

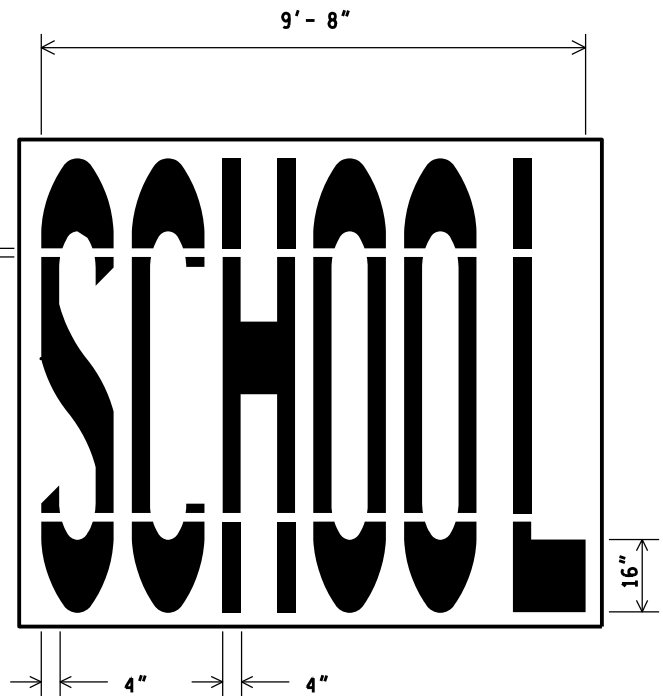
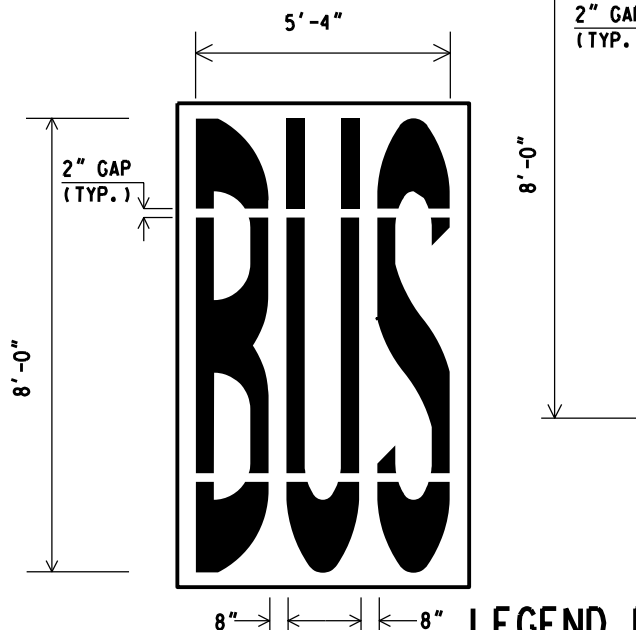
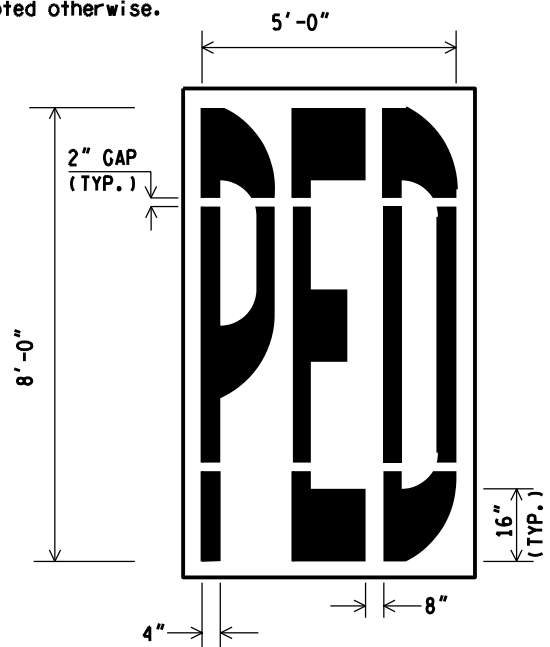
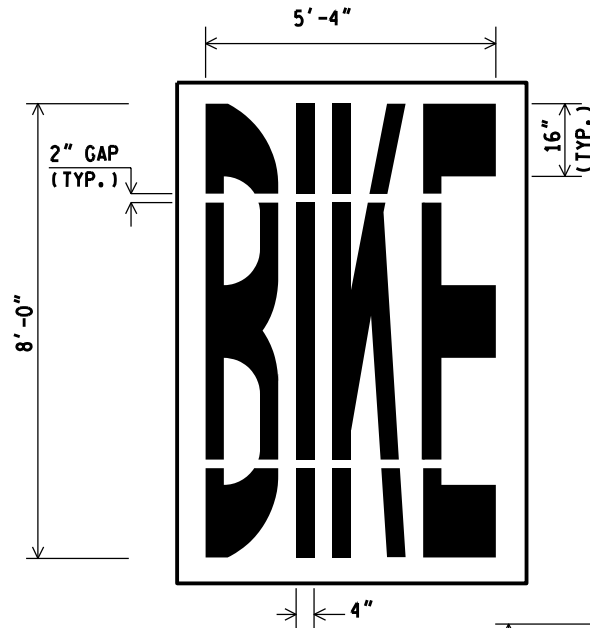
NOTES: 1. All letters are 16 inches wide unless noted otherwise.

2. All gaps between letters are 4 inches unless noted otherwise.

3. Rectangular area containing legend indicates template for liquid applied materials.

4. When placed on a shared-use path, reduce all vertical dimensions (except 2" liquid template gaps) by half.

5. 2" gaps shown are for liquid templates only and are not allowed in tape applications.



8" 8" 8" **LEGEND DETAILS**



PREPARED
BY
TSMO DIVISION

DRAWN BY: LME

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegeba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:07 PM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
Oct 29 2020 4:29 PM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**PAVEMENT ARROW
& MESSAGE DETAILS**

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-900-G

SHEET
1 OF 10

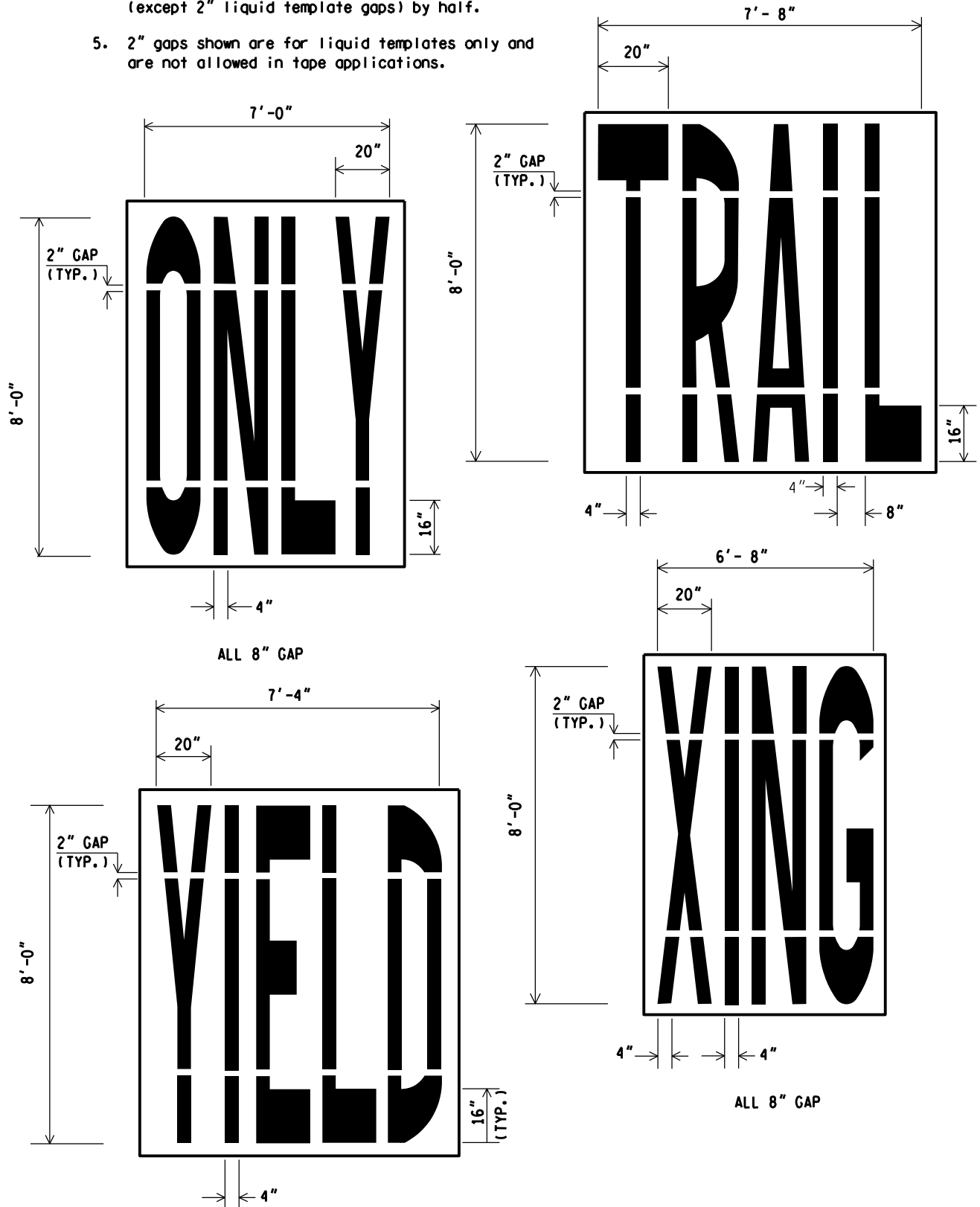
NOTES: 1. All letters are 16 inches wide unless noted otherwise.

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3. Rectangular area containing legend indicates template for liquid applied materials.

4. When placed on a shared-use path, reduce all vertical dimensions (except 2" liquid template gaps) by half.

5. 2" gaps shown are for liquid templates only and are not allowed in tape applications.



LEGEND DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-900-G

SHEET
2 OF 10

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

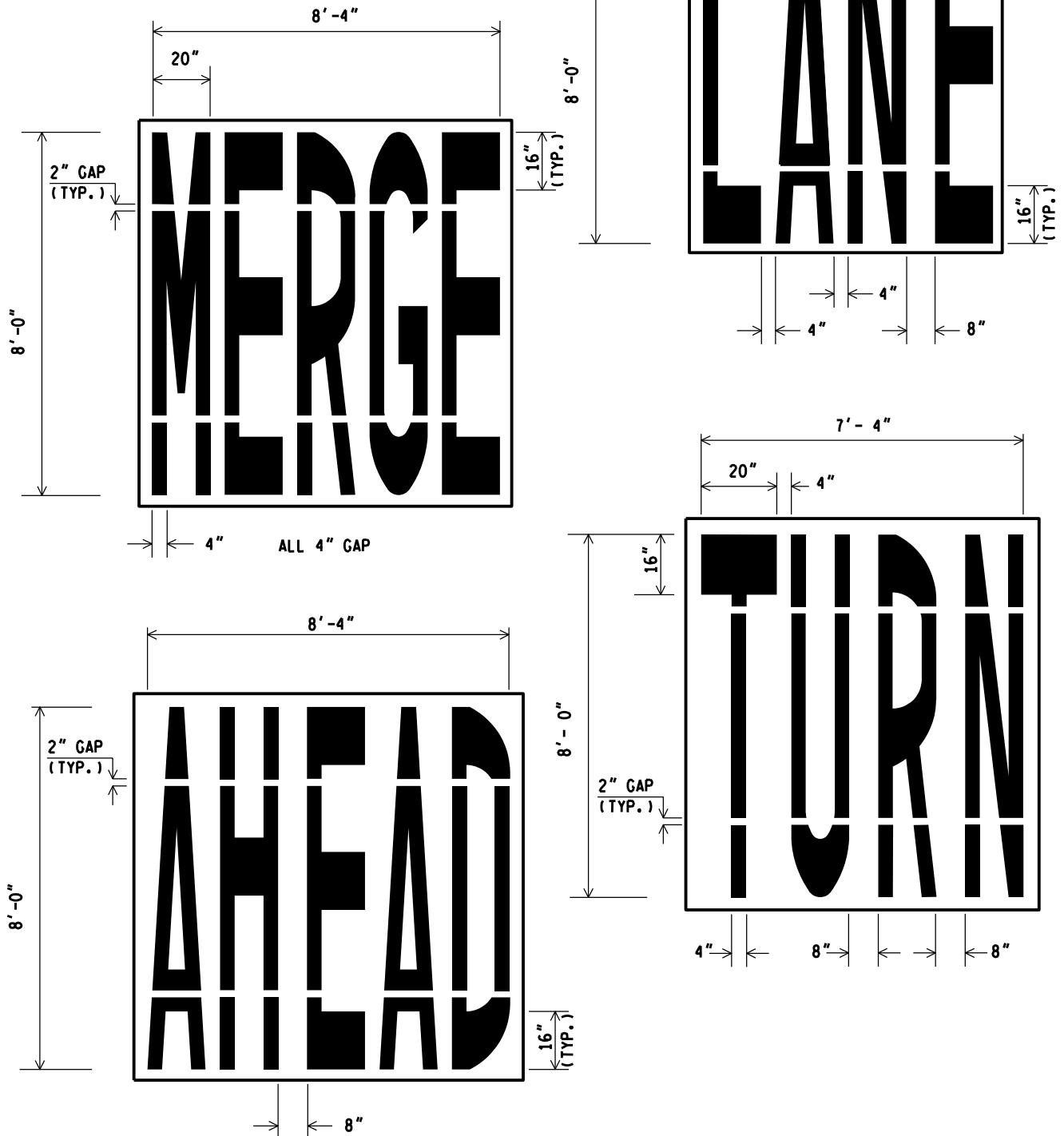
5. 2" gaps shown are for liquid templates only and are not allowed in tape applications.
-
- The diagrams show three liquid templates for signs. Each template is 8'-0" high and has a 2" gap at the top. The 'RIGHT' template is 7'-4" wide with a 4" gap at the bottom. The 'LEFT' template is 7'-4" wide with a 4" gap at the bottom. The 'NO' template is 3'-4" wide with an 8" gap at the bottom. The 'STOP' template is 7'-0" wide with a 4" gap at the bottom. The 'LEFT' and 'STOP' templates have a 16" gap at the top. The 'RIGHT' template has a 16" gap at the top. The 'LEFT' template has a 16" gap at the top. The 'STOP' template has a 16" gap at the top.

NOT TO SCALE

SHEET
3 OF 10

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

- NOTES: 1. All letters are 16 inches wide unless noted otherwise.
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3. Rectangular area containing legend indicates template for liquid applied materials.
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LEGEND DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

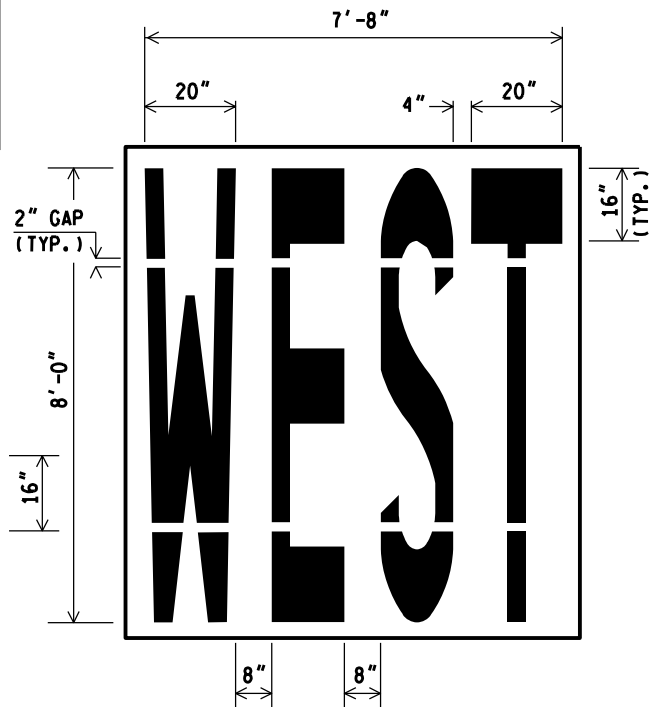
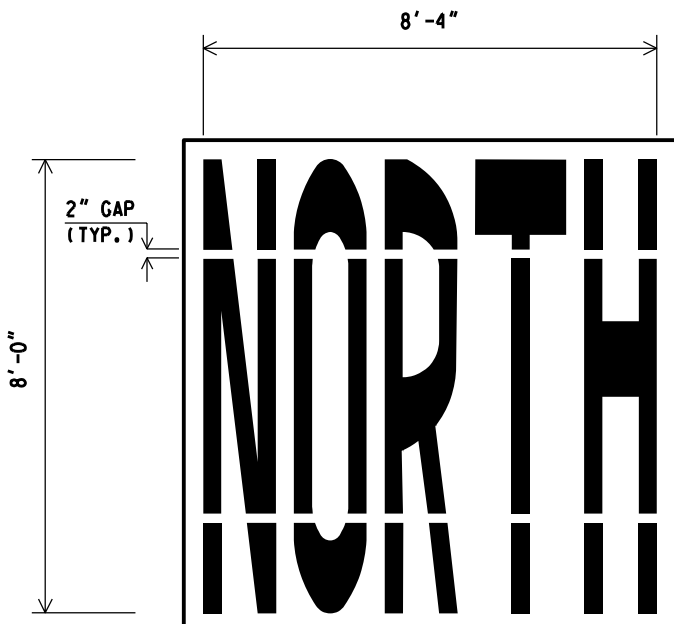
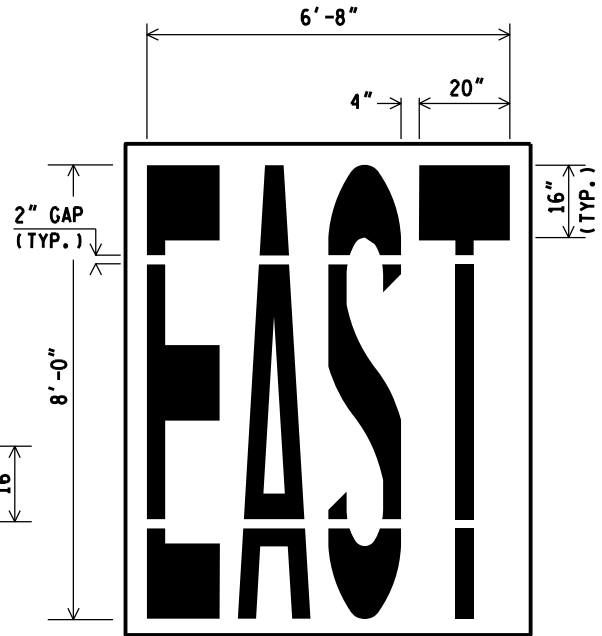
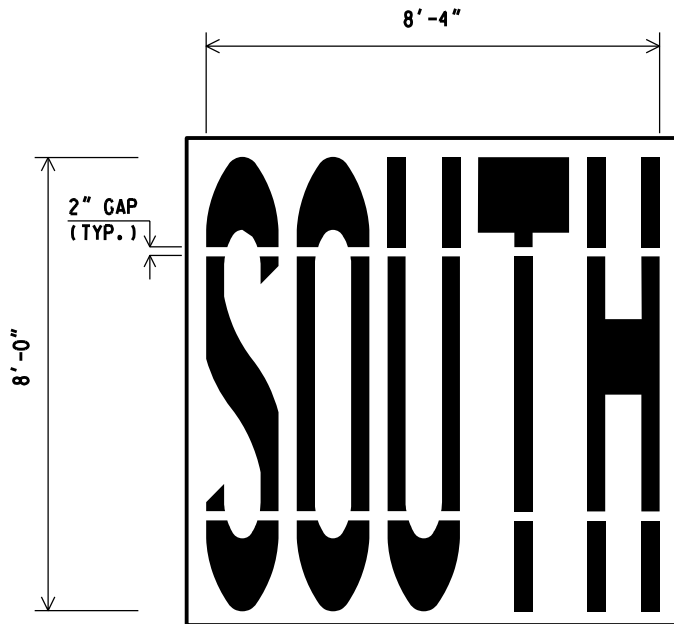
03/25/20
PLAN DATE

PAVE-900-C

SHEET
4 OF 10

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

- NOTES: 1. All letters are 16 inches wide unless noted otherwise.
2. All gaps between letters are 4 inches unless noted otherwise.
3. Rectangular area containing legend indicates template for liquid applied materials.
4. When placed on a shared-use path, reduce all vertical dimensions (except 2" liquid template gaps) by half.
5. 2" gaps shown are for liquid templates only and are not allowed in tape applications.



LEGEND DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

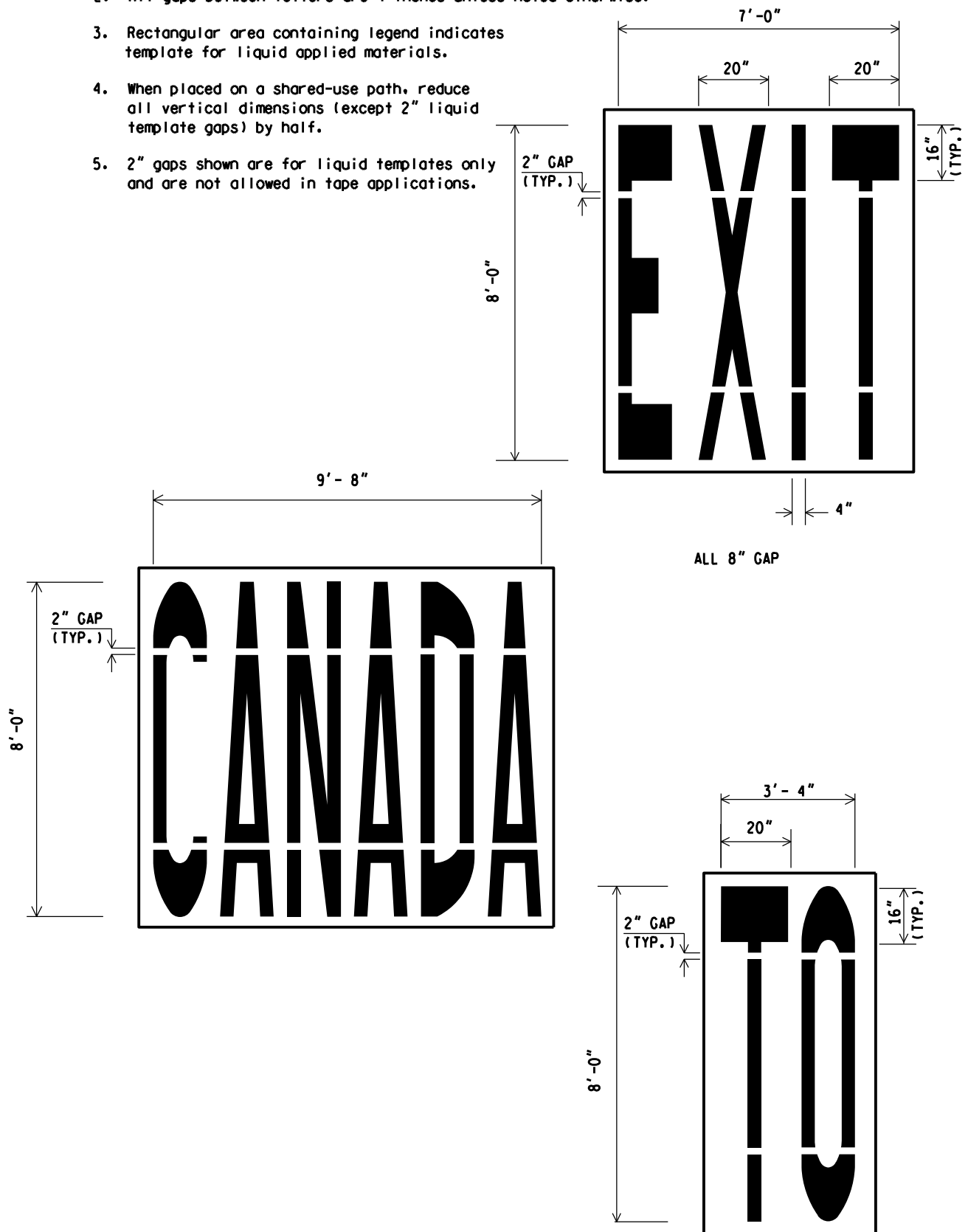
03/25/20
PLAN DATE

PAVE-900-C

SHEET
5 OF 10

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

- NOTES: 1. All letters are 16 inches wide unless noted otherwise.
2. All gaps between letters are 4 inches unless noted otherwise.
3. Rectangular area containing legend indicates template for liquid applied materials.
4. When placed on a shared-use path, reduce all vertical dimensions (except 2" liquid template gaps) by half.
5. 2" gaps shown are for liquid templates only and are not allowed in tape applications.



LEGEND DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

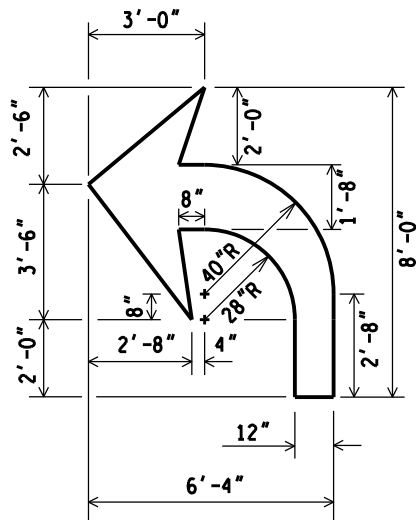
PAVE-900-G

SHEET
6 OF 10

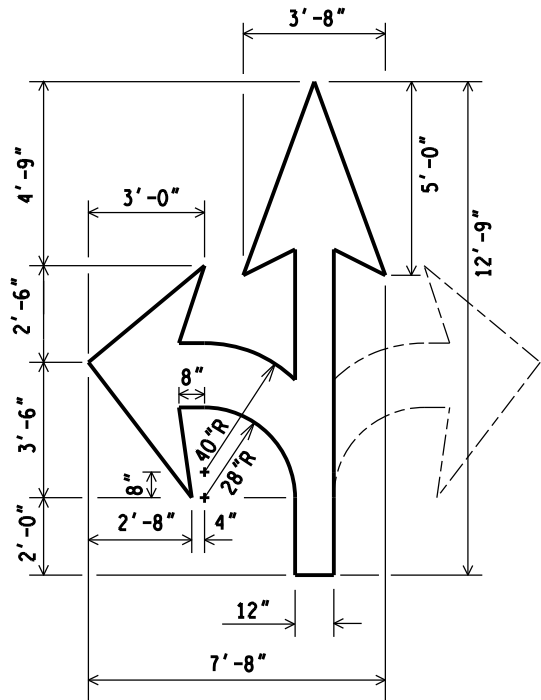
NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

NOTE: 1. Templates for liquid applied materials on this sheet do not allow gaps.

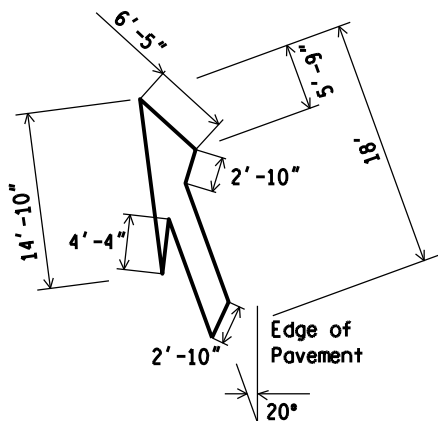
2. When placed on a shared-use path, reduce all dimensions by half.



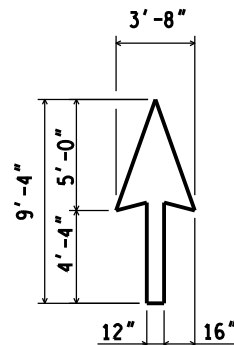
LEFT TURN ARROW
(RIGHT TURN ARROW TO BE REVERSE)



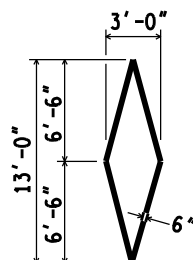
THRU RIGHT/LEFT TURN ARROW



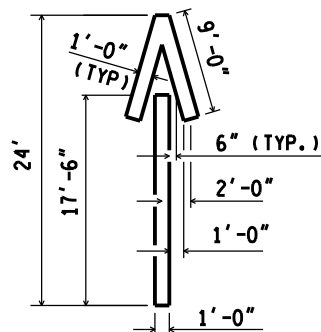
MERGE LEFT ARROW
(MERGE RIGHT ARROW TO BE REVERSE)



THRU ARROW



DEDICATED LANE SYMBOL



WRONG WAY ARROW

PAVEMENT ARROW/SYMBOL DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

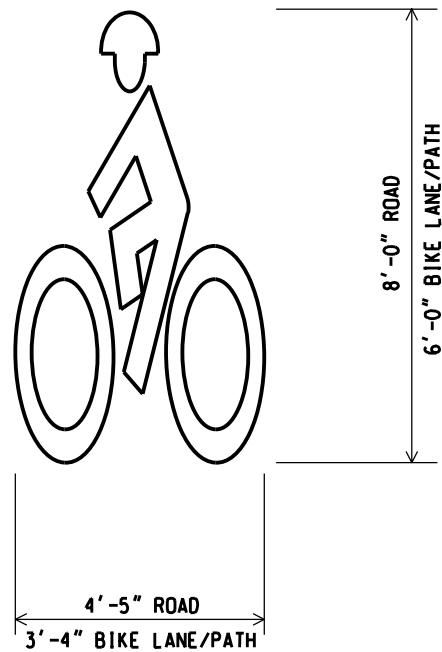
03/25/20
PLAN DATE

PAVE-900-C

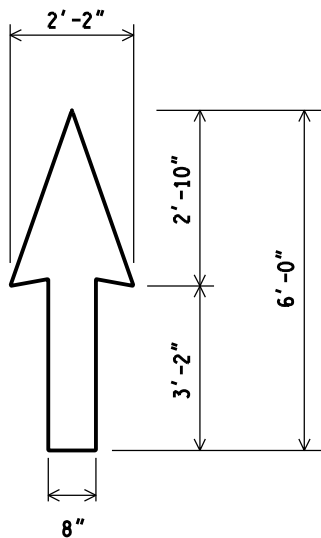
SHEET
7 OF 10

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

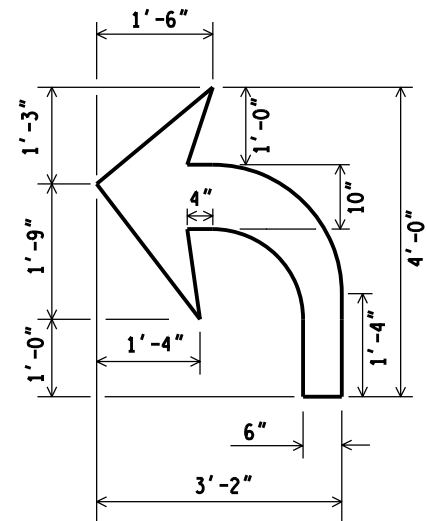
- NOTES: 1. Templates for liquid applied materials on this sheet do not allow gaps.
2. Smaller (bike lane/path) bicycle symbol is to be used in bike lanes (including bike lanes on roadways), and on paths/trails.
3. The larger (road) bicycle symbol is intended to be used in conjunction with the "XING" legend in vehicle travel lanes in advance of a bike path/trail crossing the roadway.



BICYCLE SYMBOL



DIRECTIONAL ARROW FOR USE WITH
BIKE LANE/PATH BICYCLE SYMBOL



TURN ARROW FOR USE WITH
BIKE LANE/PATH BICYCLE SYMBOL
(RIGHT TURN ARROW TO BE REVERSE)

BICYCLE ARROW/SYMBOL DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-900-C

SHEET
8 OF 10

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

SPECIAL MARKING AREAS (SFT)

LEGEND	REMOVAL	RECESSING	MATERIAL	SYMBOL	REMOVAL	RECESSING	MATERIAL
AHEAD	67	70	28.86	ACCESSIBLE	12	13	11.11
BIKE	43	45	22.15	BICYCLE (ROAD)	26	31	10.54
BUS	43	45	18.55	BICYCLE (LANE/PATH)	16	18	5.93
CANADA	78	81	32.87	BIKE TURN ARROW, LT OR RT	4	6	4.11
EAST	54	56	21.71	DEDICATED LANE (HOV)	11	13	10.24
EXIT	56	59	17.76	DIRECT. ARROW (BIKE)	5	7	5.07
LANE	54	56	22.30	LEFT, RIGHT ARROW	29	34	28.99
LEFT	59	62	19.11	LT ROUNDABOUT ARROW	18	23	17.48
MERGE	67	70	33.28	LT, RT, THRU ARROW	41	48	40.26
NO	27	29	12.92	MERGE ARROW	43	47	42.17
NORTH	67	70	29.53	RAILROAD	66	75	60.89
ONLY	56	59	20.90	RAILROAD-ALTERNATE	70	73	59.06
PED	40	43	17.63	RT, LT ROUNDABOUT ARROW	23	29	22.19
RIGHT	59	62	25.10	RT, THRU, LT ROUNDABOUT ARROW	29	38	28.31
SCHOOL	78	81	32.58	SHARROW	21	30	9.26
SOUTH	67	70	27.83	THRU ARROW	13	16	13.16
STOP	56	59	21.50	THRU, LT ROUNDABOUT ARROW	24	31	23.60
TO	27	29	10.43	THRU, LT TURN ARROW	29	34	28.14
TRAIL	62	64	22.10	THRU, RT TURN ARROW	29	34	28.14
TURN	59	62	23.04	TURN ARROW, LT OR RT	17	19	16.42
WEST	62	64	24.42	WRONG WAY ARROW	35	41	34.56
XING	54	56	20.13	YIELD TRIANGLE	3	4	3.00
YIELD	59	61	22.91				

REMOVAL AND PLACEMENT DETAILS

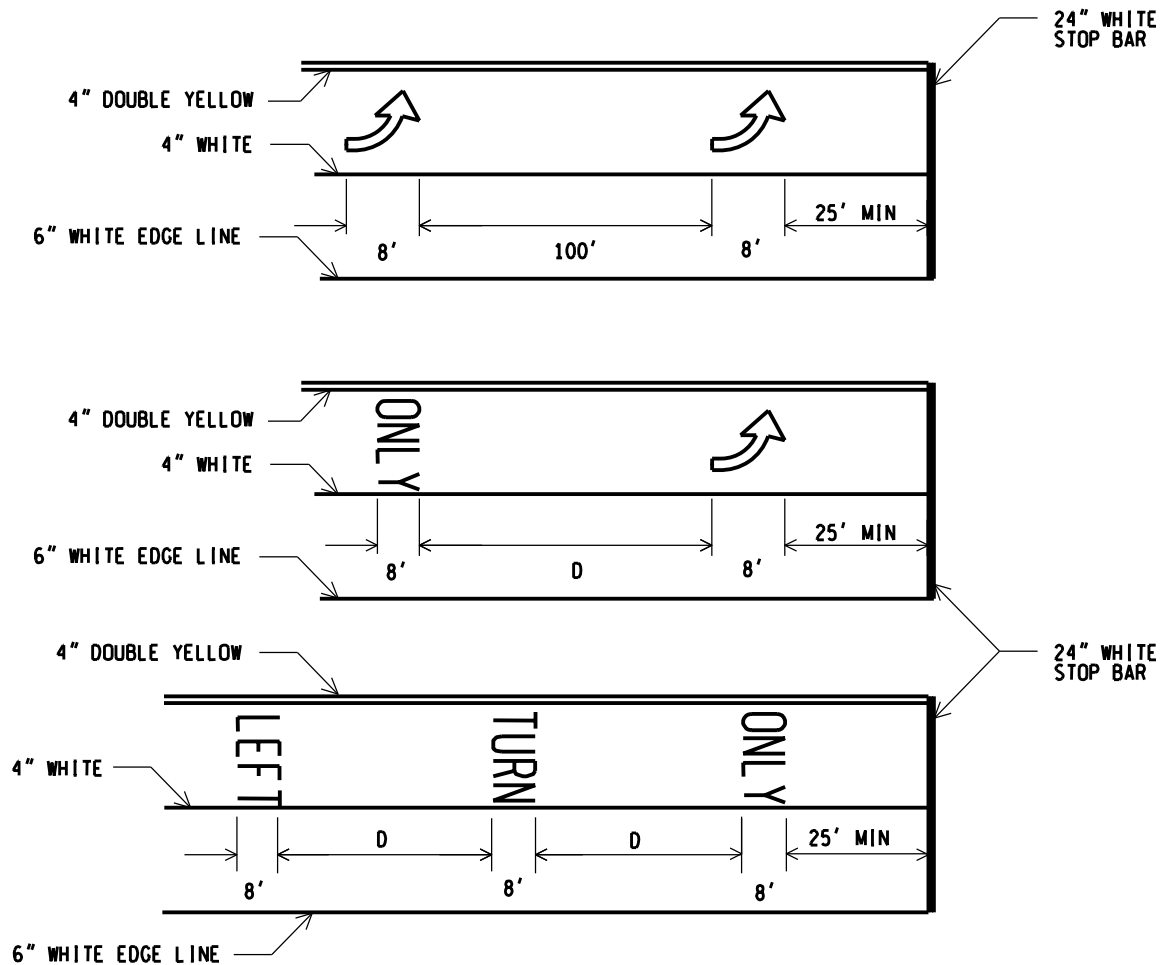
NOTES:

- Material placement areas shown are for liquid-applied special markings, and reflect the allowable template gaps in legends.
- Railroad marking areas do not include the stop bar markings.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN	09/21/20 F.H.W.A. APPROVAL	03/25/20 PLAN DATE	PAVE-900-C	SHEET 9 OF 10
------------------------------------------------------------------------------	-------------------------------	-----------------------	------------	------------------

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



TYPICAL SPACING OF ARROW AND PAVEMENT MESSAGES

POSTED SPEED (MPH)	DISTANCE "D" (FT)
25 AND BELOW	32
30-35	48
40-45	64
50 AND ABOVE	80

NOTES:

1. All special markings (arrow, message and symbol) shall be white.
2. When arrow and pavement message are used together, the arrow should be located downstream of the pavement message and separated from the pavement message by a distance of "D" (measured from the top of the message to the base of the arrow) as shown above.
3. When a series of pavement messages are used, they should be separated by a distance of "D" related to the posted speed, as shown in the table above. All symbols and legends shall be positioned in the center of the lane.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

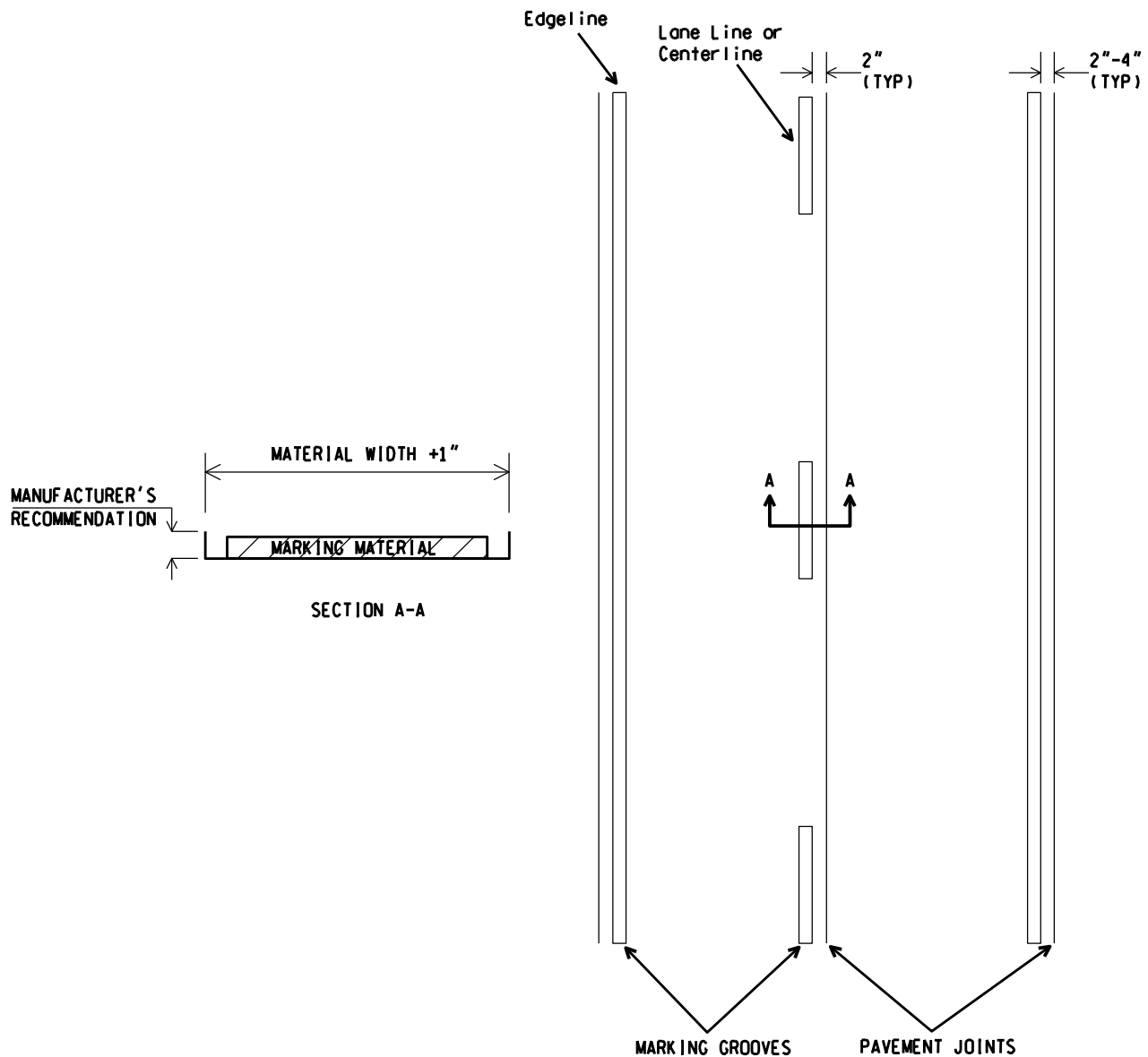
09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-900-C

SHEET
10 OF 10

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



RECESSING LONGITUDINAL MARKINGS

NOTES:

1. Tolerance on all transverse dimensions is $\pm 1/8"$.
2. Tolerance on all recessing depths is ± 5 mils.



PREPARED
BY
TSMD DIVISION

DRAWN BY: MKB

CHECKED BY: CMW

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:07 PM

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
Nov 5 2020 5:44 AM

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

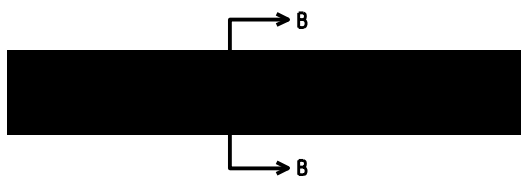
PAVEMENT MARKING RECESSING DETAILS

09/21/20
F.H.W.A. APPROVAL

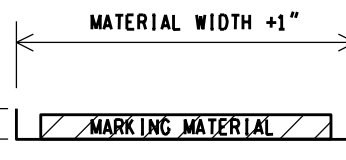
03/25/20
PLAN DATE

PAVE-901-A

SHEET
1 OF 2



MANUFACTURER'S
RECOMMENDATION

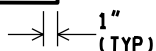
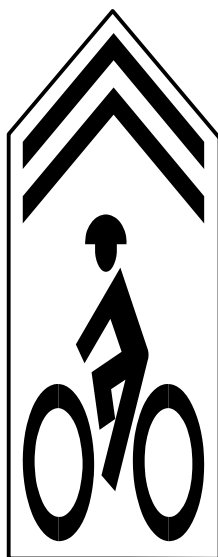


SECTION B-B

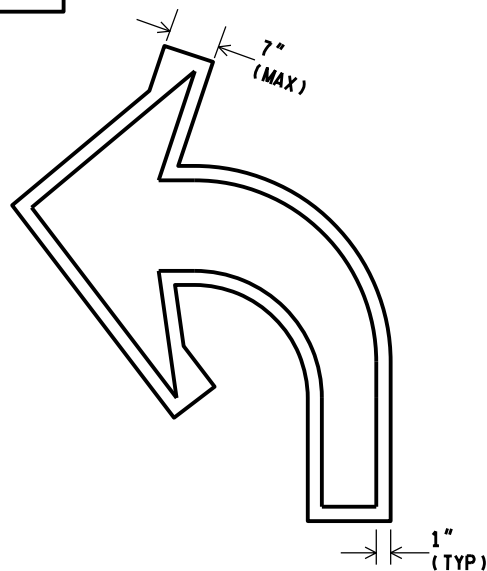
FOR STOP BARS, CROSSWALKS, & CROSS HATCHING



FOR LEGENDS



FOR IRREGULAR SYMBOLS



FOR ARROWS
(ALL TYPES)

RECESSING SPECIAL MARKINGS

NOTES:

1. Tolerance on all transverse dimensions is $\pm 1/8$ ".
2. Tolerance on all recessing depths is ± 5 mils.
3. The recess should follow the shape of the special marking as closely as possible. Where the shape cannot be followed, use a grinder head with a maximum width of 7 inches.
4. For irregular shapes agree upon a recessing layout with the Engineer. See Special Marking Symbols and Legends (CAD drawing) for recommendations.
5. See PAVE-900 for special marking recessing payment areas.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-901-A

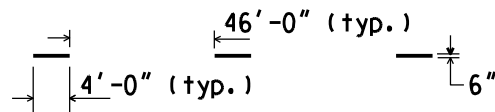
SHEET
-2 OF -2

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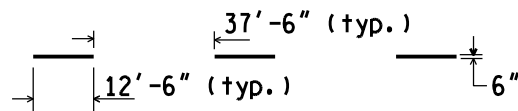
TYPES OF TEMPORARY LONGITUDINAL LINES

FREEWAY APPLICATIONS

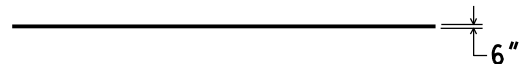
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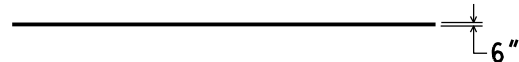
BROKEN WHITE LANE LINE (2)



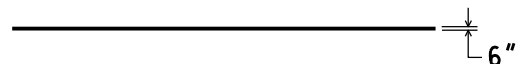
SOLID WHITE LANE LINE OR LANE SHIFT



SOLID WHITE EDGE LINE



SOLID YELLOW EDGE LINE



SOLID WHITE GORE MARKING



Notes:

1. See project documents for correct broken line pattern.



PREPARED
BY
TSMO DIVISION

DRAWN BY: MKB

CHECKED BY: KMW

DEPARTMENT DIRECTOR
Paul C. Ajegba

APPROVED BY: (SPECIAL DETAIL)
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: (SPECIAL DETAIL)
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TEMPORARY LONGITUDINAL LINE TYPES & PLACEMENT

(SPECIAL DETAIL)
F.H.W.A. APPROVAL

(SPECIAL DETAIL)
PLAN DATE

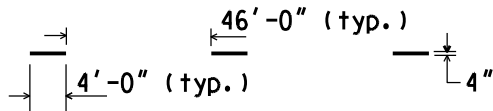
PAVE-904-A

SHEET
1 OF 3

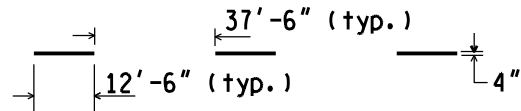
TYPES OF TEMPORARY LONGITUDINAL LINES

NON-FREEWAY APPLICATIONS

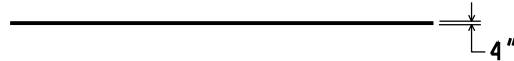
BROKEN WHITE LANE LINE (1)



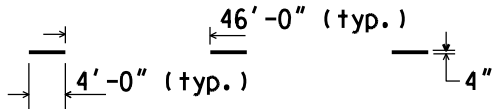
BROKEN WHITE LANE LINE (2)



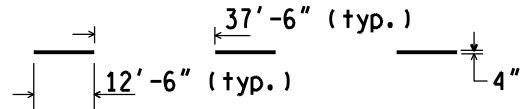
SOLID WHITE LANE LINE OR LANE SHIFT



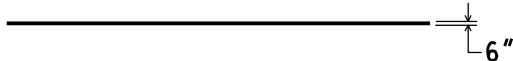
BROKEN YELLOW CENTERLINE (1)



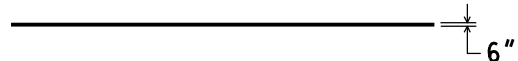
BROKEN YELLOW CENTERLINE (2)



SOLID WHITE EDGE LINE



SOLID YELLOW EDGE LINE

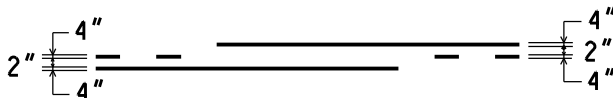


SOLID WHITE GORE MARKING

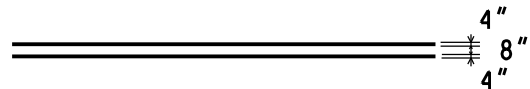


LINE PATTERNS

TWO - LANE PASSING PROHIBITED (YELLOW)



DOUBLE SOLID YELLOW (OR WHITE)



Notes:

1. See project documents for correct broken line pattern.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

(SPECIAL DETAIL)
F.H.W.A. APPROVAL

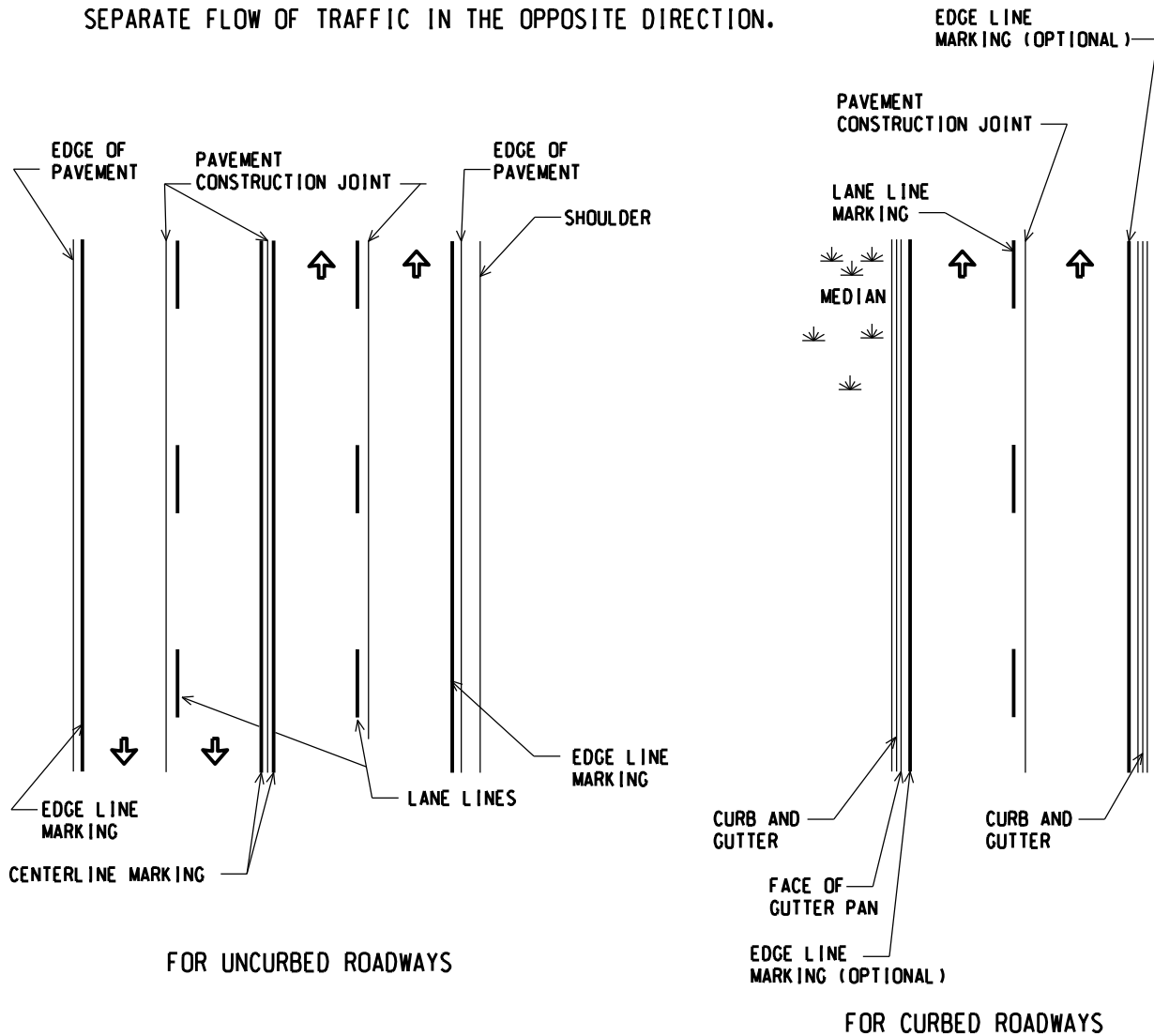
(SPECIAL DETAIL)
PLAN DATE

PAVE-904-A

SHEET
2 OF 3

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

BASIC COLOR RULE: WHITE LINES SEPARATE FLOW OF TRAFFIC IN THE SAME DIRECTION. YELLOW LINES SEPARATE FLOW OF TRAFFIC IN THE OPPOSITE DIRECTION.



