Guardian Pipeline Project

Conservation Plan
State-Listed Threatened or Endangered Mussels

Introduction

Guardian Pipeline, LLC (Guardian) is planning construction of a new underground pipeline to transport natural gas from Joliet, Illinois to Ixonia, Wisconsin. In Illinois the project will involve construction and installation of a new 36-inch-diameter pipeline and associated aboveground facilities (*e.g.*, compressor station, meter stations, valve sites) in Will, Kendall, De Kalb, and McHenry counties.

Guardian has been consulting with the Illinois Department of Natural Resources (ILDNR) since July 1999 to identify threatened and endangered species and sensitive habitats that could potentially be affected by Guardian's proposed pipeline project. Guardian will implement conservation measures that will avoid adversely affecting a majority of the state-listed endangered or threatened species (all but mussels) potentially occurring in the project area (ILDNR, 2001). Two state-threatened mussels, the slippershell (*Alasmidonta viridis*) and spike (*Elliptio dilatata*) mussel, may occur in the project area and could be adversely affected by construction (ILDNR, 1999). To minimize any impacts on listed and non-listed mussels, Guardian is proposing to carefully survey for and relocate all mussels found in areas disturbed by construction. Although Guardian expects the relocation of mussels to be a non-lethal impact, the ILDNR considers mussel relocations a "take" under the Illinois Endangered Species Protection Act (520 ILCS 10/). Consequently, Guardian is submitting this Conservation Plan (pursuant to the proposed rules in the Illinois Administrative Code, Title 17, Part 1080) in application for authorization for the incidental take of endangered or threatened mussels encountered during pre-construction surveys.

Description of Potential Impact

The slippershell and spike mussels are known from the upper Mississippi, Ohio, Cumberland, and Tennessee river drainages and lower and middle sections of the St. Lawrence. In Illinois these species are known from the Sangamon, Kankakee, Vermilion, and Little Vermilion river systems. More specifically, the slippershell mussel inhabits small to medium sized streams where it is usually found buried in sandy substrates in shallow water. This species is most frequently found in headwaters of streams where water is clear and cool. The spike is found in small to large streams and occasionally lakes in mud or gravel.

Although both slippershel and spike mussels can be found in several midwestern states, their distribution and numbers in Illinois have been greatly reduced. Declining populations of mussels in Illinois are largely attributed to increased siltation of their habitat from agriculture, poor land management, channelization, and impoundments; competition from exotic species such as the zebra mussel; and pollution by herbicides, pesticides, and other chemicals.

In the project area, the ILDNR (1999) identified the slippershell mussel as occurring in Little Rock and Big Rock Creeks and the spike mussel as occurring in Big Rock Creek. The pipeline route crosses Little Rock Creek (MP 36.5) and several of its tributaries (MP 30.3, 32.5, 33.1, and 36). Although the route crosses the West Branch of Big Rock Creek (MP 39.7) and several tributaries to the East Branch of Big Rock Creek (MP 43.4, 44.6, and 45), the project avoids direct disturbance to Big Rock Creek itself.

If not mitigated properly, in-stream pipeline construction could result in mortality of mussels and affect mussels indirectly by increasing water turbidity in areas of occupied habitat. During pipeline construction, trench excavation results in the removal and temporary on-land storage of excavated stream substrate. If mussels are present, construction equipment could cause mussels to be subjected to direct physical damage or mortality, and desiccation of the mussels could occur as the excavated trench material is stored on land. Replacement of excavated spoil during backfilling of the trench might again cause direct physical harm; bury mussels to possibly unsuitable depths; or place mussels in unsuitable substrate. Short-term changes in downstream water quality due to increased turbidity during "wet trench" pipeline construction could affect mussels in close proximity to the construction activities. The use of trenchless or "dry crossing" methods can reduce the potential turbidity impact on mussel species. However, some "dry crossing" methods (*i.e.*, dam and pump, flume) still require that a trench be excavated through the stream and trenchless technologies such as horizontal directional drill can potentially introduce turbidity to the stream.

The Guardian pipeline route crosses 35 perennial streams in Illinois that potentially contain habitat for freshwater mussels. Appendix A includes a list of perennial waterbodies in Illinois that will be crossed by the Guardian Pipeline route. Appendix B includes maps that show where the route crosses perennial streams.

Conservation Measures

The ILDNR requested that mussel surveys be conducted for all perennial streams in the areas of direct impact; as well as the immediate downstream reaches (100 feet downstream). If mussels (listed or non-listed species) are observed, Guardian will relocate them to minimize potential impacts.

Mussel surveys are currently scheduled for the fall of 2001. The surveys will be conducted using standard survey techniques including searching by feel to methodically cover the area to be disturbed by the project (wading in shallow water, SCUBA in deeper water). All mussels found will be identified to species.

Guardian is currently proposing to carefully relocate all mussels (listed and non-listed) found in areas disturbed by construction. Mussels will be relocated into areas of suitable habitat, in the same stream, preferably upstream of the construction site. Specifically, the transplant site will be close to the collection area and have similar or better water quality and substrate.

After the survey and relocations are completed, Guardian will prepare a report detailing the methods and results of the survey and relocation efforts. No long term monitoring of the relocation sites is planned.

Guardian has retained the services of Ecological Specialists, Inc. for conducting freshwater mussel surveys and relocations. The survey and relocation costs are projected to be approximately $38,500.

Because the survey and relocation activities will be conducted by experienced biologists using standard procedures, minimal or no impact on mussels is expected.

To minimize the extent and duration of project-related disturbances to waterbodies and any potential for indirect impacts on mussels or mussel habitats, Guardian will implement its *Wetland and Waterbody Construction and Mitigation Procedures*. These include requirements for environmental inspection and monitoring; development of a spill prevention containment and

countermeasure plan; erosion/sediment control and prevention; and post-construction restoration and monitoring. Additionally, Guardian is currently planning to cross a majority of perennial streams using the dam and pump or flume construction methods, techniques that minimize the introduction of sediment into the water compared to the more conventional open-cut crossing method.

Alternative Actions
Guardian's proposed pipeline route results from Guardian's efforts to identify the route that best balances the needs of the diverse interests affected by construction of the pipeline. The criteria Guardian considered in its effort to select a route included:

- the impacts of environmental disruption (including the minimization and/or mitigation of that disruption);
- the impacts on affected landowners and communities (including the minimization and/or mitigation of those impacts);
- the constructability of the pipeline;
- the ability to reasonably, reliably, and safely conduct ongoing operations and maintenance activities on the pipeline; and
- the capital cost of constructing the pipeline on the selected route.

Guardian has chosen its route to avoid impacts to sensitive environmental resources where possible. However, the avoidance of all environmental resources during construction of an approximately 149-mile-long linear project is not practical and Guardian's construction plans will minimize impacts to sensitive environmental resources. Guardian's route avoids waterbody crossings to the extent practicable.

The Federal Energy Regulatory Commission (FERC), the lead federal agency reviewing the environmental aspects of the project, conducted an extensive environmental review of the project in which they included an analysis of alternative actions. In its Environmental Impact Statement (EIS) for the project, the FERC presented five system alternatives using other existing or planned pipeline systems in Illinois and/or Wisconsin that could potentially transport Guardian's proposed volumes of gas. Additionally, the FERC evaluated eight major route alternatives that were identified to avoid or reduce impacts on environmentally sensitive resources, and 16 route variations that were identified to reduce impacts on specific localized resource issues such as waterbody crossings. Guardian also proposed 18 minor route variations to address concerns raised by landowners and local or state agencies. With the FERC's approval, Guardian adopted 17 of these minor route variations into its proposed route. The FERC staff concluded that the proposed route is the preferred route for the pipeline. A comprehensive analysis of alternatives that Guardian and the FERC staff evaluated is presented in the final EIS that was published in January 2001.

Species Survival
Construction and operation of the Guardian Pipeline Project will not reduce the likelihood of the survival of state-listed threatened or endangered mussels in Illinois. Of the 35 streams crossed by the Guardian Pipeline Project, information provided by the ILDNR and a search of the Bivalve Collection Database of the Illinois Natural History Survey indicates that only a few have known occurrences of rare mussels. There will be only minor, short-term impacts on potential

mussel habitats. Relocating any mussels that are found during the surveys will avoid any long-term impacts on mussel populations.

Implementing Agreement

Guardian contracted with Ecological Specialists, Inc. to conduct the mussel surveys and relocations for the project between August 1 and November 31, 2001. Ecological Specialists, Inc. is a widely recognized company with extensive experience with freshwater mussels in the Midwest. The field personnel from Ecological Specialists, Inc. that will be conducting the mussel surveys currently hold authorization under Section 5/3.22, Chapter 520 and Section 5/20-100, Chapter 515 of the Illinois Compiled Statutes to collect aquatic invertebrates (Permit Numbers A01.0312 and A01.0742).

Guardian will provide a report detailing the results of the mussel survey to the ILDNR, Division of Natural Heritage, within 45 days of completing the surveys and relocations.

Guardian has received or is in the process of acquiring the necessary Federal, state, and local permits and approvals for the project and will comply with all conditions of the permits. The U.S. Fish and Wildlife Service or the ILDNR has not previously given Guardian authorization for the incidental take of listed species.

References

Cummings, K.S., and C.A. Mayer. 1992. Field Guide to Freshwater Mussels of the Midwest. Illinois Natural History Survey. Manual 5. 194 pp.

Herkert, J.R. 1992. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 – Animals. Illinois Endangered Species Protection Board, Springfield, Illinois. 142pp.

Illinois Department of Natural Resources (ILDNR). 1999. Letter from K.M. Roman (Project Manager, Endangered Species Consultation Program) to D.A. Campbell (Natural Resource Group, Inc.).

Illinois Department of Natural Resources (ILDNR). 2001. Letter from J.A. Kath (Project Manager, Endangered and Threatened Species Program) to T.A. Mattson (Natural Resource Group, Inc.).

APPENDIX A

Perennial Streams Crossed by the Guardian Pipeline Project in Illinois

Milepost	Waterbody Name	County	Section, Tnsp., Rng.	Width	Class a/	Crossing Method b/	Adjacent Landowner(s)
0.30	Tributary to Cedar Creek	Will	Section 12, T34N, R9E	<10	Not Designated	Open Cut	Andrew Tordai
1.20	Cedar Creek	Will	Section 11 and 12, T34N, R9E	10	C	Open cut	Stepan Company
1.40	unnamed pond	Will	Section 11, T34N, R9E	180	Not Designated	HDD	Mobil Joliet Refining
1.60	Des Plaines River	Will	Section 2, T34N, R9E	680	C	HDD	Mobil Joliet Refining Amoco Chemical Co.
5.20	Illinois & Michigan Canal	Will	Section 5, T34N, R9E	Varies	Not Designated	Open cut or HDD	Francis W. Meade and Marjorie E. Meade Weber Joliet Farms, Inc. - c/o John Weber
5.90	Du Page River	Will	Section 5, T34N, R9E	110	B	Open cut	Francis W. Meade and Marjorie E. Meade
6.20	Unnamed Drain	Will	Section 5, T34N, R9E	<10	Not Designated	Flume	Lawrence and Margaret Morrissey
7.10	Tributary to Du Page River	Will	Section 32, T35N, R9E	<10	Not Designated	Open cut	John R. and Irene Davidson
10.40	Unnamed Drain	Kendall	Section 24, T35N, R8E	<10	Not Designated	Open cut	Francis Coyne and Shirley Coyne
10.60	Tributary to Aux Sable Creek	Kendall	Section 23, T35N, R8E	<10	Not Designated	Open cut	William J. Kunke
12.90	Aux Sable Creek	Kendall	Section 16, T35N, R8E	80	B	Flume/Dam-pump	Harris Bank Trust 367 c/o Big Trees, Inc. P.O. Box 488 Minooka, IL 60447
15.10	West Aux Sable Creek	Kendall	Section 8, T35N, R8E	10	B	Flume	Charles E. Anzelc, Jr.
17.90	Tributary to West Aux Sable Creek	Kendall	Section 35, T36N, R7E	<10	Not Designated	Open cut	Meadow Creek Farms, Inc. - c/o Chester Scott
19.50	Tributary to West Aux Sable Creek	Kendall	Section 28, T36N, R7E	<10	Not Designated	Open cut	Gary Cooper Revocable Living Trust
27.10	Fox River	Kendall	Section 4, T36N, R6E	180	B	HDD	State of Illinois

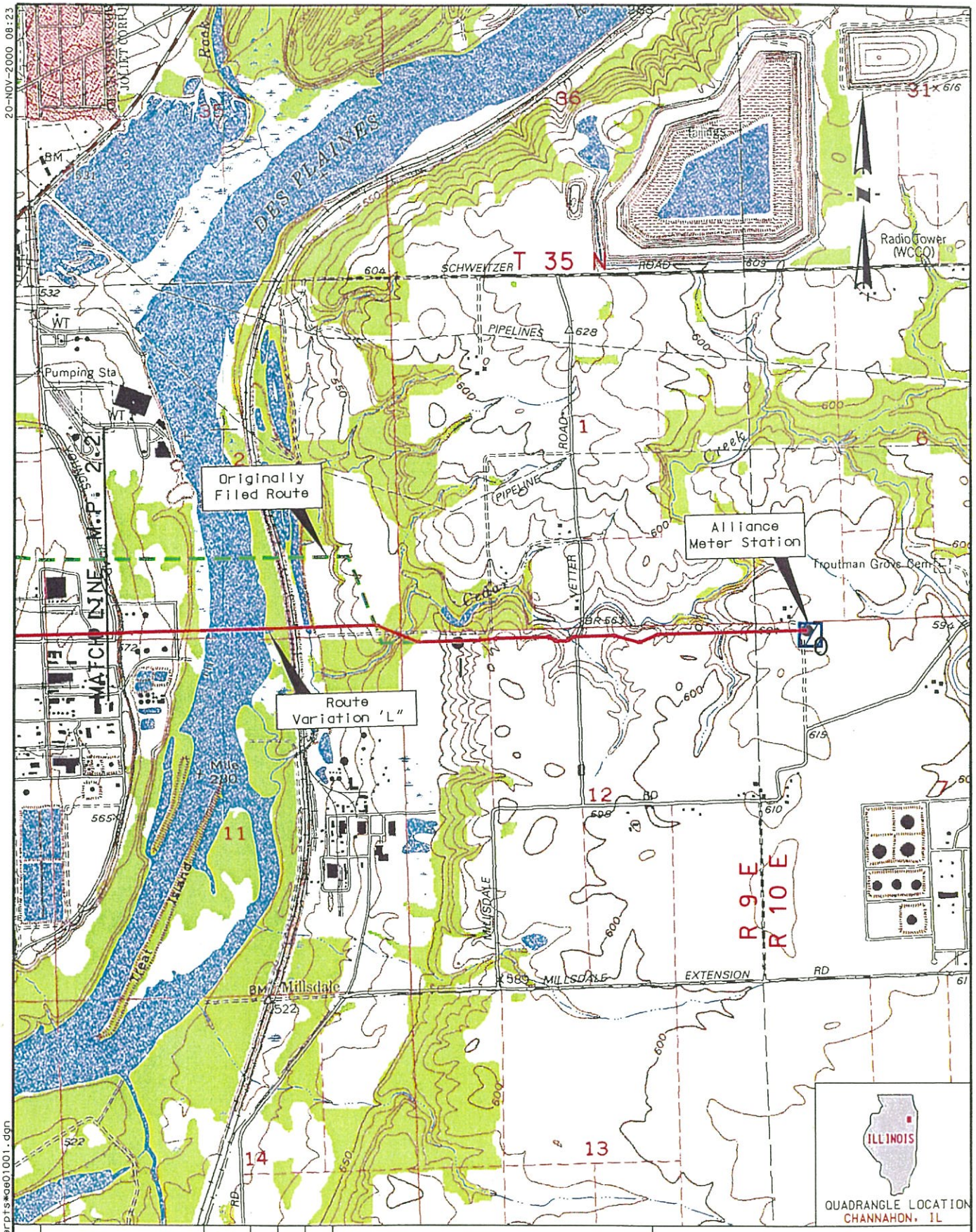
Milepost	Waterbody Name	County	Section, Tnsp., Rng.	Width	Class a/	Crossing Method b/	Adjacent Landowner(s)
30.30	Tributary to Little Rock Creek	Kendall	Section 30, T37N, R6E	10	Not Designated	Flume	Clyde W. Mackenzie Trust c/o Mary Louise Mackenzie Taylor Gary Wheaton Bank Trust #10-294
32.50	Tributary to Little Rock Creek	De Kalb	Section 24, T37N, R5E	10	Not Designated	Flume	Lasalle National Bank Trust 35339 CMP
33.10	Tributary to Little Rock Creek	De Kalb	Section 13, T37N, R5E	10	Not Designated	Open cut	George P. Drolsom
36.00	Tributary to Little Rock Creek	De Kalb	Section 36, T38N, R5E	10	Not Designated	Flume	Betty J. Gordon
36.50	Little Rock Creek	De Kalb	Section 36, T38N, R5E	30	B	Flume	Betty J. Gordon LeRoy and Rose Cowen Trusts 11 and 102
39.70	West Branch Big Rock Creek	De Kalb	Section 13, T38N, R5E	10	Not Designated	Flume	Leon J. Feldott and Mildred M. Feldott
43.40	Tributary to East Branch Big Rock Creek	De Kalb	Section 25, T39N, R5E	10	Not Designated	Open cut	Grimley Farms, Inc. National Bank & Trust Co. Trust 40-400500 att: Robert C. Hill Farm Service Department 230 West State Street Sycamore, IL 60178
44.60	Tributary to East Branch Big Rock Creek	De Kalb	Section 24, T39N, R5E	10	Not Designated	Flume	Jeanne A. Pritchard
45.00	Tributary to East Branch Big Rock Creek	De Kalb	Section 13, T39N, R5E	10	Not Designated	Open cut	Norval E. Schumacher
50.00	Union Ditch No. 1	De Kalb	Section 34, T40N, R5E	10	Not Designated	Flume	National City Bank - Ag. Services
54.40	East Branch - South Branch Kishwaukee River	De Kalb	Section 10, T40N, R5E	40	B	Dam-pump	Gerald A. and Nancy J. Hartmann Trusts 101 and 102 Roy Jr. and Joan Fenstermaker Trusts 101 and 102
70.70	Coon Creek	Mc Henry	Section 16, T43N, R5E	14	B	Flume	Ronald E. Malcom

Milepost	Waterbody Name	County	Section, Tnsp., Rng.	Width	Class a/	Crossing Method b/	Adjacent Landowner(s)
72.60	Tributary to Coon Creek	Mc Henry	Section 9, T43N, R5E	<10	Not Designated	Flume	Lawrence T. O'Brien
75.50	Kishwaukee River	Mc Henry	Section 28, T44N, R5E	50	A	HDD	Schultz Farms&Grains, Inc. c/o John Schultz 22820 River Road Marengo, IL 60152
75.51	Tributary to Kishwaukee River	Mc Henry	Section 28, T44N, R5E	10	Not Designated	HDD	Schultz Farms&Grains, Inc.
79.80	Rush Creek	Mc Henry	Section 4, T44N, R5E	10	A	Flume	Harris Bank of Woodstock Trust 3398
81.30	Tributary to Rush Creek	Mc Henry	Section 28, T45N, R5E	10	Not Designated	Open cut	Joyce L. Sozen
85.30	Mokeler Creek	Mc Henry	Section 3, T45N, R5E	12	C	Open cut	McHenry State Bank Trust 2930
87.40	Tributary to Lawrence Creek	Mc Henry	Section 27, T46N, R5E	10	Not Designated	Open cut	Glen Volkening and Carol Volkening
88.40	Lawrence Creek	Mc Henry	Section 22, T46N, R5E	12	C	Open cut	Donald W. Lacy and Lisa A. Lacy

a/ Class:
- A – Unique Aquatic Resource
- B – High Value Aquatic Resource
- C – Moderate Value Aquatic Resource

b/ Crossing Method – No in-stream construction necessary for streams crossed using horizontal directional drill technique (HDD).

