Reuben Clarson CONSULTING

June 23, 2023

Fran Stifel
Placido Bayou
4691 Laurel Oak Ln NE,
St. Petersburg, FL 33703
Email: pbcamanger@gmail.com

Re: Retention Wall Inspection Report for Placido Bayou at 4691 Laurel Oak Lane NE, St. Petersburg, FL 33703

Dear Ms. Fran Stifel,

This letter provides a summary of the field inspection performed on March 7, 2023, of the residential retaining walls on ponds 7, 8 and 9 located at the above referenced address. The following is a summary of findings and recommendations.

Existing Conditions/Construction

- Inspection of 1,235 LF +/- of Retaining Wall
  - Pond 7=500 LF of Wall
  - Pond 8= 275 LF of Wall
  - Pond 9=460 LF of Wall
- Vertical Wood Boards (2"x8")
- Wood Waler (two 2"x8" s)
- Wood Cap (2"x 8")

Reuben Clarson Consulting staff inspected a total of 1,235 linear feet (LF) of retaining wall between Pond 7, 8 and 9 at the above property. The walls consisted of 2"x8" wood vertical boards, double wood 2"x8" walers, wood 2"x8" caps and tie rod anchor system. The inspection started at Pond 7 at Station 0 ft at the north side of the pond around to the south end of the pond at Station 500 ft. Pond 8 inspection started at Station 0 ft at the east end of the pond to Station 275 ft at the west end of the pond. Pond 9 inspection started at Station 0 ft at the south end of the pond to Station 460 ft at the north end of the pond.

The following Tables 1, 2, and 3 provide a summary of observations at measured stations for Ponds 7,8 and 9. Recommendations are provided in red where applicable.

Table 1: Seawall Inspection Observations

Note: Pond #7 Station 0 ft starts at north end.

STATION	OBSERVATIONS/ RECOMMENDATIONS
N 0'	*START OF WALL *SEDIMENT LOSS/Apply crushed shell or pea gravel as needed to fill in voids
15'	*SEDIMENT LOSS/Apply crushed shell or pea gravel as needed to fill in voids *CRACKING/ DETERIORATING TOP CAP/Replace *HOLE IN WALL/Replace section of wall
22.5'	*HOLE IN WALL/Replace section of wall
24'	*CRACKING/ DETERIORATING TOP CAP/Replace
35'	*CRACKING/ DETERIORATING TOP CAP/Replace
45.5'	*CRACKING/ DETERIORATING TOP CAP/Replace
51.5'	*LEANING/ WARPED WALER/Install additional pilings, walers and tieback rods at maximum 6’ on center
87.5'	*CRACKING/ DETERIORATING TOP CAP/Replace
93'	*CRACKING/ DETERIORATING TOP CAP/Replace
100'	*CRACKING/ DETERIORATING TOP CAP/Replace
117'	*CRACKING/ DETERIORATING TOP CAP/Replace
154'	*CRACKING/ DETERIORATING TOP CAP/Replace
212'	*STORM DRAIN
224'	*CRACKING/ DETERIORATING TOP CAP/Replace
232'	*CRACKING/ DETERIORATING TOP CAP/Replace
239'	*SEDIMENT LOSS/Apply crushed shell or pea gravel as needed to fill in voids
259'	*CRACKING/ DETERIORATING TOP CAP/Replace
264'	*CRACKING/ DETERIORATING TOP CAP/Replace
295'	*CRACKING/ DETERIORATING TOP CAP/Replace
385'	*STORM DRAIN
421'	*CRACKING/ DETERIORATING TOP CAP/Replace
428'	*CRACKING/ DETERIORATING TOP CAP/Replace
444'	*CRACKING/ DETERIORATING TOP CAP/Replace
453'	*CRACKING/ DETERIORATING TOP CAP/Replace *SEDIMENT LOSS/Apply crushed shell or pea gravel as needed to fill in voids
461'	*CRACKING/ DETERIORATING TOP CAP/Replace
469'	*CRACKING/ DETERIORATING TOP CAP/Replace
481'	*CRACKING/ DETERIORATING TOP CAP/Replace
487'	*STORM DRAIN
490'	*CRACKING/ DETERIORATING TOP CAP/Replace
S 500'	*END OF WALL

Table 2: Seawall Inspection Observations

Note: Pond #8 Station 0 ft Starts at east end.

