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GRAIN QUALITY ISSUE



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Versatile Bunker

PERFORATED WALL SECTIONS ADD FLEXIBILITY TO TEMPORARY STORAGE



Frenchman Valley Farmers Cooperative's 2-million-bushel temporary storage bunker at Palisade, NE, which features unique perforated steel 4-foot-tall wall sections. Aerial drone photo by Frenchman Valley Farmers Cooperative.

In southwest Nebraska over the last couple of decades, wheat acreage has been giving way to fall crops such as corn, soybeans, and grain sorghum. Those crops typically yield more bushels per acre than wheat, and with new hybrids and production practices, the fall crop yields have been growing year by year.

At the 4-million-bushel Frenchman Valley Farmers Cooperative elevator in Palisade, NE (308-285-3297), says Location Manager Cathy Humphrey, the company has operated concrete and steel upright storage, two large temporary storage bunkers with concrete walls and asphalt floors, and three small 90,000-bushel temporary storage rings.

"Even then, we were piling grain on the ground every harvest," says Humphrey, who came to the Palisade elevator as a grain clerk in 1994 and has managed the facility since 1998. (When she joined, the elevator was owned by Wright Lorenz Grain. Frenchman Valley purchased it in 2007.)

That situation led the cooperative board to decide to replace the three small rings with a new 2-million-bushel temporary storage bunker.

To construct the bunker, Frenchman

Valley turned to LandMarc Construction Inc., Hawarden, IA (712-552-1200), which had done successful projects with the coop in the past.

"We started demolishing the old rings in May 2017, and we had the new bunker ready in time for harvest," Humphrey says. "Once the wall sections were delivered and dirt work done, it took LandMarc four to five days to set up the bunker and aeration."

Versatile Design

Working with Frenchman Valley, LandMarc came up with a uniquely flexible bunker design using a roughly 4-foot-tall-x-11-1/2-foot-wide perforated, galvanized, corrugated, 14-gauge steel wall sections with 1/4-inch-thick steel legs manufactured by Behlen Mfg. Co., Columbus, NE (800-553-5520).

Using those wall sections, the LandMarc crews set up a large oval bunker, 150 feet wide by 1,000 feet long. Humphrey notes that the wall sections will allow the coop to change the size and shape of the bunker, and with the addition of just a few more sections, to



expand it when needed.

In addition to the sidewalls, the bunker has a packed dirt floor and eighteen 7-1/2-hp Rolfes@Boone axial fans

providing 1/9.6 cfm per bushel of aeration through perforated plastic pipes.

Those fans hold in place a cover from Raven Industries when the bunker is full. The only problems the coop has had so far came not from the bunker design but from Mother Nature, Humphrey says. Frequent strong windstorms in that part of the country occasionally knock out the power to the fans, and crews then must re-tarp the pile, an arduous and labor-intensive job. The coop recently has upgraded to a Raven GrainMax™ Pro cover with an internal Fortress™ strap system for secondary cover protection. Upgrading the floor to fly ash is under consideration.

The bunker is filled using a LeMar 15,000-bph stacker with twin portable receiving pits. "That allows us to dump one truck while a second one is staging," Humphrey says. The pile is picked up using a payloader.

Ed Zdrojewski, editor