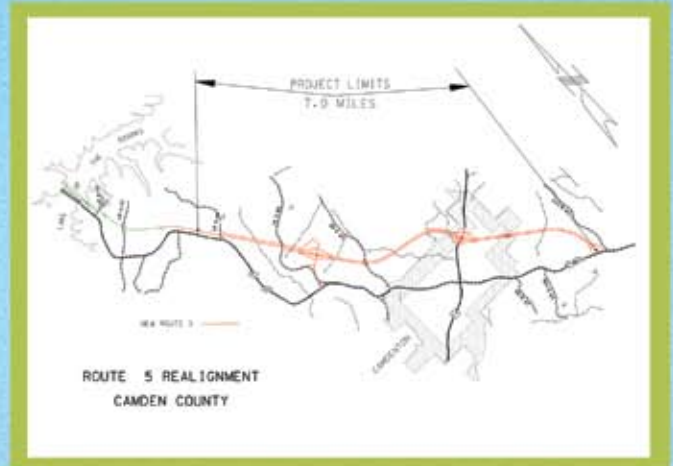


CONCRETE PIPE NEWS

The Magazine of the American **Concrete Pipe** Association



**MoDOT's Largest Grading Project
Route 5 Camden County**



2008 Project Achievement Award Winner

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Concrete Pipe News is published four times each year by the American Concrete Pipe Association. It is designed to provide information on the use and installation of precast concrete pipe products for a wide variety of applications, including drainage and pollution control systems. Industry technology, research and trends are also important subjects of the publication. Readers include engineers, specifiers, public works officials, contractors, suppliers, vendors and members of the American Concrete Pipe Association.

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Photo: Scott Snelling of Missouri Department of Transportation

editorial

*Matt Childs, P.E.
President*

American Concrete Pipe Association



MoDOT's Largest Grading Project Wins ACPA's Project Achievement Award

This issue of Concrete Pipe News is dedicated to the Departments of Transportation and all the companies and individuals who played a role in designing and constructing the structures described in the following pages. The projects were built with high quality precast concrete products to last for the design life of projects under conventional maintenance conditions.

ACPA's 2008 Project Achievement Award was won by the Missouri Department of Transportation (MoDOT) for the largest grading project in MoDOT's history. The project required more than seven million cubic yards of soil and rock excavation, extensive drainage work, and the construction of two interchanges and four major bridges to realign nearly seven miles of Route

5 in Camden County. Several pipe laying crews were mobilized to install miles of concrete pipe and box culverts, and associated drainage works.

There were five entries in this year's competition. In addition to the winning project, there were two with historical connotations to the use of precast concrete pipe; one project involved jacking pipe and one described an extensive use of precast concrete boxes for culverts. All projects were deserving candidates for the ACPA's 2008 Project Achievement Award.

In Pennsylvania, PennDOT District 3 specified 48-inch x 76-inch horizontal elliptical reinforced concrete pipe (HERCP) to replace a 100-year-old brick and mortar arch structure under Route 11, a divided highway in the Borough of Northumberland. The structure had not failed, but had reached the end of its service life.

The New York DOT redesigned one of the oldest roads in western New York and replaced an existing 36-inch diameter concrete pipeline with a 72-inch diameter storm sewer. The sewer replacement occurred on a section of Transit Road (Rt. 78) that divides the communities of Cheektowaga and Lancaster in the south, and Amherst and Clarence in the north.

The Nebraska Department of Roads decided to use 108-inch diameter reinforced concrete jacking pipe as an alternate to construction of a precast concrete box culvert under a section of US Highway 6 (Nebraska Highway 31) near Gretna.

The final award entry was received from the Mountain States Concrete Pipe Association on behalf of the Utah DOT that specified nearly 1,800 feet of precast reinforced concrete boxes for culverts under the new Legacy Parkway.

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Feature Story

2008 Project Achievement Award Winner

Largest Grading Project in MoDOT's History Makes Extensive Use of RCP and Boxes

By Ed Sexe, P.E.
Cretex Concrete Products
Midwest, Inc.
913-422-3634

Nearly seven miles of Route 5 in Camden County is the largest grading project in the history of the Missouri Department of Transportation (MoDOT.) The road realignment project included construction of four major bridges, two interchanges, grading and extensive drainage systems, along with excavation of more than seven million cubic yards of soil and rock. Several pipe laying crews were mobilized to install miles of concrete pipe and box culverts, and associated drainage works.

