

Georgia/C Carolinas PCEF Committee Meeting #25

SCDOT, Columbia, SC – Held virtually via GoToMeeting

August 13, 2020 – 10:00 AM

MINUTES

1. Welcome & Introductions

At 10:05 AM, Peter Finsen welcomed attendees connecting remotely via GoToMeeting to the 25th G/C PCEF meeting. He mentioned options for connecting since some people had difficulties in connecting. He went down the list of participants to allow attendees to comment.

2. Review & Approval of Minutes – February 6, 2020 Meeting at GDOT

Reid Castrodale noted that the minutes indicate that item 6.c.2 “Full-Length Debonding of Strands” would be removed from future agendas. However, two action items were related the deleted item. Information addressing these two action items were included in the information distributed by Peter prior to the meeting. Both items begin with the removed agenda item number, which was 6.c.2. The first includes notes for plans and proposed revisions for the bridge design manual (these are based on the NCDOT manual). The second file includes slides from a recent prestressed bridge design seminar that demonstrates the effect of full-length debonded strands on section properties.

A motion was made and seconded to approve the minutes as distributed. Passed.

The action item list was distributed prior to the meeting. These will be discussed during the meeting.

3. Review of Agenda

Committee co-chair Reid Castrodale reviewed the agenda briefly, outlining the plans for the meeting, especially the plans for the discussion of lateral stability at 1:00, which would be focused on the policies for implementing lateral stability considerations rather than details of related calculations. He suggested that if there were others that should attend during that discussion, they would be welcome to attend.

Reid Castrodale pointed out an error in the agenda regarding the 2021 PCI Convention, The Precast Show and the National Bridge Conference which are scheduled to be held in New Orleans, LA on February 23-27, 2021. *NOTE: These meetings have been rescheduled for May 18-22, 2021, and are planned to be live events in New Orleans, LA.*

A packet of information for the meeting was sent out by email prior to the meeting. The agenda, minutes, distributed documents, and the presentation on lateral stability will be posted on the G/C PCEF webpage on the G/C PCI website at: <http://www.gcpci.org/index.cfm/technical/pcef>.

4. Informational – Updates from SCDOT, GDOT, NCDOT, FHWA, PCI & G/C PCI

Each agency and organization attending gave a brief update:

SCDOT – Terry Koon reported that a consultant has been acquired to update their Structure Design Manual. They expect the project will take 3 to 3.5 years. They are also working on getting out an RFP to update existing girder standards and to add standards for box beams and FIBs. They hope to have a contract for the standards by the end of the year. The load rating guidance document has been released by the Bridge Maintenance office. They anticipate that this project will take about 2 years, and will be coordinated with the Structure Design Manual contractor.

They had identified several issues that were causing problems with load rating, such as use of elastic gain in computing prestress losses (which is no longer allowed in design) and the use of the new emergency vehicles in design. They have had some budget cuts due to funding shortfalls which has affected some projects. Hongfen Li added that SCDOT

is working on a new QA/QC policy for bridge plans which is expected to be implemented soon. Reid Castrodale mentioned that Hongfen is a member of the AASHTO T-10 meeting that is responsible for concrete bridge design.

Steve Nanney reported that a contract to revise the standard specifications has begun. Work has begun on Division 100 with a 24 month schedule.

Terry Koon mentioned several projects that are underway. Steve Nanney reported that they are still proceeding with lettings as scheduled, although revenues are reduced due to reduced traffic volumes. Terry mentioned the US 278 project coming into Hilton Head that is currently 4 bridges but may become just one bridge which should have some prestressed concrete in it. The Carolina Panthers interchange will also have some structures coming, with the RFP close to coming out.

GDOT – Bill DuVall reported that they have 43 bridge replacement projects for FY 21 with a value of about \$177M. Their low impact bridge program is continuing at \$21M/year, which is used to replace deficient local bridges. The state also has funds dedicated to bridges at \$30M/year. It is difficult to identify all of the other projects that may include bridges, and there are also design/build projects. They have a Major Mobility Investment Program for very large projects to come out in the next few years. The plan to add express lanes on the entire north side of the perimeter (I-285), from I-20 on the west to I-20 on the east. They are keeping busy on the design side, since they are also coordinating on the design/build projects.