Appendix B



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 07/22/99 | APPR BY: GCB | DATE 11/15/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 0.0 THRU M.P. 2.2

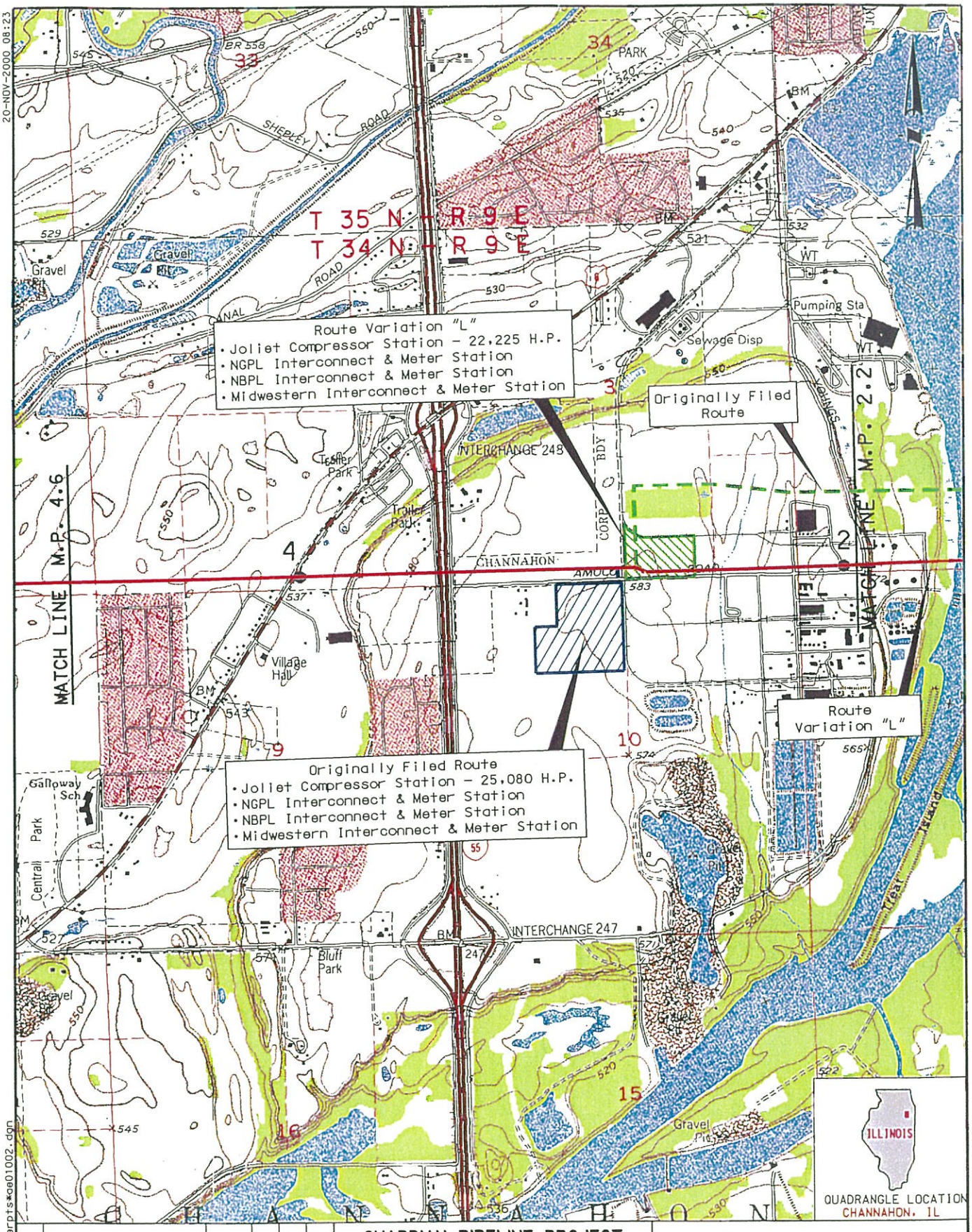
WILL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-001 | REV. NO. 2

D:\WrDost\Pr1\Quad Excerpts\ge01001.dgn

20-NOV-2000 08:23



20-NOV-2000 08:23

D:*Wrbost*Pri*Quad Excerpts*ge01002.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/23/99 | APPR BY: GCB | DATE 11/17/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

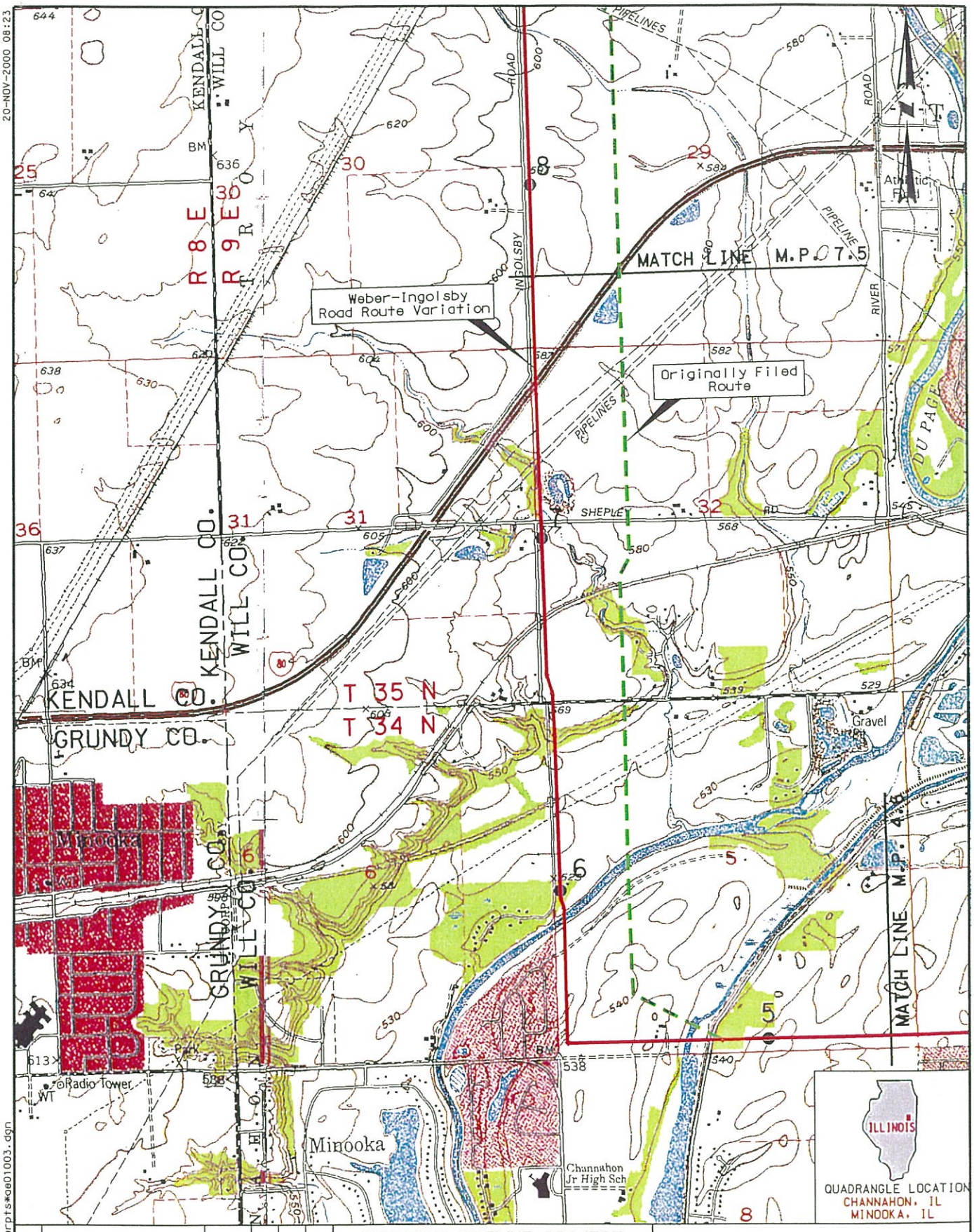
QUAD EXCERPT

M.P. 2.2 THRU M.P. 4.6

WILL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-002 REV. NO. 2



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/23/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 4.6 THRU M.P. 7.5

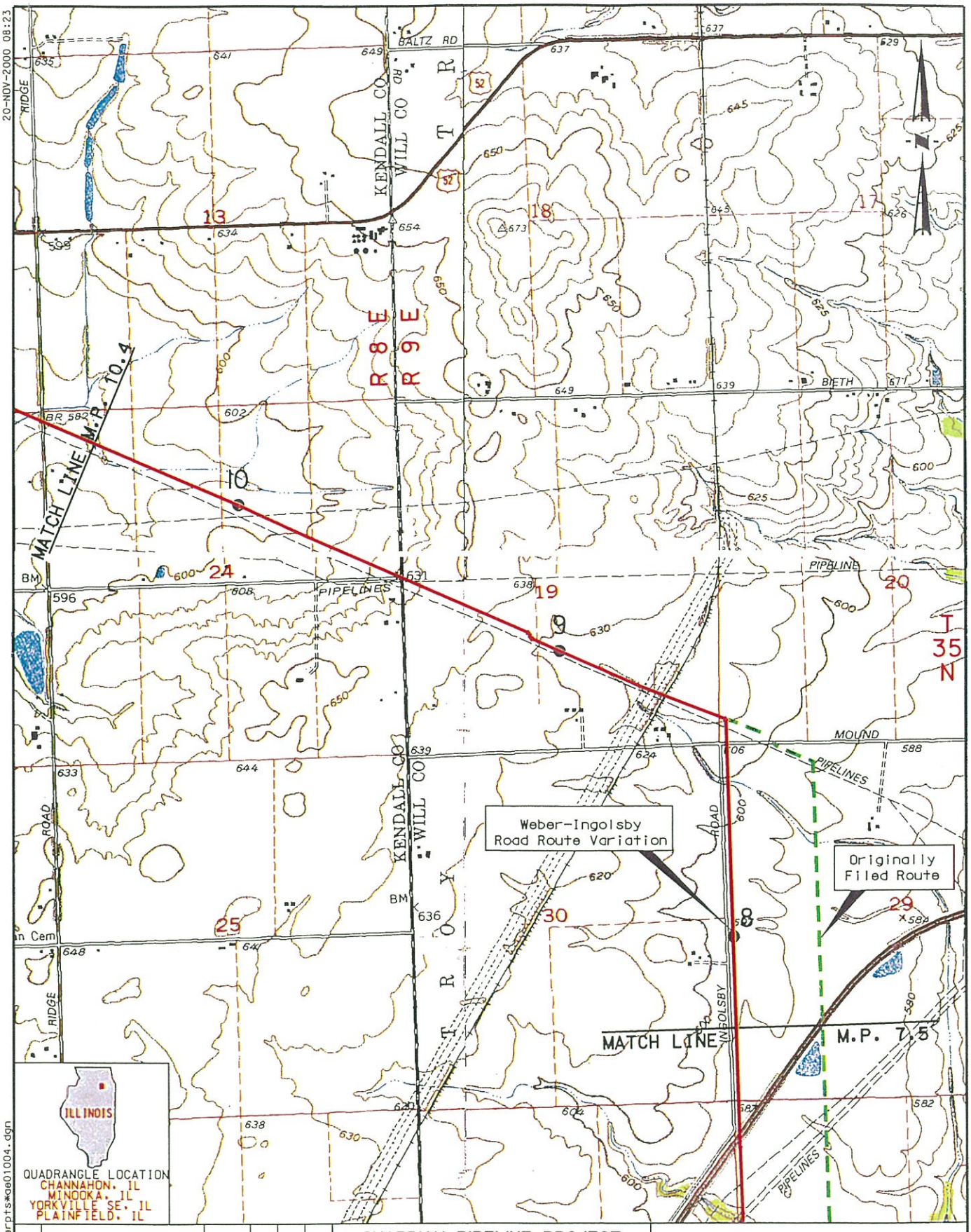
WILL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-003 | REV. NO. 2

D:*Wrbost*Pri*Quad Excerpts*ge01003.dgn

20-NOV-2000 08:23



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB
DRN BY: GEM	DATE 7/23/99	APPR BY: GCB	DATE 11/11/99		

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 7.5 THRU M.P. 10.4

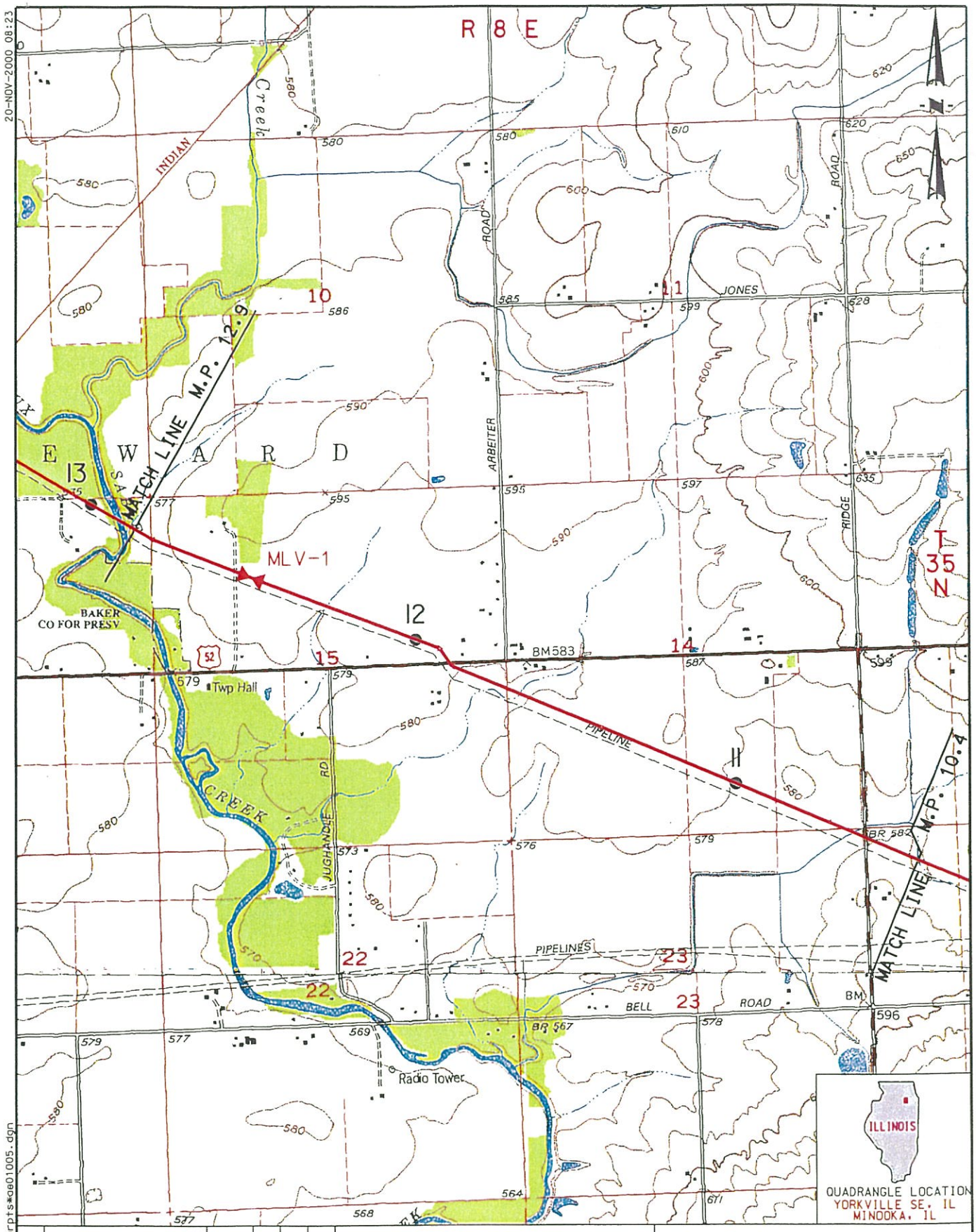
WILL CO. & KENDALL CO., ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-004 REV. NO. 2