FROM STA.	TO STA.	OBSERVATIONS/ RECOMMENDATIONS
E 0'		*LEANING/ WARPED WALER/Install additional pilings, walers and tieback rods at maximum 6' on center *WALL LEANING (TREE ROOTS)
31'		*CRACKING/ DETERIORATING TOP CAP/Replace
35'		*CRACKING/ DETERIORATING TOP CAP/Replace
40'		*RUSTING/ CORROED TIE BACK RODS/Install additional pilings, walers and tieback rods at maximum 6' on center *TREE ROOTS
44'		*CRACKING/ DETERIORATING TOP CAP/Replace
49'		*RUSTING/ CORROED TIE BACK RODS/Install additional pilings, walers and tieback rods at maximum 6' on center
58'	62'	*LARGE GAPS BETWEEN VERTICAL BOARDS/Apply crushed shell or pea gravel as needed to fill in voids behind the wall
72'		*CRACKING/ DETERIORATING TOP CAP/Replace
88'		*CRACKING/ DETERIORATING TOP CAP/Replace
95'		*CRACKING/ DETERIORATING TOP CAP/Replace *RUSTING/ CORROED TIE BACK RODS/Install additional pilings, walers and tieback rods at maximum 6' on center
120'		*RUSTING/ CORROED TIE BACK RODS/Install additional pilings, walers and tieback rods at maximum 6' on center
128'		*CRACKING/ DETERIORATING TOP CAP/Replace
157'	166'	*LARGE GAPS BETWEEN VERTICAL BOARDS/Apply crushed shell or pea gravel as needed to fill in voids behind the wall
166'	182'	*LEANING/ WARPED WALER/Replace walers + install additional tieback rod and anchor
184'		*CRACKING/ DETERIORATING TOP CAP/Replace
206'	275'	*LARGE GAPS BETWEEN VERTICAL BOARDS/Apply crushed shell or pea gravel as needed to fill in voids behind the wall *LEANING/ WARPED WALER/Install additional pilings, walers and tieback rods at maximum 6' on center *CRACKING/ DETERIORATING TOP CAP/Replace
W 275'		*END OF WALL

Table 3: Seawall Inspection Observations

Note: Pond #9 Station 0 ft starts at south end.

FROM STA.	TO STA.	OBSERVATIONS/ Recommend complete replacement of wall
S 0'		*LEANING/ WARPED WALER *CRACKING/ DETERIORATING TOP CAP
0'	82'	*WALL BOWING/ CRACKING
6'		*CRACKING/ DETERIORATING TOP CAP
16'		*CRACKING/ DETERIORATING TOP CAP
32'		*CRACKING/ DETERIORATING TOP CAP
44'		*CRACKING/ DETERIORATING TOP CAP
76'		*HOLE IN WALL *RUSTING/ CORRODED TIE BACK RODS
107'		*SEDIMENT LOSS (ABOUT 1' WIDE)
111'		*SEDIMENT LOSS (ABOUT 1' WIDE)
125'		*SEDIMENT LOSS (ABOUT 1' WIDE)
133'		*CRACKING/ DETERIORATING TOP CAP
133'	171'	*SEDIMENT LOSS
178'	195'	*SEDIMENT LOSS
203'		*LEANING/ WARPED WALER
223'		*LEANING/ WARPED WALER (WALL FAILED)
235'	251'	*SEDIMENT LOSS
267'		*SEDIMENT LOSS (ABOUT 1' WIDE) *CRACKING/ DETERIORATING TOP CAP
274'		*SEDIMENT LOSS (ABOUT 1' WIDE) *CRACKING/ DETERIORATING TOP CAP
282'		*SEDIMENT LOSS (ABOUT 1' WIDE) *CRACKING/ DETERIORATING TOP CAP
291'		*SEDIMENT LOSS (ABOUT 1' WIDE) *CRACKING/ DETERIORATING TOP CAP
308'		*SEDIMENT LOSS (ABOUT 1' WIDE)
329'		*SEDIMENT LOSS (ABOUT 1' WIDE)
352'		*HOLE IN WALL
366'		*SEDIMENT LOSS (ABOUT 1' WIDE)
377'		*STORM DRAIN
421'		*SEDIMENT LOSS (ABOUT 1' WIDE)
424'		*SEDIMENT LOSS (ABOUT 1' WIDE)
443'		*SEDIMENT LOSS (ABOUT 1' WIDE)
460'		*SEDIMENT LOSS (ABOUT 1' WIDE) *END OF WALL

