Bridge Contractors / Caltrans Liaison Committee Meeting Minutes

Friday, September 20, 2013

TIME: 10 a.m. to 1:30 p.m.

LOCATION: California Department of Transportation
Southern Regional Lab
13970 Victoria Street, Fontana CA

COMMITTEE PURPOSE: *To establish a liaison between Caltrans and the California bridge contracting community focused on structure related items of mutual interest. To maintain an on-going dialogue on pertinent issues and pursue action items in a collaborative effort to improve bridge construction in California.*

COMMITTEE MEMBERS: Industry Members identified by the AGC, SCCA and UCON

MEETING CALLED BY: Rob Stott

TYPE OF MEETING: Committee Meeting

FACILITATORS: Steve Altman

NOTE TAKER: John Babcock

ATTENDEES: See attached list

HANDOUTS PROVIDED: Revisions to Standard Specification Section 50
Falsework Memo C-18, Revisions to Standard Specification Section 48 and 12-7
Draft Design Information Bulletin XX-XX
Friction Coefficient of Concrete Surfaces Testing and Specification update

MINUTES POSTED AT: http://www.dot.ca.gov/hq/esc/construction/br_contractor_outreach/Sept2013/MtgMin.pdf

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#	TOPIC	PRESENTER	PURPOSE
1.	**Welcome and Self Introductions** Group went around the room and introduced themselves and affiliated organization – see attached attendee list (18 contractors, 2 FHWA, and 14 Caltrans attended)	Steve Altman	
2.	**Opening Remarks and purpose for meeting** Challenge to make changes, interested in hearing your concerns. We will update you on progress that has been made on issues brought up in first 2 meetings. Some new things for consideration such as moving quality control to the contractor. Discussion for new issues. Demonstration of simple tests to determine friction if you have a polyester project. Minutes and PowerPoint presentations will be posted.	Rob Stott	Background on past efforts; Current objective
3.	**Prestressing Presentation & Discussion** These changes should bring CT specifications into alignment with the Post	Ken Bocchicchio	Follow up on proposed

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	Tensioning Institute's (PTI) guidelines. Changes to the P/S specs being inserted into project Special Provisions after July 2013. Some of the key changes include: • Grouting plan required, assign to subcontractor as appropriate to ensure it is not overlooked. Demolition of bridges showed a trapping of a small amount of air at the high points. • Theoretical grout volume to ensure there are no leaks in the ducts. • Certification of those performing the grouting. • Grouting report required. • Pressure testing of ducts • Personnel Qualifications • Permanent Grout Caps • Vents – Require three vents to be located at the high point, before the high point, and after the high point. Discussion: Pressure testing of ducts is after stressing. Contractors are allowed to test as much as they desire beforehand. Past occurrences have shown strands tearing through the girder after stressing. Ensures the tendon will be able to be grouted fully and cleanly. Nationally the prestressing industry is concerned with corrosion that was found in Florida and other states. The industry came to CT and have had input on these specification changes. Future work will be to looking at pre-packaged grouts. Are the designers looking at the duct path to ensure they stay within the pour? No, but CT will talk with the designers. Some concern with ensuring the large transverse bars fit at the bent caps. If the duct is leaking, will the tendon have to be detensioned, a safety issue? Depends upon the severity, stress levels. Was the P/S industry involved in the new specification development? Yes the two companies that supply P/S systems on our projects were heavily involved in the review of these specifications. May need to further look at the 50 psi with a 25 psi loss threshold criteria once this becomes implemented to see if it works as intended. Is concrete a good material to stop an air leak? Looking for gross voids in the ducts by visual and audio inspection. Could you test the ducts before forming the stems, it would be easier to find leaks, something that cannot be done with the current duct material.		changes to Sec 50