They do not see much impact from COVID yet, but it may come later. They did have some funds come in from some settlement that has helped. He heard a report that around April 12, the traffic counts bottomed out around 50% less than the prior year, but it has rebounded to be about 10% lower than “normal”. They continue to work remotely, but are getting their work out. The bridge inspection work continues pretty much as normal – they completed 9005 inspections in FY 20. They are still uncertain about federal transportation funding.

They have published a significant update to their Bridge Design Manual in May 2020. A lot of updates addressing issues for the major mobility projects. The Department began the process of updating the GDOT Standard Specifications in Nov. 2019. They had hoped to get it published in early 2021, but that now seems unlikely.

Monica Fournoy reported that her group continues work on the inspection manual for precast prestressed concrete girders. Initially, they planned to put some of the revisions into SOP3, but are now planning to have Georgia Tech to write a manual for them. This project is expected to take 6 to 12 months. They are waiting for funding, so it is expected that the project may begin in November. The manual should include information that will clarify acceptance criteria. When a draft is developed, they intend to send it to G/C PCI for comment. Changes to SOP3 should be finalized within a week or so.

Bill added that there is a project in Burke County that will be in the next letting where full-depth precast deck panels will be used, with UHPC for closures. The panels are skewed, where others have been done at 90 deg. They have also begun to use their new LRFD prestressed concrete pile designs. It is not yet a standard, but it is getting close.

NCDOT – Trey Carrol reported that NCDOT is still dealing with challenges related to budget and cash flow, which has delayed a number of projects. They are reorganizing their projects and hope that they will have a good idea about future projects within the next month or so, which they can share with us. So for now, they are waiting to see how it shakes out.

Cabell Garbee reported that Jason Poppe, the former Concrete Products Engineer, retired June 30. Others are picking up the slack. Matt Hilderbran is now the State Field Operations Manager, since he has taken Todd Whittington's position that became vacant when he took the State Materials Engineer position.

FHWA – Romeo Garcia gave an update from FHWA. They had been working on an NHI course for Bridge Construction Inspectors. The new course has two parts: a web-based course that is a pre-requisite for a week-long instructor-led course. Both portions of the course are complete and a location for the pilot course is being identified. The course focuses on field construction so does not address fabrication of prestressed girders.

FHWA has been working on a state-of-the-practice report on partial depth prestressed concrete deck panels through a contractor, and now have a draft of the report. The goal is to provide best practices for the use of the panels, but to also

allow the use of the panels as a contractor's option. They hope to have the final draft by the end of the year, then possibly another 6 months for review, with publication by May 2021.

He had previously reported on the completed Bridge Bundling Guidebook. They are now looking at project bundling that will go beyond bridges. They are also assembling more information to supplement the bridge bundling guidebook that will give the necessary details to enable bundling to be used successfully for bridges and other projects.

They have completed an initiative called QA essentials for ABC work. They are hearing interest from their customers to expand this to cover any type of bridge work, so they are moving forward with developing a report on quality essentials for bridge work – covering the full range of topics that will assure durability in a completed bridge.

Reid Castrodale reported that he has complete a final draft of a Lightweight Concrete Bridge Design Primer for FHWA that is now in final review. Not sure when this will be completed and available. He is also participating on a technical review panel supporting FHWA's effort at Turner Fairbank Highway Research Center to develop design guidance and specifications for the use of UHPC.

PCI & G/C PCI – Peter Finsen and Reid Castrodale provided a brief discussion of PCI activities.

The PCI eLearning courses now are housed in a new learning management system that should simplify their use. The new system just came online last week. Bridge-related courses are being transferred to the new site. Peter reported that the PCI chapters are offering webinars every two weeks, which have been related to buildings. However, they are expecting to present some webinars on bridge related topics in the fall. Peter will be sending out notices to his email lists, so we should all receive notice of these webinars as they come out.

Reid presented a list of 19 transportation related eLearning courses that appear in an ad in the summer issue of *ASPIRE*. Other courses are expected to come out soon including curved U-beams and bridge geometry. He reminded attendees that the manuals are free and PDHs are offered for the courses. Several new manuals have also been published recently by PCI including the bridge geometry manual and the curved U-beam manual. A user manual for the lateral stability spreadsheet has been published which includes a link that allows the user to download the spreadsheet for free.

