Preparing for the New Capitol - 1921

Following the 1919-1920 design competition for a new State Capitol, the Nebraska Capitol Commission and chosen architect, New Yorker Bertram Grosvenor Goodhue, refined the winning design while discussing state governmental needs to be met by the new building. Before plans for Goodhue's skyscraper tower could be finalized, the architect and his engineers needed to know what lay beneath the site and how to provide a solid foundation for the 600,000 ton building. Goodhue contacted firms with substructure and superstructure design experience to submit resumes to the Capitol Commission, who at their September 8, 1921 meeting moved to employ the engineering firm of Jarrett-Chambers Co. Inc. as foundation engineers. On October 10, 1921 Edwin S. Jarrett, President of Jarrett-Chambers Co. consulted with State Engineer and Capitol Commission Secretary George Johnson and University of Nebraska Professor C. E. Mickey. Their borings to a depth of one hundred and twenty feet had provided preliminary information on the general subsoil character of the strata underlying the Capitol site. In addition to the test borings, Johnson had a test pit dug to a depth of 26 feet 6 inches and Professor Mickey tested the bearing capacity of the Dakota sandstone stratum and the clay and sand underlying the sandstone.

After studying the preliminary test results, and understanding the very heavy concentrated loads presented by the tower, the engineers requested additional testing of the bearing capacity and behavior under load of the sandstone stratum and the clay overlaying the sandstone. The tests were carried out in November and December of 1921 and the engineering report submitted in January of 1922. One hundred years ago, Nebraskans visiting the site would have seen the testing activity. Thanks to the foresight of the Nebraska Capitol Commission, we can see and imagine what it was like to be on site in those cold autumn days. Lincoln photographer J. M. Macdonald was hired to document the activity; his photographs were included in the final testing report and are part of the Nebraska Capitol Collections Archive.


Photo. Showing Microscopes for observing Depressions.

Microscopes for viewing depressions.

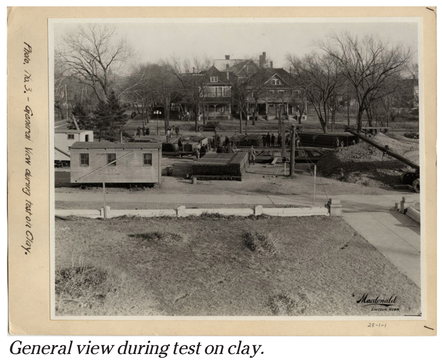
Photo. No. 1. - General view during test on clay.

General view during test on clay.

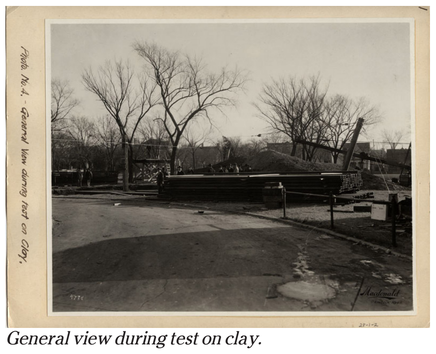
Photo. No. 1. - General view during test on clay.

General view during test on clay.


Photo. No. 1 - Column, collar and first eight layers of rails. - Test on clay.

Column, collar, and first eight layers of rails--test on clay.

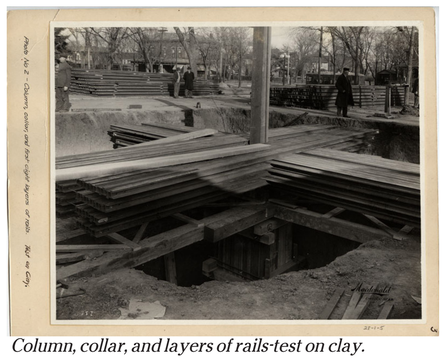
Photo. No. 2. - Column, collar, and four eight layers of rails. Test on Clay.

Column, collar, and layers of rails-test on clay.


Photo. No. 3. - Scene at end of test on clay.

Scene at end of test on clay.


Photo. No. 4. - Excavating for tests on sandstone.

Excavating for tests on sandstone.


Photo. No. 7 - Excavation for test on sandstone - Cradle for casting in place.

Excavation for sandstone tests--cradle for casting in place.


Photo. No. 8 - Large and small casting.

Large and small casting.

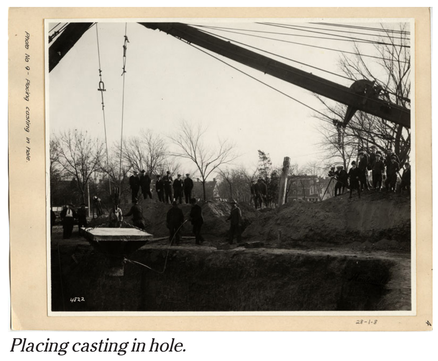
Photo. No. 9 - Placing casting in hole.

