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Twelve Maps Summarizing the Geologic Framework of Southeastern Nebraska


R. R. Burchett

University of Nebraska-Lincoln

M. P. Carlson

University of Nebraska-Lincoln

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Twelve Maps Summarizing the Geologic Framework of Southeastern Nebraska

by R. R. Burchett and M. P. Carlson



NEBRASKA GEOLOGICAL SURVEY
REPORT OF INVESTIGATIONS NO. 1

The UNIVERSITY OF NEBRASKA
CONSERVATION and SURVEY DIVISION

REPORT OF INVESTIGATIONS

NUMBER 1

SEPTEMBER 1966

TWELVE MAPS SUMMARIZING THE GEOLOGIC FRAMEWORK OF SOUTHEASTERN NEBRASKA

By

R. R. BURCHETT AND M. P. CARLSON



CONSERVATION AND SURVEY DIVISION, LINCOLN
PUBLISHED BY THE UNIVERSITY OF NEBRASKA

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As defined by law, the duties of the Conservation and Survey Division of the University are to survey and describe the geology, topography, natural resources, industries, and conservation problems of Nebraska and serve as a factual Information Bureau relating to the conservation and development of the state's resources. The Division is authorized to cooperate with federal agencies actively engaged in these particular fields.

Reports of the Division are published by its departments: Geological Survey, Water Survey, Soil Survey, Resource and Industry Survey, and Conservation Survey. The Information Bureau is a service agency designed to facilitate the immediate practical application of the factual information developed by the research of the departments of the Division. This is accomplished through correspondence, local field examination in problem areas, office and public meeting conferences and hearings, and distribution of departmental publications.

Twelve Maps Summarizing the Geologic Framework of Southeastern Nebraska

By R. R. Burchett and M.P. Carlson

This publication is the first in a series of planned reports designed to make more generally available the results of regional and special investigations. Many of the regional studies by the Geological Survey are compiled and duplicated at a scale too large for general distribution and thus are not readily available to all interested parties. It is hoped that this series of reports at a reduced scale can be more effectively utilized.

Report of Investigations Number One is a series of twelve small scale maps for a thirteen county area in southeastern Nebraska. This area was chosen for study because of its importance in understanding the Paleozoic history of Nebraska. These counties contain the only outcropping rocks of Permian and Pennsylvanian age and also the most complete stratigraphic record of pre-Pennsylvanian deposits in the state. However, due to systemic and intersystemic unconformities, there is great variation in the vertical sequence present within the area. Control points and thickness or elevations are shown on each map. This information was obtained from studies of outcrops, oil tests, water wells, and stratigraphic tests.

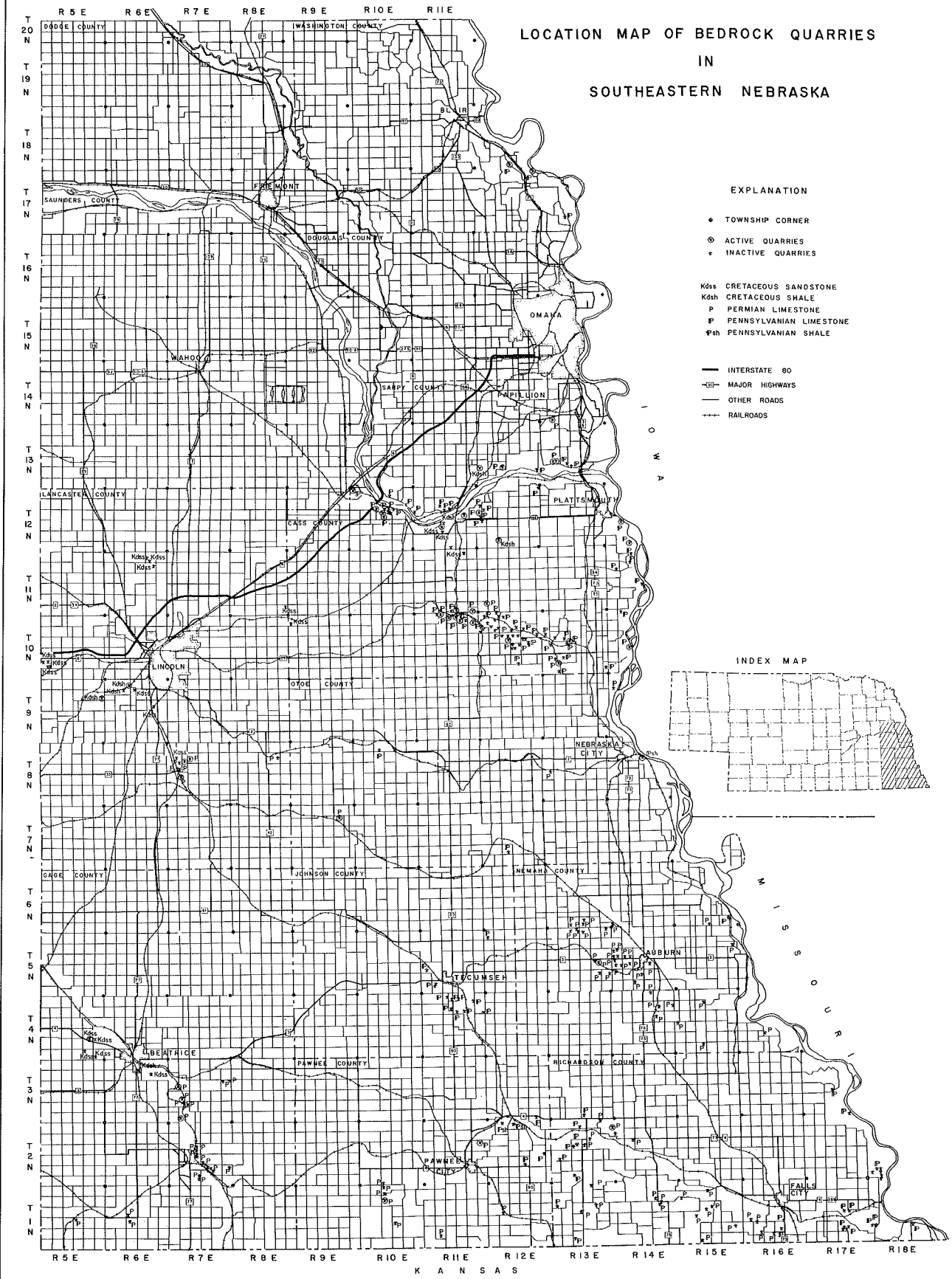
These twelve maps summarize the surface and subsurface data in southeastern Nebraska and will serve as a framework for more detailed studies. The illustrations of various horizons and intervals are presented in the order of increasing geologic age as they are normally encountered. All of the maps were originally compiled and are available at a scale of 1:250,000 either individually or as a set. The information in the files of the Nebraska Geological Survey may be studied in the offices of the Survey. Materials including samples, are not loaned but some data can be duplicated upon request. Copies of electric logs in eastern Nebraska can be obtained from the Kansas Well Log Bureau, 508 East Murdock Street, Wichita, Kansas.

A complete publication list of the Nebraska Geological Survey is available upon request.

