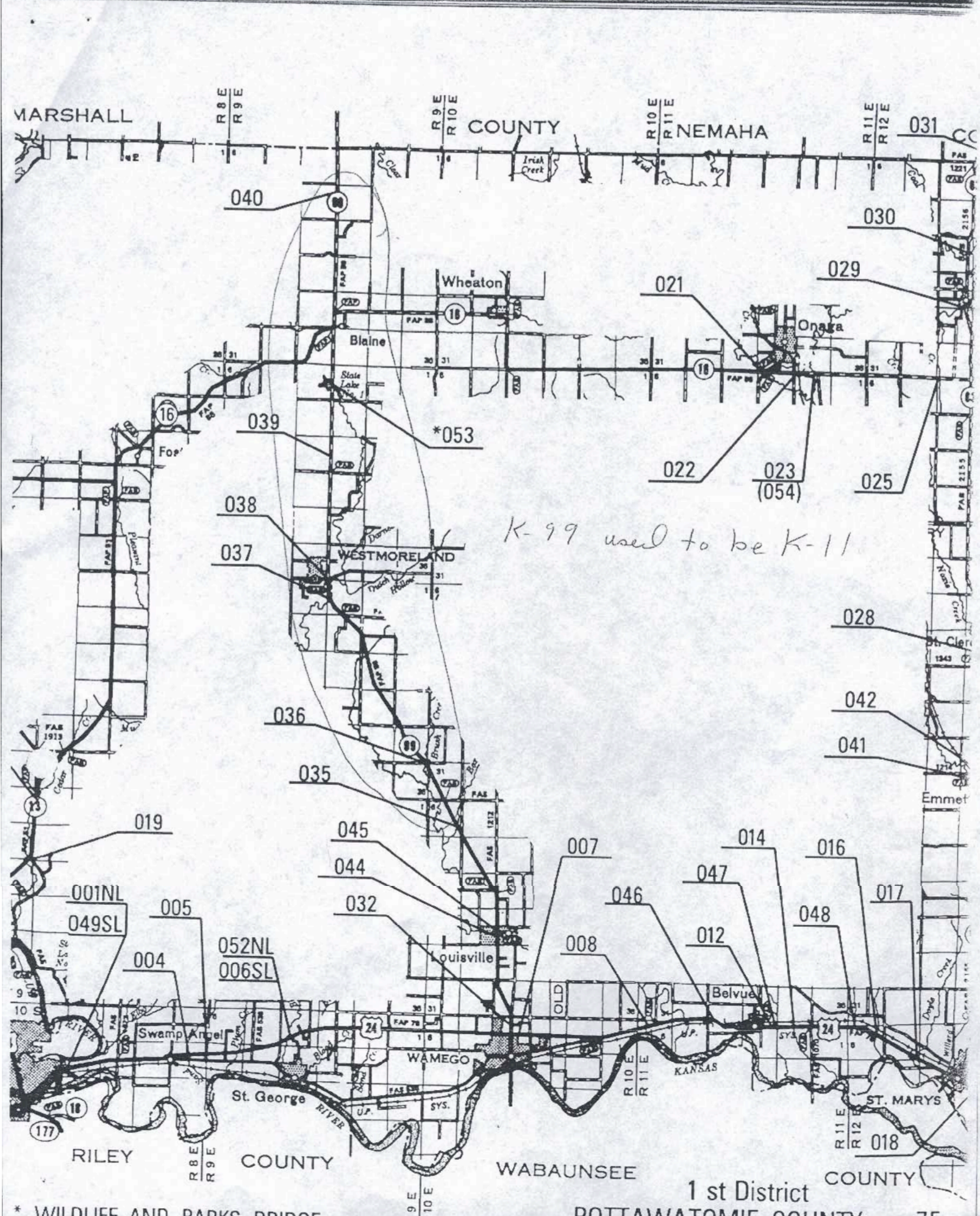
MARSHALL
COUNTY
NEMAHA
031
040
030
029
Wheaton
021
Onaga
Blaine
State Lake
*053
039
022
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025
038
037
WESTMORELAND
K-99 used to be K-11
028
042
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001NL
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Louisville
Belvue
Swamp Angel
WAMEGO
St. George
RIVER
KANSAS
ST. MARYS
018
RILEY
COUNTY
WABAUNSEE
COUNTY
1 st District
POTTAWATOMIE COUNTY
75
* WILDLIFE AND PARKS BRIDGE

