

Silo Condition Inspection Report

Silo Ridge Golf Course
Amenia, NY



Prepared by:

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

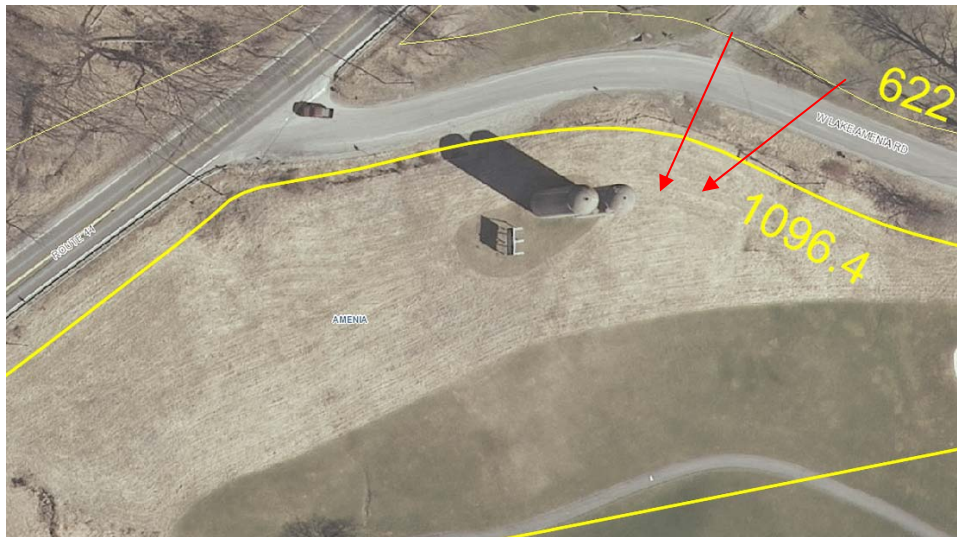
6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556
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A. EXECUTIVE SUMMARY

This report contains the results of a structure condition investigation for the two existing Silo's located on the Silo Ridge Country Club property. According to tax records the silos were built in 1957 and were presumably used for the storage of silage grown on the site.

The silos are located in the northeast section of the property near the intersection of West Lake Amenia Road and Route 44 in the Town of Amenia as seen in the image below. The two silo's are approximately (60) sixty feet tall by (12) twelve feet in diameter and are constructed of reinforced concrete that is about five (5) to six (6) inches thick.



B. SILO EVALUATION

a. Interior

Overall the existing silo interiors are in good condition. The interior of the silos have some visible spalling on the lower halves of both silos. The upper halves of the silos have little to no visible spalling. The spalling was likely caused by the breakdown of the vegetation being stored in the silos. The stored grain ferments over time and creates an acid that will corrode concrete and other materials.

The spalling which is a pitting or flaking of concrete, is in this case superficial in nature and does not appear to have affected the structural stability of either silo.

As a result of the spalling exposed steel reinforcement is visible in multiple locations. The exposed reinforcing bars appear to have only surface rust and appear to be structurally sound.

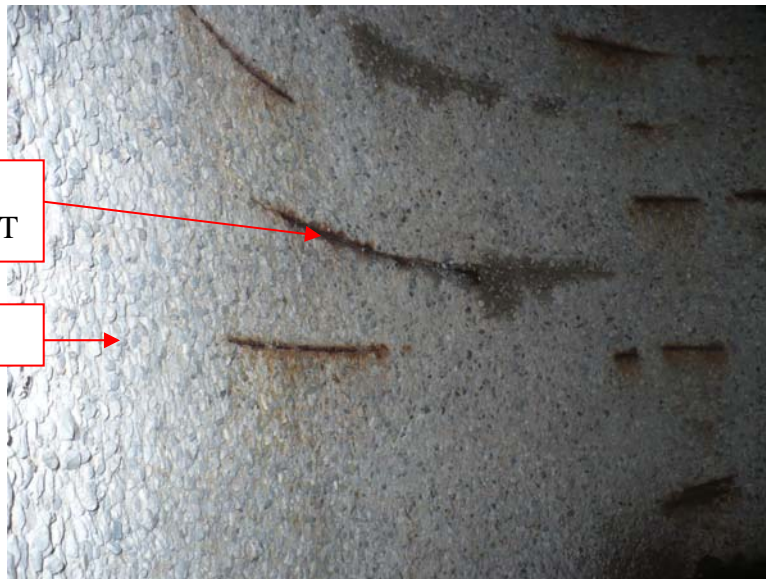
**Silo Condition Inspection Report
Silo Ridge Golf Course, Amenia, NY**