D:\#wrdost#Pr1#Quad Excerpts#ge01004.dgn

20-NOV-2000 08:23



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	REMOVED ACCESS ROADS	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/23/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 10.4 THRU M.P. 12.9

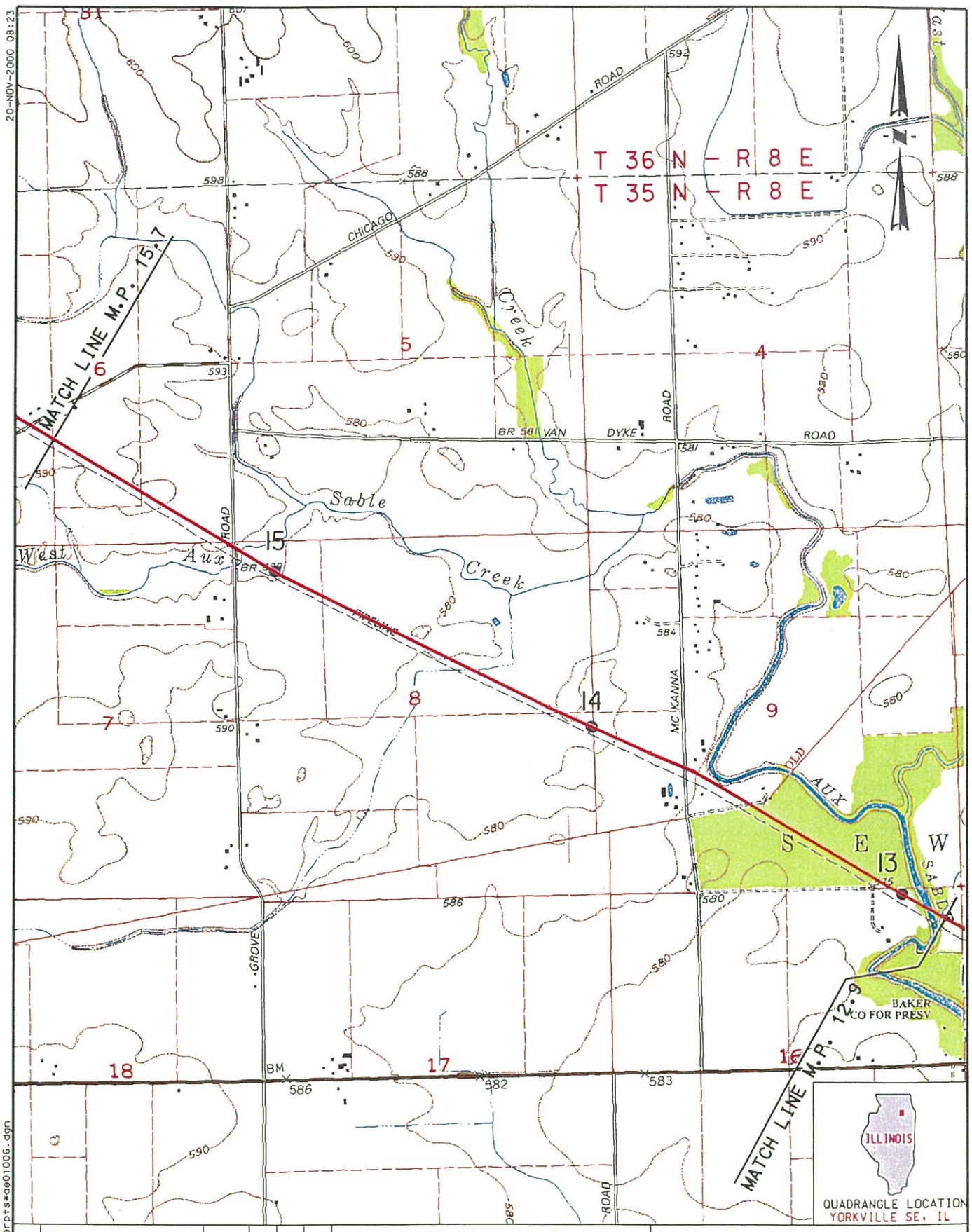
KENDALL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-005 | REV. NO. 2

20-NOV-2000 08:23

D:*Wrdost*Pr1*Quad Excerpts*ga01005.dgn



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	REMOVED ACCESS ROADS	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 12.9 THRU M.P. 15.7

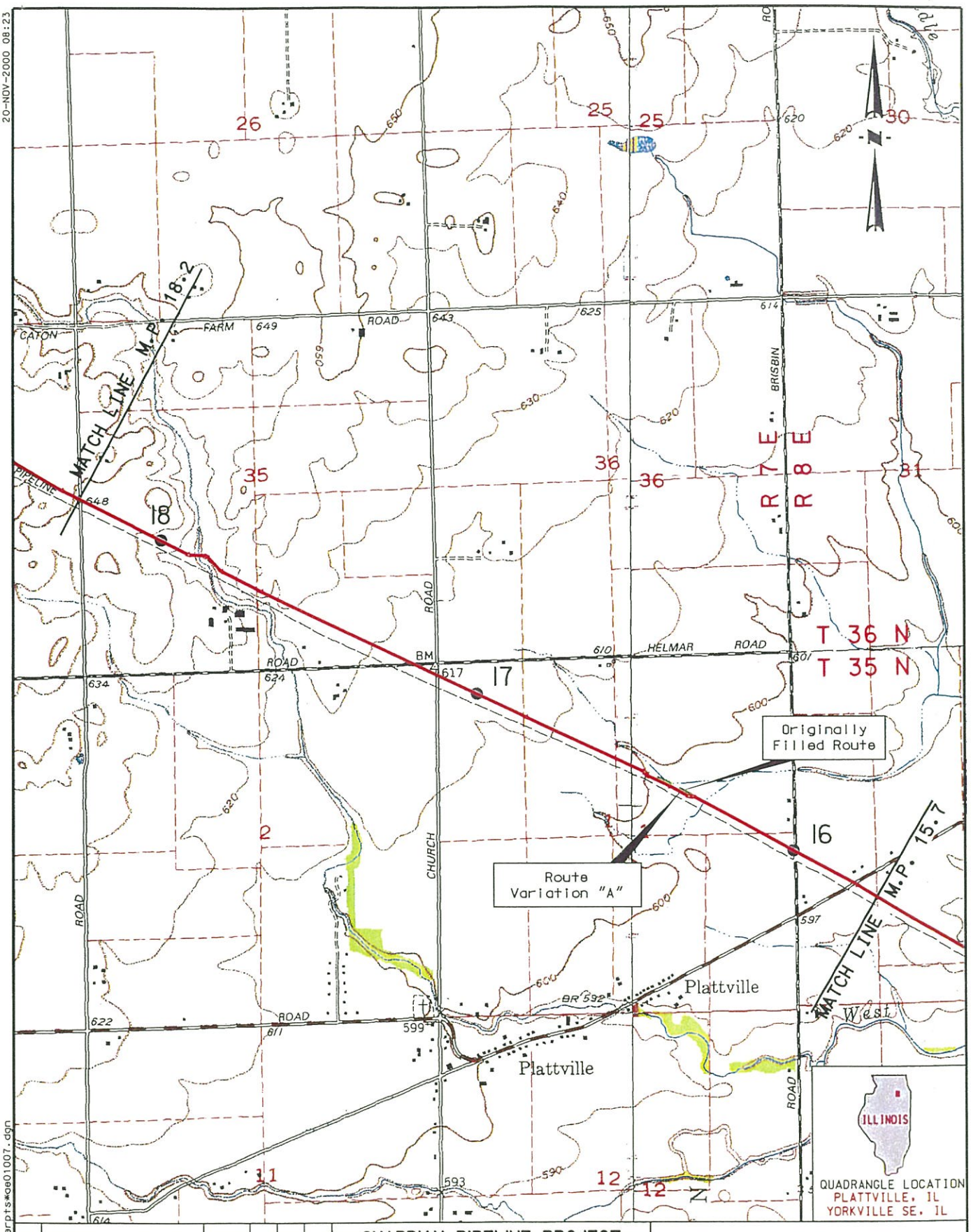
KENDALL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-006 | REV. NO. 2

20-NOV-2000 08:23

D:\#rbost\#Pr1\#Quad Excerpts\#ge01006.dgn



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 15.7 THRU M.P. 18.2

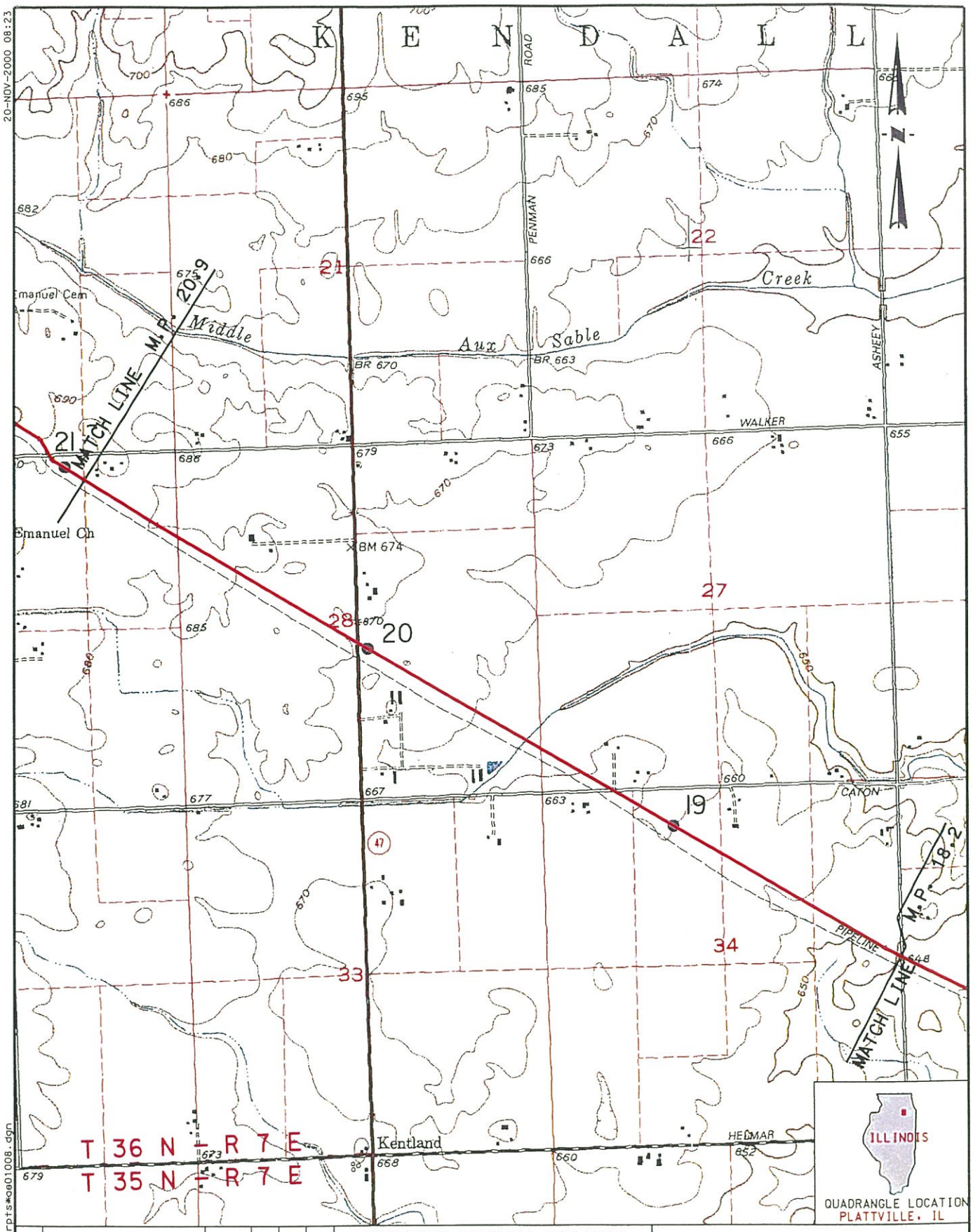
KENDALL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-007 | REV. NO. 2

20-NOV-2000 08:23

D:\#Wrbost\#Pri\#Quad Excerpts\#ge01007.dgn



20-NOV-2000 08:23

D:\Wrbost\Pri\Quad Excerpts\ga01008.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

