

## MINUTES

### SCDOT – PCI Joint Committee Meeting

SCDOT Office of Materials and Research

November 9, 2017 – 1:30 PM

Reid Castrodale welcomed attendees and began the meeting at 1:30 PM. A sign-in sheet was circulated.

The following members (or representatives) were present:

#### SCDOT

|                |                                     |
|----------------|-------------------------------------|
| Terry Koon     | Structural Design Support, Co-Chair |
| Rodrick Tucker | Bridge Maintenance                  |
| Chad Hawkins   | Office of Materials and Research    |
| Jim McCabe     | Office of Materials and Research    |

#### PCI

|                 |  |
|-----------------|--|
| Reid Castrodale | Castrodale Engineering Consultants, Co-Chair |
| Peter Finsen    | Georgia/C Carolinas PCI                      |
| J. R. Parimuha  | Florence Concrete Products                   |
| Jeff White      | Prestress of the Carolinas                   |
| Tommy Currence  | Prestress of the Carolinas                   |

#### Academia

#### FHWA

Chad Hawkins raised the issue of the need to identify who should be attending the meetings. Chad also noted that while the committee does address some materials questions, most of the issues are design related, so he thinks that the design side should take more of the lead. It was decided that Terry Koon and Reid Castrodale will continue to serve as co-chairs and Aly can remain as secretary, with Terry and Aly serving as the DOT contacts. Chad indicated that if anyone else would like to serve as secretary, they are welcome to do so. Aly and Chad certainly want to remain active in the committee.

Terry Koon would like to see a representative attend the meeting from each RPG, the Design/Build group (Hongfen Li), the Design Support Group, and also Construction and Maintenance. The current committee roster is simply a list of those who have attended meetings in the past, so it was decided that the co-chairs, with assistance from Peter Finsen, should develop a new roster to include those who should be invited to the meetings.

With the potential for a greater number of attendees, it was agreed that it would be best for meetings to be held at the DOT headquarters to make it easier for others to attend, most of whom are in that building. Larger rooms are also available at headquarters.

Terry Koon mentioned that the DOT staff was very appreciative of the PS Seminar at the Prestress of the Carolinas plant.

Jim McCabe mentioned two other prestress plants that could attend – Coastal Precast Systems (Chris Arca had attended in the past) and Eastern Vault. Peter Finsen indicated that Eastern Vault has not yet become a member of G/C PCI, although they have expressed interest.

A number of personnel changes at SCDOT were discussed.

### **Minutes of Last Meeting**

The minutes of the May 4, 2017 meeting were approved as submitted (motion by Peter Finsen, 2<sup>nd</sup> by Chad Hawkins).

### **Old Business**

#### **01-6 *SCDOT Bridge Design Manual***

Terry Koon stated they have not been working on it, but rather on the seismic specification and on updating barrier standards to be MASH compliant. They are considering hiring out updating of the Bridge Design Manual to a consultant. G/C PCI would appreciate the opportunity to be involved on an advisory panel and/or to review the new manual as it is developed.

Jeff White asked if SCDOT is considering adding any new girder cross-sections as standards. Terry responded that they will probably be looking at using them. Information on the sections are available on the FDOT website. SCDOT currently allows use of any I-shaped section – not just those shown in the Manual. Jim McCabe mentioned that some FIBs for I-85 are being made at SCP in Atlanta. Jeff White said that he is seeing all of the FIB section depths in design/build projects. The FDOT FIB details show a strand column at the center of the girder rather than offset to each side. However, it was agreed that the standard offset strand pattern was preferred by all. Using debonded strands is also preferred, which is the standard for FDOT. G/C PCI would be glad to provide information on FIBs if the Department has questions.

#### **09-1 *Accelerated Bridge Construction (ABC) Project – A Precast Alternate for Flat Slab Spans***

Terry Koon said that the UHPC closure joints have been installed and that traffic is on the Hanging Rock Creek Bridge. Testing has also been completed by Clemson, although he was not able to attend. The project uses IBRD Program funds from FHWA and will continue to be monitored about every 6 months for 2 years, then the report will be completed. Any changes resulting from this project will be several years out.

There are no other ABC projects active at this time. Peter Finsen mentioned the National ABC Conference, and that Reid Castrodale will have a LWC workshop and William Nickas will have a prestressed concrete workshop on the day before the conference.

Terry thought that there may be some opportunities for ABC on the Carolina Crossroads and I-526 widening projects. Terry also mentioned that a new division has formed within the Department that will be responsible for “megaprojects” such as the Carolinas Crossroads. It is not yet clear how that division will operate. Peter Finsen suggested that we could invite Ladd Gibson to attend this meeting so we could share some ideas with him. Reid Castrodale mentioned an ASPIRE article by VTrans (VT) on ABC in a rural setting and Peter Finsen mentioned that Utah DOT has had a lot of experience with ABC. Terry said that they were talking to TxDOT about their experience with very large projects as the Department is moving into these projects.

It was agreed that the title of this agenda item should be revised for future meetings by deleting the reference to the specific project.

#### **12-1 *Tentative Letting List***

Terry Koon reported that nothing has moved ahead with this. Jeff White indicated that some more information is now on the letting list, but more would still be appreciated.

#### **12-2 *Electronic Shop Drawings***

Terry Koon reported that procedures have not been developed yet, but that there are ongoing discussions. AGC is also pressing for this. Currently, procedures vary between RPGs; John Caver’s group is taking the lead on developing procedures. SCDOT will continue to discuss internally – there are still some logistics to work out.

#### **16-1 *Issues with Using Cement Sources with High Alkali > 0.6%***

Chad Hawkins discussed the current status of this issue. There is a source of high alkali cement in WV which has been approved. They expect that they will only be supplying projects in the Rock Hill area. It was agreed that this item is completed so should not be included on future agendas.

