Kansas Department of Transportation

MEMO TO: Jim L. Kowach, P.E., Chief, Bureau of Design

ATTENTION: James O. Brewer, P.E., Engineering Manager, State Road Office

FROM: Delmar L. Thompson, P.G., Regional Geologist, Lawrence

DATE: June 7, 2001

SUBJECT: GEOLOGY REPORT
FINAL DESIGN GEOLOGY REPORT

RE: Project 900-75 K-8212-01
Pottawatomie County State Fishing Lake Bridge
Bridge No. 900-75-1.40 (053)
Bridge Approaches
Pottawatomie County

Three copies of the above combined report are attached to this memorandum. A stratigraphic section will not be needed, as bedrock will not be encountered in the construction of the approaches for this proposed project. If questions arise over the contents of this report, please contact the Lawrence Regional Geology Office.

LSI:GNC:GRK:DLT:jmc
Enclosure
c: Bureau of Construction and Maintenance
District I
Regional Geology Offices
Project File

BUREAU of MATERIALS and RESEARCH

GEOTECHNICAL UNIT
GEOLOGY SECTION

GEOLOGY REPORT and
FINAL DESIGN GEOLOGY REPORT

Pottawatomie County State Fishing Lake Bridge
Project 900-75- K-8212-01
Bridge No. 900-75-1.40 (053)
Bridge Approaches