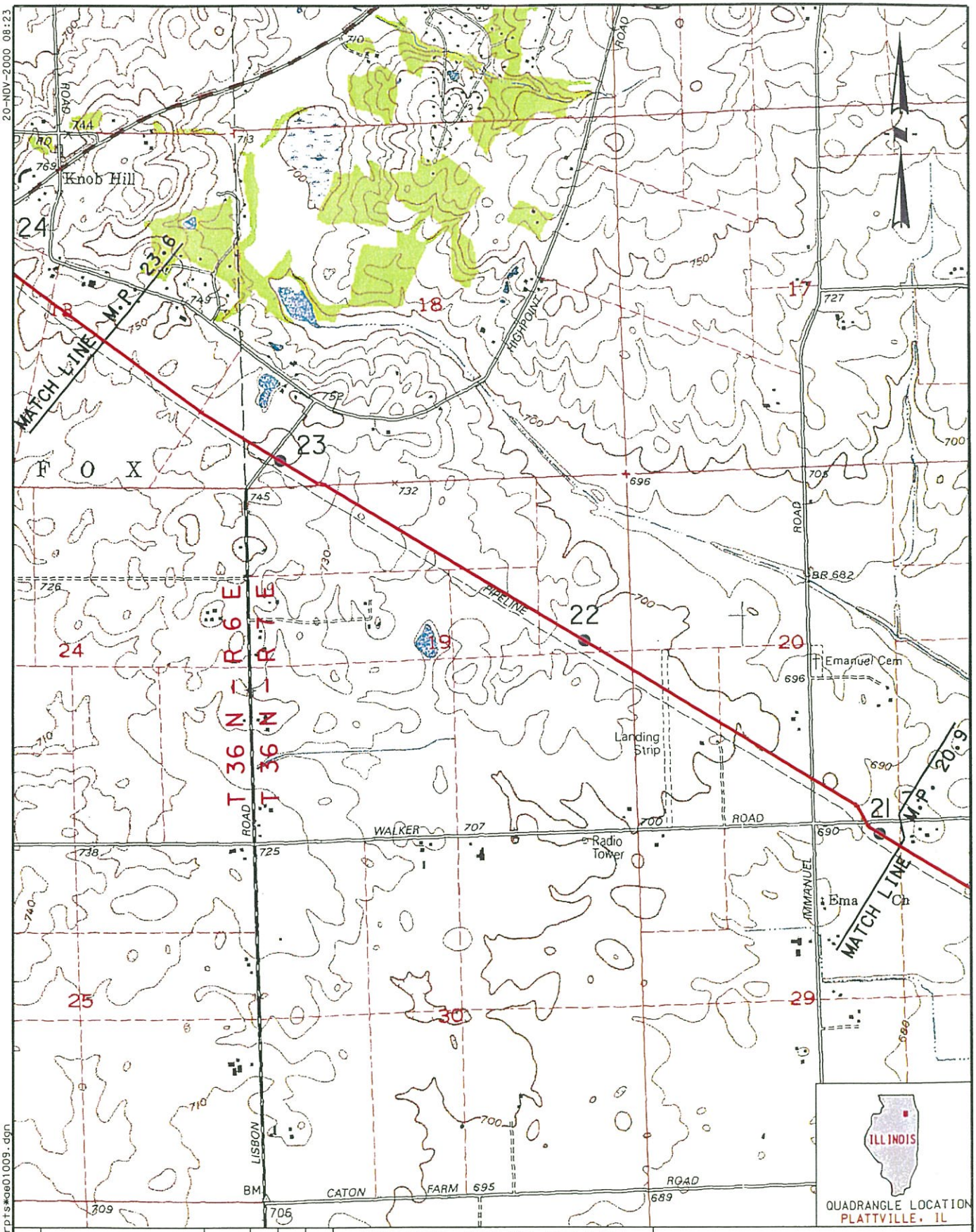
QUAD EXCERPT

M.P. 18.2 THRU M.P. 20.9

KENDALL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-008 | REV. NO. 1



QUADRANGLE LOCATION
PLATTVILLE, IL

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 20.9 THRU M.P. 23.6

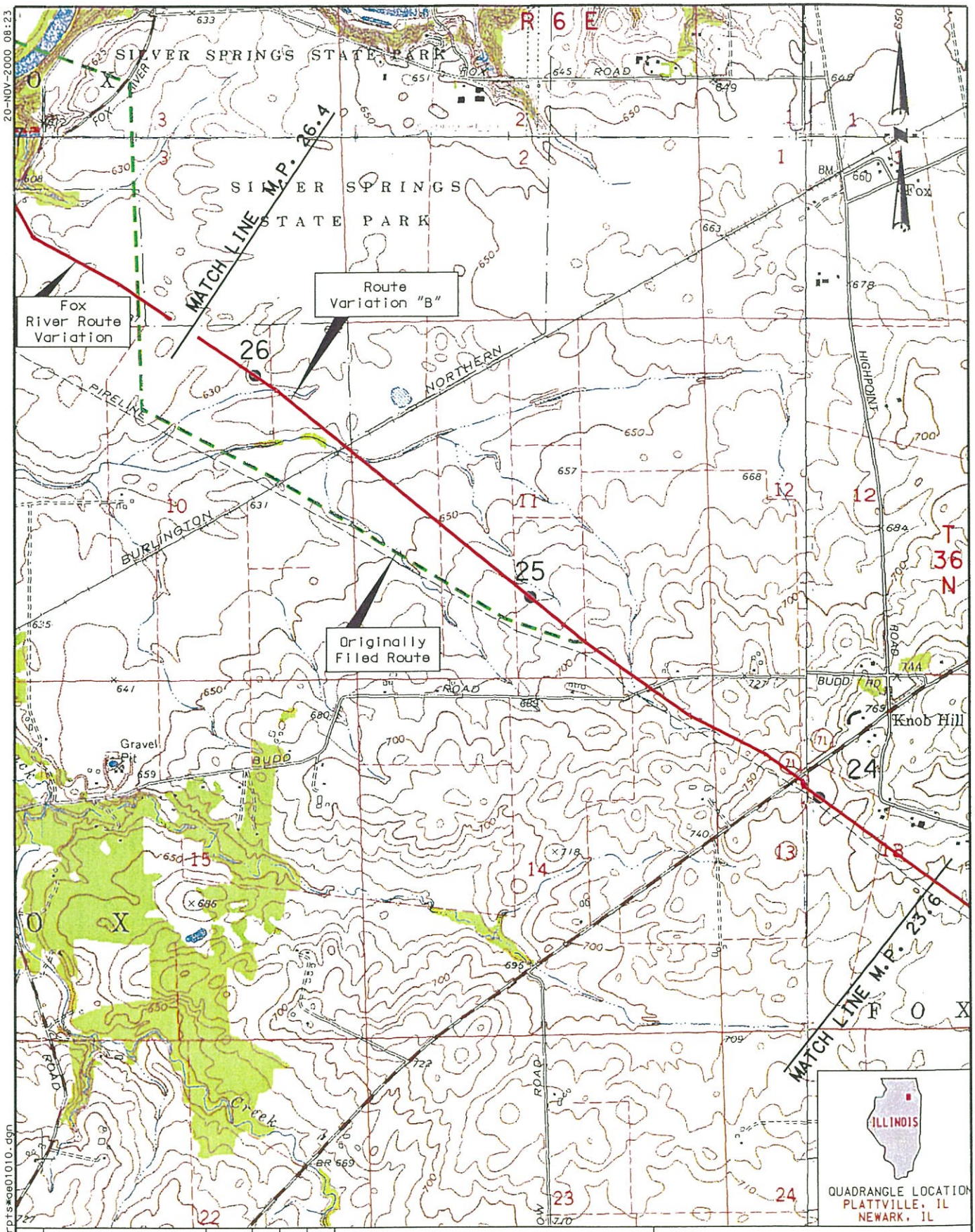
KENDALL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-009 | REV. NO. 1

20-NOV-2000 08:23

D:*Wrbost*Pr1*Quad Excerpts*ge01009.dgn



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

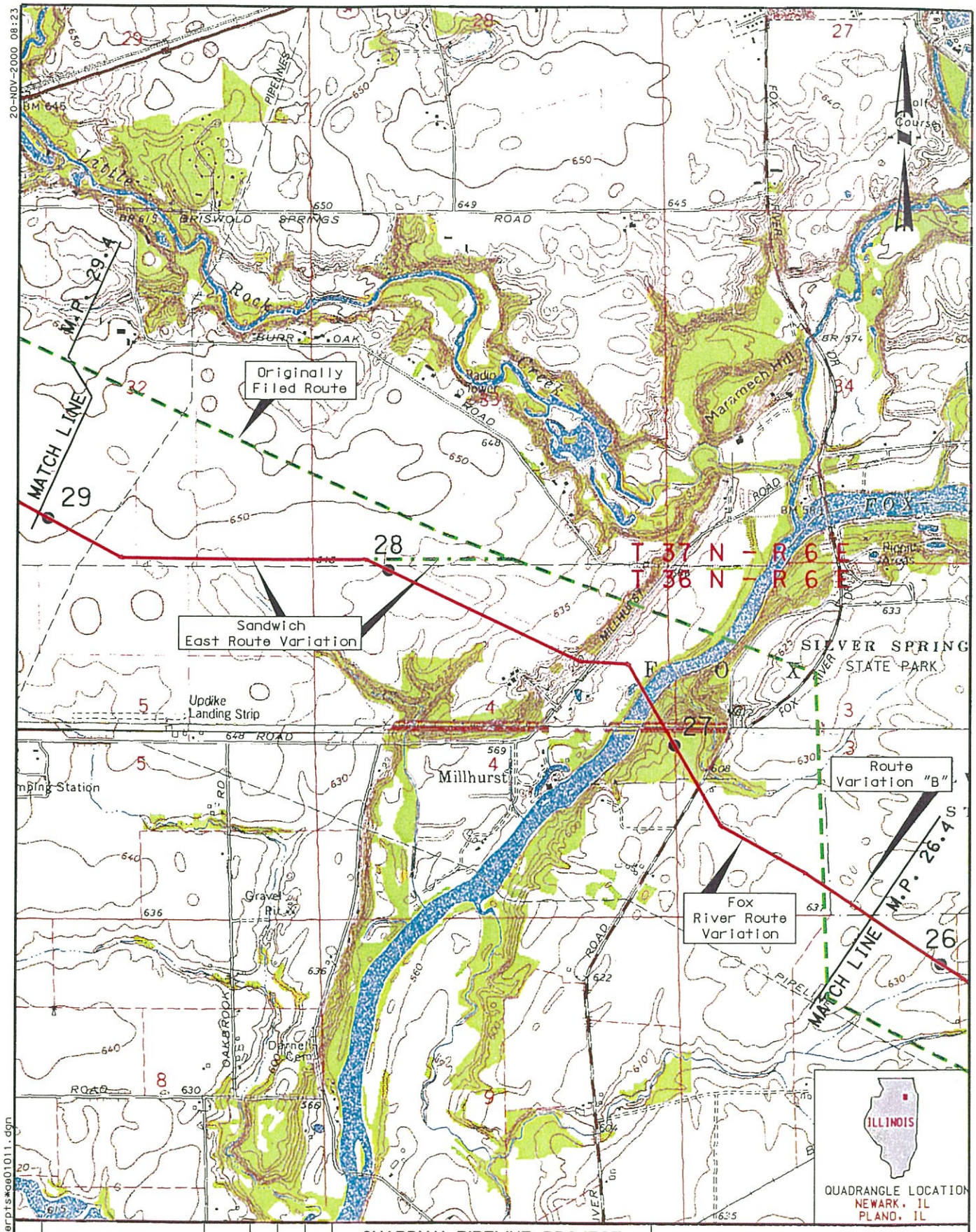
M.P. 23.6 THRU M.P. 26.4

KENDALL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-010 REV. NO. 2

D:\#Wrbost\#Pr1\#Quad Excerpts\#qe01010.dgn 20-NOV-2000 08:23



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 26.4 THRU M.P. 29.4

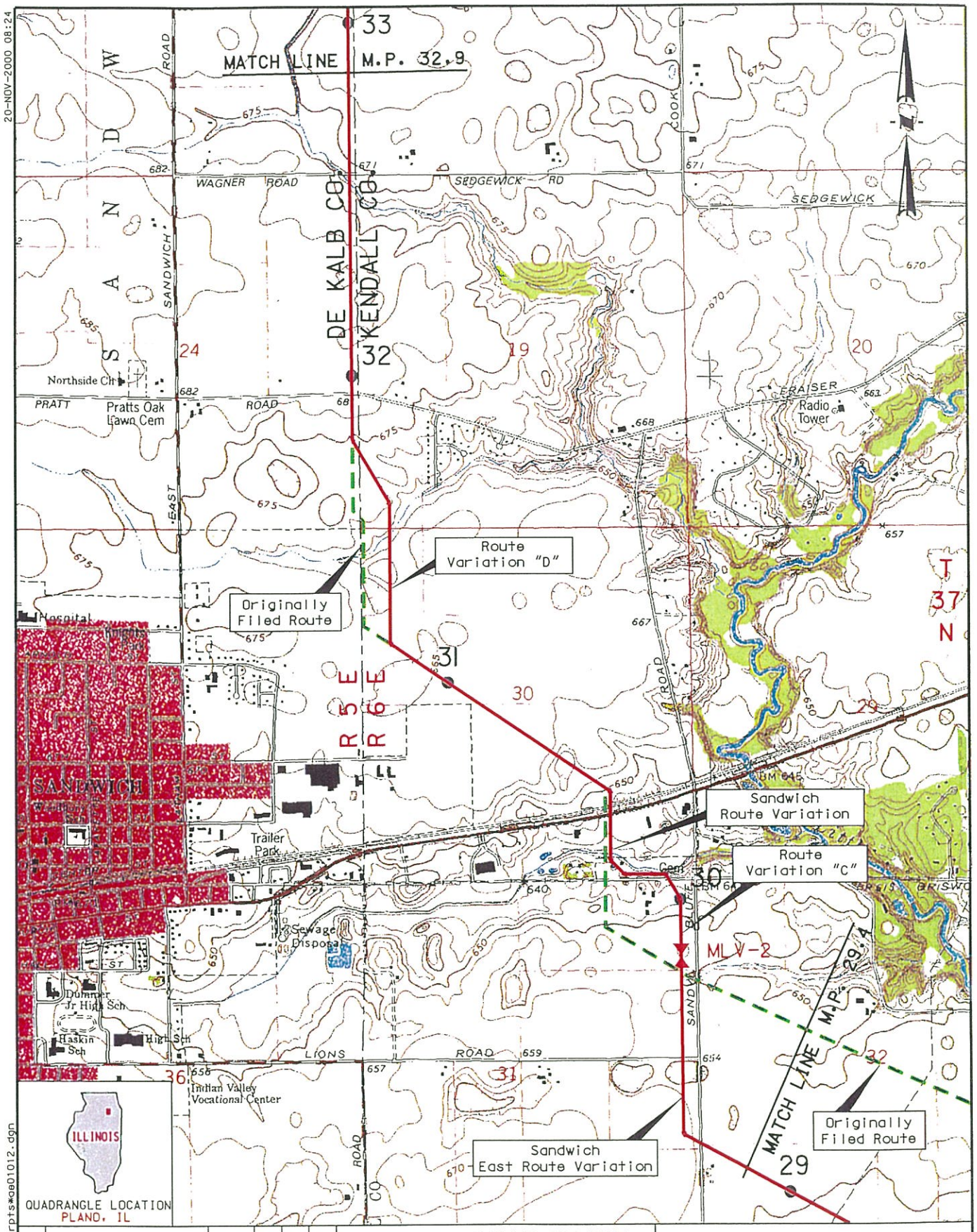
KENDALL CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-011 | REV. NO. 2

D:\WRbost\Pr1\Quad Excerpts\qe01011.dgn

20-NOV-2000 08:23



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

SANDWICH EAST ROUTE VARIATION
QUAD EXCERPT

M.P. 29.4 THRU M.P. 32.9

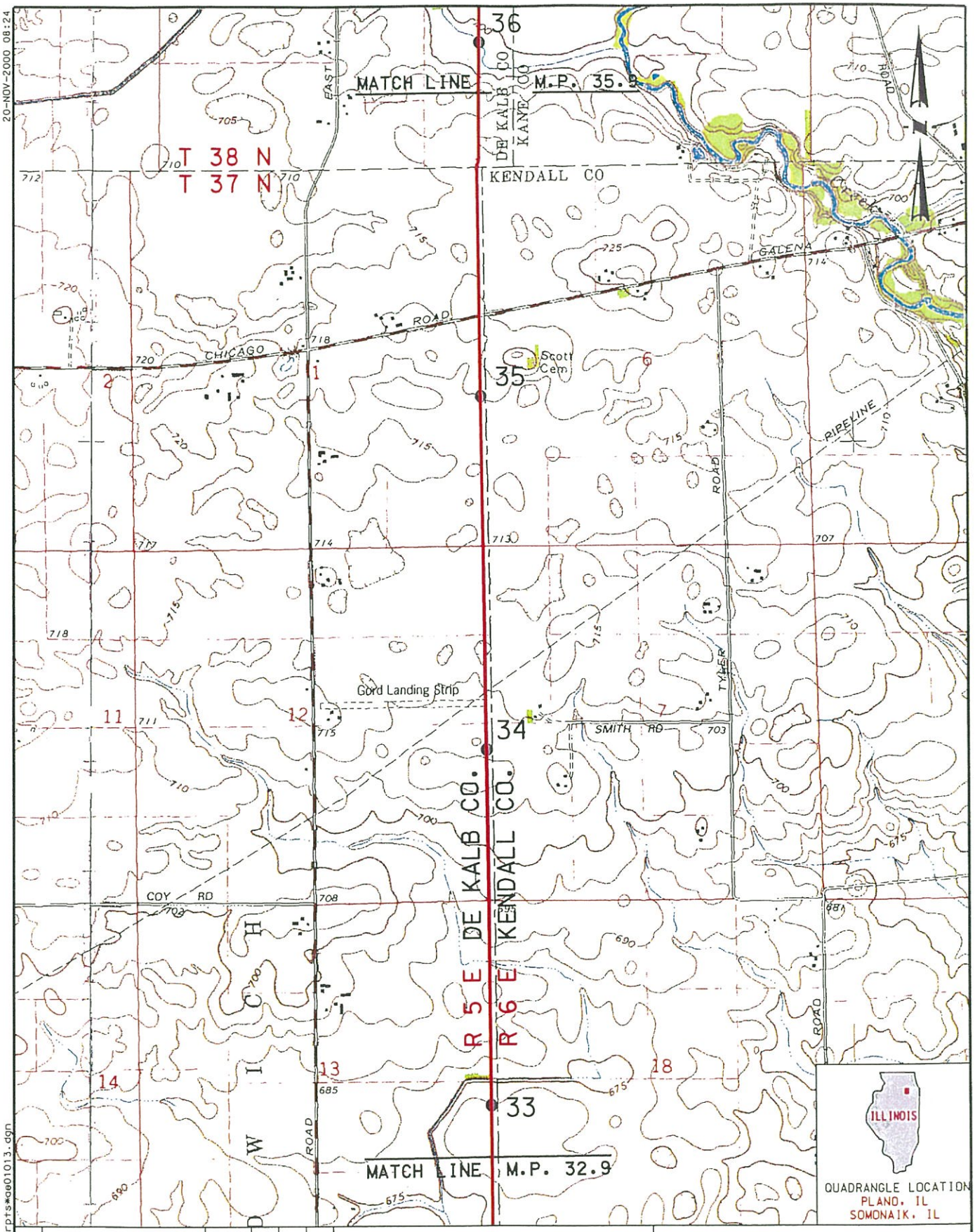
KENDALL CO. & DE KALB CO., IL

GUARDIAN PIPELINE

DWG. NO. GDA-E01-012 | REV. NO. 2

20-NOV-2000 08:24

D:*Wrbost*Pr1*Quad Excerpts*ae01012.dgn



ILLINOIS

QUADRANGLE LOCATION
PLANO, IL
SOMONAIK, IL

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

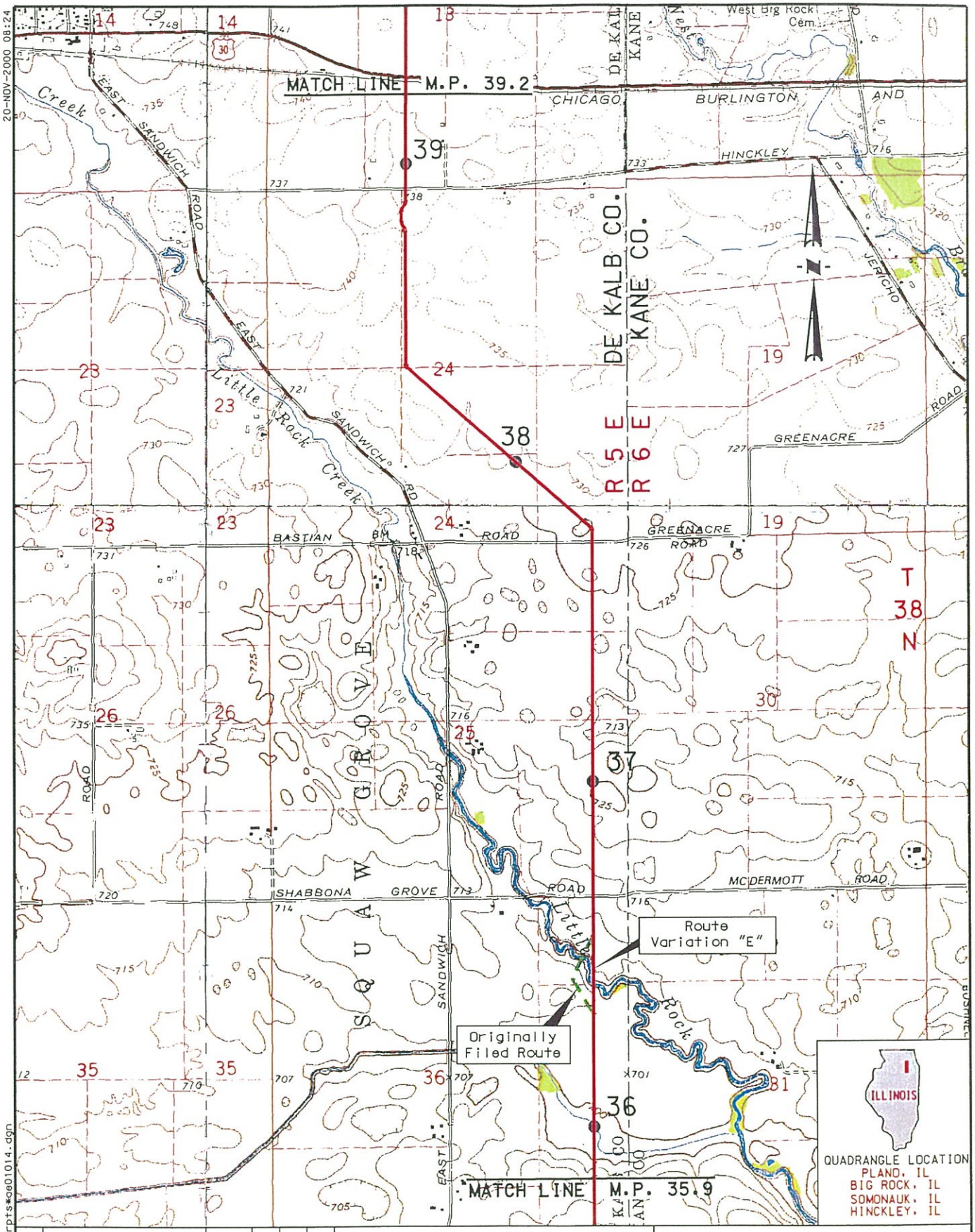
M.P. 32.9 THRU M.P. 35.9

DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-013 REV. NO. 1

D:\WrDost\Pr1\Quad Excerpts\qa01013.dgn 20-NOV-2000 08:24



20-NOV-2000 08:24

D:*Wrbost*Pr1*Quad Excerpts*qe01014.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: SHV | DATE 11/12/99 | APPR BY: | DATE

