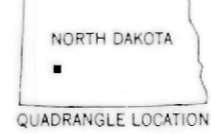
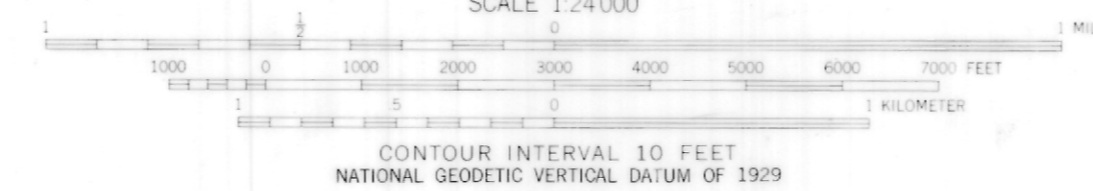


Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS

Topography by photogrammetric methods from aerial  
photographs taken 1959. Field checked 1962  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on North Dakota coordinate system,  
south zone  
1000-meter Universal Transverse Mercator grid ticks,  
zone 13, shown in blue  
Fine red dashed lines indicate selected fence and field lines where  
generally visible on aerial photographs. This information is unchecked

To place on the predicted North American Datum 1983  
move the projection lines 4 meters north and  
37 meters east as shown by dashed corner ticks  
Revisions shown in purple compiled from aerial photographs taken  
1978. Map edited 1981. This information not field checked

UTM GRID AND 1983 MAGNETIC NORTH  
DECLINATION AT CENTER OF SHEET



ROAD CLASSIFICATION

Heavy-duty	Light-duty
Medium-duty	Unimproved dirt
Interstate Route	U.S. Route

- Qa1
- Qa2
- Qa3
- Qa4
- Tsv
- o = Taylor Ball in place o TS left down
- x = collapse hole
- ▲ erratic
- CONTACT
- - - CONTACT (APPROX.)
- - - CONTACT (SY. APPROX.)

GENEALOGY BY  
ROBERT F. BIEK  
1994

DAVIS BUTTES, N. DAK.  
N4652.5-W10237.5/7.5  
1962  
PHOTOREVISED 1981  
DMA 5477 1 NW-SERIES V871

PLATE I  
NDCS OFR 95-1

46° 52' 30" N  
102° 52' 30" W  
NEW ENGLAND 26 MI  
55 MI TO U.S. 12

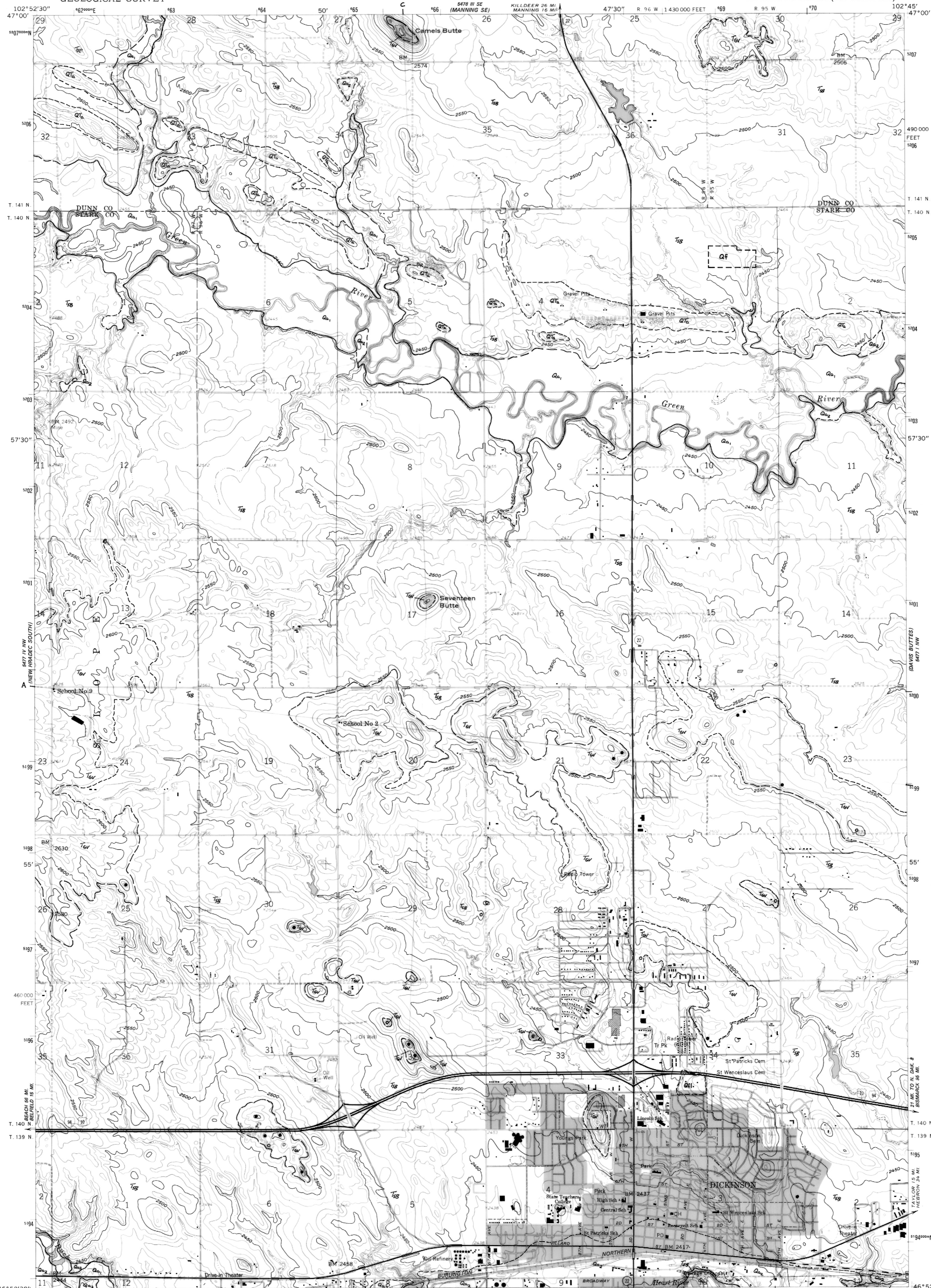
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

