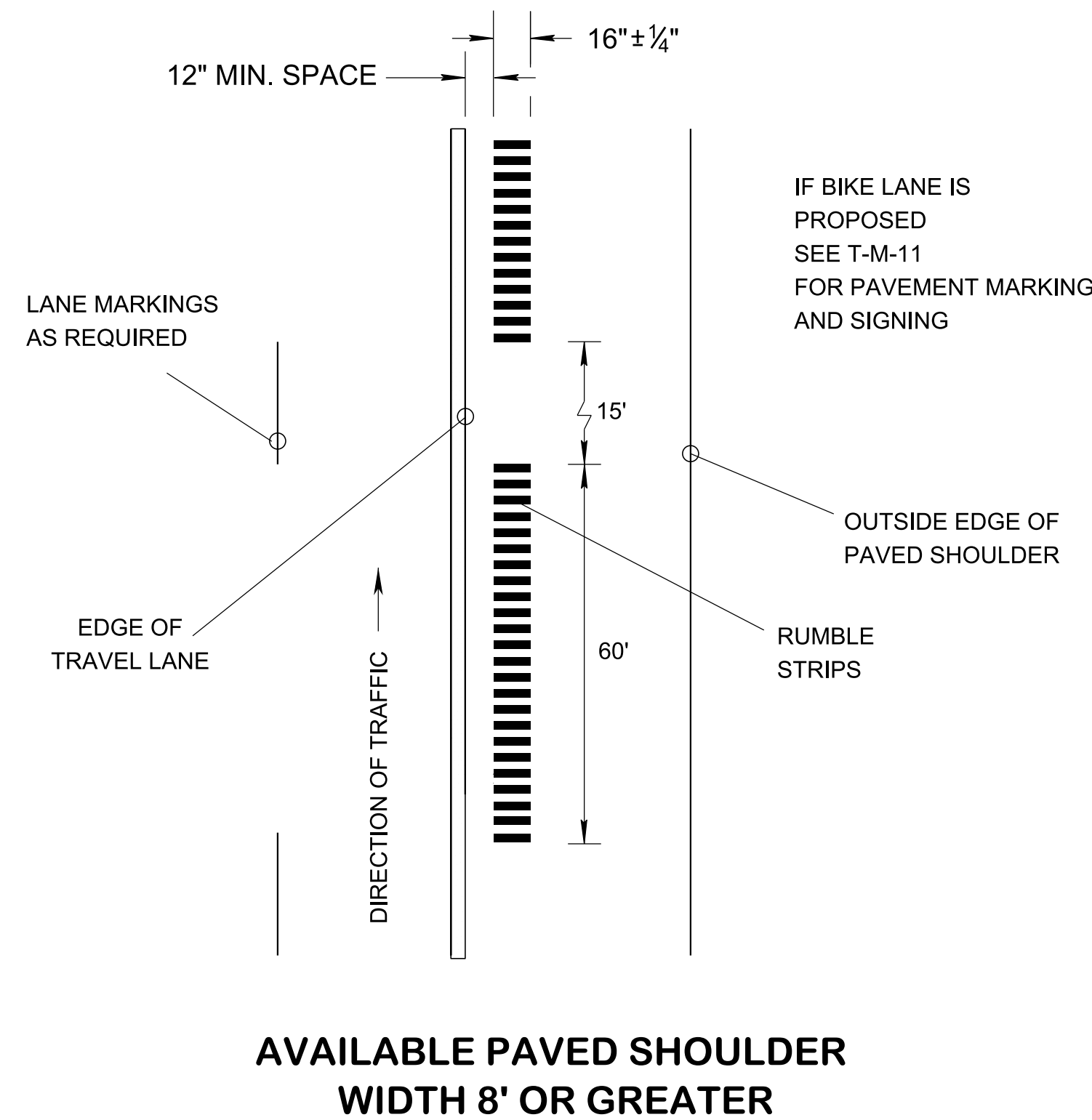
ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR INTERSTATES AND ACCESS CONTROLLED ROUTES

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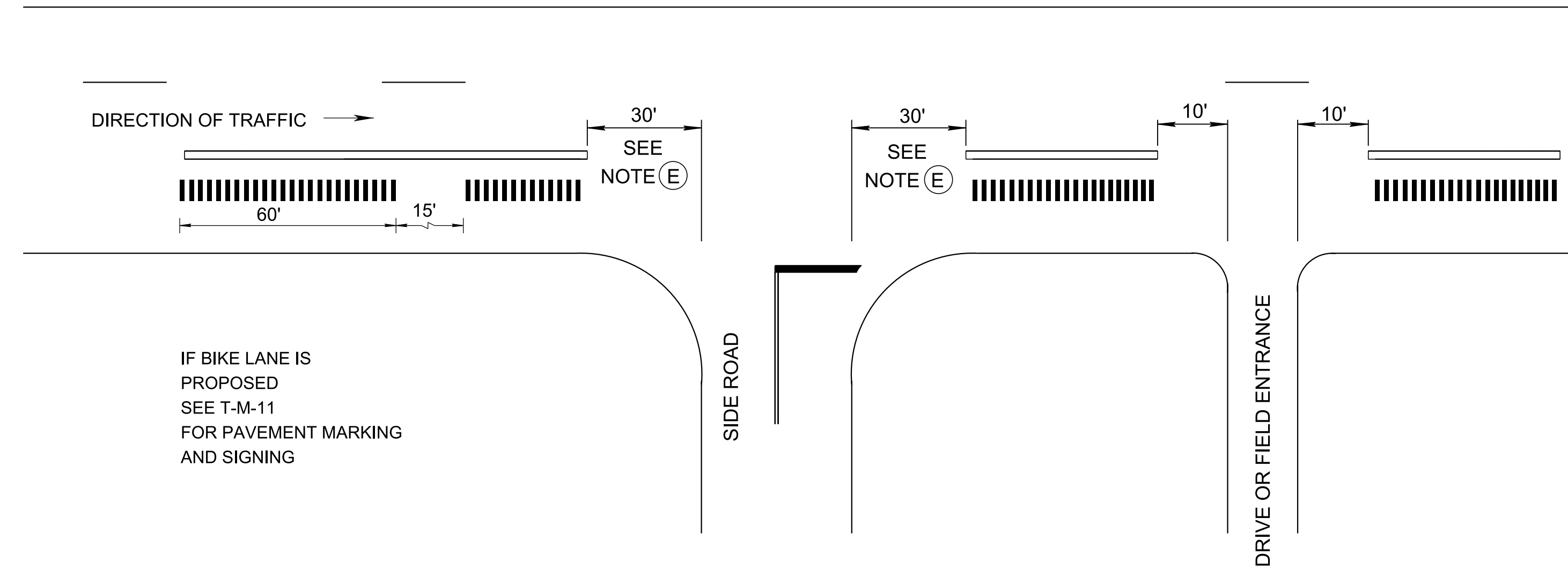
NOT TO SCALE

