

Vineyard Land Surveying & Engineering, Inc.

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CONDITION REPORT FOR THE TASHMOO LANDING PIER

Prepared For: the Town of Tisbury
March 9, 2016

On March 8 2016, William Austin and Cody Coutinho of this office completed an inspection of the Town Pier at the Tashmoo Public Landing.

The existing timber pile pier was first constructed sometime in the late 1970's or early 1980's. Since that time various repairs have been done but there is little documentation regarding what work had been done and at what time it was done. Our inspection consisted of a visual inspection above the waterline and below the waterline with an underwater camera. Additionally, elements that were easily accessible were hammer tested. The following are observations that were made and recommendations for the Pier.

DECKING:

The deck boards are generally in sound condition but are starting to show some signs of wear. The nail fastenings however, are in poor condition and many have deteriorated to the point of failure. Currently, many of the deck planks can be lifted out of place by hand.

STRINGERS:

The stringers are 2 ½" X 9 ½" pressure treated timbers. These are generally sound, however the bottoms of some are moldy and showing the beginning signs of rot. The construction technique used for the stringers was to splice the ends of the stringers at the mid-span between the "bents" with a "butt splice". Some of these splices have started to fail and are loose. These splices no longer provide a structural connection from one stringer to the next. This technique is generally not recommended and under the current condition, forces the stringers to support the decking and load as a "cantilever" and greatly reduces the load capacity of the pier. These splices also reduce the lateral resistance of the pier because any lateral load is not properly transferred to multiple piles.

JOISTS:

The joists at the south end of the "TEES" between the last two bents are in fair shape. The joists from the north end of the "TEE" to the end of the fish cleaning board are in very poor condition. Some of these joists are split and broken (presumably from boats hitting the west face of the pier). Some have been sistered and some of the sisters have split.

HEADERS, YOKES or WHALERS:

The headers are 2 ½" X 9 ½" timbers are generally in poor condition. Many of the timber ends show signs of significant rot and many are split at the bolt-to-pile connection. The splitting is occurring due to the reduced strength of the wood as it rots.

PILES:

There are 6 pressure treated piles in good condition at the south end of the "TEE" and the south end of the finger pier. The rest of the piles are either in poor condition or very poor condition. These piles show significant narrowing at the mud line, de-laminating, hollow cores, and damage. Some holes are big enough to insert the head of a hammer, one pile had a hole through to the opposite side.

OVERALL CONDITION:

Many of the piles have deteriorated badly enough that they can no longer provide any lateral support. This means any lateral resistance of the pier needs to be transferred through the structure to other piles. This pier has become more flexible over the years and these conditions have accelerated splitting of the headers and failure of the butt splices. A heavy boat hitting the pier or tied to the pier during a storm could cause excessive damage.

RECOMMENDATIONS:

Renovation of the pier In the near future is recommended to replace many of the piles, stringers and joists that are in poor condition. Some of the stringers and decking could be saved and reused, however an evaluation of cost benefits should be done at the time to determine if it would be more efficient to replace them when all the other work is being done. In the event, the decking and stringers are to be reused, it is recommended that the timber be re-fastened with stainless deck screws of suitable size.

It is this office's recommendation that most of the pier should be replaced. The attached plans show the recommended area for replacement and specifications that it should be built to.

ATTACHMENTS:

A copy of the plan used in the field at the time of the inspection showing more detailed conditions of the pier.

Plans showing recommended Repair Specifications.

Photographs of existing conditions

If you have any questions please contact Bill Austin or myself at (508) 693-3774.

