

PRESERVATIVE TREATMENTS FOR TIMBER PILING
First Progress Report

B. W. Pocock

Research Laboratory Division
Office of Testing and Research
Research Project R-61 NM-38
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Michigan State Highway Department
John C. Mackie, Commissioner
Lansing, November 1962

PRESERVATIVE TREATMENTS FOR TIMBER PILING

At the April 6, 1961, meeting of the Committee for Investigation of New Materials pentachlorophenol treatment of timber piles was brought up for consideration at the request of the Dow Chemical Company. Pentachlorophenol treatments of guard posts had been permitted for some time in Department specifications, but there had been some doubt as to its effectiveness as a heavy duty preservative treatment in a more rigorous exposure. It was decided by the Committee that a trial installation should be made to test the relative effectiveness of pentachlorophenol and creosote as preservatives for timber piling. The original site chosen for the installation was in the Saginaw river, where fluctuation in the water level would permit effective inspection of the piles at frequent intervals. The site was changed later to the St. Clair area when it was learned that the pentachlorophenol-treated piles could not be obtained in time for the construction at Saginaw.

In the meantime, another wood preservative called Boliden Salts was submitted by the TaCo Corporation for Department approval. This request was referred to the Committee by J. E. Meyer and considered at the meeting of July 11, 1961. The Committee instructed the Research Laboratory Division to study the material and report their findings. After examination of available evidence, chiefly from tests by the Forest Pro-

ducts Laboratory of the United States Department of Agriculture at Madison, Wisconsin, a recommendation was made to permit Boliden Salts as an alternate treatment for guard posts. At the same time the Committee recommended that this treatment also be included in the timber piling installation for comparison with creosote and pentachlorophenol.

Actual installation of the timber piling last summer included a fourth preservative treatment, Osmosalts, which was added to the test project by the Bridge Construction Division. This material is permitted for treating guardposts but not piling. Both Boliden Salts and Osmosalts are water-borne preservatives; pentachlorophenol is used in mineral oil solution.

As shown in the attached plan for B02 of 77052, C5, six pile clusters treated with these materials were driven in the Pine River adjacent to the M 29 bridge in St. Clair. Installation of the piles was completed August 29, 1962. The prime contractor was the K. G. Marks Construction Company. The treated piling was supplied by Biewer of Port Huron.

Periodic inspections of all piles will be made, including appropriate photographs, until sufficient evidence has been obtained to judge the relative effectiveness of the various treatments. Figures 1 through 8 show the appearance of the pile clusters on August 29, 1962. Subsequent photographs will be compared with these to show the condition at later dates in relation to the original condition.



Figure 1. Three of six new pile clusters near M 29 bridge over Pine River, St. Clair. View facing northwest showing piles treated with creosote (Nos. 1 and 2) and Osmosalts (No. 3).

