KANSAS GEOLOGICAL SURVEY

The University of Kansas
1930 Constant Ave
Lawrence KS 66047-3726
phone 785-864-3965
fax 785-864-5317
www.kgs.ku.edu

January 13, 2006

Diane Hoeting
BHE Environmental, Inc.
11733 Chesterdale Rd.
Cincinnati, OH 45246

Re: Southern Star Central Gas Pipeline's proposed Ozark Trails Expansion Project

Dear Ms. Hoeting:

I received your request for information regarding the proposed installation of facilities and other supporting activities associated with the proposed Ozark Trails Expansion Project by Southern Star Gas Pipeline. These facilities upgrades are located in Montgomery and Labette Counties. Your letter requested comment on a number of issues within ½ mile of the locations of the facilities upgrades. I am providing you with the data sources that the Kansas Geological Survey (KGS) has on these issues.

Public water wells: The KGS maintains two online databases with water well information: WWC5 contains the well completion records including depth to water, and WIMAS database has water rights information. Both of these databases can be accessed through the Water link on the KGS web site (www.kgs.ku.edu).

Wellhead protection areas: This data would be available from the Kansas Department of Health and Environment, Bureau of Water.

Aquifers: Two publications cover the hydrogeology of the area of interest: Jungmann and Williams (1968) in Labette County and O'Connor (1974) in Montgomery County. The references are provided later in this document.

Contaminated ground water & hazardous materials contamination: This data would be available from the Kansas Department of Health and Environment, Bureau of Environmental Remediation.

Springs: I checked the KGS springs database and there are no known springs within a mile of your pipeline; however, our database is not complete.

Unique geologic areas: The KGS has no information on unique geological areas; however geologic maps are available for Montgomery County (Bennison, 1996) and Labette County (Bennison, 1998).

Important mineral resources: Mineral resources for the area of interest include oil and gas, coalbed methane, and limestone for aggregates.

Geologic hazards: The KGS has no information of karst or landslide hazards in your area of interest; however, I would suggest checking *Caves in Kansas* (Young and Beard, 1993). Geologic units that have caves in other areas may potentially have caves along the pipeline. Information on expansive soils can be found in county soil reports. Soil maps are available from the National Resources Conservation Service or ESRI ArcGIS digital version is available online through DASC (gisdasc.kgs.ku.edu). In Labette and Montgomery counties most of the abandoned mines are surface mines, quarries and a few small coal drift mines. Some information on the coal mines can be found in KGS Bulletin 52 part 3 (Schoewe, 1944).

Oil and gas fields and wells: The KGS maintains online databases of oil and gas fields and wells. These databases can be accessed by clicking the Energy link on the KGS web site. Considerable data is available on oil and gas including production data. Some oil and gas wells have only paper records that can be obtained from the KGS Data Library (785-864-2161) or by mail. The KGS Data Library and the KGS Library are two different groups.

It should be noted that both oil and gas, and water wells exist in the state for which the KGS has no records.

References:

Bennison, A. P., 1998, Geologic Map of Labette County, Kansas: KGS Map M-48, 1:50,000 (available through KGS Publication Sales)

Bennison, A. P. (edited by Collins, D. P.), 1996, Geologic Map of Montgomery County, Kansas: KGS Map M-44, 1:50,000 (available through KGS Publication Sales)

Jungmann, W. C. and Williams, C. C., 1968, Geology and Ground Water in Labette County, Kansas: U. S. Geological Survey Hydrologic Atlas HA-279, 1:63,360. (available through US Geological Survey or KGS Publication Sales)

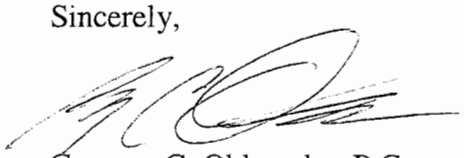
O'Connor, H G., 1974, Geology and Ground-Water Resources of Montgomery County, Southeastern Kansas: KGS Ground-Water Series 1, 12 p. (available through KGS Publication Sales)

Schoewe, W. H., 1944, Coal Resources of the Kansas City Group, Thayer Bed, in Eastern Kansas: KGS Bulletin 52, part 3, p. 81-136. (out of print, available on loan from the KGS library)

Young, J. and Beard, J., 1993, Caves in Kansas: KGS Educational Series 9, 47 p. (available through KGS Publication Sales)

The above data should help you complete your Environmental Impact Statement. If you have further questions, feel free to contact me by mail, phone (785) 864-2194 or e-mail ohlmac@kgs.ku.edu.

