Northport Village Corporation
Village Agent Report
July 14, 2024 Board of Overseers Meeting

Recent activities and recommendations

- Recommend returning the remaining $2,000 of their deposit to the Bay Street property owners. The grass is not quite there, but it is slowly growing at the Bayview Park access point to the storm drain/outfall.
- I received the 2024 annual wharf inspection report from Pinnacle Hill Engineering. A copy of the report is attached. I have been in touch with Islesboro Marine, Prock Marine and others to determine the costs of needed repairs and availability of companies to do the work. I hope to have cost information by the August Board meeting. The engineer notes that the "pier is still in good condition but the stresses of the recent winer storms have damaged a lot of bracing under the deck and between the piles." The report gives very specific recommendations regarding replacement materials and states that the repairs need to be completed before the next storm season.

Parks

- Ruggles Park playground. Playground mulched and new child's picnic table built in time for July 4th holiday weekend.
- Ruggles Park: Looking into removing rotten stumps at some point in the future.
- All parks: Park benches have been repositioned.

Wharf, floats.

- Dock Building: Looking tired. Needs scraping and new paint.
- Status of dock/causeway-storm damage repairs: Still needs to be done when I can find someone to do the work:
    - Lost more fiberglass coating on the fender pilings. Coverings need to be removed and pilings painted. Asked Bayside Marine if he was interested and he has not replied.
    - Fender pilings on the boat float side of the dock are loose and need repair.

  Current high tides are reaching the level of the dock planking. The next major dock rebuild should raise the dock.

Roads

- Sander and plow: We should plan to replace sander in 3 years. Plow should be replaced sooner.
- Property owner complaints about water runoff from village roads: Whenever I have an opportunity, I advise property owners building new structures or doing major remodels to build their foundations higher than the crest of the road grade to avoid flooding. Property owners who ignore this advice then complain that runoff from the road floods their property and they want the village to do something about it.

Miscellaneous

- Fence around the fire pond has been completed
- I continue to field calls from private contractors working throughout the Village on current and planned projects in the Village.
- I continue to deal with various villagers with issues they want addressed.
- Continuing to assess and consider improvement of Bayview Park storm - drain/outfall adjacent to Oberg's property. Because of abundance of heavy rains the last couple of years and severity of winter storms hitting at high tide, the storm drain/outfall needs help. Any of the fixes I have thought about must be consistent with recommendations we expect from the engineer hired by the Town to assess shoreline erosion. Whatever plans the Village decides on, I recommend restricting the area to storm drain/outfall purposes and no longer allow public access for construction on shoreline cottages

Village projects/needs on the near and far horizon with budget implications

- Floats replacement: It is still time to begin setting aside and saving money to replace the floats; they are starting to show their age.

Utilities

- The Utilities Superintendent has someone from his company doing more detailed sewer sampling in other areas of our system for the next 7 weeks to get more detailed data on our system. He is also doing sludge judging of the tanks.
- At the end of June, we did our big, once a year pumping and cleaning of all trains and the whole system at the wastewater treatment plant.
- We have changed testing labs, and I will be driving samples to Wisscaset weekly instead of Waterville.
- We are still dealing with a couple of water leaks.
- Completed for now color coding and painting of NVC hydrants. Will wait until fall and reduced traffic to work on the Route 1 hydrant.
- My cell phone: Plumbers have given my cell number to some owners, who call me at night and on weekends. My cell phone is also my personal phone. **If you have my number, do not give it out to anyone. The Village office phone is the right number to use for Village business.**

Submitted by Bill Paige, Village Agent.

