

CHAPTER 4 COASTAL HIGH HAZARD AREAS AND COASTAL A ZONES

4.1 SCOPE

The requirements of Chapter 4 shall apply to new construction and substantial improvements in Coastal High Hazard Areas and Coastal A Zones.

4.1.1 Identification of Coastal High Hazard Areas and Coastal A Zones For the purposes of this standard, “Coastal High Hazard Areas” shall mean those locations (1) where an area has been designated as subject to high velocity wave action on a community’s flood hazard map (V Zones), (2) where the still-water depth of the base flood above the eroded ground elevation is greater than or equal to 3.8 ft (i.e., sufficient to support a wave height equal to or greater than 3 ft and where conditions are conducive to the formation and propagation of such waves), or (3) where the eroded ground elevation under base flood conditions is 3 ft or more below the maximum wave runup elevation.

For the purposes of this standard, “Coastal A Zones” shall mean those locations (1) landward of the V Zone or shoreline and seaward of the Limit of Moderate Wave Action (LiMWA), if the LiMWA is delineated on a FIRM, or (2) designated by the authority having jurisdiction.

4.2 GENERAL

Designs for Coastal High Hazard Areas and Coastal A Zones shall account for local scour and erosion and shall be designed to resist loads from the following:

1. Waves breaking against the bracing, side of the structure, and underside of the structure,
2. Drag, inertia, and other wave-induced forces acting on structural members supporting elevated structures,
3. Uplift forces from breaking waves striking the undersides of structures, and
4. Wave runup forces including those deflected by the structure.

4.3 SITING

Within Coastal High Hazard Areas and Coastal A Zones:

1. New construction, not including substantial improvements, shall be located landward of the reach of mean high tide;
2. New construction and substantial improvements shall be sited landward of shoreline construction setbacks, where applicable; and
3. New construction and substantial improvements shall not remove or otherwise alter sand dunes and mangrove stands, unless an engineering report documents that the alterations will not increase potential flood damage by reducing the

wave and flow dissipation characteristics of the sand dunes or mangrove stands.

4.4 ELEVATION REQUIREMENTS

The bottom of the lowest horizontal structural member of the lowest floor shall be elevated in conformance with the minimum requirements of Table 4-1. The actual required height above the DFE shall be determined by the Flood Design Class of the structure. Piles, pile caps, footings, mat or raft foundations, grade beams, columns, bracing, and shear walls designed and constructed in accordance with Section 4.5 shall not be required to meet the elevation requirements of Table 4-1.

4.5 FOUNDATION REQUIREMENTS

4.5.1 General Foundation systems located in Coastal High Hazard Areas and Coastal A Zones shall be designed to minimize forces acting on the foundations, to minimize damage to the foundations and the elevated structures, and to adequately transfer all loads specified by Section 1.6 and imposed on the foundations and elevated structures to the supporting soils. Foundation systems shall be free of obstructions and attachments that will transfer flood forces to the structural system or that will restrict or eliminate free passage of high velocity flood waters and waves during design flood conditions unless provided for in Section 4.5.11 or Section 4.5.12.

Unless provided for in Section 4.5.1.1, foundations in Coastal High Hazard Areas constructed on erodible soils shall consist of piles, drilled shafts, caissons, or other deep foundations.

Unless provided for in Section 4.5.1.2, foundations in Coastal A Zones constructed on erodible soils shall consist of piles, drilled shafts, caissons, or other deep foundations.

Foundation systems shall extend upward to elevate structures as required by Table 4-1.

Columns shall be connected to and extend upward from footings, mats, rafts, or concrete slabs to elevate structures as required by Table 4-1, provided the footings, mats, rafts, or concrete slabs meet the requirements of Section 4.5.8.

Shear walls shall comply with the requirements of Section 4.5.12.

Stem walls shall comply with the requirements of Section 4.5.13.

4.5.1.1 Shallow Foundations in Coastal High Hazard Areas In Coastal High Hazard Areas where surface or subsurface conditions consist of nonerodible soils or rock that prevent deep foundations, shallow foundations including spread footing, mat and raft foundations shall be permitted, provided that the foundations (1) meet the requirements of Section 4.5.8; (2) are