KANSAS GEOLOGICAL SURVEY
THE UNIVERSITY OF KANSAS
MAP M-111

GEOLOGIC MAP OF WABAUNSEE COUNTY, KANSAS

Geology by Melville R. Mudge and Robert H. Burton
U.S. Geological Survey (1959)

Geologic formation boundaries adjusted by Lawrence L. Brady, David R. Collins, Jorgina A. Ross, and Jason D. Hartman to fit 1:24,000 topographic base of the U.S. Geological Survey

2007

KU KANSAS GEOLOGICAL SURVEY The University of Kansas

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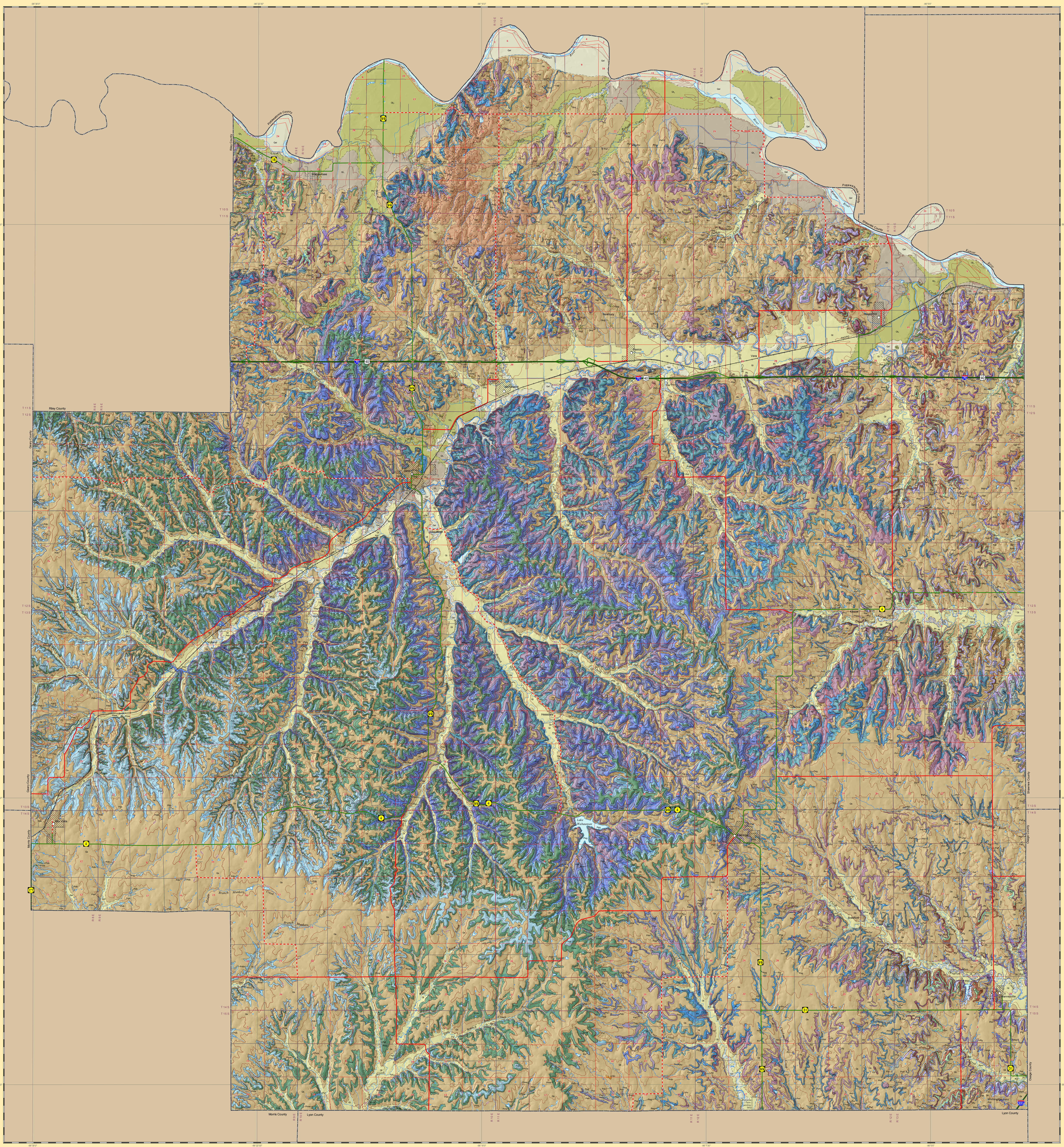
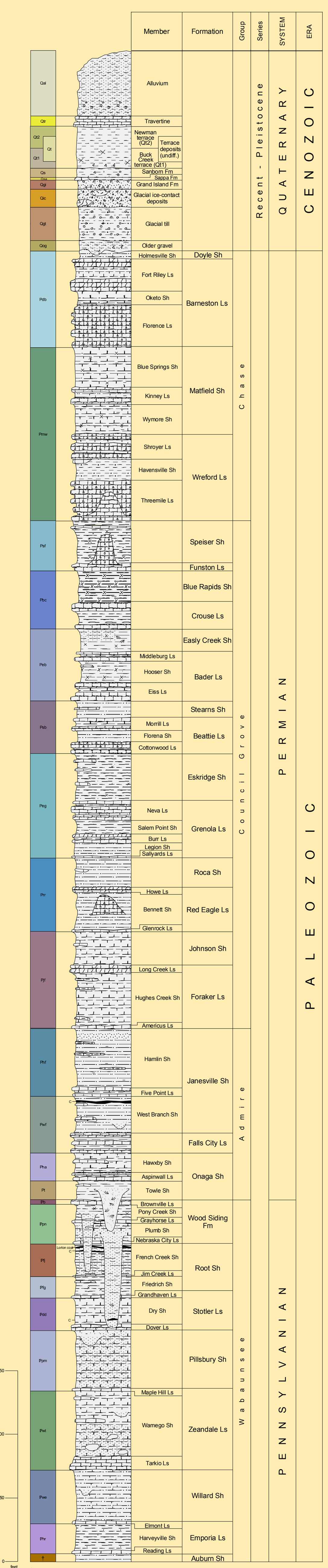




