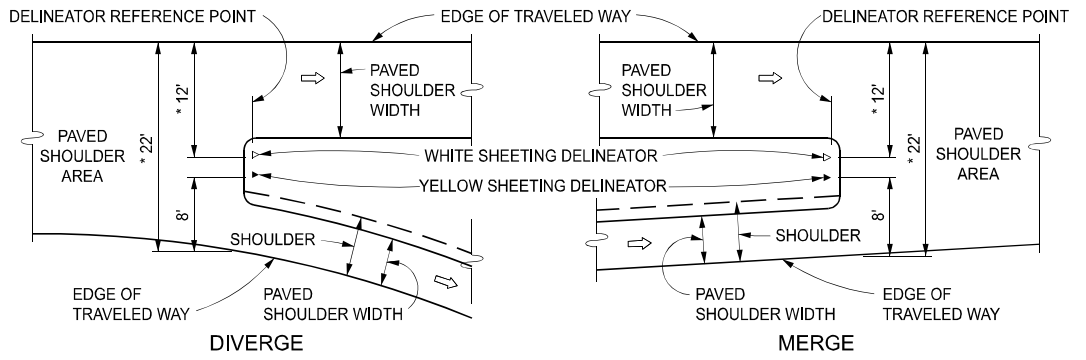
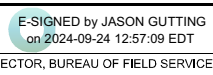


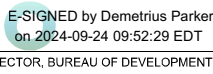
DELINEATION OF FREEWAY TO FREEWAY CONNECTIONS

* PLACE DELINEATOR 14' FROM THE EDGE OF THE TRAVELED WAY WHEN THE PAVED SHOULDER WIDTH IS 12'. INCREASE THE PAVED GORE WIDTH TO 24'.



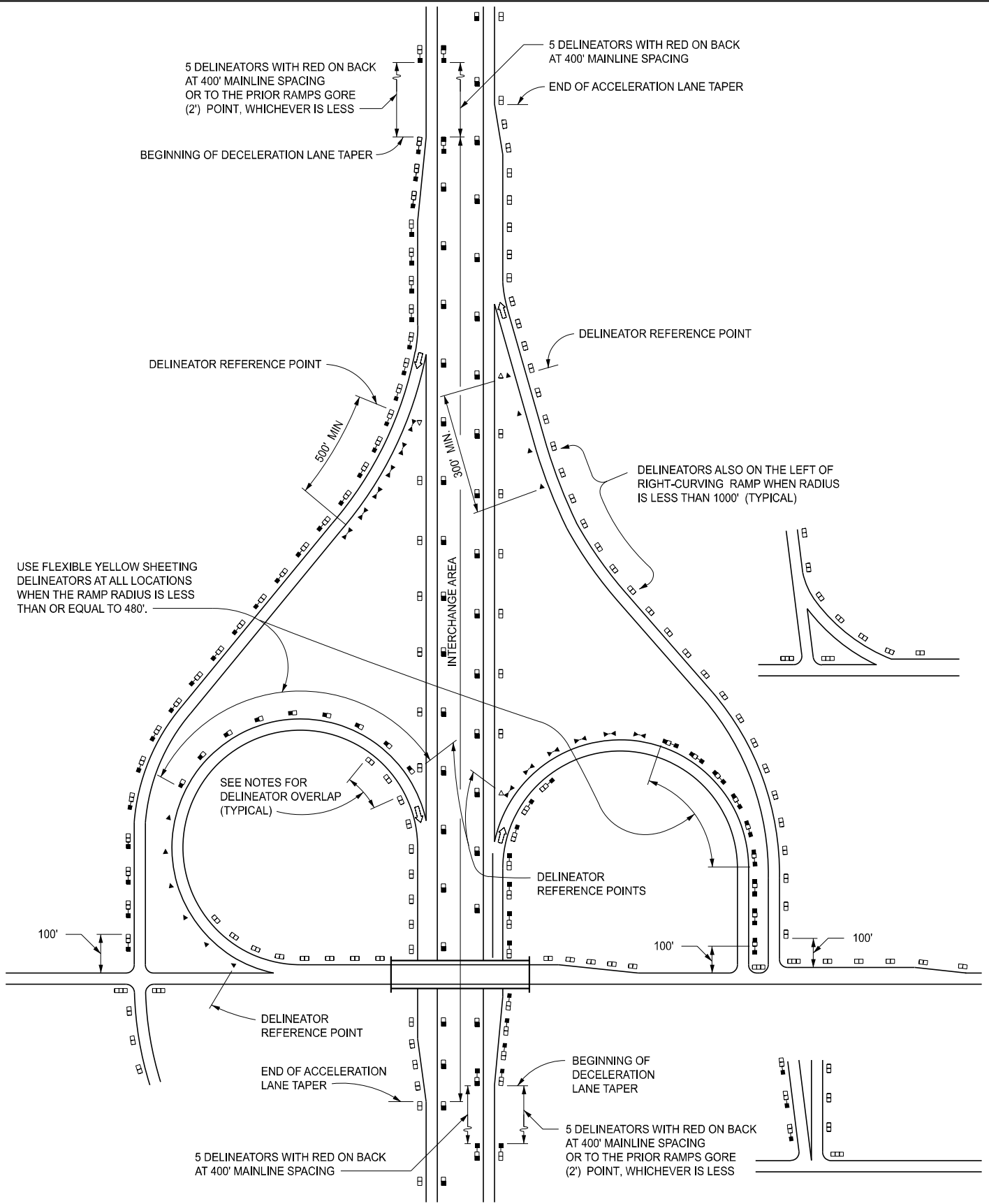
DELINEATOR REFERENCE POINTS FOR NORMAL 10' SHOULDERS (9' OR 10' PAVED)

