

# STRAIGHT LINES

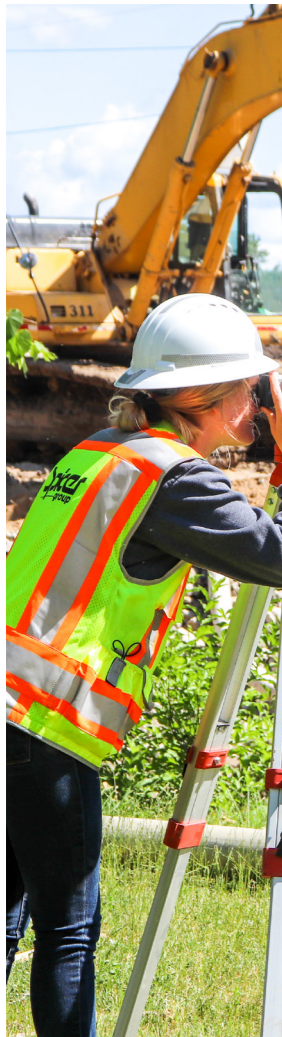
Spring 2023



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## SPICER GROUP'S NEW HIRES

### KEVIN CAMPBELL

Kevin was recently hired as a Construction Service Technician in the Municipal Service Group at our Manistee office. He earned his associate degree in Civil Engineering Technologies and bachelor's degree in Construction Management from Ferris State University.

### JENNIFER CHEHAB, P.E.

Jennifer recently joined our Municipal Service Group as a Senior Project Manager at our Bingham Farms office. She earned her bachelor's degree in Civil Engineering from the University of Detroit and has 26 years of experience as a licensed professional engineer.

### FREDERICK DICE, AIA

Frederick was recently hired as a Project Architect in the Architecture Service Group in our Saginaw office. He earned his associates degree in Architecture from Delta College and his bachelor's and master's degree in Architecture from the University of Michigan.

### NICOLE FELTEN

Nicole was recently hired as a Graphic Designer in the Marketing Group at our Saginaw office. She earned her bachelor's degree in Integrated Marketing Communications from Pepperdine University in Malibu, California.

### JERAD KENT

Jerad recently joined the Survey Service Group in our Standish office as a Technician. He comes to Spicer Group with nine years of CAD experience.

### TYLER MARKERT

Tyler was recently hired as a Construction Engineer in the Construction Service Group at our Lansing office. He earned his bachelor's degree in Civil Engineering from Iowa State University.

### CALVIN SMITH

Calvin was recently hired as a Technician in the Survey Service Group in our Saginaw office. He earned his associate degree in CAD Drafting from Mid-Michigan College.

### BO REINHARDT, P.E.

Bo recently joined the Municipal Service Group in our Traverse City office as a Project Manager. He earned his bachelor's degree in Electrical Engineering from Lake Superior State University and became a licensed professional engineer in 2008.

# SPICER GROUP ANNOUNCES

# NEW PRINCIPALS IN 2023

Spicer Group is proud to announce four new principals to our team.



**RICK E. BORN**  
named a new Principal

After completing his associate degree in Construction Engineering Technology at Ferris State University, Mr. Born was hired by Spicer Group as an Inspector in 1997. In 2000, he was promoted to Construction Administrator, to Construction Manager in 2009, and to Senior Construction Manager in 2021. He became an Associate at Spicer Group in 2012, a Senior Associate in 2015, and a Shareholder in 2019. Now, he serves as the Construction Service Group Director company-wide.



**NICHOLAS D. CZERWINSKI, P.E.,**  
named a new Principal

Nick began working for Spicer Group while still in high school in 2001. While attending college, he continued to work for us part-time. In 2007, he was hired full-time as a Design Engineer in Spicer Group's Water Resources Service Group at our Saginaw office. Nick is currently a Senior Project Manager and oversees the Water Resources Service Group in Saginaw. He holds a bachelor's degree from Michigan Technological University in Civil Engineering and became a registered Professional Engineer in Michigan in 2011. Nick became an associate at Spicer Group in 2015, a Senior Associate in 2017, and a Shareholder in 2019.



**PAUL L. FORTON, P.E.,**  
named a new Principal

Paul was hired by Spicer Group to work in the St. Johns office in 2003 as an engineering intern. After earning his bachelor's degree in Biosystems Engineering from Michigan State University in 2004, he was hired on full-time as a Design Engineer in 2005. He received his Professional Engineer license and became a Project Engineer in 2009 and was promoted as an Associate in 2012. He became a Senior Associate in 2014 and a Shareholder in 2016. He is currently a Project Manager and leads our Water Resources Service Group in Byron Center.



