Rudy/Deborah - Please withdraw my request to modify 400-1: apparently the current version is satisfactory and I was mistaken in thinking that it needed improvement. All the comments below that deal with 400-1 are no longer relevant since I am no longer asking for it to be changed so I will not be providing a response.

From the Specifications Office: All changes to Subarticle 400-1 will be removed.

4000713 (formerly 4000100) CONCRETE STRUCTURES
COMMENTS FROM INDUSTRY REVIEW

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Sherman Johnson
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Comment:
I think that under spec 400-21.3 some mention should be made to width of the crack. If it is not consequential, then that should be stated. Also, for consistency throughout the state, the type of tool(s) to measure the crack should be specified.

Response: Disagree - If a crack is only 1/2" deep (non-structural) its width, within reason, is not important so it does not influence whether or not it is nonstructural or not since it does not even extend to a point close to the first mat of rebar. Cracks more than 1/2" are structural and require a rigorous process than automatically requires that the width be measured.
From the Specifications Office: No changes made.

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Keith Waugh
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Comments:
I agree with changes made to 400-1 through 400-15.2.5.5. Thank you. Under 400-21.2 I foresee problems when crack investigation is to be performed "after the bridge has been opened to full unrestricted traffic" but "before transverse grooves are cut and after planing is complete". First, for safety and liability concerns, the deck should be grooved prior to opening to traffic. Second, planing and grooving are generally performed by the same specialty subcontractor. Waiting between planing and grooving will cause additional mobilization and maitenance of traffic costs. Third, crack investigation prior to traffic provides information on the quality of construction, investigation after traffic would provide information on the design.

Response: The intent of the spec is to require crack inspection of all components after full dead load is applied to the bridge including the deck. Decks are to be inspected for full dead load prior to any public traffic and before grooving and again after full public traffic loads (live loads) are applied. Small cracks are very difficult to see after grooves are cut so unless the current procedure proves to be excessively expensive it is needed in order to be able to see all the cracks that exist.

From the Specifications Office: No changes made.

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Ghulam Mujtaba
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Comments:
In Subarticle 400-15.2.5.1, the proposed specification instructs the Contractor to see the plans. But, it does not specify that what should be done after seeing the plans. I recommend the following modifications: When an existing bridge deck is widened, meet the finish and smoothness requirements of the existing bridge deck and its new widened section in accordance with the project plans

Response: Disagree – Contractors understand that “see the plans” means to get their instructions about smoothness requirements from the plans which they will have to comply with.
From the Specifications Office: No changes made.

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Scott Arnold
D7 Structures
813-975-6136

Comments:
The revision to the second paragraph of 400-1 seems to imply that Section 400 no longer applies to precast prestressed concrete construction at all. This is not the case since 450-12 refers to 400-21 for disposition of concrete cracks, and 400-18.6 addresses Setting Prestressed Slabs.

Response: Spec change withdrawn
From the Specifications Office: All changes to Subarticle 400-1 will be removed.

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Guy Padgett
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Comments:
400-1Description. Construct concrete structures and other concrete members, with the exception of structural concrete members covered under the Incidental Construction sections.incidental concrete construction (which are specified in other Sections). Shore, form, place, finish and cure cast-in-place concrete members and support, erect, stabilize and brace precast and/or prestressed members in accordance with the provisions of this Section. The first sentence of the proposed change is incomplete. It does not mention how the structures should be constructed. Also, it excludes concrete components of section 521,534 and 548, which are required to be constructed in accordance with this section. The following are my recommended changes: 400-1 Description.

Construct concrete structures, concrete members, and concrete components of Sections 521, 534 and 548 in accordance with this Section.

Response: Spec change withdrawn
From the Specifications Office: All changes to Subarticle 400-1 will be removed.

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Katie Bettman
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Comments:
1. The first sentence isn't a complete sentence. It is also confusing. It seems to contradict whether Section 400 can be applied to Incidental concrete or not.
2. Materials Manual 8.2 - MANUFACTURED INCIDENTAL PRECAST/PRESTRESSED CONCRETE PRODUCTS references Section 400 for form condition, concrete placement operations, and concrete curing. The second sentence indicates that these sections in 400 are for cast-in-place concrete members.
3. The second sentence also indicates that certain elements of construction for prestressed members will be in accordance with Section 400. The first sentence of the next paragraph says to refer to 450. Sections of 450 also reference 400. Why limit prestressed members to sections of 400 involving only the areas mentioned - support, erect, stabilize and brace?

Response: Spec change withdrawn
From the Specifications Office: All changes to Subarticle 400-1 will be removed.

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Greg Vickery
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Comments:
400-21.2 Investigation, Documentation and Monitoring: The Engineer will inspect concrete surfaces as soon as surfaces are fully visible after casting, with the exception of surfaces of precast concrete products produced in offsite plants, we agree with all revisions except those mentioned before this section in red. Some precast products may exhibit cracks after full dead loading - they should be inspected.

Response: When read carefully it can be seen that the provision says that precast products are supposed to be inspected by the Engineer once in place on the project and after full dead is applied and then after full live load is applied. Precast products are exempt from the Engineers inspection only at the precast plant where others perform this function.
From the Specifications Office: No changes made.

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Chris Sweitzer
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Comments:
Proposed 400-1: Does the wording of the last part of the last sentence in the first paragraph conflict with the second paragraph in this section? 450-16.4 mentions requirements for erecting, bracing and stability of precast/prestressed products.