Attachment: June 21, 2024, Pinnacle Hill Engineering 2024 Annual Inspection of Wharf at Bayside

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June 21, 2024

Mr. Bill Paige
Northport Village Corporation
813 Shore Road
Northport, Maine 04849

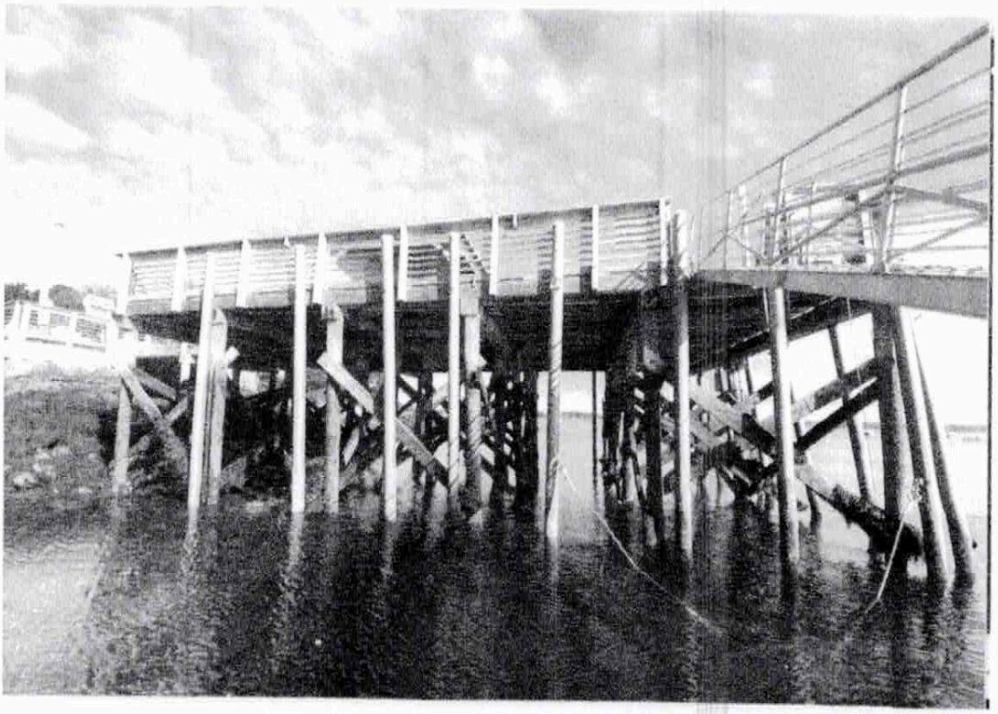
Re: 2024 Annual Inspection of Wharf at Bayside

Dear Bill:

This letter report contains the results of the annual inspection of the Bayside wharf.

I visited at low tide on the morning of June 11, 2024, when the low tide level was as low as 0.2 ft. I used the NVC dinghy and boots to visually inspect the pier.

Based on this inspection it appears that the pier is still in good condition but the stresses of the recent winter storms have damaged a lot of the bracing under the deck and between the piles. The number of bracing members that appear to be unsound is substantial, approximately 12 braces should be completely replaced this summer, with new timber, new bolts, dock washers and zinc cap nuts. There are other braces where the bolt holes are



enlarged and the bolts and washers should be replaced. As part of this process the NVC should pressure wash the bracing throughout, especially the lower ends of the braces, to expose the timber surfaces and see if more cracks and split damage is concealed by the marine growth on the surfaces. Additional damaged braces may be visible once the surfaces are cleaned.

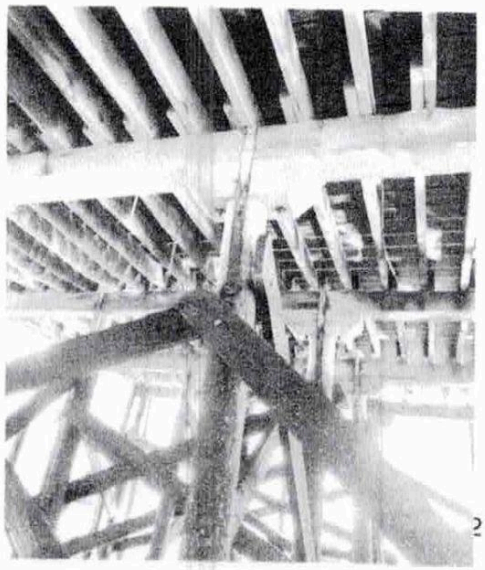
SUMMARY OF INSPECTION:

In 2015 the annual inspection included the development of a set of measured drawings of the pier. Please refer to the 2015 report for the description of the pier.

