

MEMORANDUM

To: Lisa Batchelor, CEPD

Cc: CEPD Board and Paul Winklejohn

From: Douglas W. Mann, P.E., BC.CE., APTIM



RE: Select Beach Observations August 10, 2026

This memorandum is in response to Lisa Batchelor's request to perform select beach observations. Lee County staff had reported that there was erosion occurring at several locations, with some reference to the two (2) terminal groins. For purposes of this observation, the conditions at Redfish Pass groin, Blind Pass groin, and Jensen's Resort were observed. The conditions are described in the following sections.

1. The tide was flooding within Redfish Pass at the time of observation. Tide was ebbing at Blind Pass at the time of observation (several hours later). Sea conditions in the Gulf were less than 0.5 feet from the southwest.
2. Structure-Beach Interactions. When considering the conditions of the beach and the conditions of a groin structure, it is appropriate to consider both the function and the form of the structure. Specifically, does the structure perform the function it was intended to perform, and does the structure condition reflect its original design condition? Thus, the structure can be graded in two ways.
3. Redfish Pass Groin.
 - a. Function. The groin was designed to limit the loss of sand from the north end of the island,



with the majority of the sand bypassing around the seaward side of the structure. The beach berm appears to be appropriately elevated and wide along the northern end of the South Seas Plantation (Figure 1). No significant loss of beach width has occurred. Therefore, the groin is functioning as intended.

Figure 1. South view of the dune toe and the berm from the Redfish Pass groin.



Figure 2. Southview of the beach from the Redfish Pass groin near the mean high water line.

b. Form. The groin was designed as a rubblemound groin in a trapezoidal cross section following the general guidelines of the USACE (2002). The groin was constructed around 2005. Per the USACE guidelines, some stones may be displaced during storm events. Scouring of the structure during storm events resulting in local or

global settlement may also occur. These processes usually occur slowly over time, and well-designed structures may require maintenance every few decades.

Observations of the landward end of the groin indicate that the crest of the structure is still above the elevation of the beach berm, with two small, localized depressions (small) at the landward end (Figures 3 and 4).

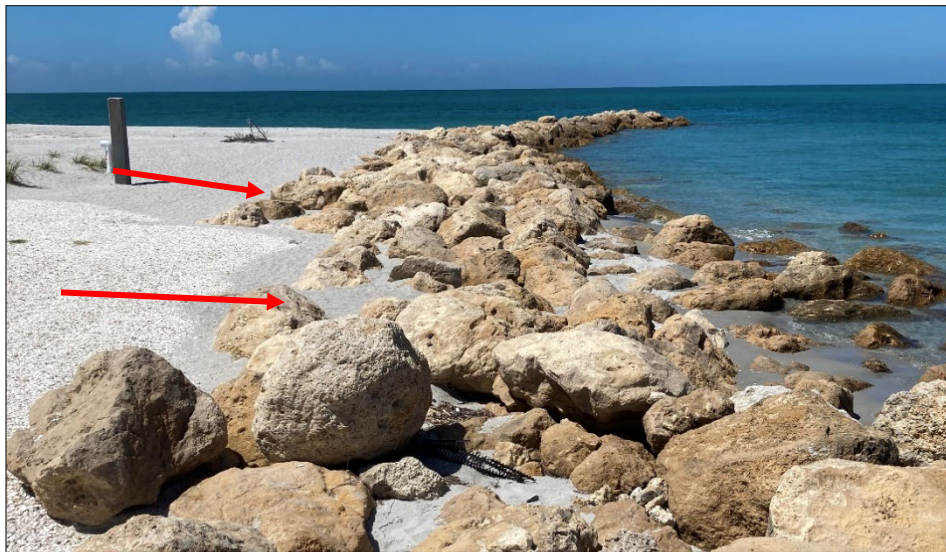


Figure 3. West view of the Redfish Pass Groin with lower crest elevations identified.



Figure 4. North view of one of the small depressions in the groin.

