



Currituck County Pier, Dock & Bulkhead Handout

Definitions:

ACCESSORY STRUCTURE. An accessory structure is any structure not roofed over and enclosed more than 50% of its perimeter walls, located on one- and two-family dwelling sites which is incidental to that of the main building. Examples of accessory structures are fencing, decks, gazebos, arbors, retaining walls, barbecue pits, detached chimneys, tree houses (supported by tree only), playground equipment, and yard art, *docks, piers*, etc.

BOAT SLIP. A berthing place for one or two watercraft where the watercraft can be securely moored to cleats, piling, or other devices while the boats are in the water. Boat slips are commonly configured as “side-ties” or as single or double loaded “U” shaped berths.

DOCK. A structure extending alongshore or out from the shore into a body of water, usually accommodating multiple boat slips, to which boats may be moored in order to load or unload people or cargo.

PIER. An elevated deck structure, usually pile supported, extending out into the water from the shore.

SECTION R324 DOCKS, PIERS, BULKHEADS AND WATERWAY STRUCTURES

R324.1 General. *Docks, piers, bulkheads* and waterway structures shall be constructed in accordance with Chapter 36 of the *North Carolina Building Code*.

Exceptions: Structures complying with the following are not required to meet the provisions of Chapter 36 of the North Carolina Building Code. A permit is required to verify these limitations and a plan shall be submitted for approval that the exceptions have been met.

Commentary: *Code requirements for plumbing, mechanical, and electrical installations shall apply.*

Fixed Piers

1. **Fixed piers** associated with a one- or two- family dwelling **meeting all of the following:**
 - 1.1 A maximum of four boat slips for a single owner of a one- or two- family dwelling or two adjacent, riparian owners.
 - 1.2 A maximum height of 15 feet measured from deck to mud line at any location along the pier.

Commentary: *This limitation on pier height is intended to limit pile stresses due to lateral loads. Pile sizes and embedment should be chosen considering forces due to moving water generated by flood stage or storm surge, waves, scour, and size of vessels moored to the pier. Where piles cannot be adequately embedded to resist lateral loads and uplift, fixed piers should be anchored to a soil strata capable of resisting the uplift and lateral loads. Wave forces due to large private or commercial vessels are not considered in these limitations and should be accommodated by the owner or contractor prior to construction. See Figure 1.*

- 1.3 A maximum normal pool depth of 13 feet on lakes and ponds and a maximum mean low water depth of 7 feet in other locations.

Commentary: *Limiting depth of water limits lateral loads on the piles and vessel sizes. See Figure 1.*

1.4 A maximum walkway width of 6 feet.

Commentary: The 6 foot maximum limitation on fixed pier width is intended to limit occupant load, limit storage on the pier, and prevent vehicles from operating on the pier. This limitation is consistent with the limitations for CAMA's general permitting process. See Figure 1.

1.5 A maximum pile spacing of 8 feet, in both directions.

Commentary: Pile spacing is limited to spans consistent with 2x8 joists or stringers at 24 inch maximum spacing and 2x10 split girders. Recommended pile size is 6 inches x 6 inches minimum. The intent is that exempted structures be capable of supporting a live load of 40 psf, even though design by a registered engineer is not required. Lateral loads on piles are also reduced by limiting the pile spacing. Wave forces due to large private or commercial vessels are not considered in these limitations and should be accommodated by the owner or contractor prior to construction. See Figure 3.

1.6 A maximum of 576 sq. ft. for non-walkways areas.

Commentary: Non-walkway areas include sitting areas, staging areas for vessel embarkation and disembarkation, and platforms for swimmers or fishermen. Limiting the area of these platforms is intended to limit occupancy and the potential for overload due to storage.

1.7 A maximum boat slip length of 40 feet.

Commentary: The boat slip size limitation is intended to limit the size of the vessels moored to the dock, which in turn limits both occupant load on the pier and lateral loads on the pier.