Sincerely,



Gregory C. Ohlmacher P.G.

BHE ENVIRONMENTAL

11733 Chesterdale Road, Cincinnati, Ohio 45246 513.326.1500 / Fax 513.326.1550

1538.009-001 December 23, 2005

Bill Harrison, Interim Director and State Geologist
Kansas Geological Survey, University of Kansas
1930 Constant Ave.
Lawrence, KS 66047-3726

Re: Southern Star Central Gas Pipeline's proposed Ozark Trails Expansion Project Christian, Greene, and Newton counties, Missouri, and Montgomery and Labette counties, Kansas

Dear Mr. Harrison:

Southern Star Central Gas Pipeline (Southern Star) seeks your comments regarding the proposed installation of facilities and other supporting activities associated with the proposed Ozark Trails Expansion Project. Southern Star plans to file an application with the Federal Energy Regulatory Commission (FERC) to expand its mainline system and make other system modifications to enable the transportation and delivery of additional gas volumes to Missouri Gas and Electric (MGE). Specific project activities as they occur in Kansas are described below.

Grabham Compressor Station Modifications

Southern Star plans to replace the gas compressor bottles on two gas compressor units, install additional high pressure discharge piping, and install various valves, regulation and measurement facilities. All work will be confined to the existing compressor station site which is located in Section 27, T33S, R15E, Montgomery County, Kansas.

Uprate Southern Trunk 20" Loop Line

Southern Star plans to conduct a hydrostatic test of the Southern Trunk 20" Loop Line to qualify the line for an increase in operating pressure from 720 psig to 877 psig. An approximately 13 mile long segment will be tested. Prior to the test, various valves and other auxiliary facilities along the existing pipeline will be replaced, and will require extra temporary work spaces at several locations along Southern Star's existing, permanent pipeline ROW. The Southern Trunk 20" Loop Line is located within Montgomery and Labette counties, Kansas.

The locations of the project areas are depicted on the following U.S. Geological Survey topographic maps, attached: Bolton, KS; Independence, KS; Liberty KS; and Mound Valley, KS.

Southern Star plans to file a 7(c) Environmental Report with the FERC for proposed pipeline activities. In support of the FERC filing, I am contacting your office on behalf of Southern Star to request review of the attached project maps, and provide comment regarding the presence of the following within 0.5 mile of the project areas:

- Public water wells
- Wellhead protection areas and aquifers crossed, including depth and productivity
- Aquifers underlying project area
- Contaminated ground water
- Springs
- Known areas of hazardous materials contamination
- Unique geological areas
- Areas of important mineral resources crossed by the project area

- Geologic hazards, including active and abandoned mines crossed by the project area
- Oil and gas wells
- Oil and gas fields crossed by the project area

Please also provide recommendations for impact minimization as warranted.