The seaward end of the structure remains a compact pile of interlocked stones, with the dimensions of the head of the structure (above the water) similar to the as-built widths. The end of the structure was constructed with flatter side slopes such that the footprint of the head of the structure is wider than the remainder of the structure (Figure 5).

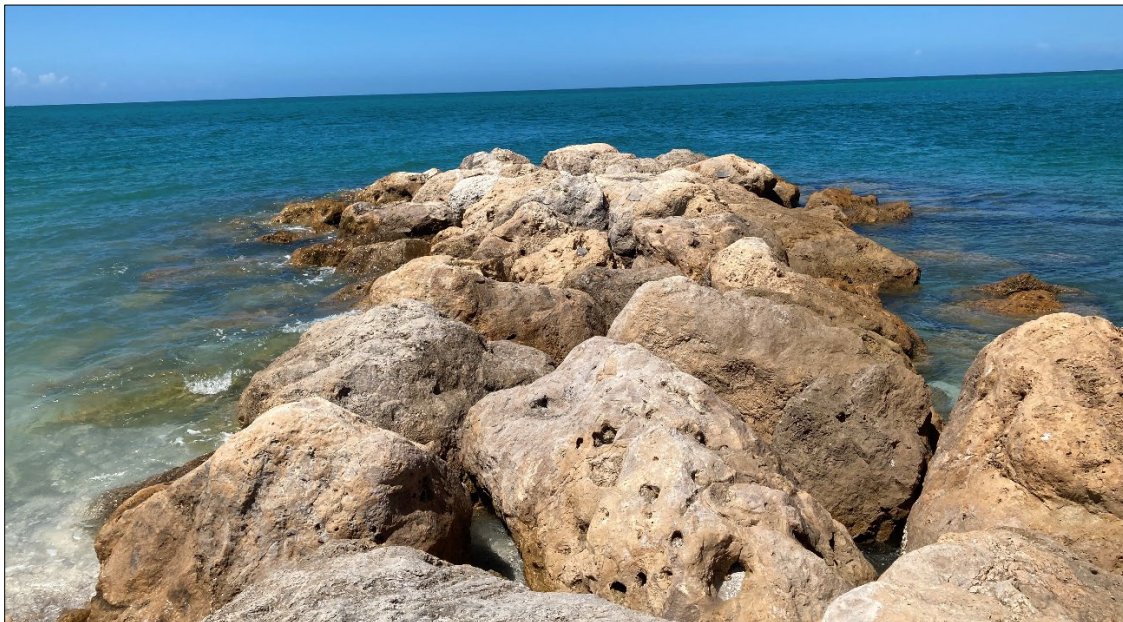


Figure 5. West view of the head of the groin at Redfish Pass.

The north side of the structure is subject to wave action and tidal currents and thus more susceptible to scour and settlement. The transport of sand along the north side of the structure also prevents direct observation of the toe of the structure during any observation. Due to changes in alignment of the northside of the structure and randomly exposed stones, some settlement of the structure may have occurred over time (Figure 6).



Figure 6. East view of the groin with randomly exposed stones on the northern side of the groin.

c. Summary and Recommendations

ASCE has developed a rating scale for the condition of waterfront facilities (Appendix 1). This guide is intended to serve more traditional waterfront structures like bulkheads, seawall, port structures, etc., and is not intended for use with rubblemound structures. Nonetheless, the grading scale can be adapted for similar use. Based on this brief observation, a preliminary rating of “Fair” is assigned to the terminal groin at Redfish Pass. The structure is performing well with some minor structural degradation.

It is recommended that a topographic survey of the exposed portions of the structure be completed concurrent with the annual beach monitoring survey. Comparison to any as-built surveys and/or design plans should be performed to quantify structural changes.

4. Jensen's Resort Beach

- a. The beach and dune system were observed from the public access at the curve in the road immediately adjacent to Jensen's Beach Resort. South of the access, the sloping beach berm has narrowed considerably and is scarped (Figure 7). The beach face is wide but low in elevation (Figure 8).



