Federal Energy Regulatory Commission

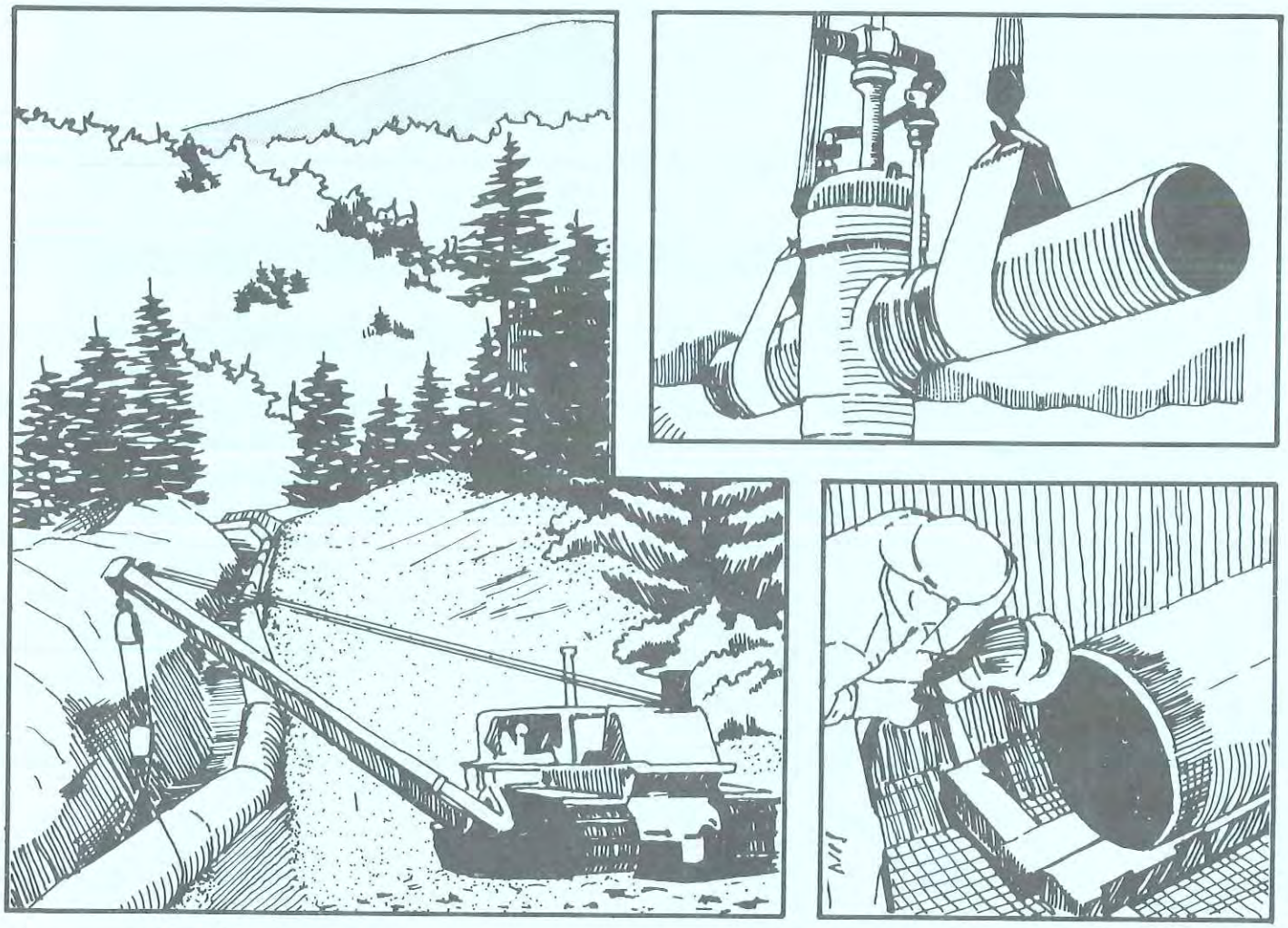
Office of Pipeline and Producer Regulation

June 1990

FERC/EIS-0054
Iroquois Gas Transmission System

Tennessee Gas Pipeline Company

Docket Nos. CP89-634-000
CP89-634-001
CP89-815-000
CP89-629-000
CP89-629-001



IROQUOIS / TENNESSEE PHASE I PIPELINE PROJECT

Final Environmental Impact Statement

Volume III
Comments and Responses
Maps

WASHINGTON, DC 20426

IROQUOIS/TENNESSEE PHASE I PIPELINE PROJECT

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Maps

LEAD AGENCY

FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF PIPELINE AND PRODUCER REGULATION

COOPERATING AGENCIES

U.S. ARMY CORPS OF ENGINEERS
U.S. ENVIRONMENTAL PROTECTION AGENCY
U.S. DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
U.S. NATIONAL PARK SERVICE
U.S. DEPARTMENT OF ENERGY

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IROQUOIS/TENNESSEE PIPELINE PROJECT
FINAL ENVIRONMENTAL IMPACT STATEMENT

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VOLUME II REGIONAL SYSTEM ALTERNATIVES

Note To Reader: The environmental analysis, comparison of alternatives and conclusions and recommendations of the regional system alternatives are contained in Volume II of the Iroquois/Tennessee Pipeline Project DEIS and incorporated herein by reference.

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IROQUOIS/TENNESSEE PIPELINE PROJECT
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1.0 INTRODUCTION

Throughout the preparation of the Iroquois/Tennessee Pipeline Project EIS, the FERC has communicated with and received input from many Federal, state and local agencies; elected representatives; environmental and citizens' organizations; industries; and individuals. Many of these individuals and organizations who were contacted participated in the public scoping meetings that were held at the following locations:

Squire Room, Albany Ramada Inn
1228 Western Avenue
Albany, NY
March 15, 1989

Danbury High School
43 Clapboard Road
Danbury, CT
March 16, 1989

Approximately 2,000 copies of the DEIS were distributed by mail to various organizations, government agencies, libraries, the media, and individuals including elected representatives. Supplemental distribution was made to the Federal Depository Library System through the Government Printing Office. During the public review period, which ended on February 16, 1990, three formal public meetings were conducted to solicit comments on the DEIS. These meetings were held in the following locations:

Danbury Hilton
and Danbury High School
Danbury, CT
January 8, 1990

Executive Room
Albany Ramada Inn
Albany, NY
January 10, 1990

University of Massachusetts
Campus Center, Room 168C
Amherst, MA
January 11, 1990

1.1 PUBLIC MEETING DISCUSSION AND STATEMENTS

A list of persons presenting oral comments or written statements at the public meetings is presented in Section 2.0. The public meeting comments are summarized and responded to in section 3.0 of this FEIS. The full public hearing transcripts have not been reprinted in the FEIS because they are a part of the public record and are available for public review at the FERC Public Reference and File Management Branch, Room 3300D, 941 North Capitol Street, Washington, DC, 20426.

1.2 PUBLIC COMMENT LETTERS

The FERC received 448 letters of commentary during the public review period in addition to the 118 oral comments and statements described in section 1.1. A list of organizations and persons who provided comment letters is presented in section 2.0. The public comments, summarized from letters, and responses to these letters are contained in section 3.0. The letters received have not been reprinted in the FEIS because of their volume. A complete sets of these letters is available for public review at the FERC Public Reference and File Management Branch, Room 3300D, 941 North Capitol Street, Washington, DC, 20426.

2.0 COMMENTOR/RESPONSE INDEX

Due to the number of public comments and, in many cases, their commonality, similar comments have been grouped and summarized. Category M includes persons who presented oral comments or submitted written statements at the public meetings. Organizations and individuals who provided comment letters during the comment period are listed in one of four categories: F-Federal; S-State; L-Local; and G-Private citizens and organization and industry representatives. In each case the document number identifies a discrete letter or oral testimony that can be reviewed at the location identified in section 1.0. The comment summary and response number identifies the specific location in Section 3.0 of this volume where the comment response can be found.

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M5	Graham Thompson	3.5-29
M6	Mae Schmidle, Connecticut General Assembly Rep. and President of Newtown Environmental Coalition	3.5-32, 3.8-12, 3.16-5
M7	Donna Hearn, Town of Dover, Planning Board	3.1-1, 3.13-15
M8	Clyde Nichols, Dover GASP	3.11-10, 3.11-5
M9	Margery Mill	3.13-15
M10	Donald Richardson	3.1-1, 3.1-8, 3.5-34
M11	Charles Sigsway	3.16-1, 3.16-3
M12	Donald Coons	3.5-29, 3.18-16
M13	S.D. Sholes	3.13-15, 3.5-28

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M84	Newtown Selectman Zita McMahon	3.5-32, 3.7-14, 3.13-98, 3.13-5
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G397	Laurie St. Amand	3.13-23, 3.13-24
G398	Stephanie Simasck	3.16-1
G399	Anna and John Jasensky	3.13-23
G400	Richard J. Mosback	3.13-24, 3.16-1, 3.16-3

3.0 COMMENT RESPONSES

3.1 PROJECT NEED, EVIDENTIARY HEARINGS, NO BUILD, AND ENERGY ALTERNATIVES

3.1-1 Comment Summary: Need for Iroquois

Comments were received questioning the need for additional natural gas supplies for the Northeast energy market. Commentors stated that there is no national energy plan to determine whether this natural gas is necessary and questioned the validity of the future market demand prepared by Iroquois, which supports the need for additional capacity, and the assumption that additional cogeneration facilities are desired.

Response:

As discussed in Volume I, sections 1.3 and 3.1, at the various public meetings that were held and in other documents prepared by FERC, the EIS does not provide an extensive analysis for the need of this project. Determination of need for the Project is being dealt with on a track parallel to the environmental analysis. Information from that analysis along with the environmental record will be placed before the Commission for their review and ultimate decision on this project. The EIS does, however, include a brief description of the underlying purpose and need for the proposal.

The EIS indicates that we conducted an analysis of the environmental consequences of not building the Northeast projects. A main focus of analysis was the forecast of the environmental effects, primarily on air quality, of not proceeding with the Northeast settlement projects. The analysis titled Environmental Consequences of not Building the Northeast Projects presents information on increased gas demands in the Northeast and identifies the volumes of alternative fuels that would be used if these demands were not supplied based on projections of gas demands for the Northeast.

Our analysis summarizes the opinions of the NYPSC, the DOE, Committee on Energy and Commerce, U.S. House of Representatives, the State of New Hampshire, the State of New York, Governor's Office, the State of Connecticut, Office of Policy and Management, the Secretary of Energy, and other industrial organizations that have conducted recent studies into the need for natural gas in the Northeast and the United States in general. All appear to indicate a continued and increased need for natural gas for various uses including electric power generation.

3.1-2 Comment Summary: Expansion of Existing Infrastructure

Comments were received regarding the ability of existing pipeline systems and suppliers to provide the needed natural gas supply. Several commentors indicated that the existing pipeline systems could provide the needed capacity and that excess capacity existed in the spring, summer, and fall months and winter season demand could be met by using peak shave. Statements were made that there is no additional natural gas pipeline need in Connecticut and that Louisiana gas is capable of supplying any additional demand to

Connecticut and, therefore, the economics of building this pipeline system cannot be justified.

Suggested alternatives included resolution of existing system constraints (e.g., improvement of gas reservoir facilities in the eastern states) to allow winter demand to be met; greater utilization of existing rights-of-way or replacement of smaller existing pipelines (with larger capacity lines); and development of more environmentally sensitive routing. One commentor indicated that the increased use of existing peaking facilities and peak-shaving supplies should be analyzed to increase the availability of natural gas to LDCs and other end users.

Response:

Our analysis shows that currently the physical capacity of the existing pipeline infrastructure could handle off-peak natural gas demands. Relatively minor construction could eliminate some of the potential supply constraints to specific locations. In other instances, major construction of facilities may be required. However, during peak demand periods, many of these constraints would remain and potentially force curtailments, as occurred in the Northeast in the month of December 1989.

For a discussion of alternatives that would provide greater utilization of existing utility/pipeline rights-of-way and consideration of alternative pipeline systems, please see Volume I, section 3.2, 3.4, and 3.5.

The New England Fuel Institute et al. (NEFI) indicated that "the available peaking capacity is far in excess of the amounts reported by the shippers" and that "these supplies must be considered and evaluated by FERC before it publishes its EIS..." We disagree with this position since these issues are not part of the EIS for this Project and will be considered by the Commission when the full record has been developed. This conclusion is further supported by the NYPSC and the DOE in their recent opinions and orders concerning these proceedings.

LNG, propane, and synthetic gases do not compete with natural gas directly in most markets, since they are used to supplement (peak-shave) natural gas only in peak demand periods and are not considered to be an alternative to increasing the availability of natural gas supplies in general market use. As discussed in our analysis in comment response 3.1-1, these peak demand supplies are not cost-competitive fuels in any of the four sectors discussed. Peak-shaving gas is injected into the distribution system on short notice during peak demand periods to satisfy demand needs. Availability of this type of service is limited by storage capacity and equipment necessary to provide pipeline available gas.

3.1-3 Comment Summary: Connecticut Use of Gas

Several comments were received concerning the inability of the property owners and communities along the pipeline right-of-way to obtain natural gas service. Commentors were concerned that these residents will suffer the environmental, property-value, and safety impact from the pipeline, without any benefits.

Response:

The proposed pipeline would traverse many small communities in New York and Connecticut to its terminus on Long Island. Many commentors from Connecticut were concerned that they would suffer the environmental effects of the pipeline project both during construction and operation, and yet would not benefit by direct use of the natural gas supply. Approximately 30 percent of the total gas transported through this system will supply local distribution companies and electric utilities in Connecticut. Further, since Iroquois is a transporter of natural gas, various towns and cities along the pipeline route have the opportunity to negotiate with Iroquois and gas producers for natural gas service.

3.1-4 Comment Summary: Canadian Dependability

Comments were received regarding the dependability of the Canadian component of the project and potential reliance on this source. Commentors requested discussion of the dependability of the proposed supply, as well as potential use of natural gas produced in the United States.

Response:

A recent study conducted by the R.J. Rudden Assoc., Inc., indicates that the Canadian supply of natural gas to the Northeast market has the following major advantages: 1) a willingness on the part of Canadian suppliers to sign long-term contracts, 2) a large 35:1 reserve to production ratio, 3) pricing and contract arrangements that are indexed to competitive fuels and their relative market shares, and 4) increased competition which resulted from additional supply sources. Additionally, DOE states, "Natural gas has been imported from Canada for many years and there has been no instance of a major natural gas supply interruption that would call into question Canada's future reliability as a supplier of natural gas to this country." (pg 32).

The security of the supply of natural gas is an issue that will be presented to the Commission for their consideration along with other issues, as discussed, but it is beyond the scope of this EIS. The Commission will deal with this issue in its proceedings and deliberation on this project.

3.1-5 Comment Summary: Volumes

Comments were received concerning the volumes of natural gas that would actually be supplied by this project. Questions raised included the consistency of the volume of natural gas use presented by the DEIS (533,900 vs. 577,000).

Response:

Based upon recent discussions with the applicant, the Iroquois/Tennessee Project will ultimately deliver a total of 575,900 Mcfd. Phase I construction consists of Iroquois and Tennessee providing a total natural gas delivery of 422,900 Mcfd, with later volumes provided by Algonquin and Tennessee for the total amount in Phase II.

3.1-6 Comment Summary: Alternative Use of Fuel

Commentors identified a need for discussion of the potential for a future shift in fuel use. Utilities indicate that both 1 and 2.2 percent sulfur residual fuel oil would be utilized if natural gas were not available.

Response:

As discussed in Volume I, section 3.1, No Action, and in detail in the study referenced in comment response 3.1-1, the potential shift by various utilities from the use of natural gas to sulfur containing residual fuel oil would increase SO_2 and NO_2 emissions. DOE has stated that its "...policy is to encourage competition in the energy marketplace. The oil and domestic gas industry cannot expect to be protected from open competition with other energy sources." (pg 27) The natural gas supplied by this proposed project would be used in two gas-demand situations: 1) to capture new energy markets, and 2) to replace other fuels currently in use. If this project is not constructed, alternative fuels used to replace natural gas in 1) above would lead to an increase in the use of alternative fuels and could possibly lead to a need for new infrastructure.

3.1-7 Comment Summary: Adequacy of Alternatives

Comments were received stating that there was an inadequate discussion of alternatives presented in the DEIS. Commentors suggested presenting alternatives in a comparative form to provide a clear basis of choice and to allow identification of the least environmentally damaging alternative.

Statements were received identifying insufficient presentation of non-construction alternatives and requesting expansion of information related to conservation measures, use of existing pipelines (including other gas companies), and alternative energy sources and fuels. Commentors questioned the range of alternatives presented and the cursory fashion in which alternatives were discussed in the EIS.

Commentors suggested that there was improper use of data in the EIS's alternatives analysis, with the 100 percent substitution used as an example. A comment also was received stating that the EIS's reference to the financial feasibility of alternatives evaluated is not appropriate for inclusion in an EIS.

Response:

Additional discussion of "non-construction" alternatives (e.g. conservation) is provided in comment response 3.1-8. Discussion of pipeline system and route alternatives is further expanded in Volume I, section 3.5. The reason that only the "100 percent replacement" scenario was used is that it assumes that the project is not constructed and the 195 trillion Btus of natural gas would not be supplied by the proposed Iroquois/Tennessee Project in future years. Therefore, fuels other than natural gas would be required to provide a "replacement" to this volume of natural gas.

The second scenario, "partial replacements" assumes only that off-peak natural gas would be utilized and alternative fuels would be used for energy supply. The "partial replacement" assumes that increased efficiency in utilization of off-peak supplies would provide a portion of the future natural gas demand for the residential/commercial, electric utility, and industrial markets. Under this scenario we assumed that 50 percent of the industrial demand, 25 percent of the electric utility demand, and only 10 percent of the residential/commercial demand would be provided using off-peak supplies via existing delivery and distribution systems. The remaining energy demand would be met using other fuels such as fuel oil and coal.

The "100 percent replacement" scenario represents the appropriate "worst case" situation for analysis by this EIS because it assumes that no increase in efficiency in the off-peak supply side and also provides a "worst case" situation for air quality analysis, since alternative fuels do not burn as cleanly as natural gas.

The comment concerning inclusion of financial considerations is generally appropriate and the FEIS incorporates the recommendation in Volume I, section 3.2.3. Cost of alternative facilities was not a factor in eliminating an alternative from environmental consideration. However, cost may be an appropriate consideration for this project if the cost penalty of an alternative clearly outweighs its environmental benefits or if there are less expensive alternatives to achieve the same purpose.

3.1-8 Comment Summary: Energy Alternatives

Comments were received about presentation and discussion of energy alternatives in the EIS.

The major concern commentors raised was energy conservation as a method of providing necessary future demands for natural gas. Commentors felt that utility company conservation and efficiency programs, some of which are already in place, could effectively reduce future demands for new supplies of natural gas. Many commentors referred to the Conservation Law Foundation's (CLF) efforts to be involved with expanding energy efficiency and conservation programs with utilities; in fact, the CLF submitted comments on this EIS citing the adoption of these programs by most New England utilities. Commentors stated that discussion of these programs and more detailed discussion of regional demand (and assumptions used in regional demand forecast) should be provided in the EIS. A concern was expressed that construction and resulting supply of additional natural gas in the pipeline's service area may dampen current and future conservation efforts.

Several commentors, including NEFI, identified that peak-shaving supplies of energy along with using excess available pipeline capacity entering the Northeast would be adequate as an alternative to meet proposed project demand. In addition, commentors requested additional information on use of synthetic fuel; development of solar, wind, and hydroelectric projects and technologies; the use of off-peak gas; and nuclear energy. Included in these comments was a statement that it is a false assumption that using gas instead of other fossil fuels outweighs the environmental impact of pipeline construction. Commentors also were concerned that the damaging impact of burning natural gas was not discussed.

Response:

The residents of the Northeast states are well known for their support of energy conservation and protection of their environment. Although individual comments reflected the commentors' personal perception/sensitivities regarding solutions to the energy demand, there was also a realistic approach to the need for continued use of energy, whether it be for current demand or for future expansion to accommodate growth. The continued conservation programs are a significant component in the efforts to meet the existing and future energy demand in the Northeast. As stated in Volume I, section 3.2.7, demand projections for the Northeast reflect the effects of ongoing energy conservation efforts and energy load management.

As discussed by the CLF and several other commentors, since the publication of Power to Spare (cited in the EIS) "...seven of Massachusetts' investor-owned electric utilities, both of Connecticut's utilities, Vermont's two largest utilities, and other utilities in Rhode Island and New Hampshire have all adopted, or are in the process of developing, electricity efficiency programs on a scale that has no precedent in the United States." This cooperative effort by the utilities, public, and interest groups is commendable and deserves recognition. The energy savings cited in the various comments are truly impressive. In fact, the comment submitted by NEFI, quantifies the potential energy savings that would result from replacing existing stock of residential furnaces with higher efficiency systems.

As identified in the EIS, there are existing technological, institutional, political, and social barriers that will inhibit complete implementation of energy conservation and load management programs. Although individual components of energy conservation programs, when implemented, will reduce energy demand, the effectiveness of energy conservation will be determined by the success rate for implementation of complete programs. We believe that energy conservation is not likely to be effective to the point that future energy demands, i.e., increased demand to accommodate regional growth, will not require continued upgrading and expansion of fuel delivery systems. This position on energy conservation is supported by the following statements:

> *"Conservation will not free us from the need for new energy facilities or solve all of our environmental problems. But conservation can help, and strong profitable conservation efforts can give new credibility to supply-side needs." - John W. Rowe, President and chief executive officer, New England Electric System.*

"...Further, while efforts should be and are being made in demand side management and conservation, these efforts are not an adequate substitute for a new supply." - State of New York Public Service Commission, Opinion No. 89-42.

Both the staff and DOE fully support the implementation of programs for energy conservation and load management as discussed above. Clean burning fuel would be for replacement in order to reduce sulfur emissions from other fossil fuels, or for accommodation of growth.

Peak-shaving facilities which typically consist of propane-air mixture, LNG, or SNG as stated in Volume I, section 3.2.5, are normally at capacity at the end of the spring-summer-fall refill period with regard to fuel storage. Currently, utilization of these fuels is for only brief periods during peak season demand and is not efficient nor economic since these facilities would remain idle during the majority of the energy year. Limitations exist with respect to both the storage capacity and the ability of equipment to generate the needed peak day loads as projected. Expansion of peak shave facilities would not provide an efficient method of accommodating current or increased (i.e., resulting from growth) energy demand in the Northeast compared to facilities designed to operate year-round and using a single fuel source. The combination of use of excess pipeline capacity and peak shaving does not appear to be reasonable considering the amount of additional infrastructure that would be necessary.

The Iroquois project would provide an additional 195 trillion Btus of energy annually to the Northeast energy market. The addition of 195 trillion Btus of energy annually into the Northeast energy market is a significant input, approximately 2.5 percent of the total energy demand in 1986. For any additional source of supply to this market area, additional facilities and a guaranteed supply of energy would be required. The Northeast has the lowest percentage of natural gas as a fuel of any market in the United States. Nationwide the average is 34 percent with the Northeast market in general with 25 percent and the New England market with only 19 percent. The New England market relies on oil for more than 50 percent of its energy mix. Additionally, natural gas pipelines provide flexibility of supply of energy to various sources with needs that continually change.

The proposed project would provide air quality benefits along with the minimal construction impact as identified in the EIS. The State of New York has recognized this advantage. The NYPSC in Opinion No. 89-42 states "... the use of clean-burning natural gas will assist the area in its continuing efforts to reduce sulfur emissions and to minimize acid rain."

3.1-9 <u>Comment Summary</u>: No Action Alternative

Comments were received regarding the treatment of the no action alternative in the EIS. Two primary issues were identified in the comments: 1) use of other fuels in the absence of the natural gas to be provided by this project, and 2) incomplete discussion of alternative impact in a comparative form.

In the absence of the natural gas that would be supplied by the proposed project, the EIS states that energy demand would be met through use of other fuels such as coal and fuel oil. The EIS does not clearly state whether additional gas could or would be provided by other suppliers (i.e., other pipeline systems).

With regard to the environmental evaluation presented for the no action alternative, only an air emission evaluation was conducted using the substitute fuels (e.g., coal and fuel oil). The EIS is incomplete in that it fails to evaluate or comparatively present the potential impact on other resource areas such as wetlands, water quality, vegetation and wildlife, socioeconomics, cultural resources, secondary and indirect impact, or cumulative impact that may be associated with the no action alterative.

Response:

The EIS does discuss these issues in the alternatives discussion in Volume I, section 3.1. NEPA, Section 1502.14, requires the alternatives analysis in the EIS to "include the alternative of no action." As discussed in the response to Forty Most Asked Questions Concerning CEQ's NEPA Regulations published in the Federal Register, March 23, 1981, Question 3, "What does the "no action" alternative include?...", two specific situations were discussed: 1) where ongoing programs initiated under existing legislation and regulations will continue, and 2) where actions involve Federal decisions on proposals for projects. This project falls into both situations. From the standpoint that a decision must be rendered on the proposed project, if the project is denied, no action means supplying projected energy needs by fuels other than those supplied by the proposed project. Therefore, the discussion presented in Volume I, section 3.1 is appropriate since that discussion centers on the use of fuels other than natural gas or a limited additional supply of natural gas. The environmental effects from taking no action would be compared to the proposed project or activity as discussed throughout this environmental document. Thus, as stated in Volume I, section 3.1, selection of the No Action Alternative would prevent all environmental impact associated with the construction and operation of the proposed project.

The development of infrastructure for other fuels is well documented elsewhere, and, in the case of fuel oil, is similar to the proposed pipeline. Our analysis of air emissions showed that the utilization of natural gas, when compared to other fuels that it would replace, would lower air pollution emissions in the project area.

3.1-10 Comment Summary: Application Changes

Iroquois identified that section 1.1 and table 1.1-1 should be modified to reflect changes in transportation capacities and contract agreements customers.

Response:

Sections of the EIS have been modified to reflect these changes as well as the changes to the Tennessee portion of the Project. The Commission will act upon the Iroquois/Tennessee Project when a full record has been developed and placed before it.

3.1-11 Comment Summary: Means Report

Several commentors stated that the Means report refutes the need for the Iroquois/Tennessee Project.

Response:

The Means report referenced, titled "Economic Analysis of Iroquois Gas Transmission System" was prepared by Mr. Robert C. Means, President of USI, Incorporated. Although Mr. Means does not identify on who's behalf he prepared the report, it was submitted to FERC as an attachment to the supplemental motion of the NEFI, an intervenor to this proceeding. This report will be reviewed by the FERC staff responsible for economics of proposed projects and their recommendation will be presented to the Commission for their consideration as the full record is developed for the Commission.

3.1-12 Comment Summary: Evidentiary Hearings

Numerous commentors stated that FERC should hold evidentiary hearings to receive testimony on the need for the Iroquois/Tennessee Project and on other related issues, such as those involving the environment.

Response:

As noted above regarding analysis of need, see comment response 3.1-1, the issue of whether to hold hearings on project need is beyond the scope of this EIS. The Commission will receive the full record that has been developed for their consideration, and at that time will determine whether further evidentiary hearings are necessary.

3.1-13 Comment Summary: Local Use of Gas

Several commentors stated that the natural gas that traverses their area is not available to them or their communities but that they must suffer the environmental consequences.

Response:

Although many residents would not directly benefit from the natural gas transported in the pipeline, there are secondary benefits to most residents when the natural gas is used to generate electricity or when the quality of the atmosphere improves through the replacement of dirtier burning fuels. See detailed response to project need in comment response 3.1-1.

3.1-14 Comment Summary: Canadian Imports

Several commentors wanted to know why Canadian natural gas would be imported into the Northeast.

Response:

This issue was addressed in the DOE Conditional Opinion and Order No. 368. The Canadian supply of natural gas to the Northeast market has the following major advantages: 1) a willingness on the part of Canadian suppliers to sign long-term contracts, 2) a large 35:1 reserve to production ratio, 3) pricing and contract arrangements that are indexed to

competitive fuels and their relative market shares, and 4) increased competition that results from additional supply sources.

3.1-15 Comment Summary: Excess Capacity and Costs

Commentors asked if the Iroquois/Tennessee Project would result in the introduction of costly excess capacity to the region at the expense of the consumer and the environment.

Response:

This comment is beyond the scope of the EIS process but will be considered by other FERC staff. Their recommendations will be submitted, along with the environmental analysis and other FERC recommendations, to the Commission. Once the Commission has reviewed the complete record, they will make a determination on the concern raised by this comment. However, in our discussion of existing system alternatives in this EIS, we determined that significant expansion of existing systems would be needed which tends to show that this increased capacity would not be in excess.

3.1-16 Comment Summary: Long Range Routing Plan

Rather than improving existing natural gas transportation systems, some commentors felt that the Iroquois/Tennessee Pipeline Project woud do nothing toward establishing a cohesive, long-term routing plan for major utilities in the Northeast.

Response:

This comment is beyond the scope of the EIS.

3.2 CONSTRUCTION, OPERATION, AND MAINTENANCE

3.2-1 Comment Summary Construction Activities

Comments were received regarding construction activities, right-of-way location and width, construction techniques, and restoration of the pipeline right-of-way after construction.

Several comments were received concerning blasting and its potential impact on nearby structures and the environment. Blasting activities and their location relative to existing structures and utilities were a concern. Specifically, concern was expressed regarding the location of potential blasting activities relative to quarry activities near Knox, New York (i.e., blasting) to affect the pipeline.

Concern was expressed for the future use of property traversed by the pipeline because of the burial depth of the pipeline and the right-of-way requirements. Commentors were concerned that burial depth could potentially constrain future development in that future improvements to property (e.g., drainage structures) may be complicated by the presence of the pipeline. The issue of right-of-way requirements included a question of the need for a 100-foot-wide right-of-way for the proposed pipeline when only a 5-foot separation between pipelines is necessary according to a pipeline company. Additionally, concern for public safety during the construction activities (i.e., recreational use of public areas and trail systems) was expressed.

Details of the construction process for various environments along the proposed right-of-way were requested. Additional information concerning procedures for construction in sensitive areas (e.g., stream crossing, wetlands, as well as existing structures and utilities) and in various terrain conditions (e.g., level areas, steep slopes, rock cliffs,) was requested.

Suggestions were made to limit the number and size of laydown areas in sensitive areas and to employ winter construction to minimize impact on soil. Use of concrete for weighting of pipe in wetland areas was questioned (corrosion of materials under these conditions) as well as potential for pipe coatings to be damaged during construction (during welding and pipe placement in rocky areas). Commentors also suggested that boring under streams and rivers would minimize impact relative to trenching, and should be discussed.

Comments also were received regarding potential for construction activities to cause increased erosion of steep slopes and the resulting potential for an impact on nearby surface water features. Commentors stated that timing of installation of erosion control measures and right-of-way clearing should be clarified. The issue of timing of construction from the time of application and the flexibility of the construction schedule (i.e., season of year) was also raised based on concerns that winter construction may or may not be the most appropriate season for minimizing impact on sensitive resources. Iroquois identified several points of clarification related to general pipeline construction techniques, which were included in section 2.2, Construction Procedures.

Response

Construction procedures, as discussed in section 2.2, identify requirements and procedures proposed to be used by Iroquois and Tennessee. These procedures include a discussion of right-of-way access, trenching, and blasting, as well as backfilling and restoration. The erosion and sedimentation control plan provided in appendix C, provides detailed measures we propose to minimize any impact from construction.

The owner of the quarry may require development of a seismic monitoring program to characterize local conditions and potential effects of blasting. Even if blasting is required in the vicinity during construction, no impact would be expected since typically the contractor would use time-delayed detonation of a series of charges or loading of less explosives in each hole to minimize the resulting ground motion and lessen the possibility of impact on the bedrock in the vicinity; this is more fully discussed in section 5.1.1.

Section 5.1.12.1 discusses the DOT Minimum Federal Safety Standards for minimum depth of burial. This depth of burial depends on the Class designation for each segment of pipeline. Within the area the commentor referred to, the minimum depth of burial is between 30 and 36 inches. Further, Iroquois has agreed to bury the pipeline 48 inches in cropland to minimize impact on farming and drainage systems (see section 5.1.2.1). Anything deeper must be negotiated between the property owner and the applicant.

As discussed in section 2.2.2.1, Iroquois anticipates use of a 100-foot right-of-way, including a 60-foot permanent right-of-way and a 40-foot-wide temporary work space. In section 7.3, mitigation measure 41, we have recommended a reduction in right-of-way width to 75 feet for construction except in agricultural areas where topsoil must be segregated and 50 feet for permanent maintenance. Iroquois has indicated that it cannot agree with a blanket use of 75-foot-wide right-of-way for construction along the entire pipeline. They have agreed to reduce the construction easement to 75 feet where physical constraints allow and will maintain a 60-foot-wide permanent right-of-way. However, we stand by our recommendation unless detailed, site-specific construction plans are provided for review and approval by the Director of OPPR.

The 5-foot separation between pipelines is normally only used in residential areas where there is a need for two pipelines and existing structures may preclude a wider separation. Typically, for cross-country pipelines, safety dictates a wider separation so that the space between the two pipelines can be used for placement of excavation materials. No construction vehicular traffic can typically traverse overtop of an existing pipeline during construction of a new pipeline.

As discussed in section 2.2.1, the pipeline would be constructed so that, to the extent possible, the area would be returned to pre-existing conditions and all fences and gates would be restored. For protection of the pipeline and public safety, no building construction nor the establishment of large trees would be allowed within the permanent right-of-way. The erosion and sedimentation control plan prepared by Iroquois would be incorporated into the Environmental Management and Construction Plans (within New York) and the Development and Management Plan (within Connecticut).

Iroquois proposes to initiate construction of the proposed system in the fall of 1990 with most likely five construction spreads rather than the four originally proposed, in order to

ensure construction completion within the 1991 season (see table 2.2.2-1). Construction of the Long Island Sound crossing is scheduled to begin January 1, 1991 and be completed by May 31, 1991. Section 2.2 was modified to reflect general construction procedure clarification as it relates to disposition of marketable timber, material placement surrounding pipeline, road crossings, river and stream crossings, and work areas in wetlands.

3.2-2 Comment Summary Debris Disposal

Comments were received regarding the methods in which solid wastes, construction debris, and excess fill would be disposed of along the pipeline right-of-way. Concerns were expressed that adequate landfill capacity may be limited along some segments of the pipeline.

Estimates of the quantity of waste, disposal location, and disposal fees were also requested, as well as the number of truck trips associated with excess materials disposal and the resulting impact on traffic, noise, and air quality. Commentors stated that the visual impact of leaving tree stumps and windrowing of excess rock material along the right-of-way needs to be evaluated, and that disposal or use of any usable timber should be at the discretion of the landowner.

Response

The applicant will dispose of all refuse in an approved and authorized manner in compliance with applicable laws and regulations. As discussed in section 2.6, FERC and the applicant have identified various agencies with permit or approval authority over these portions of the proposed project.

Recommendation 10, in section 7.3 has been added to reflect these comments and concerns.

3.2-3 Comment Summary Impact on Private Property

Comments were received concerning potential construction impact on private property. Issues of concern included the duration of construction activity and accompanying noise and air emissions, potential impact on water wells (groundwater quality/quantity yields), domestic septic systems, building foundations, and other structures. Other issues of concern included: potential future use of the site for construction of structures or septic fields; future inability to construct septic fields, etc.; on a parcel, because of pipeline location, which may severely inhibit future use or value; and a concern that a detailed process for property owner claims against Iroquois should be established.

Response

Pipeline construction will be a maximum of 3 months for any given segment of the Iroquois pipeline system. Construction impact related to the potential for erosion would be mitigated as described in sections 5.1.2. Effects on air quality would be temporary as discussed in section 5.1.8.

The applicant has adopted in its comments of February 15, 1990, recommendation 8 found in section 7.3, which indicates that they will avoid routing the pipeline close to wells or septic systems and will take into consideration any potential plans for expansion or relocation of these systems.

As discussed in section 5.1.1, blasting activities would be regulated by local agencies and individual towns must be notified prior to the occurrence of blasting. Seismic monitoring of blasts would be conducted to ensure that vibration limits are not exceeded. Each homeowner would be notified when blasting was scheduled near their structure as identified in section 7.3, recommendation 31.

The property owner would negotiate with the applicant as to the exact location of the pipeline relative to existing or proposed buildings or structures. The pipeline could be rerouted to accommodate any future construction to allow effective use of the property while providing adequate safety distance.

3.2-4 Comment Summary Huntington Landfill

Comments were received about routing and construction near the Town of Huntington landfill. Commentors were concerned that potential landfill gas migration may require implementation of special construction practices. Additionally, commentors stated that construction practices in sensitive areas (e.g., streams and wetlands), near historic structures or existing utility structures, and in areas of severe topography should be specifically defined. Commentors suggested winter construction and limiting of laydown areas in and/or near wetland and watercourse crossings, and requested that special "high tech" stream construction practices (borings) should be defined.

Response

Comment is noted. We have expanded our discussion of solid waste disposal sites in section 5.1.9.2 to include the landfill and monitoring wells in question. See responses to comments in section 3.13. Although another variation was investigated to avoid this area, it was eliminated; see response 3.5-38.

3.2-5 Comment Summary Operation and Maintenance Impact

Comments were received regarding long-term operation and maintenance impact associated with the project. Commentors requested that an operations and maintenance plan should be prepared and incorporated as a condition of approval.

Commentors were concerned that routine maintenance activity, i.e., vehicle traffic, may also lead to an increase in erosion and could potentially affect surface and groundwater resources. Concern also was expressed regarding the method of pipeline monitoring and maintenance (overflights and/or walkovers), and potential for increased ORV use along the right-of-way. A comment was received regarding the type of aircraft used for overflights and their resulting impact on residents and domestic animals. Concern was also expressed regarding the nature of "maintenance" activity for control of vegetation along the corridor. Reference to Tennessee's clearing of vegetation using a bulldozer was made

as was a comment on the resulting erosion and sedimentation problems that would follow this process. Commentors stated that if herbicides are to be used they should be in compliance with local and state requirements.

Limitation of the potential for property owners to utilize and landscape the right-of-way after construction was also a concern as well as the location of pipeline location and restriction signs.

Response

We do not agree with the characterization that the long-term risks associated with pipeline maintenance are unacceptable. It is not anticipated that the operation of the Iroquois/Tennessee Pipeline Project would result in long-term impact on either surface or groundwater resources, as discussed in section 5.1.3.

In response to comments on routine right-of-way inspection, the overflights that would be conducted on a regular basis would probably utilize fixed-wing aircraft. The low altitude of the overflight is necessary to allow visual inspection of the condition of the right-of-way corridor. Use of fixed-wing aircraft would greatly reduce the disturbance to the noise environment relative to use of helicopters. However, helicopters may be used to provide specific facility inspection. These inspections generally occur on a weekly basis and are of a short duration for any one location.

During routine maintenance, primarily for vegetation control, limited vehicle traffic would occur along the pipeline right-of-way. As identified in the operation and maintenance procedures in section 2.3, the applicants would periodically clear low growing vegetation along the pipeline right-of-way only to facilitate visual inspection from the air and to ensure access to the pipeline by cutting woody vegetation using hand-held power equipment. It is not intended that the right-of-way will be totally disrupted as indicated in the comment, since the applicant has agreed to the erosion control, revegetation, and maintenance plan presented in appendix C.

All fences and gates that were existing at the time of pipeline construction would be restored and maintained. As stated in section 5.1.9.2.1, the use of pipeline rights-of-way for recreational use such as ORVs would be subject to land owner approval. The applicant has indicated that several measures can be implemented to minimize access to the new cleared pipeline rights-of-way as identified in the above-referenced section.

Once the pipeline is installed and the right-of-way is returned to near normal condition there will be minimal restrictions on landscaping. The one major restriction would be that no large trees would be permitted to reestablish within 15 feet of the pipeline. As part of each property owner's agreement with the applicants, conditions for landscaping would be established.

The pipeline markers are typically located at roadways and fence lines directly above the pipeline. These posts and signs are provided for safety reasons and, though not attractive, are necessary and required by DOT.

3.2-6 Comment Summary Abandonment Plans

Comments were received regarding plans and responsibility for abandonment and rehabilitation of the pipeline and right-of-way at the end of the project life. Concern for public financial responsibility was expressed and potential Iroquois group funding mechanisms (i.e., escrow of funds) were raised. A question of the land ownership after abandonment was raised.

Response

It is typically assumed that a project of this type would have a life expectancy of 30 years; however, with modern pipeline construction techniques and maintenance procedures, a significantly greater life expectancy would be realistic. Natural gas supplies in Canada exceed the 30 years stated in the comment letter.

No plans for abandonment have been developed for Iroquois or Tennessee Projects. As discussed in section 2.5, buried pipeline that has reached its end of service life is typically internally cleaned, purged free of gas, isolated from internal connections, and sealed. Aboveground facilities would be removed, thus minimizing future surface disturbance. At the time any pipeline facility is proposed to be abandoned, an application pursuant to section 7(b) of the NGA must be filed with FERC. As part of the review, we would prepare a NEPA compliance document with regard to the proposed abandonment. The Commission would then make a decision regarding the applicant's request for abandonment. When the applicant has requested and received a Certificate from the Commission granting it authority to abandon the pipeline and associated services, the right-of-way would revert to the landowner following completion of abandonment activities.

3.2-7 Comment Summary Future Construction

Comments were received regarding potential for future construction impact if demand for natural gas increased and expansion of the project took place. Commentors also expressed concern about the construction of additional loops along the right-of-way, or other pipeline or utility systems, which would result in additional construction impact.

Response

Although expansion at this time is not contemplated, the primary method of expansion of pipeline capacity to transport natural gas would be through the addition of compressor stations or loops. The compressor stations would be located along the length of the pipeline. This method of increasing the pipeline's capacity is usually more cost-effective than other methods such as pipeline looping or installation a new pipeline system. Any future use of the project corridor for additional pipeline facilities would be subject to environmental review and require specific construction and maintenance mitigative measures intended to minimize environmental impact at such time when an application is filed before FERC.

3.2-8 Comment Summary Increase in Gas Deliveries

Because the Champlain Project currently does not have enough shippers to support the project as filed, several major shippers that previously requested service from Champlain have now requested service from the Iroquois/Tennessee Pipeline Project for delivery to Algonquin. These shippers and volumes requested are: Boston Gas (10,000 Mcfd [1991] and 10,000 Mcfd [1992]); Granite State (23,000 Mcfd [1991] and 23,000 Mcfd [1992]); Providence Gas Company (30,000 Mcfd [1992]); and New England Power (129,920 Mcfd [1991] and 129,920 Mcfd [1992]).

Connecticut Natural Gas Corporation has requested 15,198 Mcfd from Iroquois to Algonquin at Brookfield, Connecticut, and Algonquin will provide transportation for deliveries to Colonial Gas Company and Dartmouth Power Associates.

Response

The Iroquois, Tennessee, and Algonquin applications have been amended to reflect the shippers and volumes identified and the Commission will determine whether need exists to authorize any further expansion of these facilities at some time in the future.

3.2-9 Comment Summary Construction Start-up Date

One commentor wanted the project to start construction by September 30, 1990.

Response

Depending upon when a decision is rendered by the Commission, construction could begin before September 30, 1990.

3.3 NONJURISDICTIONAL FACILITIES

3.3-1 Comment Summary: Changes in Transportation Service

Iroquois and Tennessee identified changes in transportation service to shippers. These changes involve volumes of gas contracted for delivery, the addition and deletion of customers, and modification to the nonjurisdictional facilities to be constructed.

Response:

Comments noted. Table 1.1-1, proposed shippers and gas deliveries, and sections 2.1.4 and 5.2, describing related nonjurisdictional facilities and potential environmental effects, have been revised.

3.3-2 Comment Summary: Changes in Yankee Gas Facilities

One comment was received requesting clarification as to the volume of natural gas to be supplied by Iroquois to Yankee Gas Services Company (Yankee) and the extent of nonjurisdictional pipeline to be constructed in New Milford.

Response:

Iroquois modified both the volume of gas to be delivered to Yankee (from 59,000 to 34,000 Mcfd) and identified new locations for connecting with Yankee. A 0.2-mile-long nonjurisdictional pipeline would be constructed in New Milford beginning at MP 296.84 of the Iroquois mainline. Sections 2.1.4.1.2 and 5.2.1.1.1 have been modified accordingly.

3.3-3 Comment Summary: First Energy's Cogeneration Facility

The City of Shelton requested regulatory citation for the absence of detailed environmental analysis concerning First Energy's proposed 67.4-MW cogeneration facility described in section 2.1.4.1.6.

Response:

First Energy is no longer an Iroquois shipper. Therefore, the cogeneration facility proposed for Orange, Connecticut, is no longer part of the Iroquois/Tennessee Pipeline Project. The EIS has been revised accordingly.

3.3-4 Comment Summary: Concern Over Colfax Facility

RIDEM expressed concern over what they consider limited review of nonjurisdictional facilities; specifically the Colfax facility planned by Pawtucket Power Limited Partnership.

Response:

In the case of the Colfax Plant, serious concerns of the state should have been resolved prior to issuing its construction permits. We understand the facility is under construction and 60 percent complete with a planned in-service date of December 1990.

3.3-5 Comment Summary: Effects of Unsold Gas

One commentor noted that studies have not been completed for several nonjurisdictional cogeneration customers and questioned what would happen if these facilities did not receive [local or state] approval. The commentor also wanted to know what would happen with the then unneeded gas and who would pay.

Response:

Our recommendation 29 requires that Iroquois or Tennessee certify that all necessary permits to construct and operate the nonjurisdictional facilities have been obtained. In the event a customer, for whatever reason, terminates its agreement with either Iroquois or Tennessee, the applicants would most likely attempt to resell the excess transportation capacity to others. If no customer was found, the appropriate rates for the remaining customers would be determined in a subsequent ratemaking proceeding at FERC.

3.3-6 Comment Summary: Iroquois' Request for Recommendation Clarification

Iroquois commented about our recommendation that they certify that the nonjurisdictional customers have received all permits and approvals prior to gas delivery; specifically, they were concerned that our recommendation not be construed as affecting any right Iroquois may have to collect demand or reservation charges.

Response:

The certification requirement only pertains to responsibilities under NEPA. Any contractual relationships between the applicants and their customers are beyond the scope of this EIS.

3.3-7 Comment Summary: Roseton Plant Corrections

Iroquois commented that Central Hudson proposed to convert two boilers from oil to gas and the capacity of the Roseton Plant station is 600-MW not 660-MW.

Response:

Comment noted. Corrections have been incorporated into the EIS.

3.4 PERMITS AND APPROVALS

3.4-1 Comment Summary: COE Permit, General

Commentors wanted to know why the EIS does not say anything regarding the requirement for a permit from the COE.

Response:

In section 2.6 we discuss the permit and approval process with respect to the Clean Water Act, including compliance under Sections 401, 402, and 404. We identify that Section 404 permitting process is administered by the COE for all stream and wetland crossings and that the COE has determined that it would require Iroquois to obtain an individual Section 404. On April 9, 1990, Tennessee filed an application for a Section 404 permit with the COE. It is currently under review by the New York District. A decision for the Tennessee portion has not been reached, but it is possible that Tennessee would be able to use the Nationwide permit in lieu of an individual Section 404 permit. The requirements for a Section 10 permit pursuant to the Rivers and Harbors Act are also identified.

In our discussion of stream construction and mitigation procedures, section 5.1.3.2, we identify the need for compliance with COE permit requirements to minimize or prevent impact on surface waters. To further minimize impact on streams and wetlands, we have required each applicant to implement the "Stream and Wetland Construction and Mitigation Procedures" presented in appendix D and included in our recommendations in section 7.3., (see recommendation 5).

3.4-2 Comment Summary: Section 404 Permit for Tennessee

EPA questioned the reference to the statement that the Iroquois/Tennessee Project will require a single individual Section 404 permit, when the COE recently issued a public notice that only covered the Iroquois portion of the project.

Response:

The wording in section 2.6 was modified to reflect that the COE has determined that the Iroquois portion of the Iroquois/Tennessee Pipeline Project would require an individual Section 404 permit. On April 9, 1990, Tennessee filed an application for a Section 404 permit with the COE. It is currently under review by the New York District. A decision for the Tennessee portion has not been reached but it is possible that Tennessee would be able to use the Nationwide permit in lieu of an individual Section 404 permit.

3.4-3 Comment Summary: State Permit Requirements

The State of Connecticut and the New York State Task Force both provided clarification to their state permit requirements.

Response:

Section 2.6 and table 2.6-1 were modified to reflect these comments.

3.4-4 Comment Summary: New York State Article VII and SEQRA

The Town of Huntington commented that if Iroquois' Certificate of Environmental Compatibility and Public Need authorizing the construction and operation of the Iroquois natural gas pipeline pursuant to Article VII of the Public Service Law does not exempt Iroquois from the State Environmental Quality Review Act (SEQRA), delays could occur.

Response:

This topic is beyond the scope of the EIS and is a state matter.

3.4-5 Comment Summary: Connecticut Permitting Process

The commentor asked that the EIS address the critical path for securing approvals and permits in Connecticut, noting that it was stated in the EIS that route refinement was much further along in New York and "In Connecticut, refinement of the proposed Iroquois route has not been as extensive..."

Response:

The commentor failed to quote the following sentence which states, "Nevertheless, four route variations in Connecticut were evaluated by Iroquois after the original route was filed with the Commission. The proposed route through Connecticut incorporates two of those reroutes...". In response to DEIS comments many additional route refinements have been evaluated (see section 6.2). We do not feel that the critical path for approvals is that different between New York and Connecticut. The critical path is not an environmental issue.

3.4-6 Comment Summary: Connecticut Coastal Area Management

The HVA wanted to know why the DEIS did not address Connecticut Coastal Area Management consistency and stated that Iroquois has only filed worksheets but significant additional information is needed.

Response:

The DEIS did address the Connecticut and New York coastal zone management policies in sections 2.6 and 7.3. Additionally, throughout sections 4 and 5 discussions of the existing environment and impact on the coastal zone were discussed.

Section 2.6 has been updated to reflect the Iroquois filing to the Connecticut Department of Environmental Protection and section 5.1.9.2.2 contains a discussion of consistency with

the costal zone management policies. The additional information required is a matter between Iroquois and the state.

3.4-7 Comment Summary: Gravel Permit

One commentor stated that Connecticut would require a temporary operating permit if gravel crushing is required.

Response:

Comment accepted.

3.4-8 Comment Summary: Sherman Permits

One commentor indicated that local permits and plans would be required by the Town of Sherman for erosion control and sand and gravel regulations.

Response:

As stated in section 2.6, various local government agencies would exercise permit or approval authority over portions of the proposed project. Table 2.6-1 identifies a variety of local permits. For a pipeline project of this size, it would take many pages to list each specific local requirement for each jurisdiction. NEPA does not require such an effort.

3.4-9 Comment Summary: Huntington Permits

The Town of Huntington indicated that Iroquois must secure road crossing permits and coordinate with the Department of Traffic and Safety.

Response:

This local permit requirement is listed in table 2.6-1.

3.4-10 Comment Summary: Update Permit Section

Iroquois identified a number of suggested changes to section 2.6 concerning the need for permits for the project and provided an update on the status of permit acquisition.

Response:

Modifications were made to section 2.6 to reflect comments received by Iroquois and other agencies.

3.4-11 Comment Summary: General Local Permit

One commentor wanted to know if the applicants would apply for local permits prior to construction.

Response:

As discussed in section 2.6, applicants would apply for local permits.

3.5 SYSTEM AND ROUTE ALTERNATIVES

3.5-1 Comment Summary: Single Pipeline Alternatives

Many comments were received concerning the analysis of regional system alternatives and the conclusion that at least three single pipeline systems were identified as potentially environmentally superior to the construction of both the Iroquois/Tennessee and Champlain projects. The commentors expressed concern that FERC indicated that since no application for any single pipeline alternative was before the Commission, further consideration of single pipeline alternatives was not appropriate. Some commentors cited CEQ Guidelines that indicate that agencies shall include reasonable alternatives not within the jurisdiction of the lead agency. In addition, some commentors indicated that FERC "must demand" that the energy transportation companies come forth with applications for the single pipeline alternatives.

Response:

One of the purposes of an EIS is to "inform the decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts to enhance the quality of the human environment" (40 CFR Part 1502 [Environmental Impact Statement] §§ 1502.1 [Purpose]). The intent of the regulations is to ensure that potential environmental impacts associated with a proposed project are addressed in an EIS, so that the EIS can be used with other relevant materials to make decisions (40 CFR 1502.1). As such, the Commission will consider the EIS prepared by us as one of several factors in deciding if and how to certificate the proposed Iroquois/Tennessee Pipeline Project.

The comment that the alternatives were not addressed in the EIS is inaccurate. As required in Part 380.7 Regulations Implementing the National Environmental Policy Act for FERC, we identified four possible alternatives to the combined Iroquois/Tennessee and Champlain projects in the DEIS. An evaluation of those alternatives was conducted and we presented the potential impact of the proposed projects and the alternatives, although they are not directly under the Commission's authority to approve without supporting applications. We concluded that the Iroquois/GNE Single Pipeline Alternative or the Champlain-based Single Pipeline Alternative would be environmentally preferable to the construction of both the proposed projects. The Iroquois Mainline Single Pipeline Alternative, while not evaluated in detail, was also identified as perhaps being environmentally preferable because it would require fewer miles of pipeline than both of the projects.

However, the single pipeline alternatives were presented as alternatives to the construction of both the Iroquois/Tennessee and the Champlain pipeline systems. Subsequent to the publication of the DEIS, the Champlain project was indefinitely deferred. As such, the single pipeline alternatives are not directly comparable to the Iroquois/Tennessee Pipeline Project alone. In fact, the Iroquois/Tennessee Pipeline Project, as now proposed, closely resembles the Iroquois Mainline Single Pipeline Alternative, since former Champlain Pipeline Project customers have now contracted with Iroquois for transportation services.

FERC is under no obligation to demand applications be filed for alternatives. The majority of the comments relating to the single pipeline alternatives were from residents or organizations from Connecticut. Construction of any of the single pipeline alternatives would still require construction of the same amount of new pipeline construction in Connecticut as the Iroquois/Tennessee Pipeline Project.

3.5-2 Comment Summary: Single Pipeline Sponsorship

One commentor requested that the feasibility and/or the willingness of a sponsor to apply to FERC to construct an alternative pipeline system must be clarified. In addition, the commentor indicated that the feasibility of a single pipeline alternative must be determined before the selection of the preferred project.

Response:

All the alternatives which survived our analyses are technically feasible. We do not need to poll companies for a sponsor. FERC cannot require an applicant to construct a facility (e.g., one of the single pipeline facilities) for which it has not presented applications.

3.5-3 Comment Summary: Champlain-based Single Pipeline Alternative

One commentor requested that FERC make a full evaluation of the Champlain-based Single Pipeline Alternative to determine if it is environmentally superior to "the proposed route." The commentor is from the state of Connecticut and, therefore, it is assumed that "the proposed route" refers to the Iroquois/Tennessee route.

Response:

The Champlain-based Single Pipeline Alternative was not directly compared with, nor would it be appropriate to compare it with, only the Iroquois/Tennessee Pipeline Project, since the Champlain-based Single Pipeline Alternative included pipelines to provide gas transportation services to the customers of Iroquois and Tennessee as well as customers of Champlain and Algonquin. Even if the Champlain-based Single Pipeline Alternative were directly applicable to the Iroquois/Tennessee Pipeline Project, the Champlain-based Single Pipeline Alternative would require the construction of the same amount of new pipeline in Connecticut as the Iroquois/Tennessee Pipeline Project. Also, see the discussion of the Highgate/Algonquin Alternative in Volume 1, section 3.4.2.

3-5-4 Comment Summary: Environmentally Superior Alternatives

One commentor stated that it is FERC's responsibility to resolve all environmental concerns to the satisfaction of the local communities. That commentor also questioned whether there are environmentally superior alternatives to the two pipelines that have not been proposed.

Response:

It is the responsibility of FERC to consider the potential environmental impact associated with a proposed project in its decision concerning the certification of that project. Potential environmental impacts are one of several factors that must be considered in FERC's decision. It is not the responsibility of FERC to resolve all environmental concerns to the satisfaction of local communities even though we attempt to mitigate all potentially significant impacts we find.

We identified alternatives to the two pipelines as proposed by the applicants. These alternatives were not proposed by the applicants. We believe, and state in the EIS, that some of these alternatives are environmentally preferable to the two pipelines as proposed by the applicants.

Other alternatives to the two pipelines could undoubtedly be identified; however, NEPA does not require that all alternatives to a proposed project be identified or that the "best" alternative to a proposed project be selected. We identified a range of reasonable alternatives to the two proposed pipelines that would be environmentally preferable to those two pipelines.

3.5-5 Comment Summary: GNE Single Pipeline Route Concerns

Comments were received from local communities in Massachusetts and agencies and organizations concerned with the Quabbin Reservoir and other resources along the GNE Mainline component of the Iroquois/GNE Single Pipeline Alternative. The comments were primarily based on potential impact associated with the construction of that alternative route, the need for more detailed study, and further consideration of route variations.

Response:

The Iroquois/GNE Single Pipeline Alternative was originally evaluated as an alternative to the construction of both the Iroquois/Tennessee Pipeline Project and the Champlain Project. Because the Champlain Project has been indefinitely deferred, the Iroquois/GNE Single Pipeline Alternative is no longer relevant with respect to meeting the needs of both pipelines as originally proposed. The GNE Mainline is not a reasonable alternative to the Iroquois/Tennessee Pipeline Project and is not subject to further consideration.

3.5-6 Comment Summary: Niagara Import and Highgate Alternatives

Several commentors contended our evaluation of the Niagara Import Alternative and reasons for rejecting it were inadequate, especially since it offers the opportunity to use existing pipeline corridors as compared to the substantial amount of new right-of-way required for Iroquois' proposed route.

Response:

Based on DEIS comments and the reduced volumes of natural gas to be transported in Phase I of the Iroquois/Tennessee Pipeline Project, we reevaluated the Niagara Import and Highgate/Algonquin Alternatives which substantially follow existing utility rights-of-way or use existing pipeline systems. The Niagara Import Alternative would primarily loop Tennessee's 200 mainline (see Volume I, section 3.4.1). The Highgate/Algonquin Alternative would involve a new pipeline between Highgate, Vermont, and Mendon, Massachusetts, then backhaul deliveries through displacement along Algonquin's mainline through Massachusetts and Connecticut (see Volume I, section 3.4.2).

3.5-7 Comment Summary: New Jersey to Long Island Alternatives

HVA commented that the New Jersey to Long Island alternative was not seriously considered. They stated that the DEIS did not discuss the need for the gas on Long Island and if any pipeline to the area is needed, whether existing systems could handle the real load. They also felt that if we had taken into account existing systems to deliver the gas, the pipeline between Wright, New York, and Stratford, Connecticut, would not be needed. During scoping, many people commented on the need to avoid crossing Long Island Sound and suggested only that the gas be delivered to Long Island from the south. None of the commentors provided any other information.

Response:

The New Jersey to Long Island Alternative was designed to make all of the deliveries proposed by the applicants. The discussion in Volume I, section 3.4.3 has been modified and shows that the crossing of the Lower and Raritan Bays has potentially significant environmental impact associated with it as opposed to the proposed Long Island Sound crossing. The use of existing systems to deliver gas to Stratford for ultimate delivery by backhaul and displacement to customers was eliminated in Volume I, section 3.5.3.

3.5-8 Comment Summary: Tennessee and Algonquin Existing System Alternative

Comments were received that existing pipeline systems could be used or expanded. In particular, a number of commentors felt that since gas would be delivered to Consolidated Edison and Brooklyn Union Gas, nearby Tennessee and Algonquin pipelines should be used rather than create new right-of-way.

Response:

Our analysis determined that to provide the same capacity as the Iroquois/Tennessee Pipeline Project, existing gas transmission systems would be inadequate and would have to be expanded through new pipeline construction. This is especially true during peak demand periods (see response 3.1-2). We did evaluate additional pipeline construction along the existing systems of Tennessee and Algonquin as an alternative to the proposed project (see Volume I, sections 3.4.1 and 3.4.2).

3.5-9 Comment Summary: Viable Alternatives Not Chosen

Several commentors contended FERC has not fulfilled its responsibilities under NEPA by not being diligent in developing and pursuing environmentally superior routes. One commentor, HVA, believed that the alternatives chosen have been defined in such a way as to fail. Another commentor felt that the proposed Iroquois route primarily affects natural environments when man-dominated alternatives such as highways are available.

Response:

This comment is unfounded. We evaluated a range of alternatives as part of our analysis of Iroquois' proposed action. We identified four alternatives to both the Iroquois/Tennessee Pipeline Project and the Champlain Project. Two were identified as environmentally preferable to both projects. These alternatives are no longer meaningful since the Champlain Project has been indefinitely deferred (see response 3.5-1 and Volume I, section 3.3). We considered and reconsidered two system alternatives which are feasible and result in similar or potentially less environmental consequences to the proposed action (see Volume I, sections 3.4.1 and 3.4.2). Several of the above alternatives were considered in the same detail as the proposed action alternative. Not only are they diverse geographic alternatives, but some are cross-county with greater effects on the natural environment and some follow existing corridors which would have greater effects on the man-made environment.

Seven major alternative routes, which for the most part follow existing corridors, were evaluated and rejected. We considered each corridor which could be reasonably followed as an alternate location for the proposed Iroquois pipeline between the import point in St. Lawrence County and the northern shore of Long Island Sound. The analysis of each alternative combined original field and map analysis, review of pertinent policies, and results of other administrative proceedings which had evaluated the same or similar alternatives.

Each alternative was developed to the point at which an informed judgment could be made as to its reasonableness. If not considered reasonable, it was not developed in detail. Finally, we evaluated and recommended numerous variations in Iroquois' proposed route to avoid or minimize effects on site-specific resources.

3.5-10 Comment Summary: General Concern or Use of Existing Rights-of-Way

Many comments were received criticizing the lack of consideration given to use of existing right-of-way corridors. Many comments of a general nature suggested greater consideration be given to existing corridors to avoid impact on wetlands, homes, agricultural lands, and new visual scars. In these instances, no specific routes were identified for consideration.