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

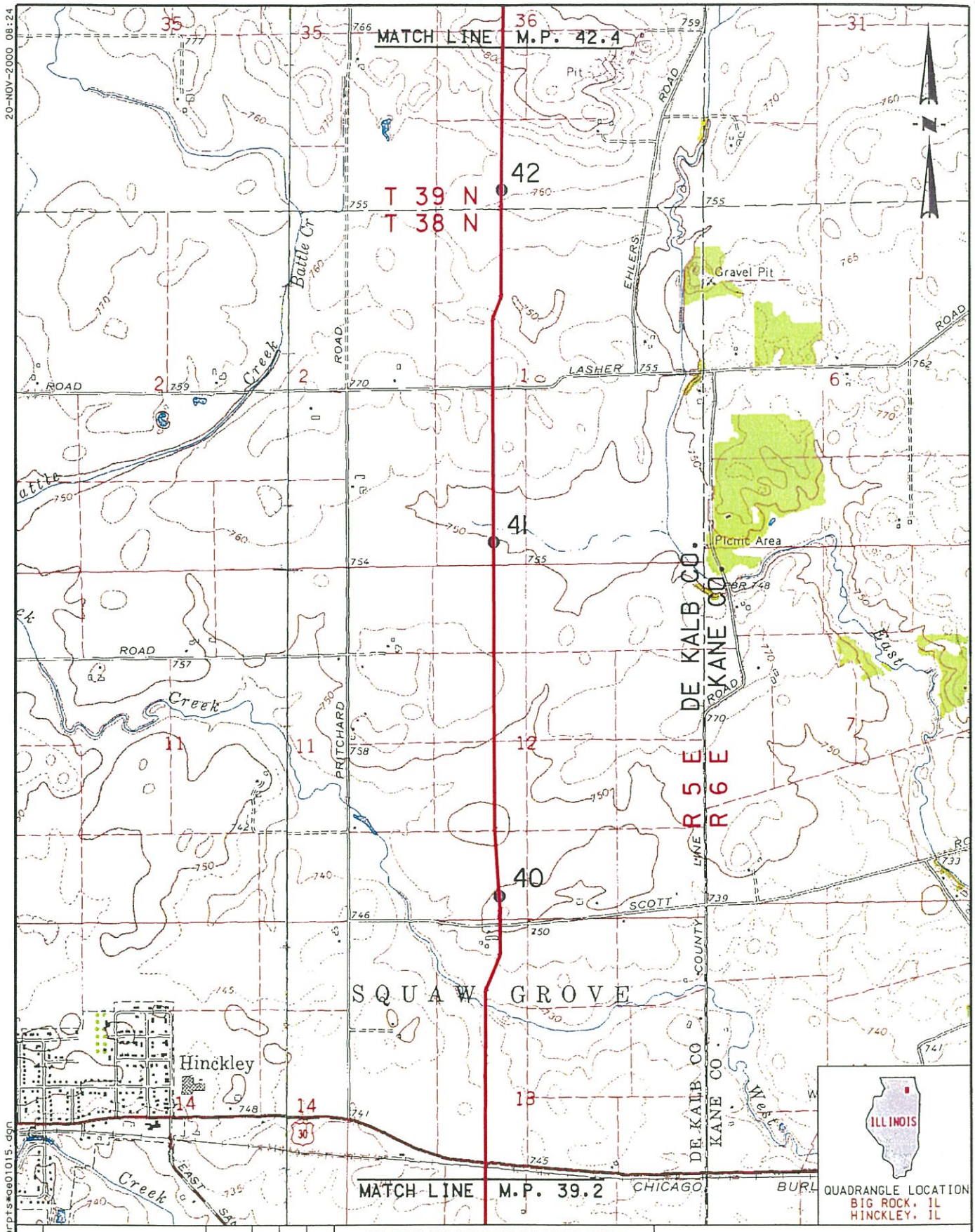
QUAD EXCERPT

M.P. 35.9 THRU M.P. 39.2

DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-014 REV. NO. 2



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 39.2 THRU M.P. 42.4

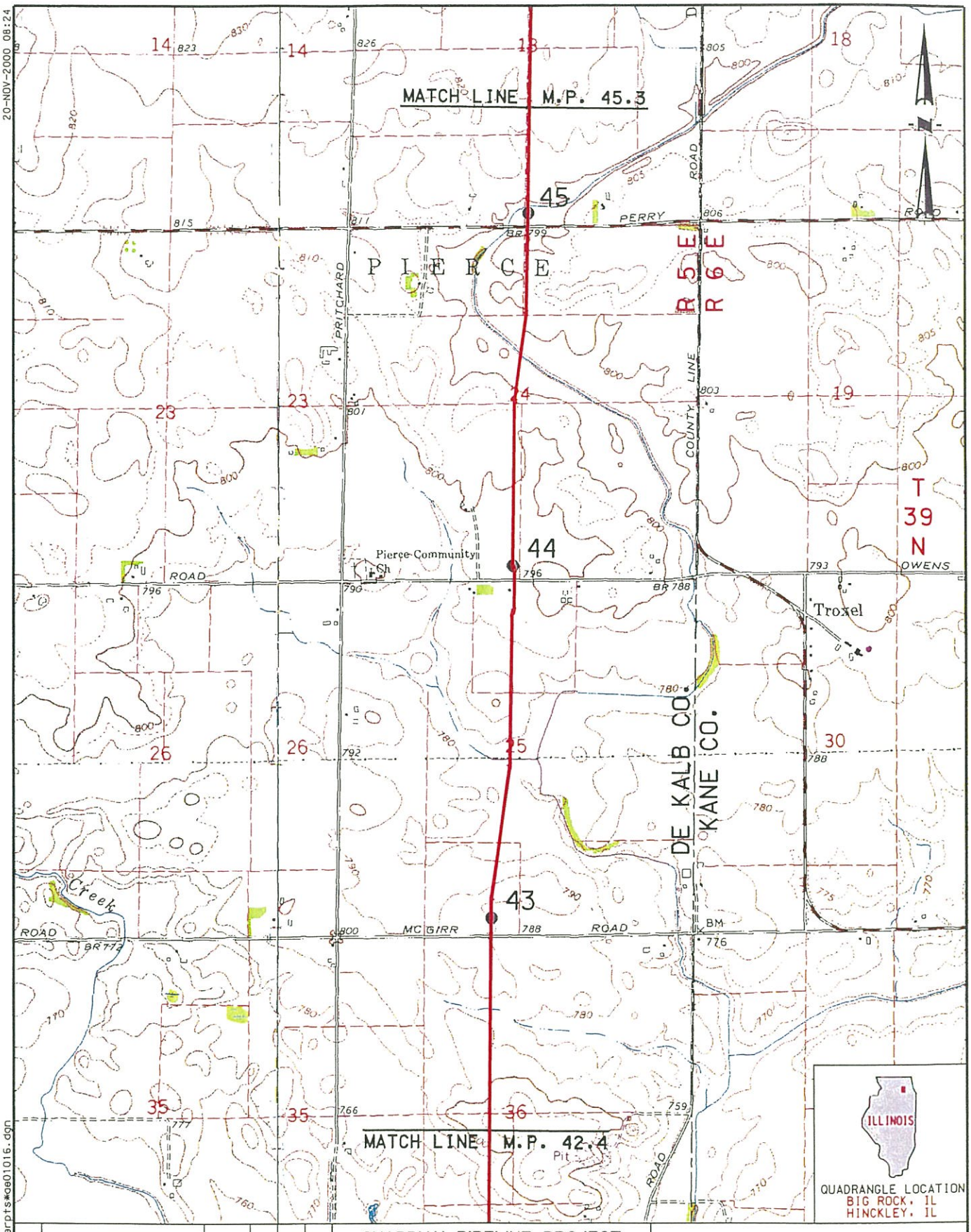
DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-015 | REV. NO. 1

20-NOV-2000 08:24

D:\wrbost\Pri\Quad Excerpts\ge01015.dgn



20-NOV-2000 08:24

D:*Wrdost*Pr1*Quad Excerpts*ga01016.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

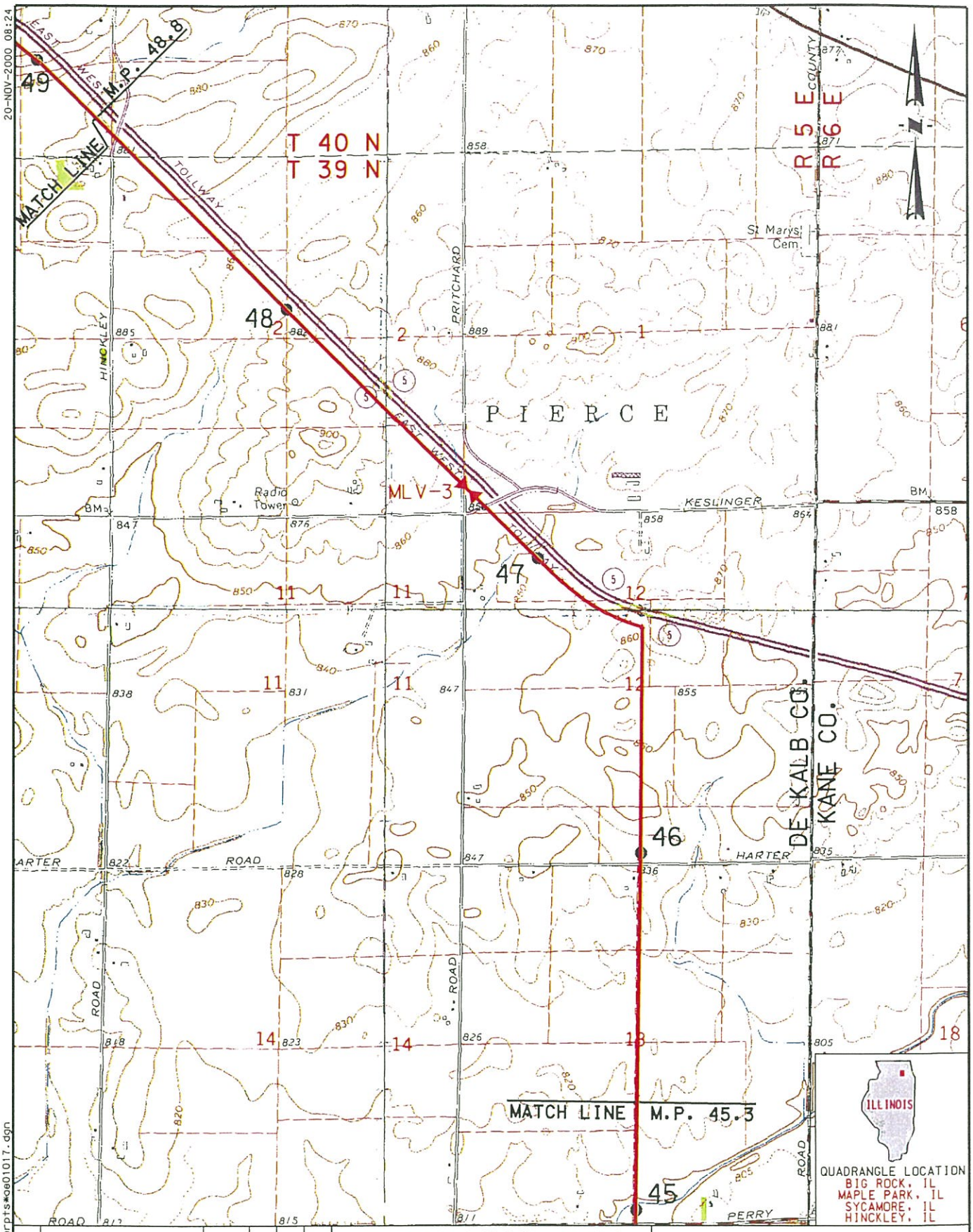
QUAD EXCERPT

M.P. 42.4 THRU M.P. 45.3

DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-016 | REV. NO. 1



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	REMOVED ACCESS ROADS	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 45.3 THRU M.P. 48.8

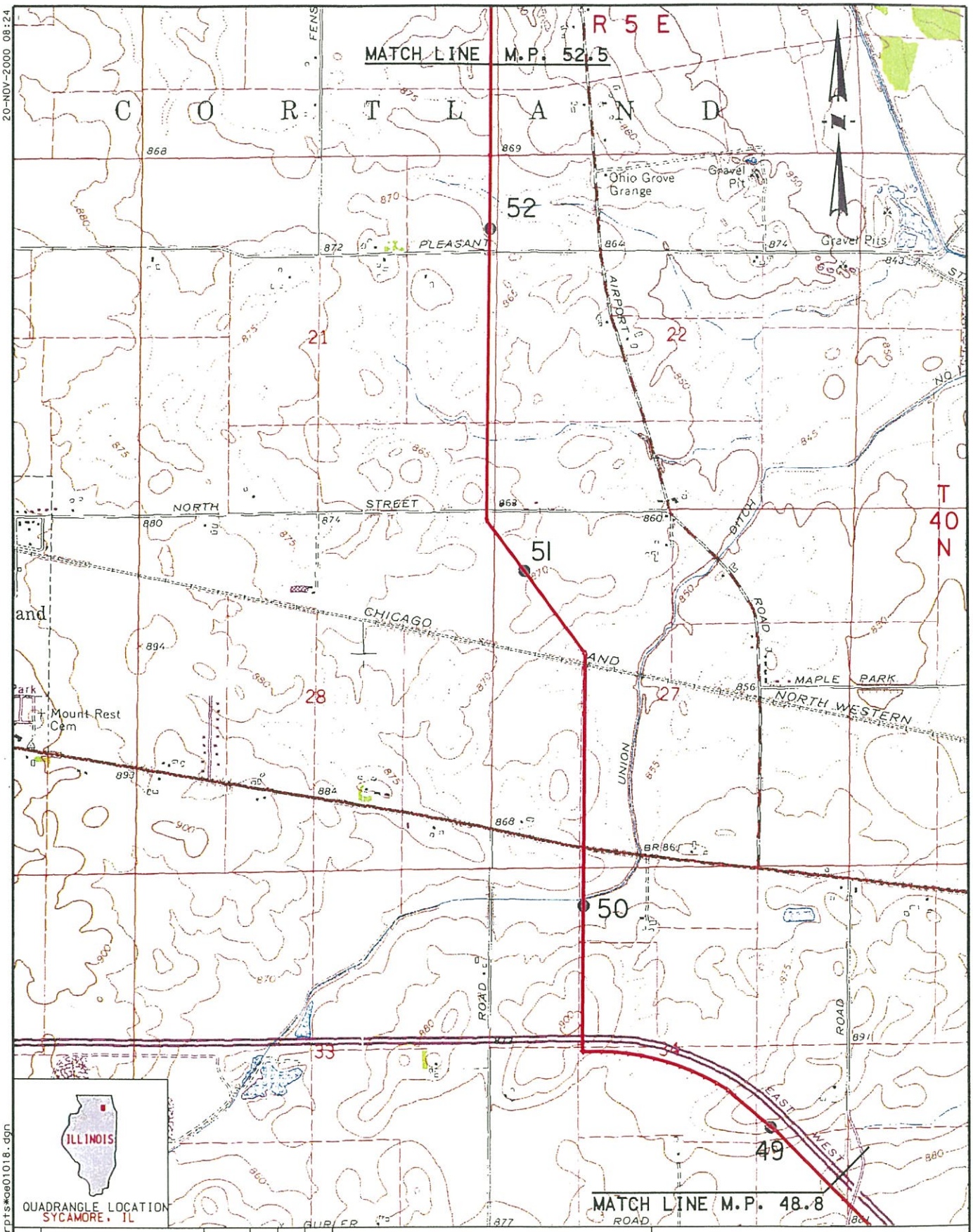
DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-017 REV. NO. 2

