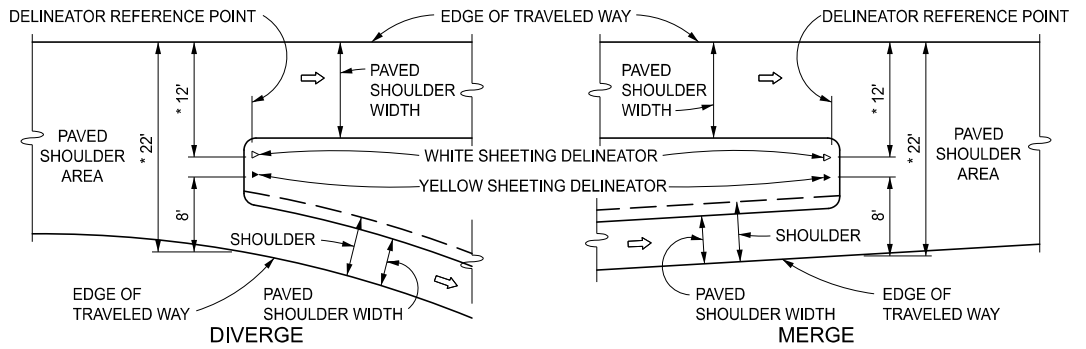
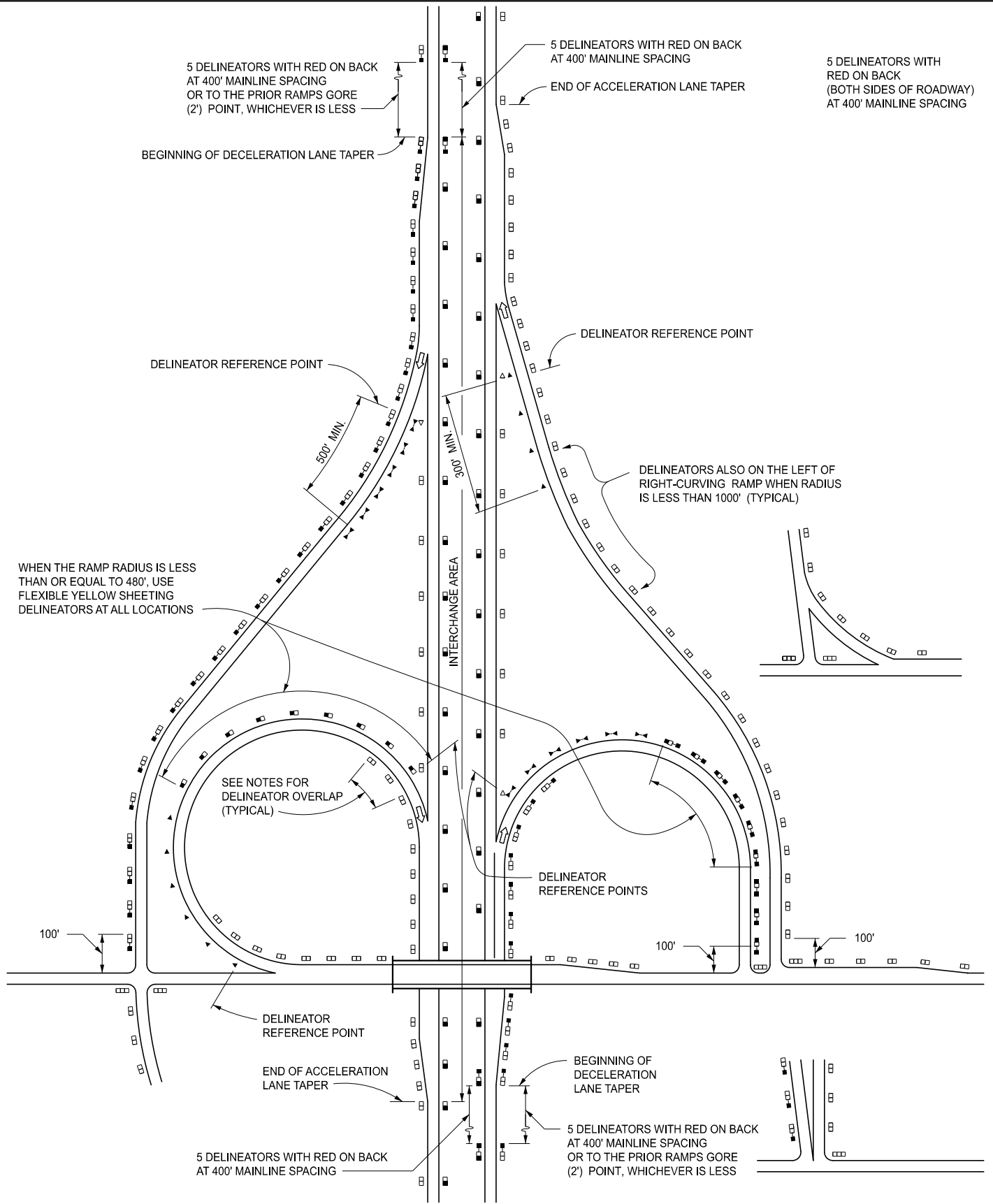