PLACEMENT OF LINES

Notes:

1. Temporary marking locations shall conform with section 812 of the Standard Specifications for Construction.
2. See PAVE-905 for locations of permanent pavement marking lines.
3. Remove pavement markings that conflict with proposed temporary traffic markings before making any changes in traffic pattern. Do not use paint or bituminous bond coat to cover existing and inappropriate pavement markings. Tape may only be used with approval of the Engineer.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

(SPECIAL DETAIL)
F.H.W.A. APPROVAL

(SPECIAL DETAIL)
PLAN DATE

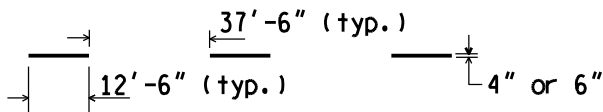
PAVE-904-A

SHEET
3 OF 3

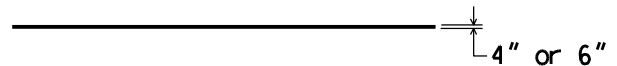
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TYPES OF PERMANENT LONGITUDINAL LINES

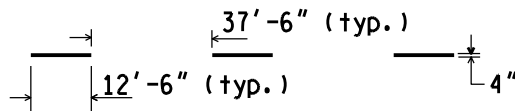
BROKEN WHITE LANE LINE



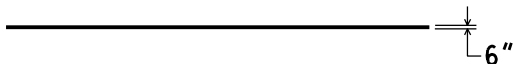
SOLID WHITE LANE LINE



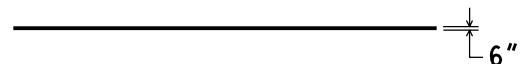
BROKEN YELLOW CENTERLINE



SOLID WHITE EDGE LINE



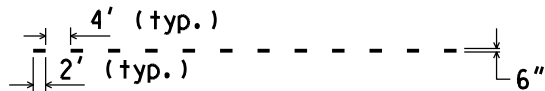
SOLID YELLOW EDGE LINE



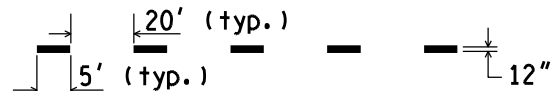
SOLID WHITE CHANNELIZING LINE



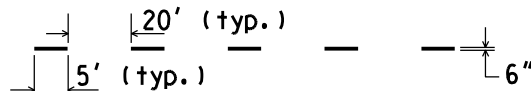
WHITE OR YELLOW DOTTED LINE
(GUIDE LINES, LANE LINE EXTENSIONS)



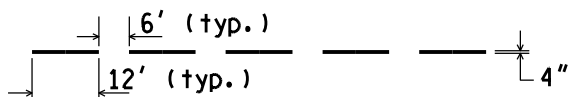
WHITE DOTTED LINE
(LANE DROP, LANE DROP EXIT AND WEAVE LANES)



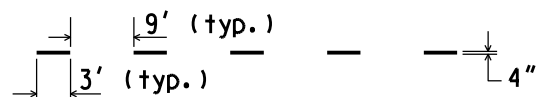
WHITE DOTTED LINE
(PARALLEL AND TAPERED EXITS AND ENTRANCES)



WHITE DASHED LINE
(ROUNDAOBT LANE LINES)

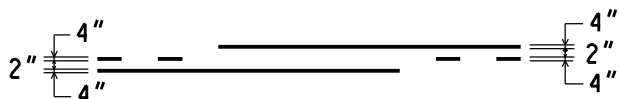


YELLOW DASHED LINE
(CENTERLINE FOR MULTI-USE PATHS)

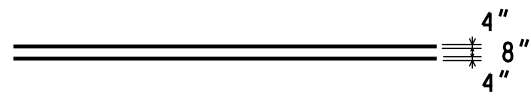


LINE PATTERNS

TWO - LANE PASSING PROHIBITED (YELLOW)



DOUBLE SOLID YELLOW (OR WHITE)



PREPARED
BY
TSMD DIVISION

DRAWN BY: LMF

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:08 PM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelich Bradley C. Wiefelich
Nov 5 2020 5:46 AM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

LONGITUDINAL LINE TYPES & PLACEMENT

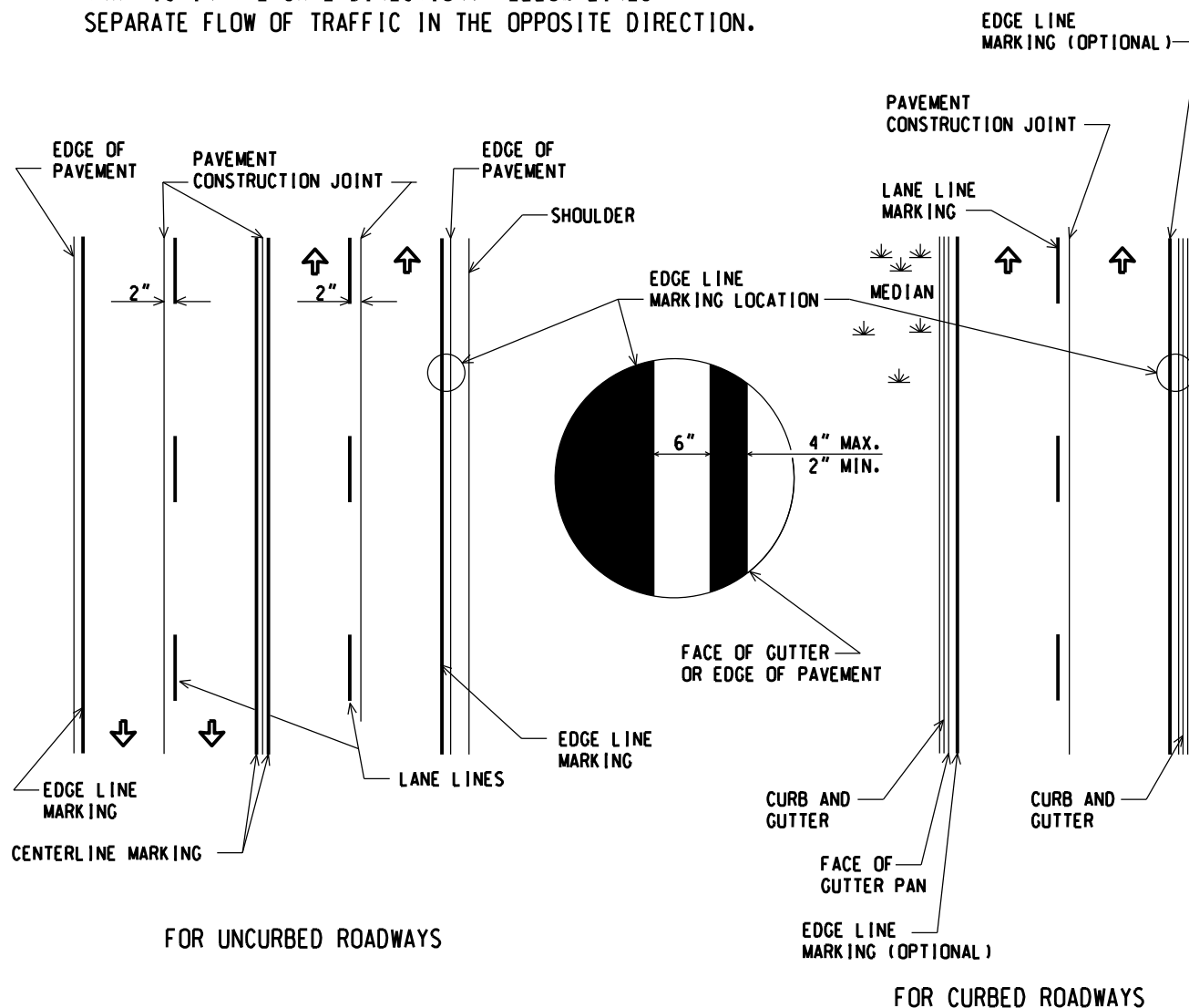
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PAVE-905-E

SHEET
1 OF 2

BASIC COLOR RULE: WHITE LINES SEPARATE FLOW OF TRAFFIC IN THE SAME DIRECTION, YELLOW LINES SEPARATE FLOW OF TRAFFIC IN THE OPPOSITE DIRECTION.



PLACEMENT OF LINES

Notes:

1. On all divided highways, lane lines shall be offset 2 inches from pavement construction joints toward the median side.
2. On 2-lane, 2-way north - south roadways a broken yellow centerline shall be offset 2 inches to the left of pavement construction joints when facing northward. Double solid yellow or solid and broken yellow centerline may straddle the construction joint.
3. On 2-lane, 2-way east - west roadways, a broken yellow centerline shall be offset 2 inches to the left of pavement construction joints when facing eastward. Double solid yellow or solid and broken yellow centerlines may straddle the construction joint.
4. When a centerline construction joint does not correspond to the geometric centerline of the roadway for roadway segments over $\frac{1}{2}$ mile, place the centerline in the location that will provide lanes of equal width unless directed otherwise by the Engineer.

NOT TO SCALE

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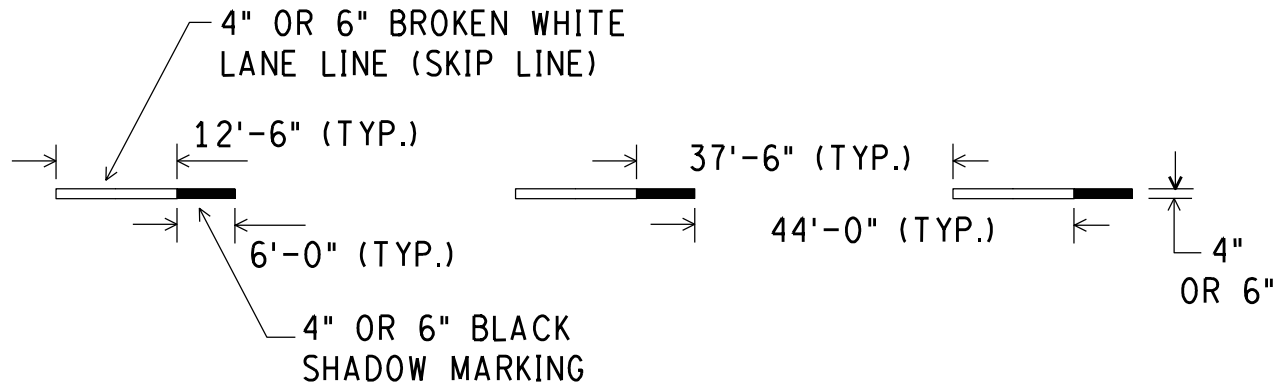
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PAVE-905-E

SHEET
2 OF 2

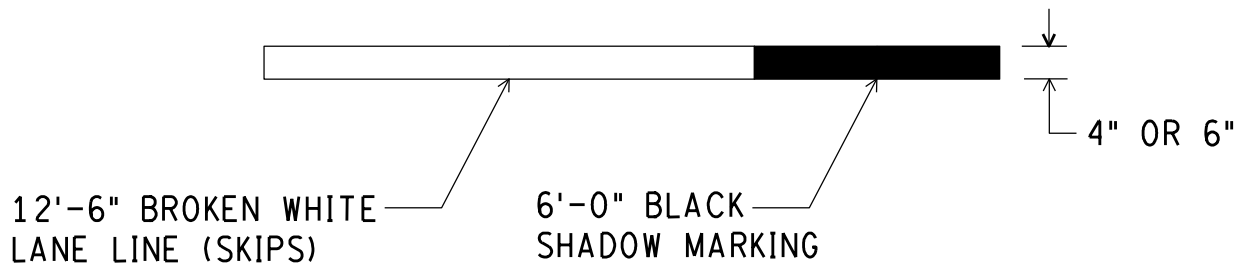
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DIRECTION OF TRAFFIC →



LAYOUT

DIRECTION OF TRAFFIC →



DETAILS

BLACK "SHADOW" PAVEMENT MARKINGS FOR LANE LINES

Notes:

1. Black "shadow" markings are required for broken lane line contrast on new concrete pavement.
2. Use black "shadow" marking tape when using white wet reflective tape for broken lane lines on new concrete pavement.
3. Use either black "shadow" marking tape or beadless liquid black "shadow" markings when using liquid materials for broken lane lines on new concrete pavement.
4. Waterborne beadless liquid black "shadow" markings may be used to retrofit existing liquid or tape lane lines as directed by the Engineer.
5. Where used, black "shadow" markings shall be placed downstream of and abutting each 4" or 6" white lane line skip marking.
6. For non-retrofit installations, if the white lane line marking is recessed then the black "shadow" marking should also be recessed.
7. The width of the "shadow" marking shall match the width of the white skip marking.

NOT TO SCALE



PREPARED
BY
TSMD DIVISION

DRAWN BY: MKB

CHECKED BY: KMA

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:08 PM

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

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Nov 5 2020 5:46 AM

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MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

BLACK "SHADOW" PAVEMENT MARKINGS

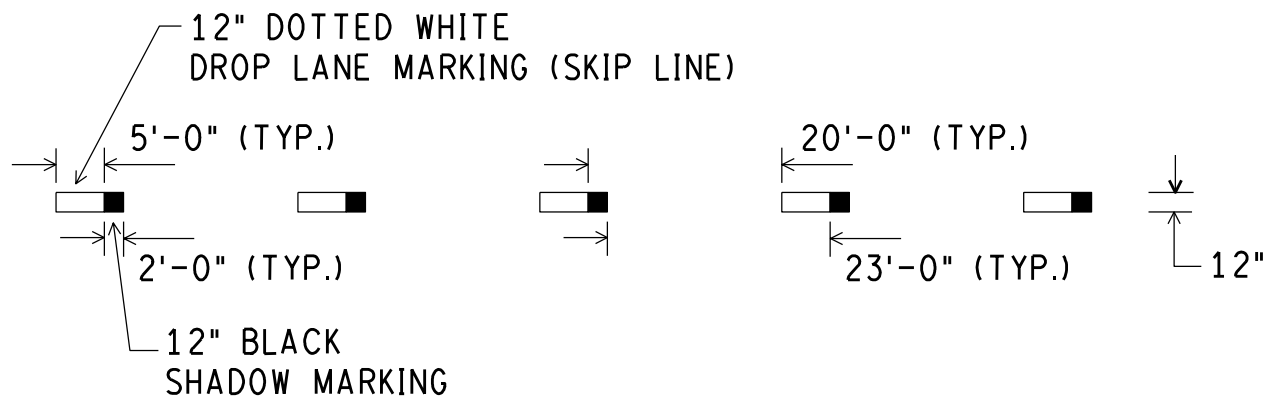
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PLAN DATE

PAVE-906-C

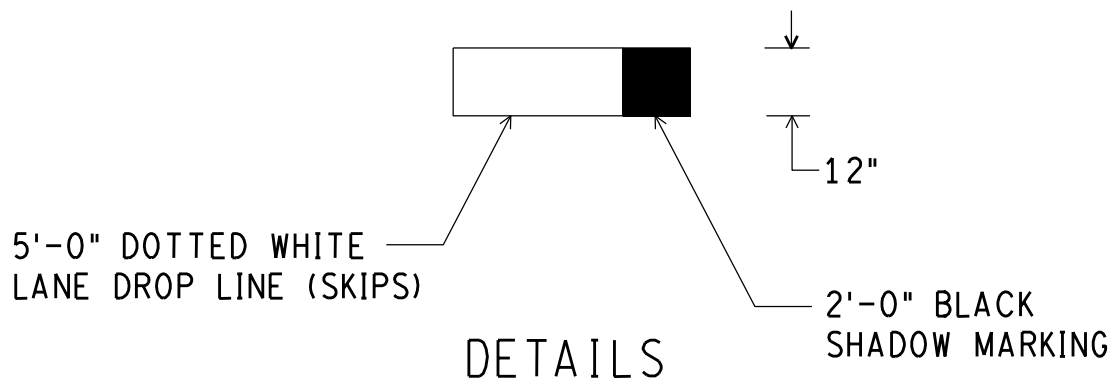
SHEET
1 OF 2

DIRECTION OF TRAFFIC →



LAYOUT

DIRECTION OF TRAFFIC →



DETAILS

BLACK "SHADOW" PAVEMENT MARKINGS FOR DROP LANES

Notes:

1. See PAVE-925 and PAVE-940 for lane drop marking information.
2. Black "shadow" markings are required for broken lane line contrast on new concrete pavement.
3. Use black "shadow" marking tape when using white wet reflective tape for broken lane lines on new concrete pavement.
4. Use either black "shadow" marking tape or beadless liquid black "shadow" markings when using liquid materials for broken lane lines on new concrete pavement.
5. Waterborne beadless liquid black "shadow" markings may be used to retrofit existing liquid or tape lane lines as directed by the Engineer.
6. Where used, black "shadow" markings shall be placed downstream of and abutting each 12" white lane drop skip marking.
7. For non-retrofit installations, if the white lane line marking is recessed then the black "shadow" marking should also be recessed.
8. The width of the "shadow" marking shall match the width of the white skip marking.

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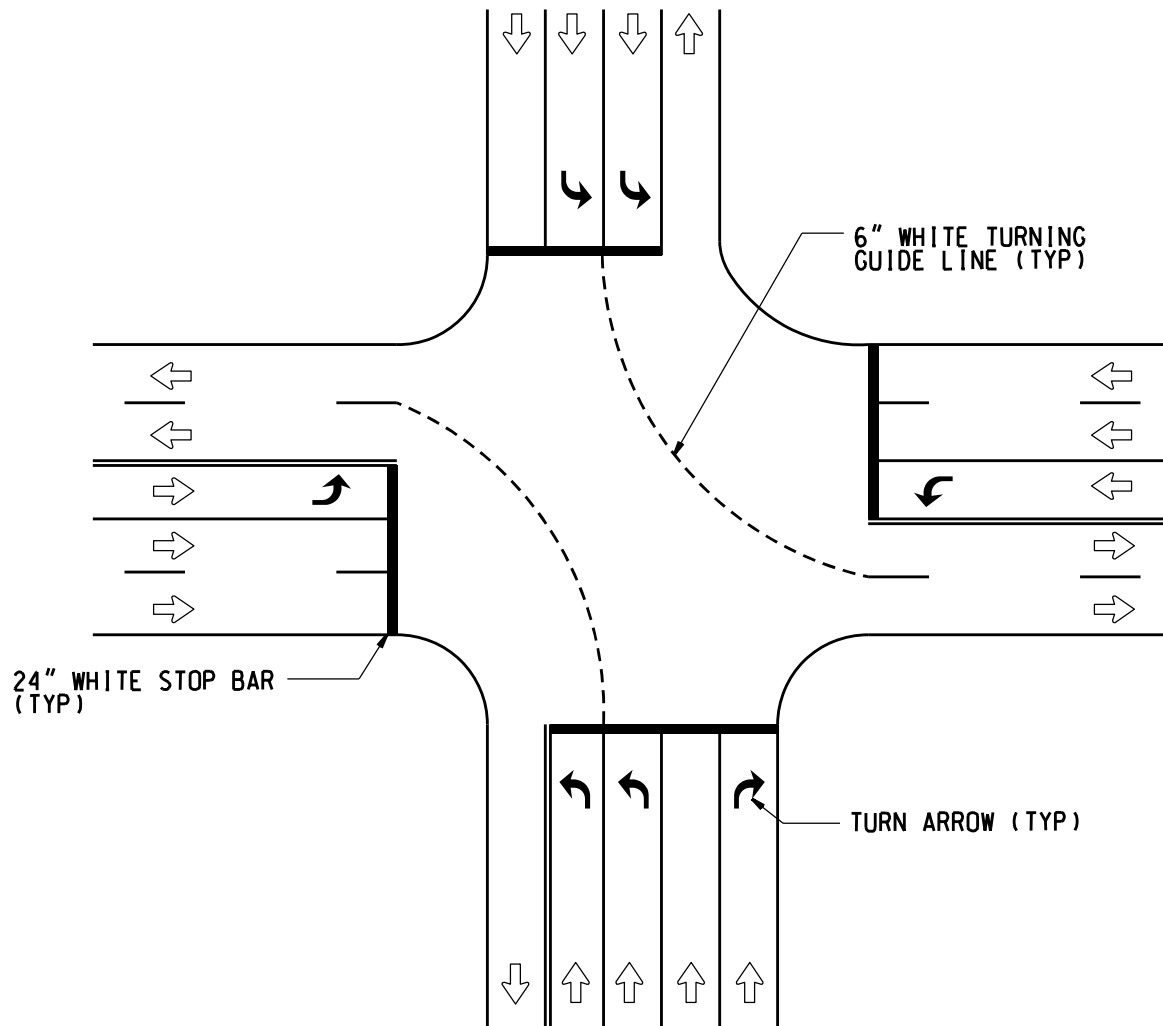
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SHEET
2 OF 2

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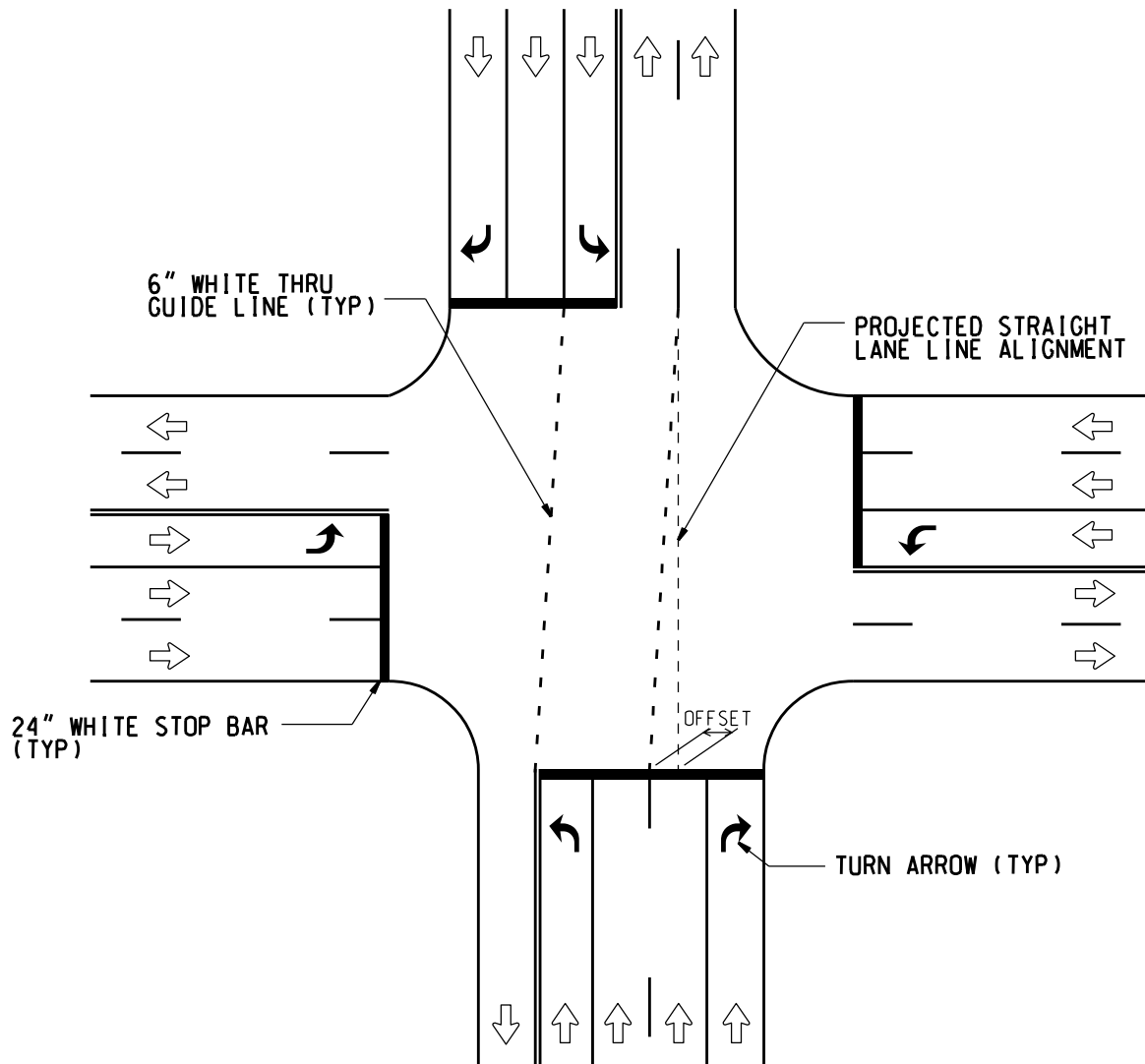
TURNING GUIDE LINES

NOTES:

1. See PAVE-900 for symbol details.
2. See PAVE-905 for line patterns.
3. Turning guide lines required for all locations where 2 or more lanes may turn the same direction.
4. Turning guide lines may be dotted (overlay cold plastic) or solid (sprayable thermoplastic). Only use sprayable thermoplastic when project longitudinal lines are also sprayable thermoplastic.
5. Dotted turning guide lines must be recessed. Recessing optional for solid turning guide lines.
6. Evaluate road conditions when more receiving lanes are present than turning lanes to determine which lanes the turning guide lines should lead to (radius considerations, lanes dropping, etc.).
7. Turning guide lines should be laid out in the field based on actual vehicle movements rather than assigned a design radius. Ensure the layout does not force turning vehicles to encroach on the turn/thru lanes of the receiving leg and allows opposing movements occurring at the same time room to safely clear one another.

NOT TO SCALE

 MDOT <small>Michigan Department of Transportation</small>	DEPARTMENT DIRECTOR Paul C. Ajegba	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR			
	Gregg Brunner, P.E. Gregg Brunner Nov 2 2020 12:08 PM	<h2 style="margin: 0;">GUIDE LINE PAVEMENT MARKINGS</h2>			
	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES				
	Bradley C. Wiefelrich Bradley C. Wiefelrich Nov 5 2020 5:46 AM				
PREPARED BY TSMD DIVISION	APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	09/21/20 F.H.W.A. APPROVAL	03/25/20 PLAN DATE	PAVE-907-A	SHEET 1 OF 2
DRAWN BY: MKR					
CHECKED BY: CMW					



THRU GUIDE LINES

NOTES:

1. See PAVE-900 for symbol details.
2. See PAVE-905 for line patterns.
3. Thru guide lines required for offsets of 2 to 6 feet. Optional for offsets less than 2 feet. Contact the Geometrics Unit if the offset would be greater than 6 feet.
4. Thru guide lines may be dotted (overlay cold plastic or sprayable thermoplastic) or solid (sprayable thermoplastic). Only use sprayable thermoplastic when project longitudinal lines are also sprayable thermoplastic.
5. Cold plastic dotted thru guide lines must be recessed. Recessing optional for sprayable thermoplastic applications.
6. For multilane movements use the thru guide line to extend the lane line(s). For a single lane movement use the thru guide line to extend the left (driver's side) line.

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MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

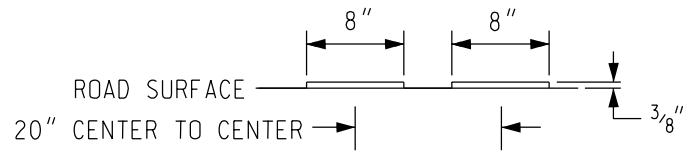
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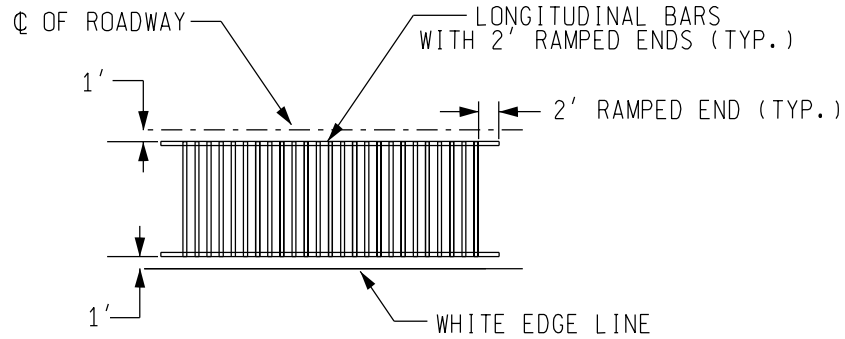
PAVE-907-A

SHEET
2 OF 2

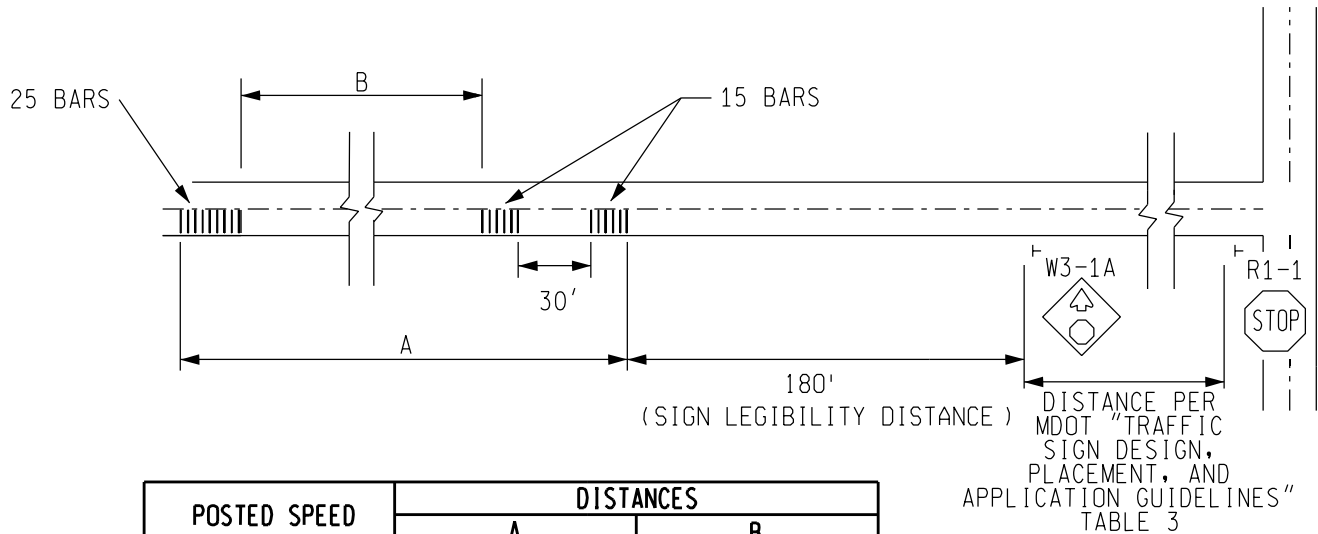
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PROFILE VIEW



PLAN VIEW




POSTED SPEED	DISTANCES	
	A	B
45 MPH	240 FT	115 FT
50 MPH	270 FT	145 FT
55 MPH	285 FT	160 FT

LOCATION

NOTE: DISTANCES GIVEN ARE MINIMUM VALUES

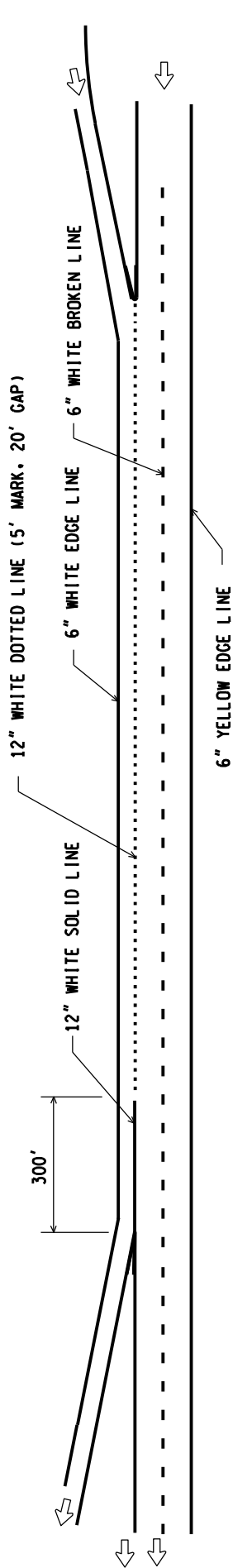
RAISED THERMOPLASTIC RUMBLE STRIPS FOR USE ON STATE TRUNKLINE

 PREPARED BY TSMD DIVISION DRAWN BY: MKB CHECKED BY: KMW	DEPARTMENT DIRECTOR Paul C. Ajegba Gregg Brunner, P.E. Gregg Brunner Nov 2 2020 12:08 PM APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR RAISED THERMOPLASTIC RUMBLE STRIPS			
	Bradley C. Wiefelrich Bradley C. Wiefelrich Nov 5 2020 5:47 AM APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	09/21/20 F.H.W.A. APPROVAL	02/27/20 PLAN DATE	PAVE-916-A	SHEET 1 OF 1

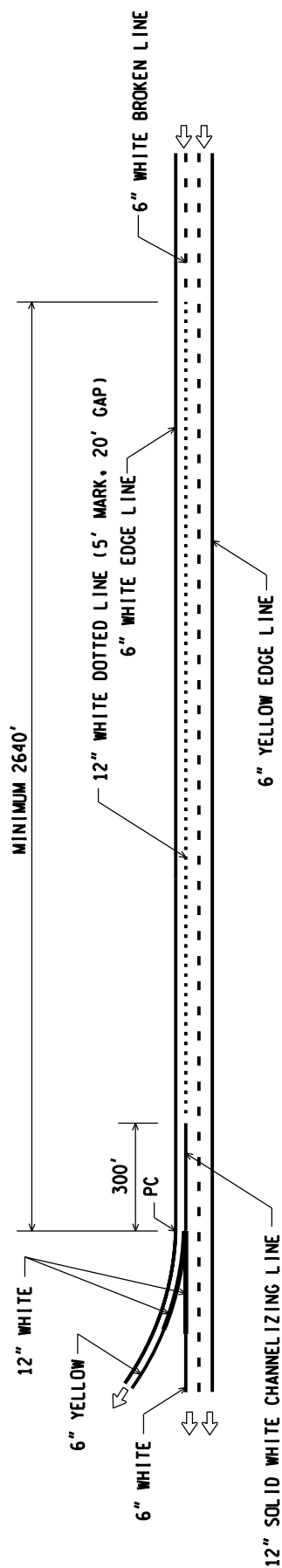


REFER TO NOTES ON SHEET 2.

SHEET
1 OF 8



FREEWAY WEAVING LANE



LANE-DROP EXIT

NOTES:

1. For long weaving lanes (greater than 900 ft) where a RIGHT LANE MUST EXIT sign is normally used, pavement marking should conform to the lane-drop exit treatment shown on this sheet.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

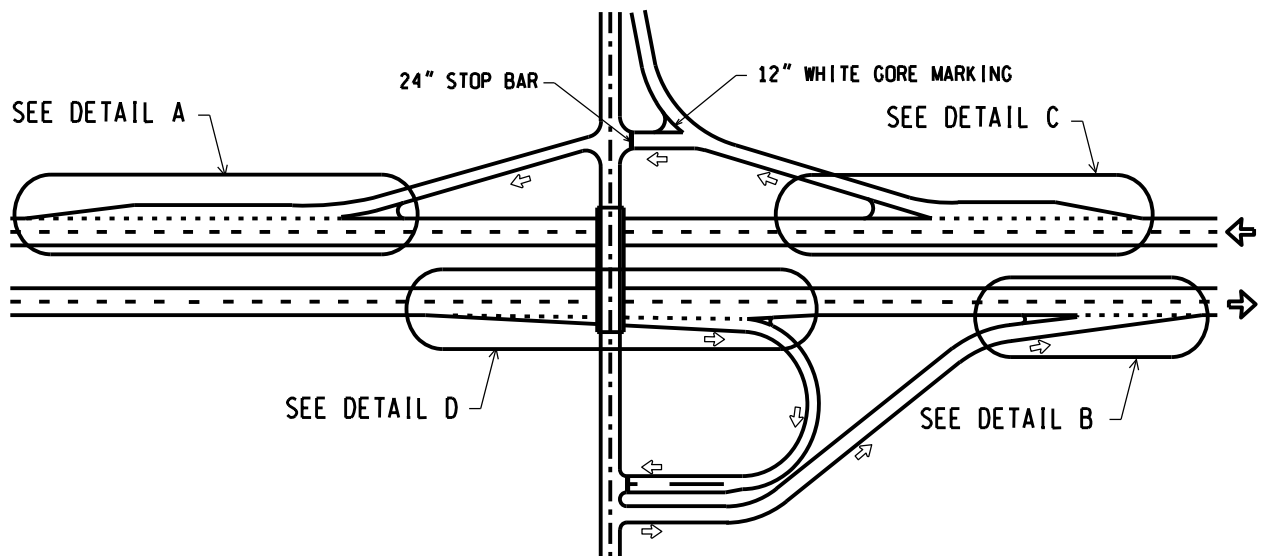
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PAVE-925-E

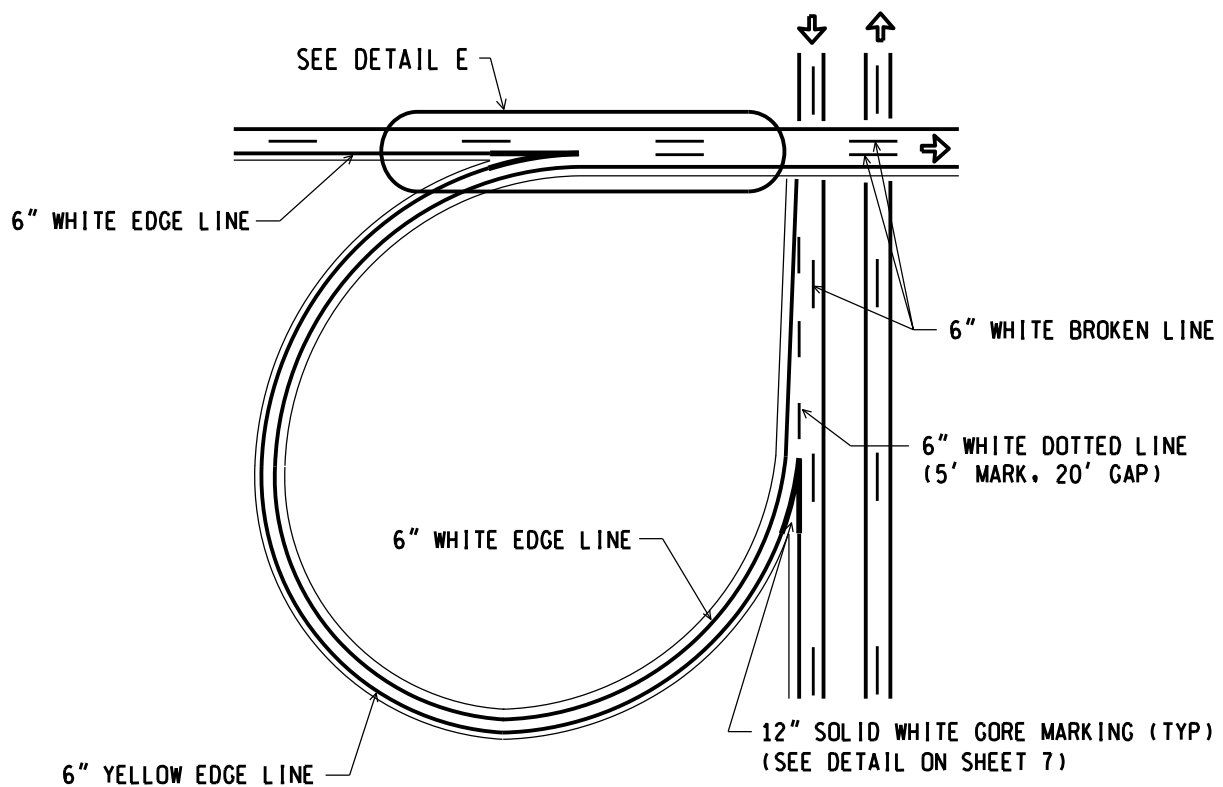
SHEET
2 OF 8

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NOTE: For Details A, B, C, D and E see Sheets 4 and 5.

