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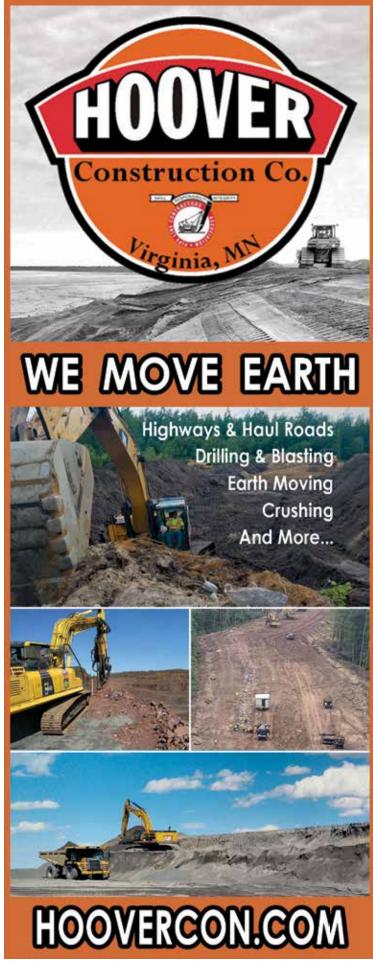
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Looking Toward Another 100 Years of Service



The year 2019 marks a new year for Lakehead Constructors, what may be viewed as a new beginning. This year marks the construction of new facilities for Lakehead as we continue to embrace our second century of service. As I have always spoken highly of in the past, I extend a very heartfelt thank-you to our trade partners, suppliers and subcontractors for their

continued contributions. Without them, Lakehead Constructors Inc. would be unable to perform as expected or be able to present this publication to you.

Our core values remain the same as always: safety, quality, innovation and integrity. We commit these values to you, the owner, in our quest to be the best and most sought-after contractor serving the upper Midwest — and to remain that way. We have always strived to meet and exceed what you have come to expect from Lakehead Constructors. We continue to train and mentor our employees in the pursuit of providing the services expected to all of our clients. We incorporate the latest technology to provide the finest workmanship for each of our projects and work closely with our labor bodies to meet the challenges that projects present.

This issue features an article on our new facilities located in Aurora, Minnesota, as well as Superior, Wisconsin. Others include our work with the CN Railroad, Project OZ and a new United Way facility in Chisholm, Minnesota.

With our continued efforts to expand our services, we count on the dedication of all of our valued employees. Without their commitment to the quality of work provided and the constant attention to schedules and details, Lakehead Constructors would not be in the position it is in today as the contractor of choice for so many great customers.

Best regards,

Brian Maki

Chairman, President and CEO





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- 3 Message from the President
- 6 Project OZ
- 10 New Facilities
- 12 Lakehead Completes Largest Railroad Project to Date
- 16 Chisholm Makes Way for the United Way

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n the spring of 2018, Lakehead successfully bid and negotiated contracts for packages No. 1 and No. 2 for a \$110 million Capital Improvement Project at Cleveland Cliffs Northshore Mining Facility in Silver Bay, Minnesota. The primary focus of the project is to modify the existing plant to create low silica taconite pellets as feed stock for a \$700 million HBI (Hot Briquette Iron) plant that Cliffs is building in Toledo, Ohio. Along with plant modifications, additional buildings and structures are being constructed to process and store the new product. Cliffs has also made the decision to idle the coal-fired Silver Bay Power Plant in 2019 and purchase power from Minnesota Power. However, the existing taconite processing facilities are heated by steam, contributing to the project scope.

A new $40' \times 90' \times 47'$ pre-engineered metal building will be erected to house new steam equipment. This project involves the construction and start-up of a new steam plant consisting of three fire-tube Cleaver Brooks package boilers. The new facility will include power supply, natural gas supply, feed water treatment and pumps, noncondensing economizers, blow-down handling and heat recovery equipment, flue gas breeching, a common stack and an integrated control system. The steam output will be connected to the existing plant steam supply main header. Tie-ins to existing utility systems in the existing power house were required, providing service to the new building's gas, steam, water and drains systems.

