

Reuben//Clarson CONSULTING

May 23, 2014

Ameri-Tech
24701 US Hwy 19 No., Ste. 102
Clearwater, Fl. 33763

Attn: Scott Vignery
Re: Seawall at 280-126th Ave. East, Treasure Island, Fl.

Gentlemen:

On May 22, 2014, I inspected the above seawall and found the following:

Approximately 388 LF of reinforced concrete seawall consisting of 4' wide x assumed 12' long slabs with a 9.5" high x 20" wide cap and 5/8" diameter uncoated original tieback rods. The exposed height from the top of the cap to the berm (mudline) is 8' and large rock riprap has been placed on the berm (mudline) along the frontage except for the last 106 LF on the left (looking at the water) end of the frontage where very minor riprap has been placed sporadically. The vertical joints between the slabs are grouted with no drains which prevents proper drainage and creates a "dam effect" which can overstress the system. There are some minor depressions in the yard directly behind the cap indicating some loss of upland sands through the more open areas of the joints below the stress beam. The cap leans backwards slightly in some areas indicating the slabs have cracked and buckled sometime in the past, and the wall leans outwards for 44+/- LF at the sidewalk from the building to the dock due to a failure of the original anchor system (the dock has been pushed outwards, but held the seawall from collapsing) and thus the addition of the secondary anchors originally, then the reinforced concrete stress beam at a later date. The rock riprap was probably added at an even later date to help prevent the scouring effects of the swift current along this seawall. The far left 123+/- LF of original cap has been replaced with a newer 14" high x 21" wide cap, but it appears the original tiebacks were utilized.

The cap has had some structural defects in that there are longitudinal cracks in the original cap indicating the rebars inside the concrete were rusting from salt intrusion over the years which causes the rebars to expand and thus crack the concrete. The cracks have been epoxy sealed and are holding well, not reopening. However, there are 2 new short longitudinal cracks appearing at the dock cap.

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The slabs have had some structural defects in that they have cracked and buckled probably behind the stress beam (normal elevation for some cracks) and thus the addition of the secondary tiebacks and the stress beam.

The stress beam is supported with battered (angled) concrete piles about every 8'. The stress beam is in relatively good condition, but there are some transverse cracks in several sections which may have been there from overstressing of the beam from storm activity prior to the placement of the riprap and at 2 of the expansion joints there is a 6"-10" section of an end that is broken so the rebar is exposed.

The original tiebacks are small and rusting so the secondary tiebacks, the stress beam and the riprap are the main elements holding the seawall in place.

RECOMMENDATION

All of the secondary washers and nuts need to be chipped, wirebrushed and liberally retarred, there needs to be new 1.25" diameter x 4' long slit type PVC wellpoint drains installed in every other slab joint 4" above the top of the stress beam, the 2 short longitudinal cap cracks at the dock area need to be chipped out and epoxy sealed, the 2 stress beam broken sections need to be chipped off and rebuilt with an epoxy mortar, the deep transverse cracks in several of the sections need to be wirebrushed and filled with epoxy, and there needs to be 1 ton/LF of 12"-18" rock (4'x 8' triangular section) placed on filter fabric on the far left 106 LF of frontage up to the bottom of the stress beam. This work could cost in the \$24,000+/- range and should be done in the next 6-8 months. The work would ideally be done in the winter months with the lower tides and less boat wake at the seawall.

Please have the riding mowers stay at least 6' off the seawall cap as the heavy wheel loads are rutting the ground behind the seawall and putting an undue surcharge load on the tierods and the seawall which will expedite the deterioration process.