**DELINEATION OF FREEWAY TO FREEWAY CONNECTIONS**

\* WHEN THE PAVED SHOULDER WIDTH IS 12', PLACE DELINEATOR 14' FROM THE EDGE OF TRAVELED WAY. THE WIDTH OF THE PAVED GORE WILL BE INCREASED TO 24'.

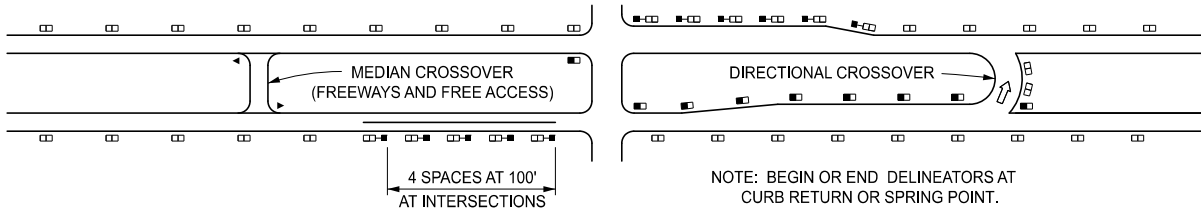


**DELINEATOR REFERENCE POINTS FOR NORMAL 10' SHOULDERS (9' OR 10' PAVED)**

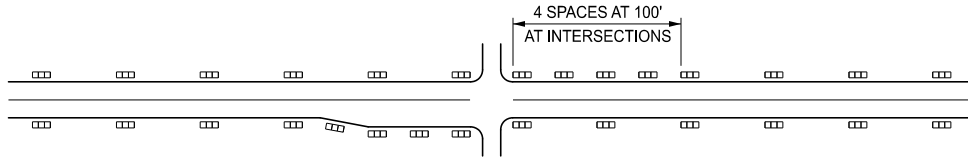


INTERCHANGE DELINEATION

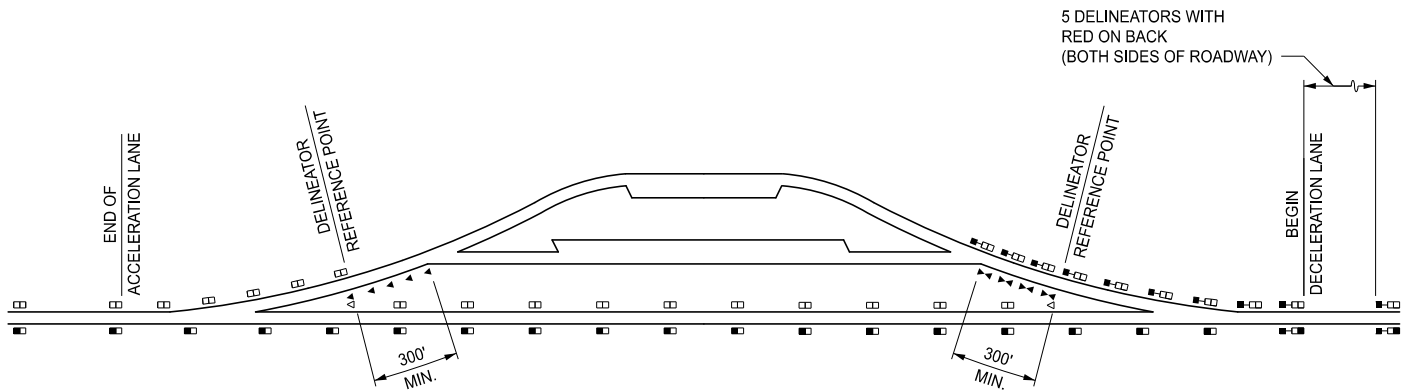
<p>MDOT Michigan Department of Transportation</p> <p>DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE</p>	<p>STANDARD PLAN FOR DELINEATOR INSTALLATIONS</p>		<p>R-127-H</p>	<p>SHEET 2 OF 8</p>
	<p>(SPECIAL DETAIL) FHWA APPROVAL</p>	<p>08/11/2023 PLAN DATE</p>		