APPROVED BY:  DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY:  DIRECTOR, BUREAU OF DEVELOPMENT



STANDARD PLAN FOR DELINEATOR INSTALLATIONS		R-127-H	SHEET 1 OF 8
12/18/2024 FHWA APPROVAL	05/13/2024 PLAN DATE		



INTERCHANGE DELINEATION



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

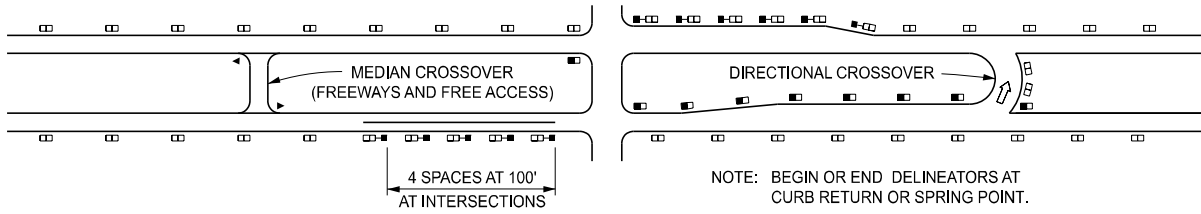
STANDARD PLAN FOR
DELINEATOR INSTALLATIONS

12/18/2024
FHWA APPROVAL

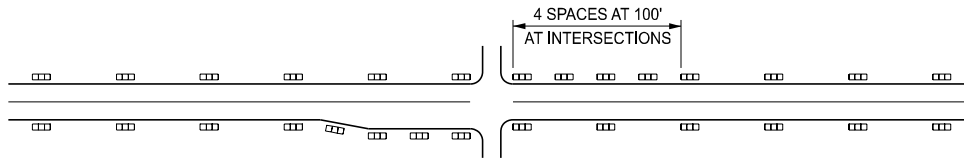
05/13/2024
PLAN DATE

R-127-H

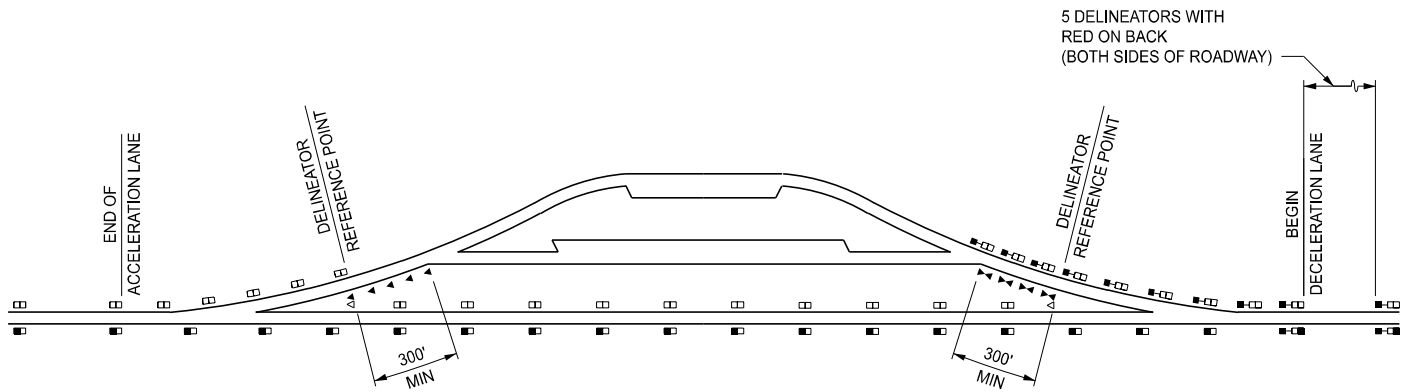
SHEET
2 OF 8



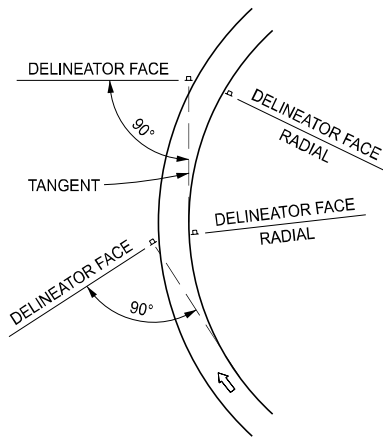
DIVIDED HIGHWAY & MEDIAN CROSSOVER



RURAL TWO-LANE TWO-WAY ROADWAYS (OPTIONAL)



REST AREA & WEIGH STATION



DELINEATOR ORIENTATION ON HORIZONTAL CURVES FOR ONE WAY TRAFFIC

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

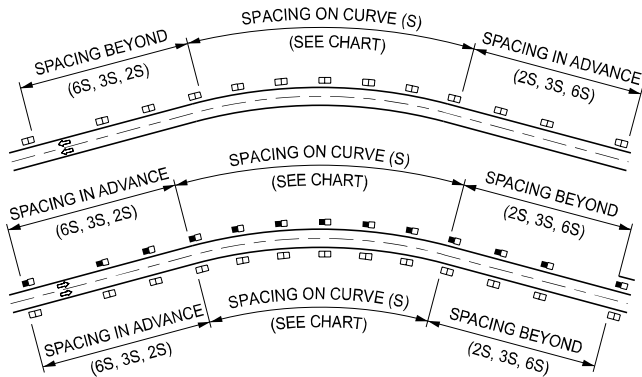
- ▷ 3" x 12" WHITE SHEETING DELINEATORS:
 - 200' MAXIMUM SPACING IN INTERCHANGE AREAS
 - 100' MAXIMUM SPACING ON INTERCHANGE RAMP