STATE OF NORTH DAKOTA  
WATER CONSERVATION COMMISSION

DICKINSON NORTH QUADRANGLE  
NORTH DAKOTA  
7.5 MINUTE SERIES (TOPOGRAPHIC)

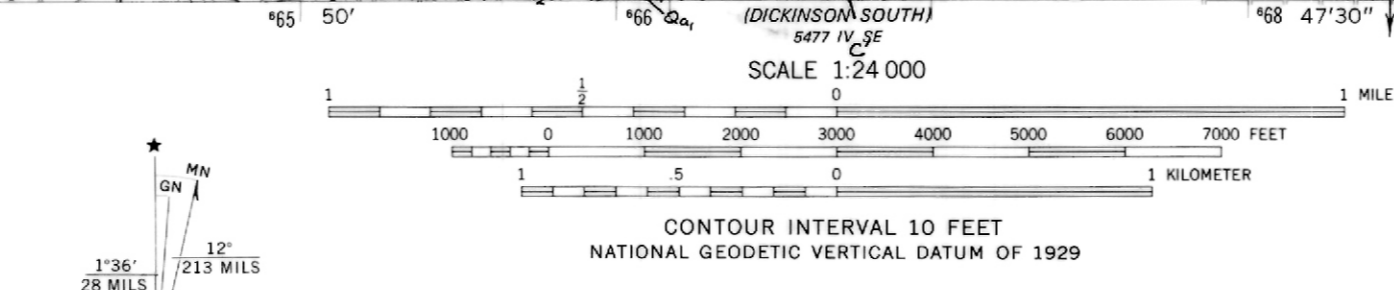
46° 52' 30" N  
102° 45' 00" W  
NEW ENGLAND 26 MI  
55 MI TO U.S. 12

Q1a = Qat  
Qa1 = Qal  
Qa2 = Qal



46° 52' 30" N  
102° 52' 30" W  
NEW ENGLAND 26 MI  
55 MI TO U.S. 12

Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS  
Topography from aerial photographs by photogrammetric methods  
Aerial photographs taken 1958. Field check 1959  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on North Dakota coordinate system,  
south zone  
1000-meter Universal Transverse Mercator grid ticks,  
zone 13, shown in blue  
Red tint indicates areas in which only  
landmark buildings are shown  
To place on the predicted North American Datum 1983  
move the projection lines 4 meters north and  
37 meters east as shown by dashed corner ticks



ROAD CLASSIFICATION  
Primary highway, hard surface  
Secondary highway, hard surface  
Unimproved road  
Light duty road, hard or improved surface  
Interstate Route  
U S Route  
State Route

ROBERT F. BIEK  
1994

DICKINSON NORTH, N. DAK.  
N4652.5—W10245.7.5  
1959  
PHOTOREVISED 1981  
DMA 5477 IV NE—SERIES V871

- Q1f
  - Q1e
  - Qa1
  - Qa2
  - Q1c
  - Q1b
  - Q1a
- CONTACT  
CONTACT (APPROX.)  
CONTACT (VERY APPROX.)

PLATE II  
NOES OFR 95-1

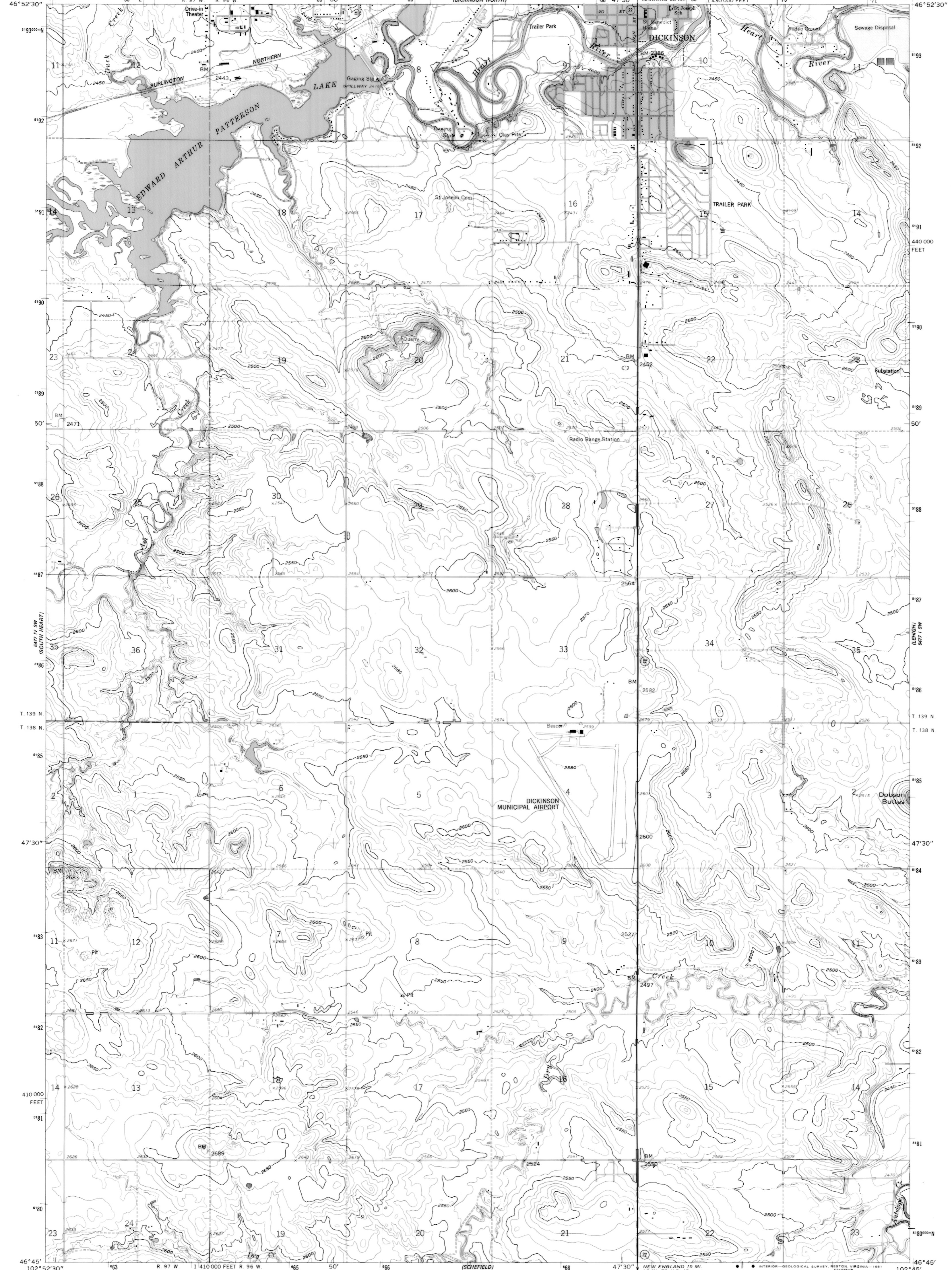
5477 IV NW  
(REVISED 1981)  
5477 III SW  
(REVISED 1981)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

