

January 11, 2015

MEMORANDUM

To: Brian Hunt, Barton Springs Edwards Aquifer Conservation District
From: Tom Grimshaw
Subject: Transfer of Geologic Mapping from Air Photos to Topographic Base Map for the Mountain City Quadrangle

After our recent conversations on how best to transfer geologic information (faults, contacts, etc.) from air photos to a topographic map with a different scale (1:24,000), I believe I have found a quick and convenient method. This method involves printing the topo map using the “poster” printing function on clear plastic transparencies and at a reduced or expanded scale (using printer scaling features) to match the air photos. The geologic information can then be traced with non-permanent thin markers from the photos onto the transparencies. The mapping can then be readily transferred to paper maps at the original 1:24,000 scale manually using topo lines and other map features for cross-reference.

I have initiated this process for the Mountain City quadrangle and portions of surrounding quads as shown in Attachment A. Mapping for the Mountain City quad is extended into the surrounding quads to complete the picture for mapping within the quad. Previous mapping in the surrounding quads is also indicated.

Attachment B presents the 25 panels in which mapping as transferred so far from two sets of photos, 1958 (western portion of the mapping area) and 1967 (eastern portion). The transferred information is focused on faults and formation contacts having a high degree of certainty. Not all the panels include geologic mapping at this time. As more office and fieldwork is accomplished, additional details will be “filled in” around the framework shown in Attachment B.

Please let me know if you have any questions about this procedure for mapping transfer or the mapping that has been transferred to date.

Attachment A.

Mountain City Quad and Portions of Surrounding Quads

Dripping Springs	Signal Hill	Signal Hill	Signal Hill	Oak Hill
Driftwood	Mt City	Mt City	Mt City	Buda
Driftwood	Mt City	Mt City	Mt City	Buda
Driftwood	Mt City	Mt City	Mt City	Buda
Wimberley	San Marcos North	San Marcos North	San Marcos North	Uhland

Notes on Previous Mapping:

Mountain City mapping is more detailed than previous mapping by Smith¹ (date), BEG² (date) and Grimshaw³ (1976)

Dripping Springs. Not previously mapped?

Driftwood. Collins⁴, date.

Wimberley. Not previously mapped in this section.

Signal Hill. Kolb⁵, 1981

San Marcos North. Grimshaw, 1976.

Oak Hill. BEG, date.

Buda. Not previously mapped?

Uhland. Collins⁶, date.

¹ Reference to be provided later.

² Reference to be provided later.

³ Reference to be provided later.

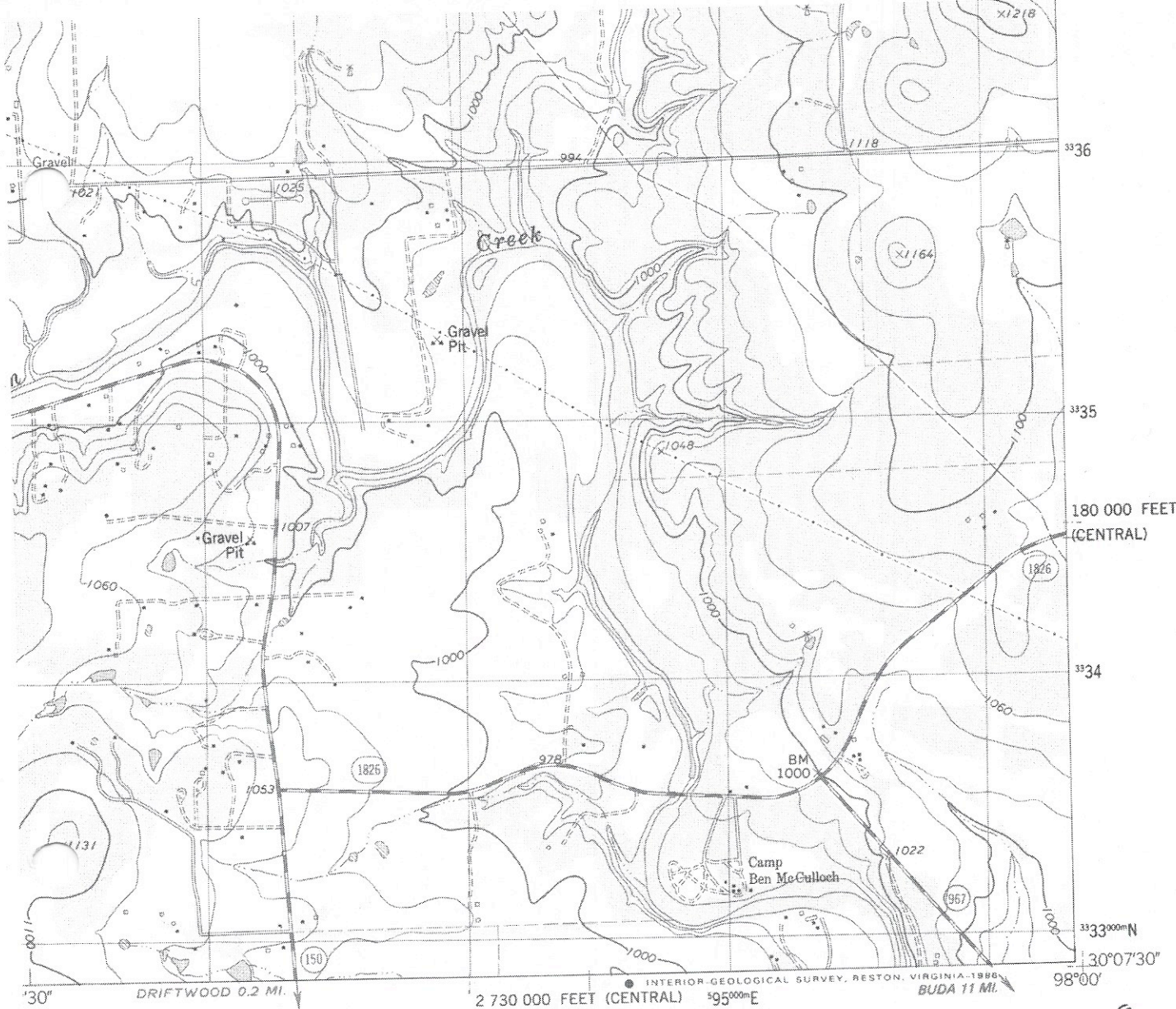
⁴ Reference to be provided later.

⁵ Reference to be provided later.

⁶ Reference to be provided later.

Attachment B.

25 Panels of Topographic Maps with Geologic Mapping to Date



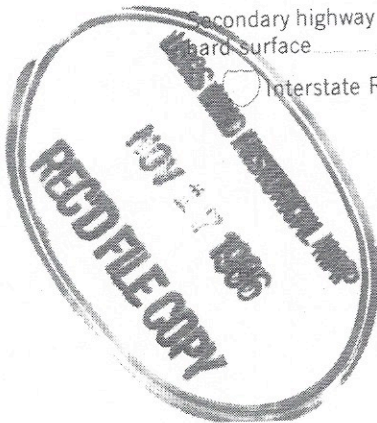
ROAD CLASSIFICATION

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



QUADRANGLE LOCATION

3098-114

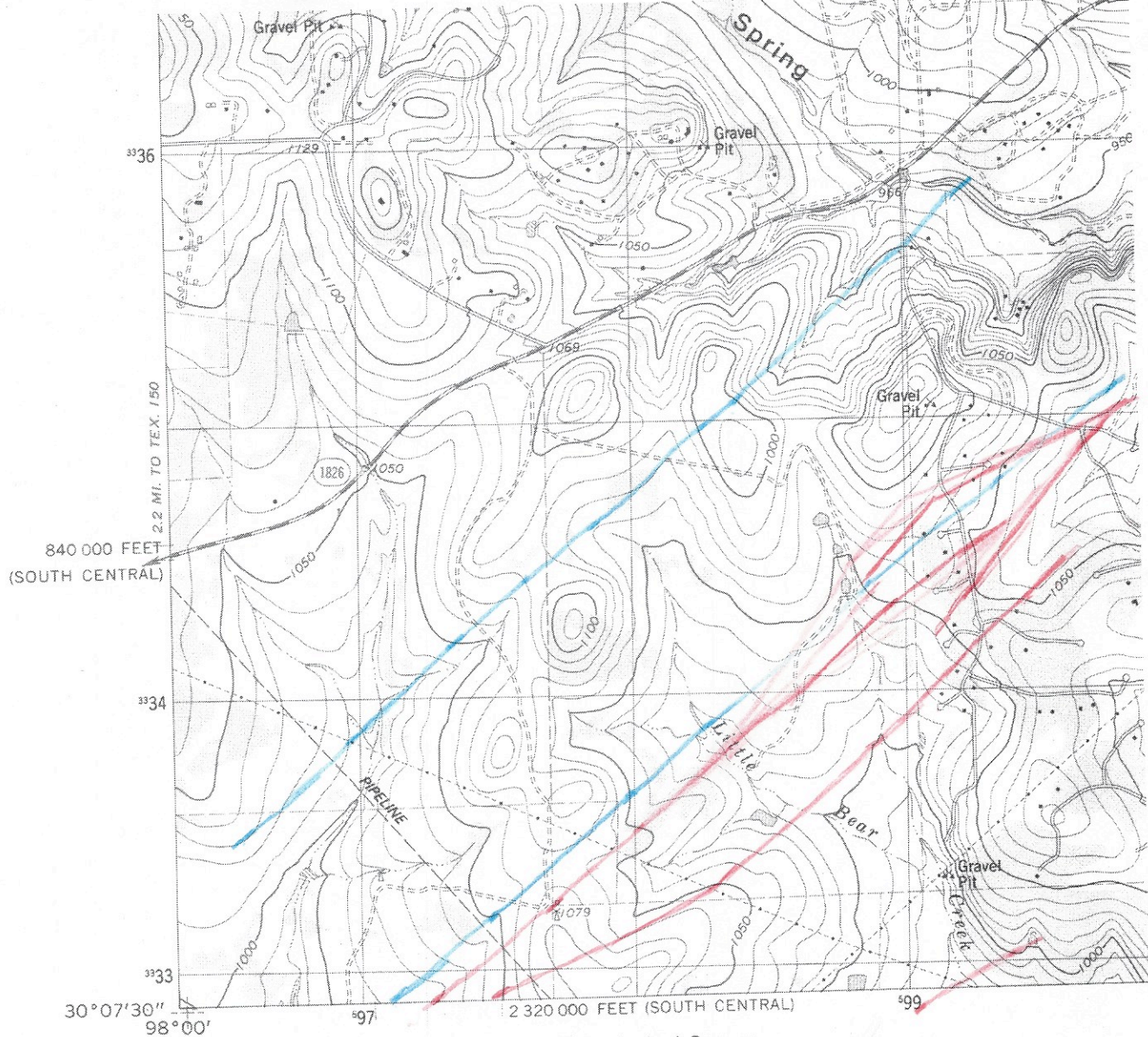


DRIPPING SPRINGS, TEX.
30098-B1-TF-024

1986

DMA 6344 II NE-SERIES V882

(MOUNTAIN CITY)
8444 III SW



(DRIFTWOOD)
6344 II SE

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1967. Field checked 1968. Revised from aerial photographs taken 1985. Field checked 1986. Map edited 1986

Projection: Texas coordinate system, south central zone (Lambert conformal conic)
10,000-foot grid ticks based on Texas coordinate system, south central and central zones
1000-meter Universal Transverse Mercator grid, zone 14
1927 North American Datum

To place on the predicted North American Datum 1983 move the projection lines 18 meters south and 28 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence lines