Peter pointed out that PCI Committee Days will be virtual this fall. All are invited to participate, and there is no charge. Both members and non-members can attend the committee meetings. See PCI website for information and registration.

Peter pointed out that G/C PCI is continuing to work virtually. Jeff White is Bridge Committee chair. He reported that the Bridge Committee has been holding conference calls following each of the DOT joint meetings which have helped to get things some items accomplished. He indicated that the cooperation of the DOTs is appreciated.

Peter also reported that G/C PCI is changing the website to be a micro-website on the PCI website. The content is being transferred now.

5. Materials, Fabrication and Construction

Reid Castrodale indicated that these items are all informational at this time. We are open to new topics.

5.a Accelerated Construction*Informational Item*

Lead: *William Nickas, Reid Castrodale*

Reid Castrodale asked if there was any additional info on the GA 299/I-24 bridge move. Steve Gaston mentioned that they did have a debrief following the project. Not many structural issues, although there was a bit of cracking in the deck. The contractor did have some issues working with the SPMTs.

Reid also asked about the GDOT project where decks were precast on girders in the field. Steve said that the project went well and that they plan to keep the concept in their toolbox for future projects.

Reid asked if any DOTs were allowing slide-in construction as an option. Slide-in was an option for the SPMT project, and the bridge was constructed next to the existing

Reid mentioned that prestressed concrete girder bridges have been successfully moved into place for quite a number of projects. Steve pointed out that the GA 299 project did use Type III girders.

Action item(s) completed:

New action item(s):

5.b Reciprocity for Certifications and Other IssuesActive Item

Lead: JR Parimuha

JR Parimuha reported no new items or action on this topic.

Action item(s) completed:

New action item(s):

5.c TolerancesActive Item

Lead:

It was agree to remove this item from future agendas.

Action item(s) completed:

New action item(s):

- Provide new PCI camber tolerance for girders Reid Castrodale

5.d SCC RequirementsActive Item

Lead:

Cabell Garbee reported that they are making slow progress collecting data on high flow concrete. They are also still planning to get ACI certification on SCC for their technicians, but all training is currently on hold.

Jon Smith reported that they have two precast concrete soundwall projects where SCC is being used, one of which is out of state. GDOT is currently only allowing use of SCC on soundwall projects. It is not being used for other precast or prestressed concrete products.

Cabell reported that SCC is being used for cylinder piles, cored slabs, box beams, and other precast items. They have allowed plants to use SCC when requested. They have specs for SCC, but the high flow material requires a waiver because there is no spec for that material.

Richard Potts indicated that they use a high flow mix for prestressed box girders for NC. They also have a new batch plant in Savannah and plan to develop SCC mixes.

Jon asked NC to share their information. Cabell offered to assemble information on their SCC specs and will forward to G/C PCI to include with the minutes.

Jon also mentioned that he had a plant ask if SCC could be supplied by a ready mix concrete plant. Jon did not think that this would work because of the strict control on moisture that is required for SCC. He also asked whether NCDOT is extending the use of SCC to ready mix concrete. Cabell responded that in NC, all of the plants using SCC or high flow concrete are batching in-house.

Cabell related their experience on a project that used ready mix SCC as one of the first uses of SCC, probably 15 years ago. It was difficult to get the mix right, and he does not think that SCC has been used in the field since then. Reid Castrodale reported that VDOT has been using SCC in the field for repairs, so they could be a source of information on ready mix SCC.

Tim Brandenburg mentioned that in a plant, SCC is generally transported without mixing which keeps it stable.

JR Parimuha reported that they have successfully use ready mix trucks to deliver SCC within their plant.

Jason Civil reported that they have made some progress with high flow mixes. They are looking at methods used by FDOT for such mixes. FDOT requires that a product be cast with the mix and then cut to demonstrate proper distribution of aggregate throughout the mix. They are considering using larger cylinders to cut in half to

check aggregate distribution. Jon Smith indicated that for the soundwall projects, they have required a sample panel to be cut to demonstrate the distribution of the aggregate. They have found this to work well. The panels were poured in a vertical orientation, although some have been poured flat which did not use SCC.