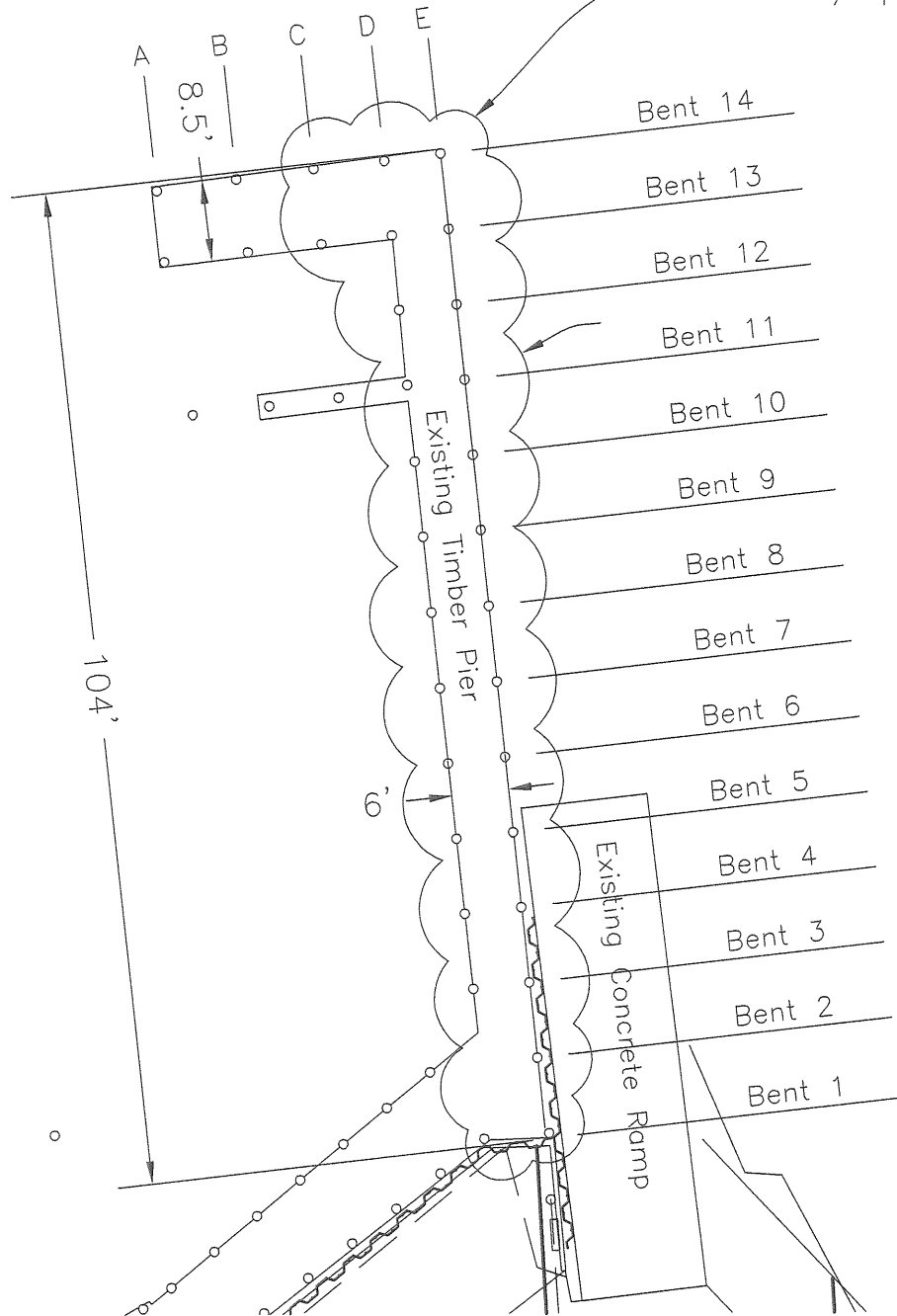
Sincerely,

A handwritten signature in dark ink, appearing to read "Reid G. Silva". The signature is fluid and cursive, with the first name "Reid" being the most prominent part.

Reid G. Silva, P.E. P.L.S.
(WMA)

TASHMOO POND

Recomended portion of pier to be re-built/replaced



Lake Street Pier in Tashmoo Pond
Recommended Repair Specifications.

Pier Plan in
Tisbury, Mass.