ENTRANCE AND EXIT RAMP



LOOP RAMP

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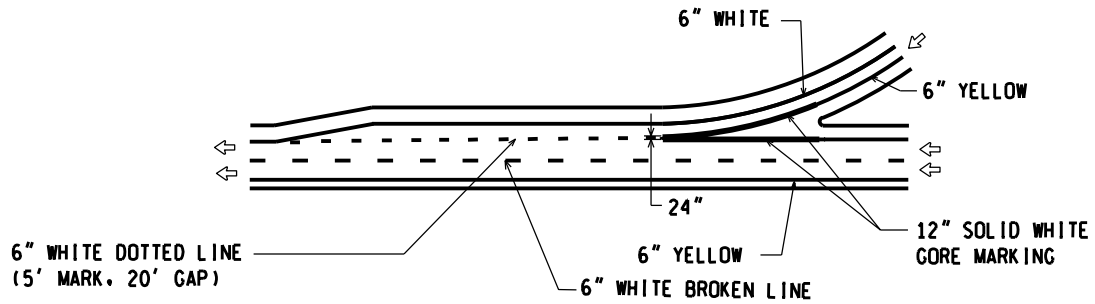
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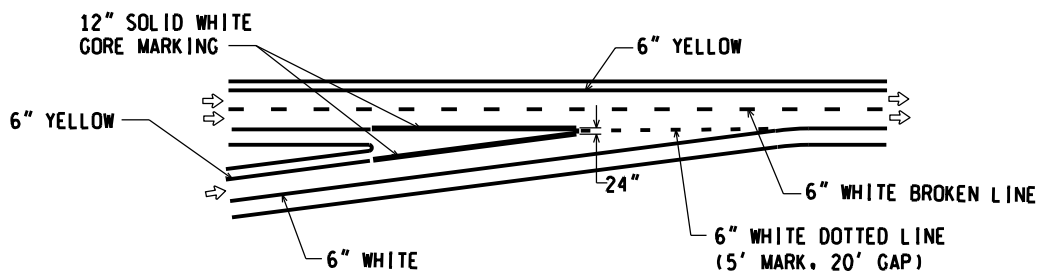
PAVE-925-E

SHEET
3 OF 8

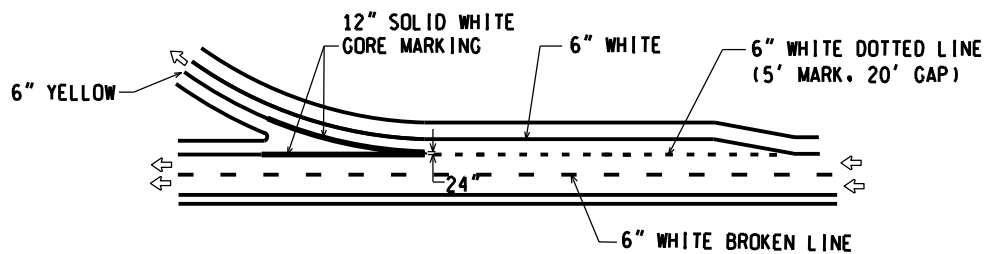
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DETAIL A - PARALLEL ACCELERATION LANE



DETAIL B - TAPERED ACCELERATION LANE



DETAIL C - PARALLEL DECELERATION LANE

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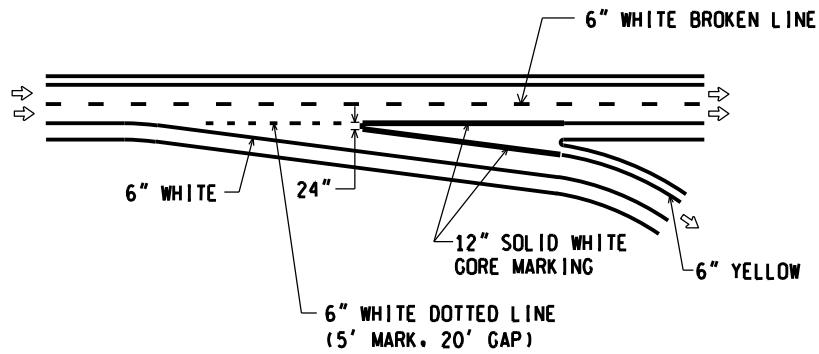
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PLAN DATE

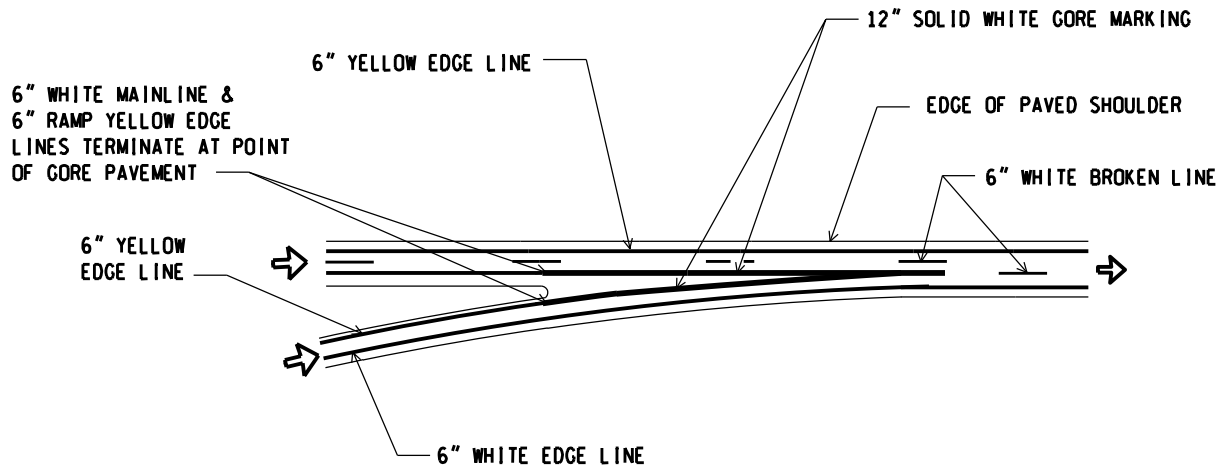
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SHEET
4 OF 8

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DETAIL D - TAPERED DECELERATION LANE



DETAIL E - TAPERED ACCELERATION LANE WITH ADDED LANE

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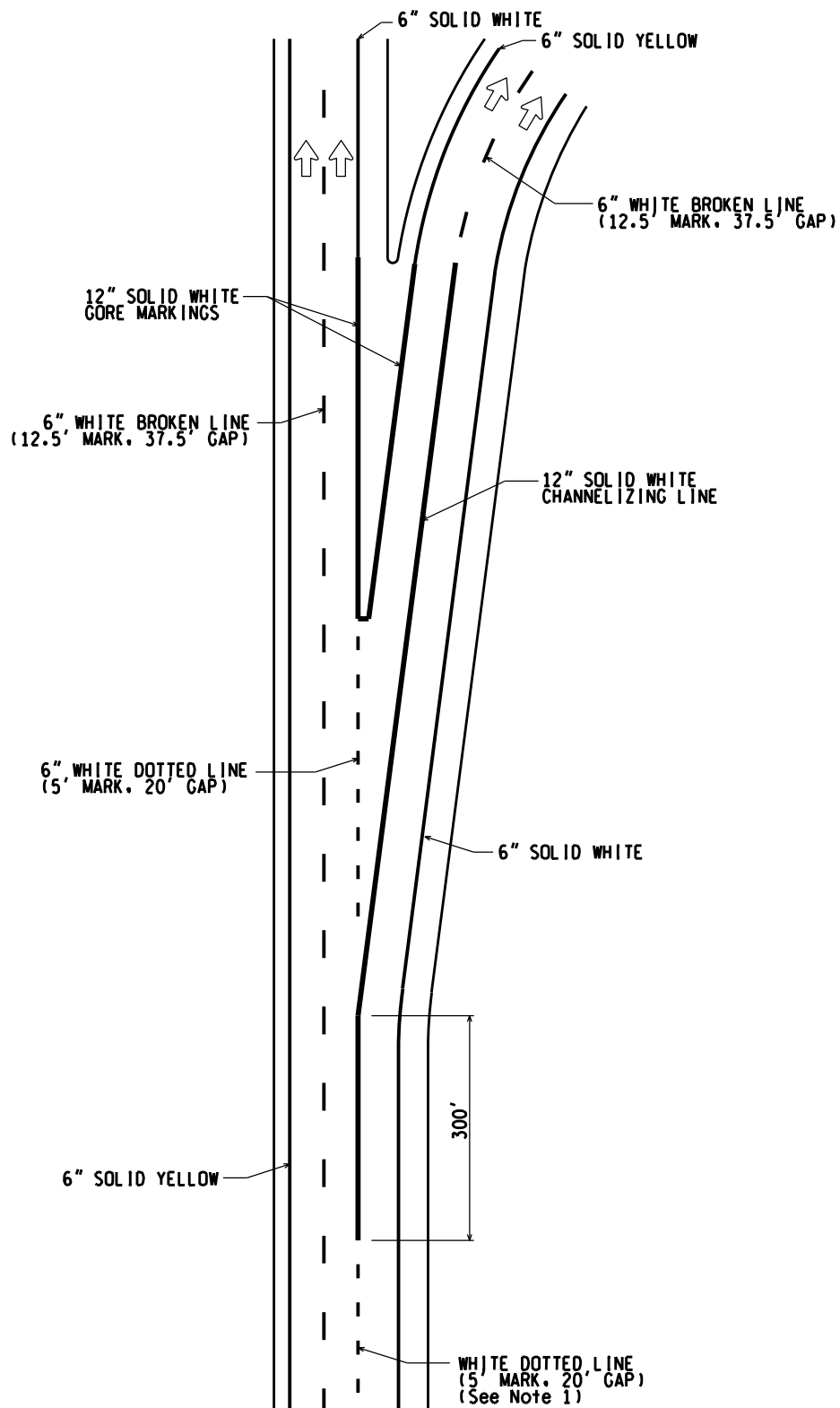
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PAVE-925-E

SHEET
5 OF 8

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MULTILANE EXIT

NOTES:

1. If the mandatory exit lane is a drop lane, the dotted line in advance of the solid channelizing line shall be 12" width (see Sheet 2). If the mandatory exit lane is a developed lane, the dotted line shall be 6" width (see Sheet 4).

NOT TO SCALE

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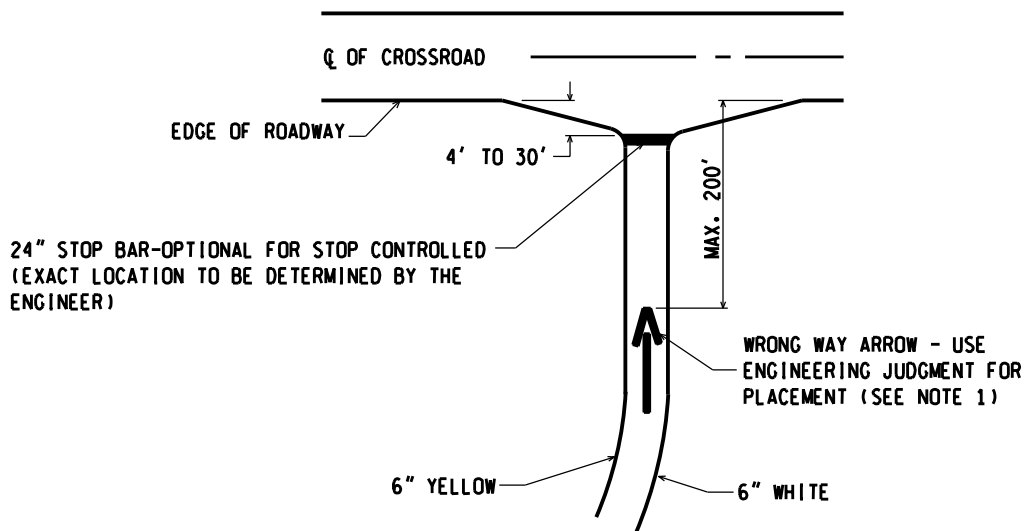
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PLAN DATE

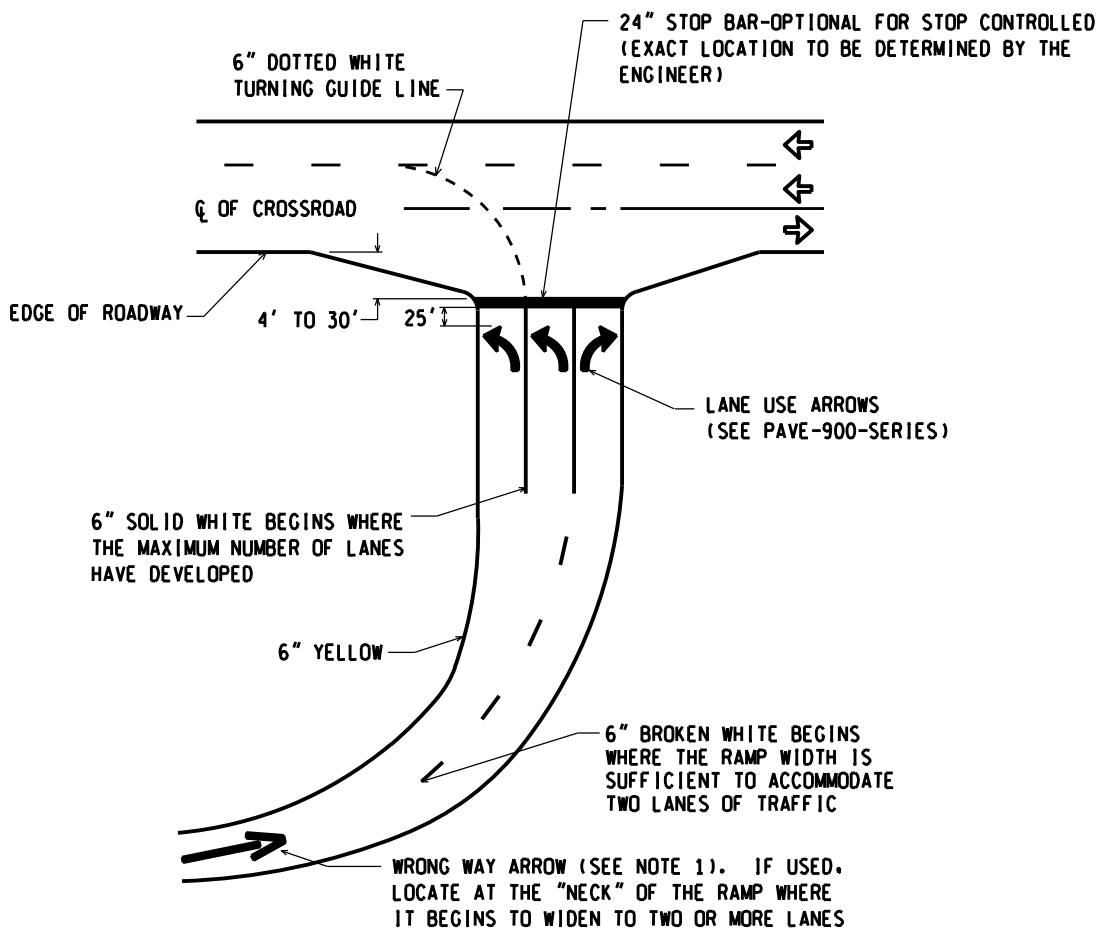
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SHEET
6 OF 8

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SINGLE LANE EXIT RAMP TERMINAL



MULTILANE EXIT RAMP TERMINAL

NOTES:

1. Wrong way arrows are optional, EXCEPT when any exit ramp parallels and is adjacent to an entrance ramp at the crossroad terminal (in the same quadrant), regardless of distance between the two ramps.
2. Double-headed arrows may be required where a service road or city street is located opposite a ramp terminal.
3. Include a dotted turning guide line for all double turn movements.

NOT TO SCALE

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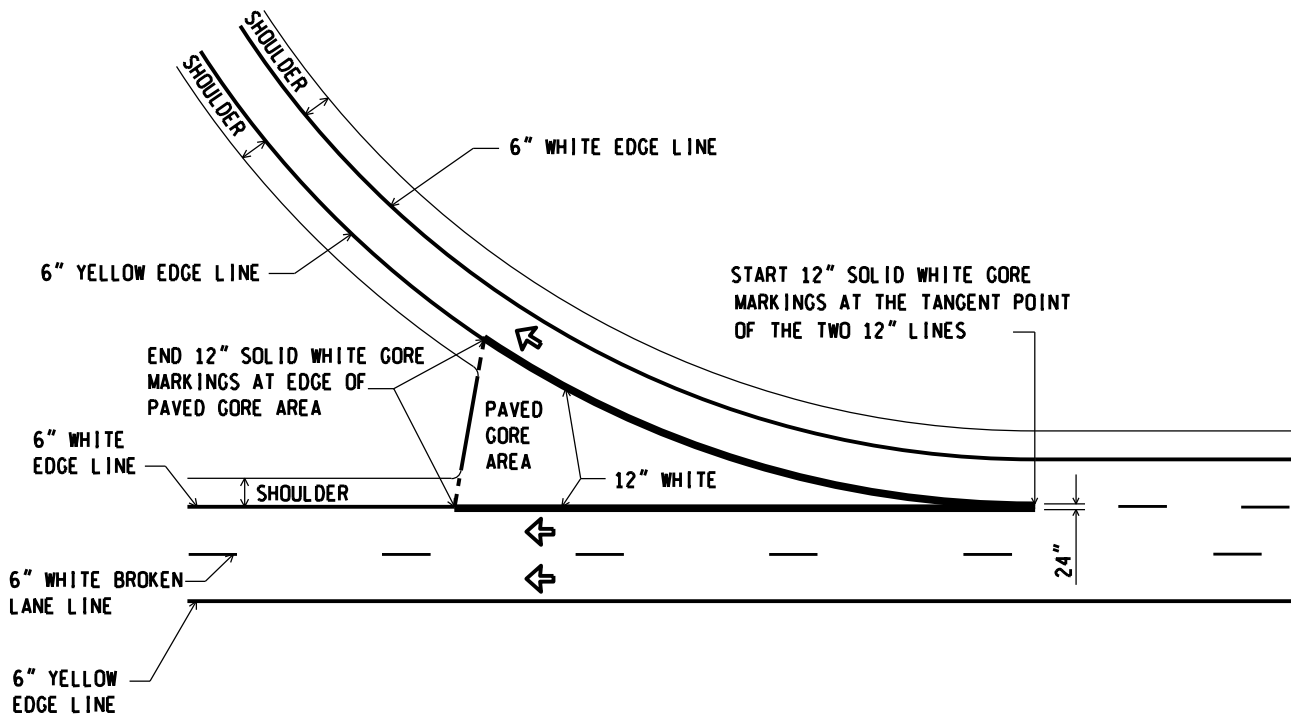
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PLAN DATE

PAVE-925-E

SHEET
7 OF 8

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GORE MARKING DETAIL

EXIT RAMP SHOWN

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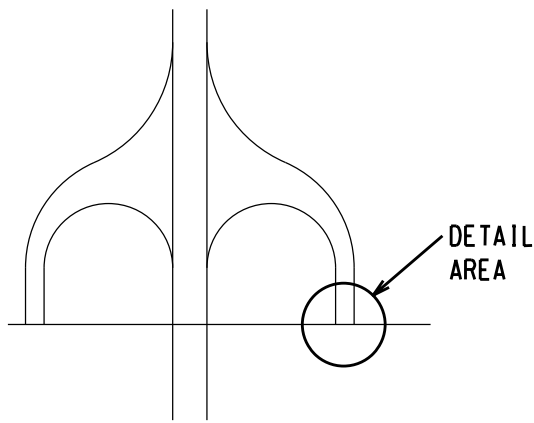
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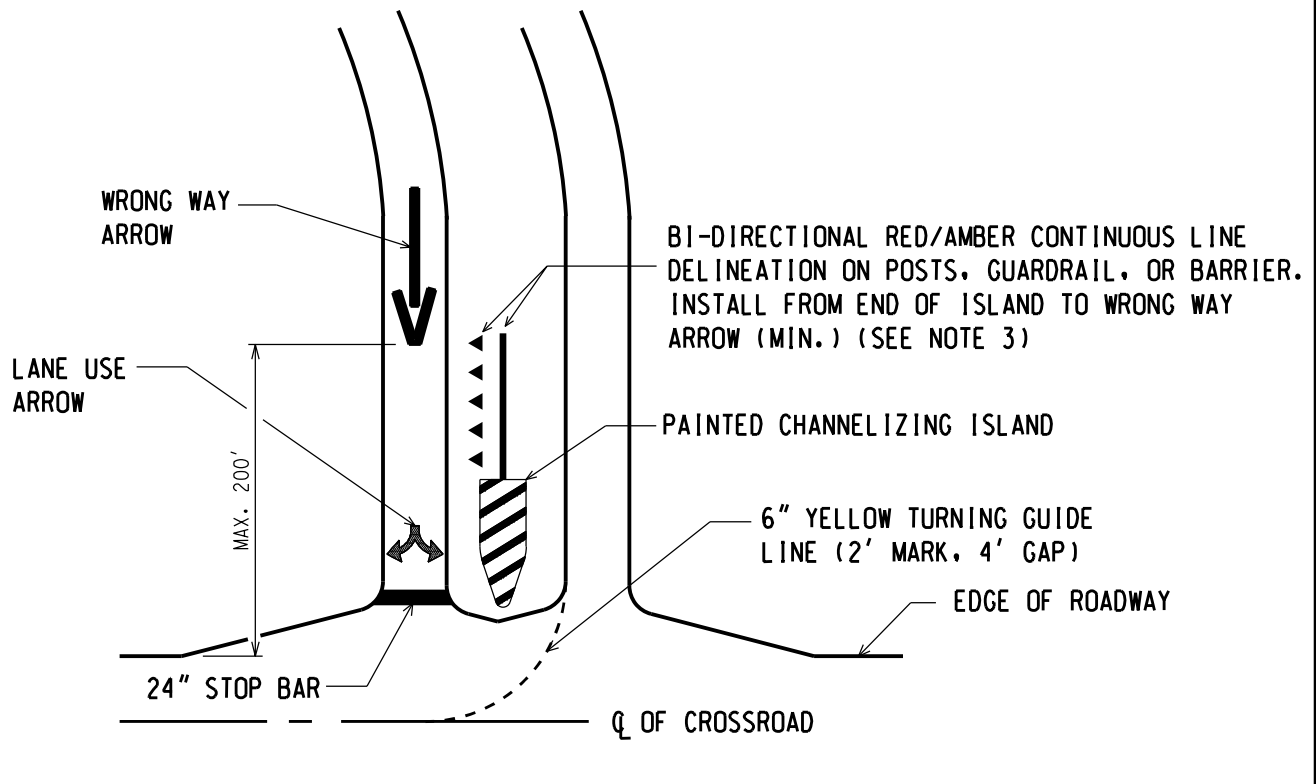
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SHEET
8 OF 8

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INTERCHANGE LAYOUT



SINGLE LANE PARELLEL EXIT/ENTRANCE RAMP DETAILS

Notes:

1. For additional placement information, see PAVE-900, PAVE-905, PAVE-907, PAVE-925, PAVE-940, and R-127.
2. Installation of the wrong way arrow is required. Installation of the stop bar is required at signalized intersections. All other features are optional and shall be installed at the direction of the Engineer.
3. When individual reflectors are used, they shall be placed at 10' maximum spacing. If a proprietary delineation system is used, install per the Manufacturer's recommendations and as directed by the Engineer.



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BY
TSMD DIVISION

DRAWN BY: MKB

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:08 PM

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DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefersich Bradley C. Wiefersich
Nov 5 2020 5:47 AM

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BUREAU OF DEVELOPMENT STANDARD PLAN FOR

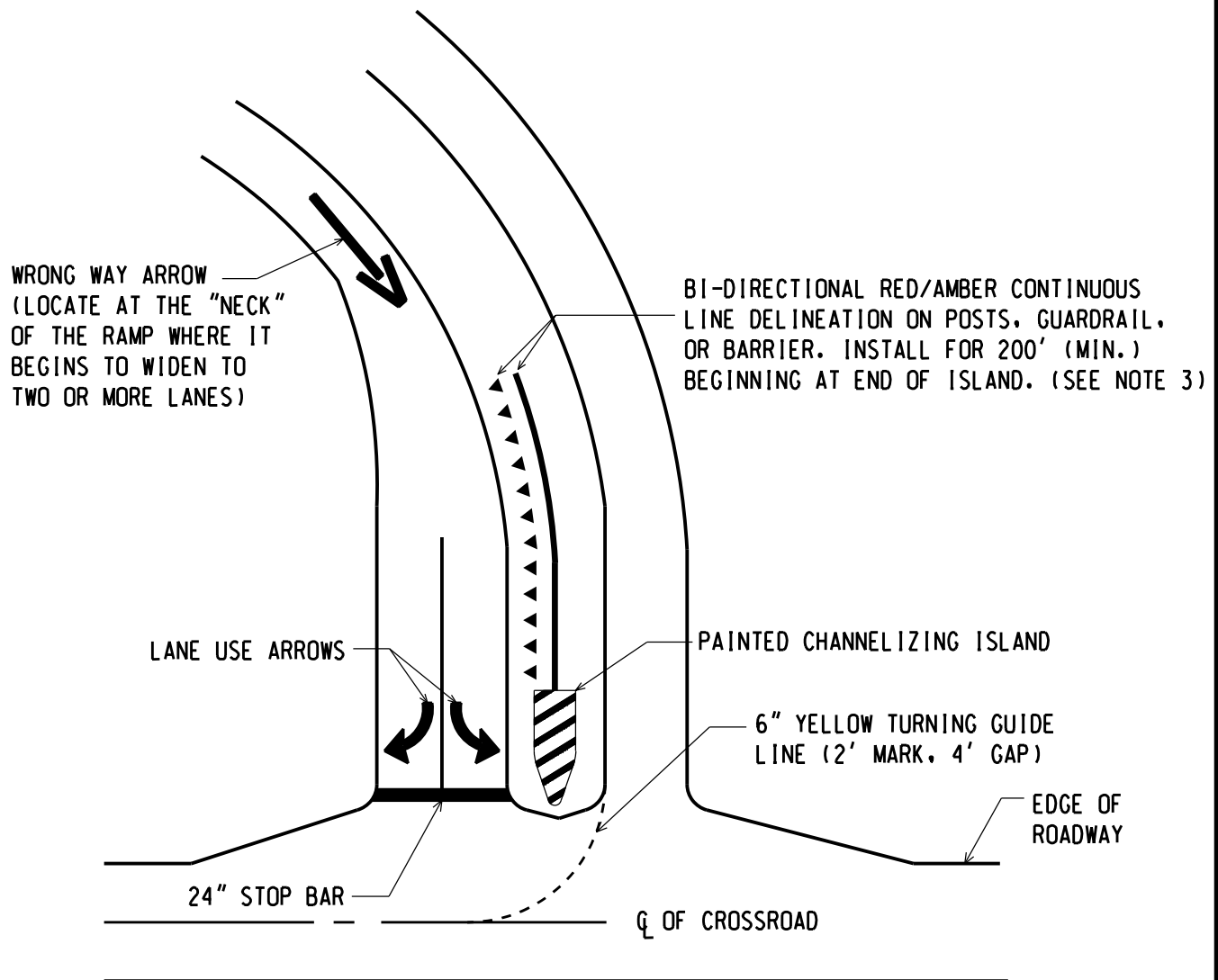
PARTIAL CLOVERLEAF TERMINAL MARKINGS

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03/25/20
PLAN DATE

PAVE-926-B

SHEET
1 OF 2



MULTILANE PARALLEL EXIT/ENTRANCE RAMP DETAILS

Notes:

1. For additional placement information, see PAVE-900, PAVE-905, PAVE-907, PAVE-925, PAVE-940, and R-127.
2. Installation of the wrong way and lane use arrows are required. Installation of the stop bar is required at signalized intersections. All other features are optional and shall be installed at the direction of the Engineer.
3. When individual reflectors are used, they shall be placed at 10' maximum spacing. If a proprietary delineation system is used, install per the Manufacturer's recommendations and as directed by the Engineer.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

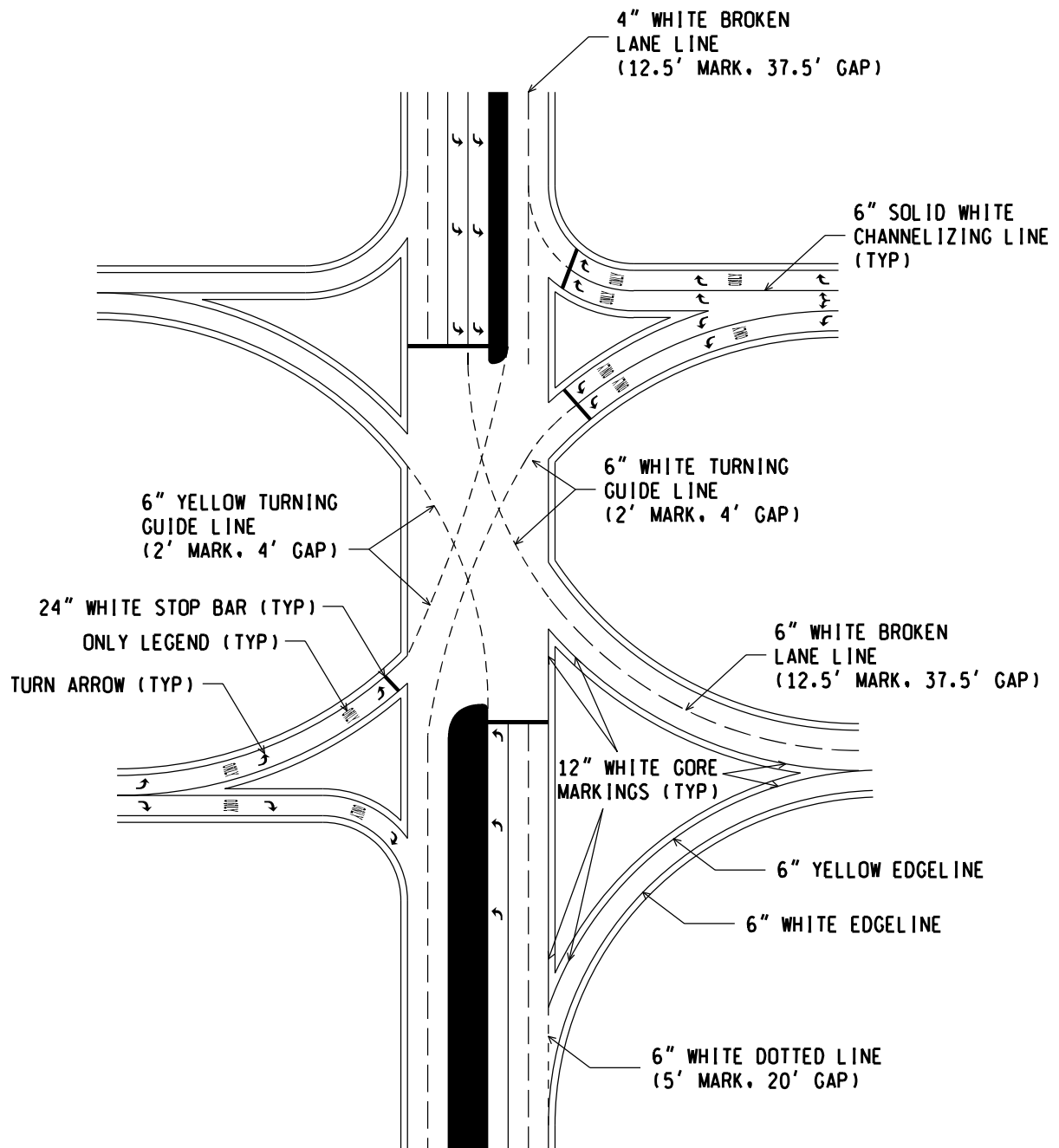
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PAVE-926-B

SHEET
2 OF 2

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SPUI MARKING DETAILS

Notes:

1. See PAVE-900 for arrow and legend details.
2. See PAVE-935 and PAVE-940 for non-ramp turn lane markings.
3. Use ONLY legends in conjunction with arrows on off-ramps.
4. Use turning guide lines for all turning movements. Refer to PAVE-907 for details.
5. For off-ramps use a 6" width solid white channelizing line between lanes that will turn in the same direction, and a 12" width solid white channelizing line between lanes that will turn in opposite directions.

NOT TO SCALE



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DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
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MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SINGLE POINT URBAN INTERCHANGE (SPUI) PAVEMENT MARKINGS

09/21/20

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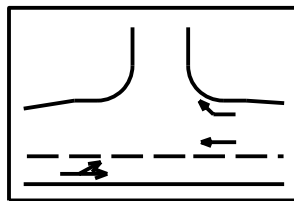
03/25/20

PLAN DATE

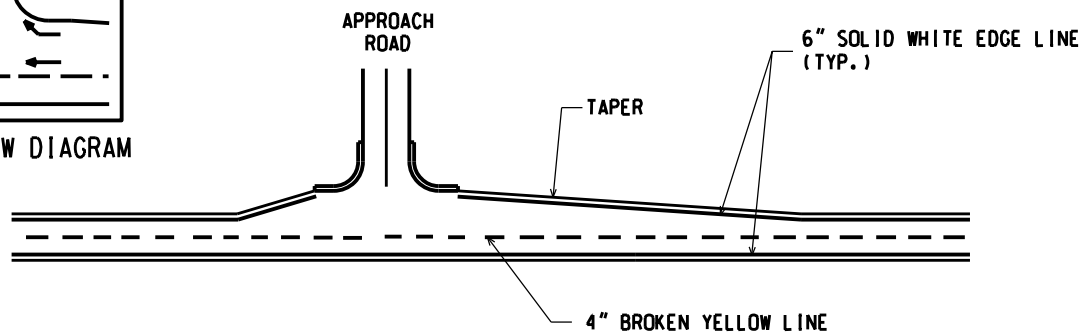
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SHEET

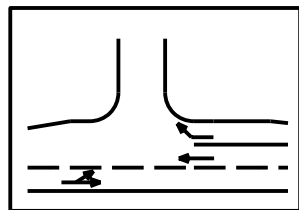
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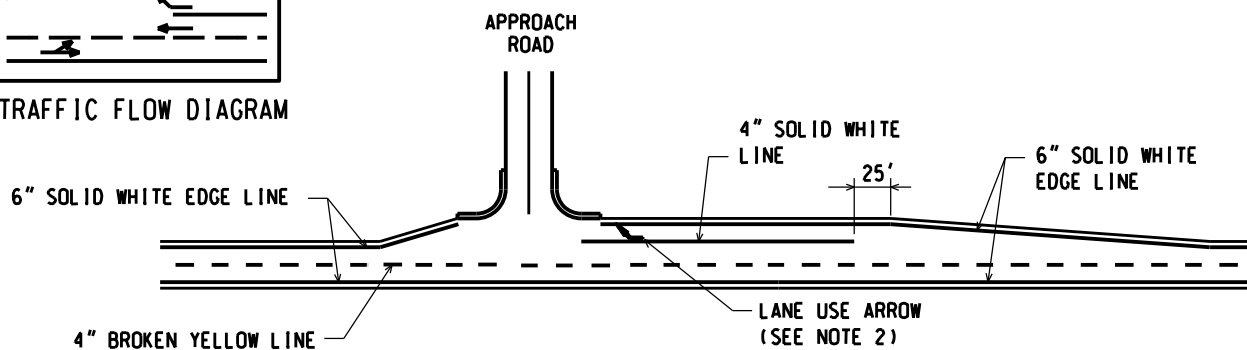
TRAFFIC FLOW DIAGRAM



INTERSECTION WITH RIGHT TURN TAPER



TRAFFIC FLOW DIAGRAM



INTERSECTION WITH RIGHT TURN LANE

Notes:

1. Paint intersection tapers greater than 50 ft in length.
2. Arrow markings should be installed according to PAVE-900, PAVE-935 and PAVE-940, if applicable.
3. Where the paved shoulder is 5 ft or greater in width approaching an intersection, radius the edge line to the curb/edge of pavement on both sides of the intersection. For narrower shoulders, the edge line may be simply discontinued across the intersection (blunt ends).



PREPARED
BY
TSMO DIVISION

DRAWN BY: LME

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:08 PM

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
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DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

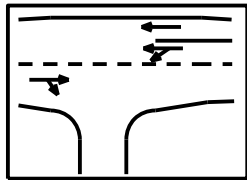
PAVEMENT MARKINGS FOR NON-SIGNALIZED INTERSECTIONS

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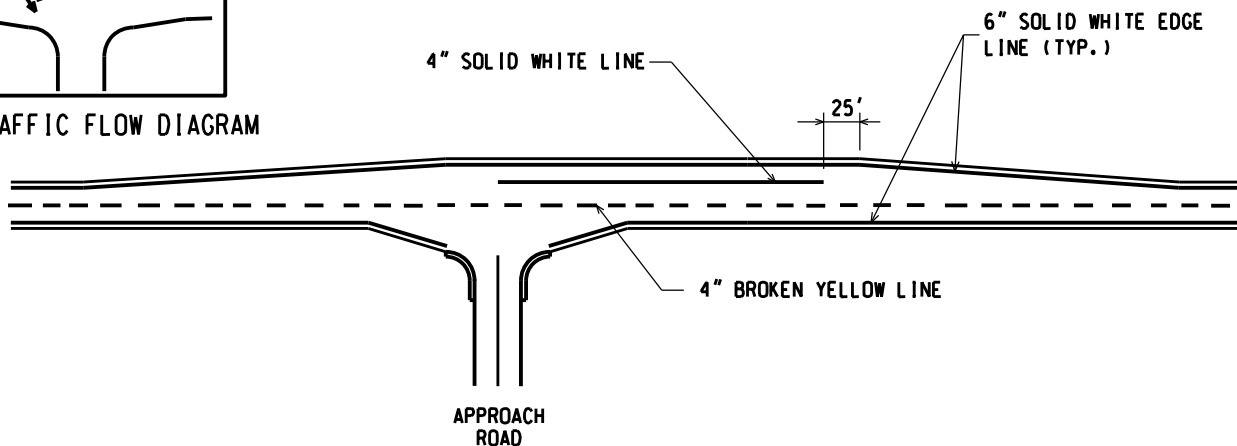
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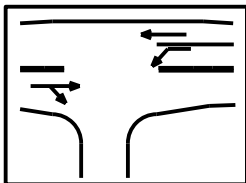
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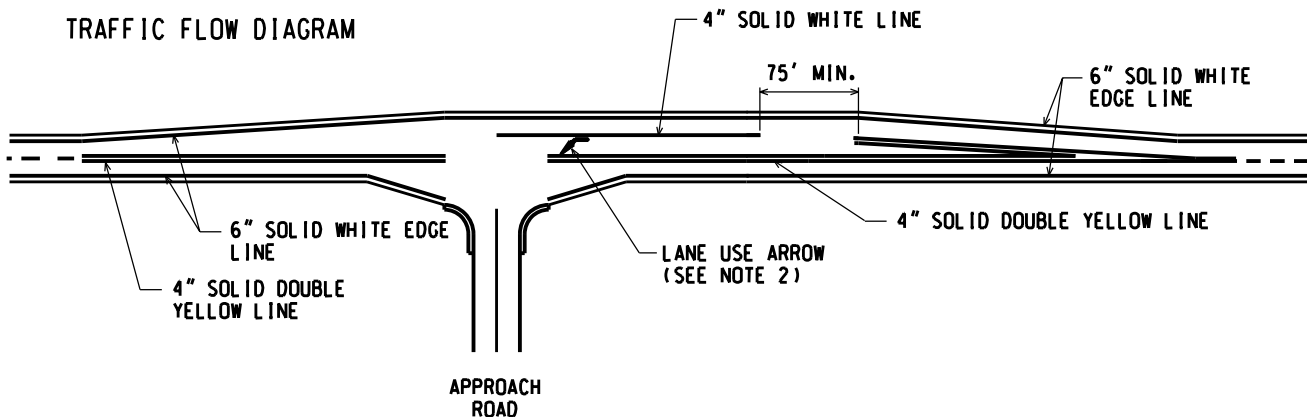
TRAFFIC FLOW DIAGRAM



"T" INTERSECTION WITH PASSING FLARE



TRAFFIC FLOW DIAGRAM



"T" INTERSECTION WITH MANDATORY LEFT TURN LANE

Notes:

1. Paint intersection tapers greater than 50 ft in length.
2. Arrow markings should be installed according to PAVE-900, PAVE-935 and PAVE-940, if applicable.
3. Where the paved shoulder is 5 ft or greater in width approaching an intersection, radius the edge line to the curb/edge of pavement on both sides of the intersection. For narrower shoulders, the edge line may be simply discontinued across the intersection (blunt ends).

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

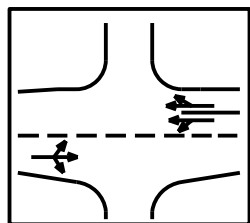
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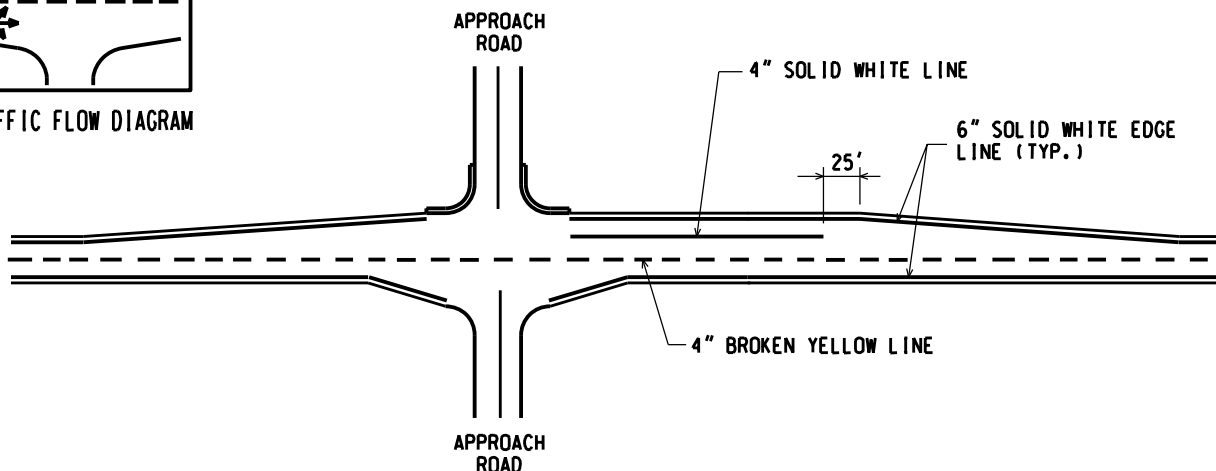
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SHEET
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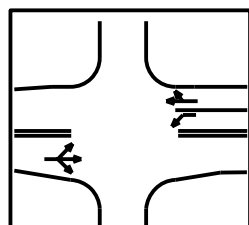
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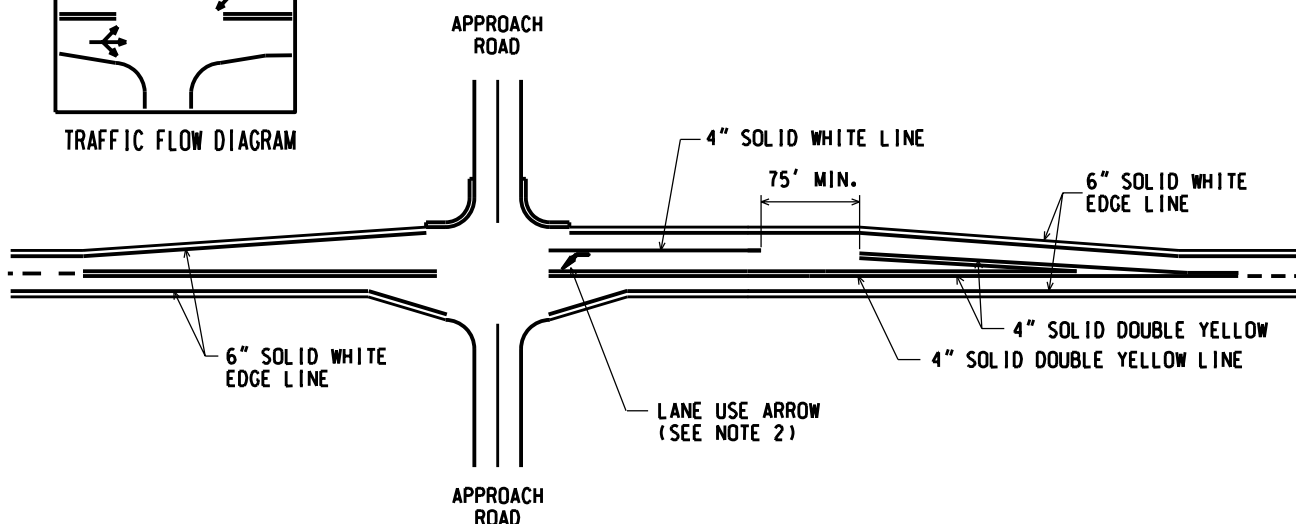
TRAFFIC FLOW DIAGRAM



FULL INTERSECTION WITH PASSING FLARE



TRAFFIC FLOW DIAGRAM



FULL INTERSECTION WITH MANDATORY LEFT TURN LANE

Notes:

1. Paint intersection tapers greater than 50 ft in length.
2. Arrow markings should be installed according to PAVE-900, PAVE-935 and PAVE-940, if applicable.
3. Where the paved shoulder is 5 ft or greater in width approaching an intersection, radius the edge line to the curb/edge of pavement on both sides of the intersection. For narrower shoulders, the edge line may be simply discontinued across the intersection (blunt ends).