This new steam building became the first available work area based upon IFC drawing releases for the project. Ulland Brothers completed the building, stack, HVAC and transformer foundation excavations for our below-grade concrete work. Once the foundation work was complete. Ulland backfilled, fine graded and completed site paving. Integrated in the excavation for the structures was the utility excavation completed by Lakehead for the underground utilities, tying the new building to the existing boiler building. In addition to the excavation for the utility lines, Lakehead self-performed the underground piping, coatings, pre-engineered metal building erection, interior platform, structural utility supports, control room construction and existing utility rack improvements to allow the structural support of the 16-inch gas line and steam piping. Lakehead's pipefitters tied in and ran the few hundred feet of gas line and steam piping to the new steam building. Lakehead provided the heavy lifting to offload the three packaged boilers and place them on framework so that Moorhead Machinery and Boiler could complete the final install. Lakehead subcontracted with Moorhead, who completed the boiler installation, associated system piping within the new building and exhaust ducting and 120' stack installation. Construction of the new steam building started in May and the first boiler was commissioned on November 27, ahead of the December 1 deadline. Parsons Electric completed the electrical and instrumentation for this project, and Northern Industrial Insulation provided onsite insulation services.



Shortly after the start on the steam building, Atlas Foundation began work onsite with the first activity being the $70' \times 244' \times 80'$ Scavenger Building. Atlas scope included installation of micro piles for foundation support of two 40' diameter thickener tanks. Once the micro piles were complete, Ulland Brothers started on the excavation for the building footings, walls and pilasters. Along with the building's perimeter concrete, Lakehead's carpenter worked on interior footing and piers, concrete launder sump and trench system and two ring foundations for the slurry storage tanks that also sit within the footprint of the Scavenger Building. LCI poured out 1,700 cubic yards of concrete from the second week in June through September. Moorhead Machinery and Boilers tank builders started in September as the concrete work finished up. Moorhead began on the erection of the two thickeners, then moved onto erection of the two slurry storage tanks. Once the west slurry storage tank was completed, LCI moved onto the building and interior platform steel erection. The interior platform steel supports six magnetic separators, two splitter boxes and a distributor box. A 15-ton bridge crane will be installed to support future maintenance. Twelve pumps are to be installed, and 3,250 linear feet of large-bore piping ties the process together within the building. Another 3,100 linear feet of 3" and smaller piping provide seal water piping and steam piping for the steam heaters in this building.

Just as Moorhead started in September on the thickener tanks, we added craft employees to accommodate an annual planned plantwide outage. During the five-day outage, we completed tie-ins and upgrades for the 60 discharge conveyor belt. Prior to the outage, we completed foundation work to accommodate the shuttle building expansion. The shuttle house addition allows room to extend 61 shuttle rails and relocation of the 61 and 161 winches, giving NSM a fourth shuttle position. The fourth shuttle point will feed the new I conveyor. One upgrade to the 60 conveyor is the option to run 60 conveyors both east and west. To make the bi-directional conveyor feasible, the installation of the W and X conveyors and a new transfer tower were concluded prior to the September outage. With the prep work done prior to the outage, Lakehead installed a new drive motor on the east end of 60A and take-up framework. We completed the extension of the 60A belt from the new transfer tower going east, performed idler shimming and discharge chute modifications. Going west from the W and X transfer tower, we completed conveyor tie-ins from the 60B to the old 60C conveyor, made discharge chute modifications and installed a new drive on the west end of the 60B conveyor in the drive house. During the outage, demolition of existing structural steel and piping was required to clear a path for added structural steel to support the 60B drive motor and provide access. The drive house takes up a very





small footprint on the mile-long work area we have at NSM-Silver Bay; however, it is our most challenging work area. The area is generally filled with steam as the hot pellets transfer through here, making it impossible to see and very similar to a Halloween haunted house. We were given short windows to enter the area to confirm design, identify interferences, plan access and clean prior to the outage. Lakehead completed the outage work, working day and night, on time and without injury.