Prepared for
The Tisbury Harbormaster

Scale 1" = 20'
March 21, 2016



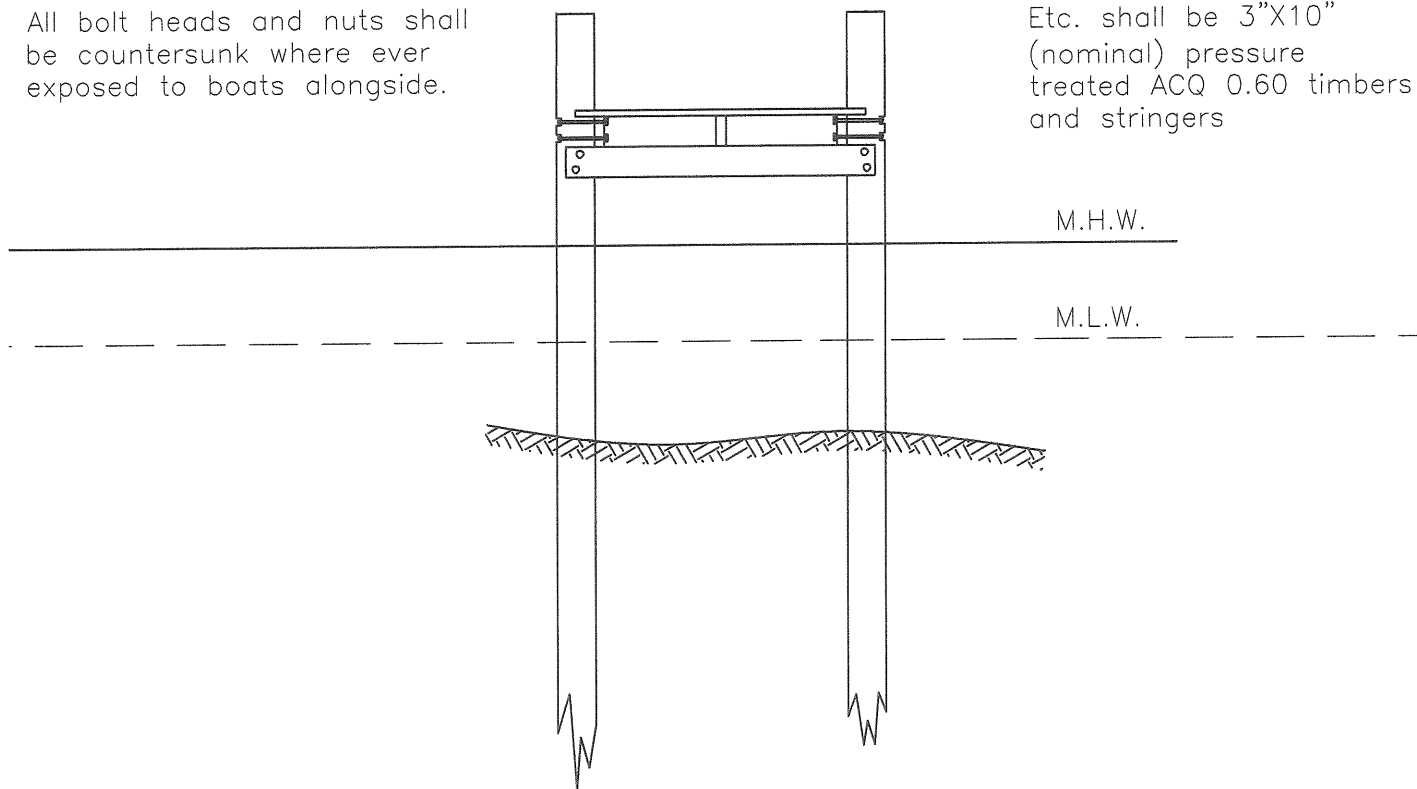
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Lake Street Pier in Tashmoo Pond
Recommended Repair Specifications.

All bolts $\frac{5}{8}$ " heavy galvanised
with oversized dock washers.
All bolt heads and nuts shall
be countersunk where ever
exposed to boats alongside.

All Stringers, Headers,
Etc. shall be 3"x10"
(nominal) pressure
treated ACQ 0.60 timbers
and stringers



Pier Plan in
Tisbury, Mass.
Prepared for
The Tisbury Harbormaster
Scale 1" = 4'
March 21, 2016