Response:

This comment is unfounded. The document makes it clear that thorough consideration was given to the utilization, enlargement, or extension of existing pipeline, electric utility, highway, and railroad rights-of-way in accordance with Commission regulations (see

Volume I, section 3.5). The route proposed by Iroquois follows existing rights-of-way for 43 percent of its length. In addition, we evaluated, and in many locations recommended, additional use of existing rights-of-way (see table 5.1.9-2 and section 6.1). At other locations we evaluated existing pipeline right-of-way and electric transmission line rights-of-way and concluded that they were not environmentally preferable to the proposed route (see Volume I, sections 3.4.1, 3.4.2 and 3.5.1 to 3.5.3). Those corridors which we evaluated included those previously rejected by Iroquois as well as additional corridors.

3.5-11 Comment Summary: Consideration of Non-access-controlled Highways

Several commentors stated that while the DEIS contains evaluations of following major access-controlled highways (although some commentors had reservations about the scope of analysis), not enough consideration was given to locating the pipeline in secondary or non-access-controlled highways as a means of reducing impact, even if costs would be greater. One commentor pointed out that most nonjurisdictional pipelines are built in pre-existing rights-of-way because local gas companies do not have the power of eminent domain.

Response:

We disagree with the general concept that building large mainline gas pipelines in secondary or non-access-controlled highways (except in specialized cases) would result in less impact. The horizontal and vertical design criteria of large-diameter pipelines and secondary roadways are not usually compatible. A pipeline on a secondary road right-of-way would be forced to frequently deviate from the right-of-way due to the curvilinear nature of these roadways or adjacent features such as homes and businesses, bedrock, culverts, bridges, or wetlands. These constraints are more easily avoided and can result in less impact along a new cross country route sited to avoid such features. Local gas companies generally do not install pipelines of the size involved in this project.

If a mainline pipeline could be constructed substantially within the right-of-way of a secondary roadway, it would not be possible to use conventional means of maintaining the pipeline, such as pigging, and it would result in long-term constraints to future road maintenance/expansion and maintenance of existing municipal utilities in streets. Local utilities utilize these secondary roadways as their right-of-way for waterlines, local natural gas piping, sewer lines, electricity, etc. Frequent crossings and disruptions would occur. Also, if there is a future need for roadway or sewer system expansion, such expansion often occurs within the right-of-way of these secondary roadways. A major large-diameter pipeline could preclude future use of the right-of-way. It is true that in a small number of instances a pipeline could be constructed on the right-of-way of secondary roadway (or more likely the adjacent land). The DOT Minimum Federal Safety Standards in 49 CFR Part 192 would require a different classification of pipe to be used if the pipeline was located within roadway rights-of-way (see section 5.1.12.1). In addition, a pipeline in this class location would require higher safety factors in pipeline design, testing, and operation. Nonetheless we considered possible routes following non-access controlled highways such as SRs 7, 22, and 55 (see responses 3.5-14 and 3.5-30).

3.5-12 Comment Summary: Need Site-specific Review of Highways

Shelton and the HVA specifically criticized the consideration we gave to maximizing use of existing rights-of-way. They contended that: use of existing corridors is dismissed without supporting documentation, including coordination with Connecticut DOT; the use of existing rights-of-way depends on site-specific factors and this level of analysis was not undertaken; FERC's consultant relied totally on information generated by Iroquois; and highway use was evaluated only in the context of a total route alternative rather than as an opportunity to avoid site-specific problems encountered on a new right-of-way route.

Shelton requested we provide a cost-benefit analysis to support our statement that special design and construction practices required for placement of pipeline in highway rights-of-way can result in significantly higher cost, and HVA contended our reluctance to use existing right-of-way is based on cost. Finally, HVA commented that Bay State Gas Company's plan to construct a 10-inch-diameter lateral within the right-of-way of the Massachusetts Turnpike demonstrates that using highway right-of-way for natural gas pipelines is eminently feasible.

Response:

Use of highway rights-of-way for the location of natural gas pipelines was given serious consideration, but there are practical, physical, and policy constraints preventing implementation of such proposals both as primary route alignments or partial usages to avoid specific environmental problems as suggested by Shelton.

Access-controlled highways have one set of constraints (see evaluation of the Thruway, Taconic Parkway, I-684, and I-287 in Volume I, section 3.5.2). Non-access-controlled highways such as state, county, and local roadways have alignment and occupational constraints (see response 3.5-11). Shelton criticized us for not coordinating with the Connecticut DOT. We describe in detail FHA and related state policies affecting use of access-controlled highways in Volume I, section 3.5.2 and believe further coordination to be unnecessary. We do not believe that there are overriding policy constraints preventing use of non-access-controlled highways; rather other factors govern (see response 3.5-11).

Our evaluation of highway corridors went beyond Iroquois' analysis and included discussions with Federal and state highway officials as well as field review of typical highway constraints. If our evaluation of highway corridors had determined that they could be reasonable alternatives, we would have considered them in greater detail and on a more site-specific basis (see response 3.5-14).

The design and construction practices that would be required for pipeline accommodation within an access-controlled highway are described in Volume I, section 3.5.2. If these practices were required, they would increase costs over those incurred when constructing on a new cross-county route. These practices are presented for the reader's understanding of factors affecting feasibility and not as a primary decision variable in determining when a highway route would be reasonable. Bay State Gas Company's plan to construct a 4-mile-long segment of its proposed lateral within the right-of-way of the Massachusetts Turnpike to serve Mass Power is consistent with our conclusion that access-controlled highway right-of-way can accommodate pipelines in limited areas (see

Volume I, section 3.5.2). The physical features of the highway in this area do not pose any serious obstacles to accommodating the pipeline (Cencini, 1990). Also, the Massachusetts Turnpike Authority is an independent state authority with locational and operational policies that can differ from FHA and AASHTO policies with regard to utility accommodation (Fisk, 1990).

3.5-13 Comment Summary: Clarification of FHA Policies

The FHA asked that we clarify our discussion of Federal policies for accommodating utilities within the Interstate Highway System as they pertain to the state utility accommodation plan and consideration of effects on agricultural lands in determining exceptional cases.

Response:

Comment accepted. The discussion of Federal and state policy in Volume I, section 3.5.2 has been revised.

3.5-14 Comment Summary: Use of Taconic Parkway, I-684, and State Routes 22 and 55

Several comments were received suggesting that the use of the Taconic Parkway, I-684, and State Routes 22 and 55 should be considered.

Response:

As stated in response 3.5-12, the feasibility of locating the proposed facilities within highway rights-of-way was explored in Volume I, section 3.5.2 and rejected. For similar reasons, locating the proposed facility within the I-684 right-of-way also would not be feasible. Based on our previous analysis and a review of I-684, local constraints such as bridges, interchanges, wetlands, waterbodies, steep topography, and development would force the proposed gas pipeline off the highway right-of-way in many locations and result in substantial environmental effects. Use of the Taconic State Parkway also was considered and determined to be environmentally unacceptable.

Response 3.5-11 discusses the feasibility of using state and local highways and roads for the proposed gas pipeline. In general, such roads do not offer routing opportunities for the proposed facilities. Based on map review of state routes 55 and 22 from the Taconic Parkway to I-684, it appears that many residences, several small communities such as Aikens Corners and Sears Corners, steep topography, curvilinear alignment of the road, wetlands such as the Great Swamp, and numerous cross roads could be significantly affected by construction along these two roads. Also, because of the extent of such conditions along State Routes 22 and 55, considerable deviations on new rights-of-way would probably be required.

3.5-15 Comment Summary: Use of Thruway and I-287

A number of comments were received including several from Brookfield, Connecticut, suggesting the use of the Thruway and I-287 to a new crossing of Long Island Sound originating in Rye, New York.

Response:

As described in Volume I, section 3.5.2 of the DEIS, the feasibility of using highway rights-of-way was considered both in general and specifically with regard to the Thruway. Substantially following an interstate highway with the proposed pipeline is not feasible due to localized constraints and Federal/state requirements. However, because of numerous comments suggesting the feasibility of using I-287 in conjunction with the Thruway, we looked at this east-west highway which terminates in Rye, New York. Our evaluation is included in Volume I, section 3.5.2.1.

3.5-16 Comment Summary: More Direct Long Island Sound Crossing

Numerous comments have been received suggesting that a more direct route to Long Island Sound avoiding the large detour through Connecticut should be considered.

Response:

To respond to comments pertaining to the feasibility of a more direct route we revisited the approach taken by the applicant and then performed a map analysis and aerial reconnaissance of the northern shore of Long Island Sound including portions of New York and Connecticut. From our review of the route selection process employed we concluded that the approach as described by Iroquois was reasonable and appropriate. Existing land use, physical characteristics of the shore, and environmental constraints were factored into the selection of candidate landfall sites and finally a preferred landfall site. In total, five sites were considered from Stanford to Milford, Connecticut.

Consideration of potential onshore impact, such as home relocations, and offshore impact, such as disruption to important shellfish beds and a reduction in the length of the Long Island Sound crossing, led to the selection of the preferred landfall site. It should be noted that this selection process included sites that would have resulted in a more direct route, and possibly a shorter Long Island Sound crossing, but were eliminated due to potential for significant impact.

To generally verify the results of this process, we performed a two step map review of the northern shore of Long Island. The first step was to identify potential landfall areas based upon conditions observed on 1:250,000 USGS maps. It is readily apparent that this portion of the coast in New York and Connecticut is densely populated and highly developed. However, we did identify several areas that appeared less developed and might offer potential landfall sites.

We then reviewed the potential landfall areas on 1:25,000 scale USGS quads. In each location reviewed we found the available land on the shore to be very limited by development, recreational facilities, wetlands, and other environmental constraints. Also

dense development adjacent to the shore would result in significant impact in routing a pipeline to the shore.

Based on our review as described above, the landfall site in Milford is a reasonable location. Furthermore, a more direct route utilizing a landfall site to the southwest of Milford could result in substantial onshore impact.

3.5-17 Comment Summary: Use of Existing Railroad Right-of-Way

Use of existing railroad rights-of-way was suggested as a means of avoiding construction of new utility corridors. Our rejection of the Conrail Variation was especially criticized.

Response:

We agree that where railroad rights-of-way are practical to follow and result in fewer environmental effects they should be followed. The proposed Iroquois route follows existing railbeds in two locations for a distance of about 8 miles. Tennessee does not propose to utilize any railbed because it generally involves looping of existing pipelines; also, where a new lateral is required, no railbeds are located.

We considered several additional locations where Iroquois' proposed route could be modified to use more railbed totalling 22.5 miles (see Volume I, sections 3.6.31, 3.6.37.2, and 3.6.37.3). In each case we found that the physical constraints or operational impacts to active railbeds made the variation less than environmentally preferable. The Conrail Variation was re-evaluated; (see response 3.5-34 and Volume I, section 6.1.31).

3.5-18 Comment Summary: Litchfield, Connecticut Route

Several commentors felt that moving the pipeline to Dutchess County from Litchfield County to serve Central Hudson's Roseton Plant is not justified. They also questioned the need for any new pipeline to serve Roseton when there are existing pipelines to the plant.

Response:

We found that the proposed route and the original Litchfield route have similar environmental characteristics with no clearly superior advantages of one route over the other. However, our analysis determined that Central Hudson's existing pipelines do not have sufficient capacity to transport the volume of gas required for the Roseton Plant as suggested by one commentor. Without the proposed route, between 30-60 miles of new pipeline would be required to connect with Tennessee's existing system or the original Litchfield Route (see Volume I, section 3.5.5). Therefore, the proposed route, in conjunction with providing service to the Roseton Plant, is clearly superior.

3.5-19 Comment Summary: Massena-Marcy and Marcy-South Electric Transmission Line Corridors

The HVA criticized our rejection of the Massena-Marcy and Marcy-South transmission line routes (see Volume I, sections 3.5.1.1 and 3.5.1.2) on several accounts: the total Massena-Marcy route should have been considered; no detailed analysis was provided to identify deviations to avoid problem areas; the conclusion contradicts our statements in the Champlain DEIS advocating electric transmission line use; our concerns about safety are inconsistent with our Champlain DEIS statements; and we rely on Iroquois-supplied data.

Response:

Of the 317 miles of Massena-Marcy or Marcy-South transmission line that would be near the path of the proposed Iroquois route, we considered 283 miles in our alternatives analysis (see Volume I, figure 3.5.1-1). If we had not identified significant problems with the segments considered, we might have evaluated the remainder of these existing corridors. In concluding that either electric transmission line route would be clearly less preferable than Iroquois' proposed route, we combined field and map review with review of the extensive NYSPSC administrative records for the Iroquois pipeline and the Marcy-South transmission line.

HVA ignores, and, in some cases is confused over, our existing right-of-way conclusions and recommendations. HVA contends that the Champlain DEIS contains positive conclusions as to the proposed use by Champlain of existing powerline rights-of-way and goes even further by including a recommendation for locating the pipeline within the existing rights-of-way. HVA cites from the Champlain DEIS that 53 percent of the Champlain Project would be parallel and adjacent to existing rights-of-way, but ignores the fact that the Iroquois project is adjacent to a combination of existing rights-of-way for 47 percent of its length. Also they ignore the Iroquois EIS recommendation for locating the proposed pipeline within existing rights-of-way (see Iroquois/Tennessee DEIS table 5.1.9.2 and recommendation 4).

3.5-20 Comment Summary: Use of Marcy-South Line and Tennessee 300 Mainline

Two commentors suggested that the Marcy-South 345 kV Transmission Line route in conjunction with other existing corridors could be more preferable than Iroquois proposed route. One suggested following Tennessee's 300 Mainline in western Pennsylvania to a connection with the Marcy-South line thereby avoiding metropolitan areas. The other suggested following the Marcy-South line as far south as State Route 17 in New York to avoid the Catskill Mountains and Shawangunk Mountains.

Response:

We see no advantage to either suggestion. Using Tennessee's 300 Mainline requires substantial looping as well as looping the 200 Mainline and NFG system (see DEIS figure 3.4.1-1). Following the Marcy-South line was discussed in section 3.5.1.2 of the DEIS. Intersecting the powerline in Sullivan County, New York, would not avoid a crossing of the Shawangunk Mountains or construction through Connecticut (see Volume

I, figure 3.5.2-1). A second alternative suggesting the Marcy-South line be followed to its intersection with State Route 17 near the Delaware County border is without merit. This alternative would not avoid the Catskill Mountains and as mentioned above would still require crossing of the Shawangunk Mountains and construction in Connecticut.

3.5-21 Comment Summary: Modified Iroquois Alternative

The HVA criticized our rejection of their Modified Iroquois Alternative. Their alternative would deliver all but 65,000 Mcfd of gas from the Iroquois Mainline at Wright, New York, and then loop Tennessee's 200 Mainline as necessary east to the vicinity of Mendon, Massachusetts. The 65,000 Mcfd would be delivered to CNG's existing pipeline system for downstream delivery by Transco. They contended that the potential we cited for significant impact on residences as a basis for rejection was not valid. Also, they felt that our comparison of the southern segment of the proposed Iroquois pipeline to the GNE Mainline was flawed because the Tennessee facilities that would not be needed were not factored into the analysis and the 33.9-mile lateral pipeline to the Roseton Plant is not needed.

Response:

We believe a more feasible alternative than the one proposed by HVA is the Niagara Import Alternative. As discussed in our re-evaluation of the Niagara Import Alternative (see response 3.5-6 and Volume I, section 3.4.1) it could be environmentally preferable to the Iroquois/Tennessee Pipeline Project as proposed. HVA's assertion that the 33.9-mile-long lateral to the vicinity of the Roseton Plant required as part of the GNE Alternative would not be required is not correct. Nearby existing Central Hudson pipelines do not have adequate capacity, thereby requiring a new pipeline (see response 3.5-18). In addition, a new 7,700-hp compressor along Algonquin's system in Brookfield would be necessary. The need for this facility was identified during our reanalysis of the Niagara Import Alternative. HVA's comment that Tennessee's facilities should be factored into the comparison of the GNE Alternative with the southern segment of the Iroquois route is valid but does not significantly change the results of our analysis because of the significantly greater length of the GNE Alternative (see Volume I, section 3.5.4).

3.5-22 Comment Summary: Use of Central Hudson Existing Pipelines

We received a comment from a resident of Westport, Connecticut, suggesting that the proposed Iroquois pipeline connect with Central Hudson's A-H pipeline (see Volume I, figure 3.5.4-1), which in turn connects with other existing pipeline systems, thereby avoiding a new pipeline in Connecticut.

Response:

Central Hudson's A-H pipeline does not have sufficient capacity to carry the volume of gas proposed to be transported by Iroquois; therefore, the construction of a new pipeline would be required. Furthermore, we determined that paralleling the A-H pipeline could result in significant adverse environmental impact (see Volume I, section 3.5.4).

3.5-23 Comment Summary: Athens-New Milford Route

One commentor felt that the analyses we presented in the DEIS did not justify elimination of the Athens-New Milford Route.

Response:

Our rejection of the Athens-New Milford Route was based on the lack of environmentally superior routes on the west side of the Hudson River (see Volume I, figure 3.5.4-1). We evaluated a possible route following or adjacent to the Thruway and for the same reasons discussed in section 3.5.2 found it was not reasonable. We also evaluated an existing Central Hudson pipeline but found it equally unreasonable. Our analysis, as the commentor suggests, was not based solely on the number of interchanges encountered.

3.5-24 Comment Summary: Housatonic River Route

Several commentors requested that we give adequate consideration to laying the pipeline down the Housatonic River. The State of Connecticut acknowledged that there would be both advantages and disadvantages. Another commentor felt it was not seriously considered in the DEIS because of cost. Other commentors, including the Connecticut Department of Agriculture Division of Aquaculture and NMFS, objected to any alternative which would route the pipe down the Housatonic River.

Response:

In the DEIS we concluded there was no need to investigate running the pipe down the Housatonic River (p3-47). Our conclusion on this matter is unchanged and based on what we feel are obvious significant disadvantages associated with such a proposal. For purposes of this response we have assumed that one concept for routing a pipe down the Housatonic would originate at MP 323 of Iroquois' proposed route. Other concepts such as entering the river north of Lake Zoar, thereby requiring deviations to avoid dams or modification to dams, are unreasonable.

From MP 323 in Shelton the alternative would traverse east for 1.7 miles and enter the river just south of Indian Wells State Park. From that point it would be laid in the river for 13.6 miles before entering Long Island Sound.

The advantages of such a route would be to avoid residential developments, wetlands, and other areas identified in public comments such as Cranberry Pond, Roosevelt Forest, and Silver Sands State Park. However, there are several apparent significant disadvantages of such an alternative route that far outweigh its advantages:

- effects on winter flounder spawning, nursery and feeding habitat of winter flounder

- effects on productive recreational fisheries of bluefish, blackfish, summer flounder, and others

- effects on gillnet fishery for Atlantic menhaden on the lower Housatonic River
- effects on lower Housatonic shellfish beds
- conflicts with sand and gravel mining
- disturbance of sediments likely containing PCBs and other contaminants
- degradation of downstream water quality from turbidity and sedimentation during an extended in river construction period
- effects on tidal wetlands

Also, we have some significant regulatory concerns that would affect the practicality of such a route. Both NMFS and the Division of Aquaculture have stated strong objections to a Housatonic Route concluding that the environmental impacts far outweigh the benefits. We discussed this alternative with a Connecticut Coastal Resource Management Division representative who indicated that it was doubtful such a route would be considered consistent with the state's coastal zone management policies (Rothenberg, 1990).

Lastly, Iroquois submitted analysis of the feasibility of constructing a pipeline down the Housatonic River to the COE. Our review of their analysis indicates that while not insurmountable, constructing and operating the pipeline in the river poses serious problems including overhead clearances for construction, tidal flows, staging areas, protection from anchor damage, and working within the construction time window established by the COE and Connecticut. In addition, there would be significant operational hazards and maintenance concerns.

3.5-25 Comment Summary: Hudson River Route

One commentor objected to locating the pipeline in Connecticut and felt it should run down the Hudson River.

Response:

We do not consider this a reasonable alternative. Longitudinal placement of pipeline in a navigable river which is also a sensitive anadramous fishery that contains spawning populations of striped bass and federally endangered short-nosed sturgeon has obvious safety and environmental concerns, which should only be seriously considered if no reasonable alternative exists. We evaluated several alternatives that we consider to be more reasonable (see Volume I, section 3.5).

3.5-26 Comment Summary: Candlewood Lake and Lake Lillinonah Routes

Two commentors suggested routing the pipeline the length of Candlewood Lake or Lake Lillinonah. In addition, the extensive residential development at the southern end of Candlewood Lake would make siting a new route avoiding significant effects difficult.

Response:

For many of the same reasons described in responses 3.5-24 and 3.5-25 we feel that either suggested location is unreasonable. With the incorporation of the route variations and mitigation measures we have proposed for the corresponding segment of the proposed route between MPs 293 and 305, these alternatives do not warrant serious consideration.

3.5-27 Comment Summary: New York Routes Proposed by Iroquois

In their comments on the DEIS, Iroquois provided specific information concerning route variations in upstate New York. Based on further field review and consultations with landowners, Iroquois suggested 19 new route variations and the modification of 16 route variations presented in the DEIS. In addition, Iroquois provided additional information in support of three route variations that were under study at the time the DEIS was prepared. As a result of their field review, Iroquois has also taken exception to our recommendations in the DEIS concerning two route variations.

Response:

The route variations and modifications identified during the DEIS comment period are listed in Volume I, table 3.7-1. Our review of the new route variations and modifications presented by Iroquois is provided in section 6.2.

3.5-28 Comment Summary: New York Routes Proposed by Others

A number of landowners, local officials, and a New York State Senator provided comments concerning specific route variations in upstate New York.

A local landowner, Mr. George Cataldo, reiterated the concerns he raised during scoping pertaining to the proposed crossing of the Independence River, near MP 91. He contended that the existing electric transmission line right-of-way located approximately 0.7-mile to the east would provide an environmentally preferable river crossing location. The concerns raised by Mr. Cataldo were echoed by Dr. A. Meuser (GASP Coalition) and provided the impetus for a suggested alternative alignment presented as Anne's Independence River Alternate.

Several comments were received concerning the routing of the pipeline in the town of Russia, New York, in the vicinity of MP 126. These comments expressed the desire to have the pipeline routed through State Reforestation Land (SRL) along the previous alignment known as Line Change 38 to minimize impact on private properties. Some commentors noted that we have recommended variations through SRLs in other parts of the state and implied that we should do so in Herkimer County.

We received a comment from Ms. Debra Danner regarding her concerns about the crossing of her property by the proposed Iroquois pipeline near MP 216. First, she expressed concern about the potential effect of a pipeline on her property with respect to her plans for subdividing her property. Second, she inquired why the proposed pipeline could not parallel a pipeline "behind" her property.

A comment was received from Robert and Audrey Harris, and Mr. Dennis Bieleski requesting a modification to Anne's Alternate #3 in the vicinity of MP 264. The purpose of the modification was to limit impact on residential properties. The commentors also identified a second modification, which they requested be adopted in the event the first was not.

Comments were also received from several landowners in the area of the State Route 55 Variation in Dover (MPs 282.9 to 286.6). A number of individuals requested reconsideration of our rejection of the route variation, while an attorney for Dr. Joyce Brothers expressed her support of the proposed route in this area. Comments from the Dutchess County Environmental Management Council and Mr. Jay Rolison, a New York State Senator, also expressed their support of the route variation in the area.

Response:

The Independence River crossing and the State Route 55 Variation were discussed in the DEIS. Based on the continued public debate concerning the routing in these areas, we have further evaluated these routes and have provided additional discussions in Sections 6.2.11 and 6.2.45.

The basis for the commentors' recommended variation through the SRL, commonly known as Hinckley State Forest, is to avoid impact on local wells and spring-fed water supply systems. Most potential impact on groundwater would be temporary in nature and could be avoided or minimized by the use of standard or specific construction procedures specified by FERC in section 5.1.3.1. If blasting must be conducted, the blasting regulations and procedures described in sections 5.1.1.1 and 5.1.3.1.1 would be followed by Iroquois. We believe these precautions would adequately protect water well/spring supplies. Additional discussion of impact on groundwater and wells is provided in response 3.8-1. With respect to the issue of routing the pipeline through the SRL, an SRL does not inherently represent a routing opportunity or advantage. In those cases where we have recommended a variation through an SRL, we have based our recommendation on a thorough evaluation and comparison of the routes through and around the SRL. In the case of Herkimer County, the route through the SRL offers no inherent advantages.

Ms. Danner did not submit a specific route modification; however, we do feel that an alignment can be identified on her property that would minimize conflicts with her development plans. Iroquois is free to work with Ms. Danner, within the constraints of the Certificate, to develop an alignment for the pipeline that would minimize conflicts with the proposed development plans. Iroquois could route the pipeline adjacent to the property lines, within proposed streets or along proposed lot lines.

The existing pipeline right-of-way located "behind" her property is apparently a propane pipeline operated by Texas Eastern. According to our review, this right-of-way is located approximately 0.8-mile north of MP 216, and proceeds in an east-northeast direction; the Iroquois route proceeds in a southeasterly direction in this area. Therefore, this existing pipeline right-of-way does not provide any routing opportunities for the proposed Iroquois pipeline.

The first modification suggested by Mr. and Mrs. Harris would require the construction of approximately 0.5-mile of pipeline in a public roadway, which would result in greater construction impact than with the proposed route and would represent greater potential threats to integrity of the line than the location of the proposed route. The first modification would also require crossing steeper slopes than the proposed route. The second modification would require a shift of approximately 900 feet of the proposed route to a new location, with a maximum deviation of 50 feet from the proposed route. The second modification would be entirely on the same property owner and apparently has already been agreed to by Iroquois. We see no advantages represented by the first modification that would not be achieved with the second modification.

3.5-29 Comment Summary: Sherman, Connecticut Alternatives

Several comments were received suggesting alternative routes to minimize apparent impact on the Smoke Ridge subdivision and the Wimisink Sanctuary in Sherman, Connecticut.

Response:

Alternative routes that would make greater use of an existing electric transmission line right-of-way and the state routes 55/39 corridor are discussed in sections 6.2.46 and 6.2.47.

Several alternative alignments through the Smoke Ridge Subdivision were suggested by Mr. Hank Dutton, a local landowner and Chairman of the NW Sherman Civic Association. A review of these alignments indicates that one objective would be greater use of property lines, and another objective would be the avoidance of his property. In addition, one of the suggested alternatives would result in, a different crossing of the Appalachian Trail; a distinct disadvantage since the proposed crossing is acceptable to the NPS. Further review of Iroquois' proposed route through this area using property maps, aerial photographs, as well as a field review in March 1990, indicates that the proposed route would effectively balance the use of property lines and the potential disruption to existing and planned development with proper consideration of the topography.

A similar route was suggested by Mr. Richard Donohue, President, Naromi Land Trust, which would place the pipeline to the north of the Smoke Ridge subdivision, skirting the Wimisink wetland system parallel to SR 55. Our field review in this area indicated that this suggested alternative would cause significantly more disruption due to the side-slope north of Smoke Ridge and greater amount of clearing that would be required along SR 55.

3.5-30 Comment Summary: New Milford, Connecticut Alternatives

Several alternative alignments were suggested in New Milford by the State of Connecticut, the HVA, and the Town of New Milford. One alternative alignment would avoid impact on the Morrissey Preserve, Stilson Hill Road, Pine Knob, and the Kimberly-Clark landfill. Other suggested alternative alignments in New Milford include an alignment along SR 7 and alignments to the east of Fort Mountain that would avoid the Waste Management, Inc. Landfill, the Hill and Plain School, the Still River Meanders, and the Candlewood Valley Country Club.

Response:

Detailed evaluations of these route variations are provided in sections 6.2.49 through 6.2.53.

3.5-31 Comment Summary: Brookfield, Connecticut Alternatives

Several comments were received from landowners in Brookfield suggesting alternative alignments that would avoid their specific property concerns. Comments were also received from the HVA, the Town of Brookfield, and the Brookfield Inland Wetlands Commission suggesting alternatives that would avoid the Town of Brookfield and the Still River Preserve by making greater use of existing highway corridors or underwater alignments.

Response:

Specific concerns were raised in regard to the previously recommended Brookfield Wetland Variation. These concerns, as well as an alternative alignment proposed by Iroquois in this area, are discussed in detail in section 6.2.55.

The HVA and the Town of Brookfield suggested a general alignment along SR 7 with a continuation along the Conrail right-of-way, possibly making use of a short segment of SR 25 across the Still River. The problems associated with using the SR 7 corridor are discussed in section 6.3.52. The use of SR 25 to connect an alignment along SR 7 with the Conrail right-of-way is also considered infeasible; development is concentrated along SR 7 and 25 in this area, and the bridge spanning the Still River is narrow and offers no opportunity for the placement of the pipeline. The steep banks of the Still River at this location also preclude a crossing. No further consideration of these alternatives is provided. It should be noted that the route through Brookfield as currently proposed makes optimum use of existing rights-of-way including Conrail, a CL&P electric transmission line, and a 3,200-foot-long segment of the SR 7 expressway.

Alternative alignments along major highway rights-of-way in New York are discussed in Volume I, section 3.5.2, and responses (3.5-11, 3.5-12, 3.5-14 and 3.5-15). Alternative alignments that would use the Housatonic River or Candlewood Lake are discussed in responses 3.5-24 and 3.5-26.

A comment was also received from Mr. H. Buchta, a landowner at approximate MP 305, suggesting greater use of either the Conrail right-of-way or the abandoned

Housatonic railroad right-of-way. The intention of these alternative alignments would be to minimize infringement on private property and avoid potential impact on a spring-fed pond.

A field review of this area was conducted in March 1990 to review these suggested alignments. In this area (MPs 304 to 305), the proposed route leaves one Conrail right-of-way and joins another Conrail right-of-way. Greater use of the Conrail right-of-way to the west of Stony Hill Road is not feasible because of steep slopes that rise more than 30 feet located on both sides of the single track and inadequate work room along the tracks. The overpass for Stony Hill Road would also create a severe bottleneck at this location.

3.5-32 Comment Summary: Newtown, Connecticut Alternatives

Numerous comments were received from residents in the Osborn Hill section of Newtown suggesting that the route be shifted toward the east, an unspecified distance, into the Paugussett State Forest. This shift would provide greater distance between the residences bordering the forest and the proposed pipeline. Most comments referenced the specific area between MPs 314.7 and 316.4. Additional comments were received suggesting approval of the subdivision variations that were rejected in the DEIS pending further analysis by Iroquois. Finally, HVA and a local resident suggested an evaluation of the Conrail right-of-way through Newtown.

Response:

Additional analysis of the Fairfield County Subdivision Variations (i.e., Old Farm Hill Subdivision, Newtown Subdivision, Forest View Subdivision, and Monroe Subdivison) is provided in sections 6.2.58, 6.2.59, 6.2.62, and 6.2.63. Evaluations of the Newtown Conrail Variation and the Paugussett State Forest Variation are also provided in sections 6.2.57 and 6.2.60, respectively.

3.5-33 Comment Summary: Monroe, Connecticut Alternatives

Most comments concerning the alignment in the Town of Monroe pertained to the Conrail Variation (see response 3.5-34). The Town of Monroe also endorsed the use of the Monroe Subdivision Variation (if the Conrail Variation is rejected), and Connecticut requested a survey and realignment in the vicinity of Boys Halfway River caves.

Response:

The Monroe Subdivision Variation has been recommended for adoption (see section 6.2.63. In regard to the Boys Halfway River caves, the need for a realignment in this area has not been determined; however, a survey for rare plants and wildlife has been made a recommendation (see response 3.11-12 and section 7.3, recommendation 37).

3.5-34 Comment Summary: Conrail Variation

Many comments were received, primarily from residents and town officials from Shelton and Monroe, regarding the Conrail Variation as presented in the DEIS. Many of the commentors considered the analysis lacking in detail while others expressed concern that cost was a primary factor in its rejection. Still others felt that since the Conrail Variation represented an existing cleared right-of-way, it should definitely be used to preserve the natural resources in Monroe and Shelton.

Response:

Because of the extensive public interest in this variation we reevaluated it based on further field analyses and in-depth meetings held with both Conrail engineers and Iroquois representatives, especially regarding the constructibility of this route. Conrail has explicitly stated that they will not, for the safety of rail operations, the safety of their employees and surrounding residents, and for the integrity of the pipeline, relax their safety specifications regarding the separation of the pipeline encasement and the railway. This is explained in detail in revised section 6.2.61 of the EIS.

Town representatives of both Shelton and Monroe commented that if FERC were to approve the Conrail Variation, Iroquois could take the right-of-way by eminent domain and force Conrail to relax these specifications. Although FERC certification would allow eminent domain proceedings against privately owned Conrail, it would not allow Iroquois to ignore Conrail's safety specifications. Although it may be convenient to place the burden of not utilizing this railway corridor on Conrail's safety specifications, these specifications have been adopted by the American Railway Engineering Association for pipeline occupancy of railway corridors in the U.S. and cannot be ignored, for the safety of all involved. So the question becomes, "if the specifications must be adhered to, what are the engineering and construction consequences." Again, these are discussed in detail in section 6.2.61 of the EIS.

Although we have presented a more detailed evaluation of this potential variation, our conclusion is still the same as presented in the DEIS. It is simply not possible to safely construct a pipeline along this right-of-way for a variety of reasons, including: areas of impassable terrain, for which there are no alternative routes around; inability to guarantee slope stability, and, therefore, railbed and pipeline stability after construction; the requirement for extended stretches of encased pipeline; and the limited work space along this section that would require all spoil material to either be hauled offsite, stored and returned onsite, or to be laid over the existing tracks, which would require the entire rail line to be rebuilt. These factors would require Conrail to suspend operations for 6 to 12 months, which would economically affect Conrail as well as its customers throughout New England and the United States. We have made recommendations regarding the realignment of the proposed route through the Mean's Brook wetland, and the field studies to determine if Boys Halfway River Gorge would be affected by the proposed route.

3.5-35 Comment Summary: Shelton, Connecticut Alternatives

The HVA suggested several alternative alignments beginning in Shelton that would avoid Cranberry Pond. In addition, two local residents suggested alternative alignments to avoid potential impact on planned and existing development.

Response:

Alternative alignments suggested by the HVA to avoid Cranberry Pond are discussed in sections 6.2.65 and 6.2.66.

A local resident, Mr. R. Miner, voiced opposition to the proposed route or the Blakeman Variation between MPs 323 and 324. It was suggested that the pipeline should be routed along the existing electric powerlines to the north. This route was identified as the Powerline Variation and is evaluated in detail in Volume I, section 3.6.31. Due to constraints caused by the narrow right-of-way, topography, and existing development, it was determined that this alignment would not be feasible. In addition, Mr. Miner suggested that we coordinate with the Town of Shelton to make use of the Conrail corridor through downtown Shelton. We evaluated this corridor through Shelton in March 1990 and concluded that this alignment would not be feasible, even if the Conrail tracks were relocated. This area is heavily industrialized with several sections of an old canal; placement of a high-pressure natural gas pipeline in this area would be inadvisable.

Another alternative alignment was suggested by Mr. J. Welch on behalf of the Wells family. This suggested alignment would make use of the Constitution Boulevard - Superblock right-of-way from approximately MP 323.7. This alignment would then cross the Housatonic River at the intersection of Coram Road and Route 110, then proceed south along the Boston and Maine (Conrail) railroad on the east bank of the Housatonic River.

A similar alignment was evaluated by Iroquois in 1986 and was eliminated due to construction concerns. We evaluated this suggested alignment during field visits in March and April 1990 and agree that construction along this alignment would not be practical because of the steep grades and observed bedrock that would require blasting. Placement of the pipeline within the paved roadway would also be inadvisable. It should be noted that much of the proposed route that would be eliminated with this variation is located parallel and adjacent to an existing electric transmission line right-of-way.

3.5-36 Comment Summary: Stratford, Connecticut Alternatives

The Town of Stratford and the HVA suggested several alternative alignments that would either avoid the Town of Stratford completely by crossing the Housatonic River at a location in the Town of Shelton, or make greater use of an existing electric transmission line right-of-way through Stratford. These alternatives would avoid or minimize impact on Cranberry Pond. Several landowners also provided comments supporting the use of the Carroll Variation, and one landowner suggested an alternative alignment along the existing electric transmission line along James Farm Road.

Response:

The alternative alignments suggested by the town and the HVA are discussed in sections 6.2.64, 6.2.65, and 6.2.66. The discussion concerning greater use of the United Illuminating right-of-way is included in section 6.2.67. Our analysis and recommendation pertaining to the Carroll Variation is included in section 6.2.68.

A landowner in Stratford, Ms. A. Ballaro, also suggested that the pipeline be shifted from the west side of the electric powerline right-of-way at MP 328.3 to the east side to provide greater clearance from their residence. We examined this location in March 1990 and found that the proposed location of the pipeline along the west side of the right-of-way is the only feasible alignment in this area; the east side of the existing right-of-way is constrained by the steep slopes rising to James Farm Road and the existing and planned development along James Farm Road (see section 6.2.67).

3.5-37 Comment Summary: Milford, Connecticut Alternatives

The State of Connecticut provided comments describing the potential impacts associated with the recommended Milford Variation in the Town of Milford and again reiterated their request for the evaluation of any alignment down the Housatonic River. Similar comments were also received from HVA, the Town of Milford, and a representative of the JFK School PTO. The Milford Harbor Management Commission commented on the potential disruption to a designated transient anchorage and suggested an alternative off-shore alignment to the west of Charles Island. A local landowner also suggested that the alignment through Milford follow Bic Drive, rather than along the rear of properties along Ruth Ann Terrace.

Response:

An alignment down the Housatonic River is discussed in response 3.5-24. The alternative off-shore alignment suggested by the Milford Harbor Management Commission is discussed in Section 6.2.69.

Construction of the proposed pipeline either adjacent to or within the roadway of Bic Drive would be inadvisable, particularly when compared to the recommended Milford Variation. Bic Drive is a heavily-traveled roadway providing access to I-95 as well as a number of commercial (office) and industrial properties. Construction along this roadway would create severe traffic disruptions for both workers at the various businesses in the area as well as individuals traveling to and from I-95. In addition, the problems associated with pipeline construction along or within local roadways are well-documented (see response 3-5.11).

In comparison, the Milford Variation would traverse to the rear of the commercial properties along Bic Drive, making optimum use of parking areas and creating little, if any, disruption to the adjacent residences. In considering the Milford Variation we recognized the sensitivity of this alignment and have included several site-specific mitigation and restoration measures in our recommendation (see section 6.1.34).

3.5-38 Comment Summary: Long Island, New York Alternatives

A number of comments were received from residents and local officials on Long Island suggesting alternative alignments within and away from the existing LILCO electric transmission right-of-way. The Town of Huntington (Mr. R. Machtay, Director of Planning) and a local resident suggested alignment of the pipeline along the east side of the existing right-of-way generally between Seaside Court and Route 25A (approximately MP 361 to MP 362.5). This alignment would avoid or minimize impacts to the town's Wodaembarc Park-Preserve and a recent townhouse development on Wood Path Drive. Other residents suggested a deviation from the existing LILCO right-of-way at approximately MP 364.8 with alignment along the Long Island Railroad and the Sunken Meadow Parkway to avoid the Huntington Landfill. A representative of the Commack Civic Group (Mr. T. Califano) also suggested the use of an alternate landfall at the Shoreham nuclear plant or, Mr. Califano suggested, at a minimum, a realignment in the vicinity of the South Commack terminus to avoid a residential area.

Response:

The alternative alignment of the South Commack terminus is discussed in section 6.2.68.

The alternative alignment along the east side of the existing LILCO right-of-way in the vicinity of MP 361 (Wodeambarc Park-Preserve) was examined and found to be less acceptable than the proposed route. An alignment along the east side of the right-of-way would impact a stream and associated wetlands and possibly residences on Seaside Circle. An existing tree screen between the LILCO right-of-way and the golf course would also be disturbed or, alternately, the golf course would be disrupted.

A shift to the east side of the existing right-of-way is appropriate between MP 362.1 and MP 362.4 in order to minimize disruption to a recent townhouse development. This shift in the alignment will be incorporated into the proposed route.

We have reviewed the proposed alignment in the vicinity of the Huntington Landfill (MP 364.8 to MP 365.9) and find that the existing right-of-way provides ample opportunity to avoid the existing methane monitoring wells as well as the residences to the west and south. The existing LILCO right-of-way in this area is 200 feet wide; the proposed pipeline will be located in a vacant portion of the right-of-way to the west and south of the existing LILCO underground cables. Existing vegetation screens between the residences and the right-of-way will be maintained. In contrast, alignment along the railroad tracks would be constrained by the lack of available right-of-way and the topographic variation between the railroad and the landfill area to the south. The alignment along the Sunken Meadow Parkway would also require the clearing of at least a portion of the existing vegetation screen along the roadway.

The suggested landfall at the Shoreham nuclear facility has little merit since the plans for the possible conversion or abandonment of that facility are far from complete. Iroquois evaluated an alternatives landfall at Port Jefferson in their Resource Report No. 10-Alternatives and found that both the alternate marine route as well as the requirements for additional facilities and reinforcements to the LILCO system resulted in potentially greater impacts than the proposed route. We feel the proposed landfall at the Northport generating facility and the proposed alignment along the existing

LILCO right-of-way provide for maximum use of existing utility corridors and property and will result in minimal impact.

3.5-39 Comment Summary: Non-specific Route Alternatives

A number of individuals and organizations in Connecticut and the Town of New Milford raised non-specific routing concerns, suggesting that alternatives with less environmental impacts should have been identified, evaluated, and/or recommended. The implication was that the alternative evaluation presented in the DEIS was inadequate because environmentally superior alternatives were not identified or were not given adequate consideration.

Response:

A total of 78 route variations were identified in the DEIS, including 16 variations to the proposed Iroquois route in Connecticut. In response to comments on the DEIS, an additional 42 new route variations and 15 modifications to previous variations were identified. Those 42 variations and 15 modifications are presented and evaluated in section 6.2; of these, 18 are located in Connecticut. A number of other suggested alternative alignments are discussed in response to specific comments in this volume.

Our evaluation of route variations has been responsive to citizens and elected officials, as well as the resource issues identified in Connecticut. The fact that we did not identify and evaluate specific alternatives to resources in every case does not mean our evaluation of alternatives was inadequate; in many instances, the identified resources would not be directly affected by the pipeline, while in other instances, site-specific recommendations adequately address the potential impacts. In other words, identification of specific resource concerns did not, in all instances, justify the identification and adoption of route variations.

In some cases, our evaluation of the route variations indicated the proposed route was superior, in which case the variation was not recommended. In several instances, inadequate information was available to justify a recommendation in the DEIS (e.g., Fairfield County Subdivision Variations, Section 6.1.29); further evaluation of these variations is provided in the FEIS. In all cases, our evaluation of route variations provided the necessary comparative analysis and supports our conclusion that the proposed route, incorporating the specific, recommended variations presented in Sections 6.1 and 6.2, represents the environmentally preferred alignment for the proposed pipeline.

3.5-40 Comment Summary: Wallingford, Connecticut Alternatives

The State of Connecticut indicated their disagreement with our rejection of the Wallingford Landfill Variation on Tennessee's proposed North Haven Extension. The state supported the variation in order to avoid potential loss of landfill capacity.

Response:

Tennessee has amended their application to FERC and has withdrawn the North Haven Extension, thereby making this variation a moot issue. FERC will consider the state's comments should this alignment be presented again in the future.

3.6 GEOLOGIC HAZARDS AND BLASTING

3.6-1 Comment Summary: Effects of Blasting

There were 21 comments concerning blasting effects on foundations, wells, septic systems, the disruption of everyday life, and the degradation of regional aesthetics from the construction of the proposed pipeline near New Milford, Monroe, Hamden, Shelton, Gaylordsville, Stratford, Brookfield, Brookfield Center, and Sandy Hook, Connecticut. The request was made that more details of the precautionary measures with regard to blasting be provided including the extent of pre-blast surveys, control of charges, insurance/bonding, and the period of responsibility of the applicant for private property.

Two comments were received from the Town of Monroe, Connecticut, concerned with the likelihood of blasting in Monroe. In their opinion, there is less probability of blasting associated with the Conrail Variation near Monroe and subsequently less impact.

Response:

Specific details describing the precautionary measures to be applied in connection with pipeline construction blasting as well as the applicable Federal and state standards and regulations are listed in section 5.1.1.1 of the EIS. The text has been revised to specifically include wells and septic systems and structures in connection with pre-and post-blasting surveys described for the EIS. The responsibility of polling homeowners as to whether pre- and post-blasting inspections are requested or declined is given to the applicant and would be done on a one-to-one basis. Insurance and bonding requirements associated with blasting are contained in the regulations governing blasting. The applicants would be required to abide by the regulations. Both applicants have either agreed to follow blasting procedures that are at least as stringent as those discussed in the sections above, or are required to conform to these procedures as described in section 7.3, recommendation 31.

Reference is made to studies conducted by the USBM (Siskind and Fumanti, 1974), which show that blasting in rock generally produces rock fractures within a very small radius surrounding the shot hole. If a typical shot hole with a 4-inch-diameter is used, rock fractures can be expected to reach a distance of 5 to 55 times the shot hole radius, or 1 to 9 feet, depending on the hardness of the rock encountered. Consequently, rock fracturing beyond the limits of the proposed construction right-of-way (75 feet) would be highly unlikely.

The comment made concerning the likelihood of blasting in Monroe stated that, from independent analysis, it was determined that "34% of the soils which would be crossed in Monroe have at least 10% exposed bedrock, meaning far less than 5 feet of soil overlying bedrock." This information supports our data, summarized in table 4.1.1-1, which concludes that less than 5 feet of soil cover occurs for the Monroe area (MP 317 - 321) except for slightly thicker (up to 10 feet) areas in valleys.

The Conrail Variation was re-evaluated in section 6.2-61. Comments were noted concerning the amounts of blasting associated with the Conrail Variation relative to the applicants proposed right-of-way. We believe that due to the predominately steeper adjacent terrain, the immediate concern of sedimentation into the Housatonic River, the

possibility of slope instability associated with additional construction along the existing Conrail right-of-way, and the likelihood of large amounts of additional blasting being associated with pipeline construction along this right-of-way, the Conrail Variation is less advantageous than the proposed route.

3.6-2 Comment Summary: Wallingford Lateral Blasting

One comment from the Town of Cheshire, Connecticut, was received indicating that an error was made on page 5-23 of the DEIS. The error concerned the length of the proposed Tennessee Wallingford Lateral that would likely require blasting during construction.

Response:

Comment acknowledged. Thank you for pointing out this typographic error. The correct length of the Wallingford Lateral that would likely require blasting is 2.8 miles and the FEIS has been corrected.

3.6-3 Comment Summary: Potential for Seismicity

Ten comments were received from HVA, and the Towns of Brookfield, Stratford, and Shelton, Connecticut concerned with the potential for seismicity. Specifically, the fault zone known formally as Cameron's Line was mentioned as a geological hazard to the integrity of the proposed pipeline. The COE suggested that the discussion of the potential for damaging earthquakes in section 5.1.1.1.2 be simplified.

Response:

The topics of seismicity and potential for surface ruptures are discussed in the EIS in sections 4.1.1.3 and 5.1.1.1.2 (see also figure 4.1.1-1). Contained within these discussions of seismicity are numerous recent references for the region incorporating the proposed pipeline. The Cameron's Line region has not had historical surface ground ruptures or seismic events that even approach the proposed pipeline's design level of intensity IX on the Modified Mercalli scale, neither from Cameron's Line or from any regional seismic events. Fault zones can commonly be inactive depending on existing geologic conditions. The historical seismic record for the region of high intensity events extends over a 300 year period and supports our conclusions.

Based on the requirements of the proposed project, there is insufficient cause to justify FERC recommending further research specifically on Cameron's Line. Refer to section 5.1.12.1 on reliability and safety of gas transmission pipelines and subsequent sections for background information, discussions, and statistics relevant to the effects of pipeline rupture. The applicants would apply emergency preparedness procedures outlined by the Federal Emergency Management Agency (FEMA) in events such as damaging earthquakes.

3.6-4 Comment Summary: Cross Rocks Copper Mine Effects

One comment was received from the Cheshire, Connecticut, area concerned with how the Wallingford Lateral might affect the Cross Rocks Copper Mine site.

Response:

We identified no active mining at this site. This was re-confirmed through conversations with CTDEC Natural Resources Center. We have also responded to comments on the site in relation to this site's potential cultural impact (see response 3.15-17).

3.6-5 Comment Summary: Liquefaction Clarification Needed

Iroquois commented that clarification was needed to indicate that no areas prone to liquefaction exist along the proposed route.

Response:

Thank you for the comment. This specific geologic/soils-related hazard is discussed in section 5.1.1.1.2.

3.6-6 Comment Summary: Rocky River Quarry Effects

Three comments were received from New Milford, Connecticut, concerned with the intersection of the proposed right-of-way and the Rocky River Quarry, an active sand and gravel mining operation.

Response:

Comments noted. This mining operation is referenced in table 4.1.1-2 of the EIS. The summary of the impact relating to mining operations is found in section 5.1.1.1.1 of the EIS. The Rocky River sand and gravel operation is the only mining operation crossed by the pipeline. The applicant would have to negotiate with the mining lease holders or owners during right-of-way acquisition.

3.6-7 Comment Summary: Amounts of Blasted Rock

A comment was received from the City of Shelton, Connecticut, requesting clarification on volume estimations of blasted rock associated with pipeline construction.

Response:

We recognize that the best available information is insufficient to adequately address the issues of detailed and site-specific disposal of excavated rock. Rather than unrealistically constraining the applicant during construction with required means of disposal, we have outlined the specific areas in which this excess rock may not be used. The applicant is then free to use the excess rock as a useful by-product for public road access pads,

development of affected lands with landowner discretion, and in building necessary erosion control outfall areas.

Refer to "Disposal of Excavated Materials" in section 5.1.1.1 for further discussion.

For the purposes of evaluating the pipeline alternatives, the plan-view lengths of the areas likely to require construction blasting were used.

3.6-8 Comment Summary: Need for Performance Bonds

The FWS recommended that FERC require the applicants to post performance bonds in appropriate amounts in relation to pipeline construction.

Response:

Comment noted. We believe that existing requirements by specific communities with respect to performance bonding for construction projects adequately resolve this issue.

3.6-9 Comment Summary: More Detail Needed on Blasting Mitigation

A comment was received from the HVA about a statement it claims we made in connection with blasting mitigation that with the best management practices all problems can be eliminated. The HVA requested that a more detailed report of the potential problems that could result from pipeline construction blasting be made.

Response:

We reject the HVA's interpretation of the discussion in section 5.1.1 referring to potential blasting effects and associated mitigation methods as casually denying their potential influences on public and private concerns. Mitigation measures lessen the adverse effects associated with a process, but do not prevent or eliminate them. We agree with the implication the HVA has made that the effects of pipeline construction blasting cannot be eliminated from the vicinity totally and have made numerous statements to this effect in section 5.1.1.1. Additional specific revisions have been added (see response 3.6-1) concerning pre- and post-blasting surveys, water wells, septic systems, documentation, and payment of damages.

3.7 EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN

3.7-1 Comment Summary: Additional Erosion Control Measures Needed

Iroquois, Tennessee, the NYSTF and other Federal, state, and local agencies have provided comments on the soils discussion in section 5.1.2 and our recommended Erosion Control, Revegetation, and Maintenance Plan (appendix C) and have recommended additional measures for mitigating soil erosion and compaction.

Response:

We have reviewed all these comments and have incorporated appropriate revisions to our Plan and section 5.1.2. Because of the number of detailed comments received from the applicants and the NYSTF, responses to these comments have been discussed and responded to in section 5.1.2. Other reviewers' comments have been summarized and responded to in subsequent responses within this section.

3.7-2 Comment Summary: Concern for Severe Erosion Problems

Seven comments were received concerned with the potential for severe erosion problems associated with the proposed construction of the pipeline. Two comments, concerned with the Still River and the Conrail railroad tracks near Shelton and Monroe, Connecticut. One comment received from Dutchess County, New York, was concerned with intermittent steep slopes from MPs 276 to 281 where erosion, sedimentation, and visual impact were not specifically addressed, in their opinion. A similar concern was noted near Blanchard Lake on Long Island; Union Vale, New York; and New Milford, Connecticut.

Response:

The discussion of high erosion potential in the vicinity of the Still River near Brookfield, Connecticut, was incorporated into Erosion and Sedimentation Control Requirements, subsection 5.1.2.1.1, under the subheading "Slope Breakers" where areas of steep slopes have been addressed. Mention of the steep slopes near the town of Dover in Dutchess County, New York, was discussed in conjunction with Erosion and Sedimentation Control Requirements, section 5.1.2.1.1 under the subheading of "Slope Breakers" where it was recognized that there would be high potential for water erosion in this region. The erosion control, revegetation, and maintenance plan discussed in appendix C reviews many of the specific preventative and mitigative measures that would be applied before, during, and after pipeline construction. Additional site-specific mitigative measures can be incorporated into local site-specific erosion and sedimentation control plans as discussed in section 5.1.2.1 and developed in conjunction with final pipeline design and routing.

3.7-3 Comment Summary: Need for Detailed Erosion Control Plans

Six comments were received from the HVA; Brookfield, Monroe, and Shelton, Connecticut; St. Lawrence County, New York; and the Town of Huntington, New York, mentioning the need for detailed-localized sediment and erosion control plans that complied with state and local requirements.

Response:

Comment noted. The EIS states that the primary need for erosion and sedimentation control and maintenance planning is to provide the background information necessary to generate project-wide recommendations and requirements to form adherence guidelines for the applicant as well as public and private concerns. We agree that there is a definite need for local or site-specific input beyond project-wide considerations associated with projects of this scale. Many recommendations, requirements, and site-specific input have been incorporated.

Reference is made to section 5.1.2 in which many of the above-mentioned issues are contained. In addition to the site-specific data contained in the EIS, a requirement has been brought to the applicant's attention, requiring submittals of erosion, sedimentation control, and maintenance plans to state or local agencies for reviewal and approval. The liability of the project rests with the applicant in connection with many local issues and so the applicant must fulfill the needs of local agencies on its own account based on the guidelines set forth by FERC. We have been in contact with every county and district Soil Conservation Service office throughout the project area in preparing our guidelines. Further refinements and detail specifications have been incorporated into the EIS.

3.7-4 Comment Summary: Long Island Sound Concerns

Six comments were received from people concerned with issues regarding the pipelines crossing of Long Island Sound. These issues included: shoreline erosion, pipeline settlement, underwater sand/sediment movements, and related construction mitigation procedures.

Response:

We have evaluated Iroquois' proposed marine construction procedures and have determined that the marine pipeline would not significantly alter submarine features including: tidal and current movements, sediment transport, aquatic communities, and commercial activities in Long Island Sound. Relatively small impact of short-term duration would occur due to construction-related turbidity, and the redistribution of disturbed sediments.

The applicant has performed marine geotechnical studies evaluating the potential effects of boulders and gravel, sea floor erosion, megaripples, rock outcroppings, excessively shallow or deep areas, corrosive sediments or sediments with dissolved gas, areas requiring seabed preparation, strong currents, obstacles such as wrecks and cables, slumping, and areas used as disposal sites for dredged materials that would be avoided by the pipeline.

The proposed landfalls near Milford, Connecticut, and Northport, New York, would consist of trenched pipeline with depths of cover ranging from 5 to 15 feet depending on shoreline erosion potential, beach topography, and existing structures. No permanent aboveground structures are associated with the trenched pipeline and no erosion-sedimentation problems are likely in the long term. Trenching of the pipeline at the Milford and the Northport landfalls would extend out to a 40 foot depth and a 30 foot depth, respectively. The applicant has indicated that deeper trenching would be performed to enhance pipeline on-bottom stability in soft, clayey silts. Three feet of marine sediment cover would be provided from the entrenched portions of the pipeline to at least the point where the water is 50 feet deep. The jetting operations are designed to protect the pipeline from the effects of a 100-year storm event. The installation of the marine pipeline segment would take place between October 1 and May 31 to reduce potential impact on commercial fisheries, Long Island Sound recreation, and critical periods in the lifecycles of marine species in the sound. The concrete-weighted pipeline would be laid on the seabed without trenching between the landfalls. In the process of laying the marine pipeline and the subsequent hydrostatic testing of the completed pipeline, the pipeline would be covered over by up to 6 inches of marine sediment.

3.7-5 Comment Summary: NYSTF Soils Issues

Comments were received from the NYSTF concerned with pipeline soil coverage issues; areas of active croplands, improved pasture, unimproved pasture, areas of blasted bedrock. Areas of shallow overburden conditions were reviewed which, in their opinion, could be causes for variances to soil coverage depths. A statement was included that the NYSTF generally agrees with the DEIS on the issues of pipeline depth of coverage. The St. Lawrence County, New York, Soil Conservation Service Office recommended similar depth of soil cover specifications.

Response:

We agree with the NYSTF and the St. Lawrence County SCS on the issues concerning pipeline depth of burial. A specific comment concerning open tile outlet ditches and soil cover specifications has been included in the EIS (see section 5.1.2). The installation of surveyed benchmarks in cultivated areas is an issue that should be settled between the applicant, state, and/or local representatives and landowners.

3.7-6 Comment Summary: Drainage System Repair and Testing

Three comments were received from the NYSTF, COE, and the St. Lawrence County, New York Soil Conservation Service concerned with drainage system repairs and testing. Specific concerns mentioned were premature corrosion of steel pipe used for system repairs in association with the pipeline's cathodic protection system, and the use of filter-covered drainage tubing. A technical definition of a "drainage tile" was requested.

Response:

"Drainage tiles" can be defined as any installed system that facilitates soil drainage through a network of subsurface conduits. We acknowledge the NYSTF's concerns and support

the use of extra heavy duty solid PVC schedule 80 drain pipe across the trenched zone and at least 2 feet into each wall of the trench in order to best insure adequate protection of landowner interests. We have recommended that qualified drainage repair specialists be employed to insure proper identification, installation, and testing of drainage system repairs as stated in recommendation 5.

3.7-7 Comment Summary: Trenching Effects on Drainage Capabilities

The NYSTF commented that the effects of trenching might adversely affect the drainage capabilities of some lacustrine-derived soils, dense basal tills, and fragipan soils. The suggestion was made that corrective measures be addressed on a site-specific basis. The comment was made to include this issue in the erosion control, revegetation, and maintenance plan for the FEIS. The SCS of St. Lawrence County, New York, expressed similar concern over drainage conditions following pipeline construction.

Response:

We agree that the proposed project has the potential to adversely affect local drainages in shallow soils that are primarily laterally drained. We believe that due to the relatively slow drainage capabilities of the soil types mentioned, possible corrective measures would be incorporated as a part of the postconstruction maintenance and environmental inspection process in the erosion control, revegetation, and maintenance plan. Long-term inspections, in conjunction with mitigation, will help insure landowner protection from this potential impact because drainage may also be affected by seasonal climatic variations on a site-specific basis over an extended period of time. We have included a recommendation that the applicants, as part of their normal maintenance routine, monitor and correct future drainage problems that result from pipeline construction (see recommendation 5).

3.7-8 Comment Summary: Topsoil Segregation and Soil Compaction

Eight comments concerned with topsoil segregation and soil compaction were received from the NYSTF. Similar comments were received from the SCS in St. Lawrence County, New York, and FWS. One comment suggested that figure 5.1.2-1 be supplemented with a modified version schematically displaying a similar construction right-of-way profile through agricultural lands. Two comments suggested that a 120-foot-wide right-of-way may be needed when landowners request full-width topsoil stripping for purposes of stockpiling, especially in cultivated land. The comment was made that, if construction was to proceed into the autumn, the applicants request that landowners allow full-width topsoil stripping in areas of clayey soils during periods of heavy rain. Another comment suggested that the applicants identify, based on soil surveys, agricultural soils with vulnerable soil structure with regards to compaction and soil mixing and perform full-width soil stripping to protect these soils. Full-width topsoil stripping was also suggested in all cultivated areas where grade cuts are made in areas of steep slopes, where additional work room is required as when crossing streams and boring under roads, and where revegetation of cultivated and non-cultivated lands is assisted by topsoil stripping and segregation.

Response:

The NYSTF prepared a revised figure 5.1.2-1 that emphasized the importance of segregating topsoil from subsoil in agricultural lands during construction. The figure supplied by the NYSTF does show an inconsistency with respect to previously stated topsoil segregation requirements: excavated subsoil materials are not to be stockpiled onto topsoil as is shown in the revised figure 5.1.2-1, appendix C, of the NYSTF's response to the DEIS. We have included a modified figure 5.1.2-1 in the FEIS which resolves all inconsistencies.

We agree with the NYSTF and require that the applicants utilize full right-of-way topsoil stripping in all active or rotated cropland and hayfields. In all other improved and residential areas, the ditch plus spoil side topsoil segregation should be used (see figure 5.1.2-1). For full right-of-way topsoil stripping, the width of the construction right-of-way would be limited to 100 feet. For the ditch plus spoil side method of topsoil stripping, the construction right-of-way would be limited to 75 feet.

3.7-9 Comment Summary: Use of Slope Breaker Diversions

A comment was received from the St. Lawrence County, New York, SCS concerned about the use of safe and stable slope breaker diversion outlets. The application of shot-rock was specifically recommended.

Response:

We acknowledge the topic of diversion outlets as worthy of specific mention within the EIS and have included it in the discussion of slope breakers in section 5.1.2.1.1. This topic is typically covered within local erosion and sedimentation control requirements. Specific references to this concern should be addressed on a site-specific basis with consultation with local SCS and agricultural agents.

3.7-10 Comment Summary: Pipeline Impact on Agricultural Land

Comments were received from the HVA and the St. Lawrence County, New York, SCS concerned with the impact of pipeline construction on agricultural lands. A summary paragraph in section 5.1.9.2 of the DEIS was specifically mentioned with respect to the impact of construction on agricultural land.

Response:

Comment noted. This issue was addressed relevant to the impact of pipeline construction on agricultural lands in section 5.1.2. Further recommendations and requirements pertaining to this major issue are found in section 7.3 and in appendix C of the DEIS. The specific statement made which interpreted the summary paragraph in section 5.1.9.2 of the DEIS reading "although 2,128 acres of agricultural lands would be impacted by pipeline construction, mitigation measures, such as separation of topsoil and subsoil during trenching, would ensure a return to full productivity" is in error. The DEIS stated on page 5-80 that "following construction, these agricultural lands, with the exception of orchards

or nurseries, would be entirely returned to their former use," which did not specifically address the issue of productivity.

