William E. “Bill” Cook  
Pavement Engineer  

It’s amazing how time flies. Since our last newsletter, I’ve travelled from Omaha to Sidney to Beatrice to Ainsworth to Norfolk promoting concrete pavements, runways and overlays.  

Almost 40 agencies and consultants have seen the PCC Overlays Presentation. And I have about another 40 to go! Engineers and officials are becoming more interested in the concrete option because of competitive cost and longer life.  

Coming in October along with the Nebraska Chapter of the Associated General Contractors we will host a short meeting discussing ways to reduce the cost of concrete and concrete paving without reducing quality. Todd Latorella from the Missouri-Kansas Chapter of the ACPA has a very good presentation on this topic. And it never hurts to see what other states and counties and cities are doing to economize the use of concrete, and still maintain a quality product.  

Please enjoy this second Concrete for Life News brochure, and we’ll be seeing you soon!

First Bonded PCC Overlay of HMA Parking Lot in Nebraska  

We may have a first in Nebraska! The Grand Island Northwest High School parking is the first bonded PCC overlay of a HMA parking lot, at least we think so. The parking lot also has a section of unbonded PCC over HMA, but that is the second one in Nebraska. Dave Wacker, Hastings City Engineer advises the City of Hastings placed an unbonded PCC Overlay over HMA about 15 years ago.  

This lot was bid with a concrete overlay as an option, and it won!  

We want to congratulate Ryan Kvan and Terry Brown from Olsson Associates for the design and initiative to consider the concrete overlay option for design and construction. Also, thanks to Dave Thibault and Dirk Eggers of contractor Stephens and Smith of Lincoln and Omaha for placing a great looking parking lot. The concrete supplier, Consolidated Concrete of Grand Island, furnished the concrete expeditiously and in compliance for this project. And a special thanks to the Grand Island School Board for having the foresight to select long-lasting, sustainable concrete for their parking lot.  

Placing a PCC Overlay means less susceptibility to rain delays. Once the rain stops, just dry the surface, and keep on paving. No mud to worry about! For the tight schedule this project needed, using the concrete overlay meant getting the job done on time and on budget.
PCC Overlay in Grand Island . . . continued

Here are some photos of the parking lot, courtesy of Jereme Montgomery of the Nebraska Concrete and Aggregates Association:

Looking south

Looking northwest at Northwest High School while pouring the concrete overlay.

Wobken Promoted at Ash Grove
Jensen Joins Team, Johnson to Retire

May 30, 2008—Ernie Peterson, National Sales Manager for Ash Grove Cement Company announced that, effective June 1, Steve Wobken will be promoted to Technical Services Representative for the Northern Region of the Midwest Sales Division. Steve will maintain sales responsibilities in eastern Nebraska and will cover the states of Nebraska, Iowa, and a small section of South Dakota.

Steve Johnson will be retiring at the end of 2008 as Senior Sales Representative. Steve has been with Ash Grove Cement Company for 6 1/2 years and was previously with Gerhold Concrete, an Ash Grove subsidiary, for 22 years. He will continue to be a recognized leader in both sales and technical service as he transitions to retirement.

Tyler Jensen will be joining the Northern Region sales team as a Sales Representative. Tyler is a recent graduate of the University of Nebraska, where he majored in Construction Management. He served as an Ash Grove intern last summer in the Northern Region and was instrumental in developing the Nebraska parking lot survey that is widely used by our customers throughout the state. He will eventually move to the northeast part of Nebraska and will assume the sales responsibilities from Steve Johnson.

Steve Wobken

Steve Johnson

Tyler Jensen
Old Age can be good!

Here are some pictures of an old pavement in Fremont, Nebraska. This 80+ years old pavement still serves as a residential street. This stretch of Old Highway 8 can be found in Fremont north of Morningside in the south central part of town. Contact me if you want more detailed directions.

Notice that the concrete mix appears to be entirely a sandy gravel, or maybe a gravelly sand mix. No sawn or formed joints, except for day's work joints. The random transverse and longitudinal cracks hurt the looks, but for this low speed residential street, detract little from its functionality.

I hope I look that good at 80+ years old!

Thanks to Clark Bochult, Fremont City Engineer for pointing out the existence of this concrete pavement.