TYPICAL RUMBLE STRIP INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED RURAL ROUTES

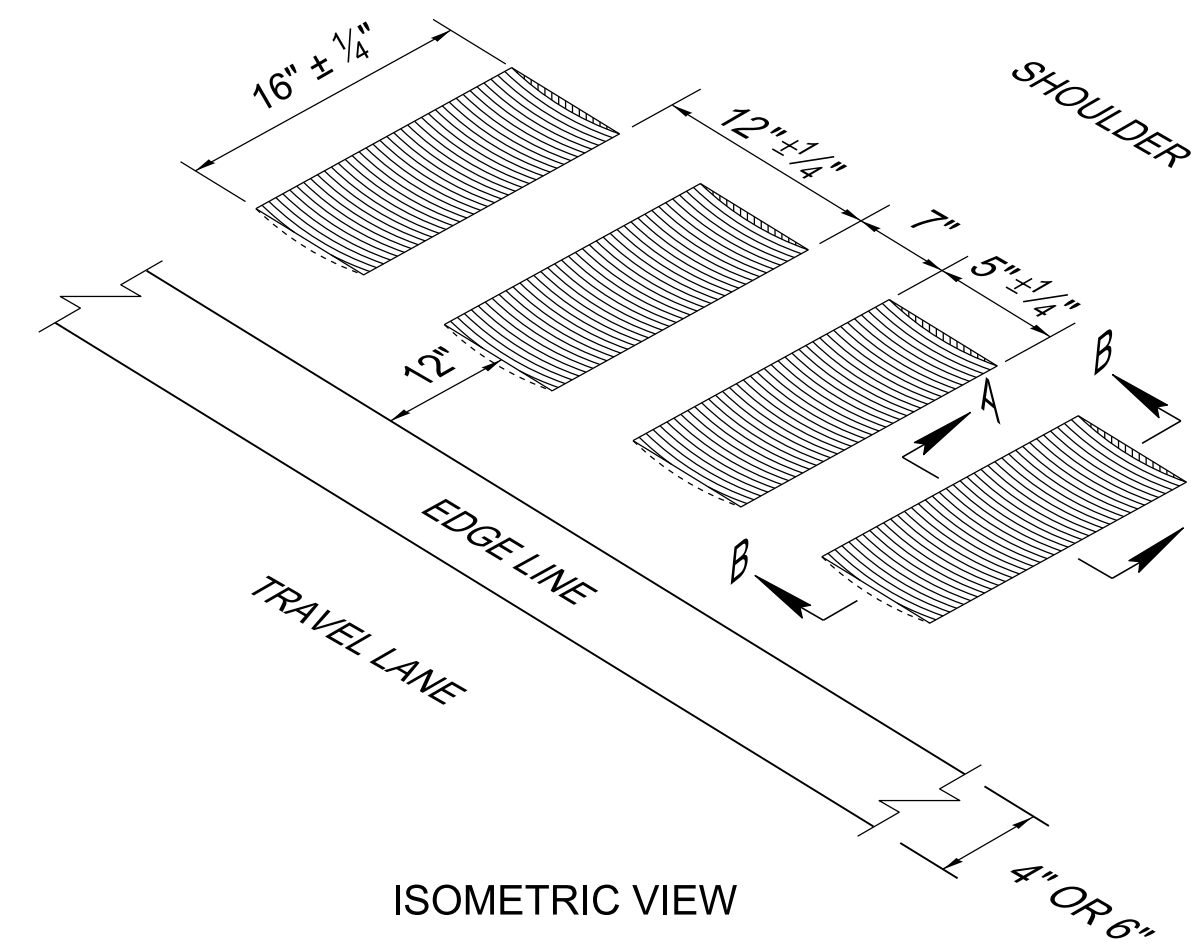
REV. 11-1-11: ADDED BIKE SYMBOL/
ARROW SHARED LANE MARKINGS DETAILS
AND ADDED GENERAL NOTE (H) AND (I).
REV. 1-30-15: REVISED RUMBLE STRIP
SPACING.
REV. 08-02-18: REVISED GENERAL NOTES.
ADJUSTED SHEET NAME. REDREW SHEET.



