

From Brenda O'Brien, Engineer of Construction and Technology

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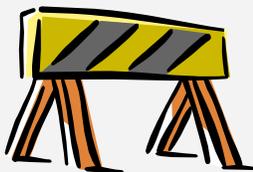
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Questions regarding this
Construction Advisory should
be directed to:

Eric Burns, Bridge
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Or

Peter Jansson, Structural
Fabrication Engineer, at
517-322-5709 or
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BJO:EB

Welding of Pile Splices

This construction advisory serves as a reminder to review the plans and the proposal for welding pile splices. Field observations have noted that pile splices are not being constructed as shown on the plans or as noted in 707.03.D.8.b, c, and d of the *2003 Standard Specifications for Construction* as amended by the Special Provision for Foundation Piling Splices.

Welding issues noted in the field have included welders and contractors without welder certifications available at the job site, or welders working out of position from their certification, which conflicts with 707.03.D.8.d. of the standard specifications

There were also issues with welds not meeting the welding requirements per 707.03.D.8.b. This includes welders not removing the slag from their welds, improper grinding, piles that had a poor fit up, and misalignment of the pile sections. There were a considerable number of welds that did not meet American Welding Society (AWS) Code for visual inspection such as arc strikes, cold lap, undercut, and underfill.

Some welders were not aware of the weld requirements such as weld lengths, locations, weld size, weld type, and root preparation including back gouging of the welds.

There were also issues with improper storage of low hydrogen (E-7018) welding rods according to 707.03.D.8.b of the standard specifications, such as leaving weld rods out for more than two hours, open partially used cans of welding rod on site, hot boxes with the tops left open, welding in the rain, welding on wet steel, welding rods sitting on the ground, hot boxes not plugged in overnight, hot boxes not plugged in during work or generators not running.

Include documentation of poor welds and the welder who performed the welds on Form 1122B, Inspector's Daily Report (IDR). Attach photos as necessary. Most welds can be accepted or rejected based on visual inspection conducted during and after welding. If there is question as to the acceptability of a finished weld, non-destructive testing can be performed to verify.

Contact Peter Jansson at 517-322-5709 or Brion Klopff at 517-204-6701 of C & T Structural Fabrication Unit, or Eric Burns, 517-322-6331 of C & T Bridge Construction Unit for questions regarding inspection or testing of pile welds.