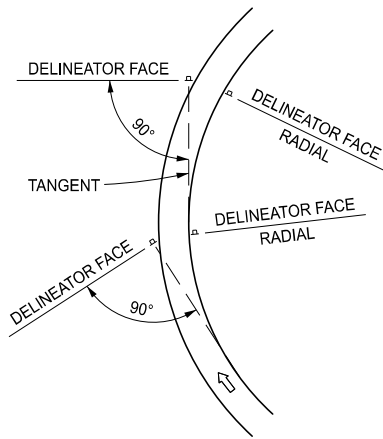
**DIVIDED HIGHWAY & MEDIAN CROSSOVER**



**RURAL TWO-LANE TWO-WAY ROADWAYS (OPTIONAL)**



**REST AREA & WEIGH STATION**



**DELINEATOR ORIENTATION ON HORIZONTAL CURVES FOR ONE WAY TRAFFIC**

<p>DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE</p>	<p>STANDARD PLAN FOR DELINEATOR INSTALLATIONS</p>		<p><b>R-127-H</b></p>	<p>SHEET 3 OF 8</p>
	<p>(SPECIAL DETAIL) FHWA APPROVAL</p>	<p>08/11/2023 PLAN DATE</p>		

# LEGEND


## DELINEATORS INSTALLED ON RIGID STEEL POSTS

- ☐ WHITE PANEL DELINEATORS:
  - 400' MAXIMUM SPACING ON TANGENT AND CURVES WITH A RADIUS GREATER THAN 3500'
  - 200' MAXIMUM SPACING IN INTERCHANGE AREAS
  - 100' MAXIMUM SPACING ON INTERCHANGE RAMP
- YELLOW PANEL DELINEATORS:
  - 200' MAXIMUM SPACING IN MERGE OR DIVERGE AREAS OF MAJOR ROADWAYS
  - 100' MAXIMUM SPACING ON INTERCHANGE RAMP
  - 400' MAXIMUM SPACING ON TANGENT & CURVES WITH A RADIUS >3500' (FREEWAYS & DIVIDED HIGHWAYS WITH POSTED SPEEDS ≥ 55 MPH)
  - 200' MAXIMUM SPACING IN INTERCHANGE AREAS (FREEWAYS & DIVIDED HIGHWAYS WITH POSTED SPEEDS ≥ 55 MPH)
- ☐☐ BACK TO BACK WHITE PANEL DELINEATORS:
  - 400' MAXIMUM SPACING ON TANGENT AND CURVES WITH A RADIUS GREATER THAN 3500'
  - 100' MAXIMUM SPACING ALONG RIGHT TURN LANES
- ☐ RED PANEL DELINEATORS ON BACK OF WHITE PANEL DELINEATORS
- RED PANEL DELINEATORS ON BACK OF YELLOW PANEL DELINEATORS
- GREEN PANEL DELINEATORS