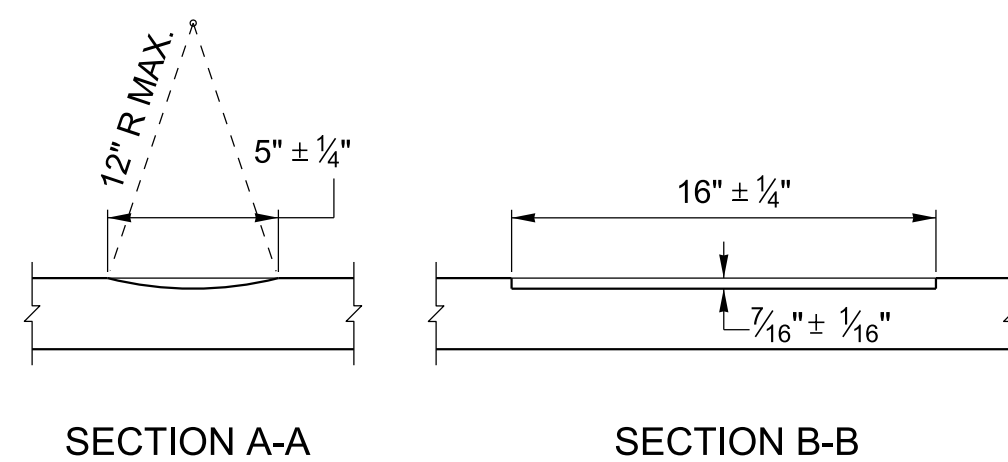
AVAILABLE PAVED SHOULDER
WIDTH 8' OR GREATER



SIDE ROAD AND DRIVEWAY
RUMBLE STRIP INSTALLATION DETAILS



ISOMETRIC VIEW



TYPICAL RUMBLE STRIP INSTALLATION DETAILS

RUMBLE STRIP GENERAL NOTES

- (A) WHEN RUMBLE STRIPS ARE USED ON NON-ACCESS CONTROLLED FACILITIES, THEY SHOULD BE DISCONTINUED IN ADVANCE OF DRIVEWAYS, INTERSECTIONS, AND MEDIAN OPENINGS.
- (B) MILLED-IN RUMBLE STRIP WITH $5'' \pm 1/4''$ GROOVES, $7/16'' \pm 1/16''$ DEEP, ON $12'' \pm 1/4''$ SPACING.
- (C) A 15' LONG GAP BETWEEN 60' LONG SECTIONS OF RUMBLE STRIPS IS REQUIRED TO ACCOMMODATE BICYCLES.
- (D) ON NON-ACCESS CONTROLLED ROUTES WITH A MEDIAN AND/OR INSIDE SHOULDERS, CONTINUOUS RUMBLE STRIPS SHOULD BE PLACED IN ACCORDANCE WITH STD. DWG. T-M-15. RUMBLE STRIPS, ALL COST OF INSTALLATION SHALL BE INCLUDED IN ITEM NO. 411-12.01 SCORING SHOULDERS (CONTINUOUS) (16IN WIDTH) PER L.M.
- (E) BREAKS SHALL BE MADE AT SIDE ROADS AND MEDIAN OPENINGS. BREAKS SHALL BEGIN 10' PRIOR TO OPENING.
- (F) WHEN THE SIDE ROAD RADIUS IS GREATER THAN 30', RUMBLE STRIP APPLICATION SHOULD BE DISCONTINUED 50' IN ADVANCE OF THE INTERSECTION.
- (G) RUMBLE STRIPS SHOULD ONLY BE PLACED ON PAVED SHOULDERS THAT ARE GREATER THAN OR EQUAL TO 8' WIDE. USE RUMBLE STRIP ON ROADWAYS WITH PAVED SHOULDER WIDTH LESS THAN 8'.
- (H) RUMBLE STRIP, ALL COST OF INSTALLATION SHALL BE INCLUDED IN ITEM NO. 411-12.02 SCORING SHOULDERS (NON-CONTINUOUS) (16IN WIDTH) PER L.M.
- (I) RUMBLES SHOULD NOT TYPICALLY BE INSTALLED AT DESIGN SPEED < 45 MPH.

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DEPARTMENT OF
TRANSPORTATION

ASPHALT SHOULDER
RUMBLE STRIP
INSTALLATION DETAILS FOR
NON-ACCESS CONTROLLED
RURAL ROUTES

12-01-09

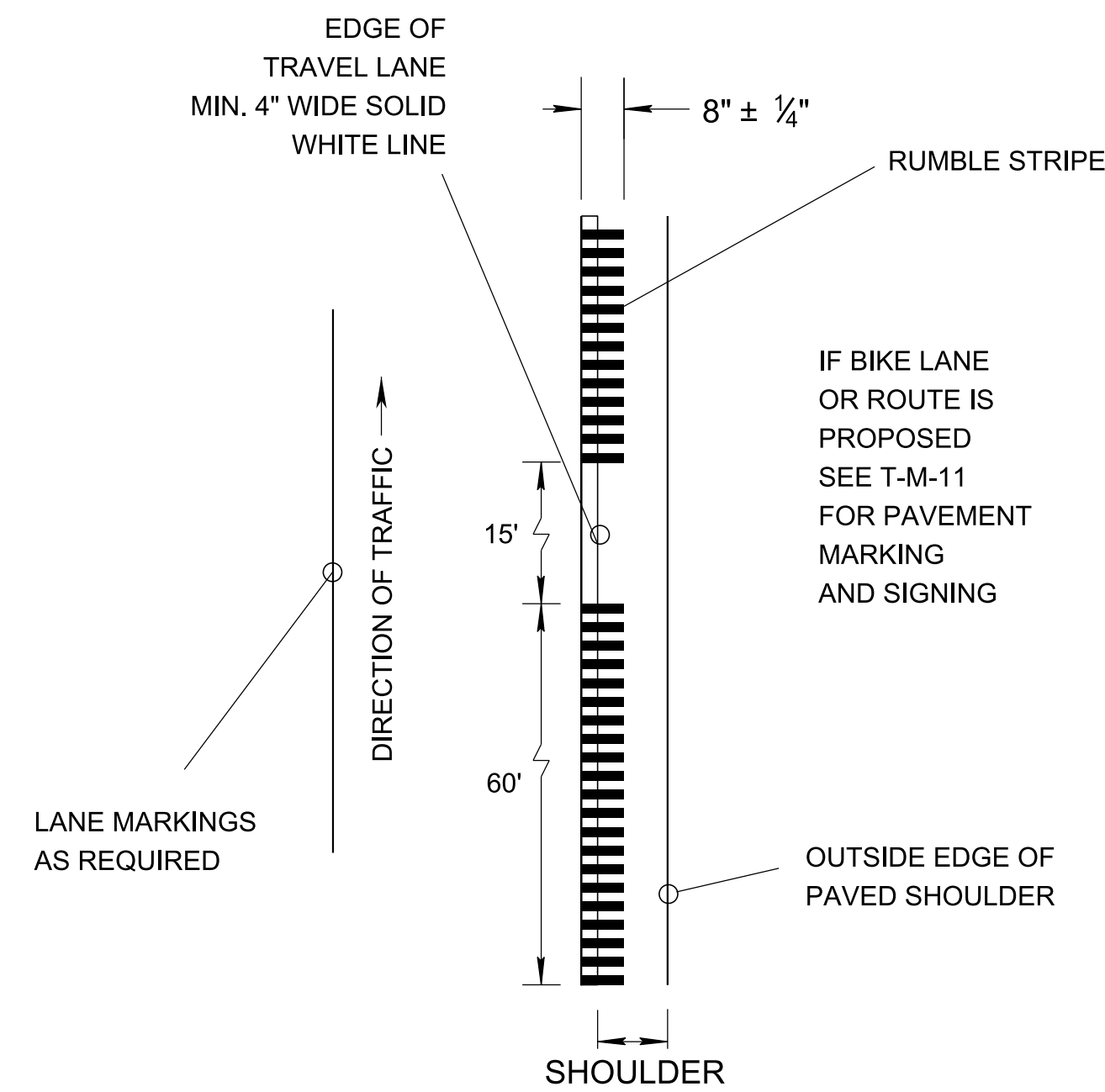
T-M-15A

TYPICAL RUMBLE STRIPE INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED RURAL ROUTES

REV. 11-1-11: CHANGED GENERAL NOTES (E), (F), AND (G). DELETED T-M-11A. ADDED BIKE SYMBOL/ARROW SHARED LANE MARKING DETAILS AND ADDED GENERAL NOTE (H) AND (I).

