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On the Cover:

Fifty-four-inch reinforced concrete pipe with steel bell bands and grouting ports to withstand the anticipated 400,000 lb. jacking load.



American **Concrete Pipe** Association

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Editorial

The New *Concrete Pipe News*



Matt Childs, P.E., President
American Concrete Pipe Association

Concrete Pipe News is changing to accommodate web-based technology for sharing knowledge and information. This issue is an 8-page publication distributed in hard copy, and archived as an electronic document with links to files on the ACPA and other industry-related sites.

Articles in *Concrete Pipe News* are portals to data and information that, among other things, will help members and other readers to have much greater access to information that will assist in specifying concrete pipe, designing and constructing major pipelines, and differentiating the performance of rigid and flexible pipe.

Concrete Pipe News is beginning a new era where it will continue to be a relevant source of information using the latest technology for Web-based communications. Some issues will be project focused, as is this issue, where the 2009 Project Achievement Award is spotlighted. The award winner and the other entries are described with links to other sources of information to satisfy the reader who may wish to know as much as possible about a product or technology used to solve a problem.

ACPA's flagship publication was established in 1949 by Richard C. Longfellow. The publication has evolved for over 60 years of technological and industry-wide change, and is now entering the information technology network of websites, social networks, and high-speed transmission of data and information to accommodate our readers.

Welcome to the new *Concrete Pipe News*. We hope you will bookmark the page at www.concrete-pipe.org that is dedicated to this innovative form of communication, and make it one of your favorite sites to share with others.

Link to the Full Story

2009 Project Achievement Award Winner - The First Use of Tunneling Method with Reinforced Concrete Jacking Pipe in DelDOT's History

<http://www.concrete-pipe.org/award.htm>

Contact: Bob Perrone, Rinker Materials – Concrete Pipe Division CEMEX
302-378-8920

Award-Winning Road Widening Using Precast Boxes and SCC a First for WSDOT

<http://www.concrete-pipe.org/award.htm>

Contact: Ted Reynolds, Oldcastle Precast Inc.
800-892-1538

Stormwater Detention Facility under NJDOT Roadway Is Largest to Date

<http://www.concrete-pipe.org/award.htm>

Contact: Alex Gallinaro, Oldcastle Precast Inc.
800-642-3755

WYDOT Precast Box Underpasses Raise Level of Safety for Motorists and Deer

<http://www.concrete-pipe.org/award.htm>

Contact: Shane Conley, Rinker Materials – Concrete Pipe Division CEMEX
307-265-3100



2009 Project Achievement Award Winner

The First Use of Tunneling Method with Reinforced Concrete Jacking Pipe in DeIDOT's History

By Tom Brooks, P.E.


Delaware Department of Transportation, Dover DE

302-760-2353

Bob Perrone

Rinker Materials – Concrete Pipe Division CEMEX, Middletown DE

302-378-8920



Shield that was used to protect the men as they removed the old CMP and excavated for the new pipe.

Standard tunneling methods and 54-inch diameter reinforced concrete jacking pipe was used to replace a 48-inch diameter corrugated metal pipe (CMP) culvert that had been in service for 25 years on Route 4 in New Castle County, DE. This was the first use of tunneling and pipe jacking of a storm sewer in DeIDOT's¹ history. Rinker Materials – Concrete Pipe Division CEMEX² supplied the pipe with steel bell bands and grouting ports to withstand the anticipated 400,000 lb. jacking load. Tenbusch provided the contractor with a tunnel shield and a hydraulic jacking unit. The tunnel shield protected the men as they excavated the face of the tunnel and manually removed the cut CMP and excavated material.