The issue of postconstruction agricultural productivity does not lend itself to statements of unconditional fact because it is a highly complex topic often involving soil-developing processes which often become very site-specific. Reference should be made to section 5.1.2 where both general background information plus site-specific data concerning detailed mitigation techniques are discussed. Further site-specific details have been added and revisions have been made to the section referenced above.

3.7-11 Comment Summary: Need for Physiographic Map

A comment was received from the COE suggesting that a physiographic map would facilitate comprehension of section 4.1.1.

Response:

Comment noted. We feel, however, that a physiographic summary of the pipeline in the form of a diagram or an additional text discussion would be of nominal value in light of the wide-spread nature of the project combined with the needed economy of this document's size. Many easily obtainable sources of regional physiographic maps can be found in bookstores and small public libraries in: many encyclopedias, atlases, geography, geomorphology, and geology texts, American Association of Petroleum Geologists roadside geology field guidebooks, technical dictionaries, and physiography texts.

3.7-12 Comment Summary: Revise Soils Groups

The COE suggested that the "five broad categories" mentioned in section 4.1.2.2, describing the soils crossed by the pipeline, be revised to "six groups."

Response:

Thank you for the clarification. The text has been revised.

3.7-13 Comment Summary: Liming and Fertilization Near Wetlands and Streams

The NYSTF and the COE commented that the preventative measures discussed concerning protection of wetlands and sensitive trout streams from highly acidic runoff associated with construction procedures was insufficiently addressed in the DEIS. The practice of liming these areas before construction/disturbance was specifically suggested and the related topic of fertilization was also mentioned in these three comments.

Response:

We have addressed this issue in our discussion of sediment control measures in section 5.1.2.2.

3.7-14 Comment Summary: Environmental Inspector Responsibilities

Five comments were received from the State of Connecticut and the Towns of Newtown and New Milford, Connecticut, concerned with the responsibilities, objectivity, and qualifications of the environmental inspectors. The statement that the inspectors' qualifications be specifically mentioned in the FEIS was made.

Response:

The environmental inspectors would be hired by and work for the applicants. He/she would have peer status with other activity inspectors and would be responsible for ensuring compliance with any FERC Certificate conditions as well as any other appropriate environmental permits or approvals.

Our Erosion Control, Revegetation, and Maintenance Plan states that these inspectors shall have knowledge of the soils and conservation plantings of the area. Iroquois has further stated that the inspectors would have a Bachelor's degree in an appropriate field, while Tennessee has stated they would employ soils/agricultural specialists to work with the environmental inspector.

We have performed compliance inspections of construction projects in the past and will continue to do so in the future to ensure compliance with FERC certificates.

If a town feels that an independent inspector should be retained it should negotiate the funding and duties of such an inspector with the applicant(s) (also see responses 3.18-25 and 3.18-26).

3.7-15 Comment Summary: Concern Over Deep Compaction of Soil

One comment was received from an interested party in Litchfield, Connecticut, concerned with the topic of deep compaction of soil and FERC's discussion of it under the subheading "Rutting and Construction Traffic" in subsection 5.1.2.1.1.

Response:

"Deep compaction is not common in connection with normal pipeline construction procedures" (see section 5.1.2.1.1 of the DEIS). This statement means that during "normal" pipeline construction (i.e., not during excessively wet periods or in connection with organic soils) deep compaction should not have been and was not common in similarly constructed pipeline projects throughout the region. It is beyond the scope of the EIS to address every location along the proposed alignment on a site-specific basis for potential deep compaction. We have inventoried the soil associations and series crossed by the proposed alignment and assessed the potential impact on these valuable resources to the extent existing data is available.

The specific issues of the characteristics of organic soils are described in section 4.1.2 of the EIS and table 4.1.2-1. A site-specific discussion of organic soils was contained in section 5.1.2 of the EIS. Table 4.1.2-1, addressing the soil groups crossed by the proposed

alignment, was designed to characterize the impact on the soils resource by using groupings of soils that have similar origins, fertilities, drainages, depths, degrees of stoniness, chemical characteristics, topographic occurrences, taxonomic categories, and land uses. The information from this table concludes that the organic soils that would be potentially affected make up 1.3 miles of the entire length of the Iroquois mainline route primarily in Lewis County, New York, and Fairfield County, Connecticut. Organic soils would be potentially affected for less than 1% of the total length of the Iroquois mainline route. This supports the statement made in subsection 5.1.2.1.1 stating that "deep compaction is not likely to be common" on the basis of occurrence of organic soils. The extensive discussion of soil moisture content and the timing of construction within the subheading of "Rutting and Construction Traffic" in section 5.1.2.1.1 adequately covers this more likely cause of deep compaction. Both preventative and mitigative measures concerning this potentially major impact on the soils resource have been carefully reviewed for the Erosion Control, Revegetation, and Maintenance Plan in appendix C.

3.7-16 Comment Summary: Timing of Erosion Control Device Installations

One comment was received from Brookfield, Connecticut, concerned that erosion controls such as silt fencing should be emplaced immediately after clearing, rather than following grading and ditching operations.

Response:

Comment noted. Mention of timing of application of sediment barriers is found in section 5.1.2.1. Sediment barriers such as silt fencing, vegetation strips, and staked hay or straw bale barriers would be applied to control sedimentation and erosion after an area is disturbed. Clearing for construction specifically qualifies as recognizable disturbance and would require the application of erosion controls.

3.7-17 Comment Summary: Erosion Issues Associated with Means Brook

One comment was received from Shelton, Connecticut, concerned with potential erosion, windthrow, and stream diversion within the Means Brook Watershed as a result of pipeline construction.

Response:

Comment noted. Refer to section 5.1.2, table 5.1.2-1, figure 5.1.2-1, section 5.1.3.2, and appendices C, D, and E for relevant data, discussions, requirements, and recommendations. We have incorporated many specific comments that have been received into the "Erosion Control, Revegetation, and Maintenance Plan" outlined in appendix C. We believe that this plan, in conjunction with proper environmental inspection, would provide sufficient preventative, mitigative, and maintenance measures relative to the concerns above. We note further that Means Brook has been channelized in the vicinity of the proposed construction, and that a levee has been constructed between Means Brook and the proposed pipeline route. This levee would not be disturbed during construction.

3.7-18 Comment Summary: Slopebreaker Installation

Iroquois commented that the installation of slope breakers at the end of each workday would cause large amounts of unnecessary disturbance and should be installed only when indicated as necessary by the environmental inspector.

Response:

Comment noted. We believe that the requirement of installation of slope breakers at the end of each workday would not result in large amounts of unnecessary disturbance as only the day's traffic areas would require regrading. The greater impact would be associated with an unpredicted thunderstorm event causing large-scale unimpeded erosion and sedimentation.

3.7-19 Comment Summary: Use of Tracked Vehicles in Saturated Soils

One comment was received from Iroquois concerning our recommendations on the use of tracked vehicles when working in areas with saturated soils (see section 5.1.2.1.1). Iroquois agreed to comply with our recommendation.

Response:

Thank you for the comment.

3.7-20 Comment Summary: Use of Crushed Stone Pads

Two comments were received on the use of crushed stone pads. Iroquois commented that the use of crushed stone pads at all locations where the right-of-way is adjacent to public roads to protect road shoulders and cut down on debris transference onto roadways from construction related vehicles is unnecessary for rural dirt and gravel public roads and lightly trafficked paved roads. Iroquois suggested that the Environmental Inspector be given the authority to decide the method to be applied to achieve the protection and safe intersection of roadways, including use of sweepers. The NYSTF commented that crushed stone pads in agricultural fields should be separated from underlying soils by placement of a suitable grade synthetic fabric material to prevent mixing of crushed stone into the underlying soil. The fabric would facilitate postconstruction restoration of such access points.

Response:

Many of the problems generated by intersecting construction-related, private, and public traffic are associated with clods of debris that once transferred onto public roadways, regardless of whether they are dirt, gravel, or paved, could result in serious damage and potential injury to public and private parties. Depending on the specific soil, weather, and traffic conditions present at any given time, varying degrees of concern would exist about this highly visible and unavoidable topic. We maintain that the specified crushed stone pads, or other appropriate measures, if properly constructed and utilized, would significantly decrease the level of public and private concern over road conditions. Iroquois' suggestion

that sweeping of some roadways may be an equally effective solution could prove true if there is protection for the shoulders and associated drainages of the roadways from rutting and blockage and if traffic, soil, and weather conditions permit. Many soil conservation service requirements for local erosion and sedimentation control plans involve construction of the previously specified crushed stone pads. Iroquois must maintain preconstruction road conditions, availability, and integrity, at all public access points. Private roadways are subject to landowners discretion although proper pre- and postconstruction documentation of conditions and modifications insuring safe and accessible roadways is recommended. Clarification of this topic has been made in appendix C.

We acknowledge the NYSTF's suggestion that the applicants apply synthetic fabric materials when constructing crushed stone access pads in agricultural lands. This recommendation has been included in appendix C.

3.7-21 Comment Summary: Deep Tillage Versus Legumes

The NYSTF commented that it recommends deep tillage procedures more strongly than use of legumes to restore soil tilth. A specific quote furnished by Iroquois in the NYPSC Opinion, Appendix F (p. 12), was referenced and suggested for incorporation into the FEIS.

Response:

In the interests of rapid mitigation of the effects of soil compaction, we agree with the NYSTF. However, we also feel that the use of legumes, "green manure," in restoring soil tilth is generally better in the long run and should be used in many cases in conjunction with the deep tillage procedures outlined below. Our plan in appendix C provides for the option of "green manure" based on site conditions and landowner preference.

In affected agricultural sections of the right-of-way area, the applicants would break up all compaction with deep tillage by such devices as, but not limited to, the deep-shank heavy duty subsoiler, the paraplow, or the paratill, down to the bottom of actual compaction. Following such deep tillage, the agricultural topsoil that has been temporarily removed for the period of construction will be replaced; where necessary, additional deep tillage activity would be undertaken during periods of relatively low soil moisture to ensure the desired mitigation and prevent additional subsurface compaction. If subsequent construction or cleanup activities result in new compaction, the applicants would carry out additional deep tillage to alleviate such compaction.

See the revisions made to section 5.1.2.1.1.

3.7-22 Comment Summary: Clarify Use of Term "Excavated Rock"

The NYSTF commented that clarification of the term "excavated rock" is needed in the FEIS. This clarification would help distinguish between improved and unimproved lands.

Response:

Comment noted. The text has been revised to read "excavated bedrock" to achieve clarification of this point. The term "float rock" has then been differentiated from "excavated bedrock."

3.7-23 Comment Summary: Clarify Appendix C Procedures

The NYSTF commented that the procedures outlined in appendix C are well-founded but in a few instances require clarification. The NYSTF suggested that compaction testing of the same soil type be done following construction so that disturbed areas and undisturbed areas are at similar moisture contents; specifically, a COE-style cone penetrometer was recommended.

Response:

We believe that the NYSTF's suggestion concerning the timing of compaction testing for mitigative purposes is very applicable to the proposed project. Not only could compaction testing proceed in a relatively quick and uniform manner but the data could be more readily assimilated by agents of the applicant as well as interested public and private individuals if moisture contents are similar. The suggestion that a COE-style cone penetrometer be used has been adopted (see section 5.1.2.2).

3.7-24 Comment Summary: Strengthen Discussion of General Soils Impact

Comments were received from the NYSTF concerning "General Construction and Operations Impact" in section 5.1.2.1. The suggestion to specifically state that "soil compaction may impact agricultural land as deleteriously as erosion" was made as well as "the necessity of segregating the topsoil of the trench and the construction work zone from the subsoil."

Response:

Comment noted. We have reviewed the suggested comments and agree that they help summarize the major construction and operation impact of the proposed project discussed in section 5.1.2.1. Revisions have been incorporated into the EIS. See section 5.1.2.1.

3.7-25 Comment Summary: Trench Breakers

The NYSTF commented that they agreed with the application and location process for trench breakers described in the DEIS.

Response:

Thank you for the comment.

3.8 GROUNDWATER, WATER QUALITY, AND STREAM CROSSING PROCEDURES

3.8-1 Comment Summary: Construction Impact on Aquifers

During the public comment period, FERC received many comments expressing general concern for the potential construction impacts of the proposed project on aquifer integrity and disruption of water well and springs used as domestic supplies. Many of the comment letters communicated knowledge of private wells/springs located near the proposed route, but exact locations were generally not included. The impact of construction and operation of the buried pipeline on groundwater hydrology and water table elevations was frequently indicated as a concern.

Response:

The majority of groundwater impacts associated with pipeline installation would be limited to areas where shallow aquifers are crossed. Most of these impacts would be temporary, and could be avoided or minimized by the use of standard or specific construction procedures specified by FERC in section 5.1.3.1. Following is a summary of potential impacts and recommended mitigation procedures.

Clearing and grading activities could result in changes in overland water flow and recharge caused by a loss of a vegetated cover and soil compaction. However, these impacts are expected to be minor because a relatively narrow strip of land would be affected (75-foot-wide right-of-way) and the rapid re-establishment of vegetation would enhance surface water recharge over the affected area. The degree of soil compaction caused by construction activities would vary depending on the nature of the soil and the moisture content. Compaction would be alleviated by deep tillage with subsoilers or deep chisel plows.

Water table elevations could be affected in a very localized area of the pipeline trench. The trench generally is no more than 6 feet deep and would only intersect those water tables that occur at shallow depths. Trench barriers would be used to ensure that the trench does not act as a conduit for groundwater movement. Dewatering of the trench may be necessary in areas where the water table is high, however, dewatering would be conducted during a limited period of time and the water that would be pumped from the trench would be discharged into well vegetated areas and allowed to return to the aquifer through infiltration.

During pipeline excavation in bedrock, blasting could cause previously sealed fractures to be opened, creating a new path for surface water migration into the aquifer. If any changes in the water table elevation were to occur as a result of this, only the immediate area of the pipeline right-of-way would be temporarily affected until the water table was re-established.

3.8-2 Comment Summary: Blasting/Contamination Impact on Aquifers

FERC received numerous comments from individuals generally concerned about blasting impacts on domestic water systems and supplies. Many people also expressed general concerns that the pipeline would contaminate groundwater supplies and others indicated

they were specifically concerned about the potential for groundwater contamination as a result of fuel/oil or other hazardous material spills during the construction period.

Response:

Blasting Impacts

Most public supply wells are located in high-yield overburden deposits where blasting would not be necessary for trench excavation. Some areas rely on bedrock aquifers as primary sources of water for domestic uses. Consequently, blasting may be required in proximity to residential wells. However, it has been demonstrated in studies and through previous blasting experience that the use of proper blasting controls and precautions can adequately protect water wells and other structures located near the blast area (see sections 5.1.1.1 and 5.1.3.1.1). In many areas, excavation of bedrock that is well fractured and weathered can be accomplished through the use of "ripping" trench excavators, rock saws and pneumatic hammers, and other similar types of equipment. We have recommended that Iroquois and Tennessee utilize these methods for trench excavation in areas where residential water wells/springs have been identified through the groundwater monitoring plan. If blasting must be conducted in these areas, the blasting regulations and procedures described in sections 5.1.1.1 and 5.1.3.1.1 would be followed by Iroquois and Tennessee. We believe these precautions would adequately protect water well/spring supplies. To provide additional protection to the water supply owner, FERC would require Iroquois and Tennessee to monitor well water quality and yield prior to and following pipeline construction and to provide owners compensation and an emergency source of potable water if needed. Compensation measures that may be required include physical repairs or replacement of the well system.

Contamination

There are no chemicals added to the natural gas as it flows through the pipeline. In the event of a pipeline leak, natural gas is lighter than air and would diffuse and ultimately be dispersed into the atmosphere. The pipe is protected with an epoxy coating which is an inert substance that will not contaminate soil or water.

Localized spills of fuel/oil or lubricants could occur during the construction phase of the pipeline and cause contamination of soils and water resources. In order to prevent and control spills during construction, FERC would require Iroquois and Tennessee to submit for review and approval a Spill Prevention, Containment, and Control Plan (SPCCP) prior to construction and to be prepared to implement the plan during pipeline installation. In addition, we have recommended that refueling activities and storage of hazardous materials be prohibited within all designated well protection areas and within a 200-foot radius of all private wells identified prior to construction (see section 5.1.3.1.1 and section 7.3, recommendation 14).

3.8-3 Comment Summary: Compensation for Wellowners

Several commentors expressed concerns regarding groundwater monitoring, and recommended that compensation be provided to homeowners. Generally, many commentors indicated that FERC's required groundwater monitoring plan should present very specific

details of procedures for determining and providing compensation to homeowners who have well or spring water systems along the proposed route.

Response:

We agree that the recommended groundwater monitoring plan prepared by the applicant should provide sufficient detail to determine whether water systems have been affected by pipeline construction. In addition, the plan should provide protocols for determining how compensation would be provided to homeowners in the event damage does occur, including measures that would be taken to provide a new, permanent source of potable water in the event that it was not possible to repair a well to its original capacity. We have revised section 5.1.3.1.2 to supplement the requirements of the recommended groundwater monitoring plan.

3.8-4 Comment Summary: Groundwater Monitoring

The citizens' organization, STOP, recommended that FERC require Iroquois to adopt Massachusetts standards for well protection areas along the entire proposed pipeline route. The group also indicated that wells should be monitored before and after construction during the same season, particularly in August when wells are known to go dry.

Response:

We recognize that the states crossed by the proposed pipeline have different requirements regarding protection of groundwater supplies. We have recommended prohibiting refueling activities and storage of hazardous materials within all designated aquifer and well protection areas and within 200 feet of private wells. The applicants could be required to comply with more stringent procedures on a site-specific basis as specified by other Federal, state, or local authorities. As a requirement of FERC's recommended groundwater monitoring plan, the applicants would be required to develop procedures for monitoring of water quality and yield in wells prior to and after pipeline construction. In order to be able to determine whether pipeline activities adversely affected well water systems, post-construction monitoring should be conducted by the applicants as soon as possible after construction is completed.

3.8-5 Comment Summary: Impact on Groundwater

The HVA contends that FERC did not conduct an adequate analysis of the impact of construction on groundwater, but instead relies on mitigation measures.

Response:

In section 5.1.3.1 we have provided a full analysis of potential impact on groundwater resources. We have also provided adequate mitigation measures that would avoid or minimize this impact. In addition, our recommended groundwater monitoring plan would provide for monitoring of potential impact on water wells and springs and would protect well owners by requiring the applicants to provide compensation in the event that it is determined that water supplies are adversely affected by construction.

3.8-6 Comment Summary: Aquifer Protection Areas

Two commentors recommended that aquifer protection areas be avoided by the proposed route.

Response:

We conclude that FERC's recommended procedures and mitigation techniques are adequate to protect aquifers for continued and future use as drinking water sources (see sections 5.1.1.1 and 5.1.3.1). Recommended procedures include prohibition of refueling activities and storage of hazardous materials within identified protection zones and within 200 feet of private wells (see section 7.3, recommendation 14).

3.8-7 Comment Summary: Aquifer Protection Act

Monroe, Connecticut, indicated that the Connecticut Aquifer Protection Act (PA89-305) discussed in section 5.1.3.1.2 has been approved by the state.

Response:

Comment noted. Section 5.1.3.1.1 has been revised to incorporate this information.

3.8-8 Comment Summary: Spill Prevention and Cleanup

The Dutchess County Environmental Management Council commented that construction crews should be trained to implement the SPCCP.

Response:

Comment noted. Section 5.1.3.1.1 has been revised to incorporate this recommendation.

3.8-9 Comment Summary: Spill Prevention and Cleanup

The U.S. Department of Health and Human Services recommended that states should review and approve the applicants' SPCCPs.

Response:

We acknowledge in section 2.6 that other Federal, state, and local agencies may have jurisdiction over a portion of the project, and that the applicants would be required to apply for any necessary permits and approvals.

3.8-10 Comment Summary: Impact of Fertilizer on Groundwater

One letter was received from citizens who were concerned about potential impact on the water quality of their residential well resulting from the use of fertilizers on the revegetated right-of-way.

Response:

The use of fertilizers on the proposed pipeline route would be a one-time event occurring during stabilization of the right-of-way after the pipeline is installed. The potential impact on groundwater quality would be similar to that resulting from establishment of a residential lawn. In problem areas, it may be necessary to reseed and fertilize a second time in order to establish a ground cover, however, problem areas are not likely to occur in residential areas.

3.8-11 Comment Summary: Future Groundwater Supply

Ten letters were received from commentors expressing concern that the northern aquifer which is a potential future water supply for Brookfield, Connecticut, would be crossed by the proposed Iroquois route. The major issue of concern was whether the pipeline would threaten the potential for the groundwater to be used as a source of drinking water at some future period of time.

Response:

The installation of a natural gas pipeline would not affect the potential for an aquifer to be used as a future source of drinking water. During the construction phase, groundwater could be affected on a temporary basis. Potential short-term effects are discussed in section 5.1.3.1.1. Pipeline construction would not result in any known long-term impact on groundwater quality or yield. Natural gas is immiscible in water and in the event of a leak, the gas would ultimately disperse into the atmosphere. No chemicals would be used in the pipeline. FERC's recommended SPCCP would address any possible spills that could occur during construction.

3.8-12 Comment Summary: Sole-Source Aquifers

EPA-designated sole-source aquifers were identified on the proposed route and concerns were expressed regarding potential impact on them.

Response:

Comment noted. Sections 4.1.3.1 and 5.1.3.1.2 have been revised to include this information. A discussion of potential impact on aquifers is presented in section 5.1.3.1.1 and responses 3.8-1 and 3.8-2.

3.8-13 Comment Summary: Stilson Hill Hydrology

Several commentors expressed concern for potential impact on the hydrology of the Stilson Hill area. Two letters indicated that water wells often go dry in this area during summer months. Another concern was that the pipeline trench would alter groundwater flow and existing drainage patterns.

Response:

We recognize the importance of bedrock aquifers that provide many residences with their only source of drinking water. We have identified particularly sensitive areas of concern including the Stilson Hill area, in section 5.1.3.1.2. As noted in section 6.2.49, we have recommended a route variation that would avoid the Stilson Hill area that was originally proposed to be crossed. FERC's recommended procedures for minimizing potential impact from blasting would protect any groundwater resources in these areas. Section 5.1.3.1.1 and responses 3.8-1 and 3.8-2 discuss additional requirements and procedures the applicants would be required to comply with.

In order to prevent the pipeline trench from acting as a conduit for groundwater movement, the applicants would be required to install trench breakers as discussed in section 5.1.2.1.1 and in our recommended Erosion Control, Revegetation, and Maintenance Plan (appendix C).

3.8-14 Comment Summary: Farm Dumps

The HVA contends that pipeline disturbance of abandoned "farm dumps" could cause potential groundwater problems.

Response:

In the event that hazardous wastes are encountered during construction, FERC's recommendation 25 requires the applicants to stop construction and notify state and local agencies to determine an appropriate course of action. FERC does not agree that disturbance of farm dumps would create groundwater problems. The pipeline excavation would be prevented from acting as a potential conduit for groundwater contamination by placing trench breakers in the pipeline excavation (see section 5.1.3.1.2).

3.8-15 Comment Summary: Cheshire Public Wells

The Cheshire Land Trust recommended that Tennessee consult the South Central Regional Water Authority (SCRWA) concerning potential impact on the Town of Cheshire public wells (Wallingford Lateral).

Response:

The SCRWA was contacted regarding the location of these wells. We have made numerous recommendations to provide adequate protection to groundwater supplies and to mitigate potential impacts (see section 5.1.3.1).

3.8-16 Comment Summary: New Milford Public Wells

The STOP citizens organization indicated the existence of public supply wells, owned by the New Milford Water Company, that were not included in the DEIS.

Response:

Comment noted. This information has been incorporated into table 4.1.3-2.

3.8-17 Comment Summary: Water Well Identification

The Town of Monroe, Connecticut, requested clarification of the reason why public wells up to 1.5 miles from the proposed line were identified.

Response:

The intent of table 4.1.3-2 was to provide an indication of groundwater usage by identifying active groundwater supply systems in the area of the proposed route (i.e., within 1.5 miles), as well as to identify any public wells that occur within proximity of the proposed route (within 0.1 mile).

3.8-18 Comment Summary: Pipeline Location in Aquifers

The COE requested clarification of whether the pipeline goes through or over aquifers.

Response:

To determine whether the pipe would actually go through aquifers on the proposed route would require an investigation of the depth to the water-bearing unit along the entire length of the pipeline routes. Aquifers can be confined at very deep depths below ground surface, in which case the 6-foot-deep pipeline trench would not have any effect on the aquifer. Aquifers can be very shallow, existing only a few feet below the ground surface, particularly adjacent to surface water drainages and lowland areas. In these cases, it is possible that the pipe would be constructed within the surface layers of an aquifer. The depth to the water table will fluctuate seasonally and with storm events. It is possible that the pipe could be placed above the water table if constructed during a dry season but be located within the groundwater zone during the wet seasons.

3.8-19 Comment Summary: Refueling Restrictions, SPCCP

Iroquois provided information on their development of the SPCCP. Iroquois also indicated that during construction across major rivers where flotation devices (i.e., barges) would be employed and across Long Island Sound, it would be impracticable to require refueling greater than 100 feet from any water body.

Response:

Comment noted. Section 5.1.3.1.1 has been revised to incorporate the spill plan information. FERC recognizes that refueling constraints exists during construction on large water bodies, and notes that our recommendations allow for the applicants to request an exemption on a site-specific basis in their detailed river crossing plans. These plans should specify locations for refueling and should refer to the SPCCP for details of refueling procedures and emergency spill containment and control measures that would be conducted in the event of a spill.

3.8-20 Comment Summary: Refueling Restrictions

RIDEM and the COE commented, respectively, that refueling of construction vehicles should not be permitted near water resources and that accidental spills directly into waters should be addressed.

Response:

FERC prohibits refueling of equipment within 100 feet of all water bodies and wetlands (see appendix D). Accidental spills are addressed by our recommendation for a SPCCP, which is presented in section 5.1.3.1.1. We have incorporated this recommendation by reference into sections 5.1.3.2.1 and 5.1.4.1.1. In areas where it is technically infeasible to comply with the distance restriction, the applicants would be required to apply for a site-specific exemption from FERC.

3.8-21 Comment Summary: Potential Spills

The COE requested information on the types of potential spills that could occur during construction of the marine pipeline.

Response:

Comment noted. We have incorporated additional information into section 5.1.3.2.2.

3.8-22 Comment Summary: Sediment Testing

The following is a three-part summary of EPA and FWS comments on sediment testing:

1) EPA and FWS recommended that Iroquois be required to conduct testing of sediments at the St. Lawrence, Mohawk, Hudson and Housatonic River crossing locations for the presence of priority and nonconventional pollutants.

2) FWS recommended that biological testing be conducted on any contaminated sediments that would be used as trench backfill. However, EPA recommended that sediments having high levels of contamination should not be used as backfill. EPA indicated that highly contaminated sediments should be disposed of in accordance with appropriate Federal and state regulations.

3) FWS recommended that FERC require sediment testing of all waterways that receive or have received municipal and/or industrial discharges upstream of the proposed crossing.

Response:

1) Iroquois collected sediment samples at proposed crossing locations for chemical analysis of PCBs, pesticides, volatile aromatic and halogenated organics, polyaromatic hydrocarbons (PAHs), and EP toxicity metals in the Mohawk, Hudson, and Housatonic Rivers. Although sediment data are available from 6 kilometers downstream of the proposed St. Lawrence River crossing, we have recommended that Iroquois conduct testing of subsurface and surficial sediments at the proposed crossing location and also to retest surficial sediments at the proposed Mohawk, Hudson, and Housatonic crossing locations to evaluate potential contamination that may have occurred during the 4-year period that has passed since the previously conducted tests (see recommendation 46).

2) FERC agrees with EPA's recommendation that sediments having elevated levels of contamination should not be used as backfill but should be disposed of in accordance with Federal and state regulations. The appropriate disposal method for these sediments would ultimately be determined by the COE, in its Section 404/10 permitting process, and the appropriate state water quality management agency, in its Section 401 water quality certification process, as is required by Federal law.

3) During Iroquois' evaluation of alternative routes for the gas pipeline, river crossings were evaluated with respect to the potential for the occurrence of contaminated sediment at possible crossing locations. Iroquois utilized aerial photographs, Federal and state water quality data, and consultations with Federal, state, and local authorities to identify areas suspected of having contaminated sediments. The Section 401 and 404/10 permitting process could result in the identification of additional areas requiring testing.

3.8-23 Comment Summary: Contaminated Sediments

The HVA contends that the problem of contaminated sediments in the St. Lawrence, Mohawk, Hudson, and Housatonic Rivers is treated inconsistently and that the issue is "handed off" to COE and the states.

Response:

Federal requirements of the Clean Water Act include compliance under Section 401 and 404. Thus, issues concerning contaminated sediments are properly addressed during the state's water quality certification (Section 401) and COE's Section 404/10 permitting processes. COE is requiring individual Section 404/10 permits for this project. Testing of sediments for contamination would be conducted as a part of this application process. In addition, FERC has recommended that chemical testing of sediments include analysis of priority pollutant metals and organic compounds, including PCBs and pesticides. FERC has also recommended that sediments found to have elevated levels of contaminants not be used

as backfill but be disposed of in accordance with Federal and state regulations (see revised section 5.1.3.2.2 and response 3.8-22).

In addition, we note that sediment testing previously conducted indicated that only very low levels of metals were detected in sediments at the proposed crossings of the Mohawk, Hudson, and Housatonic Rivers, or at the St. Lawrence River test area located 6 kilometers downstream of the proposed crossing (see tables 4.1.3-7 and 4.1.3-8).

3.8-24 Comment Summary: PCBs in Housatonic River

Two commentors expressed concern for the potential impact that could occur from disturbing the sediments in the Housatonic River, which is known to have been contaminated by PCBs.

Response:

Iroquois conducted chemical analysis of sediments at the proposed Housatonic River crossing in 1986. The samples did not contain detectable levels of PCBs. FERC is requiring retesting of surficial sediments prior to construction to ensure that sediment quality has not changed during the time period that has passed since the previous samples were collected (see section 7.3, recommendation 46).

3.8-25 Comment Summary: Sediment Testing

The COE inquired whether soil borings were drilled in the Mohawk and Hudson Rivers.

Response:

Soil borings were drilled in the Mohawk, Hudson, and Housatonic Rivers in 1986 and 1987 to evaluate sediment quality in conjunction with a geotechnical survey. Cores were advanced to 10 foot depths. The study "Subsurface Explorations and Environmental Testing of Proposed Iroquois Gas Transmission System River Crossings" was conducted by H & A of New York, Inc. (1987). The results of these tests are included in tables 4.1.3-7 and 4.1.3-8, as well as in the Section 404(b)(1) guidelines analysis that Iroquois has already provided to the COE.

3.8-26 Comment Summary: Sediment Testing

Iroquois noted that chemical analyses for organic compounds were conducted in addition to analysis for metals in sediment samples.

Response:

Comment noted. Section 4.1.3.2 has been revised to incorporate this information.

3.8-27 Comment Summary: Sediments

The COE commented that the use of the term "toxic" to describe Raritan Bay sediments is inappropriate.

Response:

Comment noted. Section 3.4.3 has been revised.

3.8-28 Comment Summary: Hydrostatic Testing Methods

One commentor suggested that other alternatives for testing the integrity of the pipeline be considered, particularly, methods that do not use water.

Response:

The DOT requires the pipeline companies to test the integrity of the pipeline prior to operation. FERC has determined that hydrostatic testing of the pipeline is the safest and most efficient and effective method of testing the integrity of natural gas pipelines.

3.8-29 Comment Summary: Hydrostatic Testing/Withdrawal

Several comments were received regarding the effect of withdrawing large amounts of water from water bodies, such as the Woonasquatucket and Still Rivers, Wappinger Creek, and various potable water sources, for hydrostatic testing.

Response:

FERC's Stream and Wetland Construction and Mitigation Procedures (appendix D) indicate that public water supplies and exceptional value waters are not permitted to be used as sources of hydrostatic test water unless otherwise authorized by state and/or local permitting agencies. The applicants are also required by FERC to apply for all necessary withdrawal and discharge permits from Federal, state, and local permitting agencies. FERC's recommended Procedures would be adequate to protect water resources from the effects of hydrostatic testing activities. A discussion of potential impact and mitigation procedures is contained in section 5.1.3.2.1 and appendix D.

3.8-30 Comment Summary: Hydrostatic Testing of Marine Pipe

The Town of Huntington, New York requested clarification concerning the hydrostatic testing of the marine pipe, particularly with respect to the discharge of saltwater.

Response:

Comment noted. Section 5.1.3.2.2 has been revised to provide additional information on testing of the marine pipeline.

3.8-31 Comment Summary: Appendix D

Iroquois and Tennessee provided comments on FERC's recommended Stream and Wetland Construction and Mitigation Procedures (appendix D).

Response:

We have addressed the applicant's comments in revised sections 5.1.3.2.1 and 5.1.7.2, and in the revised appendix D.

3.8-32 Comment Summary: Stream Crossing Procedures

The FWS commented that stream crossings can be avoided by locating the pipeline in roadways so that stream crossings can be made on top of existing culverts or fastened to existing bridges. The FWS also contended that FERC's size limitations for dry-ditch crossings (less than 10 feet wide and less than 2 feet deep) would exclude larger streams where it could be feasible to construct a dry crossing.

Response:

FERC determined, based on its extensive experience in the field of natural gas pipeline construction and on commonly recognized engineering and safety considerations, that it is generally not practicable or feasible to locate large-diameter pipelines over roadway culverts or across bridges. Based on the same information, FERC determined that it is not practicable on a generic basis to require use of the dry-ditch construction method for streams that are greater than 10 feet wide or 2 feet deep. FERC notes that the commentor lacks the requisite degree of knowledge and experience regarding the construction of natural gas pipelines to comment on the feasibility of these construction methods, and, therefore, stands by its discussion and recommendations.

3.8-33 Comment Summary: Steam Crossing Procedures

The NYSPTF provided several recommendations for stream crossing procedures. These are itemized as follows:

1) Placement of crushed stone as the upper 1 foot of fill in the backfilled trench in streams;

2) Where silts and sands occur, placement of flume pipes below the crossing location, rather than above, to minimize erosion of the backfilled trench, water turbulence, and the "plunge-pool effect" caused by fluming upstream of the trench.

3) Under suitable soil conditions, the boring technique used for road crossings could be used as an alternative crossing technique for sensitive streams;

4) Trench plugs could be used in upslope areas to prevent erosion of the pipeline excavation during pipe installation;

5) Diversion ditches could be cut into the pipeline excavation to handle excess water that accumulates behind upslope trench plugs, minimizing dewatering requirements at stream and wetland areas.

Response:

1) FERC agrees with the NYSTF's recommendation to place clean gravel fill in the upper 1 foot of the backfilled trench in streams which contain coldwater fisheries, and has revised the steam construction procedures in appendix D to incorporate this recommendation.

2) It is FERC's experience that fluming over the trench does not create the "plunge-pool effect" described by the NYSTF. A damming effect behind the flume is generally minimal due to the flume pipe capacity that the contractors provide to ensure that storm events will not wash out the flume pipe. Generally, stream flow through the flumed area is not noticeably changed during construction.

3) We have determined that the horizontal boring techniques used for roadways are infeasible for streams. The technique requires a deep boring pit to be constructed adjacent to the stream. The pit would be excavated below the water table and dewatering would be necessary to keep the pit free of water. In addition, the boring pit, because of these factors, would be a very unsafe work space for construction workers. Directional drilling techniques are more desirable but would require specialized equipment to be brought into potentially remote areas and tanks would be needed for storage of drilling muds. The possibility of success of pipeline installation by this technique is not very high where unsorted glacial till occur. Topographic and geological constraints could preclude the set up of appropriate staging areas. FERC believes that in areas of significant resources that have been well documented, and where geologic conditions indicate a high probability of success, directional drilling techniques would be appropriate.

4) FERC's recommended Erosion Control, Revegetation, and Maintenance Plan addresses this issue with the use of trench breakers (see appendix C and section 5.1.2.1.1).

5) The majority of water that accumulates in the pipeline trench in areas adjacent to stream and wetlands originates from groundwater sources rather than from upslope areas as the NYSTF suggests. Therefore, we believe that the construction of diversion ditches would constitute an unnecessary disturbance to the right-of-way without providing any benefit to the environment.

3.8-34 Comment Summary: Water Resources Information

Iroquois provided clarification of information in section 5.1.3.2.

1) Iroquois agrees to reseed the right-of-way within six working days, weather permitting;

2) Hydrostatic test sources may vary slightly based on the engineering study that would be conducted prior to construction;

3) Iroquois understands that separate Section 404/10 permits would be required from the COE and applied for a permit in March 1987, as amended in July 1989.

Response:

Comments noted. Section 5.1.3.2 has been revised as appropriate.

3.8-35 Comment Summary: Stream Crossing Procedures

Iroquois contended that the riparian clearing and grading restrictions in the Stream and Wetland Construction and Mitigation Procedures (appendix D) are excessive.

Response:

The clearing and grading restriction has been deleted from FERC's Procedures (appendix D). FERC determined that the environmental benefits of the restrictions were minimal. Our revised recommended procedures in both appendix D and appendix C (Erosion Control, Revegetation, and Maintenance Plan) adequately address protection of the riparian zone.

3.8-36 Comment Summary: Stream Crossing Procedures/Public Supplies

Iroquois contended that FERC's recommendation for dry-ditching of all public water supply streams is excessive because some of these streams, such as the Hudson River, are too large to dry-ditch. Iroquois also stated that streams with rock bottoms, which require blasting, can not be dry-ditched without causing an increase in other adverse environmental effects.

Response:

FERC's recommendation applies to those crossings where a public water supply or intake is located less than 3 miles downstream of proposed stream crossing. The Hudson River crossing is located more than 3 miles upstream of a water intake. The streams affected by this requirement are generally small size tributaries and would be flumed as required by our Procedures contained in appendix D. Streams with rock bottoms would be blasted prior to fluming (see appendix D). Fluming the stream flow across the construction right-of-way would minimize the potential impact of sedimentation and turbidity on sensitive aquatic organisms and downstream water supplies.

3.8-37 Comment Summary: Stream Crossing Procedures

The COE recommended that the pipeline companies be allowed to place trench spoils instream with FERC's approval on a site-specific basis in areas where placement above the streambank may cause more environmental damage than it is intended to avoid.

Response:

FERC's Stream and Wetland Construction and Mitigation Procedures (see appendix D) recommend that trench spoils excavated from minor and major streams be placed at least 10 feet away from streambanks. Section 5.1.3.2.1 indicates that any deviation required from this condition must be reviewed and approved by FERC on a site-specific basis prior to construction.

3.8-38 Comment Summary: Stream Crossing Procedures

A commentor inquired as to who would conduct the daily inspections of erosion and sediment control devices as specified in appendix D.

Response:

The applicant's construction contractor and/or environmental inspector would be responsible for daily inspection of these devices.

3.8-39 Comment Summary: Stream Crossing Procedures

Monroe, Connecticut, recommends that all Class A and AA water bodies and public surface water supplies be crossed utilizing the dry-ditch method in which the stream flow is flumed through a pipe across the pipeline trench.

Response:

FERC's recommendation 21 requires that the applicants construct dry-ditch crossings of all streams utilized as public water sources. Because of their size, many of the Class A and AA streams that would be crossed by the proposed project would be flumed as described in FERC's Procedures (appendix D). FERC recognizes that the exceptional quality of Class AA streams should be protected and has recommended that these proposed stream crossings be constructed by the dry-ditch method. Section 5.1.3.2.2 and section 7.3, recommendation 21 have been revised to incorporate this change.

3.8-40 Comment Summary: Public Water Supplies

The City of Albany, New York supplied information on Basic Creek Reservoir and Alcove Reservoir, active water supplies for Albany.

Response:

Comment noted. Sections 4.1.3.2 and 5.1.3.2.2 have been revised to include the tributaries that would be crossed upstream of Basic Creek Reservoir. There are no proposed water crossings located upstream of Alcove Reservoir.

3.8-41 Comment Summary: Public Water Supply Watersheds

The State of Rhode Island indicated that the Crookfall Brook Watershed is a public surface water supply and that several tributaries to surface water reservoirs are crossed by Tennessee's proposed Lincoln Lateral.

Response:

The streams crossed by the Lincoln Lateral are located in the Blackstone and Woonasquatucket River basins. The lateral traverses approximately 0.9 mile of Woonsocket Reservoir No. 3 watershed area. There are no water bodies crossed upstream of this reservoir or upstream of the Stillwater Reservoir. FERC's Erosion Control, Maintenance and Revegetation Plan (appendix C) would adequately address potential erosional impact on the watershed. In addition, our Procedures (appendix D) would prohibit refueling activities and storage of hazardous materials within any municipal watershed area.

3.8-42 Comment Summary: Public Water Supply

Iroquois provided additional information on Connecticut regulations regarding public water supplies.

Response:

Comment noted. Section 5.1.3.2.2 has been revised to incorporate this information.

3.8-43 Comment Summary: Stream Crossing Recommendations

COE indicated that the applicants should notify the COE and Coast Guard of the construction schedule for navigable waterways.

Response:

Comment noted. Section 5.1.3.2 has been revised to incorporate this recommendation.

3.8-44 Comment Summary: Navigational Impact

COE indicated that the DEIS did not address long-term impact of the proposed project on existing and potential navigation improvements in navigable waterways that would be crossed.

Response:

These issues would be addressed as a part of Iroquois and Tennessee's application for a Section 10 permit from COE.

3.8-45 Comment Summary: Antidegradation Policy

The FWS contended that FERC did not consider compliance with the antidegradation policy in 40 CFR 131.12 and state water quality regulations. The FWS stated that long-term or permanent loss of existing uses of forested habitat for wildlife species would occur up to 200 meters on either side of the right-of-way and that habitat would be eliminated during construction, both of which would result in significant degradation of water quality.

Response:

FERC points out that the state water quality certification process (Section 401) would address antidegradation concerns of the Iroquois/Tennessee project. Thus, only the state water quality agency, and not the FWS, has the authority to determine compliance or noncompliance with this policy. Terrestrial habitats are not included in the antidegradation policy referenced by FWS, which is specifically designed to protect uses on or in a water body. In addition, FERC notes that the FWS' opinion regarding the loss of existing uses of forested habitat up to 200 meters on either side of the right-of-way is not supported by current scientific studies that were conducted by FWS experts on the subject (see Wildlife Monographs No. 103). Pipeline construction would temporarily disturb habitat, which would result in the modification or alteration, but not the permanent loss of wildlife habitat.

3.8-46 Comment Summary: Water Quality Certification

The State of Connecticut indicated that the CTDEP would require the following items to be addressed and approved through the issuance of the Section 401 Water Quality Certificate:

- Erosion control and sedimentation plan
- Verification and inspection procedures
- Job specifications for environmental inspectors
- Petroleum handling procedures

Response:

Comment noted.

3.8-47 Comment Summary: Review of Stream Crossing Procedures

The City of Shelton, Connecticut, indicated that the town will retain the authority to review the applicants' stream and wetland construction procedures.

Response:

Comment noted.

3.8-48 Comment Summary: Impact of Gas Leaks

Two commentors requested an explanation of the impact of a gas leak on wetlands and fresh- and salt-waters.

Response:

Natural gas is immiscible in water and is lighter than air. Therefore, leaking gas would rise through soils and water and disperse into the atmosphere. When leaking in sufficient quantities, natural gas can destroy vegetation, causing it to turn brown. Pipeline companies periodically survey the pipeline routes for the presence of stressed or dead vegetation to identify potential leaks of gas.

3.8-49 Comment Summary: Impact on Fishing Gear

Iroquois indicated that evaluations of fishing gear used in Long Island Sound were also considered during analysis of potential interactions between pipeline and fishing gear.

Response:

Comment noted. Section 5.1.3.2.2 has been revised to incorporate this information.

3.8-50 Comment Summary: River Crossing Methods

Iroquois provided information on river crossing construction methods.

Response:

Comment noted. Section 5.1.3.2.1 has been revised to incorporate this information.

3.8-51 Comment Summary: Additional Stream Crossings

Iroquois provided clarifications to the surface-water crossings listed in appendix E. Iroquois indicated the crossing of six additional streams and their water quality classifications and provided corrections to stream names and mileposts.

Response:

Comment noted. Section 4.1.3.2 and appendix E have been revised to incorporate these items.

3.8-52 Comment Summary: Impact on Hydrology

Private citizens submitted information concerning potential flooding between Iroquois MPs 259 and 260 and MPs 304 and 305. Citizens were concerned that pipeline construction would cause adverse impact on hydrologic features on their property.

Response:

FERC's recommended Erosion Control, Revegetation, and Maintenance Plan (appendix C) and Stream and Wetland Construction and Mitigation Procedures (appendix D) address stabilization of the proposed pipeline right-of-way after pipeline installation. Environmental inspectors would be present during construction to ensure that contractors follow these specified procedures.

3.8-53 Comment Summary: Still River Alignment

Iroquois indicated that the proposed route near Still River is not aligned directly adjacent to the gorge but is located east of the railroad right-of-way.

Response:

Comment noted.

3.8-54 Comment Summary: Impact on Watersheds

Several commentors expressed concern for potential construction impact on watersheds, particularly the Weantinoge Heritage Land Trust watershed.

Response:

FERC has concluded that potential construction impact on watersheds would be minimal and temporary in nature. Our recommended Erosion Control, Revegetation, and Maintenance Plan (appendix C), Stream and Wetland Construction and Mitigation Procedures (appendix D), and the required Spill Prevention, Containment, and Control Plan would be adequate to protect watersheds during and following pipeline installation.

3.8-55 Comment Summary: Contamination Impact

The Northport Hills Civic Association suggested that the right-of-way be limited to 50 feet by the wetlands to avoid further contamination of the freshwater pond between the right-of-way and the golf course at MP 361.25.

Response:

Pipeline construction would not result in contamination of the freshwater pond. FERC's Procedures (appendix D) would prohibit refueling and storage of hazardous materials within 100 feet of all surface waters, thus, a 50-foot-wide right-of-way is not necessary in this area.

3.9 WETLANDS AND WETLAND CROSSING PROCEDURES

3.9-1 Comment Summary: Wetland Avoidance

Several letters commented on the requirement that the applicants and FERC analyze alternatives that would avoid or minimize impact on wetlands and requested that the applicants and FERC demonstrate how they avoided wetlands or minimized potential impact.

Response:

The applicants used avoidance or minimization of distance traversed through wetlands as a criteria throughout the route selection process and analysis of alternatives. Aerial photography, topographic maps, NWI maps, NYDEC wetland maps, Connecticut Soil Surveys, aerial reconnaissance, and field studies were used to avoid wetlands or minimize the distance traversed through them wherever practical.

FERC used wetlands as a criteria to evaluate system alternatives and also reviewed the entire route and evaluated potential route variations to avoid or minimize wetland crossings. We recommended 34 route variations in the DEIS with the sole intention of avoiding or minimizing wetland crossings (see table 6.1-2), which would reduce by 5 miles the amount of wetlands that would be crossed by Iroquois. In response to comments, we reevaluated nine of these variations in section 6.2. Greater consideration was given to avoiding major wetland complexes, forested wetlands, or wetlands containing unique or significant habitat. Other route variations recommended for Iroquois and Tennessee weighed wetlands avoidance with other resource factors and recommended the best practicable alternative. Many of these recommended route variations also further avoid or minimize wetland crossings.

Implementation of the Stream and Wetland Construction and Mitigation Procedures (appendix D) would further minimize potential adverse impact on wetlands, to minor, mostly short-term effects and limited right-of-way maintenance activities.

At the request of FERC and COE, Iroquois has conducted field studies to further refine wetlands delineation along the proposed right-of-way. The results of these field surveys would be used to further refine the pipeline route to avoid wetlands and/or select the most appropriate construction technique to minimize wetland impact. Detailed wetland mapping and qualitative/quantitative evaluations have been submitted to the COE as part of the individual 404 permit process. Crossing procedures specific to each wetland will be identified on the construction alignment maps that would be submitted as part of the EM & CPs and D&M Plan. The COE individual wetland permit required prior to construction may impose additional conditions on the applicants that would further avoid wetlands or minimize wetland disturbance.

3.9-2 Comment Summary: State and Local Wetland Regulations

Comments were received from the State of Connecticut, most of the towns that would be crossed in Connecticut, and from numerous Connecticut residents regarding concern that Connecticut state and local wetland regulations were not considered.

Response:

FERC is a Federal agency and, in preparing this public document for the proposed Federal action, this agency and COE are required to comply with Federal law. In identifying and assessing impact on wetland resources, FERC and COE must use the most currently accepted Federal methodology for identifying wetland resources, specifically the 3-parameter Unified Federal Methodology. These procedures, unlike those of Connecticut, utilize a combination of soil type, hydrology, and vegetation to determine the location and extent of wetlands. Consequently, we have required the applicants to field-delineate all wetlands prior to construction to verify wetland resources under COE 404 jurisdiction (see response 3.9-3). Connecticut may apply its own state and local wetland regulations during the state and local permitting process.

3.9-3 Comment Summary: Field Delineate Wetlands

The EPA, COE, FWS, RIDEM, and several local governments and individuals stated that the data used to delineate and assess wetlands in the DEIS (NWI maps and state wetland maps based largely on aerial photo interpretation) was inadequate, and recommended that wetlands be delineated using the Federal Unified Method (3-parameter approach).

Response:

National Wetland Inventory (NWI) maps and state wetland maps are useful tools in delineating major wetlands during the initial route selection process. These maps are ground-truthed to a limited extent to verify accuracy. NWI and state wetland maps are appropriate for initial route selection and general route refinement (see response 3.9-1) to avoid or minimize disturbance to wetlands. The applicants and FERC have used aerial reconnaissance and limited ground inspections to further identify and avoid or minimize effects on wetlands.

We recognize the need for more detailed delineation and assessment of wetlands and now require applicants to field delineate and assess all wetlands prior to construction. However, it is important to note that unless an applicant receives a certificate of Public Convenience and Necessity from FERC, it has no power of eminent domain and no right of entry to survey for wetlands where the landowner refuses access. In these instances, which are numerous in Connecticut, off-site delineation methods are the only available means to determine wetland occurrence during FERC's environmental review process.

The COE has determined that a single individual 404 permit is required for the project. Iroquois has been conducting on-site and off-site field studies using the 3-parameter approach (vegetation, hydrology, and soil type) for the past 6 months. The purpose of these studies is to field-verify wetlands under COE 404 jurisdiction in relation to the

proposed pipeline and further refine the pipeline route to avoid sensitive wetlands. Preliminary results of Iroquois' field delineation effort are presented in Volume I, appendix J. The results of Iroquois' field delineations were field-checked for accuracy by FERC and COE staff during April 1990.

3.9-4 Comment Summary: Wetland Revegetation Plans

Comments were received from COE, the State of Connecticut, several towns including Monroe, Brookfield, and Huntington, and various citizens regarding the need for site-specific, detailed revegetation plans for each wetland crossed during construction. The reason most often given in support of revegetation of wetlands was that natural revegetation takes too long, has a low probability of success, could result in the introduction of exotic "pest" wetland plant species, and could lower the overall habitat quality of the wetland.

Response:

The staff believes that revegetation of wetlands following pipeline construction should occur naturally and with the same species of vegetation that occurred prior to construction which are, consequently, probably best adapted for that particular wetland. To achieve this, the staff has developed wetland construction procedures (appendix D) that, in addition to reducing the width of the construction right-of-way clearing and disturbance, are geared toward preserving the root and seed stock of native vegetation. This involves the restriction in forested wetlands of stump removal in all cleared areas except directly over the trench area. Leaving the stumps in place will insure rapid regrowth of woody vegetation due to stump sprouting, particularly in the deciduous forested wetlands which are most commonly found along the Iroquois/Tennessee Pipeline route. The procedures also require the applicant to segregate the top 1 foot of topsoil from the area disturbed by trenching. This topsoil will then be restored to its original horizon over the trench after backfilling the trench with subsoils. This will ensure that existing root and seed stocks of perennial and annual herbaceous wetland vegetation will recolonize the disturbed area as quickly as possible. Our past pipeline construction experience has indicated that emergent or herbaceous wetland vegetation recolonizes very quickly. To further reduce the establishment of exotic pest species such as phragmites or purple loosestrife, we have recommended, in addition to the above procedures, that the entire disturbed right-of-way be seeded with annual rye grass. We do not believe it should be the pipeline applicants' responsibility to improve the habitat quality of every wetland it crosses by replanting with species that do not presently exist in a particular wetland.

Finally, our recommended Procedures require the applicants to develop site-specific procedures, in coordination with the appropriate state agency, to prevent the establishment or spread of undesirable exotic vegetation.

3.9-5 Comment Summary: Stream and Wetland Procedures

Iroquois and Tennessee provided comments on FERC's recommended Stream and Wetland Construction and Mitigation Procedures (appendix D).

Response:

The applicants' comments are addressed in revised sections 5.1.3.2.1 and 5.1.7.2 and in the revised appendix D.

3.9-6 Comment Summary: Right-of-Way Width

Several comments were received relative to the width of the construction right-of-way through wetlands.

Response:

As discussed in section 5.1.7.1, we have recommended that the width of the construction right-of-way through wetlands be reduced to 75 feet. We feel this is the minimum width that could be utilized for construction when considering the inherent problems of construction through areas of unstable, and possibly saturated, soils. As discussed in section 5.1.7.1, and further commented on by Iroquois, a limit of anything less would most likely be impractical.

3.9-7 Comment Summary: Winter Construction

Commentors from the State of Connecticut and Towns of Monroe, Connecticut, and Huntington, New York, recommended that construction in wetlands take place in winter after the ground is frozen or avoid the spring - early summer bird breeding season.

Response:

We do not recommend a restriction on the time period for pipeline construction in wetlands. Winter construction has been successful in reducing wetland impact in arctic and subarctic environments where depth of freezing is sufficient to support construction vehicles and equipment and winter precipitation is minimal. However, in the Northeast and Mid-Atlantic Regions, seasonal frost penetration in wetlands is often inadequate to fully support construction vehicles and equipment, and winter months tend to have higher precipitation, often falling as rain. Under these situations winter construction could be more difficult and result in greater disturbance to wetland ecosystems. The duration of construction activities in any given wetland is short-term (a few days). Right-of-way width through wetlands is reduced and staging areas are required to be located outside of wetlands. Therefore, impact on wetlands and displacement of wildlife would be limited in areal extent and would be of a temporary nature. Seasonal restrictions on construction activities in wetlands may require the applicant to mobilize for construction twice in a given area. This would result in disturbance-related displacement of wildlife during two construction periods. Continuous construction through a given area is generally more efficient and results in less overall impact and disturbance. Certain Federal, state, or local permits or authorizations could restrict timing of construction in critical habitats for rare, threatened, or endangered species, or important species of special management concern. However, we have concluded that blanket restrictions on construction timing in wetlands are inappropriate.

3.9-8 Comment Summary: No Net Wetland Loss

Several letters (primarily from local government agencies or representatives) disagreed with the assessment of no net wetland loss. They felt that pipeline construction through wetlands should be considered filling or draining, thus constituting wetland alteration. Some felt this alteration would constitute significant, irreversible wetland disturbance or destruction, including loss of wetland functions, values, and diversity.

Response:

Construction in wetlands would involve the excavation of wetland soil and backfilling of the trench with the same material. No fill would be imported to the area and no dredged material exported. Adoption of FERC's recommended pipeline construction procedures would prevent alteration of the hydrology or water surface level of wetlands. Ditch plugs would be used to prevent the trench from acting as a drainage channel. Ditch spoil would be backfilled and spread evenly over the disturbed area, and would not be burned or compacted. Therefore, no net wetland filling, draining, or loss would occur. Use of FERC's recommended Procedures (appendix D) would minimize the compaction and rutting of wetland soils. Wetland impact would therefore primarily be limited to alteration of wetland vegetation. Limited stump removal and grading activities, topsoil segregation and replacement, and seeding of disturbed areas with annual rye grass would promote the quickest reestablishment of native vegetation and minimize potential invasion by exotic species. Therefore, long-term alteration would be reduced to limited hand clearing of trees located within 15 feet of the pipeline. Utilization of the wetland crossing construction and mitigation procedures contained in appendix D will limit wetland alteration to minor, short-term impact that is not considered significant or does not have an irreversible effect on wetland function, value, or diversity.

3.9-9 Comment Summary: Functional Values

Several comments were received indicating the lack of a wetland systems analysis and of a detailed, site-specific analysis of the impact on the functional values of the wetlands that would be crossed by this project.

Response:

As discussed in section 4.1.7, wetlands have a number of functional values. Most of these are related in some degree to surface and/or groundwater movement (i.e., flood and stormwater control, erosion control, water quality improvement, recreation and wildlife habitat). Current scientific research indicates that during pipeline construction, if no barrier to surface or groundwater movement is installed or incorporated, there would be little impact on the overall functional values of a particular wetland beyond those associated with the temporary clearing of vegetation. FERC believes that if the wetland construction procedures outline in appendix D are implemented, impact on the functional values would be reduced even further, particularly those impacts associated with the initial clearing. Rapid revegetation of the wetland would allow valuable wildlife habitat to re-establish in all areas disturbed by construction. EPA and COE are in apparent agreement with FERC since pipeline construction through wetlands and across streams has been and

continues to be allowed under the jurisdiction of the Nationwide Permit Program. Consequently, we have generally limited our wetlands impact analyses to wetland systems that could be affected by the loss or change of vegetation cover within the wetland.

To further assess and mitigate the temporary impact associated with pipeline construction, the staff has required that Iroquois conduct a Land Preservation and Enhancement Program (LPEP) ecological study. If results of this study indicate additional impact on wetland functional values has occurred, the applicant would be required to develop and implement additional mitigation procedures.

3.9-10 Comment Summary: Impact Beyond Edge of Right-of-Way

The HVA commented that the impact on wetlands due to pipeline construction and operation would extend beyond the edge of the right-of-way.

Response:

We believe that most long-term impact associated with pipeline construction through wetlands would be limited primarily to the effects of vegetation clearing within the right-of-way (e.g., habitat disturbance, alteration of visual aesthetic character). The staff does not believe that construction or operation of a pipeline through a wetland would permanently adversely affect the wetland's functional values beyond those described above (refer to comment response 3.9-9). When the vegetation cover to be cleared along a right-of-way through a wetland consists of emergent or scrub/shrub species, our experience, based on previous pipeline construction projects, indicates that revegetation of the same species occurs rapidly and completely within several years following construction. We believe that by following our recommended wetland construction procedures, revegetation would occur even more quickly and completely. As indicated in sections 5.1.4 and 5.1.5, the clearing of a right-of-way through forested areas (including forested wetlands) would disrupt current wildlife habitat beyond the edge of the right-of-way. Although our procedures for clearing and maintenance of vegetation through wetlands would reduce this effect, it would not eliminate it. By limiting the construction right-of-way width through wetlands, leaving stumps intact to encourage resprouting, allowing woody vegetation to regrow over the entire right-of-way, and selectively cutting trees within 15 feet of the pipeline centerline that exceed a height of 15 feet, we feel we would substantially reduce the long-term or permanent impact on wildlife habitat in forested wetlands.

3.9-11 Comment Summary: Type of Wetland Affected

The HVA commented that the DEIS did not adequately inform the reader of the type of wetlands that would be affected or the consequences of disturbing a particular wetland.

Response:

Tables 4.1.7-1 and 4.1.7-2 and appendix J describe the type of wetland that would be crossed, with data organized by applicant, state, and milepost of the pipeline. We used the most generally accepted and widely understood method of description, the National Wetland Inventory Classification System of Freshwater Wetlands, developed by the FWS.

These tables describe the length of crossing, whether the route would consist of new right-of-way or would be adjacent to existing right-of-way, the wetland area that would be disturbed during construction, and the amount of wetland area that has been proposed to be maintained as cleared right-of-way. Additionally, the text in sections 4.1.7.1 and 4.1.7.2 summarizes the number and types of wetlands found along both applicants' proposed routes. We believe this adequately describes the wetland resources that would be affected by this proposed project.

We do not describe the effect on each and every wetland that would be crossed by the proposed project. To do so would be extremely redundant. Instead, in section 5.1.7, we describe the potential impact of construction on the types of wetlands that would be crossed, both generally and specifically, by applicant, and identify the mitigation procedures that we have recommended to reduce impact on wetlands.

3.9-12 Comment Summary: Vernal Pool Surveys

Iroquois commented that a report of results of vernal pool surveys, to be submitted to FERC, is unnecessary. Iroquois agreed to submit to FERC relevant wetland applications that indicate presence of vernal pools.

Response:

Our intent in recommending surveys for vernal pools was to identify and, where practicable, minimize impact on this important wildlife habitat type. Each state may recognize different values for vernal pool habitat, and may incorporate an assessment of these values within existing state permit processes. We have concluded that a review of the locations and proposed mitigation to avoid or minimize impact on specific vernal pools would be more appropriately handled in conjunction with the state.

However, we believe that the submittal of survey and mitigation reports to FERC is a necessary step to ensure that impact on vernal pool habitat is minimized to the maximum extent practicable. Therefore, FERC stands by its original recommendation (see comment response 3.17-20).

3.9-13 Comment Summary: General Concern About Impact

Eighteen commentors expressed general concern about potential adverse impact (disturbance, alteration, destruction, or loss) on wetlands and wetland habitat values.

Response:

Clearing of wetland vegetation would result in the temporary loss and alteration of wildlife habitat and aesthetic values, as well as temporary changes to wetland hydrology and water quality. However, through the adoption of recommended route variations to avoid or minimize effects on wetlands and adoption of the Stream and Wetland Construction and Mitigation Procedures (appendix D), we believe that wetland impact would be minimal and temporary. The applicants have included many route variations to avoid wetlands.

We have also recommended adoption of 34 route variations that avoid or minimize effects on wetlands to the maximum extent practicable.