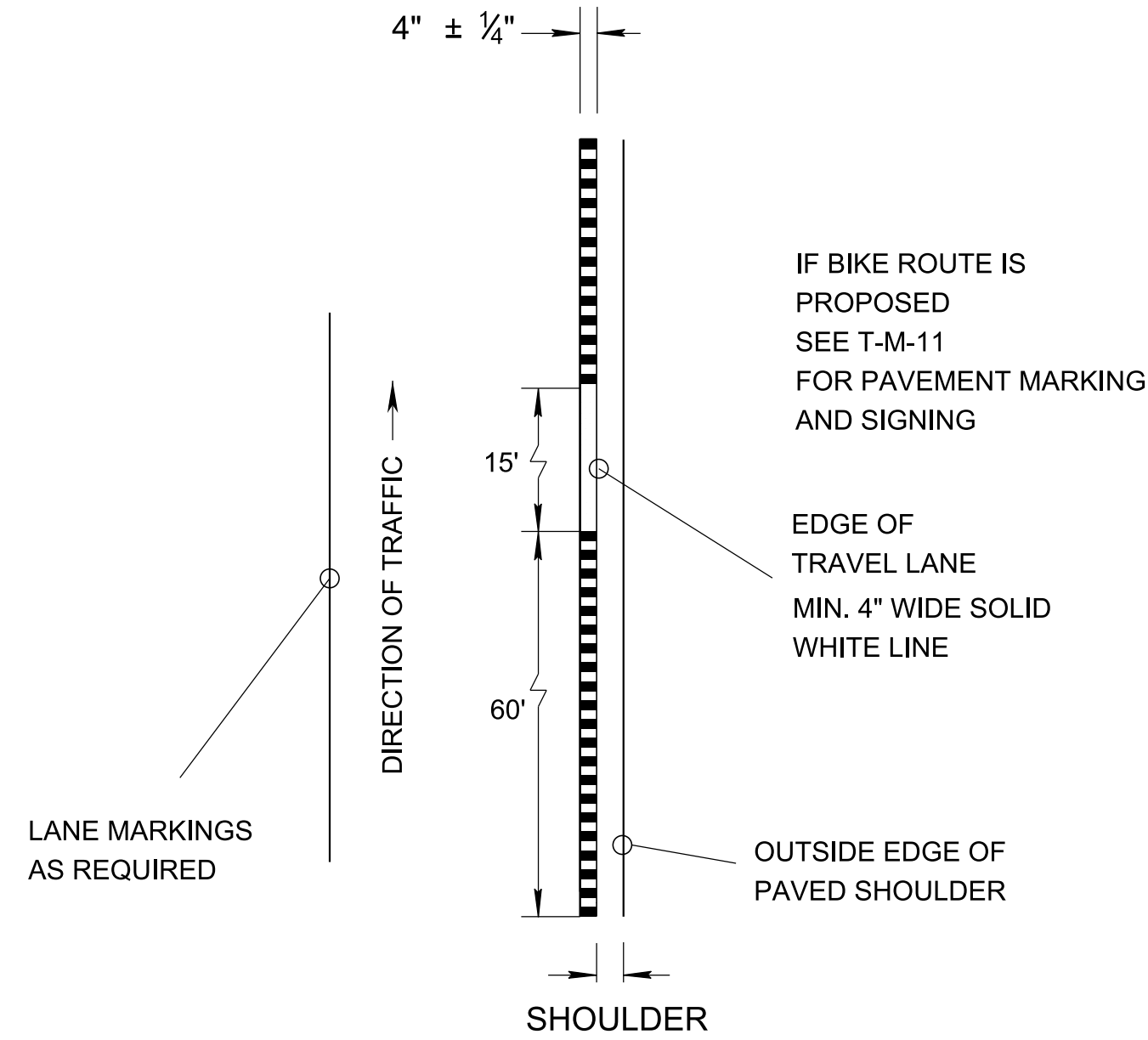
REV. 12-1-14: REVISED RUMBLE STRIPE SPACING ADDED REFERENCE TO T-M-11.

REV. 08-02-18: CHANGED THE SHOULDER WIDTH FROM " 2' OR GREATER " TO " 2' - 8' " FOR THE 8" WIDE RUMBLE STRIPE. ADDED PAVEMENT MARKING PAY ITEM NUMBERS TO NOTE (F). ADDED NOTE (H), (I), AND (J). REDREW SHEET.



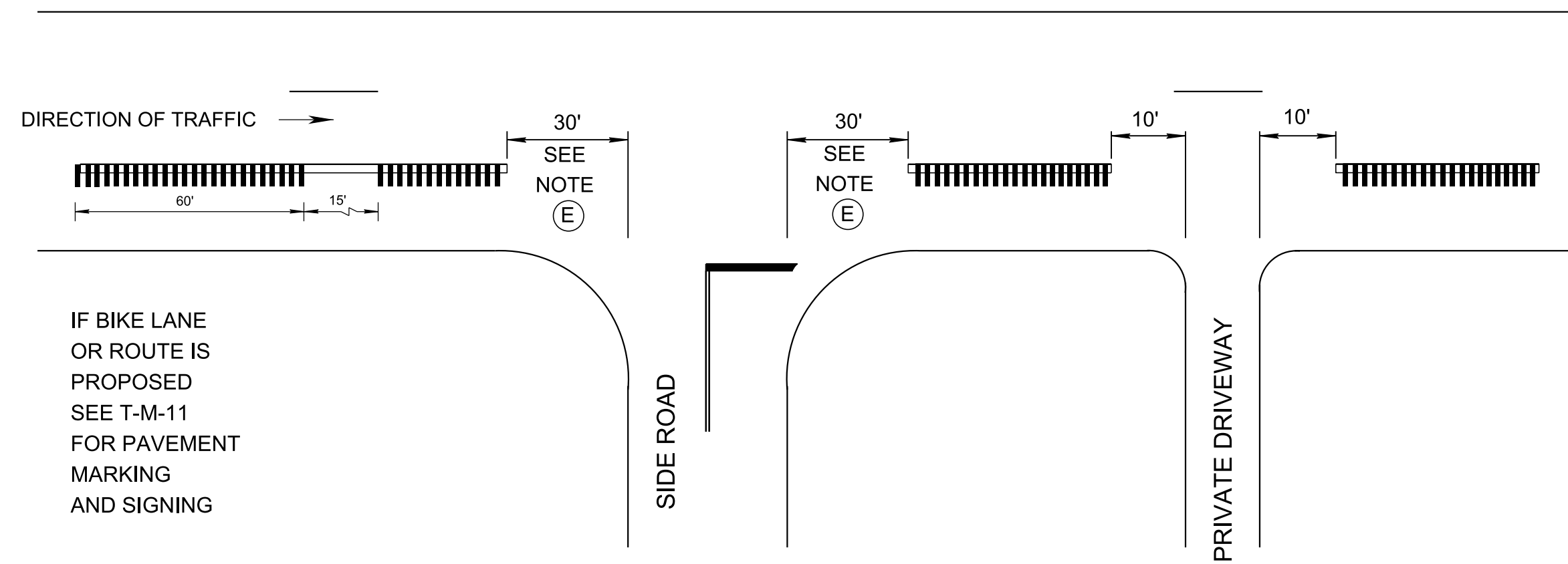
AVAILABLE PAVED SHOULDER WIDTH 2' - 8'

EXISTING PAVED SHOULDER MAY ACCOMMODATE BIKE LANE ON SHOULDER 4' OR WIDER. SEE TDOT ROADWAY DESIGN GUIDELINES AND STD. DWG. T-M-11.