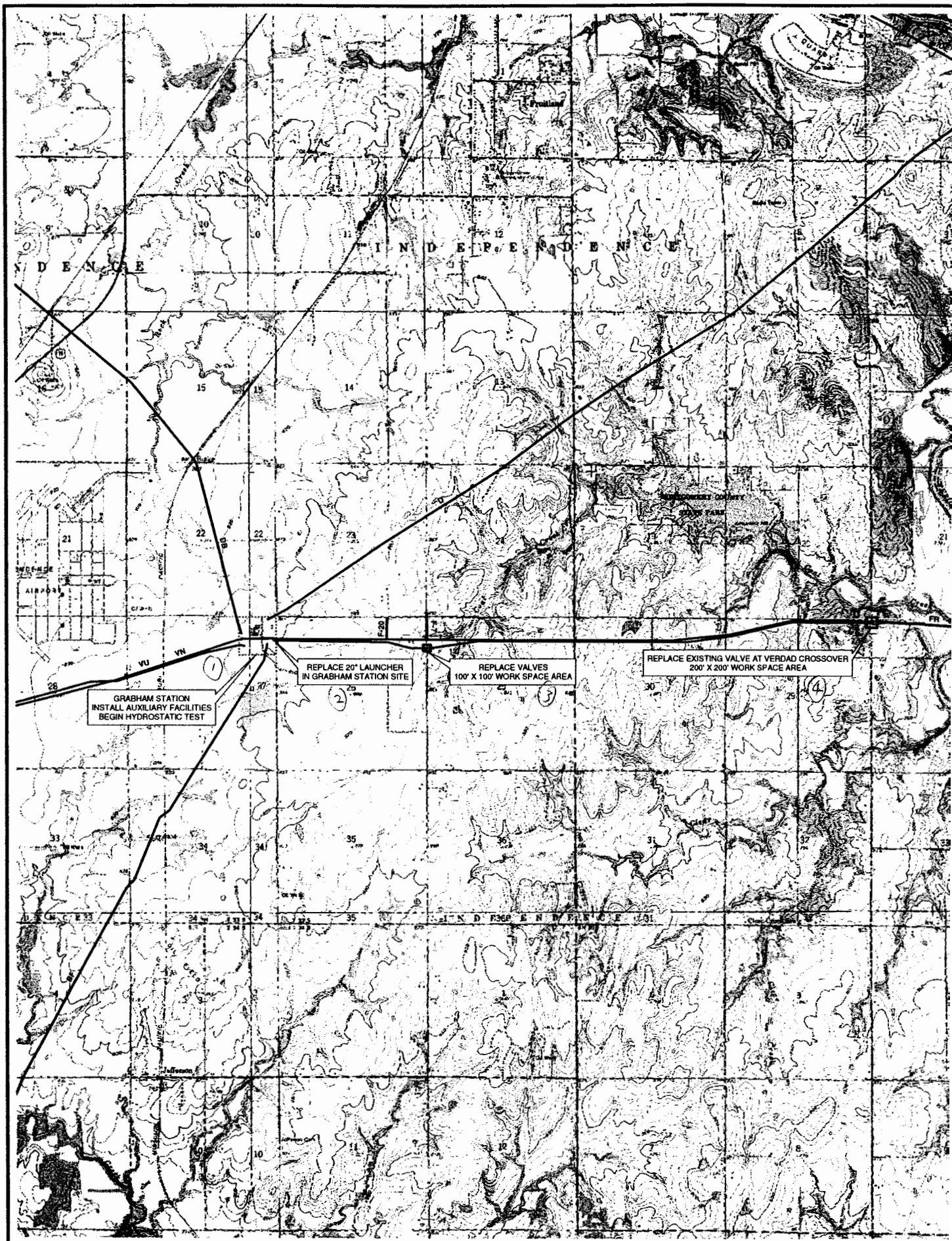
I can be reached at 513-326-1171 should you have any questions. Thank you in advance for your assistance.

