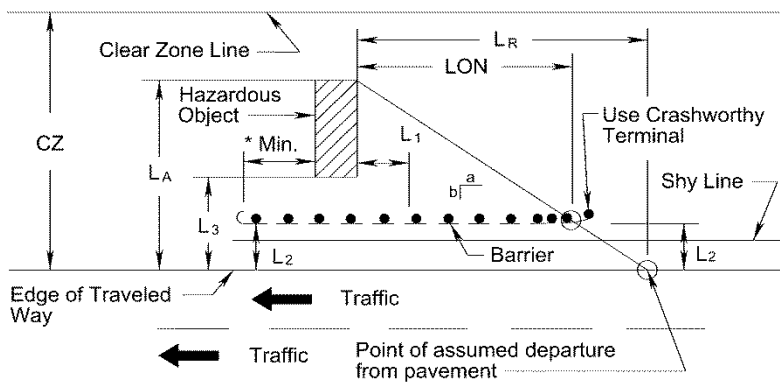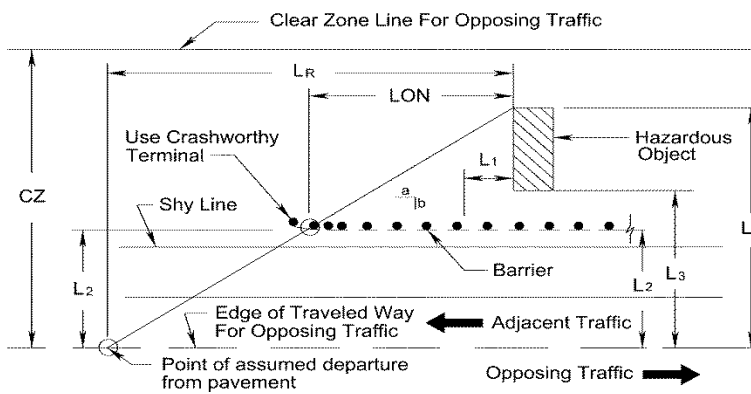## DETERMINING LOCATION OF THE ENDS OF GUARDRAIL

Figure I-3-1 and Table I-3-3 give a method to determine the location of the end of guardrail systems. Appropriate terminals shall be placed at this point.

Determining LON for adjacent traffic;*

Determining LON for opposing traffic on two-way undivided roadway;

FIGURE I-3-1 - BARRIER LENGTH OF NEED DETERMINATION

LON = Length of Need
Cz = Clear Zone Width
L_A = Distance to back of hazard, Max. = Cz
L_R = Runout length
L_1 = Upstream length of Guardrail prior to flare
L_2 = Distance to Face of Guardrail
L_3 = Distance to front of hazard
a:b = Flare Rate of Guardrail (if applicable)

* For one-way traffic on undivided roadway the terminal can begin after end of hazard; 12.5' for GR-11 to terminate GR-2 & 50' for Type II run-off GR-8 terminal treatment.

$$LON = \frac{L_A + (b/a)\,(L_1) - L_2}{(b/a) + (L_A/L_R)}$$

$$LON\ (No\ Flare) = \frac{L_A - L_2}{L_A / L_R}$$