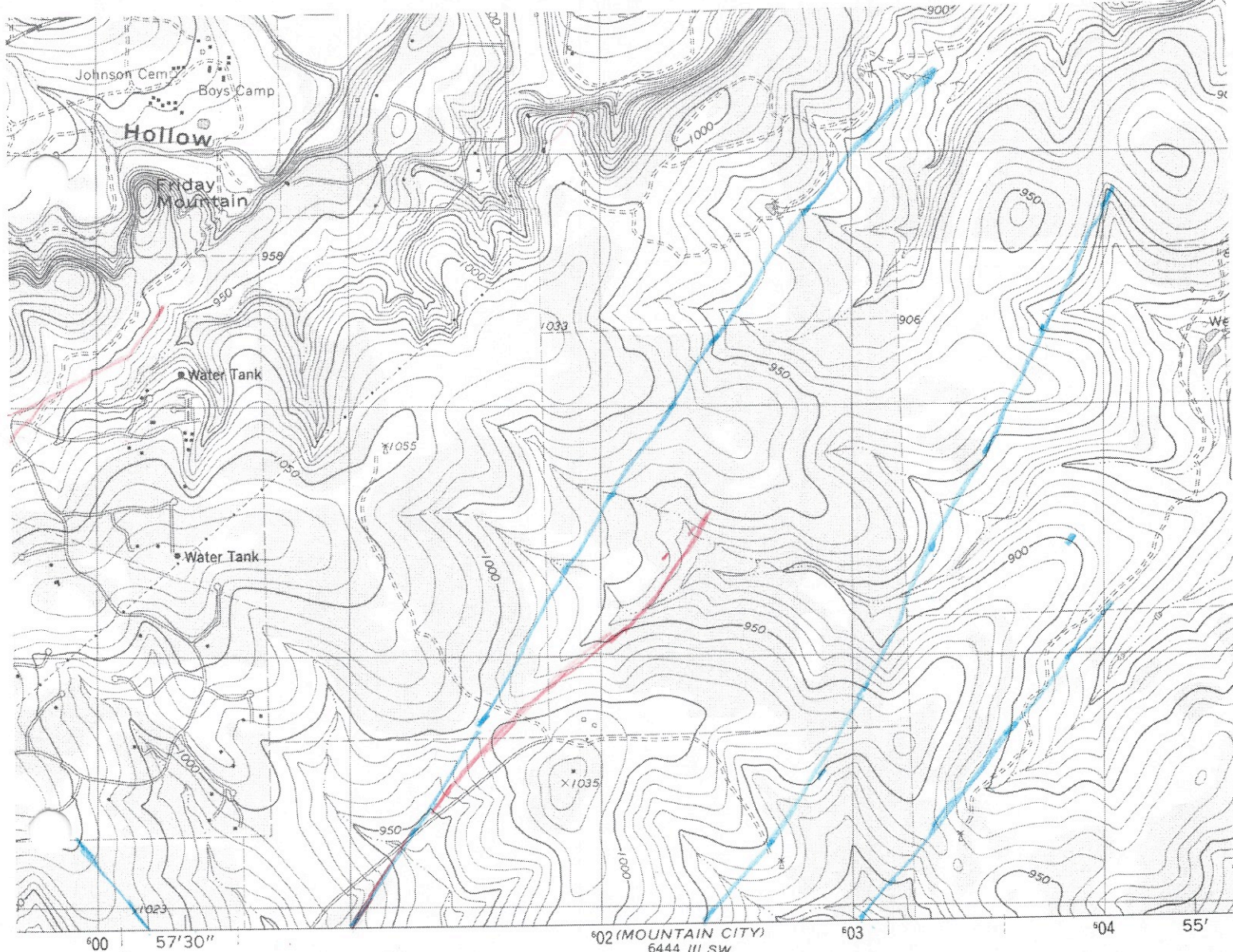
Red tint indicates areas in which only landmark buildings are shown

Severe offset
problem between
& adjacent photos.
Mapping appears
same on both 11/10/16

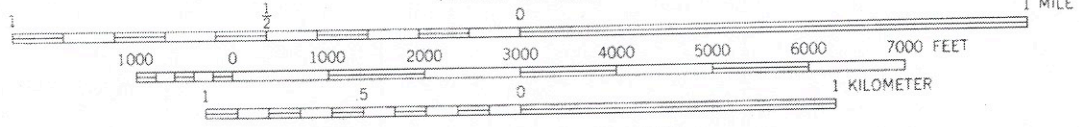
★
GN

0°32'
9 MILS

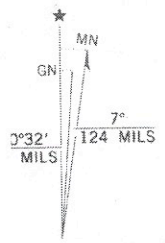
UTM GRID AND 1986
DECLINATION AT C
DIAGRAM IS AT



SCALE 1:24 000

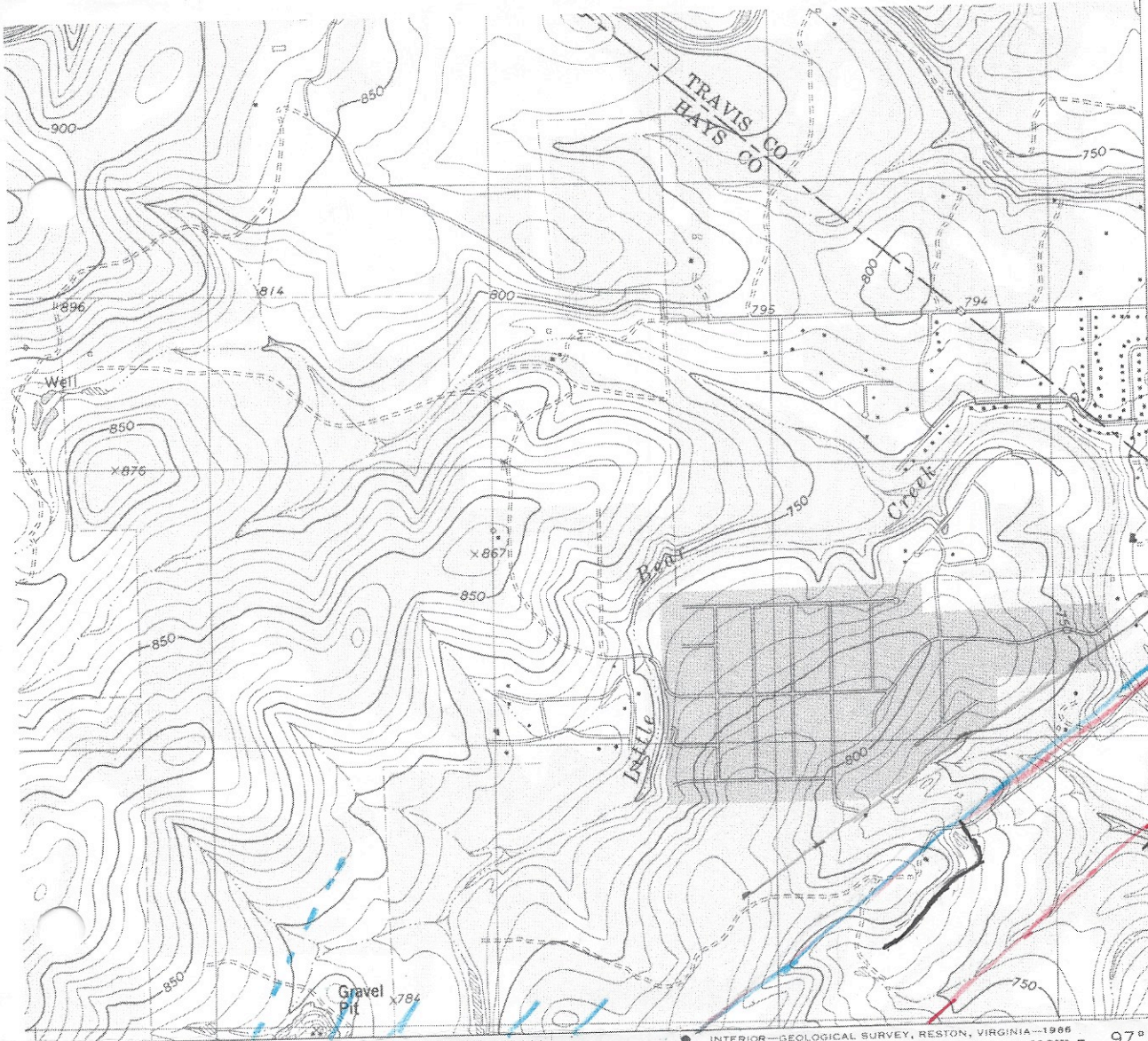


CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



D 1986 MAGNETIC NORTH
GN AT CENTER OF MAP
M IS APPROXIMATE

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



3335

180 000 FEET
(CENTRAL)

33°34'00"N

130°07'30"

55'

6°05'

2 770 000 FEET (CENTRAL)

ROAD CLASSIFICATION

Primary highway,
hard surface

Light-duty road, hard or
improved surface

Secondary highway,
hard surface

Unimproved road



Interstate Route



U. S. Route

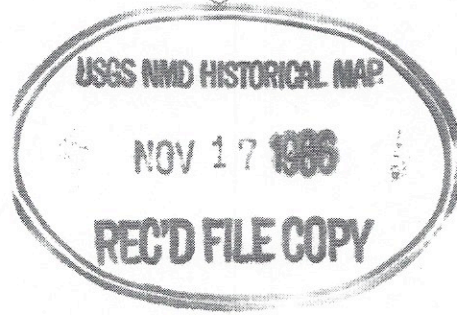


State Route



QUADRANGLE LOCATION

3097-223



SIGNAL HILL, TEX.

NW/4 BUDA 15' QUADRANGLE
30097-B8-TF-024

1986

DMA 6444 III NW-SERIES V882

(BUDA)
6444 III SE

DRIFTWOOD QUADRANGLE
TEXAS-HAYS CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

