

DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

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BUREAU OF MATERIALS
126 EAST ASH STREET
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November 7, 1961

Mr. John D. Mattison District Engineer 6035 North Mt. Hawley Road Peoria, Illinois

Dear Sir:

We have completed our tests on the two 2-inch limestone cores, Lab. Nos. 61-11872 and 61-11873, which were submitted to us on October 23, 1961 by Ray Jones, Canton, Illinois.

These cores were drilled October 17, 1961, on properties located in Peoria County, Illinois, 4 miles east and 2 miles south of the city of Farmington, in the SE, SW, Sec 15, TON, RIE.

Herewith is a folder containing copies of the logs we made on these cores. Folders containing copies of the logs are also being sent to Mr. Ray Jones, and to Mr. J. E. Lamar of the Illinois Geological Survey at Urbana.

From the results of the tests we were able to make on the stone provided by these cores, the indications are that the crushed material that would be produced from the 7 feet of ledges represented, should the deposit be opened, would not be of suitable quality for use in any of our work. The soundness losses of 38.1% and 34.1% are greatly in excess of the limit of 25% which is specified for crushed stone for use in Grade 8 for surfacing, and it is also too high to be acceptable under any "special provision" that might be written for it. It is not likely that any special crushing or other benefication would improve it.

The information provided by these logs, and the accompanying test data should give a fairly good idea of the quality and characteristics of the stone in the ledges in the deposit from which the cores were taken.

Very truly yours,

. D. Lindsay

ENGINEER OF MATERIALS

cc Ray Jones J. E. Lamar LOG OF 2" LIMESTONE CORES. Lab. Nos. 61-11872 and 61-11873. Core No. 1 and Core No. 2.

Submitted on October 23, 1961, by Ray Jones, Canton, Illinois

These two cores were drilled October 17, 1961, in the SE 1, SW 1, Sec. 15, T8N, RIE, Peoria County. Core No. 1 was drilled on the Higgs property on the north side of the road and north of the fence at the top of the slope above the opening made a day or so prior to October 11 about 30° east of the creek bed. Hole No. 2 was drilled on the Quinn property on the south side of the road, south of the barn and west of the creek. This deposit is located approximately 4 miles east and 2 miles south of the city of Farmington, and approximately 18 miles west of Peoria.

Core No. 1. Lab. No. 61-11872 Core No. 2. Lab. No. 61-11873 Depth, Thickfeet Classification ness Classification 0 to 26'3" Overburden 0' to 19'4" Overburden. Top of rock in core RESULTS OF ABRASION AND SOUNDNESS TESTS REMARKS 4" Broken Core From information given by the Illinois Geological Survey, the Core No. 1 rock in the deposit from which these cores were drilled is the Lonsdale unit of the Lower McLeansboro group of Pennsylvanian 27 20-Top 1 to 2 feet Los Ang. Sod. Sulf. Top 1 to 2 feet age. It is in general a gray to dark gray limestone. Lab. No. Sp. Cr. % Abs. Abr. loss,% Sound, loss, Light creamy gray, fine grained, partially semi-lithographic lime-stone. Full of thin, irregular, Same as in Core 1. Previous drillings had indicated the thickness of the stone in 61-11872 2.65 1.1 28.6* 38.1 this deposit to range from 11 to 15 feet with from 20 to 26 feet of overburden. These two cores show the thickness of the main Core No. 2 clay seams throughout. 28 lower ledges to be about 7 feet with 19 to 26 feet of overburden 21-61-11873 2.64 1.1 34.1 There is a considerable difference in the quality of the stone in the upper, middle and lower portions of the 7 feet of ledges represented in these cores. *Combined for abrasion test. 29 22 -The stone in the upper 1 to 2 feet is a light creamy gray, fine grained, partially semilithographic limestone. It is full of For crushed stone for use in p.c. concrete and I-11 bit. work--The abrasion loss limit is ----- 35% thin, very irregular clay seams throughout. The sodium sulfate soundness loss limit is ---- 15% The stone in the 2 to 3 feet of middle ledges is a mottled light and dark gray, fine grained, partially argillaceous lime-Middle 2 to 3 feet Middle 2 to 3 feet For crushed stone for Grade 8 for surfacing and base ... 30 23-The abrasion loss limit is ----- 45% 619" stone, with many scattered, small, crystal areas. This stone Same as in Core 1. 7.6" Mottled light and dark gray, fine The sodium sulfate soundness loss limit is --- 25% also contains many thin, and very irregular clay seams throughgrained, partially argillaceous limestone, with many small and Shale scattered crystal areas. Also con-The stone in the <u>lower ledges</u> ranges from $l\frac{1}{2}$ to $2\frac{1}{2}$ feet in thickness. It is a dark gray, fine grained crystalline limestone. These ledges also contain some thin, irregular clay tains many thin and very irregular 31 24 clay seams throughout. seams but only a few. There doesn't seem to be a definite bedding plane or separation between the three types of stone. The semilithographic stone 32 25 Lower $1\frac{1}{2}$ to $2\frac{1}{2}$ feet in the upper ledges blends into the mottled ledges in the middle portion and this blends into the darker stone below. Since all of the 7 feet of ledges would be worked together in so small a Same as in Core. 1. face, all the tests shown below for each core were made on com-Lower 11 to 2 feet posite samples of the stone in all the ledges. 33 Dark gray, fine grained, crystalline 26 In preparation for logging and study the cores were split in limestone. Some thin, irregular half lengthwise. The soundness and abrasion tests that we were clay seams, able to make on the stone provided by these cores were run on graded samples of crushed material which was prepared by crushing the pieces of the halves of the split cores in a small jaw crusher. The grading of the crushed material in the samples Shale tested was approximately 12 inches to No. 4. 34'2" Bottom of Core. 27 The logs serve to show something of the thickness and nature of the deposit, and the accompanying test data gives some in-Shale dication of the quality and characteristics of the stone in the ledges in the different portions of the deposit represented. 35 28 In the tabulation below are shown the results of the abrasion and soundness tests we were able to make on the stone from these cores. The results give a very good indication of the quality of the crushed material that would be produced from the ledges from which the cores were taken, should the deposit be 29'0" Bottom of Core. 36 opened. 37 30 10-31-61