## DELINEATORS INSTALLED ON FLEXIBLE POSTS

- ▷ 3" x 12" WHITE SHEETING DELINEATORS:
  - 200' MAXIMUM SPACING IN INTERCHANGE AREAS
  - 100' MAXIMUM SPACING ON INTERCHANGE RAMP
- ▶ 3" x 12" YELLOW SHEETING DELINEATORS:
  - 200' MAXIMUM SPACING IN MERGE OR DIVERGE AREAS OF MAJOR ROADWAYS
  - 100' MAXIMUM SPACING ON INTERCHANGE RAMP
  - 200' MAXIMUM SPACING IN INTERCHANGE AREAS (FREEWAYS & DIVIDED HIGHWAYS WITH POSTED SPEEDS ≥ 55 MPH)
- ⊗ 3" x 12" RED SHEETING ON BACK OF 3" x 12" WHITE SHEETING DELINEATORS
- ▶◀ 3" x 12" RED SHEETING ON BACK OF 3" x 12" YELLOW SHEETING DELINEATORS
- ⊗◊ BACK TO BACK 3" x 12" WHITE SHEETING DELINEATORS

NOTE:  
 WHEN THE ABOVE SPACING CONFLICTS WITH THE CURVE CHARTS  
 ON SHEET 5, USE WHICHEVER VALUE RESULTS IN THE CLOSER  
 SPACING.

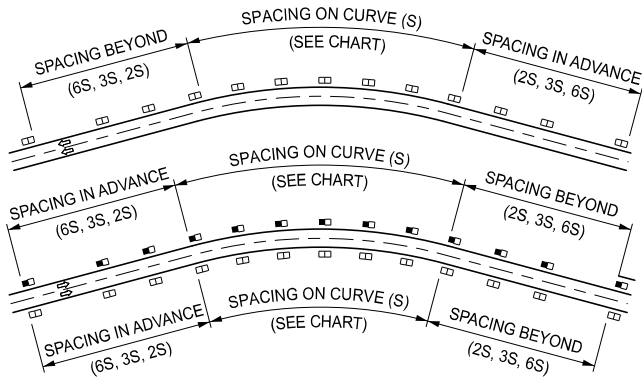
 DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR DELINEATOR INSTALLATIONS		R-127-H	SHEET 4 OF 8
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CURVE RADIUS KNOWN				
MIN. RADIUS (R) OF CURVE (FT)	SPACING (S) ON CURVE (FT)	SPACING BEFORE/AFTER CURVE		
		2S	3S	6S
50	20	40	60	120
150	30	60	90	180
230	40	80	120	240
325	50	100	150	300
450	60	120	180	300
595	70	140	210	300
760	80	160	240	300
950	90	180	270	300
1160	100	200	300	300
1395	110	220	300	300
1650	120	240	300	300
1930	130	260	300	300
2230	140	280	300	300
2550	150	300	300	300
2895	160	300	300	300
3260	170	300	300	300
3650	180	300	300	300
4060	190	300	300	300
4495	200	300	300	300
4950	210	300	300	300
5430	220	300	300	300
5930	230	300	300	300
6450	240	300	300	300
6995	250	300	300	300
7560	260	300	300	300
8150	270	300	300	300
8760	280	300	300	300
9395	290	300	300	300
10,050 - 17,830	300	300	300	300
> 17,830	NORMAL SPACING			

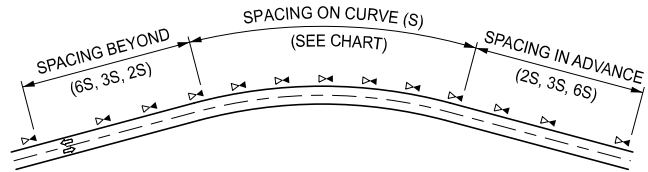
THE SPACING "S" IS FOUND USING THE FORMULA  
 $S = 3 \sqrt{R - 50}$  WHERE "R" IS THE RADIUS OF  
 THE CURVE IN FEET.