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- Figure 2. Configuration of Pre-Pleistocene Bedrock Surface in Southeastern Nebraska
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- Figure 5. Thickness Map of Pennsylvanian System in Southeastern Nebraska
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LOCATION MAP OF BEDROCK QUARRIES IN SOUTHEASTERN NEBRASKA



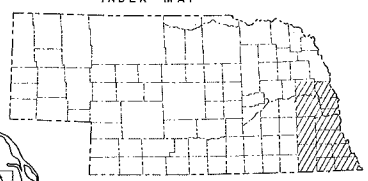
EXPLANATION

- TOWNSHIP CORNER
- ⊙ ACTIVE QUARRIES
- ⊗ INACTIVE QUARRIES

- K6ss CRETACEOUS SANDSTONE
- K6sh CRETACEOUS SHALE
- P PERMIAN LIMESTONE
- P PENNSYLVANIAN LIMESTONE
- Psh PENNSYLVANIAN SHALE

- INTERSTATE 80
- MAJOR HIGHWAYS
- OTHER ROADS
- RAILROADS

INDEX MAP



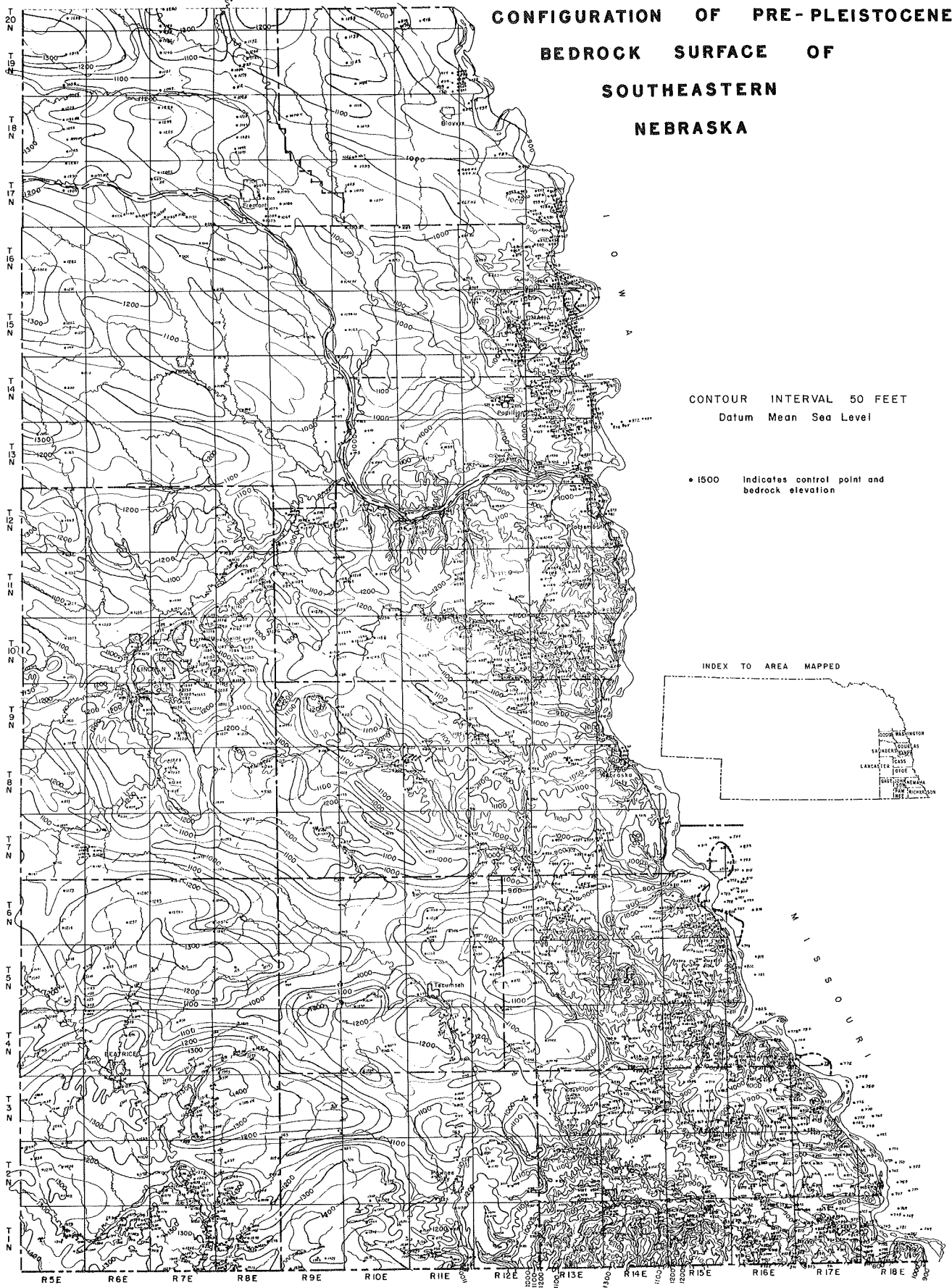
E.C. Reed Director
Conservation & Survey Division
University of Nebraska