1538

GEOLOGIC REPORT

Proj. No. 11-75-432 E

Glacial Drift

Glacial drift was found at the following places: Sta. 600-604 glacial pebbles found on the surface, in stream bottom at Sta. 606 glacial erratus was found. From Sta. 607 to 618 glacial pebbles were noted at the surface; in the valley between Sta. 622 to 627 glacial pebbles and boulders were found. Between Sta. 649 and 675 glacial pebbles were found by drilling and the thickness was 2 feet with smaller amounts being found up to a total thickness of 9 feet. From Sta. 692 to end of project large glacial boulders are found. The glacial material is quartzite pebbles, with a few igneous rocks being found, the latter a rarity.

Permian System
Council Grove Group
Bettie Formation

Morrill Limestone - This limestone is the highest exposed member on this project and only one exposure was found. (500' E. of N.W. Cor. Sec. 11, T 8 S, R 9 E). The limestone measured only 1.0' at this exposure; it is composed of two parts, the lower .4 is a buff, hard, fine-grained limestone and the upper .8 is white, medium hard, with many solution holes. At a location 3 miles north of Westmoreland, on K-11, the Morrill was found to be 2.8' thick. At this locality the limestone is a buff, hard, fairly massive limestone. The results of test pits and auger holes show that the Morrill is absent on the center line of this project. The absence of this member is probably due to removal by glacial action.

Florena Shale - At the same location (500' E of NW Cor. Sec. 11, T 8 S, R 9 E) that the Morrill Limestone is found, 6.7' of Florena Shale is found. It is a light gray, calcareous shale, containing many brachiopods ([illegible] main form found). Some bryozoans are present. The results of prospect holes show this shale to be absent above the Cottonwood Limestone. The absence of this shale is no doubt the result of the same force that has caused the removal of the Morrill.

Cottonwood Limestone - This member is the most prominent outcropping limestone on this project. It is a light gray to buff, massive to thin-bedded limestone. Included in the limestone is chert, being most outstanding at the top (1.5') and 2.6' from the base. This chert is nodular. Fusulinids are very abundant in the limestone, particularly in the upper part, brachiopods, are found in this member also. The texture of this limestone is fine grained, making the member hard. At good exposures the thickness of this member runs between 6.5' and 7.3', but the results of prospecting pits and holes show that part of the top has in many cases been removed, therefore a full thickness is not to be expected throughout the project.

Eskridge Shale Formation - This formation is composed of red, green and gray shales with two included limy hard parts. (See columnar section for location of latter). The thickness of the latter two hard limy parts vary a tenth or two but the accepted figure is on the section. At the top a light green part is found, toward the middle the color is an olive green and at the bottomthe color is red to gray.

Grenola Formation

Neva Limestone - The Neva is composed of limestone, shale and shaley limestone. The limestone is gray, fine grained to crystalline, hard and unfossiliferous. The shale parts are a gray calcareous shale. The shaley limestone parts are very prominent and are characterized by the hard exposure, the resulting of weathering. The thickness of the Neva, seems to have reached its maximum at the locality (18.28).

Salem Point Shale - Gray shale, hard and calcareous. The thickness of this member is 6.6'.

Burr Limestone - This member is composed of a limestone, shale and shaley limestone. The limestone is a gray to buff, massive part unfossiliferous. The shale is a black shale. The lower part of the Burr is blue-gray silty limestone, massive.

Roca Shale - A gray, green and black shale with included limy and limestone parts. (Position of latter parts shown on section).

Howe Limestone

Submitted by: Underwood and Young

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