Many units are shipped on their sides to stay within maximum truck heights or bridge limitations on the way to the project site. They must be lifted and rolled to an upright position, and then set into their final location. Rectangular shapes are most common, but tapered pieces can be used to form apparent curves when needed to accommodate existing stream flows.
Precast: Solution of Choice (continued from page 1)

Many failing old structures built of concrete masonry, or simply corrugated steel pipes, are replaced with precast units of much larger dimension, thus safely accommodating significantly greater storm flows. An example is the French Road Culvert replacement project, which used 6’ high by 16’ span box culverts.

Route 14 bridge in Vetran, NY required exacting fit and installation control. These 10’ high units span 30’, weighed 30 tons each, and were set in two days. The last section was placed with only 4” to spare adjacent to the temporary bridge that had been installed to maintain traffic during construction of the new structure.

Don’t try this – but each of these seven 28-ton box culverts, 4’ high and 16’ long, were placed by reaching over high tension power lines!

Our thanks to our photo and article contributors: Mike Kistner (Kistner Concrete Products), Joel Dickinson, PE (Oldcastle Precast), Paul Sudol, PE and Jeremy Bourdeau, PE (Barton & Loguidice).

(continued on page 3)

Member Notes:

Kistner Concrete Products will send any consulting engineer their new 80-page 2008 Catalog upon request; just send an email including your name, company, phone, and mailing address to mikek@kistner.com. Besides information on hundreds of products, it also offers specifications, installation guides, warranty, conditions of delivery, certified plant information, etc.
An old culvert carrying Hollowville Creek under CR 16, consisting of a single span concrete slab supported by concrete abutments (built around 1910), exhibited severe deterioration in the form of cracking, spalling, undermining, and loss of roadway supporting materials. For the replacement project, Barton & Loguidice, P.C. provided preliminary and final design documents, and construction phase services assisting the Columbia County DPW through the process of building a three-sided, precast concrete culvert replacement structure. Project features included maintenance of the existing horizontal alignment and profile grades of the roadway, maintenance of the existing stream flow alignment, and improving the hydraulic capacity at the site.

A stone formliner was used on the upstream face for esthetics due to proximity to private driveways and residences. The structure length was extended to accommodate the heavy skew and proximity to an intersection. Also, precast wingwalls with foundation anchors were used due to poor subsurface conditions.

The NYSDOT combined units in two phases to provide a structure under I-287 in White Plains. The first phase was made of twin 15'-5" x 11'-6" box culverts, forming 155 linear feet for stormwater detention and 37 linear feet for a sand filter. The second phase is triple cell 12' x 10'-6" units forming a detention structure 135 feet long. All joints were provided with watertight gaskets to prevent exfiltration of stormwater runoff.

All the above project photos were submitted by two Producer Members: Kistner Concrete Products and Oldcastle Precast. One of our Professional Members, Barton & Loguidice submitted the next project.
Extracted from *Engineering News Record*, June 16, 2008, reporting on the 25th annual International Bridge Conference:

Bridge designers and engineers face increasing pressure to build and rehabilitate structures faster and more durably than ever.

Contractors gave their perspectives in sessions on accelerated bridge construction (ABC), a major theme championed by the Federal Highway Administration. Utah Dept. of Transportation officials said accelerated bridge construction was almost standard practice now. ABC, for UDOT, includes design-build project delivery and use of prefabricated or precast elements.

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**PRODUCER MEMBERS**

A & R Concrete Products, New Windsor, NY, 845-562-0640
Bayshore Concrete Products, Cape Charles, VA, 757-331-2300
Binghamton Precast & Supply, Binghamton, NY, 607-722-0334
J.P. Carrara & Sons, Middletown, VT, 802-386-6361
Coastal Pipeline Products Corp, Calverton, NY, 631-369-4000
Daley Precast, Shaftsbury, VT, 802-442-4418
The Fort Miller Co., Inc., Schuylerville, NY, 518-695-5000
Hanson Pipe & Products, inc., Pottstown, PA, 800-800-2216
Jefferson Concrete Corp., Watertown, NY, 315-788-4717
Kotter Concrete Products, East Pembroke, NY, 716-862-0216
Lakeland Concrete Products, Inc., Lima, 585-624-1900
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Oldcastle Precast, South Bethlehem, PA, 610-786-2321
Oldcastle Precast Inc, Middle Island, NY, 631-524-7400
Oldcastle Precast Inc., DBA Rolando Precast, Acon, CT, 860-673-3291
Roman Stone Construction Co., Bay Shore, NY, 631-667-0568
Schuykill Products, Inc., Cressona, PA, 570-385-2352
Sunnymore Inc., Auburn, NY, 315-522-7214
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R. Deso, Inc., Champlain, NY, 518-298-8411
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The Fort Miller Co., Inc., Schuylerville, NY, 518-695-5000
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Concrete Building Supply, Champlain, NY, 518-593-0700
Keeler Vault Co., Inc., Hudson, NY, 518-851-6281
Kotier Concrete Products, East Pembroke, NY, 716-862-8216
Onondaga Block, Onondaga, NY, 315-432-9641
Sunnycreek Inc., Auburn, NY, 315-522-7214
Woodard's Concrete Products, Inc., Buffalo, NY, 716-361-3471
Zeiser Wilbert Vault, Elmira, NY, 607-733-0588

**ASSOCIATE MEMBERS**

A-Lok Products, Inc., Tullytown, PA, 800-822-2565
Amcrete Products, Newburgh, NY, 845-562-0010
BASF Admixtures, Cleveland, OH, 518-232-1187
Buzzi Unicem USA, Stockton, CT, 607-644-2262
Cemex, Inc., Wampum, PA, 724-535-4311
Chase Specialty Castings, Pittsburgh, PA, 412-828-1500
Concrete Sasatani, Inc., Royersford, PA, 610-948-7867
Dayton Superior Corp, Canton, CT, 860-693-1738

**PROFESSIONAL MEMBERS**

Advanced Building Systems, Inc., Nashua, NH, 603-569-3555
The Euclid Chemical Co., Saratoga Springs, NY, 518-587-0871
Northeast Sales Associates Inc., Fairport, NY, 585-709-6372

**PROJECT DELIVERY AND USE OF PREFABRICATED OR PRECAST ELEMENTS.**

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