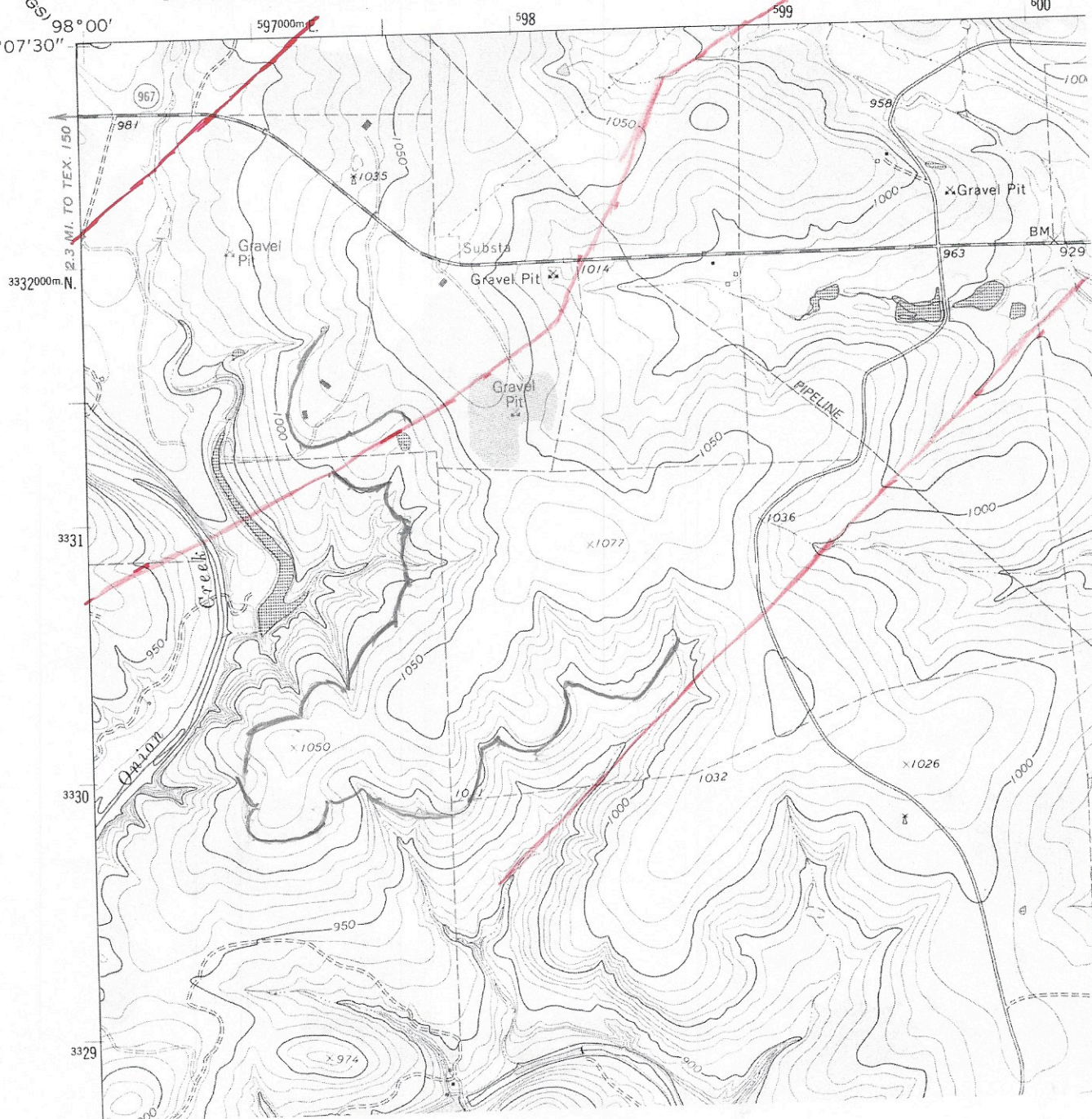
644111
BUDA 1:62500

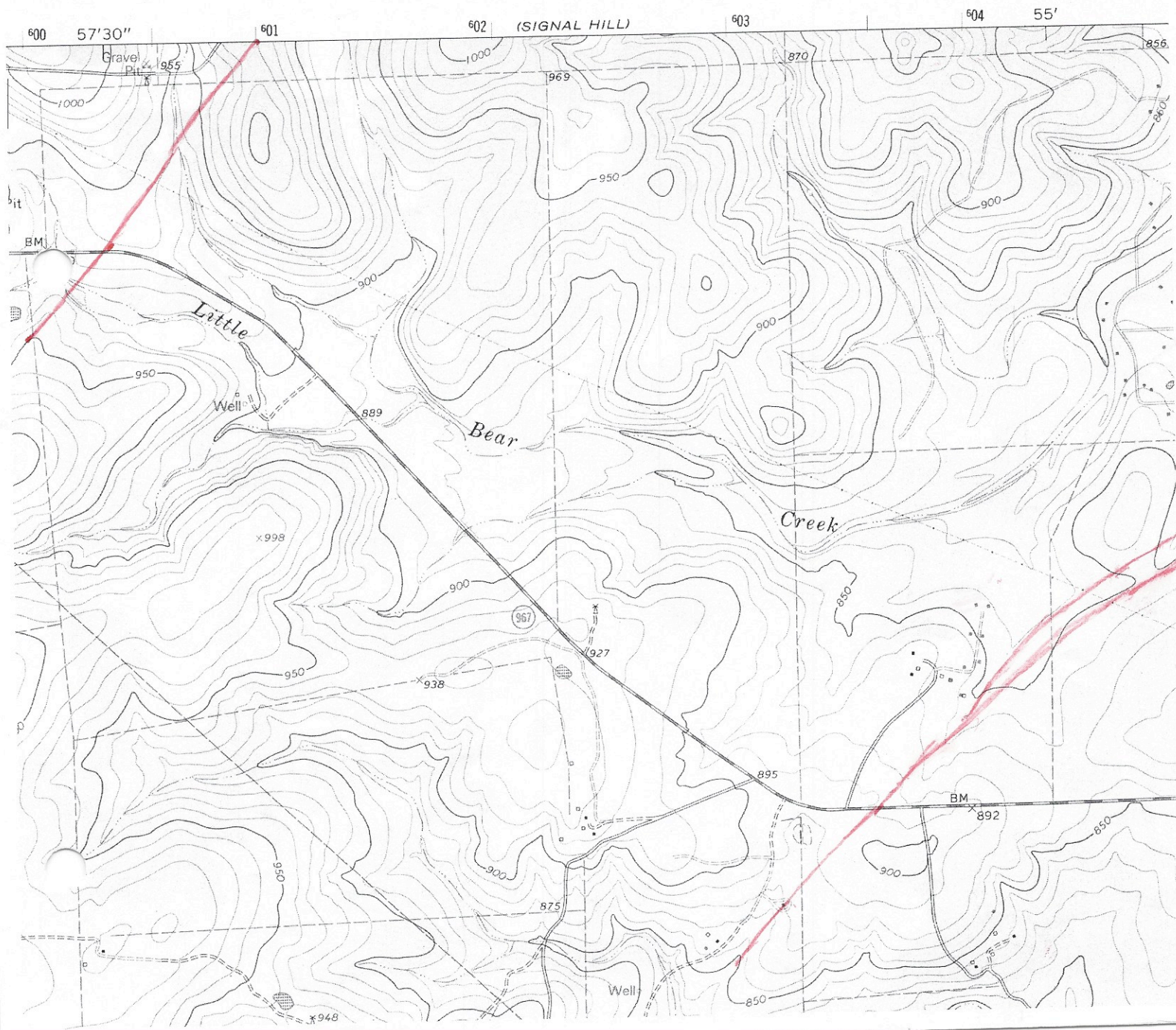


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

(DRIPPING SPRINGS)

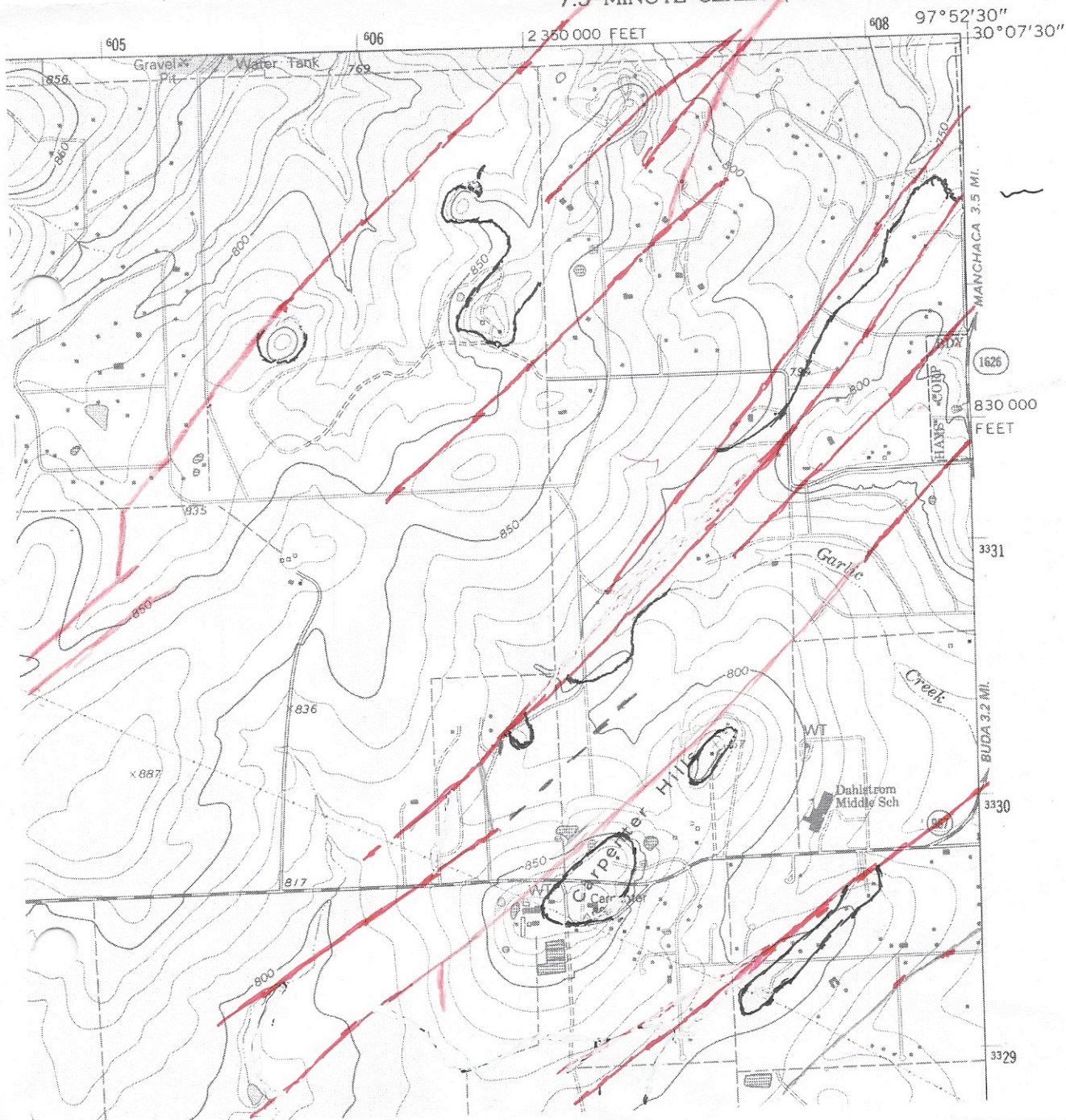
98°00'
30°07'30"





MOUNTAIN CITY QUADRANGLE
TEXAS-HAYS CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

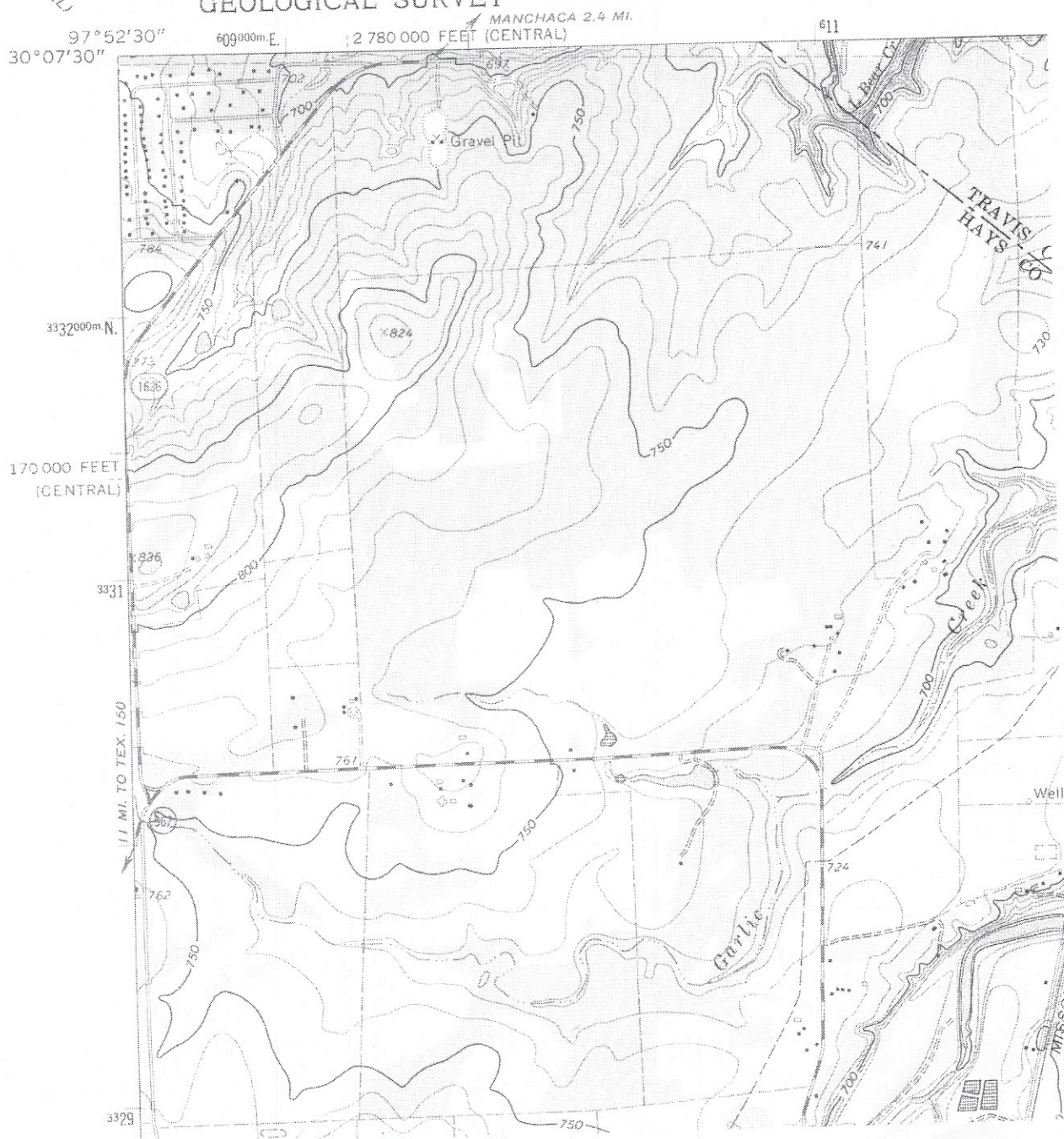
(OAK HILL)