Construction of pipelines and culverts requires experienced contractors who are familiar with pipe materials and the performance of drainage products to be able to install pipe and boxes quickly and safely, without compromising the quality of construction. Aside from the sheer magnitude of the project, topography and the geology along the alignment became challenges to the contractor by affecting access to job sites. The formidable topographic challenges had to be overcome to accommodate the timely delivery of concrete pipe from Cretex Concrete Products Midwest, Inc. The contractor couldn't start the mass excavation until the pipe was installed. Some

Photos: Scott Snelling of Missouri Department of Transportation



of the installation sites were so steep that the contractor had to blaze roads to them with bulldozers to get the delivery trucks to the job sites.

Cretex Midwest shipped over 10,000 feet (2.0 miles) of pipe ranging from 12 to 90 inches in diameter under various fill heights and 1,350 feet of boxes. The MoDOT pipe design included 42-inch to 90-inch diameter thick-wall reinforced concrete pipe that would carry fill heights into the 100-foot range. In addition, the engineering team had to consider the high velocity of a stream, and design a culvert to accommodate the stream volume and dissipate the hydraulic energy while passing through the culvert.

MoDOT's project team in District 5 decided on ring chamber stations or "baffles" to dissipate the energy of flow in culverts. The baffle dissipater

system was designed in accordance with MoDOT specifications and was used in both concrete boxes and pipe. Most installations of pipe included energy dissipaters, which fit on the end of the pipe, as well as joint ties at the end of the lines for added support. The 8-foot x 10-foot reinforced concrete boxes provided by Cretex used sheer steel to help carry the height of fill. A second pour was required for the addition of the baffles in the 8-foot x 10-foot boxes, as well as 12-foot x 10-foot boxes.

Throughout the project, Cretex Midwest used value engineering techniques to pass along savings of thousands of dollars and construction time to the DOT and taxpayers by analyzing each culvert crossing of the roadbed and designing the structure to accommodate the amount of fill that it would actually support. It was possible to construct a single crossing characterized by more than one pipe strength design along the length of the installation. Value engineering allowed the state to use a smaller percentage of 42 to 90-inch diameter thick wall pipe specially designed for deep fill. In addition to value engineering, Cretex passed along savings by manufacturing the baffle dissipaters at the plant with a second pour before shipping them to job sites and expecting the contractor to pour baffles on site.

The project was awarded to McAninch Corporation at a cost of \$44.3 million dollars. Between the groundbreaking ceremony in May 2007 and February 2008, 7,107,000 cubic yards were excavated. The project is scheduled for completion in August 2008. McAninch is recognized as one of the most technically advanced earthmoving contractors in America. Along with the earthmoving capabilities, underground utility installation is one of the contractor's specialties.

Project:	Route 5 Realignment Project Missouri Department of Transportation, Central District Jefferson City, MO
Owner:	Missouri Department of Transportation
Contractor:	McAninch Corporation Kansas City, KS
Engineering:	Jacobs Civil, Inc. St. Louis, MO
Producer:	Cretex Concrete Products Midwest, Inc. Urbandale, IA
Quantities:	Over 10,000 feet of RCP ranging in size between 12 and 90 inches in diameter in various strengths and wall thicknesses. 1,350 feet of precast concrete boxes including 8-foot x 10-foot and 12-foot x 10-foot boxes with energy dissipater baffles.

Cretex Concrete Products Midwest, Inc. is a manufacturer of reinforced concrete pipe, boxes, manholes and other ancillary precast products used in storm and sanitary sewer infrastructure. Cretex Concrete Products Midwest, Inc., a subsidiary of Cretex Inc, includes the 6 precast plants in the mid-west region. This project was supplied out of the Bonner Springs, KS plant. Cretex Inc. is a national family of companies that supply a world market with products as diverse as heart-pacemakers components and prestressed concrete bridge beams.



