

120 YEARS OF SERVICE & GOOD AS NEW!

In the spring of 2016 the city of Minneapolis was upsizing an existing sanitary sewer pipeline to add capacity. The old line was a 12-inch diameter pipe manufactured by the Red Wing Sewer Pipe Company in Red Wing, MN, installed and in-service since 1896 (see the as-built plan and profile).

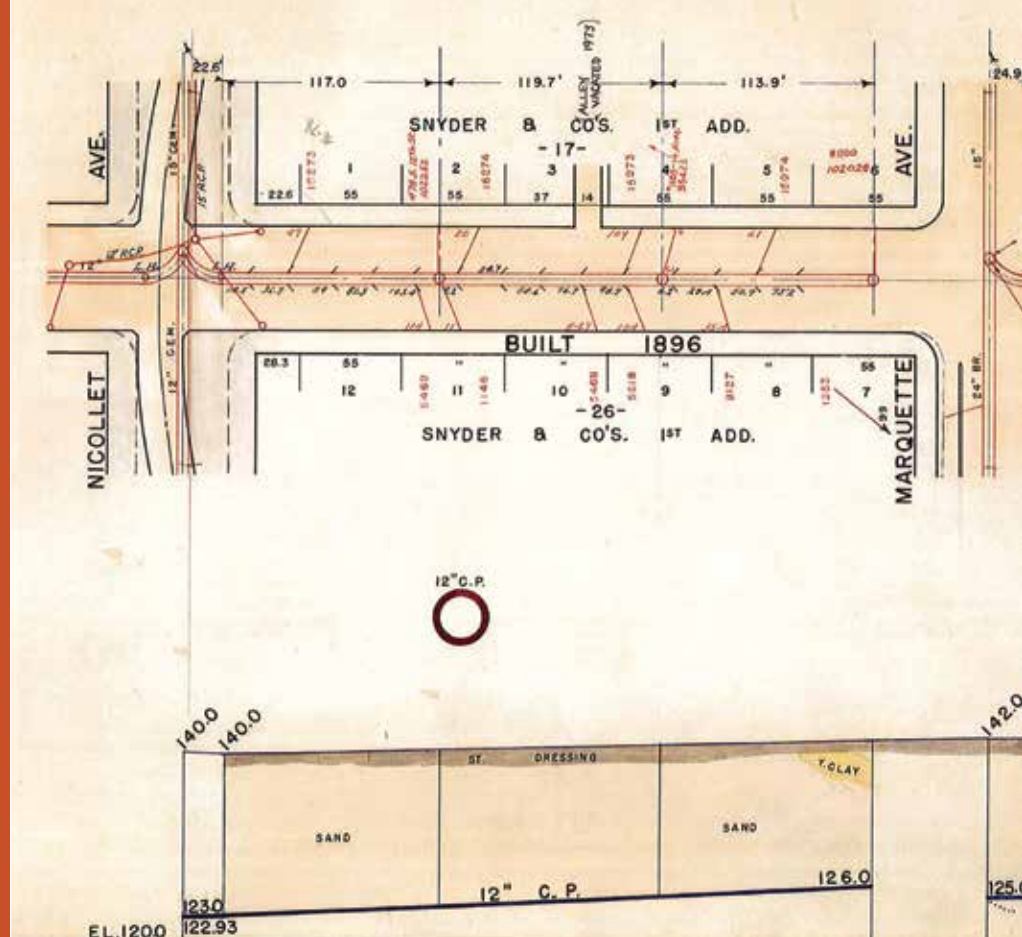
Naturally, the National Clay Pipe Institute was eager to evaluate the condition of the 120-year old pipe. The contractor, Minger Construction, retrieved several of the existing 12-inch by 3-foot long pipe sections from a jacking shaft located at the corner of 12th and Nicollet Avenues.

A few sections of pipe were shipped to The Logan Clay Products Company in Logan, Ohio for testing.

In 2016, a 120 year old pipe, manufactured and installed 20 years prior to the first ASTM governing standard, tested 42% above the minimum bearing strength requirement, first introduced in 1917 (see the pipe section being tested for bearing strength).

The 1896 clay pipe was in condition to serve another 120 years.

The Bottom Line: Vitrified Clay Pipe (as a fired ceramic) doesn't degrade with time – Vitrified Clay Pipe, properly installed, will serve a community for centuries!



Plan and profile drawings of the 1896 installation from the City of Minneapolis, Surface Water & Sewers Department.

Clay Pipe Standards & Practice Timeline 1896 - 2016

| | | |
|----------------------------|---|--------------|
| 1896 | 12-inch Sanitary pipeline installed. <ul style="list-style-type: none"> No design specifications No bearing strength standards No installation standards | |
| 1917 | ASTM C13 for Standard Strength (SS) Clay Pipe introduced: <ul style="list-style-type: none"> Minimum bearing strength for 12-inch pipe | 1,200 lbs/LF |
| After 120 years of service | 120 Year old pipe tested <ul style="list-style-type: none"> Actual Bearing Strength | 1,700 lbs/LF |
| 2016 | Current bearing strength standards (per ASTM C700) <ul style="list-style-type: none"> 12-inch Extra Strength (ES) VCP | 2,600 lbs/LF |



The 120-year-old pipe being tested in the lab at The Logan Clay Products Company. The 3-foot pipe withstood over 5100 lbs. of pressure in the three-edge bearing test.