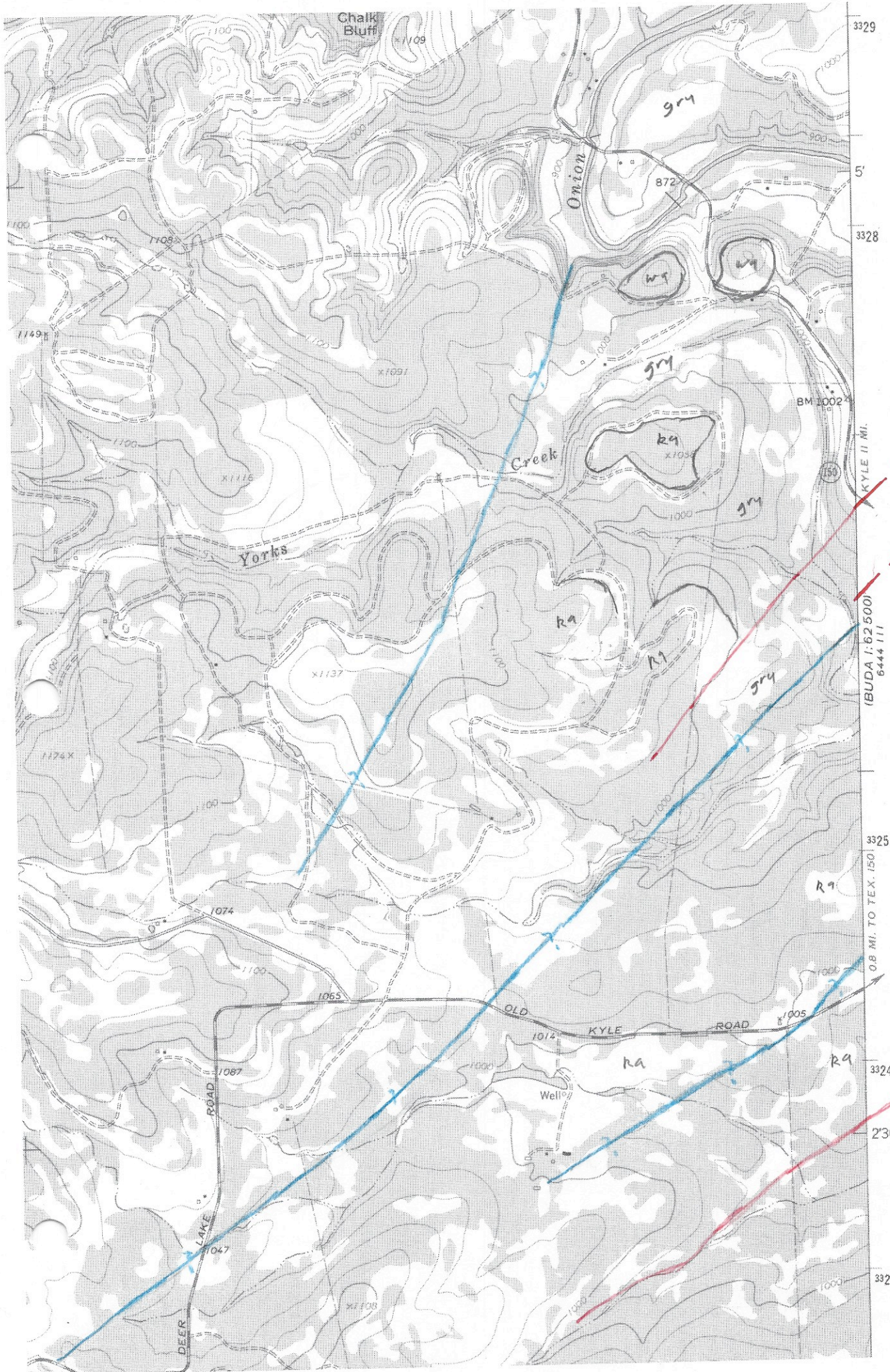
Buda (NW)