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

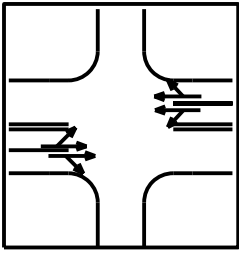
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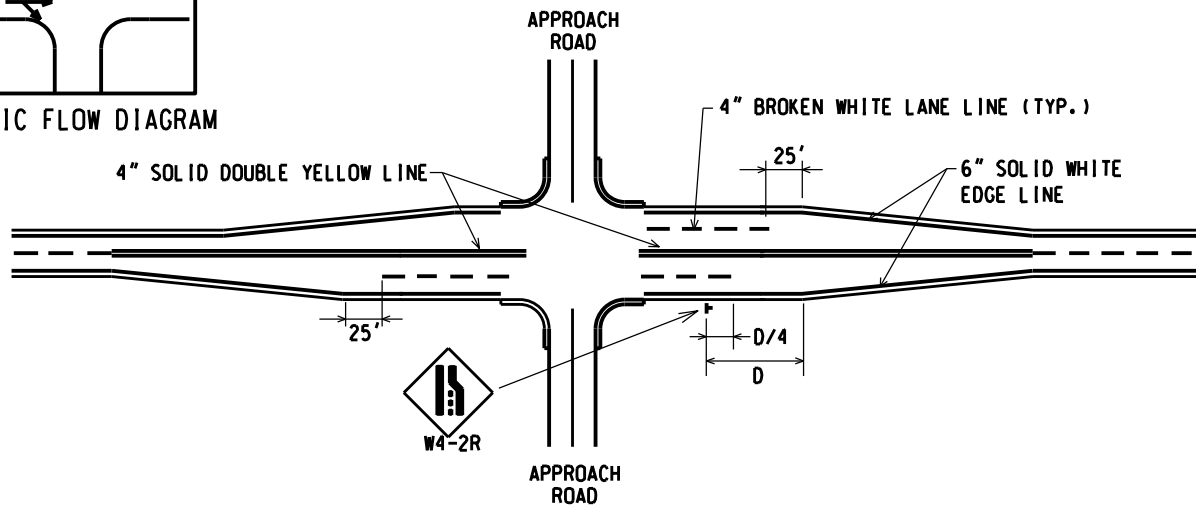
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SHEET
3 OF 8

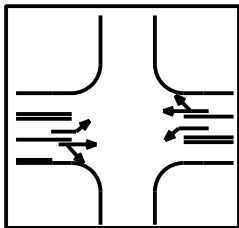
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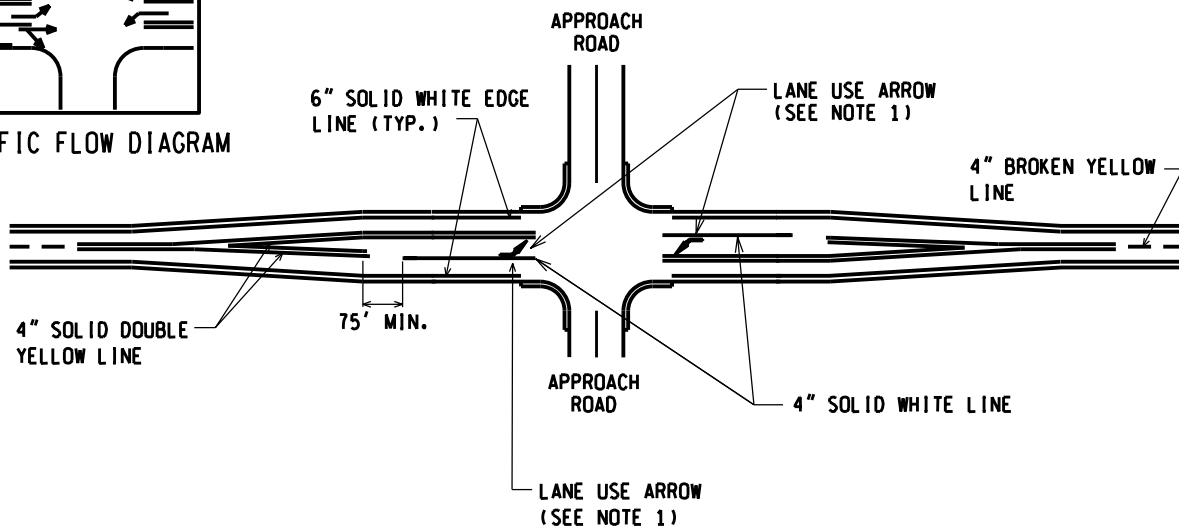
TRAFFIC FLOW DIAGRAM



FULL INTERSECTION WITH FAR SIDE LANE DROP



TRAFFIC FLOW DIAGRAM



FULL INTERSECTION WITH PARTIAL FLARE WITH DEVELOPED CENTER LEFT-TURN LANE

(MAJOR CROSS STREET)

Notes:

1. Arrow markings should be installed according to PAVE-900, PAVE-935 and PAVE-940, if applicable.
2. Where the paved shoulder is 5 ft or greater in width approaching an intersection, radius the edge line to the curb/edge of pavement on both sides of the intersection. For narrower shoulders, the edge line may be simply discontinued across the intersection (blunt ends).

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

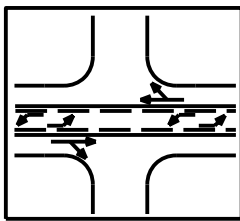
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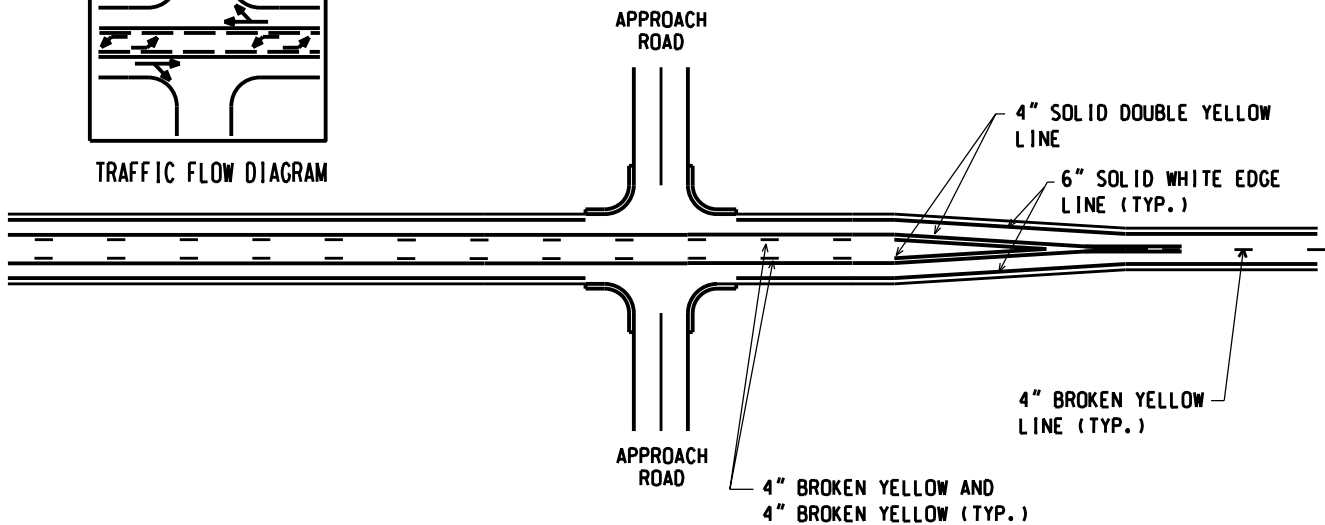
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SHEET
4 OF 8

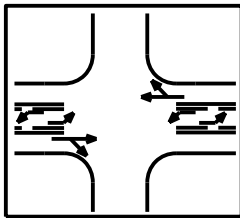
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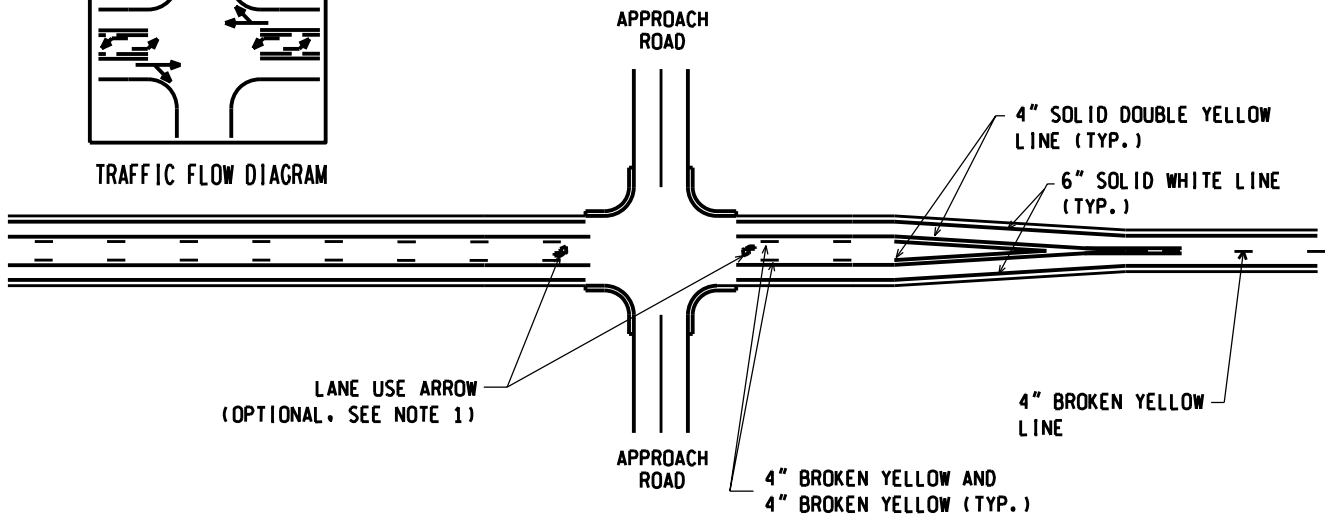
TRAFFIC FLOW DIAGRAM



FULL INTERSECTION PARTIAL FLARE WITH DEVELOPED CENTER LEFT-TURN LANE - CONVENTIONAL MARKINGS (MINOR CROSS STREET)



TRAFFIC FLOW DIAGRAM



FULL INTERSECTION PARTIAL FLARE WITH DEVELOPED CENTER LEFT-TURN LANE - ALTERNATE MARKING (MINOR CROSS STREET)

Notes:

1. Arrow markings should be installed according to PAVE-900, PAVE-935 and PAVE-940, if applicable.
2. Where the paved shoulder is 5 ft or greater in width approaching an intersection, radius the edge line to the curb/edge of pavement on both sides of the intersection. For narrower shoulders, the edge line may be simply discontinued across the intersection (blunt ends).

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

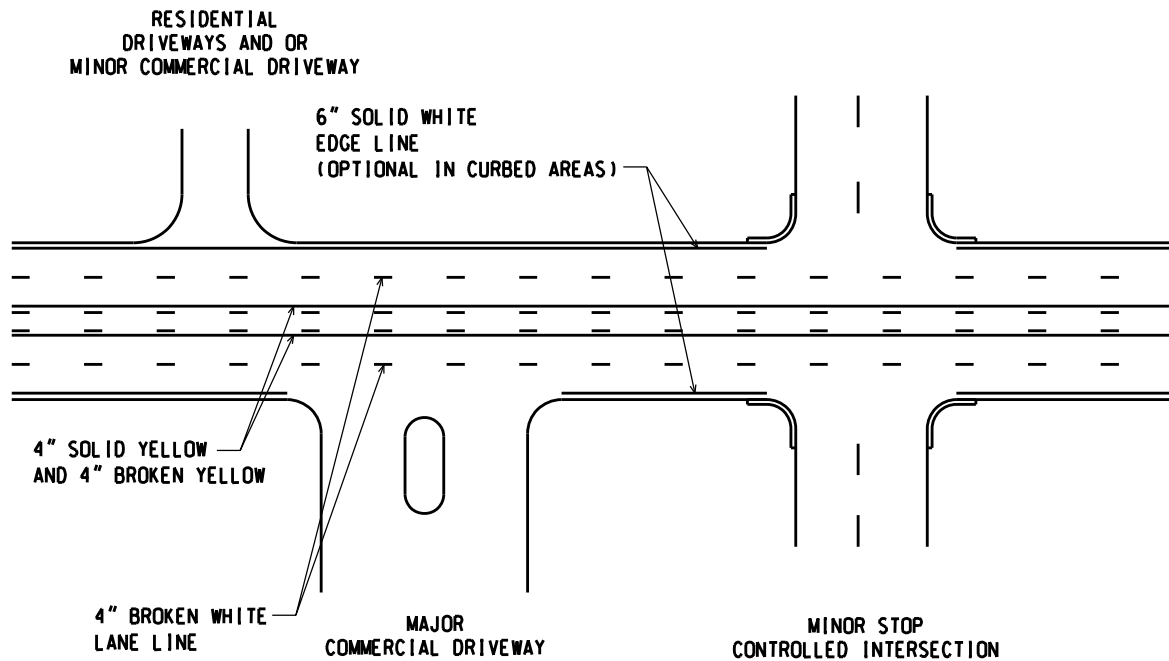
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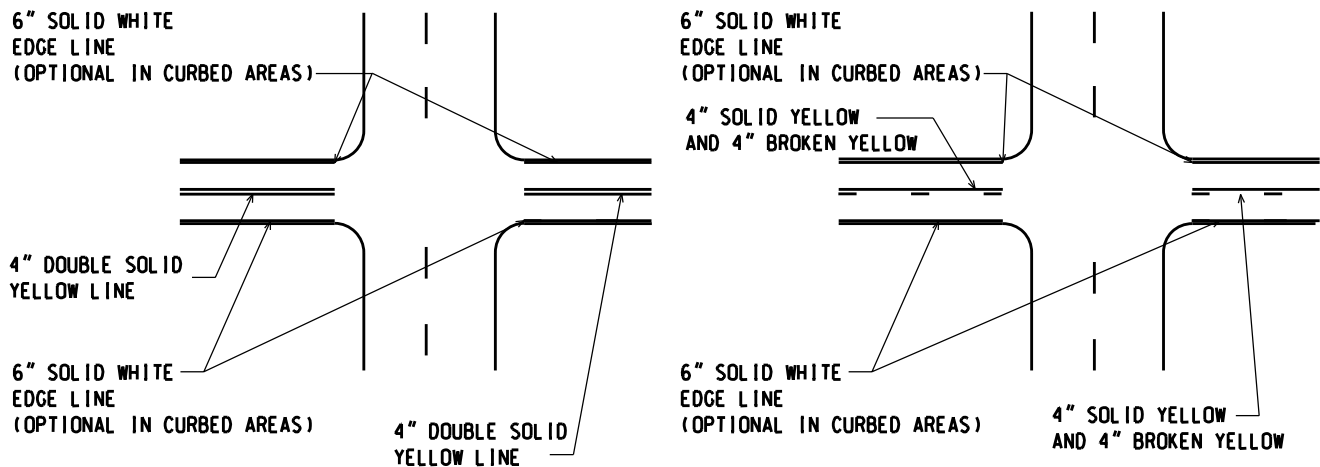
PAVE-930-D

SHEET
5 OF 8

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STRIPING THROUGH MINOR (STOP CONTROLLED) INTERSECTIONS AND DRIVEWAYS



GAPPING INTERSECTIONS AT MINOR (STOP CONTROLLED) STREETS

Notes:

- Where the paved shoulder is 5 ft or greater in width approaching an intersection, radius the edge line to the curb/edge of pavement on both sides of the intersection. For narrower shoulders, the edge line may be simply discontinued across the intersection (blunt ends).

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MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

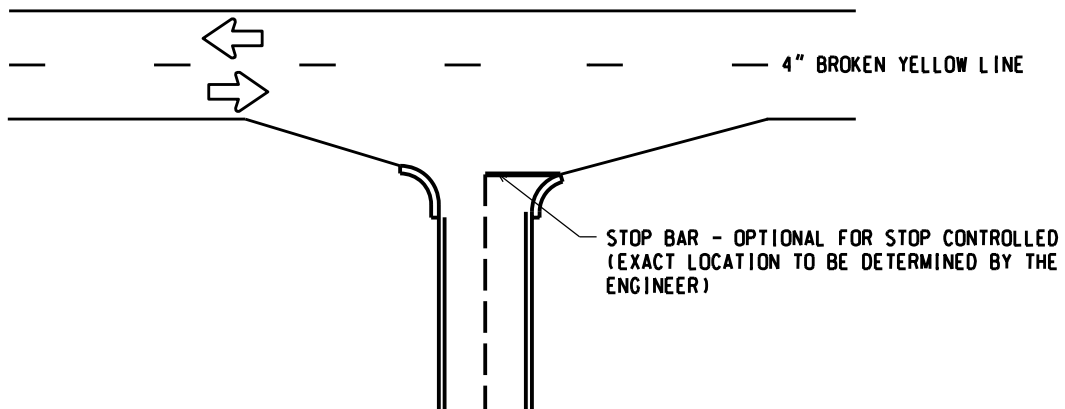
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SHEET
6 OF 8

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STOP BAR DETAIL

(TRUNKLINE TO TRUNKLINE "T" INTERSECTION)

Notes:

1. The width of stop bars shall be 24 in.
2. Stop bars should be placed between 4 ft and 30 ft from the nearest edge of the intersecting roadway.
3. To minimize vehicle exposure time, stop bars should be located as near the intersecting roadway as practical.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

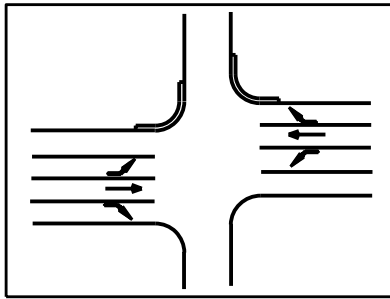
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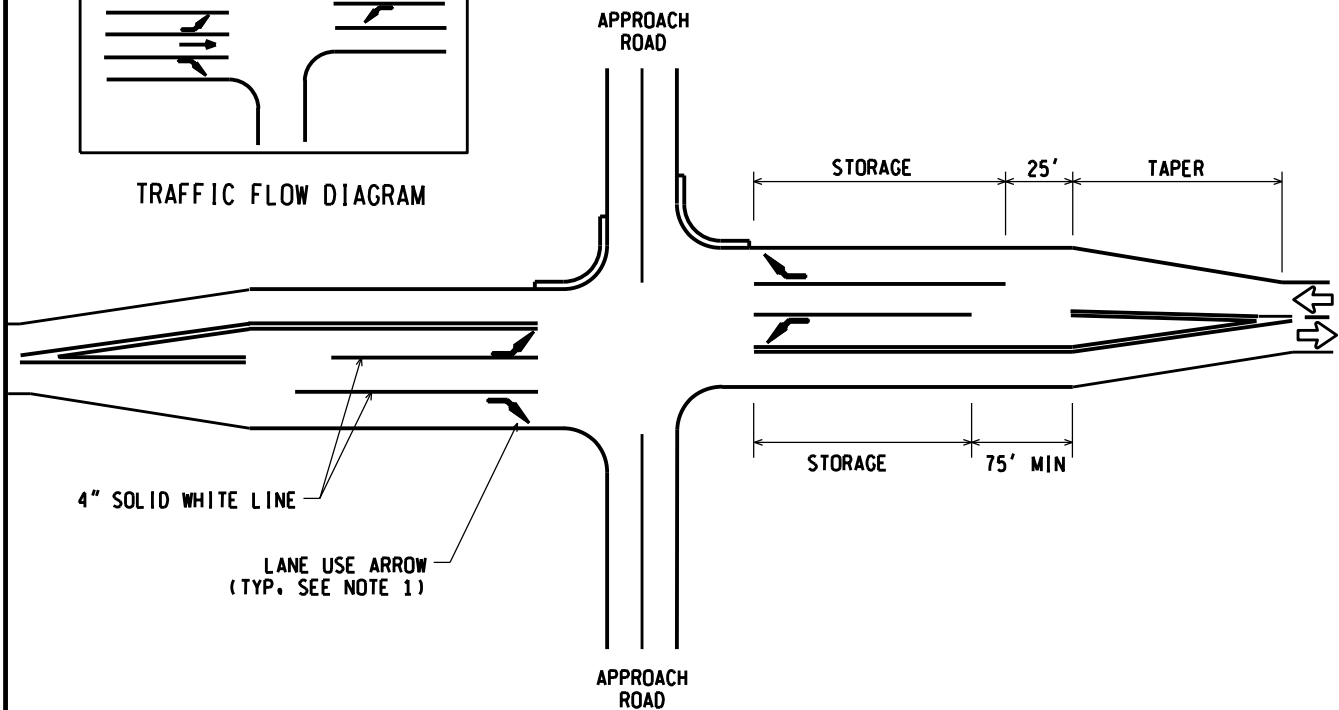
PAVE-930-D

SHEET
7 OF 8

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TRAFFIC FLOW DIAGRAM



RIGHT AND LEFT TURN LANES ON THE SAME APPROACH

Note:

1. Arrow markings should be installed according to the layouts shown on PAVE-900, PAVE-935 and PAVE-940, if applicable.
2. Refer to GEO-650 for taper lengths.

NOT TO SCALE

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BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
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03/25/20
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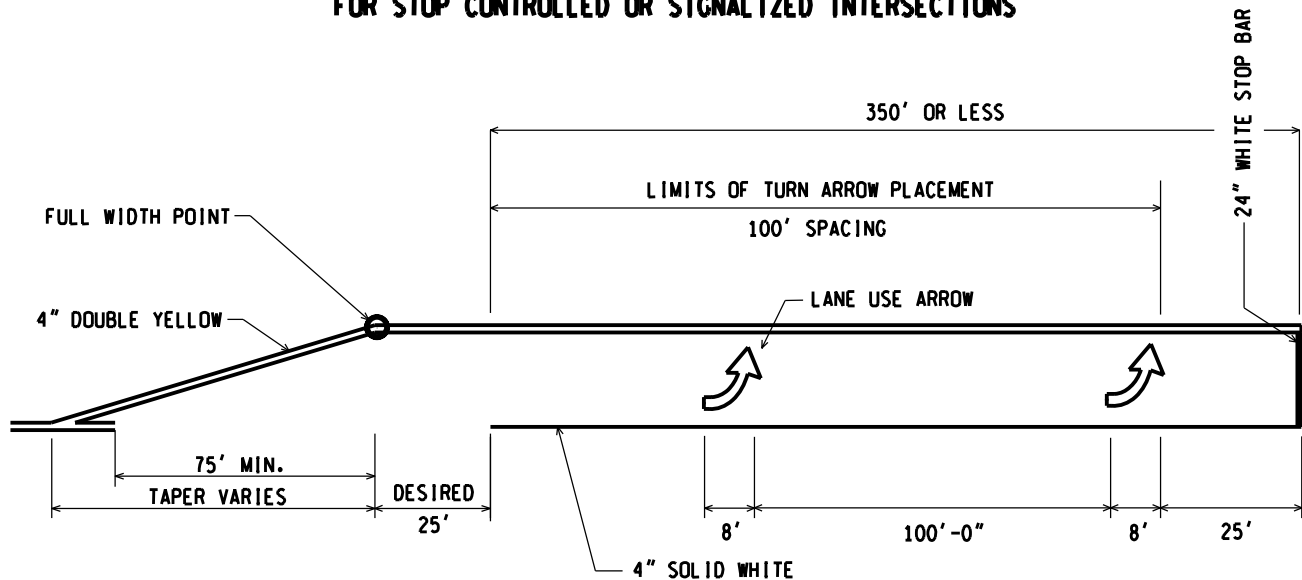
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SHEET
8 OF 8

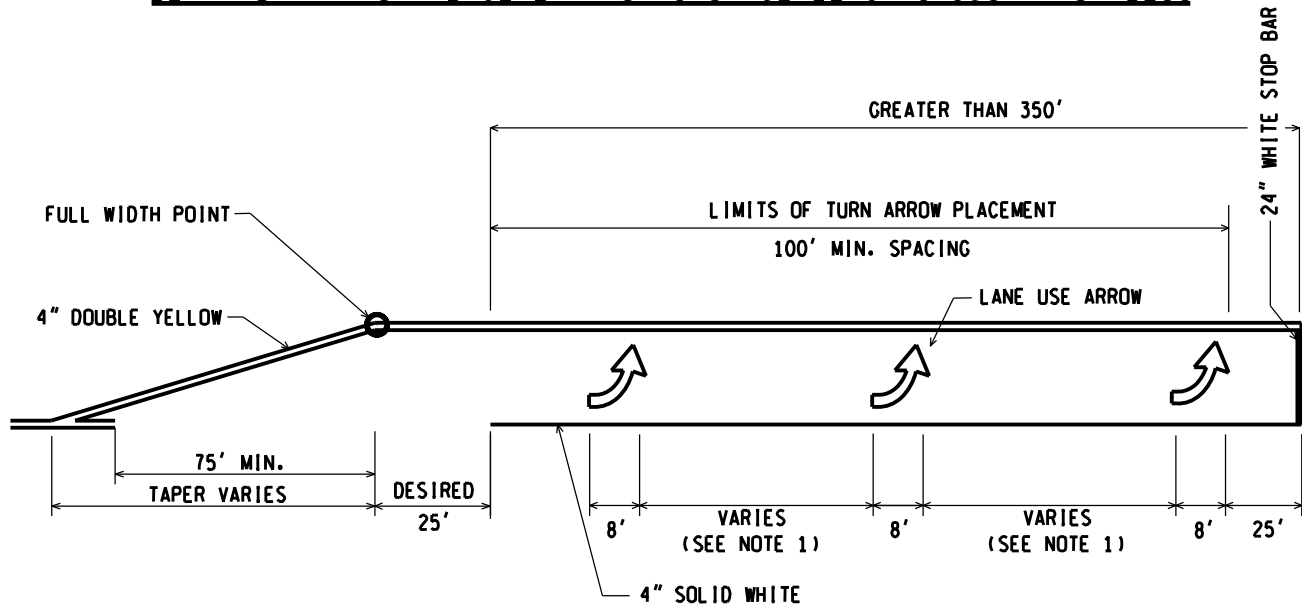
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LEFT TURN STORAGE LANE(S) MARKING DETAILS

FOR STOP CONTROLLED OR SIGNALIZED INTERSECTIONS



LEFT TURN ARROW PLACEMENT FOR STORAGE LENGTHS 350 FT OR LESS



LEFT TURN ARROW PLACEMENT FOR STORAGE LENGTHS GREATER THAN 350 FT

NOTES:

- Where the storage length is greater than 350 ft, use a minimum of three arrows. Place additional arrows as directed by the Engineer. Arrows should be evenly spaced throughout the available length with a minimum spacing of 100 ft.
- Arrows shall be used in exclusive turn lanes at signalized intersections. When used, they shall be located as shown.
- A 4 inch yellow left turn edge line may be used adjacent to raised curbs or medians in a left turn lane.



PREPARED
BY
TSMO DIVISION

DRAWN BY: MKB

CHECKED BY: CMW

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:09 PM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wierferich Bradley C. Wierferich
Nov 5 2020 5:49 AM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

LEFT TURN LANE MARKINGS

09/21/20

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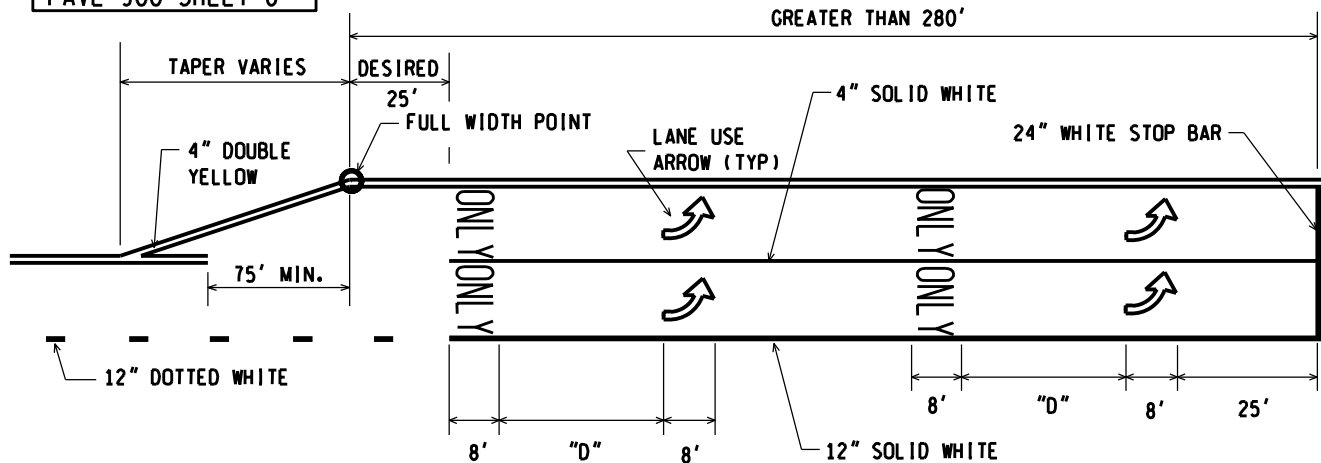
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SHEET
1 OF 6

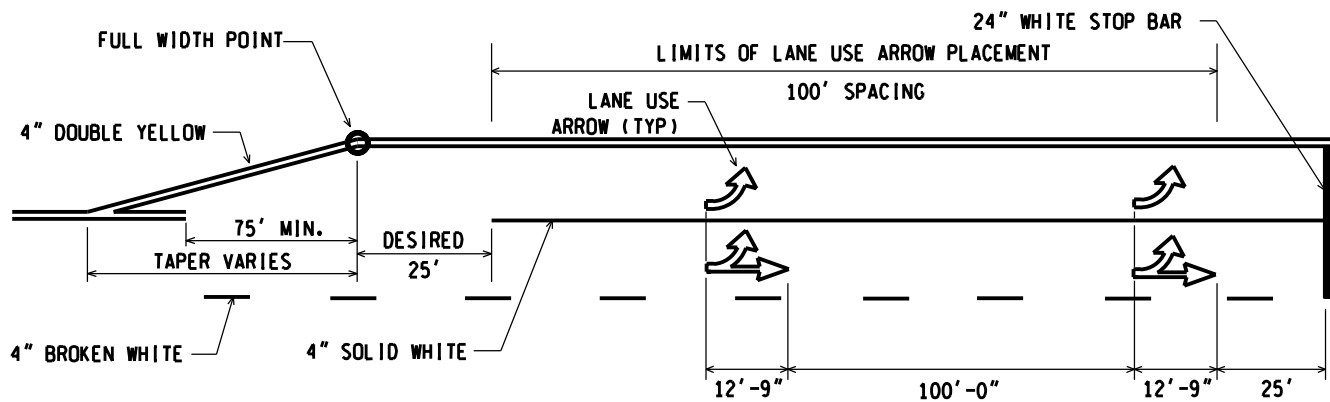
DOUBLE LEFT TURN STORAGE LANES MARKING DETAILS

FOR STOP CONTROLLED OR SIGNALIZED INTERSECTIONS

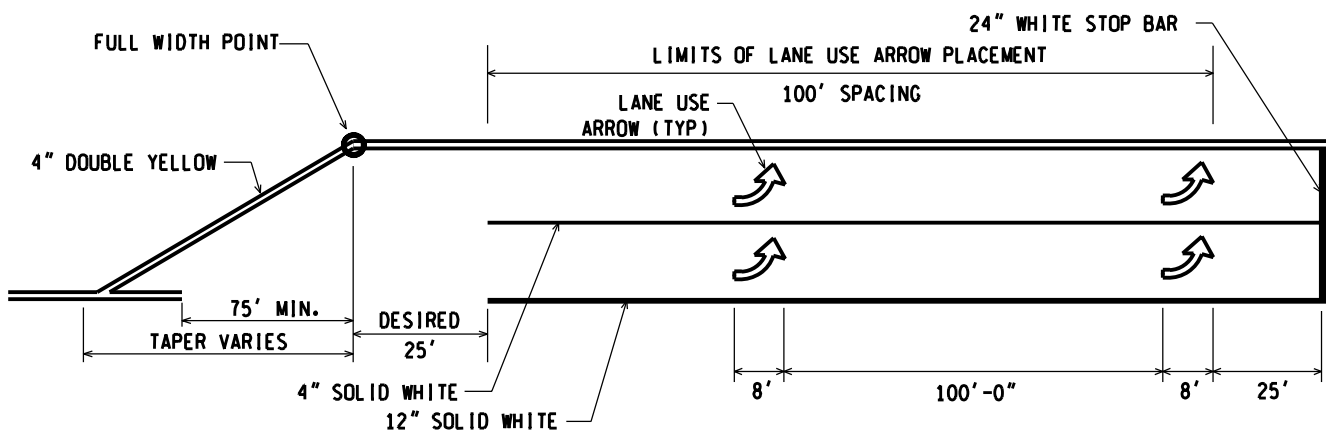
FOR "D" VALUES SEE
PAVE-900 SHEET 8



THROUGH LANE BECOMES EXCLUSIVE LEFT TURN LANE



THROUGH LANE BECOMES OPTIONAL LEFT TURN LANE



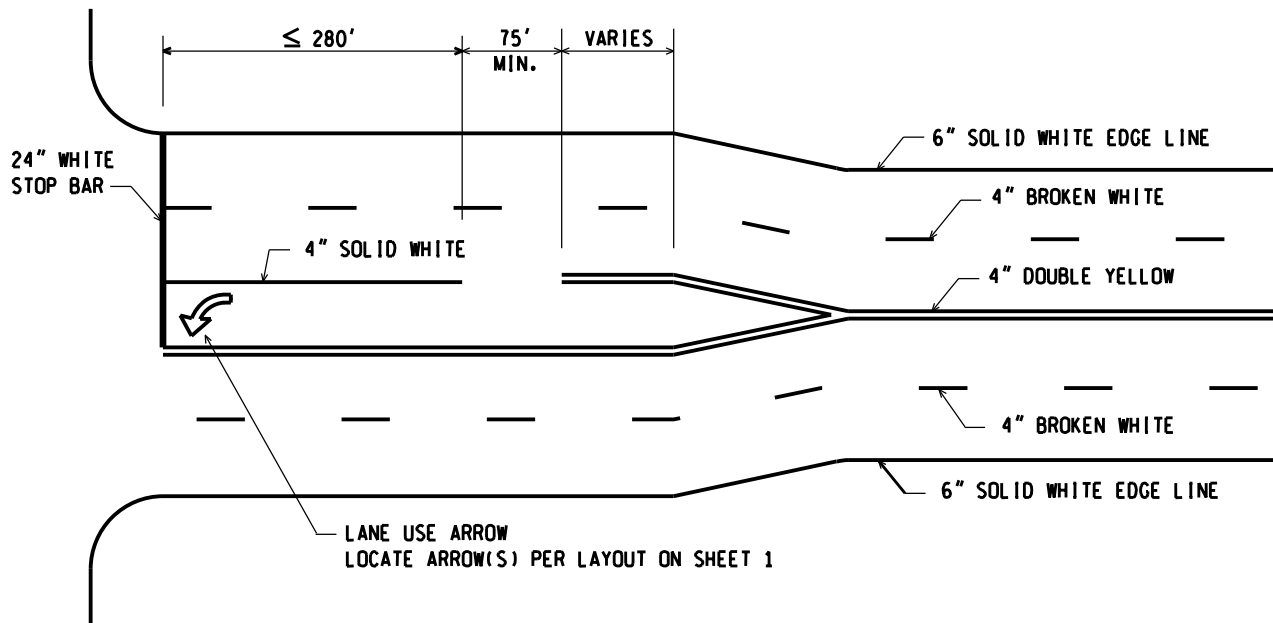
NOTES:

1. Where at least one through lane becomes an exclusive turn lane, arrow and legend markings shall be used. Otherwise, omit the legend markings.
2. For double left turn lanes 280 ft or less, omit the second set of arrow-legend pairs and/or combination arrows in each lane.
3. When two or more arrow/legend sets are used and spacing between sets is less than "D", the Engineer may choose to reduce the distance between the arrow and legend.
4. Include a dotted turning guideline for all double turn movements.

NOT TO SCALE

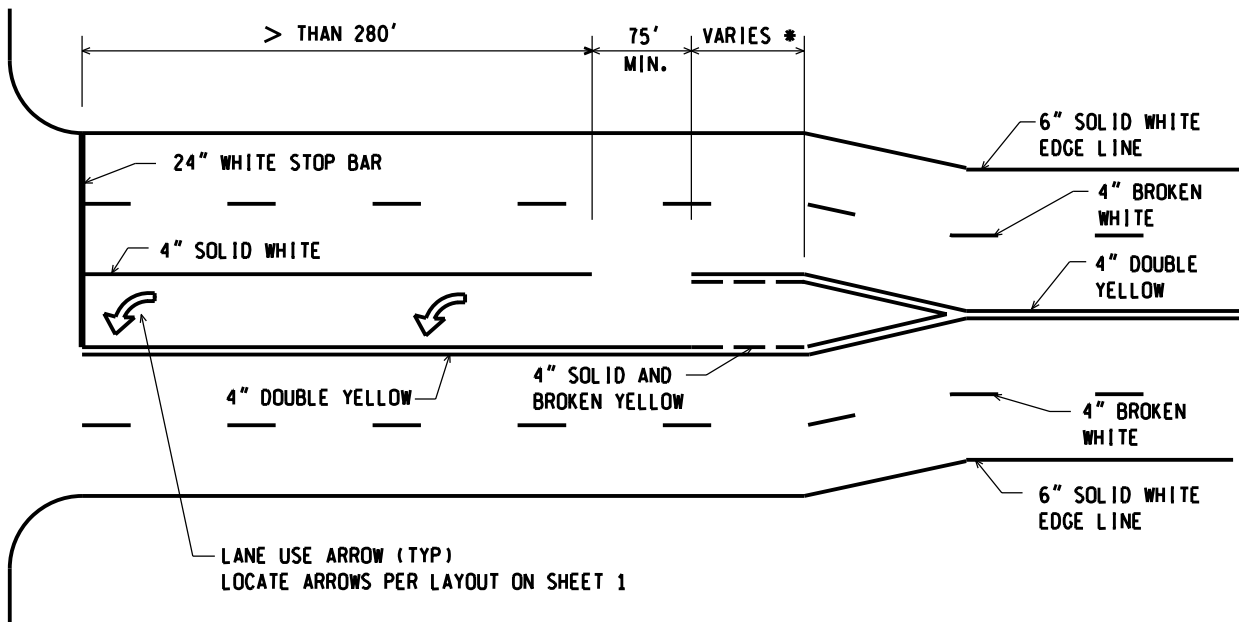
LIMITED LENGTH LEFT TURN LANES

FOR SIGNALIZED INTERSECTIONS



355 FT OR LESS OF FULL WIDTH CENTER LANE FOR LEFT TURNS

* REMAINDER OF 5 LANE SECTION TO BE MARKED AS A BI-DIRECTIONAL LEFT TURN LANE (SEE SHEET 5)



FOR FULL WIDTH CENTER LEFT TURN LANES GREATER THAN 355 FT

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

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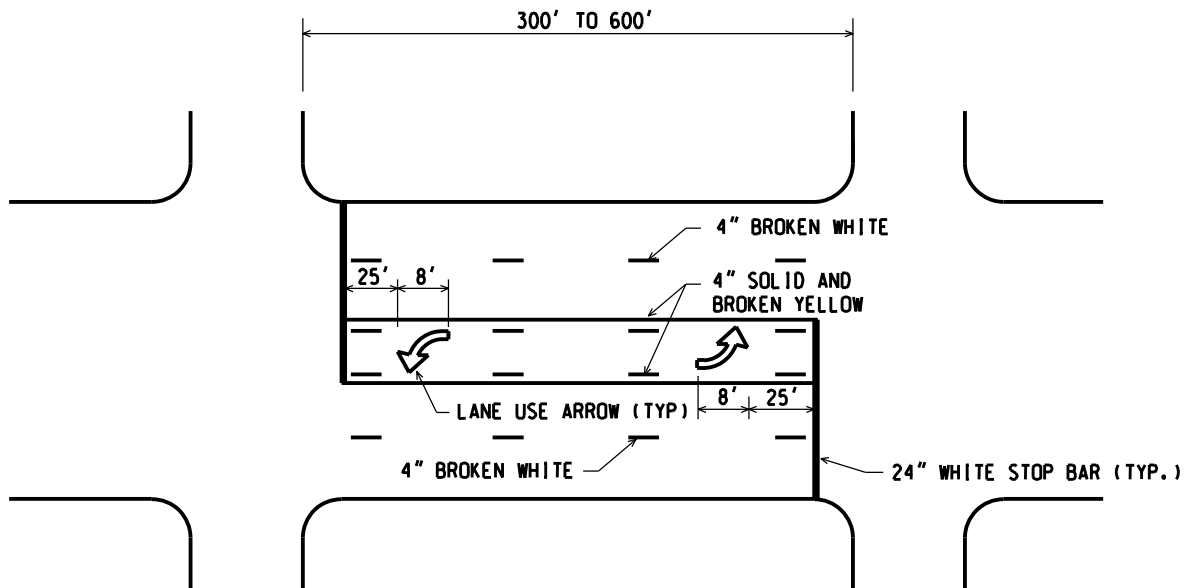
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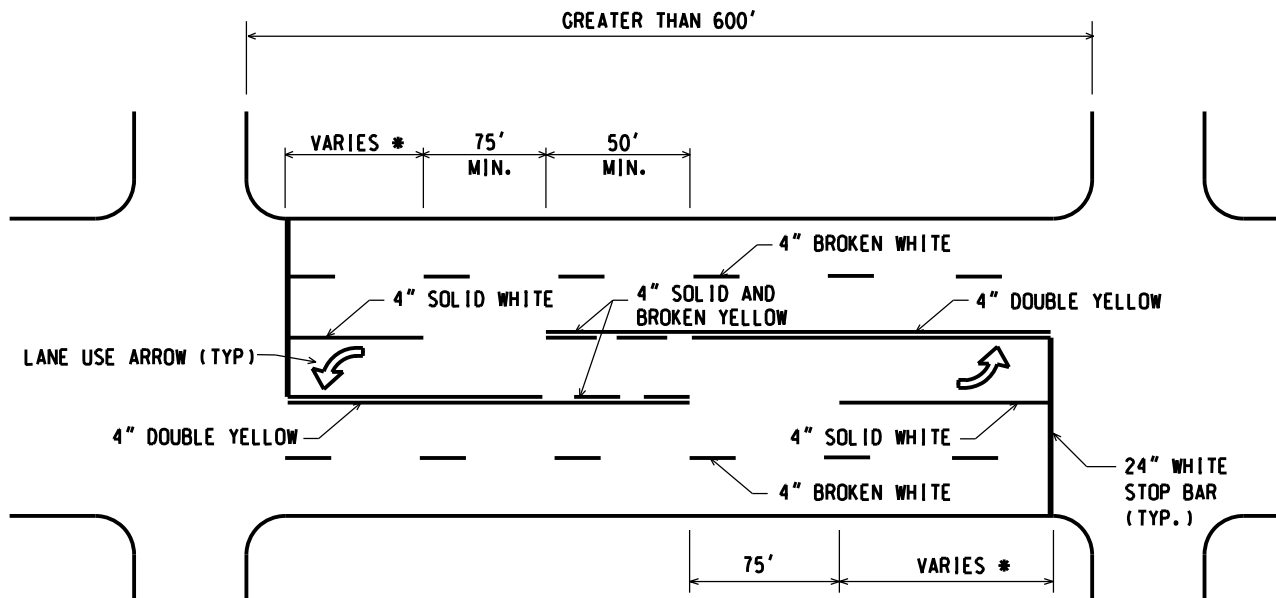
SHEET
3 OF 6

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LEFT TURN LANE TREATMENTS BETWEEN URBAN SIGNALIZED INTERSECTIONS



WHERE DISTANCE BETWEEN ADJACENT INTERSECTIONS IS 600 FT OR LESS



WHERE DISTANCE BETWEEN ADJACENT INTERSECTIONS IS GREATER THAN 600 FT

* LENGTH DETERMINED BY TRAFFIC COUNT ANALYSIS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

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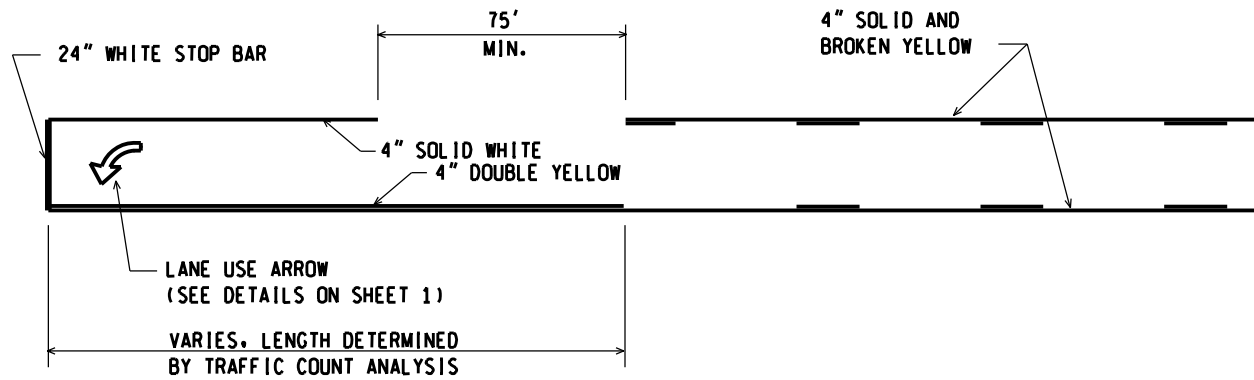
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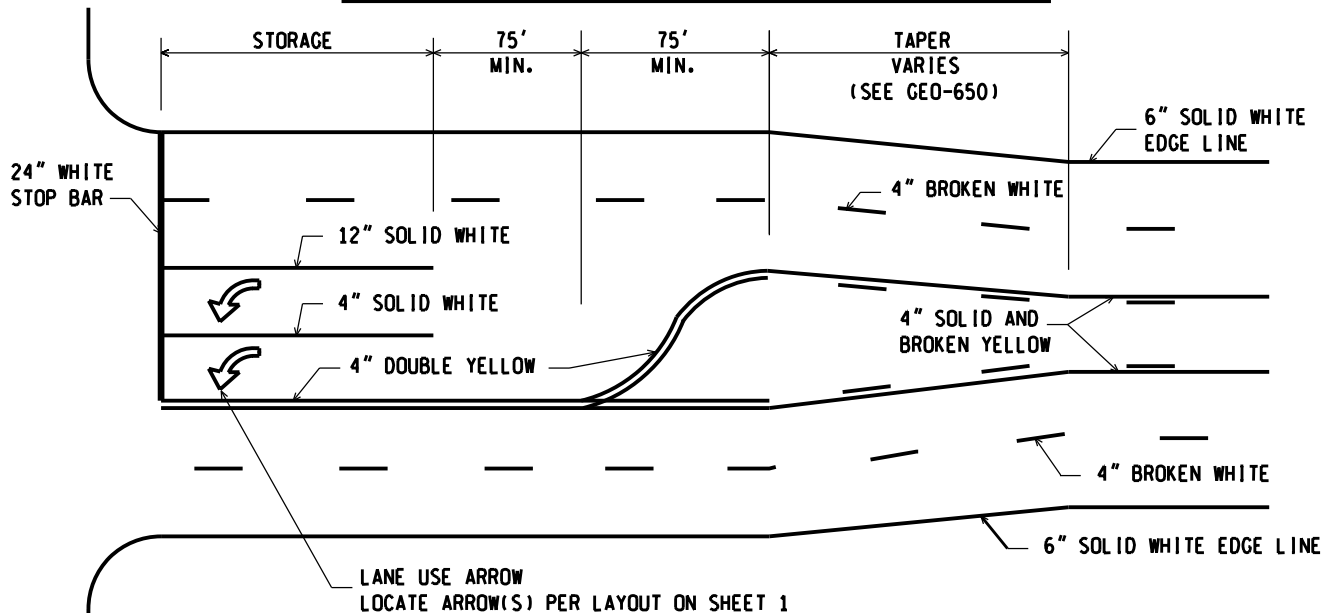
SHEET
4 OF 6