Since there would be no filling or draining of wetlands, no net loss of wetlands would occur. Recommended construction and mitigation procedures require staging areas to be located outside of wetlands, limit vegetation clearing and grading activities, minimize equipment operation in wetlands, avoid interruption of natural drainage, provide for erosion and sediment control, prompt quick reestablishment of native vegetation, and minimize right-of-way maintenance activities to selective removal of 6-inch-diameter trees 15 feet on either side of the pipe centerline. Adoption of these route variations and implementation of these procedures would minimize affected wetland area, and ensure that most impact would be of a short-term nature and long-term impact would be restricted to the alteration of forested wetland vegetation along the maintained right-of-way.

The COE individual Section 404 permit required prior to construction, as well as state and local review processes, may impose additional conditions on the applicants that would further avoid or minimize potential impact of proposed wetland crossings.

3.9-14 Comment Summary: Staging Areas in Wetlands

FWS commented that wetlands located at both the St. Lawrence and Hudson River crossings should not be disturbed by construction of staging areas unless, following the 404(b)(1) guidelines, there is no other alternative that would result in less impact.

Response:

Iroquois, after conducting wetland field delineation surveys utilizing the unified Federal methodology, relocated the proposed pipeline landfall to the west approximately 200 feet along the St. Lawrence River to avoid placing a portion of their staging area within a wetland (see section 6.2.1). We have determined that it is not practicable to avoid the wetland area along the Hudson River during river crossing procedures. Consequently, Iroquois has agreed to prepare a wetland mitigation plan to restore the wetland area along the Hudson River that would be disturbed by construction of the staging area. We have recommended that this plan be submitted to FERC for review and approval prior to construction.

3.9-15 Comment Summary: Wimisink Wetland

Several comments were received about the potential impact on the Wimisink wetland and wildlife sanctuary due to construction and operation of the proposed pipeline. Of particular concern was the length of wetland to be crossed, the clearing of vegetation in the wetland, the potential for alteration of hydrology within the wetland and the combined effects on wildlife habitat within the sanctuary.

Response:

We recommend a route variation through the Wimisink wetland that would avoid the clearing of tamaracks and a white oak hedge row. As noted in comment response 3.9-16, the wetland area to be crossed by this variation is approximately 1,600 feet. The area to be crossed consists primarily of herbaceous wetland grasses, sedges, and rushes. Although other variations have been considered, we feel this route would result in the least overall impact on the area's resources. By following our recommended construction procedures, the width of the right-of-way would be reduced through the wetland, and topsoil and associated native seed and root stocks would be segregated from the trench spoils and reapplied over the trench backfill to ensure rapid regrowth of the existing vegetation. The trench would be backfilled only with the same material that was removed from the trench during excavation. No granular fill or gravel would be used in the trench as backfill. Consequently, impact on the hydrology of the Wimisink wetland, including existing subsurface drainage patterns, would be minimal and temporary in nature. Additionally, trench breakers would be utilized at the wetland boundaries to further reduce the potential for wetland drainage. We also recommend that construction through this wetland be restricted to the months of July, August, or September during its driest period, and that Iroquois submit to FERC a site-specific construction and mitigation plan prior to construction.

We believe that by following these procedures and recommendations through this essentially emergent wetland meadow, the impact from construction would be short-term and would consist of temporary disruption and loss of habitat during construction and revegetation. More mobile wildlife species such as deer, muskrat, beaver, song birds, wading birds, etc., would be temporarily displaced until, at a minimum, construction was complete. Nesting and cover habitat in the area over the right-of-way would be lost until revegetation was complete. Less mobile species such as reptiles, amphibians, and small mammals could be lost in the area of the right-of-way. These species would become re-established in the construction area after revegetation is complete, which would occur within 1 to 3 years.

3.9-16 Comment Summary: Wetland Crossing Length

One commentor stated that the indication of wetland length crossed in Sherman, Connecticut (Wimisink wetland), is incorrect (see Volume I, section 3.6.26).

Response:

Comment accepted; see revised Volume I, section 3.6.26 and revised table 4.1.7-1.

3.9-17 Comment Summary: Weantinoge Wetlands

Comments were received from the State of Connecticut, the Town of Brookfield, and from several Connecticut residents expressing concern for the effects of construction on the natural resources of the Weantinoge Heritage Land Trust's Still River Nature Preserve.

Response:

Iroquois has routed the proposed pipeline within, but along the boundary of, the Still River Preserve in an area immediately adjacent to an existing cleared right-of-way utilized by an electric transmission line. The route would also run parallel, but not quite adjacent, to the Conrail right-of-way. Iroquois would maintain a 30-foot-wide visual vegetation screen between its proposed right-of-way and the Conrail right-of-way. In addition, Iroquois would survey for and avoid specimen trees in this area.

The proposed route through the Still River Preserve would cross several calcareous spring seeps that flow directly to the Still River wetland area, which is located downgradiant of the proposed route. By backfilling the trench with native materials removed from the same trench area, no changes in subsurface drainage patterns would occur. To insure maintenance of existing groundwater drainage patterns and to protect the integrity of the pipeline, Iroquois would install ditch plugs and subsurface drains across the trench in seep areas should it become apparent during construction that existing soil conditions warrant additional drainage mitigation.

Because calcareous seeps (wetland areas) may support rare plant species, FERC will require Iroquois to survey these areas to determine if rare species exist along the proposed right-of-way. We have recommended that the results of these surveys be submitted to FERC, along with proposed mitigation measures to avoid or restore habitat of discovered populations.

3.9-18 Comment Summary: Brookfield Wetlands

Many residents from Brookfield, Connecticut, indicated a concern regarding the potential impact on "wetland areas such as riparian wetland systems, wet meadows, floodplain areas, and the Red Maple swamps."

Response:

We investigated three route variations in Brookfield to reduce or eliminate the crossing of wetlands and associated riparian and floodplain communities. We have recommended that these route variations be adopted; their utilization would reduce the amounts of wetlands crossed from 3,450 feet to 1,400 feet. These wetlands have been identified from both FWS National Wetland Inventory Maps and from town wetland maps based on hydric soils. The proposed crossing of Bound Brook wetland, a primarily forested wetland, would be reduced in length by 900 feet.

3.9-19 Comment Summary: Brookfield Wetland Variation

A comment was received that the Brookfield Wetland Variation appeared, based on a review of the USGS map, to traverse a pond and wetland area located to the east and north of Pocono and Silvermine Roads.

Response:

We have revised this variation to proceed south along the west side of the Conrail tracks, opposite the referenced pond and wetland area. Refer to the Brookfield Variation #2 discussion, section 6.2.55.

3.9-20 Comment Summary: Stilson Hill Wetlands

The Stilson Hill Association commented that the proposed route along the west side of Stilson Hill Road would traverse wooded wetlands for much of its length.

Response:

We have investigated a route variation to avoid the proposed route alignment along the west side of Stilson Hill Road (see section 6.2.49). The variation would traverse fewer wetland areas, including most of the linear forested wetland located along a former telephone right-of-way. The results of an investigation by Iroquois indicated that the variation would cross approximately 500 feet of wetland area (based on hydric soils) while avoiding 1,100 feet of wetland located along the proposed route. We have recommended this variation.

3.9-21 Comment Summary: Means Brook Wetland

The City of Shelton and the HVA commented on the potential for impact on the old growth mixed hardwoods, structural diversity, and the functional values of the Means Brook Wetland.

Response:

We have acknowledged the heavily forested characteristics of this swamp in our discussion of the Conrail Variation (see section 6.2.61). To preserve the continuity of this large wetland, in addition to its wildlife habitat value and structural diversity, we have recommended that Iroquois realign its proposed route to cross Means Brook Wetland along its eastern edge. Although clearing of woody vegetation would still be required, the right-of-way would not fragment the wetland or create new edge habitat within the wetland. Although this wetland has been described as "pristine," our discussions with the Bridgeport Hydraulic Company (BHC) have indicated that it has been disturbed during a stream channelization and vegetation clearing project by BHC. Field investigations have also revealed the recent construction of several large storm water ponds that were developed to accommodate runoff from newly constructed residential developments surrounding the wetland. We feel that by realigning the route to the eastern edge of the wetland, the extent of wetland clearing would be reduced while preserving the integrity of the large, wooded wetland expanse. We feel this, together with implementation of our recommended stream and wetland crossing procedures, would significantly reduce the potential to affect the structural diversity and functional values of this wetland and would protect the existing water quality of Means Brook.

3.9-22 Comment Summary: Cranberry Pond Wetland

Several comments were received about the omission of Cranberry Pond Wetland from table 4.1.7-1.

Response

Comment accepted; see revised table 4.1.7-1.

3.9-23 Comment Summary: Crab Meadow Wetlands

Several comments were received from the Town of Huntington, New York, regarding potential impact on Crab Meadow, Blanchard Lake wetlands, and on Fuchs' Pond. Of specific concern was the use, to the greatest extent possible, of the existing LILCO underground transmission right-of-way (causeway) and the potential for soil compaction and rutting to occur from equipment use in the wetland areas. Another concern was expressed regarding the impact on fisheries in Fuchs' Pond due to increases in suspended sediment.

Response:

Iroquois has indicated on its alignment sheets that the pipeline would be constructed and placed within the existing roadway located between Blanchard Lake and its associated wetlands and the LILCO power plant outfall channel. All ditch spoil from within the roadway would be removed from the right-of-way and stored until required for backfilling the trench. Impact on Blanchard Lake and the adjacent wetland would be minimal.

The proposed pipeline route would cross a portion of Crab Meadow wetland that contains both forested and emergent vegetation cover. The route is aligned adjacent to the southwest side of the LILCO transmission causeway. This causeway contains five buried electric transmission cables and is approximately 3 to 5 feet higher than the surrounding wetland area. Iroquois has indicated that the proposed gas pipe centerline would be located approximately 25 feet from the causeway, but may extend further away depending on the soil's composition and moisture content. Iroquois has also indicated it would utilize the LILCO right-of-way for construction vehicle traffic across the wetland, thereby reducing the width and use of the construction right-of-way within the wetland. Trenching would be conducted from within the wetland, however, following our recommended construction procedures (e.g., removable wooden mats for support during trenching) in accordance with site conditions at the time of construction. Iroquois has also indicated that the pipeline segment crossing Crab Meadow wetland would be assembled outside the wetland in adjoining upland areas should spoil moisture content be high enough to allow the pipe assembly to be floated through the wetland. Overall, use of these procedures and use of the LILCO right-of-way for construction traffic would reduce the amount of construction within the wetland, thereby reducing soil compaction and rutting within the wetland area.

Fuchs' Pond is located on the opposite side of the LILCO right-of-way, and would not be affected by sediment runoff or increased suspended sediments.

3.9-24 Comment Summary: Wetland Location

One commentor asked if the Kangaroo Bog [sic] is located in New York or Massachusetts.

Response:

As indicated in section 4.1.7.2, Kampoosa Bog is located in Massachusetts.

3.9-25 Comment Summary: Meter Station Location

Officials from the town of Lincoln, Rhode Island, commented that the meter station associated with Tennessee's Lincoln Extension is proposed to be located within a forested wetland area.

Response:

Comment noted. We have recommended that Tennessee relocate this meter station to an upland area and submit the new location, together with a plot plan detailing the area required to construct and operate this meter station, to the Director of OPPR for review and approval prior to construction. Refer to revised sections 4.1.7.2, 5.1.7.3, and 7.3.

3.9-26 Comment Summary: Reduction of Crossing Length

Iroquois commented that the length of crossing of large, forested wetlands has been significantly reduced due to route variation modifications proposed by Iroquois.

Response:

Commented noted; refer to revised section 4.1.7.1.

3.10 VEGETATION, WILDLIFE, AND FISHERIES

3.10-1 Comment Summary: Minimize Right-of-Way Width

Three letters were received requesting that the temporary work space and permanent right-of-way be reduced to minimize loss of trees and that trees should be allowed to grow back or should be planted in the temporary work space.

Response:

We have recommended that Iroquois reduce its proposed 100-foot-wide construction area and 60-foot-wide permanent right-of-way to a 75-foot-wide construction work space and 50-foot-wide permanent right-of-way (see section 7.3, recommendation 38). Tennessee would utilize existing rights-of-way to the maximum extent practical and would typically require an additional 50-foot construction and 25-foot permanent right-of-way for its loops. Temporary construction work space would be seeded with grasses and legumes. No tree seedlings would be planted in the temporary work space unless specifically required by the landowner. However, these areas would be allowed to revegetate naturally with shrub and tree species. A young forest stand would typically become established in 15 to 25 years. Only the permanent right-of-way would be maintained in a herbaceous and open shrub cover through periodic mowing and hand thinning every 3 to 7 years.

3.10-2 Comment Summary: Herbicides

Three agencies and four individuals recommended restriction or elimination of the use of herbicides in maintaining permanent right-of-way. The three individuals believed Iroquois would maintain a 100-foot right-of-way through the use of herbicides.

Response:

We have recommended Iroquois maintain no more than 50 feet of permanent right-of-way. Iroquois has voluntarily agreed not to use herbicides, and to perform right-of-way vegetation management at 5 to 7 (or more) year cycles, conducted from mid-summer to late fall using power-driven equipment and selective trimming using hand-held equipment.

Most of Tennessee's new permanent right-of-way parallels existing maintained rights-of-way. Tennessee is currently evaluating herbicides and regrowth inhibitors used to maintain existing rights-of-way. They may choose to selectively restrict or discontinue use of herbicides in favor of emphasizing mechanical means. Tennessee is likely to extend its revised vegetation management plan for existing rights-of-way to the proposed loops, laterals, and extensions. However, no herbicides would be used in Massachusetts. The selection and use of herbicides would be in accordance with applicable EPA and state regulations and include limited use of only EPA-approved herbicides in wet areas (wetlands, water courses, and public water supply areas).

FERC's general policy is to discourage herbicide use and encourage mechanical vegetation maintenance. However, authority to restrict or permit the use of pesticides is within the sole jurisdiction of the EPA.

3.10-3 Comment Summary: Specimen Trees

Two letters were received expressing concern for large "specimen" trees. The Stilson Hill Association of New Milford, Connecticut, was concerned about large white and red oaks (up to 180 - 200 inches in girth). The Northport Hills, New York Civic Association requested that the New York State Register of Big Trees be consulted in addition to the National Register of Big Trees and that trees with a score equal to or greater than 80% in either register be avoided.

Response:

We have recommended a route variation that would avoid the specimen trees located on Stilson Hill. Iroquois has agreed to identify specimen trees and to protect them from damage, using the National Register of Big Trees and the Big Tree Point System for New York State, and a similar methodology for Connecticut. Tennessee would also be required to avoid and protect specimen trees using these systems or a similar methodology in other states. Recommendation 17 in section 7.3 has been modified to include both registers and appropriate methodology in other states.

3.10-4 Comment Summary: Relative Age of Forests

One commentor asked if all the forest that the project would go through was second or third growth.

Response:

Nearly all of the forested land in the five states that the pipeline facilities would traverse consists of second or third growth. Proposed pipeline facilities do not cross any known or designated virgin, climax or old growth forests. Old growth forests are uncommon in the project vicinity.

3.10-5 Comment Summary: Loss of Cedar Trees

A representative of the Shelton Land Trust commented that 100-foot-tall cedar trees would be destroyed by construction, and that with blasting of a ledge on a steep, rocky slope it is unlikely vegetation would return.

Response:

Trees within the construction right-of-way would be removed. The proposed construction right-of-way would be reduced to 75 feet and permanent right-of-way reduced to 50 feet to minimize tree removal. The applicants have agreed to identify, clearly mark, and protect during construction any trees located immediately adjacent to the right-of-way that are of significant value to local landowners. In addition, Iroquois has agreed to identify specimen trees prior to construction, using the Big Tree Point System in New York and a similar methodology in Connecticut, and to protect these trees from damage during

construction (see section 5.1.6.2). Right-of-way restoration would include regrading to restore natural contours and revegetation with herbaceous species. Shrub and tree species would be allowed to reinvade and reestablish in the portion of the construction right-of-way that is not permanently maintained.

3.10-6 Comment Summary: Revegetation of Right-of-Way

The COE suggested that replanted vegetation should supply wildlife value and be tailored to the individual needs of the area. Weantinoge Heritage, Inc. expressed concern that the right-of-way would be invaded by alien (exotic) vegetation (such as Japanese multiflora rose, oriental bittersweet), which would take over and spread into adjoining property.

Response:

Revegetation plans call for seed mixtures that are adapted to the region and can be modified by the SCS and local soil conservation districts at the local, county, and state levels. These seed mixtures are designed to promote rapid cover, thus minimizing the opportunity for establishment of exotics, and would also provide wildlife value. Periodic mowing would limit the invasion and spread of undesirable exotics. Native vegetation adjacent to the construction right-of-way would be encouraged to become re-established within the temporary construction right-of-way. Typically a shrub and young forest stand with value to wildlife is reestablished within 15 to 25 years.

3.10-7 Comment Summary: Streambank Revegetation

The COE commented that the use of riprap on streambanks should be used as a last resort after reasonable attempts at vegetative stabilization have been exhausted and then riprap and vegetative cover can be combined.

Response:

Stream-crossing mitigation procedures contained in appendix D limit the use of riprap to areas where flow conditions preempt vegetative stabilization. Streambanks would be revegetated with grasses and legumes and a riparian strip from the edge of water to 10 feet beyond the top of bank would be permanently revegetated with native woody plant species across the width of the entire right-of-way. Where large riprap must be used for stabilization, revegetation would be encouraged in the spaces between individual rocks and boulders so that the riprap and bank vegetation would both stabilize the bank and replace or add streambank cover.

3.10-8 Comment Summary: Secondary Impact on Forest Edges

HVA commented that secondary impact on forest edges along cleared rights-of-way was not adequately addressed. HVA felt that the determination in the DEIS that secondary effects would be minor is "without basis or supporting evidence."

Response:

Section 5.1.6.1 lists the types of damage that may occur to forest vegetation adjacent to utility rights-of-way. This secondary impact is related to abrupt changes in temperature and exposure to sunlight and wind, as well as mechanical damage to roots and boles. This impact generally occurs only to the vegetation immediately adjacent to the clearing or within the range where sunlight penetrates laterally through to the forest floor (generally less than 100 feet). Carvell and Johnston (1978) found that despite this type of damage, edge trees showed equal or greater vigor than nearby non-edge trees.

Therefore, we maintain that secondary impact on forest edges along the cleared right-of-way would be minor, and that coverage of this topic in greater detail is not warranted. We also point out that the DEIS did not ignore the wildlife habitat values lost by the creation of such edges, as the HVA suggests. This concern was addressed in section 5.1.4.2.1.

3.10-9 Comment Summary: Stump and Brush Removal

Two commentors objected to FERC's recommended measures for stump removal and disposal. The State of Connecticut rejected the recommendation that pulled stumps be left on the surface following right-of-way restoration. It was stated that this would exacerbate the aesthetic impact resulting from pipeline construction. Another commentor objected to stump burial in residential area, stating that this may attract ants and termites, and may also create a safety hazard as the ground sinks over decaying stumps. A third commentor asked how tree and brush debris would be disposed.

Response:

We have revaluated our recommendation for stump pulling and disposal. Refer to modification in section 5.1.6.1 and response 3.17-7.

The applicant would be responsible for disposing of stumps, trees, brush, and slash in accordance with the reasonable wishes of each affected landowner. If agreed to by the landowner, disposal methods may include burial, stacking at the edge of right-of-way, or chipping and spreading in the right-of-way. However, we recommend that burial not occur in residential areas, and if chipping occurs, it must be done in accordance with appropriate provisions of appendix C. Merchantable timber would be stacked and left on the right-of-way at the landowners' request. If the landowner does not agree to disposal of this material on the right-of-way, the applicant would be responsible for removing it to an acceptable disposal site.

3.10-10 Comment Summary: Vegetation Maintenance In Upland Areas

FWS commented that FERC should condition each pipeline certificate to require the same limited vegetation maintenance practices on upland areas as FERC has proposed for wetland areas.

Response:

Our recommended Stream and Wetland Construction and Mitigation Procedures include a requirement for only limited vegetation maintenance on rights-of-way that traverse wetlands. Only trees greater than 15 feet in height, and within 15 feet of the pipeline would be selectively cut during operation of the pipeline facility. To extend this requirement to include upland areas would significantly impair the applicants' ability to conduct routine maintenance, as well as safety inspections of the proposed gas lines as required by DOT regulations. We also note that allowing shrub vegetation to reestablish on the right-of-way would not significantly reduce the impact on area-sensitive wildlife species that require unbroken mature forest, as FWS contends. For these reasons we conclude that no additional restrictions beyond those listed in the DEIS be placed on right-of-way maintenance practices in upland areas.

3.10-11 Comment Summary: Increased Hunting Near Residences

Three commentors from Sandy Hook, Connecticut, expressed concern that the new right-of-way that would be created by the Iroquois Mainline between MP 314 and MP 316 would encourage an increase in use by hunters within proximity to a number of residences.

Response:

Comment noted. The creation of an open right-of-way could attract wildlife, particularly deer, and potentially deer hunters, to areas relatively close to residences. This may increase the chance of firearms being discharged near homes. In Connecticut it is unlawful to discharge firearms within 500 feet of occupied buildings. As the commentors noted, however, the residences between MP 314 and MP 316 abut public forest land which already is used by hunters. As discussed in section 6.2.60, we have recommended a route variation east of Iroquois' proposed route, which would result in an increased distance between these homes and the pipeline.

3.10-12 Comment Summary:

The FWS contends that vegetation clearing during pipeline construction and maintenance would involve violations of the Migratory Bird Treaty (MBT).

Response:

The staff believes that the MBT seeks to prohibit activities that intentionally harm or destroy migratory bird species, particularly those resulting from hunting migratory birds or trading in bird eggs, nests, or body parts. The MBT was not intended to apply to activities that result in incidental impact on migratory birds, such as those related to highway construction, commercial and residential development, and agricultural and forestry management practices. The provisions of the MBT do not, therefore, apply to the proposed pipeline project, since any impact that would result from the project on individuals of migratory bird species would be incidental and non-intentional.

The FWS has commented that the proposed project would be an "unlawful activity" under the MBT because it would result in the periodic clearing of nesting habitat. If this were true then all of the activities mentioned above would be illegal. The FWS states:

> "The Service believes that if the Commission does not incorporate the Service's Migratory Bird Treaty [Act] provisions then the Commission would be purporting to authorize an unlawful activity."

We note that the FWS states that application of the recommended provisions would minimize, but not eliminate, takings of individuals. Since the FWS interprets the MBT as prohibiting any takings, the FWS would be condoning an illegal activity even if we were to apply the "provisions."

3.10-13 Comment Summary: Deer Winter Areas

The Town of Monroe, Connecticut, requested clarification regarding the methods to identify and avoid DWAs in Connecticut. Their letter references section 7.3 and recommendation 22, which requires Iroquois and Tennessee to conduct preconstruction winter surveys of the DWAs crossed.

Response:

The discussion of DWAs in sections 4.1.4.2, 5.1.4.2, and 7.3, and recommendation 22, apply only to DWAs in New York. The winters in Connecticut are not severe enough to require deer to utilize DWAs on a regular basis, and the Connecticut DEP Wildlife Bureau does not consider DWAs to be a significant habitat for the Connecticut deer herd. We recognize that this was not stated clearly in the DEIS, and sections 4.1.4.2, 5.1.4.2, and 7.3 have been modified accordingly.

3.10-14 Comment Summary: Beaver Impoundments

FWS made several comments regarding the crossing of beaver impoundments, specifically along Tennessee's proposed Mercer Loop. FWS recommended that all beaver impoundments be avoided, and that in rare cases where they could not be avoided, a site-specific evaluation be given to determine the least damaging method of crossing.

Response:

Tennessee deleted its proposed Mercer Loop from the Iroquois/Tennessee Project. Therefore, this specific comment no longer applies to the proposed project.

3.10-15 Comment Summary: Impact on Wildlife in Canada

Several comments were received regarding the need to assess impact from gas exploration and drilling in the Canadian Rocky Mountains on grizzly bears and other wildlife.

Response:

Under the terms of Executive Order 12114 of January 4, 1979, the proposal by TransCanada to build facilities in Canada to support the Iroquois/Tennessee Project does

not have to be addressed in the EIS. See sections 2-3 and 3-5 of the Executive Order. See response 3.18-4 for a more complete discussion of the Executive Order.

3.10-16 Comment Summary: Forest Fragmentation

Two commentors felt that the DEIS did not adequately address the impact resulting from fragmentation of forest wildlife habitat. One commentor felt that the estimate that right-of-way clearing could reduce habitat quality up to 100 feet on either side of the right-of-way was seriously underestimating the area that would be affected. The distance of 100 - 200 meters was suggested as a more appropriate estimate. This commentor also felt that the DEIS did not address alternatives to avoid or greatly minimize this impact. The other commentor felt the DEIS provided little support for its conclusion that impact on migratory birds as a result of forest fragmentation would be minor. A third commentor felt that the discussion of forest fragmentation was excellent, but the discussion of positive impact from forest clearing was misleading because it created the impression that forest clearing is generally beneficial.

Response:

Section 5.1.4.2.1 states that following the clearing of a pipeline right-of-way through large forested areas, "the creation of early successional and edge habitats would decrease the quality of habitat for forest interior species in the right-of-way, and possibly up to 100 feet on either side (Anderson et al., 1977)." This refers to the actual change from forest vegetation to early successional vegetation, which would not extend appreciably beyond 100 feet from a forest edge (see response 3.10-8). As the commentors noted, there may be additional "edge effects" which extend beyond the actual change in vegetation. These may include increased competition or nest depredation by "edge" species, or increased disturbance by humans. These effects may extend inward from the forest edge, but the potential for these factors to affect area-sensitive or forest-interior species is highly variable and site dependent.

The clearing of forest vegetation is unavoidable for a project of this nature. The primary means to minimize forest clearing and the creation of new forest openings is to route the pipeline adjacent to existing rights-of-way or through previously cleared areas (i.e., fields). We feel that this has been done to the maximum, practicable extent possible. We have recommended route variations where we felt that additional use of existing cleared areas or rights-of-way were feasible.

The most recent and extensive scientific research on forest fragmentation, conducted in part by FWS personnel, concluded that forest clearing for the construction of this type of project would have only minor impact on forest-interior or migratory birds (Robbins et al., 1989). This impact would result from the loss of forest habitat, as well as the creation of a limited number of isolated or fragmented habitats. We find little evidence to support the argument that a narrow, linear right-of-way would have significant impact on migratory birds. Therefore, we stand by our original discussion and conclusions.

The paragraph describing wildlife that would be expected to respond positively to forest clearing was not intended to portray forest clearing as generally beneficial. It followed

the discussion of negative impact (forest fragmentation) to identify positive impact on several species, including popular game species.

3.10-17 Comment Summary: Non-Specific Natural Resources

We received numerous comments expressing concern for the environment, non-specific natural resources, or general resources such as woods, fields, streams, and wetlands.

Response:

The resources that would be affected by the proposed project have been addressed in both the DEIS and FEIS by separate topics. Our discussion of the existing environment and potential impact on these resources adequately addresses the commentor's general concerns.

3.10-18 Comment Summary: Nonspecific Wildlife Concern

Numerous letters were received containing comments about general pipeline impact on wildlife and habitats, or to wildlife and habitats in the vicinity of the commentors' residence. Two commentors felt that the discussion of impact on wildlife was not substansive enough. One commentor felt that sufficient information was not provided to justify the conclusion that Tennessee's proposed Herkimer/Otsego Loop would not significantly affect the wild turkey.

Response:

Section 5.1.4.2 addresses general construction and operation impact on wildlife. Sections 5.1.4.2.2 and 5.1.4.2.3 address known site-specific impact associated with the proposed Iroquois/Tennessee Pipeline Project. All of the comments regarding general wildlife impact are addressed in these sections.

FWS and respective state wildlife management agencies were contacted by both the applicants and FERC to review the proposed projects and identify general or site-specific concerns. A number of general concerns, including fragmentation of wildlife habitat, use of existing right-of-way to minimize impact, impact on migratory birds, and impact on endangered and threatened species were identified and addressed in the DEIS; concerns were further addressed in response to comments received on the DEIS. A number of site-specific concerns were also identified and addressed in the DEIS.

We believe that our recommended measures to avoid or minimize impact on known sensitive habitats, and where appropriate to identify and avoid additional sensitive wildlife habitats, would reduce impact to acceptable levels. For the remainder of the proposed routes, we feel that impact on wildlife that may result from construction of a narrow, linear right-of-way would be minor. We base our conclusion on consultations with the state wildlife management agencies, and our knowledge of the regional wildlife resources.

The Herkimer/Otsego Loop originally proposed by Tennessee is no longer a part of Phase I of the Iroquois/Tennessee Pipeline Project. Therefore, the comment regarding impact on wild turkeys along this loop no longer applies to this project.

3.10-19 Comment Summary: Wildlife Near Stilson Hill

One commentor felt that the DEIS failed to acknowledge the wildlife value of the specific wetlands in the Stilson Hill area of Connecticut.

Response:

We determined that a specific discussion of the wildlife habitat value of the Stilson Hill wetland complex was not warranted. The general discussion of the high wildlife value of wetlands in sections 4.1.4.2, 4.1.7, 5.1.4.2 and 5.1.7 applies to the Stilson Hills wetland complex, as well as to all other wetlands not specifically identified as wildlife habitat.

3.10-20 Comment Summary: Turkey Vultures

A property owner along the proposed route in New Milford, Connecticut, noted that turkey vultures nest on his property.

Response:

Comment noted. A brief discussion of turkey vulture nesting habitat has been added to sections 4.1.4 and 4.1.5 of the text.

3.10-21 Comment Summary: Stuart B. McKinney National Wildlife Refuge

One commentor expressed concern about the proximity of the proposed Iroquois Mainline to the Stuart B. McKinney National Wildlife Refuge in Milford, Connecticut.

Response:

The closest the offshore segment of the proposed Iroquois pipeline would be to the Stuart B. McKinney National Wildlife Refuge is approximately 3 miles. At this distance, any potential disturbance created by pipeline construction activities would be similar to that resulting from existing boat traffic; therefore, pipeline construction would not affect the wildlife refuge.

3.10-22 Comment Summary: Significant Wildlife Habitats

The Town of Monroe, Connecticut, commenting on the comparison of the Conrail Variation to the proposed route, questioned the listing of significant wildlife habitat within 1.5 miles of the route (table 6.2-1). They noted that the text states that no significant habitats would be affected.

Response:

Table 6.1-1 lists the number of significant wildlife habitats within 1.5 miles to provide a general comparison of the route variation and the proposed route. However, only the significant habitats that would actually be affected are considered when making the final determination of whether the variation would be a significant improvement over the proposed route.

3.10-23 Comment Summary: In-stream Blasting

The COE commented that Iroquois and Tennessee should have a biologist present at stream crossings during blasting procedures to monitor the effects of in-stream blasting on fisheries. The COE also commented that the blasting recommendations proposed as mitigation for fisheries would be effective in small streams only.

Response:

We have recommended that the applicants have an environmental inspector present on all construction spreads who would be available to document effects of blasting on fisheries. We feel that the mitigation procedures recommended to reduce the effects of blasting on fisheries would work equally well in large rivers as well as in small streams. Obviously, the larger the water body, the greater the number of scare charges that would be required to cover the expected area of impact. Delayed detonation to reduce shock-wave intensity would work equally well in both large or small surface waters.

3.10-24 Comment Summary: Stream Construction in Winter

The COE requested information on how the stream crossing work could be limited by ice conditions.

Response:

Our recommended stream crossing procedures would prohibit construction across streams in the winter. No major river crossings are scheduled to be completed past December 31 (Housatonic River). Consequently, ice conditions should not affect crossing procedures.

3.10-25 Comment Summary: Listing of Perennial Streams

Iroquois commented on several errors in the listing of perennial stream crossings and their respective classification.

Response:

Comment noted; refer to revised section 4.1.4.1.

3.10-26 Comment Summary: Fishery Mitigation

The City of Shelton wanted to know what FERC would recommend that Iroquois do to compensate for lost fishery resources.

Response:

We have recommended that the applicants utilize stream crossing construction procedures specifically designed to protect the aquatic resources of surface waters being crossed. Our reference to the number and types of streams being crossed (see section 4.1.4.1 of the DEIS), as referenced by the City of Shelton, does not infer that we believe these fisheries would be lost. On the contrary, by adhering to our Procedures, together with specific recommendations for particular streams and rivers, we feel potential impact would be minimized to the greatest extent possible.

3.10-27 Comment Summary: Stream Crossing Construction Window

FWS does not concur with FERC's designated low flow period of June 1 through September 30 specified as the time window for pipeline construction across streams (see appendix D). FWS contended that August through September is the normal low flow period in the Northeast and FERC's time window would not protect the critical reproduction period for many fish, reptile and invertebrate species. FWS recommended a site-specific construction window be established for all stream crossings.

Response:

FERC's construction window of June 1 through September 30 would avoid the critical spawning periods of most warm, cool, and coldwater fish species, while providing enough time for pipeline construction to occur. In some cases where significant fisheries have been identified, we have recommended site-specific construction windows. We recognize that states may, during their review of the project, identify site-specific construction windows that differ from our recommendation. Specifically, we note that we have identified New York's recommended construction windows in table 5.1.4-1, and have recommended that Iroquois adhere to these windows in recommendation 41. In this case, FERC would defer to the state's site-specific review and allow changes in the construction window as determined appropriate based on the additional information. FWS' suggested 2-month construction time window is too restrictive for the construction of a pipeline project the size of Iroquois' proposal, and would not result in any additional protection to sensitive environmental resources.

3.10-28 Comment Summary: Site-Specific Stream Plans

The State of Connecticut commented that site-specific information must be obtained for each stream crossing to adequately assess the impact on these resources and to develop site-specific restoration plans.

Response:

In our assessment of surface water resources, we have utilized all information available, including field reviews, discussions with Federal and state agency personnel and site-specific data provided by the applicants, to adequately assess the potential impact on the water resources proposed to be crossed by this project. We believe that implementation of our Procedures during construction would minimize potential impact to non-significant levels at the vast majority of the proposed stream crossings. Absent a showing of unique or special site-specific resources, FERC does not require site-specific restoration plans be developed for every water crossing. However, the state is free to address this issue during its Section 401 water quality certification process, if it desires to do so.

3.10-29 Comment Summary: Sedimentation of Morrissey Brook

John McNeely, representing the Weantinoge Heritage, Inc., commented that construction of the pipeline across Morrissey Brook would result in downstream sedimentation.

Response:

Construction across Morrissey Brook, a stocked trout stream, would be conducted according to our recommended stream crossing procedures (see appendix D). We believe that implementation of these procedures would result in minimal downstream sedimentation during the non-spawning time of year (June 1 through September 30).

3.10-30 Comment Summary: Dredging in Hudson River

The COE commented that dredging in the Hudson River should be limited to the same environmental windows as used during COE dredging projects. New York State regulatory authorities, NMFS, and FWS should be consulted regarding impact on non-anadromous fish and wildlife species.

Response:

The construction time window of August 1 through November 30 identified in table 5.1.4-1 and recommended by FERC in recommendation 41 was developed after extensive consultation with the NYDEC, NYPSC, COE, NMFS, and FWS, and is designed to avoid impact on anadromous fish and shortnose sturgeon.

3.10-31 Comment Summary: Juvenile Striped Bass

The COE requested information on the time of year juvenile striped bass are found in the Housatonic River.

Response:

The CTDEP has no records of any striped bass spawning or overwintering in the Housatonic River (MacCloud, 1990). Striped bass are known to overwinter in the Thames

River, however, so the possibility of the lower Housatonic River serving as an overwintering area for juvenile striped bass is not precluded. It is unlikely that a significant population of striped bass could exist in the Housatonic River without being recorded.

Riverine nursery areas are used by young-of-year and yearling fish, although yearling fish are frequently found in waters outside of the river area, particularly during winter months. Generally, as water temperature rises during spring and summer months, juvenile striped bass migrate upstream (within the upstream limits of the nursery area); as water temperature drops, they migrate downstream. Any juvenile striped bass population existing in the Housatonic River estuary probably would follow this migration pattern. As damming of the Housatonic River would preclude a major spawning run (if one existed historically), any juveniles in the river would have to have been "imported" from other areas.

3.10-32 Comment Summary: Shellfisheries in Tidal Housatonic

The Shelton Republican Town Committee and HVA expressed concern regarding effects of siltation on oyster beds in the Housatonic River estuary.

Response:

The oyster spawning period in the Housatonic River is from June 1st through September 30th. Dredging and siltation associated with the pipeline crossing the Housatonic River estuary would not be detrimental to the oyster population if no dredging or other bottom disturbances took place during this time (Volk, 1990). We have recommended that no dredging associated with the proposed project be allowed in the Housatonic River or Long Island Sound during this period.

Oyster spat require a hard surface upon which to attach, and any appreciable siltation would hinder this phase of oyster development. However, once attached and developed to the stage where they begin to siphon water, juvenile oysters would be resistant to siltation impact associated with project construction. Lunz (1938) reported that adult oysters were not harmed by sediment resuspended by dredging operations.

3.10-33 Comment Summary: Marine Species Diversity

The COE commented that table 4.1.4-1 in the DEIS should reflect a greater diversity of marine species occurring in Long Island Sound.

Response:

Comment noted; refer to revised table 4.1.4-1.

3.10-34 Comment Summary: Long Island Sound Fishery

Additional information was requested by the COE about the recreational fishery in Long Island Sound.

Response:

The Connecticut Department of Environmental Protection conducted a sport fishing survey during 1985 (CTDEP, 1986) which showed the following percentage of species (based on total creeled catch) caught by marine anglers in Connecticut:

Scup (Porgy)	27.7%
Adult Bluefish	26.6%
Young-of-the-Year Bluefish	22.9%
Winter Flounder	14.8%
Tautog (Blackfish)	4.1%
Summer Founder (Fluke)	3.5%
Weakfish (seatrout)	0.2%
Striped Bass	0.1%
Other	0.1%

3.10-35 Comment Summary: Commerical Fishing Operations

The COE and State of Connecticut requested a more detailed justification for concluding that the exposed pipeline would not interfere with commercial fishing operations. Additionally, the COE would like to know if the laying of anchors near the exposed pipeline could constitute a navigational hazard.

Response:

The conclusion that commercial fishing operations would not be significantly affected by the exposed sections of the pipeline is based on several factors:

- The majority of substrate expected along the pipe corridor is composed of silt and sand/silt. These small grain size materials have high sediment movement rates within the Central Basin of Long Island Sound (CTDEP, 1977). Consequently, the pipeline is expected to be partially buried by natural sediment movement within a short time. This would reduce the elevational profile of the pipeline, making it less likely to interfere with commercial trawls (or other gear).

- The pipeline would be trenched and filled with a minimum of 3 feet of cover in areas where oyster beds (and oyster harvesting) exist. This should result in the pipeline being buried below the penetration depth of the teeth of commercial oyster dredges.

- The pipeline would be concrete-coated and would have a smooth profile, free of bars, hooks, or other protuberances. This smooth, unencumbered profile should prevent any tangling or snagging with the "pots" used by commercial fishermen. A smooth profile would also reduce the risk of snagging by commercial trawlers.

- Extensive studies on the effects of exposed pipelines on commercial trawling equipment were evaluated by Carstens (1980) and Kiltau et al. (1981) in the North Sea. Collectively these workers concluded the following:

1) The major potential impact is that an otter board would snag on the pipeline and either become permanently lodged or would unhook, planing uncontrollably into the bottom, imparting a load that would snap the trawl warp (towline).

2) Otter board snagging does occur on smaller pipelines but is not a problem on pipelines greater than 16 inches in diameter (Carstens 1980). (The Iroquois pipeline in Long Island Sound would have a diameter of 24 inches).

3) The potential physical damage to the pipeline through collision with the otter boards appears to be avoided if a concrete coating is present on the pipe to absorb the impact (the Iroqouis pipeline would have a concrete coating).

4) The trawl gear itself does not suffer any damage as it is dragged over the pipeline.

Laying of anchors on or near the pipeline potentially could result in anchor snagging and/or pipeline damage. The partially buried, smooth profile of the pipeline should reduce the potential for these types of problems but would not effectively preclude their occurrence. Accordingly, the entire pipeline right-of-way in Long Island Sound would be designated as a non-anchorage area by the U.S. Coast Guard and would be so designated on navigational maps.

3.10-36 Comment Summary: Benthic Communities

Several comments, including those from the COE, Town of Huntington, New York, and City of Milford, Connecticut, requested clarification on impact on benthic communities in Long Island Sound.

Response:

The major impact on benthic communities in Long Island Sound would be the short-term effects related to construction, specifically the dredging and filling of marine sediments. Habitat disruption from pipe installation and burial would occur along an area approximately 45,400 feet long by 200 feet wide (210 acres) at the Milford landfall and an area approximately 7,450 feet long by two hundred feet wide (34 acres) at the Northport landfall. In addition, approximately 4.0 acres of benthic habitat would be affected by the non-buried portions of the pipeline. In the immediate area of trenching and side-casting activities (i.e., within 100 feet of the pipeline) loss of benthos would occur but should be inconsequential within 150 feet of the pipeline. Consequently, losses of biota would be localized. Several factors would mitigate dredging impact, including:

- With the exception of shellfish beds at the proposed Milford landfall (see discussion below), none of the benthic assemblages along the proposed Iroqouis route are unique; most organisms are widely distributed across a variety of depths and locations. McCall (1977) and Reid et al. (1979) indicated that differences in benthic communities in Long Island Sound are a result of differences in sediment type and disturbance histories (e.g., storms, predation, sedimentation, and sediment

destabilization). Areas with similar characteristics contain similar benthic communities.

- Dredging operations would take place during a relatively short period of time. Most work would be completed during winter when dissolved oxygen levels are at an annual maximum. No work would be conducted during summer months when dissolved oxygen levels are typically at a minimum.

- Many species of fish and some invertebrates are highly mobile and can avoid areas subject to dredging impact.

- Recolonization of the dredging area by benthic organisms is expected to be rapid. McCall (1977) reported that experimentally defaunated sediments in Long Island Sound were recolonized at high population densities (up to 1,000,000 organisms per square meter) after as little as 10 days. Many species of benthic invertebrates normally found in Long Island Sound are opportunistic, with high rates of reproduction and dispersal. These species would recolonize disturbed sediments rapidly. Organisms with lower reproduction or dispersal rates would still be expected to colonize disturbed sediments within months of construction activities.

- Frequently, areas that have been dredged will experience an increase in benthic community production and diversity as benthic succession occurs.

Shellfish beds within the proposed Milford landfall area are of concern both because of their densities and economic importance. The Iroquois pipeline would cross approximately 10,000 feet of shellfish beds. Shellfish not harvested prior to construction from approximately 46 acres of bottom could be destroyed by pipeline trenching and burial and resulting sedimentation. Larval shellfish (spat) are more sensitive to siltation than are juveniles and adults. However, all dredging and construction activities would be scheduled during winter and spring, when shellfish spat would not be present. This should prevent any adverse effects on larval shellfish (Volk, 1990).

To mitigate losses of shellfish, Iroquois would allow lease-holders to pre-harvest commercial shellfish species in the affected area prior to construction and would compensate lease-holders for any lost resources as a result of the project. Following installation of the pipeline, the disturbed area of the seabed would be recontoured and clutch (oyster shells) would be placed along the area to provide settling substrate for larval shellfish (spat).

A final concern with respect to shellfish is the possibility that bacteria or toxic materials may be introduced into the water column by resuspension of bottom sediments. The Connecticut Department of Health Services would monitor pipeline construction activities, testing for coliform levels in the water column. It is unlikely that high concentrations of coliform bacteria exist in the sediments along the proposed route at Milford (Ball, 1990). However, if unacceptable levels of coliform bacteria are present, shellfish harvesting would be precluded for a minimum period of two weeks. If this occurs, Iroquois would compensate commercial shellfishermen for the full market value of their lost harvest.

Bulk sediment and elutirate testing were conducted by Iroquois. These analyses indicated very low levels of potential contaminants and, in most cases, concentrations [of toxics]

were below required detection limits. Based on these surveys, contamination of shellfish by resuspension of toxic materials is not expected to occur.

3.10-37 Comment Summary: Barrier to Lobsters

The State of Connecticut is concerned that the exposed pipeline would serve as a "lead" or detour to the normal movement of lobsters and flounders in Long Island Sound.

Response:

Mobile species such as flounder and lobster would be able to move over the pipeline with a minimum of difficulty. Furthermore, as discussed in response 3.10-35, the relatively high sediment movement rate in the Central Basin of Long Island Sound should result in 1/8 to 1/4 of the 24-inch diameter pipeline being at least partially buried within a short time. This would reduce the elevation profile of the pipeline to between 18 to 21 inches, which would make it even less likely to hinder or redirect movement of migratory species such as flounder and lobster.

3.10-38 Comment Summary: Estuary of National Significance

A comment was received expressing concern about potential impact on Long Island Sound and its classification as the first designated estuary of national significance. An alternative Connecticut landfall was suggested, resulting in a reduced crossing length of Long Island Sound.

Response:

We conducted an analysis of potential alternative Connecticut landfall sites (refer to response 3.5-16) and determined that the Milford site was the most practicable and feasible landfall site, and would result in the least environmental impact. We do not feel that the Long Island estuary's classification of national significance would be altered by the construction or operation of the Iroquois gas pipeline. The New York Department of State and the CTDEP's Coastal Resource Management division are currently reviewing Iroquois' applications for a Coastal Zone Consistency Determination.

3.10-39 Comment Summary: Impact on Vegetation

The Town of Monroe commented that the utilization of the Conrail Variation would reduce the impact on vegetation in their town. They stated that use of this variation would affect a narrow, 300-foot-long strip of eastern white pine, and that "this would be the only significant damage caused to vegetation along the length of the track."

Response:

We concur that utilization of the Conrail Variation may affect less vegetation than utilization of the corresponding proposed route segment due to partial use of the existing cleared right-of-way. However, we do not believe there would be a significant difference

in the amount of vegetation cleared since use of the Conrail Variation would entail significant off-right-of-way grading and clearing in order to place the pipeline more than 25 feet from the railbed. Refer to revised section 6.2.61 for detailed discussion of construction activities along the Conrail Variation.

3.11 ENDANGERED AND THREATENED SPECIES

3.11-1 Comment Summary: No Impact Determination

The FWS, NMFS, and COE commented on the determination in the DEIS that the proposed jurisdictional and nonjurisdictional facilities would result in no impact on federally listed endangered or threatened species.

Response:

The federally listed species that could be affected by the proposed project include the shortnose sturgeon, Kemp's Ridley sea turtle, bald eagle, and piping plover. The NMFS has jurisdiction over the sturgeon and sea turtle. During informal consultation with the NMFS regarding the proposed crossing of the Hudson and Housatonic Rivers and Long Island Sound, the NMFS recommended time-of-year restrictions on construction within these areas to minimize potential impact. We have incorporated these restrictions into our recommended measures. The NMFS commented, "provided the conditions recommended by the "staff" are implemented, we conclude that the project will have minimal impact on the resources for which the National Marine Fisheries Service is responsible."

During informal consultation, the FWS indicated that no endangered or threatened species under their jurisdiction would be affected by the proposed project. However, they requested that state wildlife management agencies be contacted for additional review. The NYDEC and CTDEP identified bald eagle winter roost sites in the vicinity of the proposed crossings of three major rivers. In addition, a location in Albany County, New York, has been identified by the NYDEC as a potential nest site for a pair of bald eagles that occur in the area. We have recommended time-of-year restrictions for construction across the major rivers, which would avoid potential impact on wintering eagles. We have recommended additional mitigation measures to ensure that construction near the Albany County site would not affect the eagles.

The piping plover is known to nest approximately 2.5 miles from the proposed landfill locations on Long Island Sound. There would be no effect on nesting birds from this distance. Because plovers may shift to new breeding beaches, we have recommended that surveys for breeding plovers be conducted at the proposed landfill locations if construction is scheduled to take place after March 15. If nesting plovers are present, construction would not occur between March 15 and October 1. Construction prior to March 15 would not affect plovers, as this migratory species generall does not arrive in the Northeast until after this date.

The FWS commented that it is uncertain of our determination of no effect. However, as noted in our comment response 3.11-8, we relied on the best available scientific information, as well as our own professional judgment and the opinion of recognized threatened and endangered species experts in formulating our determination of no effect. We noted that the FWS has not provided any specific reason as to why it is uncertain of our determination of no effect. Therefore, we stand behind our analysis and determination of no effect.

The FWS also commented that statements attributed to FWS personnel did not accurately reflect the views of these individuals or the FWS concerning the construction of

nonjurisdictional facilities. Section 5.2 has been modified accordingly to indicate that the FWS only provided information that was used by FERC in its determination of no effect.

The COE commented on the time-of-year constraints placed on construction across the Hudson and Housatonic Rivers in regard to impact on anadromous fish. As discussed above, these restrictions were determined based on NMFS recommendations. The COE also indicated that the DEIS left unclear whether or not the NMFS and the FWS are in agreement with our determination of no effect. As discussed above, the NMFS has commented that, with the appropriate measures, the project could have minimal impact on species under its jurisdiction. The FWS has not responded with a statement of its agreement or disagreement with our determination, as is required by the Interagency Cooperation promulgated pursuant to the Endangered Species Act, as amended.

3.11-2 Comment Summary: Additional Field Surveys

A number of commentors suggested that additional field surveys to locate endangered and threatened species should be conducted. One commentor indicated that surveys should be conducted in all suitable habitats, and three commentors identified additional sites where field surveys for endangered or threatened species are warranted.

Response:

In determining what endangered or threatened species would potentially occur in the vicinity of the proposed pipeline routes, we contacted the FWS and NMFS (which have jurisdiction over the federally listed species), and the endangered species office or Natural Heritage Program for each state. These agencies have the most complete and up-to-date records on the known and potential location of Federal and state-listed species. Upon review of the proposed project locations, these agencies indicated where the projects might affect species of concern, and where additional surveys were warranted to confirm or deny the occurrence of a species. Our recommendations for field surveys are based, at a minimum, on the comments made by these agencies in addition to site-specific information available to FERC.

3.11-3 Comment Summary: Endangered Species Nomenclature

One commentor requested that scientific names for endangered and threatened species be included in the text and asked that the status of the four-spined stickleback be clarified.

Response:

As a general policy, we include the scientific name of plants or animals in an EIS only when there is no accepted common name. Section 4.1.5 and table 4.1.5-1 have been modified by the addition of the scientific name for panic grass *(Panicum flexal)*. Section 5.1.5.2 has been modified to clarify the status of the four-spine stickleback. This fish is not a Federal- or state-listed endangered or threatened species, but is considered rare within Connecticut.

3.11-4 Comment Summary: Offshore Construction Schedule

The Conservation Board of Huntington, New York, recommended that construction within the offshore marine environment be limited to December through March, in order to minimize impact on marine organisms, particularly Kemp's Ridley sea turtle.

Response:

Our recommended construction time window, October 1 through May 31, was based on consultation with the NMFS. Under regulations promulgated pursuant to the Endangered Species Act, as amended, the NMFS has Section 7 jurisdiction over this species. The NMFS has concluded that construction within this time period would not affect the Kemp's Ridley sea turtle; therefore, we stand by our original recommendation.

3.11-5 Comment Summary: Timber Rattlesnake

Norene D. Coller, representing the Dutchess County Environmental Management Council, (DCEMC), noted that the NYDEC identified a timber rattlesnake den in Dutchess County in the vicinity of the proposed route. Based on apparent consultation with the NYDEC, she identified a potential route variation to avoid this site. The DCEMC is particularly concerned about possible impact on this species from blasting.

Response:

The discussion of the timber rattlesnake in section 5.1.5.2 includes the site of concern in Dutchess County. However, as explained in the text, the precise location of this site was not identified to minimize the chance of disturbance caused by increased human visitation. Our recommended mitigation measures include surveys of the suspected habitats to locate and move any snakes found, as well as the development of mitigation measures to minimize impact on the den site. The text has been modified to include the requirement that Iroquois consult with the NYDEC when planning and conducting surveys, as well as when developing mitigation measures.

3.11-6 Comment Summary: Species Location Clarification

Iroquois noted that the discussion of several endangered and threatened plants in section 4.1.5-2 includes the description that they occur "along" the proposed route. Iroquois wished to clarify that none of the species are known to occur on the proposed route.

Response:

Comment accepted. The text has been modified to read these plants are known to occur in the vicinity of the proposed route. We point out, however, that section 5.1.5.2 clearly states that none of the endangered or threatened plants listed are known to occur within the proposed right-of-way.

3-11-7 Comment Summary: Connecticut Natural Diversity Data Base

The HVA commented that FERC misused information from the Connecticut Natural Diversity Data Base (CTNDDB). The HVA stated that consultation with the CTNDDB should not be substituted for field surveys, and that as a result, the DEIS was deliberately misleading.

Response:

Section 5.1.5.2 states that the discussion of endangered and threatened species is based on "a compilation and summary of currently available data from recent and ongoing state agency surveys and databases." Section 5.1.5.2 also states that "Iroquois is currently conducting field surveys to identify the occurrence of state-listed species in New York and Connecticut." The DEIS does not imply that consultation with the CTNDDB or other state agencies constitutes the final say in the location of state-listed species. These consultations were used to identify potential areas of concern, and would serve as the basis for conducting surveys for state-listed species, and the development of site-specific mitigation plans (refer to response 3.17-20).

3.11-8 Comment Summary: Detail of Endangered Species Assessment

A number of general comments were received regarding the level of detail given in the DEIS to endangered, threatened, and rare species. These commentors felt that impact on endangered and threatened species were not adequately addressed. Two commentors indicated that the DEIS was incomplete without an exhaustive vegetative survey. One commentor felt that the DEIS did not address critical habitats and another commentor indicated that the loss of available habitat is a potential impact that was not addressed. Another commentor indicated that the CTNDDB should be consulted to determine impact on rare species or resources other than federally listed species.

Response:

Under NEPA, FERC is required to identify potential impact on endangered and threatened species. In addition, Section 7 of the Endangered Species Act requires that any project authorized, funded, or conducted by any Federal agency (e.g., FERC) should not "...jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species which is determined to be critical..." (16 USC & 1536 (a)(2) (1988)). The lead agency (FERC) is required to consult with FWS or NMFS, which have jurisdiction over federally listed species, to determine if any federally listed species or designated critical habitats occur in the vicinity of the proposed project. We have consulted with FWS' and NMFS' endangered species experts to determine what species or critical habitats may be affected by the proposed projects, and what potential impact may result. In addition, we have consulted with all appropriate state endangered species or natural heritage inventory offices, and other recognized experts to obtain additional information on Federal- and state-listed species.

Our determination that no federally listed or proposed endangered or threatened species would be affected by this project is based on these consultations. No designated critical habitat for any federally listed species is located in the vicinity of the proposed projects.

Therefore, we stand by our original conclusion, which was developed in full compliance with the requirements of the Endangered Species Act as amended.

Our determination of impact on state-listed species was based on information obtained from the appropriate state agencies. By consulting with the state offices responsible for managing and inventorying rare species within each state, we believe we have utilized the best available data bases to identify state-listed species that may be affected by the proposed project. Where appropriate, we have recommended surveys and mitigation measures to avoid or minimize impact on state-listed species. Populations of most state-listed species are not declining nationwide, and generally are rare within a particular state because they are at the periphery of their natural range. We feel that with appropriate mitigation measures, potential impact on state-listed species should be reduced to acceptable levels.

We have recommended that the applicants conduct additional surveys for state-listed species and develop appropriate mitigation in consultation with the state agencies. We have recommended that any additional action by the applicants in regard to state-listed species be carried out while consulting with the appropriate state agency to ensure that state concerns are fully addressed. In addition, it should be noted that some states (including Connecticut) have no endangered species legislation, and rare species are given no legal protection by these states.

3.11-9 Comment Summary: Barred Owl

A number of commentors expressed concern about impact on the barred owl in Connecticut, suggesting that loss of habitat may cause this species to be included on the state list of threatened species. One commentor indicated that this species is currently listed as endangered in Connecticut.

Response:

According to the CTNDDB, the barred owl is a common species in Connecticut. It is not known to be declining in number, and has not been identified by the CTNDDB as a species of potential concern. The text has been modified, however, to include this species among the list of typical woodland birds. We concluded that impact on the barred owl as a result of pipeline construction would be minor.

3.11-10 Comment Summary: Bog Turtle

One commentor from Dover, New York, questioned why the DEIS did not address the presence of the bog turtle and timber rattlesnake in the vicinity of the proposed Iroquois route in Dover, New York.

Response:

The occurrence of these two species at the location identified by the commentor was addressed. Sections 4.1.5.1 and 5.1.5.2 state that these two species were reported by the NYNHP to occur in the vicinity of the proposed Iroquois route within Dutchess County.

As explained in section 5.1.5.2, at the request of the NYNHP, the exact location of these occurrences was not published to prevent visitation and possible disturbance. We have required that Iroquois consult with the NYNHP to conduct surveys of these areas, and develop appropriate mitigation plans (including the use of route variations), as necessary.

3.11-11 Comment Summary: Housatonic River

A representative of the Shelton Republican Town Committee commented that sightings of osprey, eagles, and harbor seals in the Housatonic River within Shelton and Stratford were not addressed in the DEIS.

Response:

The occurrence of wintering bald eagles in the general vicinity of the proposed pipeline crossing of the Housatonic River is addressed in sections 4.1.5.1 and 5.1.5.2. The CTNDDB was consulted to identify other species of concern along the proposed route. No osprey nest sites or sensitive habitats were identified as occurring in the vicinity of the proposed route through Connecticut; therefore, this species was not addressed. The occurrence of the harbor seal in the Housatonic River has been added to the text.

3.11-12 Comment Summary: Boys Halfway River Gorge

Two commentors indicated concern that the Boys Halfway River Gorge in Monroe, Connecticut, was not addressed in sufficient detail in the DEIS. It was requested that surveys for rare species be conducted in this area, and that the route be modified to avoid the area.

Response:

The proposed Iroquois route would cross near the Boys Halfway River near MP 318 in Monroe, Connecticut. This area was addressed in conjunction with the Conrail Variation in Volume I, sections 3.6.31 and 6.2.61. The text has been modified to include a discussion of this area in section 5.1.4.2.2.

Because of a number of construction, engineering, safety, and land-use constraints, this route variation was determined to be unacceptable. Volume I, section 6.2.61 also recommends that field surveys be conducted in the area of the Boys Halfway River Gorge to determine if rare plants or wildlife occur within the proposed right-of-way.

3.11-13 Comment Summary: Species Occurrence Correction

One commentor identified several discrepancies between different sections of the DEIS where rare species occurring in Connecticut were addressed.

Response:

Comment noted. Section 4.1.5 has been modified to correctly list the rare species known to occur in the vicinity of the proposed route.

3.11-14 Comment Summary: Great Blue Heron Mitigation

The COE suggested planting great blue heron nest trees as a long-term mitigation measure.

Response:

No active great blue heron nesting trees would be removed within the one known heron rookery located in the vicinity of the proposed route. We suggest that our recommended measure requiring surveying for and avoiding potential nest trees in the vicinity of this rookery would be a more successful mitigation measure than that suggested by the COE.

3.11-15 Comment Summary: Mitigation Requirements

The COE commented that our recommended mitigation measures to avoid or minimize impact on endangered and threatened species appear to be less stringent for Tennessee than for Iroquois.

Response:

Our recommended mitigation measures are generally more restrictive for Iroquois than for Tennessee because Iroquois' proposed route would include predominately new right-of-way. Route variations to avoid a resource are generally more practicable where a proposed new right-of-way is involved. Tennessee's proposed facilities would be constructed along existing rights-of-way, which generally results in less impact.

In addition, several federally listed and protected species could be affected by construction of the Iroquois facilities. We have recommended measures to avoid impact on these species. No federally listed species would be affected by construction of the Tennessee facilities.

3.12 AIR QUALITY AND NOISE

3.12 -1 Comment Summary: Major New Source

A commentor questioned whether the entire Iroquois/Tennessee Project should be considered a major new source, subject to an air quality impact analysis.

Response:

Only the compressor stations associated with the Iroquois/Tennessee Project are a permanent source of pollutant emissions. Emissions due to construction are temporary and insignificant. The compressor station emissions are also local and separate, associated with a single compressor station that is located many miles from another station. Each station is evaluated separately, with any other sources significantly affecting the same area as the compressor station included in the air quality impact analysis. This criteria is applied to all stationary source analyses. Therefore, treating all project air emissions sources as one source is inappropriate. Individual compressor stations may qualify as major new sources or as major modifications to an existing major source.

3.12-2 Comment Summary: Connecticut's Ambient Air Quality

A comment was received regarding Connecticut's ambient air quality monitoring program.

Response:

Connecticut operates an air quality monitoring network to measure ambient concentrations of the NAAQS criteria pollutants. The State of Connecticut is in attainment with the NAAQS except for ozone. The New Haven area (AQCR 42) is nonattainment for the 24-hour PM10 standard while the same area (AQCR) is nonattainment for the 8-hour CO standard. Since no new or additional compression is proposed in Connecticut, we believe no further air quality analysis is required.

3.12-3 Comment Summary: Increased Highway Noise

One commentor expressed concern that the removal of vegetation adjacent to existing expressways during pipeline construction could result in additional pressure on the state to address perceived increases in traffic noise.

Response:

We appreciate the commentor's concern regarding traffic noise in New York and Connecticut. However, the rather limited removal of vegetation along existing expressways should not significantly affect the noise reduction effects.

3.12-4 Comment Summary: Identify Receptors Along Route

A report submitted on behalf of the City of Shelton, Connecticut, includes a comment indicating that sensitive receptors along the entire proposed route should be identified and included in the assessment of noise impact.

Response:

Noise impact associated with construction along the entire proposed route will generally be intermittent and brief at any one location and limited to daylight hours. We believe that an assessment of construction noise impact at sensitive receptors along the entire proposed route is not warranted. Potential long-term noise impact would be limited to and has been assessed for sensitive areas near the proposed compression facilities.

3.12-5 Comment Summary: Increased Noise Impact - Station 254

Comments were received from public officials and residential neighbors concerned about the existing and potential future noise impact associated with Tennessee's Compressor Station 254. These comments are combined into the following areas that are summarized below:

1) The acoustic performance of the existing compressor building should be improved to reduce the transmission of noise from interior equipment.

2) The proposed new compression facilities should be located at alternate Site B.

3) The proposed new compression facilities should be located in a bowl-shaped depression with excavated materials used to form an effective sound barrier between the station and residential neighbors.