The area of erosional impact is a few hundred feet in length. The dune has not been impacted by erosion to date and remains the as-built width and cross section. This section of beach has been a historical area of higher-than-average erosion (a hot spot).

Figure 7. North view from the beach access.



Figure 8. South view from the beach access.

b. Recommendations

The Board should continue to monitor this area through annual beach monitoring and direct observations. Comparison of the erosion rate with historic measurements is advised. Due to the erosion occurring in this area, reducing the investment in the proposed supplemental dune vegetation (north of the dune overwalk) along the first 500 feet is prudent.

5. Blind Pass Groin

a. Function. The groin was designed to limit the loss of sand from the south end of the island, particularly in the southernmost 3,500 feet of island where the orientation bends slightly to the southeast. The majority of the sand is bypassing the groin around the seaward end of the structure. The beach berm appears to be appropriately elevated and wide north of the groin (Figure 9). No significant loss of beach width has occurred. Therefore, the groin is functioning

as intended.



*Figure 9.
Northwest
view of the
wide sand
beach and
dune
immediately
north of the
Blind Pass
terminal
groin.*

- b. Form. The groin was designed as a rubblemound groin in a trapezoidal cross section following the general guidelines of the USACE (1984). The groin was constructed and extended in 1989. Per the USACE guidelines, some stones may be displaced during storm events. Scouring of the structure during storm events resulting in local or global settlement may also occur. These processes usually occur slowly over time, and well-designed structures may require maintenance every few decades. To date, no specific maintenance has been performed on the terminal groin.

There are local settlements of some stones approximately 50 to 75 feet from the seaward end of the structure. This results in local loss of sand through or over the structure (Figure 10).



Figure 10. Localized sand loss through or over the structure. There appears to be localized settlement of the stone.

While there is a mass of stone on the seaward end of the structure, the south side slope appears to have steepened in a few locations as a result of select stone displacements (Figure 11).



Figure 11. Southwest view of the seaward end of the Blind Pass terminal groin. Note the steep slope in some locations.

- c. Summary and Recommendations. Based on this brief observation, a preliminary rating of “Fair” is assigned to the terminal groin at Blind Pass (Appendix 1). The structure is performing well with some minor structural degradation.

It is recommended that a topographic survey of the exposed portions of the structure be completed concurrent with the annual beach monitoring survey. Comparison to any asbuilt surveys and or design plans should be performed to quantify the long term structural changes.

Appendix 1. ASCE Waterfront Facilities Inspection Guideline (2025)

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WATERFRONT FACILITIES INSPECTION AND ASSESSMENT

Table 2-14. Condition Assessment Ratings

Rating	Description
6 Good	No visible damage or only minor damage noted. Structural elements may show very minor deterioration, but no overstressing observed. No repairs are required.
5 Satisfactory	Limited minor to moderate defects or deterioration observed but no overstressing observed. No repairs are required.
4 Fair	All primary structural elements are sound but minor to moderate defects or deterioration observed. Localized areas of moderate to advanced deterioration may be present but do not significantly reduce the load-bearing capacity of the structure. Repairs are recommended, but the priority of the recommended repairs is low.
3 Poor	Advanced deterioration or overstressing observed on widespread portions of the structure but does not significantly reduce the load-bearing capacity of the structure. Repairs may need to be carried out with moderate urgency.
2 Serious	Advanced deterioration, overstressing, or breakage may have significantly affected the load-bearing capacity of primary structural components. Local failures are possible, and loading restrictions may be necessary. Repairs may need to be carried out on a high-priority basis with urgency.
1 Critical	Very advanced deterioration, overstressing, or breakage has resulted in localized failure(s) of primary structural components. More widespread failures are possible or likely to occur, and load restrictions should be implemented as necessary. Repairs may need to be carried out on a very high-priority basis with strong urgency.