914 Todville Road Construction Notes

Goal - Meet and exceed current coastal building standards

SITE PREPARATION

- Filled existing site with 125 loads of clay-sand mix and compacted to structural engineer's specifications using a 15 ton vibrating roller
- Compaction tested by local soil engineer PSI
- Compacted fill improves washout resistance in coastal flooding events as well as creates opportunity for increase height over mean high tide
- Raised slab height from previous approximate 1' over mean high tide to 8' over mean high tide

FOUNDATION STRUCTURE

- Used 36' long, 13" round wood pilings, which offers significant strength improvement and reduced drag in coastal flooding events
- Constructed a monolithic structural concrete foundation that is resistant to scour and offers substantial racking resistance coastal flooding events
- Structural foundation used approximately 60 cubic yards of concrete and utilized #5 rebar instead of #3 rebar
- CCA treated wood pilings tied to structural concrete foundations composed of 1' wide by 3' deep outer beams and 1' wide by 2' deep inner beams
- Pilings are attached to large concrete footers
- Mid-deck offers recreational space and is based on mid-deck beams designed to resist deflection

HOUSE STRUCTURE

- The house has 3 duplicate systems to resist wind uplift

    1. 9' OSB Tall Board spans vertically on outside wall from the bottom plate to the top plate to create a uniform load path
    2. Eight 3/4" threaded rods (4 on each side of the house) run from a plate attached to the stringer to the top plate for uplift resistance

3. Traditional hurricane straps are installed as called out in Coastal Building Code

- Tall Board is glued to the internal studs for increased strength and air sealing of the outer wall
- Wall lumber is 2 * 6 dimensional lumber set on 16” centers
- Roof rafters are 2 * 8 dimensional number set on 16” centers
- Roof decking is 3/4” plywood glued with structural cement applied to the roof rafters and nailed every 4 inches
- Dupont synthetic roof underlayment was applied with a high wind nailing pattern and offers substantial resistance over tar paper to water penetration in the case of shingle loss
- 135 mph rated shingles were used
- Commercial Tyvek house wrap was used instead of Residential Tyvek and cap nailed
- Hurricane rated doors and windows were installed
- House has a non-vented attic and open cell insulation has been applied under the roof deck, inside the wall cavity and under the floor cavity
- All exposed lumber as well as the floor joists under the house are CCA treated, which provides significant protection as opposed to the other available preventative wood treatments
- All stringers were bolted together in a consistent pattern to improve overall strength versus conventional nailing
- Galvanized nails were called out for the house
- The gap between the boards on the mid-deck was rated a flow through design by FEMA
- House was air sealed using structural cement along the joint formed by the OSB and stud wall and spray foam for larger gaps