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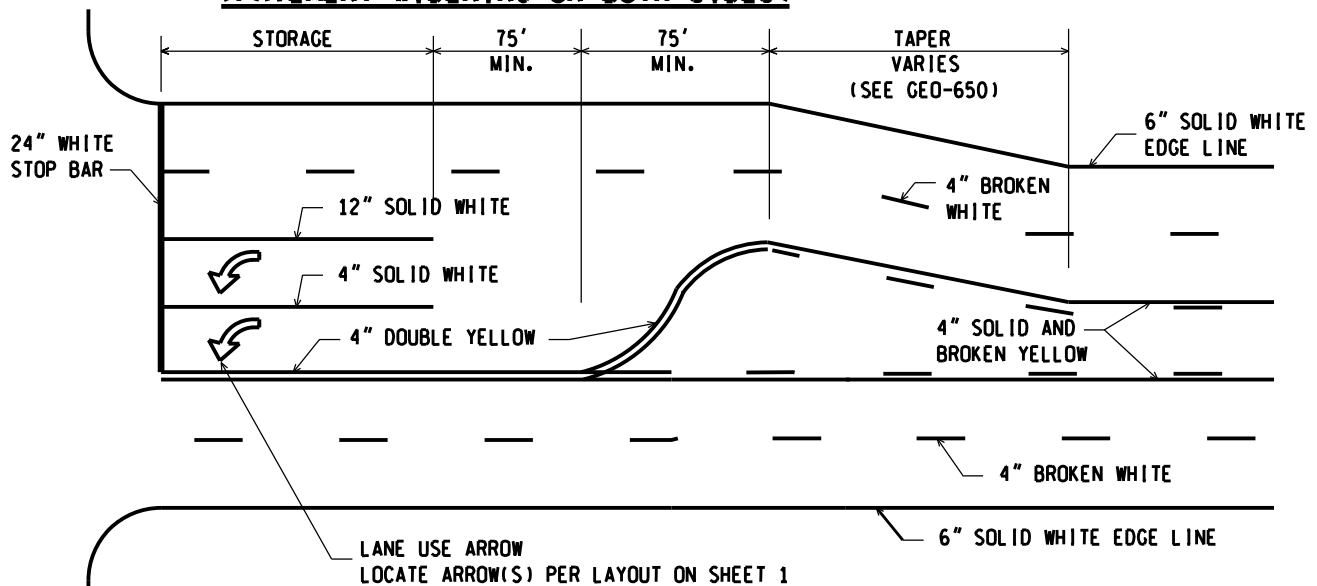
TWO-WAY LEFT-TURN LANE MARKINGS



SINGLE-DIRECTION LEFT TURN CHANNELIZATION



SINGLE-DIRECTION LEFT TURN CHANNELIZATION FOR DUAL TURNS (PAVEMENT WIDENING ON BOTH SIDES)



SINGLE-DIRECTION LEFT TURN CHANNELIZATION FOR DUAL TURNS (PAVEMENT WIDENING ON ONE SIDE)

NOT TO SCALE

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BUREAU OF DEVELOPMENT STANDARD PLAN

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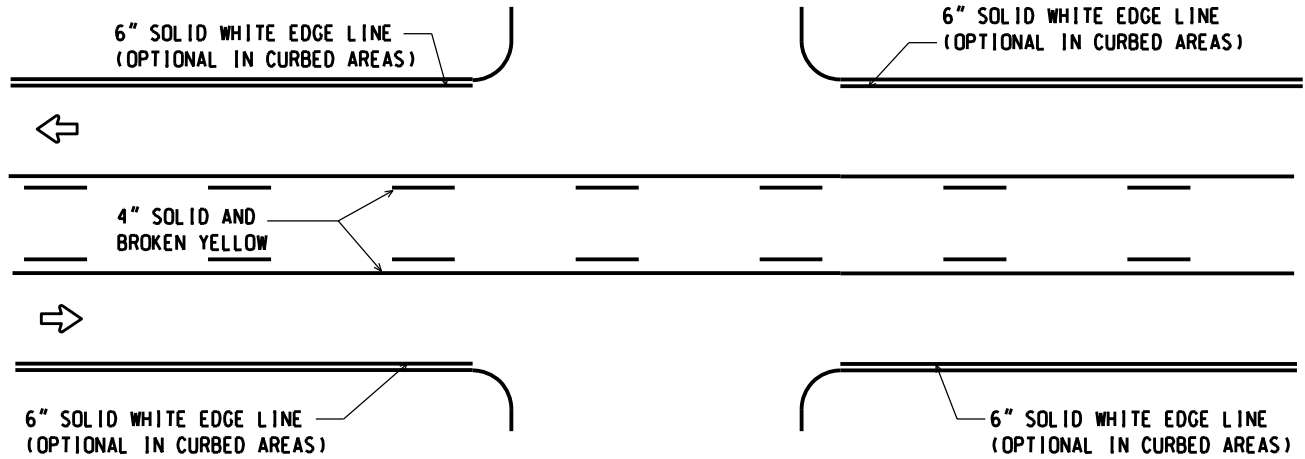
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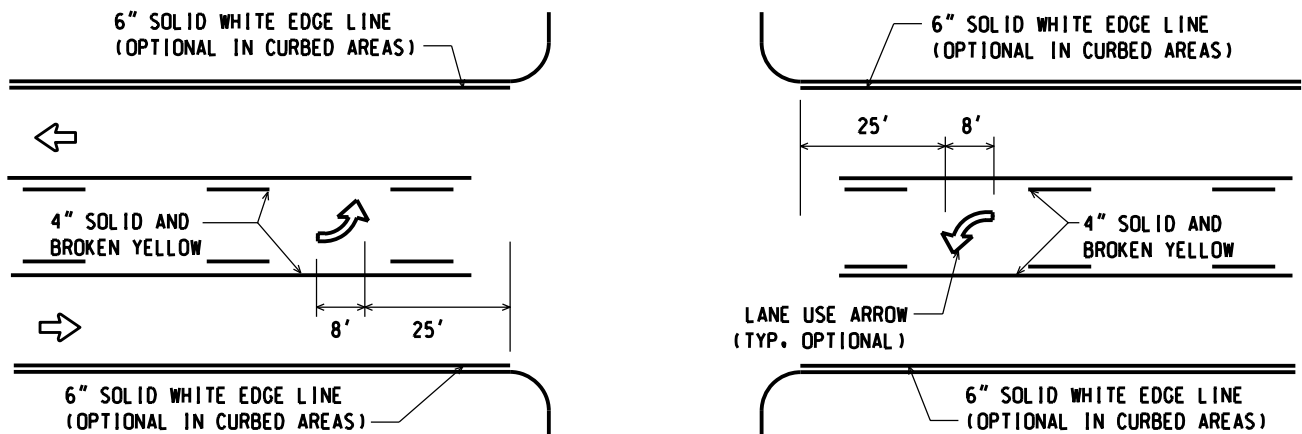
SHEET
5 OF 6

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TWO-WAY LEFT-TURN LANE MARKINGS



CONVENTIONAL MARKINGS AT STOP CONTROLLED INTERSECTIONS



ALTERNATE MARKINGS AT STOP CONTROLLED INTERSECTIONS

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BUREAU OF DEVELOPMENT STANDARD PLAN

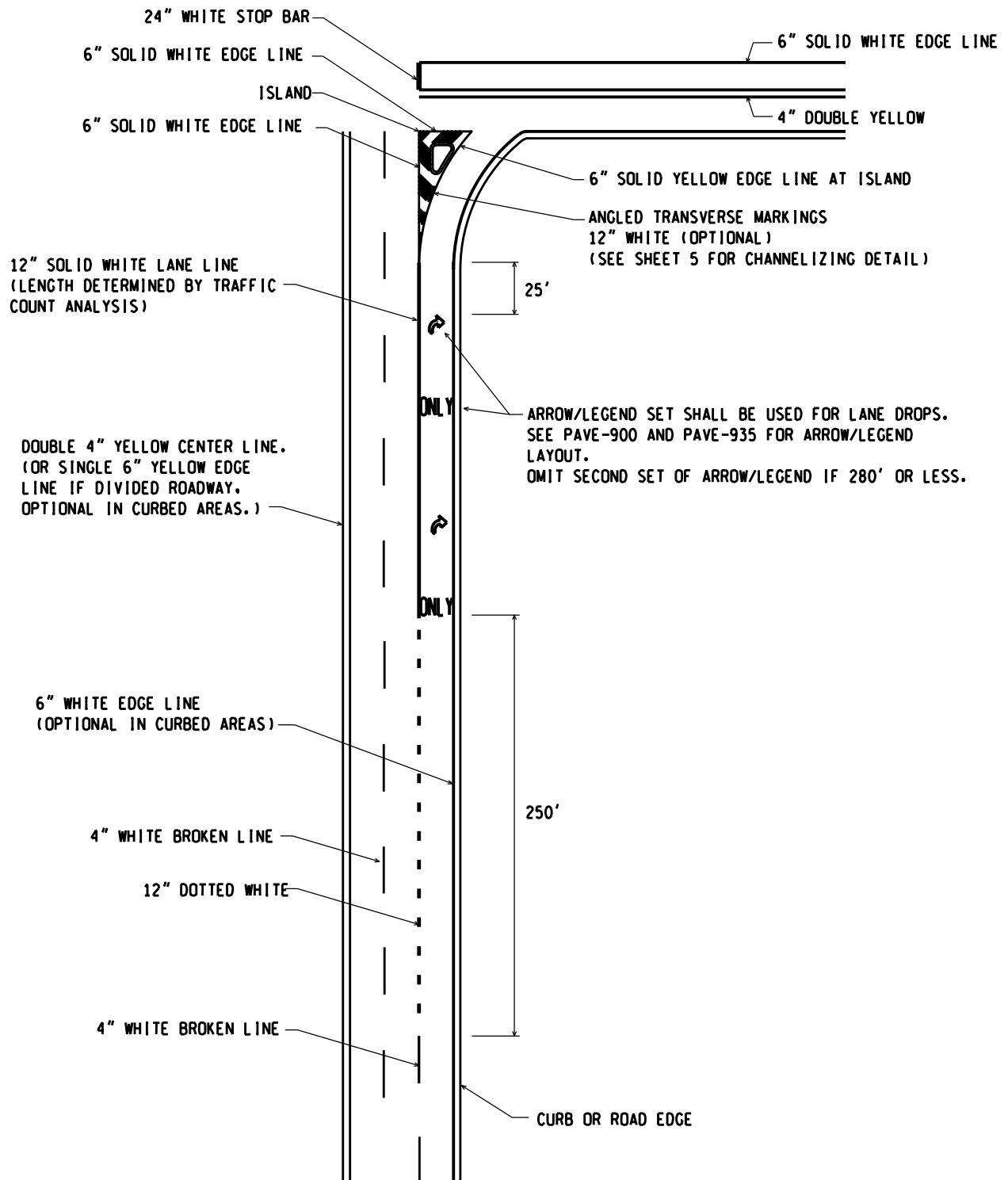
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6 OF 6

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RIGHT TURN LANE DROP AND ISLAND DETAILS

(ALSO APPLIES TO ONE WAY LEFT TURN LANE DROPS)



PREPARED
BY
TSMD DIVISION

DRAWN BY: LMF

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:09 PM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
Nov 5 2020 5:50 AM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

RIGHT TURN LANE AND ISLAND PAVEMENT MARKING

09/21/20

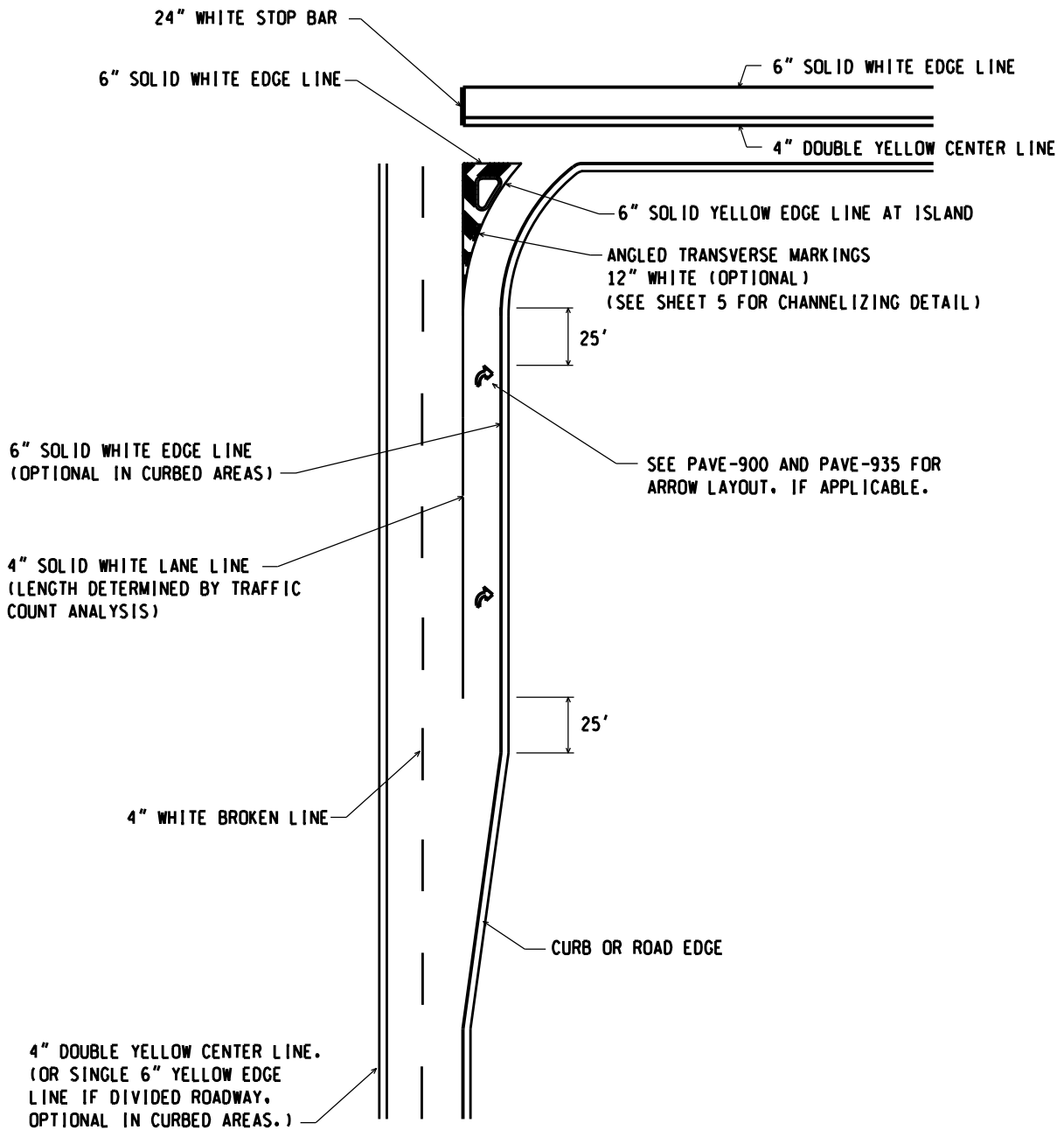
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SHEET
1 OF 6



RIGHT TURN LANE WITH CHANNELIZING ISLAND

NOT TO SCALE

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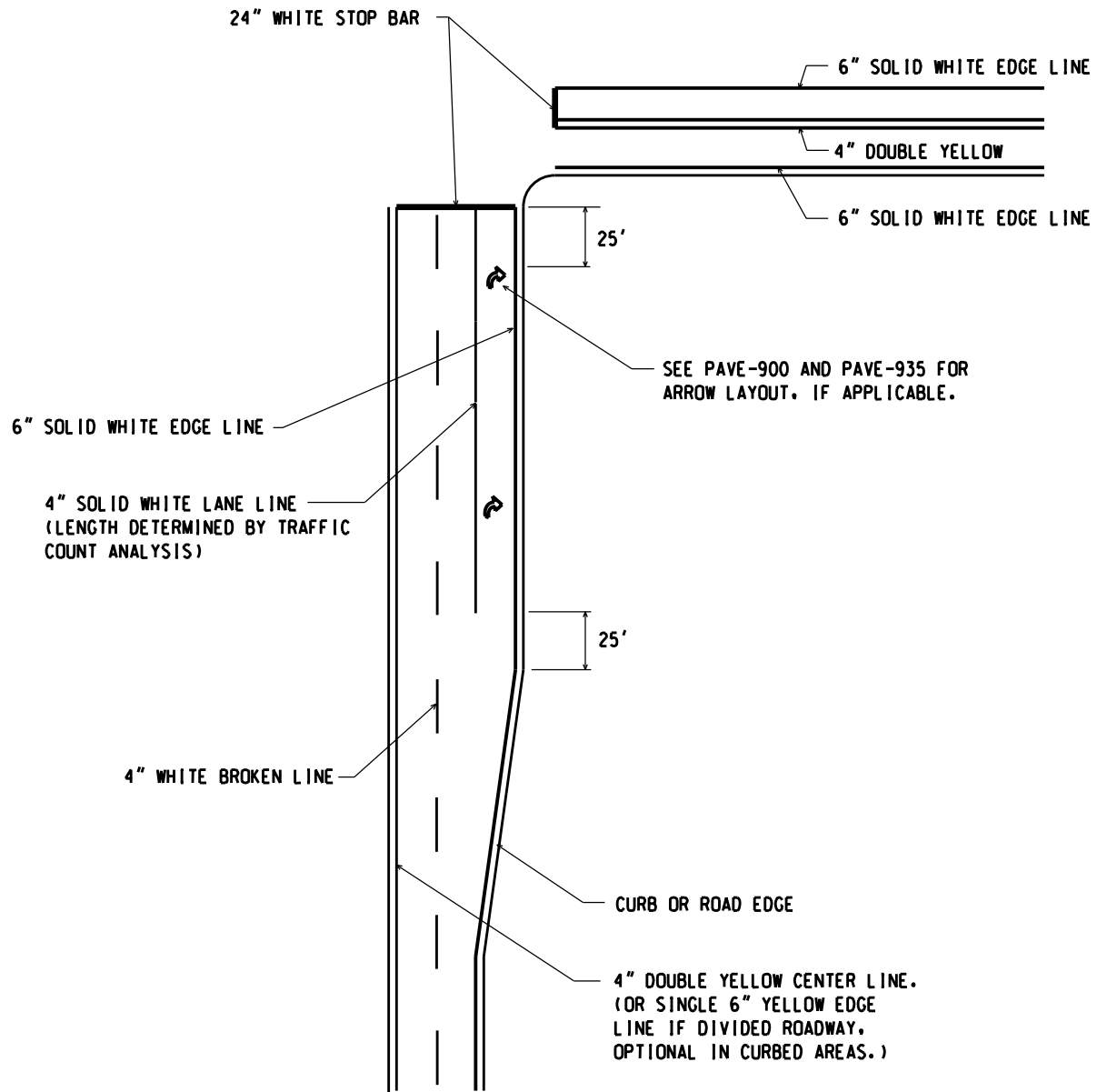
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DEVELOPED RIGHT TURN LANE

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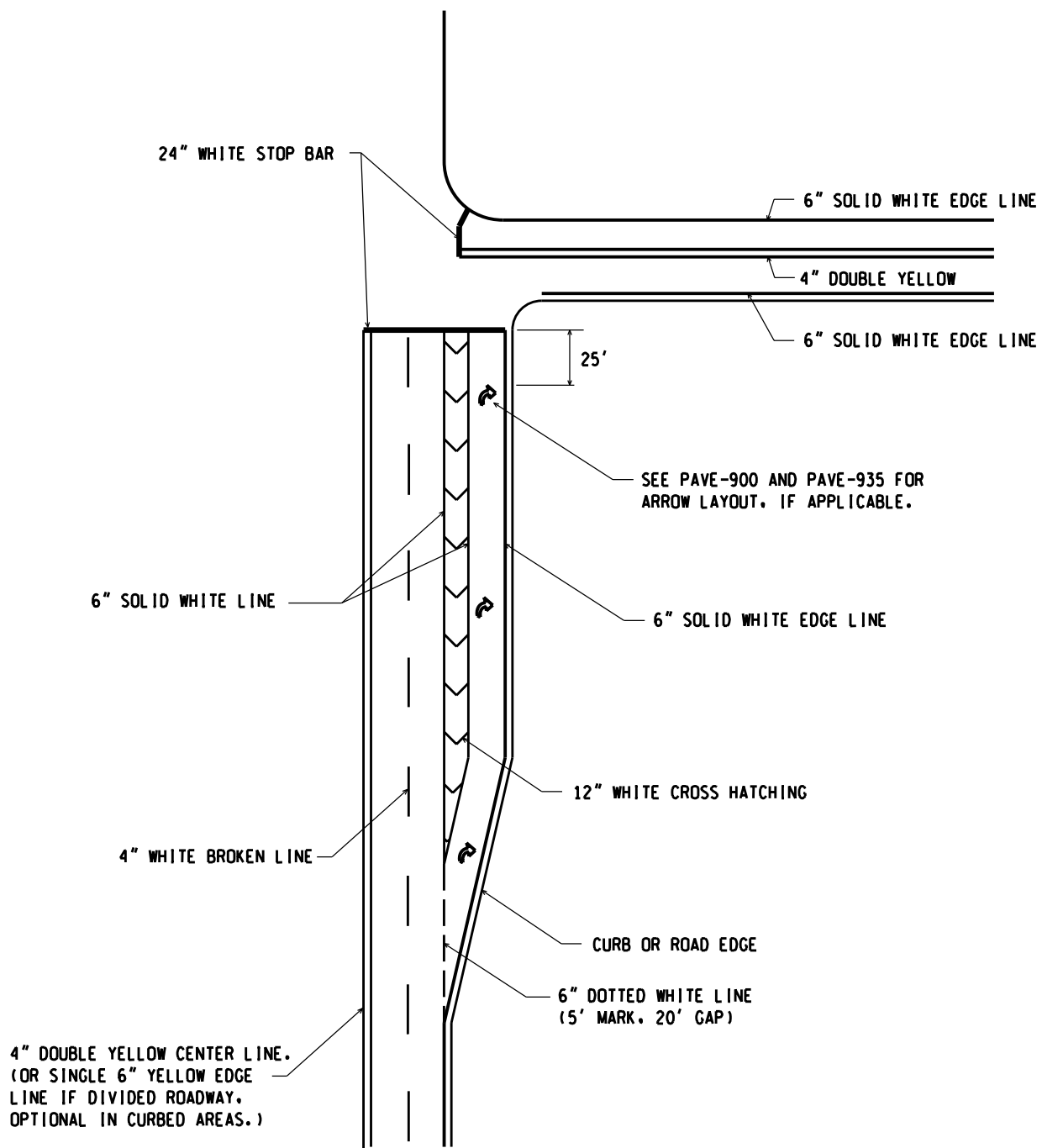
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3 OF 6

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OFFSET RIGHT TURN LANE

NOTE:

1. See Sheet 5 of 6 and PAVE-945 for transverse marking details.

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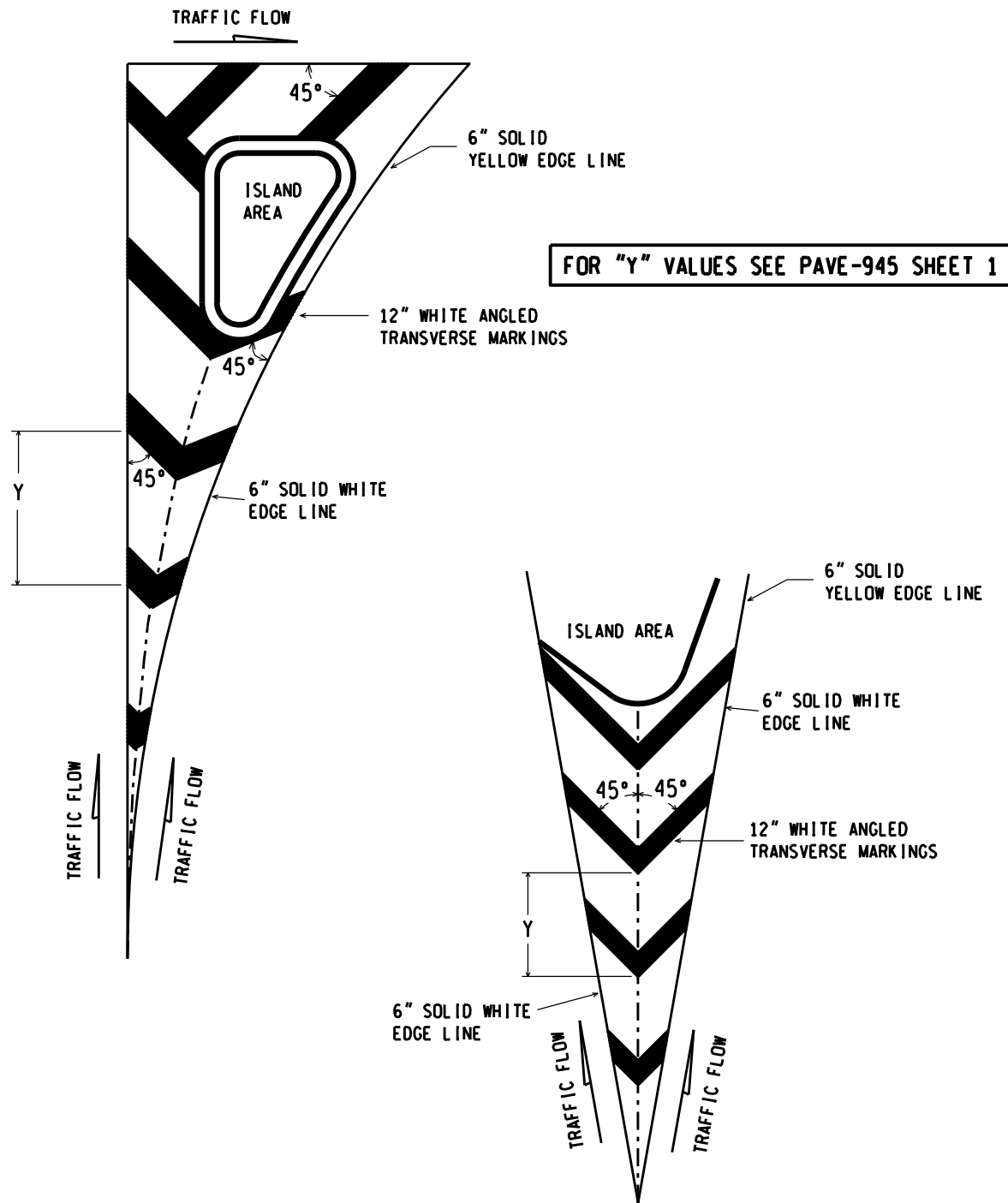
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SHEET
4 OF 6

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CHANNELIZING ISLANDS

(TRAFFIC FLOWS IN SAME DIRECTION)

NOT TO SCALE

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BUREAU OF DEVELOPMENT STANDARD PLAN

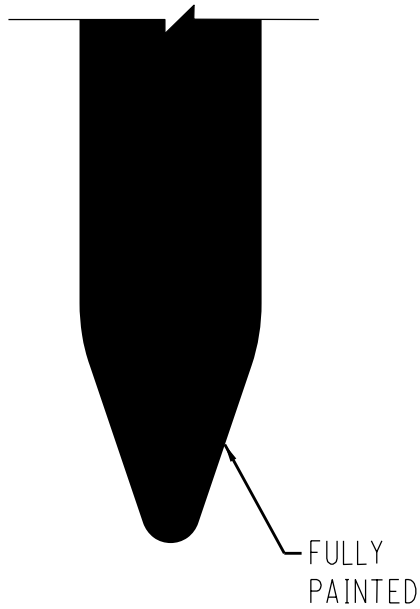
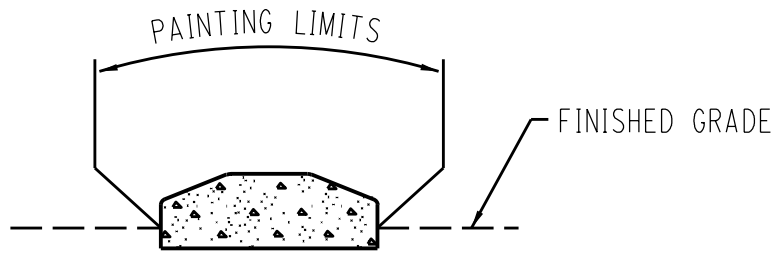
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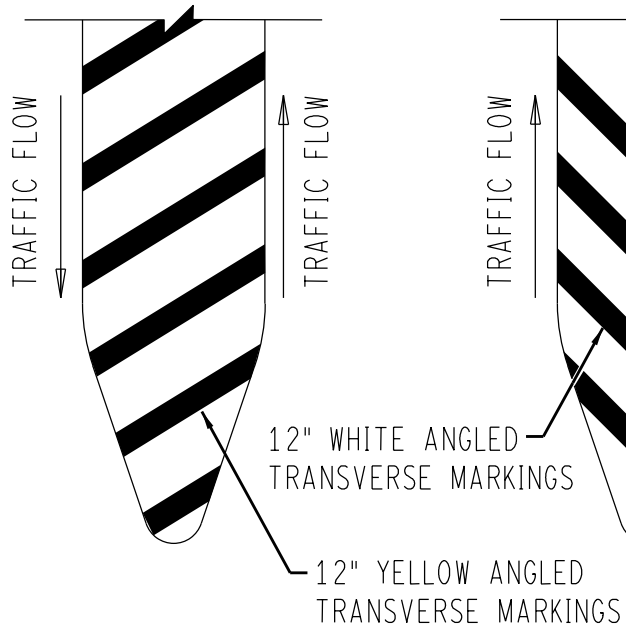
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5 OF 6

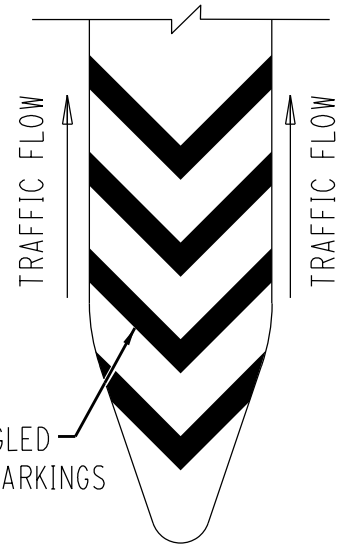
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OPTION A



OPTION B



OPTION C

RAISED CHANNELIZING ISLAND PAINTING

NOTE:

1. See Sheet 5 of 6 and PAVE-945 for transverse marking details.

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BUREAU OF DEVELOPMENT STANDARD PLAN

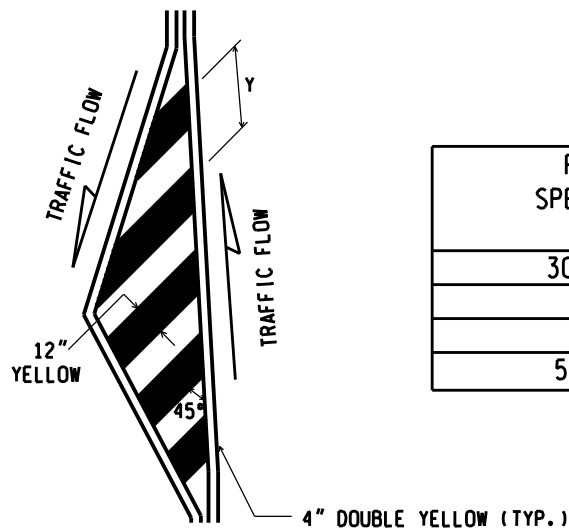
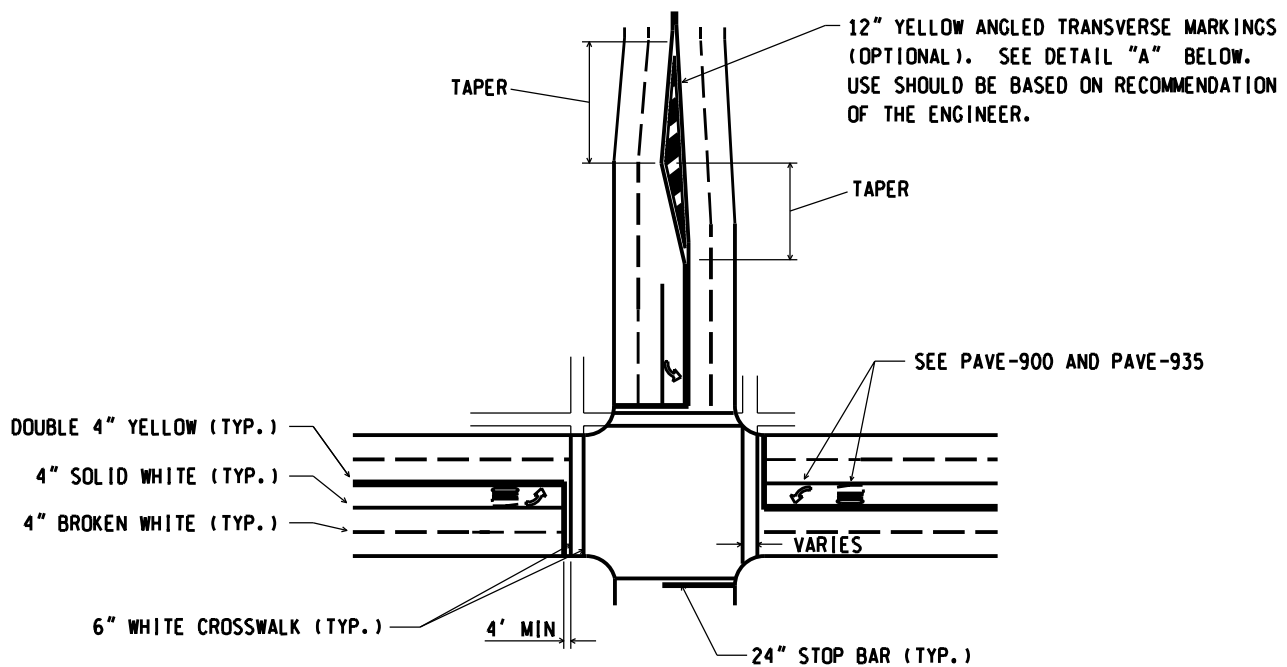
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SHEET
6 OF 6

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POSTED SPEED LIMIT (MPH)	"Y" FT
30 OR LESS	10
35-40	20
45	30
50 OR MORE	40

DETAIL "A" ANGLED TRANSVERSE MARKING



PREPARED
BY
TSMO DIVISION

DRAWN BY: LME

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:09 PM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
Nov 5 2020 5:50 AM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

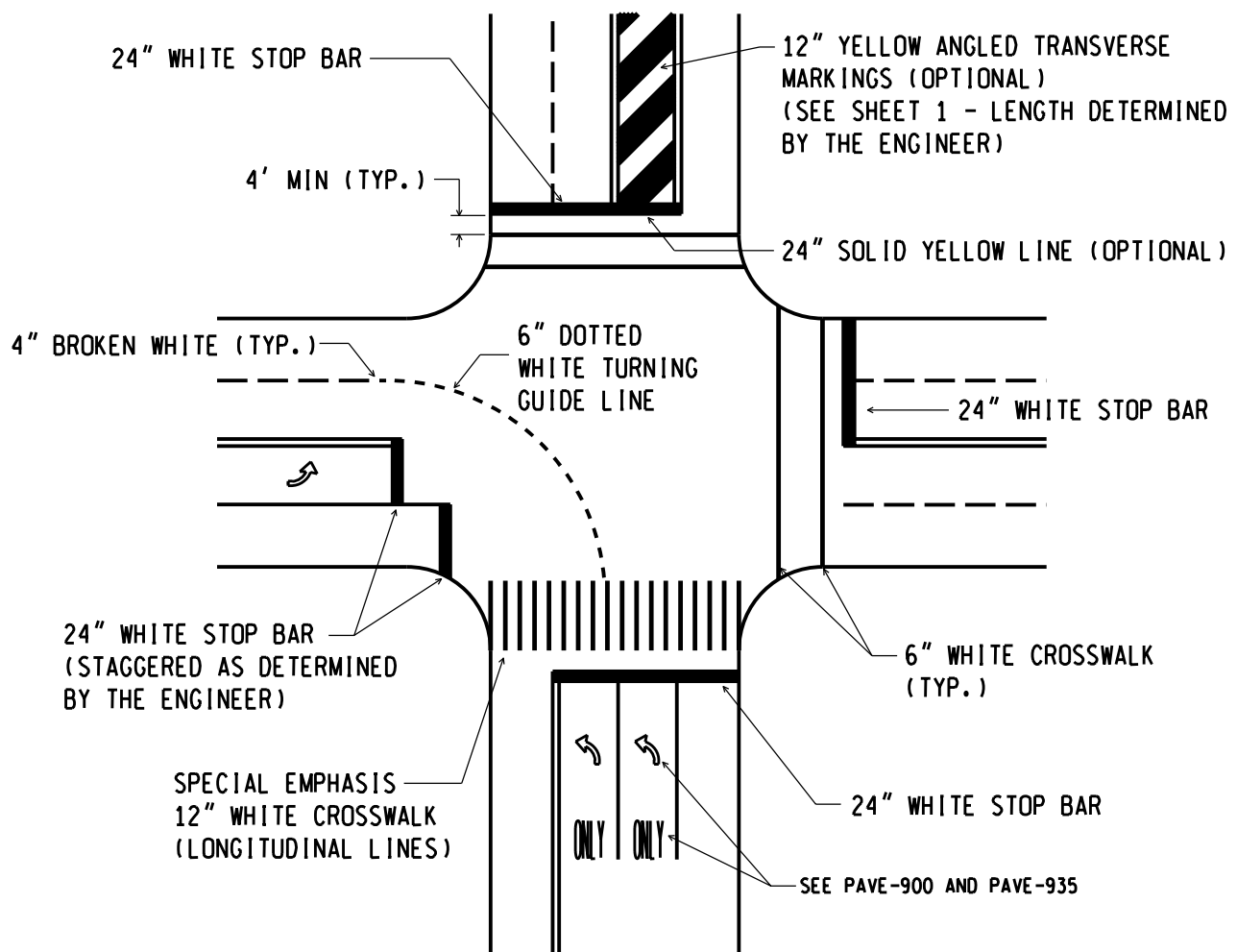
INTERSECTION, STOP BAR & CROSSWALK MARKINGS

09/21/20
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03/25/20
PLAN DATE

PAVE-945-D

SHEET
1 OF 3



SIGNALIZED OR STOP SIGN CONTROLLED INTERSECTION

NOTES:

1. Stop Bars should be located 40-150 ft from the signal head. Optional stop bars, if used at stop controlled intersections, should be 4-30 ft from the edge of the intersecting roadway. Exact location to be determined by the Engineer.
2. Standard crosswalk is two 6 inch white transverse lines. Special emphasis crosswalk is 12 inch white longitudinal lines.
3. Install special emphasis crosswalks at mid-block crossings, established school crossings (as defined by the MMUTCD), where crossing uncontrolled traffic at an intersection or ramp, or when directed by the Engineer. See Sheet 3 for detail of special emphasis crosswalk markings.
4. Width of crosswalk should equal width of the adjacent sidewalk, but shall not be less than 6 ft (measured inside the lines).
5. When practical, crosswalk location should avoid conflict with drainage inlets.
6. Turning guide lines should be placed to direct the driver into the closest through lane. Include a dotted turning guide line for all double turn movements.

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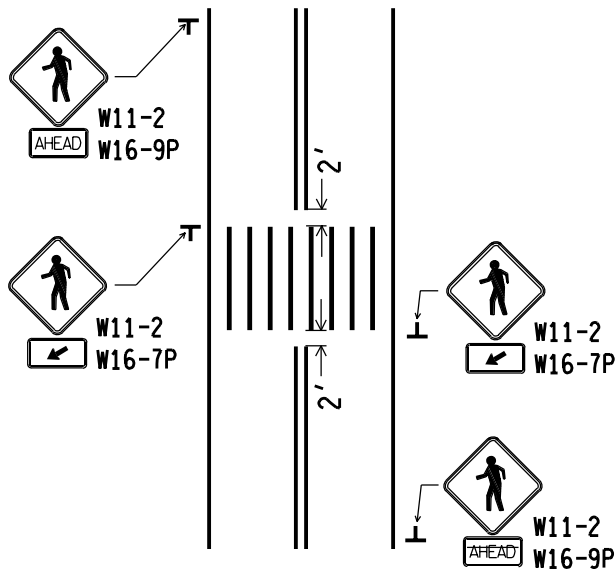
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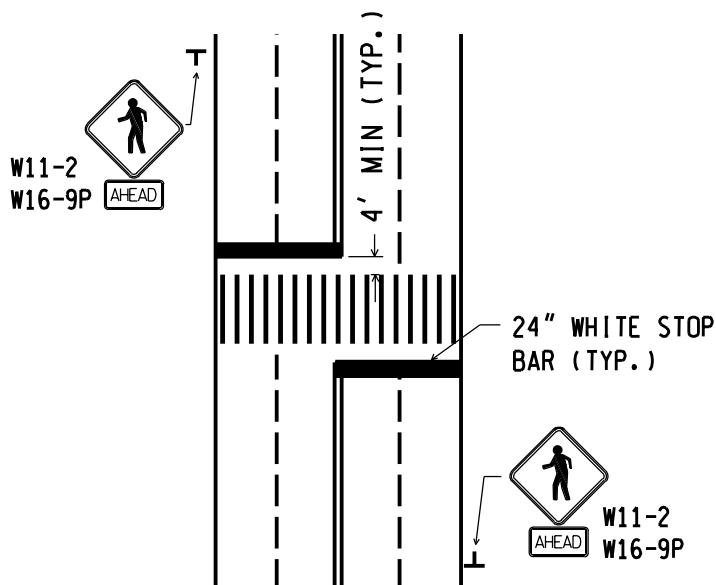
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SHEET
2 OF 3

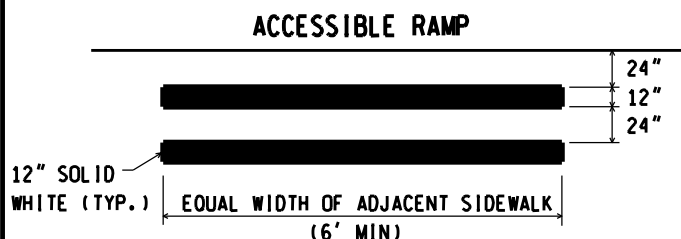
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MID-BLOCK TWO LANE NON-SIGNALIZED

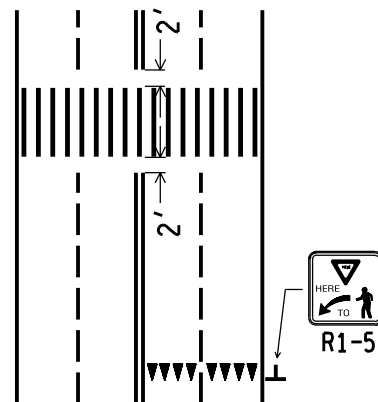


MID-BLOCK MULTI-LANE SIGNALIZED

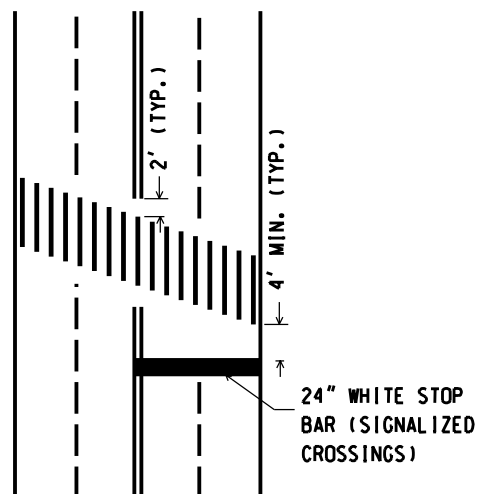


DETAIL OF SPECIAL EMPHASIS CROSSWALK MARKING

NOT TO SCALE



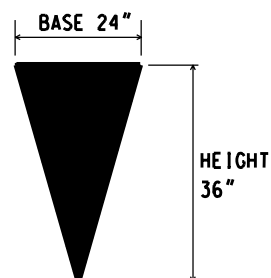
MID-BLOCK MULTI-LANE NON-SIGNALIZED



SKewed CROSSINGS

NOTES:

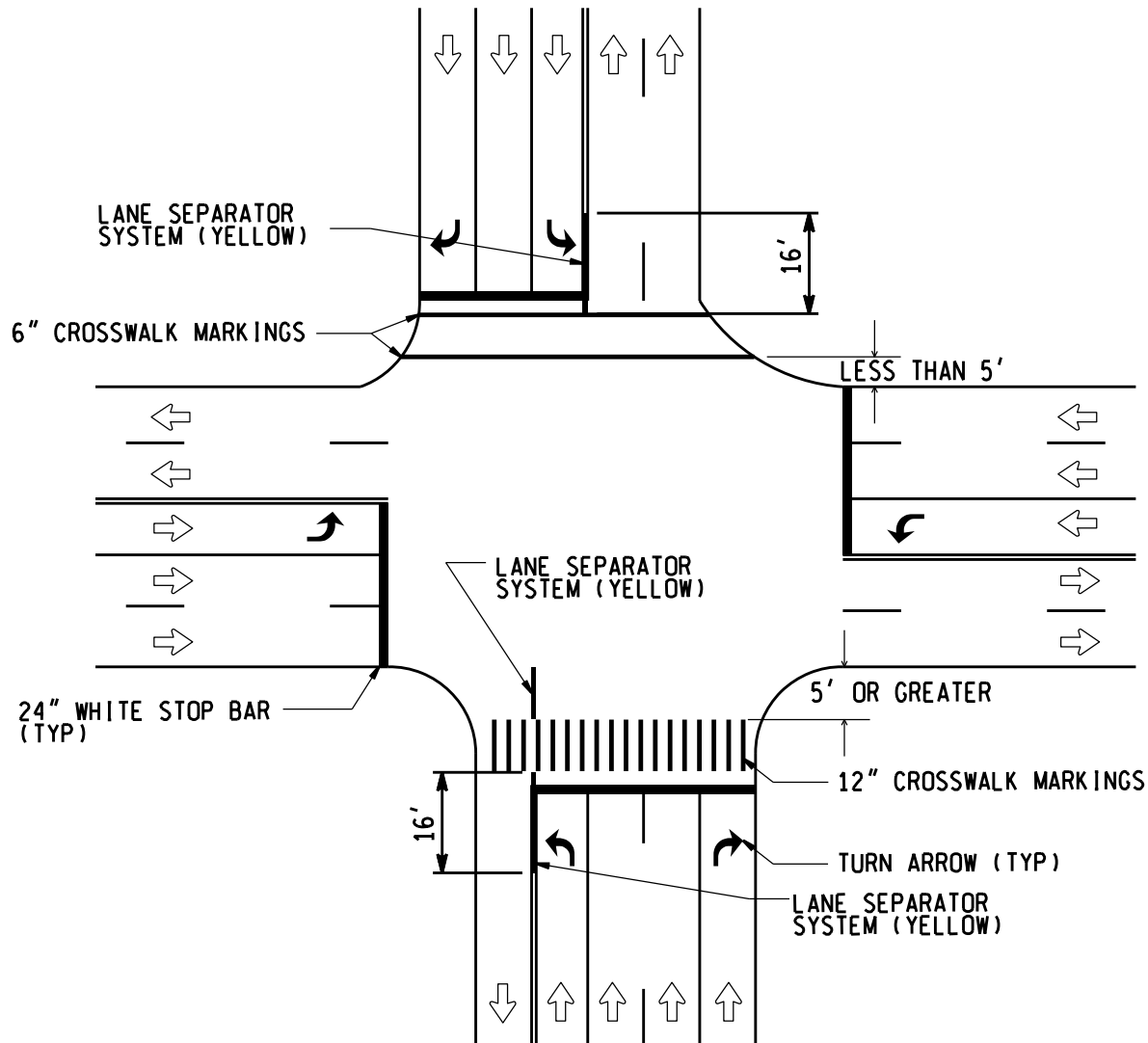
1. Install special emphasis crosswalk markings parallel to traffic flow.