- ▶ 3" x 12" YELLOW SHEETING DELINEATORS:
 - 200' MAXIMUM SPACING IN MERGE OR DIVERGE AREAS OF MAJOR ROADWAYS
 - 100' MAXIMUM SPACING ON INTERCHANGE RAMP
 - 200' MAXIMUM SPACING 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:
 USE THE VALUE THAT RESULTS IN CLOSER SPACING
 WHEN THE ABOVE SPACING CONFLICTS WITH THE
 CURVE CHARTS ON SHEET 5.

 DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR DELINEATOR INSTALLATIONS		R-127-H	SHEET 4 OF 8
	12/18/2024 FHWA APPROVAL	05/13/2024 PLAN DATE		

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			

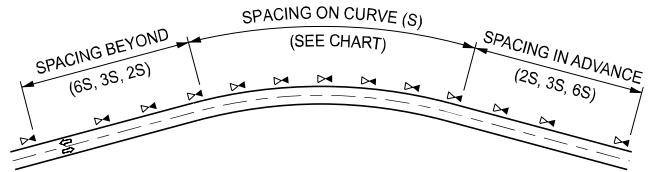
USE THE FORMULA $S = 3 \sqrt{R - 50}$ TO FIND THE SPACING "S", WHERE R IS THE RADIUS OF THE CURVE IN FEET.



DELINEATOR LOCATION ON FREEWAY AND DIVIDED ROADWAY CURVES

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



NOTE:
PLACE DELINEATORS 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.

INSTALL DELINEATOR FACE PERPENDICULAR (OR RADIAL) TO ROADWAY.