Antiquated Arch Culvert Replacement Was a Tough Balancing Act

*By Joe Gawrysiak, Sales Engineer
Oldcastle Precast, Inc. Pipe
Northeast Pipe Group
800- 642-3755*

Budget constraints are a common denominator in today's highway and utility projects. Northumberland County and PennDOT would not escape this reality when faced with an aging and antiquated storm water system. Tough decisions had to be made when a circa 1900 brick and mortar arch structure reached the end of its service life. Elements of the existing structure had to be replaced on both the north and southbound sides of Pennsylvania State Route 11 in the Borough of Northumberland. Route 11 is a divided highway that travels north-south through the historic downtown section of town, as it runs parallel with the Susquehanna River.

PennDOT had a challenge on their hands, as they attempted to balance three key factors while trying to figure out which alternative was the best solution for the cost. They wanted to match the shape of the existing culvert they were tying into, minimize the impacts to the surrounding community, as well as accommodate the numerous existing pipelines that have been added to the culvert throughout the years.

After examining various alternatives, engineers at PennDOT and Oldcastle Precast, Inc. developed a simple solution to the problem while allowing for a quick installation. PennDOT elected to use a 48-inch x76-inch horizontal elliptical reinforced concrete pipe (HERCP) with flared end sections on both sides of the roadway in lieu of a precast box culvert or other meth-





ods. This would allow for a four to six week construction schedule and the best product for the money spent. HRI, Inc. of Bloomsburg, PA was selected by PennDOT to complete the project and Oldcastle of Farmingdale, NJ provided the elliptical pipeline and flared end sections.

Eleven existing pipelines (five pipelines on the northbound side and six on the southbound side) of various sizes and types had been tied into the existing culvert at various times, providing a challenge for construction. These pipes ranged in size and material from 8-inch diameter ductile iron to 18-inch diameter reinforced concrete, and were aligned at different inverts and angles. The exact tie-in location of these lines needed to be determined, so a laying schedule was developed. Each pipe could then be numbered and pre-cut holes positioned to allow for the existing lines to simply be mortared into place. The pipe was assembled by Oldcastle prior to shipment to ensure the accuracy of the hole placement and joint alignment.

Each side of the roadway had different requirements as well. The southbound side had to tie into an existing concrete arch while the northbound side simply had a flared end on each side. A concrete collar was used to connect the proposed 48-inch x 76-inch HERCP to the existing culvert on the north side of the southbound lanes. The location of these flared ends and collar had to be

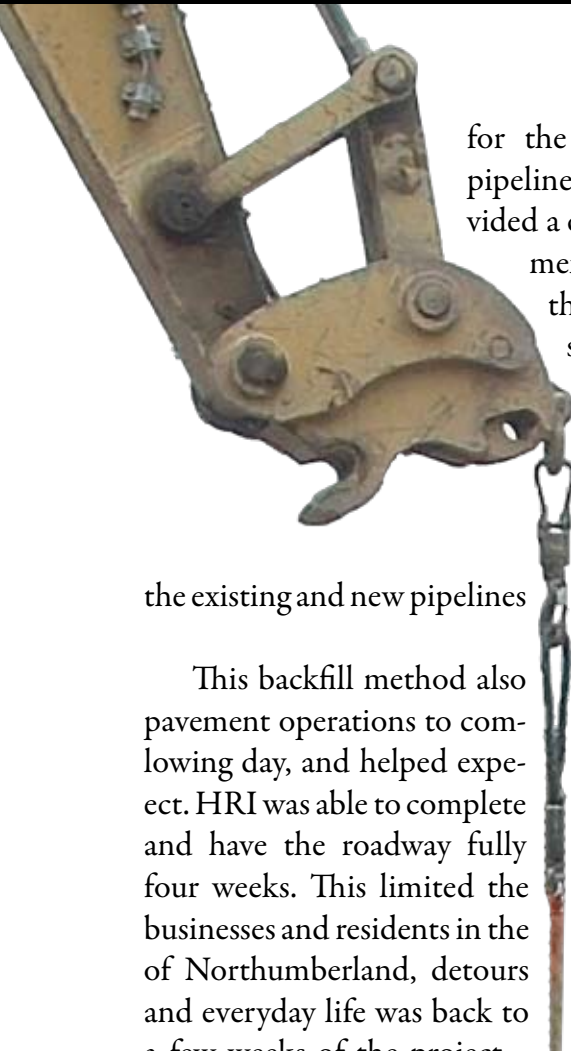
exact to ensure a smooth installation with no construction delays, as each pipe was custom manufactured.