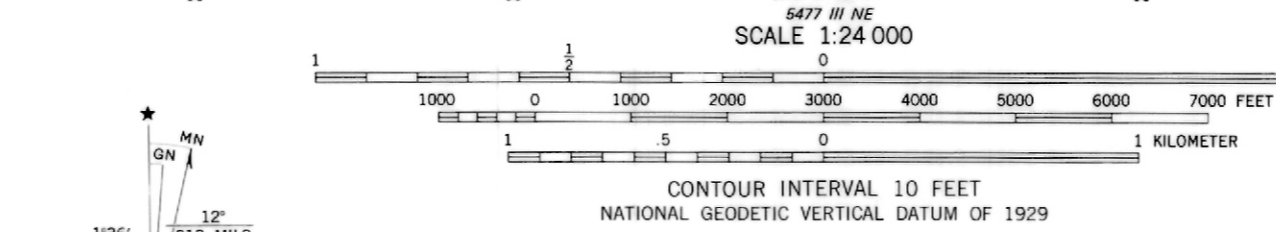
STATE OF NORTH DAKOTA  
WATER COMMISSION

DICKINSON SOUTH QUADRANGLE  
NORTH DAKOTA—STARK CO.  
7.5 MINUTE SERIES (TOPOGRAPHIC)

5477 IV NW  
(REVISED 1981)  
5477 III NW  
(REVISED 1981)



Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS  
Topography from aerial photographs by photogrammetric methods  
Aerial photographs taken 1957. Field check 1959  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on North Dakota coordinate system,  
south zone  
1000-meter Universal Transverse Mercator grid ticks,  
zone 13, shown in blue  
Red tint indicates area in which only  
landmark buildings are shown  
To place on the predicted North American Datum 1983  
move the projection lines 4 meters north and  
38 meters east as shown by dashed corner ticks



UTM GRID AND 1981 MAGNETIC NORTH FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092  
AND STATE WATER COMMISSION, BISMARCK, NORTH DAKOTA 58501  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION  
Heavy-duty ——— Light-duty ———  
Unimproved dirt - - - - - State Route ○

DICKINSON SOUTH, N. DAK.  
N4645—W10245/7.5  
1959  
PHOTOREVISED 1981  
DMA 5477 IV SE—SERIES V871

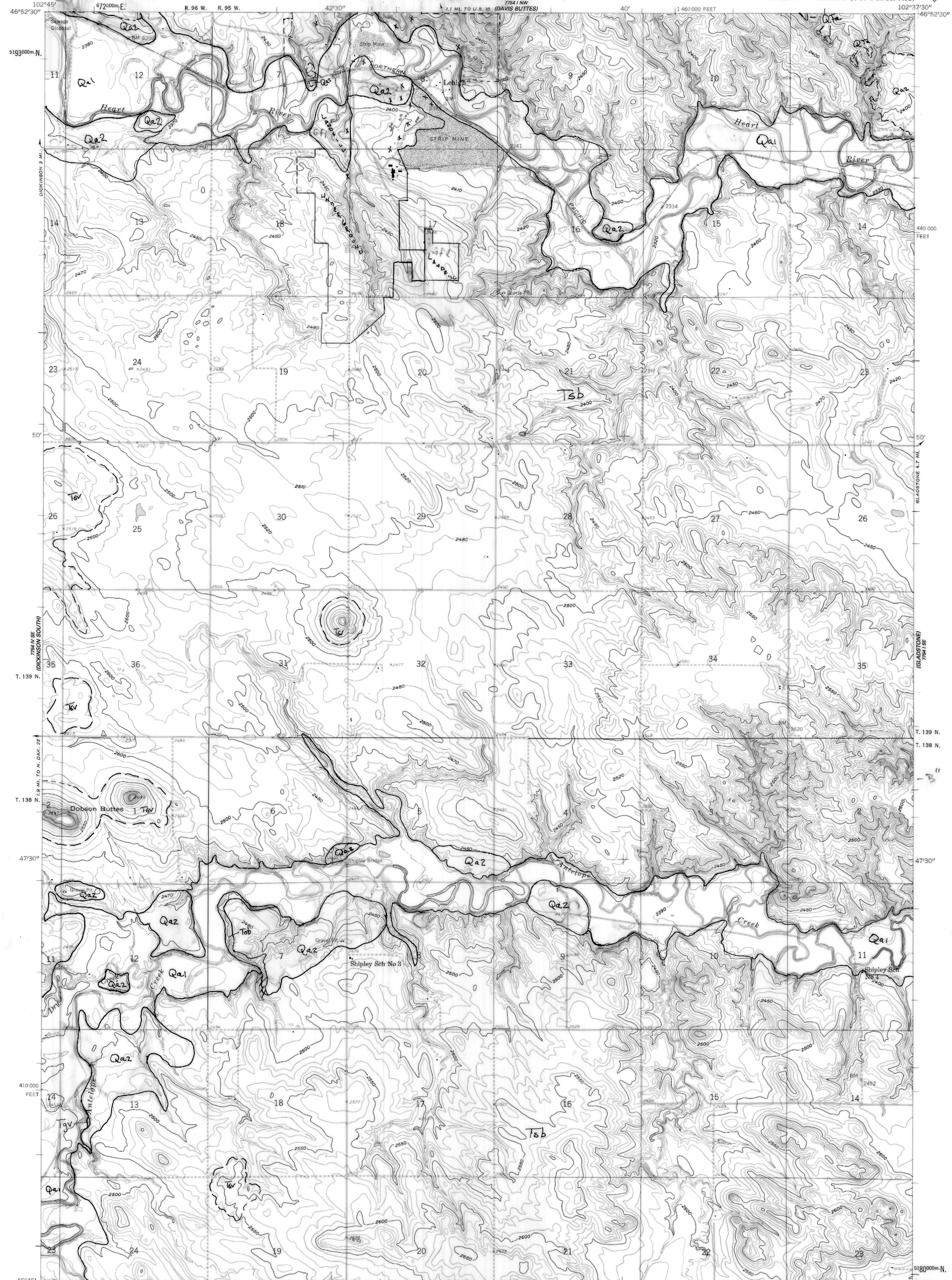
7784 NW  
(DICKINSON NORTH)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