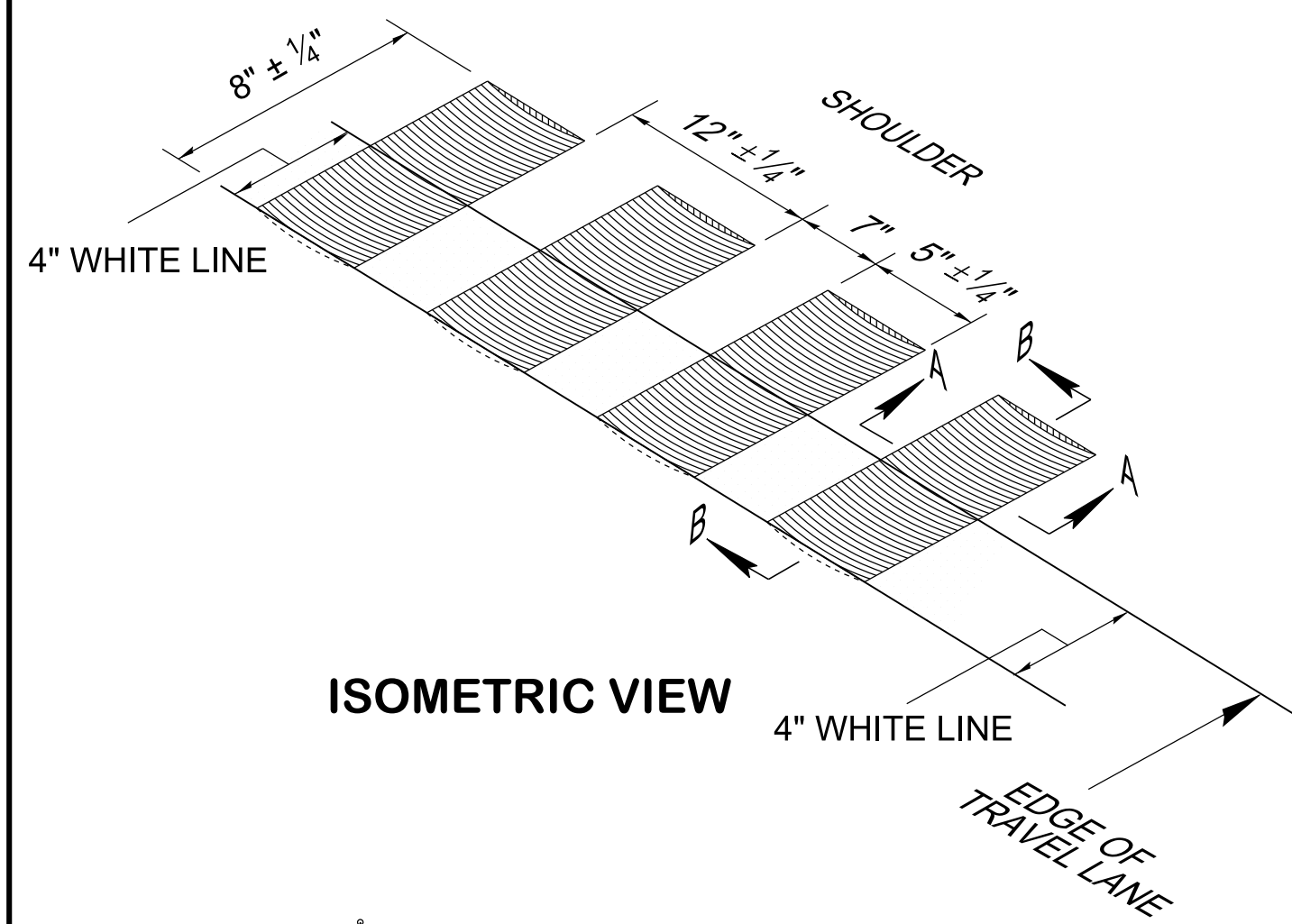


AVAILABLE PAVED SHOULDER WIDTH 0' - 2'

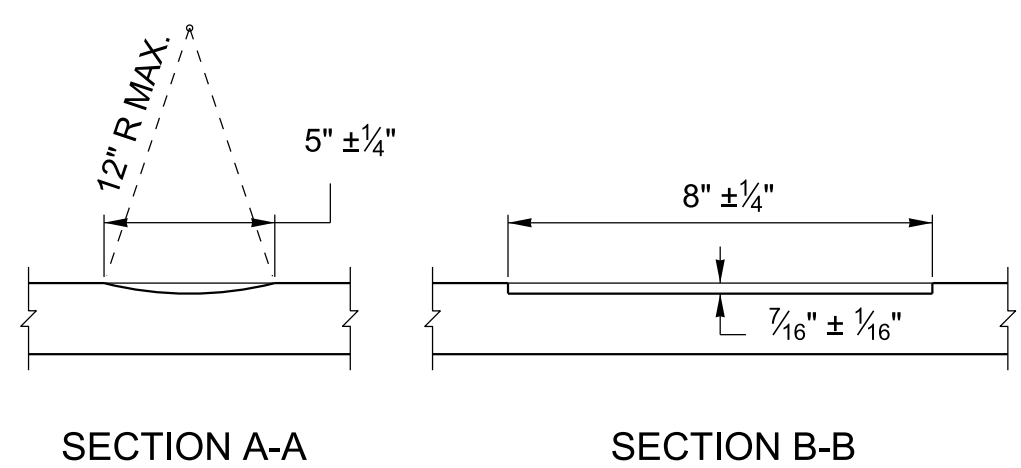
EXISTING ROADWAY MAY ACCOMMODATE BIKE ROUTE IF POSTED SPEED IS JUSTIFIED. SEE TDOT ROADWAY DESIGN GUIDELINES AND STD. DWG. T-M-11.