Recommendations

It should be noted that the typical useful life of a wood wall within brackish water is approximately 25-30± years. Based on the age and existing condition of the retaining wall system we recommend the following options:

Option 1: Repair Pond #7 and #8 and Replace Pond #9 Retaining Wall

This option consists of the following:

Pond #7 Repairs:

1.) Remove and replace wood caps (22 x $60.60=$1,333)
2.) Remove and replace approximately 24 linear feet of wall at approximate Station 51.5 ft (24 LF x $500/LF= $12,000)
3.) Apply crushed shell or pea gravel as needed to fill voids behind the wall (approximately 14 cu. yds. X $153/cu. yd. = $2,142)

Pond #8 Repairs:

1.) Remove and replace wood caps (9 x $60.60=$545.40)
2.) Remove and replace approximately 48 linear feet of wall from Station 0 ft to Station 48 ft (48 LF x $500/LF= $24,000)
3.) Apply crushed shell or pea gravel as needed to fill voids behind the wall (approximately 20 cu. yds. X $153/cu. yd. = $3,060)

Pond #9: Replacement of existing wood wall. (460 LF x $500/LF= $230,000)

The total estimated cost for this option is $273,080± ballpark range. It should be noted that even with the above repairs we recommend planning to replace the retaining walls at Pond #7 and Pond #8 within the next 5-7± years. Replacement of walls can be constructed in phases.

We also recommend engineering inspection of the walls every 3± years to identify any new structural defects if any. The estimated remaining useful life of the retaining walls can be revised as needed upon future inspection.

Option 2: Construction of New Retaining Walls at Pond #7, #8 and #9

This option includes the construction of a new retaining wall. Recommended options for a new retaining wall would include construction of either a new wood wall or a new corrugated vinyl system.

Wood Retaining Wall Replacement. A wood wall with wood walers, wood vertical boards, wood cap and tierod anchor system could cost approximately $500 per linear foot with an expected useful life of approximately 25-30± years (1,235 LF x $500/LF = $617,500± ballpark cost in today's prices).

Vinyl Sheet Pile Wall Replacement. A corrugated vinyl sheet wall with a wood or composite walers, 1" diameter HDG PVC encased tieback rods to MR-SR Manta Ray anchors or deadmen could cost in the $500/LF with an expected useful life of approximately 50± years (1,235 LF x $500/LF = $617,500± ballpark cost in today's prices). The new wall could be constructed in phases.

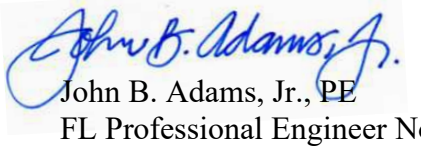
The replacement of the retaining wall system can be completed in phases. The recommend order for a phased replacement is the following:

Phase 1: Pond #9 retaining wall.
Phase 2: Pond #8 retaining wall.
Phase 3: Pond #7 retaining wall.

If you should have any questions or comments, please do not hesitate to contact me. We appreciate the opportunity to provide this report.

Sincerely,

REUBEN CLARSON CONSULTING, INC.