20-NOV-2000 08:24

D:\Wrdost\Pri\Quad Excerpts\ge01017.dgn



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 48.8 THRU M.P. 52.5

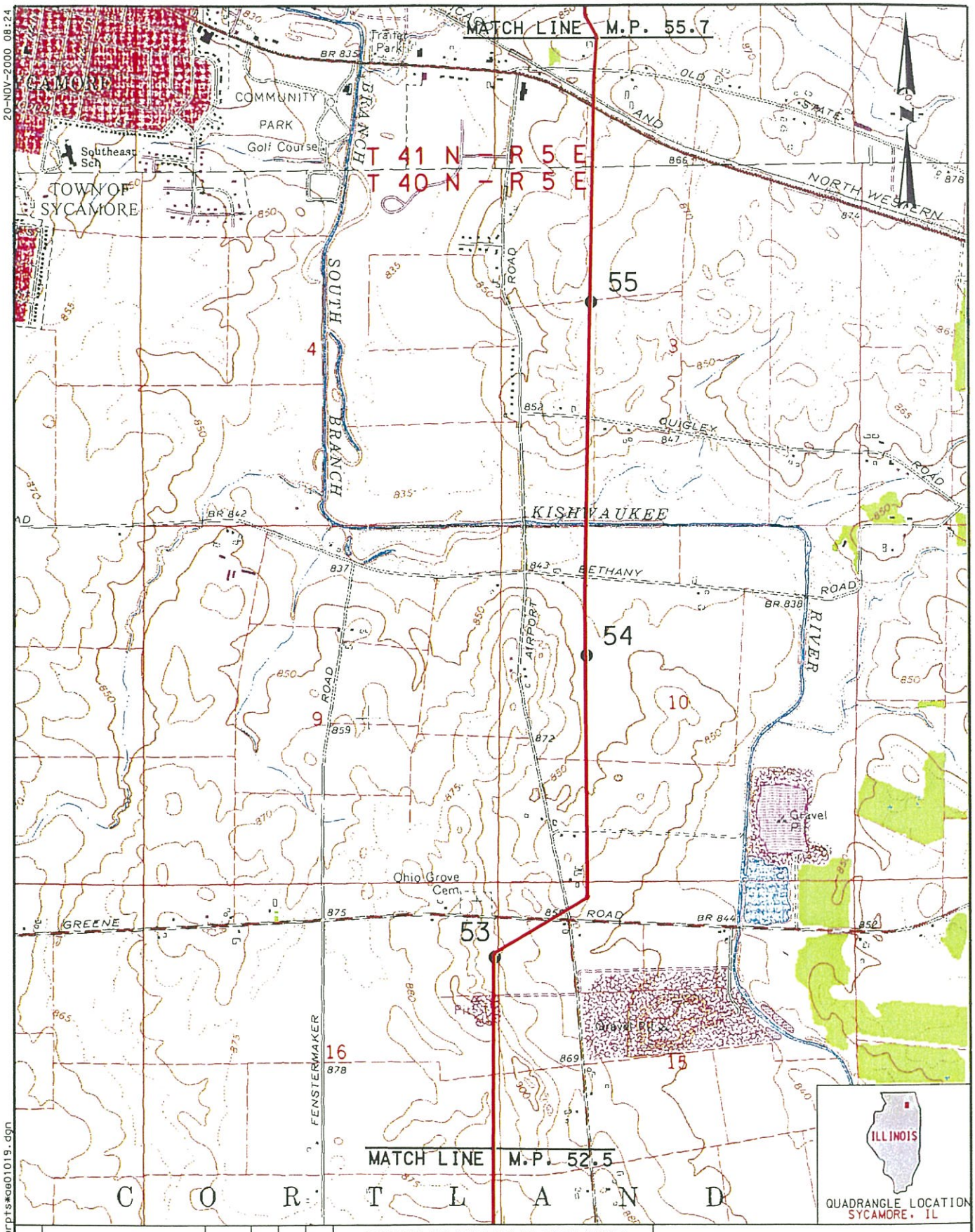
DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-018 | REV. NO. 1

20-NOV-2000 08:24

D:\WrDost\Pr1\Quad Excerpts\ge01018.dgn



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 52.5 THRU M.P. 55.7

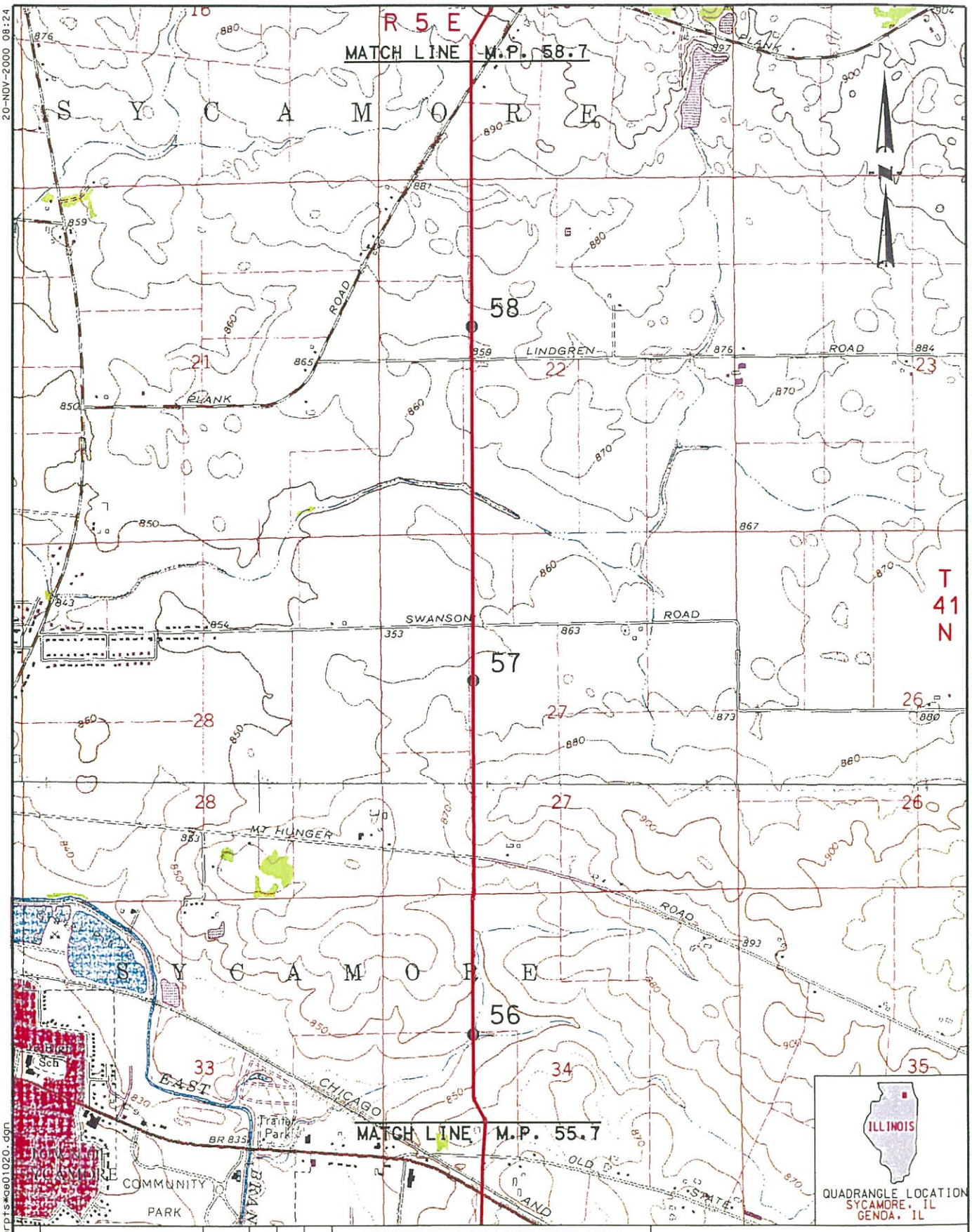
DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-019 | REV. NO. 1

20-NOV-2000 08:24

D:*Wrbost**Pri*Quad Excerpts*qa01019.dgn



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 55.7 THRU M.P. 58.7

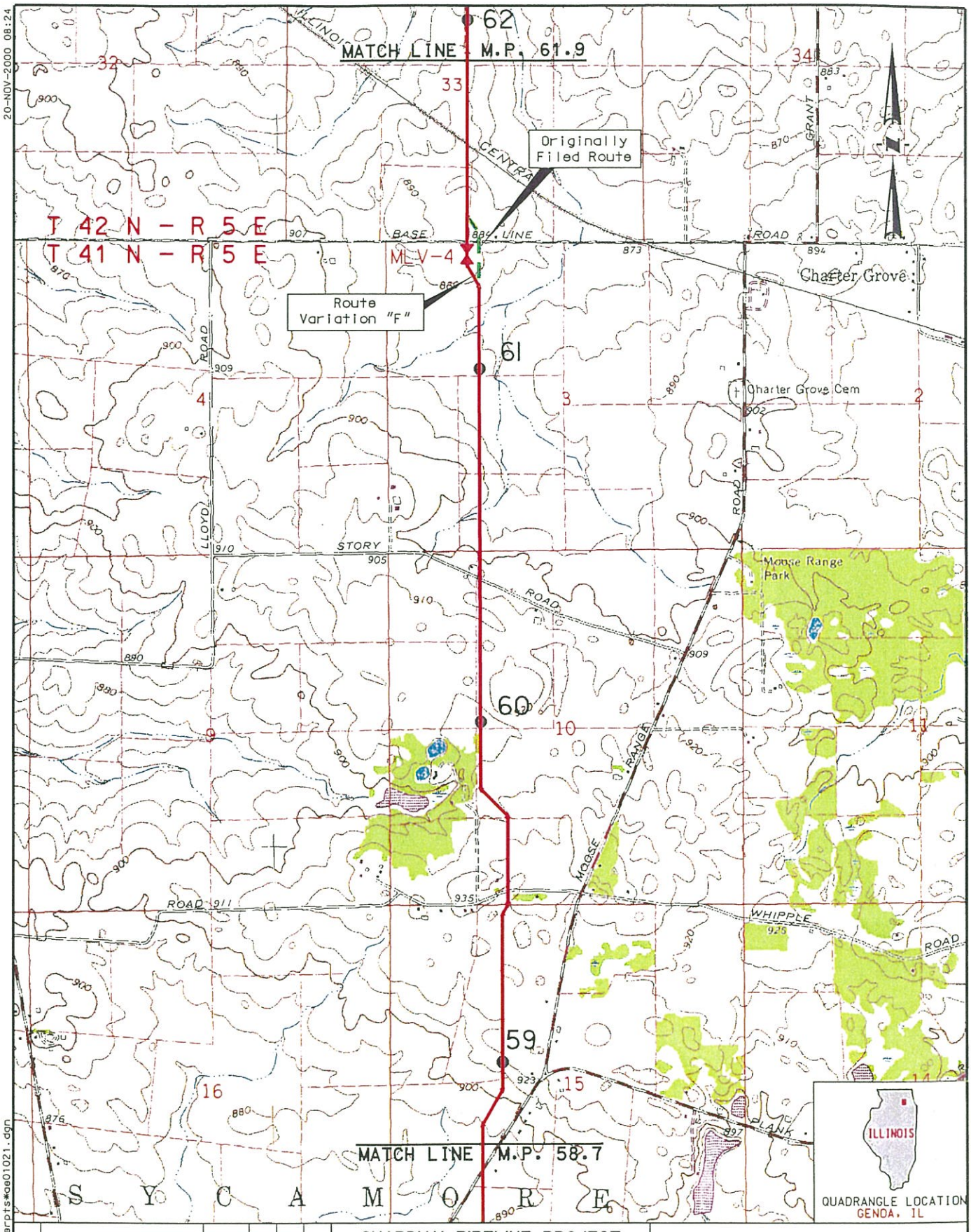
DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-020 | REV. NO. 1

20-NOV-2000 09:24

D:\#Wrbost\#Pr1\#Quad Excerpts\#ge01020.dgn



20-NOV-2000 08:24

D:*Wrdost*Pr1*Quad Excerpts*qe01021.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

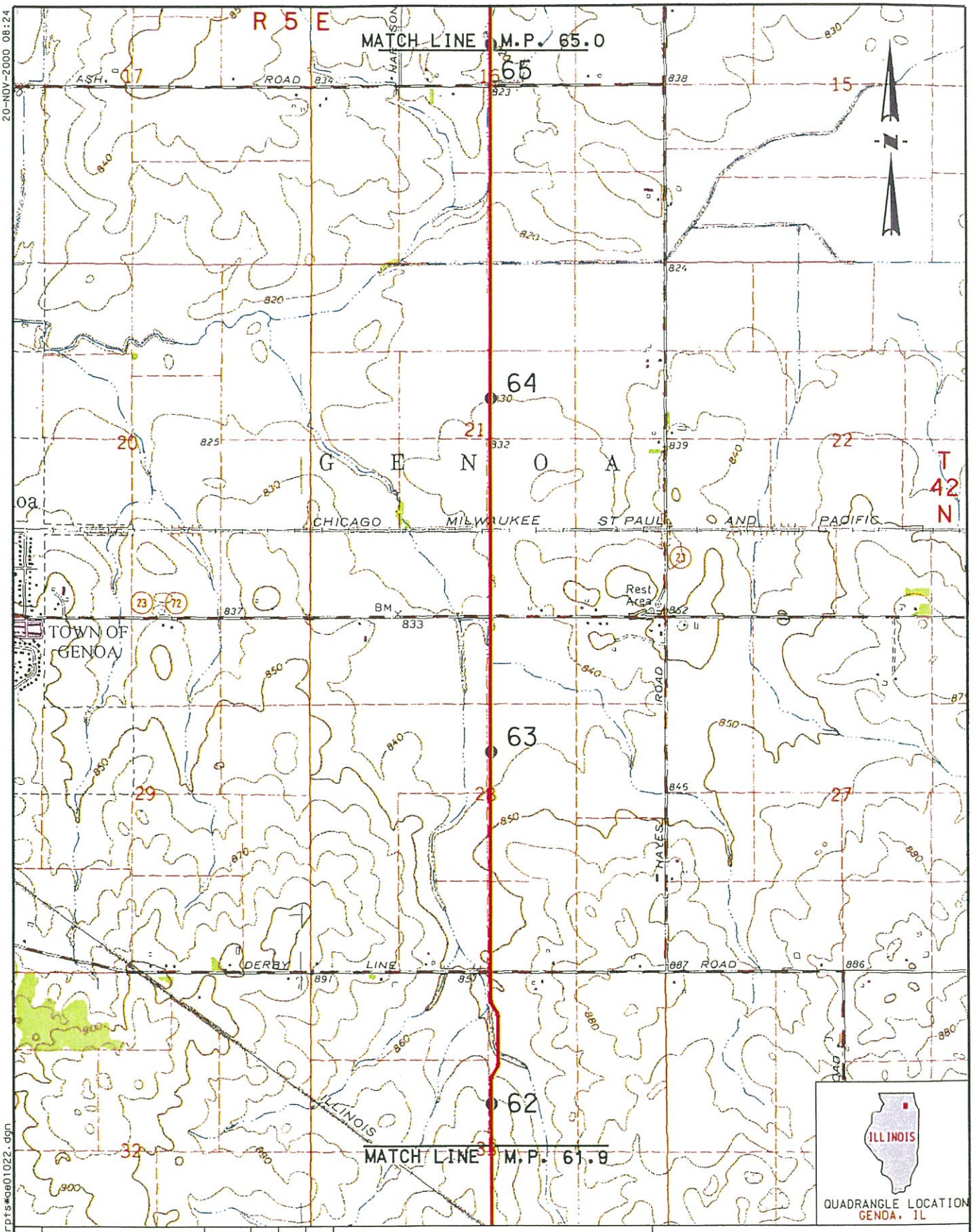
QUAD EXCERPT

M.P. 58.7 THRU M.P. 61.9

DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-021 | REV. NO. 2



20-NOV-2000 08:24

D:\wrbost\Pr1\Quad Excerpts\ge01022.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

