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New Lake Huron Water Intake Ready to Supply Pipeline

In October, construction of a 1.4-mile, 78-inch diameter pipeline into Lake Huron near Worth Township, MI to intake water for a new regional water supply was completed. ROWE was excited to be part of this project, for which Genesee County officials had been studying and planning almost two decades. The intake is designed to draw as much as 85 million gallons of water per day from Lake Huron.

Others involved in this massive project include Lockwood, Andrews & Newnam, Inc.; GEI Consultants of Michigan, P.C.; Professional Service Industries, Inc.; L. D'Agostini & Sons, Inc.; and Buffalo Industrial Diving Company.

Unique project aspects included:

- Installing pipes by tunneling 500 feet offshore to where lake depths allowed completion of remaining offshore installation by excavation from barges.
- Utilizing a microtunnel boring machine that is controlled remotely and eliminates the need for workers to be in the tunnel during excavation. This protects workers against a potential encounter with methane gas and flooding.
- Having a specialized team of divers install pipes, joints, and perform testing underwater. Divers were fitted with video and communications equipment so it was possible to monitor their work from the barge.

For the project, ROWE:

- Assembled and managed a team of consultants to develop the design of the water supply intake
- Completed surveying and mapping
- Prepared and submitted environmental permit applications for the intake
- Prepared plans for the intake pipeline
- Designed site improvements
- Performed construction administration



Above left, workers excavate the shaft and install earth retention 50 feet below ground level for the tunneling operation. Middle, the microtunnel boring machine (MTBM) is lowered into the shaft to begin tunneling. The MTBM and tunneling operations are controlled from within the yellow structure in the photo, which is located at ground level. Right, the contractor utilizes two barges for marine installation of the pipeline. The barge in the foreground is for pipelaying; the barge in the background is for excavating the pipeline trench.

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ROWE's South Carolina Staff Complete Master-Planned Community

In 2007, ROWE acquired Carolina Aerial Surveys Inc. in Myrtle Beach, SC. Our first engineering project in that state was to complete the design of Surfside Beach Club, a 143-acre master-planned community for Bill Clark Homes — which has been an award-winning builder in the Carolinas for more than 35 years. The community provides five separate neighborhoods and more than 480 single-family lots. ROWE designed the grading and infrastructure for three of the neighborhoods, including 50 acres and more than 180 single-family homes. ROWE also completed the close-out of the remaining portions of the project. With less than 20 remaining lots, construction is scheduled for completion by the end of this year.

With the completion of Surfside Beach Club, Bill Clark Homes and ROWE are moving forward with Belle Mer, their next master planned community in Myrtle Beach. The project is a 113-acre, 225-lot, single-family subdivision being designed and constructed on the existing Wicked Stick Golf Course. The master-planned community will include two neighborhoods; the design of phase 1 of each is currently near completion. Construction for phase 1 of each neighborhood is scheduled to begin in November.



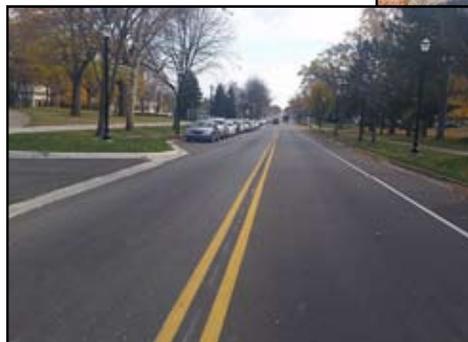
Above and at right are aerial views of the community.

Staff Use Excellent Coordination Skills for Superior Street Project

With careful coordination, a half mile of the City of Alma, MI's Superior Street was reconstructed without interfering with Alma College's summer activities and in harmony with a separate traffic signal job, railroad crossing replacement, and campus improvement projects. ROWE prepared the successful grant application, designed and provided construction engineering services for the project, which was completed this fall.

The project, along Alma College frontage, included converting the three-lane road into a two-lane road with on-street parking; water and sanitary sewer replacement; and construction of a 10-foot-wide concrete non-motorized path and bike lane. Michigan Department of Transportation (MDOT) Transportation Alternatives Program funding was used for enhancements, such as stamped concrete crosswalks, decorative lighting, and landscaping.

ROWE was in close communication with Alma College, the City of Alma, the MDOT Office of Rail, and MDOT - Mt. Pleasant TSC during the project's planning and execution.



The above aerial view of the project along the Alma College corridor includes stamped concrete crosswalks. At left is a street view showing on-street parking on the left and the bike lane on the right.

ROWE Plays Part in Completing County's First Roundabout

On October 10, the temporary barricades and plastic drums were removed, signs taken down, and traffic was literally going in circles over the reconstructed intersection at Hill and Elms Roads on the border of Gaines and Mundy townships, MI. This project to replace stop signs and flasher on Elms Road with a roundabout is history making for Genesee County as it is the first roundabout on a public roadway within the county. ROWE had the privilege of working alongside the Genesee County Road Commission on this monumental project, providing both design and construction engineering services.