Prepared by
R.R. Burchett
1 March 66

FIGURE 1

CONFIGURATION OF PRE-PLEISTOCENE BEDROCK SURFACE OF SOUTHEASTERN NEBRASKA



CONTOUR INTERVAL 50 FEET
Datum Mean Sea Level

• 1500 Indicates control point and
bedrock elevation

INDEX TO AREA MAPPED

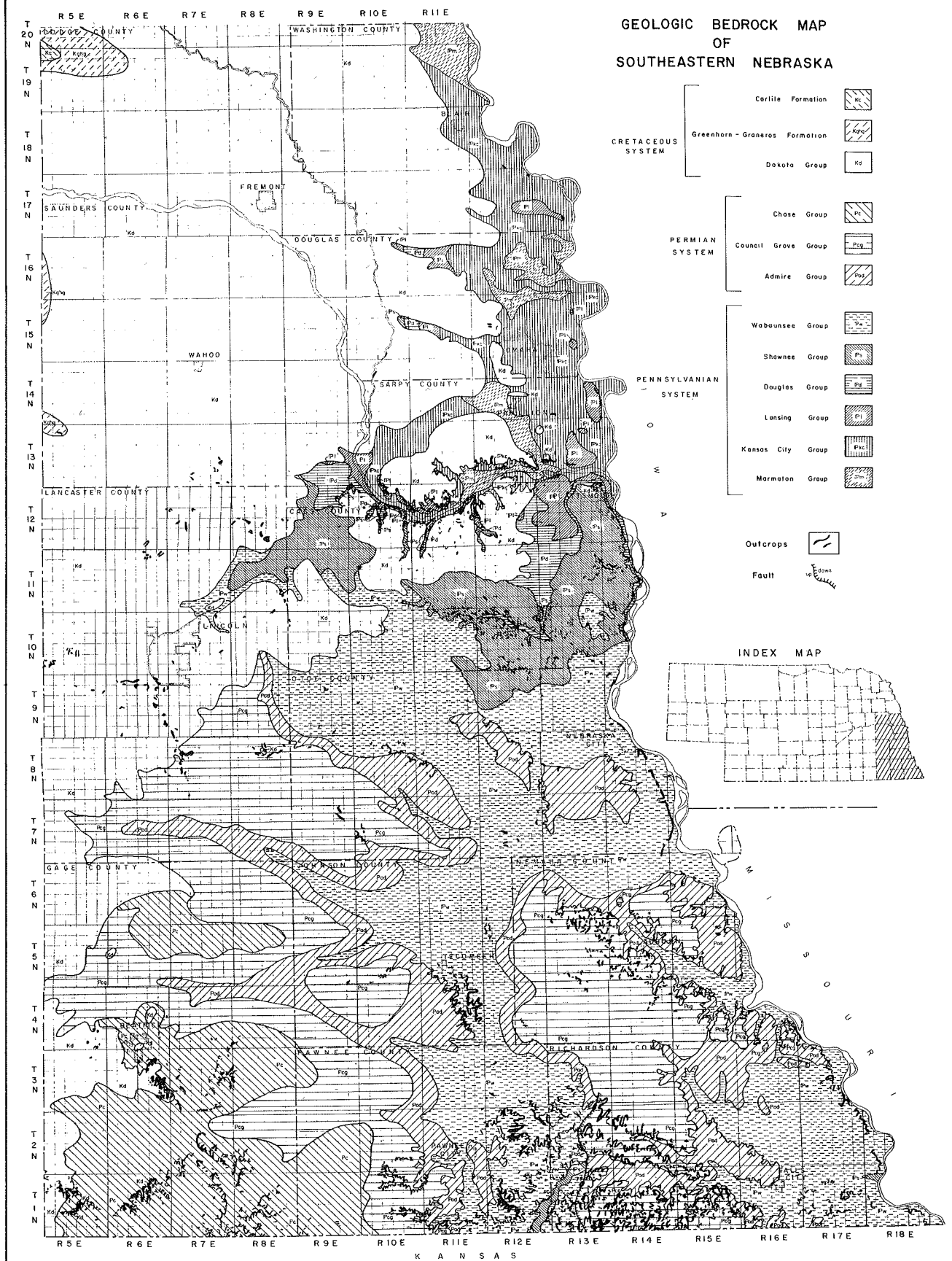


E. C. Reed, Director
Construction and Survey Division
University of Nebraska June 1954

FIGURE 2

Prepared by R. R. Burchett
and V. H. Dreeszen
June 1954

GEOLOGIC BEDROCK MAP OF SOUTHEASTERN NEBRASKA



CRETACEOUS SYSTEM

- Carlile Formation
- Greenhorn - Graneros Formation
- Dakota Group

PERMIAN SYSTEM

- Chase Group
- Council Grove Group
- Admiral Group

PENNSYLVANIAN SYSTEM

- Wabaunsee Group
- Shawnee Group
- Douglas Group
- Lansing Group
- Kansas City Group
- Marmaton Group

Outcrops

Fault

INDEX MAP

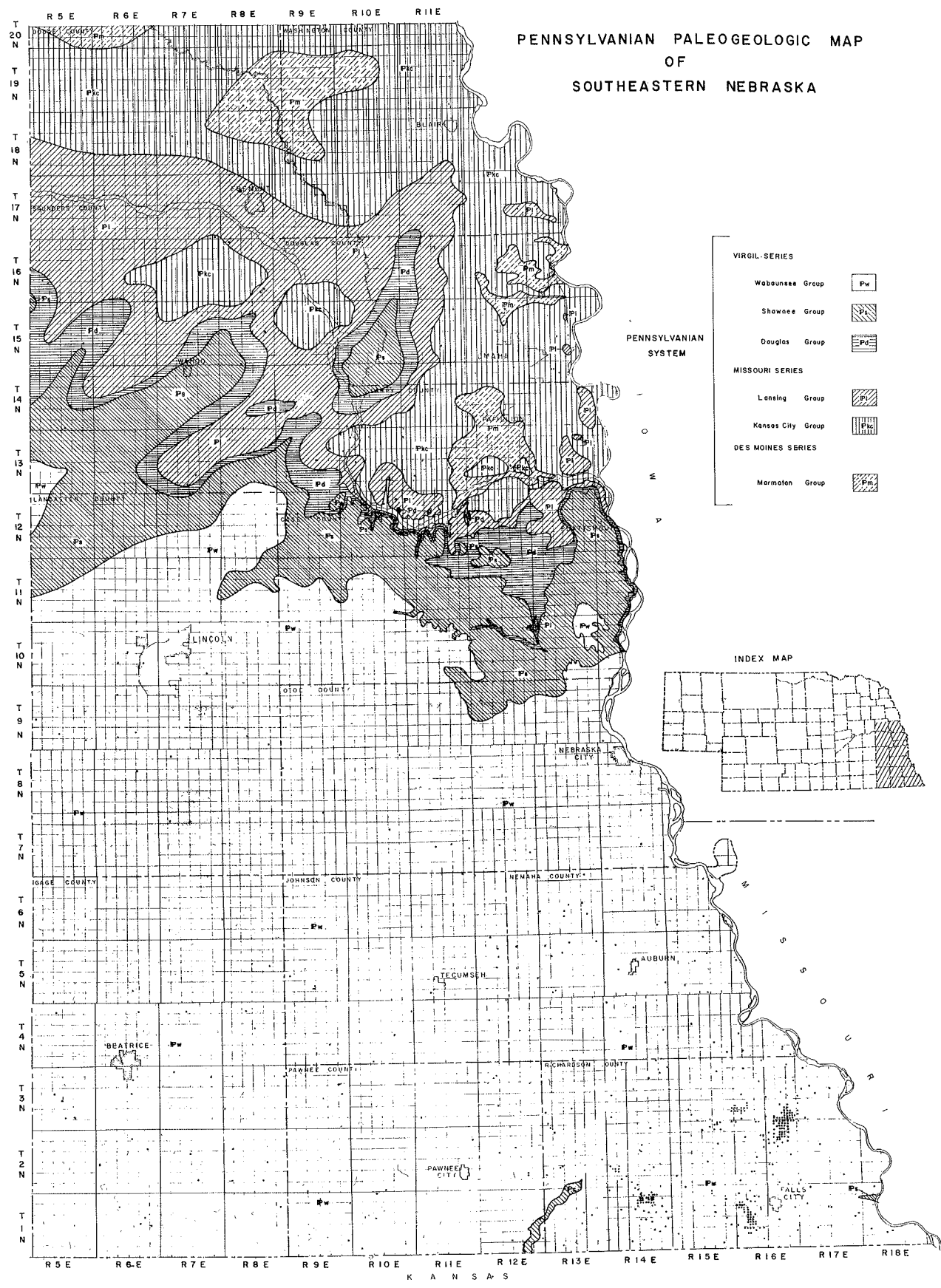
E. C. Reed, Director
 Conservation & Survey Division
 University of Nebraska

SCALE 0 10 20 30 Miles

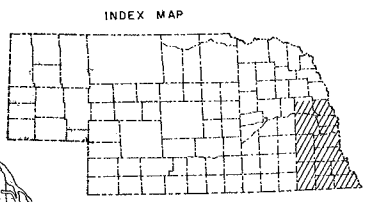
Prepared by
 R. R. Buchert
 March 1955

FIGURE 3

PENNSYLVANIAN PALEOGEOLOGIC MAP OF SOUTHEASTERN NEBRASKA



- PENNSYLVANIAN SYSTEM**
- VIRGIL SERIES**
- Webbounee Group Pw
 - Shownee Group P
 - Douglas Group P_d
- MISSOURI SERIES**
- Lansing Group P_l
 - Kansas City Group P_k
- DES MOINES SERIES**
- Mormon Group P_m