CURVE RADIUS UNKNOWN				
CURVE ADVISORY SPEED (MPH)*	SPACING (S) ON CURVE (FT)	SPACING BEFORE/AFTER CURVE		
		2S	3S	6S
< 25	25	50	75	150
25	40	80	120	240
30	50	100	150	300
35	60	120	180	300
40	70	140	210	300
45	80	160	240	300
50	90	180	270	300
55	100	200	300	300
60	115	230	300	300
65	130	260	300	300
70	140	280	300	300
75	160	300	300	300

\* POSTED OR STATUTORY SPEED LIMIT IF NO ADVISORY POSTED



DELINEATOR LOCATION ON  
 FREEWAY AND DIVIDED ROADWAY CURVES



NOTE:  
 DELINEATORS SHALL BE PLACED ON TWO LANE TWO WAY  
 ROADWAY HORIZONTAL CURVES WITH A RADIUS OF 1900' OR  
 LESS, OR AS DIRECTED BY THE REGION/TSC TRAFFIC AND  
 SAFETY ENGINEER.

DELINEATOR FACE SHALL BE INSTALLED PERPENDICULAR  
 (OR RADIAL) TO ROADWAY.

DELINEATOR LOCATION ON  
 TWO LANE TWO WAY ROADWAY CURVES



DEPARTMENT DIRECTOR  
 BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR  
 DELINEATOR INSTALLATIONS

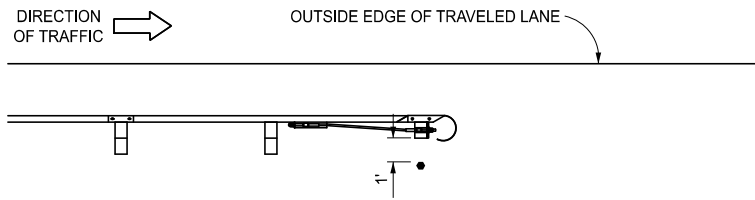
(SPECIAL DETAIL)  
 FHWA APPROVAL

08/11/2023  
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 5 OF 8

GUARDRAIL APPROACH TERMINAL	DELINEATOR LOCATED 1 FOOT BEHIND
TYPE 1	LAST POST (FROM APPROACH END)
TYPE 2	FIRST POST (FROM APPROACH END)