4) Station 254 should not emit more noise than does the compressor station operated by Tennessee in Sussex, New Jersey.

5) Noise from the proposed compressor addition should be limited so as to not exceed 40 dBA at the nearest homes, in accordance with the NYPSC proposed noise guidelines.

Response:

Responses to the above five comment summaries are provided below.

1) Our recommendation number 55 directs Tennessee to address the issue of noise radiation from the existing compressor building, prior to commencing construction of the proposed addition.

2) We recognize the neighbors' interest in locating the proposed unit at alternate site B and, as set forth in our recommendation number 56, have directed Tennessee to prepare and submit an analysis of the feasibility of alternate locations, including site B.

3) In response to the neighbors' interest in locating the proposed unit within a bowl-shaped depression, we have expanded our recommendation number 56 directing Tennessee to prepare and submit an analysis of the feasibility of locating the proposed unit within such a depression.

4) The compressor station located in Sussex, New Jersey, was designed to meet noise limits that are applicable in New Jersey rather than in New York. Our guidelines limit the noise from new compressor units to not exceed an Ldn of 55 dBA at nearby noise sensitive receptors. This guideline is intended to adequately protect health and welfare in residential areas, and is based on extensive studies of the effects of noise on people published by the EPA. The commentor has not provided support for a different noise level limit.

5) We recognize the neighbors' interest in requesting that we direct Tennessee to comply with the NYPSC proposed noise guidelines (statement of policy) for gas compressor stations. We understand that this proposed policy statement applies to gas compressor stations licensed under Article VII of the New York Public Service Law.

3.12-6 Comment Summary: Future Station 254 Additions

Commentors stated that Tennessee's intention to construct additional compression facilities at Stations 245 and 254 should be reflected in the FEIS and should assess the noise impact.

Response:

It will be our intent to limit the combined noise impact associated with the facilities proposed in this project, as well as additional facilities planned in other projects to an Ldn of 55 dBA at the nearby noise-sensitive receptors.

3.13 LAND USE, RECREATION, AND VISUAL RESOURCES

3.13-1 Comment Summary: Proximity to Dwellings

Two comments were received regarding the proximity of Iroquois' route to dwellings in Connecticut and New York. Commentors wrote that they would lose their homes to the Iroquois pipeline.

Response:

The construction and operation of the Iroquois pipeline would not require the removal of any homes. Please see sections 4.1.9.1.1, 5.1.9.1.1, and 5.1.9.1.2.

3.13-2 Comment Summary: Proximity to Dwellings

Comment letters were received from residents expressing safety concerns as to the proximity of the pipeline to dwellings.

Response:

Please see EIS sections 5.1.9.1.1 and 5.1.9.1.2 for information on the proximity of the pipeline to dwellings and section 5.1.12 and response 3.16-3 for information on pipeline safety.

3.13-3 Comment Summary: Residential Zones

Why, a commentor asked, when one of FERC's objectives is to minimize encumbrance of residential property, did it bless a route that is almost entirely residentially zoned.

Response:

As shown in table 4.1.9-1, the Iroquois' proposed pipeline route would traverse only 22.7% residential land. With the incorporation of route variations, which are discussed in sections 3.6 and 6.0, many of these residential areas would be avoided.

3.13-4 Comment Summary: Residential Areas

One comment was received regarding residential areas: do people's homes fit into the environment. Also, we talk about wetlands and turtles and snakes, but what about people's homes?

Response:

We have identified all residences in proximity to the pipeline route. Dwellings less than 50 feet from the pipeline are listed on table 4.1.9-1. Construction mitigation techniques

have been recommended in areas so that effects of pipeline construction would be minimized. Please see sections 4.1.9.1.1 and 5.1.9.1.1.

3.13-5 Comment Summary: Visual Impact Near Residences

Commentors were concerned that the DEIS stated that the visual impact would be minimum to low because of common quality landscapes that are presently dominated by man-made structures. Commentors felt that man-made structures in Newtown are very expensive, well kept residences where real people live, and people consider the views from their windows to be noteworthy and distinctive.

Response:

Our assessment of visual impact is based on the extent to which the pipeline right-of-way would be visible and the quality of the landscapes traversed. We analyzed the route through Newtown and feel that overall visual impact would be low to moderate. As shown on table 4.1.9-1, approximately 31% of the route would be parallel to existing pipeline and highway corridors, resulting in minimal visual impact. In other areas, the pipeline would be routed through areas that are proposed to be cleared for future residential developments. Near Paugussett State Forest, a route variation has been recommended (see section 6.2.60) that would reduce the visual impact on the residences on Osborn Hill. The remaining portion of the route should not provide any long unbroken views of the right-of-way through forested areas.

3.13-6 Comment Summary: Dwellings in Milford

The mayor of the City of Milford wrote that the proposed route variation would pass very close to approximately 17 homes in the Ruth Ann Terrace, Hemlock Road, Westfield Road, and Elgid Drive areas. It would also pass very close to a major Senior Citizen housing project on DeMaio Drive.

Response:

The Milford Variation would not traverse any residential property. The variation would be less than 100 feet from two dwellings on Ruth Ann Terrace, two on Westfield Road, and one on West Avenue. None of the dwellings would be less than 50 feet from the pipeline. The senior citizen housing project on DeMaio Drive would be 125 feet from the right-of-way. There would not be any long-term impact on the residents near the Milford Variation.

Between Bic Drive (MP 332) and West Drive (MP 332.5), the route would border the rear yards of approximately eight dwellings. The pipeline would cross office parking lots to minimize the removal of trees.

3.13-7 Comment Summary: Dwellings in Brookfield

Residents of Brookfield, Connecticut, wrote that the pipeline would be 2 feet from their house located at 16 Brookfield Meadows and through their septic system. Also, the pipeline easement would reduce their lot acreage, therefore, eliminating the possibility of adding a kitchen and bath and expanding the existing septic system.

Response:

The proposed pipeline route would not be closer than 100 feet to any dwelling on Brookfield Meadows. We feel that this distance is great enough to ensure that the pipeline easement would not encumber the lot, thereby preventing their expansion plans. Iroquois would work with the landowner to develop site-specific construction, impact mitigation, and restoration plans to minimize interference with future landowner plans.

3.13-8 Comment Summary: Vegetative Buffer Removal

A comment letter was received about the removal of a vegetative buffer between homes and the railroad in Brookfield, Connecticut.

Response:

Comment noted. Please see revision to section 7.3, recommendation 40 which now requires the applicants to maintain a vegetative buffer between the dwellings and the railroad in Brookfield.

3.13-9 Comment Summary: Buffer Between Dwelling and Landfill

One commentor from New Milford was concerned that a buffer between his home and the SCA Landfill would be removed.

Response:

The SCA Services site in New Milford would be 1.2 miles from the Iroquois pipeline at its nearest point (MP 294.4). The removal of trees for the pipeline right-of-way would not be wide enough to remove the buffer between SCA and dwellings.

3.13-10 Comment Summary: Visual Impact of SPVs

A resident of Richfield Springs, New York, sent photos of Tennessee's two stand pipe valves (SPVs). When the SPVs were unfenced, they did not appear intrusive to the landscape, however, Tennessee has individually fenced each SPV. The commentor was concerned that the addition of another SPV would have a great visual impact.

Response:

Tennessee's proposed Herkimer/Otsego Loop is no longer being analyzed in this document. It will be analyzed in the document written for Phase II of this project.

3.13-11 Comment Summary: Worcester Loop

The Massachusetts Energy Facilities Siting Council (MEFSC) identified residential areas that were not adequately addressed. The MEFSC recommended several alignment modifications along the Worcester Loop to minimize impact on residential areas.

Response:

We reviewed alignment sheets provided by Tennessee during the preparation of the DEIS, and we determined that Tennessee has already proposed the alignments requested. We concur with recommended alignment modifications in the vicinity of Uxbridge Road (MP 265+2.2), Dodge Hill Road (MP 265+4.7), Route 122 (MP 265+7.0 to MP 265+7.3), Grafton Street (MP 266+1 to 266+1.3), and Fowler Road (MP 266+1.3 to 1.5). Please see revisions made to table 5.1.9-3.

3.13-12 Comment Summary: Wallingford Replacement Line

A comment letter was received from the Town of Cheshire regarding the Wallingford replacement line. The town urged that every effort be made to minimize disturbances to the residents of Cheshire.

Response:

Our recommended mitigative measures set forth in section 5.1.9 and recommendations 8 and 12 would direct the applicants to minimize disturbances to residents in proximity to the pipeline. When made a condition of the certificate, recommended mitigation measures must be complied with by the applicant.

3.13-13 Comment Summary: Use of Right-of-Way

One landowner commented that part of his property had already been condemned by the state for a road. If the pipeline is approved, they would own 60 feet of land that they would pay taxes on but could not use.

Response:

Unlike highway rights-of-way, landowners would be able to use the land within the pipeline right-of-way for most present uses since it would be maintained with low-growth vegetation. The only limitations on a property from a pipeline right-of-way are: 1) no permanent structures may be constructed on the permanent right-of-way, and 2) no large trees or deep-rooted shrubs may be planted on the permanent right-of-way (see section 5.1.9.1.1).

3.13-14 Comment Summary: Wimisink Variation

Section 3.6.26 (Wimisink Variation) of the DEIS incorrectly states that one residence would be within 50 feet of the right-of-way of the variation. One house would be within 20 feet and another would be within 100 feet.

Response:

Section 3.6.26 (Wimiskink Variation) identifies dwellings within 50 feet of the right-of-way. The dwelling within 50 feet has been noted in the analysis of the variation.

3.13-15 Comment Summary: Routing Through Dover, New York

Several comments were made regarding the routing through Dover: the DEIS did not review line alternatives through undeveloped, vacant lands relative to the impact of locating the proposed route proximate to houses; and the proposed route crosses Cricket Hill three times and avoids famous people's property.

Response:

Line alternatives through vacant land in Dutchess County were reviewed. Please see Volume I, sections 3.6.25 and 6.2.45 for the analysis and recommendation of the State Route 55 Variation, which utilizes undeveloped land through Dover. The route variation avoids developed land and excessive road crossings. Also, in section 6.2.46, we reviewed the Dover/Sherman Variation.

3.13-16 Comment Summary: Residential Mitigation Techniques

Iroquois offered the following comments about Type C and Type D residential mitigation techniques listed in table 5.1.9-3. First, Iroquois would consult with individual property owners to develop mitigation techniques on a site-specific basis. The techniques agreed upon would be incorporated into the individual's easement document, as well as the construction specifications. Second, Iroquois would agree to reduce construction crews and to use special construction techniques as appropriate. However, the exact type of construction methods must be determined on a site-specific basis and can only be finalized after field surveys. A 50-foot-wide construction right-of-way should be used only as a guideline. Iroquois would agree to avoid the removal of trees to the extent possible and to fence the work area through populated areas.

Response:

We believe that a 50-foot-wide construction right-of-way is necessary in the residential areas listed on table 5.1.9-3 to minimize impact. Iroquois can request a variance for any condition from the Director of OPPR upon providing detailed site-specific construction and mitigation plans to the FERC and describing the reasons the variance would be required.

3.13-17 Comment Summary: Subdivisions

One comment letter was received which asked how FERC located new subdivisions.

Response:

The applicants provided us with recent aerial photographs to identify dwellings. We also conducted field surveys to determine the location of dwellings near the proposed route. In addition, Iroquois consulted with local developers whose proposed plans would be affected by the project. They have forwarded all relevant information to us. All subdivision data were checked by us at the local level. Developers of subdivisions that are proposed after the EIS is published and prior to construction could coordinate with the pipeline company to incorporate specific requirements in the final pipeline design (see response 3.13-19).

3.13-18 Comment Summary: Subdivision

One commentor was concerned about her 95 acres in Greene and Albany Counties. She believes the pipeline would destroy the future development potential of her property, since she planned to subdivide the land.

Response:

Landowners can request property-specific routing and mitigation, including compensation for lost development potential, during the right-of-way acquisition process. We believe that the right-of-way could be aligned through the subdivision in a way that would not preclude future development.

3.13-19 Comment Summary: Connecticut Subdivisions

Comments were received regarding new subdivisions in Connecticut. Iroquois identified 12 proposed subdivisions between MPs 290.8 and 328.8 which they want identified on table 4.1.9-2 of the EIS.

Response:

Comment noted. Please see revision to table 4.1.9-2 to include recent proposals identified by Iroquois.

3.13-20 Comment Summary: Fairfield County Subdivisions

Comment letters were received regarding route variations to avoid subdivisions. The Fairfield County subdivision variation would bisect a large development between MPs 314.7 and 316.4. A homeowner wrote that the variations favored developers.

Response:

All route variations intended to avoid subdivisions are discussed in Volume I, sections 3.6.29 and 6.2. We did not recommend route variations that would avoid subdivisions and relocate the pipeline in proximity to existing dwellings. Please see sections 6.2.58, 6.2.59, 6.2.62, and 6.2.63 (Fairfield County Subdivision Variations).

3.13-21 Comment Summary: Routing Along Lot Lines

Comments were received stating that Iroquois must route along lot lines and should not be allowed to shift the route segments during construction.

Response:

Routing along lot lines could be accomplished once the applicant begins meeting with landowners to discuss easements and construction on a parcel of land. The route agreed to by the landowner and the applicant could not be changed during construction without consultation with the landowner. Please see section 7.3, recommendation 2.

3.13-22 Comment Summary: Brookfield Public Areas

Comment letters were received that noted Brookfield residents' concern as to the proximity of the pipeline to the post office, town hall, and the new creative playground.

Response:

Since these sites are not traversed by the pipeline route, we believe that the pipeline would not interfere with operations at the post office, town hall, or playground.

3.13-23 Comment Summary: Church in New Milford

Comment letters were received from the Town of New Milford and residents regarding the crossing of a 5-acre site owned by the Archdiocese of Hartford for the planned Our Lady of Lakes Catholic Church in New Milford. There would also be a meter station across the street. The EIS did not review alternatives to avoid the church site.

Response:

We did evaluate two route variations that would avoid both the planned church site and Hill and Plain School; but ultimately rejected them (see section 6.2.53 and response 3.13-24. The pipeline could be routed onsite to avoid the proposed location of the church and accessory facilities. Iroquois could work in conjunction with the Archdiocese of Hartford to align the pipeline along the lot line. Please see section 7.3, recommendation 2.

3.13-24 Comment Summary: Schools in Connecticut

Many comment letters were received from Connecticut raising safety concerns due to the proximity of the proposed pipeline to schools. Schools specifically mentioned were the JFK, Hill and Plain Elementary, Pumpkin Delight, and Meadowside. It is also believed that the Hill and Plain School could not expand due to the location of the pipeline right-of-way.

Response:

The JFK School would not be in proximity to the pipeline. Please see Volume I, sections 3.6.34 and 6.1.34 for our recommendation of the Milford Variation, which would avoid the JFK School and Mondo Ponds area.

The Hill and Plain School's property (MP 296.6) would be crossed for 900 feet about 250 feet to the east of the school. The school could expand up to the right-of-way or to the north. Route variations were reviewed to avoid the Hill and Plain School area but were rejected (see section 6.2.53).

The Pumpkin Delight School (MP 297) would be approximately 800 feet from the right-of-way and the Meadowside School would be about 1,400 feet away. None of the schools would be close enough to the pipeline to warrant more stringent safety measures.

Please see sections 5.1.9.2 (Land Use Impact) and 5.1.12 (Reliability and Safety), as well as responses 3.3-25 and 3.16-3 for more information regarding schools.

3.13-25 Comment Summary: Schools

The COE commented that the towns in which the schools are located should be given in section 4.1.9. Iroquois stated that the Circle Hill School had recently been demolished and they noted that JFK School would not be traversed by the Milford Variation.

Response:

Comments accepted. Please see revision to section 4.1.9.1.1 that now lists the names of the towns in which the schools are located and the deletion of Circle Hill School. We believe that JFK School belongs in section 4.1.9, Existing Land Use, since it would be bordered by the proposed route. The route variation to avoid the JFK school is discussed in section 6.1.34.

3.13-26 Comment Summary: Milford Variation

Iroquois stated that Mondo Ponds and Beaver Brook area in the City of Milford would not be crossed by the Milford Variation.

Response:

Comment noted. Volume I, sections 3.6.34 and 6.1.34 mention that Mondo Ponds and Beaver Brook would be avoided by the Milford Variation.

3.13-27 Comment Summary: Public Land in New Milford

One commentor stated that Iroquois is insensitive to route the pipeline through almost every piece of public land in New Milford, and asked if FERC took a good look at this route.

Response:

In order to avoid residential areas, the pipeline was routed through undeveloped areas. We have made numerous field inspections and site visits of the proposed and alternative routes since the initial Iroquois application was filed in 1986. Many of the recommendations and site-specific analyses occurred as a result of on-the-ground site-specific visits.

3.13-28 Comment Summary: Visual Impact

Several comment letters were received regarding short- and long-term visual impact, especially on Brookfield's historic setting, Newtown, and public lands.

Response:

Short-term visual impact would occur during the construction of the pipeline and right-of-way restoration. This would be a temporary situation since construction would progress at a rapid rate.

Long-term visual impact would only be in wooded areas. We have recommended that Iroquois reduce their permanent right-of-way from 60 feet to 50 feet. Since most previous land uses, including agricultural, could continue on the right-of-way after construction, FERC does not believe that the rural atmosphere of the towns traversed would be lost.

If a vegetative buffer is removed, the applicant would be required to submit a revegetation plan (please see section 7.3). Recommendations 3, 4, 23, 27, 28, 39, 40, 53 and the Erosion Control, Revegetation, and Maintenance Plan (appendix C) are intended to minimize effects on aesthetic quality.

3.13-29 Comment Summary: Means Brook Corridor

The City of Shelton's Conservation Commission commented that the pipeline route through the Means Brook corridor would reduce its value as open space, and that the City plans to purchase this property, which is an undisturbed wetland system.

Response:

The Means Brook corridor is not an undisturbed wetland system. Bridgeport Hydraulic has channelized the brook. Vegetation, which was cleared as part of a maintenance procedure, has grown back. We believe that the construction right-of-way would also revegetate after restoration. Appendix D outlines the procedures to be used in constructing

through wetlands and revegetating wetlands. Further, recommendation 45 requires Iroquois to file site-specific construction and mitigation procedures for this area.

3.13-30 Comment Summary: Visual Impact in Shelton

The City of Shelton stated that the Shelton Land Trust, Jones Tree Farm, and Means Brook wetland are not man-made features, and they would be affected by the route. The Town of Brookfield also believes that the Means Brook wetland system, a unique and pristine area, would have more than minimal visual impact.

Response:

The Iroquois pipeline would utilize an existing gravel haul road through the Shelton Land Trust, thereby minimizing any visual effects. The Jones Tree Farm is a man-made feature that involves agricultural and horticultural operations. It should be noted that the Jones Tree Farm is crossed for a short distance where no active farming activities are presently occurring.

The Means Brook Wetland area has been modified by the channelization of Means Brook and the construction of storm water retention basins for a subdivision. To minimize impact on the wetland, we have recommended that Iroquois align the pipeline along the eastern edge of the wetland, which would reduce the length of a new corridor through the wetland.

3.13-31 Comment Summary: Land Trusts and NPS Land

Comments were received stating that lands protected by local land trusts and the NPS would be adversely affected.

Response:

Impact of the proposed pipeline on local land trusts is discussed in sections 5.1.9 and 6.1. In section 7.3, recommendation 42, we have required Iroquois to develop final alignment and mitigation plans for land trust crossings. The plans must be filed with the Commission for review and approval by the Director of OPPR prior to construction. Impact on the AT, the only NPS land crossed by the proposed Iroquois route, is discussed in section 5.1.9.

3.13-32 Comment Summary: Land Trusts

The COE wrote a comment letter noting that the Public Interest Areas section should include a description of land trusts and a detailed description of why alternatives around land trusts were not recommended.

Response:

The land trusts that would be crossed are described in table 4.1.9-3, and sections 4.1.9.2 and 5.1.9.2.2. Section 4.1.9.2 has been revised to give a more detailed description of each of the land trusts. Route alternatives were analyzed for the Naromi, Weantinoge, and Shelton

Land Trusts in Volume I, sections 3.6.26, 3.6.27, 3.6.31, 6.1.26, 6.2.48, and 6.2.61. In addition, route variations raised during the comment period are discussed in sections 6.2.47, 6.2.52, 6.2.53, and 6.2.65. A route variation was not considered for Tennessee's pipeline through the Cheshire Land Trust, because it is a replacement of an existing pipeline.

3.13-33 Comment Summary: Shelton Land Trust

A comment was made at the public hearing concerning the Shelton Land Trust: Iroquois' alignment would cross trails and would create a visual corridor and FERC's route variation would not be acceptable.

Response:

Iroquois' proposed route through the Shelton Land Trust would utilize an access road and traverse old borrow area. We have recommended that Iroquois reduce the right-of-way through the land trust and screen the permanent right-of-way near Route 110 and reclaim the borrow area within the land trust. Efforts would be made to schedule construction through the land trust's property during low-use periods, and to accelerate construction and cleanup procedures.

We have reviewed two route variations that would avoid the land trust (Conrail Variation and Powerline Variation). However, both variations have been rejected. Please see Volume I, sections 3.6.31 and 6.2.61.

3.13-34 Comment Summary: Naromi Land Trust

Commentors asked about impact on the Naromi Land Trust's Wimisink Wildlife Sanctuary in Sherman, Connecticut. They wanted to know how the destruction of the wetland within the land trust's borders can be justified.

Response:

The Wimisink Variation, which was recommended, would have a shorter crossing of the wetland than the proposed route. The crossing of the wetland would be in an open meadow adjacent to a tree line. The wetland would be restored to its preconstruction state upon completion of construction. Efforts would be made to schedule construction through the land trust during dryer periods. Accelerated construction and cleanup procedures would be used. Please see Volume I, sections 3.6.26, 6.1.26, and 5.1.9.2.2. Also, in section 7.3, recommendation 42, we have required Iroquois to submit final alignment and mitigation plans for the Naromi Land Trust crossing. Prior to construction, these plans must be reviewed and approved by the Director of OPPR.

Refer to comment response 3.9-15 for further discussion of this wetland.

3.13-35 Comment Summary: Visual Impact Near Morrissey Brook

One commentor was concerned that the proposed route across Morrissey Brook near Gaylord Road would disrupt a scenic vista across the wetland and a grazing area. This area has also been documented as containing Indian artifacts.

Response:

Utilization of the Stilson Hill Variation (see section 6.2.49) as recommended, would avoid this area. Prior to beginning construction, the applicants must complete all archeological surveys and submit them to FERC to comply with applicable laws. See section 7.3, recommendation 18.

3.13-36 Comment Summary: Morrissey Preserve

Comment letters were received regarding visual impact on the Weantinoge Heritage's Morrissey Preserve; the land trust property is incorrectly identified in section 5.1 as being in Fairfield County; the visual impact would not be low, as identified in section 5.1; and the swath cut by the proposed right-of-way would be seen by many visitors from roads and scenic vistas near Morrissey Brook.

Response:

All tables referencing the location of the land trust have been changed from Fairfield to Litchfield County.

We have required Iroquois to submit final alignment and mitigation plans for crossing Weantinoge's land. The plans must be approved by the Director of OPPR, prior to construction. Please see section 7.3, recommendation 42.

Further, we have recommended that Iroquois utilize the Stilson Hill Variation in this area. Utilization of this variation would alleviate any unbroken views along the right-of-way from nearby roads, because the variation would begin in the wooded area north of the intersection of Gaylord and Stilson Hill Roads. A wooded area would be maintained between the right-of-way and the road.

3.13-37 Comment Summary: Still River Preserve

Iroquois stated that the Weantinoge's Still River Preserve would be crossed for 0.38 mile, not 1 mile as stated in table 4.1.9-4 (Public Interest Areas).

Response:

We have measured the crossing of the Still River Preserve and found that the distance between the Pickerel Bayou to the land trust's southern boundary is 0.38 mile. The entire preserve is approximately 1 mile in length from its northern boundary to its southern boundary. Table 4.1.9-4 has been revised to include the correction.

3.13-38 Comment Summary: Still River Preserve

Comments were made at the public hearing regarding the Weantinoge Land Trust's Still River Preserve. Commentors felt that the proposed alignment would follow the railroad and power line, therefore compounding visual impact.

Response:

Iroquois would not create a new corridor through this area. We have recommended that Iroquois locate its pipeline 5 feet inside the outer edge of the powerline right-of-way. Further, we recommend in section 5.1.9.2.2 and table 5.1.9-6, that Iroquois minimize tree removal along the railroad right-of-way. Iroquois is also required to develop final mitigation plans and submit them for approval (see section 7.3, recommendation 39).

3.13-39 Comment Summary: Still River Preserve

Comments were received about the visual impact on the Still River Nature Preserve (MP 299.5). Table 5.1.9-6 lists the visual impact rating as "none," but commentors stated that there would be a visual impact on the Still River Nature Preserve. Commentors also stated that a visual impact assessment, with a detailed mitigation plan to reduce removal of the tree screen west of the railroad, should be provided prior to final routing.

Response:

The construction of the pipeline would not create a new corridor through Weantinoge's Still River Preserve. The proposed pipeline right-of-way would be adjacent to the Conrail right-of-way through the Preserve. The vegetative screen between the access road and the railroad would not be removed during construction, as stated in section 7.3, recommendation 40.

3.13-40 Comment Summary: Stilson Hill Road

Iroquois noted that the parcel of land trust property located adjacent to Stilson Hill Road would be avoided entirely by the adoption of the Stilson Hill Road Variation.

Response:

Comment noted. The Weantinoge Land Trust's property, which is located at MP 289 in New Milford, would be avoided if the Stilson Hill Road variation is recommended. Please see section 6.2.49.

3.13-41 Comment Summary: Stilson Hill Road

Two comment letters were received about visual impact on Stilson Hill Road and Old Stilson Hill. They felt that visual impact would not be low. Stilson Hill Road is protected from any change that would alter its character or appearance.

Response:

We have recommended a route variation to avoid the Stilson Hill Road area. Please see sections 6.2.49. The pipeline alignment along this variation would require less forestland clearing and maximize the distance between the pipeline and residences.

3.13-42 Comment Summary: Visual Impact

Iroquois stated that the discussion of visual resources in Connecticut should be modified to include the Tenmile River (MP 284.2 and MP 285.25); the Naromi Land Trust's Wimisink property (MP 287.8); the Weantinoge Land Trust's Morrissey Brook Parcel (MP 288); the Housatonic Range (Candlewood) Trail and Pine Knob area (MP 291.8) and the Pomperaug Blue Dot Trail (MP 318.4).

Response:

Most of these locations were discussed in the DEIS. The EIS was revised to include the Tenmile River and the Pomperaug Trail, which were not originally addressed (see table 5.1.9-6).

3.13-43 Comment Summary: West Canada Creek

Iroquois noted that there are no comments provided next to West Canada Creek on table 4.1.9-4 (Public Interest Areas). During the NYS Article VII proceedings, Iroquois acknowledged that the proposed crossing of the creek was in an area that was perceived as scenic, although not designated as such by any Federal or state agency.

Response:

We believe that West Canada Creek was adequately discussed in table 5.1.9-4 . Although the area surrounding the creek is not designated as scenic, we have recommended that Iroquois submit a detailed mitigation plan, since there would be a cleared right-of-way through each side of the wooded banks. See section 7.3, recommendation 28.

3.13-44 Comment Summary: Roeliff Jansen Kill

The Columbia County Planning Department sent a comment letter that noted that the Roeliff Jansen Kill was not listed on table 4.1.9-4, Public Interest Areas.

Response:

Comment noted. Please see revision to table 4.1.9-4 to include the Roeliff Jansen Kill.

3.13-45 Comment Summary: Housatonic River

Iroquois stated that the segment of the Housatonic River that is listed on the NRI is ysubstantially north of the proposed Iroquois crossing.

Response:

Table 4.1.9-4 clearly states that the crossing of the Housatonic River by Iroquois would be south of the NRI section.

3.13-46 Comment Summary: NRI

Iroquois stated that their route would not cross portions of the Schoharie Creek, Grass River, or Oswegatchie River that are on the National Rivers Inventory.

Response:

Table 4.1.9-4 clearly states that the sections crossed of the Grass River and Oswegatchie River are not on the NRI. The section of Schoharie Creek listed on the NRI is the area from the New York State Thruway to the town of Esperance. Dan Haas of the NPS believes that the study area probably ended at the Esperance town border. Therefore, the pipeline route would not cross the study section (Haas, 1990). Please see revision to sections 4.1.9 and 5.1.9 to reflect NPS remarks.

3.13-47 Comment Summary: Suncook River

Tennessee noted that table 4.1.9-4 incorrectly stated that the Suncook River is a candidate for Wild and Scenic River status. The portion of the river that is a candidate for such status is several miles downstream of Tennessee's proposed crossing.

Response:

The NPS lists the area of the Suncook River that is on the NRI from the Route 3 bridge above the Town of Suncook to the dam in Pittsfield, which is 1 mile east of Tennessee's proposed crossing. Sections 4.1.9 and 5.1.9 have been revised. The NPS does not believe there would be an impact on the NRI segment since the pipeline crossing would be downstream.

3.13-48 Comment Summary: Milford Harbor

Comment letters were received regarding the impact of the proposed pipeline on Milford Harbor and Charles Island in the Long Island Sound. The proposed route would cut through an officially designated transient anchorage area to the north of Charles Island; anchors could damage the pipe; and the pipeline would conflict with plans to develop a marina on the north side of Charles Island.

Response:

The entire marine pipeline route would be designated as a nonanchorage area by the USCG and would be so indicated on navigational maps to avoid damage from anchors dragging across the pipeline. For additional protection, the pipeline would be concrete coated and buried with 5 feet of cover in the vicinity of the mooring area near Charles Island. The anchors of vessels that typically use the anchorage area are not large enough to penetrate the sediment to the depth of the pipeline. Further, the pipeline would be coated with 2 inches of concrete to protect it from outside forces and to provide negative buoyancy for the pipeline.

The pipeline would not permanently limit the ability to deepen the channel, since small vessels would use the channel.

For discussion of impact on Milford Harbor and Charles Island, see section 6.2.69.

3.13-49 Comment Summary: Connecticut Coastal Area Management

A comment letter was received regarding Connecticut's Coastal Area Management (CAM) consistency. The commentor stated that the DEIS did not address this issue because Iroquois did not file worksheets. Since this has now occurred, it should be discussed in the EIS.

Response:

The DEIS did address coastal management zones in Connecticut and New York. DEIS, section 7.3, recommendation 60, required Iroquois to submit plans to state agencies. The agencies must agree that the proposed facilities are consistent with coastal zone management programs. Determination from each state must be filed with FERC prior to the initiation of construction. Please see section 5.1.9.2.2 for information on coastal zones.

3.13-50 Comment Summary: LPEP

The Dutchess County Environmental Management Council stated that the Land Preservation and Enhancement Program was not presented.

Response:

The Land Preservation and Enhancement Program was discussed in section 5.1.9.2.2. More information on the program has been added in sections 5.1.4.2.2, 5.1.9.2.2, and 7.3, recommendation 45.

3.13-51 Comment Summary: Guarantees on Mitigation and Compensation

The Town of Brookfield asked what guarantee is offered to them on local mitigation and compensation issues.

Response:

We will recommend to the Commission that all mitigation measures contained in Chapter 7 be made part of any certificate issued in this proceeding. The Commission will make the decision on which conditions are to be contained in any certificate. Compensation issues are between the landowner and the applicant. The town is free to require Iroquois to perform any local mitigation that is legally necessary or that Iroquois agrees to perform, so long as the federally determined public convenience and necessity is met. If Iroquois fails to perform any mitigation which is part of the FERC certificate, they may be held liable for enforcement actions taken by FERC under the appropriate provisions of its regulations.

3.13-52 Comment Summary: Contacting Local Officials

The Town of New Milford and a Senator wrote a comment letter and stated during the public hearing that FERC did not contact local officials when preparing the DEIS.

Response:

A Notice of Interest (NOI) was published on February 17, 1989, and was sent to all municipalities. The NOI described the project and requested comments on the scope of the DEIS. In addition, two public scoping meetings were held in March 1989.

In the case of New Milford, the First Selectman was contacted. He referred us to the Maguire Group, the environmental consultant to the town. The Maguire Group's senior environmental planner provided us with information to aid in the analyses of environmental impact.

3.13-53 Comment Summary: Guaranteeing Mitigation Measures

Commentors stated that Iroquois should be prepared to guarantee future and present mitigation to all aspects of environmental impact. All mitigation recommended by FERC in the DEIS should be incorporated into the FEIS.

Response:

Iroquois would be required to follow FERC's recommended mitigation measures for the entire length of the pipeline. The recommendations in the EIS will be presented to the Commission as part of any order issued in the proceeding. Any changes or deviations from these conditions would have to be submitted to FERC for review and approval.

3.13-54 Comment Summary: Long-term Damage

One commentor stated FERC and Iroquois must be accountable for future damage resulting from opening a new corridor through pristine lands.

Response:

We do not believe that there would be long-term damage resulting from opening a new corridor. If damage occurs on the right-of-way following construction, Iroquois would be responsible for making certain that the appropriate repairs are made and provisions are taken to prevent future occurrences.

3.13-55 Comment Summary: Nature Trails

Three comments were received about the impact of the proposed pipeline on nature trails. Commentors were concerned that hikers and campers who visit these pristine areas would be greatly disappointed to have heavy construction and artificially created open areas substituted for existing natural surroundings. Commentors also stated that trail crossings should not be permitted.

Response:

Impact on nature trails would be minimal. We have recommended special construction techniques for trail crossings that would minimize the visual impact, such as requiring the pipeline company to limit the width of the construction right-of-way. Efforts would be made to schedule construction through trail areas during low-use periods, and to accelerate construction and cleanup procedures. Please see table 5.1.9-6 and section 5.1.9.2.1. Also, in section 7.3 recommendation 27, we have required the applicants to file specific mitigation plans for each trail crossing. The plan must be reviewed and approved by the Director of OPPR.

3.13-56 Comment Summary: Housatonic Range Trail

The HVA sent a comment letter about the Housatonic Range Trail crossings. The recommendation in the DEIS to minimize visual impact on the trail is generic and general, the commentors felt, and should be replaced with specific recommendations for maintaining natural scenic views.

Response:

Recommendation 27 requires Iroquois to file with the Secretary of the Commission for review and approval by the Director of OPPR specific construction and mitigation plans for this trail crossing. We feel this would ensure no adverse effects in this area.

3.13-57 Comment Summary: Appalachian Trail

The Appalachian Trail Conference's comment letter addressed several concerns regarding the AT crossing by the Iroquois pipeline. They support NPS and Iroquois' agreement to cross the trail along Line Change 37A. Any other crossing would create greater visual impact on the AT.

It would be difficult to control access points to the right-of-way. They stated that an access control plan should be submitted.

Commentors also were concerned that mitigating measures should include keeping the AT open throughout the construction period.

Response:

Section 5.1.9.2.1 discusses ORV and pedestrian control measures that could be used to deter trespassers. Section 7.3, recommendations 7, 27, and 28 require Iroquois to minimize short- and long-term impact on the AT.

Iroquois has stated that trail traffic would be maintained during the construction phase. Trail users may be temporarily inconvenienced during construction due to the presence of equipment, the noise and dust associated with construction, and the visual intrusion caused by construction. These effects, however, would be of a temporary nature.

3.13-58 Comment Summary: Appalachian Trail

The Appalachian Trail Conference's comment letter addressed several concerns regarding Tennessee's proposed crossing of the AT in New Jersey and Massachusetts. Tennessee has not contacted AT officials.

Response:

Tennessee's proposed Sussex Loop through High Point State Park and the portion of the Columbia/Berkshire Loop that would have crossed the AT are no longer part of the project studied in this EIS. The Sussex Loop was deleted from the project in Tennessee's amendment, Docket No. CP89-629-001, filed January 19, 1990. The affected portion of the Columbia/Berkshire Loop will be studied in a future environmental document.

3.13-59 Comment Summary: Appalachian Trail

The Appalachian Trail Conference and the HVA wrote comment letters about the visual impact on the AT. They felt that mitigation methods need to be delineated in order for reviewers to determine if, in fact, visual impact on this national resource would be "minimal."

Response:

The proposed crossing of the AT would be on lands owned by the NPS. In letters dated July 18, 1988, Charles Rinaldi (Project Manager of NPS AT Project Office) wrote that Iroquois' route, "with proper mitigation methods, would result in minimal impact to the scenic values and proper management of the AT." We have recommended that Iroquois prepare and file with FERC a specific construction and mitigation plan for this crossing for review and approval by the Director of OPPR prior to construction (see section 7.3, recommendation 27).

3.13-60 Comment Summary: Farmhill River Trail

The Shelton Conservation Commission has been discussing the reestablishment of the Blue Dot Trail through the Farmhill River corridor. A comment indicated that the pipeline cuts through the corridor.

Response:

We have contacted John Cook, Chairman of Shelton's Conservation Commission, to discuss the impact on the proposed Farmhill River Blue Dot Trail. Mr. Cook informed us that the pipeline route would be 1,500 feet east of the trail in the vicinity of MP 325 to MP 326. No impact is anticipated to the trail as a result of the proposed project. Although the conservation commission recognizes the historic importance of the Indian trail, no plans have been made to acquire the land.

3.13-61 Comment Summary: Pomperaug Trail

Iroquois and the Town of Monroe commented that the Pomperaug Blue Blazed Trail would be crossed and, therefore, it should be included in section 7.3 (recommendation 27).

Response:

Comment noted. We contacted Dr. Deborah Orwig, a consultant to the Town of Monroe, to discuss impact on the Pomperaug Blue Blazed Hiking Trail. We field-surveyed the trail the week of March 12, 1990, and believe long-term impact would be minimal, since the trail would be crossed through an unforested area. Efforts would be made to schedule construction through the trail area during low-use periods. Please see revisions to section 4.1.9.2, table 4.1.9-4, table 5.1.9-6, and section 7.3 (recommendation 27) to include the Pomperaug Trail.

3.13-62 Comment Summary: Seaway Trail

Iroquois requested that section 4.1.9 note that the Seaway Trail is a vehicular trail.

Response:

Comment noted. See revisions to table 4.1.9-4 and section 4.1.9.2.

3.13-63 Comment Summary: Road Crossing Permits

A comment was received stating that traffic and safety problems would be created by road crossings, and Iroquois must acquire road crossing permits.

Response:

As stated in section 2.6, Iroquois would obtain local road crossing permits and would be required to construct the pipeline in accordance with permit conditions.

3.13-64 Comment Summary: Traffic Analysis

A comment was made at public hearing in Danbury regarding the need for a traffic analysis.

Response:

Traffic problems would only be a short-term impact during construction. Most public roads would be bored. Please see section 2.2.1 (General Pipeline Construction Procedures).

3.13-65 Comment Summary: Corporate Property

The president of Mark IV Investments Corporation opposed the proposed pipeline crossing of corporate property in Newtown, Connecticut.

Response:

Short-term impact on commercial and industrial property would be associated with construction disturbances, such as road openings. We do not believe that there would be any long-term impact on corporate property once construction and restoration have been completed.

3.13-66 Comment Summary: Pollution

One comment letter was received about pollution from the Iroquois pipeline.

Response:

We have given serious consideration to all issues raised. Unfortunately, this comment does not specify whether the concern is pollution during construction or operation of the pipeline. In any case, Iroquois would be responsible to cleanup the right-of-way during restoration. Operation of the Iroquois pipeline would not result in pollution of the land or air. Please see sections 4.1.8.1 and 5.1.8.1 for information on impact on air quality.

3.13-67 Comment Summary: Hazardous and Solid Waste Sites

Iroquois stated that their route does not directly traverse any known hazardous or solid waste sites, as stated in section 4.1.9.2.

Response:

Section 4.1.9.2 lists sites that would be crossed or bordered by the proposed route as filed with FERC, not with route variations incorporated. Route variations to avoid landfills, such as the Rose Valley, Mica Products, Waste Management, and Walter Vincent, are discussed in sections 3 and 6.

Section 5.1.9.2.2 has been revised to note that the Silver Sands Landfill site would not be crossed in the area that was used as a landfill.

The EIS clearly states in table 4.1.9-4 that the Mackay Dump (MP 267.5) and Kimberly-Clark Landfill (MP 292.2) would not be crossed or even bordered. The other solid or hazardous waste sites would be crossed or bordered by the proposed route.

3.13-68 Comment Summary: Rose Valley Landfill

Iroquois requested that a footnote be added to table 4.1.9-4 (Public Interest Areas) to clarify that the Rose Valley Landfill Variation would avoid the landfill.

Response:

Table 4.1.9-4 lists all public interest areas crossed or near the proposed route. The Rose Valley Landfill would be crossed by the proposed route. Sections 3 and 6 discuss route variations and their impact. The Rose Valley Landfill Variation, which was recommended, is described in Volume I, section 3.6.13 and 6.1.13. Therefore, we believe that table 4.1.9-4 should only reflect the effects of the proposed route.

3.13-69 Comment Summary: Dover Landfill

The Dutchess County Environmental Management Council asked if the landfill at MP 282 would be crossed.

Response:

The Dover/Walter Vincent Landfill (MP282.3) would not be traversed by the proposed route (see section 4.1.9.2). For information on the route variation through this area, see Volume I, sections 3.6.24 and 6.1.24. The variation would not cross the landfill, but would be closer than the proposed route.

3.13-70 Comment Summary: Dover Variation

Iroquois stated that the Dover Variation does not traverse the Walter Vincent Landfill, and suggested that this should be noted in section 4.1.9 and table 4.1.9-4 (Public Interest Areas).

Response:

The section and table mentioned above detail existing environment along the proposed route, not route variations. Table 4.1.9-4 had a typographical error in the column for the length of crossing which has been corrected. Section 4.1.9.2 does not state that the landfill would be traversed, but that it would be within 2,000 feet. The Dover Variation is discussed in Volume I, sections 3.6.24 and 6.1.24.

3.13-71 Comment Summary: Waste Management and Kimberly-Clark Landfill

The Town of New Milford commented that it is ludicrous that the EIS suggests that environmental impact of pipeline construction through the Waste Management Landfill and Kimberly-Clark Landfill be deferred to a future plan or evaluation. They stated that the EIS should define the environmental impact of the proposed action and weigh alternatives. They were also concerned that no alternatives were reviewed to avoid Waste Management's Landfill (MPs 295.3 - 295.7)

Response:

Section 7.3, recommendation 35, requires Iroquois to route the pipeline around landfills if they were used for any other purpose than Class III fill sites. If toxic materials could be near the pipeline route, Iroquois must perform sufficient testing to ensure that contaminated materials would not be disturbed. The extent of contamination at the Waste Management and Kimberly-Clark landfills cannot be determined until soil and water samples are taken.

Please see the analyses of State Route 7 and New Milford route variations in sections 6.2.52 and 6.2.53 to avoid the Waste Management Landfill area.

3.13-72 Comment Summary: Waste Management Landfill

Comment letters were received which questioned the impact of the proposed pipeline on New Milford's underground aquifer from contaminants in Waste Management Inc.'s landfill located in New Milford, Connecticut. Specifically, commentors were concerned that contaminants could follow the pipeline trench.

Response:

The pipeline would border, not cross, the Waste Management Landfill. Iroquois stated that the pipeline would be upgradient of the landfill, which is EPA-listed. Please see section 5.1.9.2 for our impact analysis. In addition, the Erosion Control, Revegetation, and Maintenance Plan (appendix C) and section 5.1.2.2 specify the placement of trench breakers. The trench breakers are placed to stop the longitudinal flow of shallow groundwater along the pipeline and the trench.

3.13-73 Comment Summary: Huntington Landfill

Comment letters were received about the Huntington Landfill in East Northport, Long Island. The commentor stated that the landfill is a methane explosion waiting to happen and it seeps gas through the LILCO right-of-way.

Response:

Iroquois' pipeline would be approximately 200 feet from the landfill. Existing methane detectors would remain in the LILCO right-of-way. Iroquois would be required to sample the water and soil within the construction right-of-way in the vicinity of the Huntington Landfill. If hazardous wastes are encountered during construction, Iroquois must stop construction and notify state and local agencies to determine the appropriate course of action.

3.13-74 Comment Summary: Silver Sands Landfill and Park

Several comment letters were received concerning the impact of the proposed pipeline on the Silver Sands Landfill and planned State Park in Milford, Connecticut. The residents asked if FERC investigated past unregulated uses at the site and if the pipeline would interfere with plans to develop the site as a park. Iroquois noted changes that were needed to the EIS regarding Silver Sands.

Response:

Iroquois stated they would be responsible for the disposal of any hazardous wastes encountered during construction. Iroquois would design and implement a plan to prevent any contaminated leachate from entering the Long Island Sound. The plan would be submitted to FERC for review and approval prior to construction. We have recommended that onsite monitoring wells and offsite municipal supply wells be sampled.

We contacted CTDEP's Hazardous Waste Division, Solid Waste Division, and Natural Resources Center for information on the Silver Sands Landfill. Information on the Silver Sands State Park was obtained from the Office of State Parks.

Please see sections 4.1.9, 5.1.9.2 (Land Use Impact), and 5.1.12 (Reliability and Safety), as well as table 4.1.9-4 (Public Interest Areas).

3.13-75 Comment Summary: Boothe Memorial Park

One commentor from Stratford, Connecticut, wrote that the pipeline would cross Boothe Memorial Park, a park used by thousands of Stratford residents.

Response:

Boothe Memorial Park would not be crossed by the pipeline. Please see the maps in Volume I, appendix A.

3.13-76 Comment Summary: Cranberry Pond and Lynn Demming Park

A comment letter was received about areas that are conspicuously absent from discussion in the DEIS, such as Cranberry Pond and Lynn Demming Park.

Response:

Lynn Demming Park is listed on tables 4.1.9-4 and 5.1.9-6. The park, which is near MP 293.8, would not be crossed. The pipeline right-of-way would be adjacent to an electric right-of-way. The trees which screen the view of the electric right-of-way would not be removed, therefore, no visual impact is expected. We have recommended that Iroquois submit detailed mitigation plans in the vicinity of the park.

Cranberry Pond was not mentioned in the land use section of the DEIS because it would not be crossed. The pipeline would be routed near the pond through a wooded area. Please see wetlands sections 4.1.7.1 and 5.1.7. We considered but rejected a route variation around Cranberry Pond in the DEIS and additional routes around Cranberry Pond in the FEIS section 6.3. However, we did recommend a major route variation that would include avoiding Cranberry Pond (see section 6.2.65).

3.13-77 Comment Summary: Huntington

The Town of Huntington's comment letter addressed impact of the proposed pipeline on town park properties, such as Crabmeadow Park, Kirschbaum Park, Wodaembarc Park - Preserve, and Meadowlark Park.

Response:

We contacted R. Machtay, Huntington's Director of Planning, for information on the parks. M. Myles, Senior Environmental Analyst, sent tax maps showing the exact boundaries of the properties in question. In response to the comments, Crabmeadow Park, Wodaembarc Park - Preserve, Kirschbaum Park, and Meadowlark Park are now listed in table 4.1.9-4 (Public Interest Areas).

All wooded wetlands would be allowed to revegetate. The permanent right-of-way in upland forests would be revegetated with a grass-legume mixture and large trees would not be allowed to grow within 25 feet of the pipeline. These trees would be removed by selective cutting or by moving during routine maintenance, if they are small enough. The pipeline right-of-way would be within the LILCO right-of-way.

Efforts would be made to schedule construction through the parks during low-use periods. After construction, the permanent right-of-way could be used for recreational activities. No turf would removed from the golf fairways during construction.

Please see sections 4.1.9 and 5.1.9 for our analyses of the pipeline's route in proximity to the parks. The entire pipeline right-of-way would be within the existing LILCO right-of-way.

3.13-78 Comment Summary: Parkland in Huntington

A commentor stated that Iroquois should be obligated to restore 35 feet of parkland adjacent to the LILCO right-of-way in Huntington, New York, after construction.

Response:

Iroquois would be obligated to restore all areas that are disturbed in the construction right-of-way. Woodland would be permitted to revegetate in the construction right-of-way. The entire permanent right-of-way on Long Island would be within the existing LILCO right-of-way.

3.13-79 Comment Summary: Aboveground Facilities

A comment letter was received regarding the flow meter monitoring building proposed by Iroquois adjacent to the LILCO right-of-way. The commentor stated that the building should be designed to blend into the surrounding landscape and be located such that it is hidden from nearby residents.

Response:

Our Erosion Control, Revegetation, and Maintenance Plan (appendix C) requires the applicants submit detailed landscaping and planting plans for new metering and compression facilities for review and approval by the Director of OPPR. The purpose of this requirement is to minimize visual intrusion on nearby areas from aboveground facilities.

3.13-80 Comment Summary: Visual Impact Along LILCO

Commentors were concerned that visual impact along the LILCO right-of-way in Huntington, Long Island, should be minimized.

Response:

The Iroquois gas pipeline's permanent right-of-way would be within LILCO's right-of-way, therefore, eliminating the possibility of additional adverse visual impact.

3.13-81 Comment Summary: Future Development

Commentors were concerned that the new energy source (natural gas) on Long Island would ultimately be a catalyst that would flame commercial, industrial, and residential expansion onto lands in central and eastern Long Island where they are trying to preserve agricultural lands. Commentors requested that FERC, scientifically, evaluate the domino effect of the pipeline on the growth and development of sensitive lands in central and eastern Long Island.

Response:

Iroquois and its customers have asserted that there is an existing need for energy sources on Long Island. The natural gas proposed to be transported by Iroquois could satisfy that existing need. Future growth and development is determined by local zoning and master plans. Also, see response 3.18-17 in FERC policies and procedures.

3.13-82 Comment Summary: Agriculture

The HVA commented that the EIS should fully investigate the potential damage to the farmers and consumers of Connecticut, and the importance of maintaining a regional food supply. Agricultural land as a resource should be discussed.

Response:

Impact on agricultural land is addressed in sections 5.1.2 and 5.1.9. We do not believe that there would be a decrease in the regional food supply. Farming operations, if disrupted, could resume immediately after construction and restoration have been completed.

3.13-83 Comment Summary: Agricultural Districts

Two comment letters were received regarding agricultural districts: section 4.1.9.1 should note that agricultural districts are designed to protect such lands from outright acquisition or eminent domain by local or state government without first conducting an environmental review and complying with the provisions of the Agricultural District Law.

Response:

There would not be any long-term impact on agricultural land. After restoration of the right-of-way, the easement could be farmed as it was prior to construction. After construction of the proposed pipeline, the right-of-way would be restored and little change in land-use practices would occur. The route location across agricultural districts in New York has been extensively reviewed by NYDAM. Many route refinements proposed by NYDAM have been incorporated into Iroquois' proposed route.

3.13-84 Comment Summary: Agricultural Resources

The Senior Planner for Columbia County, New York, stated that there should be a section on agricultural resources and operations to discuss construction-related interference with agricultural operations, such as access to pastures and fields and containment of livestock.

Response:

Section 5.1.9 discusses the construction-related impact of the proposed pipeline on agricultural operations. Livestock issues are also addressed in section 5.1.6.2. After restoration of the right-of-way, there would not be any long-term impact on agricultural operations.

3.13-85 Comment Summary: Fallow Deer Farm

One comment was received about the impact of the proposed pipeline on a fallow deer farm: What would be the impact of Mainline valve 249-2A which would be located within the farm's borders?

Response:

Mainline valve 249-2A would be an aboveground structure located on a 100 by 100 feet plot of land adjacent to the road. Tennessee would have to relocate the deer in a holding pen during construction or provide suitable alternative arrangements to the landowner.

3.13-86 Comment Summary: Farms in Connecticut

Commentors were concerned about the impact on the only dairy farm in Shelton and the only remaining working farm in Sherman. Commentors noted that the proposed pipeline would cut through the middle of the farms.

Response:

Dairy operations could resume immediately after land restoration. The dairy farm owner would be compensated by the applicant for any loss of business during construction. If the farmer must provide supplemental feed as a result of construction across a farm, due to inaccessibility of a portion of the farm, the applicant would be required to compensate the farmer for the supplemental feed under terms of the easement. Cropland would be restored to preconstruction conditions. The Bristol Daylily farm in Sherman would not be traversed. We believe impact on farming operations in Sherman would be negligible.

3.13-87 Comment Summary: Jones Tree Farm

Residents of Monroe, Connecticut, wrote comment letters regarding the impact of crossing Jones Tree Farm. Specifically, they were concerned that the pipeline would cut right through the middle of the farm, traversing the berry patches.

Response:

During telephone conversations with Terry Jones in June 1989, it was determined that only the natural forested area of Jones Tree Farm in Shelton would be crossed. There would be no impact on farming operations.

3.13-88 Comment Summary: Plowing Over Pipeline

Comments were received at the Albany public hearing and in comment letters regarding the effects of plowing over the pipeline in agricultural areas.

Response:

Iroquois has agreed to bury the pipeline 4 feet through agricultural areas. At this depth, the pipeline would not be affected by plowing.

3.13-89 Comment Summary: Orchards

A comment letter was received regarding impact on orchards. The Planner for Columbia County wrote that maximum efforts should be made to avoid orchards, and the Greenport Orchard Variation should be adopted.

Response:

Site-specific mitigation measures would be developed during right-of-way negotiation for orchard crossings. The applicant would try to save as many trees as possible through methods such as reducing the permanent and construction right-of-way. Property owners would be reimbursed for all commercial trees removed during construction and for loss of fruit production as a direct consequence of the construction activities. The Greenport Orchard Variation is discussed in Volume I, section 3.6.16 and 6.2.38.

3.13-90 Comment Summary: Fisher Forest Tax

A comment letter was received regarding the crossing of Fisher Forest Tax properties.

Response:

The landowner of the Fisher Forest Tax property would not be subject to any penalties. Fisher Forest Tax properties are discussed in section 5.1.9.1.2, which details site-specific land use impact.

3.13-91 Comment Summary: Visual Impact

Commentors were concerned that Iroquois' clear cutting of a 100-foot construction area would leave a permanent scar across their mountains, through their valleys, and in their forests.

Response:

We have recommended that Iroquois reduce their construction right-of-way to 75 feet and permanent right-of-way to 50 feet to minimize visual impact, especially in forested areas. Following construction, all disturbed areas would be revegetated in accordance with appendix C. The presence of the right-of-way would be evident only in forested locations. The construction right-of-way would be allowed to recolonize with woody vegetation in forested areas, while the permanent right-of-way would only be mowed every 5 to 7 years.

3.13-92 Comment Summary: Loss of Trees

Comments were made at the Danbury public hearing about the loss of trees in Brookfield and the 727 acres of forest throughout the proposed route.

Response:

Landowners would be compensated for the value of lost trees by the applicant. Both applicants have stated they would pay fair-market value for easements and other impact on properties. If a landowner feels that the right-of-way would cause a loss of privacy, during the easement negotiation process they could request that the applicants plant vegetative screens to minimize the loss of privacy. The effects of the loss of forest are discussed in section 5.1.6.

3.13-93 Comment Summary: Roosevelt Forest

Two residents of Stratford, Connecticut, were concerned about the impact of the proposed pipeline on Roosevelt Forest.

Response:

We have recommended that Iroquois reduce their construction right-of-way from 100 feet to 75 feet, thereby minimizing the area of clearing. Efforts would be made to schedule construction through the forest during low-use periods, and to accelerate construction and cleanup procedures. While forest-interior species could be negatively affected by the clearing of forest habitats, species that utilize early- and mid-successional stage habitats would benefit from right-of-way clearing. Density and diversity of small mammals and bird species often increase after the initial clearing of forestland. Please see section 5.1.4.2.1. Following construction, there would be no limitations on forest use; only the presence of large trees on the right-of-way would be precluded.

3.13-94 Comment Summary: Paugussett State Forest

Commentors stated that the DEIS gave little consideration to the Paugussett State Forest.

Response:

The Paugussett State Forest is mentioned in sections 4.1.9.2, 5.1.9.2, and 6.2.60. Under state law, pipelines are not precluded from being located in state forests. Iroquois would have to obtain an easement from CTDEP in order to construct through the state forest.

3.13-95 Comment Summary: Paugussett State Forest

Malcolm and Anne Goodman asked if an existing easement in Paugussett State Forest would be used for pipeline construction.

Response:

Iroquois has proposed a route variation through Paugussett State Forest. We have recommended the variation, which would minimize impact on residential areas. Please see section 6.2.60.

3.13-96 Comment Summary: Paugussett State Forest

The residents adjacent to the Paugussett State Forest are concerned that the buffer zone between their houses and the state forest would be removed, jeopardizing their safety from hunters. They recommend placing the pipeline deeper into the state forest.

Response:

In the DEIS, the Forest Subdivision Variation, which would route the proposed pipeline through Paugussett State Park to avoid proposed subdivisions, was rejected due to lack of sufficient information provided by the applicant ensuring that the variation would result in less impact. We believe that less of a visual impact would occur if the state forest was bordered than if it were crossed. The FEIS analyzes and recommends the Paugussett State Forest Variation in section 6.2.60.

3.13-97 Comment Summary: Use of Existing Rights-of-Way

One commentor wanted to know why 56 percent of the route goes through woodlands and only 29 percent follows existing powerline rights-of-way.

Response:

About 37 percent of Iroquois' proposed route would cross woodland and 20 percent of the proposed route would be adjacent to existing rights-of-way. Sections 3.6 and 6.1 discuss recommended route variations that would require Iroquois to follow existing right-of-way, such as along the Greenport Quarry Variation, Right-Of-Way Alignment Variation, and the Simon Alternative. In some cases, it would not be possible to follow existing rights-of-way (see Conrail Variation) or existing rights-of-way do not exist. In other locations, we have recommended that Iroquois place the pipeline within existing rights-of-way (see table 5.1.9-2).

3.13-98 Comment Summary: Trespassing on Right-of-Way

Several comment letters were received regarding trespassing on the right-of-way. The right-of-way would attract hunters, ORVs, and dumping. A few comment letters stated that most barriers could be destroyed or circumvented by trespassers. Short of fencing the entire right-of-way, how can access be limited? Commentors stated that FERC should visit all areas traversed by the pipeline to better devise barriers that will protect these areas.

Control measures should be discussed in terms of cost and effectiveness. Mitigating the increased incidence of dumping should be included. Dumping fines should be increased to $1,000 in Connecticut.

Residents of Long Island, New York, commented that the existing LILCO right-of-way, which the Iroquois pipeline would be adjacent to, is often used by ORVs. They believe the problem would be aggravated by the increased width of the right-of-way.

Response:

Comment noted. The managers of land trusts and other public interest areas and landowners could require Iroquois to install one or more of the right-of-way barriers listed in section 5.1.9.2.1 of the FEIS or any other barrier they feel would be effective. Please see the revision to section 7.3, recommendation 7, which requires the applicant to work in conjunction with LILCO to resolve any current ORV problems. Barriers could be installed at ORV access points on Iroquois' side of the right-of-way, however, we cannot require LILCO to install barriers.

The applicants would replace any fences removed during construction. New fences and barriers placed on the right-of-way to deter trespassers would be subject to the terms and conditions of the easement.

In section 7.3, recommendation 23, we have recommended that the applicants plant dense vegetation at all road crossings in forested areas to reduce uncontrolled use of the right-of-way. We do not have the authority to increase the fine for unauthorized dumping. As part of its routing pipeline patrols, the applicants would note and report any unauthorized dumping to the appropriate authorities.

3.13-99 Comment Summary: Eminent Domain

Two comments were received regarding eminent domain. Eminent domain by a private company is a breach of constitutional rights.

Response:

When Congress passed the Natural Gas Act of 1938 it gave companies that authority. Section 7(h) of the Natural Gas Act of 1938 grants the holder of a certificate of Public Convenience and Necessity the right of eminent domain when it cannot acquire land necessary to construct and operate certificated facilities by contract or reach agreement with the owner of such property.

3.13-100 Comment Summary: Condemnation

Iroquois suggested that the discussion of condemnation might be more broadly understandable by laypersons were it noted early in the paragraph that condemnation actions may be brought by a pipeline company in either Federal or state court under authority of the FERC Certificate.

Response:

We believe that the discussion of condemnation in section 5.1.9.1.1 is adequate.

3.13-101 Comment Summary: Corrections and Clarifications

A number of clarifications and corrections to the DEIS were received. The following were valid corrections and needed clarifications and we have incorporated these revisions.

1) Iroquois noted that the area within the Naromi Land Trust is a mixture of woodland, open (wet) meadow, and scrub-shrub vegetation, not all forestland.

2) The Appalachian Trail Conference noted that section 2.6 incorrectly stated that a special use permit would be required to cross the AT. The NPS would only have the authority to enter a land exchange.

3) Iroquois' records indicate that the Weantinoge Land Trust's Morrissey Brook area would be crossed for 820 feet, not 1 mile as indicated on table 4.1.9-4 (Public Interest Areas).

Response:

The requested changes have been made.

3.13-102 Comment Summary: North Haven Extension

Two comment letters were received regarding the impact of the North Haven Extension.

Response:

Tennessee's proposed North Haven Extension is no longer part of the project studied in this EIS. It was deleted from the project in Tennessee's amendment, Docket No. CP89-629-001, filed January 19, 1990.

3.13-103 Comment Summary: Visual Impact Assessment

The City of Shelton and the Town of New Milford claim that a visual impact assessment was not performed in Connecticut. They commented that section 4.1.9.3 suggests that routing through Connecticut was an afterthought.

Response:

Iroquois prepared a visual resource assessment of the pipeline route through Connecticut using a modified Bureau of Land Management scenic quality inventory/evaluation system. The assessment rated all land features in relation to the physiographic region in which they are located. In addition, Iroquois submitted information on additional areas after the DEIS

was published. All of these visually significant areas are listed on table 5.1.9-6. We have field-checked all information provided by the applicant.

3.13-104 Comment Summary: Candlewood Mountain and Boys Halfway River Caves

Comments were received regarding visual impact on the Candlewood Mountain/Pine Knob area and the Boys Halfway River Caves. Commentors felt that impact would not be low-moderate as stated in the DEIS.

Response:

The Candlewood Mountain area has been extensively modified by the construction of the powerlines, the penstock for the pumped storage plant, and numerous commercial, and residential areas. The pipeline would generally parallel the powerlines after it crosses the penstock. Prior to crossing the penstock, the right-of-way would generally not be visible to the local population. Two route variations, East Stilson Hill Road and Kimberly Clark, were analyzed, but rejected in sections 6.2.50 and 6.2.51, respectively.