**NATHAN G. SHEPHERD, P.S.,**  
named a new Principal

Nate joined Spicer's Survey Service Group in our Saginaw office in 2008 as an intern surveyor. In January 2012, he was rehired as a full-time Survey Crew Chief and has since been a Staff Surveyor, Project Surveyor, and Survey Project Manager. Nate was promoted to Associate in 2015, a Senior Associate in 2018, and became a Shareholder in 2019. He now heads our Atlanta, Georgia office. He graduated from Ferris State University with a bachelor's degree, specializing in Land Surveying, in 2011. He became a licensed Professional Surveyor in Michigan in 2015, a licensed Professional Surveyor in Georgia in 2020, and a licensed Professional Surveyor in Kentucky in 2021.

# Flood Mitigation Project Improves Little Tobacco River Intercounty Drain



**THE LITTLE TOBACCO RIVER INTERCOUNTY DRAIN** begins just northeast of US-10 at the Tobacco River in Grant Township in Clare County and travels nearly 2.83 miles through Clare County, southwest through the historic downtown in the City of Clare to Dunlop Road, which is the Isabella County Line. Its waters flow into the Tittabawassee River, the Saginaw River, and ultimately the Saginaw Bay.

The drain was established in 1897 and is maintained by the Little Tobacco River Intercounty Drain Drainage Board. The Little Tobacco River Intercounty Drainage District services approximately 7,007 acres and consists of many different land uses.

Historically, the City of Clare had been built-out within the existing drain right-of-way and special flood hazard area for the Little Tobacco River Intercounty Drain. Businesses and residences were located directly next to the drain, which crosses beneath 13 bridges within the City. Flooding surrounding the drain was a proven and historical threat.

To mitigate this, the City of Clare petitioned the Little Tobacco River Intercounty Drain Drainage Board to develop an improvement and maintenance project to improve the drain and significantly reduce the possibility of flooding.

This project was found necessary by the drainage board in 2013 after a public hearing where the board listened to the residents and stakeholders about the flooding concerns along their property

and on roadways. This project was also found necessary after inspections of bridges throughout the City of Clare that crossed the drain were found to be at the end of their life expectancy and required replacement.

For the next few years, the drainage board worked with the City and other stakeholders to make the project design adequate to mitigate the risk of flooding and cost-effective for taxpayers.

Multiple options on how to improve the drain and solve flooding issues were brought forward to the drainage board.

After a hydraulics study was completed by Spicer Group, it was determined the bridges and drain were inadequate to support the 100-year storm floodplain. To reduce flooding and improve the drain, all the bridges would have to be replaced, increased in size, and the drain channel would need to be increased to convey the water downstream and avoid flooding during significant rain events. However, this solution was cost-prohibitive for the municipality as their budget would not be able to sustain it.

An alternative solution was proposed to replace the bridges while also pursuing funding through the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation Grant program. This program provides funding for municipalities to purchase property from owners at a fair market value to then remove the structures from the special flood hazard area, creating an open greenspace and floodplain.

The drainage board worked with Spicer Group to determine that 26 landowners with properties within the City were eligible for the grant process. The Drainage Board worked with the landowners to use the grant to voluntarily move from the floodplain area. Once vacant, these homes and buildings were removed from the floodplain, reducing the risk from the 100-year stormwater levels.

The design incorporated two innovative approaches. The first approach included maintaining the original depth and features of the drain channel and constructing a flood shelf to provide the additional conveyance capacity required to ensure that the flooding was contained within the channel. The second design approach utilized the FEMA Pre-Disaster Mitigation Grant to remove several houses and structures from the floodplain in conjunction with replacing the bridges, which helped the project become a financially feasible undertaking for the municipality and stakeholders.

This portion of the project focused on restoring the floodplain by increasing the cross-sectional area of the drain's channel, restoring floodplain connectivity, and reducing the risk of property flooding throughout the City of Clare while also enhancing the environment along the drain.

The bridge-replacement portion of the project included the replacement of 11 bridges that crossed the drain. These bridges were at or near life expectancy – some having been built more than 80 years ago—posing a potential risk to those that traveled them every day. These bridges were replaced with new and improved structures, creating safer, more sustainable roadways.



Demolition of the Great Lakes Central Railroad Crossing on the Little Tobacco River Intercounty Drain.



Finished box culvert replacement on the Little Tobacco River Intercounty Drain along McEwan Street (Bus-127) in the City of Clare.

In seven of the bridge replacements, three-sided precast concrete bridges with pedestal footings or pilings were used. These pedestal footings were specially designed by Spicer Group and Northern Concrete Pipe and were the first of their kind implemented on a three-sided structure. This design allowed the drain's natural stream bed to be retained, rather than be replaced with a flat-bottomed stream bed typically used in a four-sided box culvert crossing. In addition, the footings allowed for manageable loads of precast materials to be shipped to the site by lessening the need for a greater scale three-sided precast concrete bridge.

Spicer Group, along with Wade Trim and Fahey Shultz Burzych Rhodes, assisted the Little Tobacco River Intercounty Drain Drainage Board with managing the improvement project, maintaining a high level of communication and coordination throughout the entirety of the project, designing the replacement bridges, designing the drain improvements, applying for the grant, administering the grant, constructing the improved drain, demolishing the buildings within the floodplain, and constructing the greenspace and floodplain shelf.