Pottawatomie County

GARY R. KOONTZ, P.G.
CHIEF GEOLOGIST

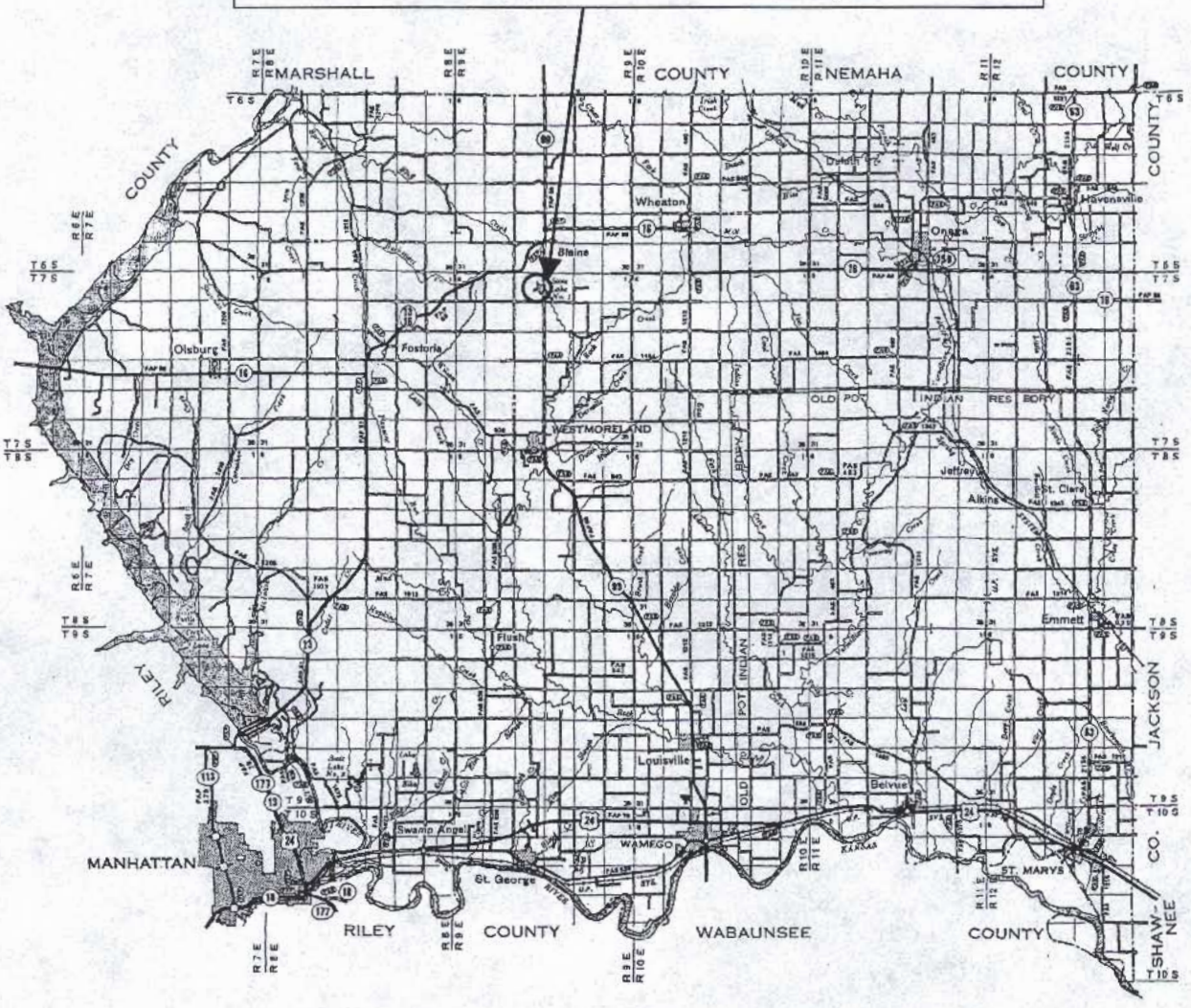
BY

Delmar Thompson, P.G., Regional Geologist

June 2001

FINAL DESIGN GEOLOGY REPORT

Project 900-75-K-8212-01
Pottawatomie County State Fishing Lake Bridge
Bridge No. 900-75-1.40 (053)



INTRODUCTION

This proposed project consists of a bridge replacement at the Pottawatomie County State Fishing Lake located just west of K-99 approximately 7.24 to 8.0 km (4.5 to 5 miles) north of Westmoreland. The existing bridge is a small wooden structure on concrete block footings at the north end of the lake. The proposed replacement structure will be a single span bridge approximately 9.5 m in length at the same location. The bridge approaches will be improved approximately 23 m on either side of the bridge by slightly raising and widening the embankments to match the new structure.

Engineering Geology of the Project

Geology of the Site

The hills surrounding the lake are made up of thin residual soils over the lower bedrock units of the Chase Group and the upper units of the Council Grove Group of the Permian System of geologic time. The individual members range from the Florence Limestone Member to the Funston Limestone Member. At the project site, the existing bridge crosses a stream channel at the northern end of the lake. The soil mantel consists of approximately .5 m of fill and residual silty clays over 4 m a very soft, saturated alluvium. Below the soil mantle, the remnants of the Blue Rapids Shale Formation and the Crouse Limestone Member will be encountered only at depth. With the exception of construction of the foundations for the bridge, bedrock will not be encountered on this proposed project.

Engineering Recommendations

Any excavation will be classified as common in the soil mantle. All backslopes should be set to a 1:3 or flatter. Rock toes may be required to help stabilize any additional berm placed around the new abutments and for the fill for the widening of the new approaches.

Hydrology

The water level of the lake was measured at an elevation of 422.03 in December of 2000. It should be noted that the water level of the lake could change rapidly during construction due to precipitation and runoff. Fluctuations in the lake level could cause considerable problems during construction of the bridge and approaches.

KANSAS DEPARTMENT OF TRANSPORTATION

BUREAU OF MATERIALS AND RESEARCH
GEOTECHNICAL UNIT
Materials and Research Center
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Telephone - (785) 296-3008
Fax # - (785) 296-2526

MEMORANDUM

TO: Jim L. Kowach, P.E.
Chief, Bureau of Design

DATE: Dec. 15, 2000

SUBJECT: Bridge Foundation Geology Report

RE: Project 75 K-8212-01
Pottawatomie County State Fishing Lake Bridge
Bridge No. 900-75-1.40 (053)
Pottawatomie County

Three copies of the above report are attached to this memorandum. Due to a lack of available plans and the small size of the planned structure, an Engineering Geology Bridge Sheet was not drawn for the proposed structure. Two copies of the drill sounding logs are attached to the report.

If questions arise over the contents of this report, please contact the Lawrence Regional Geology Office.

L. S. Ingram, P.E., Chief
Bureau of Material and Research

for

G. N. Clark, P.E.
Geotechnical Engineer

LSI:GNC:GRK:DLT:cdt
Attachments

c: Ken Hurst, P.E., Engineering Manager, State Bridge Office
James O. Brewer, P.E. Engineering Manager-State Road Office
Bob Hirt, P.E., Road Design Leader
Bureau of Construction and Maintenance
District I
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