GUARDRAIL DEPARTING TERMINAL TYPES B, T, & MGS

GREEN DELINEATORS AT GUARDRAIL INSTALLATIONS



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

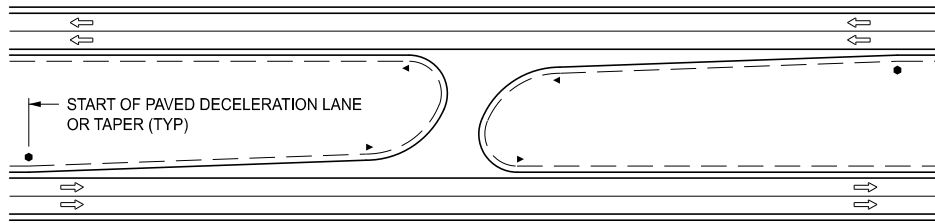
STANDARD PLAN FOR  
DELINEATOR INSTALLATIONS

(SPECIAL DETAIL)  
FHWA APPROVAL

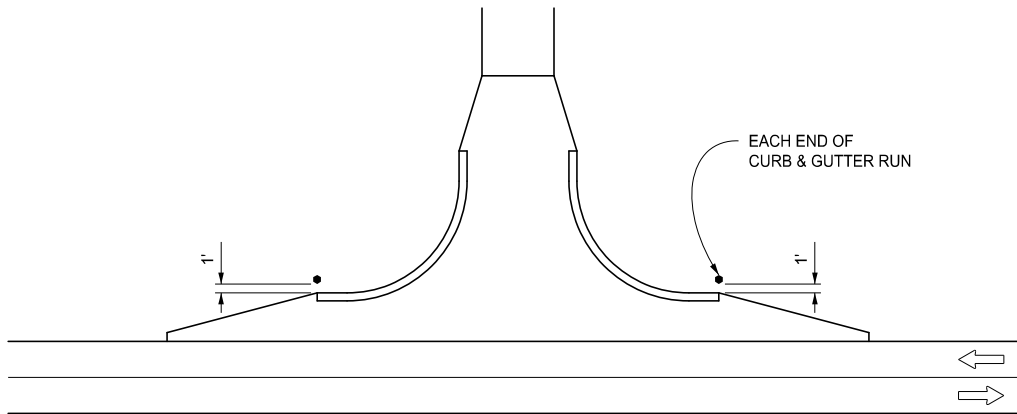
08/11/2023  
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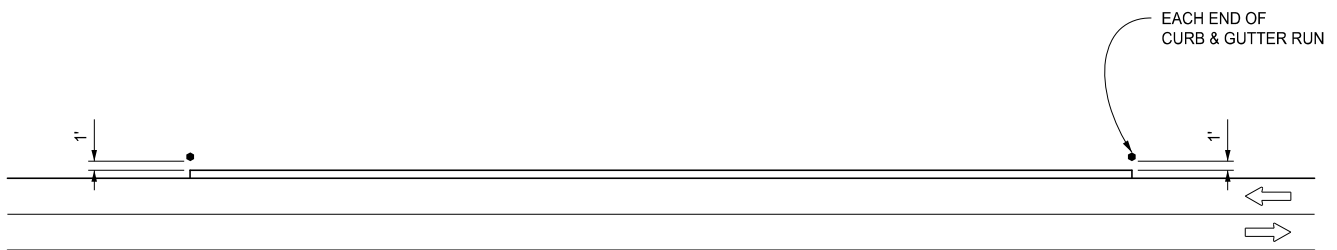


MAINTENANCE CROSSOVER



INTERSECTION

NOTE: MAY BE OMITTED AT FREEWAY RAMP TERMINALS DUE TO THE PRESENCE OF OTHER DELINEATORS



CURB & GUTTER AND CATCH BASINS

GREEN DELINEATOR LOCATIONS



DEPARTMENT DIRECTOR  
BRADLEY C. WIEFERICH, PE

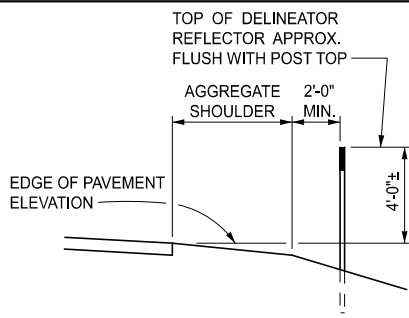
STANDARD PLAN FOR  
DELINEATOR INSTALLATIONS

(SPECIAL DETAIL)  
FHWA APPROVAL

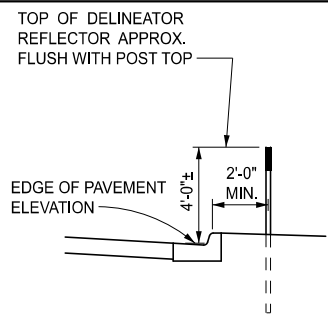
08/11/2023  
PLAN DATE

R-127-H

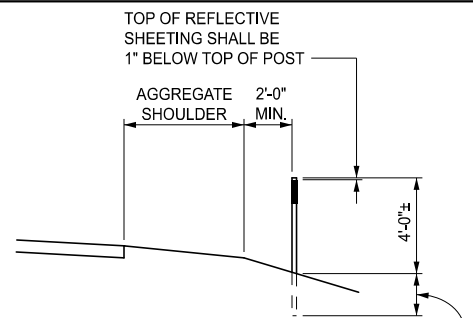
SHEET  
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SHOULDER