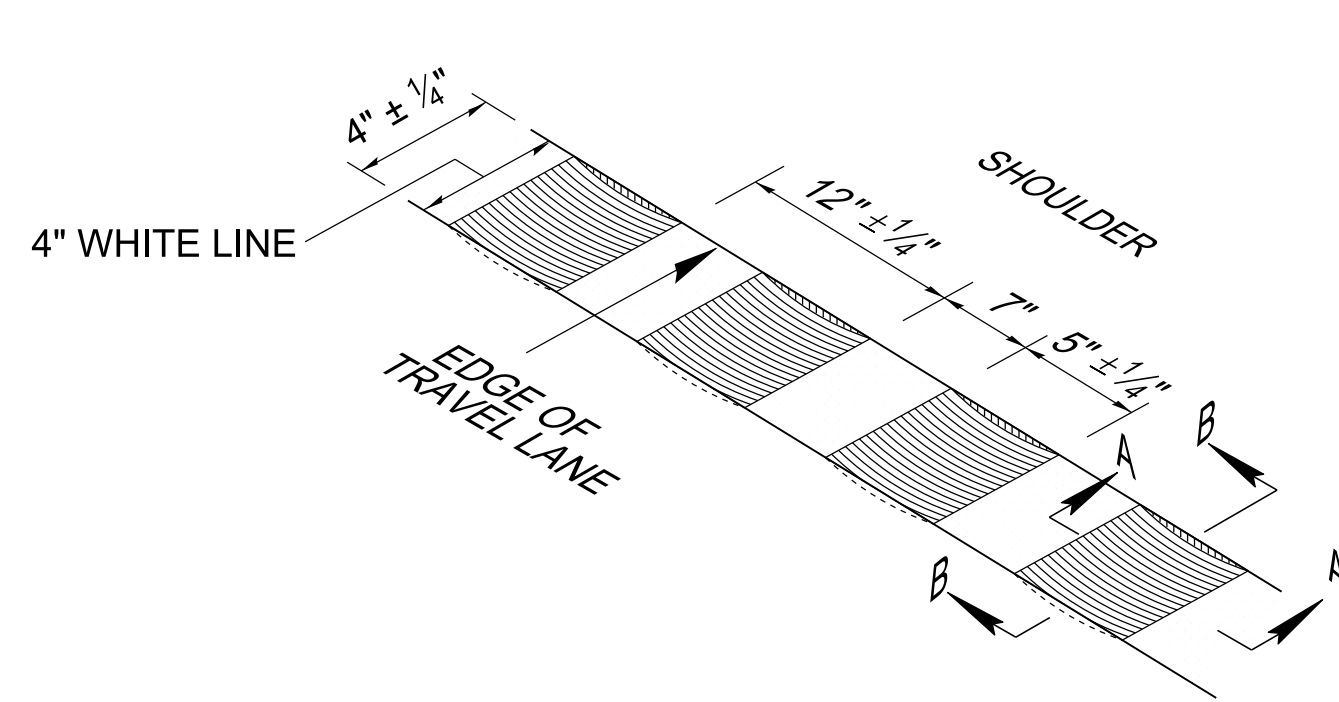
SIDE ROAD AND DRIVEWAY RUMBLE STRIPE INSTALLATION DETAILS



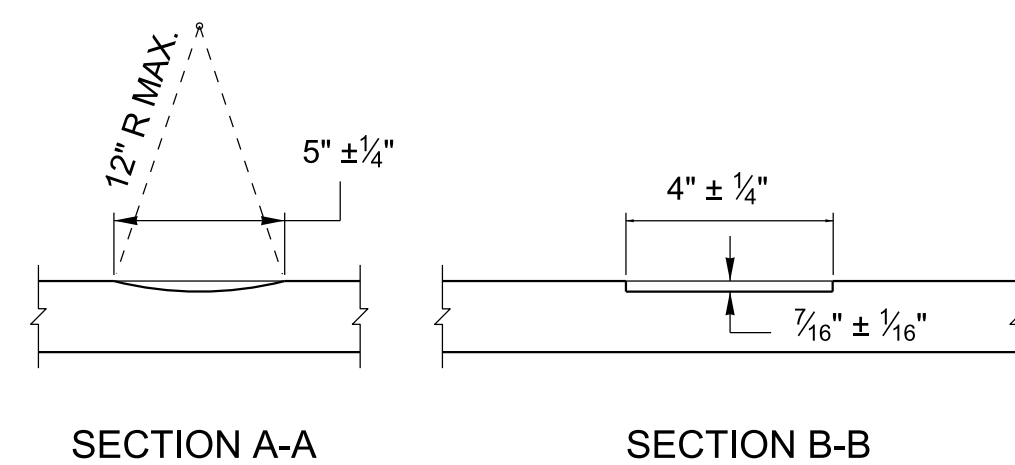
ISOMETRIC VIEW



TYPICAL 8" WIDE RUMBLE STRIPE INSTALLATION



ISOMETRIC VIEW



TYPICAL 4" WIDE RUMBLE STRIPE INSTALLATION

NOTE: 4" WIDE RUMBLE STRIPE IS NOT A PREFERRED APPLICATION. IT SHOULD BE USED IN LOCATIONS WHERE NO SHOULDER IS AVAILABLE AND RUMBLE STRIPE IS REQUIRED FOR A SAFETY UPGRADE.

