

The SDA **C**ONNECTION



Award Winning Project—Toledo, Ohio Eastside Watermain Phase II

**INNOVATIVE USE OF “HISTORICAL” SURVEY TECHNIQUE
 ACHIEVES MODERN RESULTS**

ACEC honors Spalding DeDecker Associates, Inc. (SDA) for survey construction layout under Maumee River

The American Council of Engineering Companies (ACEC) presented SDA with the Surveying Honorable Conceptor Award for its creative usage of an “age-old” surveying technique on a challenging project. Through the use of historical surveying equipment, SDA successfully performed the construction layout of 1600 feet of tunnel *beneath* the Maumee River, connecting the watermain on the east river bank, to the watermain on the west river bank. SDA used surveying equipment called a Gyrocompass (or Gyroscope), typically used for mining in the 1960’s. The new watermain will increase overall efficiency and water pressures in both the southern and western portions of Toledo’s distribution system, strengthen the eastern portion of the system, and increase reliability through an additional river crossing that will ultimately reduce system pressure losses.



Gyroscope used to survey beneath the Maumee River connecting east river bank to west river bank.

Inside this issue

Connections—East Side Water Main Phase II	2
Teaming Up—Surveying Excellence	2
Awarded Projects	3
The <i>Cutting-Edge</i>	3
Community Matters	3
Contact Information	4
Project Portals	4

Industry TIPS

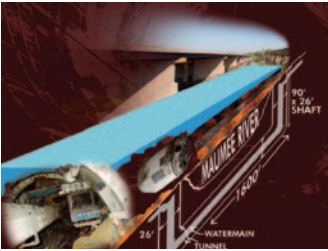
Preventative water and wastewater collection systems maintenance can save significantly in replacement and repairs. Comprehensive operations and maintenance procedures assure system reliability. A well-developed maintenance program will help avoid breakdowns, and will enable water and wastewater systems to serve their expected life spans.

Spalding DeDecker Associates, Inc. (SDA) has performed full-service operations and maintenance of technical facilities for municipal authorities across southeast Michigan, including the Detroit Water and Sewerage Department, which operates the third largest water and sewer utility in the United States.

We work with municipalities to plan, direct, coordinate, and review the work plan for maintenance staff; meet with staff to identify and resolve problems, assign work activities, projects and programs; monitor work flow; review and evaluate work products, methods and procedures.

www.spaldingdedecker.com

Connections—East Side Watermain Phase II



Establishing and maintaining a close connection with the contractor, James Bilicki of Ric-Man Construction, Inc. of Sterling Heights, MI and the City of Toledo representatives during the intense progression of this project was critical. The City of Toledo performed a Water Distribution Study in 1996 that projected the population and water demands through the year 2025. The watermain modifications are necessary to maintain safe, reliable service to meet existing and future growth demands. The tunnel was constructed between the City of Toledo and Perrysburg Township.

Phase II East Side Watermain Project was a continuation of

Phase I, completed in 2002, involving two miles of water line from Toledo's Water Treatment Plant, to an existing river crossing. Phase II continued where Phase I ended and ran to the River Tunnel, and from the tunnel to an existing waterline. Phase II included five miles of 72-inch watermain, 2.6 miles of 66-inch watermain, and 1.5 miles of 48-inch watermain, including the Maumee River Crossing.

When looking at the project to determine a layout budget, SDA realized that any deviation from the survey baseline would increase the project costs astronomically. The construction time line left no room for error. Alignment

holes could not be drilled, due to the river, to verify the Tunnel Boring Machine's position. SDA used an antique Gyrocompass for this task.

With the survey in hand, the Ric-Man Construction, Inc. proceeded. One day ahead of schedule, the SDA Survey Team received the call. Jim Bilicki exclaimed, "Just heard from Ohio. They hit the exit shaft dead center, perfect line and grade. Congratulations! You guys did a great job getting us across that river!" The drill had hit **right on the mark** after drilling through 1600 feet of dolomite.

Teaming Up! —Surveying Excellence



When the SDA Team initially looked at the City of Toledo Eastside Watermain project to determine a layout budget, they understood that the responsibility to provide an accurate baseline was paramount. Survey technicians had to crawl through a 90-foot long, 3'x3' opening carrying a bag full of tools through the Tunnel Boring Machine's conveyor system. GPS equipment verified the coordinates of the control, and established the centerline of each shaft. The gyrocompass was attached to

a theodolite. A Turning Point Method was used to determine the precise direction of true north, the angle of the tunnel measured from true north was first measured precisely on the ground surface, before entering the tunnel. One reading took at least 20 minutes. Based upon the SDA Survey Team's diligence, calculations, innovative thinking and proper use of equipment, SDA was able to contribute, successfully, to this project.