The project was 0.3 mile in length and included removal of all existing pavement. New aggregate base was placed along with storm sewer, curb and gutter, concrete pavement, HMA approaches, signs, and pavement markings.

During design, ROWE coordinated with local farmers and truckers within the area to make sure the proposed roadway would accommodate the large equipment that would need to traverse through the intersection. ROWE also assisted with obtaining grading easements for the project.

After discussion and explanation of the safety aspects of roundabouts, everyone was excited about the prospect of reduced severity of accidents at this location, which included 10 crashes in the last four years – resulting in three injury and one fatal.



Pictured above is the intersection prior to the construction; at right is the completed project.

The Federal Highway Administration reports constructing roundabouts:

- Improves traffic safety (35% fewer overall crashes, 75% fewer injury crashes)
- Improves pedestrian safety (40% fewer pedestrian collisions)
- Reduces air and noise pollution
- Calms traffic
- Provides good transition between high-speed/low-speed areas or commercial/rural areas
- Lowers operating and maintenance costs compared to a signalized intersection
- May require less approach widening than other types of intersections



Conditions Right for Pervious Concrete on Fenton, MI Site

ROWE worked with the City of Fenton, MI and Rhoads and Johnson to develop an innovative storm water solution for their parking lot that included the use of pervious concrete. The owner, SkyPoint Ventures, restored the historic Fenton Bean Company for a high-end sporting goods outfitter. The retailer and city will share the completed 60-space parking lot.

The existing municipal storm water system was at capacity and could not handle any additional storm water. An underground detention system was originally considered for the site, but the required depth of excavation, the short project timeline, and associated costs of the system made it clear an alternate plan would be beneficial for the development.

The project team worked together to find an environmentally-responsible solution, which resulted in a pervious concrete storm water retention system. The system cross section includes six inches of pervious concrete over a 12-inch thick crushed limestone detention layer that covers a native sand subbase. The storm water system will allow 100 percent of the storm water to percolate into the sandy soils below the parking lot with no run-off.



At left, workers from contractor Fessler & Bowman place pervious concrete at the Red Fox Outfitters parking lot. Construction was managed by Rhoads & Johnson. Below is the Red Fox Outfitters building.



Award-Winning Project Turns Unsightly Alley into Desired Destination

The Buckham Alley Corridor Plan was chosen by the Michigan Association of Planning for an Urban Design award due to its excellent effort to create a sense of place in a public space. For the plan, ROWE completed conceptual plans and illustrations, provided cost estimates for design and construction options, and identified funding sources for the Flint Downtown Development Authority.



At left is a photo of conditions prior to implementation of project elements. It was clogged with cars and trash receptacles. At right is a recent festival in the alley, including a view of the new lighting (photo courtesy of Friends of the Alley).



Staff Updates

ROWE Names New Associates

Beginning in January 2016, three new associates will join ROWE's group of 18 associates; company shareholders who participate in firm management and long-range goal development to improve the quality of services provided to clients.

- **Tracy A. Blouir** is a 16-year ROWE employee who earned an A.S. in construction engineering technology from Lawrence Technological University. As a senior engineering technician / CADD coordinator in the Special Services Division, he performs design engineering for private and municipal clients.
- **Steven M. Clark** is a 15-year ROWE employee who earned a B.S. in earth science and sociology from Central Michigan University. As a project administrator in the Civil Utilities Division, he designs projects, manages teams, and administers construction projects for municipal, county, state clients, and land developers.
- **Michael A. Royalty, PE**, is a 10-year ROWE employee who earned a B.S. in civil engineering from Michigan Technological University. As a project manager in the Civil Utilities Division, he assists with the design, construction, and analysis of various road and infrastructure projects.



T. Blouir



S. Clark



M. Royalty

Promotion Announced

Jeffrey B. Markstrom, PE, has been promoted to the Civil Utilities Division manager position. He is replacing Leanne H. Panduren, PE, as she transitions to the chief executive officer (CEO) position. Current CEO John D. Matonich, PS, will retire at the end of this year. Jeff joined ROWE in 2008 with 15 years of civil engineering experience and a B.S. in civil engineering from Michigan Technological University. He is a ROWE associate (company shareholder). Jeff oversees a staff of 24 engineers and engineering technicians who work with local communities to address their infrastructure needs.



J. Markstrom

The ROWE Team Expands

- **Steven J. Magnan, PE**, joined ROWE as a senior project manager in the Civil Utilities Division in the Farmington Hills, MI office. He has a B.S. in civil engineering from the University of Michigan and 25 years' experience in the areas of project management, design/build management, and transportation engineering.
- **Amanda B. Reed** joined ROWE as a receptionist in the Flint, MI corporate office. She has an A.S. in business management from Baker College and 15 years of customer service experience.



S. Magnan



A. Reed

For questions about these projects and more, contact Director of Corporate Marketing Jack Wheatley, PE, at JWheatley@rowepsc.com or (800) 837-9131.

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