RUMBLE STRIPE GENERAL NOTES

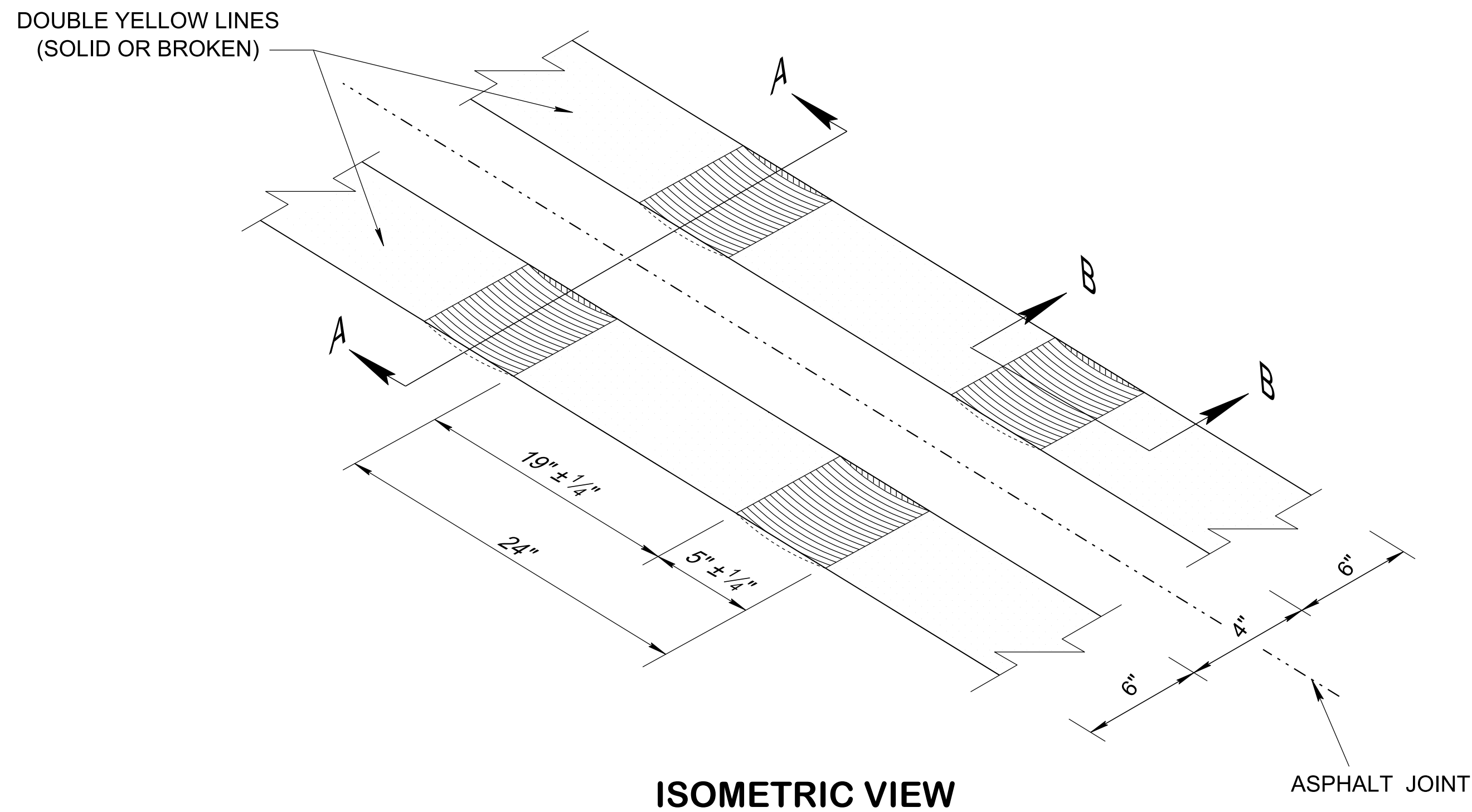
- (A) WHEN RUMBLE STRIPES ARE USED ON NON-ACCESS CONTROLLED FACILITIES, THEY SHOULD BE DISCONTINUED IN ADVANCE OF DRIVEWAYS, INTERSECTIONS, AND MEDIAN OPENINGS.
 - (B) MILLED-IN RUMBLE STRIPE WITH 5" ± 1/4" GROOVES, 7/16" ± 1/16" DEEP, ON 12" ± 1/4" SPACING.
 - (C) WHEN RUMBLE STRIPES ARE INSTALLED ON ACCESS CONTROLLED ROUTES, THE RUMBLE STRIPE IS TO BE INSTALLED CONTINUOUSLY WITHOUT THE 15' GAP. RUMBLE STRIPE WIDTH SHALL BE 16" WIDE AS DETAILED ON STD. DWG. T-M-15.
 - (D) A 15' LONG GAP BETWEEN 60' LONG SECTIONS OF RUMBLE STRIPES ARE REQUIRED TO ACCOMMODATE BICYCLES.
 - (E) WHEN THE SIDE ROAD RADIUS IS GREATER THAN 30', RUMBLE STRIPE APPLICATION SHOULD BE DISCONTINUED 50' IN ADVANCE.
 - (F) RUMBLE STRIPE, ALL COST OF INSTALLATION SHALL BE INCLUDED IN ITEM NOS:
411-12.03 SCORING FOR RUMBLE STRIPE (NON-CONTINUOUS) (8IN WIDTH), PER L.M.
411-12.04 SCORING FOR RUMBLE STRIPE (NON-CONTINUOUS) (4IN WIDTH), PER L.M.
PAVEMENT MARKINGS, ALL COST OF INSTALLATION SHALL BE INCLUDED IN ITEM NOS:
716-13.01 SPRAY THERMO PVMT MRKNG (60 mil) (4IN LINE), PER L.M.
716-13.02 SPRAY THERMO PVMT MRKNG (60 mil) (6IN LINE), PER L.M.
 - (G) THE COLOR OF AN EDGE LINE OR CENTER LINE ASSOCIATED WITH LONGITUDINAL RUMBLE STRIPE SHALL BE IN ACCORDANCE WITH SECTION 3A.05 OF THE MUTCD.
 - (H) APPLICATIONS OF RUMBLE STRIPE SHOWN ON THIS DRAWING ARE TO ACCOMMODATE BICYCLES TO THE MAXIMUM EXTENT ON THE ROADWAY OR SHOULDER.
 - (I) RUMBLES SHOULD NOT TYPICALLY BE INSTALLED AT DESIGN SPEED < 45 MPH.
 - (J) THE DESIGNER OR THE FIELD ENGINEER MAY CHOOSE TO ALTERNATE RUMBLE STRIPE WITH PROFILED THERMOPLASTIC PAVEMENT MARKING WHEN THE FOLLOWING CONDITIONS EXIST:
 - 1) WHEN IT IS NOT PRACTICAL OR DESIRABLE TO INSTALL MILLED-IN RUMBLE STRIPES FOR INSIDE AND OUTSIDE EDGE LINE PAVEMENT MARKINGS ON ROADWAYS WITH RIGID PAVEMENT SHOULDERS.
 - 2) WHEN EDGE LINES ON TWO - LANE ROADWAYS THAT DO NOT HAVE PAVED SHOULDERS.
 - 3) WHEN EDGE LINES ON BRIDGES WITH NARROW SHOULDERS, AS A SAFETY COUNTERMEASURE FOR BRIDGE PARAPET IMPACTS.
- ALL COST OF INSTALLATION SHALL BE INCLUDED IN ITEM NOS:
716-14.01, PROFILED THERMO PVMT MRKNG AUDIBLE (4IN), PER L.M.
716-14.02, PROFILED THERMO PVMT MRKNG AUDIBLE (6IN), PER L.M.

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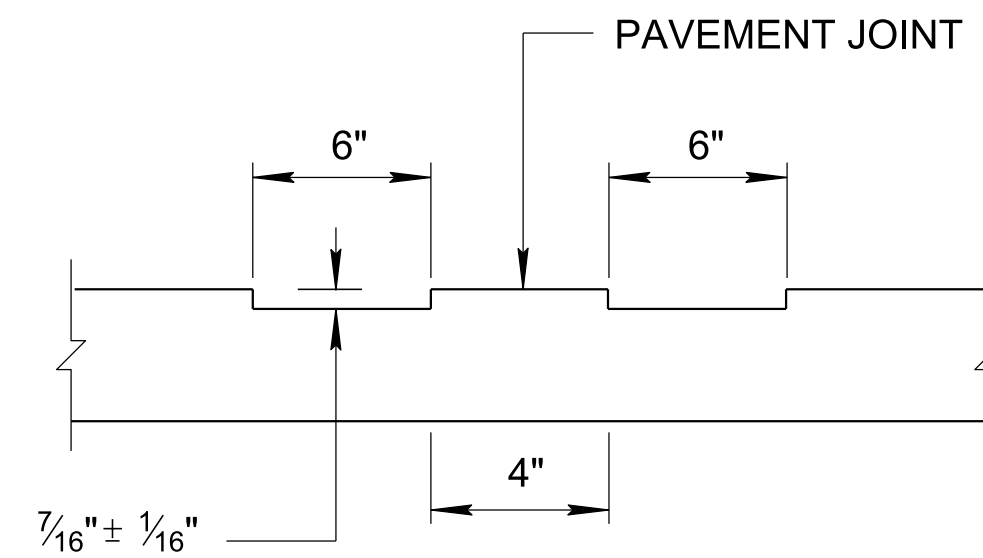
STATE OF TENNESSEE
DEPARTMENT OF
TRANSPORTATION