54424 1/4 NW
(SIGNAL HILL)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



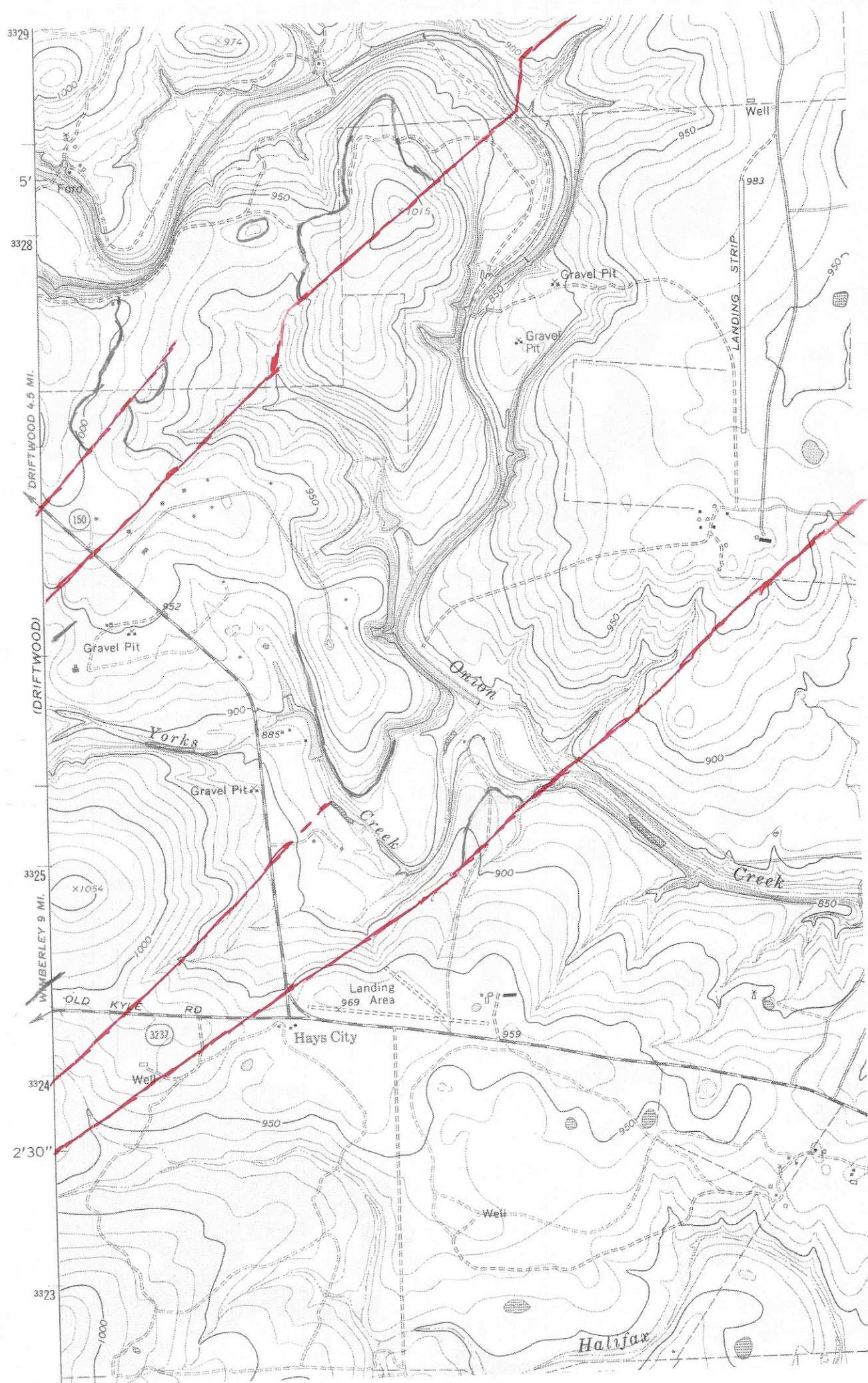
Driftwood

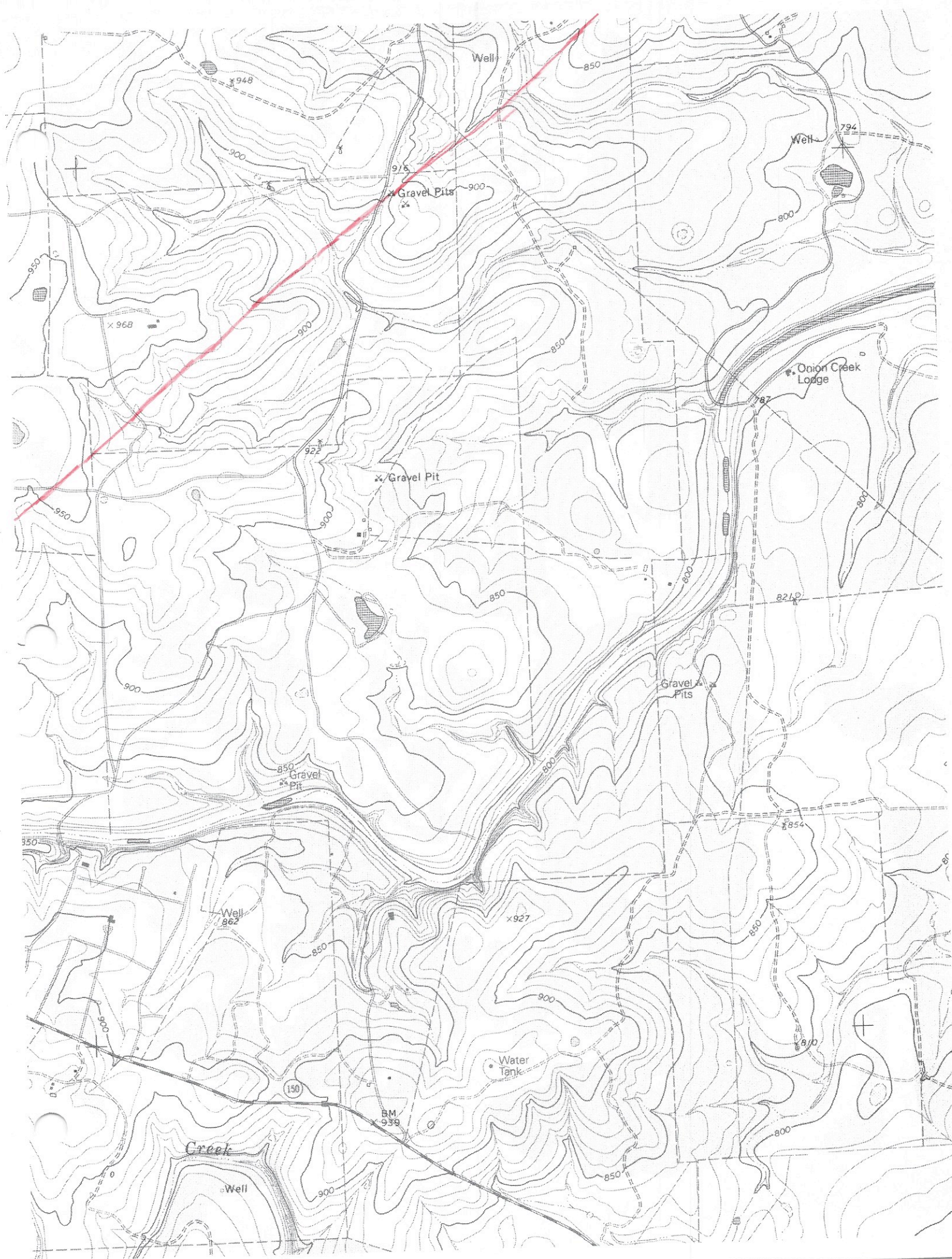


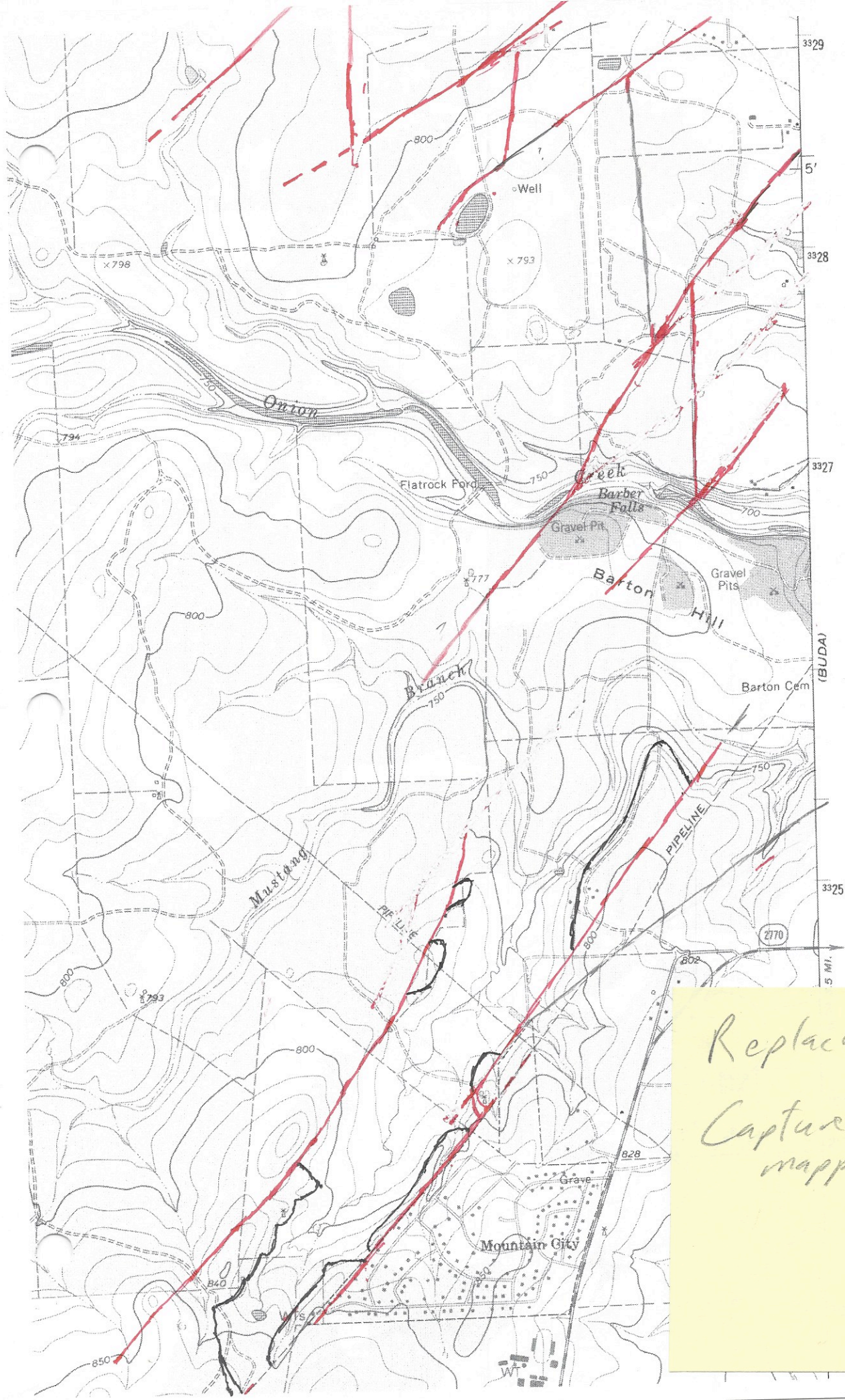
KYLE 11 MI.
(BUDA 1:62 500)
6444 111

0.8 MI. TO TEX. 150

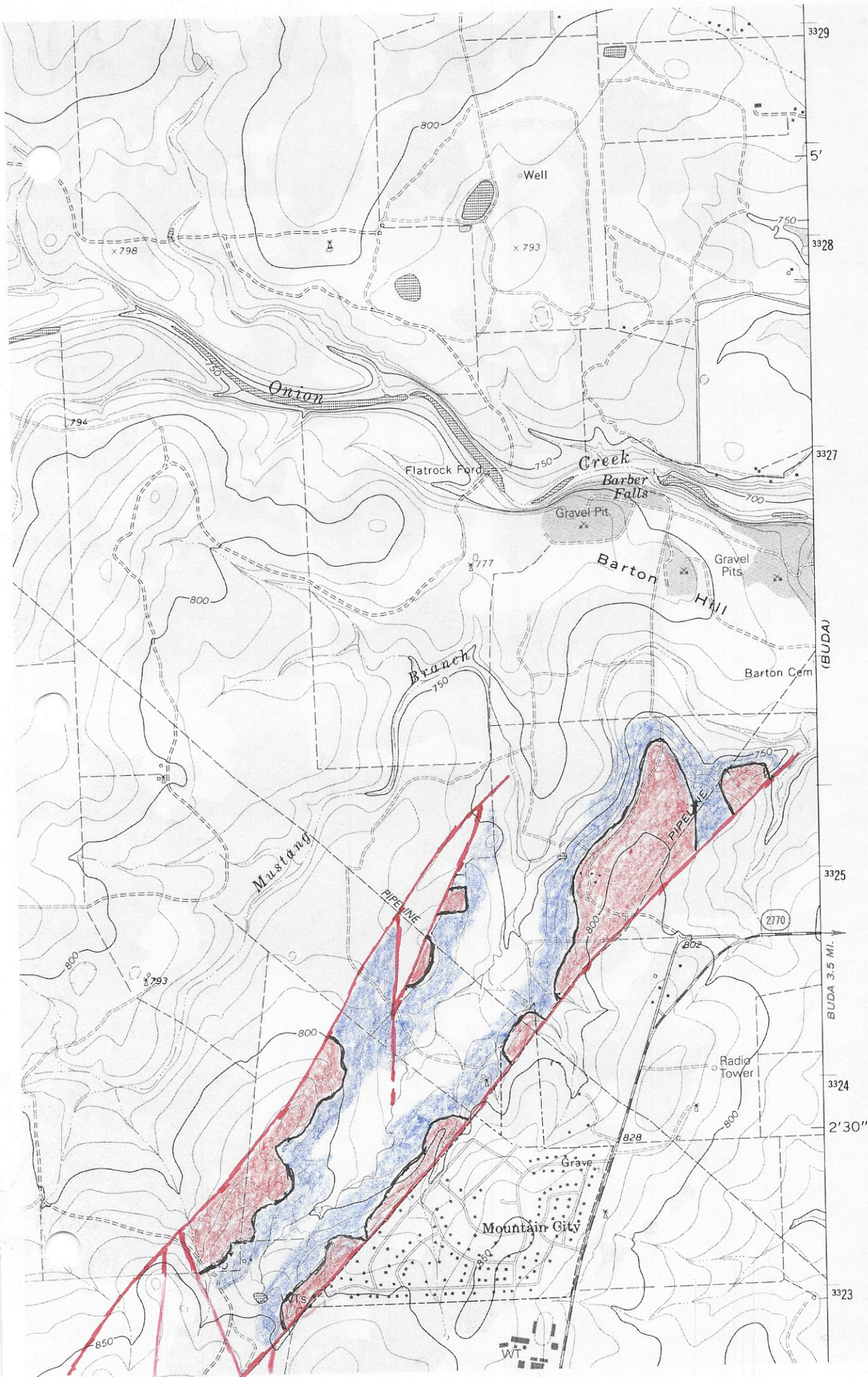
2'30"