And here is a section of Nebraska 50 at milepost 41, about seven miles north of Tecumseh.

This stretch of 50+ years old pavement looks great, and is still serving Nebraska residents admirably. How many other kinds of surfaces see 50 years before needing major repair?
Team winners of the 2008 NCPA Golf Outing at Quarry Oaks were (L to R):

Sam Porter, Aaron Bell, Kirk Havranek and Sheila Radenslaben.

Sam and Sheila work for the Nebraska AGC, while Aaron works at Security 1st Bank. Kirk Havranek is with Lincoln Ready Mix.

Price Turnaround

Remember in the past when inch-for-inch asphalt was always cheaper than Portland cement concrete? Well, those days are gone.

Look at the Producer price indices for Competitive Building Materials

Note the steep rise in Asphalt.

Earlier this summer the Nebraska Department of Roads decided to defer letting any more asphalt projects for this year because of both price and availability of the desired grade of asphalt.

Today there is very little difference in price inch-for-inch, and with concrete you get longer life with lower maintenance costs. Depending on the grade of asphalt binder and location in the Nebraska, and the thickness being placed, agencies may find a lower first cost with a PCC overlay than an HMA overlay. And for thicker pavements, concrete will definitely cost less.

Price turnaround... continued on page 7
<table>
<thead>
<tr>
<th>County</th>
<th>Item Description</th>
<th>Control Number</th>
<th>Project Number</th>
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*Data obtained from the TrnsPort database on August 15, 2008, based on projects currently scheduled to be let during this time period, for those projects having estimated quantities.*
And just in case you really think the smoke is blowing, consider the parking lot at Northwest High School in Grand Island. Olsson Associates Project Manager Terry Brown, along with Design Engineer Ryan Kvan, developed a project with both PCC and HMA as overlay options. Stephens and Smith Construction from Lincoln bid the concrete option, and they were the low bidder!

Visit our website! www.nebrconc.org

Recently, the Nebraska issued an revised Concrete Mixes Table 1002.02. The changes include:

- Adding “28-Day” to the top of the strength column
- Adding note 7
- Adding Note 8
- Changing the SF mix from 3500 psi to 4000 psi required strength.

Take Note:

The 2009 NCPA Workshop will be held at the Cornhusker Marriott in Lincoln, NE on January 7-8, 2009

Be sure to mark your calendars!

Visit our website! www.nebrconc.org

Concrete Mixes (Cubic Yard Batch)

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<th>Base Cement Type</th>
<th>Portland Cement (Min. Lbs)</th>
<th>Pre-Blended Class C Fly Ash (Min. Lbs)</th>
<th>Class C Fly Ash (Min. Lbs)</th>
<th>GGBFS Class C Fly Ash (Min. Lbs)</th>
<th>Silica Fume (Min. Lbs)</th>
<th>Total Consititutes (Min. Lbs)</th>
<th>Course Aggregate (Min. Lbs)</th>
<th>Type of Course Aggregate (Min. Lbs)</th>
<th>Air Content (Min. Vol.)</th>
<th>Water/Cement Ratio (Max. Vol.)</th>
<th>Required through (Min. psi)</th>
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<td>423</td>
<td>141</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>594</td>
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<td>3150</td>
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<td>47BFS*** (6)</td>
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<td>113</td>
<td>113</td>
<td>113</td>
<td>0</td>
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<td>3000</td>
<td>30±3</td>
<td>6.0-8.5</td>
<td>0.42</td>
</tr>
</tbody>
</table>