Another challenge was that working in the downtown district did not allow for an adequate staging area. Deliveries had to be coordinated to correspond with the proposed construction schedule. Each delivery provided the exact pieces needed for that day to limit unnecessary handling, storage and movement of the pipe. This allowed for the contractor to leave the existing pipelines in service until they were tied into the new line.

The use of certain construction and staging methods by HRI, Inc. allowed for a quick installation of the pipeline. Starting on the southbound side, sand bags were used as bulkheads to help stop the flow of the existing tributary. The pooled water was then pumped around the ongoing construction allowing for quick daily set-ups and tear downs. Trench construction methods were then used to lay the pipe and limit the impact to the surrounding properties. Detours were avoided by the use of two construction stages, which allowed enough of the roadway to remain operational during construction.

After the existing section of culvert was excavated and the proposed pipe laid into place, flowable fill concrete was used as backfill material. The low strength concrete was poured up to the existing utility line and the pre-cut hole in the elliptical pipe. The existing pipeline was then positioned into the hole and mortared into place using a Class A concrete collar. The mortar was allowed to set overnight and flowable fill concrete was used the following day to backfill up to the bottom of the pavement box.

HRI used up to 50 cubic yards of flowable fill concrete in one day with each side requiring a total of 115 cubic yards. The choice of this material as a backfill not only provided a stable bedding



for the large elliptical pipeline, but it also provided a concrete encasement for the pipe that tied into the structure. Once it was covered in concrete, the integrity of the connection between the existing and new pipelines

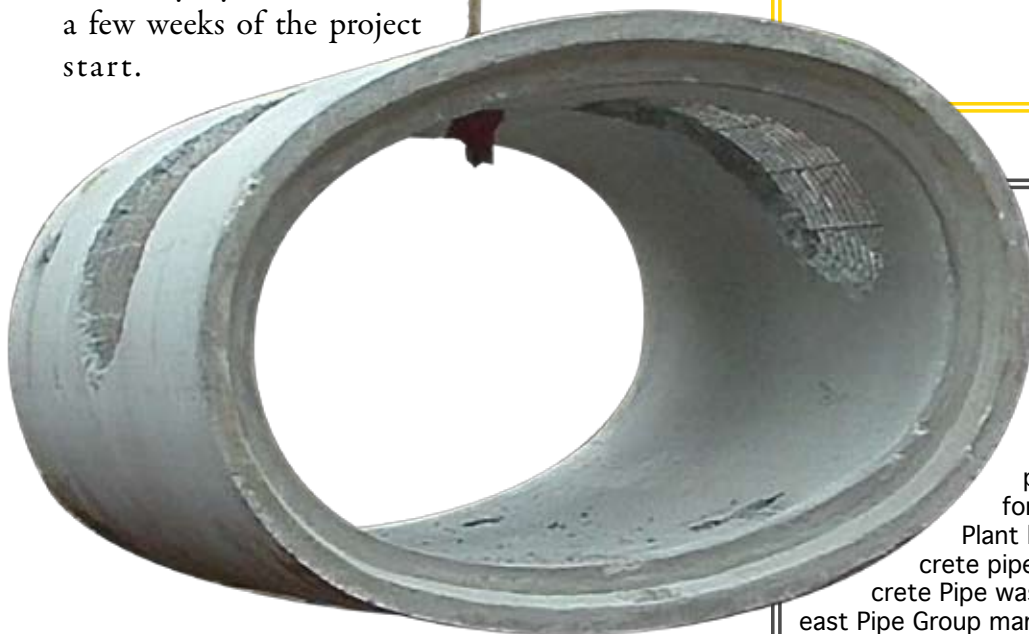
the existing and new pipelines

This backfill method also allowed for pavement operations to commence the following day, and helped expedite the project. HRI was able to complete and have the roadway fully functional in four weeks. This limited the impact to local businesses and residents in the downtown area of Northumberland, detours were avoided, and everyday life was back to normal within a few weeks of the project start.

allowed for pavement operations to commence the following day, and helped expedite the project. HRI was able to complete and have the roadway fully functional in four weeks. This limited the impact to local businesses and residents in the downtown area of Northumberland, detours were avoided, and everyday life was back to normal within a few weeks of the project start.

equated a solution that will benefit the community and downtown district for generations to come. The project was completed November, 2007.

