

Oklahoma Department of Transportation

To Assistant Director - Operations
From Bridge Engineer
Subject Specifications for Painting Piling

Date August 3, 1999
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AUG 04 1999

CONSTRUCTION
DIVISION

This memo is in response to our meeting on the specifications for painting piling. The Bridge Division is concerned about the durability of piling used in pile bents and placed in potentially corrosive environments. In order to improve the durability, we are requiring the application of paint to the upper part of the piling. During the meeting, Mr. Behne questioned the amount of time required for the Coal Tar Epoxy to cure after the pile has been painted at a welded field splice. Cure times vary with different products, but a minimum of 48 hour cure time is recommended for handling and seven days is required for a complete cure. Cure times can be speeded up with the addition of heat.

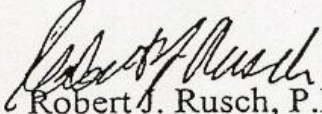
We contacted paint companies and asked them if there was an alternate product with extremely quick cure times which could be used for painting field splices. The product would have to resist the abrasive forces of piling driving, perform as good as or better than the coal tar epoxy, and be user friendly to Contractor application. We were not able to find such a product.

Our recommendation is that contractors make every effort to avoid splicing the pile in the region that requires paint. In most cases the region requiring paint will never exceed 50'. This will require careful planning on the part of the Contractor. They will need to determine the length of painted pile, splice a section of pile equal to or greater than that length, and apply the coal tar epoxy paint prior to pile driving. Since we have extended the paint requirement 5' below the computed scour line, we have built in a driving tolerance of 5' for piles that drive too short and 10' to 15', depending on the elevation of the ground line, for piles that drive too long. The portion, which is exposed above the ground line for the piles that drive too long, would be painted with the inorganic zinc - epoxy - urethane (IZ - E - U) paint system after pile driving.

As an alternate to painting the piling below the ground line, the Contractor may elect to encase the piling in concrete as shown in the attached sketch and use the IZ-E-U paint system above the concrete encasement. If the Contractor chooses this option, he will be required to use an inhibitor in his concrete mix.

Our goal is to design bridges that have a 75-year design life with little or no maintenance. The addition of these paints and / or the concrete encasement will extend the life of our pile bents.

If you have any questions, please give me or Walt Peters a call at (405) 521-2606.