† Auburn Shale appears only as text in the U. S. Geological Survey Bulletin 1068, 1959, p. 17.

LITHOGRAPHIC EXPLANATION

- Sand and gravel or conglomerate
- Sandstone or sand
- Crossbedded sandstone
- Till
- Variegated shale
- Shale or claystone
- Calcareous shale
- Silt
- Limestone concretions
- Limestone
- Cherty limestone
- Oolitic limestone
- Crossbedded limestone
- Shaly limestone
- Dolomitic limestone
- Dolomite
- Coal
- Sandstone concretions

Adjustment Technique
This map is based on interpretation of Mudge and Burton (1959). Field work for the original map was done in the 1950's without the benefit of modern topographic and base maps. The techniques for developing this updated version – a process that simply adjusts the original geologic data to fit modern topographic maps – were described by Ross (1996), Collins (1997) and by Ross and Collins (1997). Topographic maps at a scale of 1:24,000 were used as base maps in the process, which included reference to other sources and limited field checking. Geologic information and critical map points were transferred from the original geologic map to a modern 1:24,000-scale topographic base. The 1:24,000-scale outcrop patterns were then derived, and the resulting data digitized into databases using standard methodology. While the geology on this map is reproduced without changes from the original map by Mudge and Burton (1959), more recent investigation indicates that some units shown on the map are incorrectly mapped. For example, in the NE ¼ NW ¼ NW ¼ of Section 23, T 13 S, R 10 E (Mudge and Burton's Stratigraphic Section 26), the units shown as Eiss Limestone Member should be shown as the Cottonwood Limestone Member, the Stearns Shale should be shown as the Eskridge Shale, and the Morrill Limestone Member should be shown as the Neva Limestone Member.