Project:	Northbound and Southbound Culvert Replacement State Route 11, Section 87M Northumberland Borough, PA County of Northumberland
Designer/Owner:	Pennsylvania Department of Transportation - District 3 Montoursville, PA Paul King, P.E.
Contractor:	HRI, Inc. Eastern Regional Office Bloomsburg, PA Terry Broffe
Producer:	Oldcastle Precast, Inc. Pipe Pipe - Farmingdale, NJ Flared Ends - Montrose, PA (NE Pipe Group, Oldcastle Precast, Inc)
Quantities:	144 feet of 48-inch x76-inch horizontal elliptical reinforced concrete pipe Three (48-inch x76-inch flared end sections)



The Northeast Pipe Group of Oldcastle Precast, Inc. consists of three plant locations in Pennsylvania (Cayuga Concrete Pipe) and two in New Jersey (Kerr Concrete Pipe). Cayuga Concrete Pipe started in New Britain and has been a presence in the pipe market for over 48 years. The Montrose Plant has been manufacturing concrete pipe for over 50 years. Kerr Concrete Pipe was founded in 1936. The Northeast Pipe Group manufactures 12-inch through 120-inch diameter rubber gasket and mortar joint pipe, 18-inch to 108-inch elliptical pipe, and flared ends 12-inch through 72-inch round and elliptical. See www.oldcastleprecast.com.

Both PennDOT and the residents of Northumberland are pleased with the finished results of the project and the work done by HRI and Oldcastle. This unique solution not only saved the taxpayers of Pennsylvania money, but also provided an ad-

Reinforced Concrete Pipe - The Right Choice for Two Centuries

*By Mark Mruk, Hatch Mott MacDonald
and Deborah Loomis
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Transit Road, also known as NY Route 78, is one of western New York's oldest roads, and an arterial highway. A heavily travelled 1.4 mile section forms the jurisdictional boundary between the towns of Cheektowaga and Lancaster in the south, and Amherst and Clarence in the north. Because of the need for greater highway capacity and safety improvements for the 1.4-mile section, New York State Department of Transportation (NYSDOT) redesigned the section with assistance from consulting engineer, Hatch Mott MacDonald. The design included replacement of undersized reinforced concrete pipe (RCP) installed in the early 20th Century with larger diameter RCP required to accommodate greater volumes of runoff. Plans and other records for Transit Road date to the early 1900s, but the road existed long before construction records were required.

Rapid growth in commercial development and increasing traffic congestion prompted the towns to partner with NYSDOT to address the congestion, mobility, and safety concerns. Changing traffic patterns and corridor development required careful study to meet both the needs of the DOT and the towns. Provisions for six new through lanes, as well as multiple auxiliary turn lanes were designed to handle the 48,000 vehicles that travel over Transit Road each day. Route 78 is also noted for heavy commercial truck traffic because it provides direct access to New York State Thruway I-90 located in the southern portion of the project. Preliminary design that began in 2000 ended in December 2006 with the bid letting of the approved design. The contract was awarded to Dipizio Construction C., Inc. for \$28,398,000.

The first drainage product of choice on Transit Road was concrete pipe, and remains the preferred choice close to 100 years later. The new buried drainage system consists of 36-inch to 72-inch diameter RCP that replaced the still-functioning 36-inch diameter storm sewer. A 72-inch diameter outlet pipe was required to handle the 72 cubic feet per second peak design storm water discharge.

Hatch Mott MacDonald and NYSDOT determined that RCP was the pipe of choice for several reasons. Considering performance of RCP and the associated cost savings related to the maintenance of a concrete pipeline and minimal disruption to traffic, the proven 100-year service life of concrete pipe met the design life of the project. Since the storm sewer would be installed in a shallow trench in a floodplain, buoyancy of the pipe was an important design consideration. With RCP, adequate buoyancy resistance was attained, even if the pipe was empty when completely covered by floodwater. In addition, the O-ring gasketed pipe minimized the potential for infiltration, a key consideration given the presence of fine soils and perched groundwater conditions. Savings in trench excavation costs were realized by specifying concrete pipe, because approximately 50 percent of the pipe installation was aligned through limestone bedrock. Since narrow rock trenches are permitted for concrete pipe installations in New York State standard backfill details, the cost savings in select backfill material was significant. The final reason for specifying concrete pipe was related to future considerations. Approximately 2,000 feet of the outfall pipe was installed in 2007, but is subject to future construction loading with little cover when a section of Transit Road will be reconstructed and widened.

