

# Steel Tank Annex

NORTH DAKOTA COOP GETS MORE OF ITS CROP UNDER ROOF



**Fullerton Farmers Elevator**  
Fullerton, ND • 701-375-7251

**Founded:** 1919  
**Storage capacity:** 7 million bushels at one location  
**Annual volume:** 12.5-13.5 million bushels  
**Annual revenues:** \$150-200 million  
**Number of members:** 200  
**Number of employees:** 25  
**Crops handled:** Hard red spring wheat, corn, soybeans  
**Services:** Grain handling and merchandising, agronomy, vehicle repair

**Key personnel:**

- Andrew Hager Jr., general manager
- Dana Gramlow, agronomy manager

**Supplier List**

**Aeration fans**..... GSI  
**Bearing sensors**..... Hope Electric  
**Bin sweeps** ..... GSI  
**Bucket elevators**..... GSI  
**Catwalks** ..... Warrior Mfg.  
**Concrete** .... Diversified Foundations  
**Contractor**..... Kava Construction Inc.  
**Control system**..... Hope Electric  
**Conveyors** ..... GSI  
**Conveyor belting** ..... Goodyear Conveyor Belting  
**Distributor**..... Schlager Inc.  
**Dust filters**..... CAMCORP Inc.  
**Elevator buckets** ..... Maxi-Lift Inc.  
**Engineering** ..... VAA, LLC  
**Excavation** .... Dakota Improvement  
**Grain temperature system** .. Rolfes@Boone  
**Leg belting**..... Goodyear Conveyor Belting  
**Level indicators**..... Hope Electric  
**Millwright**.. Kava Construction Inc.  
**Motion sensors** ..... Hope Electric  
**Steel storage**..... GSI  
**Steel tank erection** ... Cross Country Construction  
**Tower support system** ... Warrior Mfg.  
**Truck scale**..... Prairie Scales



*New steel annex at Fullerton Farmers Elevator in Fullerton, ND includes two GSI 1.2-million-bushel steel tanks and a pair of 20,000-bph receiving legs. Photos by Judy Hemphill, JH Photography, Spencer, IA.*

It's not every day that a relatively small farmer-owned cooperative spends \$12 million to build a storage annex, but the general manager at Fullerton Farmers Elevator in Fullerton, ND thinks it was worth it.

"We've always found ourselves piling too much grain on the ground," says Andrew Hager Jr., a 37-year grain industry veteran. "We worked with our banker to make some projections, and this penciled out."

The all-steel facility built in 2014 includes two huge GSI 1.2-million-bushel tanks, two new enclosed receiving pits and legs, and related grain handling equipment.

After taking bids on the project, Fullerton Farmers hired Kava Construction, Inc., Fargo, ND (701-282-5583), as general contractor and millwright.

"They had done some work on our existing plant in the past, and we were pleased with that," says Hager. "The thing that impressed me the most was that they took care of the subcontractors and coordinated all of the players. When you're running a year-round grain operation, you don't have time to babysit everybody."

Among those players were:

- VAA LLC, Plymouth, MN 763-559-9100), which performed structural engineer-

ing work on the project.

- Hope Electric, Hope, ND (701-945-2460), which designed and installed all of the electrical and automation systems.
- Cross Country Construction, Elbow Lake, MN (218-685-6410), which erected the big tanks.
- Diversified Foundations, Alexandria, MN (320-852-6933), which supplied and poured the concrete.
- Dakota Improvement, Oakes, ND (701-742-3226), which did site excavation work.

Construction began in the early part of May 2014, and the project was completed by the end of the year.



*General Manager Andrew Hager Jr.*



*Handling equipment includes a pair of 20,000-bph GSI receiving legs enclosed in a Warrior support tower and a 59,400-cfm CAMCORP baghouse dust control system.*

### **Project Specifications**

The two big GSI tanks stand 135 feet in diameter, nearly 86 feet tall at the eaves, and 121 feet tall at the peak. The bottom 24 rings are double-sheeted, and higher rings are fabricated from extra-heavy gauge steel. This helps provide the tanks a rating to withstand winds up to 100 mph.

The tanks are equipped with outside stiffeners, flat floors, GSI X-Series 16-inch zero-entry bin sweeps, 34-cable Rolfes@Boone grain temperature monitoring systems, and Hope Electric level indicators.

A set of six GSI 50-hp centrifugal fans per tank supply 1/10 cfm per bushel of aeration on corn and soybeans through in-floor ducting. They are assisted by 19 roof exhausters per tank.

Adjacent to the new tanks are a pair of 1,500-bushel enclosed mechanical receiving pits. These feed a pair of 20,000-bph GSI legs that stand 202 feet tall and are powered by 200-hp Reliance Electric motors and Dodge speed reducers. The legs are equipped with Maxi-Lift 20x8 TigerTuff buckets mounted on 22-inch Goodyear belts. They are enclosed in a 20-foot-x-22-foot-x-179-foot-tall Warrior support

tower with switchback staircase.

The legs deposit grain into a four-duct swing-type Schlager double distributor. From there, grain travels via a pair of GSI 40,000-bph enclosed belt conveyors out to storage. The operator has the option of running grain through a 20,000-bph Magik Kleener screener first.

The big tanks empty onto 50,000-bph GSI belt conveyors in below-ground tunnels. These feed into a 55,000-bph jump leg, which in turn feeds a 55,000 bph

reversible GSI belt conveyor that runs out to existing grain handling equipment.

In addition, Fullerton Farmers added a 59,400-cfm CAMCORP baghouse filter system for dust and a new 120-foot outbound truck scale from Prairie Scales.

According to Hager, plans for 2015 include the addition of a third 1.2-million-bushel steel tank at an estimated cost of \$3.5 million. Later plans call for the addition of a new wet bin and dryer.

*Ed Zdrojewski, editor*