John B. Adams, Jr., PE
FL Professional Engineer No. 53963

Photo 1: View of Deteriorated/Cracking Top Cap

Photo 2: View of Deteriorated/Cracking Top Cap

Photo 3: View of Corroded Tieback Rods

Photo 4: View of Corroded Tieback Rods

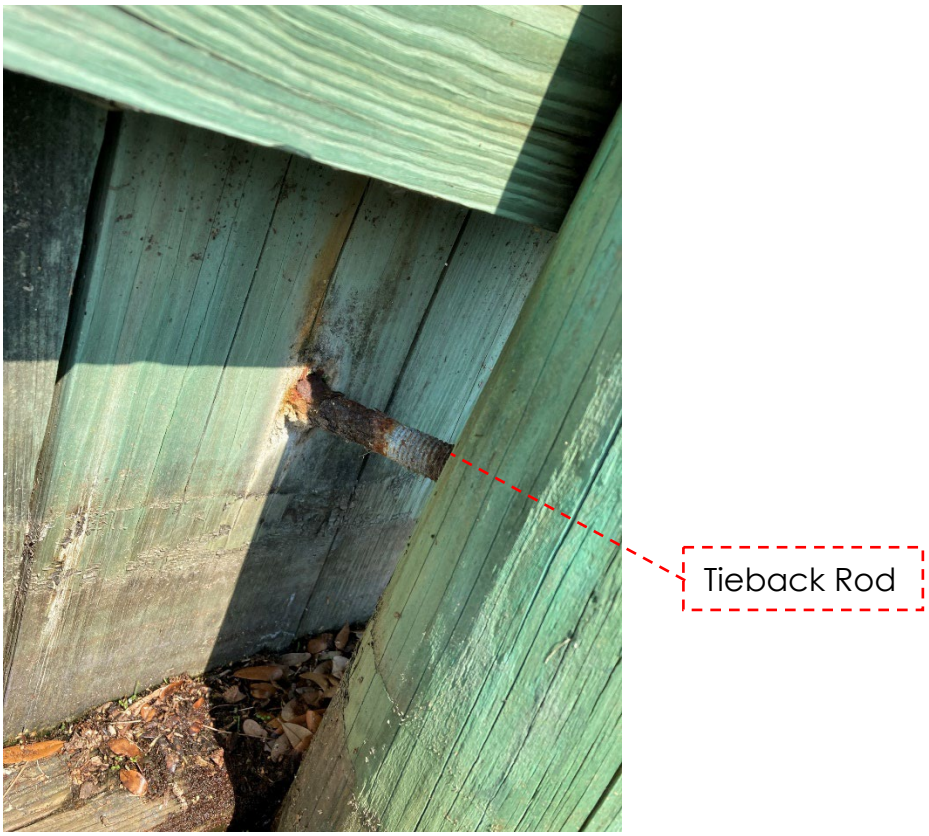


Photo 5: View of Gaps Between Vertical Boards

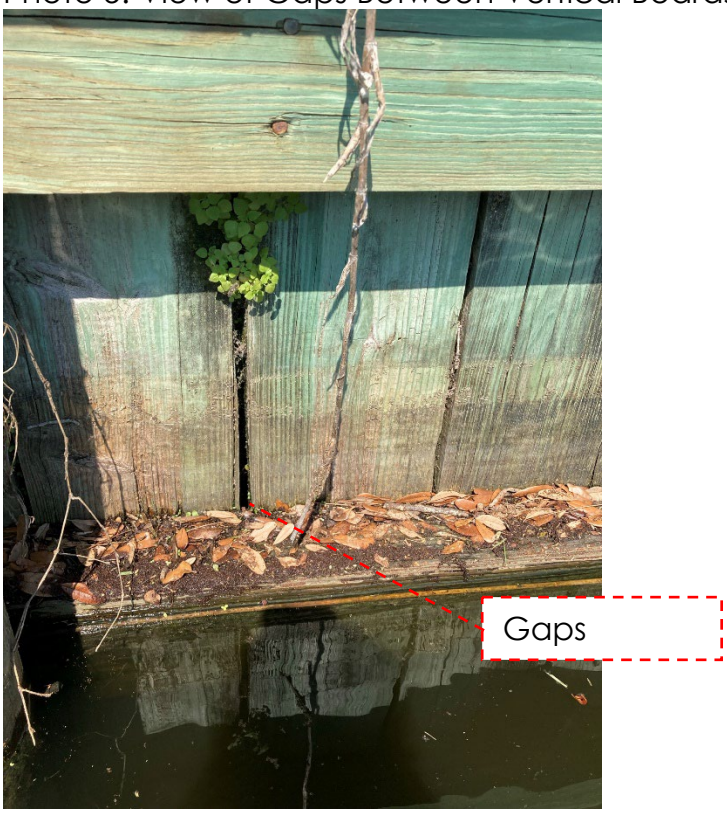