As the foundation work finished on the shuttle house, one of our concrete crews moved to the foundations for the I and J conveyors. Concurrently, Atlas worked on installation of the rock anchors for the J conveyor foundations. An additional 1,800 cubic yards of concrete was poured from August through October to support the 1,400 feet of new enclosed conveyor. Once completed, the new system will allow Cliffs to provide segregated storage of the low silica taconite pellets at their Silver Bay facility. The tail of the I conveyor starts beneath the fourth shuttle point, climbing 90' in elevation over 450' up to a transfer tower. At this point, the pellets will discharge down onto the tail of the 950' long J conveyor. The J conveyor is set up with a traveling tripper car for discharge of the pellets from the belt for stacking. The enclosed J conveyor gallery is 18' x 18' with insulated metal panels. There were 175 truck loads of structural steel, siding and conveyor components associated with this system. The typical assembled gallery section weighs 190,000 pounds, fully loaded, and is 110' long. We will be hoisting the section 80' to the top of bent steel elevation. There is an access bridge and tower that ties into the Anchor tower, which is at the midway point of the J conveyor. This bridge and J conveyor will be visible from Highway 61, becoming a new fixture of the Northshore.

As winter approached, we had one last area to get out of the ground, which included the limestone slurry tank, pumphouse and utility support foundations. Once the limestone ring foundation was complete and Moorhead completed the east slurry tank in the Scavenger, they moved their tank erectors to the limestone area. The erection took place from November through early February. The upper utility rack provides conveyance of the piping and cable tray from the filter building to the new structure.

Once winter set in, we moved onto the filter building, installing foundations to support structural steel required for a new splitter box. Other work in the filter building included: discharge piping from the NOLAs (nuclear online analyzers) to the new splitter box; modifications to filters three and eight, including feed lines from the west distributor; modifications to the south splitter box; piping from fines recovery to filter building thickeners and associated valves and control; installation of a new filter No. 9, vacuum pumps and piping from the vacuum pumps to the filter and silencer piping.

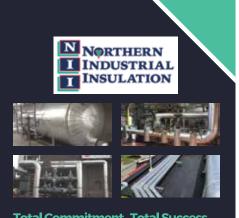
The concentrator building is the largest work area on Project OZ. The work consists of upgrading 17 concentrators sections to produce low silica taconite pellets. Flotation cells work included installing level control valves, new spray bars and diversion laterals, new VFDs for the existing froth pumps, seven new and 10 used screen oversize sumps, new piping from the new scavenger pump on each section to the designated NOLA scavenger collection sump and pump. It also included regrinding pump installation and 4" piping from the regrind pump to a secondary flotation cell. The concentrator has four NOLAs. Low silica taconite concentrate production requires a similar system. The scope included a building addition to each of the four existing NOLAs. Each addition included foundation work around the underground mill water heater, underground drain piping, furnishing and installing of sumps and splitter boxes, installation of pumps and associated piping to and from the sumps and pumps, installation of access platforms up and around the new sumps, and structural building erection, siding and insulation to complete our contract work. The NOLA building and associated components proved to be a very challenging work area. On the exterior of the concentrator, new pipe hangers run the entire length of the concentrator, giving access for piping running from the NOLAs to the filter building and from the NOLAs to the Scavenger Building.

Reactivation of sections two, three and four added to the work within the concentrator, as these sections had been removed from service some time ago. Our work scope included the installation of three new regrind mills and drive motors, three new primary and secondary flotation cells, reconstruction of finisher hydro separators and flotation hydro separators, installation of new drives on finisher magnetic separators, new froth pumps and regrind pumps, new piping and valves to reactivate all systems and new guarding for equipment.



At the end of 2018, Lakehead and its 13 subcontractors had worked 200,000 man hours without a lost time injury on the project and with peak manpower onsite at 220. The 14-month project is proving to be a marathon as we move toward the June 1, 2019, substantial completion date, reaching project milestones weekly.

Ultimately we will fulfill the purpose of this project: giving Cleveland Cliffs at Northshore Mining Silver Bay the ability to provide low silica taconite feed stock to the new HBI plant so that they can have 400,000 to 600,000 tons of low silica pellets on the ground in Toledo by the close of the 2019 shipping season.



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New Facilities

fter 103 years, Lakehead Constructors Inc. has decided to move both offices to new locations. The plan is to develop a new facility in Superior, Wisconsin, and renovate an existing building, along with the construction of a new shop in Aurora, Minnesota.