LINKS

<http://www.concrete-pipe.org/award.htm> (full story)

Project: SR4, Ogeltown-Stanton Road Culvert Replacement

References


1. www.deldot.gov
2. www.rinkerpipe.com/Locations/ConcretePipe/PlantLocns_006_US.shtml

Project Related

- Engineer: RK&K Consulting Engineers
www.rkk.com/index.php/delaware
- Contractor: Eastern States Construction Service, Inc.
- Tunnel Equipment Supplier: Tenbusch
www.tenbusch.com/tunnel
- Jacking Concrete Pipe
www.concrete-pipe.org/pdfs1/DD_13.pdf
- Design Data 4 - Jacking Concrete Pipe
www.concrete-pipe.org/pdfs1/DD_4.pdf
- You Should Know – Technical Paper - Microtunneling
www.concrete-pipe.org/ysk_pdfs/ysk109.pdf
- Loads and Supporting Strengths
www.concrete-pipe.org/pdf/DM_Chp_4.pdf
- Keyword search: tunneling or jacking
www.concrete-pipe.org



Culvert carries stream under Route 4.



54-inch diameter reinforced concrete pipe jacked under Route 4.
Photos: Tenbusch, Inc.

Award-Winning Road Widening Using Precast Boxes and SCC a First for WSDOT

By Hien Trinh, Project Engineer Construction
Washington State Department of Transportation, Bellevue, WA
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Ted Reynolds
Oldcastle Precast Inc., Auburn, WA
800-892-1538

The award-winning widening¹ of a section of State Route 520 between the West Lake Sammamish Parkway interchange and State Route 202 in King County between the cities of Redmond and Sammamish, Washington recorded two firsts for the Washington State Department of Transportation (WSDOT)². The widening marked the first time that WSDOT allowed the construction of a three-sided precast box storm water detention vault system within the travelled way of their infrastructure. It was also the first time that self-consolidating concrete (SCC)³ was used on a WSDOT project. The use of SCC in the production of the boxes increased installation efficiencies and reduced the amount of preparation work and grouting for the waterproofing application. The construction of the vault was required to treat stormwater runoff⁴ from the roadway to ensure the health of salmon and other fish in nearby streams and rivers.

On this project, the new Load and Resistance Factor Design (LRFD)⁵ standards had to be included in the engineering. The segmented, precast vault design ingeniously used a 24-foot wide, 3-sided structure with precast base slabs and baffles. Oldcastle's design utilizing the basic three-sided box with the LRFD requirement for increased traffic loading, minimal cover, precast floor, baffle, and end sections was instrumental in obtaining approvals for construction.

LINKS

<http://www.concrete-pipe.org/award.htm> (full story)

Project: SR 520 - West Lake Sammamish Parkway to SR 202

References

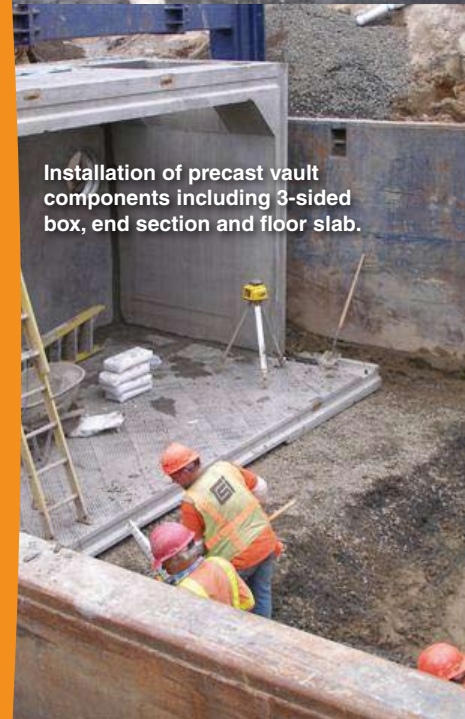
1. www.wsdot.wa.gov/projects/SR520/WLakeSamPk_SR202
2. <http://www.wsdot.wa.gov>
3. www.concrete-pipe.org/education/qualityschool/05_Concrete%20Mixes.pdf
4. www.concrete-pipe.org/brochures/pdfs/underground_storm_water.pdf
5. www.concrete-pipe.org/pdfs1/DD_1.pdf

Project Related

- Contractor: Tri-State Construction Inc.
www.tristatecon.com
- Pipe Producer: Oldcastle Precast Inc.
www.oldcastleprecast.com/Locations/Pages/default.aspx
- Keyword search: stormwater, boxes, detention or retention
www.concrete-pipe.org



Installation of precast vault components including 3-sided box, end section and floor slab.



