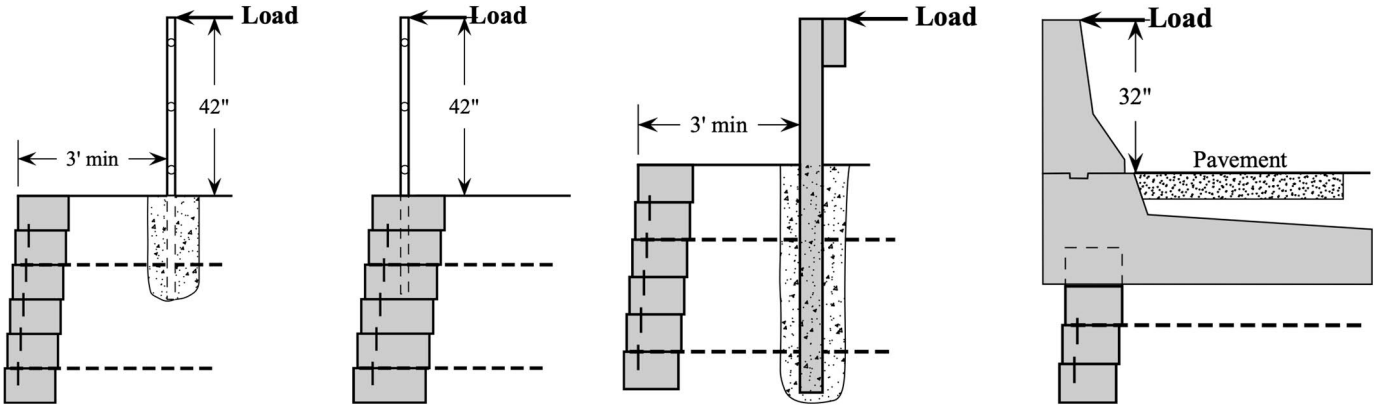
Guard and Barrier Requirements



Railing Offset **Railing Direct Mount** **Guiderail** **Traffic Barrier**

Introduction

Railing, fencing, guiderail, and traffic barrier requirements for retaining walls are not clearly defined in design codes nor are they properly addressed in many site plans. Many times guards and barriers are added as an afterthought which can become a costly and logistical issue when no provisions are made in the original retaining wall layout and site design.

Guards and barriers require a common sense approach by the site designer considering the proximity of a wall structure to people and traffic. Sufficient space must be reserved for such installations with modular wall systems accounting for wall batter and generally placing foundations behind the wall facing system. The design of these systems is a function of their anticipated use and location.

Guards

IBC 2018: *"Guards shall be located along open-sided walking surfaces, including mezzanine, equipment platforms, aisles, stairs, ramps, and landings that are located more than 30" measured vertically to the floor or grade below any point with 36" horizontally to the open side."* The application of this provision to retaining walls is certainly not clear and there are exemptions for certain situations.

AASHTO: AASHTO is equally unclear as to when and where guards are required for retaining walls but transportation projects tend to be more clear in their bid documents though the actual design may not be.

Railing/Guard Design Requirements		
	IBC 2018	**AASHTO 2020**
Handrails and guards	50 lbs/ft or 200 lb load (whichever governs)	50 lbs/ft and 200 lb load (simultaneously)
Except:		
1 and 2 family	200 lb load only	n/a
I-3, F, H, S occupancies (less than 50, not public accessible)	20 lbs/ft or 200 lb load (whichever governs)	n/a
Vehicle Barrier	6,000 lbs load (passenger vehicles)	13,500 lbs - 175,000 lbs Impact (pseudo static load = 10,000 lbs typ)