It should be noted that the Boys Halfway River caves are over 0.5 mile (table 5.1.9-6) from the proposed route. At this distance, the pipeline right-of-way would not be visible from the caves' vicinity. Further, the Boys Halfway River caves collapsed, and therefore, this is no longer a high-use area. We reviewed two route variations, Monroe Subdivision and Conrail, in sections 6.2.63 and 6.2.61. The Monroe Subdivision Variation was recommended.

3.13-105 Comment Summary: Aboveground Facilities

Commentors noted that aboveground facilities should be landscaped.

Response:

Only one of Iroquois' aboveground facilities would be visible from a dwelling. We have recommended that aboveground facilities be screened from view with a vegetative buffer.

3.14 SOCIOECONOMICS

3.14-1 Comment Summary: Compensation to Developers

The Town of Monroe requested that Iroquois compensate developers for loss of value to the subdivision properties. They stated that Iroquois must provide proof of discussions with affected developers. In addition, Iroquois should be required to purchase outright those properties where the pipeline would not follow the lot line, if the property owner so wishes.

Response:

Iroquois has provided us with data supporting the fact that their right-of-way agents have attempted to contact developers. The exact location of the route through a subdivision would be determined during right-of-way negotiations. Once the final location of the pipeline corridor has been selected, Iroquois would work with the property owners to develop site-specific plans. If the pipeline traverses an undeveloped subdivision lot in such a way that the lot is no longer developable, Iroquois would compensate the developer for the entire lot.

3.14-2 Comment Summary: Residential and Commercial Property Values

Approximately fifty comment letters were received that questioned the pipeline's impact on property values. Many people were concerned that there would be a significant decrease in residential and commercial property values.

Response:

We have conducted a computerized data base literature review for information on the effects of gas pipeline easements on property values. We were unable to find any published literature which pertained specifically to this topic. Similar studies, however, have been conducted for electric transmission line rights-of-way. As stated in section 5.1.10.1, these studies indicate that there is no statistically significant correlation between proximity to a transmission line right-of-way and a decrease in property values. Internal studies performed by the New York Power Authority on the effects of construction and operation of their 765 kV Massena Line and their Marcy-South Line, concluded that the proximity to the right-of-way may limit the depth of the market of potential buyers, but the final selling price is comparable to other homes in the area which are not adjacent to the right-of-way (Alfred, 1990). In support of their filing in Docket No. CP87-205-000, Texas Gas Transmission Corporation conducted a study comparing land sales within 0.5 mile of an existing pipeline easement versus those beyond 0.5 mile. The results of this study indicate that the pipeline right-of-way creates no measurable loss in value in lands adjacent to the right-of-way.

We recognize the fact that landowners would not be permitted to build on the permanent right-of-way. However, we feel that through negotiations with the landowners they would be adequately compensated for this loss. Also minor route deviation could be made to avoid proposed or existing dwellings.

Lastly, we note that none of the commentors have submitted any references, or substantive data or information to support their claim that the pipeline easement negatively affects the value of property adjacent to the easement.

3.14-3 Comment Summary: Loss of Services

Commentors were concerned that homeowners would lose electrical supply, telephone hookup, sewage systems, water supply, and access to homes.

Response:

The inconveniences mentioned above would be temporary. The applicants would be required to consult landowners to minimize effects during construction activities and to maintain utilities and property access except for short interruptions during such construction. All services would be restored after construction. If sewage systems or wells do not work after construction, the applicant would be responsible to repair the systems to preconstruction condition or provide permanent alternative services.

3.14-4 Comment Summary: Cost of Relocating Septic Systems

A resident of Brookfield, Connecticut, wrote that residents are required to maintain septic systems. If a septic system fails and there is a pipeline through a backyard, the entire system would have to be removed and replaced with new piping and dirt, instead of adding a new one in a different location. Iroquois would not be required to cover the costs of such improvements 5 years down the line, even though they are directly responsible for limiting options to the most expensive one.

Response:

Section 7.3, recommendation 8, requires the applicants to avoid routing the pipeline close to septic systems and to take into consideration any potential plans for the expansion or relocation of these systems.

3.14-5 Comment Summary: Homeowner's Insurance

One comment letter was received about the possibility that homeowners' insurance would increase.

Response:

The landowners should not incur additional costs resulting from pipeline easements. Casualty losses to land, structures, or other property, and personal injuries caused directly by the pipeline are the responsibility of the pipeline company or its insurance underwriters. Claims would be resolved with the affected persons or governing body according to the legal liability laws of the state.

3.14-6 Comment Summary: Economic Impact on Shelton

The City of Shelton wrote that economic impact associated with assigned values to reforestation, wetlands replacement, loss of revenue to business during construction, land acquisition, and legal costs of eminent domain should be discussed in section 5.1.10.

Response:

The applicants stated that natural succession would allow forested vegetation to recolonize the construction right-of-way following revegetation. If a landowner wants the construction right-of-way replanted with trees, he/she is free to raise this during right-of-way negotiations.

We feel there will be no significant, long-term, adverse effects on wetlands as a result of project construction. If an entity, such as a landowner or town, wishes to negotiate with an applicant for wetlands replacement as mitigation, this issue would be strictly between those parties.

There would be no economic impact associated with wetlands replacement since all wetlands would be permitted to revegetate. During construction of the pipeline, revenues to businesses would most likely increase due to the influx of construction workers.

Land acquisition costs, including easements and purchase of sites for aboveground facilities, are costs associated with development of a project. The applicant would pay the negotiated cost or the cost determined during eminent domain proceedings to the landowner for property.

The cost of filing a court action for eminent domain proceedings would be borne by the applicant. The landowner would be responsible for retaining their own legal counsel and for paying any costs mandated by the court.

3.14-7 Comment Summary: Market Value for Developable Land

One comment was received regarding market values. The commentor stated that Iroquois should pay the full market value of property based on the highest and best possible use. For example, land that is currently cultivated should be assessed as developed property.

Response:

In most cases, the land needed for the right-of-way would be assessed at its present use. If plans have been filed for a subdivision or an addition to an existing building, the local appraiser would take that into consideration. The landowner is free to negotiate with the applicant for compensation based on other potential use of the land or lost development rights or potential as a result of the easement.

3.14-8 Comment Summary: Compensation for Farmland

Comment letters were received regarding the economic effects on agricultural land. The issue was raised that the pipeline would detract from farmland property values. Also,

commentors felt that we should specify that full-time farmhands, who would normally be paid by the farmer, should be financially supported by the pipeline company. Compensation should be total and should continue for as long as the loss persists. Section 7.3 should recommend that Iroquois compensate farmers for up to 2 years for loss of income.

Response:

Productive farmland operations would be interrupted during the construction phase and possibly one to two growing seasons following restoration. We believe that cropland and pastures would not be devalued since farmland could revert to its previous use after construction is completed. During the operation of the pipeline, the land could be farmed as it was prior to construction. Please see section 5.1.9.1.1.

Approximately 50 percent of the proposed Iroquois pipeline was routed through agricultural areas and open space since the long-term impact would be minimal when compared to long-term impact on woodland, residential, and commercial land.

Compensation to the landowner for losses sustained during construction would be determined after restoration has been completed. Compensation would cover the value of the easement and financial losses due to construction of the pipeline. If usual farm operations include the employment of farmhands, their salaries could be part of the compensation.

3.14-9 Comment Summary : Taxes

One comment letter was received asking what specific taxes will be paid.

Response:

The applicants would pay the required income taxes, sales taxes, any required taxes on the service that they perform, and other legally required taxes.

3.14-10 Comment Summary: Tax Rate

Commentors asked if Iroquois is taxed, will the land be considered "open space," since no structures will be allowed to be built on it? Or, given that the property must remain undeveloped because of its commercial use, will Iroquois be taxed as a commercial or business property owner?

Response:

Local taxes would be determined by the tax assessor of each municipality, not FERC. The landowners would be responsible for paying the property tax.

3.14-11 Comment Summary: Forest Tax Rate

The Town of Monroe stated that if forestland was cleared for the pipeline, the deforested area may not be eligible for the lower tax rate.

Response:

If the pipeline's cleared right-of-way made a lot ineligible for a lower forestland tax rate, the applicant would take that into consideration when determining the amount of compensation. The landowner would be compensated for the difference in property taxes.

3.14-12 Comment Summary: Future Cleanups

One comment letter was received that asked if Iroquois would be taxed at a rate that would pay for cleanups needed at a future date.

Response

Iroquois would not be taxed to pay for future cleanups unless they are legally required by state or local statutes. Iroquois would restore the land to its preconstruction state after construction. Iroquois would maintain its permanent right-of-way following construction. This right-of-way maintenance would include, but not be limited to, replanting of areas where inadequate revegetation has occurred, removal of unauthorized trash dumping, and repair of erosion-control structures.

3.14-13 Comment Summary: Taxes to Connecticut

A resident of Brookfield commented that Iroquois would not pay enough taxes to the State of Connecticut.

Response

Although Iroquois would not pay property tax on the pipeline or right-of-way, they would be required to pay the appropriate state and local income taxes, property taxes on parcels of land that are owned in fee, and any other taxes on the services they perform or equipment they purchase as required by law.

3.14-14 Comment Summary: Decrease of Revenue

The Town of Monroe stated that when property values drop, revenue to towns is decreased. The potential loss of revenue to the towns from decreased property values is not addressed anywhere.

Response:

We do not believe that property values would decrease. Therefore, there would not be a loss of revenue to towns due to decreased taxes.

3.14-15 Comment Summary: Taxes

The Town of Monroe asked if Iroquois would be required to remunerate tax revenue to towns on the land retained for permanent right-of-way or if the existing property owner would be taxed on the entire property.

Response:

The present property owner would be responsible for payment of taxes, although they could request reassessment of their property based on the presence of the pipeline right-of-way.

3.14-16 Comment Summary: Road Repair Fund

The Dutchess County Environmental Management Council recommended that a road repair fund be established.

Response:

All areas crossed by the pipeline, including roads, would be returned to their preconstruction conditions. The applicants would be responsible for complying with any conditions contained in road crossing permits, including provisions and specifications for road repairs and damages caused by construction traffic.

3.14-17 Comment Summary: Emergency Aid Services

The issue was raised that towns would have to expand enforcement and emergency aid services in the event of a disaster.

Response

The applicant would be responsible for all accidents on the right-of-way due to a gas leak. The likelihood of a gas leak is described in section 5.1.12. The applicants would prepare and maintain emergency plans with each town. These plans would outline emergency responses in case of an accident.

3.14-18 Comment Summary: Socioeconomic Data

The City of Shelton commented that table 5.1.9-1 should be recategorized to reflect the affected towns within Connecticut since there is no county government, and no one thinks in terms of county-wide impact.

Response:

We believe that the socioeconomic section should reflect regional impact. We acknowledge that Connecticut does not have county government.

3.15 CULTURAL RESOURCES

3.15-1 Comment Summary: Disagreement with Approach

Several comments were received expressing a generalized disapproval of the DEIS' approach to historic preservation.

Response:

FERC recognizes that NEPA and NHPA are related. However, because of different levels of documentation requirements, the studies performed in compliance with each act may not necessarily be completed concurrently. We believe we have taken appropriate measures to ensure that Iroquois will comply with applicable historic preservation requirements under Section 106 of the NHPA and in accordance with the FERC order of July 1988.

3.15-2 Comment Summary: Executive Summary Underestimates Effects

Commentors noted that the Executive Summary states that the project would affect cultural resources "to a lesser extent" than other resources (e.g., wetlands); they argued this statement was unsubstantiated and that it reflected an underestimation of the "archeological richness, anthropological values, and cultural significance of some of the lands crossed by the pipeline."

Response:

When the DEIS was compiled, no previously recorded cultural resources, listed in or eligible for the NRHP, were located within the proposed pipeline right-of-way. Thus, effect on known cultural resources could be characterized, for the moment, as relatively slight. Additionally, this comparative statement on effects was based upon FERC's commitment to avoid, reduce, or eliminate adverse effects on cultural resources in consultation with the appropriate SHPOs, ACHP, and other interested persons in accordance with the Section 106 process.

3.15-3 Comment Summary: Iroquois Update

Iroquois provided updates/classifications to the cultural resources discussion in section 4.1.11. They state Phase 1 fieldwork was initiated in July 1989, has now progressed to the Mohawk River (approximately) and that field testing has been completed in Long Island Sound. Iroquois also noted their commitment to avoid direct effects on NRHP-listed or NRHP-eligible structures. They also stated that they "consulted with representatives of the various tribes within whose former territories the project would traverse." Iroquois concluded from these consultations that "no federally recognized religious sites or sites of known tribal interest are located along the pipeline route."

Response:

Appropriate revisions have been made section 4.1.11. When it has been completed, Phase 1 work should be provided to FERC and appropriate SHPOs.

3.15-4 Comment Summary: Concerns About Oliver Wiswall House

The owners of the Oliver Wiswall house, which is listed on the NRHP, commented that pipeline construction would result in visual impact on both the house and Mt. Merino on which the house is located. They suggested alternative routes to minimize effects to the viewshed.

Response:

In general, Iroquois agreed to perform an historic structures survey to identify NRHP or NRHP-eligible structures that are within the viewshed of the pipeline right-of-way and that may be affected (in terms of historic visual context) by exposure to long-term views of the permanent easement. For such structures found to be potentially affected, in accordance with Section 106, Iroquois will identify long-term mitigation options in consultation with the appropriate SHPO and FERC (e.g., minor adjustments in the alignment of the right-of-way in order to limit long views of the pipeline easement, vegetative plantings). However, for those mitigation measures directly involving private property, Iroquois also will consult with the involved property owners about their specific concerns.

We evaluated the route deviations suggested by the owners of the Oliver Wiswall House but did not find them preferable to the proposed route (see sections 6.2.35 and 6.2.36). Because of the visual sensitivity of this area, Iroquois proposed special mitigation in the Hudson River area, including Mt. Merino, and in Athens across the river. These measures would include replanting of forested vegetation along the right-of-way in Mt. Merino. Iroquois stated they would consider the replanting of woody vegetation for limited distances or a combination of woody and ornamental shrub vegetation along the entire right-of-way. Any proposed mitigation would be approved by the Director of OPPR in accordance with Section 106 of the NHPA.

3.15-5 Comment Summary: Appropriateness of Research Design

One commentor suggested that models of regional prehistory, if applied to western Connecticut by project archeologists, would obscure the uniqueness and complexity of the prehistoric record in this area and lead to misunderstanding of its research potential. As an example, the commentor noted that Paleo-Indian occupation of wetlands in Litchfield County was more intensive than would be presumed, based on the usual notions of nomadic hunting by Paleo-Indians. The commentor also suggested that the work plan did not recognize or discuss the significance of earlier work nor did it use earlier studies to develop research designs. Specifically it was noted that the American Indian Archeological Institute (AIAI) has made significant finds on properties along the pipeline route. It was asked that more research be done, in accordance with Public Law 89-368, and that "specific measures for avoiding these known sites and identifying additional unknown sites be set out and undertaken."

Response:

The DEIS states that "In all cases, field surveys are necessary to determine the presence or absence of previously unrecorded archeological sites." Guidelines for this procedure were established in FERC's July 28, 1988, Order. FERC and New York and Connecticut SHPOs required the applicant to conduct an archeological survey using methods that have, in other cases, resulted in discovery of all or most of the discernible archeological sites located within affected areas. There is no reason to assume that factors influencing prehistoric settlement distributions, (e.g., water access, degree of slope, soil drainage, and site aspect), had different effects on human behavior in western Connecticut than in other areas in the Northeast, that were occupied by ethnically related groups with similar technologies and adaptations. It should be noted that wetland and stream margins have been categorized by the project archeologists as high or moderate probability areas, where testing will be particularly intensive. If there are Paleo-Indian sites in such wetland areas, surveys should locate them.

We note that the DEIS actually cites Litchfield County, Connecticut, as one of the few areas on the Iroquois route for which there is useful archeological survey information (see section 4.1.11).

We also assume that "significant" archeological sites, discovered by other parties, have presumably been reported to the Connecticut SHPO as NRHP-eligible. If not, AIAI archeologists should make this information available to SHPO and Iroquois' archeological consultant to facilitate investigation.

3.15-6 Comment Summary: Identification of Native American Sites

The State of Connecticut emphasized that identification of Native American sites must be undertaken per the January 1989 Memorandum of Understanding between the New York SHPO, Connecticut SHPO, Iroquois, and FERC.

One commentor noted that the DEIS contains "no information about Algonkian sacred sites, historically known and still important settlements, or mission stations." The commentor also suggested that tests placed at intervals of 10 meters or more are likely to miss traces of "small and dispersed wigwam clusters," and called for modification of the research design so that these clusters will not be missed. The commentor suggested that the research design be modified to ensure appropriate treatment of "traditionally sacred resources," such as isolated burials, prehistoric mortuary sites with cremation features, historic period cemeteries, and rock cairns marking graves of clan leaders. The commentor also stated that there is no discussion of how such traditionally sacred resources will be treated by field crews after discovery.

Response:

The DEIS (section 4.1.11.2) states that, "In accordance with the ACHP regulations (36 CFR 800.1(c)(2)(ii)), every effort should be made to ensure that Indian tribes and other Native American groups are provided full opportunity to participate in the review of Federal projects under Section 106. Specifically, the regulations encourage Federal agencies to "be

sensitive to the special concerns of Indian tribes in historic preservation issues, which often extend beyond Indian lands to other properties'." Among these traditional tribal concerns is "a desire to preserve ancestral or ancient burial places of sacred sites from desecration".

The DEIS further states, "The FERC, in consultation and cooperation with appropriate SHPOs, in order to document Indian concerns, will send project-specific plans and maps to designated tribal representatives, identified interested Indian groups, and individuals. The accompanying letter will specifically request responses regarding sacred areas, archeological sites and their excavation, burials, and ethnographic use areas with particular reference to traditional plants, animals, and ritual areas. A copy of the initial letter and the list of those contacted are to be provided in the cultural resources technical report. In addition, existing published documentation on traditional Native American concerns will be incorporated into the Analysis."

In general, subsurface post-molds comprise the archeological remains of wigwams. These are often found in surveys utilizing testing intervals of no less than 10 meters; this is particularly true when remains (e.g., artifactual remains) from associated living floors are encountered during Phase 1 study. Because these wigwam sites may be areas of multiple activities, we expect our survey strategy (approved by the SHPO) will identify loci of cultural resource sensitivity, if not specific features. Section 106 regulation and guidance makes provisions for treatment of traditional cultural resources.

3.15-7 Comment Summary: Phase 1 and 2 Surveys Need to Precede FEIS

Two commentors stated that Iroquois should have completed archeological field investigation (Phase 1 and 2 surveys) to identify cultural resources before routing the pipeline and completion of the FEIS.

Response:

We recognize the fact that the cultural resource surveys have not been completed and, once completed, there may be a need to include additional mitigation measures, including reroutes, to reduce or eliminate impact on significant cultural resources.

Section 5.1.11.1 states that Iroquois "has agreed to defer construction of any facilities that must be certificated until the Commission has reviewed and approved all Phase 2 reports and Phase 3 mitigation plans (if required); the Commission has considered any comments of the SHPOs and the ACHP; and the Director of OPPR has informed the applicant that construction may begin."

As noted in the DEIS (see Executive Summary), "Although the site evaluation work and mitigation requirements will not be completed for inclusion in the FEIS, completion of this activity prior to construction will be a condition to any Certificate of Public Convenience and Necessity which may be issued by the Commission." In this way, FERC will ensure compliance with the NHPA (see also response 3.15-1).

3.15-8 Comment Summary: Connecticut Cultural Resources Not Addressed

The State of Connecticut stated that Connecticut's cultural resource concerns were not yadequately addressed in the DEIS. In particular, they were concerned that sonar targets and magnetic anomalies (which may represent shipwrecks) identified in the Long Island Sound crossing should be avoided, even if the pipeline route or anchoring patterns change. They also indicated that Iroquois has not provided a second copy of the marine resources report or a completed copy of the state's archeological inventory forms.

Iroquois stated that the submarine cultural resources study was conducted by Drs. Sheli Smith and Warren Reis, not Ecology and Environment, Inc. as stated in section 4.1.11.1.

Response:

The current proposal avoids all anomalies. The Connecticut SHPO concurred with the finding that the present pipeline route does not affect significant cultural resources. If the route is changed so that new anomalies (possible wreck sites) fall within it, avoidance would be recommended or additional archeological investigation would be required. As stated in the EIS (section 7.3, recommendation 2) route realignments must be approved by the Director of OPPR.

The completion of appropriate state forms is an issue that needs to be resolved between the Connecticut SHPO and Iroquois.

We revised the DEIS to correctly reference Smith and Reis. Since the Connecticut SHPO accepted the findings of the marine survey, no further investigation is required for this section. The term "preliminary" can be deleted from the text.

3.15-9 Comment Summary: Cultural Plan of Work Needs to be Referenced

The State of Connecticut requested that the cultural resources section (5.1.11) explicitly reference the "Work Plan for Cultural Resources Investigations for the Final Segment of Iroquois Gas Transmission System", prepared by Ecology and Environment, Inc., September 1988 (revised).

Response:

Please see section 4.1.11.1 in the FEIS.

3.15-10 Comment Summary: Iroquois' Assumptions

Iroquois emphasized that it expects its reports of cultural resource investigations to be reviewed by the Director of the OPPR as the work is completed on different segments (i.e., "phased" review). Iroquois assumes that construction can proceed on any pipeline segment for which cultural resource clearances have been received.

Response:

OPPR will determine if permission to initiate construction for portions of the right-of-way that do not contain eligible cultural resources is appropriate. FERC, in compliance with NHPA, must assure that these phased reviews do not limit or preclude appropriate options for treatment of identified cultural resources. That is, FERC intends to grant permission to initiate construction on cleared segments only in those instances where this doesn't preclude actions to avoid impact on NRHP-eligible resources in adjacent segments (see recommendation 18).

3.15-11 Comment Summary: New Milford House

A comment was received that the oldest house in New Milford, built in the 1730s, is on the pipeline path.

Response:

Iroquois' Phase I study has been initiated. We will forward your comment on New Milford to Iroquois for consideration by their cultural resources consultants in their identification phase of study.

3.15-12 Comment Summary: Still River Preserve Archeological Site

Many comments were received concerning the presence of a 1,000-year-old archeological site of an Indian village in the Still River Preserve in Brookfield, Connecticut. Concern was also expressed that the route would cross the Northrop Cemetery, the burial grounds for Brookfield founding fathers.

Response:

Iroquois has initiated Phase 1 studies in Connecticut. We will forward your concerns about the Indian village and Northrop Cemetery to Iroquois so that the information may be incorporated into the survey analysis and report. If any cultural resources are identified within the construction right-of-way, a Phase 2 study will be performed to assess the NRHP eligibility of each site. If any sites are found to be eligible, FERC will work with Iroquois to avoid or mitigate any adverse effects on the properties. All cultural resources studies and treatments must be completed and approved by the Commission prior to construction.

Since the pipeline would be routed within Conrail property in the vicinity of the Northrop Cemetery, we do not anticipate any adverse effects on the cemetery. However, Iroquois is conducting a Phase 1 cultural resources study to identify cultural resources along the route. If the cemetery is affected, a route deviation would be investigated to avoid it.

3.15-13 Comment Summary: Brookfield Historic District

Several comments were received concerning the effects of pipeline construction in the Brookfield Historic District. Specific mention was made of potential damage to those historic houses from blasting during construction.

Response:

The Brookfield Historic District is no longer within the project right-of-way. The Sassers District on Porono Road and Iron Works Hill are adjacent to the right-of-way.

3.15-14 Comment Summary: Farmington Canal Mitigation

One commentor suggested that a mitigation plan for the Farmington canal should be included in the EIS, and that the Town of Cheshire should have a role in reviewing the plan, since the canal is part of its preserve development.

Response:

As indicated in the DEIS, assessment of effects and appropriate mitigation plans are in preparation. Once we determine if there is an effect, we will consider any comments you may have on our mitigation plans. If the Town of Cheshire wishes to review this mitigation plan, they should make a special written request to Iroquois.

3.15-15 Comment Summary: Prehistoric Site in LILCO Right-of-Way

A commentor noted that archeological consultants (Truex and Kalin) identified a prehistoric site in the Wodaembarc tract of the LILCO right-of-way in Northport; the commentor urged avoidance of this site.

Response:

Iroquois recently completed Phase 1 fieldwork on Long Island. The report is not yet available. We will forward your concerns to Iroquois so that their archeological consultants may incorporate the information you provided into their analysis. If NRHP-eligible properties are identified within the construction right-of-way, FERC will investigate options for avoidance or mitigation of adverse effects to these properties.

3.15-16 Comment Summary: Coordination with Town of Huntington

The Town of Huntington stated that Iroquois agreed to keep town personnel informed of the progress of cultural resources investigations performed in summer of 1989 and asked for the results of the survey.

Response:

The applicant has not yet submitted a report on Phase 1 investigations to the SHPO or to FERC. Release of that report, prior to review by those agencies, might result in access of unauthorized individuals to site-locational data, possibly leading to vandalism. To prevent misuse of the data, reports should not be released until data and recommendations have been reviewed. At that time, the town should request a copy of relevant sections and explain its professional reasons for such a request.

3.15-17 Comment Summary: Cross Rocks Copper Mine

A commentor noted that the proposed terminus of the Wallingford Lateral passes just south of the Cross Rocks copper mine, which is said to date from 1711. The commentor recommended "extra precautions and oversight...in the event of pipeline removal/replacement" in this area.

Response:

As part of Phase 1 study, the applicant will determine if the mine is potentially NRHP-eligible and possible effects of pipeline placement in the vicinity of the mine. Avoidance or data recovery, in accordance with SHPO and FERC recommendations, are mitigation options, if NRHP eligibility is confirmed.

3.16 SAFETY, RELIABILITY, AND PCBs

3.16-1 Comment Summary: Risk of Leaks and Explosions

Comments were received regarding the overall safety of the pipeline from construction practice to potential for leaks and explosion during operation.

The potential for gas leaks and explosions was viewed as an unacceptable risk to public safety and property. Concern was expressed by many that their safety was being compromised by the presence of the proposed pipeline and its proximity to populated areas. Concern also was expressed for potential disruption of the pipeline from future agricultural, earthmoving, well drilling, and other construction and maintenance activities that may occur along the right-of-way.

Comments were received regarding the pipeline service incident statistics presented in the DEIS and their accuracy. Commentors requested clarification of the statistics presented in the DEIS and their relationship to similar types of pipelines (i.e., 24"/30" diameter). Inclusion of 1987 and 1988 incident data and comparison of accident figures for other forms of energy transportation rather than natural disasters were also requested.

The EPA recommended incorporation of a worst-case analysis for pipeline rupture and explosion along the right-of-way and how it relates to public health and proximity to hazardous and solid waste sites. Other disasters such as plane crashes were a concern for residents near the Athens airport. Concern was also expressed about potential gas leaks beneath Long Island Sound.

Response:

Section 5.1.12 discusses in detail pipeline safety and reliability as it relates to construction, operation, and maintenance. If there were a pipeline rupture and a resulting explosion or fire, the procedures discussed in sections 2.3 and 2.4 would be implemented. Among other factors, emergency shutdown procedures would be implemented to shut off the flow of natural gas at the various automatic valves along the pipeline system and at compressor stations. Natural gas in the pipeline is under a significant pressure, and when automatic shutoff occurs, this pressure is rapidly diminished, i.e., via the leak or rupture, until pipeline pressure equalizes with the atmospheric pressure. Released natural gas would rise and dissipate, rather than concentrate near ground level as propane does, because it is lighter than air and rises under normal atmospheric conditions.

Upon release, natural gas is not explosive when unconfined and it is lighter than air and rises. The recent incident in North Blenheim, New York, involved propane, which is heavier than air and has different physical properties than methane. It remained at ground level and spread until it reached an ignition source. When ignited, the cloud of propane exploded.

Many of the accidents involving natural gas systems involve local distribution company gas lines which are maintained and monitored in a different fashion than a mainline pipeline system such as the proposed Iroquois/Tennessee project system. These local distribution pipelines are located beneath city streets and provide direct service to residential, office,

and commercial buildings. These buildings offer a trap for collection of natural gas leaks. A flammable concentration of natural gas within an enclosed space can explode if ignited. The higher population densities in these distribution areas provide greater opportunity for public injury resulting from such occurrences.

Iroquois/Tennessee has adopted a service to assure safety and minimize unauthorized excavation activity in the vicinity of pipelines, the "one call" program. This program is utilized by public utilities and some private sector companies to provide construction contractors and other maintenance workers an accurate identification of underground pipeline locations, cables, and culverts.

To provide the local populace with information pertaining to the location and operation of the pipeline, an informational program would be conducted for landowners, fire, police, and public officials. The operators would establish a continuing education program to enable local fire, police, and public officials and those engaged in evacuation activities to recognize a gas pipeline emergency, provide initial response, and report to the necessary officials.

The pipeline right-of-way would be clearly marked to identify the location of the underlying pipeline. In areas of agricultural activities, pipeline depth of burial is below the plowing depth to allow farmers the opportunity to utilize their fields unimpeded.

The information presented in section 5.1.12.3 contains a summary of pipeline accident data for a 14 year period, 1970 through 1984, along mainline pipeline systems similar to the proposed Iroquois/Tennessee Pipeline Project. This data indicates that the risk to the general public from the approximate 300,000 miles of natural gas transmission and gathering pipelines in the United States is minimal. It does not however, identify accidents that occur within local distribution pipelines.

The report An Analysis of Reportable Incidents for Natural Gas Transmission and Gathering Lines 1970 Through June 1984, prepared by Battelle, states "...the fatalities from various transportation modes were compared for 1983; the numbers do not change much from year to year....the total number of fatalities from all pipelines (gas distribution and transmission, and petroleum products, ammonia, and all others) was 16, which is the lowest number among all the [transportation] categories." The report also identifies that in 1983, 2 of the 16 fatalities attributed to pipelines resulted from incidents along natural gas transmission and gathering systems. The Battelle report goes on to state that "The inclusion of highway, airline, and other mode totals brings the total number of transportation-related fatalities in 1983 to 46,115. Thus, although it is difficult to find a common basis for comparison of the safety (in terms of human lives) of the various modes of transportation, it is clear that pipelines are responsible for an extremely small fraction of all fatal transportation-related accidents. Furthermore, the incidents in the gas transmission industry in any year account for only a small fraction of all pipeline fatalities. The figures suggest that pipelines, and natural gas transmission lines in particular, constitute a much smaller hazard to the public than other modes of transportation." (pg 17)

As indicated in section 5.1.12 the pipeline would be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. These regulations were adopted in August, 1970 and have been updated on a

frequent basis to reflect technological changes and need for increased operating safety. These regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. The pipe would be designed with sufficient wall thickness to withstand operating pressures and external load factors. The high pressure pipeline to be used for the proposed Iroquois/Tennessee system would be manufactured in accordance with the DOT Minimum Federal Safety Standards 49 CFR Part 192 requirements and as described by the American Petroleum Institute (API) in its Standards for High Strength Pipeline.

The pipeline routing and construction specifications, as stated above, are guided by Federal safety requirements. Provisions for protection of public health have been incorporated into these minimum standards, and we feel that the pipeline safety records presented above represent the potential risk to the public. Proximity of the pipeline to existing solid and hazardous waste sites has been reviewed and Iroquois has agreed to adopt mitigation measures to avoid or minimize potential for disruption of either the pipeline or the disposal facility from pipeline construction and operation; see section 7.3, recommendations 25 and 35.

The pipeline route would approach the edge of the runway at the Athens airport. To ensure pipeline safety, appropriate DOT safety requirements would be incorporated into pipeline design. It is not uncommon for pipelines to be in proximity to airports within the United States. However, since the pipeline traverses the landing edge of the runway, a recommendation is included in section 7.3 requiring Iroquois to provide 10 feet of cover for the pipeline for a distance of 50 feet on each side of the runway, see recommendation 47.

Procedures have been established for the construction of natural gas pipelines from on-shore to off-shore in saline areas and pipelines have operated safely in the Gulf of Mexico, California, and Alaska. Similar procedures would be utilized in construction of the proposed pipeline across Long Island Sound. In the remote event that a rupture or leak would occur in the pipeline beneath the Long Island Sound, natural gas would bubble to the surface and dissipate into the atmosphere not resulting in any risk to populations since there would be no ignition source.

3-16-2 Comment Summary: Design and Construction Standards

Comments were received regarding the design of the proposed pipeline (e.g., pipe thickness specifications), corrosion detection, and quality of construction, and pipe inspection (e.g., x-ray of welded joints) as they relate to public safety.

Comments were received concerning pipe classification (i.e., pipe thickness relative to population density). A recommendation was made to allow local agencies to input into the design specifications for the pipe based on their knowledge of current and future development plans and proximity to sensitive areas. Concern was also expressed for potential upgrading of the pipe in future years if development occurs in the vicinity of the right-of-way.

Concern was expressed for potential corrosion damage to the pipeline from factors such as leachate from landfills and the environment at the land-salt water boundary.

Additionally, concern was expressed for potential corrosion of the concrete weights used in wetland areas as well as potential for degradation of protective coatings or sheathing and resulting release of toxic chemicals.

Specifications of low-pressure detection valves and an indication of the sensitivity of these devices in extreme temperatures were requested. In addition reference was made to concerns for construction quality and potential for "shoddy construction" practices to increase public safety risk and potential for pipeline design and construction to circumvent maximum safety standards.

Response:

As indicated in section 5.1.12 the pipeline would be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. These regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. Construction is carefully monitored and must be in full compliance with the DOT Minimum Federal Safety Standards. In areas of higher population densities, more rigorous safety requirements would be implemented. These requirements may include type of pipe and depth of cover, emergency plans, and emergency shutdown procedures.

The pipe would be designed with sufficient wall thickness to withstand operating pressures and external load factors. The high pressure pipeline to be used for the Iroquois/Tennessee system would be manufactured in accordance with 49 CFR Part 192 requirements and as described by the API in its Standards for High Strength Pipeline.

As further discussed in section 5.1.12.1, there are four class locations representing more populated areas with higher safety factors in pipeline design, testing, and operation. However, each of these four classes must meet the prescribed minimum safety standards for operation and maintenance of facilities.

With regard to potential safety risks associated with corrosion of the pipe used in construction of the pipeline, corrosion is a very slow process, especially with use of modern corrosion protection techniques, and can be detected early, before the integrity of the pipeline is in question. Potential surveys would be conducted regularly to determine the efficiency of the cathodic protection system. The results of these surveys would be analyzed and any potential problems identified would be scheduled into maintenance activities.

Since the 1960s, when magnetic inspection of operating pipelines was first developed, there has been significant advancement in the accuracy of corrosion detection. The corrosion detection device is made to travel inside the pipeline like a normal cleaning "pig." It is inserted into the pipeline at a launching point and is moved by the flowing gas to a retrieval point where it is removed and its recorded data is analyzed. Data on the pipe wall thickness and loss of metal by corrosion are collected and recorded continuously for the entire pipeline surface area.

Development of highly sensitive electronic sensors in recent years permits reliable and repeatable detection of corrosion pitting that would exceed 30 percent of nominal wall thickness, which is approximately the minimum factor of safety originally built into the

pipeline system. Operational tests have shown that this can be accomplished within an accuracy of 10 percent. Pipeline companies periodically monitor their major pipelines with magnetic-flux corrosion detectors, and also have a program of pipe rehabilitation and replacement for pipelines with many years of service.

We have no evidence that "shoddy construction" practices have been used in mainline pipeline construction. Such construction is carefully monitored and installation must be in full compliance with the DOT Minimum Federal Safety Standards.

3.16-3 Comment Summary: Proximity

The majority of comments received expressed concern for the location of the pipeline relative to villages and towns, private residences, and schools.

In several areas along the pipeline right-of-way the pipeline would be near residential structures and public buildings such as schools. The potential for gas leaks and explosions was viewed as an unacceptable risk to public safety and property. A definition of what is a safe distance for a pipeline relative to residential and school structures was requested. The potential risk of a gas leak or explosion near residences and school grounds was considered unacceptable and was a strong concern. Several references were made to recent gas line ruptures and explosions as examples of the risk involved with a project of this type.

Response:

The right-of-way as delineated in the EIS does maintain adequate distances from settlements and villages to provide for the safety of nearby residents. Where the pipeline does encroach upon residences (e.g., near roadways) mitigation techniques, as identified in table 5.1.9-3, would be implemented as appropriate.

As indicated in section 5.1.12 the pipeline would be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. These regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. In areas of higher population densities, the more rigorous of the DOT safety requirements would be implemented. These requirements may include type of pipe and depth of cover, emergency plans, and emergency shutdown procedures. Additionally, each operator must establish and maintain liaison with fire, police, and public officials along its system to implement an educational program which addresses gas pipeline emergencies and requires periodic reporting to public officials. Site-specific comments pursuant to location of school buildings and playgrounds are discussed in Volume I, section 3.13.

With regard to recent natural gas pipeline and propane pipeline incidents, see response to comment section 3.16-1.

3.16-4 Comment Summary: Fire Protection and Emergency

Comments were received regarding the adequacy of fire protection services along the pipeline right-of-way. Concern was expressed that many small town and rural areas are served by volunteer fire departments that have limited resources in terms of equipment, staff, and training. Without proper fire protection in the event of a pipeline explosion, forests and homes would be in jeopardy.

In the event of an incident (e.g., fire) along the pipeline, estimates of response times by Iroquois' trained experts to reach the scene were requested. Recommendations were also made that any additional training, or equipment required by local fire departments along the route, be provided by Iroquois.

Recommendations were made to increase the detail of the emergency response plans in the EIS and to describe any training programs that the applicant will conduct for local emergency response agencies. Additionally, the question of liability in the event of an explosion was raised.

Response:

We understand that each volunteer fire department along the proposed pipeline right-of-way would not normally be equipped to handle a mainline pipeline emergency. To assist in handling a mainline pipeline emergency, each applicant would provide training and would establish and maintain liaison with fire, police, and public officials along its system and implement an educational program which addresses gas pipeline emergencies and requires periodic reporting to public officials.

As indicated in section 5.1.12, the pipeline would be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. These regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. In areas of higher population densities the more rigorous of the DOT safety requirements would be implemented. These requirements may include type of pipe and depth of cover, emergency plans, and emergency shutdown procedures.

As another service to assure safety and minimize unauthorized excavation activity in the vicinity of pipelines, Iroquois/Tennessee have adopted the "one call" program. This program is utilized by public utilities and some private sector companies to provide construction contractors and other maintenance workers an accurate identification of underground pipeline locations, cables, and culverts.

All proposed pipeline facilities would be covered by casualty and liability insurance for property damage and personal injury.

3.16-5 Comment Summary: Use of Existing Utility Rights-of-Way

Comments were received regarding the proposed use of existing utility right-of-ways. Concern ranges from potential equipment maneuverability constraints due to existing structures along the right-of-way to concern about the electrical influences on the pipeline and potential for explosion.

Several comments were made regarding pipeline location relative to the LILCO underground electric lines, the right-of-way requirements, and potential for electrical interaction with the pipeline.

Other comments included potential risk of pipeline upset from corrosion or from future maintenance and construction activities, citing that two-thirds of pipeline ruptures are caused by construction equipment (i.e., "outside forces"). Concern also was expressed for potential maintenance and repair equipment maneuverability problems associated with Niagara Mohawk's right-of-way. Existing aboveground structures may inhibit repair operations.

Response:

Section 3.5.1, of the DEIS discusses the utilization of overhead electric transmission line rights-of-way. Although the comments made pertain to underground power lines, the concept is the same. The underground power line conduit would be treated similar to an existing natural gas pipeline. There would be a safe distance between the two utilities. If this distance were 25 feet, and there was a natural gas leak, natural gas would migrate upward since it is lighter than air.

The data presented in section 5.1.12.3 do support the statement that the majority of pipeline failures are caused by outside forces. Approximately 67 percent of the "outside forces" that cause pipeline service incidents are a result of equipment operated by outside parties (i.e., other than pipeline operators). To help prevent these occurrences, Iroquois/Tennessee have adopted the "one call" program. This program is utilized by public utilities and some private sector companies to provide construction contractors and other maintenance workers an accurate identification of underground pipeline locations, cables, and culverts.

Corrosion, which historically has been the cause of approximately 17 percent of pipeline incidents, is a very slow process, especially with use of modern corrosion protection techniques, and can be detected early, before the integrity of the pipeline is in question. Surveys would be conducted regularly to determine the efficiency of the cathodic protection system. The results of these surveys would be analyzed and any potential problems identified would be scheduled into maintenance activities.

3.16-6 Comment Summary: PCBs

Comments were received regarding polychlorinated biphenyls (PCBs).

Suggestions were made to minimize input of PCBs or avoid dispersion of PCBs from existing sources (i.e., existing, older pipelines) into the new pipeline system.

One comment identified that the EIS needs to explain the link between groundwater and the problem of PCB contamination. The Wallingford Lateral is one of those pipelines that EPA considers to have been contaminated by PCB liquids over 500 ppm (see section 5.1.13.2). Inquiries were made as to who would monitor contaminated gas and what levels are expected to be permitted.

Support was expressed for the EPA's policy of removal and retirement, but extra precautions should be taken to protect public health and water supplies. Commentors suggested that CTDEP should also approve Tennessee's pipe removal/decontamination plan in addition to EPA. Concern was expressed for the statements made in the EIS (Volume I, section 2.3.1) that Iroquois would regulate itself and provide its own safety checks.

Iroquois commented that the Iroquois system has not been exposed to the same concerns noted in the EIS for the existing Tennessee System. PCBs are no longer being manufactured or utilized as lubricating materials in pipeline systems.

Response:

PCB contamination would not be present in any new construction or facilities proposed, so long as the natural gas is transported from its source through pipeline systems that are not contaminated with PCBs. The potential does exist for the introduction of PCBs into the pipeline facilities from interconnections with pipeline systems that contained residual PCBs from previous operational practices.

All operating pipelines must be in compliance with 49 CFR Part 192, which requires that all pipelines operate in a safe manner, regardless of the age of a pipeline, and if a leak is detected in the Wallingford Lateral, it would be repaired immediately.

In pipelines which contain residual PCBs, the PCBs tend to accumulate with the liquid condensate. Condensates frequently settle in low points along the pipeline and remain there until they are mechanically moved by routine pigging operations. During normal operations, any liquid condensates are removed at compressor stations by filter separators and stored in liquid tanks. All liquid potentially contaminated with PCBs is handled pursuant to EPA requirements.

Tennessee has applied for an Alternative Disposal Permit pursuant to 40 CFR Part 761.60 (e) from the EPA that, among other requirements, would control any potential releases of PCBs to the surface or the atmosphere during pipeline removal activities (including the Wallingford Lateral replacement). Approval of the permit is under the authority of the Assistant Administrator for Pesticides and Toxic Substances, EPA headquarters, rather than under an EPA Regional Adminstrator or state agency, since the permit will apply to system-wide activities occurring in more than one EPA region or state. See section 5.1.13.1 for a detailed discussion of PCBs and their properties.

3.17 RECOMMENDED MEASURES

This section discusses comments received on recommended measures contained in section 7.3 of the DEIS. Each response identifies the status of the recommendation in the FEIS, section 7.3, by indicating either the FEIS recommendation number or that the DEIS recommendation has been deleted.

3.17-1 Comment on DEIS recommendation 1:

Iroquois responded to recommendation 1 indicating that it would adhere to the recommendation; however, Iroquois indicated that it takes exception to some of the recommendations contained in section 7.3.

Response:

Since recommendation 1 is really the applicants' submission, no response is necessary. We will identify each recommendation and comment received and review the objections to determine whether a change is required. Additionally, changes to certain recommendations may have resulted from comments received from commentors on a specific issue. At the end of each response, we will identify the FEIS recommendation number since several new recommendations are presented and several DEIS recommendations are no longer applicable.

See FEIS recommendation 1.

3.17-2 Comment on DEIS recommendation 2:

Both applicants were concerned that minor changes and route modifications are common during final design and construction and felt that the submission of all modifications would be a burden. Both felt that variations less than 660 feet should not require approval.

Response:

We do not feel that this recommendation is overly burdensome to the applicants. We are especially concerned with route modifications developed following submission of the detailed project data and approval of the Director of OPPR. We are not concerned with minor field realignments to satisfy an individual landowner so long as they do not result in greater impact than those approved. However, when a realignment results in the crossing of landowners previously not affected, no matter how minor the realignment, this recommendation is applicable. Recommendation stands as written.

See FEIS recommendation 2.

3.17-3 Comment on DEIS recommendation 3:

Tennessee noted that it is unlikely that construction and restoration plans for the identified residential areas would be submitted for OPPR approval prior to certification.

Response:

We believe that restoration plans for certain residential areas along Tennessee's pipeline are necessary to minimize impact on residents. The residential areas we have identified would be close to the pipeline construction right-of-way and, therefore, would require site-specific construction and mitigation plans.

It should be noted that Tennessee has apparently misread the recommendation. The recommendation states that the plans are required prior to construction, not prior to certification.

See FEIS recommendation 3.

3.17-4 Comment on DEIS recommendation 4:

Iroquois and Tennessee do not believe that it is practical to install new pipeline and associated permanent right-of-way within existing electric utility right-of-way as recommended in table 5.1.9-2. They stated that sufficient engineering information does not exist at this time to support the recommendation. If the electric utility expands its facilities in the future, it may be necessary to clear additional vegetation.

Response:

Subsequent to the submission of these comments, Tennessee withdrew the Ontario/Seneca Loop and the North Haven Extension from this application; therefore, we have eliminated Tennessee from table 5.1.9-2. The recommended mitigation does not apply to the remaining loops and extensions of Tennessee.

Iroquois' pipeline would be required to be within the existing electric transmission rights-of-way as identified on table 5.1.9-2. However, where it is not possible to place the entire 50-foot-wide permanent right-of-way within those electric transmission rights-of-way, for safety or environmental reasons, we have modified the recommendation to allow Iroquois to file with the Secretary of the Commission for review and approval by the Director of OPPR the specific reasons for proposed variance to this recommendation. However, in no circumstance will it be acceptable for the pipe to be placed less than 5 feet within the edge of the electric transmission right-of-way and no permanent right-of-way outside of the existing right-of-way will be granted.

See FEIS recommendation 4.

3.17-5 Comment on DEIS recommendation 5:

Both applicants generally agreed to comply with procedures identified in appendix C and appendix D but have presented suggested changes as they related to their individual needs and experiences in the field.

Response:

We have reviewed the suggested changes presented by both applicants, suggestions made by other commentors, and suggestions from other companies in the pipeline industry. Appendices C and D have been modified to reflect some of these suggestions.

See FEIS recommendation 5.

3.17-6 Comment on DEIS recommendation 6:

Iroquois agreed to this recommendation; Tennessee did not respond. Several commentors were concerned with the reporting authority and the independence of the environmental inspector. Another commentor suggested using local inspectors.

Response:

We do not agree that the recommendation should be changed. The need to have construction performed in compliance with the recommendation creates a need to have inspectors to monitor the applicants' performance. We would monitor compliance with appropriate FERC certificate requirements while other Federal, state, and local agencies would monitor their specific requirements.

See FEIS recommendation 6.

3.17-7 Comment on DEIS recommendation 7:

Both Iroquois and Tennessee objected to the clearing of tree stumps only over the trench line, stating personal safety and damage to construction equipment as reasons prohibiting compliance with this procedure.

Response:

The limitation of the removal of tree stumps to only over the trench line was recommended to reduce soils disturbance along the construction right-of-way and to eliminate disposal of numerous tree stumps by burying or by disposal in solid waste landfills.

However, we reconsidered this recommendation and realize that limiting stump removal to the trench line area only could seriously affect the ability of the applicant to restore and maintain its right-of-way (i.e., reseeding and subsequent removal of vegetation). We also agree with the applicants' position on personal safety and maintenance of construction equipment. Consequently, we have eliminated this recommendation.

DEIS recommendation 7 was deleted.

3.17-8 Comment on DEIS recommendation 8:

Iroquois agreed with our recommendation 8, but noted that individual landowner preferences must be considered when determining appropriate mitigation measures.

Response:

Thank you for your comment.

See FEIS recommendation 7.

3.17-9 Comment on DEIS recommendation 9:

No comments were received.

Response:

Recommendation remains as written.

See FEIS recommendation 8.

3.17-10 Comment on DEIS recommendation 10:

Both Iroquois and Tennessee responded to this recommendation and were unclear as to the intent of the recommendation. Both indicated that excess rock would be disposed of pursuant to the landowners' request and rock disposal plans would be approved by involved agencies.

Response:

We have clarified our recommendation because excavated rock can be used as backfill in accordance with the requirements of appendix C, Erosion Control, Revegetation, and Maintenance Plan.

See FEIS recommendation 9.

3.17-11 Comment on DEIS recommendation 11:

Both Iroquois and Tennessee responded to this recommendation. Iroquois is in the process of conducting these preconstruction surveys and agreed to comply with this requirement. Tennessee objected to performing this expensive and time-consuming preconstruction survey when their previous approach of securing the information from the landowners prior to construction appeared adequate.

Response:

The preconstruction survey requirement is applicable to both applicants. We do not believe that it will create an enormous burden or be very expensive to perform. A clause was added to this recommendation as a result of concerns identified by other commentors about requiring long-term maintenance of drainage systems; otherwise the recommendation stands as written.

See FEIS recommendation 11.

3.17-12 Comment on DEIS recommendation 12:

Both Iroquois and Tennessee responded to the recommendation. Iroquois agreed, but wanted the groundwater monitoring plan to be limited to those wells located within 300 feet of centerline where blasting is expected to be required. Tennessee disagreed with this recommendation, preferring instead to monitor groundwater as a matter of course.

Response:

We believe this is a significant enough issue to warrant including it as a subject of pre-construction planning and monitoring; without such a requirement, there would be no way to ascertain the extent of impact from the project. Therefore, no change to the recommendation is warranted.

See FEIS recommendation 12.

3.17-13 Comment on DEIS recommendation 13 :

Iroquois agreed with the recommendation. The Town of Huntington supported the need for this recommendation and recommended further that this plan should be reviewed by appropriate agencies prior to the Long Island Sound crossing.

Response:

Recommendation remains unchanged. An SPCCP is not required to be filed with any agency but must be in place in the unlikely event that a spill occurs. Other agencies can request copies of the plan or, if a permit is required, a condition can be included.

See FEIS recommendation 13.

3.17-14 Comment on DEIS recommendation 14:

Iroquois agreed with the recommendation.

Response:

Recommendation remains with minor wording changes.

See FEIS recommendation 14.

3.17-15 Comment on DEIS recommendation 15:

Iroquois agreed with this recommendation but suggested that other more appropriate methods such as air bubble curtains and scare charges could be used for in-stream blasting. Iroquois suggested that each sensitive stream be considered on a site-specific basis.

Response:

We agree that other appropriate methods of in-stream blasting techniques are available and have modified the recommendation to reflect their use.

See FEIS recommendation 15.

3.17-16 Comment on DEIS recommendation 16:

Tennessee indicated that vegetation maintenance on a 5-year basis would interfere with basic tasks such as corrosion surveys, which are essential for safe and efficient operation of its system.

Response:

We agree with the comment and have changed the interval from 5 years to 3 years.

See FEIS recommendation 16.

3.17-17 Comment on DEIS recommendation 17:

Iroquois objected to our recommendation to "identify, clearly mark, and protect any trees immediately adjacent to the cleared right-of-way that are of significant value to the landowner." Iroquois stated that they would "note" any special concerns of the landowners during the easement negotiation process.

Response:

We believe that Iroquois' proposed step is not enough to ensure that a contractor, while in the field working heavy equipment, would be aware of trees or other properties deemed significant by the landowners. Consequently, our recommendation remains unchanged.

See FEIS recommendation 17.

3.17-18 Comment on DEIS recommendation 18:

Iroquois emphasized that it expects reports of cultural-resource investigations to be reviewed by the Director of OPPR as soon as the studies are completed and the reports are filed. Iroquois also expected to receive Section 106 (NHPA) clearance and approval to proceed to construction for all areas that do not contain NRHP-eligible properties as soon as the survey studies have been approved.

Response:

FERC and the SHPOs have agreed to a phased review of cultural resources reports. Following these reviews, the Director of OPPR will determine if it is appropriate to initiate construction for portions of the right-of-way that do not contain eligible cultural resources. FERC, in compliance with NHPA, must assure that these phased reviews do not limit or preclude appropriate options for treatment of identified cultural resources. FERC intends to grant permission to initiate construction on cleared segments only in those instances where it doesn't lock-in adjacent segments to affecting NRHP-eligible resources.

See FEIS recommendation 18.

3.17-19 Comment on DEIS recommendation 19:

Iroquois commented that it has already consulted with [Native American and other ethnic] groups with traditional links to the project area and has not been alerted to any concerns about the effects of project construction on traditional or sacred cultural areas. Thus, Iroquois urged that FERC coordinate with the applicant all additional consultations with traditional groups. Specifically, Iroquois was concerned that section 4.1.11 states FERC will initiate contacts with these groups but requires Iroquois to assure that all groups are contacted.

Response:

The introduction to section 4.1.11 states that Iroquois shall assist FERC in meeting the Section 106 (NHPA) obligations. In order to make section 4.1.11.2, Traditional Cultural Values, consistent with this approach, we have reworded it to indicate that Iroquois shall make these contacts. However, this does not obviate Iroquois' responsibility to provide full documentation of and responses to these contacts. Additionally, FERC reserves the right to intercede if it appears that consultations require more direct agency participation. Of course, Iroquois will be kept informed.

See FEIS recommendation 19.

3.17-20 Comment on DEIS recommendation 20:

Both Iroquois and Tennessee responded to this recommendation. Iroquois indicated that it would conduct surveys for state-listed species and consult with the appropriate agencies to discuss specific construction and mitigation plans. Iroquois is presently conducting on-ground field surveys of the entire pipeline route to delineate wetlands. These surveys are

designed to identify all wetlands including vernal pool habitat. Tennessee objected in general to those preconstruction surveys and to submitting them for review and approval. They felt that there would be delays once received by the Commission.

Response:

The vernal pool habitat and species identification is time-sensitive and, therefore, does not fit into a general field survey for the identification of wetlands. This recommendation stands as written.

See FEIS recommendation 20.

3.17-21 Comment on DEIS recommendation 21:

Iroquois did not agree with this recommendation because it appears to be impractical, especially for large rivers where this method cannot apply and doesn't limit the downstream distance.

Response:

The recommendation will use the distance identified in appendix D "Stream and Wetland Construction and Mitigation Procedures," which identifies restriction for potable water supplies located within 3 miles downstream of construction location. Additionally, due to the sensitivity of Class AA streams, we have included the dry-ditch method as a requirement for such crossings.

See FEIS recommendation 21.

3.17-22 Comment on DEIS recommendation 22:

Tennessee objected to the preconstruction winter survey and to submitting it for review and approval. Their concern was with delays that could result from these reviews. Iroquois adopted the recommendation.

Response:

We believe that if the applicants do not take time to develop and implement mitigation plans, these resources will not be properly protected. Recommendation stands as written.

See FEIS recommendation 22.

3.17-23 Comment on DEIS recommendation 23:

Both Iroquois and Tennessee submitted comments to recommendation 23. Iroquois generally agreed, understanding it to mean that vegetation will be planted that will attain a height of at least 7 feet when mature. A 2-foot-high berm would only be contemplated in certain circumstances and if it would not interfere with the reestablishment of

preconstruction drainage patterns. This entire condition also should be subject to landowner approval, because virtually all of the property traversed by the Iroquois route is private. Tennessee disagreed with recommendation 23, which requires them to plant and maintain dense vegetation at least 7 feet high at each road crossing in forested areas. An area 25 feet wide must be kept cleared for essential pipeline surveillance activities and maintenance. Tennessee would construct the 2-foot-high vegetated berm parallel to intersected roads, as required, provided that the vegetation may be regularly maintained and that the berm does not disturb preconstruction drainage patterns.

Response:

We concur that initially planting 7-foot-tall vegetation may be excessive. The vegetation to be planted at each road crossing of the right-of-way in all unbroken forested areas that exceed 1 mile in length shall be 3 feet when planted and shall mature to a height of a least 7 feet. This recommendation is in accordance with Section 18 CFR 2.69 which the applicants have already agreed to comply with in their initial application. We agree that recommendation 23 should be subject to landowner approval.

See FEIS recommendation 23.

3.17-24 Comment on DEIS recommendation 24:

Iroquois commented on our recommendation which restricts construction within 1 mile of bald eagle winter roosts between November 1 and March 31. Iroquois noted that because of other construction time window limitations for the major rivers where wintering eagles may occur, construction between November 1 and March 31 may be unavoidable. Iroquois recommended that consultation with Federal and state wildlife agencies be relied upon to determine whether a potential exists for construction to significantly affect wintering eagles.

Response:

We stand by this recommendation. The intent our recommendation was to ensure that construction of the proposed project would not adversely affect wintering bald eagles. Based on informal consultation with the FWS and state wildlife management agencies, it is unlikely that winter roosting would occur within 1 mile of the proposed route, therefore, the potential for time window conflicts to occur is unlikely. Therefore, we stand by our recommendation.

See FEIS recommendation 24.

3.17-25 Comment on DEIS recommendation 25:

Iroquois adopted recommendation 25. Tennessee did not respond, therefore, it is assumed that they also adopt this recommendation.

Response:

Recommendation stands as written.

See FEIS recommendation 25.

3.17-26 Comment on DEIS recommendation 26:

Iroquois agreed with recommendation 26. Iroquois anticipated that construction across the golf course can be accomplished in about 1 week. The Columbia County, New York, Planner wrote that we should revise recommendation 26 to require the applicants to coordinate closely with the owner or manager of all farms to be crossed (regardless of the size of farm) to develop a construction plan to minimize disruption to farming and limit the amount of time construction occurs on the property.

Response:

We agree that the applicants should coordinate crossing of all areas with the landowner to minimize impact, as covered under the terms of many other recommendations especially the erosion control plan. However, we do not feel that this recommendation should be modified to include farms. Golf courses and recreational facilities require that minimizing disruption be stressed more specifically. Recommendation stands as written.

See FEIS recommendation 26.

3.17-27 Comment on DEIS recommendation 27:

Iroquois agreed to file specific construction mitigation plans for the AT, Candlewood, and Pomperaug Trail crossings as required in recommendation 27. However, Iroquois does not believe that mitigation plans are required for the Seaway Trail or the North Country Trail crossings since the location of the hiking trails has not been determined. The exact width of the construction right-of-way across the other trails would be determined subsequent to field investigations. Tennessee commented that a 50 foot clearance at trail crossings is not sufficient since steep grades in some trail areas require more space for clearing and pipe makeup.

Response:

We believe that a construction mitigation plan is needed for the crossing of the Seaway Trail since it is a designated national trail. Specific construction plans would be required for the North Country Trail only if the trail is established prior to pipeline construction. Otherwise, Iroquois would be required to permit revegetation as a visual buffer once the trail is established. We believe that the crossing of the Willow Brook Trail and Hanton City Hiking Trail would be in areas that would enable Tennessee to construct the pipeline within a 50-foot-wide right-of-way for the short distance adjacent to the trails.

See FEIS recommendation 27.

3.17-28 Comment on DEIS recommendation 28:

Iroquois agreed with recommendation 28. However, until site-specific surveys have been completed, Iroquois stated that they cannot agree to limit their construction right-of-way. This is because the presence of rock may dictate that the "normal" right-of-way width be utilized. Tennessee commented that it will not be able to comply with requirements listed in table 5.1.9-6.

Response:

We disagree. The areas outlined in table 5.1.9-6 requiring the use of specific construction techniques to minimize visual impact are for short distances, such as on the banks of river crossings, trail crossings, and land trusts. Recommendation stands as written.

See FEIS recommendation 28.

3.17-29 Comment on DEIS recommendation 29:

Both Iroquois and Tennessee objected to all or part of recommendation 29 that service to nonjurisdictional facilities not begin until they have certified that all necessary permits to construct and operate these facilities are filed with the Secretary of the Commission and the Director of OPPR has given approval. Iroquois agreed with the certification requirements but was concerned that it not be precluded by this recommendation from collecting demand or reservation charges. Tennessee objected to all of this provision contending that as an interstate pipeline company it should not be put in a position of auditor of the permitting process.

Response:

We have addressed Iroquois' concern about collecting charges in response 3.3-6. The intent of this recommendation is to allow the Commission a means to meet its NEPA responsibilities for related nonjurisdictional facilities by ensuring that potentially significant environmental effects not currently identified be thoroughly evaluated. By certifying to the Commission that the nonjurisdictional facility had received all necessary permits, we would be reasonably assured that any significant environmental issues had been resolved. We do not intend, by this recommendation, that once the jurisdictional applicant has completed its certification requirements it would then be responsible for auditing or monitoring compliance with any permit provisions. We see no need to delete or modify this recommendation.

See FEIS recommendation 29.

3.17-30 Comment on DEIS recommendation 30:

Iroquois agreed with recommendation 30 but suggested that the Commission should also be given a timetable for their review and approval.

Response:

Recommendation stands as written; of course; the staff's review would be timely.

See FEIS recommendation 30.

3.17-31 Comment on DEIS recommendation 31:

Iroquois requested that the Commission reconsider this recommendation in the intent of comity with the state, respect for its environmental enactments, and the avoidance of potential litigation. However, many other commentors, including a member of the New York State Assembly, stated that "...I continue to assert that crossing state reforestation land (SRL) is environmentally preferable..."

Response:

As discussed in sections 3.6 and 6.1 our responsibility is to identify an environmentally superior route. In several instances where Iroquois avoided SRLs we found that a more direct route would be environmentally preferable. Therefore, our recommendation stands as written.

See FEIS recommendation 32.

3.17-32 Comment on DEIS recommendation 32:

Iroquois generally agreed with the recommendation but is concerned with the timing since the construction is scheduled between January and May 31.

Response:

Since the piping plover is a federally listed threatened species, the construction schedule must be adjusted to avoid the nesting season. The recommendation identifies a 0.5-mile restriction area on either side of the pipeline. Recommendation stands as written.

See FEIS recommendation 33.

3.19.33 Comment on DEIS recommendation 33:

Iroquois adopted the recommendations.