#### **16-2 *UA Bars in BTs***

Terry Koon reported that there has been no progress. He has been debating whether to use a disclaimer note to require the engineer to make sure that the strands can be placed in the girder or to revise the sole plate detail to use 2 rows of 3 studs instead of 3 rows of 2 studs. There is no known design requirement for the number of studs on the plate.

NCDOT uses 4 studs, and it would be helpful and more economical to have plates for SCDOT to also use 4 studs. Terry is reluctant to reduce the number of studs, but will consider it.

The current UA bar detail often results in problems when erecting the girders. It was also acknowledged that designers need to draw the actual conditions at the continuity connections to see if the details will work – this is especially important for skewed supports or curved (chorded) girders. The current detail with a No. 11 bar can hardly be made to work in ideal conditions, and it is so large that it cannot be adjusted in the field. Shifting the girders to make the bars fit can result in problems with the fit of the SIP deck forms. Terry had asked his staff to consider a new detail, but they were pulled to other things. It was suggested that the NCDOT detail should be considered. Terry was concerned that the NCDOT detail may not be sufficient for seismic design. It was agreed that the prestressers should propose a detail. Using strands rather than rebar could also be considered.

## **New Business**

### **For Information**

#### ***Debonding in bottom row of strands***

JR Parimuha raised the question of debonding in the bottom row of strands, which is currently not allowed for SCDOT projects, but is allowed for NCDOT projects. He said that it is difficult to get designs to work without debonding in the bottom row. The prestressers prefer straight strand designs, even when they require more strands because straight strand designs are more economical and are safer to produce. Terry said that they would consider a change. Consultants need to be educated on debonding.

#### ***Prestress Design Seminar***

The development of a future prestress design seminar for SCDOT and consultants was discussed. In NC, G/C PCI has partnered with NCDOT to develop a prestress seminar. Terry Koon said that he would check on their rules for holding such seminars. Chad Hawkins said that there was a mechanism available to allow an organization such as G/C PCI to sponsor a seminar. It was suggested that G/C PCI reach out to ACEC to discuss further. It was agreed that Terry and Peter should have a conversation in the next month or so to explore holding a seminar in SC.

#### ***PCI Convention and National Bridge Conference***

G/C PCI offered to support four SCDOT representatives to attend the PCI Convention, which will be held in Denver, CO, on February 20-24, 2018. Terry Koon has been coordinating with RPGs and others – potential attendees have been identified. Peter Finsen will be sending an invitation very shortly after the meeting.

### ***SIP form clip inserts***

Jeff White asked that SCDOT would consider using the NCDOT standard for SIP clip inserts which are 2 x 3 in. minimum size, 10 gauge clips spaced at 12 in. on center. These requirements are in the NCDOT Standard Specifications. Using the standard clip simplifies work for prestressers. Contractors supply the clips, and if they lag in supplying the clips, it can delay projects. If standard clips are used, then the clips that the prestresser has on hand can be used. Jeff White agreed to send a copy to SCDOT. Terry will discuss with David Rister in construction. Chad Hawkins indicated that this should be able to move forward because the Department is actively looking for ways to streamline and standardize processes to promote accelerated construction.

### ***Rubbing prestressed concrete girders***

Jeff White mentioned the new OSHA requirements for silica dust, especially in confined spaces such as between stored girders. He asked if there is a way to reduce or eliminate the need to rub girders, and whether it is required for all girders or if it could just be done for exterior faces of fascia girders. Chad Hawkins mentioned that they are also dealing with the requirements in their aggregate test unit. Jim McCabe said that bug holes greater than ¼ in. are required to be filled, but it is easier to rub the hole girder than to try to find the larger bug holes. Voids would certainly need to be repaired. For SCDOT, the outside face of the girders, deck and parapet on an overpass bridge is painted anyway. Peter Finsen suggested that SCDOT consider staining/sealing rather than painting, after having just visited the US Formliner plant. The stain forms a chemical bond rather than just a surface coating. NCDOT has the same situation. SCDOT agreed to discuss the situation and try to define the size of defects that need to be repaired.

### ***PCI Publications***

Terry Koon asked if PCI has provided the Handbook and Bridge Design Manual in the past. Peter Finsen indicated that G/C PCI has provided copies of the Bridge Design Manual to the Department in the past. However, now almost all of the bridge related PCI documents, including the Bridge Design Manual, are available free on the PCI website. Peter noted that the PCI Handbook is not a bridge-related document but focuses on building products, so it has not been distributed to the Department in the past, and PCI is still charging for this document.

### ***Low Volume Bridge Criteria***

Terry Koon reported that they have been tasked to develop a low volume bridge design criteria especially for the load restricted bridge list. He thinks that there are about 300 bridges on this list. The intent would be to get a more cost effective product. They are restricting it to flat slabs and cored slabs initially. They intend to have one standard for cored slab bridges for both structure design and maintenance, where there have been two separate standards. Maintenance is not expected to be constructing as many bridges in the

future, as a result of some discussions with FHWA. Preconstruction will be doing all design for these bridges in the future. The standards will go up to 70 ft spans, which is the current longest span for cored slab details. Bridges must qualify for these standards to be used. They expect that there will be some new ways to get the bridges constructed, possibly design/build. Terry thinks that these new projects should be coming out very soon. G/C PCI offered to assist in any way possible.

### **Next Meeting**

The next meetings are scheduled for Thursday, May 3, 2018 and November 8, 2018 at 1:30 p.m. It was suggested that the next meeting be held at headquarters to make it easier for more people from the RPGs to attend.

The meeting was adjourned at 3:40 P.M.