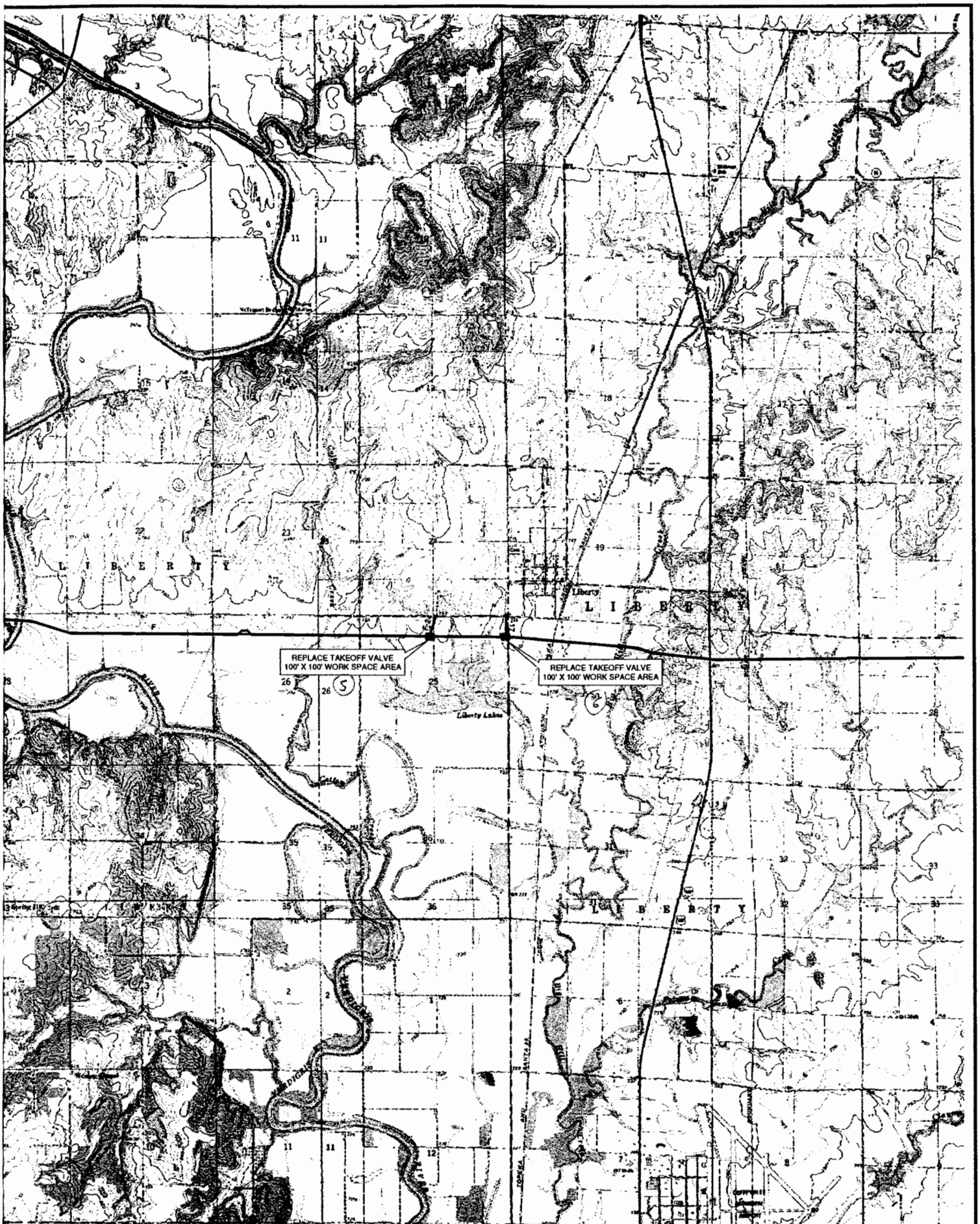
Sincerely,
BHE Environmental, Inc.

Diane Hoeting
Natural Resources Management Group

copy: Steve Taylor, Southern Star

attachments


GRABHAM STATION
INSTALL AUXILIARY FACILITIES
BEGIN HYDROSTATIC TEST
REPLACE 20" LAUNCHER
IN GRABHAM STATION SITE
REPLACE VALVES
100' X 100' WORK SPACE AREA
REPLACE EXISTING VALVE AT VERDAD CROSSOVER
200' X 200' WORK SPACE AREA
INDEPENDENCE
VU
VN
F-20
1
2
3
4



BACKGROUND TOPOGRAPHY FROM THE FOLLOWING U.S.G.S 7.5 MIN. QUADRANGLES:

BOLTON, KANS., 1959 (PHOTOREVISED 1979)
INDEPENDENCE, KANS., 1959 (PHOTOREVISED 1979)
LIBERTY, KANS., 1962 (PHOTOINSPECTED 1977)