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	Design may have to look at polypropylene ducts, something that is used in other parts of the country. The industry does not have a value for what is an acceptable amount of pressure loss. There is concern about pull through that would require a modified grouting plan, cracked girders and pull outs. Stacked ducts pose challenges and new details especially for ducts on a radius should alleviate some of this. When tendons tear through ducts it should lead to a project discussion as to what the possible solutions would be. A distance of 1 inch between ducts to allow concrete helps stop crushing of ducts when they are stacked. What if the duct was pressure tested at after soffit/stem, and deck concrete placement? Contractors' determination of risk to determine when would be the best time to pressure test and how many times. CT will discuss with the DES Prestress committee the best time to test that would provide the best quality to CT, after stem/soffit so that you are not tearing through the deck which produces a "patched" deck. The bond between the polypropylene duct and the outside concrete and the inside grout is not well understood by CT. The frictional forces when strand is tensioned are higher in polypropylene duct and do affect P_{jack}. Polypropylene duct is thicker and takes up more space which could affect prestressing layout and therefore P_{jack}. Polypropylene duct is indeed more expensive than metal duct. Send any further proposed changes to the group for comments. High risk climate conditions may require the use of additional requirements including the use of pre-packaged grout.		
4.	**Falsework Presentation & Discussion** • Memo C-18, Sand jacks, provides a definition of failure, removed requirement for lining the pre-authorized sand jack with plastic, and increased the allowable to 68K. Although the plastic liner is not part of the authorized sand jack the contractor must still protect the sand jack filler from erosion. • Winch specification has been issued but there is still concern on the size of hole and Ajay is asking for details from industry as to what they are using. Working with the DES deck committee on their requirement to keep holes from being along the lane line. • Temporary pedestrian facilities – Have the advisory team review this again. There continues to be a concern in requiring ¾" plywood. Discussion: Perhaps 2 sheets of 5/8" laid atop each other. Impact more of a concern. Can a load duration factor be applied? Clarification will be provided. • Manual update	Ajay Sehgal	Update from FW advisory team meeting and hot topics

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	o CIDH and steel pile guidance. o Incorporating the memos into the manual • Removal of falsework • Requiring falsework be removed 30 days after grouting was discussed. The issue is that once falsework is released it is at its lowest point and more vulnerable to being struck and it is more likely a stringer can be dislodged. We also had a case of reloading of partially removed falsework bents that caused a collapse. Need to do the correct thing before we are told what to do. • There have been cases where the completed structure deflected and reloaded the falsework causing a failure and also cases where high load hits have brought it down. • How long can it sit there? CT cannot wait for contractors to get the next bid/project. Do closure pours affect this? Generally not since the notes on the plans would dictate how long the falsework would need to remain in place. • Perhaps it would be best for CT to dictate the time frame but it should consider: o Cases where there is an adjacent structure and there is a delay while waiting for the next stage as when the settlement period of the embankment has not finished, etc. o Protection by permanent structure. o Maintenance issues especially with timber where connections may have to be retightened, foundations, bracing etc. o Concerns of the clearance. – Lowering of 2x6 sand jacks. – Height threshold and associated risk. o Leaving falsework in place over traffic restricts Caltrans' ability to route permit loads restricting goods movement. o Winches and scheduling of equipment may make the time longer. Scheduling of falsework team, may drive to using the B team. • 60 days would be reasonable. Other general concerns expressed: • Hinge locations over traffic/railroad openings. Presentation to the Designers requesting that hinges are not placed in these difficult locations has been made. • CT reviewers that is totally wrong in their review. Best to work through the partnering issue escalation ladder on the job. Using the facilitated partnering to resolve issues at the lowest level. Work it there, then to the Senior (Bridge Construction Engineer) and eventually to the ACM if needed. – In general 95% of the reviewers are doing great but there have been cases where some falsework plans have been under review for over a year. – The falsework designer should notify the Project Manager who is aware of the process for resolving issues. – During a partnering session earlier this		

