

# Triple Play

WESTERN NEBRASKA COOP ADDS LARGE FLAT STORAGE UNITS AT THREE LOCATIONS

As of the 2021 harvest, three of 22 grain handling locations for **Frenchman Valley Farmers Cooperative** in southwest Nebraska will be storing grain in a new type of structure.

In 2020 and 2021, the farmer-owned cooperative built flat storage hoop buildings at elevators in Kimball, Chappell, and Grant.

The storage buildings, each with a capacity of 2 million bushels, were supplied and constructed by **Macon Construction**, Bradford, IL (309-897-8216).

“We were behind on storage,” says **Joe Wollenhaupt**, project manager for the Imperial, NE-based cooperative (308-882-3200, ext. 4106), “especially in the late summer when we were trying to flip storage from hard red winter (HRW) wheat to corn. We were having to pile too much grain on the ground during harvest.”

Frenchman Valley looked at several options for storage expansion in 2020 and decided on flat storage as less expensive per bushel than upright.

Also, Wollenhaupt says, modern flat storage buildings can be set up for blending on the go and send grain directly to loadout. They can be built with reclaim tunnels, which saves on labor. And a full flat storage weighs less per square foot than a full upright tank, especially useful on sites where the soil can't support a lot of weight.

“We built all three flat storages without the need for pilings,” he notes.

## Construction

Wollenhaupt, who has been with Frenchman Valley for 2-1/2 years, became familiar with the Macon Construction product while working for his previous employer, Kan-



*New 2-million-bushel flat storage hoop building at Frenchman Valley Farmers Cooperative in Chappell, NE. Drone aerial photos courtesy of Macon Construction.*

sas City, MO-based Bartlett Grain Co. LP, and liked working with Macon. “They did everything, the concrete work and the millwright work.

“Macon Construction was great to work with,” he adds. “And they offer a 15-year guarantee on the roof material.”

Wollenhaupt says Frenchman Valley chose to locate the buildings at the three grain locations most in need of more space. The storages at Kimball and Chappell were completed in 2020. The Chappell location was completed first, starting in March and done in July, in time for the wheat harvest. The storage building at Kimball broke ground in May and was done by Oct. 1, in time for fall harvest.

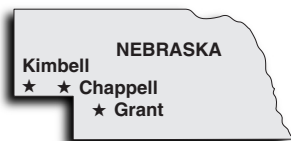
When *Grain Journal* visited Frenchman Valley early in July 2021, the Grant location had been started in May and was still under construction but was expected to be done by Aug. 1. Unlike the other two locations,



*Joe Wollenhaupt*

Grant was intended to be used strictly for corn to feed a nearby ethanol plant. Chappell is strictly for HRW, while Kimball can switch between the two crops but is mainly for wheat – these locations ship to livestock feeders along the Front Range of the Rockies.

Electrical work on the hoop buildings was done by Robinson Electric, Gering,



NE at Kimball and Chappell and by Brophy Electric, Imperial, NE, at Grant.

### Specifications

The three flat storage buildings are nearly identical. They cover a footprint of 372 feet long and 180 feet wide and have flat concrete floors and 18-foot-tall concrete sidewalls. Overhead is a structural steel frame holding up a polyethylene-type roof material.

The design utilizes Macon Construction's patented MaconMaximizer™, wherein reinforced perforated steel is fastened to the underside of the trusses. This allows grain, the company says, to be stored much higher than the top of the concrete walls, boosting storage capacity by up to 30% in the same building footprint. The company's keder system protects against harsh weather by creating a continuous waterproof connection between fabric and frame without risk of wear points on the cover.

Stored grain is aerated at 1/7 cfm per bushel with 28 Sukup aeration fans. These are 7.5-hp centrifugal fans at Kimball, which are quieter for its in-town location; 5-hp axial fans are



*Closeup view of the flat storage receiving and loadout system at Kimball, NE with GSI InterSystems leg and Brock surge tank. Ground-level photos by Ed Zdrojewski.*



*New 2-million-bushel hoop building at Kimball, NE.*



*Another 2-million-bushel flat storage nearing completion at Grant, NE in July 2021.*



*First of the 2021 harvest to be loaded into the flat storage at Kimball, NE, roughly 50,000 bushels of wheat at this point in July 2021.*

used at the other two sites. Kimball and Chappell have in-floor ducting; Grant utilizes perforated black PVC piping.

All three locations receive grain through drive-over 1,000-bushel receiving pits in front of each building. The pit feeds a GSI InterSystems 20,000-bph leg which, in turn, feeds a 20,000-bph GSI InterSystems open belt conveyor with a continuous-discharge plow running into the building supported by the

roof trusses.

Stored grain empties through sumps into a 10,000-bph GSI InterSystems enclosed belt conveyor in a below-ground tunnel. This runs back to the receiving leg and into an overhead Brock Grain Systems surge tank for truck loading, 3,000 bushels at Kimball and Chappell, 6,000 bushels at Grant.

*Ed Zdrojewski, editor*