DELINEATOR LOCATION ON TWO LANE TWO WAY ROADWAY CURVES



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STANDARD PLAN FOR
DELINEATOR INSTALLATIONS

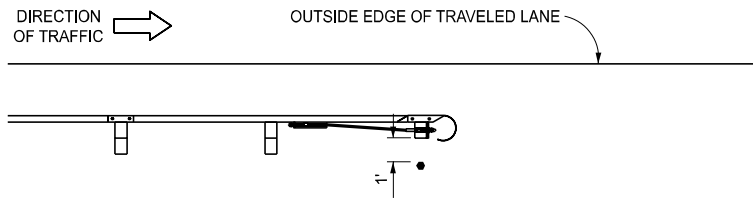
12/18/2024
FHWA APPROVAL

05/13/2024
PLAN DATE

R-127-H

SHEET
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

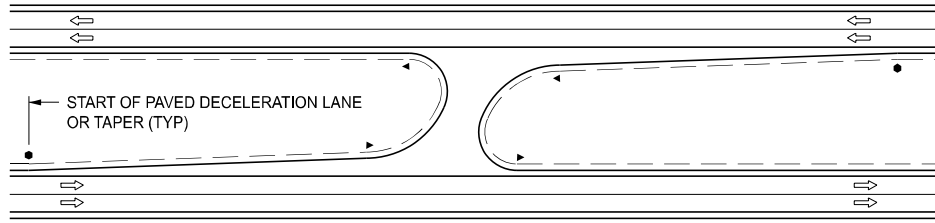
STANDARD PLAN FOR
DELINEATOR INSTALLATIONS

12/18/2024
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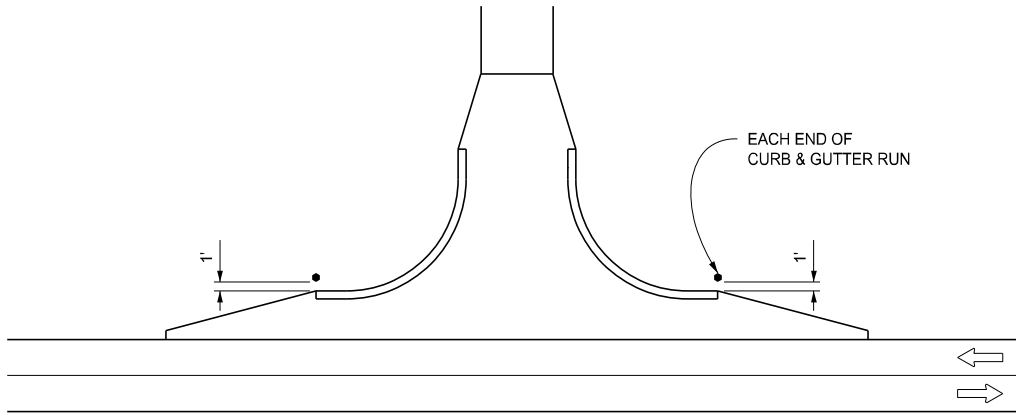
05/13/2024
PLAN DATE

R-127-H

SHEET
6 OF 8

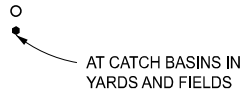
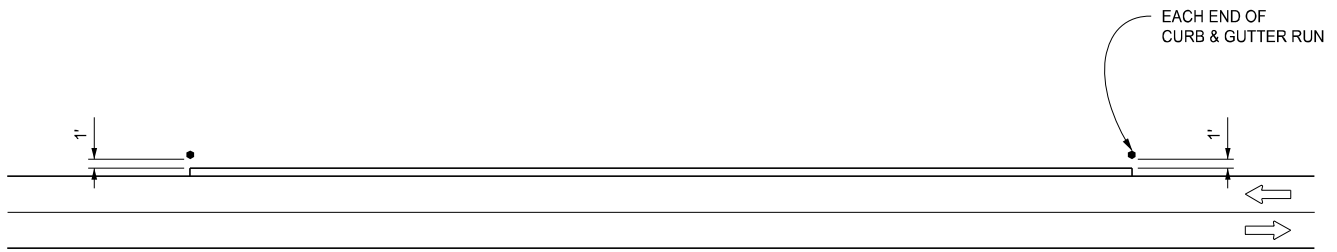


MAINTENANCE CROSSOVER



INTERSECTION

NOTE: OMIT DELINEATOR(S) AT FREEWAY RAMP TERMINALS WHEN THEY CONFLICT WITH OTHER DELINEATORS.



