4501205 PRECAST PRESTRESSED CONCRETE CONSTRUCTION
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comment: (1-2-14)
The only thing I see here is there is much more length allowed for round piles than Square is that intended?
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Response:

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Miles Zeman
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Comment: (1-10-14)
I've made alterations (highlighted) to the 450-12 specification which I believe will address the issue of cracks in poles. As poles are so very similar in construction to piles, the changes are only a few words in the entirety of the text, but should make all the difference. This option is simple, effective, and requires only minor adjustments to the existing specification.
In anticipation of potential arguments against this option, I'll point out that A) while poles are above ground for much of their length, piles typically carry a much greater load; B) both piles and poles have a portion that's buried, and a portion that's exposed to the air; and C) end zones are not currently defined for either piles or poles.

1.

450-12.3.1 Pile and Pole Ends: Make square pile or pole ends which are outside this Section's tolerances by grinding in accordance with 450-13.7, or any other means of removal as approved by the Engineer. Reshape the pile chamfer if more than 0.25 inch from the cast pile end is removed and such removal affects the chamfer dimension.

Response:

2.

450-12.5 Cracks: A crack is the separation of a product or portion thereof which may appear before or after de tensioning and may or may not cause separation throughout the product thickness or depth. Identify cracks by the classifications and locations described below and subject them to the disposition required by the identified crack. If the total surface length of all cracks within a single product, regardless of width, located between the end zones exceeds one-quarter of the product's length, an engineering evaluation and disposition in accordance with 450-14 is required. Establish crack sizes subsequent to release of all pre-tensioning forces.

The Engineer will reject any pile or pole that is cracked to the point that a transverse or longitudinal crack extends through the pile or pole, shows failure of the concrete as indicated by spalling of concrete on the main body of the pile or pole adjacent to the crack, or which in the opinion of the

Engineer will not withstand pile driving stresses. Occasional hairline surface cracking caused by shrinkage or tensile stress in the concrete from handling will not be cause for rejection.

Response:

3.

450-12.5.1 Classification and Treatment of Cracks: Regardless of cause and for the purposes of Section 450, cracks in precast pre stressed components, excluding piling and poles, will be identified according to their surface appearance…

Response:

4.

450-12.5.3 Non-critical Locations of Cracks by Product Type:

450-12.5.3.1 Piles or Poles: Surface cracks in any direction and of a length not exceeding twice the width of the pile, or the pole at the butt end.

Response:

I believe the solution outlined herein is the best from both a production and quality control standpoint. However, should FDOT personnel object to the proposed changes, then the earlier missive (included below) applies. The existing proposal espoused by the FDOT is fraught with issues, and needs heavy revision should that route be chosen. In fact, if the aforementioned changes are denied, I would suggest a more drastic modification to the 450-12 specification to address the real problem, namely, that poles were never included in the 450 specification.

Response:

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