- The pile supported pier continues to be in generally good condition and has been generally maintained. Since last year, the pier has been weakened by the storm damage and vital structural upgrading should be done before the next fall and the winter storm season, if or when we have storms equal to last year.

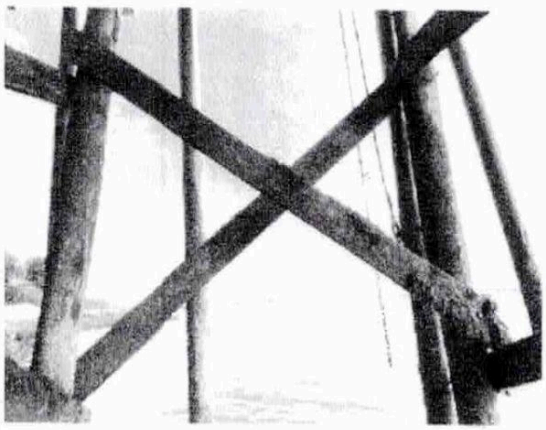
- In recent years the main problems have been deterioration of the X-bracing under the pier, with a few problems with braces each year. This year I saw many more weakened braces than prior years. The braces have splitting probably caused by the strain imposed by the December 2023 and January 2024 storms, which caused extensive damage to piers throughout the Maine coast. Three different times there were high winds and waves that ocurred simultaneously with extreme astronomical high tides. The resulting tide levels were much higher than historically occur, so that the typical pier decks were submerged and battered by waves for upwards to an hour. Those conditions were enough to tear apart many timber pier structures that had been previously adequate.

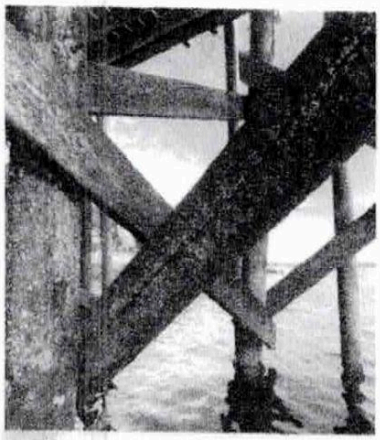
- The Bayside pier seems to have done well comparatively. I attribute that primarily to the fact that your pile caps are connected to the piles with steel straps and bolted connections, rather than the more typical connection traditional in Maine piers, which is a driven steel pin through the pile cap into the top end of the pile. Those connections do not have a lot of resistance to uplift, and did not fare well. The pins pulled out of the piles, and allowed the decks to lift upward, sometimes with complete failure of the pier. I have viewed the video of the Town of Lincolnville Fish Pier which had some straps and some pinned