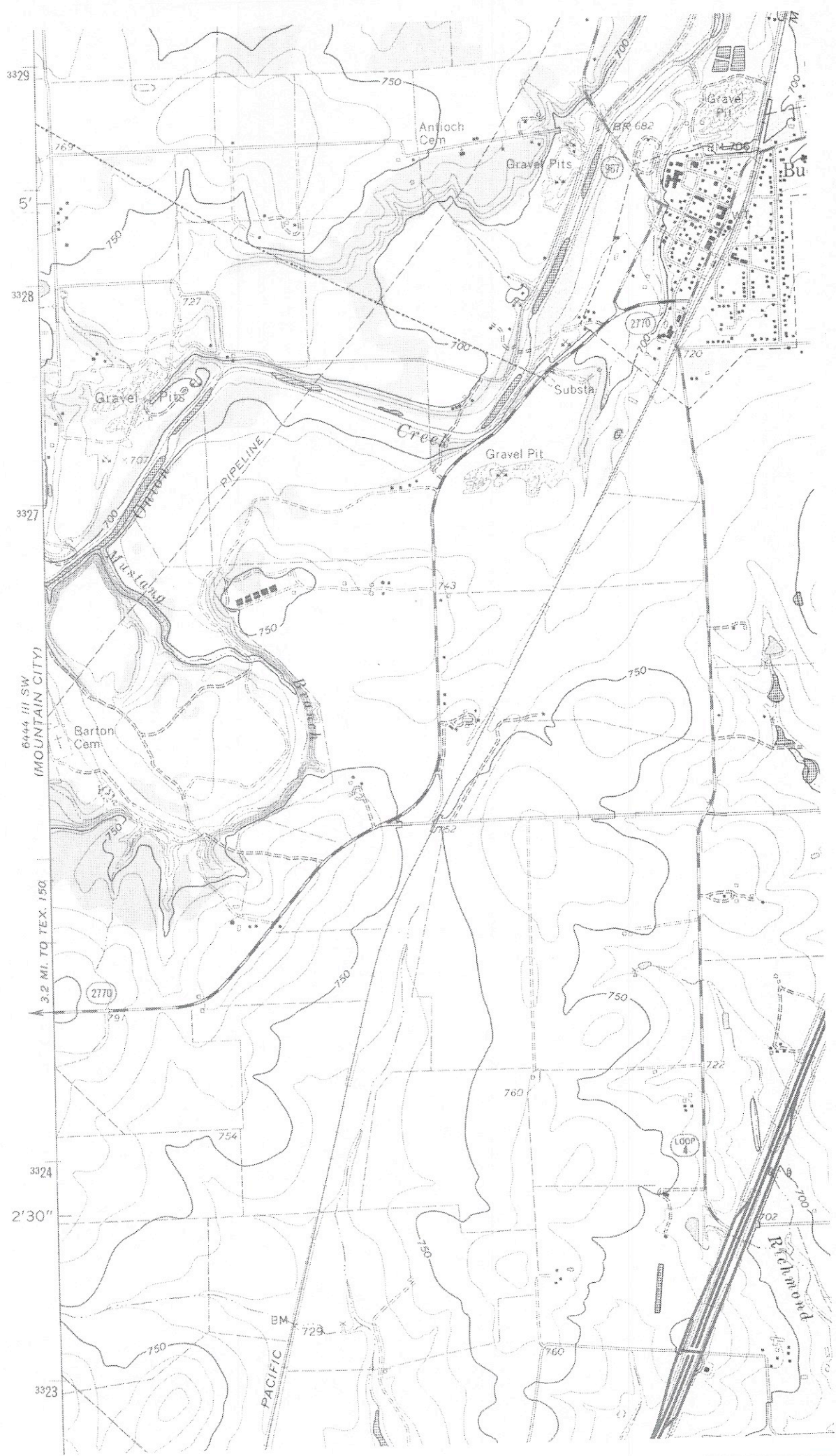


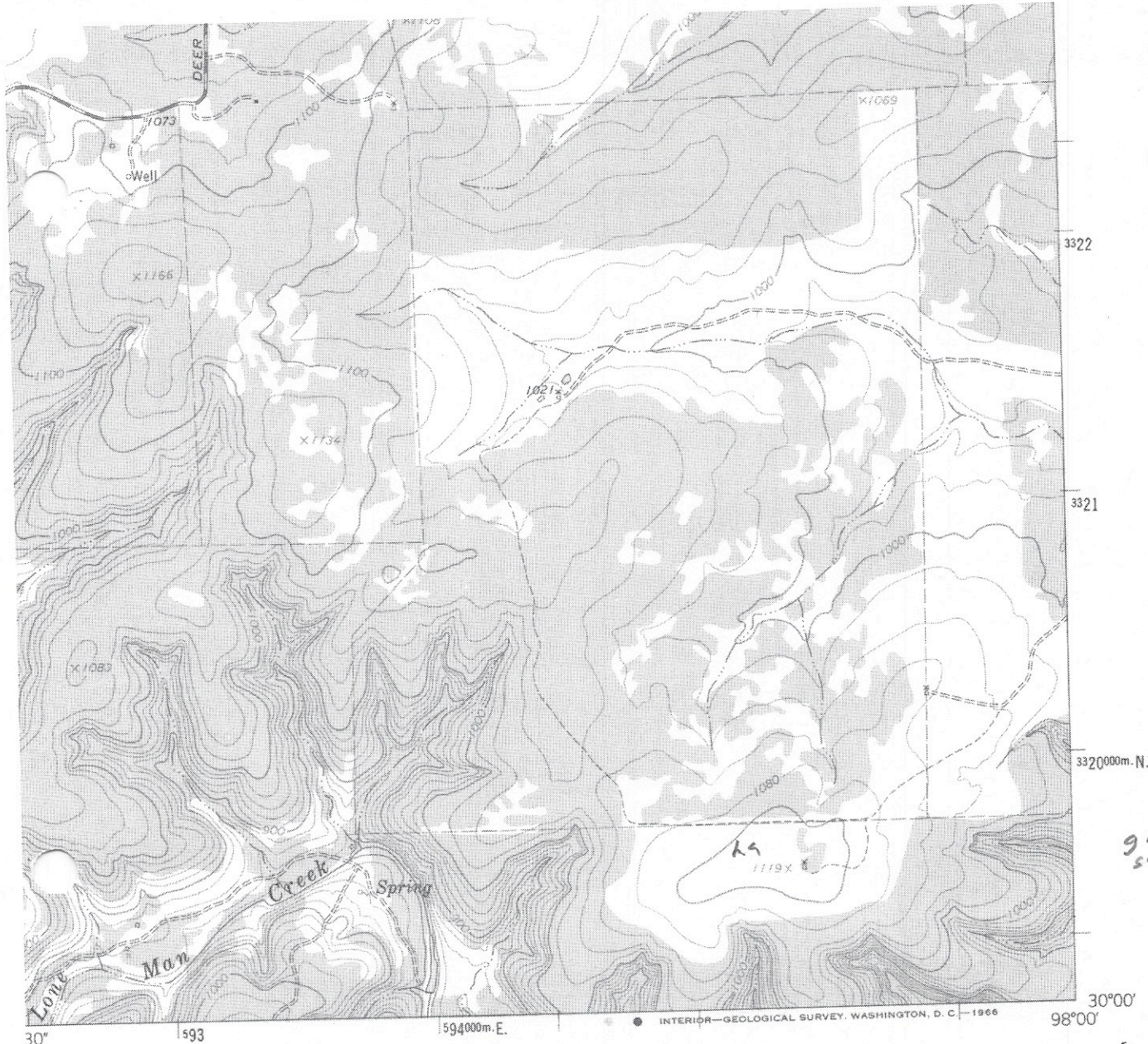


Replaced 10/27/15
Capture upper
mapping



Budy





gr-w2-h9
successive

(SAN MARCOS NORTH)
6443 IV NW

2850
MAR 3 1966



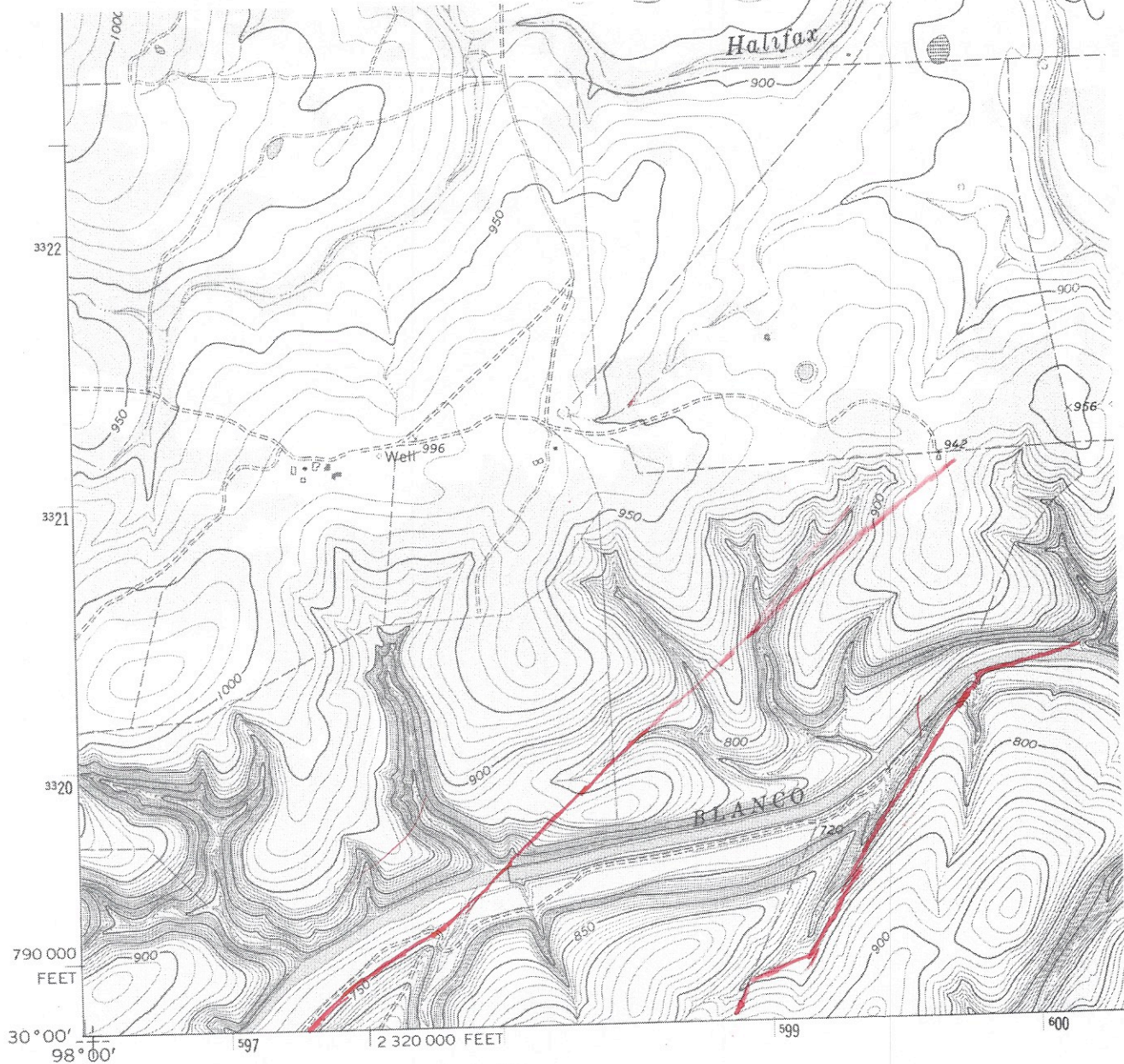
QUADRANGLE LOCATION

U.S.G.S.
FILE COPY
TOPOGRAPHIC DIVISION

ROAD CLASSIFICATION
Medium-duty ——— Light-duty ———
Unimproved dirt =====
○ State Route

DRIFTWOOD, TEX.
N3000-W9800/7.5
1964

AMS 6344 II SE-SERIES V882



(WIMBERLEY)

Produced by the United States Geological Survey

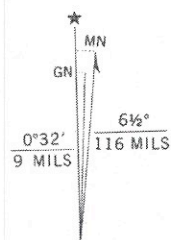
Control by USGS and NOS/NOAA

Compiled from aerial photographs taken 1967. Revisions shown in purple compiled from aerial photographs taken 1986 and other sources and have been field checked. Map edited 1994. Conflicts may exist between some updated features and previously mapped contours.

North American Datum of 1927 (NAD 27). Projection and 10 000-foot ticks: Texas Coordinate System, south central zone (Lambert Conformal Conic). Blue 1000-meter Universal Transverse Mercator ticks, zone 14.

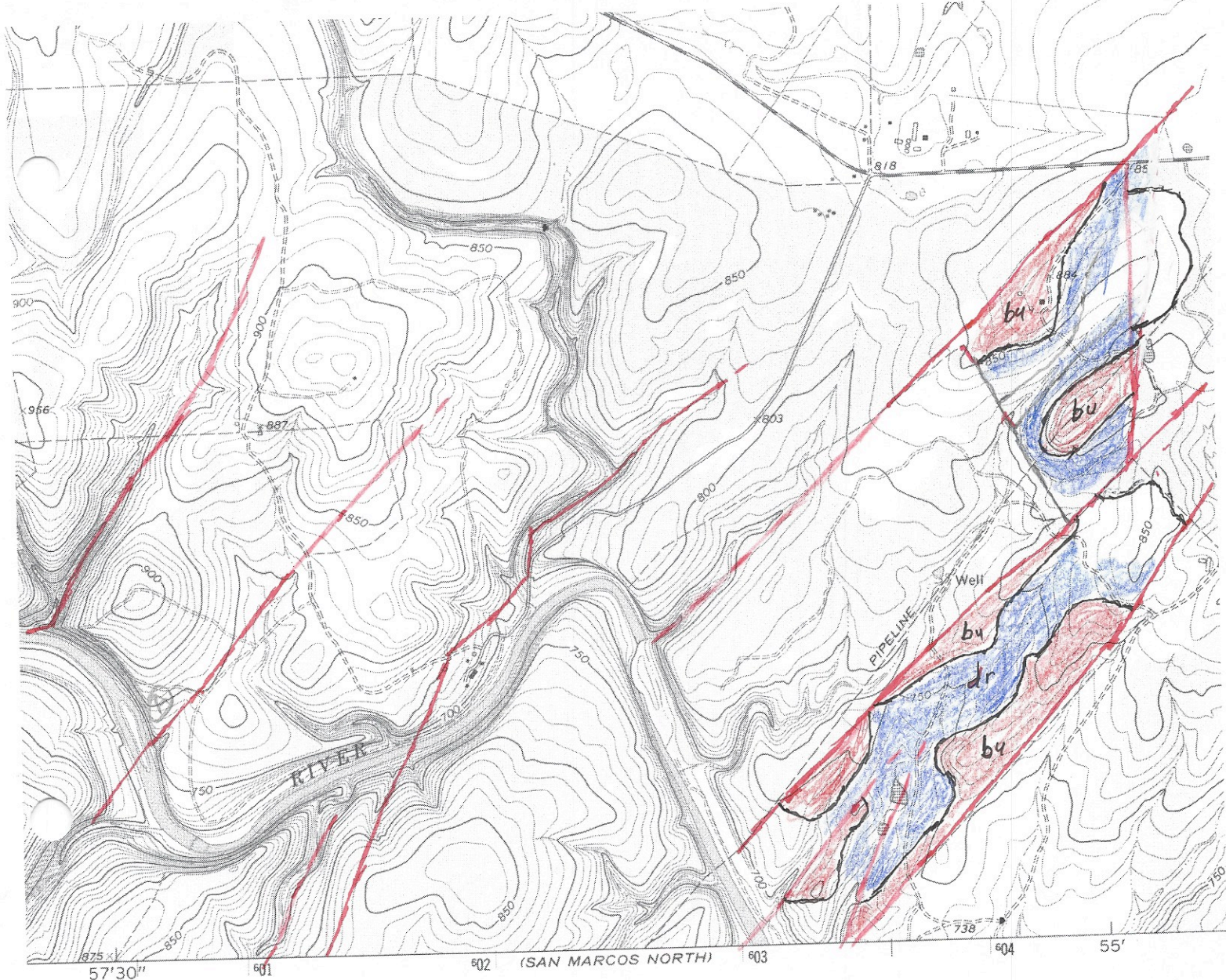
North American Datum of 1983 (NAD 83) is shown by dashed corner ticks. The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are obtainable from National Geodetic Survey NADCON software.