Response: Spec change withdrawn
From the Specifications Office: All changes to Subarticle 400-1 will be removed.

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Ken Zinck
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Comments:

(1) Paul Wabi: My recommendation is to change the verbiage (in 400-15.2.5.1) to "When an existing bridge deck is widened, meet the finish and smoothness requirements of 400-15.2.5.3 and 400-15.2.5.5 for the widened section, unless otherwise specified in the plans".
(2) Tonii Brush: (in 400-1)"Obtain incidental precast products from a plant that is currently on the list of Producers with Accepted Quality Control Programs.">> Comment: Where can the list be found?
(3) Eric Jaggers: (in 400-15.2.5.1) "When an existing bridge deck is widened, see the plans for the finish and smoothness requirements of the existing bridge deck and its new widened section. "What if the existing plans don't identify what the finish and smoothness is suppose to be? I don't really understand the need for this additional wording. It doesn't seem to be necessary it would seem that the section for Surface Finishes would be sufficient."

Response:
(1) Widened bridge decks will never be covered in 400-15 because they are all designed on a case by case basis.
(2) The FDOT State Materials Office website
(3) See response 2

From the Specifications Office: No changes made.

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The following comments are from the Internal Review phase for this revision.

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Charles Boyd
414-4275

Comments:

400-7.13.2 Screed Demonstration: Subsequent to the placement of all reinforcing steel and prior to placing any slab or deck concrete, demonstrate that the proposed equipment and methods can finish the concrete to the specified grades while maintaining the specified cover over the reinforcement.

Provide the demonstration over the entire length and width of the spans to be placed. During the demonstration, load the screed support rails that are cantilevered beyond the fascia girders to simulate the concrete loading that will be placed on the rail support system during actual placement and screeding operations. Submit a written justification to the Engineer, for consideration, if seeking a waiver of the requirement to simulate the concrete loading that will be placed on the rail support system.

Comment: This requirement should be removed from the specification completely if it is being waived or overlooked as a matter of standard practice and the resulting deck surfaces are consistently satisfactory.

Response:
1. Agree, will remove.
From the Specifications Office: Changes made.

400-21.3 Classification of Cracks: The Engineer will classify cracks as either nonstructural or structural and determine the cause. In general, nonstructural cracks are cracks 1/2 inch or less deep from the surface of the concrete; however, the Engineer may determine that a crack greater than 1/2 inch deep is nonstructural. In general, structural cracks are cracks that extend deeper than 1/2 inch. A crack that is fully or partially underwater at any time during its service life will be classified as a structural crack unless the Environment note of the General Notes in the plans categorizes the substructure as slightly aggressive, in which case, the nonstructural crack criteria may apply as determined by the Engineer.

Comment: Why isn't this addressed in the crack width tables? This provision will be used against us more than for us. Structural cracks should be evaluated, and then only if appropriate treated or repaired as non-structural cracks.

Response:
2. It will be addressed in the crack width tables as explained here. The specification currently requires all cracks to be considered structural if they are underwater which requires the Contractor to submit a Request for Correction (RFC) proposing a repair. This request must be prepared by the Contractor's Engineer of Record with consequent administrative effort for both the Contractor and Department. The Department reconsidered the across the board classification of all underwater cracks as structural and concluded that certain cracks (narrow, limited in length, non-critical location) in slightly aggressive environments (noncorrosive fresh water) could be considered non-structural and so with this revision, an RFC will no longer be required if approved by the Engineer. If the crack is classified as nonstructural then the required **correction is addressed in a crack correction table** of specification 400-21.

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Bob Burleson

Comments:
1. 400-5.7.2, 9
I don't like the "If seeking a waiver" and "submit a written proposal". This leaves too much up to a judgment call.
Response: Agree: change will be withdrawn.
From the Specifications Office: Changes made.

2. 400-7.13.2
I have no problem with the dry run process. When a structure has public safety requirements formwork will be submitted showing that the forms are capable of supporting the load and the screed. Therefore, why should a simulated load be applied during the dry run? Again, the "if seeking a waiver" statement allows too much room for unlimited q & a.
Response: Agree: screed rail loading requirement will be deleted.
From the Specifications Office: Changes made.

2. 400-15.2.5.5
Issue 1: Planing equipment can only get within 2' of the gutter. Grooving can get within 18". The smoothness evaluation should be limited to the boundaries that conventional equipment can plane, or 2' from the gutter line.

Issue 2: The minimum planing depth of ¼" should be removed. The specification should be written that the entire area is planed to meet the smoothness requirements. In reality, that's what is done, so why give an opening for argument in the field? The goal is to plane the entire deck and provide smoothness without sacrificing the 2" minimum cover on the steel. This can be accomplished without a minimum depth specified.

Response:
Issue 1 - Agree: will add 2’ limit.
From the Specifications Office: Changes made.

Issue 2 – The 1/4” requirement is valid for several reasons as verified through conversations with grinding subcontractors and others.
1) If less than 1/4” is used then most of the time only high spots will require grinding which leaves other areas un-ground and this results in a final deck surface that has a non-uniform or patchy in appearance.
2) According to grinding subcontractors, it is very difficult to pass the profilograph criteria without a total removal which almost always requires at least ¼’’ removal: a patchy surface almost always fails the test.
3) For long bridges (those over 100’ long) the specification prohibits floating of the surface behind the screed; therefore, numerous depressions as deep as 1/4” will be left after the screed with burlap drag passes. By requiring a minimum of 1/4” removal, almost all significant depressions are removed.
From the Specifications Office: No changes made.

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