DETAIL OF YIELD TRIANGLE FOR YIELD LINE

NOTES:


1. Install four triangles per lane.
2. Adjust spacing (between 3 to 12 inches) as necessary.

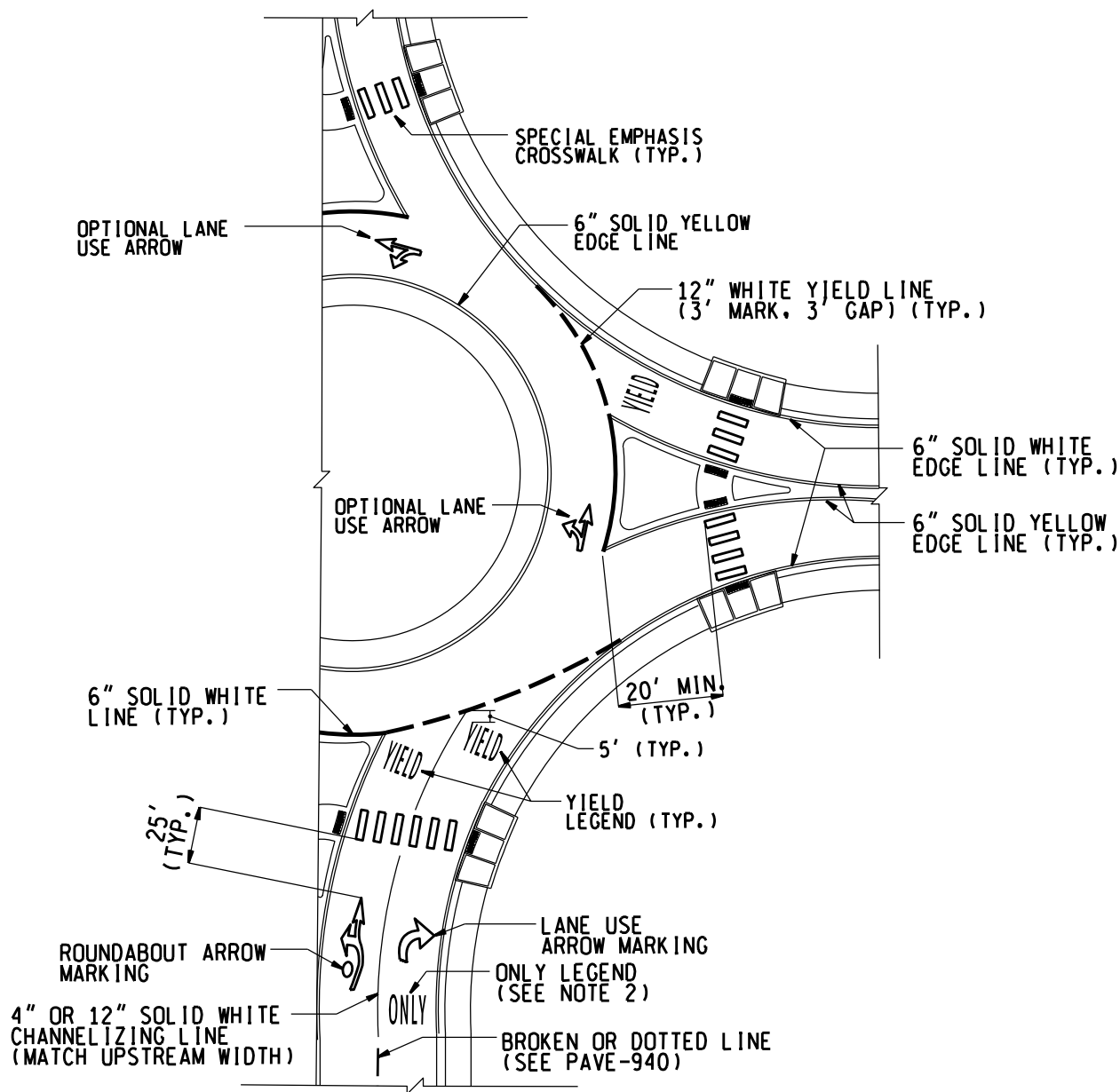


THRU GUIDE LINES

NOTES:

1. Lane separator system may be placed on any approach that is receiving a left turn movement at the direction of the Engineer.
2. Place lane separator system between the crosswalk and intersection only when a minimum of 5 feet exists between the crosswalk and the crossroad edgeline.
3. Placement length behind the crosswalk is approximate and may be slightly more or less than 16 feet depending on the product used. Payment will be made for actual placement length, including any placed end units.
4. All lane separator system shall be yellow curbing units with end units for applicable products. Uprights shall be round posts or bollards with at least two 6-inch bands of yellow reflective sheeting. One post or bollard shall be required in each section of curbing, resulting in a spacing of approximately 40 inches on-center for the posts or bollards.

 Michigan Department of Transportation PREPARED BY TSMD DIVISION DRAWN BY: _____ CHECKED BY: _____	DEPARTMENT DIRECTOR Paul C. Ajegba	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR CENTERLINE HARDENING MARKINGS & DEVICES			
	APPROVED BY: _____ (SPECIAL DETAIL) DIRECTOR, BUREAU OF FIELD SERVICES				
	APPROVED BY: _____ (SPECIAL DETAIL) DIRECTOR, BUREAU OF DEVELOPMENT	(SPECIAL DETAIL) F.H.W.A. APPROVAL	05/12/20 PLAN DATE	PAVE-946-A	SHEET 1 OF 1




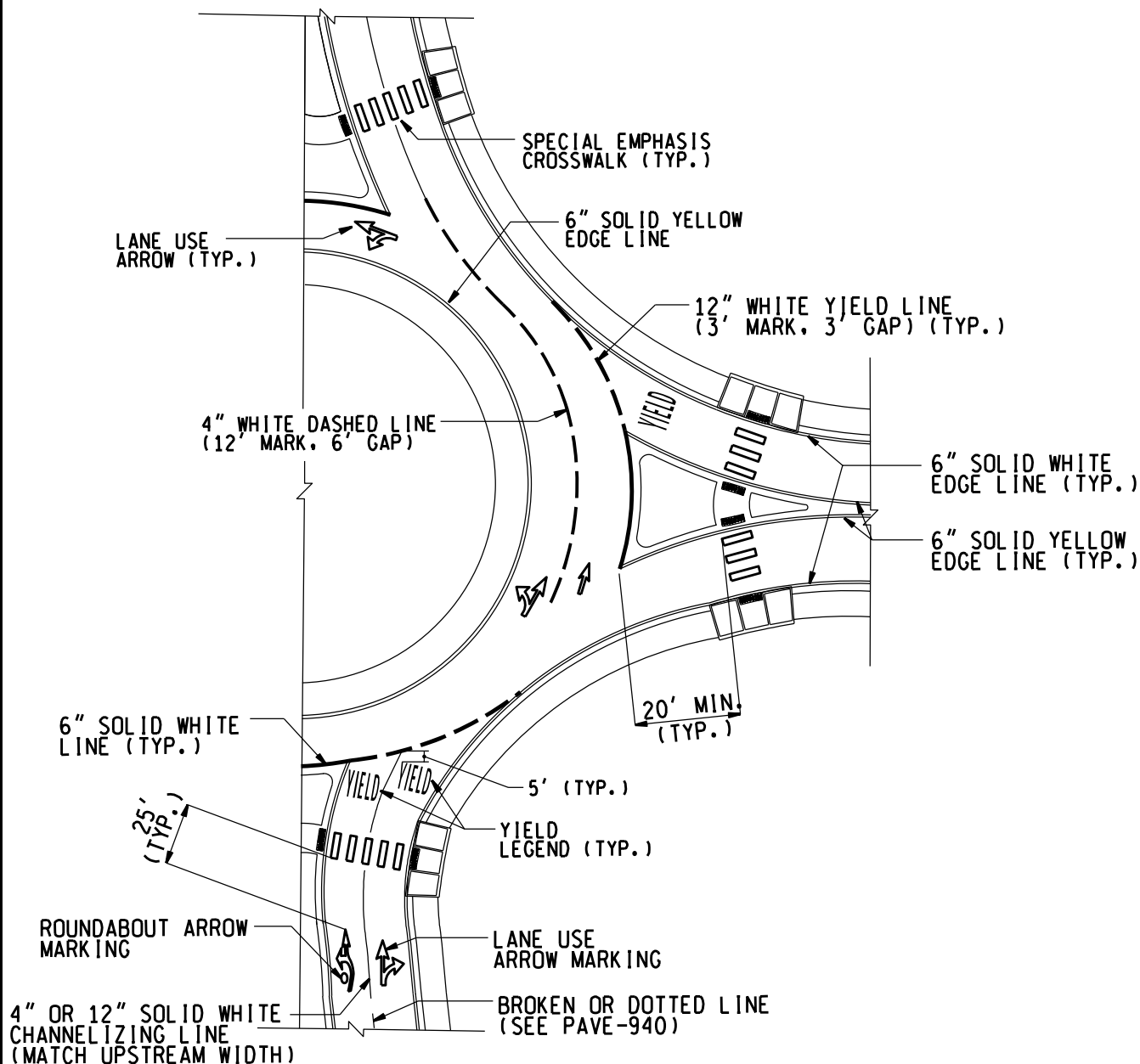
ONE-LANE ROUNDABOUT

NOTES:

1. Lane use arrows shall be placed on approaches with more than one lane. Use roundabout (fishhook style) arrows for approach arrows that include a left turn movement, and standard arrows for all other applications. See Sheet 3 for roundabout arrow details.
2. Use ONLY legend when the right turn lane becomes a mandatory turn lane; omit for developed lanes. See PAVE-900 for layout.
3. If there is no crosswalk on a multilane approach, place the lane use arrows 25' in advance of the yield line (or, if present, the yield legend).
4. If the channelizing (solid) lane line extends beyond the first lane use arrows, install additional sets of arrows/legends in accordance with PAVE-935.

NOT TO SCALE

 PREPARED BY TSMO DIVISION DRAWN BY: MKB CHECKED BY: JGM	DEPARTMENT DIRECTOR Paul C. Ajegeba Gregg Brunner, P.E. Gregg Brunner Nov 2 2020 12:09 PM APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR <h2 style="text-align: center;">ROUNDABOUT MARKINGS</h2>			
	Bradley C. Wiefelrich Bradley C. Wiefelrich Nov 5 2020 5:51 AM APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	09/21/20 F.H.W.A. APPROVAL	04/30/20 PLAN DATE	PAVE-951-C	SHEET 1 OF 3



TWO-LANE ROUNDABOUT

NOTES:

1. Lane use arrows shall be placed on approaches with more than one lane. Use roundabout (fishhook style) arrows for approach arrows that include a left turn movement, and standard arrows for all other applications. See Sheet 3 for roundabout arrow details.
2. If there is no crosswalk on a multilane approach, place the lane use arrows 25' in advance of the yield line (or, if present, the yield legend).
3. If the channelizing (solid) lane line extends beyond the first lane use arrows, install additional sets of arrows/legends in accordance with PAVE-935.

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BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

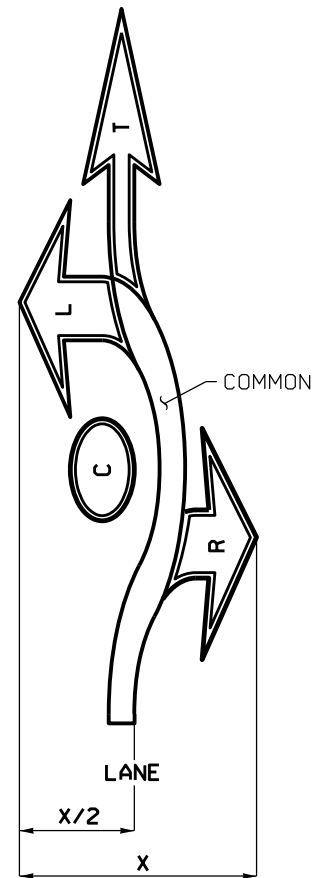
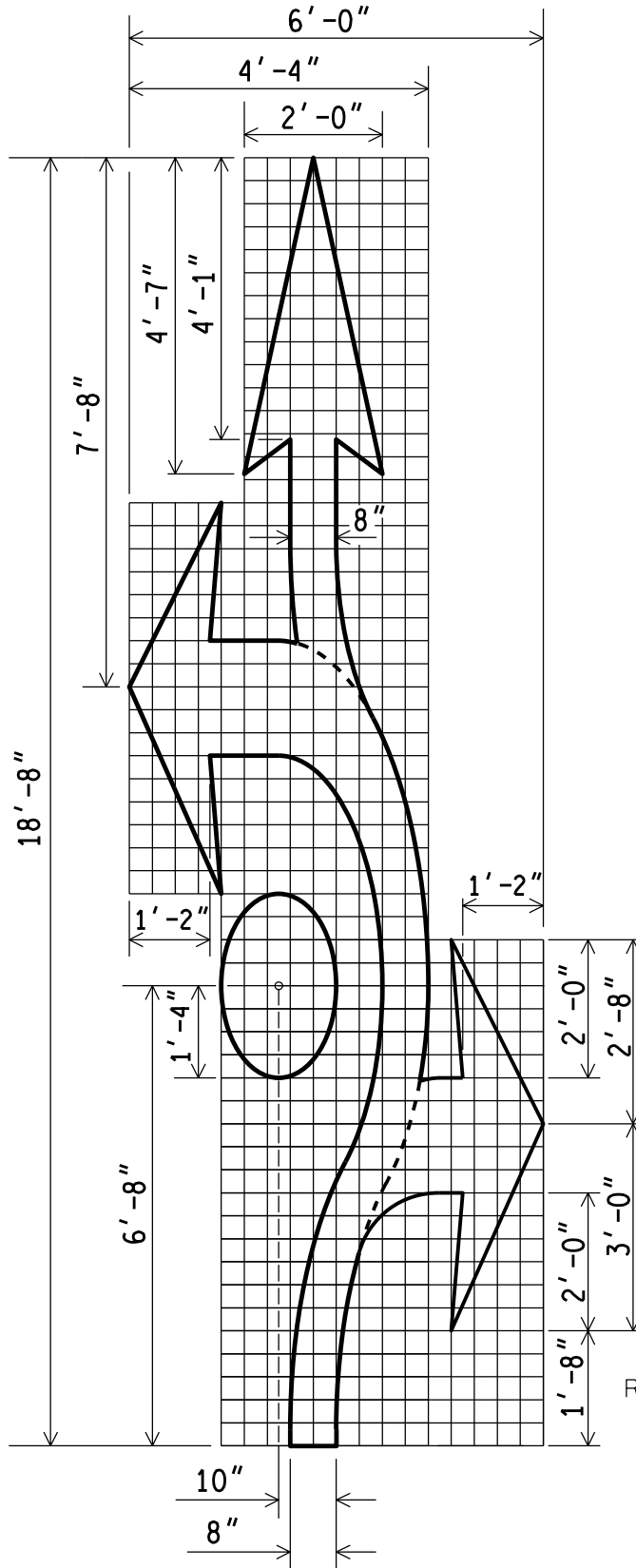
04/30/20
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SHEET
2 OF 3

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NOTE: Templates for liquid applied materials on this sheet do not allow gaps.

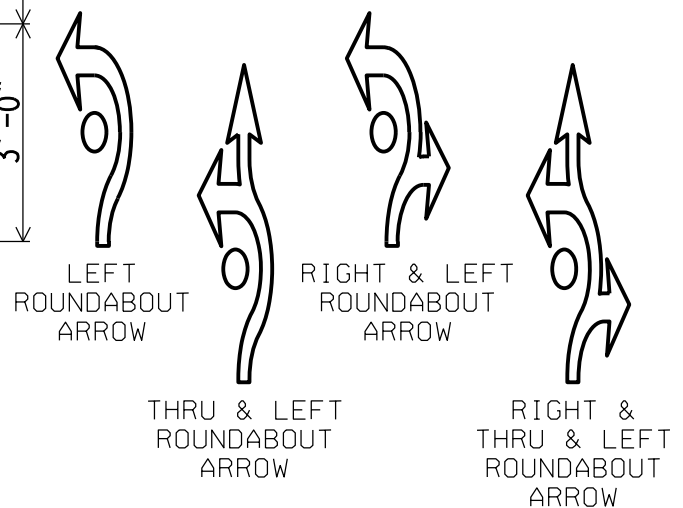


COMPONENT KEY

THE LABELED AREAS ABOVE CORRESPOND TO THE PORTIONS NEEDED FOR EACH TYPE OF ROUNDABOUT TRAFFIC ARROW.

ALL ROUNDABOUT ARROWS REQUIRE THE "COMMON", "C", AND "L" AREAS. ARROWS INCLUDING A THRU MOVEMENT ADDITIONALLY REQUIRE THE "T" AREA. AND ARROWS INCLUDING A RIGHT TURN MOVEMENT REQUIRE THE "R" AREA.

CENTER THE ARROW ON THE LANE.



Grid = 4"

ROUNDABOUT ARROW DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

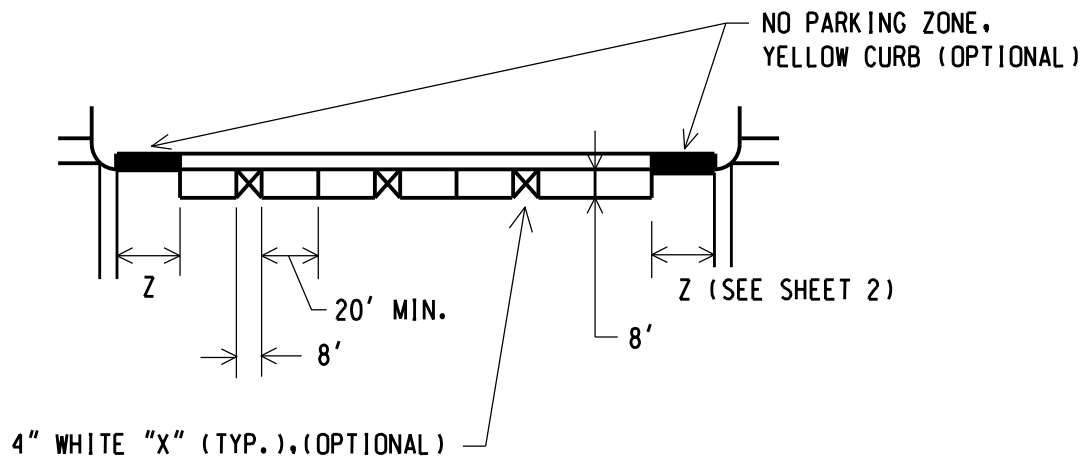
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F.H.W.A. APPROVAL

04/30/20
PLAN DATE

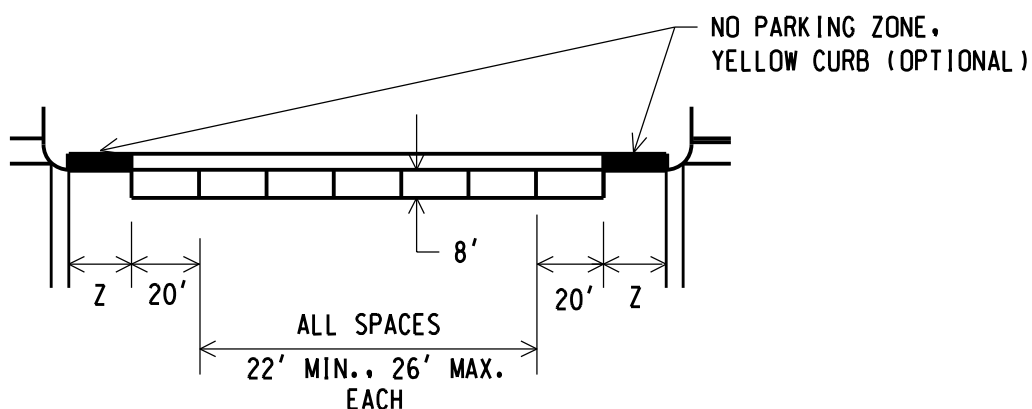
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3 OF 3

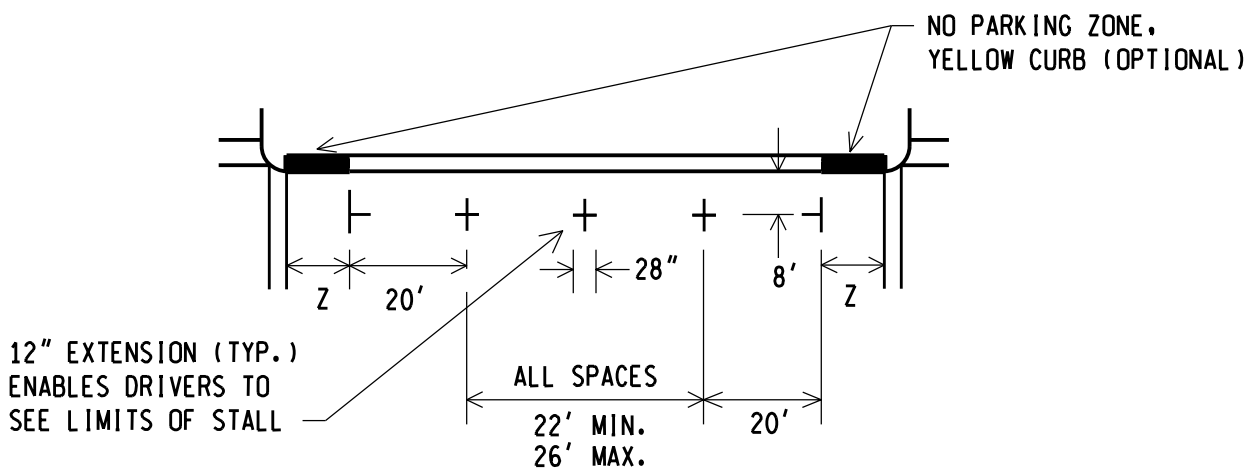
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TYPE I



TYPE II



TYPE III



PREPARED
BY
TSMD DIVISION

DRAWN BY: JME

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegeba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:09 PM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
Nov 5 2020 5:51 AM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

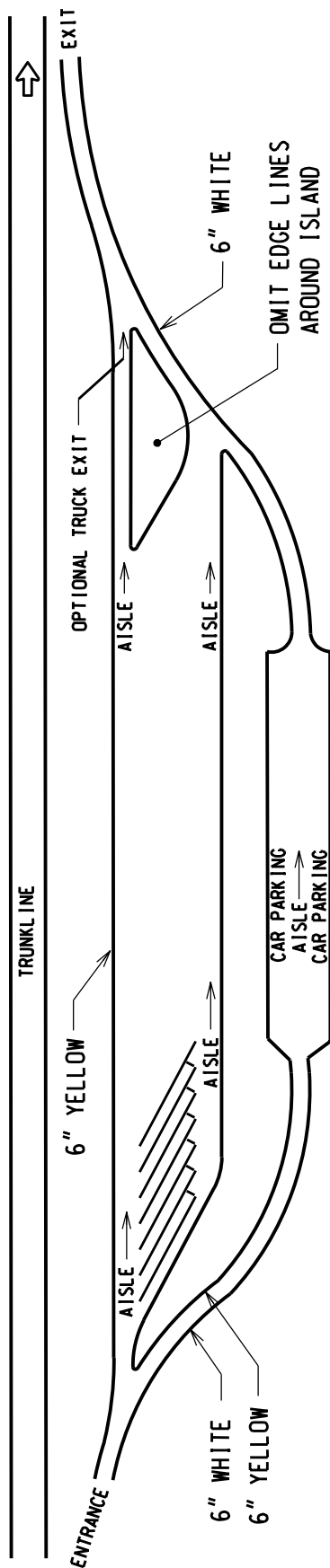
ON-STREET PARKING ZONE MARKINGS

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-955-C

SHEET
1 OF 2



TYPICAL REST AREA LAYOUT

NOTES:

- Specifically designated 12 ft wide accessible parking stalls (14 ft for accessible trucks stalls) will be located as close as possible to walkways and entrances. The number of such to the total number of stalls (car and truck) is: 1 for every 25. The accessible parking stalls should include at least 1 accessible van stall for every 6 accessible stalls, with a minimum of 1. See sheet 3 for details and the Michigan Vehicle Code and local ordinances for more information on accessible requirements.
- To calculate the number of truck stalls (T): $T = (\text{Length of truck parking area minus } 86 \text{ ft } 8 \text{ inches (end loss) minus allowances needed for accessible stalls}) \text{ divided by } 28 \text{ ft}.$
- To calculate the number of car stalls (C): $C = (\text{Length of car parking area minus } 13 \text{ ft } 10 \text{ inches (end loss) minus allowances needed for accessible stalls}) \text{ divided by } 12 \text{ ft } 7 \text{ inches}.$
- The typical parking stalls are striped with single lines with center to center spacing of 10 ft (12 ft for accessible stalls and 14 ft for trucks).



PREPARED
BY
TSMD DIVISION

DRAWN BY: LMF

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Jul 29 2020 10:35 AM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
Nov 5 2020 5:51 AM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

PARKING AREA PAVEMENT MARKINGS

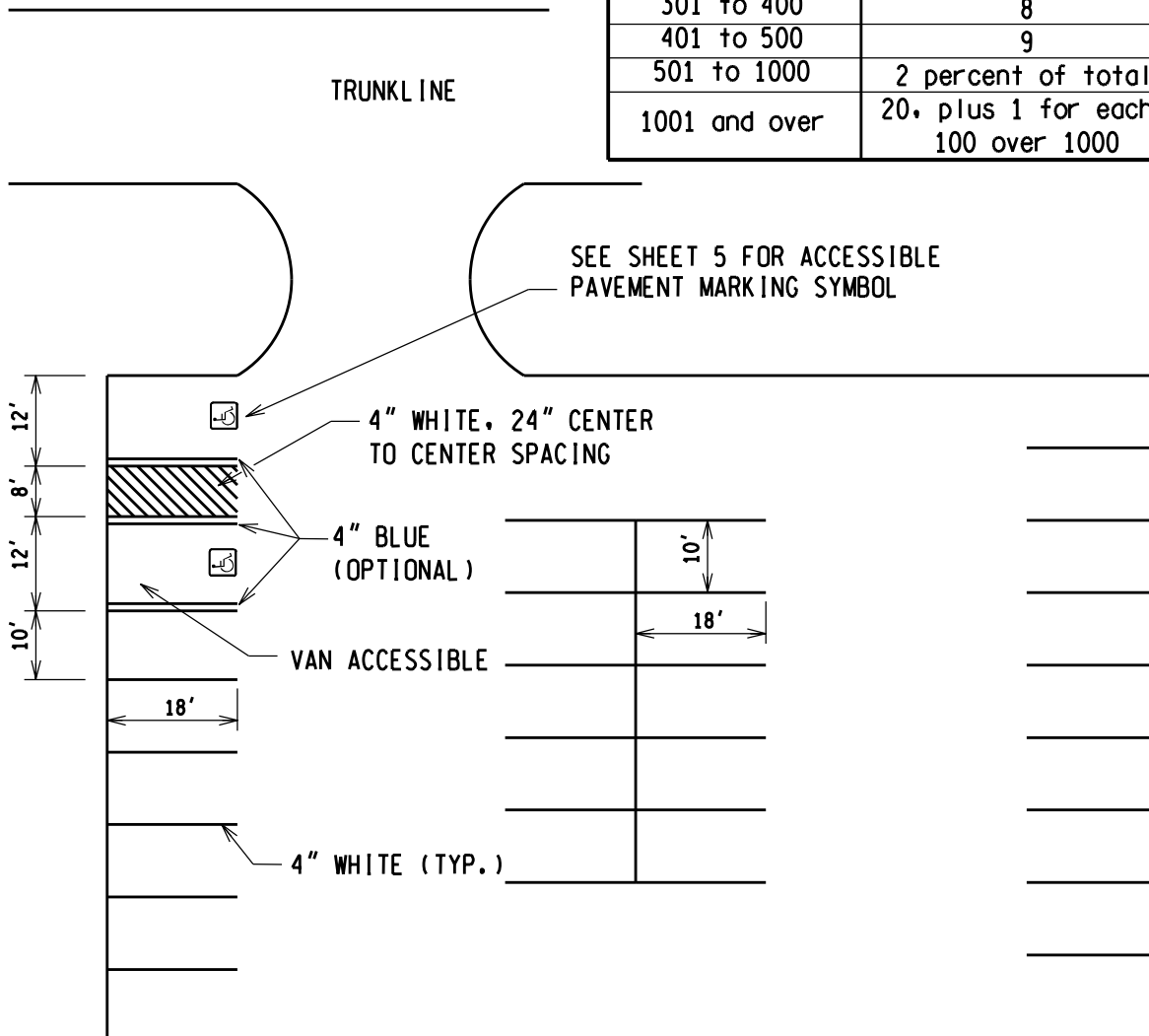
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PLAN DATE

PAVE-956-D

SHEET
1 OF 6

Total Parking in Lot	Required Minimum Number of Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100 over 1000



TYPICAL PARK AND RIDE LOT LAYOUT

NOTES:

1. Refer to the Road Design Manual for typical parking lot dimensions.
2. Shown for typical stall striping information only.
3. All stall lines are single white lines. White lines may be supplemented with blue in accessible stalls.
4. 1 van accessible stall is required for every 6 accessible stalls, with a minimum of 1.
5. Buffers adjacent to a van accessible stall must be 8 ft wide. Buffers adjacent to other accessible stalls may be 5 ft width. Two accessible stalls may share a buffer. Buffers may be on either side of the stall except for angled van accessible stalls, where the buffer must be on the right (passenger) side.

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BUREAU OF DEVELOPMENT STANDARD PLAN

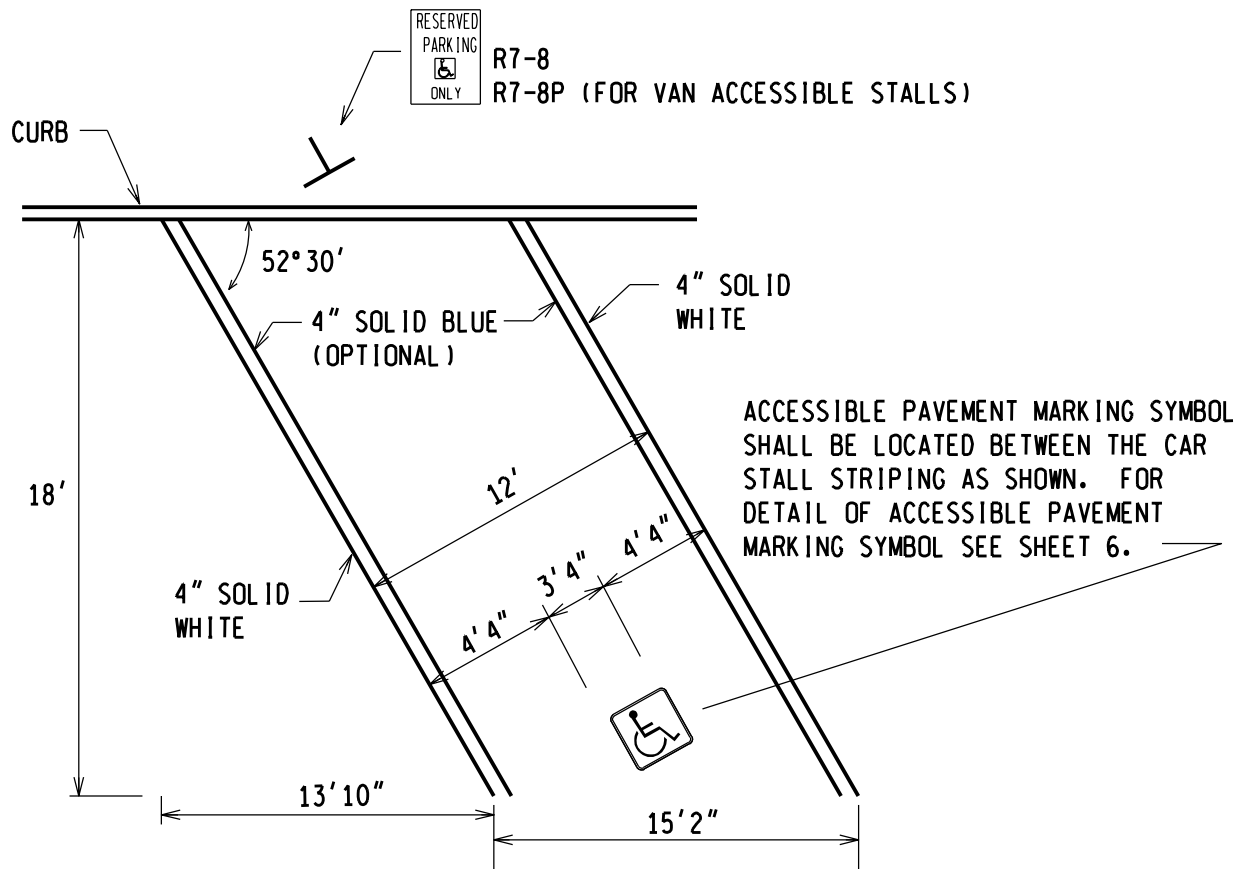
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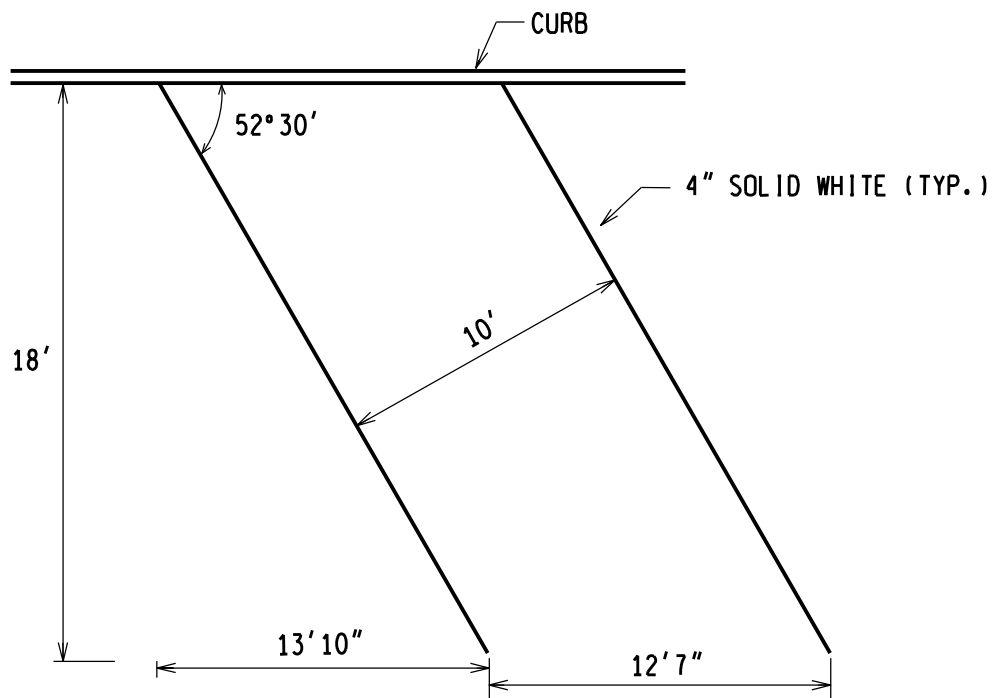
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2 OF 6

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TYPICAL ACCESSIBLE PAVEMENT MARKINGS FOR CAR STALL



TYPICAL PAVEMENT MARKINGS FOR CAR STALL

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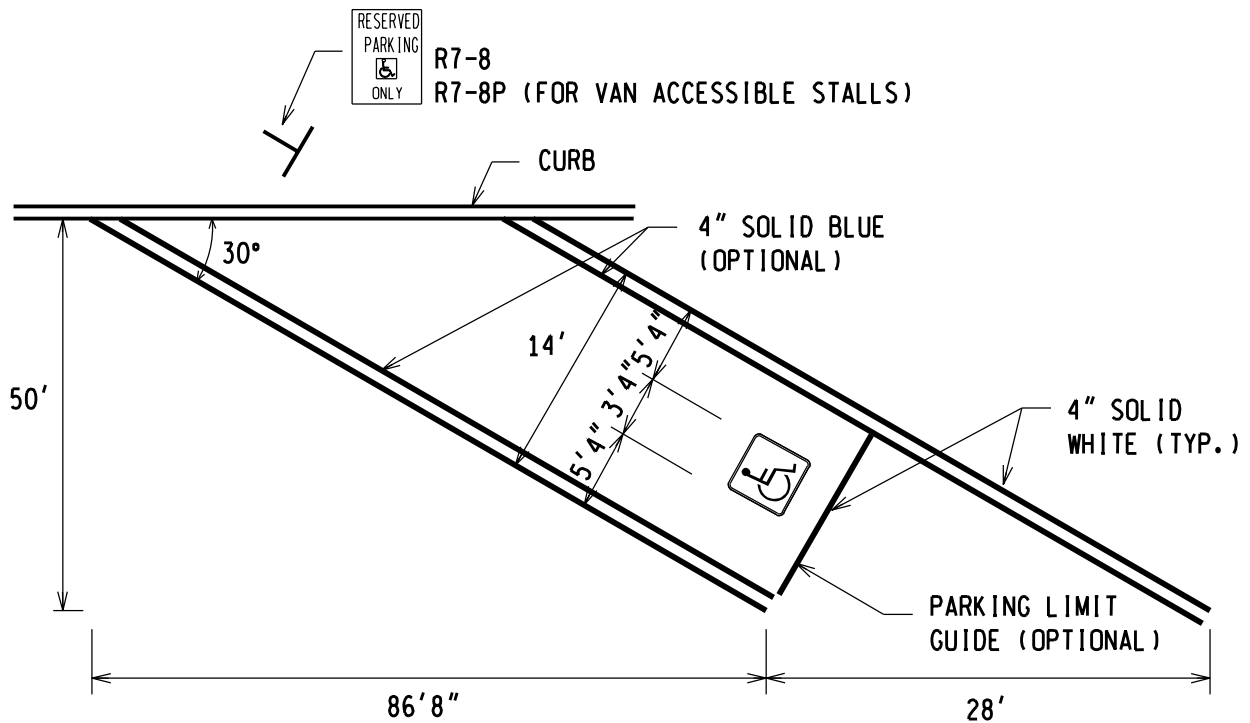
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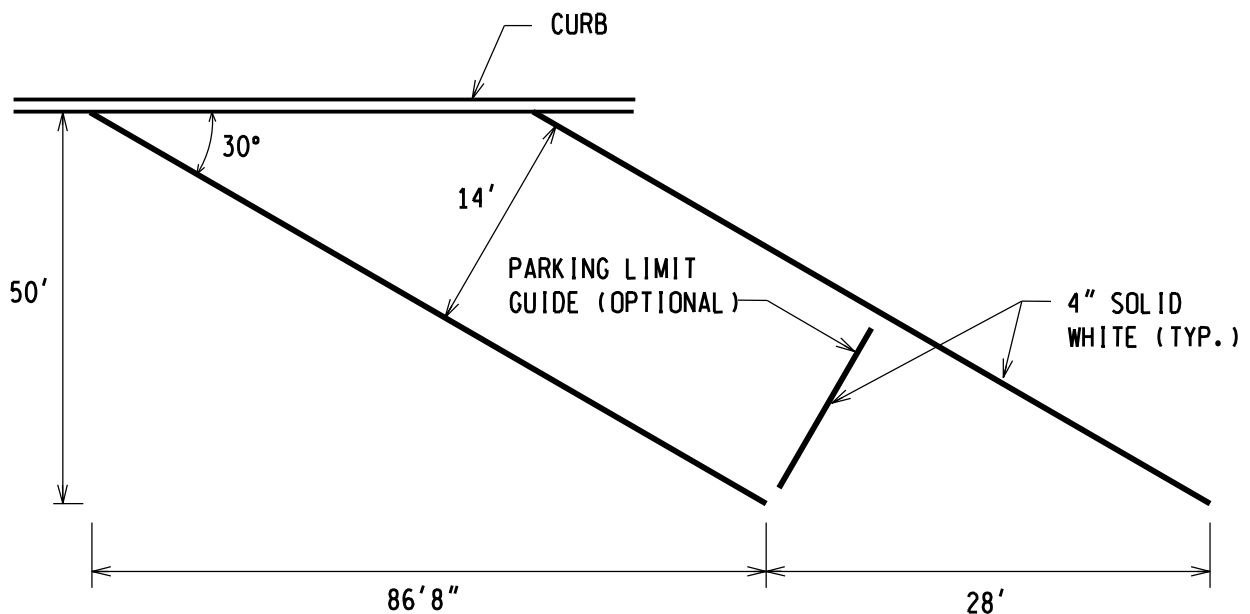
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3 OF 6

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TYPICAL ACCESSIBLE PAVEMENT MARKINGS FOR TRUCK STALL



TYPICAL PAVEMENT MARKINGS FOR TRUCK STALL

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BUREAU OF DEVELOPMENT STANDARD PLAN

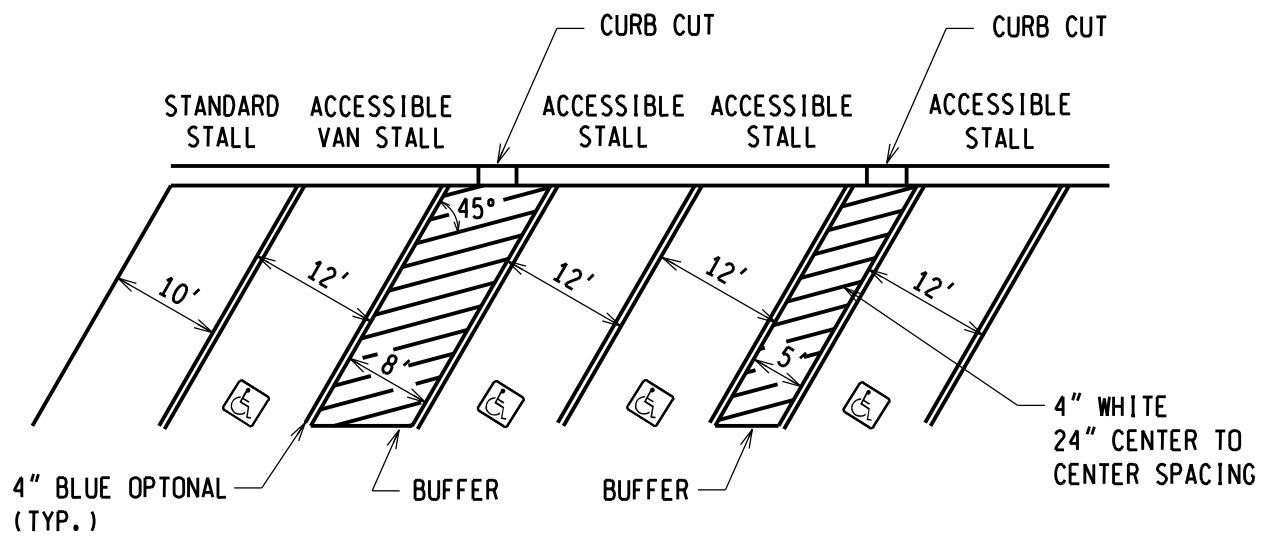
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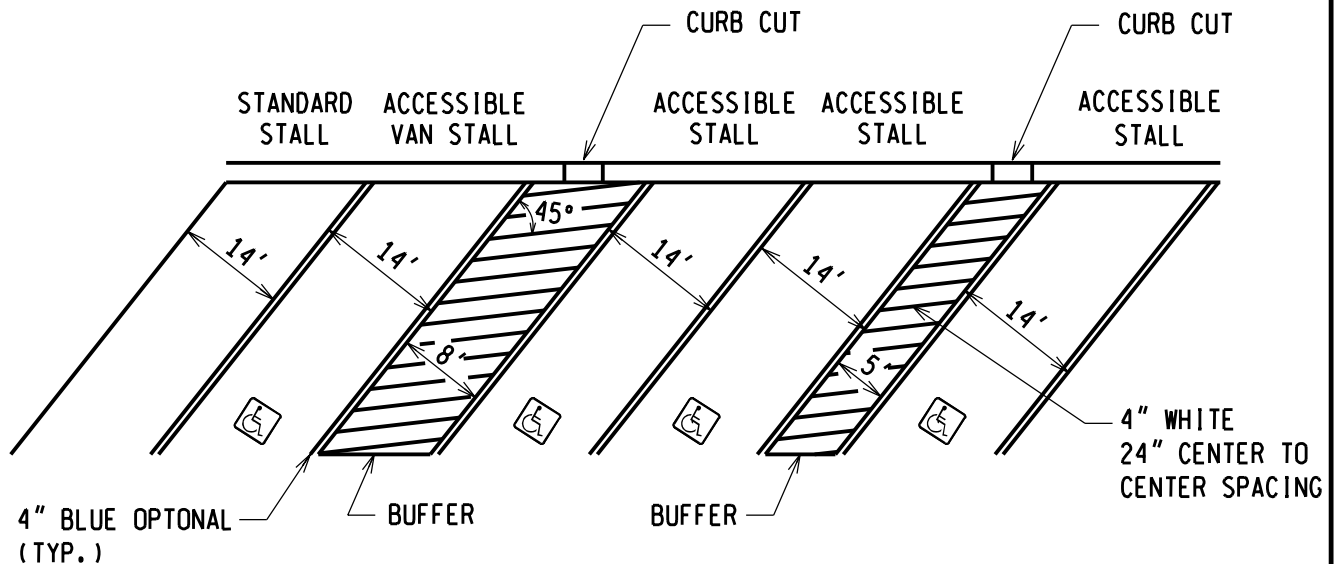
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4 OF 6

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TYPICAL CAR PARKING STALL ARRANGEMENT



TYPICAL TRUCK PARKING STALL ARRANGEMENT

NOTES:

1. All stall lines are single white lines. White lines may be supplemented with blue in accessible stalls.
2. See sheet 6 for detail of accessible pavement marking symbol.
3. For curb cuts see typical detail on plan sheets.
4. 1 van accessible stall is required for every 6 accessible stalls, with a minimum of 1.
5. Buffers adjacent to a van accessible stall must be 8 ft wide. Buffers adjacent to other accessible stalls may be 5 ft width. Two accessible stalls may share a buffer. Buffers may be on either side of the stall except for angled van accessible stalls, where the buffer must be on the right (passenger) side.