Areas covered by dashed light blue pattern are subject to controlled inundation.

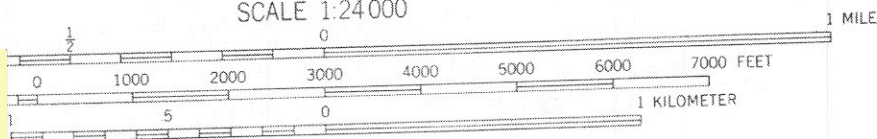


UTM GRID AND 1994 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

1/6/16
 - Add Kgr, New Kgr
 in Blanco trench
 - From Twb 1976 + Collins
 - Kgr up to A next sheet

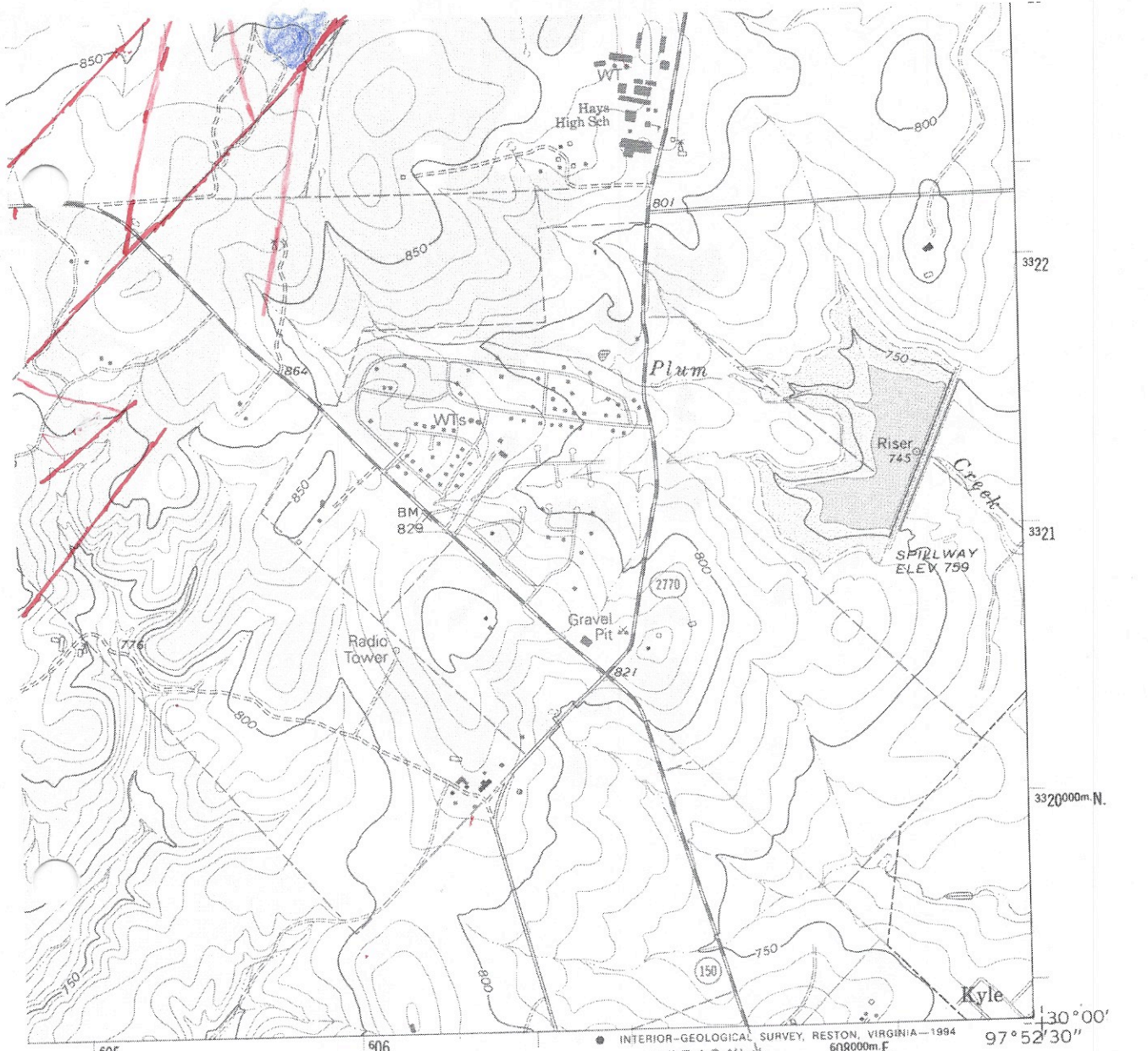


SCALE 1:24 000



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 2209.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



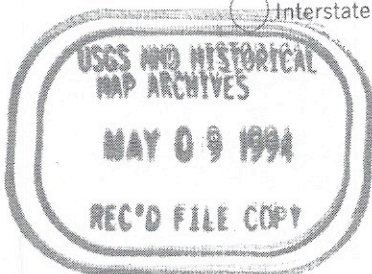
ROAD CLASSIFICATION

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



QUADRANGLE LOCATION

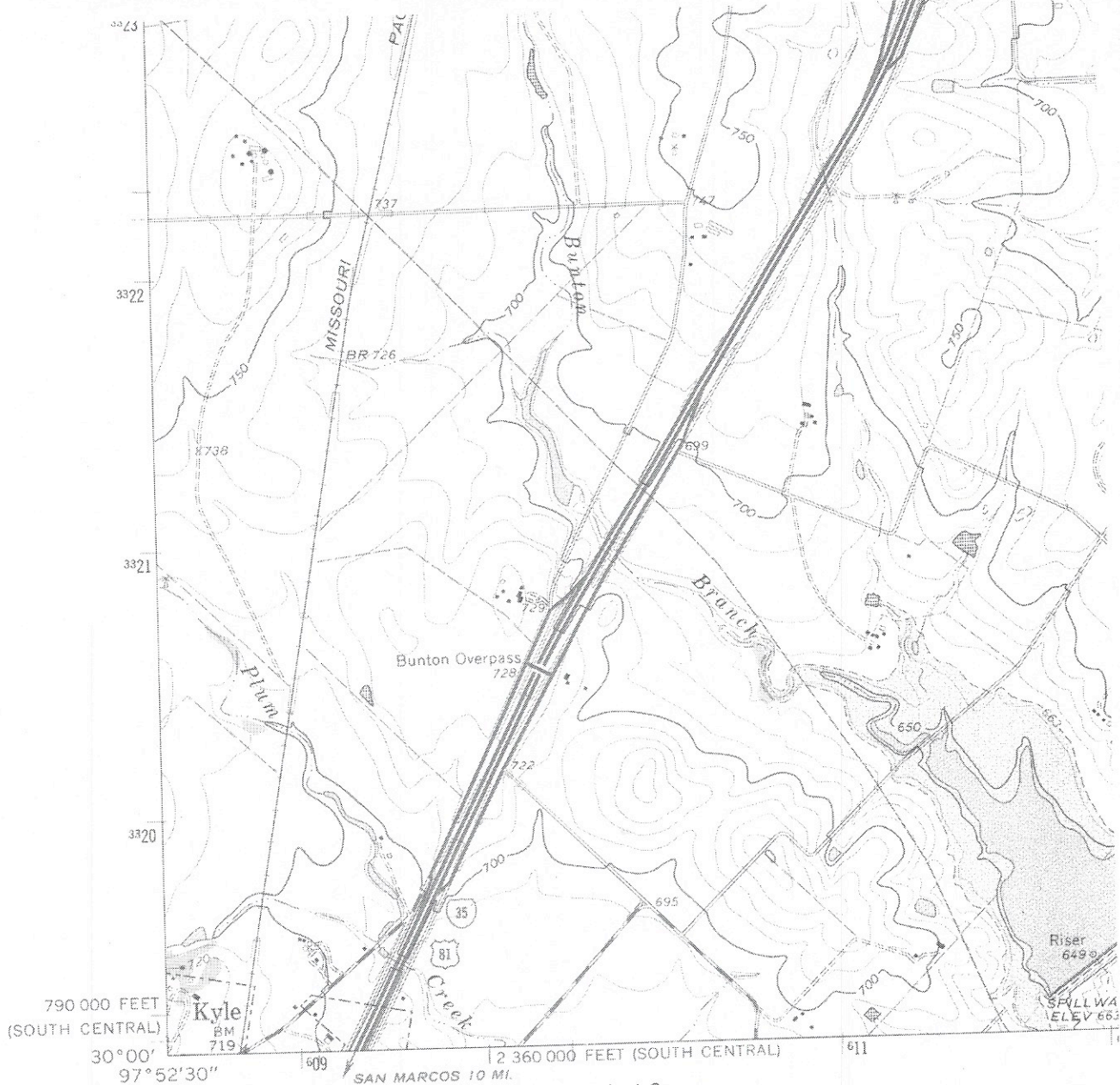
3097-222



MOUNTAIN CITY, TEX.