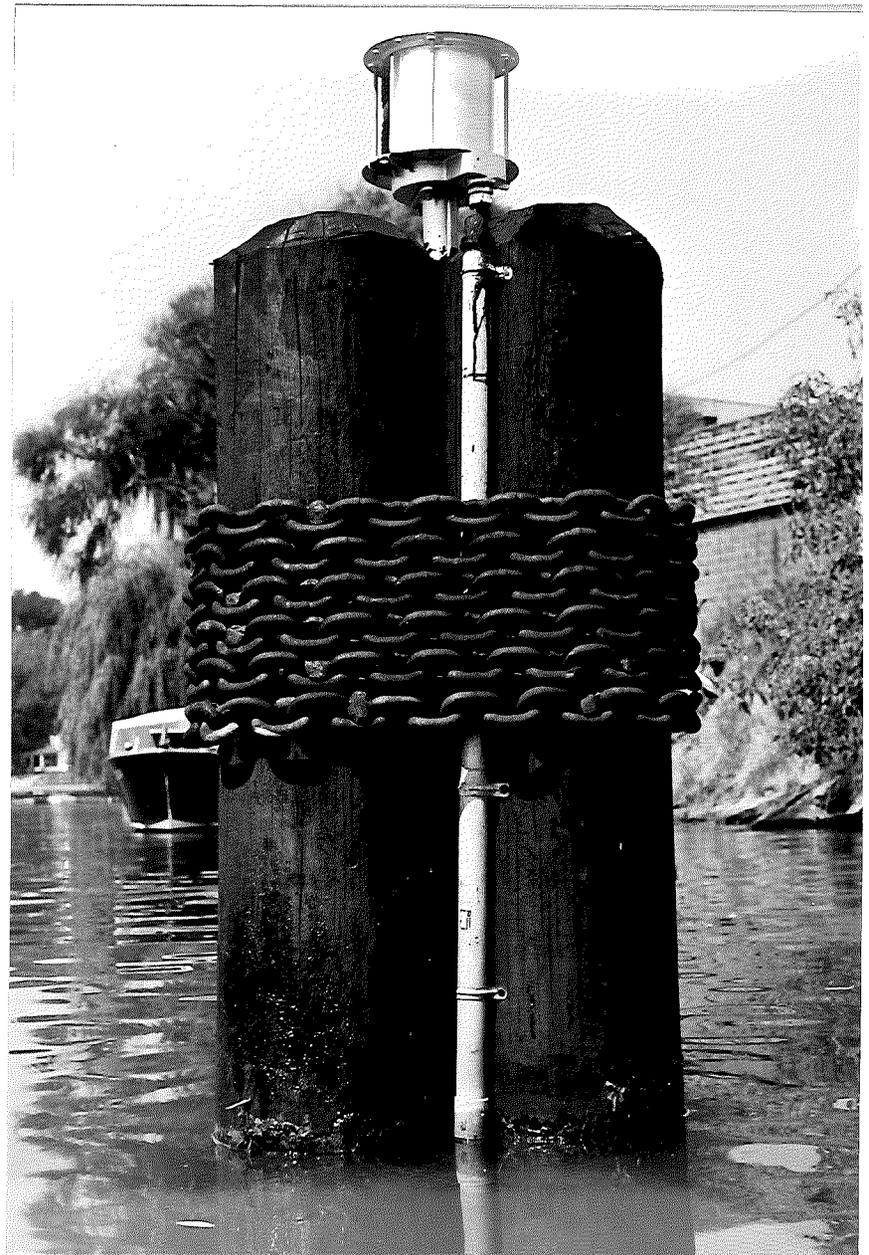


Figure 2. Pile cluster 1, treated with creosote, viewed facing north (left) and northwest (right).