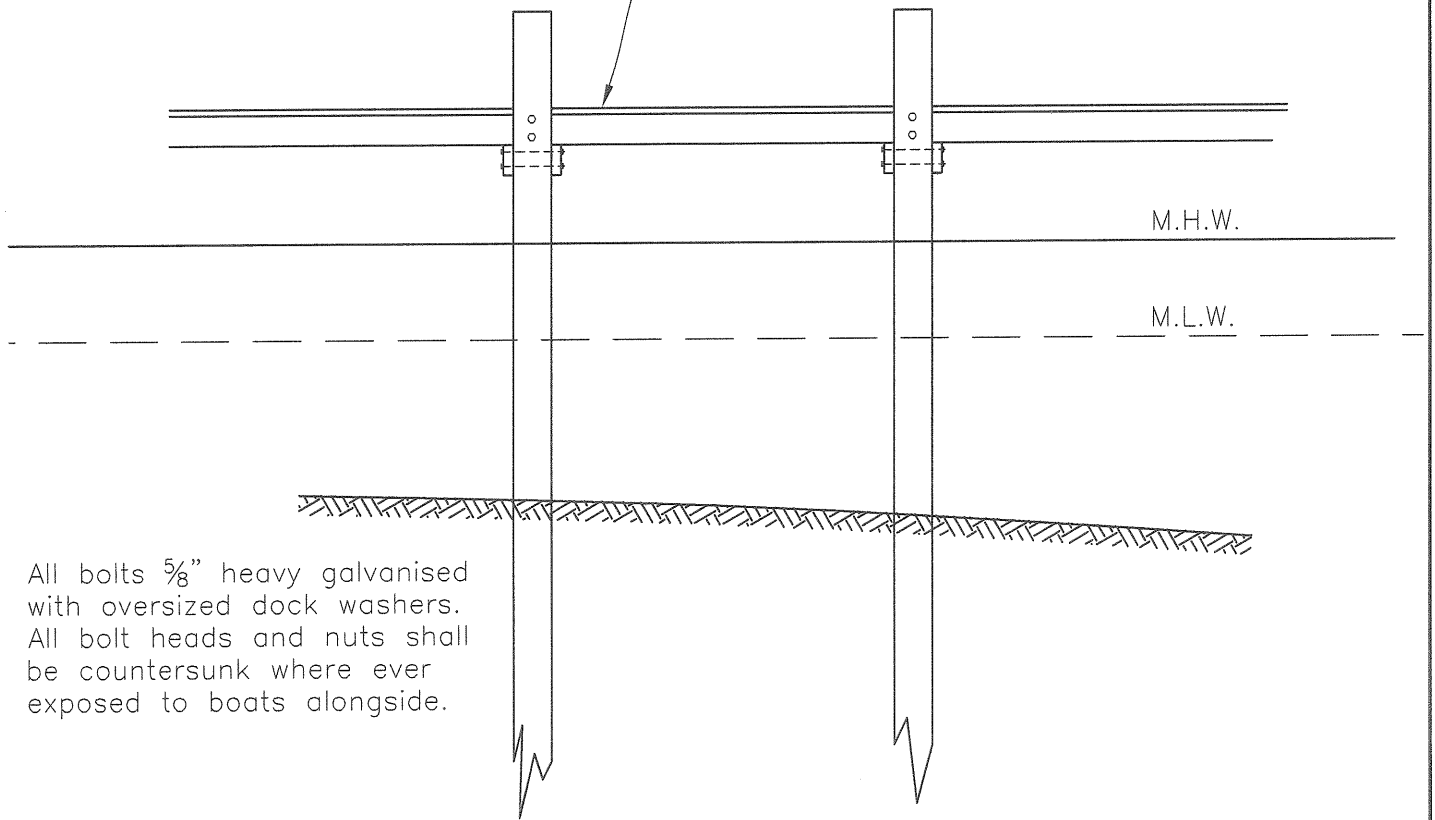


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Lake Street Pier in Tashmoo Pond
Recommended Repair Specifications.

The decking shall be 2X6"
(nominal) pressure treated ACQ
0.60 fastened with 3½" stainless
steel deck screws



All bolts 5/8" heavy galvanised
with oversized dock washers.
All bolt heads and nuts shall
be countersunk where ever
exposed to boats alongside.

All Stringers, Headers,
Etc. shall be 3"X10"
(nominal) pressure
treated ACQ 0.60 timbers
and stringers

Pier Plan in
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Prepared for
The Tisbury Harbormaster
Scale 1" = 4'
March 21, 2016

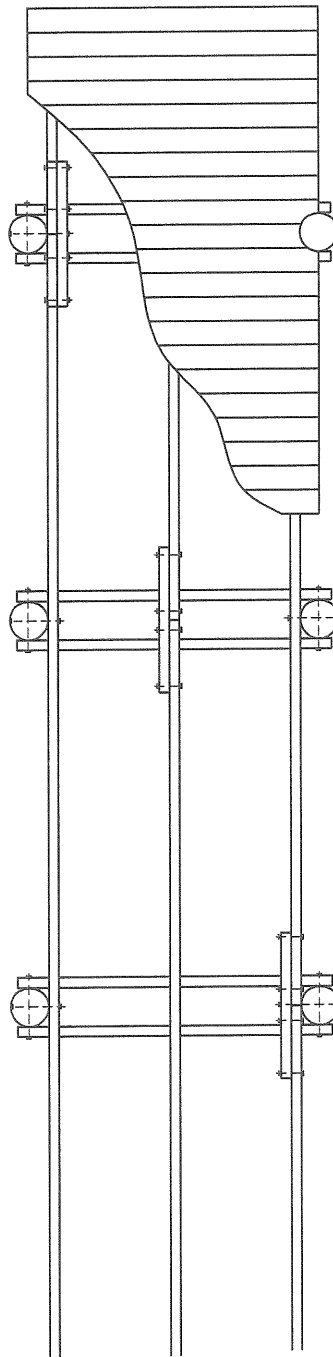


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Lake Street Pier in Tashmoo Pond
Recommended Repair Specifications.