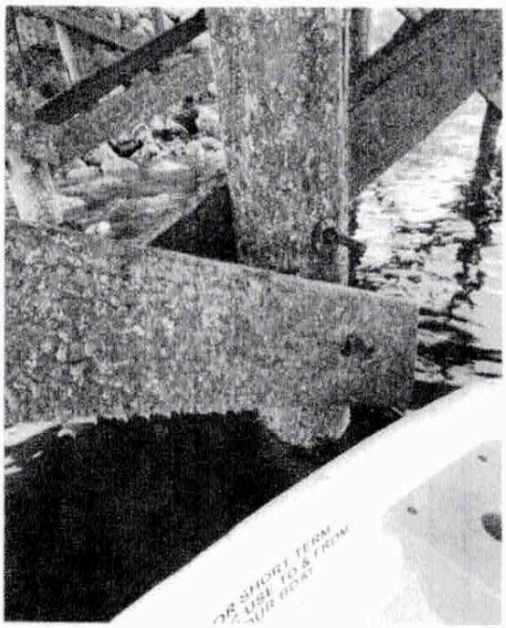


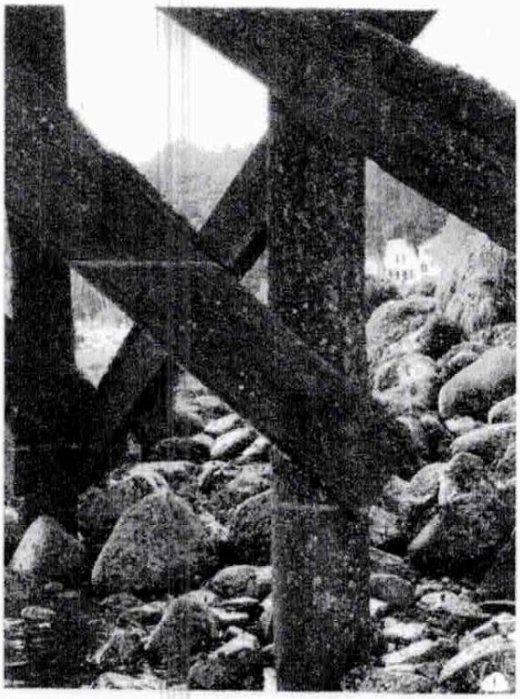
connections. In the video the water was over the deck and the waves lifted and dropped the wood deck structure, flexing it like a snake for a period of time. I was there following the storm and we saw that the pinned connections in the center of the pier deck had lifted up some but held their alignment, so the deck could settle back down. The outer perimeter piles of the pier have steel strap connections, which appears to have been enough to hold the structure together for the time needed. I inspected several other piers that had the deck lifted high enough that the pins came out of the holes and the pins bent so that the pier deck could not return to the original position.

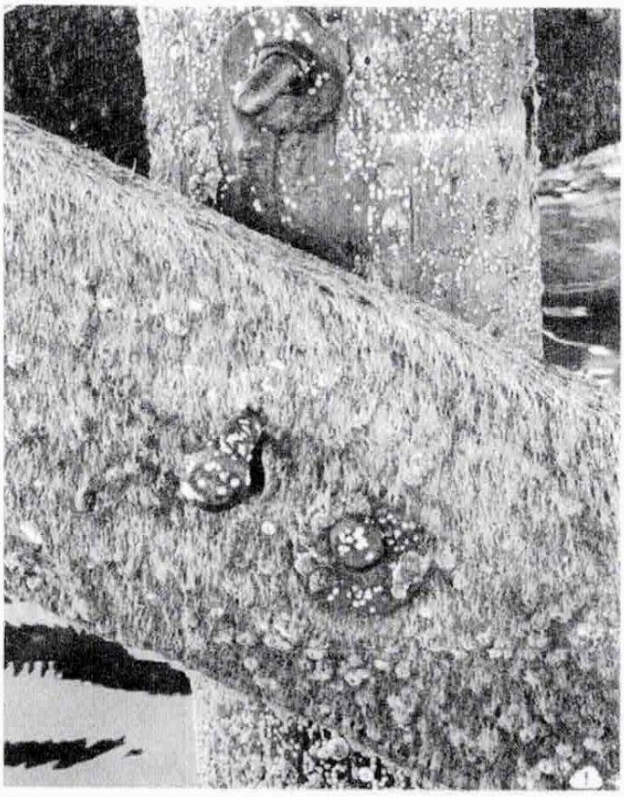
- In past years we have been noting split braces for immediate replacement and also pointing out the ones with checks and cracking that seemed to be candidates for the next couple of years. Some braces develop deep checks, usually near the bottom ends - two were noted last year to be replaced in the next couple of years. However that pattern bas been broken and this year the splitting and checks seem to be present in many more braces than normal. I attribute this to the storms, which stressed to bracing much more than normal. I noted a total of 12 braces to replace that I could see, including the E5 brace further described below. These are shown on the attached plan. The photos below show some of the cracked braces