30097-A8-TF-024

1968
 REVISED 1994
 DMA 6444 III SW-SERIES V882



(SAN MARCOS NORTH)
6443 IV NW

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

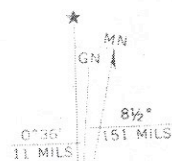
Topography by photogrammetric methods from aerial
photographs taken 1967. Field checked 1968

Polyconic projection. 1927 North American datum
10,000-foot grids based on Texas coordinate system,
south central and central zones
1000-meter Universal Transverse Mercator grid ticks,
zone 14, shown in blue

Fine red dashed lines indicate selected fence lines

Areas covered by dashed light-blue pattern are subject to
controlled inundation

Revisions shown in purple compiled from aerial photographs
taken 1973. This information not field checked

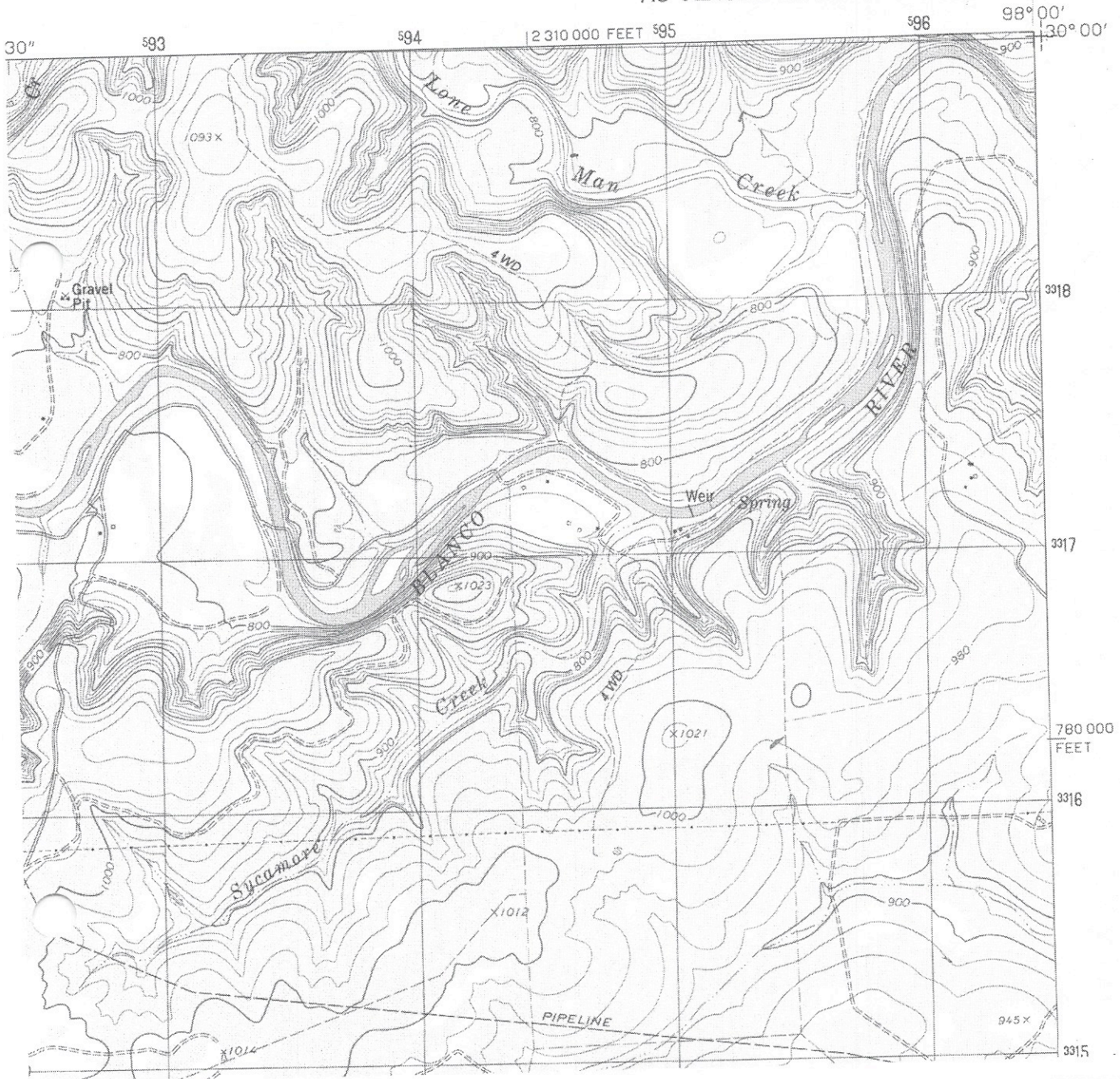


UTM GRID AND 1973 MAGNETIC NO
DECLINATION AT CENTER OF SHEET

Bada (SW)

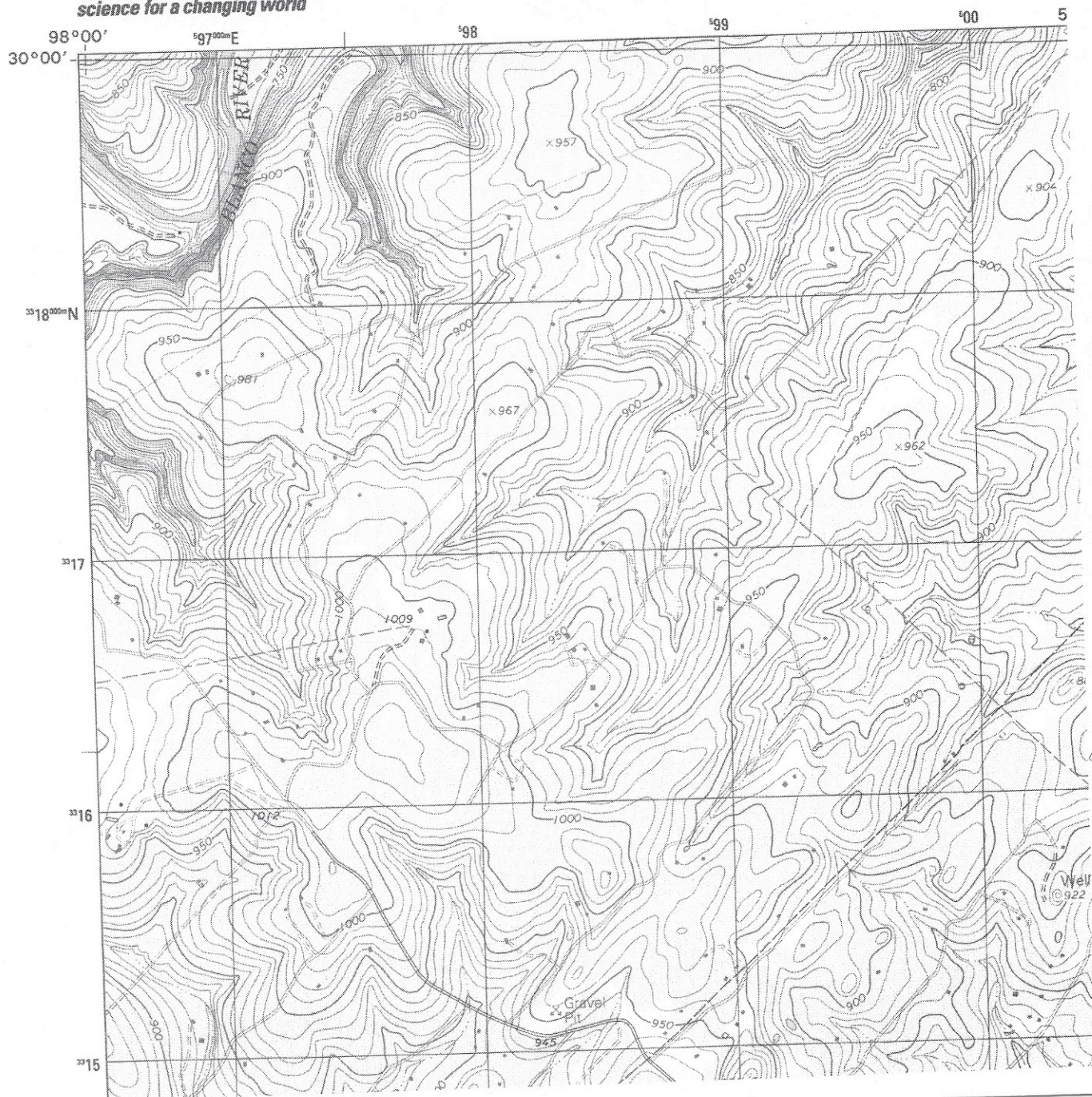
WIMBERLEY QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

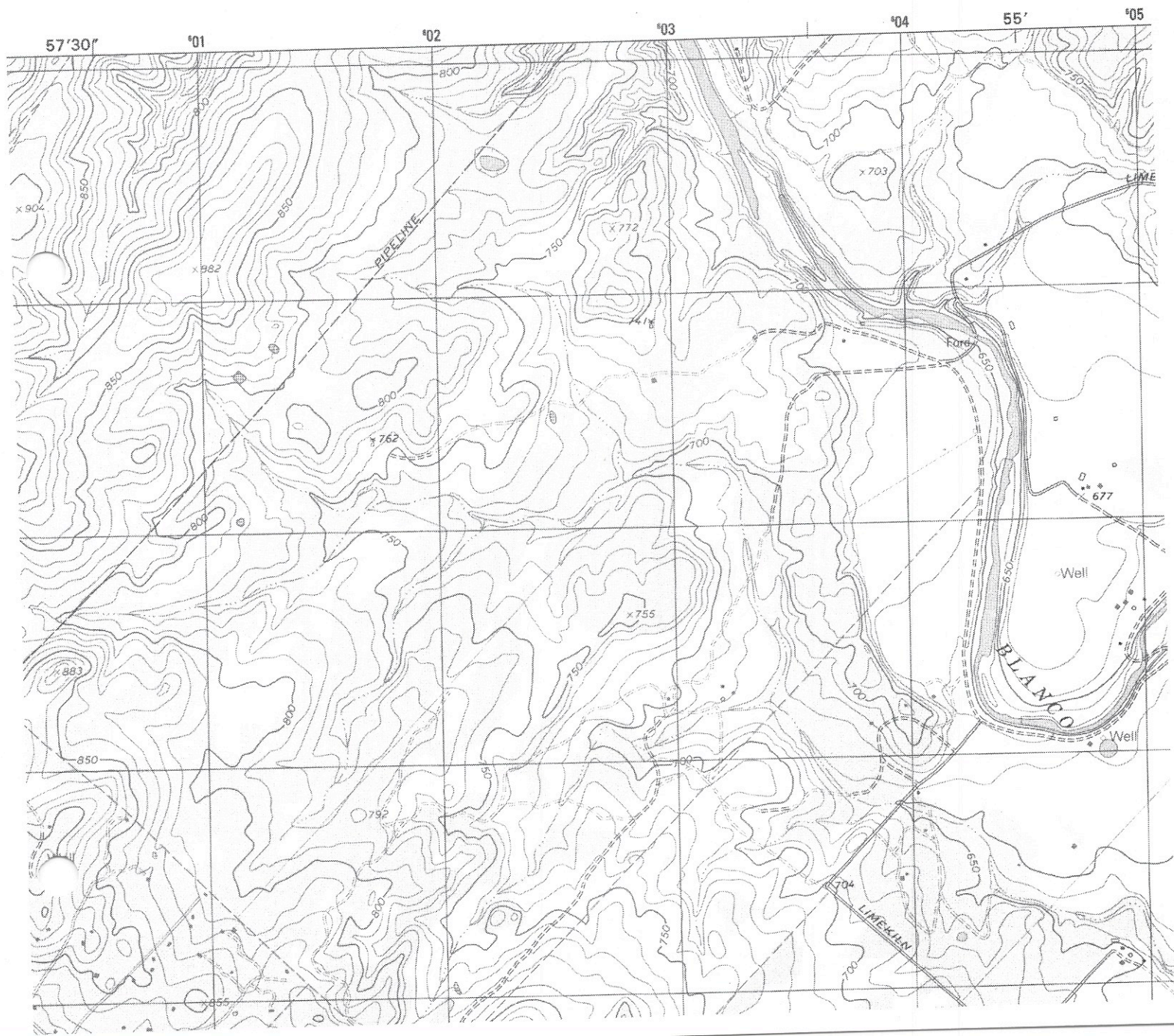
6444 III SW
(MOUNTAIN CITY)





U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY





Uhtland

SAN MARCOS NORTH QUADRANGLE
TEXAS
7.5-MINUTE SERIES (TOPOGRAPHIC)



6444 111
(BUDA 1:62500)

Topographic map of the Kyle area, Texas. The map shows contour lines with elevations ranging from 640 to 720 feet. Key features include:

- Location:** Kyle, Texas. Distances to Austin (21 MI) and San Antonio (57 MI) are indicated.
- Geographical Features:** Plum, Spillway ELEV 660, Creek, Well, and a Grave Pit.
- Infrastructure:** Roads (e.g., 150, 81, 35), a railroad (PAC), and a bridge (MQ).
- Coordinates:** 97°52'30" W, 30°00' N. Grid coordinates 609000m.E and 3319000m.N are shown.