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	week it was determined that after two cycles it is best to bring the right people together to resolve the issue. – In the escalation ladder there are time frames set. – In the resolution you have to get the right people in the room. – Bad experience where decisions made at the job level were later reversed after the CT personnel had further conversations with others. – A threshold before escalating and if this is known it may drive the behavior. Industry designers may be designing falsework every day but the CT reviewer may not be checking it every day but this is the model that CT prefers to use since it has benefits. • Is CT using secret software that cannot be shared? – State law prevents the sharing of CT software. – Anecdotal stories of various reviews. • Delays in returning comments. – Not the intent and the direction to CT staff are to continue working on the review. • How much falsework can be removed from a hinge span and the adjacent spans? • Combined stresses on posts; timber bracing and using strand. • Frustrating when contractors are told falsework fails and there is no discussion as to why. It would be preferable to call the member overstressed rather than failed.		
5.	**Aesthetics Presentation & Discussion** • Once enacted the Design Information Bulletin will provide guidance to Caltrans designers on the use of and materials for form liners in constructing wall aesthetics. • Will the option be left to the contractor to determine the material the liner will need to be based on the number of uses they anticipate? Yes that is the intent.	Henry Kirzhner	Follow up on issues raised by contractors
6.	**Open Discussion – new items to consider** • Coefficient of Friction of Concrete surfaces o Stage I is changes to the specifications related to friction testing of bridge decks that have been treated with methacrylate or overlaid with polyester concrete. o Stage II is to provide a means to test polyester test sections to ensure that the placed material has the same texture as the test section. (Expected implementation within a year) o Stage III is to provide details for the CT machine or the use of the Dynamic Friction Testing.(Expected implementation more than a year away) In the future the coefficient of friction testing will be performed by the contractor. CT is building test machines to ensure the plans are sufficient and complete. The plans would then be released by Caltrans to the Contractors for construction of their own skid testing machines that meet the requirements of California Test 342 or the contractor may purchase manufactured testing devices that meet	All	

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	ASTM E1911-02. Either method will likely be acceptable. Demonstration of the Volumetric "Sand Patch" Test ASTM E965-96. • Architectural treatments on walls, water cure is obsolete, explore use of membrane cures. • Shoring – Flatiron has consulted a PhD that has brought up items in the manual that are not quite right. Discussing the requirements in the manual may be a good future topic. [Tom Cameron and Jamie Dodd] • Incident shared where Structure Representative cited Cal/OSHA Type B soil requirements when reviewing an engineered sloping plan. Clearly an error. This may reflect a need for training. • Field inspections and determining quality of timber (falsework) materials. A narrative with pictures that provides more insight on how to judge lumber. Link to timber quality research, especially for checking in timber members. • Making available falsework failure reports. A lessons learned opportunity. Possibly CT could cobble together a history that could be shared with the industry or make report available. • Should there be a lessons learned segment of this meeting? • Extended windows for erection of falsework. Director is a proponent of this particularly if it eliminates numerous night closures. Could be something explored via a Value Engineering Change Proposal (VECP) formerly a Cost Reduction Incentive Proposal (CRIP) or through the CMGC pilots that are coming up.		
7.	**Recap** Minutes will be posted and emailed to attendees. Next meeting in Sacramento on March 21, 2014. New co-chairs will be Dennis Wilder, ACM District 11, and John Weldon, Atkinson Construction. Thanks to Steve Altman and Clint Myers for their efforts over the last year plus getting these meetings going. The following action items and questions were captured during the meeting: • Prestress: o Discuss with structure design the need to ensure that the cable path stays within the limits of the first pour at bent caps. Consideration needs to be made for the physical location of the ducts and not just the path of the center-of-gravity. o Start discussions with Structure Design on the use of polypropylene ducts that would potentially allow air testing of ducts prior to placing forms. o Guidance to Structure Construction staff if the ducts are unable to maintain pressure. o Continue discussion with the DES Prestress Committee regarding	Rob Stott	

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	the best time to test the ducts; what provides the best quality to CT, after stem/soffit so that you are not tearing through the deck which produces a "patched" deck. o Send any further proposed changes to the group for comments. • Falsework: o Winch specification has been issued but there is still concern on the size of hole. Need additional industry input on this detail. o Continue discussions with the CT Deck Committee on their requirement to keep holes from being along the lane line. o Temporary pedestrian facilities – Have the advisory team review this again. Can you apply a load duration factor? Clarification will be provided. o Develop a draft specification on when falsework over traffic opening that has been released must be removed. o Address the use of the FW-Check program, its use and some of the theory behind it. State law prevents the sharing of our software. o How much falsework can be removed from a hinge span and the adjacent spans? Other items (unassigned) • Architectural treatments on walls, water cure is obsolete, explore use of membrane cures. • Shoring – Flatiron has consulted a PhD that has brought up items in the manual that are not quite right. Discussing the requirements in the manual may be a good future topic. • Making available falsework failure reports. A lessons learned opportunity. Possibly CT could cobble together a history that could be shared with the industry or make report available.		
8.	**<u>Future Agenda Concepts</u>** Prestress – Update on action items Design Information Bulletin – Update on progress Falsework – Discussion on the draft specification on removal of elements over the travelled way Coefficient of Friction – Continuing discussion Contractor presented item -		