

PCEF Meeting Minutes
Carousel Resort Hotel & Condominiums
Ocean City, Maryland
February 9, 2009 1pm to 5:30 pm

Meeting Convened & Introductions made at 1:00 pm

Approval of Minutes from June 2, 2008 Meeting

Minutes Approved – motioned by Bill Via, seconded by Paul Finnerty

Central Atlantic Bridge Associates (CABA) Update- Hank Bonstedt, PCAP

Bridges for life

Non-profit representing Mid-Atlantic beam producers

Inform non-members of activities

Market Communication

Knowledge transfer and education

Develop owner relations

Maintain agency relations

Substitute Bulb Tees in place of other designs (AASHTO girders)

HPC – try to obtain uniformity (too many mix designs & variations)

SSC – try to obtain uniformity (too many mix designs & variations)

Technical Development

Standards for spliced girders

Use PCEF Bulb Tees in place of box beams

Wider top flange will speed up construction

More inspectable than box beams

Double tee does not fit in the plant

Promoting total precast bridge elements & p/c concrete pavements

DOTs want rules for substituting AASHTO Type VI's & New England bulb-Ts.

Promoting standards for spliced girders

PCI Certification Program Update and State-Specific Options - Dean Frank, PCI

See presentation attached

Erection program currently does not apply to transportation projects; only to building projects.

New Manual-118 is coming for non-prestressed and non-arch members

There are 174 plants nationwide; 28 in the Mid-Atlantic States' area

Q: Are you taking a step backwards by having each state with their own specifications? Why not just enhance the current bridge category?

A: We provide a baseline specification and each state can add their own requirements. This is an intermediate step. Eventually, we will try to find common ground and unify regionally common requirements.

Q: Are you tracking the Highways for Life (HfL) projects?

A: CABA is tracking the HfL projects. One upcoming is the VA I-66 WB ramp to US 50, using precast slabs

Mid-Atlantic States' Evaluation of NPCA Prestressed Concrete Certification Program-
All State DOT Representatives

Is there any interest in using NPCA for prestressed girders?

MD- used NPCA program for the past 3 to 5 years for precast concrete elements; PCI program currently meets their needs for prestressed concrete members; not looking to change as confusion may result.

DE- does not know

VA- NPCA program used to certify precast concrete elements, but inspection requirements under PCI program are used for prestressed concrete elements.

They are evaluating the pros and cons of NPCA for prestressed concrete. PCI offered to supply information about the differences between the 2 programs.

PA- used NPCA for 3 years for precast concrete elements, 5 years for pipe. Have revised their manuals to account for lack of information on grading schedules. Believe that technical assistance and knowledge offered with PCI program surpasses NPCA program.

NJ- materials engineer not present to respond in detail, but aware of use of NPCA program for precast elements.

Newcrete- have not worked with NPCA yet.

Bayshore- member of NPCA for only one project; all information available through PCI is not available with NPCA; PCI staff has extensive knowledge of the industry, and more understanding of the sources and origins of technical information. Bayshore gets as much out of the PCI program as the level of effort expended; believe the prestressed concrete industry will have less advancement if PCI is weakened.

High Concrete- PCI has a lot of advancement; has made some mistakes but gained from that knowledge; get value out of PCI through committee work, benefits related to amount of effort expended with PCI program; plan to stay with PCI.

Design Parameters & Standardization Subcommittee Report – John Martin, VDOT & Claude Napier, FHWA

April or May meeting planned, to cover following topics:

Use of draped vs. debonded strands

Cracking at ends of beams

Bar projection

Closure diaphragms

Lightweight concrete for longer spans

Bulb Tee shape CD – will have comparisons with other beam types

Q: full or half day meeting?

A: could make it two half-days with some travel time built in

Q: Do we want to look at precast deck panels?

A: No, but could start by looking at New England's information on NEXTEA beams

Presentation on FHWA Strategic Plan for Infrastructure Research & Development - Lou Triandafilou, FHWA

See presentation attached, service life of bridges beyond 100 years

Q: It all sounds good, but bridges are functionally obsolete long before the bridge life cycle.

A: Researchers struggled with this but the research remains

Comment: Find an alternate to chlorides for de-icing bridge decks

Results of TRB Committee AFN20 Meeting, Properties of Concrete – Lou Triandafilou, FHWA

The committee has sponsored recent sessions at TRB dealing with HPC and materials/inspection of concrete pavements.

Identified research needs areas included aggregate absorption, optimizing concrete mixes, mass concrete in bridge substructures, and developing a standard test to evaluate post-cracking behavior.

Synthesis topics included mix optimization, new test methods, and strength tests.

The committee continues work on a SCC circular guidance document.

The committee recently submitted a tri-ennial strategic plan to TRB leadership.