Response:

Recommendation stands as written.

See FEIS recommendation 34.

3.17-34 Comment on DEIS recommendation 34:

Iroquois agreed with the recommendation and has incorporated route changes to avoid the landfill sites near the towns of Russia and Dover, New York.

Response:

Recommendation stands as written.

See FEIS recommendation 35.

3.17-35 Comment on DEIS recommendation 35:

Iroquois disagreed with the restriction of no construction activities within 0.5 mile of a great blue heron rookery during the nesting period, but agreed to make adjustments to centerline to avoid clearing suitable nesting trees.

Response:

Since the nesting period is critical to the survival of the great blue heron colonies, construction impact on active nesting colonies, as close as 500 feet to nests could result in abandonment of young. The construction window is not that restrictive that planning cannot accommodate this period. The recommendation stands as written.

See FEIS recommendation 36.

3.17-36 Comment on DEIS recommendation 36:

A comment letter was received regarding recommendation 36. Since owner compensation would be required for sugarbush, the commentor felt that it should also be required for orchards and vineyards. How will compensation be determined for orchard or tree farmers since the loss of the trees represents a permanent loss of income?

Response:

The owner/operators of the orchards or nurseries that would be crossed in Columbia, Dutchess, and Suffolk Counties, New York, should and would be compensated for the trees. We are unaware of any vineyard crossings; however, vines could grow on the permanent right-of-way. During the negotiations of damage, the applicant would reimburse property owners for any commercial orchards, nurseries, and vineyards for any loss of production as a direct consequence of construction activities. Please see revision to recommendation 38 to include orchards and nurseries.

See FEIS recommendation 38.

3.17-37 Comment on DEIS recommendation 37:

Iroquois agreed with recommendation 37 and has already consulted with residential developers.

Response:

Recommendation stands as written.

See FEIS recommendation 39.

3.17-38 Comment on DEIS recommendation 38:

Iroquois disagreed with recommendation 38, which requires them to limit their construction and permanent right-of-way. The First Selectman of Newtown agreed with the recommendation that requires Iroquois to minimize their construction right-of-way to 75 feet.

Response:

We believe that Iroquois can adequately construct and operate the proposed pipeline within a 75-foot-wide construction right-of-way and a 50-foot-wide permanent right-of-way, as this is standard industry practice. See section 5.1.9.1.2. However, this recommendation has been modified to allow for a 100-foot-wide construction right-of-way in agricultural areas where topsoil must be segregated from the entire right-of-way.

See FEIS recommendation 41.

3.17-39 Comment on DEIS recommendation 39:

Iroquois agreed with recommendation 39.

Response:

Recommendation stands as written.

See FEIS recommendation 42.

3.17-40 Comment on DEIS recommendation 40:

Iroquois agreed to recommendation 40, which also has been stipulated in the New York State Article VII process. However, some of the required studies are season-specific and require prompt response from review agencies.

Response:

Recommendation stands as written. We would review the information as promptly as possible, particularly if Iroquois identifies which specific studies require priority treatment.

See FEIS recommendation 43.

3.17-41 Comment on DEIS recommendation 41:

Iroquois indicated that the recommended window for construction across the Housatonic River (October 1 to December 31) is too restrictive.

Response:

The reason for ending in-stream construction by December 31 is to prevent impact on the spawning of winter flounder in the tidal portions of the Housatonic River. The NMFS has agreed with this construction window. If Iroquois would require an extension of this window, it could file documentation supporting the reasons it requires an extension with FERC for review and approval by the Director of OPPR. Recommendation stands as written.

See FEIS recommendation 41.

3.17-42 Comment on DEIS recommendation 42:

Iroquois conducted the wetland surveys and modified its proposed staging areas as required by recommendation 42.

Response:

Recommendation 42 is no longer required; therefore, it has been eliminated. We are continuing to work with the COE.

DEIS recommendation 42 was deleted.

3.17-43 Comment on DEIS recommendation 43:

Iroquois agreed with recommendation 43 and has realigned the staging area at the St. Lawrence River crossing.

Response:

The FWS commented that wetlands located at the Hudson River crossing should not be disturbed by construction of staging areas unless, following the Section 404(b)(1) guidelines, there is no other alternative that would result in less impact. Iroquois, after conducting wetland field delineation surveys utilizing the unified Federal methodology, has relocated the proposed pipeline landfall to the west approximately 250 feet along the St. Lawrence

River to avoid placing a portion of their staging area within a wetland (see section 6.2.1). It has been determined that the wetland area along the Hudson River cannot be avoided during river crossing procedures. Consequently, Iroquois has agreed to prepare a wetland mitigation plan to restore the wetland area along the Hudson River that would be disturbed by construction of the staging area. The St. Lawrence River staging area has been removed from this recommendation.

See FEIS recommendation 46.

3.17-44 Comment on DEIS recommendation 44:

Tennessee requested clarification on the requirement of 48 inches of cover in active agricultural areas when all their existing pipelines are typically buried at a depth of 36 inches.

Response:

We agree with Tennessee's comment; the recommendation has been modified to reflect their concern.

See FEIS recommendation 49.

3.17-45 Comment on DEIS recommendation 45:

Tennessee does not agree with the recommendation to file and obtain the Commission's approval.

Response:

Recommendation stands as written except that the Cool Springs Creek crossing is no longer in this phase of construction and has been deleted from the recommendation.

See FEIS recommendation 50.

3.17-46 Comment on DEIS recommendation 46:

No comments were received specific to recommendation 46, but numerous comments were received concerning construction procedures; construction safety; and impact of blasting upon buildings, wells, septic systems, aquifers, and other facilities.

Response:

Recommendation 46 has been expanded to include both Iroquois and Tennessee and revised in subparts b, d, and e to reflect the comments received.

See FEIS recommendation 31.

3.17-47 Comment on DEIS recommendation 47:

Tennessee amended its application to delete the Forest Loop. Therefore, our recommendation 47 to limit new additional permanent right-of-way through the Allegheny National Forest is no longer applicable.

Response:

Comment accepted. This recommendation has been deleted.

DEIS recommendation 47 was deleted.

3.17-48 Comment on DEIS recommendation 48:

Tennessee amended its application to delete construction in Onondaga County, New York.

Response

Recommendation 48 has been deleted.

DEIS recommendation 48 was deleted.

3.17-49 Comment on DEIS recommendation 49:

Tennessee amended its application to delete the Mercer Loop. Therefore, our recommendation 49 concerning minimizing effects on waterfowl is no longer applicable.

Response:

Comment accepted. This recommendation has been deleted.

DEIS recommendation 49 was deleted.

3.17-50 Comment on DEIS recommendation 50:

Tennessee amended its application to delete pipelines in Mercer County, Pennsylvania.

Response:

Recommendation 50 has been deleted.

DEIS recommendation 50 was deleted.

3.17-51 Comment on DEIS recommendation 51:

No comments were received concerning recommendation 51.

Response:

Recommendation stands as written.

See FEIS recommendation 51.

3.17-52 Comment on DEIS recommendation 52:

Tennessee noted that they are no longer proposing to construct the North Haven Extension, therefore, recommendation 52 should be deleted.

Response:

Comment noted. This recommendation has been deleted.

DEIS recommendation 52 was deleted.

3.17-53 Comment on DEIS recommendation 53

No comments were received concerning recommendation 53.

Response:

Recommendation stands as written.

See FEIS recommendation 53.

3.17-54 Comment on DEIS recommendation 54:

Tennessee noted that they are no longer proposing to construct the North Haven Extension, therefore, recommendation 54 should be deleted.

Response:

Comment noted. This recommendation has been deleted.

DEIS recommendation 54 was deleted.

3.17-55 Comment on DEIS recommendation 55:

No comments were received concerning recommendation 55.

Response:

Recommendation stands as written.

See FEIS recommendation 54.

3.17-56 Comment on DEIS recommendation 56:

No comments were received concerning recommendation 56.

Response:

Recommendation stands as written with minor wording changes.

See FEIS recommendation 55.

3.17-57 Comment on DEIS recommendation 57:

No comments were received concerning recommendation 57.

Response:

Recommendation stands as written with minor wording changes.

See FEIS recommendation 56.

3.17-58 Comment on DEIS recommendation 58:

No comments were received concerning recommendation 58.

Response:

Recommendation stands as written.

See FEIS recommendation 57.

3.17-59 Comment on DEIS recommendation 59:

Tennessee noted that they are no longer proposing to construct the North Haven Extension, therefore, recommendation 59 should be deleted.

Response:

Comment noted. This recommendation has been deleted.

DEIS recommendation 59 was deleted.

3.17-60 Comment on DEIS recommendation 60:

Iroquois adopted recommendation 60 and filed coastal zone consistency certificates with the appropriate agencies.

Response:

Recommendation stands as written.

See FEIS recommendation 48.

3.18 FERC POLICIES AND PROCEDURES

3.18-1 Comment Summary: Comparison of Iroquois vs. Other Projects

Several commentors wanted to know why there was not a head to head comparison between Champlain, Iroquois, and other projects.

Response:

Since Iroquois/Tennessee and Champlain proposed to serve different markets, and/or explained below were determined to be discrete: a head-to-head comparison of Iroquois/Tennessee to replace Champlain and vice versa would be inappropriate. We analyzed the possibility of one of the projects serving both markets in Volume II of the DEIS (Regional System Alternative).

The Commission issued, on January 12, 1989, an order in Docket No. CP87-451-016, ORDER RULING ON DISCRETENESS OF ADDITIONAL NORTHEAST PROJECTS AND ESTABLISHING PROCEDURES, that stated the projects were discrete and not mutually exclusive. This order severed the Champlain, Iroquois/Tennessee, and ANR projects from the open season proceeding for processing as discrete projects. In the order the Commission stated that the projects were not mutually exclusive and therefore, could be processed independently. The projects would serve different segments of the Northeast gas market and would have different gas supplies. Further, on November 7, 1989, Champlain's operator, ANR requested that the Commission suspend processing of the Champlain application. In the filing, ANR indicated that the project would be restructured and refiled with FERC sometime in 1990. Since the projects are proceeding on different time tracks and serve different customers they are not reasonable alternatives to one another. Therefore, a head-to-head comparison is not needed.

3.18-2 Comment Summary: Tiering Process

The FWS called for an EIS tiering process starting with a comprehensive EIS for the Northeast Open Season Settlement process then extending to individual projects and nonjurisdictional facilities.

Response:

The tiering concept, as defined by CEQ, involves the preparation of an initial EIS on an overall policy or program with subsequent environmental documents analyzing smaller, more localized issues. The tiering process is an optional procedure which can be used if it suits the lead agencies' purpose. As discussed in response 3-18.1, the Commission issued an order that stated that the Northeast projects are discrete. In this situation, the Northeast open season proceeding was the subject of extensive settlement discussions which were open to all interverons. For this reason when the discreteness of the project was determined, a tiering process EA or EIS was unnecessary.

3.18-3 Comment Summary: Comprehensive EIS

Several commentors felt that the Iroquois/Tennessee, Champlain, ANR, and Great Lakes Projects should be evaluated in one comprehensive EIS.

Response:

A DEIS was prepared for the Iroquois/Tennessee Pipeline Project, a discrete project, as determined by the Commission, and is being processed independently of the other projects. The Great Lakes application to support this project was withdrawn on January 23, 1990, by the applicant. The ANR, NIP, and Iroquois/Tennessee projects are stand-alone projects to serve the Northeast. There is no requirement to treat several projects in a single EIS nor is there any reason for doing so.

3.18-4 Comment Summary: Canadian Effects

Two commentors felt that the effects of gas production and pipeline construction in Canada should have been addressed in the DEIS.

Response:

Under the terms of Executive Order 12114 of January 4, 1979, the proposal by TransCanada to build facilities in Canada to support the Iroquois/Tennessee Project does not have to be addressed in the EIS. See section 2-3(b) and 3-5 of the Executive Order.

Section 2-3 of the E.O. specifies the extraterritorial actions which are included in NEPA requirements. Of the four types of actions identified, only one could apply to the Iroquois/Tennessee Project: 2-3(b). It states that an agency must analyze the effects of actions

> *...affecting the environment of a foreign nation not participating with the United States and not otherwise involved in the action.*

Canada is both participating in and involved in this project.

Section 3-5 of the E.O. needs no interpretation. It says that if an environmental impact statement is being prepared for an action, and

> *if the action also has effects on the environment of a foreign nation, an environmental impact statement need not be prepared with respect to the effects on the environment of the foreign nation.*

The National Energy Board has its own comprehensive procedure that has been established to consider whether facilities in Canada are needed.

3.18-5 Comment Summary: Relationship to Great Lakes

One commentor argued that final approval of the Iroquois/Tennessee Project should be withheld until Great Lakes' application to support TransCanada deliveries is approved.

Response:

The Great Lakes Project application to provide upstream transportation of the Iroquois natural gas volumes has been withdrawn. At present, the transportation is proposed by facilities to be constructed in Canada by TransCanada.

3.18-6 Comment Summary: Cumulative Impact

Comments were received objecting to the lack of cumulative impact analysis in the DEIS, contending that the FEIS should contain an analysis of the cumulative impact of the several Northeast natural gas pipeline projects.

Response:

Cumulative impact results when a project is added to an area in which other developments exist or are proposed. In such a situation, although the impact from the separate projects might be minor, the impact from all the projects in the area could be significant.

We presume the commentors refer to ANR, NIP, and Iroquois/Tennessee Projects. These projects involve pipelines, associated aboveground facilities, and related nonjurisdictional facilities in 19 states. In no instance are pipeline facilities being constructed in the same location in more than one project. With the diverse geographic locations of these facilities, we do not believe there is any potential for significant cumulative impact on the local level. Further, these projects have no significant adverse regional impact associated with them. The EIS does analyze the project by project and overall air quality effect of not building these projects.

We have added a discussion of our review of this cumulative impact issue into the EIS. (See section 5.3).

3.18-7 Comment Summary: Nonjurisdictional Facilities Cumulative Impact

Objections were made by several commentors that the cumulative impact of nonjurisdictional facilities needs to be addressed in the FEIS, especially with regard to induced growth which might result in unplanned or chaotic development. They contended that it is inappropriate to provide independent separate analysis of the nonjurisdictional facilities.

Response:

Individual analysis of nonjurisdictional facilities might violate NEPA if it were to be totally removed from the EIS with no connection to the overall project. The nonjurisdictional facilities served by Iroquois/Tennessee have been identified herein as part of this project. They have clearly not been hidden or segmented. The EIS identifies all such facilities we know about and describes the general environmental setting and the status of its approval at the local or state level.

Since none of the nonjurisdictional facilities are close to one another there is little potential for significant cumulative impact on the local level. In addition, none of the facilities have significant regional impact associated with them.

The potential of the jurisdictional and nonjurisdictional facilities to induce growth leading to unplanned or chaotic development is unfounded. Experience from other pipeline projects does not support a case for substantial induced growth. To the extent that growth occurs, whether industrial, commercial or residential, it would be subject to applicable state or local permitting processes and therefore could not be unplanned. Receipt of these permits would imply the associated impact is acceptable. Recommendation 29 states that gas deliveries cannot begin until the applicant has filed copies of all permits and approvals required for the nonjurisdictional facilities with the Secretary of the Commission and the Director of OPPR has reviewed this information and informed the applicant that gas deliveries can commence.

In our EIS scoping notices on this project we announced our desire to know about associated nonjurisdictional facilities and problems associated with them. Except as noted in the EIS, no such scoping comments were received. Lastly, the condition we have recommended will assure that no unacceptable projects will go forward.

3.18-8 Comment Summary: Nonjurisdictional Facility Analysis

Several commentors objected to the lack of detail on which our assessment of nonjurisdictional facilities was based and our reliance on certificate conditions and state and local approvals to ensure that no significant effects would result.

Response:

For each facility we have considered the potential effect on endangered and threatened species and historic and cultural resources consistent with our responsibilities under the ESA and NHPA. Those projects that are undergoing vigorous state review or have already been approved at the state or local level need not be addressed in detail as the existence of such permits prior to construction implies the associated impact is acceptable. If we do not find any or if no one raises any specific environmental issues in the FERC proceeding, there is no reason for us to expand our review of them. Moreover, one of the major aboveground facilities, the Colfax cogeneration plant, is under construction and many of the others are advancing through their state and local approvals.

3.18-9 Comment Summary: Supplemental DEIS

Six commentors requested that a supplemental DEIS be prepared to correct supposed deficiencies in the DEIS and to go into more local site-specific detail.

Response:

We do not believe the need exists to prepare a supplemental DEIS. We have responded to all comments made on the DEIS and addressed in detail site-specific issues raised in

those comments. It should be noted that EPA, the agency responsible for commenting on all DEIS' under section 309 of the Clean Air Act, did not request that a supplemental DEIS be prepared for the project. Nor do we believe that any of the issues/comments raised or identified issues so new or significant that a Supplemental DEIS would be needed.

3.18-10 Comment Summary: Compliance with Section 102(c) of NEPA

One commentor contended we have not complied with NEPA Section 102(c) because separate discussions of short term uses, long-term productivity, and irreversible or irretrievable commitments of resources are not provided.

Response:

Discussions of these potential effects are included in the environmental consequences sections of the EIS in conjunction with the resources affected to the extent that they involve issues relevant to these projects. There is no regulatory requirement that these discussions be segregated into discrete sections. In fact, the EIS follows our NEPA regulations which were developed in conjunction with the CEQ.

3.18-11 Comment Summary: Alternatives Scope

Shelton commented that CEQ guidelines call for evaluation of alternatives to include those not within the jurisdiction of the lead agency.

Response:

The DEIS, while pointing out the fact that the single-pipeline alternatives are not before FERC, nonetheless includes a complete analysis of two such alternatives. Additional single-pipeline alternatives are mentioned, but not presented in detail. We have performed a detailed review of a reasonable range of alternatives and have identified all reasonable alternatives we could find.

3.18-12 Comment Summary: Long-Term Routing Plan for the Northeast

One commentor believed FERC should "develop a long term routing plan for the Northeast, specifically designed for additional right-of-way capacity, to meet natural gas growth needs into the mid-21st century." He went on to quote DEIS page 1-6 as an indication that related facilities were not analyzed.

Response:

Development of a long term routing plan is not within the scope of this EIS nor does NEPA require such a plan in response to the proposed project. However, we have analyzed several single-pipeline alternatives that would replace the combination of the Iroquois/Tennessee Pipeline Project as originally proposed as well as the now-deferred Champlain Project.

The commentor has misunderstood the reference on page 1-6 of the DEIS. The missing facilities are part of the ANR project not the Iroquois/Tennessee Pipeline Project.

3.18-13 Comment Summary: DEIS Too Generic

Many commentors stated that the DEIS is too generic, lacks detail, used information provided by Iroquois, and had too short a review period.

Response:

The Iroquois/Tennessee DEIS was prepared to provide information to the Commission to allow it to make a decision on a project that involves the construction of approximately 423 miles of pipeline, 8,650-hp of compression, and appurtenant facilities. The construction procedures and route described in the EIS are in fact quite detailed and the EIS adequately describes the anticipated environmental impact on the affected resources. As specified in the CEQ, regulations NEPA's purpose is not to generate paperwork, "...but to foster excellent action."

Further CEQ says that EIS's should be "analytic" not "encyclopedic." We have described all potentially significant impact.

The Iroquois project, along essentially the same general route, has been under review in one form or another since 1986.

The comment period for the DEIS was 93 days long--over twice as long as the minimum requirement of 45 days. We believe that this is an adequate period of time to provide comments.

3.18-14 Comment Summary: No Site-specific Information

Many commentors contended that Iroquois and FERC selected and evaluated the route without site-specific information and used old maps. Commentors stated that helicopter surveys were used rather than walking the route and FERC accepted Iroquois data without validation.

Response:

The analysis contained in the EIS was not based only on map review and helicopter surveys. We have independently made numerous field inspections and site visits of the proposed and alternative pipeline routes since 1986. We have developed our analysis independently through extensive data collection and consultation with resource agencies. Where Iroquois data has been relied on, it has first been validated. Many of the recommendations and impact analyses occurred as a result of on-the-ground site-specific visits.

3.18-15 Comment Summary: Route Modifications

Commentors argued that the route has been substantially modified since the DEIS and the FEIS should be based on a route flagged in the field. They further contended that a shift in the route of as little as 150 feet can be disastrous.

Response:

The Iroquois route has not been substantially modified since the DEIS. Although numerous route variations have been proposed by both Iroquois and other commentors, including the State of Connecticut, the extent of the deviations and deflections from the proposed route is in terms of hundreds of feet in most instances. The variations and deviations presented in the comments are addressed in the EIS. Minor shifts in route alignment are sometimes necessary even during the design phase as more detailed information becomes available. Procedures for minor shifts in alignment per landowner needs are described in our recommendations. See section 7.3, recommendation 2.

3.18-16 Comment Summary: Can Iroquois Refile Its Route

One commentor who was concerned about the route in Sherman, Connecticut, wanted to know if Iroquois could refile its application with a different route.

Response:

If Iroquois were to refile its application and it involved a completely different pipeline route as opposed to variations of the proposed route, the Commission would notice Iroquois' new application and would have to prepare a NEPA compliance document, either an EA or an EIS, to analyze the project.

3.18-17 Comment Summary: Officials Not Informed

One commentor contended that state and local officials have not been adequately informed.

Response:

The Commission issued numerous notices regarding the project dating back to 1986. Government officials in all affected states and towns received copies of the "Notice of Intent to Prepare a Draft Environmental Impact Statement for the Proposed Iroquois/Tennessee Pipeline Project and Request for Comments." FERC originally issued a Notice of Intent to Prepare an EIS for the Iroquois Project on September 3, 1986. This notice was widely distributed. In addition, numerous newspaper and magazine articles have since been written on the project.

3.18-18 Comment Summary: Lack of Time at Public Meetings

Two commentors contended that the limited time allowed at the public comment meetings to speak was inadequate for a project of this scope.

Response:

Public meetings supplemented the ample opportunity for the public to respond to the DEIS in writing. The ability to provide written comments allows virtually unlimited time to express views. Prior to these meetings the Commission issued numerous notices regarding the project with opportunity to intervene and participate in the proceeding.

3.18-19 Comment Summary: Meetings on Long Island

Several commentors felt that there should have been public meetings on Long Island and that the NYPSC should be required to hold hearings on Long Island.

Response:

We determined the locations of the scoping meetings and the comment meetings so that the maximum number of affected individuals could present comments. The lack of a public comment meeting on Long Island has not diminished our follow-up analysis on any written comments we received. FERC cannot require the NYPSC to hold hearings. However, the NYPSC held a public statement hearing on July 14, 1987, in Smithtown, New York, which is located on Long Island.

3.18-20 Comment Summary: Lack of Notice

Many individuals and towns criticized the lack of notice given to landowners and lack of effort to stimulate public awareness in general.

Response:

While it is true that there is no requirement to notify landowners directly, the Commission issued numerous notices regarding the project dating back to 1986. Government officials in all affected states and towns, as well as interested individuals, libraries, conservation organizations, and newspapers, received copies of the "Notice of Intent to Prepare a Draft Environmental Impact Statement for the Proposed Iroquois/Tennessee Pipeline Project and Request for Comments." FERC originally issued a Notice of Intent to Prepare an EIS for the Iroquois Project on September 3, 1986. In addition, numerous newspaper and magazine articles have since been written on the project.

3.18-21 Comment Summary: Extension of Comment Period

Many commentors felt they did not have sufficient time to prepare comments within the established comment period and requested time extensions of varying lengths.

Response:

The comment period was extended once already to February 16, 1990, giving a comment period 93 days long, over twice as long as the 45 day minimum set forth in the regulations. We feel that this is adequate time to comment on the DEIS.

3.18-22 Comment Summary: Lack of Landowner Notice

One commentor criticized the lack of public notice given to landowners who reside in locations not in the local area.

Response:

See the response to 3.18-20.

3.18-23 Comment Summary: Eminent Domain Violates Constitutional Rights

One commentor felt that if Iroquois has the right of eminent domain, her constitutional rights will be violated.

Response:

When Congress passed the Natural Gas Act of 1938 it gave companies that authority. Section 7(h) of the Natural Gas Act of 1938 grants the holder of a Certificate of Public Convenience and Necessity the right of eminent domain when it cannot acquire land necessary to construct and operate certificated facilities by contract or reach agreement with the owner of such property.

3.18-24 Comment Summary: 72 Hours Notice Before Viewing Property

Once commentor wanted Iroquois to be required to give 72 hours notice before viewing a specific area of the route.

Response:

This comment is beyond the scope of this EIS. However, with the extensive number of route visits taken by the company over the entire route, such a requirement would be impractical.

3.18-25 Comment Summary: Environmental Inspectors

Commentors felt our recommendation that an environmental inspector be hired by Iroquois and be given specific duties and responsibilities was not sufficient. They felt that the inspectors should have stop-work authority.

Response:

We believe this concern is adequately addressed by our recommendations which require environmental inspectors and the duties for the inspectors described in appendix C.

3.18-26 Comment Summary: Local Environmental Inspectors

Several commentors stated that grants should be given to the towns and counties to hire their own environmental inspectors.

Response:

We believe that our recommendation for inspectors with FERC oversight will assure that the mitigation measures will be implemented. (see response 3.18-25).

3.18-27 Comment Summary: Bold Point

The RIEFSB questioned the right of FERC to grant an easement across Bold Point, a federally funded site.

Response:

The facility in question was proposed by Algonquin and is no longer a part of the project studied in this EIS. These concerns will be addressed in a subsequent environmental document on the ANR project that will analyze this facility.

3.18-28 Comment Summary: Bonding and Insurance

Several commentors wanted to know what types of bonding and insurance requirements would be placed on the applicant for damages incurred during construction.

Response:

There are no such requirements at the Federal level. There may be state and local laws requiring bonding and insurance for construction projects.

3.18-29 Comment Summary: Oliver Wiswall House

The owners of the Oliver Wiswall House were concerned about the exact location of the pipeline in relation to this house, given a 660-foot-wide corridor to either side of the pipeline is allowed by New York State.

Response:

We have performed our environmental analysis of the proposed project on the route as depicted in the maps filed January 17, 1989, for Iroquois and July 18, 1989 for Tennessee,

and any deviations subsequently filed, analyzed, and recommended by FERC. The route shown on these maps or as modified by the EIS is the actual route. It is not 660 feet wide on either side of the centerline. Minor deviations from the filed route are permissible to meet landowner needs and requirements. These deviations customarily involve only route modifications that would not affect additional wetlands, cultural resource sites, or threatened and endangered species or their habitats and would not affect any landowners previously unaffected. Any other deviations must be filed with the Commission for review and approval prior to their implementation by the applicants.

3.18-30 Comment Summary: Project Has Been Approved

One landowner stated that they were approached by an Iroquois representative who implied that the project had been approved.

Response:

At this time the project has not been approved by the Commission. The applicants have requested survey access from property owners to perform the required engineering and environmental surveys.

3.18-31 Comment Summary: Decision Already Made

Several commentors felt that a FERC decision has already been made.

Response:

No final decision has been made on the project at this time. The Commission will act upon the project once a full record, including gas supply and market data, engineering data, and environmental information, has been prepared. At that time the Commission will made a decision on the project, taking into account all relevant factors.

3.18-32 Comment Summary: Manchester Street Lateral

The RIEFSB expressed concern over the routing of Algonquin's Manchester Street Lateral.

Response:

The facilities the DEIS describes in Rhode Island for Algonquin are no longer part of this EIS. This information will be used in a subsequent environmental document for the ANR project that would analyze these facilities.

3.18-33 Comment Summary: Request for Site Visit

A resident of Columbia County requested a site visit by the Commission to the county.

Response:

We have made numerous field inspections of the proposed and alternative pipeline routes, including those in Columbia County, New York.

3.18-34 Comment Summary: Request Meeting with Iroquois

The Town of Athens requested that pipeline representatives meet with town officials to discuss local citizen concerns.

Response:

Thank you for the comment. It is our understanding that such a meeting took place.

3.18-35 Comment Summary: Eminent Domain

A commentor felt that the Federal government cannot take over private property against an owner's wish.

Response:

See response to 3.18-23.

3.18-36 Comment Summary: Reasonable Public and Proper Procedures

One commentor felt that neither Iroquois nor FERC had followed reasonable public and proper procedures.

Response:

See responses 3.18-17 and 3.18-20.

3.18-37 Comment Summary: Unanswered Questions

One commentor asked that we consider the many unanswered questions about this project.

Response:

We have given serious consideration to all issues raised. Unfortunately this commentor does not specify any "unanswered questions."

3.18-38 Comment Summary: Coastal Zone Consistency

Several commentors questioned how the EIS can precede the coastal zone consistency determination.

Response:

There is no requirement that the coastal zone consistency review precede the issuance of a NEPA document. We have included a recommendation (see section 7.3, recommendation 48) in the EIS that any certificate issued in this proceeding be conditioned stating that no construction may commence until the appropriate coastal zone consistency determinations have been obtained and filed with the Secretary of the Commission for review prior to construction.

3.18-39 Comment Summary: Index

Several commentors asked that an index be included cross referencing topics particularly where problems are discussed.

Response:

An index is included in the EIS.

3.18-40 Comment Summary: Iroquois and LILCO Not Cooperative

One commentor felt that both Iroquois and LILCO had not cooperated with Commack, New York, in providing factual information to the community.

Response:

This is beyond the scope of the EIS.

3.18-41 Comment Summary: Party Status for Commack Civics Group

The Commack Civics Group asked that they be deemed a concerned party and included in all matters and correspondence.

Response:

The Commack Civics Group has been placed on the list of parties requesting intervenor status and will be mailed an EIS.

3.18-42 Comment Summary: COE Function

One commentor objected to the inference that FERC was performing a function mandated to the COE under the Clean Water Act.

Response:

FERC is not performing the COE's function. The COE is a cooperating agency in the preparation of the EIS, and therefore, we have attempted to meet its requirements relevant to Section 404(b) (1) of the Clean Water Act. However, the COE must ultimately perform its regulatory functions as appropriate.

3.18-43 Comment Summary: Refusal to Consider Expert Testimony

A commentor from Shelton, Connecticut, stated the greatest problem has arisen due to FERC's refusal to consider expert testimony in this matter.

Response:

Neither FERC nor its staff has refused to consider expert testimony. The comment does not identify whose expert testimony we are alleged to have failed to consider or where it was given.

3.18-44 Comment Summary: State and Local Review and Jurisdiction

The Brookfield Inland Wetlands Commission (BIWC) asked if FERC will "advocate state and local review and jurisdiction over every aspect of [the Proposed Iroquois/Tennessee Pipeline Project]?"

Response:

We are unsure of the forum in which the BIWC wishes FERC to be an advocate. However, applicable laws will govern the jurisdiction and review authority of Federal, state, and local agencies.

3.18-45 Comment Summary: Original Research

The BIWC asked, "How much detailed original research, not accessing data bases, have you done?"

Response:

The EIS clearly identifies the resources used in analyzing the project. Without clarification of what BIWC means by "original research" further response is difficult. However, the detailed review which the FERC staff and its consultant have been performing over the years, including field visits and overflights, is in its own right original research.

3.18-46 Comment Summary: Same Mistakes

The BIWC asked, "Why do the same mistakes occur in the independently prepared in [sic] FERC materials and the Iroquois reports?"

Response:

The BIWC neither identifies the alleged mistakes nor where they appear. However we have stated that some of our data is taken from Iroquois' reports and filings filed under oath before the FERC and verified by our staff prior to using it. Some errors will not be caught in this process. This is one of the reasons EIS' are sent out in draft form for review and comment. When specifics are raised they are considered.

3.18-47 Comment Summary: Right-of-Way Widths

The Land Group wanted to know when the public will know the width of temporary and permanent easements/corridors and what are the parameters for deciding where a narrowing of the corridor or "Area of Special Concern" can occur.

Response:

The EIS identifies the width proposed by the applicant for temporary and permanent right-of-way. It also identifies where we, the staff, are recommending that less right-of-way width be used. See section 7.3, recommendation 41.

We have not used the term "Area of Special Concern." We understand that Iroquois, whose representatives are stated to have used the term, means areas where interested individuals, groups, or agencies identify as being of special concern. Although the applicant will be limited to the widths stated in the EIS overall, specific landowner agreements need to be negotiated with the landowners.

3.18-48 Comment Summary: Location of Aboveground Facilities Changing

Two commentors from Milford, Connecticut, asked how can our analysis in the DEIS be valid when the route or the location of aboveground facilities keeps changing.

Response:

The EIS will make the location of the facilities quite clear. If FERC approves the project it must be located as specified in the EIS or relocated within limits set by the FERC order.

Many of the changes are a result of comments on the DEIS or negotiations between the applicant and landowners or governmental agencies. This shows that the public involvement required by NEPA is working.

3.18-49 Comment Summary: Connecticut Residents Disadvantaged

STOP claims residents of Connecticut are at a disadvantage compared to those of New York because Connecticut does not have the same process for project review.

Response:

This comment is beyond the scope of the EIS, but we note that our DEIS was sent out in both states.

3.18-50 Comment Summary: Cash Bond

STOP requested that Iroquois be required to post a cash bond with each town to "be used to correct impacts which Iroquois may cause."

Response:

Whether bond should be required and what the amount, if any, should be is the responsibility of local governments. If such bonds are required for similar construction projects then, presumably, they would be appropriate here. We do not see a reason to treat this project differently from any other construction project.

3.18-51 Comment Summary: Objection to LPEP

STOP objected to the LPEP proposed by Iroquois. STOP questions the validity of any results of the LPEP since the company funds it and apparently doesn't want the cost in the company's rate base.

Response:

The ecological studies recommended within the LPEP are being conducted in affiliation with Syracuse University under the direction of the College of Natural Resources. The research design for these studies will be developed by PhD and Masters candidate students, under the direct supervision of either a doctoral dissertation or masters thesis committee. In our recommendation, these research designs must then be submitted to FERC for the review and approval of the Director of OPPR, in order to ensure that the proposed studies are designed to answer long-standing questions concerning the impact of natural gas pipelines on ecological resources. The results of these studies will be presented in either a masters thesis or doctoral dissertation and will be published by the University. In addition, they will be submitted to refereed scientific journals for possible publication.

FERC will decide whether rate base treatment is appropriate in a separate rate proceeding.

3.18-52 Comment Summary: States Rights

The commentor questioned "What ever happened to States Rights? Aren't we worthy of being protected by the FERC? It seems to me folks in our states should be able to overrule the Iroquois pipeline being built."

Response:

This comment is outside the scope of the EIS. It deals with legal matters basic to the Natural Gas Act and interstate commerce.

3.18-53 Comment Summary: Expansion

A commentor questioned what requirements there are if Iroquois wishes to expand capacity by looping or compression.

Response:

Approval for any future expansion by looping or compression of the Iroquois mainline would have to be obtained from FERC via applying for another certificate of Public Convenience and Necessity.

3.18-54 Comment Summary: Illegal Activities

The comment questions whether Iroquois would be exempt from penalty for "misdeeds," including any illegal activities.

Response:

Although we have no reason to expect Iroquois to engage in illegal activities, Iroquois would be responsible for any illegal activities of which it was guilty. If Iroquois failed to live up to obligations made in filings with FERC or did not abide by conditions in its certificate, FERC could take enforcement action against it. Further, if Iroquois fails to abide by the terms of any other permit, they could be held accountable under the provisions of the law establishing the permit.

3.18-55 Comment Summary: Local Review of EM&CP

The Town of Huntington, Department of Environmental Control and the Planning Department, felt that the town must review and comment on the EM & CP before any construction within the town begins.

Response:

The plans in the EIS are in general and specific terms. Other review than that should be coordinated through the applicant.

3.18-56 Comment Summary: Alternatives to use of LILCO

The Township of Huntington, New York, recommended alternative mitigating measures to offset loss of park land along the LILCO right-of-way caused by construction of the Iroquois pipeline.

Response:

The township is free to pursue any mitigation/compensation measures it feels necessary with Iroquois and LILCO during easement negotiations for any lands that it owns.

3.18-57 Comment Summary: Map Scale Inadequate

The Town of Monroe stated that the map scale used in the EIS along with the aerial photography was too large a scale to assess the project's impact. They recommended mapping at a scale of 1:1,200 using tax assessor base maps.

Response:

The EIS and its maps are a Federal document for use in making a decision at the Federal level. Subject to applicable law, the town is free to require the proponents of the project to file whatever data, in whatever form is legally necessary, to issue local permits as long as the federally determined public convenience and necessity is met.

3.18-58 Comment Summary: Herbicide Use

The Town of Monroe questioned who would ensure that Iroquois does not use herbicides. They wanted to know if it would be the town's responsibility, and what penalties would be imposed if Iroquois uses herbicides.

Response:

Iroquois' agreement not to use herbicides would be made part of any certificate issued in this proceeding (section 7.3 recommendation 1). If it is brought to the attention of FERC that Iroquois is using or has used herbicides, the Commission would investigate this matter and take any action it feels appropriate for violating terms of a FERC certificate.

3.18-59 Comment Summary: Recommendations in Certificate

The COE asked if any recommendations in the EIS will be part of any license the Commission issues.

Response:

We will recommend to the Commission that all of the mitigating measures contained in Chapter 7 be made part of any certificate issued in this proceeding. The Commission will make the decision on what conditions (recommendations) are contained in any certificate.

3.18-60 Comment Summary: Resolution of Differences

The COE suggested the EIS should include a section on how FERC has attempted to resolve differences with towns and property owners that are affected by the route.

Response:

In preparing the EIS, we have contacted all of the affected towns along the route and analyzed and responded to their comments, both during scoping and on the DEIS. We have analyzed all comments received from individuals and groups and responded to their concerns.

Any differences between the applicants and towns or landowners would be resolved during the local permitting or easement negotiation processes.

3.18-61 Comment Summary: Locally Unique Environments

The COE commented that impact on locally unique environments should be discussed in detail in the EIS.

Response:

The DEIS had extensive discussion about areas that are locally significant. We have made revisions in chapter 5, appendix C, and appendix D based on comments on the DEIS and statements at the public meetings. Please see the applicable revisions to the EIS that have been made in response to this and other comments.

3.18-62 Comment Summary: Shoreham

A comment was received asking why the Shoreham Nuclear Power Plant on Long Island was built, and if a need study was conducted for this facility.

Response:

The questions regarding the Shoreham facility are beyond the scope of the EIS.

3.18-63 Comment Summary: Cover Sheet

The City of Shelton commented that the EIS should have a cover sheet in accordance with Section 1502.11 of the CEQ regulations. They state this cover sheet should include

lead and cooperating agencies, title, jurisdiction, contact person, abstract, and deadline for comments.

Response:

On April 9, 1990, the staff contacted Mr. Carl Bausch of the Office of General Counsel at CEQ regarding the need for a cover sheet. Mr. Bausch informed us that the notice printed at the front of the EIS suffices for the cover sheet requirement. This notice contains all relevant cover sheet information.

3.18-64 Comment Summary: SEQRA Review

A speaker at the Albany meeting asked why the Iroquois project has not undergone a SEQRA review pursuant to New York laws.

Response:

The EIS is a Federal document for use in making a decision on the project at the Federal level, while the SEQRA review is a state process. Iroquois has undergone extensive review in New York under Article VII. If New York feels a SEQRA review is necessary, it can attempt to do so as long as the Federal public convenience and necessity determination is met.

3.18-65 Comment Summary: Number of Public Meetings

At the Albany meeting, one speaker asked how many public hearings do you need to do something like this, and wanted to know if we had to hold hearings at the local and county level.

Response:

We have held public meetings at locations where we feel we will get the most public involvement. We have issued numerous notices regarding this project since 1986 which were mailed to state and local governments, local media, and interested members of the public. Further hearings at the local and county level may be held in response to applications by the applicant for local permits.

3.18-66 Comment Summary: Access to FERC records

At the Albany meeting, one speaker asked if they could have access to the evidence presented at FERC.

Response:

All information filed in the project is available through FERC's Office of Public Information. Public inquiries should be made to the Public Reference and File

Management Branch, Room 3308, 941 North Capital St., N.E., Washington, DC 20426. The phone number is (202) 208-1371.

3.18-67 Comment Summary: How is Project "Environmentally Acceptable"

At the Albany meeting, one speaker asked how FERC can determine that a project that involves the clearing of 727 acres of forestland, disturbance of 269 acres of wetlands, disruption and taking of 2,000 acres of agricultural land by eminent domain, and disturbance to residents along the 369-mile-route by noise, dust, and traffic to be environmentally acceptable.

Response:

We analyzed the short- and long-term effects of the proposed project and presented them in the EIS. Our conclusion that the project is environmentally acceptable is based on our analysis as presented in the EIS. We recognize that there would be disruption to people during construction, however, most of the impact would be short-term, lasting less than 6 months, would only occur during construction, and have been extensively mitigated.

3.18-68 Comment Summary:: Powers of Connecticut Siting Council

Two speakers in Danbury requested that the Connecticut Siting Council be given the power to review, approve, and enforce the detailed environmental measures in Connecticut.

Response:

The Connecticut Siting Council is free to review, approve, and enforce any mitigation measures and routing that it is legally empowered to do. The State of Connecticut has taken the legal position that its jurisdiction in the project is residual to FERC's. The FERC cannot order a state agency to perform these functions.

3.18-69 Comment Summary: Avoidance and Compensation as Mitigation

One speaker at the Danbury meeting stated the DEIS lacked discussion of avoidance and compensation as mitigative tools.

Response:

The EIS discusses avoidance in Volume I, chapters 3 and 6. In many instances, we have recommended variations to avoid sensitive areas. Compensation is an issue that is typically resolved during the easement negotiation process between the landowners and the applicant. Compensation for wetlands crossings may be negotiated between the applicant and the permitting authority for these crossings. See chapter 5 for a discussion of impact as well as recommended mitigation measures.

3.18-70 Comment Summary: Environmental Management Plan

One speaker at the Danbury meeting requested that all FERC recommendations regarding construction methods, safety, erosion and sediment control, and wetlands mitigation be incorporated into an environmental management plan.

Response:

All of our recommendations would be made to the Commission for inclusion in any order as conditions to the Certificate. The applicant would be responsible for ensuring compliance with all conditions contained in the Certificate. The applicants would include these conditions or methods to comply with the conditions.

3.19 MISCELLANEOUS

3.19-1 Comment Summary: Define Cogeneration

One commentor asked that we define the term cogeneration.

Response:

Cogeneration is the use of one type of fuel to generate two other types of power, usually electricity and steam. Most applications of this method of producing energy involve producing electricity for sale to a utility and selling steam to a nearby industrial customer.

3.19-2 Comment Summary: Move Section 1.3

The City of Shelton commented that section 1.3 should be placed at the beginning of the chapter to clarify the extremely confusing narrative. They felt that would help focus the readers' attention on critical issues.

Response:

Chapter 1 has been revised to make the discussion less confusing. This section has also been revised to clarify the purpose and scope of the EIS and to clearly define what is being studied.

3.19-3 Comment Summary: Section 1.4 Confusing

The City of Shelton commented that section 1.4 should be rewritten to clarify the nonjurisdictional facilities.

Response:

The nonjurisdictional facilities associated with the project are clearly identified in section 2.1.4; an analysis of the facilities, potential impact, and status of each facility is identified in section 5.2.

3.19-4 Comment Summary: Inadequate Detail Presented

A commentor stated that the DEIS does not provide adequate detail on all aspects of the impact and felt that details were not provided at the hearings to residents of the affected towns.

Response:

We do not concur with this comment. The EIS is a comprehensive environmental study and the hearings were not held to discuss specific route details, but to allow the public the opportunity to present general or specific comments (also see response 3.18-9).

3.19-5 Comment Summary Location of Route Unclear

Comments were received at the public hearing stating that the location of the proposed pipeline is unclear. A commentor asked when the exact location of the line will be determined.

Response:

The maps in appendix A delineate the location of the reviewed route. If the route is certified, any modifications to the route must be filed with the Secretary of the Commission for review and approval by the Director of OPPR.

3.19-6 Comment Summary: Matchlines and Other Minor Graphic Corrections Needed

Commentors noted locations where matchlines appear to be needed, meter stations and interconnection points were not shown or have been modified, and in one case, where a route designation was missing.

Response:

Where correct, the changes have been made.

3.19-7 Comment Summary: Athens to New Milford Mislabeled

One commentor noted in our description of the Athens to New Milford Alternative (see section 3.5.4) that we incorrectly described Iroquois' proposed route as avoiding Litchfield County and in another location called the alternative Athens-to-Milford.

Response:

Comment accepted; the section has been revised to describe the alternative correctly.

3.19-8 Comment Summary: Route Variation Omitted from Table

One commentor noted that the State Route 55 variation was omitted from table 7.2.1.

Response:

Commented noted; the table has been corrected.

3.19-9 Comment Summary: Need Discussion of Effects of New North/South Pipeline

One commentor stated that all existing pipelines in New York run east to west and that the proposed Iroquois pipeline would traverse the state north to south. No discussion of impact from such an alignment has been included in the EIS.

Response:

The purpose of the EIS is to discuss this alignment, although the impact of a north-south alignment of New York was not specifically addressed. Other than the future potential to provide natural gas to locations along the north-south alignment and site-specific impact discussed in the EIS, we do not expect any direct impact from a north-south alignment.

3.19-10 Comment Summary: Clarify Executive Summary Wording

The COE commented on a sentence in the Executive Summary, asking that the sentence be reworded to be understandable. They wanted to know if the sentence means the state has approved other utility crossings through state forests.

Response:

This sentence has been modified.

The intent of the statement was to indicate that the NYPSC approved a route that is different from our recommended route. It should be noted that the state has also approved crossings of state forests by other utilities. As an example, the NYPSC authorized the NYPA to construct the Marcy-Massena 765 kV transmission line through the same area in 1977.

3.19-11 Comment Summary: Existing Right-of-Way Classification

One commentor would like section 4.1.9-1 revised to reflect that the AT&T right-of-way in New Milford, Connecticut, is not classified an existing right-of-way.

Response:

Comment noted (see also response 3.19-12).

3.19-12 Comment Summary: Length of Existing Right-of-Way Misleading

One commentor questioned the length of parallel right-of-way cited in the description of Iroquois' proposed route for the Litchfield, Connecticut, route comparison (see section 3.5.5).

Response:

We recognize that citizens question Iroquois' contention that the old telephone right-of-way followed in Connecticut can legitimately be considered an existing right-of-way. However, our conclusion regarding the Litchfield, Connecticut, route remains the same whether we consider the telephone line right-of-way as an existing corridor paralleled or not.

3.19-13 Comment Summary: Personal Pet Marker Concerns

A portion of the area to be cleared in the vicinity of Sandy Hook has special significance to the commentor since they hike in the area, have built a mound of rocks, and have a personal marker there in remembrance of a pet.

Response:

The commentor has a valid concern from a personal standpoint and the landowner of this area should discuss a minor variation around the rock mound and the pet marker. If the commentor is not the property owner, there is little that can be done.

3.19-14 Comment Summary: How are Iroquois' Costs Passed to Consumer

Commentors wanted to know how the cost of Iroquois gets passed through to the consumer and asked that we break these costs down by seasonal user versus steady load consumer. The commentor also wanted to know if the rate structure is anti-competitive and should the risk be passed on to the customers rather than the investor.

Response:

These topics are not the subject of an EIS but are issues under consideration by other FERC staff. This information and recommendations will be included with the full record that will be submitted to the Commission for their consideration and review. The full record would then be used by the Commission to reach their decision.

3.19-15 Comment Summary: Tennessee Not Discussed in Sufficient Detail

One commentor contended that the level of detail in the EIS for the description of the Tennessee facilities is less when compared to Iroquois.

Response:

The EIS treats both facilities at the same level of detail. Because most of Tennessee's facilities involve looping, fewer issues arise; therefore, the appearance of Iroquois being discussed in more detail is given.

3.19-16 Comment Summary: MEFSC Supports Recommendations

The Massachusetts Energy Facility Siting Council endorses the recommendation set forth in section 7.3.

Response:

Thank you for the comment.

3.19-17 Comment Summary Lack of Referencing

The COE commented there is a lack of referencing throughout the DEIS.

Response:

Comment noted.

3.19-18 Comment Summary: No EIS Prepared

Commentors asked why the Iroquois/Tennessee Project should be approved for construction when no environmental impact studies have been provided.

Response:

The commentors are responding to a Federal EIS process pursuant to the National Environmental Policy Act. No response necessary.

3.19-19 Comment Summary: General Concern Over Impact

Several commentors raised concerns on a broad range of topics, which included nonspecific impact, but generally were in opposition to the proposed project.

Response:

No response necessary to nonspecific comments. All comments that identified specific topics or general issues on specific topics received a response. Opposition to the Iroquois/Tennessee Project is noted.

3.19-20 Comment Summary: Opposed to Project

Numerous commentors opposed the proposed Iroquois/Tennessee Project for a variety of reasons that could not be categorized by topic.

Response:

These letters of opposition are noted for the record.

3.19-21 Comment Summary: Support for Project

Several letters of comment were received that support the Iroquois/Tennessee Project for a variety of reasons such as jobs and gas supply.

Response:

These notices of support are noted for the record.

3.19-22 Comment Summary: SCS Comment

The SCS in Tennessee indicated they have no comment on the project.

Response:

Thank you for your comment.

3.19-23 Comment Summary Forest Land and Commercial Forest Stand Clarification

The NYSTF identified two statements in section 4.1.6 that required correction. These were in reference to commercial forest lands and commercial maple stands.

Response:

Comment noted. Section 4.1.6 has been modified as indicated in the comment.

APPENDIX A

PIPELINE ROUTE/NONJURISDICTIONAL FACILITIES LOCATION MAPS

APPENDIX A

MAP INDEX

FIGURE NO.	FIGURE TITLE
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A-2	Key Map - Tennessee Pipeline Facilities - Sheets 1 and 2
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FIGURE A-1

Iroquois Mainline

Key Map

SCALE : 1 : 1,500,000

SHEET 1 of 1

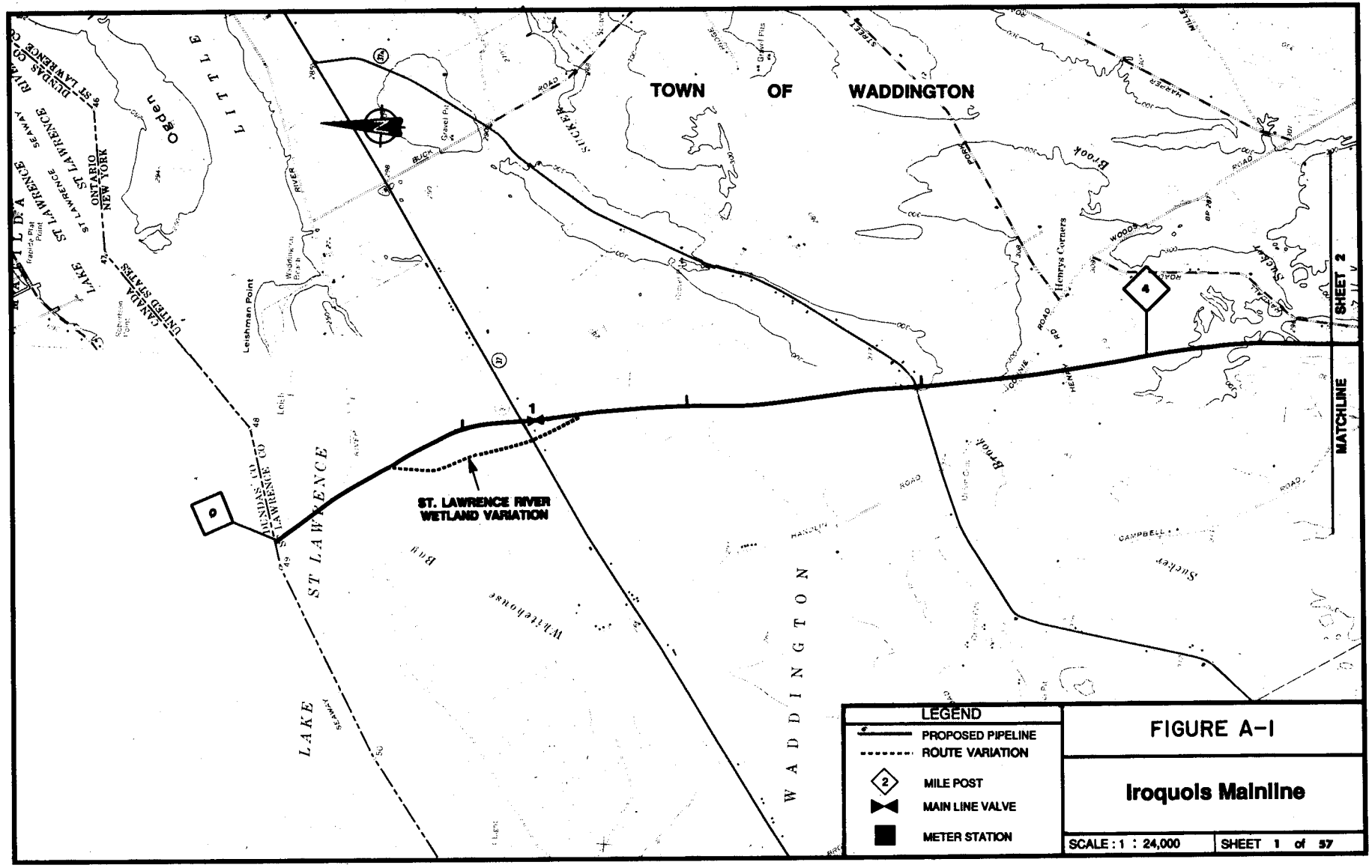


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 1 of 57

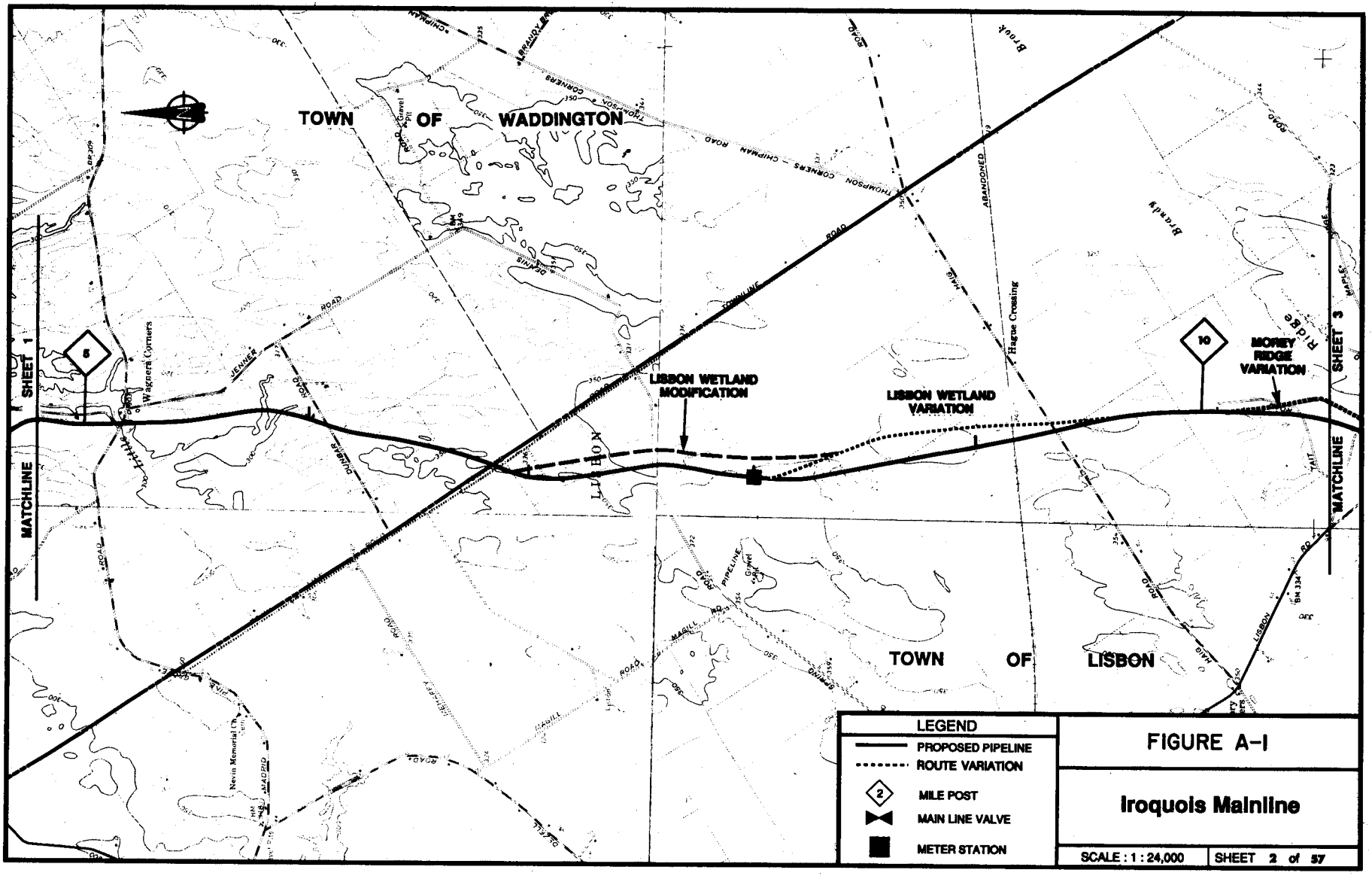
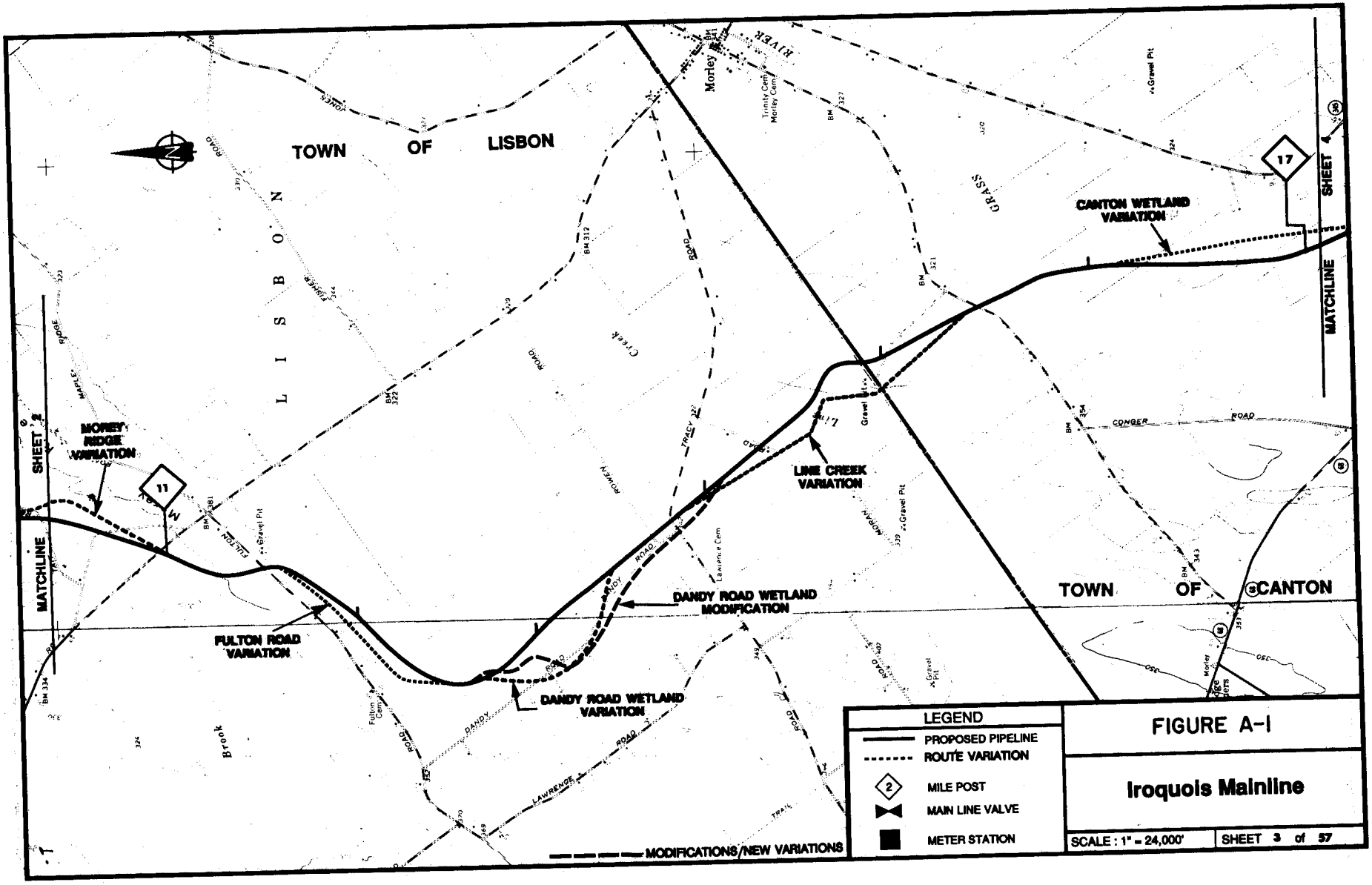


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 2 of 57


TOWN OF LISBON
TOWN OF CANTON
MATCHLINE
SHEET 2
SHEET 4
MONEY RIDGE VARIATION
FULTON ROAD VARIATION
DANDY ROAD WETLAND MODIFICATION
DANDY ROAD WETLAND VARIATION
LINE CREEK VARIATION
CANTON WETLAND VARIATION
11
17
Morley
Gravel Pit
CONGER ROAD
TRACY ROAD
DANDY ROAD
LAWRENCE ROAD
MODIFICATIONS/NEW VARIATIONS
LEGEND
PROPOSED PIPELINE
ROUTE VARIATION
MILE POST
MAIN LINE VALVE
METER STATION
FIGURE A-I
Iroquois Mainline
SCALE : 1" = 24,000'
SHEET 3 of 57