SDA licensed professional surveyors, can mobilize up to ten fully-equipped and ready-

to-roll field crews, staffed with Certified Survey Technicians (CST). All field personnel are highly trained in the use of surveying technology, while practicing work site safety in a drug-free company environment. Surveyors are experts at resolving difficult property line and right-of-way, site development, topography, infrastructure and the construction staking issues for complicated new industrial and commercial buildings. We are true team partners in every relationship, and our success depends on delivering positive results.

New Projects

Michigan Department of Transportation
I-275 Lane Extension from I-96 to 6 Mile Road

Michigan Department of Transportation
Road Scoping in Wayne County
I-96 (Livonia), US-12 (Michigan Avenue, in Dearborn Heights and Inkster), and I-375 (Detroit)

City of Troy
Livernois Rehabilitation, Maple to Big Beaver

Michigan Department of Transportation
M-59 Survey Staking in Howell

Beaumont Hospital
New Independence Township Facility Site

North Gratiot "Interceptor" Sewer Projects
(Contract 5 and Lenox Local)
Lenox Township

City of Inkster
CSO Sewer Separation Project

Brandon Schools
Oakwood Road Site Survey

The Cutting-Edge



LAKIN RECEIVES MSPE INDIVIDUAL ENGINEERING EXCELLENCE AWARD FOR 2007

David A. Lakin, president of SDA, was awarded in recognition of his outstanding leadership, achievements and contributions to the engineering industry, professionalism, community involvement and Michigan Society of Professional Engineers (MSPE).

10TH ANNUAL MICHIGAN STORMWATER FLOODPLAIN ASSOCIATION CONFERENCE

The Association of State Floodplain Managers has established this national program for professional certification of floodplain managers that are involved in floodplain management, flood hazard mitigation, the National Flood Insurance Program, and flood preparedness, warning and recovery.

Maria Sedki, PE, and Brian McKissen, PE attended this year's conference in Grand Rapids, MI. Both Maria and Brian tested and successfully passed the Certified Floodplain Managers (CFM) Exam, and are now registered CFMs. This training and registration enhances the firm's ability to serve its clients in their stormwater needs. SDA can effectively provide flood management consultation, studies, and assistance in the implementation of the National Flood Insurance Community Rating System (CRS).

Community Matters

National Engineer's Week is the last week of February each year. This year, Spalding DeDecker Associates, Inc along with the Michigan Society of Professional Engineers (MSPE), participated in the ZOOM into Engineering Program. The ZOOM into Engineering Program is a collaboration of the National Engineers Week Foundation, and the popular kids' television show, ZOOM on PBS. The program incorporates ZOOM's kid-tested activities with real engineers, and provides the kids with a chance to learn how science and engineering apply in the real world. On March 1st, fifth graders from local schools assembled at the Sashabaw Middle School in Clarkston, MI to participate in an array of science experiments. Cheryl Gregory and Scott Wanagat of SDA both spoke about the Civil Engineering profession, and directed the kids through the step-by-step experiments. Cheryl led an experiment in which the kids mixed and strength-tested their own glue made from vinegar and skim milk. Scott led an experiment

in which the kids generated static electricity with a balloon and held it over gelatin powder to see its effects. Everyone had a great time and the kids learned a lot about engineering.





Spalding DeDecker Associates, Inc.

Engineering Consultants
Infrastructure • Land Development • Surveying

Contact Information

The SDA Connection is a publication of Spalding DeDecker Associates, Inc.

Copyright © 2007 All rights reserved

For more information on the articles or subscriptions, please contact Sandy Alford at salford@spaldingdedecker.com or Toll Free: 1-800-598-1600

We're on the web www.spaldingdedecker.com

Michigan Offices: Detroit | Rochester Hills | Trenton

Project Web Portals

Spalding DeDecker Associates, Inc. (SDA) utilizes an innovative communication tool — Web-Based Project Portals to facilitate communication among project team members, internally and externally.

All Team members, including the Client Project Manager and any stakeholders, will be able to upload and download files, documents, standards, and comments via the Internet project portal site.

This is a **secure** website, with **controlled access**, that allows Team members to share a common location for project information, such as meeting minutes, schedules, plans, details and correspondence.

It is particularly **useful when sharing large electronic files**, such as Microstation drawings or site photos, which can be problematic with computer network firewalls, with attachment size limits. The portal site is not intended to replace the design project file, but allows electronic reference data to be stored at a common location for all Team members to access.

The portal:

- Facilitates communication between the SDA Team and other team members including clients, contractors, and other stakeholders.
- Aids information sharing between all designated project team members
- Speeds up the follow-up on issues and concerns
- Improves team accountability