Photo 6: View of Gaps Between Vertical Boards

Photo 7: View of Bowing Walers and Leaning Wall in Pond #9

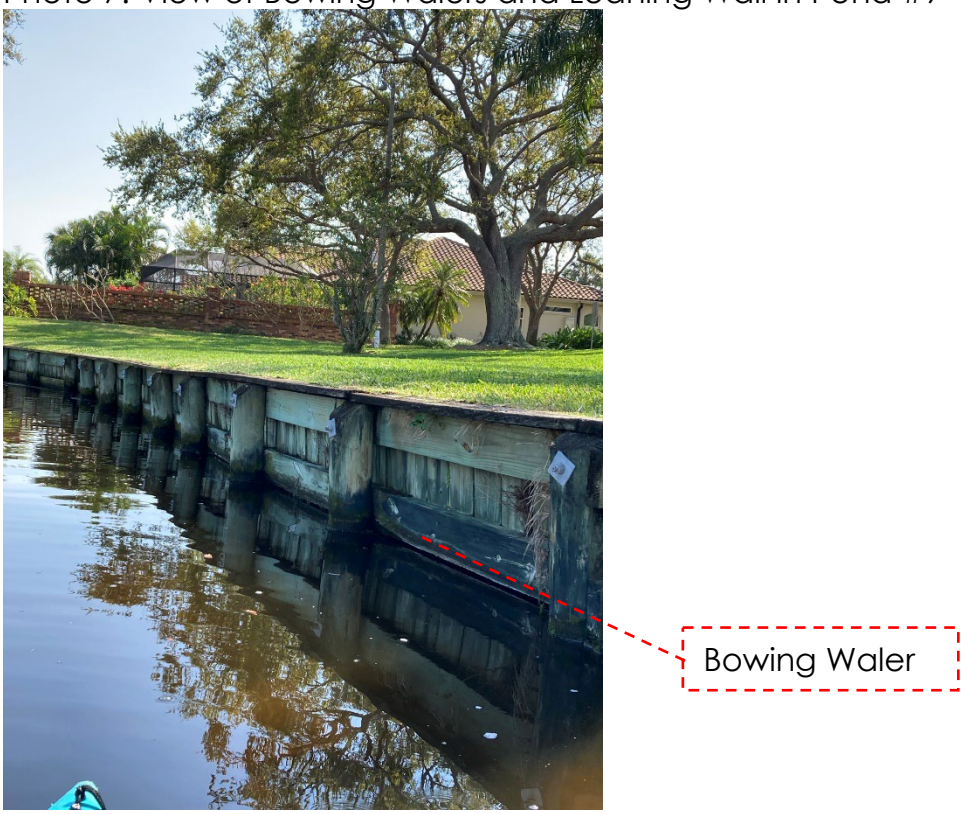


Photo 8: View of Bowing Walers and Leaning Wall in Pond #9

Photo 9: View of Cracking Walers and Leaning Wall in Pond #9

Photo 10: View of Holes in Bottom of Vertical Wall in Pond #9.