References

Collins, D. R., 1997, Mining information from published geologic maps (an extractive industry), in Soller, D.R. (ed.), Digital Mapping Techniques '97 – Proceedings of a Workshop on Digital Mapping Techniques: Methods for Geologic Map Data Capture, Management, and Publication: U.S. Geological Survey, Open-File Report 97-269, p. 47-50.

Mudge, M. R., and Burton, R. H., 1959, Geology of Wabaunsee County, Kansas: U.S. Geological Survey, Bulletin 1068, 210 p.

Ross, J. A., 1996, Compilation of digital geologic map data at the Kansas Geological Survey – Report to the Working Group on Data Capture, Digital Geologic Map Standards Committee, American Association of State Geologists and United States Geological Survey: Kansas Geological Survey, Open-file Report 96-58, 29 p.

Ross, J. A., and Collins, D. R., 1997, Information capture from previously published maps, in Soller, D. R. (ed.), Digital Mapping Techniques '97 – Proceedings of a Workshop on Digital Mapping Techniques: Methods for Geologic Map Data Capture, Management, and Publication: U.S. Geological Survey, Open-File Report 97-269, p. 51-56.

Elevation contours are presented for general reference. They are taken from USGS Digital Line Graph (DLG) files compiled from base maps at a scale of 1:100,000. In some places the contours from the DLG's may be more generalized than the base maps used for compilation of geologic outcrop patterns. Outcrop patterns on the map will typically reflect topographic variation more accurately than the associated contour lines. Repeated fluctuation of an outcrop line across a contour line should be interpreted as an indication that the mapped rock unit is maintaining a relatively constant elevation along a generalized contour.

Roads and highways shown on the base map as represented by data from the Kansas Department of Transportation (KDOT), TeleAtlas, and other sources. U.S. Department of Agriculture – Farm Services Agency (USDA-FSA) National Agriculture Imagery Program (NAIP) imagery also was used to check road locations.

Shaded relief is based on U.S. Geological Survey digital elevation model (DEM) with 1/3 arc-second resolution. The 1/3 arc-second data, in ESRI GRID format, were converted to a hillshade, a multidirectional shaded-relief image using angles of illumination from 0°, 225°, 270°, and 315° azimuths, each 45° above the horizon, with a 4x vertical exaggeration.

Map partially funded by the National Cooperative Geologic Mapping STATEMAP Program.

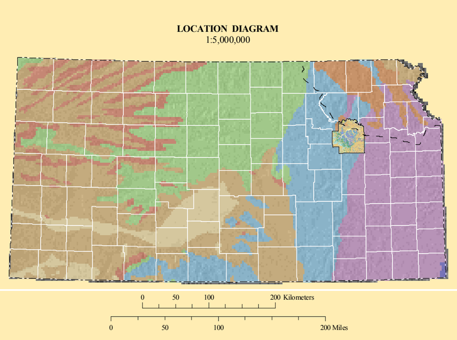
This map was produced using the ArcMap system developed by ESRI (Environmental Systems Research Institute, Inc.).

Lithographic symbols developed by Gerald W. Wright III using High-Logic® Font Creator Program 4.1 and ESRI® ArcMap™.

The Kansas Geological Survey does not guarantee this map to be free from errors or inaccuracies and disclaims any responsibility or liability for interpretations made from the map or decisions based thereon.

Suggested reference to this map:
Mudge, M.R., and Burton, R.H., [1959] 2007, Geologic Map of Wabaunsee County, Kansas; geology modified by L.L. Brady, D.R. Collins, J.A. Ross, and J.D. Hartman to fit 1:24,000 topographic base of the U.S. Geological Survey; Kansas Geological Survey, Map M-111, scale 1:50,000; revised from U.S. Geological Survey, Bulletin 1068-2, plate.