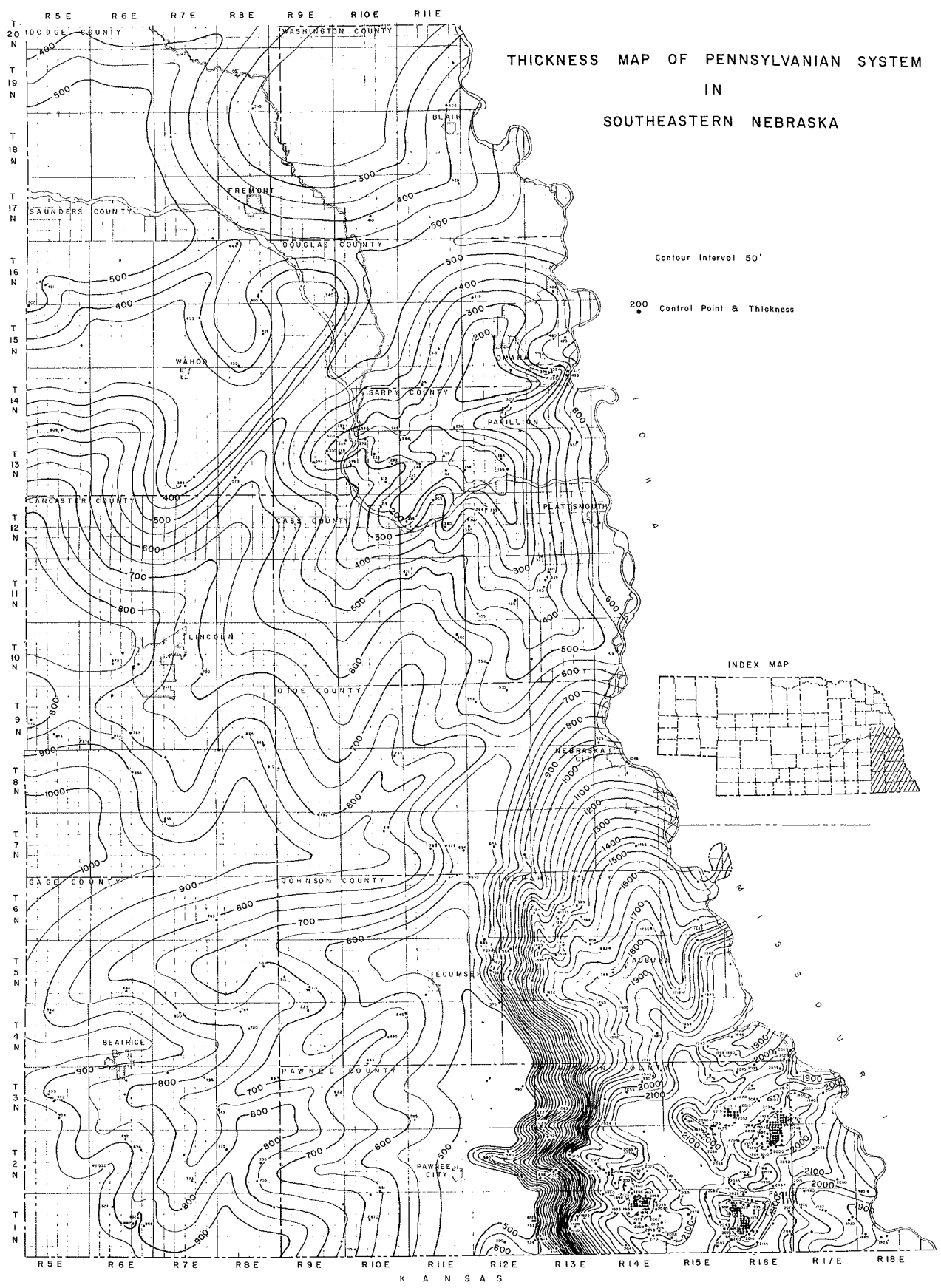


E. C. Reed, Director
Conservation & Survey Division
University of Nebraska

Prepared by
R. R. Buchheit
March 1966

FIGURE 4

THICKNESS MAP OF PENNSYLVANIAN SYSTEM IN SOUTHEASTERN NEBRASKA



Contour Interval 50'