STATE OF NORTH DAKOTA  
WATER COMMISSION

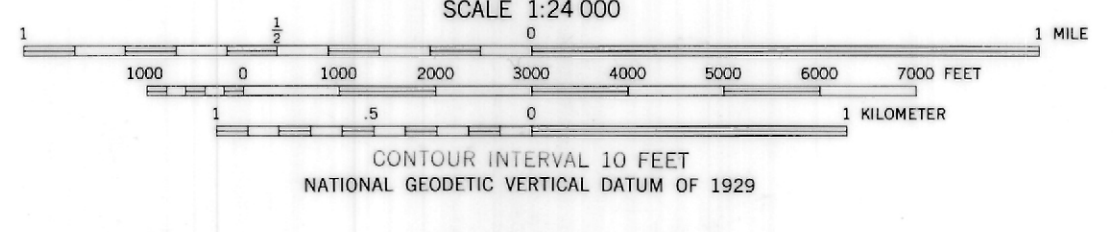
LEHIGH QUADRANGLE  
NORTH DAKOTA—STARK CO.  
7.5 MINUTE SERIES (TOPOGRAPHIC)

7784 NE  
(DICKINSON NORTH)



X collapse Hole

Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS  
Topography from aerial photographs by photogrammetric methods  
Aerial photographs taken 1957. Field check 1959  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on North Dakota coordinate system,  
south zone  
1000-meter Universal Transverse Mercator grid ticks,  
zone 13, shown in blue  
To place on the predicted North American Datum 1983,  
move the projection lines 4 meters north and  
37 meters east as shown by dashed corner ticks