Reid reviewed the action items. There has been no progress with these items. Richard Potts indicated that he will ask Dale Willhite to review and compare SCC requirements between states, and see if revisions are required with advances in technology.

Action item(s) completed:

New action item(s):

- Assemble information on flowable concrete for sharing with other DOTs Cabell Garbee

5.e UHPC *Active Item*

Lead: *Richard Potts*

It was agreed to add UHPC as a new topic. Richard Potts will get information on the work being done at their FL plant based on the PCI research project. Peter Finsen indicated that a general presentation on the PCI applied research project on UHPC will be given as one of the PCI webinar series by Dr. Maher Tadros and Dr. John Lawler on Sept. 29. Richard indicated that Phase I of the project related to mix development has been completed and Phase II, which involves testing full-scale specimens, is underway. Some of the testing will be conducted at NC State. Richard indicated that using UHPC will eliminate corrosion issues. The additional cost of a UHPC mix can typically be offset by a reduction in required volume to get the same performance. He mentioned that a modified Type II girder and some waffle slab panels were cast with UHPC in the Standard Concrete Products plant in Tampa. The slab pieces were then connected to the girder using UHPC, and the assembly will be shipped to Tallahassee for testing which will probably be in early 2021.

Reid Castrodale asked Richard if there was any progress on UHPC piles. He was not aware of any new activity related to UHPC piling other than the casting of an H-pile at the DuraStress Plant in FL which had 3 in. thick flanges and web. A pile was tested at the FDOT structures lab and another was also driven; both the testing and driving were successful.

Bill DuVall indicated that GDOT had an ongoing research project to develop UHPC mixes, so he supported adding this topic to the agenda.

It was agreed to add this item to future agendas.

6. Parameters and Standardization

6.a Precast Pavements [approach slabs] *Informational Item*

Lead:

Peter Finsen reported that this topic would be included in the fall webinar series.

6.b Full-Depth Bridge Slabs *Informational Item*

Lead: *Bill DuVall*

Bill DuVall reported that the Burke County project with full depth deck panels would use UHPC for the connections. The composite connection to the girders is in hidden pockets. It is a single span bridge and only the end panels are skewed.

6.c Process Standardization *Various*

Lead: Jeff White

The following issues were discussed.

6.c.1 RFID/Bar codes for precast products..... Informational Item

Cabell Garbee reported that NCDOT is planning to get the portal completed using in the next month which will allow direct input of data into the HiCAMS system. He has also had discussions with Titan to get their data directly into HiCAMS, and has heard that Idencia is working with AASHTO to be able to send their data directly into the AASHTOWware products. He is pleased that an additional vendor and other DOTs are getting involved in work on the topic.

Cabell reported that the system is working very well, and that maintenance will be modifying their procedures to incorporate the use of this data.

Cabell recommended that the item will be left on for at least one more update to see how the system is working. He hopes for some competition rather than the current sole source situation.

6.c.2 Full-Length Debonding of StrandsRemoved from Agenda

At the previous meeting, it was agreed to remove this item from the agenda.

However, the Action Item list included two items that were addressed by the distribution of two items that are posted on the PCEF webpage for this meeting.

Action item(s) completed:

- *Develop proposed text on full length debonding for DOT BDMs* Industry
- *Post calculations on effect of full length debonding on PCEF webpage* Industry

New action item(s):

Break for Lunch – Presentation followed lunch, but is listed below as Item 7.

Stopped meeting at noon for lunch. It was suggested that attendees could come back on at about 12:30 for some networking, and that the presentations would begin at 1:00.

6.d Strand and Reinforcement Details.....Active Item

Lead: Richard Potts Reid Castrodale

6.d.1 Stirrup Projections

Richard Potts reported that he had reached out to other producers to see how they handled the projections. He said that they had different approaches, so it appears best to let the fabricators handle this individually rather than seeking to develop a standardized approach.

Therefore, it was agreed that this topic be deleted from future agendas.

6.d.2 Top Strand Debonding

It was noted that Rick Brice mentioned that he was not aware of any problems with this, which has been a concern for NCDOT.

Reid Castrodale asked if the DOTs would like further assistance from industry with this topic. Bill DuVall indicated that GDOT still has concerns and thinks that they may look at it further as they get into lateral stability. He mentioned, for example, the question about how to prevent water from entering the debonded top strand through the access port.