● Control Point & Thickness

INDEX MAP

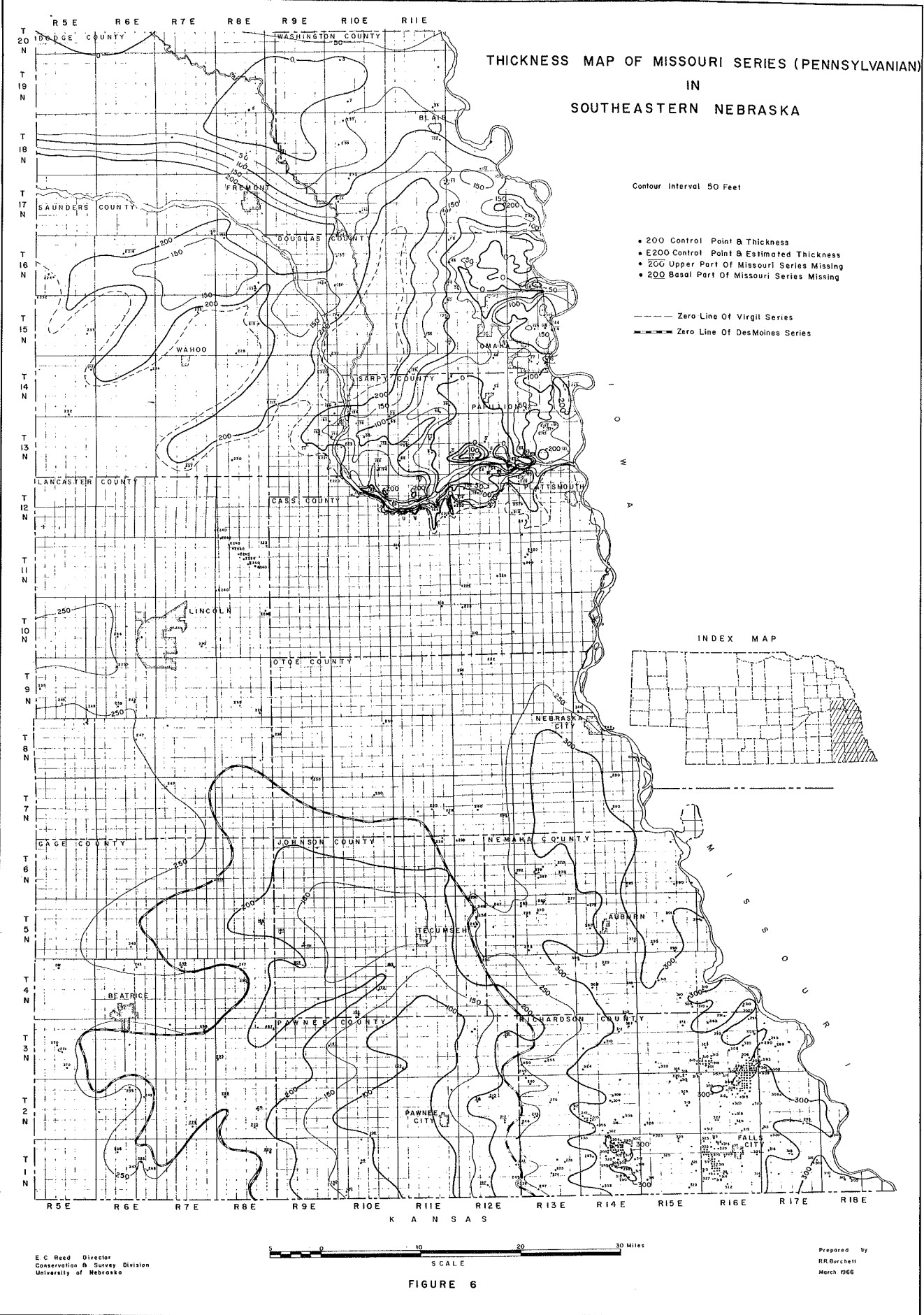


SCALE
FIGURE 5

E. C. Reed, Director
Conservation & Survey Division
University of Nebraska

Prepared by
R. R. Burchett
July 1965

THICKNESS MAP OF MISSOURI SERIES (PENNSYLVANIAN) IN SOUTHEASTERN NEBRASKA

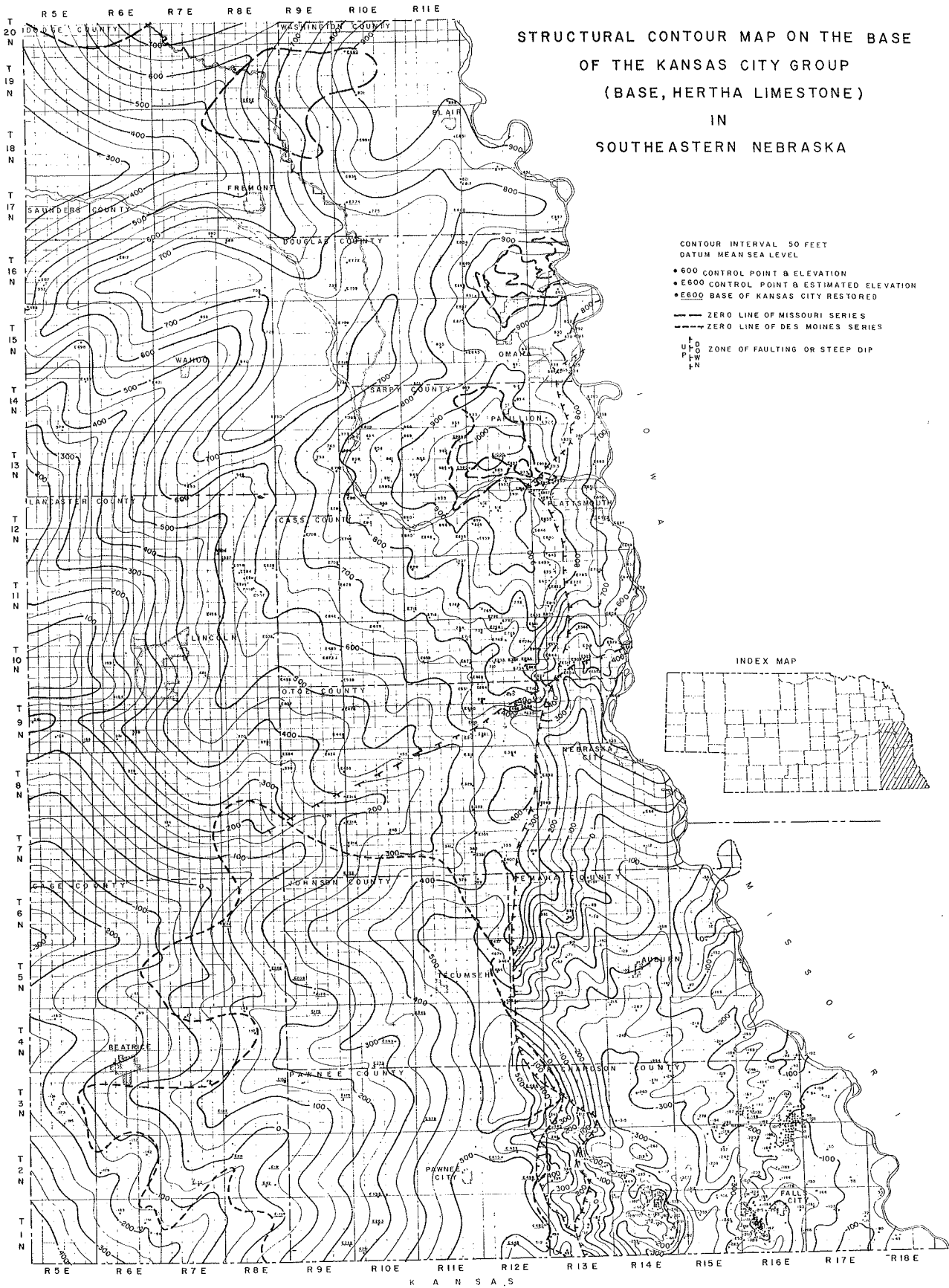


E. C. Reed, Director
Conservation & Survey Division
University of Nebraska

Prepared by
R. R. Burchett
March 1966

FIGURE 6

STRUCTURAL CONTOUR MAP ON THE BASE
OF THE KANSAS CITY GROUP
(BASE, HERTHA LIMESTONE)
IN
SOUTHEASTERN NEBRASKA



CONTOUR INTERVAL 50 FEET
DATUM MEAN SEA LEVEL

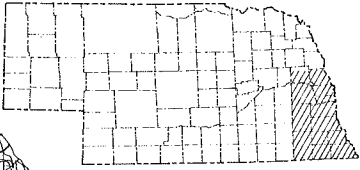
- 600 CONTROL POINT & ELEVATION
- 6000 CONTROL POINT & ESTIMATED ELEVATION
- 6000 BASE OF KANSAS CITY RESTORED