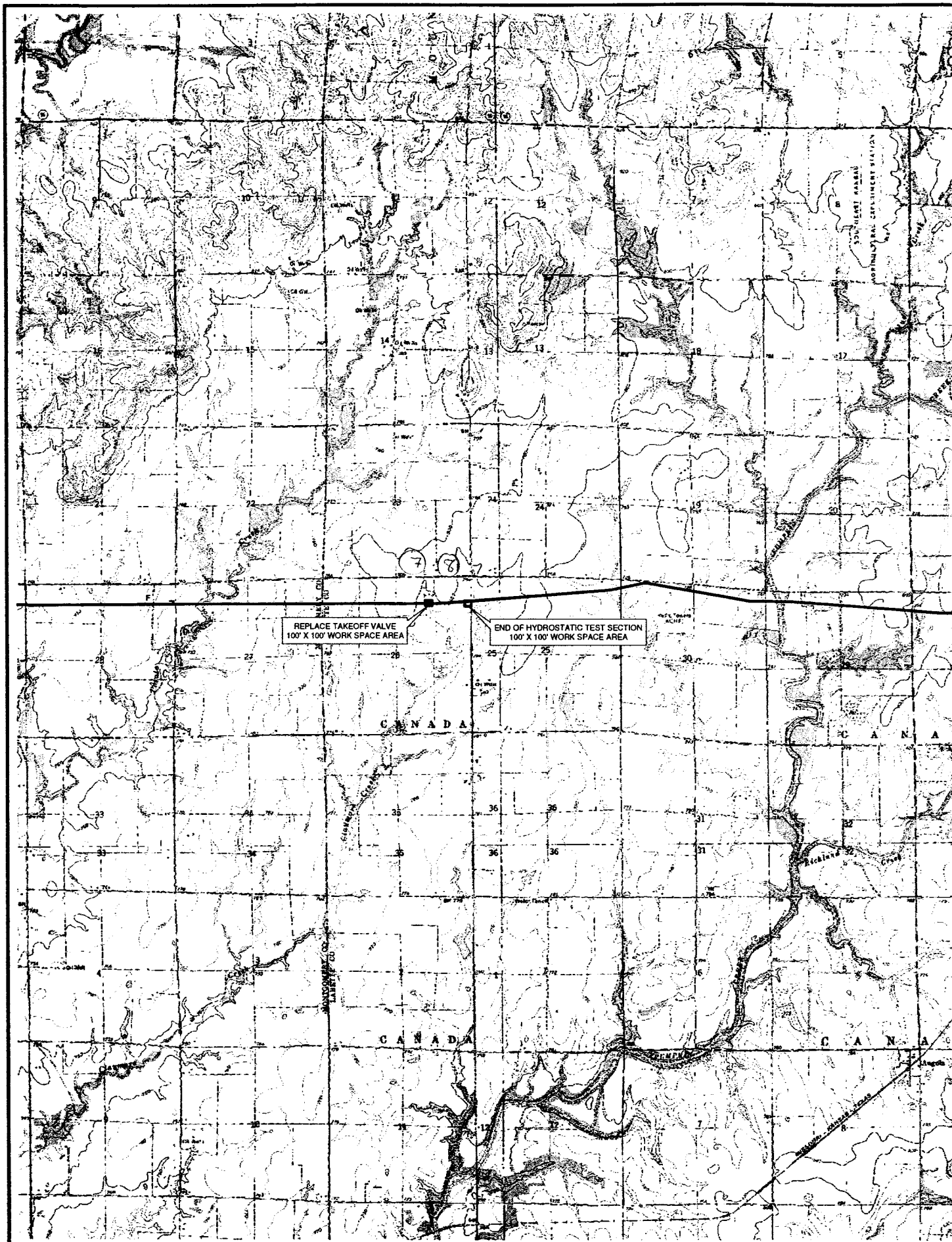
SOUTHERN STAR CENTRAL GAS PIPELINE, INC.