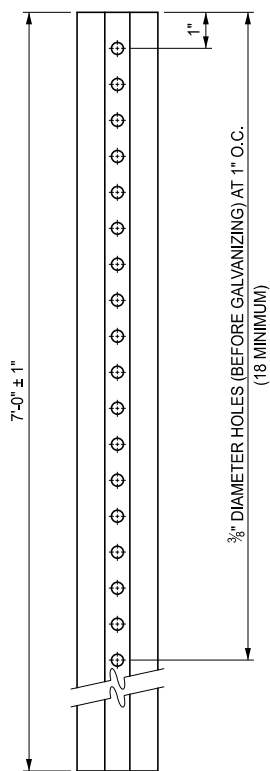
CURB



DEPTH AS RECOMMENDED BY THE MANUFACTURER

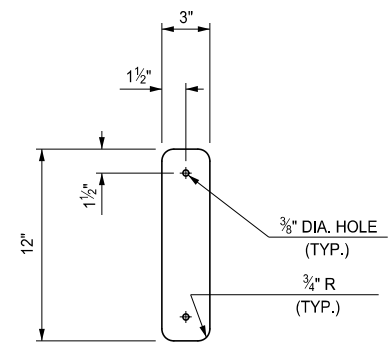
INSTALLATION OF DELINEATOR REFLECTORS ON RIGID STEEL POST

INSTALLATION OF REFLECTIVE SHEETING ON FLEXIBLE POST



NOMINAL WEIGHT = 1.12 LBS/FT  
 MINIMUM MOMENT OF INERTIA ABOUT X-X AXIS = 0.031 in.<sup>4</sup>

RIGID STEEL POST DETAIL



DELINEATOR REFLECTOR DETAIL

NOTES:

DELINEATORS SHOULD BE PLACED 2'-0" BEYOND THE AGGREGATE SHOULDER, 2'-0" BEYOND THE FACE OF A BARRIER CURB, IMMEDIATELY BEHIND THE GUARDRAIL POST, OR AS NEAR AS POSSIBLE BEHIND CONCRETE BARRIER. DELINEATORS INSTALLED ON FLEXIBLE POSTS SHALL NOT BE PLACED BEHIND GUARDRAIL.

FLEXIBLE POST DELINEATORS SHALL BE INSTALLED ACCORDING TO THE CURRENT SPECIFICATIONS AND INSTALLED AT ALL LOCATIONS SPECIFIED ON THIS STANDARD PLAN, OR WHERE DIRECTED BY THE ENGINEER.

ON RAMP, WHITE DELINEATORS SHALL BE PLACED ON THE RIGHT AND YELLOW DELINEATORS SHALL ALSO BE PLACED ON THE LEFT FOR A RIGHT-CURVING RAMP WITH A RADIUS OF 1000' OR LESS.

WHERE DELINEATION ON ONE SIDE OF THE ROADWAY OR RAMP ENDS AND DELINEATION ON THE OTHER SIDE APPEARS, AN OVERLAP OF TWO DELINEATOR INSTALLATIONS SHALL BE USED.

DELINEATORS SHALL BE PLACED ON ALL RAMP AT RURAL INTERCHANGES WHETHER OR NOT THE INTERCHANGES ARE LIGHTED. DELINEATORS SHALL BE OMITTED ALONG THE THROUGH ROADWAY BETWEEN INTERCHANGES WHERE FIXED SOURCE LIGHTING EXISTS.

DELINEATOR PLACEMENT SHOULD CONTINUE WHERE GUARDRAIL OR CONCRETE BARRIER IS PRESENT. DO NOT PLACE DELINEATORS BEHIND GUARDRAIL APPROACH TERMINALS EXCEPT AS SHOWN ON SHEET 6 OF THIS STANDARD. IF TERRAIN OR OTHER FACTORS PROHIBIT POST MOUNTED DELINEATOR PLACEMENT, INSTALLATION OF GUARDRAIL OR BARRIER MOUNTED ENHANCED DELINEATORS IS RECOMMENDED.

ALTERNATE DELINEATOR LOCATION METHOD:  
 THE FIRST DELINEATOR ON EACH SIDE OF THE ROADWAY IS LOCATED FROM THE AGGREGATE SHOULDER. A NEW OFFSET REFERENCE IS GENERATED BY MEASURING FROM THE LOCATED DELINEATOR TO THE STRIPED EDGE LINE. THIS MEASUREMENT CAN BE USED TO LOCATE THE OTHER DELINEATORS IN A CORRIDOR OF SIMILAR CROSS SECTION.

 DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR <b>DELINEATOR INSTALLATIONS</b>			<b>R-127-H</b> SHEET 8 OF 8
	(SPECIAL DETAIL) FHWA APPROVAL	08/11/2023 PLAN DATE		