NOT TO SCALE

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BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

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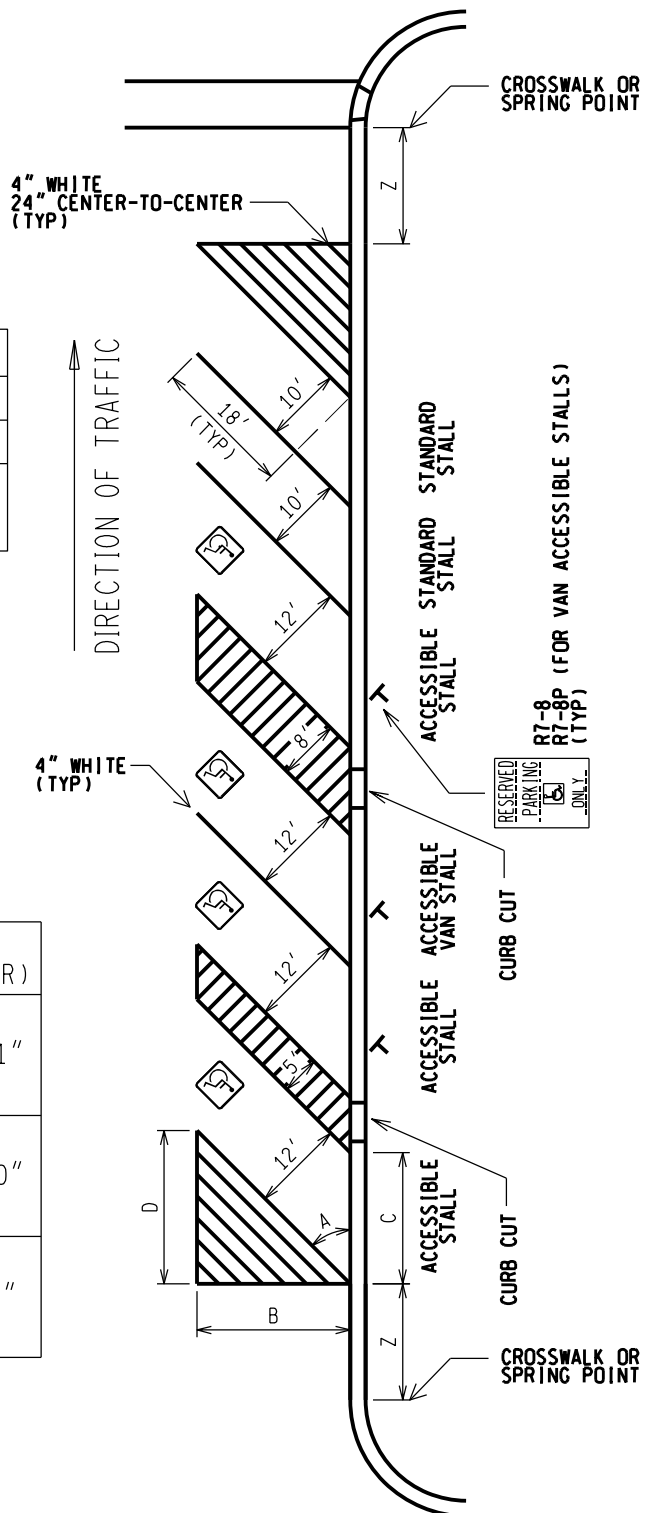
SHEET
5 OF 6

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INTERSECTION TYPE	"Z" (FT)
NO TRAFFIC CONTROL NO CROSSWALK	15
NO TRAFFIC CONTROL WITH CROSSWALK	20
TRAFFIC CONTROL PRESENT	30
SEE SECTION 257.674 OF THE MICHIGAN VEHICLE CODE FOR MORE INFORMATION.	

A (ANGLE)	B (FROM F/C)	C (ALONG CURB)	D (BUFFER)
60	20'-7"	11'-7" STD 13'-10" ACC	11'-11"
45	19'-10"	14'-2" STD 17'-0" ACC	19'-10"
30	17'-8"	20'-0" STD 24'-0" ACC	30'-7"

PARKING DETAILS



NOT TO SCALE



PREPARED
BY
TSMD DIVISION

DRAWN BY: **MKB**

CHECKED BY: **JGM**

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:09 PM

APPROVED BY: **DIRECTOR, BUREAU OF FIELD SERVICES**

Bradley C. Wiefelrich Bradley C. Wiefelrich
Nov 5 2020 5:52 AM

APPROVED BY: **DIRECTOR, BUREAU OF DEVELOPMENT**

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

BACK-IN ANGLE PARKING

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-957-B

SHEET
1 OF 2

Notes:

1. See PAVE-956 for accessible pavement marking symbol.
2. For mid-block driveway, clearance from parking stall to the curb cut shall be 20 ft minimum.
3. All parking zone markings shall be 4 inch white. 4 inch blue may supplement the white zone marking for an accessible stall.
4. The use of a yellow (or other color) painted curb to denote a no parking zone is optional, and shall only be used to supplement standard signs.
5. Align buffer area crosshatching parallel to stall markings in the end buffer zones, and perpendicular to stall markings for accessible stall buffers.
6. 1 van accessible stall is required for every 6 accessible stalls, with a minimum of 1.
7. Buffers adjacent to a van accessible stall must be 8 ft wide.
Buffers adjacent to other accessible stalls may be 5 ft width.
8. Two accessible stalls may share a buffer. Buffers may be on either side of the stall except for angled van accessible stalls, where the buffer must be on the right (passenger) side.

NOT TO SCALE

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BUREAU OF DEVELOPMENT STANDARD PLAN

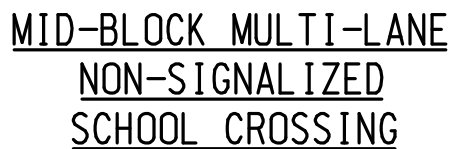
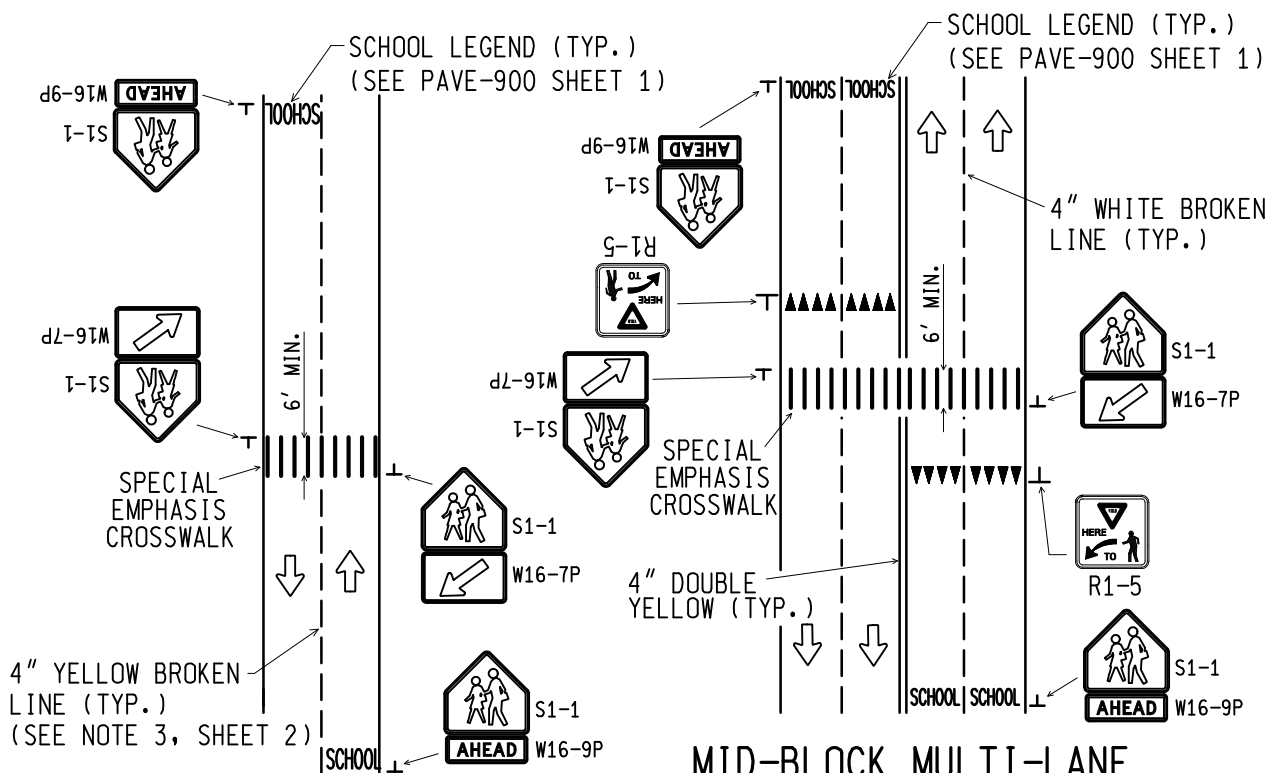
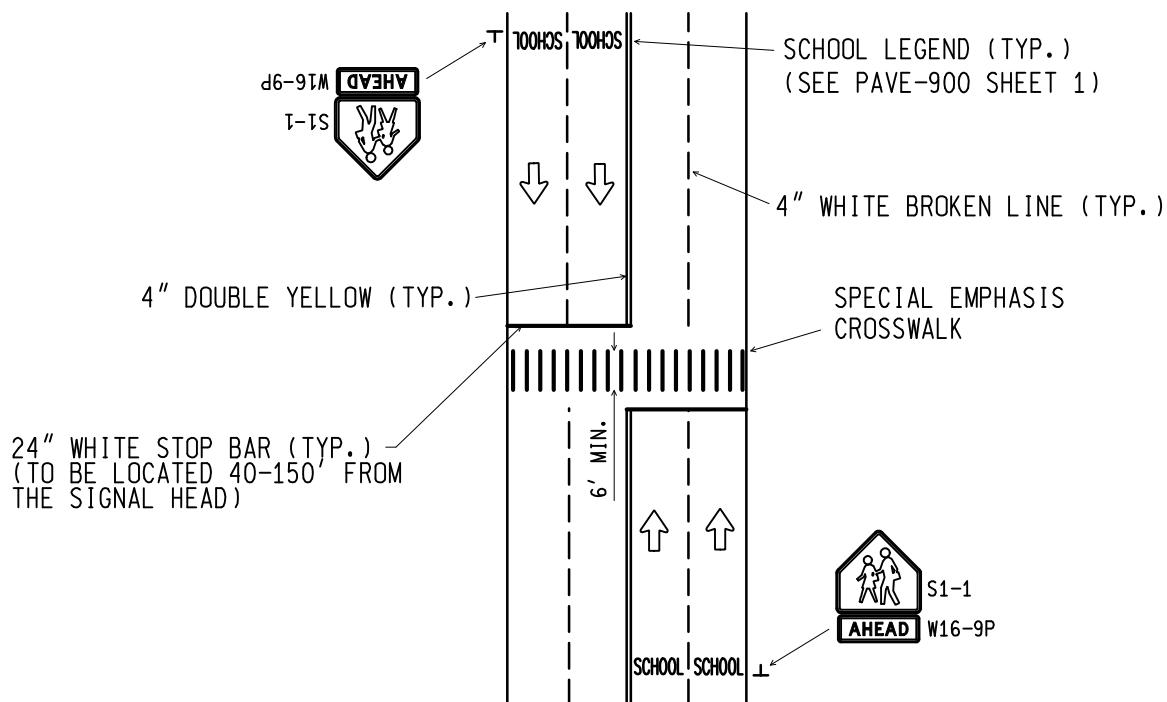
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SHEET
2 OF 2

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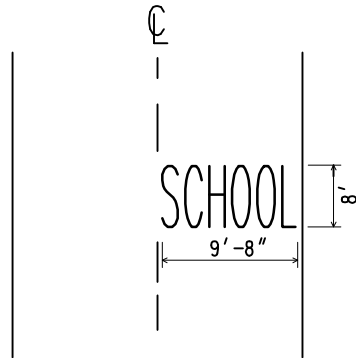
APPROVED BY: Mark A. [Signature]
DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

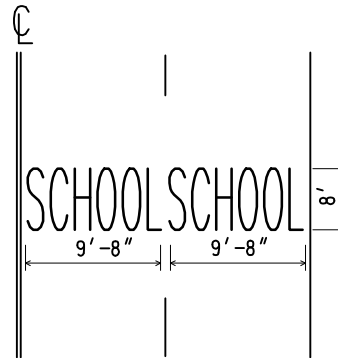
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PAVE-960-B

SINGLE LANE APPROACH



MULTI LANE APPROACH



NOTES:

1. Place 9 ft 8 inch SCHOOL marking for each lane. Omit legend in left turn or exclusive right turn lanes.
2. Pavement marking should not extend over into opposing lane.
3. Pavement lane line markings (passing, no passing zone) per existing markings or as directed by the Engineer.
4. Refer to PAVE-945 for stop bar, crosswalk and yield line marking details.

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BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

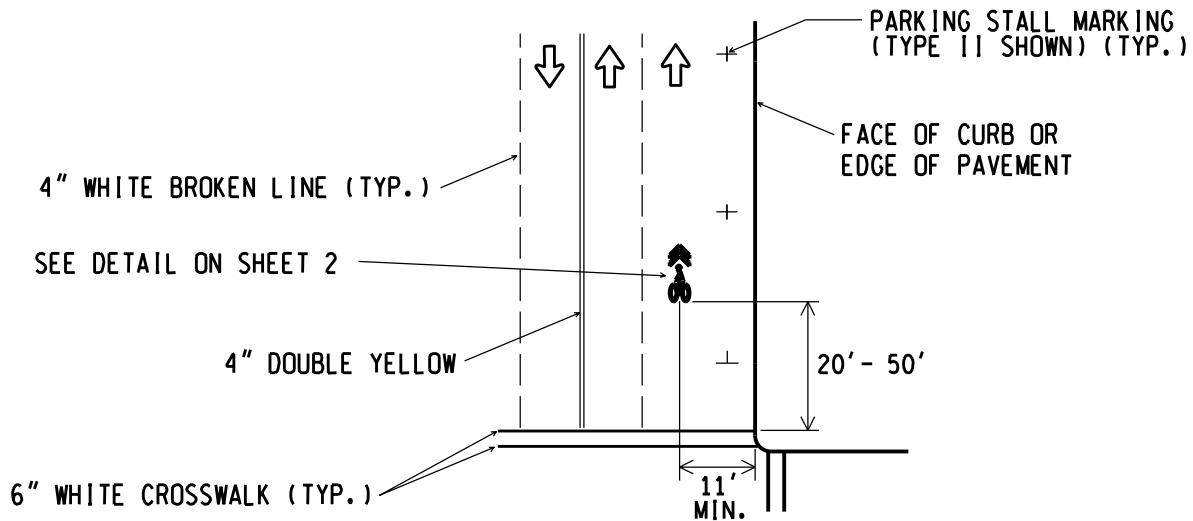
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10/18/11
PLAN DATE

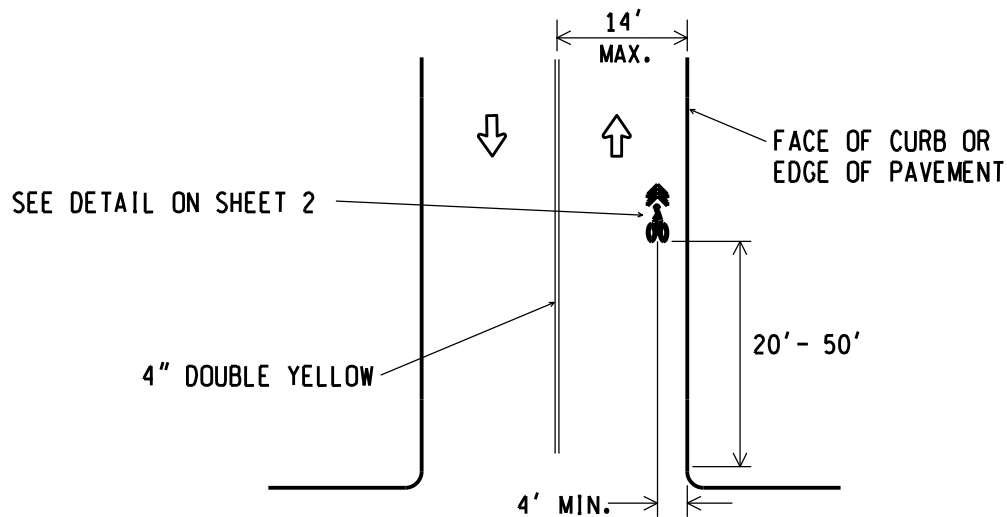
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SHEET
2 OF 2

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SHARED LANE WITH ON-STREET PARALLEL PARKING

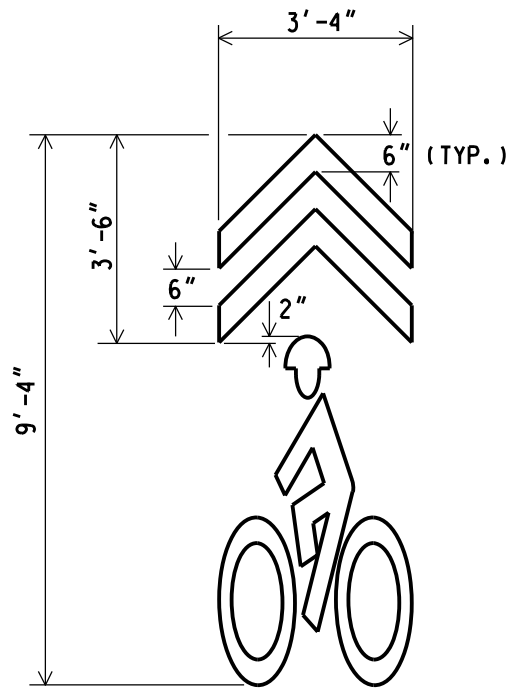


SHARED LANE WITH NO ON-STREET PARKING

NOTES:

1. Refer to the AASHTO Guide for the Development of Bicycle Facilities for appropriate use of marking.
2. When used, space shared lane marking at intervals no greater than 250 ft.
3. Refer to PAVE-955 for on-street parking zone marking details.

 <p>PREPARED BY TSMD DIVISION</p> <p>DRAWN BY: LME</p> <p>CHECKED BY: JGM</p>	<p>DEPARTMENT DIRECTOR Paul C. Ajegba</p> <p>Gregg Brunner, P.E. Gregg Brunner Nov 2 2020 12:10 PM</p> <p>APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES</p> <p>Bradley C. Wiefelrich Nov 5 2020 5:52 AM</p> <p>APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <h2>SHARED LANE (SHARROW) MARKING</h2>		
	<p>09/21/20 F.H.W.A. APPROVAL</p>	<p>04/01/20 PLAN DATE</p>	<p>PAVE-961-C</p>	<p>SHEET 1 OF 2</p>



DETAIL OF SHARED LANE (SHARROW) MARKING

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

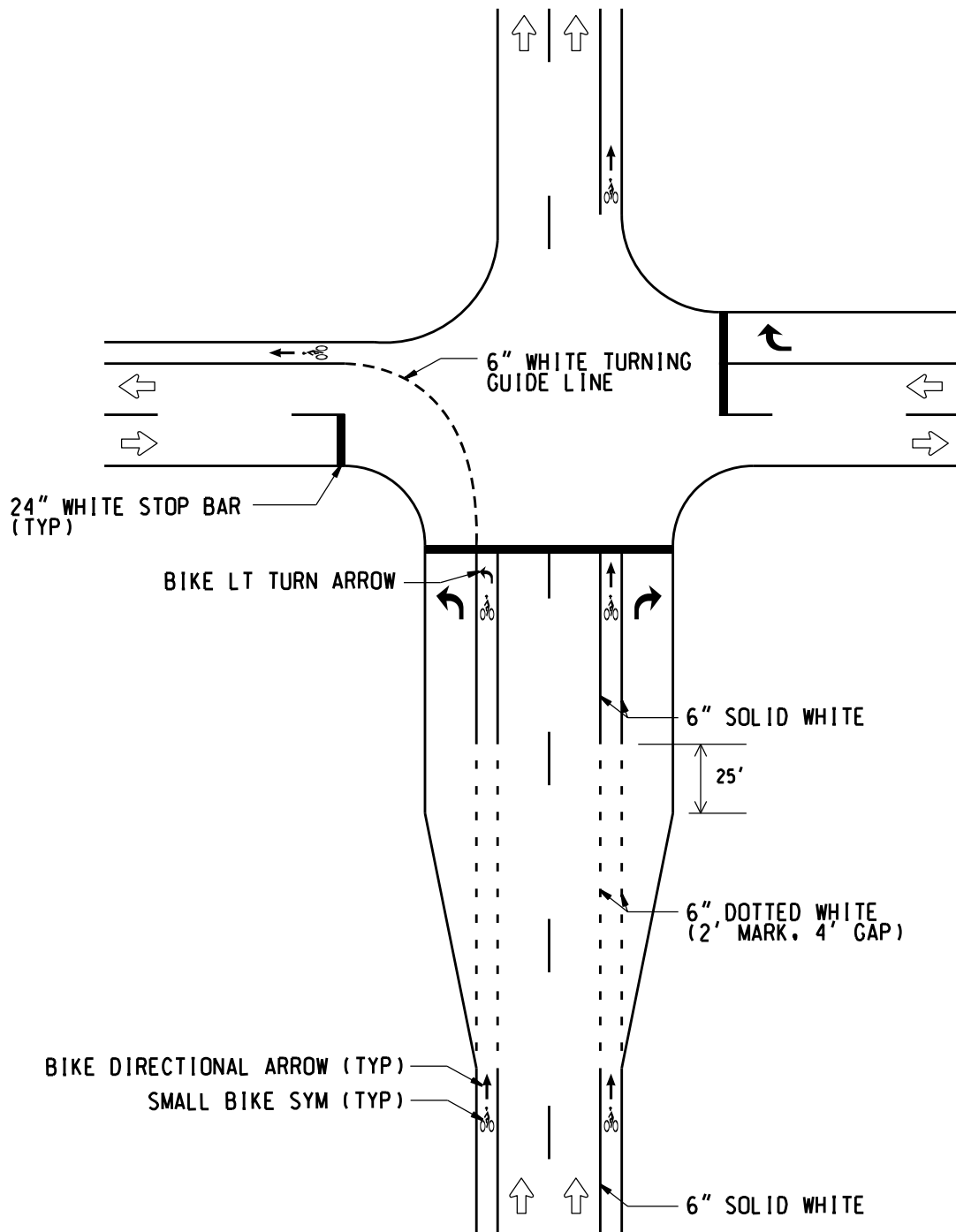
09/21/20
F.H.W.A. APPROVAL

04/01/20
PLAN DATE

PAVE-961-C

SHEET
2 OF 2

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NOTES:

STANDARD BIKE LANES

1. See PAVE-900 for symbol details.

NOT TO SCALE



PREPARED
BY
TSMD DIVISION

DRAWN BY: MKR

CHECKED BY: KMA

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:10 PM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wieferich Bradley C. Wieferich
Nov 5 2020 5:52 AM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

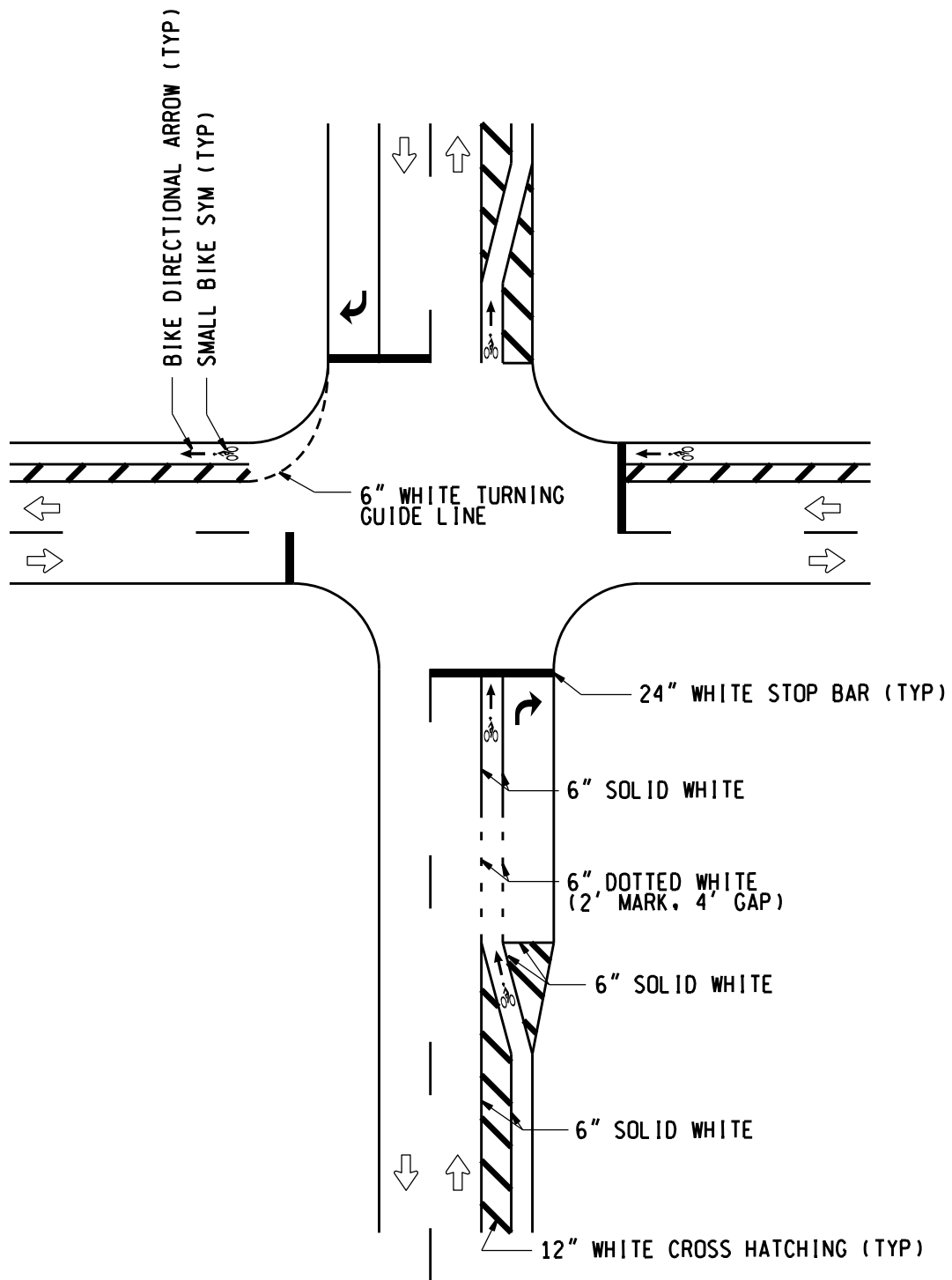
BIKE LANE & PATH PAVEMENT MARKINGS

09/21/20
F.H.W.A. APPROVAL

04/01/20
PLAN DATE

PAVE-962-B

SHEET
1 OF 6



BUFFERED BIKE LANES

NOTES:

1. See PAVE-900 for symbol details.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

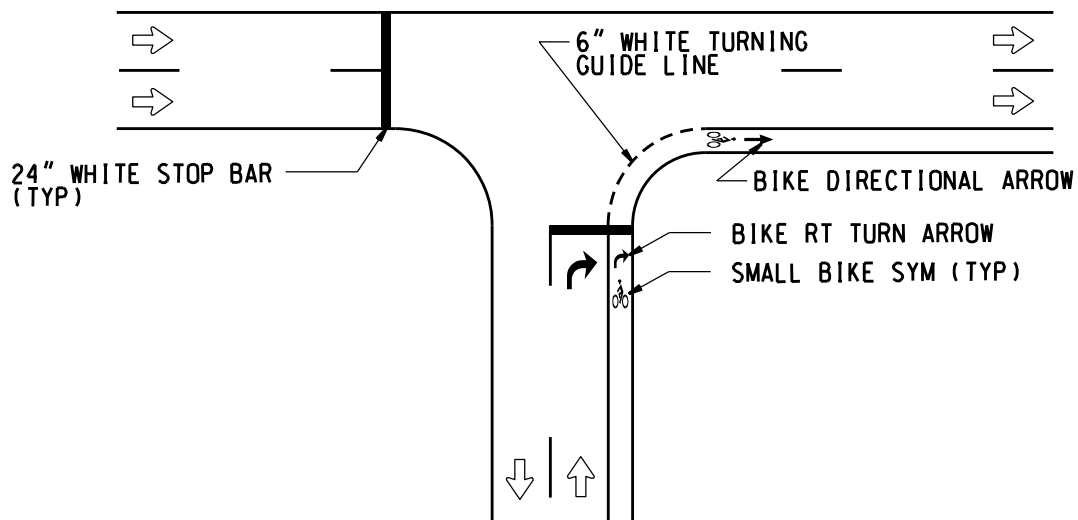
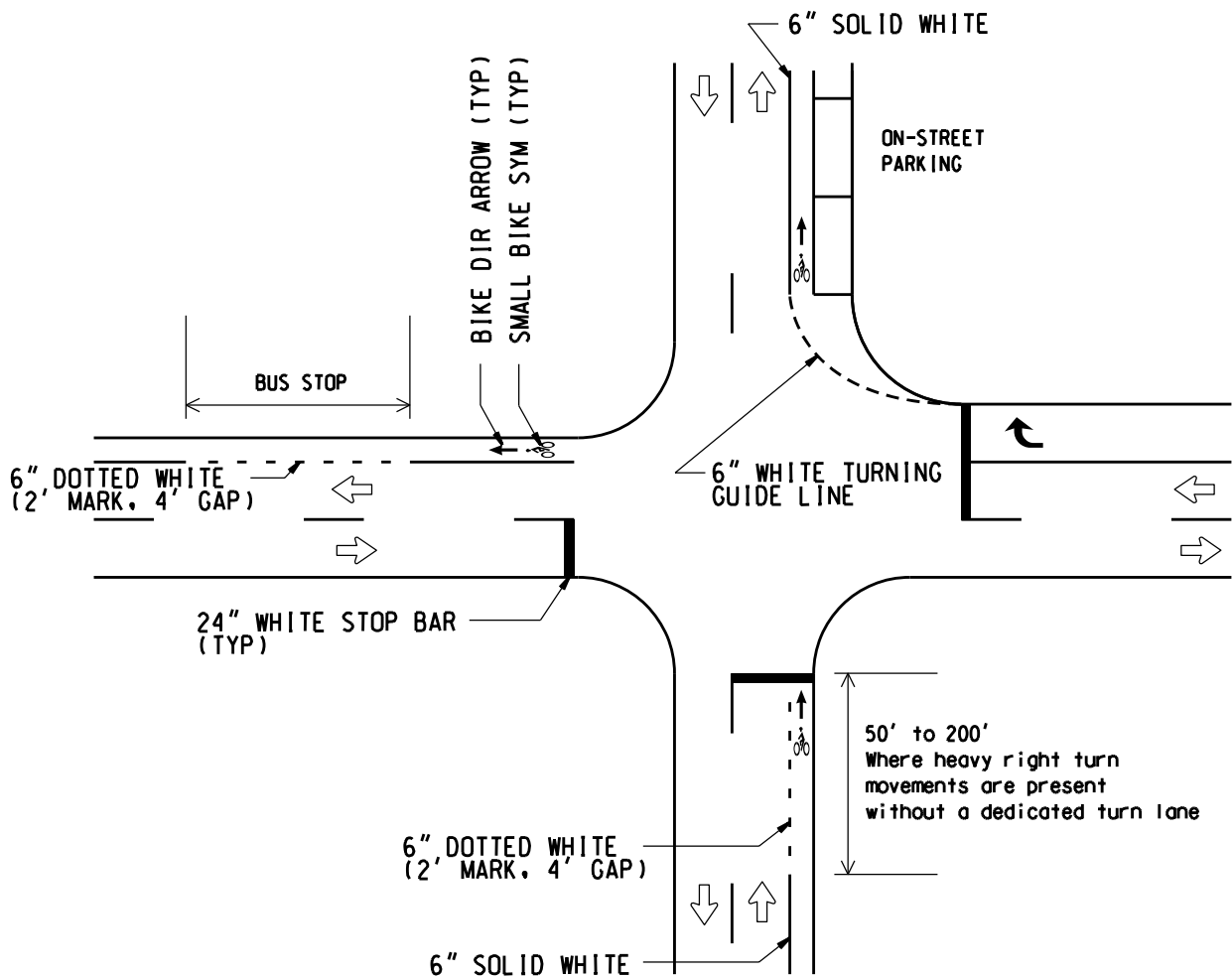
09/21/20
F.H.W.A. APPROVAL

04/01/20
PLAN DATE

PAVE-962-B

SHEET
2 OF 6

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ADDITIONAL DETAILS

NOTES:

1. See PAVE-900 for symbol details.
2. Where bike lanes are adjacent to on-street parking, recommend utilizing Type I or Type II stall markings to provide continuous delineation. See PAVE-955 for details.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

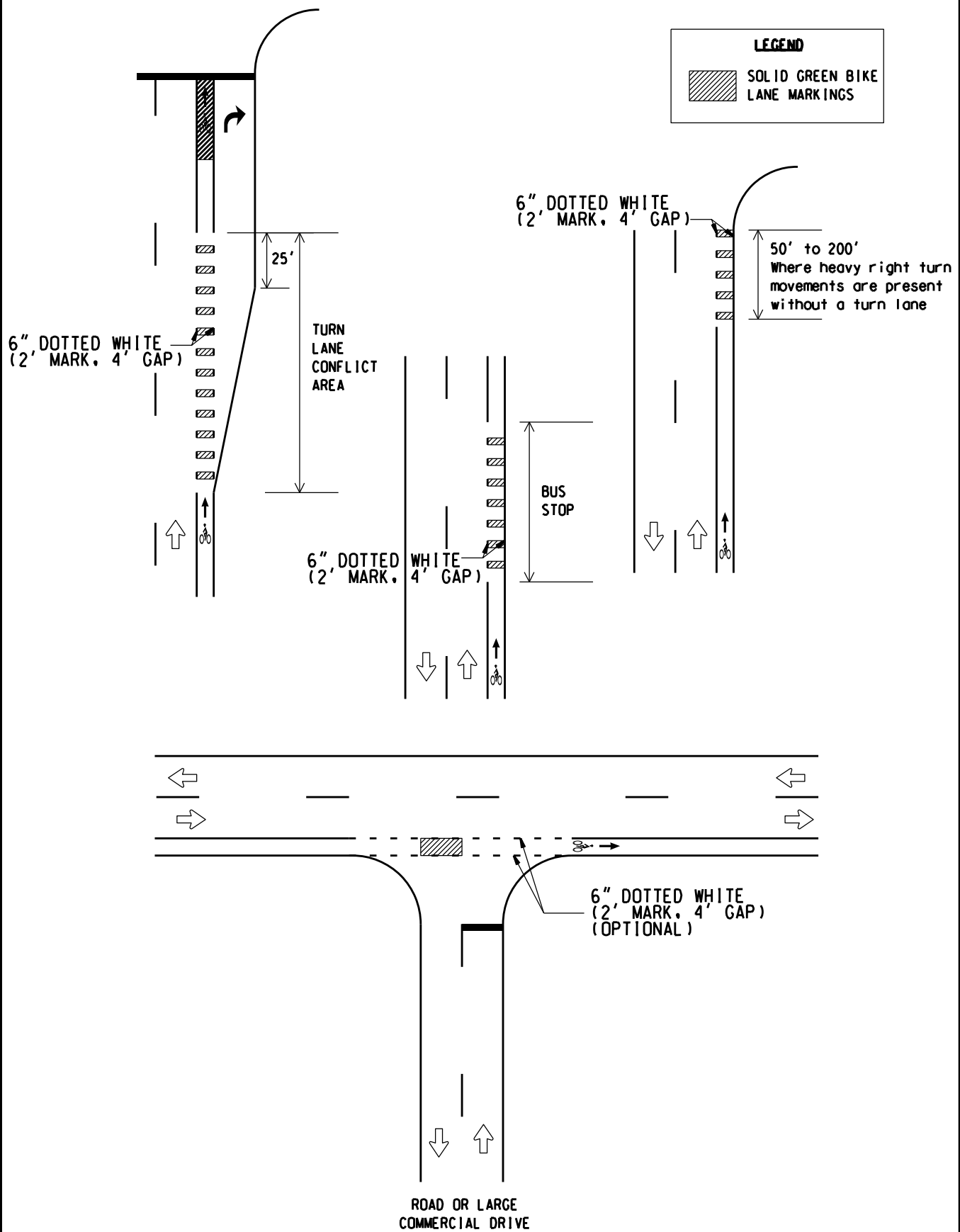
09/21/20
F.H.W.A. APPROVAL

04/01/20
PLAN DATE

PAVE-962-B

SHEET
3 OF 6

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OPTIONAL GREEN MARKINGS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

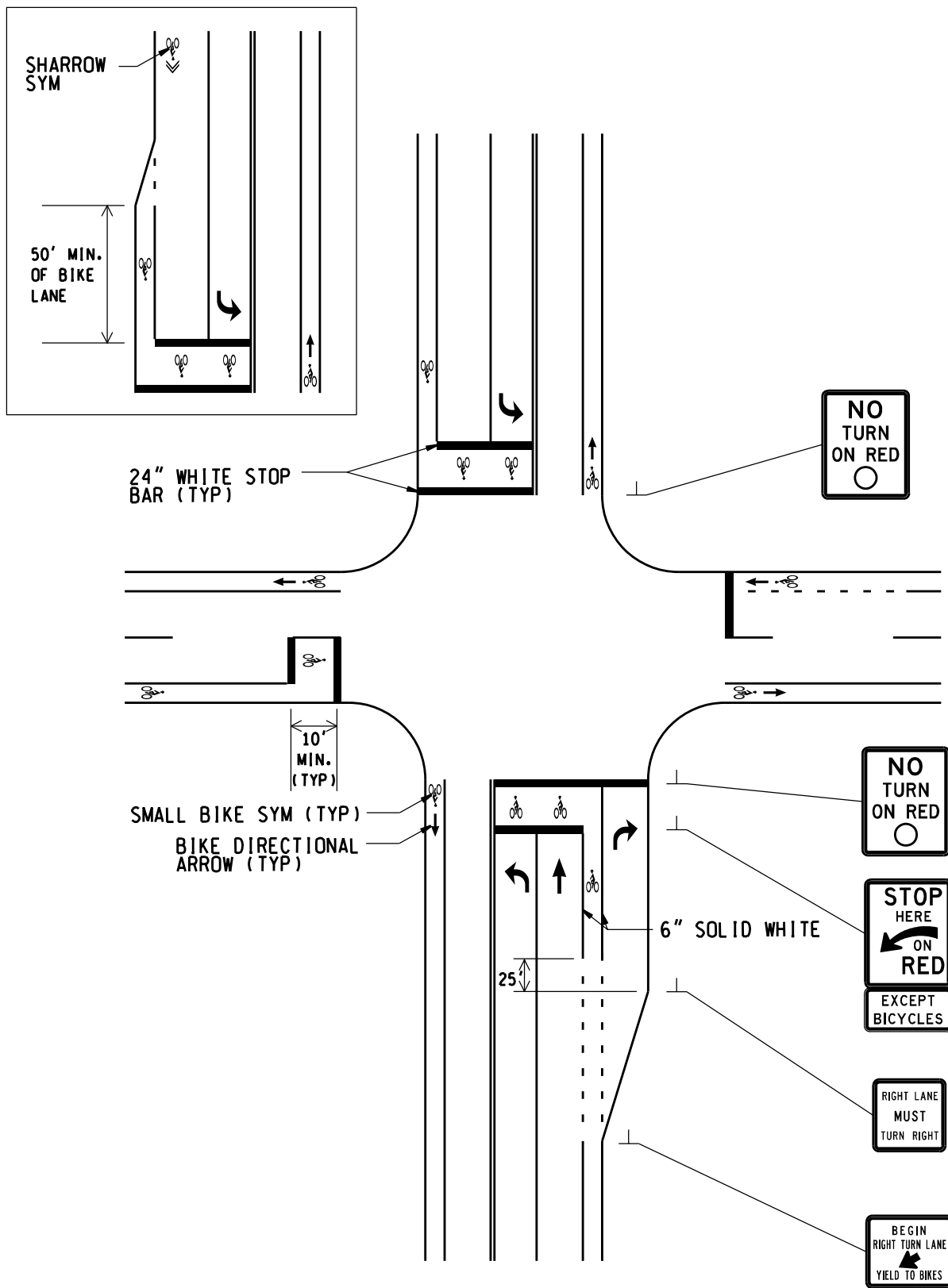
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F.H.W.A. APPROVAL

04/01/20
PLAN DATE

PAVE-962-B

SHEET
4 OF 6

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BIKE BOXES

NOTES:

1. Solid green bike lane markings may be used in the bike box and the incoming section of bike lane.
2. Where the bike box is across multiple lanes, pedestrian countdown signals must be present on that approach.
3. Turns on red are prohibited from approaches where bike boxes are present.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

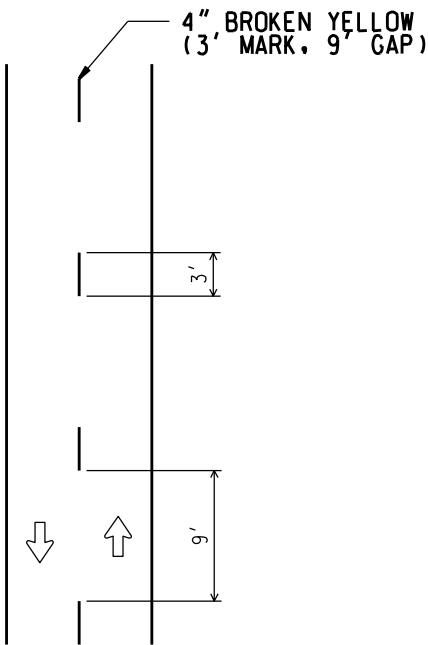
09/21/20
F.H.W.A. APPROVAL

04/01/20
PLAN DATE

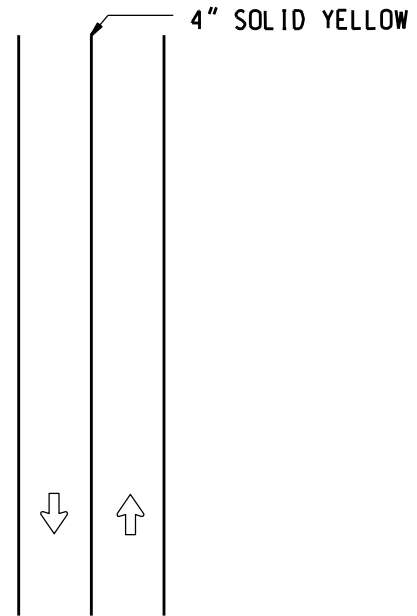
PAVE-962-B

SHEET
5 OF 6

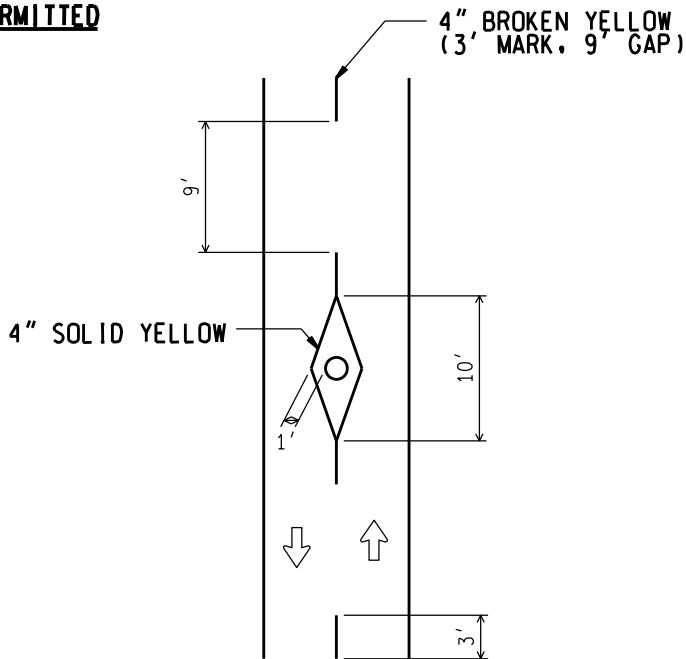
NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



**PASSING
PERMITTED**

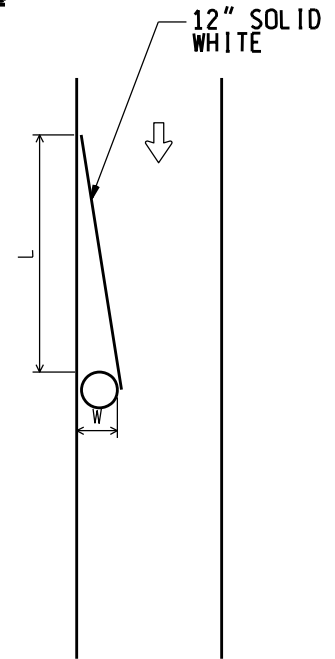


NO PASSING



**CENTRAL
OBSTRUCTION**

1. Place broken yellow centerline markings for a minimum of 110 feet before and after the obstruction.



**SIDE
OBSTRUCTION**

1. $L=18 \times W$.
2. Increase W by 1 foot for raised obstructions.