(1) Each class shall identify the minimum strength requirement. (For example, 47B-3500, where the last four digits indicate the strength in pounds per square inch. In the chart, strength of 3500 psi is indicated by 47B-3500; however, other strengths may be authorized elsewhere in the contract. The classes shown in the chart are typical examples.)
(2) As determined by ASTM C 138 or ASTM C 231.
(3) Coarse aggregate shall be limestone unless otherwise specified.
(4) The Contractor is responsible to adjust the water/cement ratio so that the concrete supplied achieves the required compressive strength without exceeding the maximum water/cement ratio. The minimum water/cement ratio for any slip form concrete pavement is 0.36.
(5) Single aggregate (sand-gravel) used for these classes of concrete.
(6) 47BFS is an acceptable substitute for 47B and 47BDFS is an acceptable substitute for 47BD.
(7) For each class of concrete acceptance, refer to the specifications.
(8) For temporary pavement type III cement is allowed.
(*) Mixes with Type 1PF and Class F fly ash designation are pre-blended or interground with Class F fly ash by the cement mill producer at a rate of 22%±2%; no additional Class F fly ash is added at the batch plant.
(****) For slip form applications.
(****) For hand-pours and substructures applications.
(*****) Quartzite aggregate can be used in place of limestone providing the aggregate meets Paragraph 3.3 of subsection E333.02 of the Standard Specifications.
The Nebraska Department of Roads, Materials and Research Division issued a revised Policy for Certification of Ready Mix Plants. The flow chart below gives a bird's eye view of the new Policy.

**Note:**

1. Stationary Plants/Truck Certifications are required every two years.
2. Portable plants require certification a minimum of once a year
   a. Contact PCC Engineer for a possible waiver if:
      i. Portable plants remain at the same location longer than one year.
   b. Trucks are to be certified every two years.
NDOR revised Policy for Certification of Ready Mix Plants

ASTM C94 REQUIREMENTS FOR PORTABLE BATCH PLANTS

1. ASTM C94 shall be performed on all portable batch plants
2. Contractor is responsible to have testing performed by ACI certified Grade I Technician
3. Test results shall be certified and submitted to the project manager/ QA for the ASTM C-94 testing along with the plant certification check list.
4. NDOR Materials and Research will have personnel observing the testing and noting conformance to the testing protocol.
5. Testing shall be performed the 1st week of concrete plant production.
6. All plants shall be allowed to perform regular paving operations at minimum of 60 sec. mix time or at the plant manufacturers' recommended mixing time, which ever is greater.
7. Samples will be taken at the mixer, immediately after the mix time is completed.
8. There will be a need for two samples one at 15% and one at 85% of the batch, in loaders, wheel barrows, a storage location etc. The samples must be protected to maintain the quality of the sample.
9. Slump and Air should be performed within 15 min. of each sample.
10. As a minimum, the following 5 tests will be performed and 4 must pass for the mixer to be approved at that specified mixing time.
   a) Mass per cubic foot calculated to an air free basis, (¼ cu. ft can be used)
   b) Air Content, volume % of concrete
   c) Slump
   d) Coarse aggregate content, portion by mass of each sample retained on #4 sieve, %
   e) Average compressive strength at 7 days for each sample, based on average strength of three test specimens, %

Optional – Mass per unit volume of air free mortar based on average for all comparative samples tested, % (If this is used in addition to the 5 above, a total of 5 of the 6 must pass the ASTM C94 tolerances)

<table>
<thead>
<tr>
<th>Test</th>
<th>Requirement, Expressed as Maximum permissible Difference in Results of Test of Samples taken from two Locations in the Concrete Batch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass per cubic foot calculated to an air-free basis, lb/ft³</td>
<td>1.0</td>
</tr>
<tr>
<td>Air Content, volume % of concrete</td>
<td>1.0</td>
</tr>
<tr>
<td>Slump:</td>
<td>1.0</td>
</tr>
<tr>
<td>If average Slump is 4 in or less, in</td>
<td>1.0</td>
</tr>
<tr>
<td>If average slump is 4-6 in</td>
<td>1.5</td>
</tr>
<tr>
<td>Coarse Aggregate content, portion by mass of each sample retained on No. 4 sieve %</td>
<td>6.0</td>
</tr>
<tr>
<td>Mass per unit volume of air-free mortar based on average for all comparative samples tested, %</td>
<td>1.6</td>
</tr>
<tr>
<td>Average compressive strength at 7 days for each sample, based on average strength of all comparative test specimens, %</td>
<td>7.5⁵</td>
</tr>
</tbody>
</table>

Table A1.1
Requirements for Uniformity of Concrete (According to ASTM C94- Page 56 - Annual Book of ASTM Standards. Vol. 05.02

11. If a mixer performance test fails immediately, and the contractor wants to continue a performance test at that particular mixing time, two consecutive tests must pass 4 or 5 ASTM C-94 uniformity requirements.
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