The interior portion of the roof appears to be in good condition as well with no cracking, spalling, or deterioration.



NO
SPALLING

Silo Interior Upper Section



RUSTING
REINFORCEMENT

SPALLING

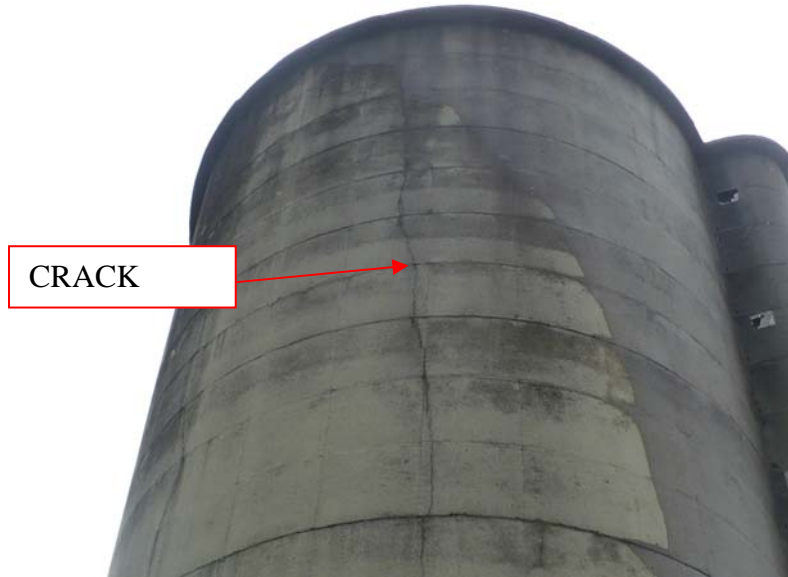
Silo Interior Lower Section

b. Exterior

The exteriors of the silos were also found to be in good overall condition. Some minor cracking on the exterior of the silos is visible. The cracks appear to be stable and have not moved in many years.

The exterior foundation zone appears to be in good condition as well with no visible cracking or settlement. Additionally the area appears to be well drained.

**Silo Condition Inspection Report
Silo Ridge Golf Course, Amenia, NY**



Silo Exterior



Silo Exterior

C. RECOMMENDATIONS

The issues noted for both silos includes interior spalling and some minor cracks on the exterior. For the long term viability of the structures we recommend that these two issues be addressed at some time within the next five (5) years.

The spalling repair should include at minimum the following:

1. Remove any loose material with a high pressure water spray.
2. Wire brush the reinforcing bars to remove loose scale and coat with a rust inhibiting coating formulated to adhere to rusty surfaces.
3. Apply a surface hardener to the spalled concrete face.

Silo Condition Inspection Report
Silo Ridge Golf Course, Amenia, NY

4. Apply a bonding agent to the spalled concrete face.
5. Coat the remaining spalled concrete with a high strength ($\geq 5,000$ psi) masonry cement mixture that is either trowel or spray applied to a minimum thickness of 1-inch.

The crack repair should include at minimum the following:

1. Remove any loose material with a high pressure water spray.
2. Router out the crack to 1/4" x 1/4".
3. Apply a concrete caulk such as Sikaflex 15 LM.

In addition to the above repairs we also recommend the cleaning of the exterior walls and application of a masonry water proofing compound such as Sure Klean Weather Seal Siloxane PD.

The silo interior floors should also be cleaned of any remnant organic materials.