Mountain Iron relocating to Aurora was the first of the two moves. At the beginning of 2018, Lakehead purchased the Minnesota Power (MP) building, a well-built precast building, located on Third Avenue in Aurora, and a few acres of additional land off of Erie Street. Along with those purchases, the City of Aurora, the Aurora Housing & Redevelopment Authority and Lakehead Constructors entered into an agreement to develop a parcel of land between these two properties for a shop and equipment storage yard.

Near the end of June 2018, Lakehead had hired a local Iron Range earthwork contractor, Hoover Construction, to prepare the property for

the construction of a new equipment shop and a graveled equipment laydown yard. Lakehead then constructed an 8,400-square-foot equipment shop, two times the size of the previous equipment shop, on the newly developed 7 acres of land. This larger shop will allow for Lakehead to maintain the service needs of our equipment fleet, and in turn better serve the needs of our customers.

As the equipment shop was near completion, Lakehead started the renovation of the MP building into a new office and tool storage space. A significant portion of the interior structure was removed to allow for the new office layout and upgrade of electrical and mechanical portions of the



building. When the renovation was complete there were 15 new offices for our Iron Range staff.

The second of the two moves will be a new main office on the waterfront of the St. Louis River at the north end of Superior, off Winter Street. Lakehead has been in its current Superior location since the 1970s, and in May of 2018, the Superior Refining Company inquired about buying our office, shop and land. This opportunity has given Lakehead the chance to upgrade and move into a new facility. The plan to move into a new facility has been in the works for years now, and this move will keep Lakehead at the forefront of the construction industry.

With help from the City of Superior, Lakehead was able to purchase a parcel of land in a new development area so that we could remain in the community. Groundbreaking is scheduled for March 1, 2019, and we are planning to be in our new facility by early fall of 2019. The new facility will be a precast structure with nearly 32,000 square feet of office and shop space, and nearly 5 acres of graveled laydown yard.











LAKEHEAD COMPLETES LARGEST RAILROAD PROJECT TO DATE



akehead Constructors has performed railroad construction and maintenance for 30-plus years. Each year, we have become more involved with everyday activities such as track cleaning, road crossing and turnout renewals and construction of track. As rail traffic continues to increase, so does the need to expand infrastructure.

In 2018, the Canadian National Railway continued its expansions in an attempt to cure bottlenecks. One project in particular, located in the small border town of Ranier, Minnesota, was especially unique for Lakehead. The CN planned to install five No. 20 turnouts and contacted Lakehead to assist with assembly and installation. A turnout, or switch, is a mechanical installation that allows trains to move from one track to another. As with all railroad projects, this needed to be completed in as little time as possible without disrupting daily operations.

In order to make this happen, without causing major delays, the CN supervisors decided that two of the No. 20 switches would need to be welded together into one large section, called a crossover. This section, once built, would be just shy of 600 feet long and weigh roughly 250,000 pounds. Lakehead has installed many track panels over the years but never anything of this magnitude.



Lakehead's plan was to strategically place the individual panels near their final resting place prior to welding them together. By doing this, we would ensure that our movements would be minimized once the panel was in one piece. With past experience installing single No. 20 turnouts, we knew it would require at least 14 80,000- to 100,000-pound excavators. These excavators would have to work in a synchronized fashion to move the panel safely without damaging any components.

As always, careful and meticulous planning made for a seamless installation. Lakehead removed the existing track panels, excavated to the proper grade and installed the double turnout without issue. Military-style movements were utilized to help our trained operators and laborers work together. First, the panel was picked and walked east approximately 50 feet. Next, the panel was set down and the machines repositioned. Finally, the panel was lifted and walked approximately 500 feet north to its final resting place. This was a tremendous achievement that was completed safely and within the allotted time frame.











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Chisholm Makes Way for the **United Way**

s office and program spaces go, the United Way of Northeastern Minnesota (UWNEMN) office in Chisholm, Minnesota, was antiquated and cramped by any stretch of the imagination. Being undersized for its operations, this regional outreach organization began to outgrow its space throughout the last 10 years. As the needs of the region grew, the programs of the organization expanded and the need for more volunteers became evident, it was clear that a larger, more efficient space would be required. Interim space for their Buddy Backpack and Good360 programs was made available by local leaders, but with leaking roofs and space constraints, it was time for a bold move. In the role of a regional fundraising organization, as well as one that provides direct-service programming, more square footage for operations was necessary. UWNEMN currently provides meal kits to 1,004 food-insecure children on the weekends through Buddy Backpacks, and assists hundreds of individuals by providing household products to those in need through Good360. The challenge of finding a new and larger office space became the battle cry.

