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April 22, 2008

Wayne Rust
State of Delaware
Division of Parks & Recreation
89 Kings Highway
Dover, DE 19901

RE: WO# D4932.00
Cape Henlopen State Park Fishing Pier
April 2008 Review
Lewes, Delaware

Dear Wayne:

In accordance with our proposal dated March 7, 2008, we have performed a cursory visual review of the existing Cape Henlopen State Park Fishing Pier in Lewes, Delaware. This review was prompted by concerns over the condition of the existing timber piling. Our services to date on this project have included visual observations of the piling under the area of the pier currently open to the public and a brief observation of the middle and T-head areas. Additional services to date include reports dated August 2006 & May 2007, which are attached for reference.

The purpose of this review and report is to identify those piling on the inner portion of the pier which may have experienced deterioration subsequent to the review in August 2006.

Below are our findings and recommendations to date:

1. We have identified 43 additional piling on the inner portion of the pier which have little or no capacity for gravity or lateral loads. We note that the inner portion of the pier contains approximately 600 piling. The August 2006 review identified 131 piling, 10 of which were repaired. The current total number of piling with little or no load carrying capacity in the inner section is 164.
2. Of the 164 piling mentioned above, 18 are identified as requiring immediate repair in order to keep the entire inner portion of the pier open. The piling locations are noted on attached drawings S1 & S2. The recommended repair is identical to the previous repair (fiberglass jacket/epoxy grout) and the repair detail is attached on drawing S3.
3. Prior to the repair of the 18 piling identified on drawings S1 & S2, we recommend closing the areas of pier near the 18 piling until repairs are complete. The proposed

areas of closure will allow the public to access the pier out to the existing fence at Bent #89. We have identified these areas on drawings S1 & S2.

4. We recommend that the SPI-Pharma crane remain landward of Bent 28 until the 18 piling are repaired.

5. It should be noted that given the apparent rapid deterioration of the piling, additional piling will require repairs in the future. We recommend continued monitoring of the pier, and repairs as necessary, in order for the inner pier sections to remain open.

6. We made brief cursory observations of the middle and T-head sections of the pier, although we have not made detailed observations to identify the quantity and locations of unacceptable piling. In our opinion, detailed observations are not warranted due to the overwhelming number of deteriorated piling visible by casual observation.

Due to the significant quantity of piling that are damaged on the outer sections of the pier, particularly under the west T-head, collapse of this section under dead load alone cannot be ruled out. A strong coastal storm and/or ice will subject the pier to increased risk of collapse. We understand that the west T-head will be demolished; however, we suggest consideration for the possibility that partial collapse may occur prior to the planned demolition.

7. Given the potential for a collapse, we recommend that a section of the narrow walkway be removed as part of the short-term repairs indicated in Item #2 above. This will reduce the opportunity for someone to access the outer sections of the pier, and will also reduce the risk of any type of failure affecting the open sections of pier.

8. During a strong coastal storm and/or ice floes present in the bay, we recommend that the entire pier be closed.

9. Currently the pier is open to the public on a short-term basis with a maximum allowable live load of 50 psf, with the understanding that the condition of the piling must be monitored on a regular and frequent basis. Accordingly, we recommend the following:

- A. Limit live loads to 50 PSF.
- B. Perform the repairs required (Ref May 2007 report) to bring the pier up to a 100 PSF live load capacity at your earliest convenience.

10. For your long-term planning purposes, we suggest you use this report in conjunction with our report dated May 2007.



We trust this letter report fulfills your needs at this time. Please call if you have any questions, or if additional discussion is required.

Respectfully submitted,

BAKER, INGRAM & ASSOCIATES

A handwritten signature in black ink, appearing to read 'F. M. Young', with a long horizontal stroke extending to the right.

Frank M. Young, P.E.

FMY/aml

Attachments: Drawings: S1, S2, & S3
Reports dated Aug 2006 & May 2007
Letter re: SPI-Pharma crane October 2007