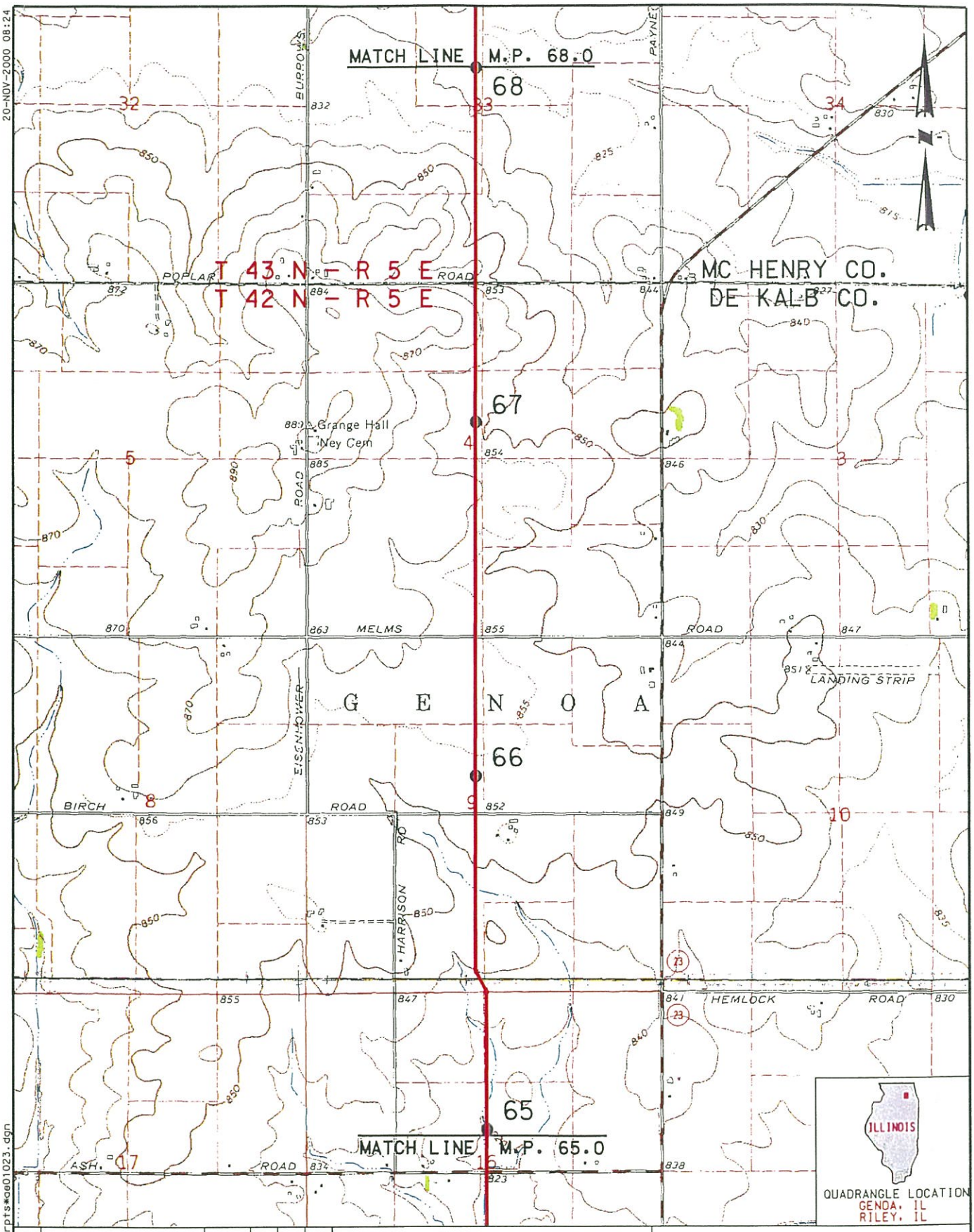
QUAD EXCERPT

M.P. 61.9 THRU M.P. 65.0

DE KALB CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-022 | REV. NO. 1



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 65.0 THRU M.P. 68.0

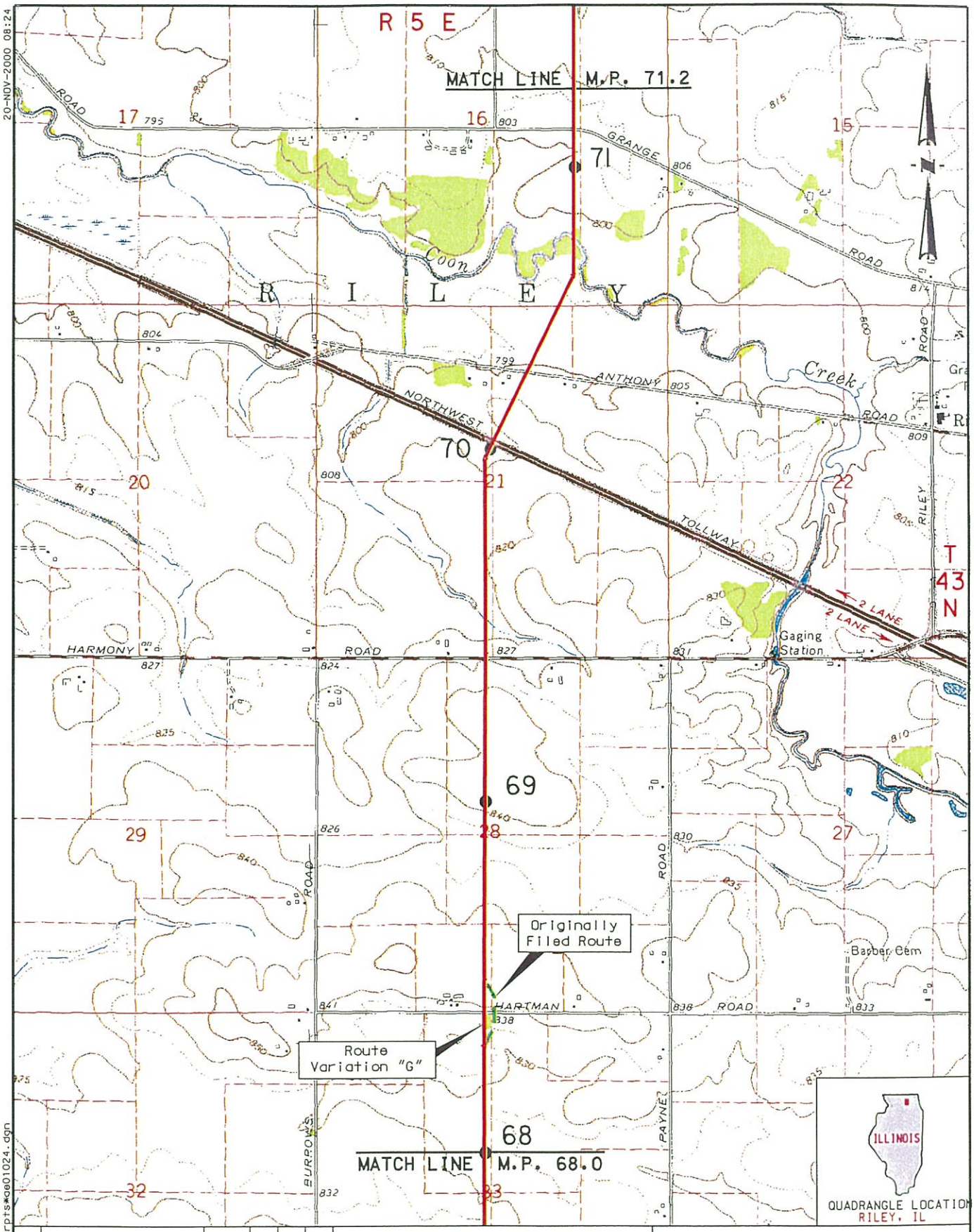
DE KALB CO. & MC HENRY CO., IL

GUARDIAN PIPELINE

DWG. NO. GDA-E01-023 | REV. NO. 1

20-NOV-2000 08:24

D:\wrbost\Pr1\Quad Excerpts\ge01023.dgn



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	ROUTE VARIATION UPDATE	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 68.0 THRU M.P. 71.2

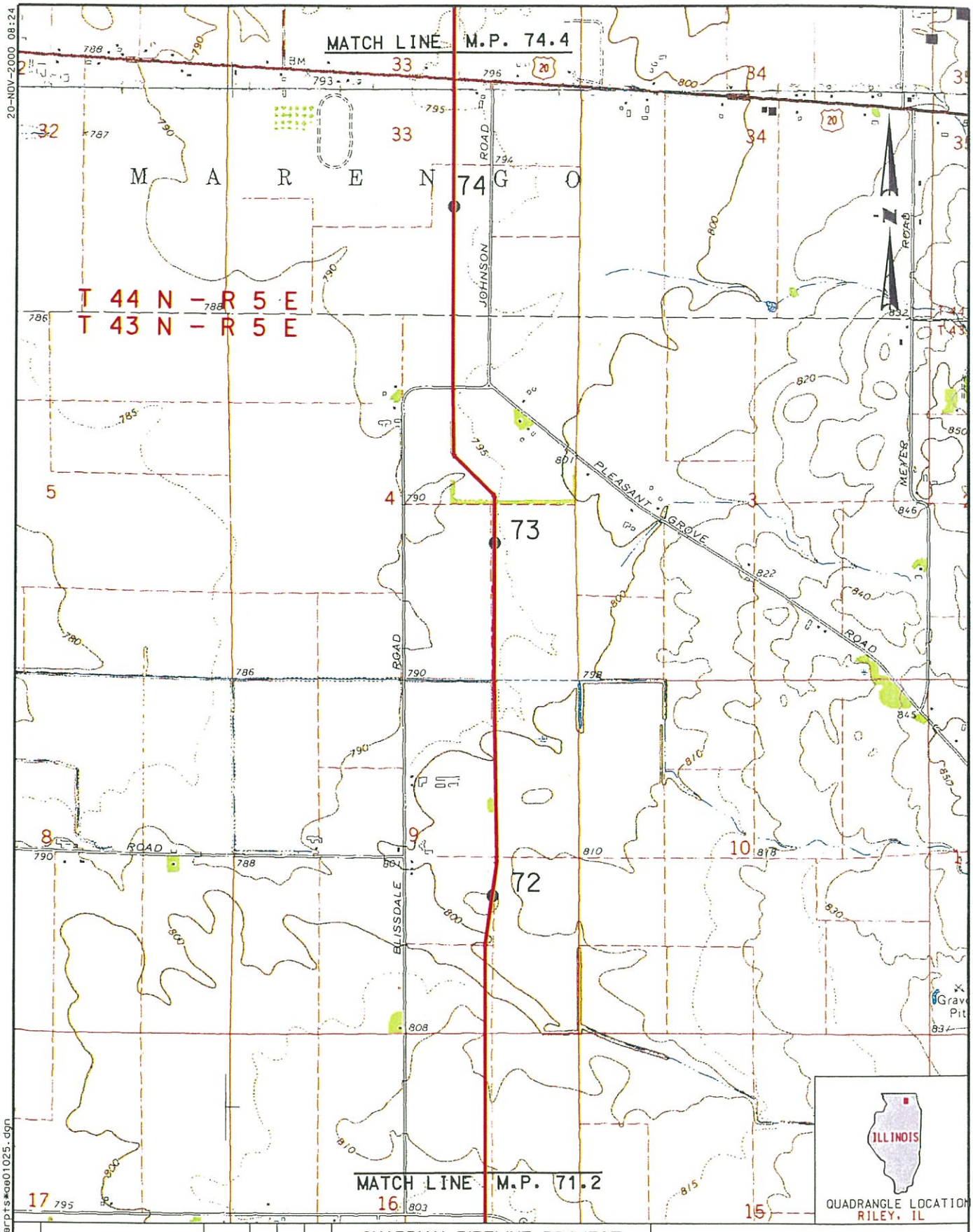
MC HENRY CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-024 | REV. NO. 2

D:*Wrbost*Pri*Quad Excerpts*ge01024.dgn

20-NOV-2000 08:24



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	REMOVED ACCESS ROADS	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

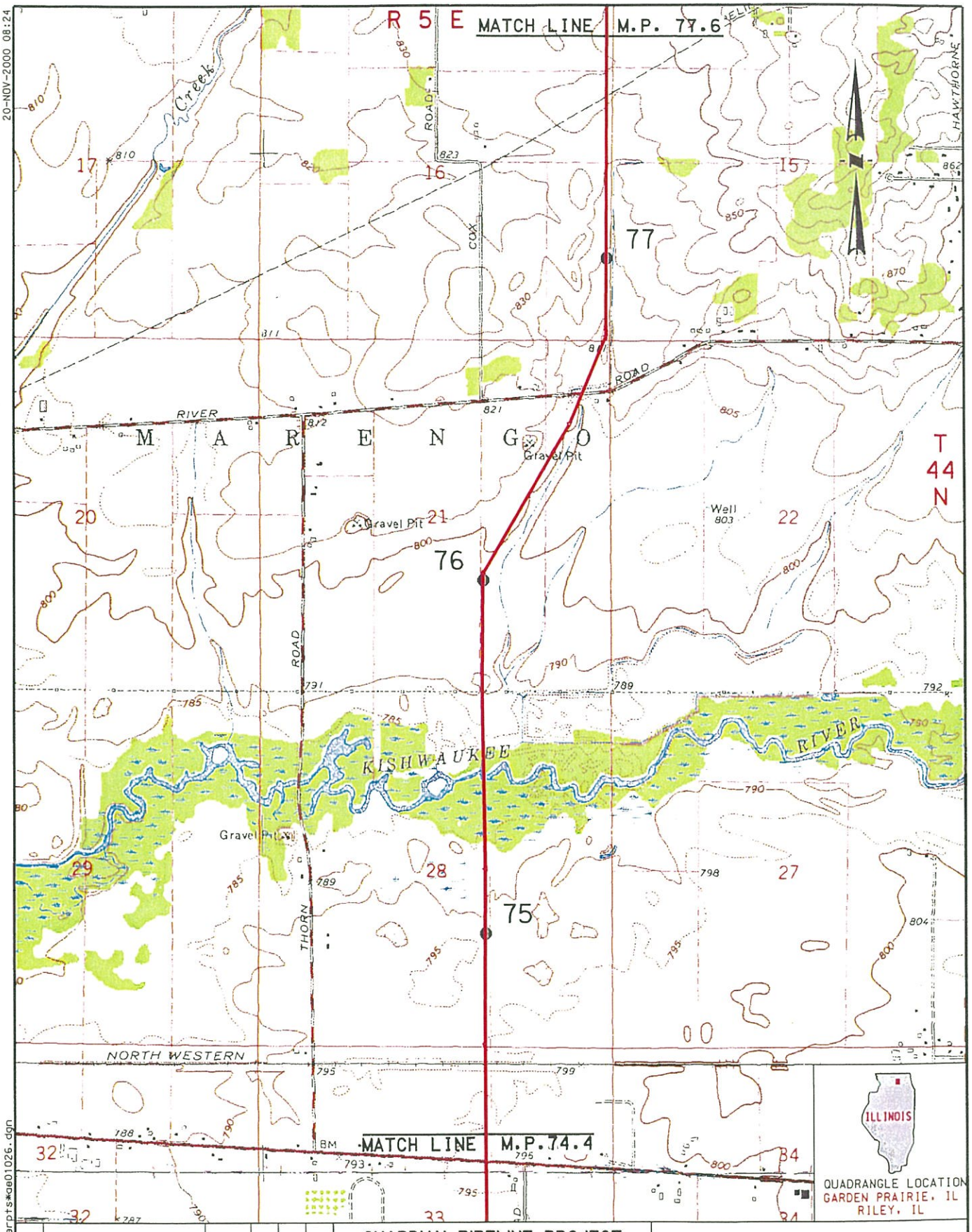
M.P. 71.2 THRU M.P. 74.4

MC HENRY CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-025 | REV. NO. 2

D:\Projects\Quad Excerpts\qa01025.dgn 20-NOV-2000 08:24



QUADRANGLE LOCATION
GARDEN PRAIRIE, IL
RILEY, IL

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	REMOVED ACCESS ROADS	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 74.4 THRU M.P. 77.6

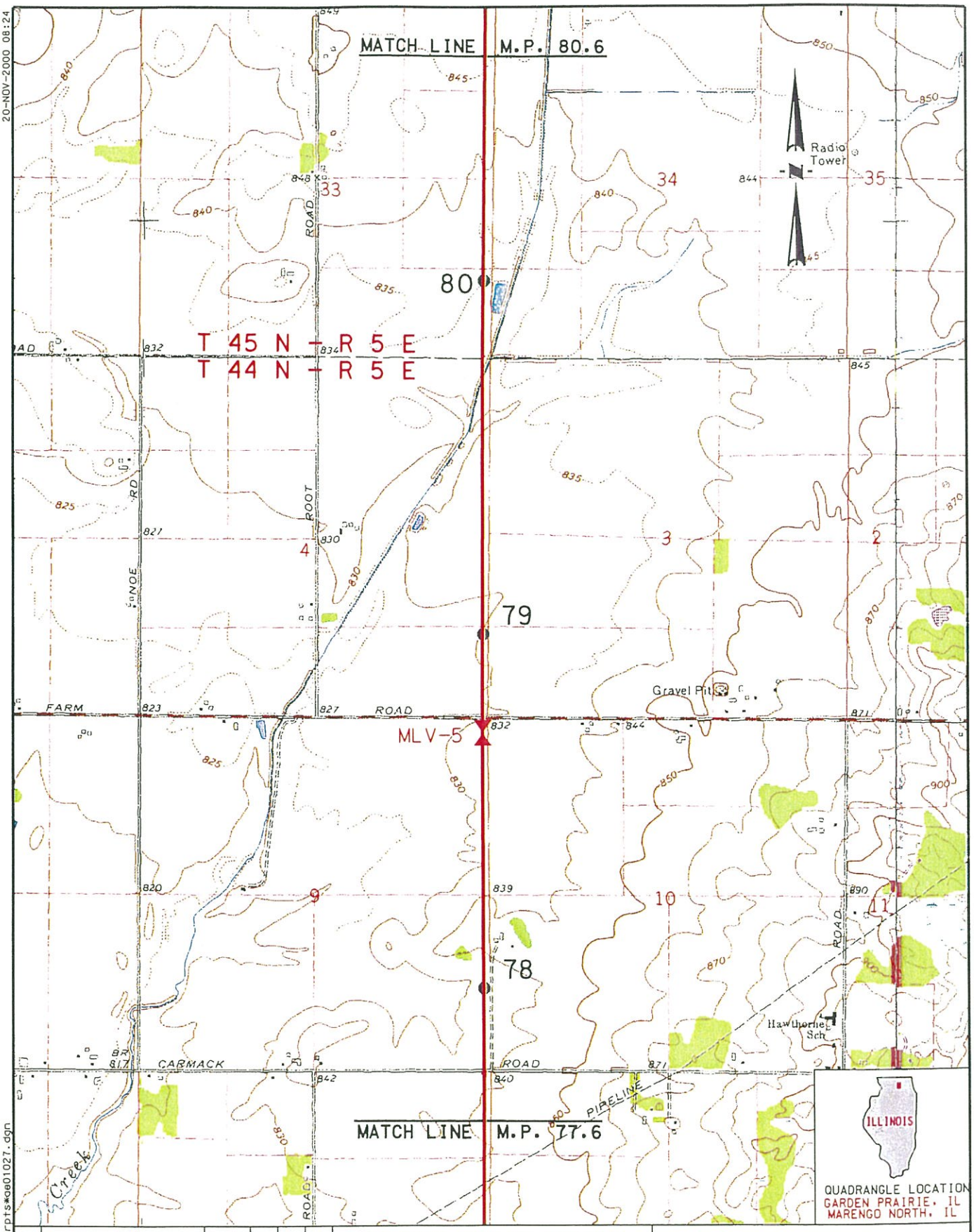
MC HENRY CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-026 | REV. NO. 2