1.8 A maximum roofed area of 576 sq. ft. with an additional maximum 2 foot overhang. **Commentary:** See Figure 3.

1.9 Constructed with no enclosed or multilevel structures.

1.10 Supports a boatlift with a maximum design capacity no greater than 16,000 pounds.

Floating Docks

2. **Floating docks** associated with a one- or two- family dwelling meeting all of the following:

2.1 A maximum of four boat slips for a single owner of a one- or two -family dwelling or two adjacent, riparian owners.

2.2 A maximum normal pool depth of 20 feet for docks with guide piles on lakes and ponds and a maximum mean low water of 10 feet for docks with guide piles in other locations.

Commentary: Guide piles should be long enough to prevent the dock from floating off the piles at flood stage or during a 100 year storm surge. Pile sizes should be chosen considering forces due to moving water generated by flood stage or storm surge, waves, scour, and size of vessels moored to the dock. Wave forces due to large private or commercial vessels are not considered in these limitations and should be accommodated by the owner or contractor prior to construction. See Figure 2.

2.3 A maximum boat slip length of 40 feet.

Commentary: *The boat slip size limitation is intended to limit the size of the vessels moored to the dock, which in turn limits both occupant load on the dock and lateral loads on the dock.*

2.4 Finger piers, crosswalks or other floating surfaces having a minimum width of 3 feet wide to a maximum of 6 feet wide, except for a single 8 foot x 16 foot section.

Commentary: *A minimum width for walking surfaces on floating docks is specified to provide some measure of stability. Owners should be aware that this is a rule of thumb and should check with the manufacturer of the floating dock system for limits on stability for their particular system. The 6 foot maximum limitation on floating walking surfaces is intended to limit occupant load, limit storage on the dock, and prevent vehicles from operating on the dock. See Figure 2.*

2.5 When constructed with a roof the following conditions exist:

- i. Basic design wind speed is 90 mph or less;
- ii. Ground snow load is 15 psf or less (See Figure 4);
- iii. A maximum eave height of 10 feet;
- iv. A maximum roof slope of 4:12;
- v. A maximum roofed area of 576 sq. ft. with an additional maximum 2 foot overhang;
- vi. A minimum boat slip width of 12 feet;
- vii. A minimum floating dock width of 4 feet along both sides of the boat slip;
- viii. A maximum dead load of 12 psf;
- ix. Floating structures supporting roof structures are balanced or anchored to reduce the possibility of tipping.