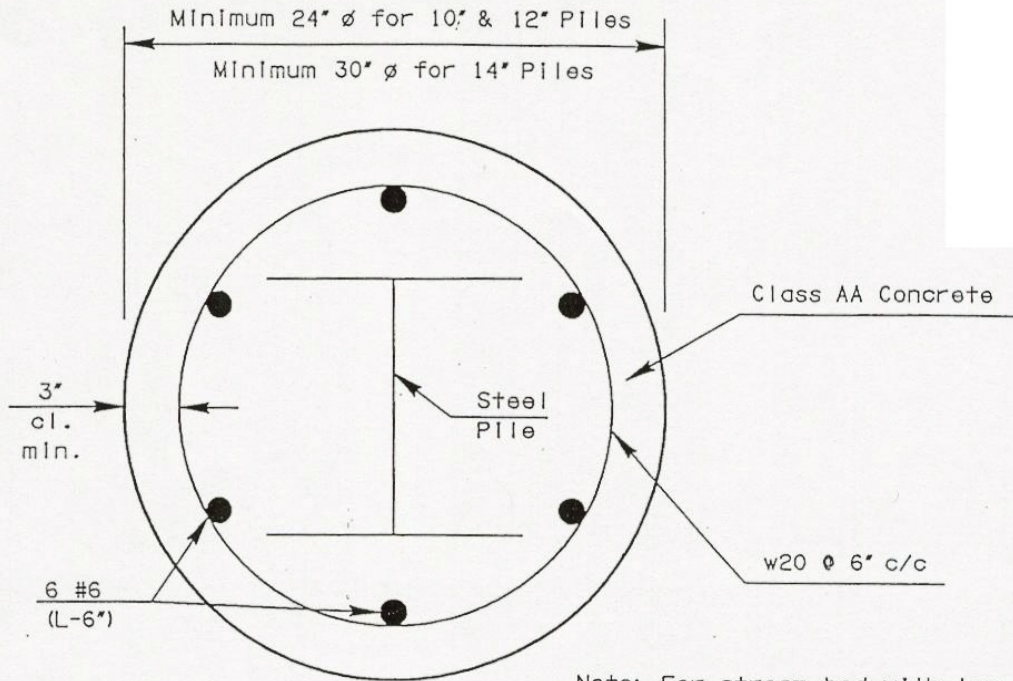

Robert J. Rusch, P.E.
Bridge Engineer

RJR/wp

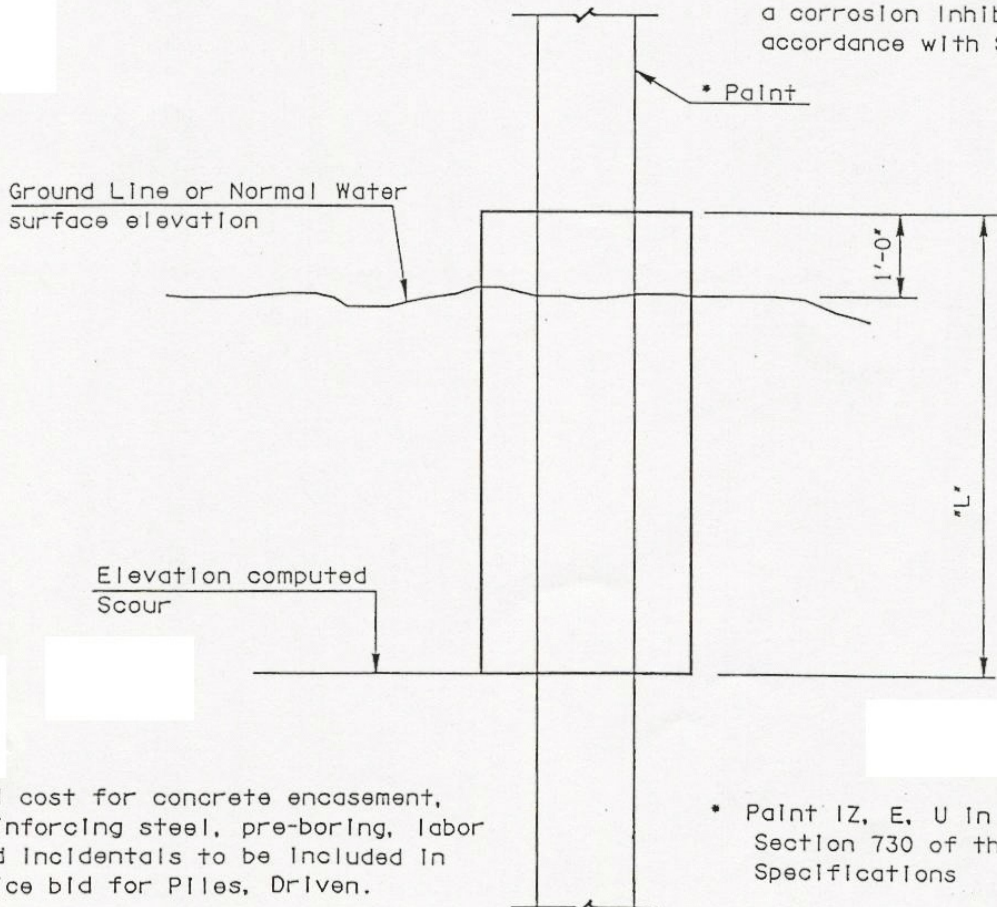
Attachment

cc: Chief Engineer
Assistant Director - Preconstruction
Construction Engineer
Assistant Bridge Engineers
Construction Coordinator

CONCRETE ENCASEMENT OF PILING



Note: For stream bed with low chlorides and high sulfates $SO_4 \geq 1500$ ppm use Type V cement, provide a corrosion inhibiting Admixture in accordance with Section 509.02(c) 5.2



All cost for concrete encasement, reinforcing steel, pre-boring, labor and incidentals to be included in price bid for Piles, Driven.

* Paint IZ, E, U in accordance with Section 730 of the Standard Specifications

