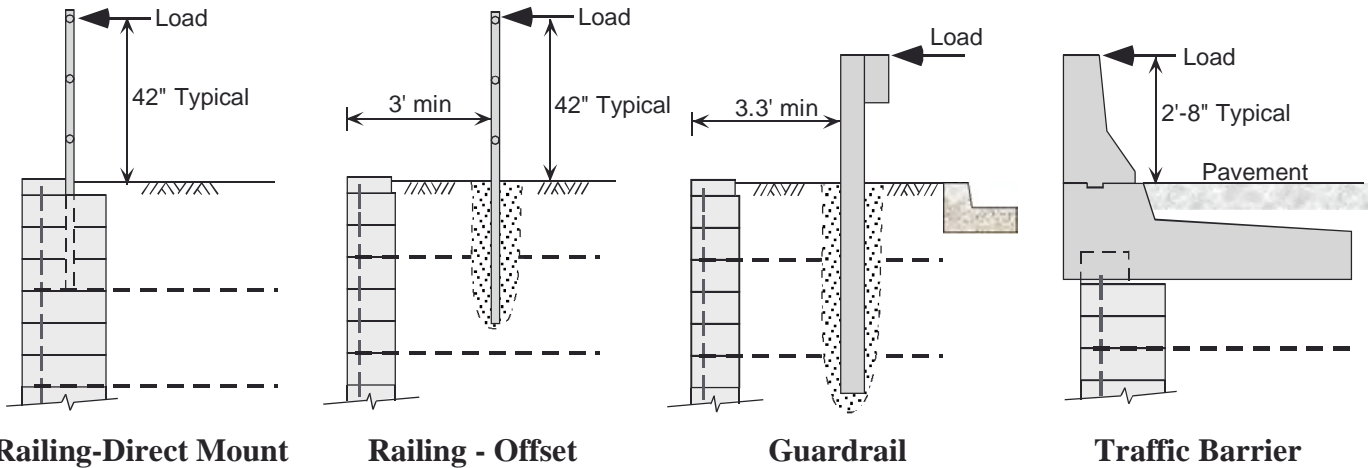


Railing and Barrier Requirements



Introduction

Railing, guardrail, 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 railings 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.

Guard 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. Some excerpts from design codes may be useful in defining the general intent of barriers:

Guardrail (UBC)

Guardrail is a system of building components located near the open sides of elevated walking surfaces for the purpose of minimizing the possibility of an accidental fall from the walking surface to the lower level.

Railing/Guard Requirements (BOCA)

Where retaining walls with differences in grade level on either side of the wall in excess of 4 feet (1219 mm) are located closer than 2 feet (610mm) to a walk, path, parking lot or driveway on the high side, such retaining walls shall be provided with guards that are constructed in accordance with Section 1021.0 or other approved protective measures.

Railings (AASHTO)

Railings shall be provided along the edges of structures for protection of traffic and pedestrians.

Summary

The railing/barrier issue can be a logistical and structural problem with modular wall systems due to the inability of the small wall units to resist concentrated loads and the need for lateral space at the top of wall to install most barrier systems. Proper planning and design is required.

The design loadings can be quite significant as indicated below:

UBC Railing and Guardrail Loadings

- * Other than exit facilities 20 plf
- * Exit facilities serving an occupant load greater than 50. 50 plf
- * Minimum point loading 200 lbs
- * Vehicle Barrier 6000 lbs

AASHTO Railing Loadings

- * Pedestrian Railing (W) 50 plf
- * Traffic Barrier (P) 10,000 lbs