

Wanted: More Storage

NEW CONCRETE ANNEX PROVIDES FLEXIBILITY FOR LOADING THREE CROPS



Alton Grain Terminal LLC
Hillsboro, ND • 701-636-5130

Founded: 2001
Storage capacity: 2.2 million bushels at one location
Annual volume: 26 million bushels
Annual revenues: \$139 million
Number of employees: 8
Crops handled: Hard red spring wheat, corn, soybeans
Services: Grain handling, drying, and merchandising

Key personnel:

- Robin Stene, general manager
- Brad Kjar, assistant manager
- Keith Finney, merchandiser
- Darren Bjerke, operations manager

Supplier List

- Aeration fans AIRLANCO
- Aeration system North American Equipment Co. Inc.
- Catwalk Vigen Construction Inc.
- Contractor Vigen Construction Inc.
- Control system CompuWeigh Corp.
- Conveyor (belt)..... Hi Roller Conveyors
- Conveyors (drag) Schlagel Inc.
- Engineering Van Sickle, Allen & Associates Inc.
- Level indicators 4B Components Ltd.
- Liner Tandem Products Inc.
- Millwright..... Vigen Construction Inc.
- Motion sensors 4B Components Ltd.
- Motors U.S. Motors
- Roofer Kooiker Roofing & Insulation
- Speed reducers Dodge

Alton Grain Terminal LLC's shuttle-loading grain terminal south of Hillsboro, ND, with two new 500,000-bushel slipform concrete tanks at right. Aerial photo courtesy of Vigen Construction Inc.

When it opened for business in 2001, the Alton Grain Terminal LLC elevator south of Hillsboro, ND – a joint venture involving eight Red River Valley cooperatives to load 110-car shuttle trains on the Burlington Northern Santa Fe (BNSF) – was one of the largest new grain elevators to be built in the region for years. It offered 1.2 million bushels worth of upright

storage on hand.

But that wasn't big enough.

“We're handling three commodities – corn, soybeans, and wheat – and with a train holding 400,000 bushels, having only 1.2 million bushels on hand is running pretty tight,” says General Manager Robin Stene, who has been the manager at Halsted Elevator Co., one of the terminal's eight



Key personnel, from left: General Manager Robin Stene, Assistant Manager Brad Kjar, and Merchandiser Keith Finney. Photos by Ed Zdrojewski.



Airlanco centrifugal fans and ducting serving the PM Luft/KanalSystem floors in the new tanks.



Two Schlagel 15,000-bph drag conveyors that carry grain out to the new slipform concrete annex.

owners in Halsted, MN, for 23 years.

The following year, the terminal's owners decided to add another 1 million bushels worth of storage space in the form of two 500,000-bushel slipform concrete tanks. "Now we have five trains' worth of storage capacity, and that gives us some breathing room," says Stene.

To build the \$2.8 million project, Alton Grain turned once again to Vigen Construction Inc., East Grand Forks, MN (218-773-1159), the contractor that built the original elevator. "Service is a big issue for us," Stene comments, "and they do quality work."

Van Sickle, Allen & Associates Inc.,

Plymouth, MN (763-559-9100), served as structural engineer on the project.

The project began in spring 2003 and was completed in October.

Concrete Annex

The two new slipform concrete tanks stand 76 feet in diameter and 140 feet tall. They have no grain temperature monitoring systems but are outfitted with two 4B high-level sensors per tank and with grain ladders designed and built by Vigen. The grain ladders help prevent damage to kernels as they fall to the bottom of the tank.

The tanks also are outfitted with PM Luft/KanalSystem floors, which are sloped and channeled toward cen-

ter discharges and utilize air flow for both aeration and for assistance in unloading the tank. The system is powered by four 50-hp Airlanco centrifugal fans per tank, which deliver 1/11 cfm per bushel of air when used for aeration. Each tank also has seven 2-hp roof exhausters.

A pair of 15,000-bph Schlagel drag conveyors carry grain out to the annex from different areas of the existing elevator. The new tanks empty onto a 40,000-bph Hi Roller belt conveyor, with a 48-inch belt, housed in a below-ground concrete tunnel.

Ed Zdrojewski, editor

Interior view of two Kanals with 37¹/₂° concrete ridge



Floodplain Escape

BTR FARMERS COOP BUILDS A NEW RAIL-LOADING TERMINAL



BTR Farmers Cooperative
Churchs Ferry, ND • 701-466-2231

Founded: 1994

Storage capacity: 2.1 million bushels at three locations

Annual volume: 5 million bushels anticipated

Annual revenues: \$12-13 million

Number of members: 400

Number of employees: 13

Crops handled: Hard red spring wheat, durum wheat, barley, oats, flax, commercial and confectionary sunflowers, soybeans, canola, pinto beans

Services: Grain handling and merchandising, anhydrous ammonia, custom application, seed cleaning

Key personnel:

- Bob Yri, general manager
- David Nelson, agronomist
- Lynn Hoganson, plant mgr./Leeds
- Dale Ellsruhe, seed cleaning mgr.
- Randy Habeck, merchandiser
- Carla Bjerke, office manager

Supplier List

Aeration fans Alanco
Environmental Mfg. Inc.