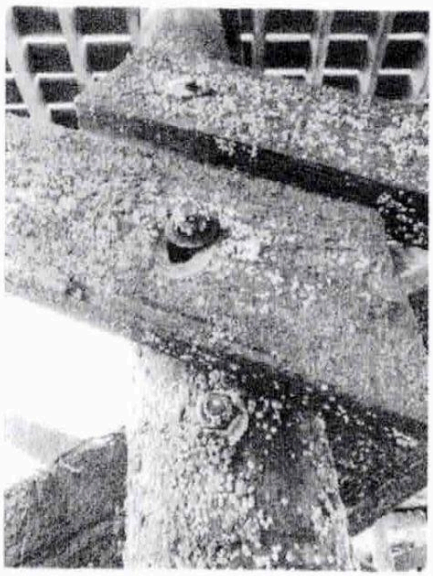




- Given the high number of visible cracks I recommend that all bracing should be considered to potentially have concealed damage and that you should engage a high pressure water blast cleaning of the bracing in order to remove weed growth, barnacles, and slime and better expose the wood surfaces. I believe that this will reveal some additional damage that is not now visible.

- Replace bracing with new 3x10 Southern Pine pressure treated to 2.5 pcf with CCA preservative. This treated lumber preservative is only sold by lumber yards for Marine use. Viking Lumber in Belfast is one of the primary suppliers for this material. Other species and pressure treatments may look outwardly the same but are not adequate for marine submergence applications.

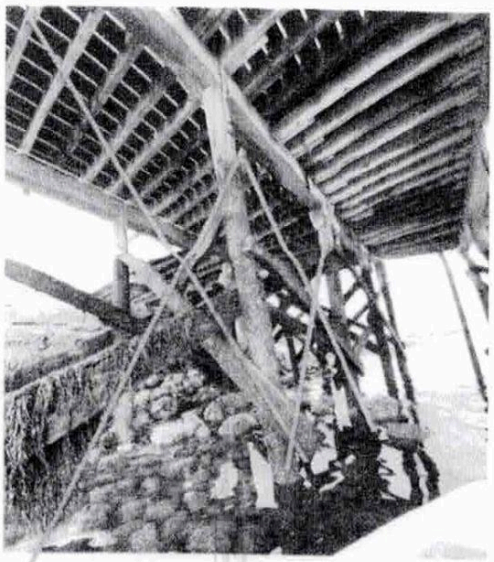
- One brace came free and is hanging vertically from a bolt on Pile E5. This brace was recommended to be replaced last year but that was not done. The brace was a repair of previous damage and the bracing members were long planks spanning two pile spaces for piles C5,D5 and E5. Over the years the repairs have resulted in haphazard



2024 repeat brace recommended to be replaced

2024 that brace failed, pile E5

replacement of the two long diagonals originally there, so now the three piles are not braced properly. I recommend that you reconfigure those two bays to have one "X" on each bay rather than the current pattern. The current piece of bracing is hanging vertically should be



Recomended reconfiguration of bracing

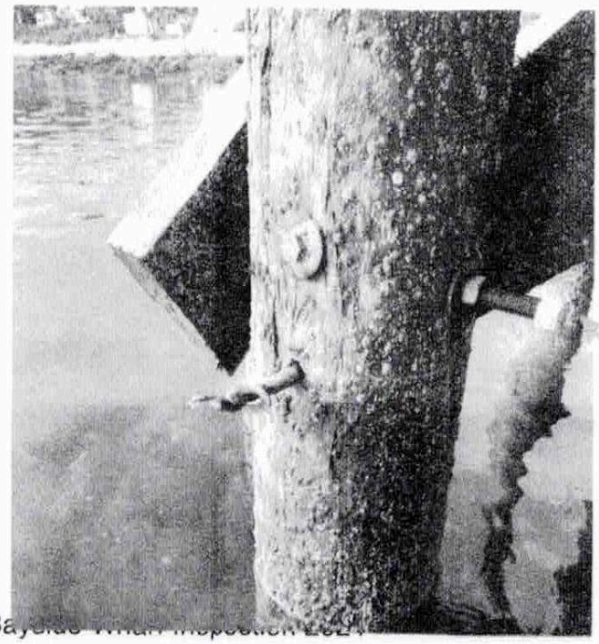
discarded and you should remove the other parts of the long diagonals still in place. Then install two sets of diagonals as pairs to make two "X"s. These replacement braces must be installed this year.