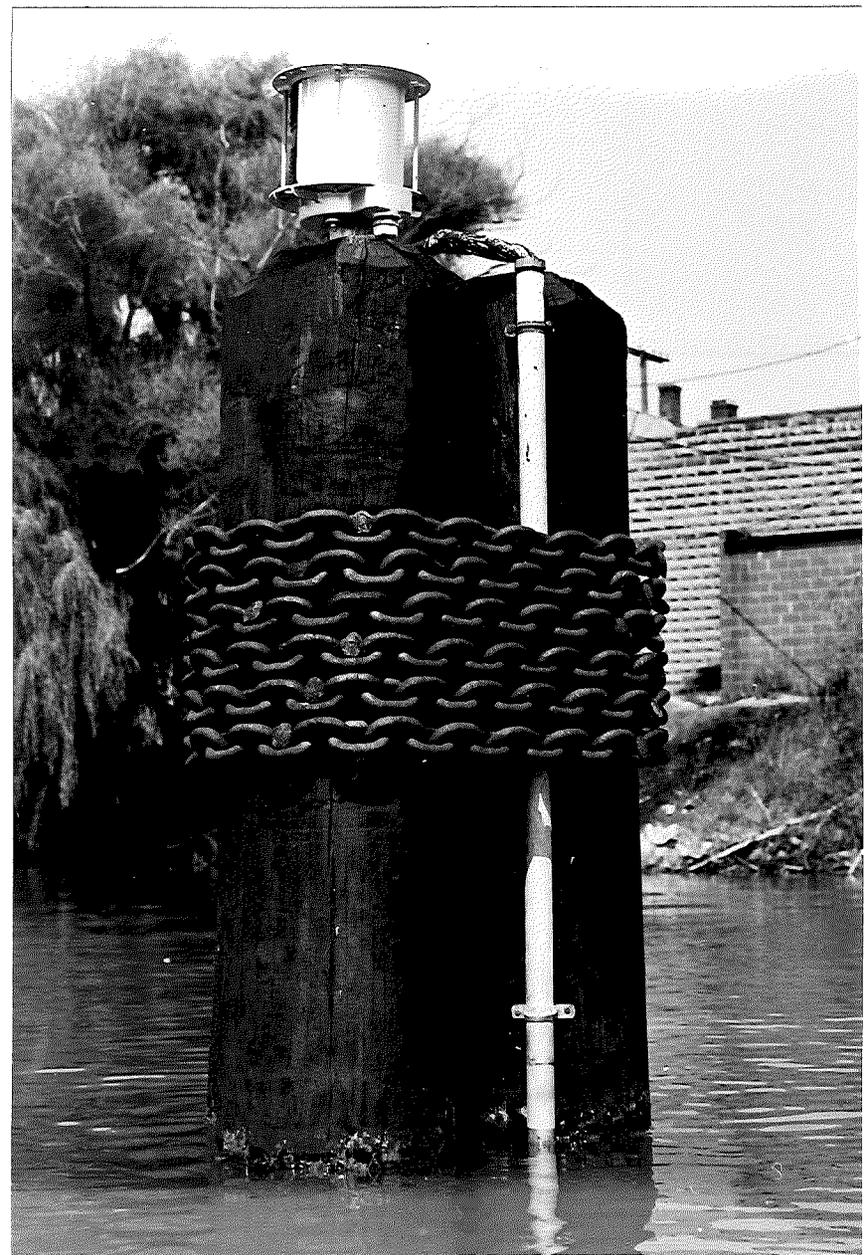


Figure 3. Pile cluster 2, treated with creosote, viewed facing north (left) and northwest (right).



Figure 4. Pile cluster 3, treated with Osmosalts, viewed facing northwest (left) and northeast (right).