— ZERO LINE OF MISSOURI SERIES
- - - ZERO LINE OF DES MOINES SERIES

U
D
P
W
IN

ZONE OF FAULTING OR STEEP DIP

INDEX MAP



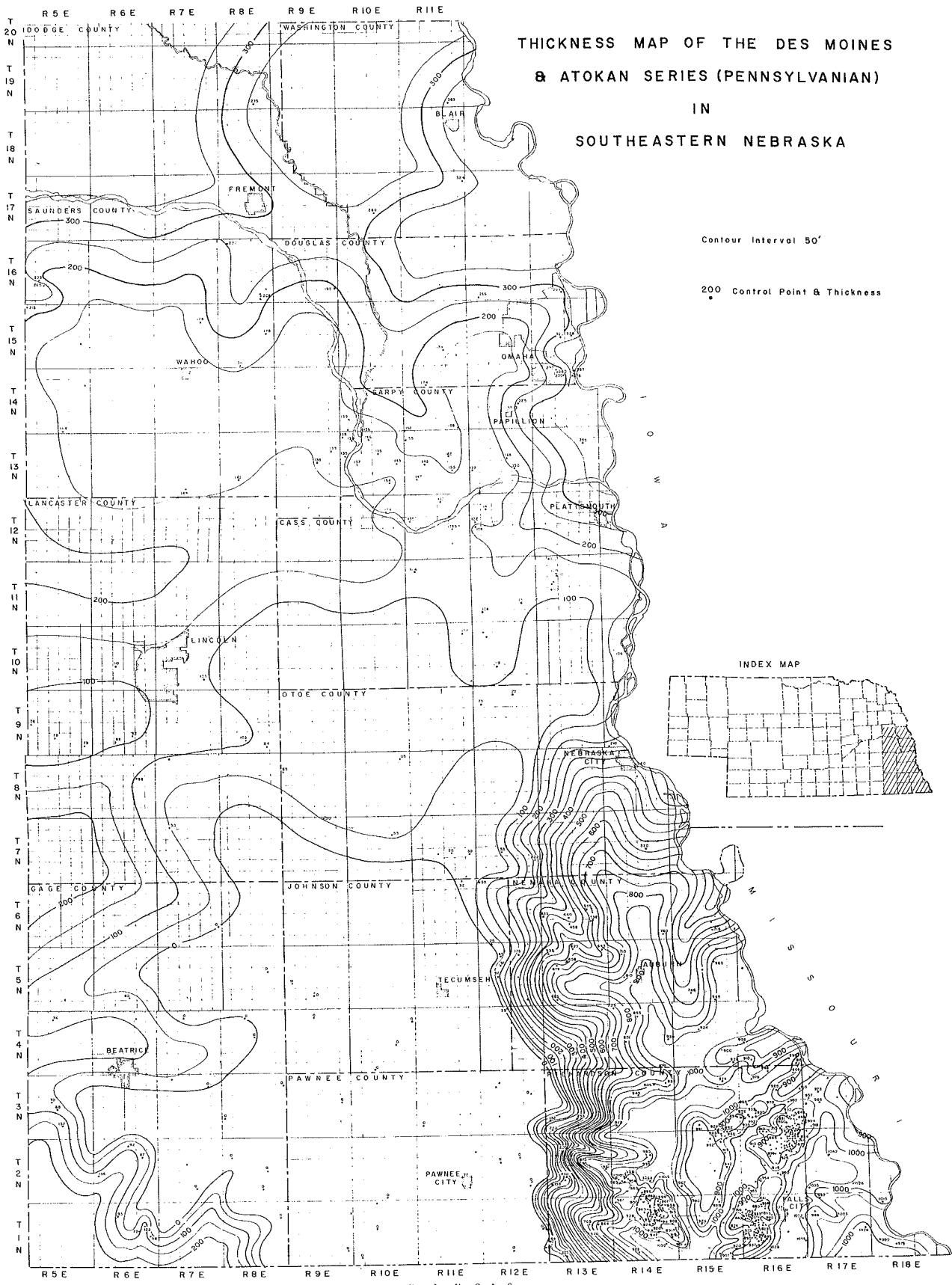
E. C. Reed, Director
Construction & Survey Division
University of Nebraska



Prepared by
H. R. Burckett
March 1966

FIGURE 7

THICKNESS MAP OF THE DES MOINES
& ATOKAN SERIES (PENNSYLVANIAN)
IN
SOUTHEASTERN NEBRASKA

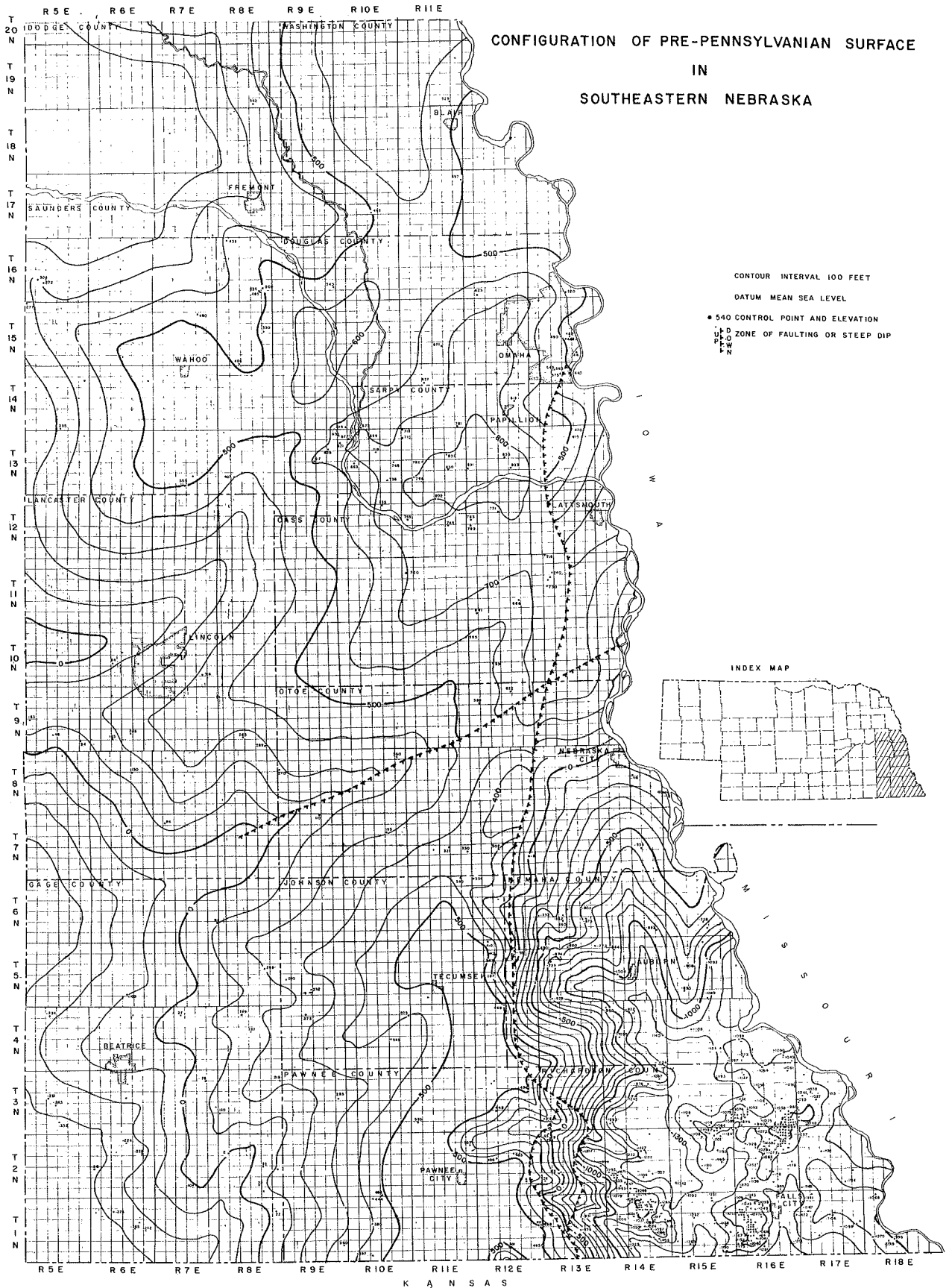


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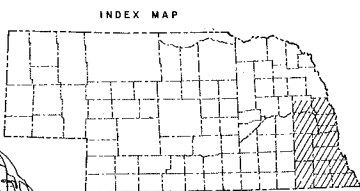
Prepared by
R. H. Burchett
March 1966