- Do not allow any loose bolted connections that will allow motion of the brace in wave action, as that will wear out the bolts hole at both ends and destroys the effectiveness of the braces. Spike grids would improve the performance of the bolted connections. I believe that this pier originally had spike grids in the joints but they have not been used recently.

•New Bolts should be installed for all repairs, all bolts should be upsized to 1" hot dipped galvanized hex bolts with dock washers or heavy galvanized square plate (3/8" thick or more) washers. The thin standard round washers are not good enough and should not be used. They corrode so quickly that they soon leave the bolts loose and start to wear out the wood.

•Existing holes should be reused in the piles whenever practical. It is undesirable to drill new holes each time. This eventually causes weakening of the piles and extra water passage into the interior of the pile. The piles will be very expensive to replace in the future, so practices that prolong their lives will be beneficial. Even though it more effort and expense to remove the old bolts, particularly to drive them out if they are corroded into the holes, it should be done to avoid drilling additional holes.

•The bolt holes through the piles need attention if they are oval shape. Re-drilling and using a 1" or 1 ¼" bolt, larger than the original, can restore a round hole, This is much preferable to drilling a second new hole. New holes should be added in new locations away from the original bolts only if the existing holes are too large and beyond salvaging. Enlarging the bolt size should be enough for most of them, particularly if it is done early before they fail or start moving and enlarge the hole in the wood.



• Many of the bolts have received zinc cap nuts as previously recommended and have proven that these bolts are corrosion free, so it is an effective strategy to extend the life of the fasteners. Protection of each bolt with a cap nut is recommended to reduce the corrosion rate and reduce maintenance. The zinc is sacrificial and should be replaced periodically, experience will tell how often. They should be installed on all bolts throughout the pier, particularly the

lowest bolts of every brace, and on the upper straps. An online source of cap nuts with some background information is https://www.farwestcorrosion.com/mars-zinc-caps.html. They are not generally available locally.

- Corrosion is continuing on the steel straps of the pile caps. Those straps saved your pier, in my opinion, and should not be allowed to deteriorate. While still not requiring immediate action, a proposed repair as shown in the report for 2019 is still recommended when the funds become available. I understand that the cost was high for new straps but we may be able to work on that to reduce the cost through a less expensive design if that is of interest. Installing zinc cap nuts on all of the bolts would help considerably to delay this repair.

- The outer coating of the fiberglass composite fender piles is continuing to fail. Most of the damage is on the East side facing the bay and to a lesser extent on the North and one pile on the South. These started with small scars and tears but several piles on the East face have now lost large sections. Repair and coating materials were discussed in the 2019 report. The original coating is obviously not adequate for the long term. It is not structural but likely helps to inhibit long term UV deterioration of the underlying fiberglass shell of the piles.

- You have already repaired the storm damage to the deck -railings and decking. I looked briefly at these and did not note any additional damage, except perhaps that the shelter structure is generally in need of a paint job.

This inspection was only the timber pier itself, and not a detailed examination of each structural component in the facility and it is not intended to substitute for sound maintenance practices. It remains the Owner's responsibility to provide ongoing maintenance, including periodic monitoring and repairing of deterioration as it occurs. The adjacent seawall along the beach, aluminum gangways, and floats were not included.