Aeration system North
American Equipment Co. Inc.

Bearing sensors Compu-Watt
Weighing Systems Inc.

Bucket elevators Schlagel Inc.

Bulk weigh scale controls
AGRIS Corp.

Contractor Vigen
Construction Inc.

Conveyors Schlagel Inc.

Distributor Schlagel Inc.

Dust filters ... MAC Equipment Inc.

Elevator buckets Tapco Inc.

Grain probe InterSystems Inc.

Level indicators Monitor
Technologies LLC

Manlift .. Schumacher Elevator Co.

Samplers InterSystems Inc.

Structural engineering ... Van Sickle,
Allen & Associates Inc.

Truck scale Webster Scale



BTR Farmers Cooperative's new 680,000-bushel rail-loading terminal near Leeds, ND, can load 110-car shuttle trains in 10 hours or less. Photos by Bruce Selyem.

BTR Farmers Cooperative had a recurring problem with no apparent solution at its flagship elevator in Churchs Ferry, ND.

The problem was the continuing threat of

flooding from the ever-rising waters of nearby Devils Lake. The property at Churchs Ferry was diked from almost every direction to keep out the lake, which had submerged a num



General Manager Bob Yri demonstrates the new elevator's PLC-based control system supplied by Hope Electric.

ber of nearby properties and had even covered over some major highways in the area, said General Manager Bob Yri, who had joined the coop in April 2003 from another cooperative in North Dakota.

The only real solution was to build a new rail terminal. That 680,000-bushel terminal opened for business Oct. 1, 2003 at a site roughly five miles to the west, at a wide spot on U.S. Highway 2 known locally as "Niles." (The site has a Leeds, ND, mailing address.) The site offered access to the Burlington Northern Santa Fe Railroad, enough space for a 7,367-foot loop track, and more importantly, 70 feet higher elevation.

For the project, BTR selected Vigen Construction Inc., East Grand Forks, MN (218-773-1159), as general contractor. "Vigen is known for its excellent work, their bid was in the ballpark, and they had done some work for us in the past," Yri says.

Van Sickle, Allen & Associates, Plymouth, MN (763-559-9100), did structural engineering on the project, and Hope Electric, Hope, ND (800-950-5792), served as electrical contractor. R&R Contracting Inc., Grand Forks, ND (701-772-7667), built the loop track.

Groundbreaking took place in June 2002. Yri notes that the project took three to four months longer than anticipated to complete due to excessive rains and muddy ground. Vigen began actual construction of the struc-

ture in September, after access roads were built into the site.

Elevator Specifications

The slipform concrete structure contains four large tanks and 10 interstices. The big tanks stand 38 feet in diameter and 150 feet tall, holding 135,000 bushels each.

The tanks are equipped with KanalSystem floors, which are sloped



New 22-duct, Schlagel electronic programmable triple distributor handles the output of three legs at once and can keep three different commodities separate simultaneously.

and channeled for entry-free unloading with aeration assistance. A pair of 50-hp Alanco centrifugal fans provide 1/10 cfm of aeration per bushel per tank throughout the entire facility. No grain temperature system was included because of anticipated fast turnaround, but the tanks are equipped with Monitor level indicators.

The legs and bulk weigh loadout system were included inside the slip, as is common practice in North Dakota.

The facility includes a new office and grain grading building adjacent to an 120-foot Webster truck scale. An InterSystems grain probe samples incoming trucks.

Truckers then deliver grain to one of two 800-bushel mechanical receiving pits, which feed a pair of 15,000-bph Schlagel receiving legs. These legs are outfitted with 20x8 Tapco heavy-duty buckets on 10-1/2-inch centers, mounted on a 22-inch Goodyear belt.

The legs feed a Schlagel electronic programmable triple distributor, with 22 ducts feeding 18-inch urethane-lined spouting. The distributor can reach every tank via gravity.

The main tanks empty onto below-ground 30,000-bph Schlagel drag conveyors, which feed a 30,000-bph shipping leg. This leg is outfitted with two rows of the Tapco 20x8 buckets, mounted on a 44-inch Goodyear belt. Both of the receiving legs can be used for shipping, as well, for a total of 60,000 bph capacity.

A 10,000-bph Northland Superior cleaner is installed at ground level, with four 10,000-bushel bins above the cleaner.

The 60,000-bph scale, which was supplied by Vigen, is equipped with AGRIS oneWeigh® software, including a trackside RF tag reader for transmitting railcar capacity data to the scale controls. The oneWeigh software can interface with the office's MidStates business management system from AGRIS, which BTR uses for grain accounting.

Yri reported that as of December, the new elevator had loaded three 110-car shuttle trains and had performed "exceptionally well," averaging about 10 hours per train.

Ed Zdrojewski, editor