Three-sided box lowered into position without closing Route 520.
Photos: Tri-State Construction

Stormwater Detention Facility under NJDOT Roadway Is Largest to Date

By Alex Gallinaro and Rex Busa
Oldcastle Precast Inc.
Folsom and Farmingdale, New Jersey
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In 2008, New Jersey DOT (NJDOT)¹ specified the largest stormwater detention facility² it had ever tendered under a section of 100-year old Rt. 5 that was scheduled for reconstruction. The multi-channelled 72-inch diameter detention system was needed to retain some 110,000/ft³ of stormwater runoff from Rt. 5 and surrounding streets. The stormwater detention facility, would mitigate the flooding of houses located in low-lying areas adjacent to the roadway, a result of an antiquated system with insufficient capacity. All of the work was to be completed while maintaining traffic flow and retaining storm water from Rt. 5.

Nine-ton sections of 72-inch diameter reinforced concrete pipe (RCP) were lowered some 30 feet to the facility's bedding foundation. Storage for materials, heavy traffic, and solid ledge rock were challenges during construction. Limited onsite space required close communication between the producer³ and the contractor for just-in-time delivery of the concrete pipe.

LINKS

<http://www.concrete-pipe.org/award.htm> (full story)

Project: Rt. 5 Stormwater Detention Facility

References

1. www.nj.gov/transportation
2. www.concrete-pipe.org/brochures/pdfs/underground_storm_water.pdf
3. www.oldcastleprecast.com/Locations/Pages/default.aspx

Project Related

- Engineer: CMX Engineering
www.cmxengineering.com
- Contractor: New Prince Concrete Construction (no website)
- Keyword search: stormwater, detention, or retention
www.concrete-pipe.org



Photos: Alex Gallinaro,
Oldcastle Precast Inc.



WYDOT Precast Box Underpasses Raise Level of Safety for Motorists and Deer

By Gregg Fredrick, State Bridge Engineer
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Shane Conley
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Nugget Canyon is part of the migration route for an estimated 14,000 mule deer. Until recently, approximately half of the crashes on U.S. Highway 30 passing through Nugget Canyon in southwest Wyoming involved deer. In 2001, the Wyoming Department of Transportation (WYDOT)¹ built a wildlife underpass at the west end of the canyon along with deer-proof fencing to direct the herd to the crossing. On July of 2007, the Wyoming Transportation Commission awarded a \$3.9 million contract to Hout Fencing of Wyoming Inc. to build underpasses and erect 12 miles of deer-proof fence to direct deer to the underpasses and prevent them from crossing the highway at other locations. Using precast concrete boxes² reduced the cost of building the underpasses by about 25 percent. The precast concrete boxes were used to construct six underpasses, each 20 feet wide, 12 feet high and 47.33 feet long.

LINKS

<http://www.concrete-pipe.org/award.htm> (full story)

Project: Nugget Canyon Underpass

References

1. <http://dot.state.wy.us/wydot/pid/1>
2. www.rinkerpipe.com/default.shtml

Project Related

- Contractor: Hout Fencing of Wyoming Inc. (no website)
- Keyword search: pedestrian tunnel
www.concrete-pipe.org

Photos:
Wyoming DOT



The underpasses provide a highway crossing safe for deer and motorists.



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Save this link <http://www.concrete-pipe.org/cpnews.htm> to your favorites list to increase your knowledge about drainage applications and innovative ways to use precast reinforced concrete pipe and boxes to build structures that will last.