2.6 Constructed with no enclosed or multilevel structures.

2.7 Supports a boat lift with a maximum design capacity no greater than 16,000 pounds.

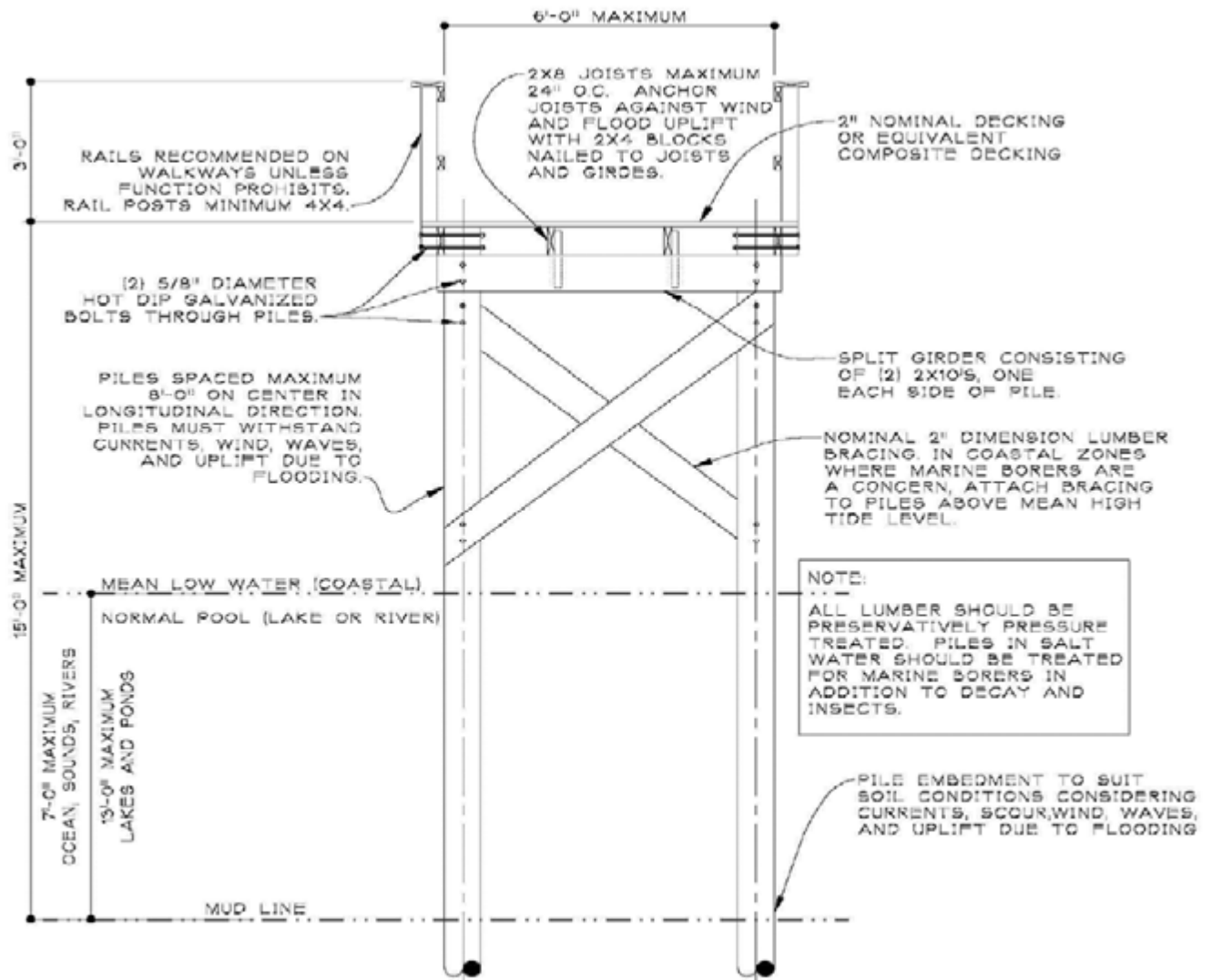


FIGURE 1: FIXED PIER WALKWAY SECTION

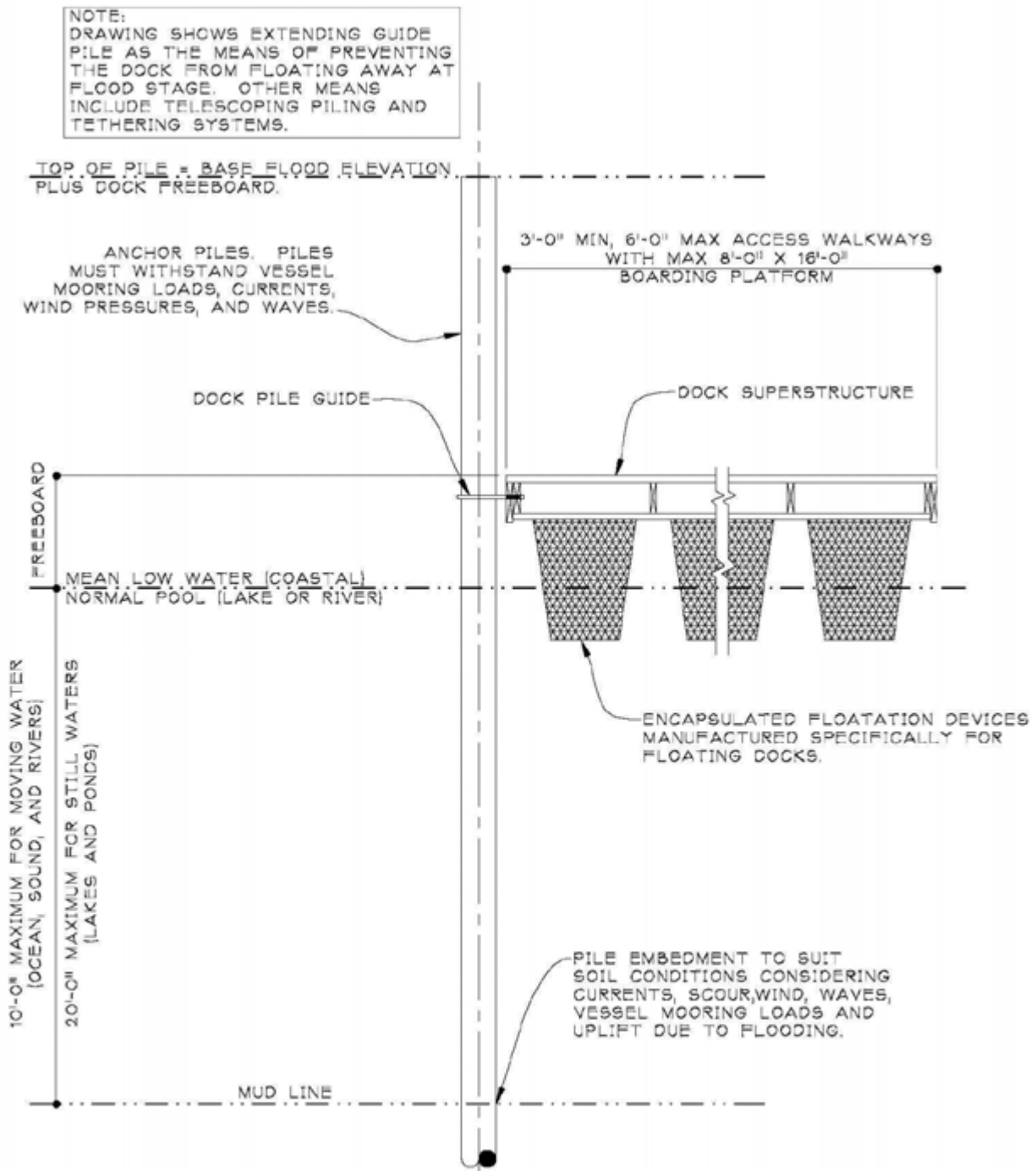
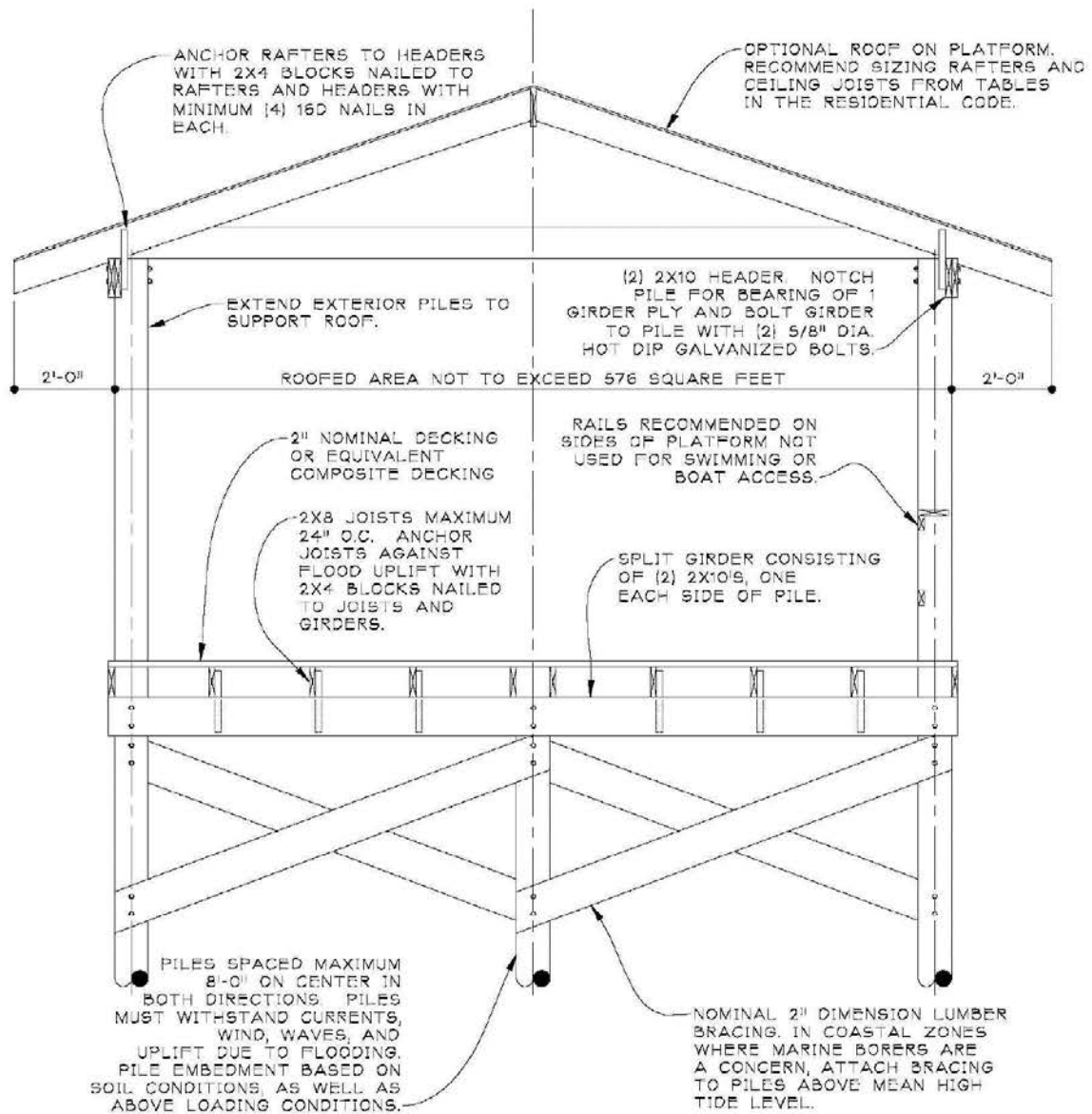


