

Design Speed (km/h)	Pier End Inside Clear Zone	Pier End Outside Clear Zone
	Required Minimum Length	
$\geq 80$	Calculated Length of Need or 30 m, whichever is greater	30 m
$< 80$	Calculated Length of Need or 15 m, whichever is greater	15 m

**LENGTH-OF-NEED REQUIREMENTS FOR PIER PROTECTION**  
**Figure 49-3L**