6.d.3 Supplementary Stirrup Bars

Reid Castrodale reported that MnDOT has details for these bars, but that he could not find any research on the use of such bars. Richard Potts also reported no success in finding information on these details.

Therefore, it was agreed that this topic be deleted from future agendas. This topic could be reinstated to the agenda if information is found that would be useful to share.

6.e Girder Shapes *Active*

Lead: Reid Castrodale

Reid Castrodale pointed out that two items have been on the action item list related to girder shapes for many years. He suggested that neither may be useful any longer. The first item was added when there was interest in determining whether a FIB or PCEF girder (as used by VDOT) should become the next standard section for the region. The market seems to have decided in favor of the FIB now. The second item was related to a deck bulb tee project that was being proposed by SCDOT. There was concern about whether the section should be based on the FIB or PCEF section, and the market seems to have decided this choice. Furthermore, the SCDOT project did not move forward, so the development of a section was not required. Reid suggested that both items be dropped and there was no opposition to this action. Either item could be reconsidered in the future.

Action item(s) removed:

- *Develop guidance on factors to be considered when selecting girder sections* *G/C PCI*
- *Develop proposal on preferred deck bulb tee section(s)* *Industry*

6.e.1 Lateral Stability *Active Item*

Discussion related to this topic is covered with the Lateral Stability Implementation Discussion below.

The first of the two listed action items related to this item was to develop recommendations. Rather than pursue developing the recommendations, the presentations on the approaches of GDOT and WSDOT to address lateral stability design were taken as adequate to count as completing this task.

The second of the two action items for this section was completed with the presentations and discussion.

Reid Castrodale offered that the industry would be glad to assist the DOTs as they move forward with implementation of their lateral stability design procedures, either in the PCEF meeting, or with each DOT.

Action item(s) completed:

- *Develop recommendations on implementing lateral stability provisions* *Reid Castrodale*
- *Propose agenda for workshop on lateral stability design approaches* *Reid Castrodale*

New action item(s):

6.e.2 FIBs *Active Item*

When asked about GDOT details regarding the strand pattern, Bill DuVall asked Richard Potts to respond. Richard indicated that FIBs for GDOT projects have been detailed using the FDOT details with an odd number of strands in each row, which provides only 1 column of strands in the web, and the bottom row of strands located at 3" from the bottom of the beam. GDOT projects have departed from FDOT details by not requiring the confinement bars for the full length of the girder, and by eliminating some strand locations on the centerline of the girder to allow for the GDOT standard bearing detail using the pin in the bearing plate that extends up into the bottom of the girder.

Richard mentioned that NCDOT preferred that projects using FIBs have an even number of strands, which makes it possible to drape strands, and the bottom row of strands at 2" from the bottom of the girder. These differences make it difficult to agree on a standard among the states.

Hongfen Li asked how difficult it was for the fabricators to change the location of the bottom row of strands. Richard explained that the girder end forms, called headers, are typically made of steel so different headers would be required for the different strand pattern. He pointed out that the bulb tees also had a different location for the bottom row of strands between NC and SC design, which used a 2" dimension, while bulb tees for GA

designs used 2.5". Richard stated that his company's preference is for 2.5" to the bottom row of strands to allow more room for placement of concrete.

Hongfen indicated that she liked the idea of more cover over strands and other reinforcement for coastal projects. SCDOT has not yet decided on what they will use as a standard for FIBs. Richard added that the fabricators strongly prefer a single detail for greater economy in fabrication.

Tim Brandenburg indicated that his preference was to use the 3" dimension to the bottom row of strands if the design group would allow it. He thought that more cover would be better and would prevent popouts of concrete under the strands. Richard pointed out that using the 3" dimension to the bottom row of strands would eliminate strands from the pattern because of the small bottom flange.

Jeff White indicated that all of the projects for NC and SC are set up for the bottom row of strands at 2" and that has worked well for them in the past. Changing the distance to the bottom row of strands is a complication that his company would like to avoid. They have made some projects with a 3" dimension, but their strong preference is to maintain consistency between all of the girder shapes produced in the state.

