Per Design Manual 8C-2 the location of the light poles (including bases) should not interfere with the installation of the guardrail since the posts will be within 2' of the back of curb.

## Placement near Curbs

In general, the use of guardrail with curbs is discouraged. However, situations exist where it cannot be avoided. As discussed in Section <u>3C-2</u>, curbs may be necessary to control drainage or to restrict access. Details of standard curb shapes and transitions are shown on <u>PV-102</u>.

## Placement in Front of Curbs

While uncommon, guardrail may be installed in front of curbs, but no closer than 3 feet from the gutter line. Refer to Figure 9. This placement may not be desirable, however, because the posts will be located within the pavement, and the pavement will need to be blocked out or cut out around the posts (see <u>BA-200</u> for details).

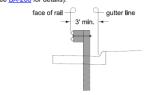
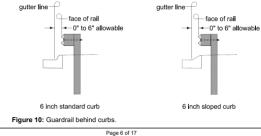


Figure 9: Guardrail in front of curbs.

## Placement behind Curbs

For guardrail installed behind curbs, follow the guidance below and as shown in Figure 10.

 Where 6 inch standard or 6 inch sloped curb is present, the face of guardrail must be located flush with, or within 6 inches of, the gutter line.



## Intake top should not be a problem if a Long Span System is used to go over the top. Google Maps shows the top being roughly 9' wide which would put in in Case 1 for BA-211.

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_	Location Side					Layout Lengths						Delineators and Object Markers (2)				Bid Items											
	G	dian	Station	Offset	BA-250, BA-260, LS-630, or LS-635						Delineator		Object Marker				1		BA	84-250 or LS-630			BA- 268 or	LS-635			
No.	in j					<b>VF</b>	VT2	ET	Long-Span System BA-211		SI -211	SI -172	SI -173		Bolted End Anchor		Post	Steel Beam Guardrail		End Terminal				Barrier Transition	End Terminal	Remarks	
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1	NB	0	250+25.29		53.125	150.00		47.7	248+91.19	1	3				1	c	1		162.5	1	1						
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Long Span System called out in tabulation. No bid item required.

Pipe between intakes could be an issue. Email states the pipe is between 1'-2" and 2'-6" from the back of curb. Those are the interior wall to interior wall dimensions. This coincides with a 2 1/4" thick wall per IDOT standards. This means there is about 1' of clear space between the back of curb and exterior wall of pipe. If we adhere to 8C-2 guardrail installation behind curb where the face of the guardrail is flush with the gutterline, we would not be able to install a 6" post. (7.5" curb width + 1'-2" to interior pipe wall - 2.25" wall thickness is 19.25". 3-1/4" guardrail + 12" spacer block + 6" post = 21.25" to back of post). We would be into the pipe by 2". There is a section in 8C-2 that talks about installing guardrail in the pavement in front of the curb (Figure 9 above). We would not have to resort to that but if the guardrail face is moved 3" past the gutterline towards the traveled way we would be roughly centered in that 1' space between the back of curb and pipe. This would give the contractor the clearance for installation and not have to adjust anything in the plans.