



CASE HISTORY

SafeBase™ Push Piers, Helical Piers, Buttresses & Polyurethane
48,750 sq ft Grain Bin, Glyndon, MN



August 2023

SafeBasements of Minnesota was contacted by Maple River Grain & Agronomy regarding the compromised condition of a 48,750 sq ft grain bin located in Glyndon, Minnesota. Upon evaluation, SBMN found that the 12' tall walls were tipping outwards most significantly along the middle 200 ft of the 350 ft long walls up to 4" out of plumb in the center. SBMN also found that the footings had undergone some rotation and settlement. The footings showed roughly two inches of differential settlement and rotation of $\frac{3}{4}$ " across the width of the footing. These results indicated that overall, the walls were



Grain bin interior wall before & after lift



Installation of Helical Piers



Top: Lift hydraulics attached to piers
Bottom: Manufacturing custom parts



Installation of buttresses

tipping outwards more than the footings were rotating. With this as the case, SBMN proposed that the problem could be solved in two parts: first, bracing and pushing the walls back to plumb, and second, supporting and rotating the footings.

In order to brace and straighten the concrete walls of the grain bin, custom steel buttresses were engineered and manufactured to be supported by SafeBase helical piers. A total of 32 custom galvanized steel buttresses with helical piers were installed on each side of the grain bin. This combination allowed the walls to be hydraulically pushed back to plumb once the grain bin was emptied. In order to brace and straighten the footing, a total of 64 SafeBase push piers were installed along the grain bin (32 on each side). Piers were installed to depths of 82'-109'. Once the outer edge of the footing was lifted, the void beneath the footing was filled with structural polyurethane to support the rest of the footing. The project was completed in August of 2023.

Click here to watch: <https://www.youtube.com/watch?v=QFwmS5sK2jU>

SafeBasements of MN
60335 US Highway 12
Litchfield, MN 55355
320-593-8729
www.safebasements.com



SafeBasements, Inc.
28272 Minnie Street
Paynesville, MN 56362
1-888-963-6892
www.safebasementsinc.com