The concrete pipeline was characterized by a special design feature to deal with the periodic flooding

of a portion of the 1.4-mile project. In August 2004, runoff from storms generated by Hurricane Frances pushed the level of Ellicott Creek near the project outfall well into the 100-year floodplain. The new sewer would be completely submerged every seven or eight years by recurring storms similar to those of Hurricane Frances. To reduce the potential for additional flooding caused by a backed up drainage system and damage to the storm sewer, a backflow prevention system was specified. A Red Valve Company, Tideflex® check valve would prevent such a backflow into the sewer. Tideflex check valves require no routine maintenance or repair due to their all rubber compound construction. This is a totally passive valve, operating solely on line back pressure. The valve was placed over a 72-inch diameter pipe section in the last manhole prior to outletting. The concrete pipe was evaluated and determined to be structurally adequate to support the cantilevered weight of the valve system, thereby minimizing valve installation cost. The valve is approximately ten feet high in the closed position, tightly fitting into the manhole chamber.

The RCP pipeline installed for performance through this century is expected to perform equally as well as the system that went before it. Environmental considerations and the need for a reconstructed arterial road demanded a high performance pipeline that could accommodate new technology for reducing the impacts of recurring floods and potential damage to the structure. “Getting in, getting out, and staying out” is a mantra often used by NYSDOT, particularly in western New York. RCP was the right choice for servicing historical Transit Road and serving the need of NYSDOT.

Project:	Route 78 (Transit Road) Road Work
Owner:	New York State Department of Transportation Region 5 William Zimmerman
Engineering:	Hatch Mott MacDonald Buffalo, NY Mark Mruk
Contractor:	Dipizio Construction Co., Inc. Cheektowaga, NY Marty Dipizio
Producers:	Cayuga Concrete Pipe Croydon, PA
Quantities:	672 feet of 42-inch diameter Class 3 RCP 1,000 feet of 48-inch diameter Class 3 RCP 1,400 feet of 54-inch diameter Class 3 RCP 860 feet of 66-inch diameter Class 3 RCP 2,300 feet of 72-inch diameter Class 3 RCP

The Northeast Pipe Group of Oldcastle Precast, Inc. consists of two plant locations in Pennsylvania and two in New Jersey (Oldcastle Precast Pipe). These plants have been a presence in the pipe market for over 48 years. Kerr Concrete Pipe was founded in 1936. The Northeast Pipe Group manufactures 12-inch through 144-inch diameter rubber gasket and mortar joint pipe, 18-inch to 108-inch elliptical pipe, and flared ends 12-inch through 72-inch round and elliptical. See www.oldcastleprecast.com.

Photo: Mark Mruk



Photos: Deborah Loomis

Specially Designed Jacking Pipe Used As Alternate to Box Culvert

By Kris Thompson
Rinker Materials – Concrete Pipe Division
402-510-7111

Traffic volume on US Highway 6/Nebraska Highway 31 in the vicinity of Gretna, Nebraska continues to increase, as the City of Omaha expands westward. Consequently, the Nebraska Department of Roads (NDOR) has addressed this growth through strategic planning and the design and redesign of roads to accommodate traffic. One improvement area was US Highway 6/Nebraska Highway 31 in Douglas and Sarpy Counties from Nebraska Highway 370 to "Q" Street in Gretna. This roadway is a main artery for travel between the community of Gretna and the rapidly expanding City of Omaha.