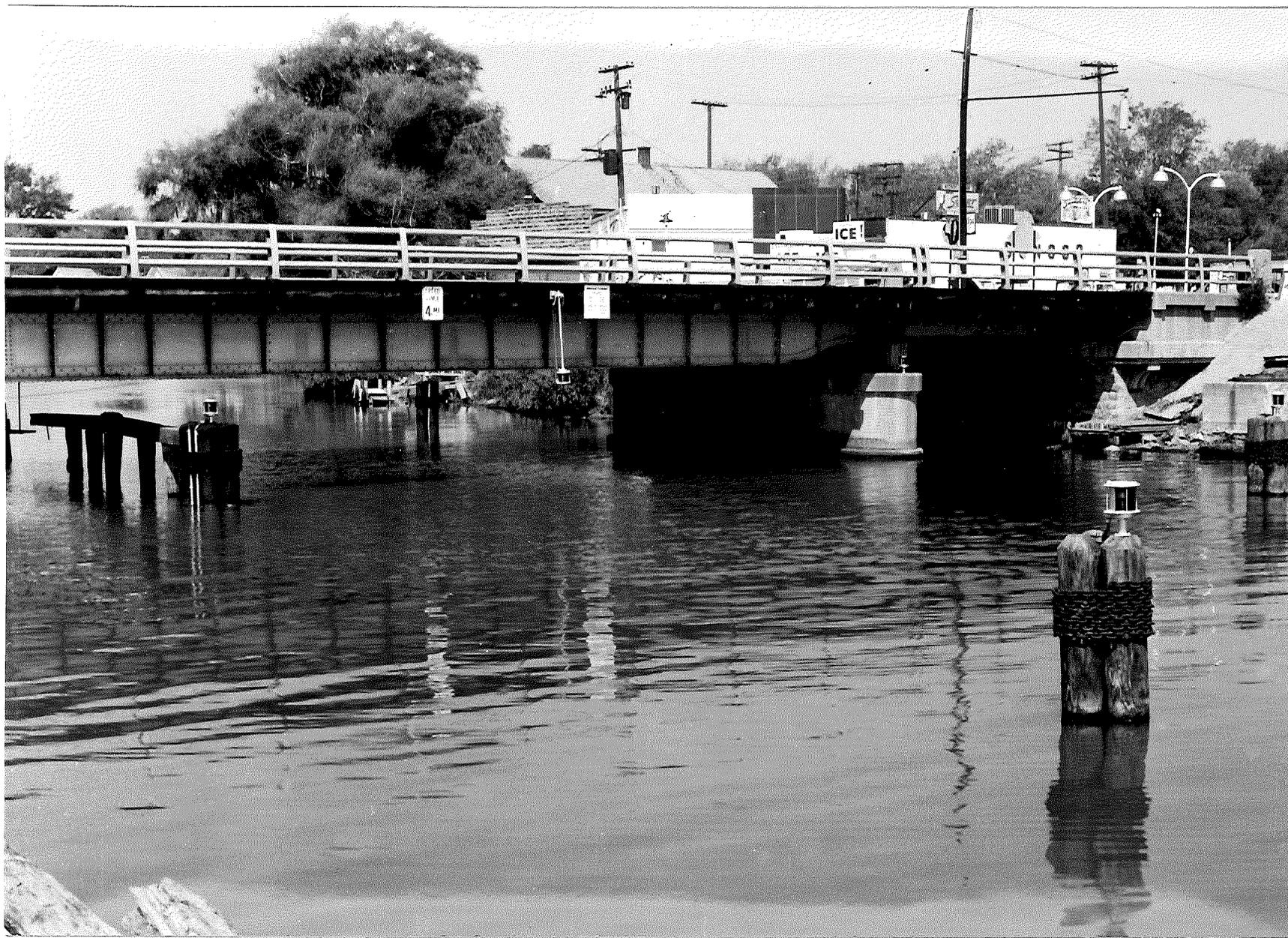


Figure 5. Three of six new pile clusters near M 29 bridge over Pine River, St. Clair. View facing northwest showing piles treated with pentachlorophenol (No. 4) and Boliden salts (Nos. 5 and 6).