Because of the difference in practice between the states, the industry will develop a proposal regarding a standard strands pattern.

Steel diaphragm details for FIBs were also discussed. Terry Koon mentioned that for bulb tees, they use channels to a certain depth, then go to cross frames for deeper sections. Bill DuVall indicated that they allow steel diaphragms for bulb tee spans not over traffic, and that GDOT has a research project underway to develop design and details for diaphragms. They do not currently allow steel diaphragms for FIB projects. Reid pointed out that steel diaphragms can be problematic for the short FIB sections where the flat portion of the web is limited, so it is difficult to fabricate steel diaphragms to fit. Terry also mentioned that they were concerned that the depth of such a diaphragm may not be adequate to obtain the desired performance. A standard is needed as details have varied between projects, which is difficult for fabricators. Richard pointed out that FDOT does not require intermediate diaphragms. Jeff indicated that they have only seen channels used as diaphragms for FIB projects. Jeff agreed to send Terry some of the details he has seen for steel diaphragms.

Reid indicated that the design approach for diaphragms is not well-defined. He also pointed out that he recalled that years ago FDOT had done research in the past where they found that they could eliminate intermediate diaphragms if they added 5% to the live load, so their policy became to add the live load and only required temporary bracing during construction. Reid concluded that industry should discuss how to approach this issue before an action item would be added.

Action item(s) completed:

New action item(s):

- *Discuss and recommend standard for bottom strand location for FIBs* *Industry*

6.f Precast Substructure Elements *Informational*
 Lead: *JR Parimuha*

6.f.1 Precast Pile Caps

Reid Castrodale mentioned that he was reviewing an article for *ASPIRE* from TxDOT regarding precast columns and caps. Interest in the system seemed to be contractor driven as they seem to want to do it.

Richard Potts mentioned that the precast prestressed cap detail developed by NCDOT was a good detail that appeared like it would be easy to cast, although they had not yet done any.

6.f.2 Precast Substructures

No discussion.

7. Lateral Stability Implementation Discussion

Reid Castrodale introduced this discussion as being intended to assist the DOTs in developing policies related to lateral stability rather than demonstrating the mechanics of how to evaluate the lateral stability of a girder. Reid reviewed the information distributed with the meeting invitation, all of which will be posted on the PCEF Committee webpage on the G/C PCI website. Reid also mentioned PCI publications and eLearning resources that are available on lateral stability. Links to WSDOT webinars on lateral stability presented by Rick Brice, which discuss the theory and equations for lateral stability analysis, appear below with additional information on the PCEF webpage on the G/C PCI site:

Session 1 – Lifting : <https://attendee.gotowebinar.com/recording/5934690281895089665>

Session 2 – Hauling: <https://attendee.gotowebinar.com/recording/177294455782271752>

Steve Gaston gave a presentation on the approach to lateral stability consideration taken by GDOT, which is to provide a table of spans beyond which lateral stability must be considered. The table was developed in 2015 after they ran a series of designs using each of their typical girder types, then checked lateral stability and concrete stresses. Spans not exceeding the listed values are considered to have good lateral stability when supported at 1.5 x the girder depth from the end of the girder and at dunnage locations 3 ft from the end of the girder. The table was distributed prior to the meeting and appears as Item G for this meeting on the website. Steve also noted that design/build projects may exceed the limits, but that lateral stability then has to be evaluated. He also noted that a few design/bid/build projects have exceeded the limits. They have been happy with the results and have not revisited the table.

Rick Brice, the Bridge Design Technology Unit Manager at the WSDOT and the chair of the lateral stability subcommittee of the PCI Bridge Committee, joined the call to give a presentation on the WSDOT perspective and experience regarding design and fabrication of prestressed concrete girders with respect to lateral stability. A PDF of his presentation is posted on the website and is identified as “PRESENTATION” without a number.