NDOR tendered a project on April 13, 2006 to replace the existing two-lane highway with a four-lane divided highway. The original design specified the jacking of several concrete pipe culverts underneath Highway 31, in addition to construction of an 8-foot x 8-foot reinforced concrete box culvert. Before construction commenced,

several value engineering ideas were generated at an Associated General Contractors of America (AGC) culvert committee meeting that could pass along savings in construction costs to NDOR. Working with engineers from Rinker Materials – Concrete Pipe Division, NDOR specified jacking 108-inch diameter reinforced concrete pipe (RCP) as an alternate to constructing the box culvert,

which would have caused additional disruption to traffic. NDOR had already decided to jack much of the culvert pipe in the project to keep the highway open to traffic during construction. Providing an alternative to the box culvert made sense when Rinker engineers



NDOR specified jacking 108-inch diameter RCP as an alternate to constructing a box culvert.
Photo: NDOR

were able to demonstrate how a large diameter pipe could accommodate anticipated peak flows and loads of a four-lane highway.

The road reconstruction project was awarded to Charles Vrana & Son Construction Company, who chose to use the 108-inch diameter RCP due to its ease of installation and lower construction cost. The contractor chose Rinker Materials to supply the concrete pipe and KW Boring for the jacking operations. Construction commenced in June 2006.



*Installed 108-inch diameter RCP
Photo: NDOR*

Specifications for jacking the 108-inch diameter RCP required the contractor to design, furnish, and construct the pipe. The contractor was responsible for ensuring that the design of the RCP was capable of withstanding the jacking stresses and the dead load from the design fill height shown in the plans. The pipe design required review by a Professional Engineer registered in the State of Nebraska, and the engineer’s stamp on the approved design.

Rinker Materials’ Engineering Division teamed with Lamp, Rynearson and Associates to develop the most economical design using direct design methods. NDOR reviewed the special design for the concrete pipe culvert in a timely manner which resulted in a project that was completed ahead of schedule. The owner, contractor, designers and pipe supplier exemplified how a project could be completed with great success based on partnership and cooperation.

Project:	US-6/N-31 Gretna – “Q” Street Gretna, NE
Owner:	Nebraska Department of Roads (NDOR) Omaha, NE
Engineering:	Nebraska Department of Roads Engineering Division Lamp, Rynearson & Associates, Inc. Omaha, NE Rinker Materials Engineering Division
Inspection Agency:	Nebraska Department of Roads, District 2 Omaha, NE
General Contractor:	Charles Vrana & Son Construction Company Omaha, NE
Producer:	Rinker Materials – Concrete Pipe Division Valley, NE
Quantities:	Approximately 160 feet of 108-inch diameter jacked RCP (special design)



*108-inch diameter RCP with bell jacking bands
Photo: NDOR*

Rinker Materials Corporation (the US subsidiary of Rinker Group Limited), headquartered in West Palm Beach, Florida, is one of the largest producers of heavy building materials in the United States with its principal operations in Florida and Arizona and additional operations in 29 states. Products manufactured include crushed stone, cement, concrete, concrete block, concrete pipe and asphalt. See www.rinkermaterials.com.

Precast Box Culverts Produced with SCC Used on Utah's Legacy Parkway

By Robert Brinkerhoff
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The Wasatch Front of Utah encompasses the main metropolitan area around Salt Lake City. Approximately 120 miles long and less than 10 miles wide through some sections due to the mountain ranges and the Great Salt Lake, the growing area of 2 million residents is facing a transportation crisis. Despite the Interstate 15 corridor that runs north/south along the Great Salt Lake, transportation demand cannot be met. The Legacy Highway is a parallel freeway to offload the north/south traffic from I-15. When completed, Legacy Highway will pass through six communities in Davis and Salt Lake counties. The initial 14 mile segment known as the Legacy Parkway will be completed in 2008, although the entire highway is not projected to be completed until 2025 or later.

The Parkway's proximity to the Great Salt Lake raised environmental issues and court challenges that delayed the initial construction of the Legacy Parkway from 1996 to 2006. With a design-build construction process accelerating

construction timelines, precast concrete boxes were substituted for cast-in-place structures to meet the aggressive construction schedule.

In addition to meeting the construction schedule, precast concrete box culverts were necessary to meet the environmental and hydraulic design challenges. Wetlands and drainage aspects of the Legacy Parkway were an extremely important aspect of many of the legal issues that had plagued the project. Precast concrete boxes provided the culvert structure required to support the highway and to allow for shortened timeframes of temporary diversions of drainage.