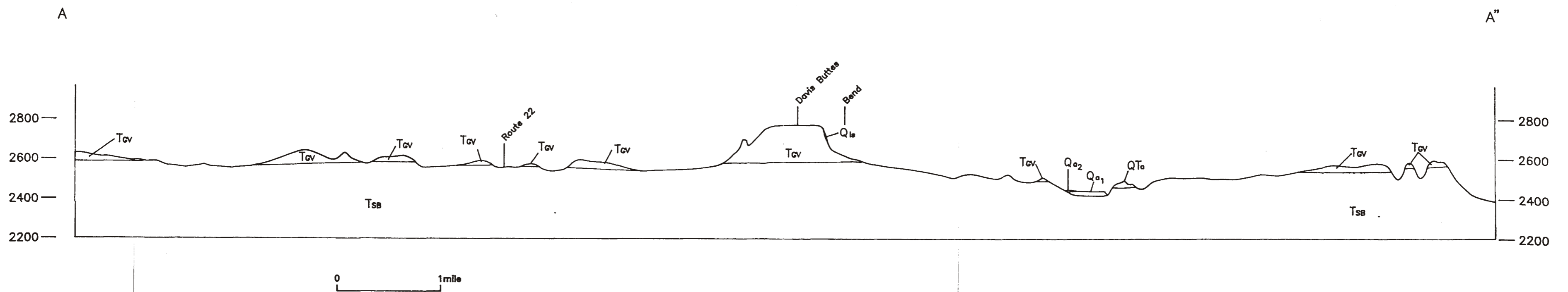
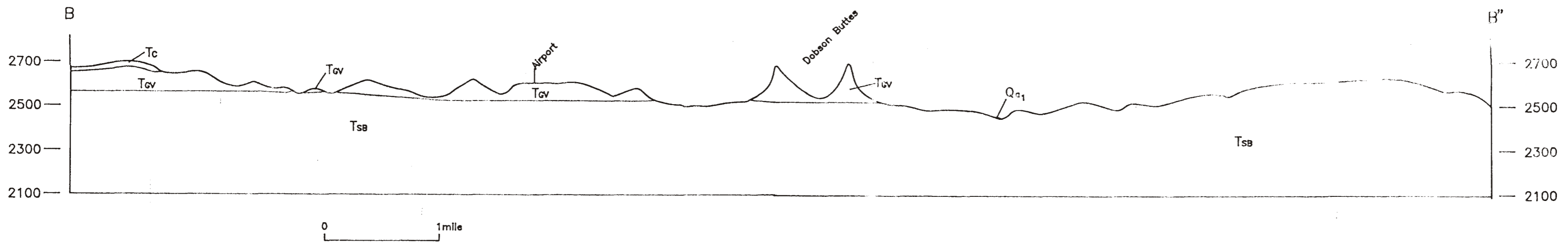
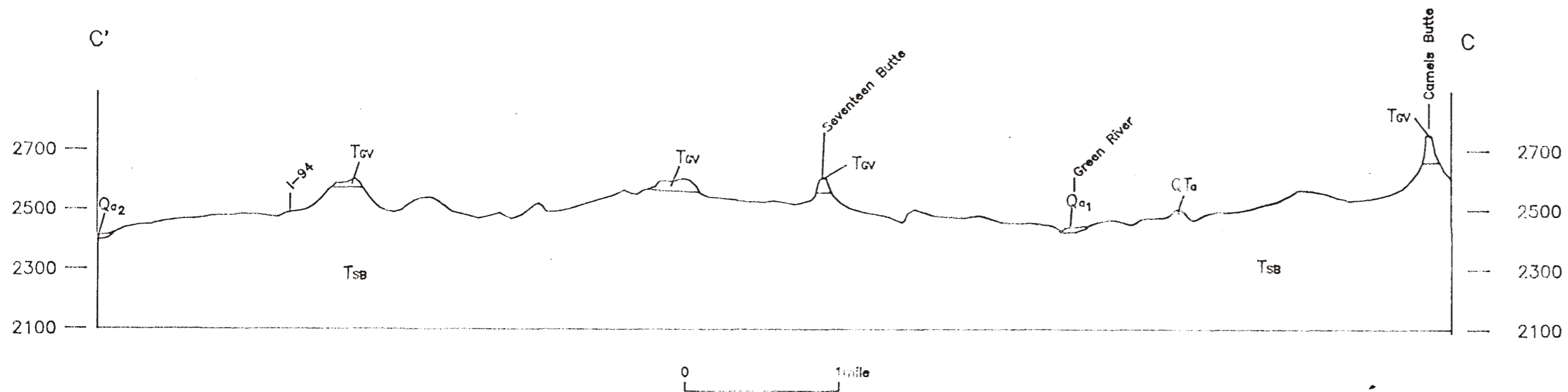
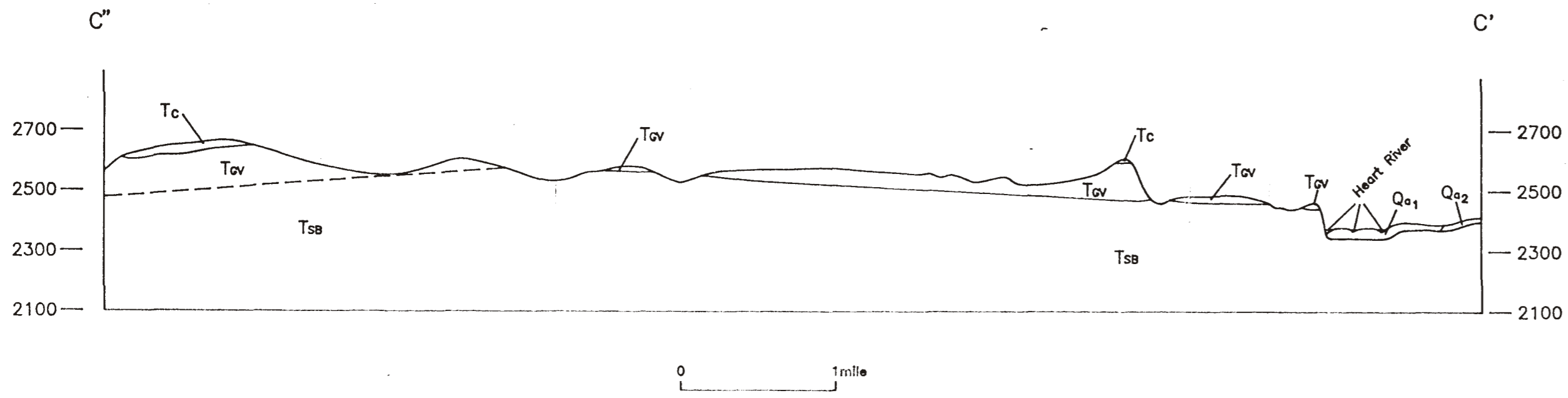