20-NOV-2000 08:24

D:*Wrdost*Pr1*Quad Excerpts*ga01026.dgn



20-NOV-2000 08:24

D:*Wrdost*Pr1*Quad Excerpts*qe01027.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	REMOVED ACCESS ROADS	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

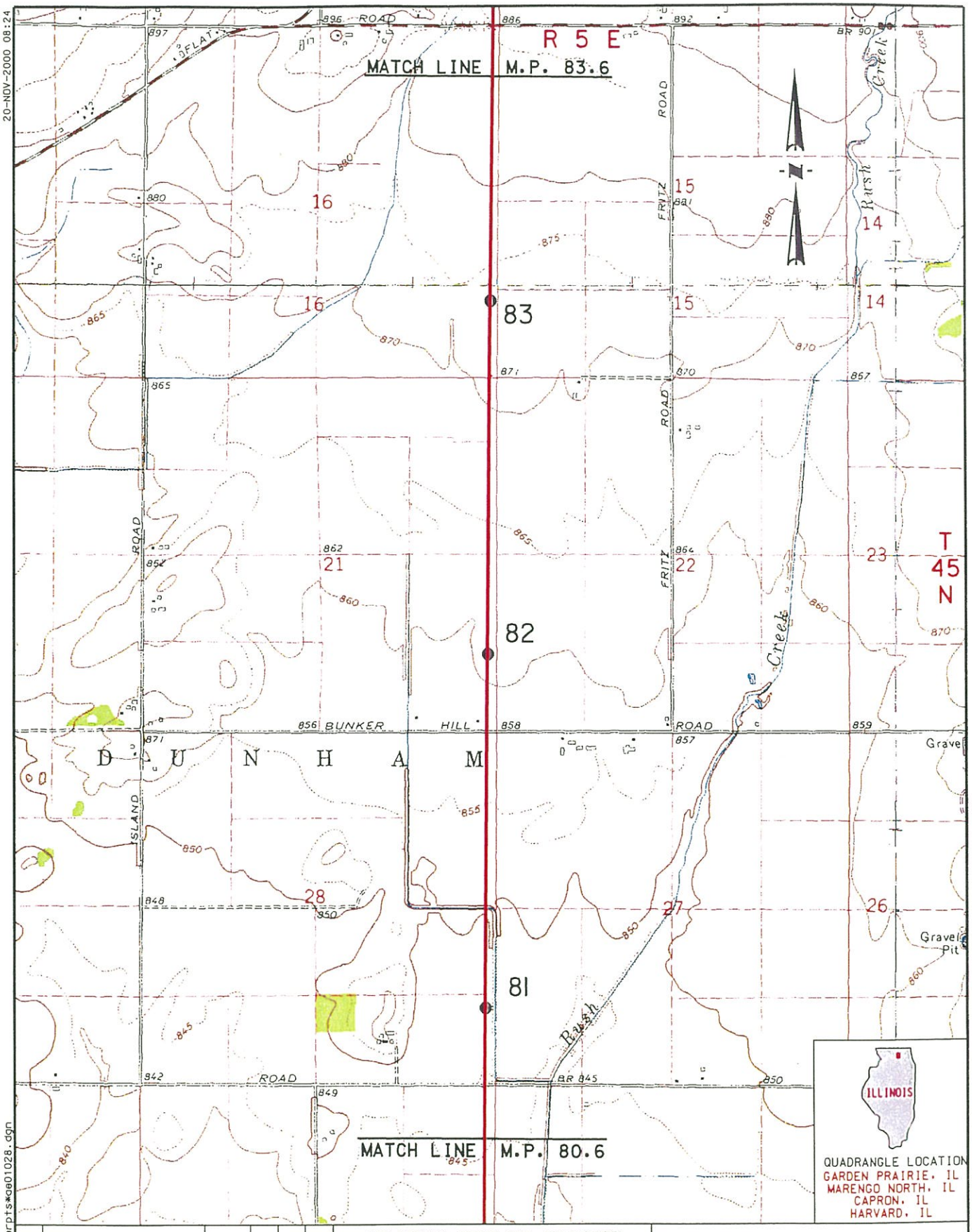
QUAD EXCERPT

M.P. 77.6 THRU M.P. 80.6

MC HENRY CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-027 REV. NO. 2



20-NOV-2000 08:24

D:\#rbost\#Pr1\#Quad Excerpts\#g01028.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

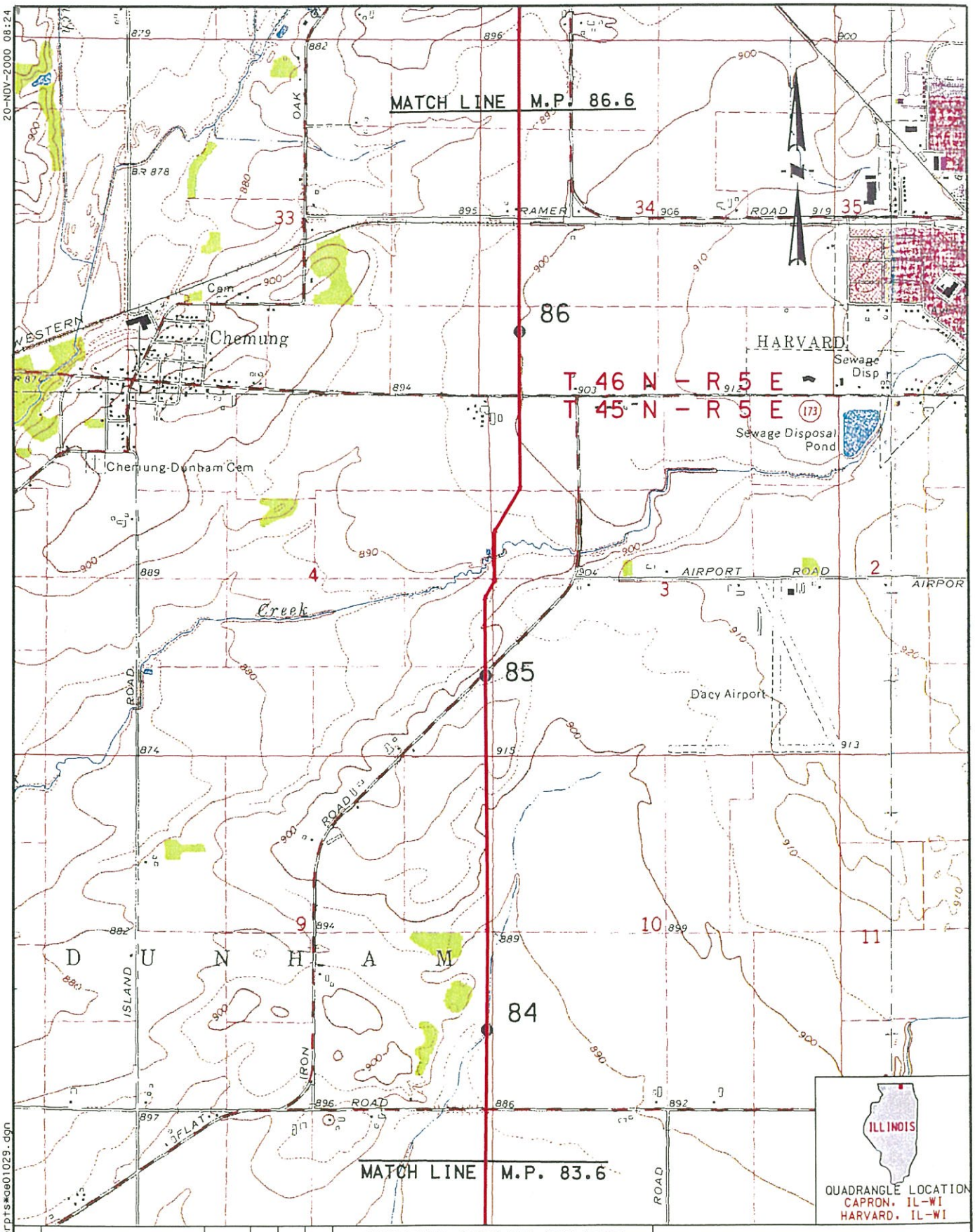
QUAD EXCERPT

M.P. 80.6 THRU M.P. 83.6

MC HENRY CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-028 | REV. NO. 1



20-NOV-2000 08:24

D:*Wrbost*\Pr1*Quad Excerpts*\ge01029.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

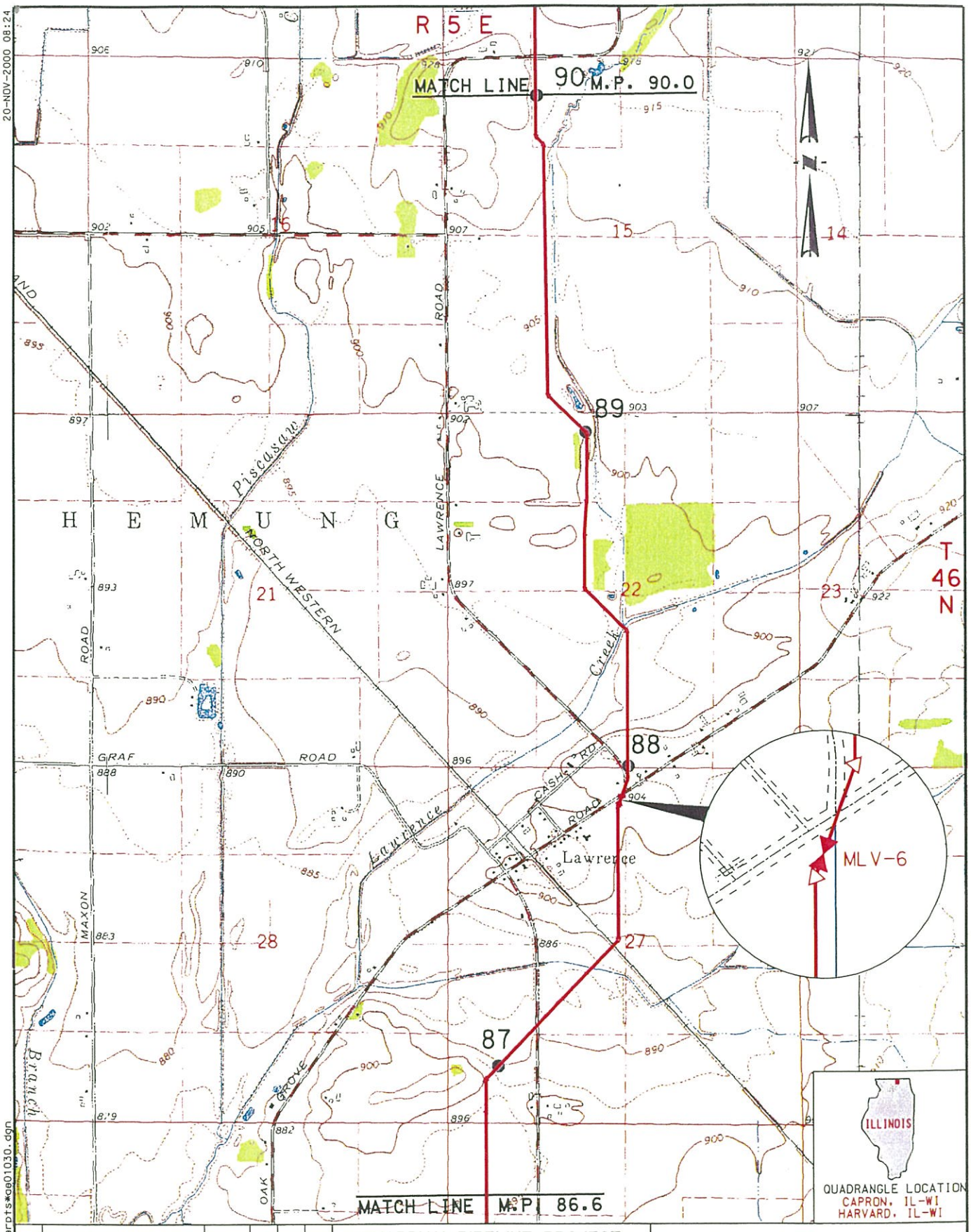
QUAD EXCERPT

M.P. 83.6 THRU M.P. 86.6

MC HENRY CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-029 | REV. NO. 1



REV:	DESCRIPTION	DATE	DRN	CHK	APPR
2	REMOVED ACCESS ROADS	11-16-00	WRB	MA	GCB
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

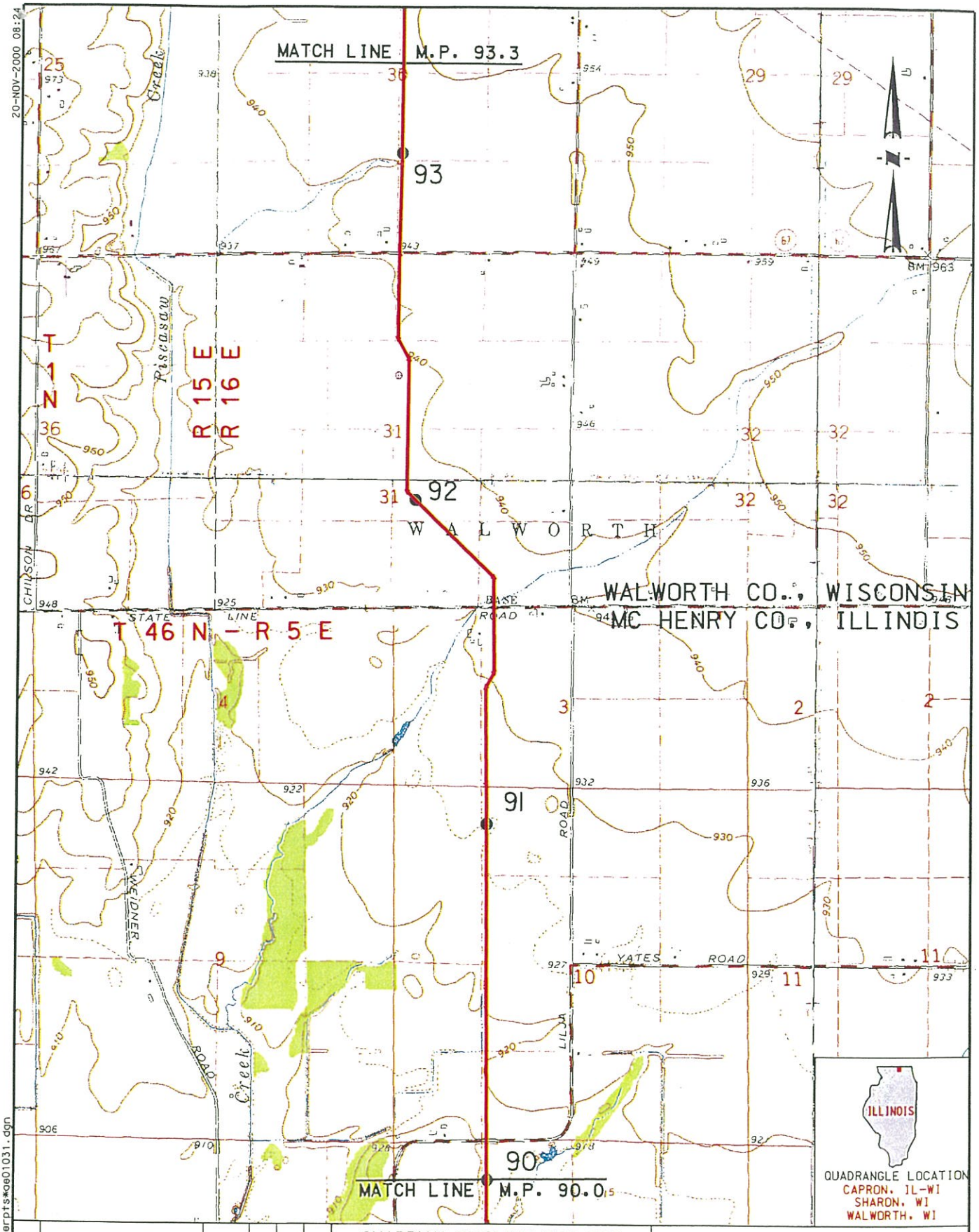
M.P. 86.6 THRU M.P. 90.0

MC HENRY CO. ILLINOIS

GUARDIAN PIPELINE

DWG. NO. GDA-E01-030 | REV. NO. 2

D:\WRDOST\Pr1\Quad Excerpts\qe01030.dgn 20-NOV-2000 08:24



20-NOV-2000 08:24

D:\#rbost\#Prl\#Quad Excerpts\#ge01031.dgn

REV:	DESCRIPTION	DATE	DRN	CHK	APPR
1	REVISED ROUTE	11-10-00	WRB	MA	GCB

DRN BY: GEM | DATE 7/22/99 | APPR BY: GCB | DATE 11/11/99

0 1000 2000 4000

BAR SCALE

GUARDIAN PIPELINE PROJECT

QUAD EXCERPT

M.P. 90.0 THRU M.P. 93.3
MC HENRY CO. ILLINOIS
WALWORTH CO. WISCONSIN

GUARDIAN PIPELINE

DWG. NO. GDA-E01-031 REV. NO. 1