With construction timelines a critical element of the project, Oldcastle Precast (Amcors) used a self-consolidating concrete (SCC) mix design that enabled workers to strip the initial daily pour after four hours. This allowed for two pours per shift and full utilization of forms and labor. To accomplish this, the SCC "Nitro" mix had to meet 2,100 psi in four hours. The forms were stripped, but the box remained on a pallet overnight while steam curing. The boxes would reach a seven-day strength of 6,600 psi and exceeded 7,800 psi after 28 days. Compressive strengths were 10 to 15 percent higher than conventional SCC mix designs.

Many of the boxes were manufactured with prefabricated holes in the top slab to accommodate dowel bars, so that a guardrail could be installed over the top of selected box culvert sections. The holes were at a skew and went through the double-wide box section at an angle. Layout and construction tolerances were critical.



New technology in the SCC mix design allowed 5,500 tons of precast concrete boxes to be produced and delivered to the job site in five months. While SCC mixes can be slightly more costly due to admixtures, there are overall savings due to reduction in labor, safety equipment, and insurance requirements. In essence, an SCC mix design does not have to be vibrated while pouring because of its high flowability. When combined with the ability to develop an extra high early strength mix design that allowed for two pours per shift, this approach to production of the boxes made for an extremely cost effective way to fast track a project. The drainage portion of the Legacy Parkway project was completed in 2007 with nearly 1,800 feet of precast reinforced concrete box culverts.

Project:	Legacy Parkway, Davis County Utah
Owner:	Utah Department of Transportation Salt Lake City
Design Engineer:	H.W. Lochner Brian Byrne, Tyler Robirds Salt Lake City
Contractor:	Ames Construction Tim Burgett West Valley City, Utah
Producer:	Oldcastle Precast (Amcors) Ogden, Utah
Quantities:	980 feet of 13-foot x 6-foot Reinforce Concrete Boxes 678 feet of 11-foot x 4-foot Reinforce Concrete Boxes 138 feet of 12-foot x 5-foot Reinforce Concrete Boxes

Oldcastle's Ogden Utah facility has been in service for over 50 years. Along with a full line of concrete pipe and manhole products, Oldcastle also produces utility vaults, catch basin products, box sections, and a wide variety of other precast products. See www.oldcastle-precast.com.



Photos: Randy Wahlen



editorial

continued from page 3 _____

Throughout ACPA's history, concrete pipe producers have jointly funded research and development to advance technology to raise the standard for producing concrete pipe, and ultimately the quality of precast concrete drainage products. Concrete pipe producers have long been strong community builders within the industry, and without. Their commitment to work together with contractors, specifiers, designers and regulators to make better pipe should not go unrecognized. The annual Project Achievement Award demonstrates the commitment of the concrete pipe industry to research and development that will produce outstanding products that are du-

rable and sustainable. The Award validates these qualities for state DOTs who have a choice to specify materials and products that match service life to design life on their projects.

ACPA's 2008 Chairman Bill Washabaugh has launched the fourth Project Achievement Award. Any state DOT may enter the competition. State DOTs and ACPA members are invited to submit projects jointly or separately. The winning award is based on public involvement and education, use of new materials or large diameter concrete pipe or precast boxes, use of new technologies, innovation, complexity, cost effectiveness and environmental benefits. Entry forms for the 2009 Award are due March 1, 2009 ☺



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Join us at ACPA's 2008 Fall Short Course School on November 3 - 5 in Savannah, Georgia. Learn from industry experts, who will offer you a variety of courses from three education tracks on Monday and Tuesday – Basic Engineering, Advanced Engineering, and Management. Instructors will bring their personal knowledge and practical experience to each session. Besides earning valuable PDHs/CEUs, you will have many opportunities to network with peers and industry professionals. ACPA is an approved sponsor for continuing edu-

cation in Florida and North Carolina. Also make plans to attend the river boat dinner cruise on Monday evening. Wednesday is a "Members only" day.

Register to attend and make your travel arrangements early. Take this opportunity to learn more about the design specifications, and utilization of pipe-line products for sanitary and storm sewers and culverts, while experiencing the charm of beautiful Savannah. For more information visit the ACPA website at www.concrete-pipe.org under "education."



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