FIGURE 8

CONFIGURATION OF PRE-PENNSYLVANIAN SURFACE IN SOUTHEASTERN NEBRASKA



CONTOUR INTERVAL 100 FEET
 DATUM MEAN SEA LEVEL
 • 540 CONTROL POINT AND ELEVATION
 - D ZONE OF FAULTING OR STEEP DIP
 P
 W
 N

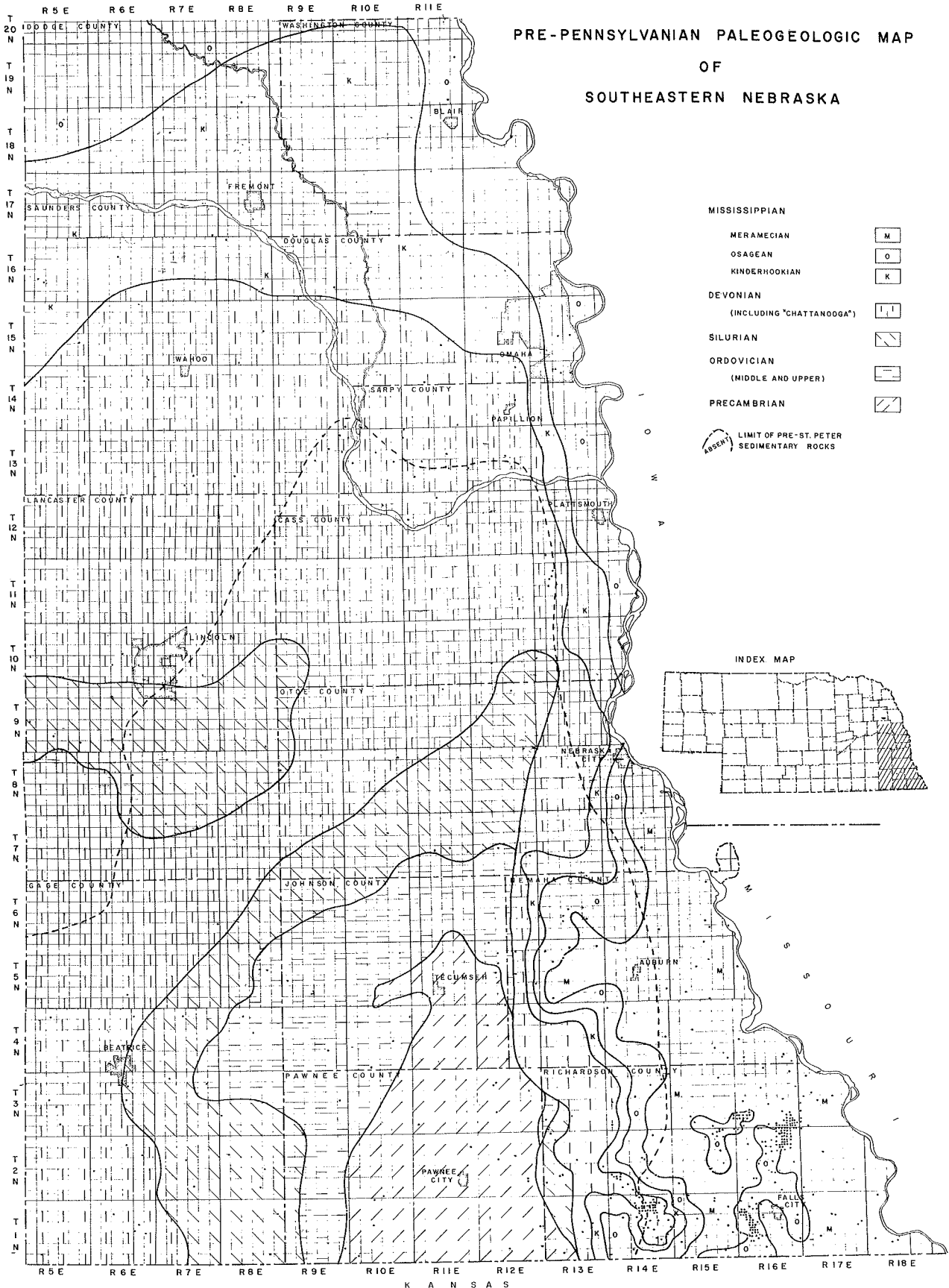


E. C. Reed Director
 Conservation & Survey Division
 University of Nebraska

Prepared by
 Marvin P. Carlson
 December 1965

FIGURE 9

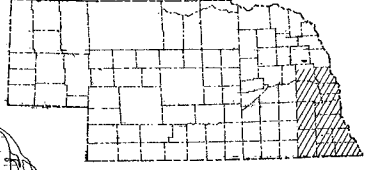
PRE-PENNSYLVANIAN PALEOGEOLOGIC MAP OF SOUTHEASTERN NEBRASKA



- MISSISSIPPIAN**
- MERAMECIAN M
 - OSAGEAN O
 - KINDERHOOKIAN K
- DEVONIAN**
(INCLUDING "CHATTANOOGA") L
- SILURIAN** S
- ORDOVICIAN**
(MIDDLE AND UPPER) U
- PRECAMBRIAN** P