ASPHALT SHOULDER
RUMBLE STRIPE
INSTALLATION DETAILS
FOR NON-ACCESS
CONTROLLED RURAL ROUTES

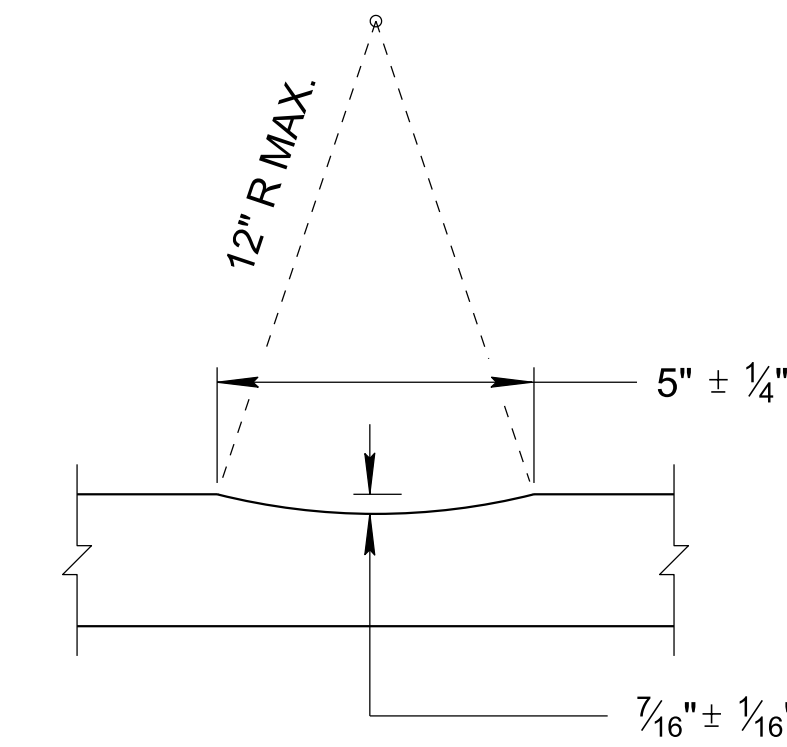
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ISOMETRIC VIEW



SECTION A-A



SECTION B-B

FOR NO PASSING ZONES OR ONE WAY PASSING ZONES

RUMBLE STRIPE GENERAL NOTES

- (A) FOR IMPROVEMENTS OR RECONSTRUCTION OF EXISTING ROADS, RUMBLE STRIPES MAY BE USED AS NEEDED DUE TO CRASH HISTORY. FOR NEW CONSTRUCTION, CENTERLINE RUMBLE STRIPES MAY BE SPECIFIED IF THE FOLLOWING CONDITIONS EXIST:
 - 1) DESIGN SPEED > 45 MPH
 - 2) ADT OF 1500 OR MORE
 - 3) LANE WIDTH 12' MINIMUM
 - 4) ROAD SEGMENT IS A TWO OR FOUR LANE UNDIVIDED SECTION
 - 5) ROAD SEGMENT IS A NO PASSING OR ONE WAY PASSING ZONE
 - (B) WHEN RUMBLE STRIPES ARE SPECIFIED, PAVEMENT MARKING ITEM NUMBER SHALL BE:
716-12.02 ENHANCED FLATLINE THERMO PVMT MRKNG (6IN LINE) PER L.M.
 - (C) CENTERLINE RUMBLE STRIPES SHALL NOT BE USED ON BRIDGES.
 - (D) THE PAVEMENT JOINT SHALL NOT BE MILLED.
 - (E) RUMBLE STRIPE SHALL BE DISCONTINUED WHENEVER THE CENTERLINE MARKING IS ALSO DISCONTINUED.
 - (F) RUMBLE STRIPE SHOULD NOT BE USED IN RESIDENTIAL OR COMMERCIAL AREAS.
 - (G) SCORING FOR RUMBLE STRIPES TO BE PAID FOR UNDER ITEM NUMBER:
411-12.05 SCORING FOR CENTERLINE RUMBLE (4IN WIDTH-24IN SPACING), PER L.M.
(INCLUDES BOTH LEFT AND RIGHT SIDE PER LINEAR MILE).
 - (H) FOR RAISED PAVEMENT MARKINGS SPACING, SEE STD. DWG. T-M-1. IN LOCATIONS WHERE RPMS ARE PRESENT, STAGGER RUMBLES SUCH THAT RPMS ARE CENTERED BETWEEN RUMBLES.
 - (I) THE DESIGNER OR THE FIELD ENGINEER MAY CHOOSE TO ALTERNATE RUMBLE STRIPE WITH PROFILED THERMOPLASTIC PAVEMENT MARKING WHEN THE FOLLOWING CONDITIONS EXIST:
 - 1) WHEN IT IS NOT PRACTICAL OR DESIRABLE TO INSTALL MILLED-IN RUMBLE STRIPES FOR INSIDE AND OUTSIDE EDGE LINE PAVEMENT MARKINGS ON ROADWAYS WITH RIGID PAVEMENT SHOULDERS.
 - 2) WHEN THERE ARE EDGE LINES ON TWO - LANE ROADWAYS THAT DO NOT HAVE PAVED SHOULDERS.
 - 3) WHEN THERE ARE EDGE LINES ON BRIDGES WITH NARROW SHOULDERS, AS A SAFETY COUNTERMEASURE FOR BRIDGE PARAPET IMPACTS.
- ALL COST OF INSTALLATION SHALL BE INCLUDED IN ITEM NOS:
 716-14.01, PROFILED THERMO PVMT MRKNG AUDIBLE (4IN), PER L.M.
 716-14.02, PROFILED THERMO PVMT MRKNG AUDIBLE (6IN), PER L.M.

- REV. 4-21-14: REMOVED TWO WAY PASSING ZONE OPTION. MODIFIED NOTES (A) AND (B).
- REV. 7-24-14: CHANGED STRIPE WIDTH.
- REV. 08-02-18: CHANGED PAY ITEM NUMBER IN NOTE (B). MODIFIED NOTE (C). CHANGED LENGTH OF RUMBLE STRIPE GROOVE FROM 7" TO 5". CHANGED DISTANCE BETWEEN GROOVES FROM 17" TO 19". ADDED ± TO BOTH THESE DIMENSIONS. ADDED GENERAL NOTE (I). REDREW SHEET.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
 DEPARTMENT OF
 TRANSPORTATION

ASPHALT
 CENTERLINE
 RUMBLE STRIPE