Placing casting in hole.


Photo. No. 10 - Large casting in hole before setting on sandstone.

Large casting in hole before setting on sandstone.


Photo. No. 14 - Castings in place for 4.025 sq. ft. test on sandstone.

Castings in place for4.025 sq. ft. test on sandstone.

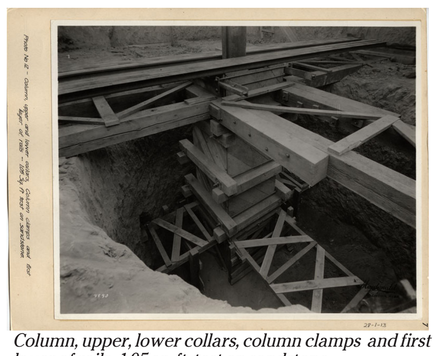
Photo No. 15 - Column, upper and lower collars, column clamps and first layer of rails - 1.05 sq. ft. test on sandstone.

Column, upper, lower collars, column clamps and first layer of rails--1.05 sq. ft. test on sandstone


Photo. No. 11 - Sandstone partly cleared away after failure - 1.05 sq. ft. test.

Sandstone partly cleared away after failure--1.05 sq. ft. test

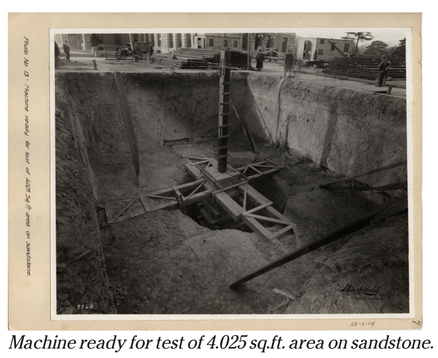
Photo. No. 13 - Machine ready for test of 4.025 sq. ft. area on sandstone.

Machine ready for test of 4.025 sq.ft. area on sandstone.

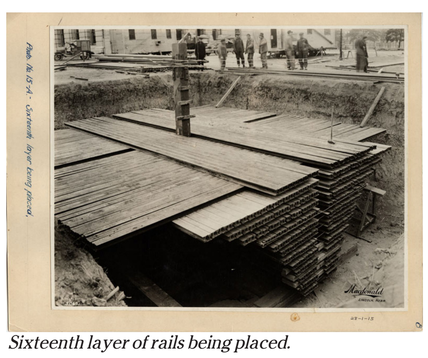
Photo. No. 15-A - Sixteenth layer of rails being placed.

Sixteenth layer of rails being placed.


Photo. No. 17 - 4.025 sq. ft. test on sandstone - 26 th. layer being placed.

4.025 sq. ft. test on sandstone--26th layer being placed.

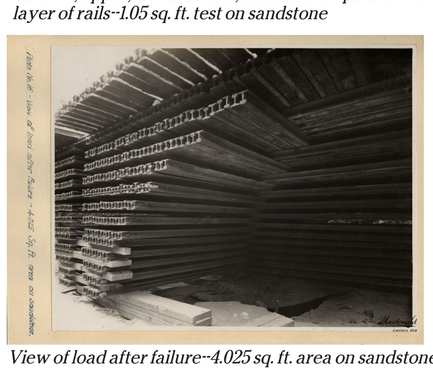
Photo. No. 18 - View of load after failure - 4.025 sq. ft. area on sandstone.

View of load after failure--4.025 sq. ft. area on sandstone.


Photo. No. 19 - Showing ruptured sandstone. After test - area 4.025 sq. ft.

Showing ruptured sandstone after test--area 4.025 sq. ft.


Photo. No. 17 - View of full load of 379.7 Tons taken morning after failure.

View of full load of 379.7 tons taken morning after failure.

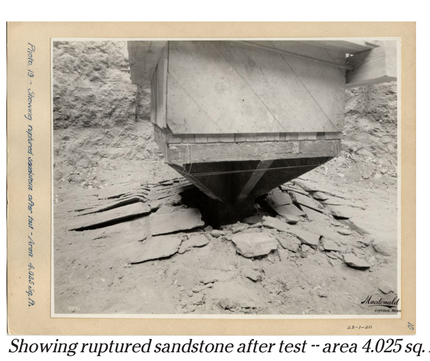
Photo. No. 19 - Showing ruptured sandstone after test - Area 4.025 sq. ft.

Showing ruptured sandstone after test -- area 4.025 sq. ft.