LIMIT OF PRE-ST. PETER
SEDIMENTARY ROCKS

INDEX MAP



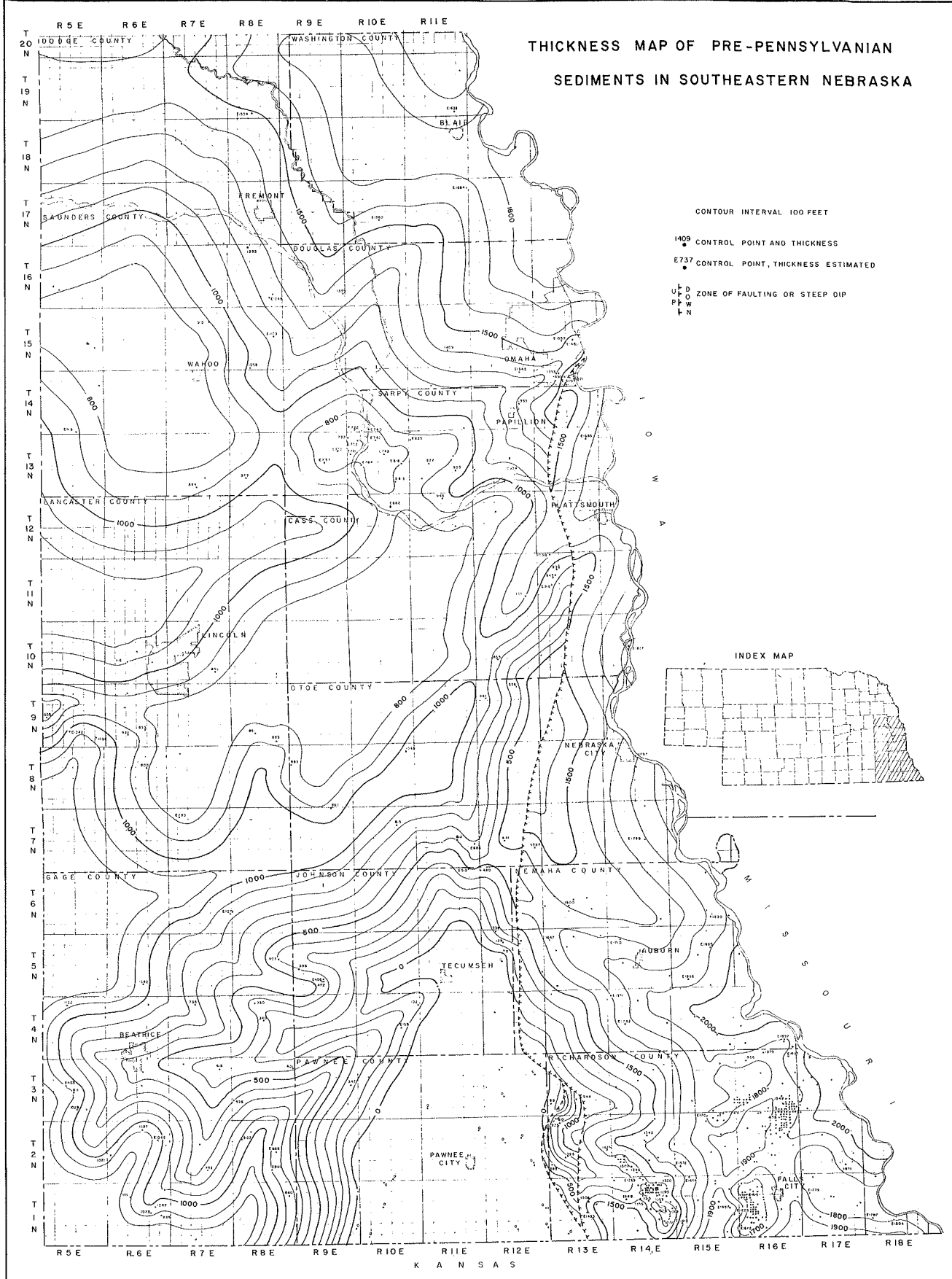
E. C. Reed, Director
Conservation & Survey Division
University of Nebraska



SCALE
FIGURE 10

Prepared by
Marvin P. Carlson
December 1965

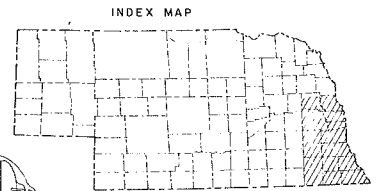
THICKNESS MAP OF PRE-PENNSYLVANIAN SEDIMENTS IN SOUTHEASTERN NEBRASKA



CONTOUR INTERVAL 100 FEET

1409 CONTROL POINT AND THICKNESS
 E737 CONTROL POINT, THICKNESS ESTIMATED

LD ZONE OF FAULTING OR STEEP DIP
 PW
 FN



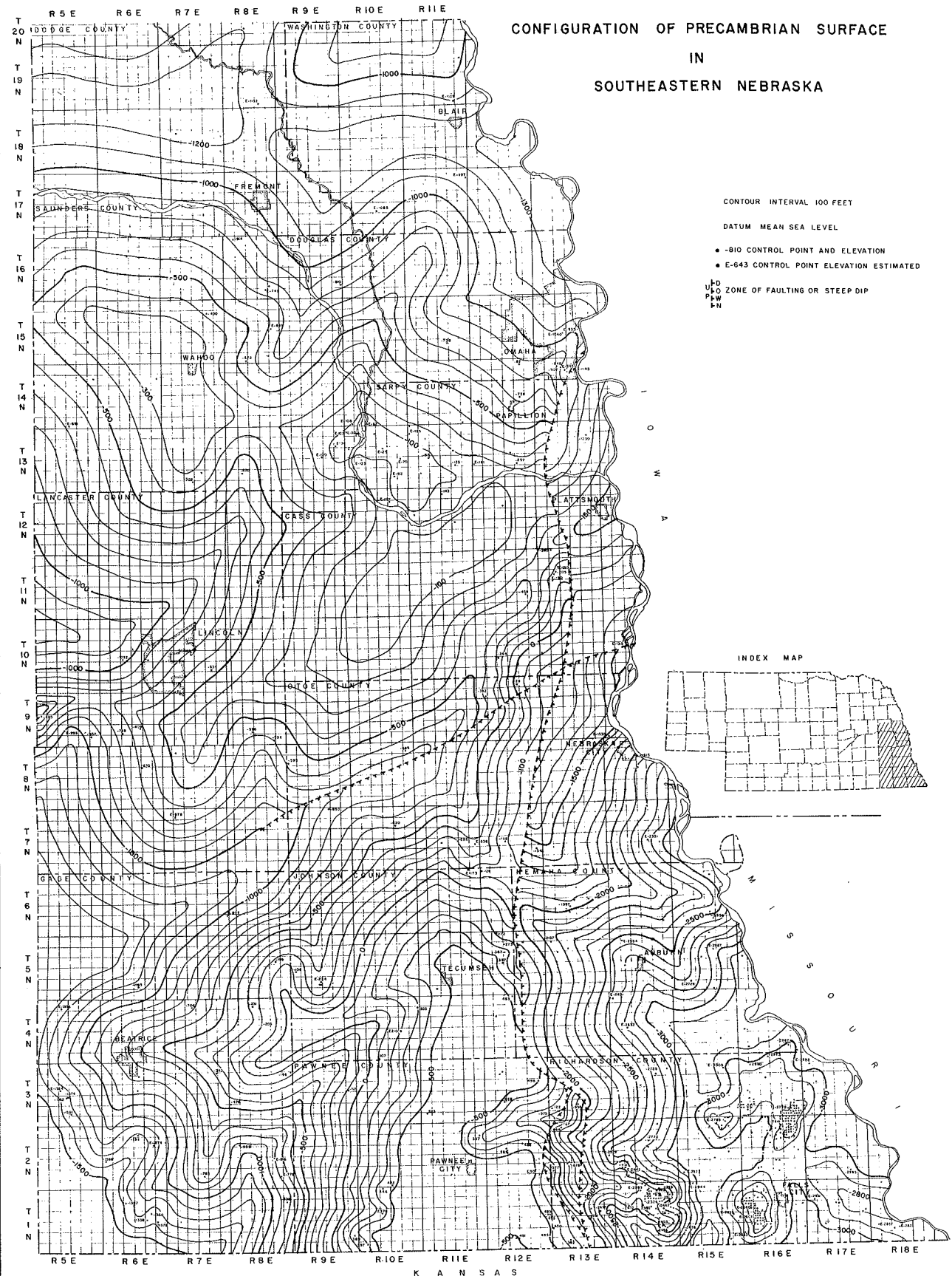
E C Reed Director
 Conservation & Survey Division
 University of Nebraska



Prepared by
 Marvin P. Carlson
 December 1965

FIGURE II

CONFIGURATION OF PRECAMBRIAN SURFACE IN SOUTHEASTERN NEBRASKA



E. C. Reed Director
Conservation & Survey Division
University of Nebraska



Prepared by
Morris P. Carlson
December 1950

FIGURE 12