## VILLAGE OF MAYVILLE IMPLEMENTS IMPROVEMENTS FOR WASTEWATER LAGOON AND SEWER SYSTEM

currently being constructed in Phase I to prepare for the future Phase II rehabilitation of the two existing cells. Construction began in late 2022 and will be complete by this summer.

In order to meet today's state requirements, lagoons must have an approved dual-liner system. For the future Phase II project, both of the existing cells will be cleaned, reshaped, and lined. All three cells will be equipped with a composite clay and geomembrane dual-liner system. The cells will also have a venting system installed beneath the new liners to ensure any gases are able to escape. The future Phase II construction on the two existing cells will take place after the addition of the third cell is fully completed.

Current construction efforts underway also include updating portions of the Village's sanitary collection system which consists of 6.87 miles of gravity sewer, ranging in size from 6-inches to 12-inches. The system includes four sanitary pump stations with 0.66 miles of forcemain.

This division of the project includes sewer replacements on Fulton, Turner, and Pine Streets; Fifth Street pump station rehabilitation, Ohmer Road and Fox Street pump station replacements, 12-inch interceptor sewer CIPP lining, and manhole sewer repairs. The Fifth Street pump station's pumps,

wetwell piping, and electrical and controls will all be replaced. The Ohmer Road and Fox Street pump stations will be completely replaced with new duplex submersible pump stations and have permanent onsite natural gas backup generators. Construction on these efforts is slated to begin this spring.

Spicer Group was hired by the Village of Mayville to provide financial application assistance, engineering design, permitting assistance, and construction administration and inspection for the project.

The current work that is under contract received grant and loan funding from the United States Department of Agriculture Rural Development in the amount of \$7.16 million. To make all the components of the project more manageable, it was split into divisions. The first division (A) includes all of the collection system improvements which is being carried out by American Excavating Ltd. The second division (B) for the lagoon cell construction is being done by Fisher Contracting. The upgrades being made to the lagoon and collection system will bring the community one step closer towards an efficient and easily maintainable system that will last the community through future years.

**TUSCOLA COUNTY** – The Village of Mayville, a community of roughly 950 people, owns and operates its own wastewater collection system and lagoon facility to convey and treat sanitary sewer waste. The system is a crucial part of the community's infrastructure, and improvement efforts are currently in process to upgrade both the lagoon treatment system and collection system.

Lagoon operations involve taking in wastewater and naturally treating it by holding the water for a period of time. While the water sits in the lagoon cells, it undergoes several biological processes. These processes are sped up by bacteria, oxygen, sunlight, and wind components to naturally clean the water. The Village of Mayville's lagoon facility, located at the eastern end of Mills Street, is composed of two cells that were expanded in the 1970s. Although the community has followed a routine maintenance schedule on the lagoon, improvements were needed to meet state regulatory requirements.

The Michigan Department of Environment, Great Lakes, and Energy, which oversees state permitting of wastewater facilities, made recommendations to the Village of Mayville that the cells be completely drained and cleaned out to allow for the improvements to be made. In order to take a cell out of service for an extended period of time such as this, a third lagoon cell sized for 8 million gallons of working volume is



Fisher Contracting creating a berm on the northern side of the new lagoon cell.



Precast concrete sections for catch basins and manholes.

Spicer Group was hired by the Village of Mayville to provide financial application assistance, engineering design, permitting assistance, and construction administration and inspection for the project.

# MACDC



# AWARDS ANNOUNCEMENT

**CONGRATULATIONS** to the Clare County Drain Commissioner, Isabella County Drain Commissioner, Michigan Department of Agriculture and Rural Development (MDARD), and the Montcalm County Drain Commissioner for being presented with awards at the Michigan Association of County Drain Commissioners Winter Conference held in February. An Innovation and Excellence Award was given to the Clare County Drain Commissioner, Isabella County Drain Commissioner, and MDARD for the Little Tobacco River Intercounty Drain Maintenance and Improvement Project. Turn to pages 6-7 to read more about this complex project. The Montcalm County Drain Commissioner was given an Honorable Mention Award for the Rainbow Lake Drain project. We will be highlighting this project in our upcoming Summer 2023 issue.

## LITTLE TOBACCO RIVER INTERCOUNTY DRAIN MAINTENANCE AND IMPROVEMENT PROJECT



## RAINBOW LAKE DRAIN IMPROVEMENT PROJECT



The outlet structure with ductile iron pipe and gate valve during installation.



The excavator conveyor system being used to backfill the trench.



Left to right: Troy Andrews, P.E., Larry Protasiewicz, P.E., Brady Harrington, P.E., Michigan Department of Agriculture and Rural Development, Carl Parks, Clare County Drain Commissioner, Robert Willoughby, Isabella County Drain Commissioner, and Brian VanNorman.



Installation of a new culvert along 5th Street (Bus-10) in Clare.



Left to right: Paul Forton, P.E., Todd Sattler, Montcalm County Drain Commissioner, and Noah Szott, P.E.

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