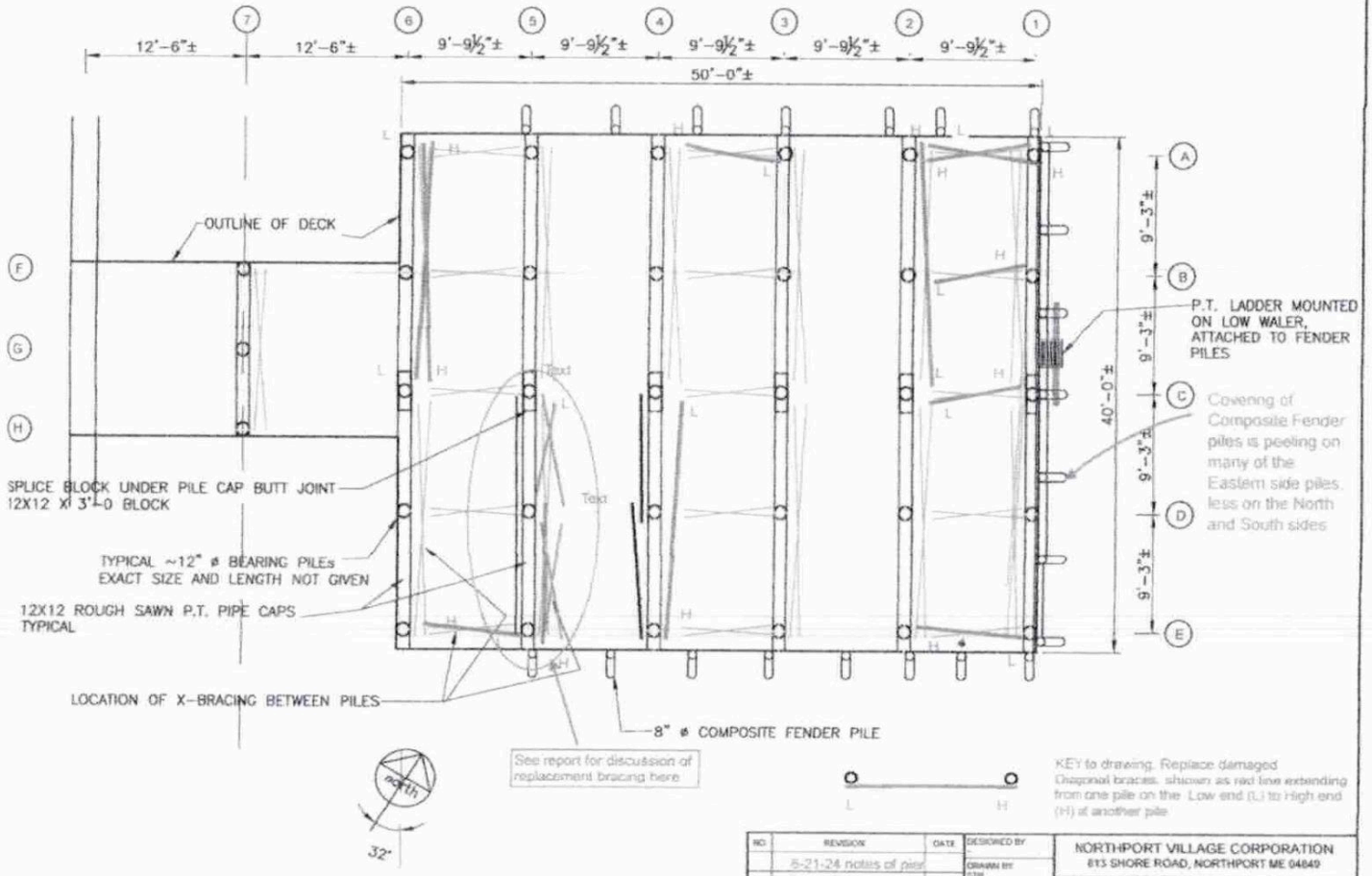
Please let me know if there are any questions.

Sincerely,

Stephen T. Ruell, P.E.

Pinnacle Hill Engineering

Attachment: Sheet 3



NO.	REVISION	DATE
	5-21-24 notes of pier inspection	

DESIGNED BY
DRAWN BY: DJW
CHECKED BY
DATE REVISED: 7-2-2015

NORTHPORT VILLAGE CORPORATION
813 SHORE ROAD, NORTHPORT ME 04849

WHARF INSPECTION
PILE PLAN

PINNACLE HILL ENGINEERING
33 Pinnacle Road
Camden, ME 04824
Phone: (207) 474-8200

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REV. 0

Pier Inspection 2024

This drawing is based on limited measurements and is intended for planning purposes only.