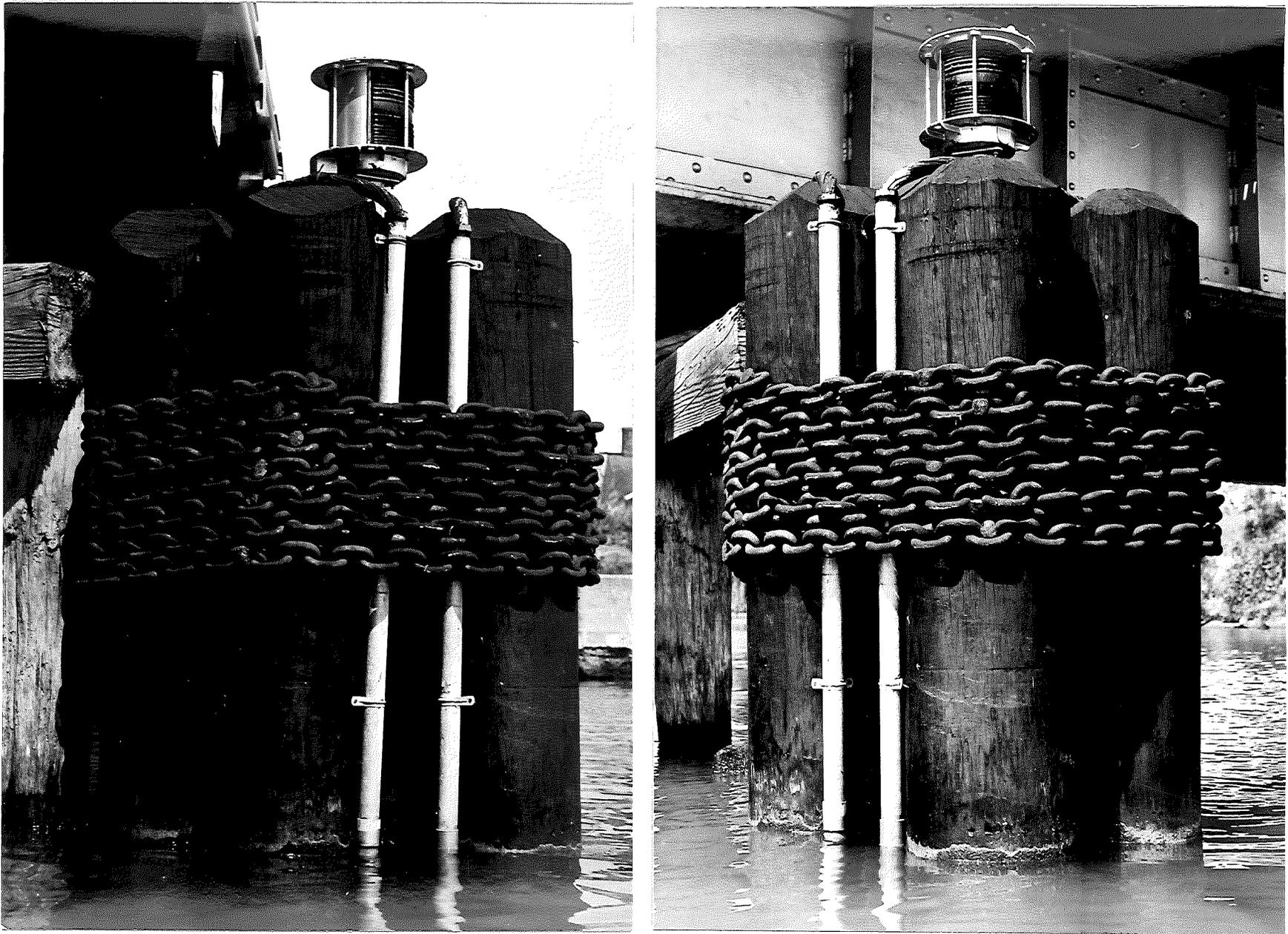


Figure 6. Pile cluster 4, treated with pentachlorophenol, viewed facing north (left) and west-northwest (right).

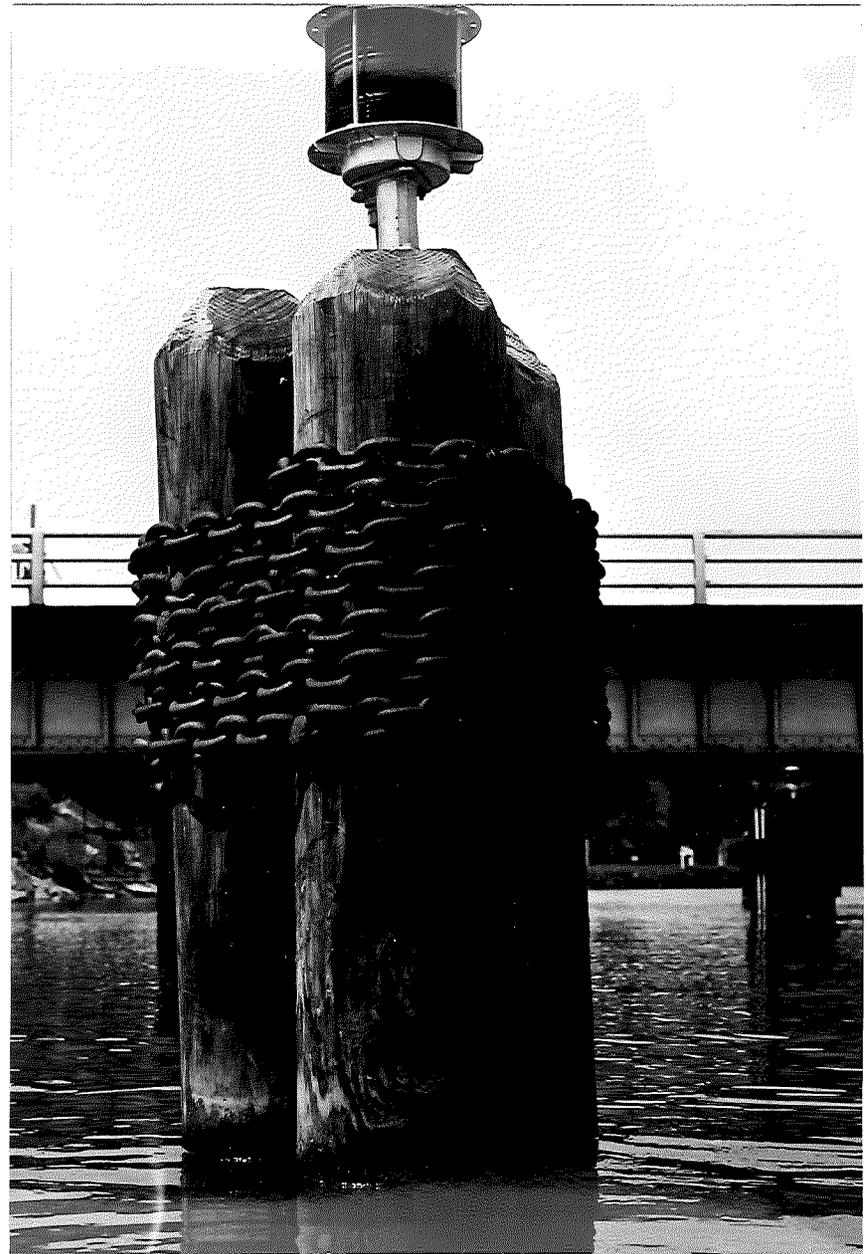


Figure 7. Pile cluster 5, treated with Boliden salts, viewed facing north (left) and west (right).

