NYSDOT selected and designed these NEBT 2000 (New England Bulb Tee) girders for the Route 7 steel bridge replacement in Hoosick, NY. Contractor Rifenburg Construction, using Bette & Cring and Burt Crane & Rigging, erected ten 73 ton girders 137’ long and ten 62 ton girders 116’ long in four days. According to Ken Barth, Rifenburg Construction, the placement of stay-in-place metal forms and deck rebars, followed by 9½” thick deck pours, will be completed the first week in May. The girders were cast using 10,000 psi concrete; the long girders each have 56 0.6” dia. prestressing strands, equal to 2.46 million pounds of prestress force per girder. Each girder has #4 hairpin anchor bars projecting 6” out of the top flange at 20” o.c. William Scheib, Burt Crane, said they used 250 ton and 175 ton All Terrain Cranes set up on causeways in the river. Cross bracing was installed at each end of each beam as erecting progressed. Bearings were elastomeric. Our thanks go to Joe Carrara for this story.

(continued on page 2)

CONGRATULATIONS to PCANY Members Listed in the ENR April ’10 Top 500 Design Firms –

CDM; Dewberry; Wilber Smith Associates Inc; Greenman – Pedersen Inc; CHA; C & S Cos; Bergmann Associates Inc; Erdman, Anthony and Associates; Maser Consulting PA, Barton & Loguidice PC.

Additionally, C & S Cos, CHA, and CDM made one or more Top 20 Specialty Fields, and the Top 100 “Pure” Designers list included Dewberry, Wilber Smith Associates Inc, Greenman – Pedersen, Inc, CHA, and Simpson Gumpertz & Heger Inc.
William E. Dailey Precast, LLC’s rapid bridge construction process has been expanded and enhanced with the addition of the NEXT Beam bridge section. The NEXT Beam was developed by the PCI Northeast Bridge Technical Committee for the purpose of promoting a greater degree of uniformity among DOT’s, engineers and industry of the Northeast, with respect to planning, designing, fabricating and constructing highway bridges with the FHA’s philosophy of accelerated bridge construction. A NEXT Beam resembles a standard precast/prestressed concrete double tee commonly used in the construction of parking structures and train platforms, however, its wider tee legs and pre-stressing capability provide the greater strength required to handle the moment and shear demand for bridge loadings.

NEXT Beam sections can be fabricated from 40 to 90 feet in length and in widths from 8 to 12 feet. Depths range from 24” to 36” depending on the span and loading criteria. The beams recently produced by Dailey are for a seven span bridge over the York River, in York, ME. There are 8 NEXT Beams 9’ 4½” x 3’ x 55’ 0½”, 20 NEXT Beams 9’ 4½” x 3’ x 78’ 9”, and 16 precast bearing blocks 12” x 18”.

(continued on page 3)
The advantages for considering the NEXT Beam as an option for your next bridge construction/replace-
ment project are numerous. This new bridge section design provides a fast, high-strength, low maintenance construction alternative for variable width bridges with longer spans and is more efficient to install than typical stringer beam bridges. The NEXT Beam’s top flange supports a concrete overpour, thereby eliminating time consuming and costly deck forming and stripping in the field. The top flange can even be used to support beam overhangs, which are often the most difficult portion of the bridge deck to form.

On shorter span structures full depth flange sections offer additional value. Intermediate diaphragms are not required and joint and parapet details are much easier further reducing construction time. Your NEXT Beam bridge could be built in a matter of days!

A major advantage of the NEXT Beam design is the ability to accommodate under bridge utilities between the tee legs, eliminating the need to attach pipes and cables to fascia beams and parapets, which is a much less desirable approach. The inherent design of the NEXT Beam makes visual inspections by engineers and agencies much easier as all surfaces of the bridge structure are visible and accessible.

Thanks to Bob Wilcox, William E. Dailey Precast, LLC for these photos and the story. These beams are scheduled for installation in mid-June.

They also held an open house in February while the NEXT Beam was in production. Over 100 engineers, architects and transportation representatives from Vermont, New Hampshire, New York, Maine and Massachusetts attended.

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**Northeast Extreme Tee Beam (NEXT)**
(continued from page 3)

<table>
<thead>
<tr>
<th>Projecting web shear/stirrups</th>
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<tr>
<td>Casting begins after all reinforcing is placed and secured</td>
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<tr>
<td>NEXT Beams immediately after stripping from casting bed</td>
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Scanned from *PCI Bridge Design Manual, Chapter 6*

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PCANY Meetings — May 17, AGC Office, 10 Airline Drive, Albany, NY 12205

Adjacent Box Beam Bridge Evaluation and Repair Task Force, 10 a.m. – 12:00 p.m.

Semi-annual Joint Meeting, NYSDOT Structures and Materials, 1:00 p.m. to 4:00 p.m.
SUDER AVENUE BRIDGE, Lucas County, Ohio

A Unique, Interesting, and Informative Article About An Old Project, by Joe Kelleher, PE

This steel truss bridge built in the early 1900s was badly deteriorating. The bridge had a single 100 ft clear span and the deck was 19 or 20 ft wide. It spanned an inlet from Maumee Bay. It had to be replaced. The county reduced the permissible load on the bridge.

Rain and winds out of the northeast would raise the water level to near the underside of the deck. The surrounding area was developing fast and expressways were being planned and constructed. Because of lack of roads in the area, it was important to widen the bridge and keep it in service. Prestressed – precast concrete beams seemed to be an ideal solution. The existing abutments were in good shape and could be widened without interfering with the existing traffic. The approaching roads could be widened without any major grade changes. Four or five 100 foot long concrete box beams could be placed on each side of the existing steel trusses with minimum interruption of traffic. The beams would be 36 inches wide, 42 inches deep and 104 feet long and weigh 30 tons. The newly set beams would be used for emergency vehicles and school busses while the old bridge is being demolished. The height of the abutments was adjusted and eight 3 foot wide by 4 foot deep concrete beams were erected. Sidewalks/curbs were poured on both sides of the bridge. Three inches of asphalt was placed on the entire deck with a slight crown.

The prestressed concrete beams were designed in accordance with a Criteria provided by the Bureau of Public Roads. The State of Pennsylvania in the mid-1950’s had developed some standards for three foot wide prestressed concrete beams. Tables were worked up for 12”, 17”, 21”, 27”, and 42” deep beams. Engineers at Concrete Products of America assisted in the design and the company made and tested several beams. They were also producing prestressed beams in Pottstown, PA and on Neville Island, PA. Also, in the mid-50’s Martin-Marietta bought Concrete Products of America.

A plant was planned and constructed on the south side of Toledo along a railroad siding. Two, 220 foot long concrete casting beds were designed and built that would permit pouring 2 – 100 foot long bridge beams a day. The strand used in this bridge was 3/8 inch, 7 wire, 250,000 psi. I’m not sure if it came from Roebling or A&SW, or if it was stress relieved or not.

The Suder Bridge was used to determine some of the limitations for the casting beds and yard handling equipment. This writer’s primary responsibility was to design and construct a plant and to manufacture prestressed/pre tensioned concrete beams. The years were 1958, 1959 and 1960.

Joe Kelleher – 614-442-5509 – email jdksr22@live.com

Many thanks, Joe!