ROAD CLASSIFICATION  
Light-duty ————— Unimproved dirt - - - - -

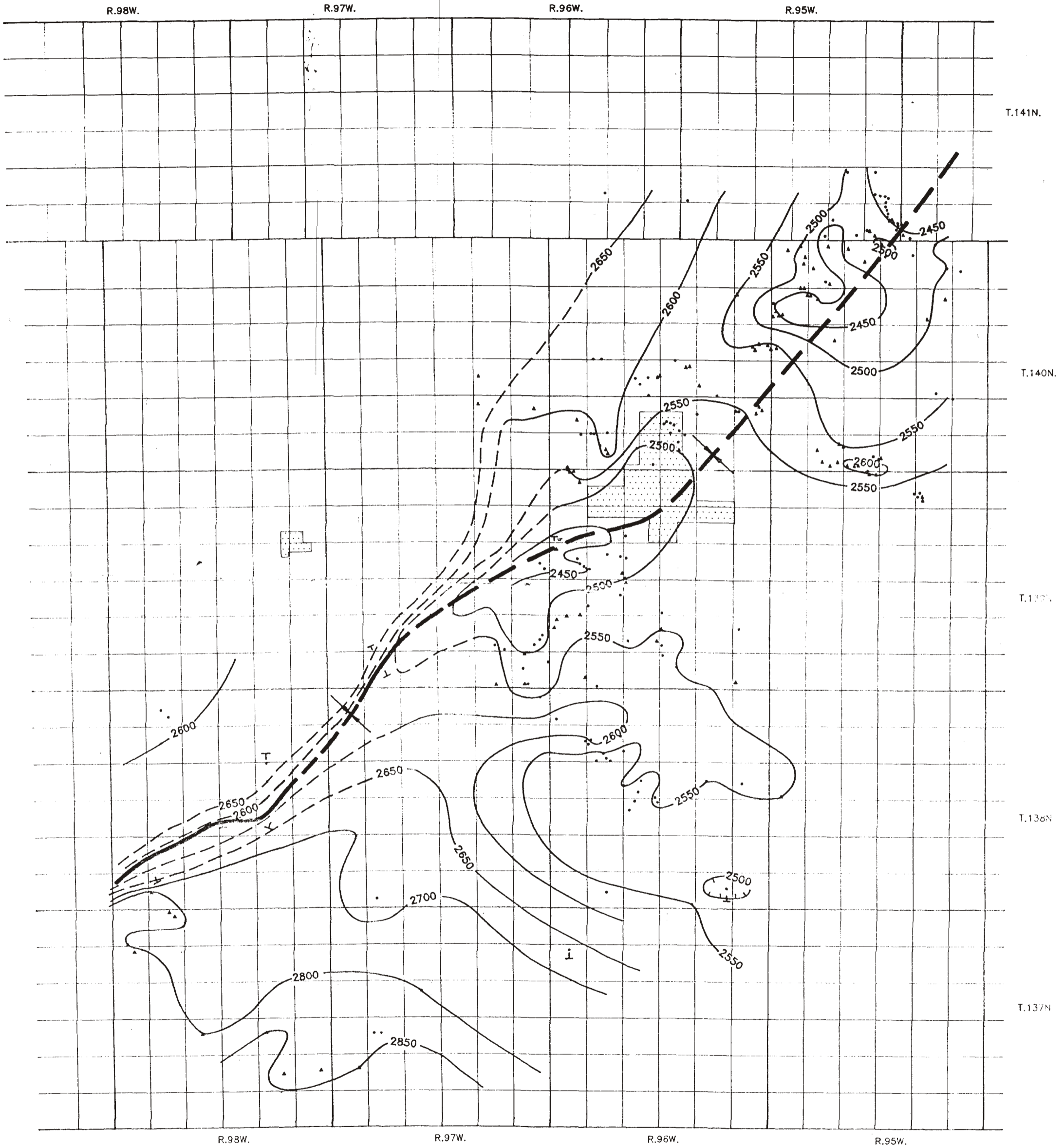
LEHIGH, N. DAK.  
46102-66-TF-024  
1959

Geology by E.C. MURPHY  
1945  
MAP LEGEND IN ACCOMPANYING REPORT

DMG 7784 1 SW-SERIES V871  
PLATE 4 NDCS OPR 95-1



# STRUCTURAL CONTOUR MAP ON THE BEAR DEN MEMBER (PALEOCENE) OF THE GOLDEN VALLEY FORMATION



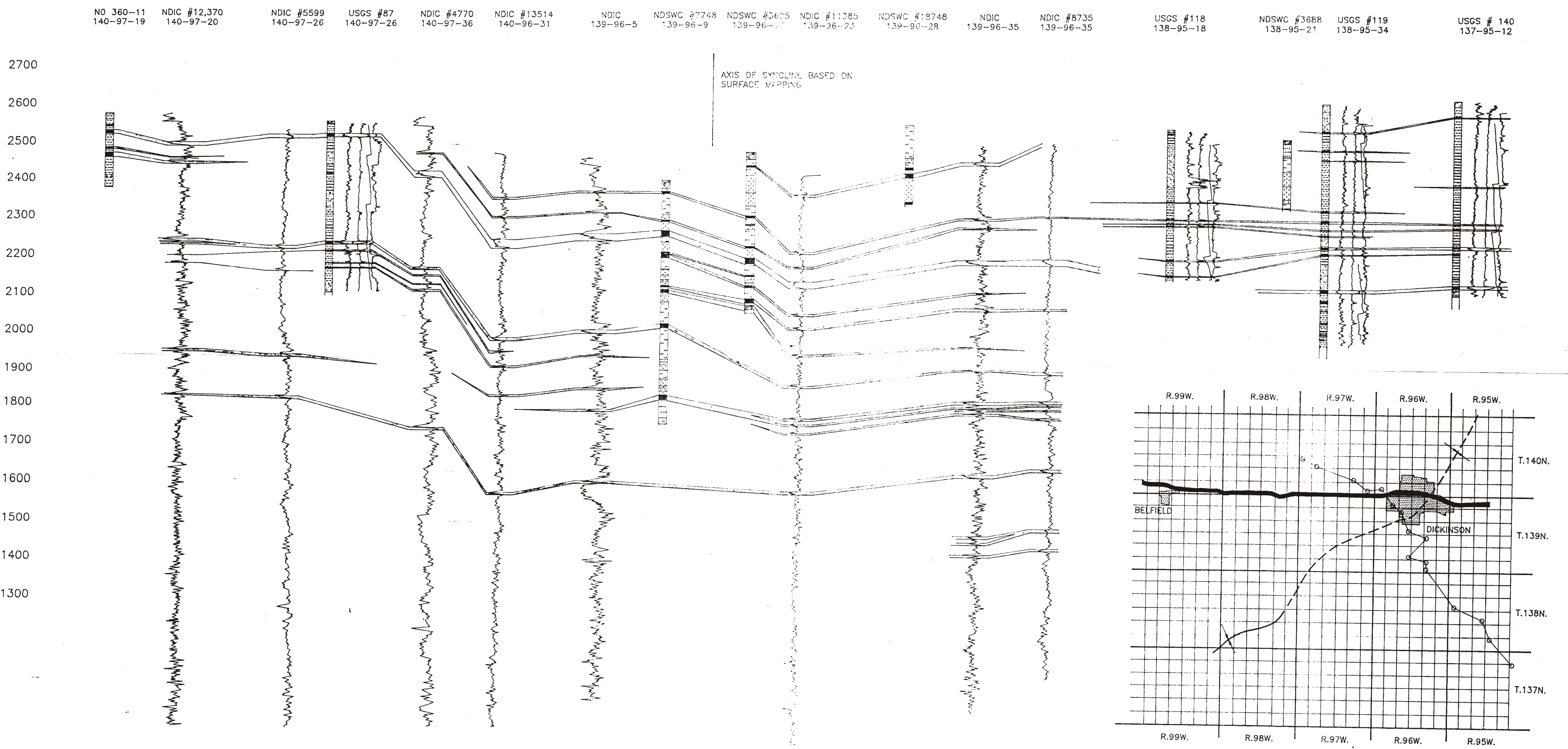
This map shows the altitude and structure of the Bear Den Member of the Golden Valley Formation. The contours reveal a gently folded northeast trending syncline. Contour interval 50 feet. Solid triangles indicate control points on the Taylor bed; solid circles indicate control points on the Bear Den Member. Scale approximately 1:164,000.