CURB & GUTTER AND CATCH BASINS

GREEN DELINEATOR LOCATIONS



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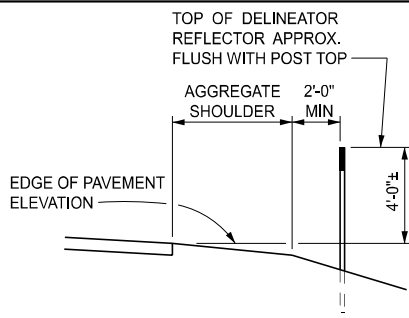
STANDARD PLAN FOR
DELINEATOR INSTALLATIONS

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FHWA APPROVAL

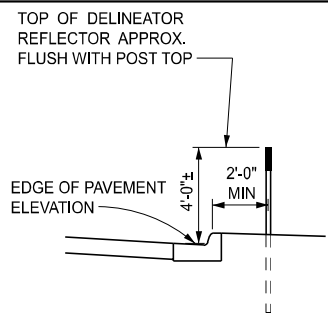
05/13/2024
PLAN DATE

R-127-H

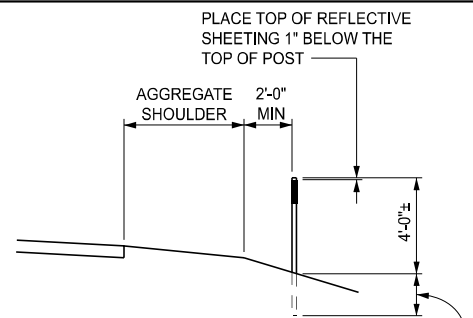
SHEET
7 OF 8



SHOULDER



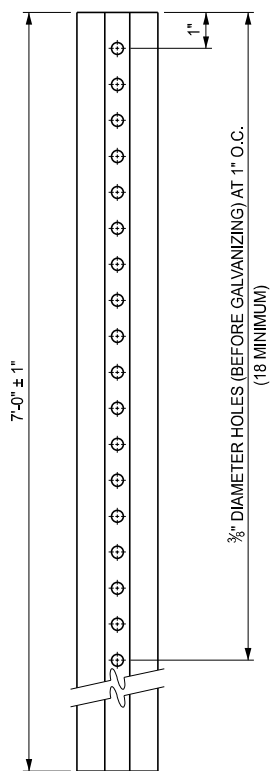
CURB



DEPTH AS RECOMMENDED BY THE MANUFACTURER

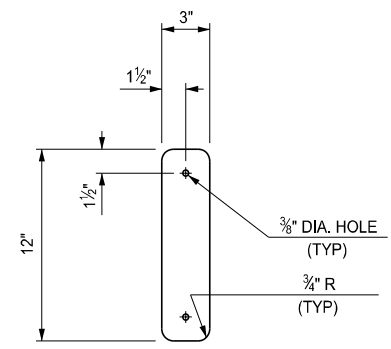
INSTALLATION OF DELINEATOR REFLECTORS ON RIGID STEEL POST

INSTALLATION OF REFLECTIVE SHEETING ON FLEXIBLE POST



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

RIGID STEEL POST DETAIL



DELINEATOR REFLECTOR DETAIL

NOTES:

PLACE DELINEATORS 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. DO NOT PLACE DELINEATORS INSTALLED ON FLEXIBLE POSTS BEHIND GUARDRAIL.

INSTALL FLEXIBLE POST DELINEATORS ACCORDING TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND AT ALL LOCATIONS SPECIFIED ON THIS STANDARD PLAN, OR WHERE DIRECTED BY THE ENGINEER.

PLACE WHITE DELINEATORS ON THE RIGHT AND YELLOW DELINEATORS ON THE LEFT OF A RIGHT-CURVING RAMP WITH A RADIUS OF 1000' OR LESS.

USE AN OVERLAP OF TWO DELINEATOR INSTALLATIONS WHERE DELINEATION ON ONE SIDE OF THE ROADWAY OR RAMP ENDS AND DELINEATION ON THE OTHER SIDE BEGINS.

PLACE DELINEATORS ON ALL RAMP AT RURAL INTERCHANGES WHETHER OR NOT THE INTERCHANGES ARE LIGHTED. OMIT DELINEATORS ALONG THE THROUGH ROADWAY BETWEEN INTERCHANGES WHERE FIXED SOURCE LIGHTING EXISTS.

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

ALTERNATE DELINEATOR LOCATION METHOD:
 LOCATE THE FIRST DELINEATOR ON EACH SIDE OF THE ROADWAY FROM THE AGGREGATE SHOULDER. GENERATE A NEW OFFSET REFERENCE BY MEASURING FROM THE LOCATED DELINEATOR TO THE STRIPED EDGELINE. USE THIS MEASUREMENT TO LOCATE OTHER DELINEATORS IN A CORRIDOR OF SIMILAR CROSS SECTION.