LOCATION DIAGRAM
1:5,000,000



GENERALIZED GEOLOGY OF KANSAS

QUATERNARY SYSTEM
Recent - Pleistocene Series
- Loess and river-valley deposits
- Sand dunes
- Glacial-drift deposits
- Limit of Kansan Glaciation

TERTIARY SYSTEM
Pliocene Series
- Ogallala Fm

- CRETACEOUS SYSTEM
- PERMIAN SYSTEM
- PENNSYLVANIAN SYSTEM
- MISSISSIPPIAN SYSTEM

Index to 1:24,000 scale maps
PR - Photorevised
PI - Photoinspected

	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
	24	25	26	27	28

1 - St. George 1953 (78 PR)
2 - Wamego 1953 (78 PR)
3 - Belvue 1953 (78 PR)
4 - St. Marys 1953 (78 PR)
5 - Rossville 1952 (82 PR)
6 - Swede Creek 1982
7 - Wamego SW 1953 (78 PR)
8 - Alma 1954 (78 PR)
9 - McFarland 1954 (78 PR)
10 - Maple Hill 1953 (78 PR)
11 - Willard 1952 (72 PR)
12 - White City NE 1971
13 - Volland 1971
14 - Allendorph 1971 (83 PR)
15 - Hessdale 1971 (83 PR)
16 - Keene 1971 (83 PR)
17 - Dover 1952 (82 PR)
18 - Dwight 1971
19 - Alta Vista 1971
20 - Alta Vista SE 1971
21 - Lake Wabaunsee 1971
22 - Eskridge 1972 (83 PR)
23 - Harveyville 1952 (72 PR)
24 - Council Grove 1971 (83 PR)
25 - Bushong 1971
26 - Allen 1971 (83 PR)
27 - Admire 1971
28 - Miller 1971

GN 1° 46'
MN 3° 56'

Convergence (GN) and 2007 magnetic declinaton (MN) at center of map
Diagram is approximate

Scale 1:50,000

Lambert Conformal Conic Projection with standard parallels at 33° and 45°
North American Datum of 1927

CONVERSION TABLE

	feet	meters	kilometers	miles
feet	1	0.3048	0.0003	0.00019
meters	3.2808	1	0.001	0.00062
kilometers	3280.8	1000	1	0.6214
miles	5280	1609.4	1.6094	1

To convert feet to meters multiply by 0.3048
To convert meters to feet multiply by 3.2808
To convert kilometers to miles multiply by 0.6214
To convert miles to kilometers multiply by 1.6094

1 0.5 0 1 2 3
Kilometers

1 0.5 0 1 2 3
Miles

Geologic Unit Boundaries
1 - Observed contact
2 - Observed contact (Change of facies)*
3 - Inferred contact
4 - Inferred contact (Change of facies)*
5 - Concealed contact*
* Does not appear on this map

Geologic Feature
1 - Glacial boulder

Geologic Structure
1 - Actual fault
2 - Inferred fault
3 - Concealed fault*
4 - Actual anticline*
5 - Inferred anticline*
6 - Concealed anticline*
7 - Actual syncline*
8 - Inferred syncline*
9 - Concealed syncline*
U - Upthrown side
D - Downthrown side
* Does not appear on this map

Transportation
1 - Interstate highway
2 - Federal highway
3 - State highway
4 - Medium-duty primary road
5 - Medium-duty secondary road
6 - Light-duty secondary road
7 - Unimproved secondary road
8 - Railroad
9 - Landing strip
10 - Airport*
* Does not appear on this map

Boundaries and Locations
1 - State line*
2 - County line
3 - Township/Range line
4 - Section line
5 - Park boundary*
6 - County seat
7 - City
8 - Locality
9 - City boundary
* Does not appear on this map

Hydrology and Topography
1 - Intermittent stream*
2 - Perennial stream
3 - Canal
4 - Abandoned canal*
5 - Areal hydrology
6 - Land subject to inundation*
7 - Dam*
8 - Elevation contours (50-meter interval)
9 - Elevation contours (10-meter interval)
10 - Levee*
* Does not appear on this map

Index Reference Features
1 - 1:24,000 map edge
2 - Line of cross section*
* Does not appear on this map

Townships

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Diagram of a township showing numbering of sections

Last updated: 10/24/2007

ISBN #: 1-58806-952-4