VII  
PLATE  
N.D.G.S. OFR

# CORRELATION OF COAL BEDS IN THE SENTINEL BUTTE AND BULLION CREEK FORMATIONS IN THE DICKINSON AREA

NORTHWEST

SOUTHEAST

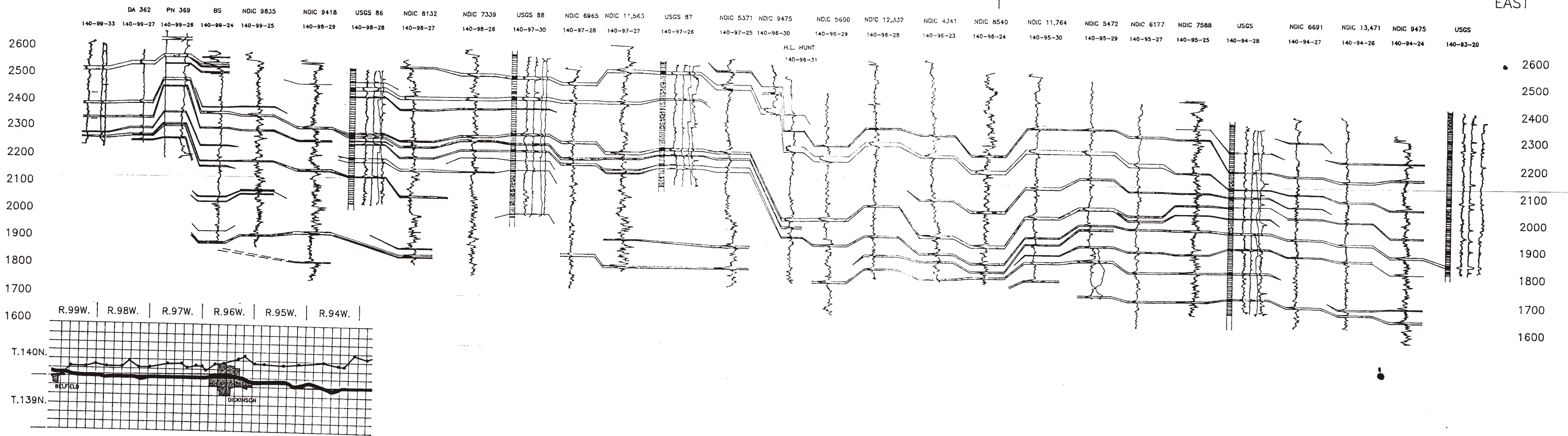


# CORRELATION OF COAL BEDS IN THE SENTINEL BUTTE AND BULLION CREEK FORMATIONS IN NORTHERN STARK COUNTY

WEST

1/4" OF 5' QUOTE BASED

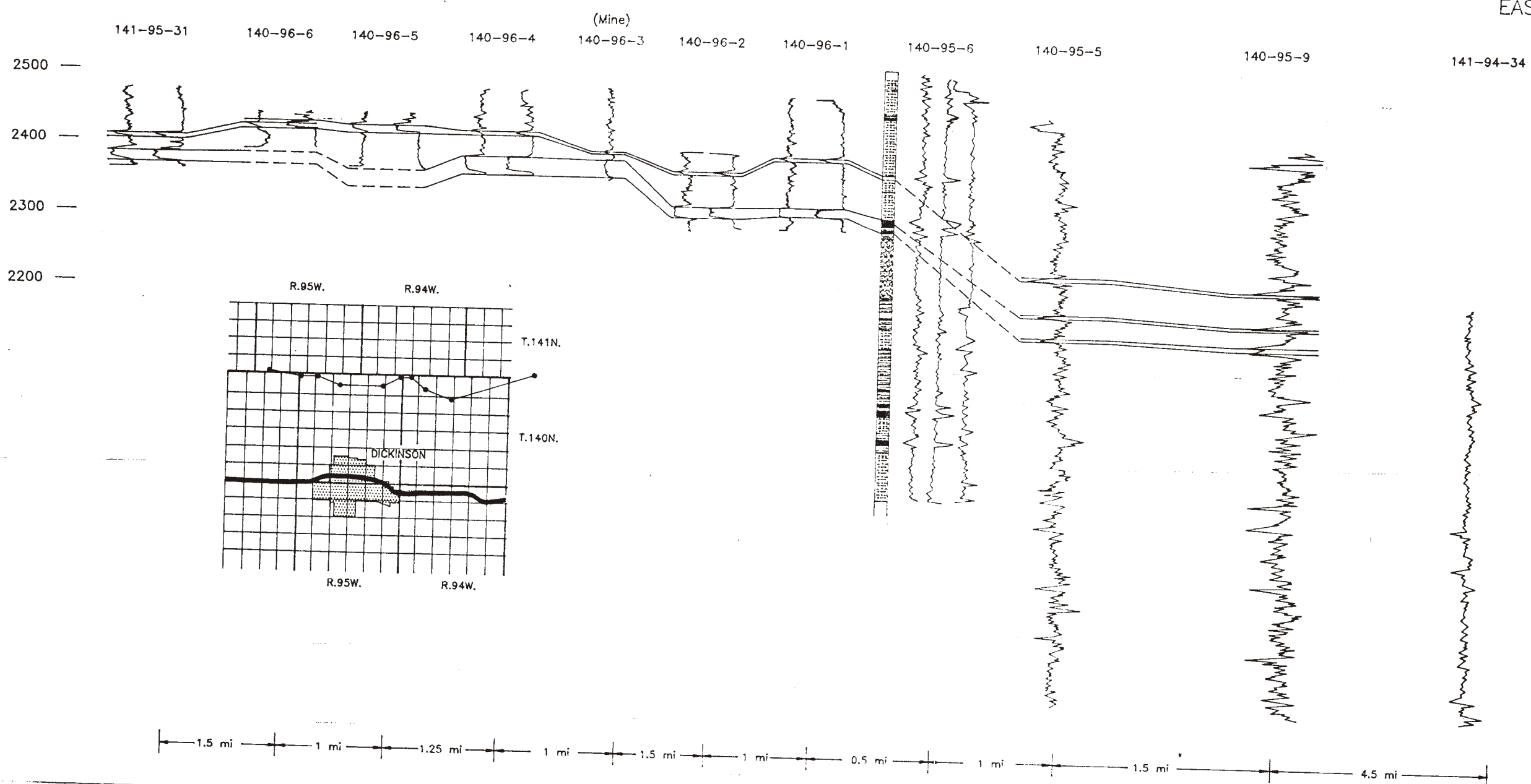
EAST

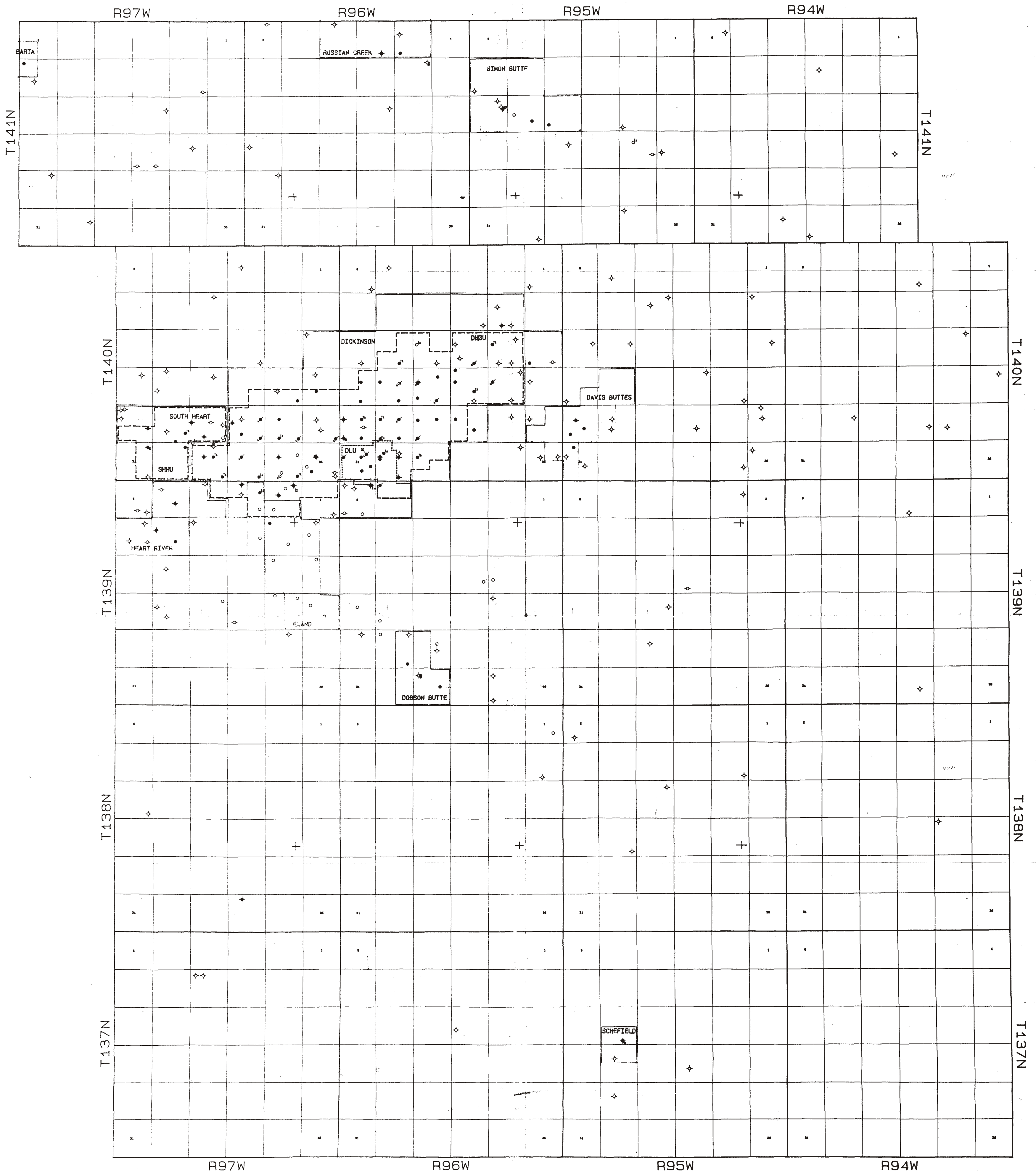


# CORRELATION OF COALS IN NORTHERN STARK COUNTY

WEST

EAST





**MAP LEGEND**

- PERMITTED LOCATION
- CANCELLED PERMIT
- ◇ DRY HOLE
- PRODUCING OIL WELL
- ◆ ABANDONED OIL PRODUCER
- ⊗ PRODUCING GAS WELL
- ⊗ ABANDONED GAS PRODUCER
- ⊗ SALT WATER DISPOSAL WELL
- ⊗ ENHANCED RECOVERY FLUID INJECTOR
- ⊗ ENHANCED RECOVERY GAS OR AIR INJECTOR
- <sup>TA</sup> TEMPORARILY ABANDONED
- <sup>WS</sup> WATER SUPPLY WELL
- DEVIATED WELL SURFACE LOCATION
- HORIZONTAL WELL

Eastern Stark County Well Locations  
 PREPARED BY N.O.I.C. OIL & GAS DIVISION  
 SCALE: 1 INCH = 8000 FEET