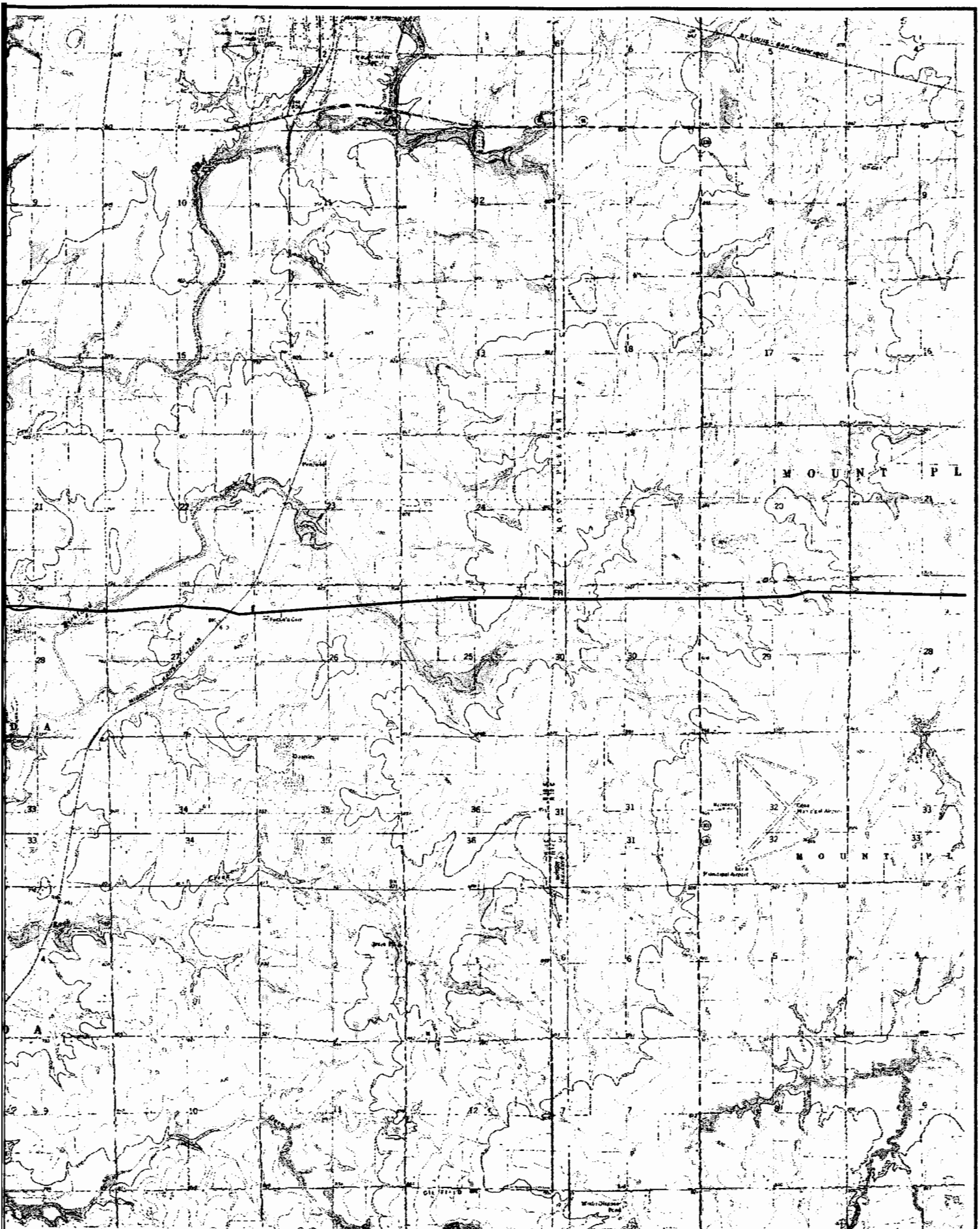
PROPOSED OZARK TRAILS EXPANSION
UPRATE 20" FR LINE SOUTHERN TRUNK LOOP

EXHIBIT "J" **SHEET 1 OF 2**

SOUTHERN STAR CENTRAL GAS PIPELINE

Feet
0 2,000 4,000 6,000


REPLACE TAKEOFF VALVE
100' X 100' WORK SPACE AREA
END OF HYDROSTATIC TEST SECTION
100' X 100' WORK SPACE AREA
CANADA
CANADA
CANADA
CANADA



BACKGROUND TOPOGRAPHY FROM THE FOLLOWING U.S.G.S 7.5 MIN. QUADRANGLES:

LIBERTY, KANS., 1962 (PHOTOINSPECTED 1977)
MOUND VALLEY, KANS., 1974

N
W E
S

SOUTHERN STAR CENTRAL GAS PIPELINE, INC.

PROPOSED OZARK TRAILS EXPANSION
UPRATE 20" FR LINE SOUTHERN TRUNK LOOP

EXHIBIT "J" **SHEET 2 OF 2**

SOUTHERN STAR CENTRAL GAS PIPELINE

Feet
0 2,000 4,000 6,000