The plan covers such areas as performance evaluation and future goals, technology transfer activities and research needs

Results of 1st PCI GA-Carolinas PCEF Meeting – Peter Finsen, PCI GA/Carolinas

DOTs from the Carolinas and Georgia have formed an economic fabrication committee similar to the Mid-Atlantic States' PCEF

20-30 people attended the first meeting last August

Broke into subcommittees

Will meet again next week

A lot of PCI certifications with the GA/Carolinas
Meet on a regular basis – start by comparing standards between each state
Modeled after the Mid-Atlantic States PCEF committee
 Involvement with FHWA, GA, NC, SC, PCI, Academia
 Trying to get industry involvement
Determine goals
Subcommittees
 Materials Fabrication / Construction
 Accelerated Bridge Construction
 SCC
 Regional PCI Certification
 Standardization
 Precast
 Bearing plates
 Piles
 Shapes – spans
 Use the AASHTO shape
Noticed duplication of efforts among the 3 states
Look forward to first productive meeting

Q: AASHTO Type III and IV girders are still economical, but AASHTO Type V and VI shapes are not. Why not consider using bulb-T shapes?

A: All 3 states use PCI bulb tee, but efficiency is not critical; considering allowing the PCEF bulb-T as an alternate for full deck sections; they do not see as a priority developing their own standard regional shape. Florida is coming up with their own shape with deck already on top

Q: Camber control may be a problem with full depth girders with deck on top.

A: Longer bridges may be tougher, figure camber into vertical curve, can control camber with more strands, can jack the difference.

Q: What about on heavy skewed bridges?

A: Tilting the beam seats could be the answer.

Materials & Construction QC/QA Subcommittee, Including Future Direction – Bob Horwhat, PADOT & Paul Finnerty, MDSHA

Three major pieces of work have been completed by the group and adopted by the full PCEF:

1. Guide specification for prestressed concrete
2. QC guide documents
3. Guide for SCC

Discussion of future areas to address:

Precast deck sections- no positive feedback

Rapid construction standards

Connections – review soon-to-be-published FHWA Manual and compile acceptable details for Mid-Atlantic region

Ultra High Performance Concrete

Precast concrete cylinder piles – no good response

SCC

Implementation by DOTs

Differences in specifications and expectation of the mix design, minimum and maximum slump flows

Guide specification developed but not required. MD uses it on design -build projects

Precast systems – connections

Set of acceptable connections with precast elements

670-page manual on precast concrete elements, including 150 connections

Lightweight concrete – for deck, girders, precast substructures

WV- not used for prestressed girders, but in deck panels

VA- used on Rt. 33 project for longer span prestressed girders and for bridge deck

DE- used in bridge decks but not in prestressed girders

MD- used in cast-in-place and precast deck panels

NJ- not aware of any use

PA- not in use, change in management could change the future use

Uniformity in making and curing concrete cylinders

Moist cure; steam cure; combination moist/steam; air cure (match-cast)

Different mixes may not result in uniform testing

Different states have different methods

The 1st manual talked about it, but will send out survey to different states

PCI sets baseline, but state specific PCI requirements should be used

Wants it to be the same so that one mix will meet strength requirement

NCHRP Synthesis Report on Box Beam Connection Details – Lou Triandafilou, FHWA

Discussed the results of a survey completed by Dr. Henry Russell for this study:

1/3 states did not use box beams

1/3 used them as simple spans with CIP decks on top

80% used partial-depth keyways

80% used post-tensioned bars (43% unbonded)

Range of post-tensioning force used was 1 – 13 kips/foot

2/3 noted longitudinal cracking

56% noted water/salt penetration

30% noted reinforcing corrosion

26% noted differential movement between adjacent boxes

Following design/construction recommendations were made in the synthesis:

- Form voids with expanded polystyrene geofoam
- Use full-depth keyways – easier to sand blast (at plant)
- Clean keyways in field before erecting
- Use transverse post-tensioning
- Use pre-packaged high bonding grout before the p/t operation
- Use CIP composite decks and wet cure for 7 days
- Pre-packaged grout

Following maintenance recommendations were made:

- Seal cracks in deck as soon as possible
- Wash decks
- Clean drain holes

Future research was recommended in the following areas:

- Design (already submitted to NCHRP)
- Durability
- Repair

Upcoming Concrete Conferences (VA and MD) – Respective State DOT/FHWA reps

- MD 9th annual – March 24th Timonium Crown Plaza
 - I-35 MN keynote presentation
 - Redecking of Chesapeake Bay Bridge to be presented in breakout session

- VA – March 4th and 5th
 - WWB interchange
 - Accelerated bridge construction
 - Drilled shafts
 - Accelerated long service life
 - 16 overlays

- WV – had one on Jan 7th
 - CD with presentations is still available

- PA- Jan 24 /25
 - Heavy on pavement

- PCI Bridge Conference – September 12-15 in San Antonio

Review of PCEF Adopted Standards by All

3 QA/QC specifications
SCC
Steel diaphragms
PCEF Bulb Tees
Use of HPC and corrosion protection

Other Issues

Design requirements for rehabilitating piers, columns, or beams – standards or specifications available for analyzing shoring/temporary works?

DE- case by case

WV- case by case

MD- Middle 3rd, bearing percentage, jacking standards

VA- Not sure – case by case

PA – not present

Adjourned at 5:00 pm

Next meeting is tentatively scheduled for the end of August, possibly at the MD Office of Materials & Testing Lab in Hanover, MD. Preference is to set it up as a webconference in order that non-attendees can view presentations.