Joints of the stringers must land on a bent and have a minimum of a 3 ft. splice block bolted with a minimum of 2 bolts into each stringer. There shall be no joints or splices in the span between bents.



The decking shall be 2X6" (nominal) pressure treated ACQ 0.60 fastened with 3½" stainless steel deck screws

All Stringers, Headers, Etc. shall be 3"X10" (nominal) pressure treated ACQ 0.60 timbers and stringers

All bolts ⅝" heavy galvanised with oversized dock washers. All bolt heads and nuts shall be countersunk where ever exposed to boats alongside.

Pier Plan in
Tisbury, Mass.

Prepared for
The Tisbury Harbormaster

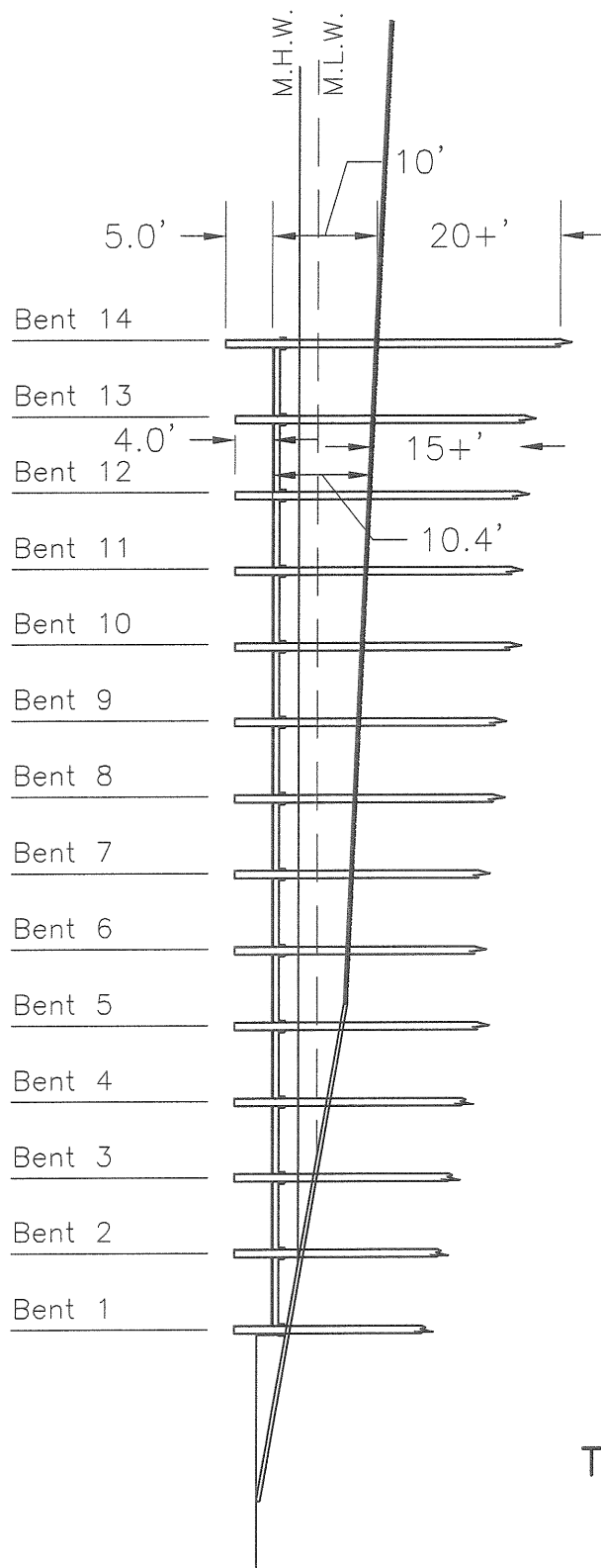
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Recommended Repair Specifications.



Piles at Bents 1-13 shall be cut off 4 ft. above the deck elevation. Piles at Bent 14 shall be cut off 5 ft. above the deck elevation. The top of each pile shall be banded with a stainless steel band to prevent splitting.

Greenheart Piles
Bents 1-8 to be 8" minimum at the but and have a minimum of 15 ft. embedment.
Bents 8-13 to be 10" minimum at the but and have a minimum of 15 ft. of embedment.
Bent 14 to be 12" minimum at the but and have a minimum of 20 ft. of embedment.

Pier Plan in
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Scale 1" = 20'
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