During his career at WSDOT, which now spans nearly 30 years, Rick noted that he has always evaluated stresses when lifting a girder. He stated that WSDOT position that “design modifications after bidding are undesirable” which leads them to require the designers to consider lateral stability and stresses during handling and hauling. He observed that the girder strength at hauling often governed over other design requirements. He also commented that using temporary top strands in a design will often allow a reduced concrete strength at transfer. He checks stresses at lifting, storage, hauling and erection. Storage is usually not as critical as lifting from the bed; erection is also not generally critical. For hauling, both stresses and lateral stability need to be checked. They often use as many as 6 to 8 temporary top strands, which can either be 0.6-in. or 0.7.-in. strands. He also noted that while the Recommended Practice looks at the location with the highest stress, research has shown that an allowable concrete compressive stress of $0.7 f_{ci}$ is justified; the current limit is $0.65 f_{ci}$, which was increased from $0.60 f_{ci}$ in the last few years. the allowable concrete stress at that worst condition.

When evaluating lateral stability during hauling, the “least capable” haul truck is considered first. WSDOT provides a table of hauling rigs currently available in WA that includes the stiffness of each rig which is used in the hauling analysis. In some cases, analysis will show that that a truck will not be adequate for a particular girder, so other trucks will have to be considered. The spring constant for the haul rig is most critical for the analysis. The value for each rig is typically determined by the rig owner. PCI has just begun a national effort to provide guidance for how the stiffness of trucks should be determined. WSDOT design and construction procedures related to lateral stability are presented in both the Bridge Design Manual and the WSDOT standard specifications. These requirements were discussed in the presentation.

Rick mentioned that WSDOT uses PGStable to evaluate the lateral stability of girders. This program is available at no cost from WSDOT, or can also be obtained from BridgeSight software, which is a commercial product with some enhancements which carries a fee.

He closed his presentation with a look ahead regarding the work of the lateral stability subcommittee which will focus on revising the Recommended Practice.

There was some discussion following the end of Rick’s presentation. He noted that he was unaware of any issues with contractors detensioning temporary top strands. He understands that fabricators are including instructions for the

contractor to use when detensioning the top strands as part of the shop drawings which refer to PCI standard methods for detensioning stressed strands using a flame. He also mentioned that precautions need to be taken to prevent water from getting into the strands through the detensioning access ports in the top flange of the girder. This avoids problems with water entering the strands and then freezing and causing splitting along the strand. He was not sure about the details used to prevent water from entering the strands.

He noted that WSDOT continues to improve the lateral stability requirement in both their Bridge Design Manual and the Standard Specifications. Any recent changes to these documents are based on their experience from encountering situations that were previously unanticipated. As Rick left the call, he invited attendees to contact him if they have questions in the future. His email is: bricer@wsdot.wa.gov.

Following the presentation, Reid Castrodale encouraged the DOTs to consider the information from WSDOT as a good example for both the Standard Specifications and Bridge Design Manual. He noted that WSDOT does design to zero tension at the Service Limit State which is not usually done in our area.

8. New Business/Informational Items

- 2020 PCI Committee Days – Virtual – September 8 – 23, 2020.
- **2021 PCI Convention, The Precast Show and National Bridge Conference – New Orleans, LA – February 23-27, 2021** – *Now rescheduled for May 18-22, 2021, and planned to be a live event in New Orleans, LA. G/C PCI intends to sponsor DOT engineers to the convention as in the past if the conference is in person.*

9. Develop/Review List of Action Items

10. Evaluation of Committee Progress/Process

Reid Castrodale noted that there was good attendance and participation.

11. Next Meeting Date & Location

Thursday, February 4, 2021 (10 am – 4 pm) at NCDOT

Thursday, August 12, 2021 (10 am – 4 pm) at SCDOT

Adjourn

The meeting was adjourned at 3:40 PM.

ATTENDEES: G/C PCEF Committee Meeting – August 13, 2020 - Virtual

<u>Attend in Person</u>	<u>Attend via Web</u>	<u>Name</u>	<u>Company</u>	<u>Phone</u>	<u>Email</u>
FHWA					
	✓	Romeo Garcia	FHWA – HQ Construction	(202) 366-1342	romeo.garcia@dot.gov
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	✓	Bill DuVall	GDOT – Bridge Design & Maint.	(404) 631-1985	bduvall@dot.ga.gov
	✓	Steve Gaston	GDOT – Bridge Design & Maint.	(404) 631-1881	sgaston@dot.ga.gov
	✓	Monica Flournoy	GDOT – Materials & Testing	(404) 608-4708	mflournoy@dot.ga.gov
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