As it has been, and as it continues to this day on the Iron Range, it's all about relationships. The Iron Range is made up of small communities that rely on one another for support. The iron mining world is one of boom and bust, and those that live throughout the Range are robust and caring people. Al Hodnik, president of Allete and a native Iron Ranger, has always been supportive of UWNEMN and had a place he believed could work as their program and office space. Minnesota Power had an outdated service building located in Chisholm that no longer met its needs. Hodnik believed it would be perfect to house the needs of a new United Way office. An idea was born.

With the graciousness of Allete, a significantly reduced cost to purchase the building was offered to UWNEMN. The only problem was how to raise the \$300,000 needed to buy the property. Enter Dick Enrico, another native Iron Ranger, originally from Chisholm. Enrico found fame and fortune with his 2nd Wind Exercise Equipment business and, upon hearing of the opportunity to give back to his community, generously donated the \$300,000 to purchase the Minnesota Power building. The project had now found its legs.

Through the bidding process, Lakehead Constructors was awarded the interior renovation. The building had to be completely gutted and rebuilt to meet the needs of UWNEMN's ever-increasing









Before After

Buddy Backpack and Good 360 Programs

During the project's planning stages, Shelley Valentini, the executive director of the UWNEMN, took the time to explain two significant services her operation provides to Northern Minnesota. United Way of Northeastern Minnesota is an affiliate of the Good360 program, in partnership with Bed Bath & Beyond. Through this program, they are able to obtain bedding, towels, rugs and other household items. These products are then distributed to people in need throughout our service territory, based on a referral system. Through the Good360 program, UWNEMN is able to provide donated household products to individuals and families in their service territory who have experienced a fire, home damage or a recent life event causing home displacement. Since October 2014, more than 951 children and over 1,165 adults have benefited from Good360 in surrounding communities.

The second service is the Buddy Backpack program. UWNEMN's Buddy Backpack program provides a backpack filled with nutritious, nonperishable, child-friendly food items to children who are at risk of going hungry over the weekends due to various reasons. This program is designed to assist children who are facing hunger on the Iron Range. Currently, Buddy Backpacks is helping to fight weekend hunger by providing these food kits to 925 children between the Iron Range and Koochiching County each Friday or holiday break from school. A considerable amount of space is required to store the supplies for the Good 360 and the Buddy Backpack programs, along with space to package up the Buddy Backpacks for distribution to the children. The packaging alone can require as many as 50 volunteers each week to facilitate. When you see the energy Valentini and her team put into making these programs a success, it is easy to get behind these projects and help streamline their operation.

programming. At a cost of \$685,000 to renovate the building, money to be raised solely by the UWNEMN separate from their annual campaign, significant changes were underway.

With the renovations completed in the summer of 2018, UWNEMN moved their programs and staff into the building. The new facility unites and focuses on area communities in creating measurable results to improve people's lives and strengthen families. Now with room to grow, UWNEMN is positioned to create an even greater impact within the region.



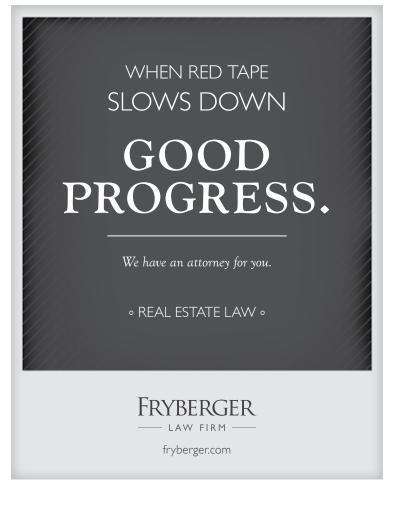






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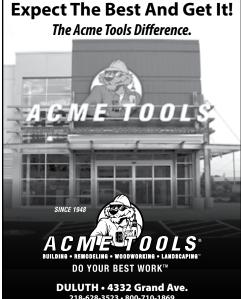


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