FIGURE 2: FLOATING DOCK SECTION



NOTE:
 ALL LUMBER SHOULD BE PRESERVATIVELY PRESSURE TREATED. PILES IN SALT WATER SHOULD BE TREATED FOR MARINE BORERS IN ADDITION TO DECAY AND INSECTS. BOLTING SAME AS FIGURE 1.

NOTE:
 PLATFORM FLOOR AREA NOT TO EXCEED 400 SQUARE FEET. MAXIMUM DECK HEIGHT ABOVE MUD LINE AND NORMAL POOL DEPTH SHOWN IN FIGURE 1 ALSO APPLY TO THIS FIGURE.

FIGURE 3: FIXED PIER PLATFORM SECTION

CURRITUCK COUNTY TYPICAL BULKHEAD DRAWING

Bulkheads are required by the building code to be designed by a NC Design Professional (Engineer or Architect). In lieu of the engineering design Currituck Inspections will accept the following design as a proven empirical design method. Bulkhead height must be no greater than 5' in height in order to be accepted and approved by our department. Structures in a VE Special Flood Hazard Area will require a sealed design by an NC Design Professional.

Bulkhead maximum height is 5' measured from the mud line. Bulkheads greater than 5' in height will require a sealed design by an NC Design Professional.

For VE Flood Zone Information you may call our offices or use our county web site interactive mapping tool