MULTI-USE PATHWAY MARKINGS

NOTES:

1. Passing and no passing centerline markings may be used where paths are sufficient width to designate multiple lanes, but are not required.
2. Obstruction markings should be used at any location where an object cannot be eliminated from the path, including but not limited to drains, grates, bollards, and poles.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

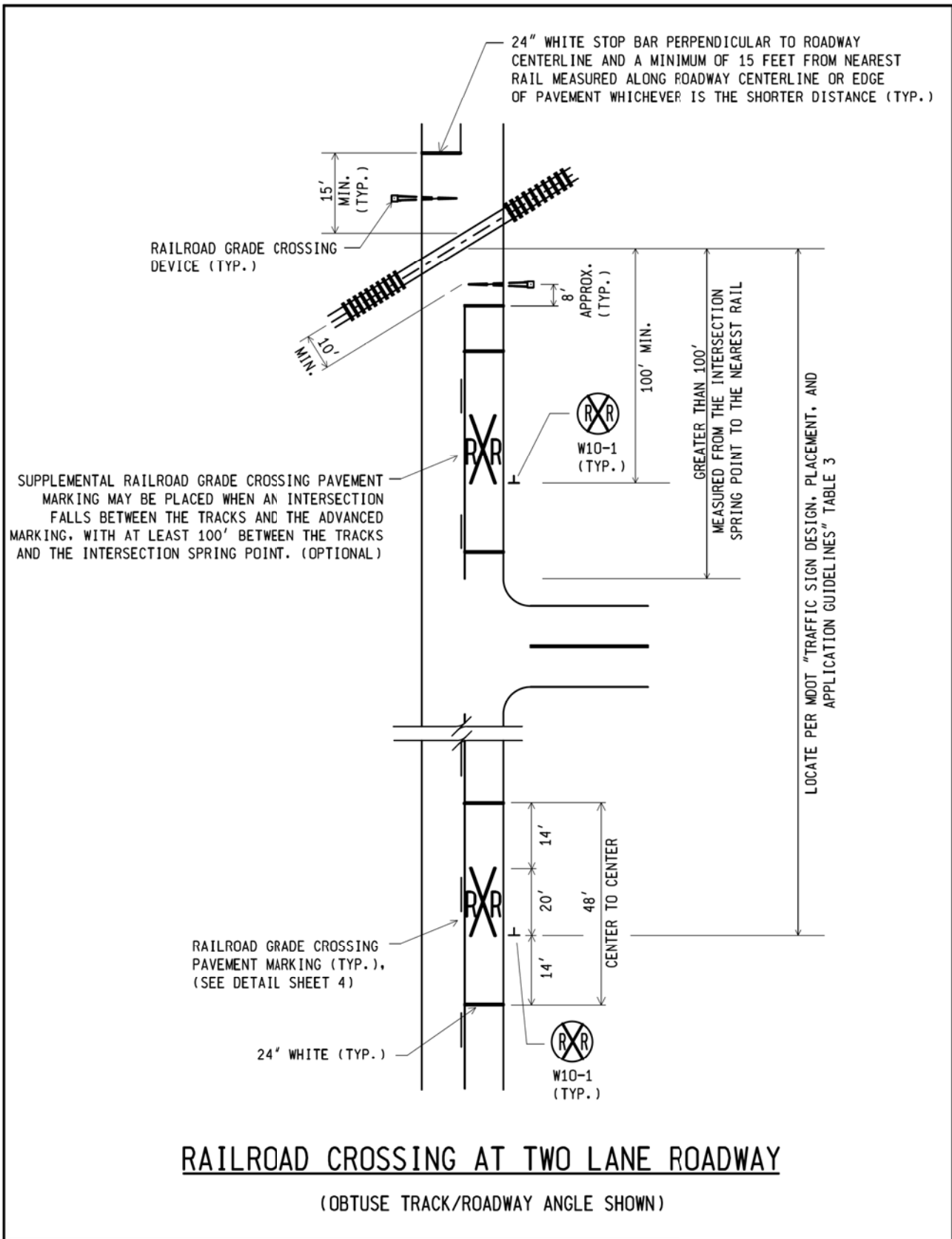
09/21/20
F.H.W.A. APPROVAL

04/01/20
PLAN DATE

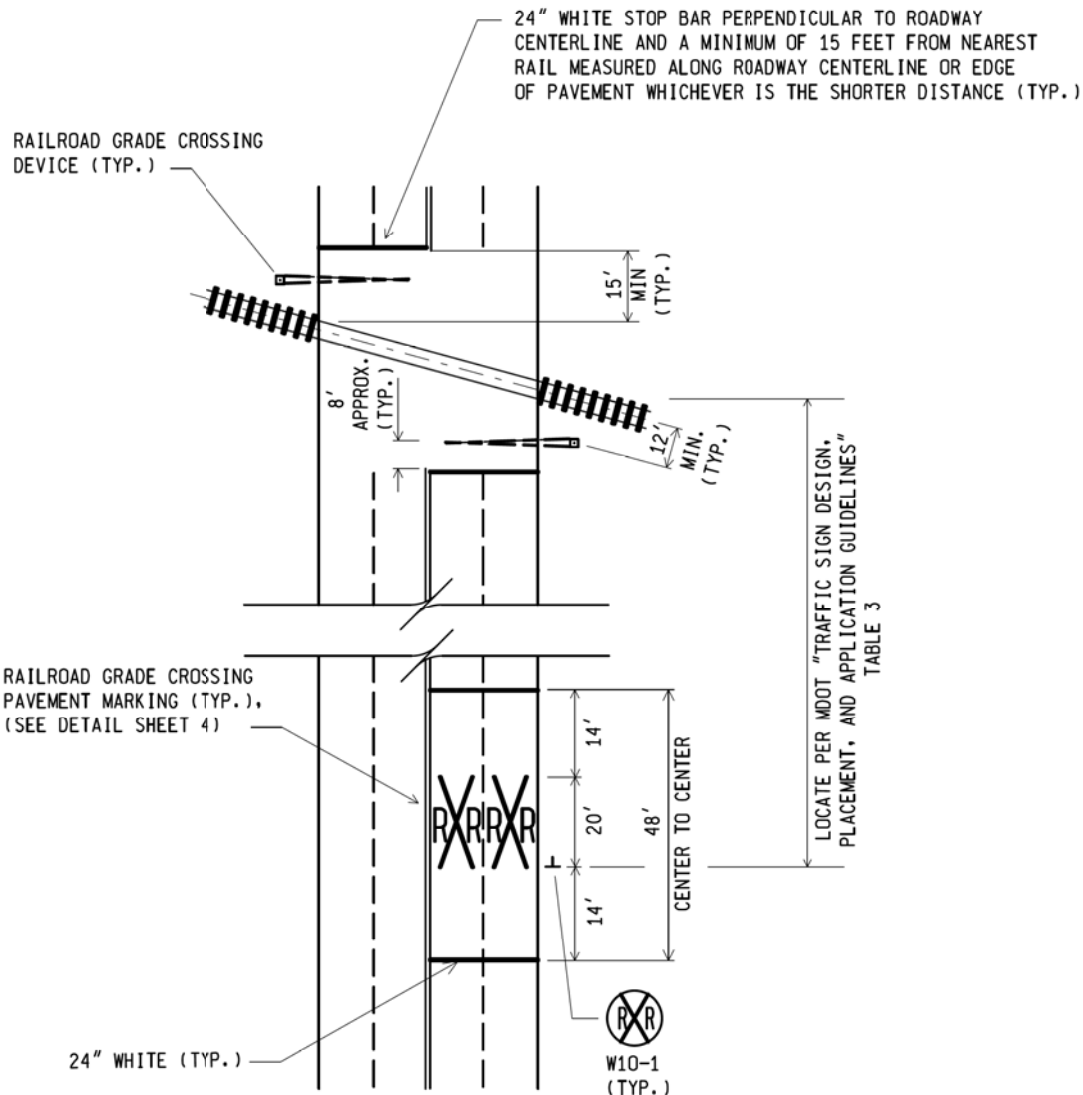
PAVE-962-B

SHEET
6 OF 6

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 <p>PREPARED BY DESIGN DIVISION</p> <p>DRAWN BY: <u>LME</u></p> <p>CHECKED BY: <u>JGM</u></p>	<p>DEPARTMENT DIRECTOR Kirk T. Steudle</p> <p>APPROVED BY: <u>Kimberly Avery</u> DIRECTOR, BUREAU OF FIELD SERVICES</p> <p>Bradley C. Wiefelrich 2017.09.24 18:29:01 -04'00"</p> <p>APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR</p> <h2>RAILROAD GRADE CROSSING PAVEMENT MARKINGS</h2>		
	<p>08/23/17 F.H.W.A. APPROVAL</p>	<p>01/22/17 PLAN DATE</p>	<p>PAVE-965-D</p>	<p>SHEET 1 OF 4</p>



RAILROAD CROSSING AT MULTI LANE ROADWAY

(ACUTE TRACK/ROADWAY ANGLE SHOWN)

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

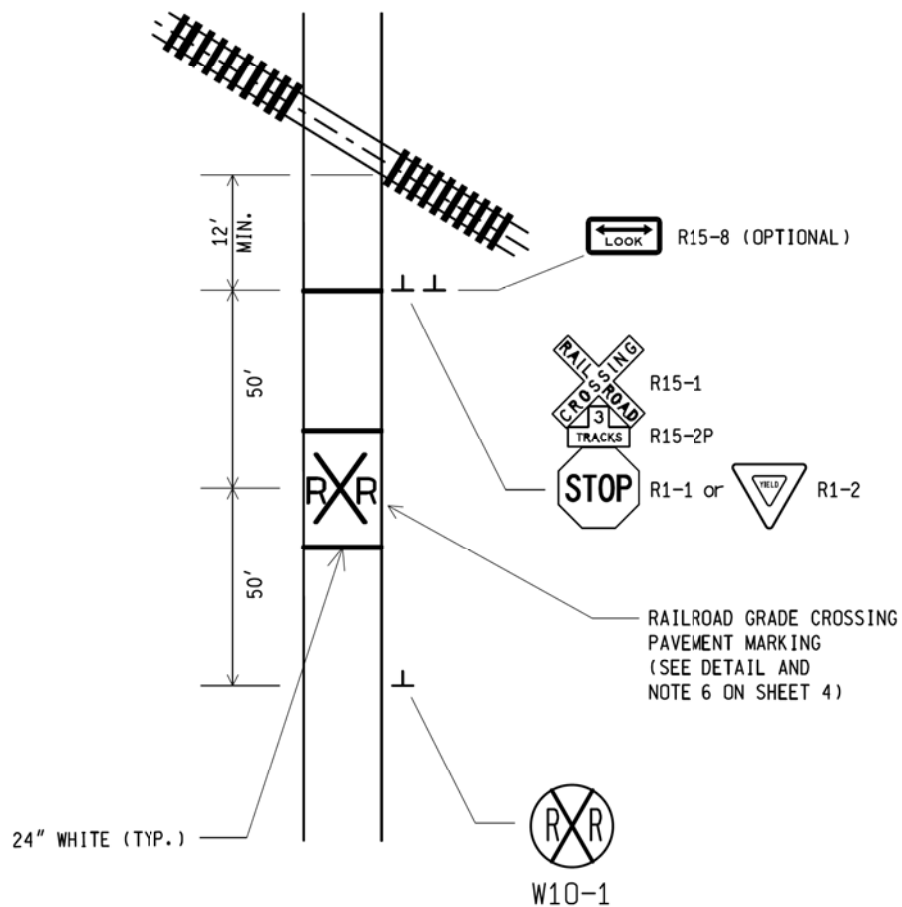
08/23/17
F.H.W.A. APPROVAL

01/22/17
PLAN DATE

PAVE-965-D

SHEET
2 OF 4

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



RAILROAD CROSSING AT SHARED-USE PATH

(ACUTE TRACK/ROADWAY ANGLE SHOWN)

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

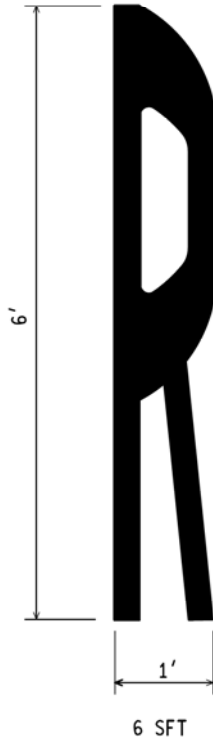
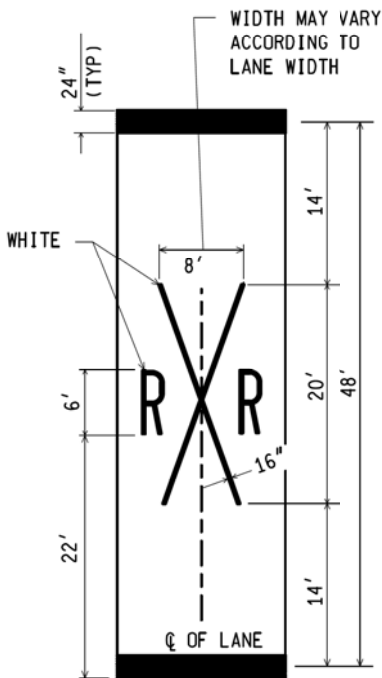
08/23/17
F.H.W.A. APPROVAL

01/22/17
PLAN DATE

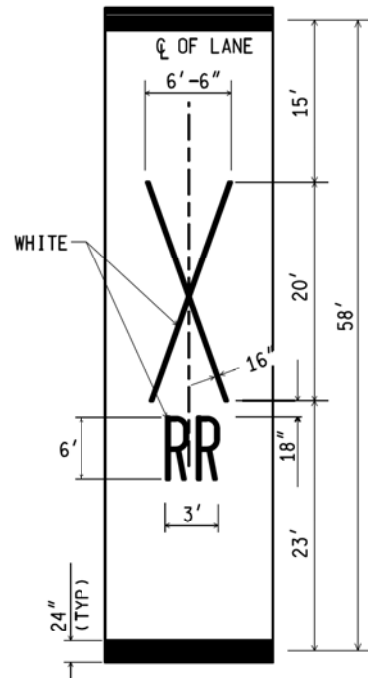
PAVE-965-D

SHEET
3 OF 4

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CONVENTIONAL MARKINGS



ALTERNATE MARKINGS

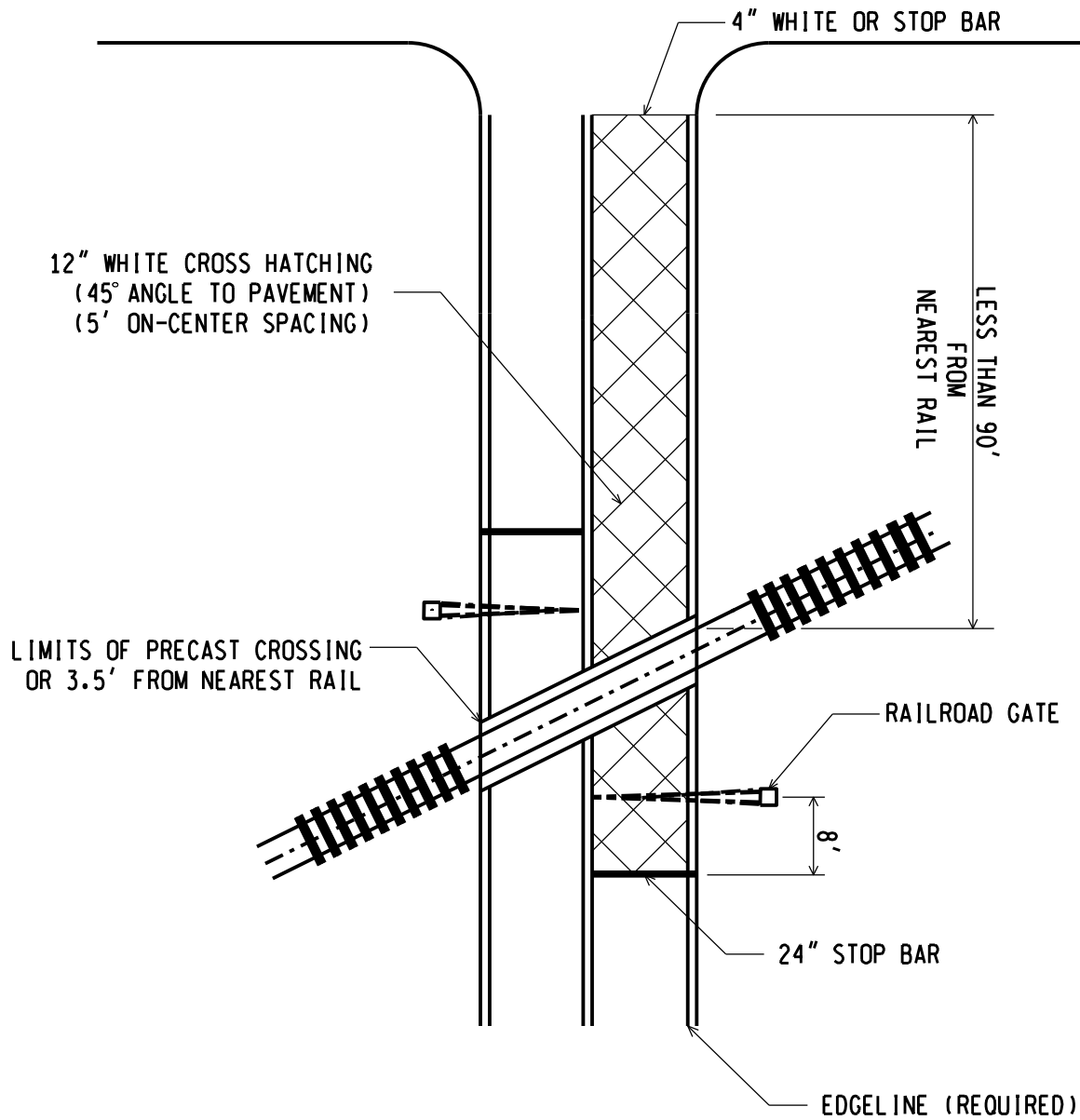
NOTES:

1. This document shows active grade crossing devices on two lane and multi-lane roadways. If passive grade crossing devices (crossbucks) are present, the stop bar should be located at the crossbuck, but no closer than 15 feet from the nearest rail.
2. "R X R" pavement markings can be omitted for exclusive right turn lane locations. "R X R" pavement markings are optional for center lane left turn only lanes.
3. The alternate pavement markings may be specified at any grade crossing, but their use is particularly advantageous on roadways subjected to high traffic volumes, since they are designed to minimize the amount of markings applied in the wheel tracks, thereby extending marking life. Identical types of markings shall be installed on both roadway approaches.
4. The 24 inch transverse markings immediately above and below the "R X R" marking will be paid for separately.
5. See part 8 of the MMUTCD for criteria regarding the placement of solid yellow, no passing zone markings.
6. When placed on a shared-use path, reduce all vertical dimensions (except for stop bars) by half.
7. STOP or YIELD signs are only to be used at passive crossings.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN	08/23/17 F.H.W.A. APPROVAL	01/22/17 PLAN DATE	PAVE-965-D	SHEET 4 OF 4
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UNSIGNALIZED, STORAGE LESS THAN 90'

Notes:

1. Where the angle between the cross hatching and the tracks would be less than 20°, the cross hatching should be sloped in the opposite direction of shown.
2. All markings shown shall be retroreflective.
3. If gates are not present, stop bar should be located approximately 15 feet from the nearest rail.

NOT TO SCALE



PREPARED
BY
TSMO DIVISION

DRAWN BY: MKB

CHECKED BY: CMW

DEPARTMENT DIRECTOR
Paul C. Ajegba

APPROVED BY: (SPECIAL DETAIL)
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: (SPECIAL DETAIL)
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

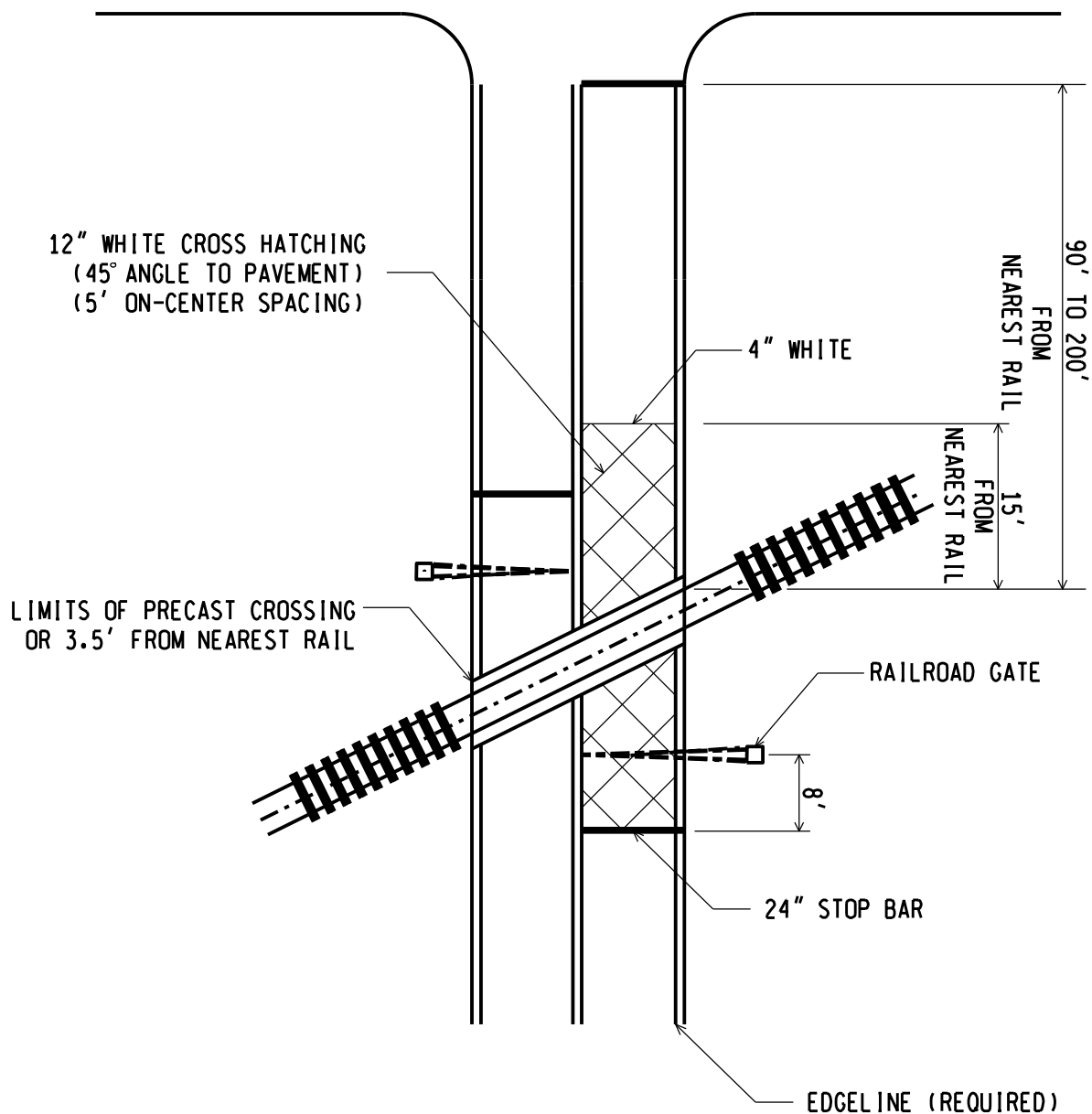
EXCLUSION ZONE PAVEMENT MARKINGS

(SPECIAL DETAIL)
F.H.W.A. APPROVAL

02/23/20
PLAN DATE

PAVE-966-A

SHEET
1 OF 3



SIGNALIZED OR UNSIGNALIZED, STORAGE 90' TO 200'

Notes:

1. Where the angle between the cross hatching and the tracks would be less than 20°, the cross hatching should be sloped in the opposite direction of shown.
2. All markings shown shall be retroreflective.
3. If gates are not present, stop bar should be located approximately 15 feet from the nearest rail.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

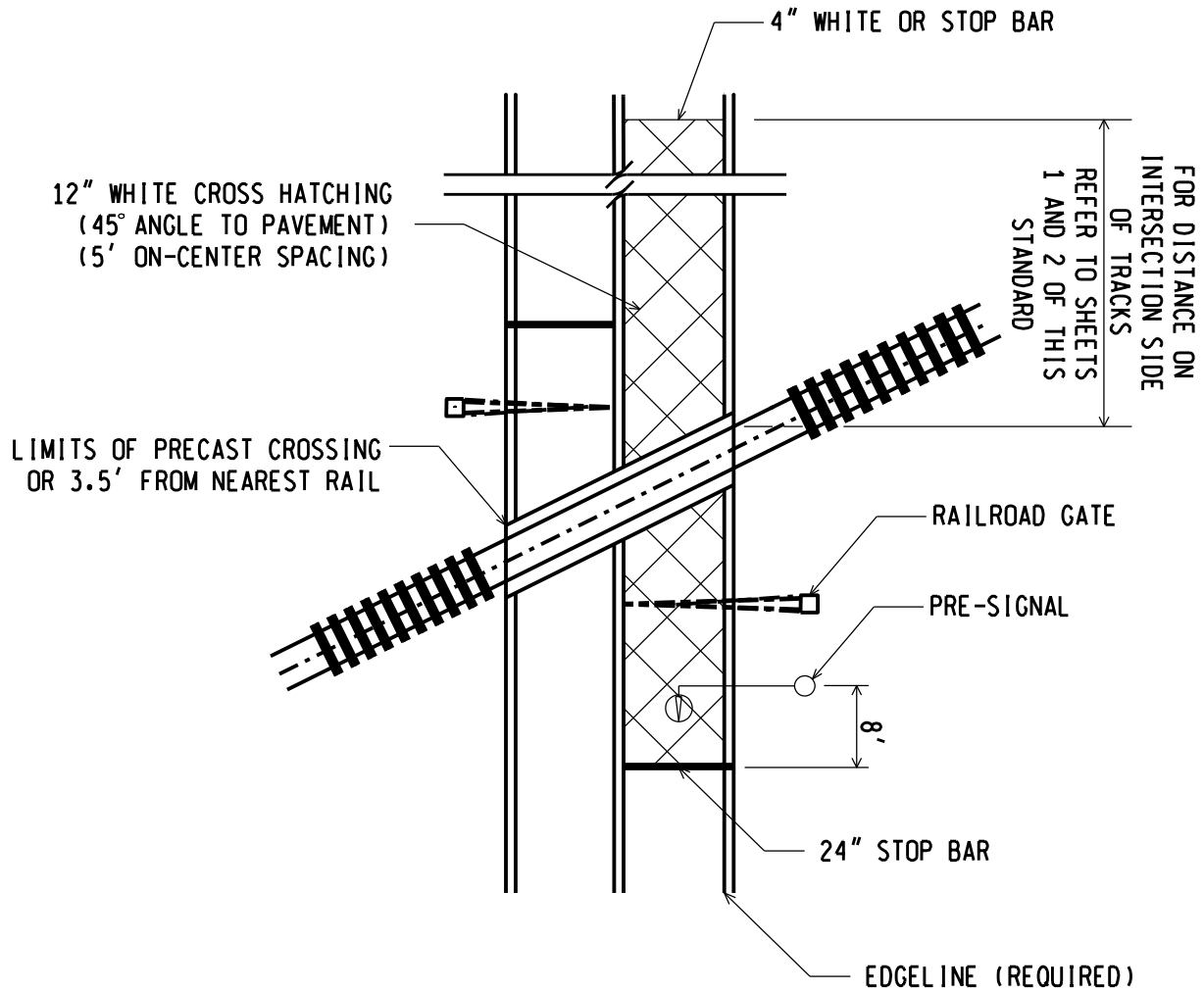
(SPECIAL DETAIL)
F.H.W.A. APPROVAL

02/23/20
PLAN DATE

PAVE-966-A

SHEET
2 OF 3

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WITH PRE-SIGNAL

Notes:

1. Where the angle between the cross hatching and the tracks would be less than 20°, the cross hatching should be sloped in the opposite direction of shown.
2. All markings shown shall be retroreflective.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

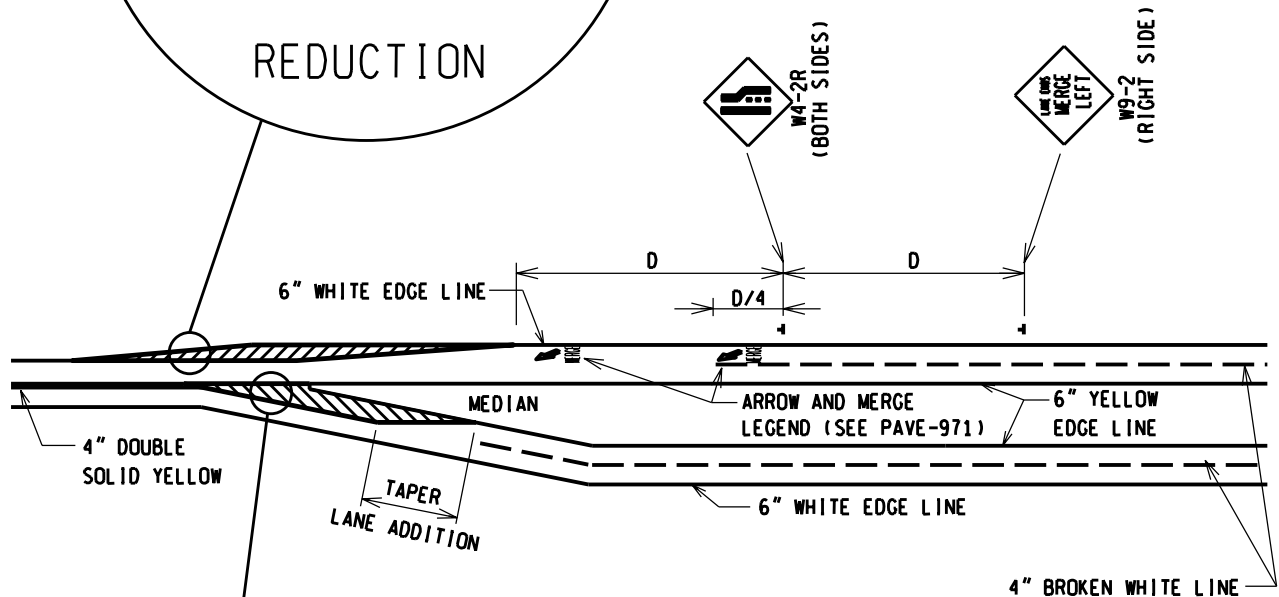
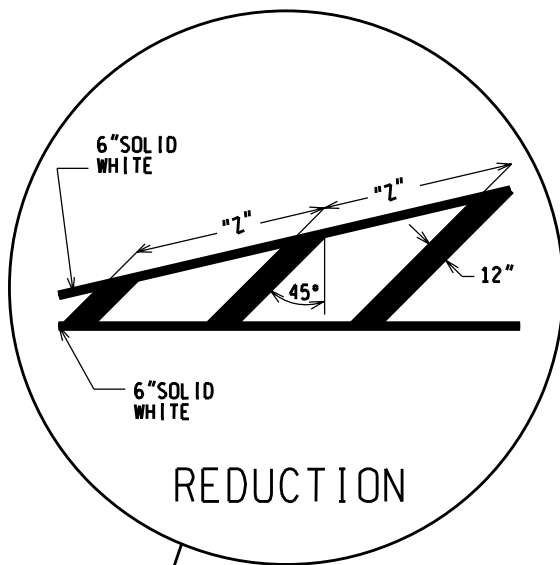
(SPECIAL DETAIL)
F.H.W.A. APPROVAL

02/23/20
PLAN DATE

PAVE-966-A

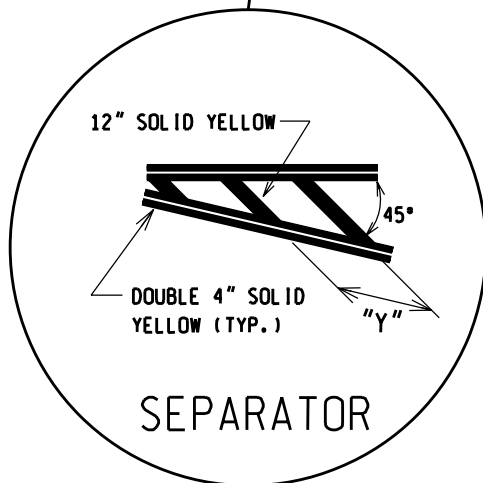
SHEET
3 OF 3

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D = ADVANCE WARNING DISTANCE
(REFER TO TABLE 2C-4 OF MMUTCD FOR D VALUES)

FOR "Y" VALUES SEE PAVE-945 SHEET 1



PAVEMENT WIDTH REDUCTION CROSS-HATCH SPACING	
POSTED SPEED LIMIT (MPH)	"Z" (FT)
25 OR LESS	10
30	20
35	20
40	40
45	40
50	60
55	60



PREPARED
BY
TSMD DIVISION

DRAWN BY: LME

CHECKED BY: JGM

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:10 PM

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
Nov 5 2020 5:53 AM

APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

2-LANE TO 4-LANE TRANSITION PAVEMENT MARKINGS

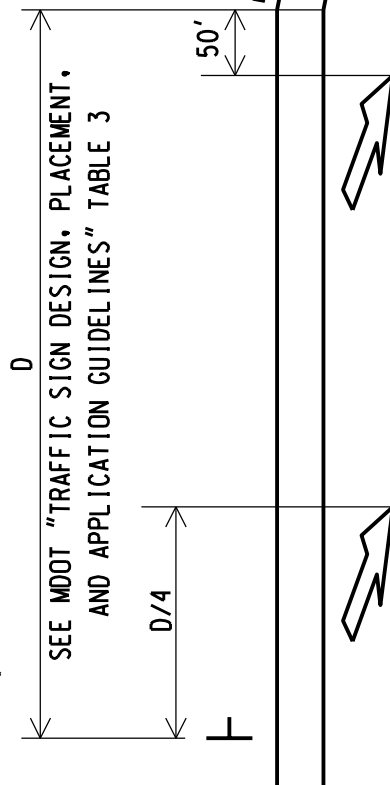
09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-970-C

SHEET
1 OF 1

DELINEATORS AT 100' SPACING
YELLOW OR WHITE REFLECTORS
(SEE NOTE 4 AND R-127 SERIES)



MERGE ARROWS
(SEE NOTE 1 AND
PAVE-900 SERIES)

Notes:

1. Merge arrows are required when the speed limit is 45mph or greater. Where the speed limit is 40mph or less, merge arrows are optional.
2. The MERGE legend may be used to supplement, but not replace, the arrows. See PAVE-900 for spacing.
3. The Engineer may choose to place merge arrows in long acceleration lanes.
4. When the merging lane is an interior lane on a multilane roadway, omit delineators.
5. For shorter "D" distances, the first arrow may be moved upstream as far as 180 ft prior to the W4-2 sign at the direction of the Engineer to provide better spacing of the symbols.



PREPARED
BY
TSMD DIVISION

DRAWN BY: MKB

CHECKED BY: KMA

DEPARTMENT DIRECTOR
Paul C. Ajegba

Gregg Brunner, P.E. Gregg Brunner
Nov 2 2020 12:10 PM

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

Bradley C. Wiefelrich Bradley C. Wiefelrich
Nov 5 2020 5:53 AM

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

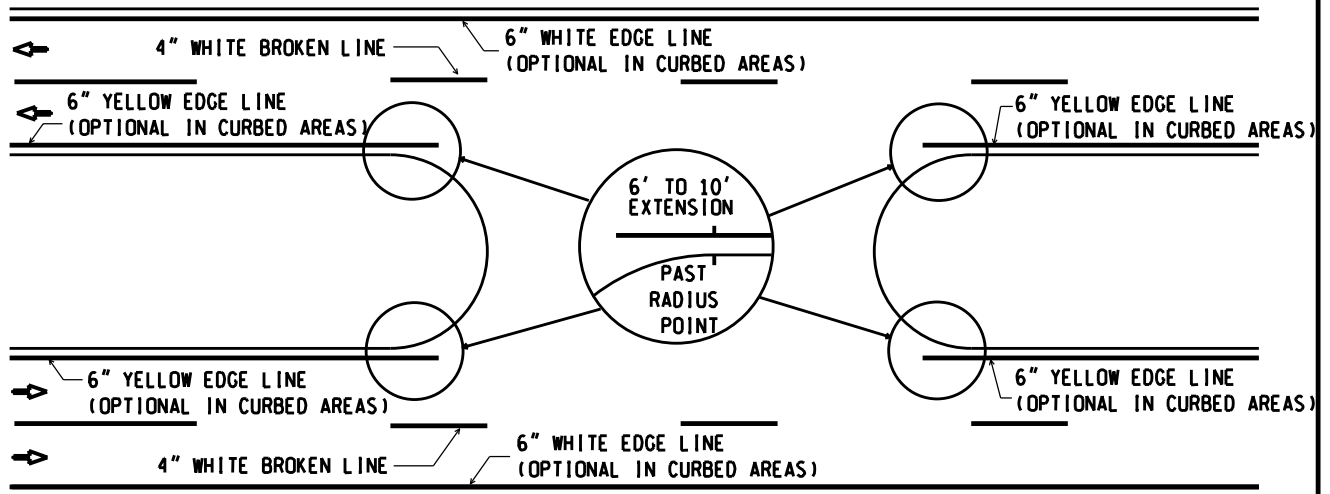
LANE REDUCTION PAVEMENT MARKINGS

09/21/20
F.H.W.A. APPROVAL

03/25/20
PLAN DATE

PAVE-971-B

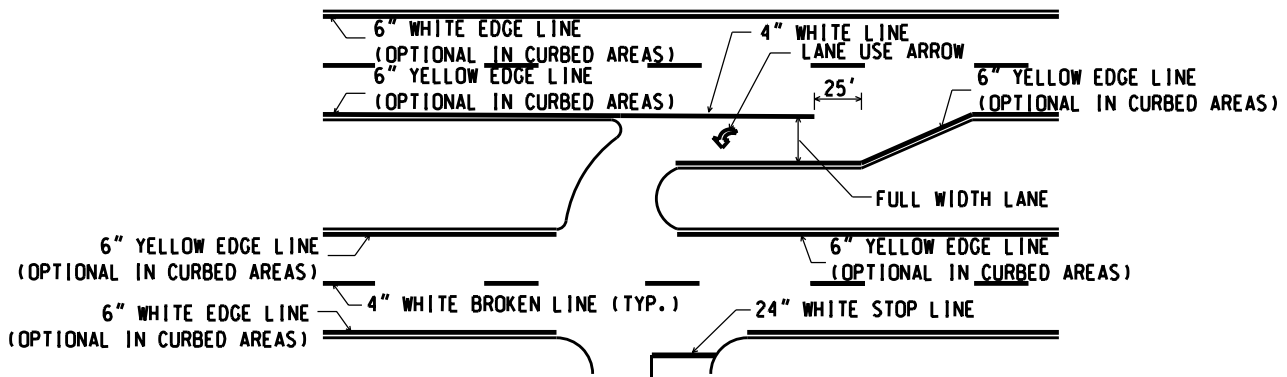
SHEET
1 OF 1



MEDIAN CROSS-OVER

NOTES:


1. For "AUTHORIZED VEHICLES ONLY" crossovers, continue 6 inch yellow edgeline completely through crossover.

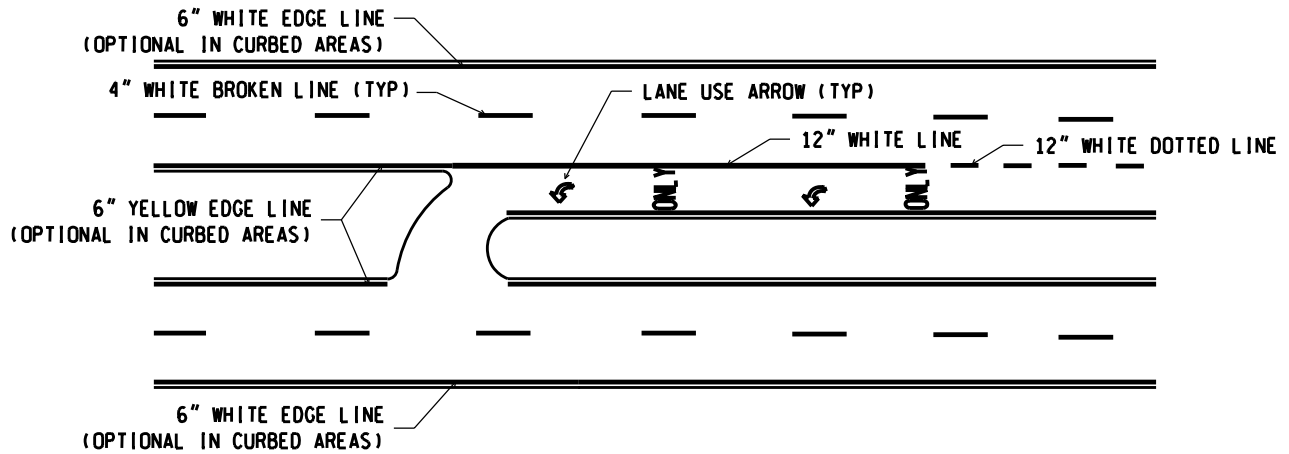


DIRECTIONAL CROSS-OVER

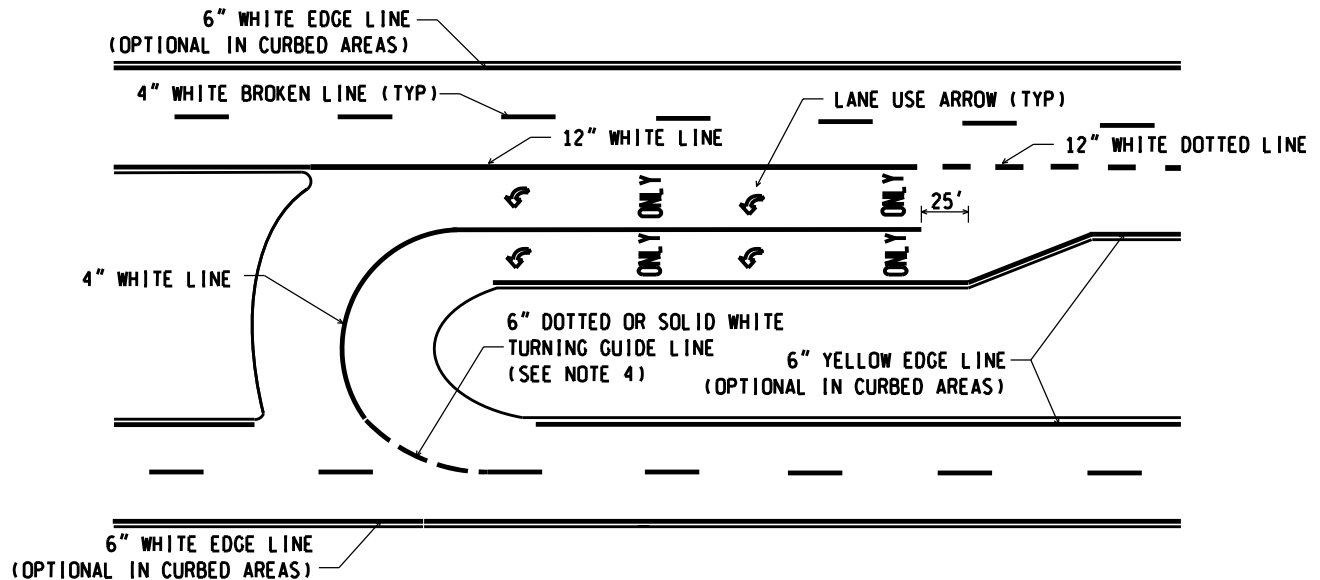
NOTES:

1. Install arrow(s) as shown in PAVE-900 and PAVE-935. Omit arrow(s) if the lane is not full width in advance of the island or the channelizing marking is less than 75 ft in length.

 <p>PREPARED BY TSMD DIVISION</p> <p>DRAWN BY: <u>LME</u></p> <p>CHECKED BY: <u>JGM</u></p>	<p>DEPARTMENT DIRECTOR Paul C. Ajegba</p> <p>Gregg Brunner, P.E. Gregg Brunner Nov 2 2020 12:10 PM</p> <p>APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES</p> <p>Bradley C. Wiefelrich Bradley C. Wiefelrich Nov 5 2020 5:53 AM</p> <p>APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR</p> <h2>CROSS-OVER PAVEMENT MARKINGS</h2>		
	<p>09/21/20 06/16/20 PAVE-985-E SHEET F.H.W.A. APPROVAL PLAN DATE 1 OF 3</p>			



DIRECTIONAL CROSS-OVER WITH LANE DROP



DIRECTIONAL CROSS-OVER WITH DUAL LANES

NOTES:

1. See PAVE-900 and PAVE-935 for location of special markings.
2. "ONLY" legends are not required when all crossover lanes are developed. If at least one crossover lane is a drop lane, then "ONLY" legends are required in addition to the arrows.
3. Include a dotted turning guideline for all double turn movements.
4. Evaluate road conditions when more than two receiving lanes are present to determine which lane the turning guide line should lead to (radius considerations, lanes dropping, etc.).

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

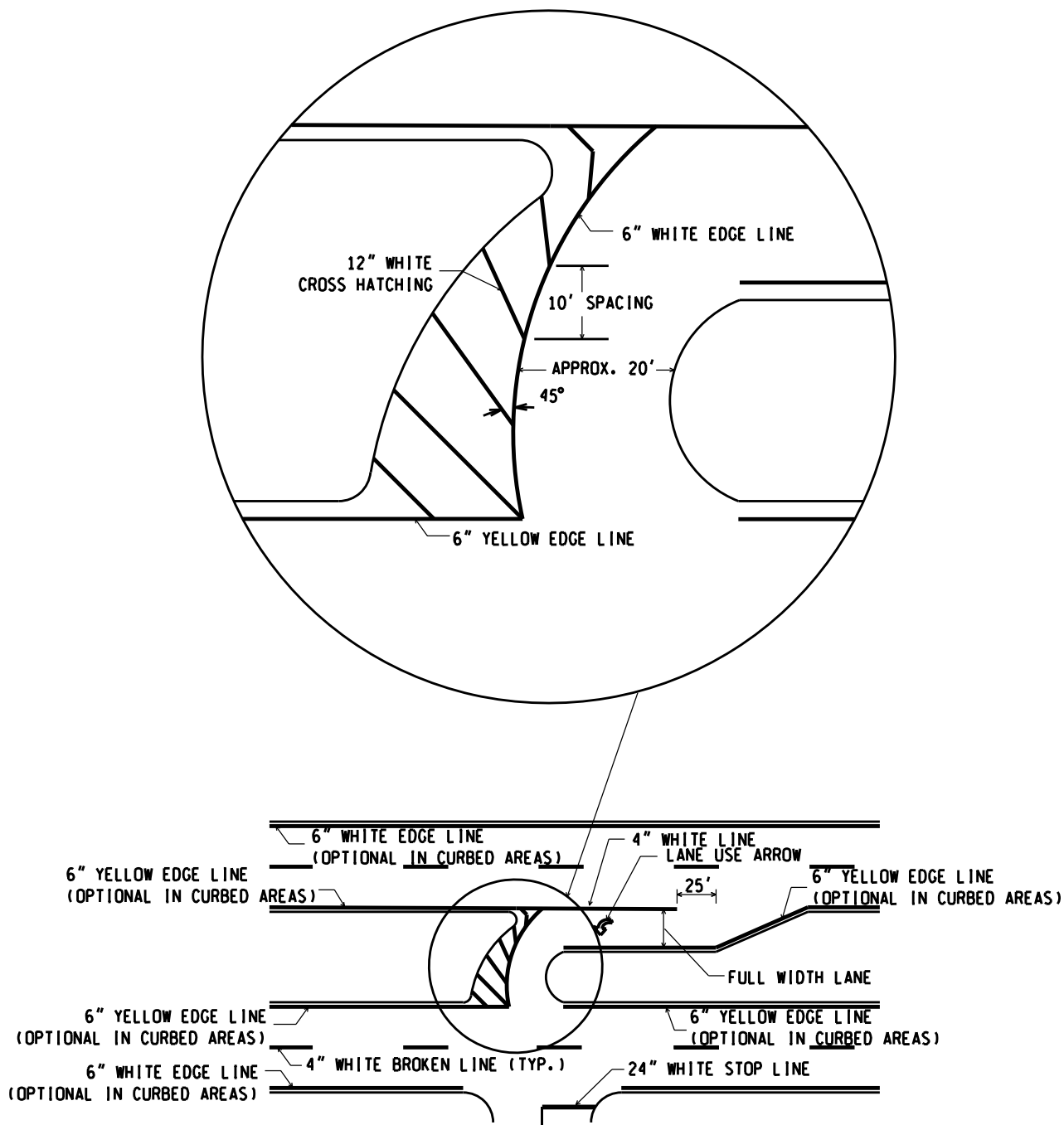
09/21/20
F.H.W.A. APPROVAL

06/16/20
PLAN DATE

PAVE-985-E

SHEET
2 OF 3

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CROSS HATCHING FOR WIDE SINGLE-LANE CROSS-OVERS

NOTES:

1. See PAVE-900 and PAVE-935 for location of special markings.
2. "ONLY" legends are not required when all crossover lanes are developed. If at least one crossover lane is a drop lane, then "ONLY" legends are required in addition to the arrows.
3. Cross hatching is radial to always point upwards in the direction of traffic movement and maintain a 45 degree angle to the edgeline. 10 foot spacing is measured along the white edgeline.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN

09/21/20
F.H.W.A. APPROVAL

06/16/20
PLAN DATE

PAVE-985-E

SHEET
3 OF 3

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