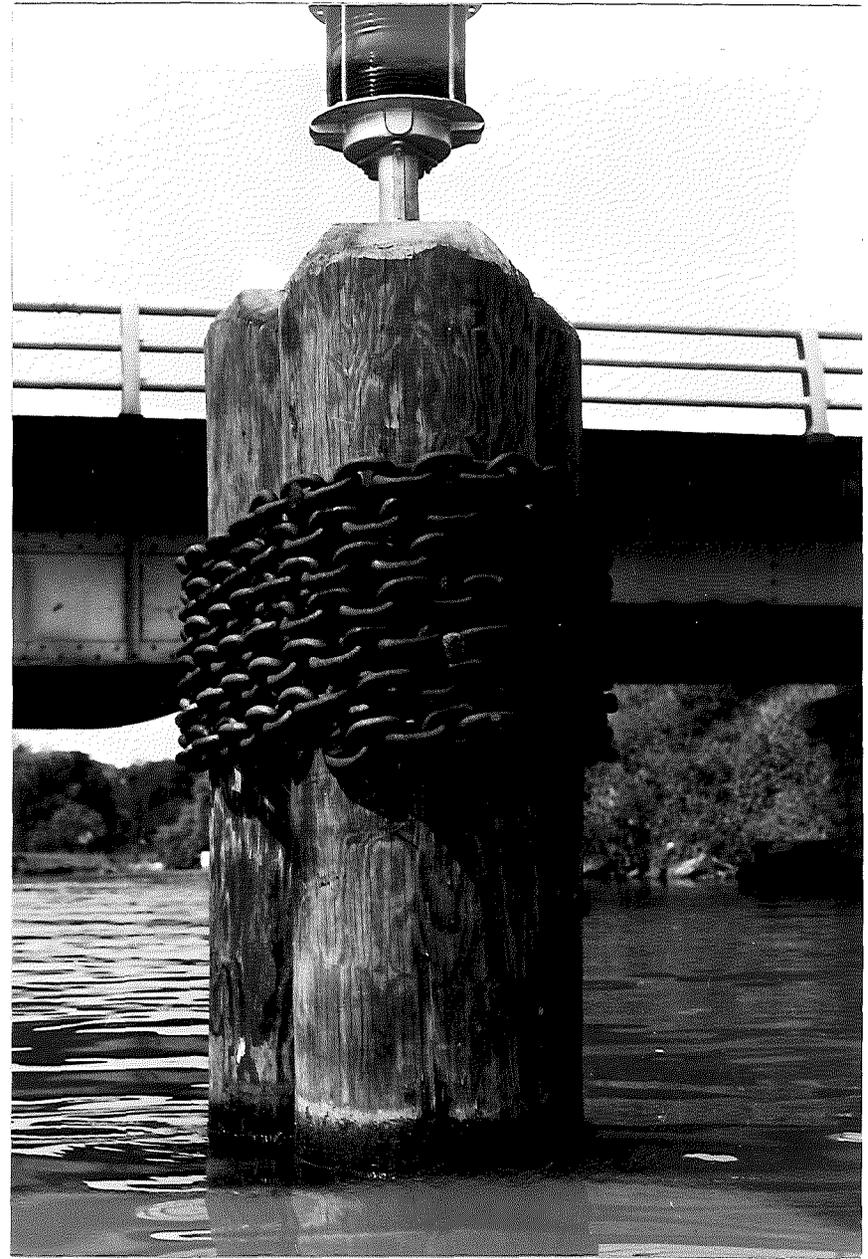
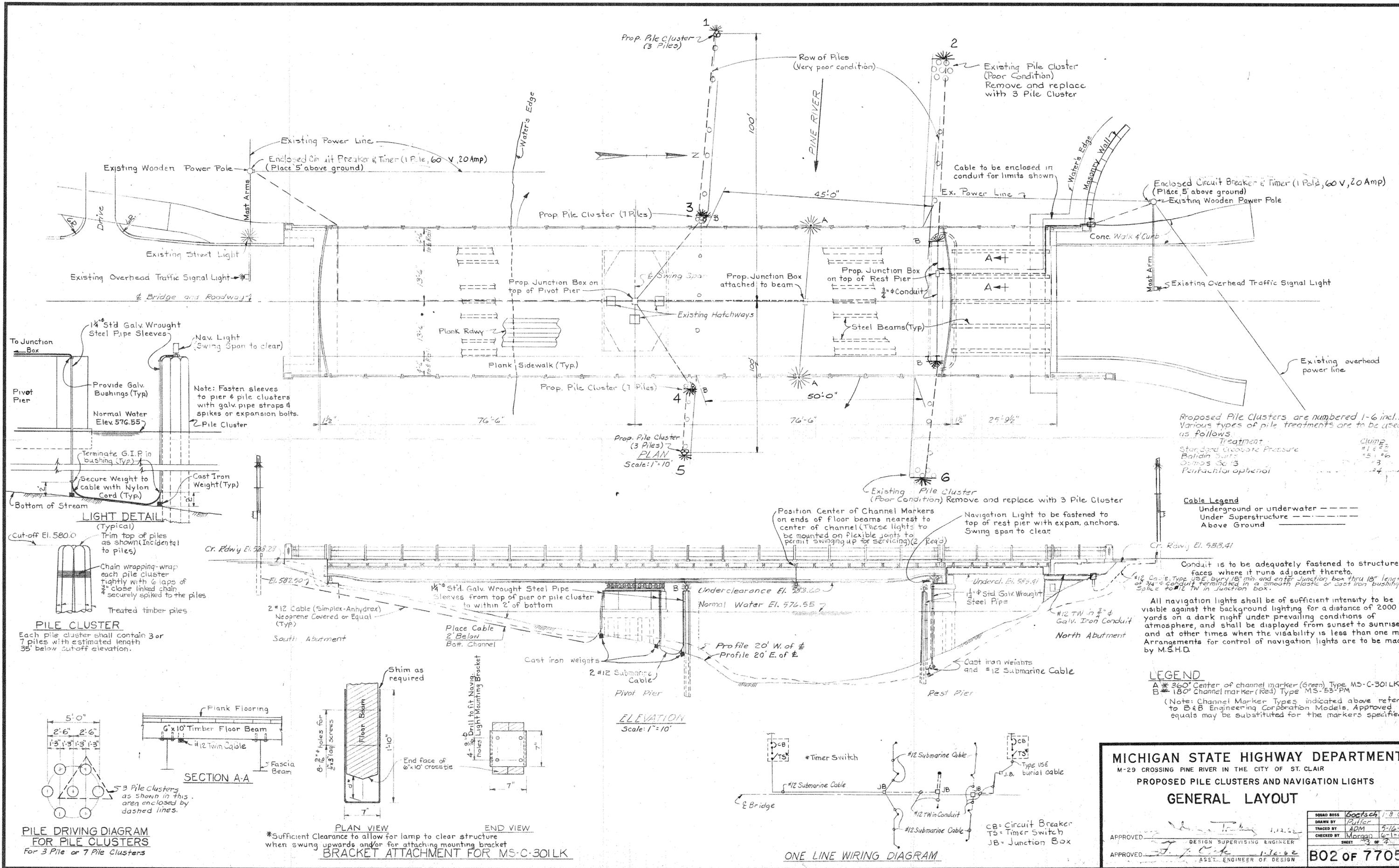


Figure 8. Pile cluster 6, treated with Boliden salts, viewed facing north (left) and west (right).



MICHIGAN STATE HIGHWAY DEPARTMENT
 M-29 CROSSING PINE RIVER IN THE CITY OF ST. CLAIR
PROPOSED PILE CLUSTERS AND NAVIGATION LIGHTS
GENERAL LAYOUT

APPROVED: *[Signature]* 11.12.62
 DESIGN SUPERVISING ENGINEER

APPROVED: *[Signature]* 11.12.62
 ASST. ENGINEER OF DESIGN

TRACED BY: ADM 5-16-61
 CHECKED BY: Morgan 6-1-61

SHEET 3 OF 4

B02 OF 7705205