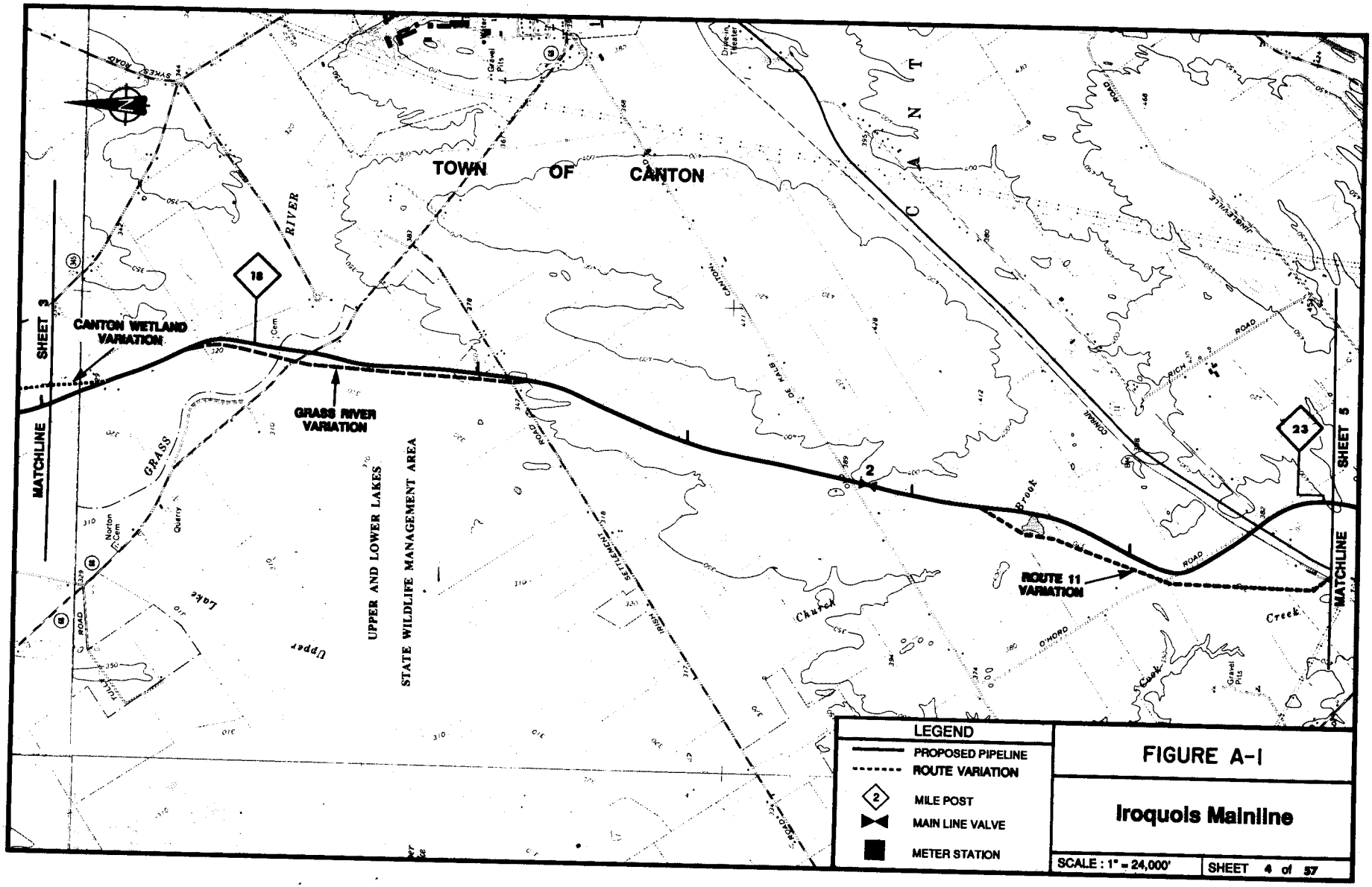
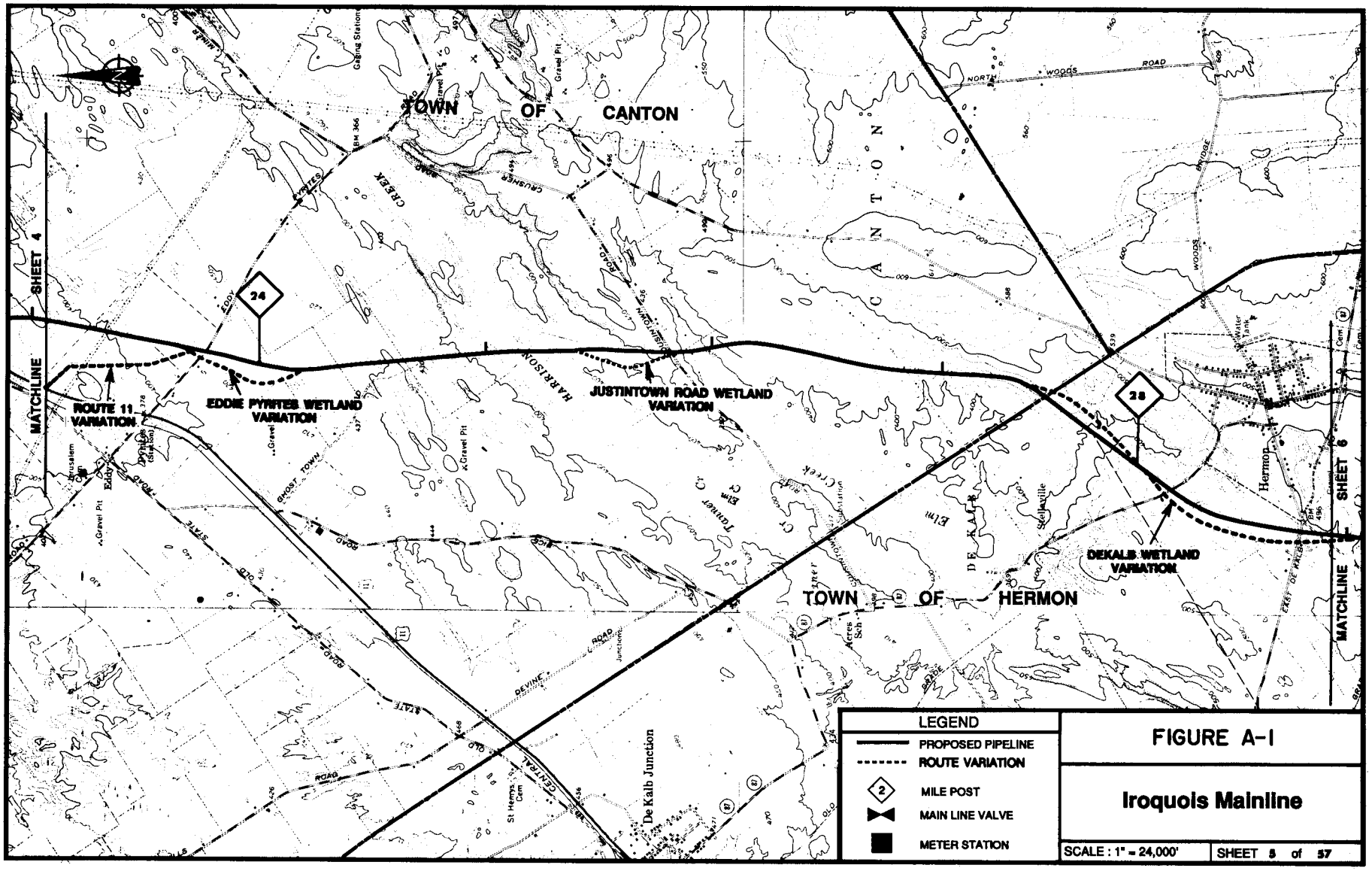


FIGURE A-1

Iroquois Mainline

SCALE : 1" = 24,000'

SHEET 4 of 57


TOWN OF CANTON
TOWN OF HERMON
MATCHLINE SHEET 4
MATCHLINE SHEET 6
ROUTE 11 VARIATION
EDDIE PYRITES WETLAND VARIATION
JUSTINTOWN ROAD WETLAND VARIATION
DEKALB WETLAND VARIATION
24
28
Eddy
Jerusalem
Philips (Station)
Gravel Pit
Gaging Station
Hermon
Selkville
De Kalb Junction
St Henry's Cem
Acres Sch
Water Tank
Cem
NORTH WOODS ROAD
WOODS BRIDGE
GHOST TOWN ROAD
STATE ROAD
OLD STATE ROAD
DEVINE ROAD
CENTRAL
HARRISON
CRUSHER
CREEK
Elm
Farmer Cr
Elm Creek
DE KALB
EAST OF KALB
LEGEND
PROPOSED PIPELINE
ROUTE VARIATION
MILE POST
MAIN LINE VALVE
METER STATION
FIGURE A-1
Iroquois Mainline
SCALE : 1" = 24,000'
SHEET 5 of 57

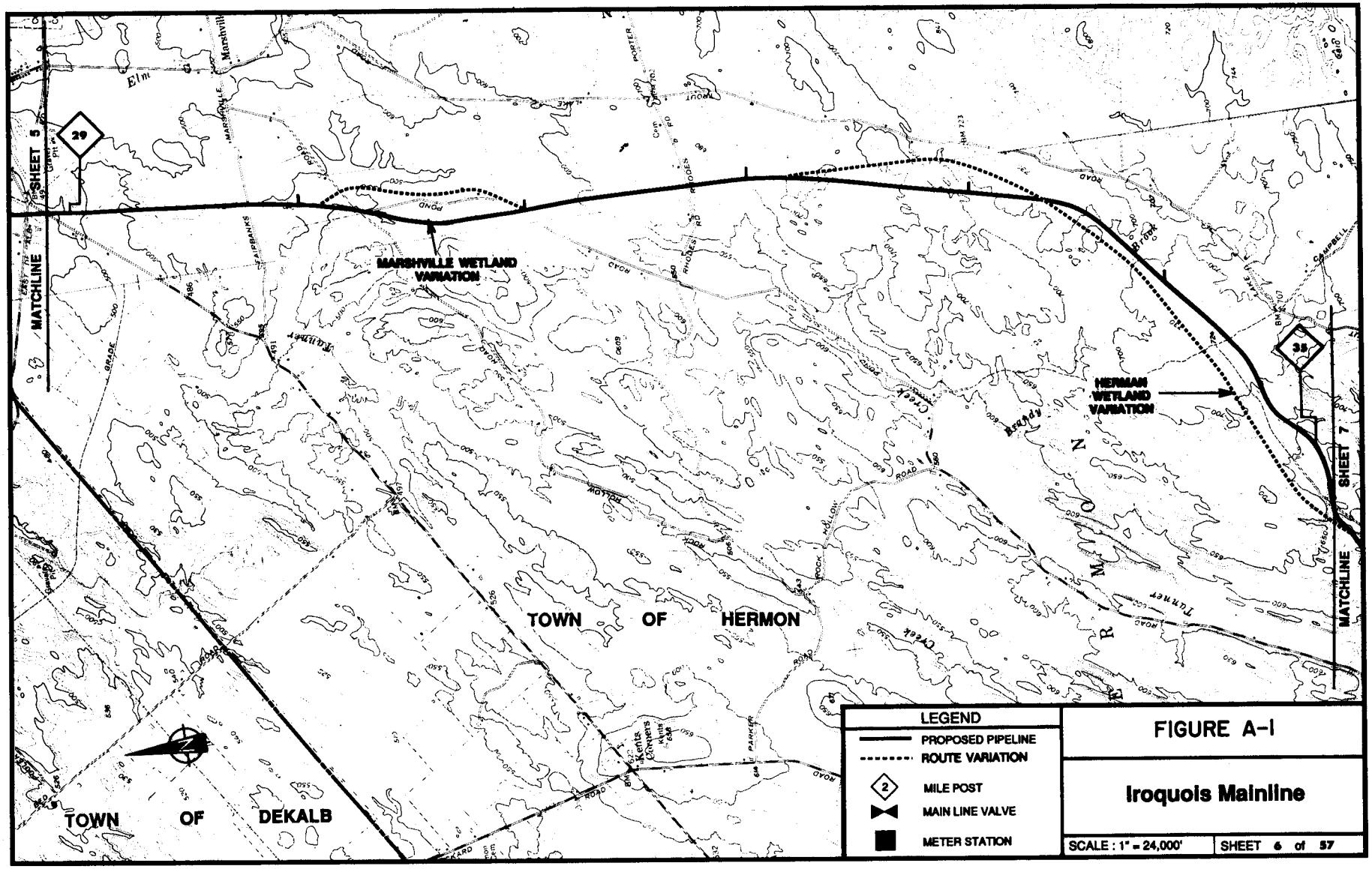


FIGURE A-1

Iroquois Mainline

SCALE : 1" = 24,000'

SHEET 6 of 57

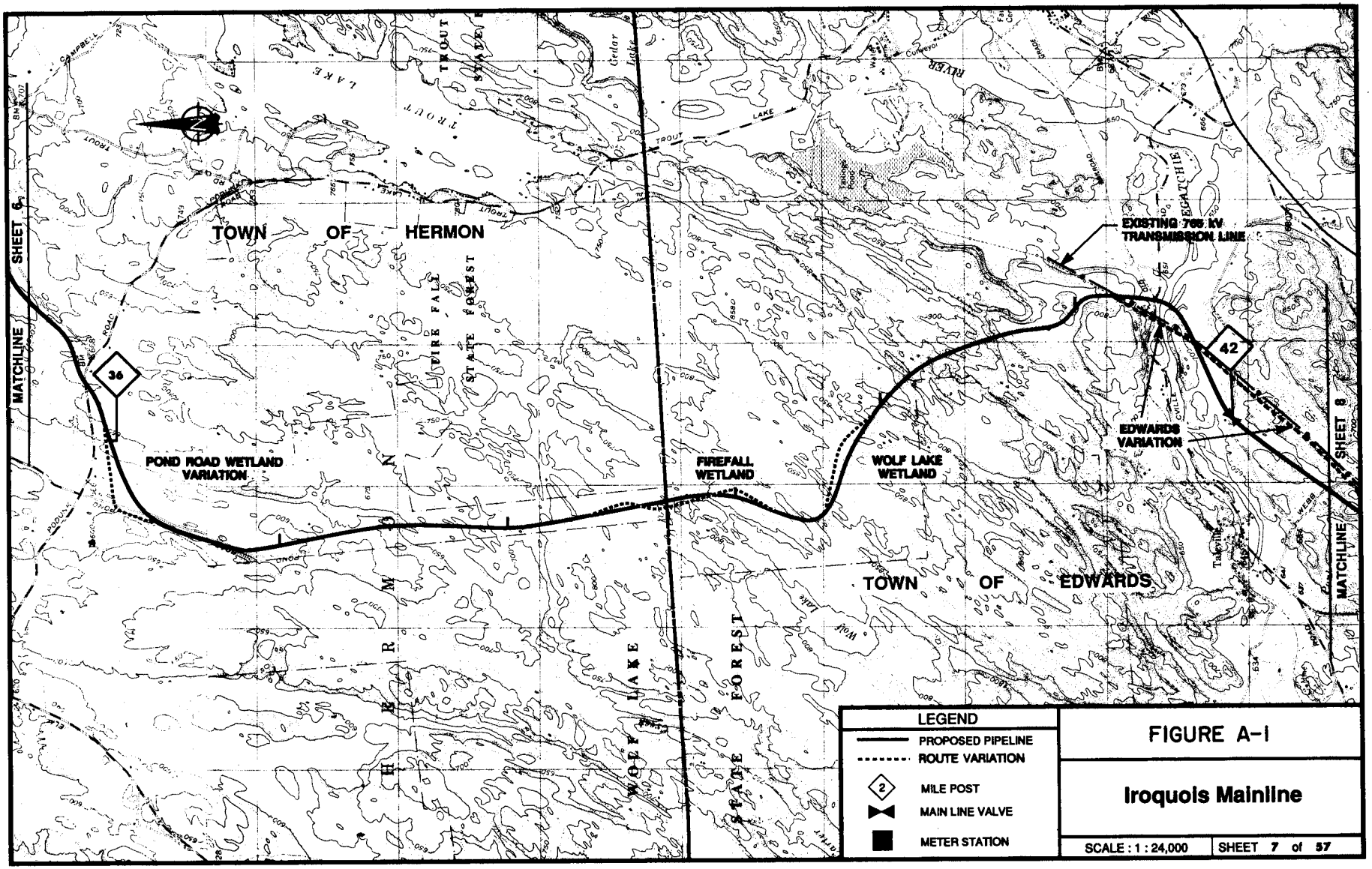


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 7 of 57

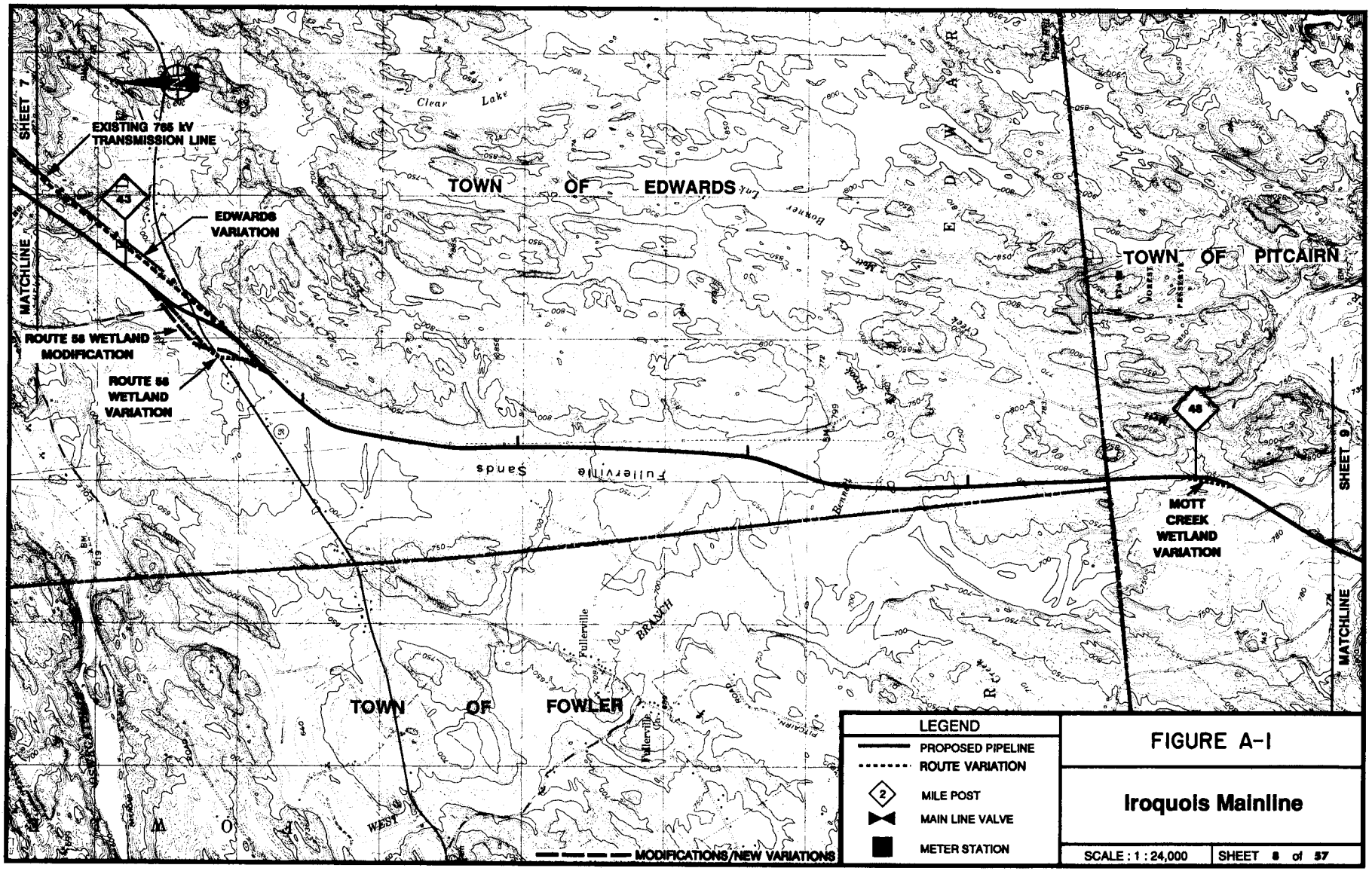


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 8 of 57

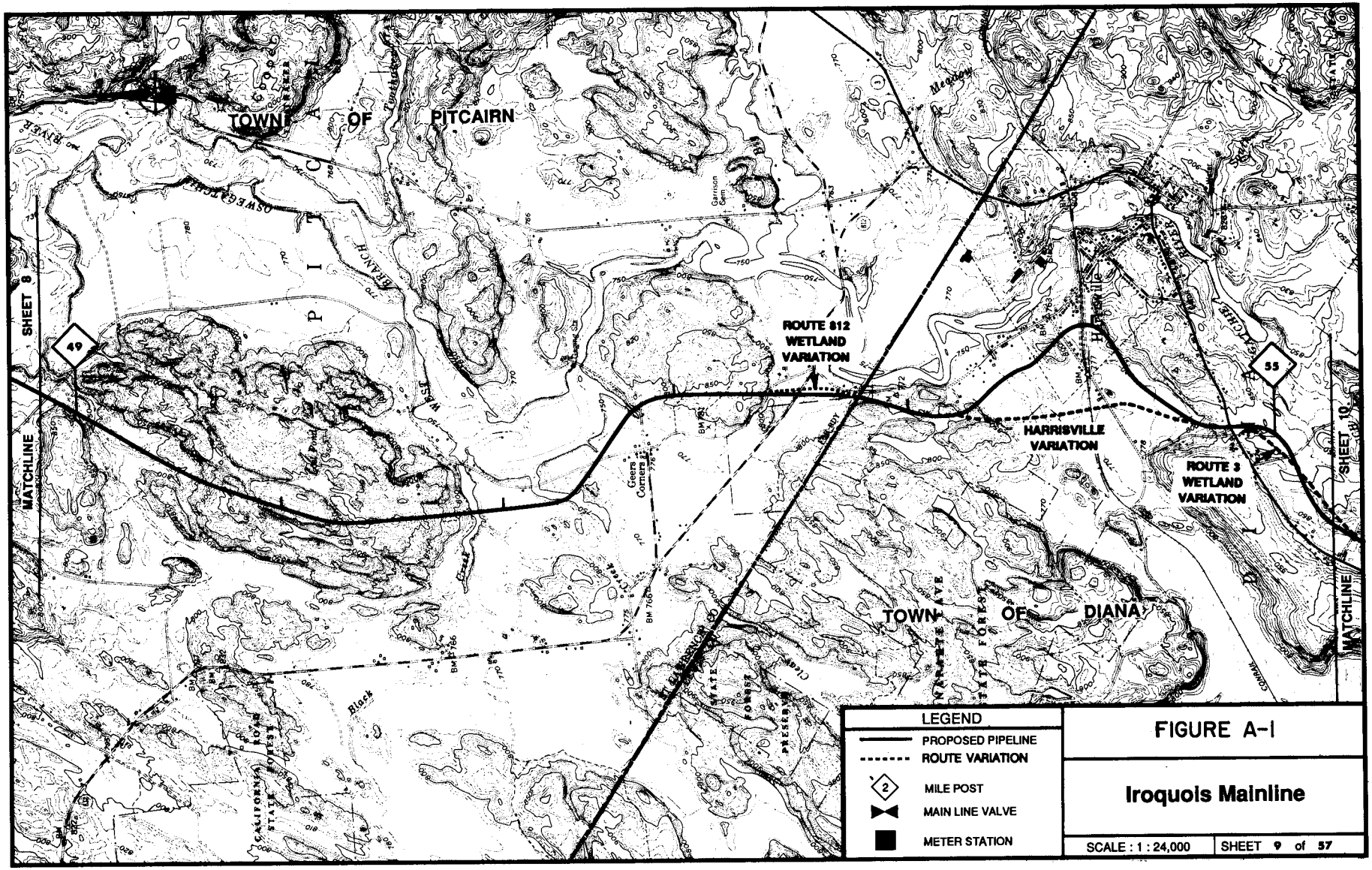


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 9 of 57

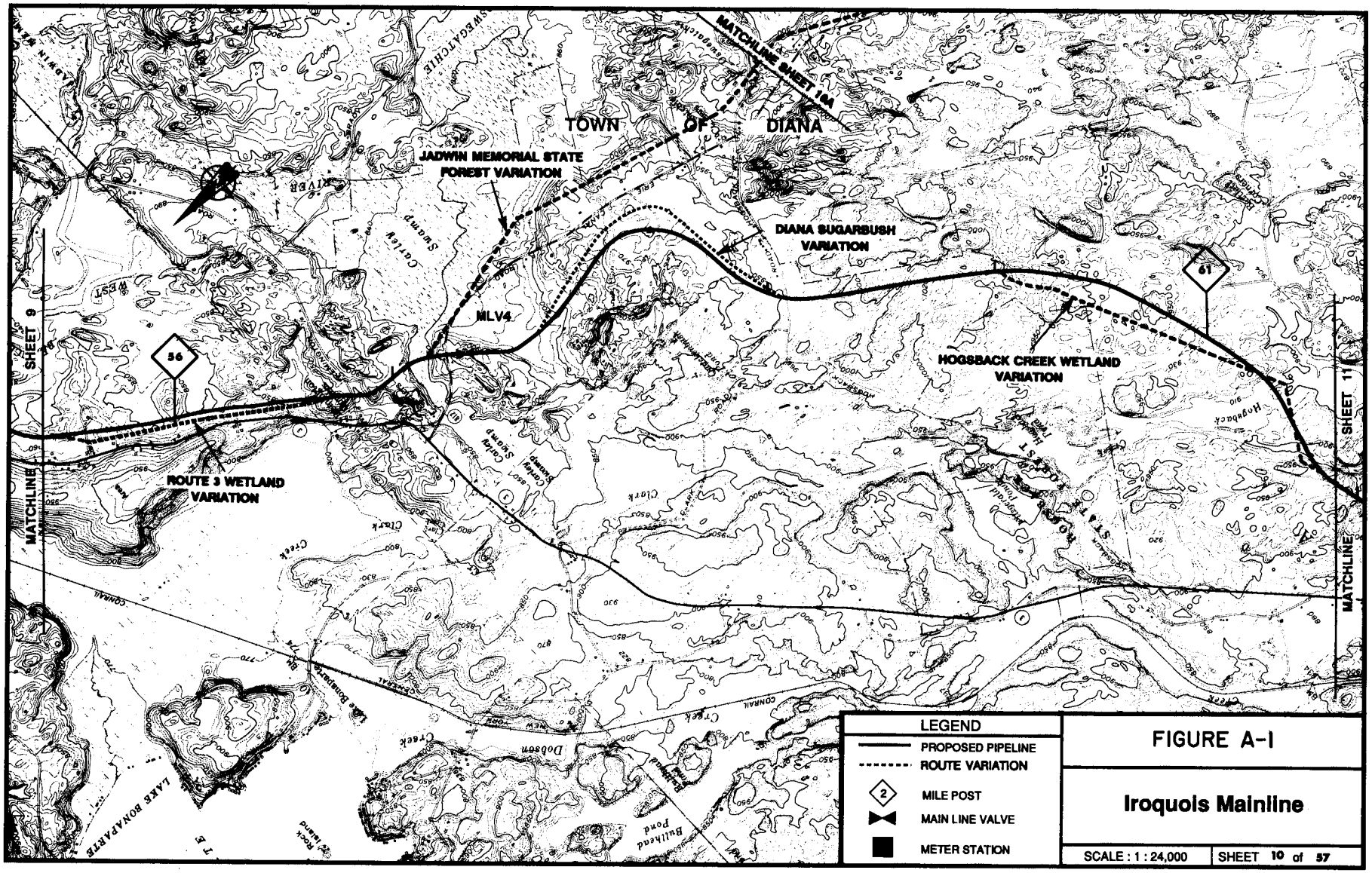


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 10 of 57

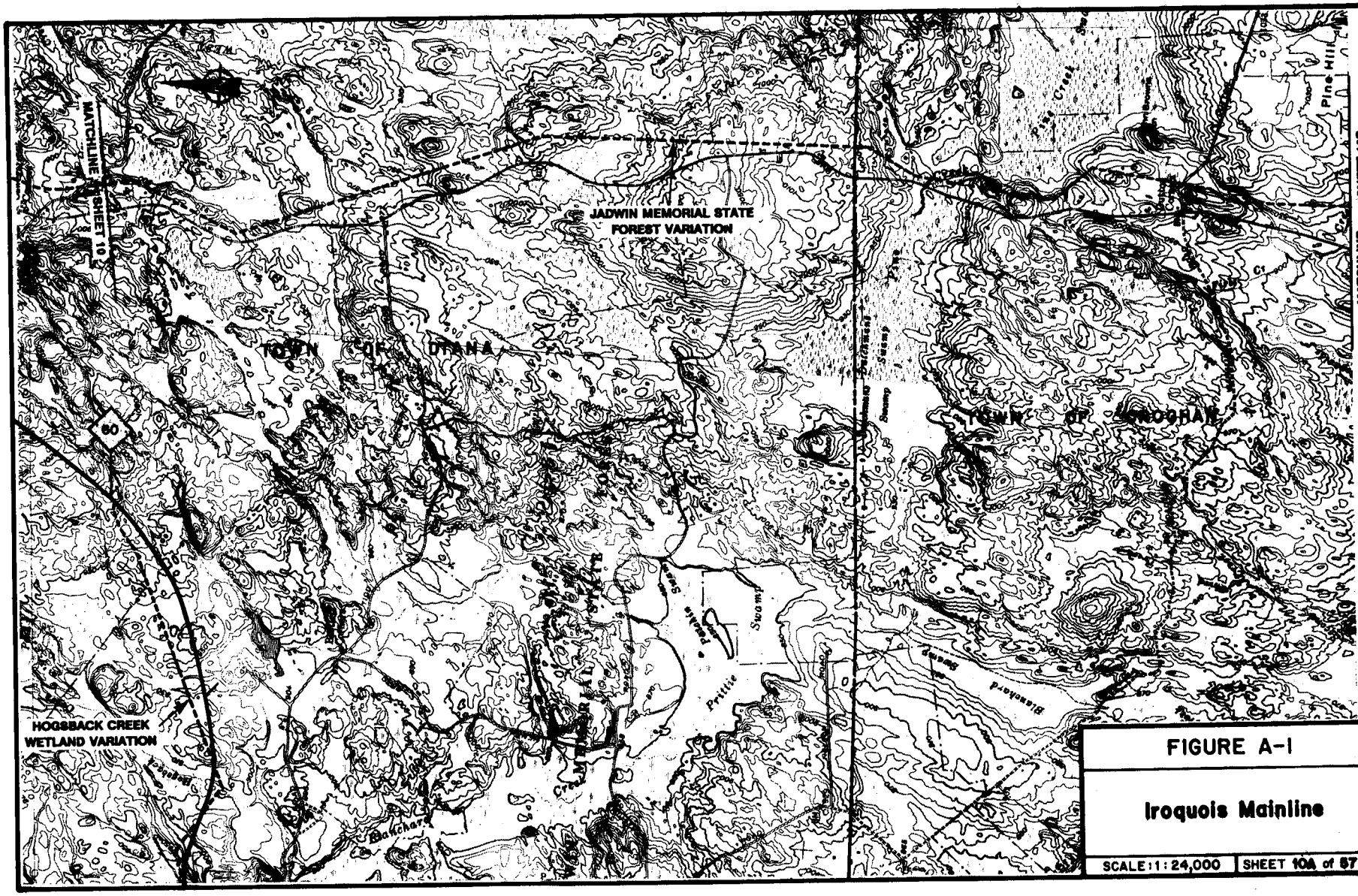


FIGURE A-1

Iroquois Mainline

SCALE: 1:24,000 | SHEET 10A of 87

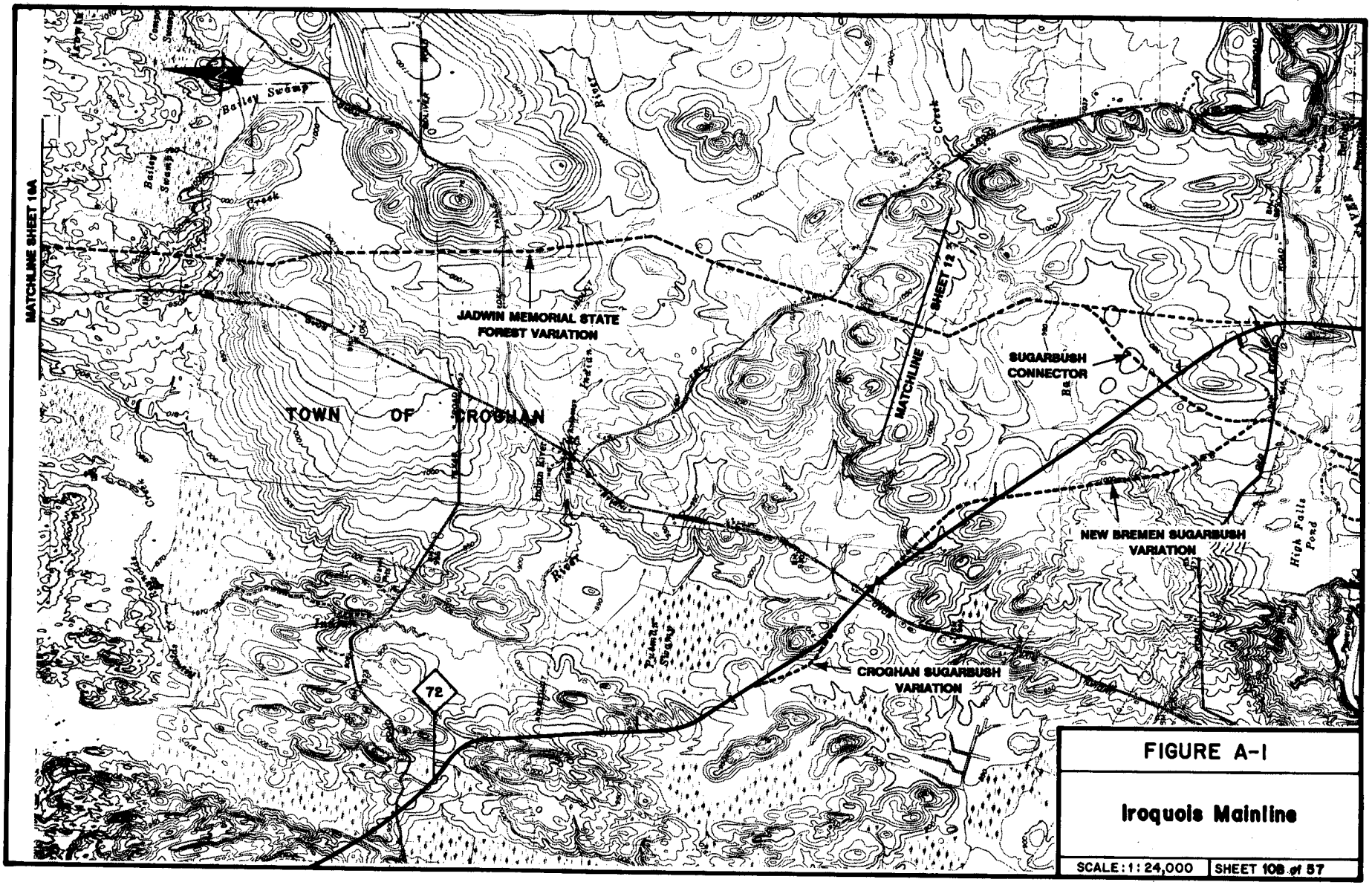


FIGURE A-1

Iroquois Mainline

SCALE: 1:24,000 | SHEET 10B of 57

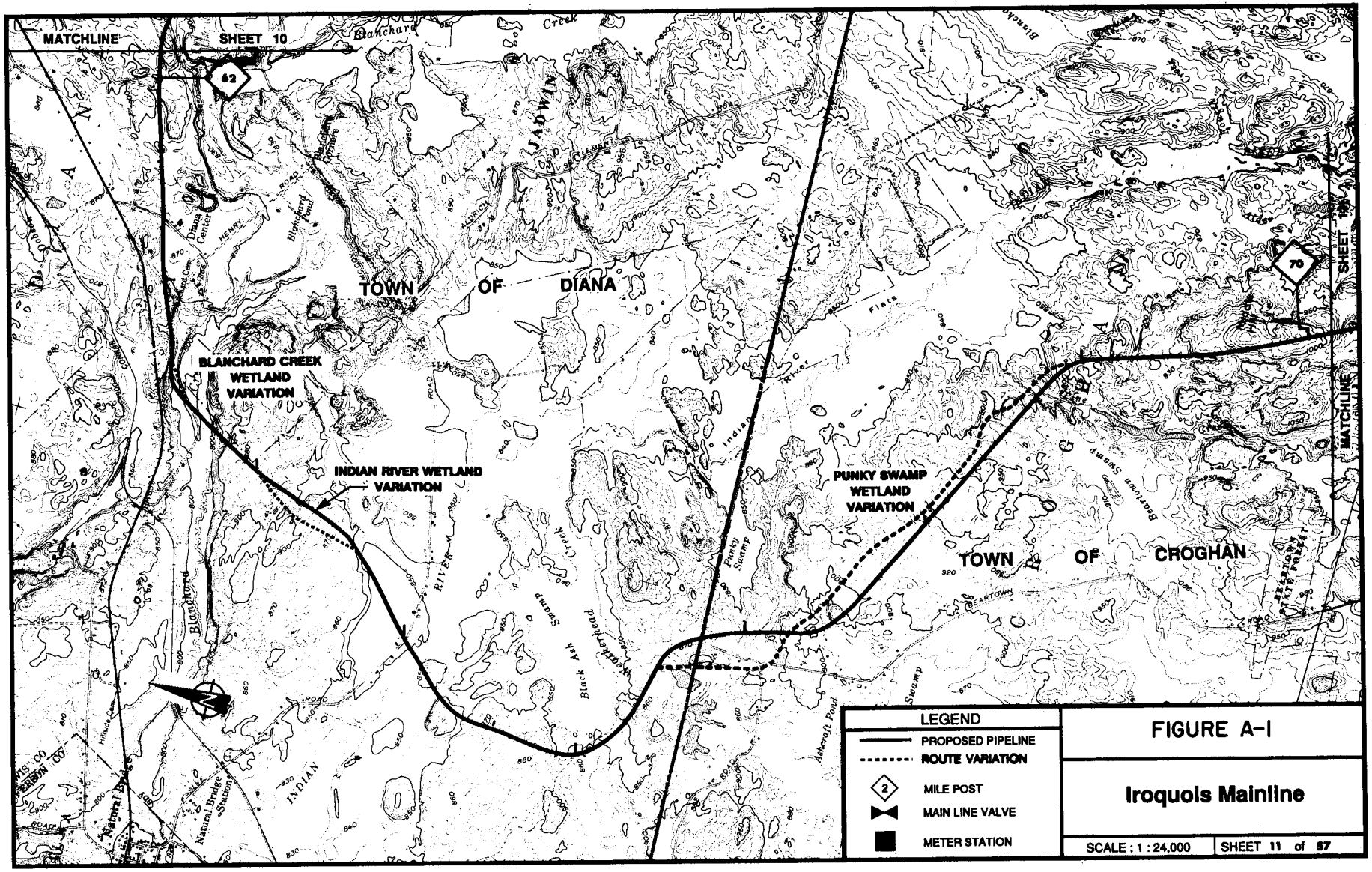


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 11 of 57

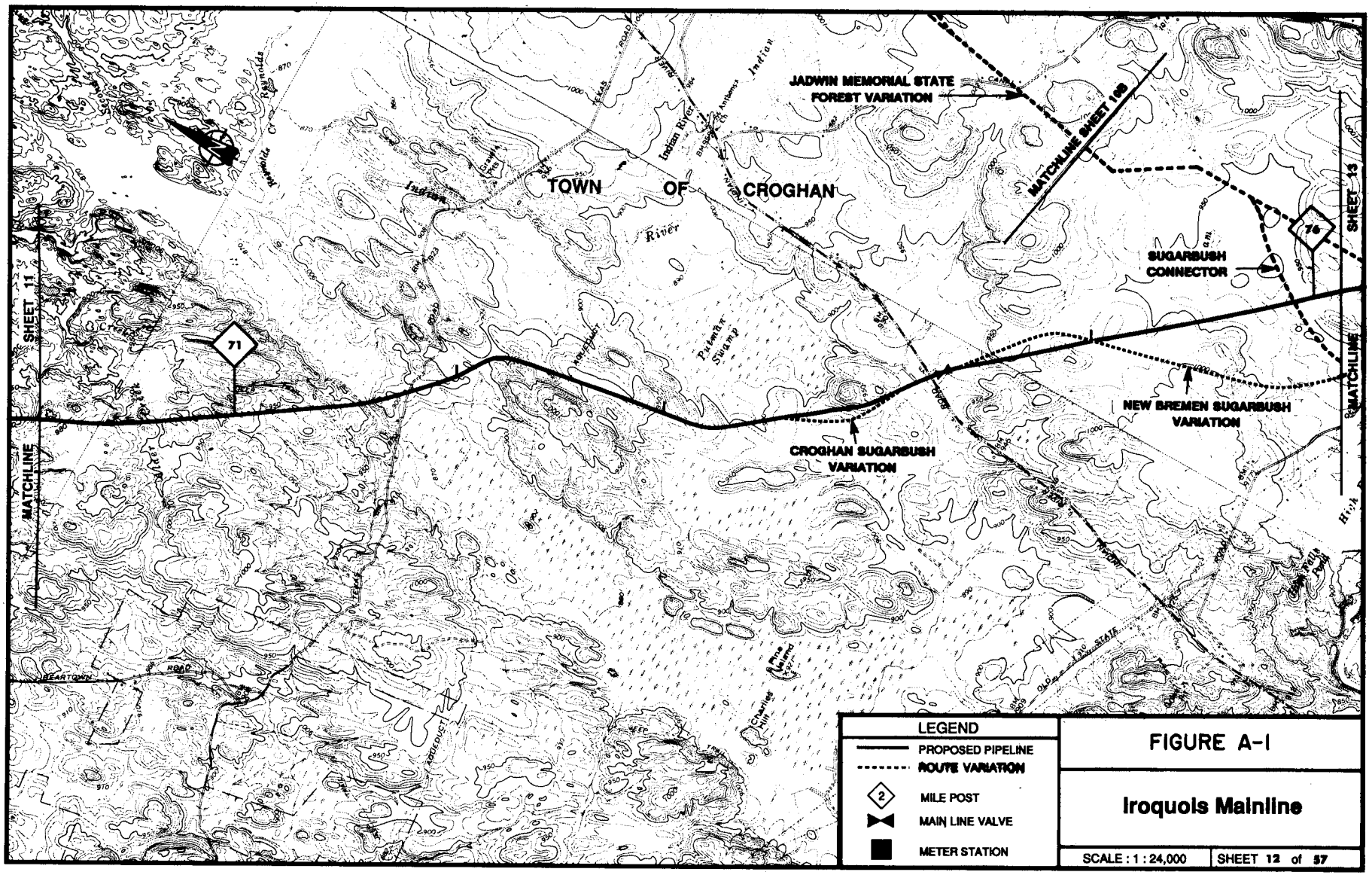
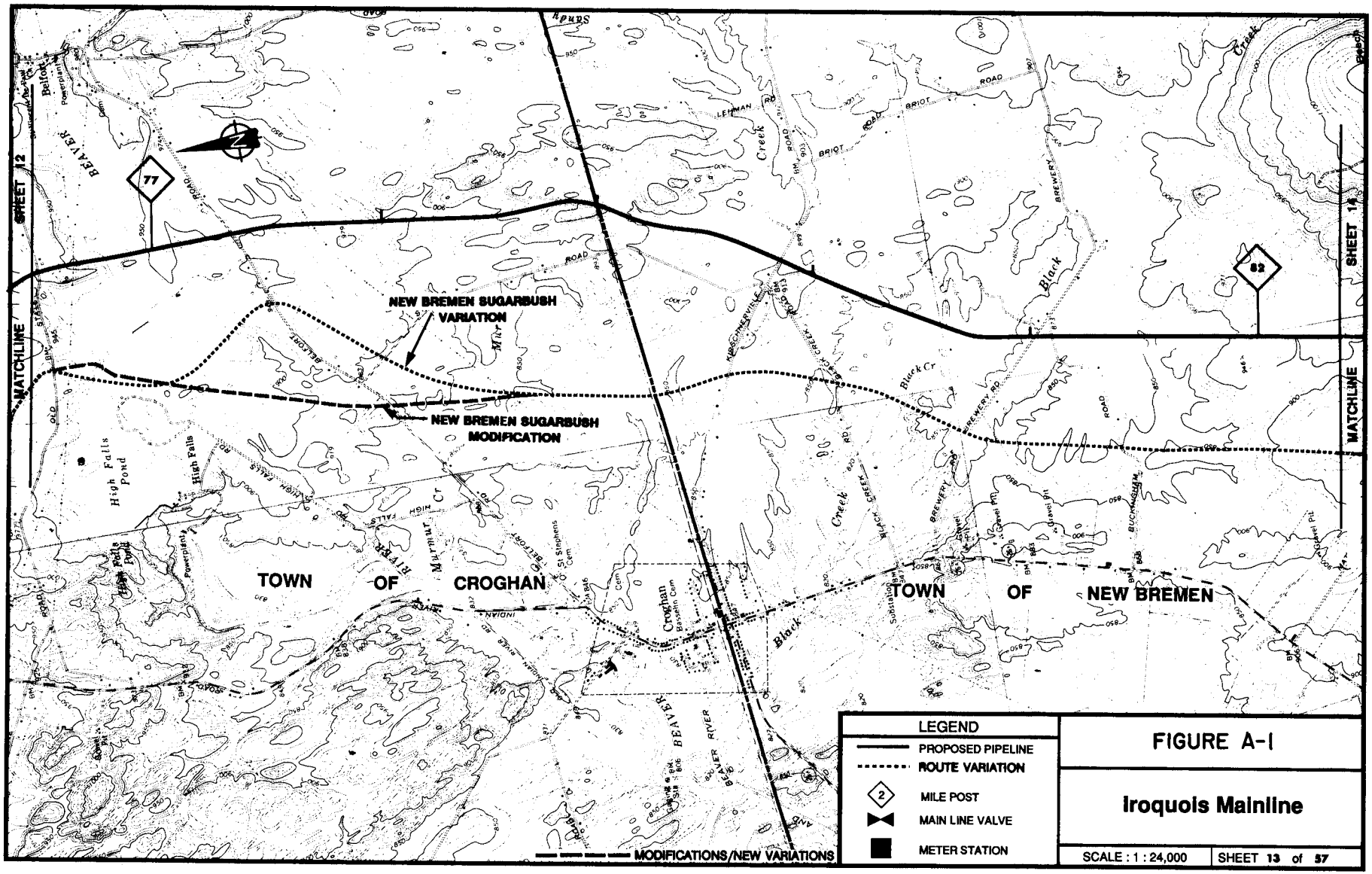


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 12 of 57



LEGEND	
PROPOSED PIPELINE	
ROUTE VARIATION	
MILE POST	
MAIN LINE VALVE	
METER STATION	

FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 13 of 57

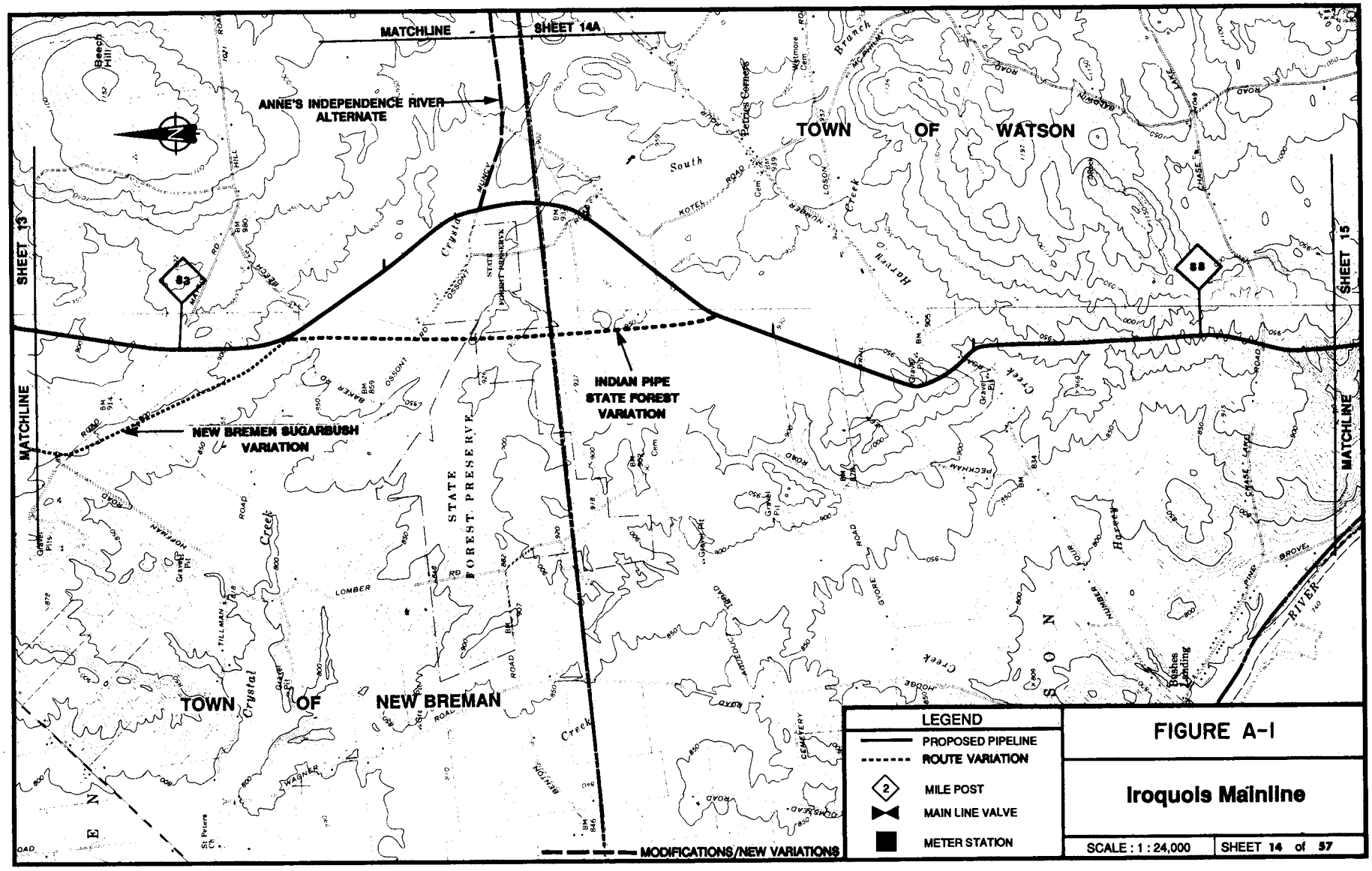


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 14 of 57

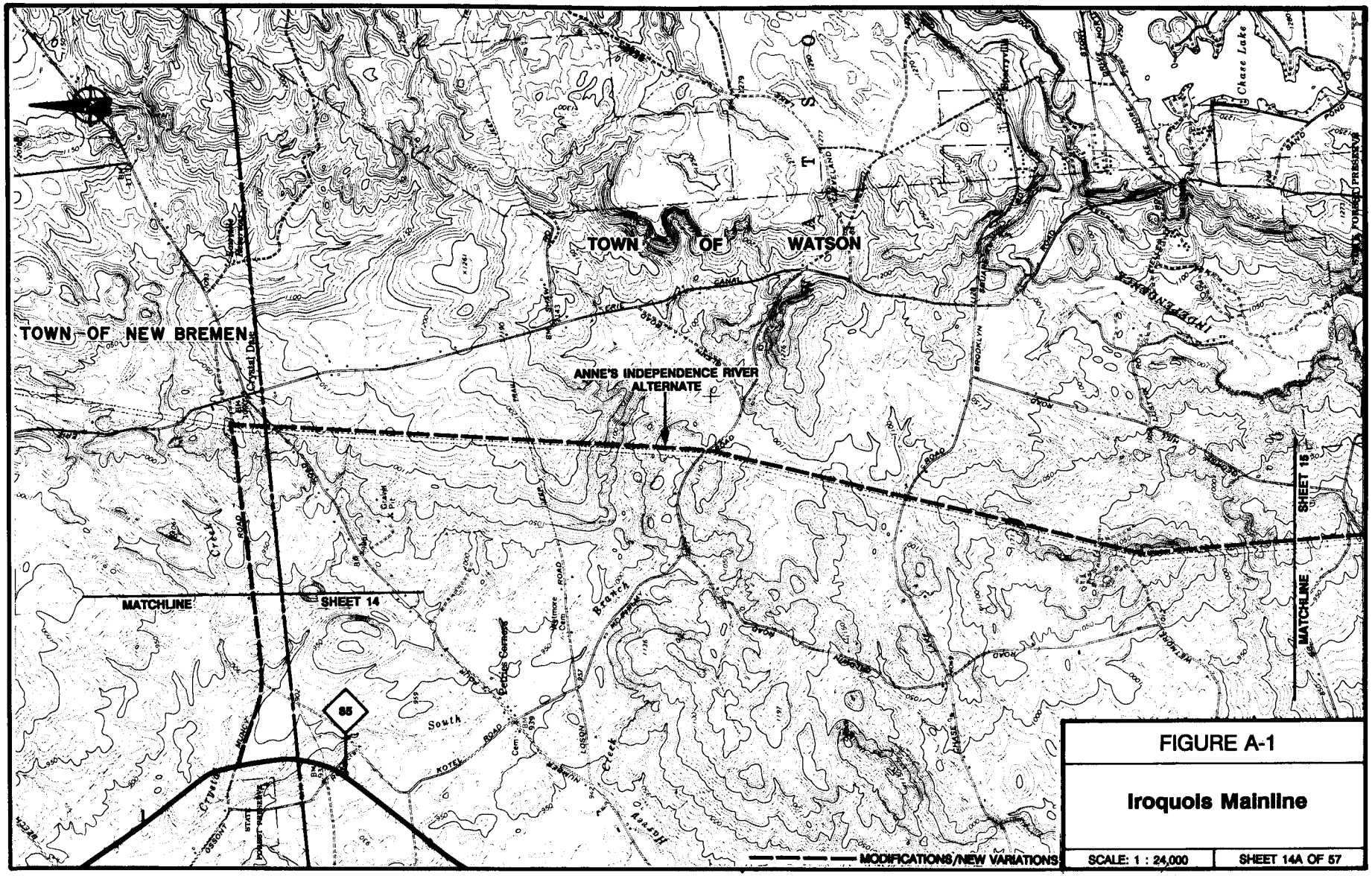
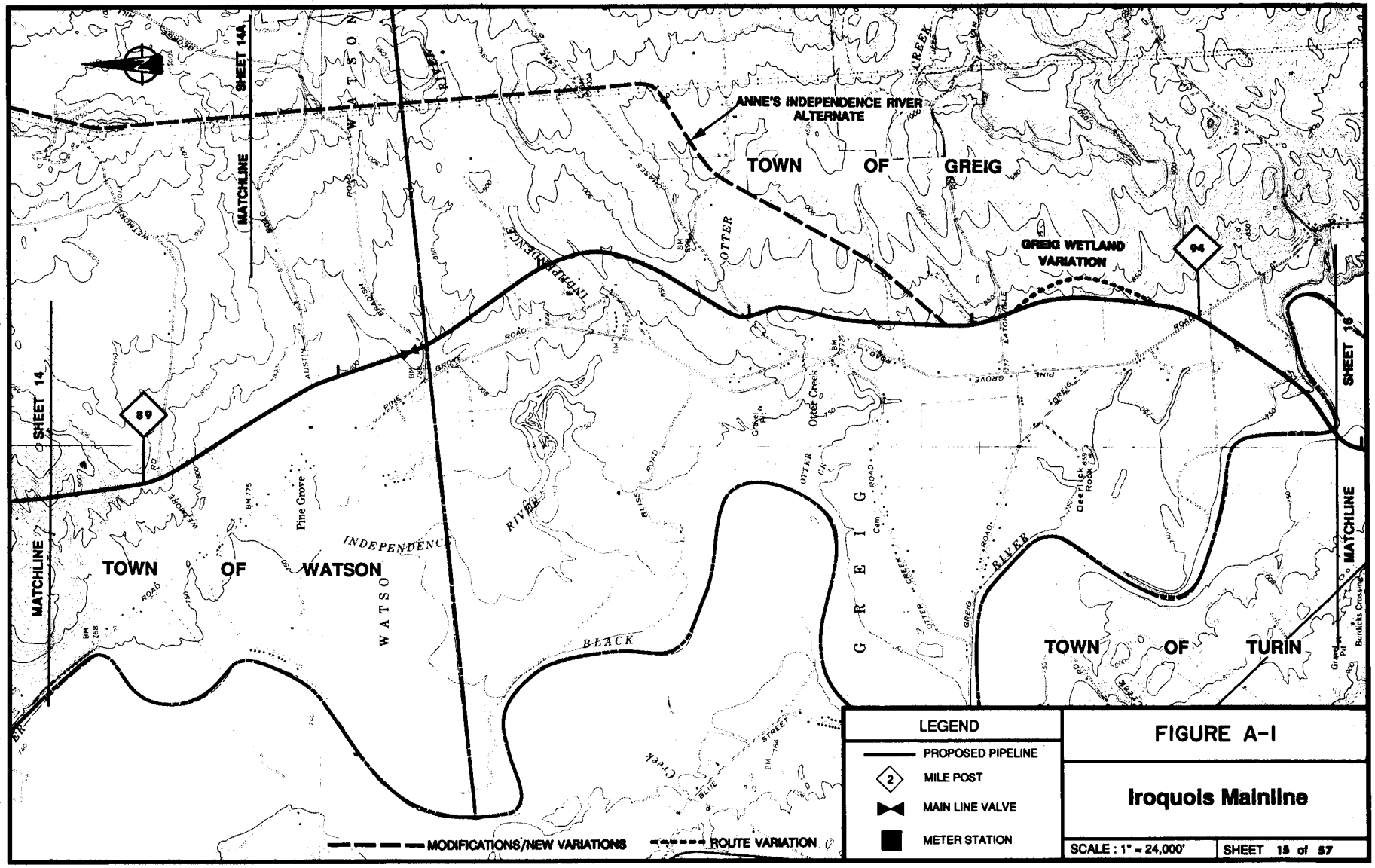


FIGURE A-1

Iroquois Mainline

SCALE: 1 : 24,000 | SHEET 14A OF 57



LEGEND	FIGURE A-I
PROPOSED PIPELINE	Iroquois Mainline
MILE POST	
MAIN LINE VALVE	
METER STATION	SCALE : 1" = 24,000' / SHEET 15 of 57

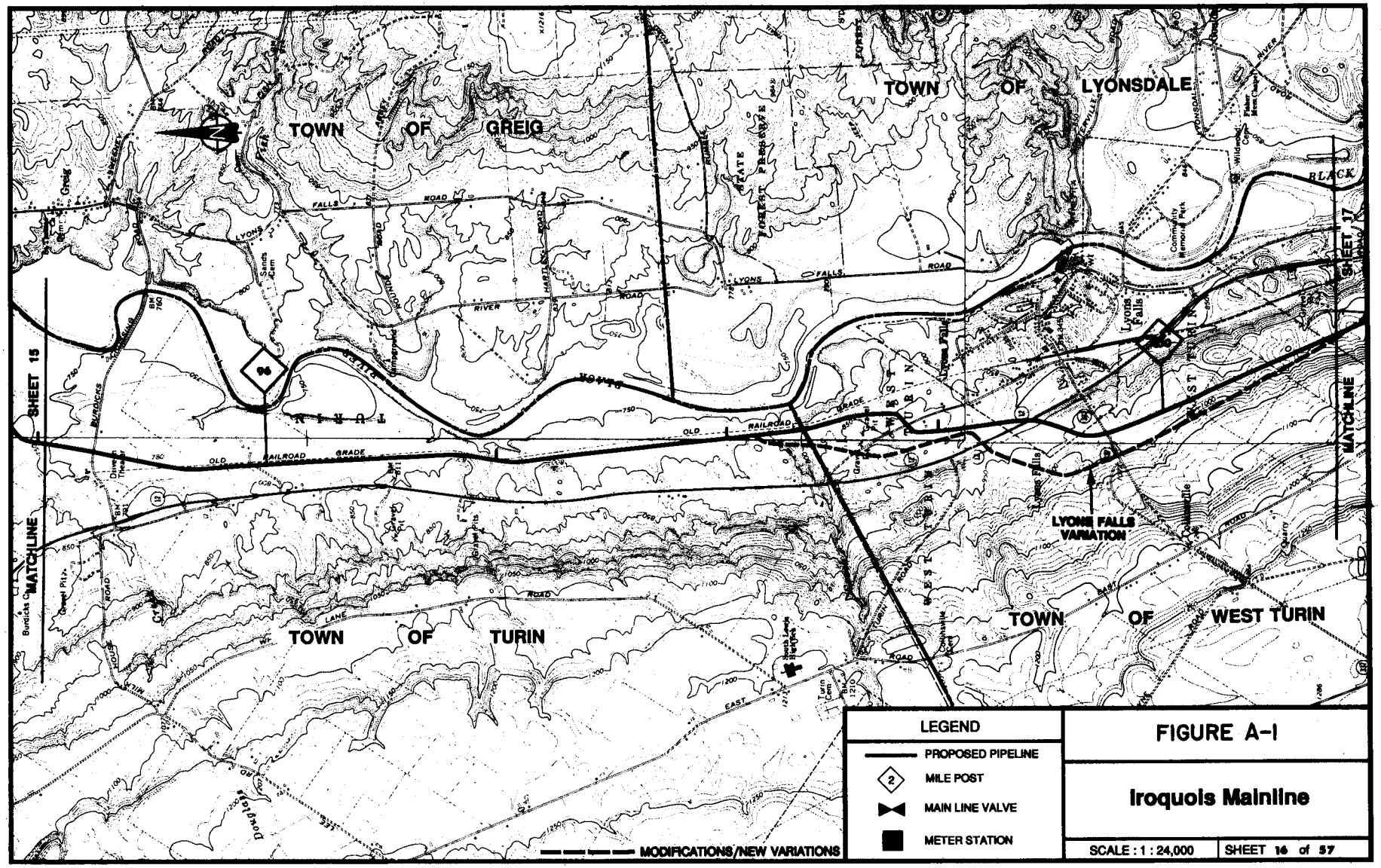


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 16 of 57

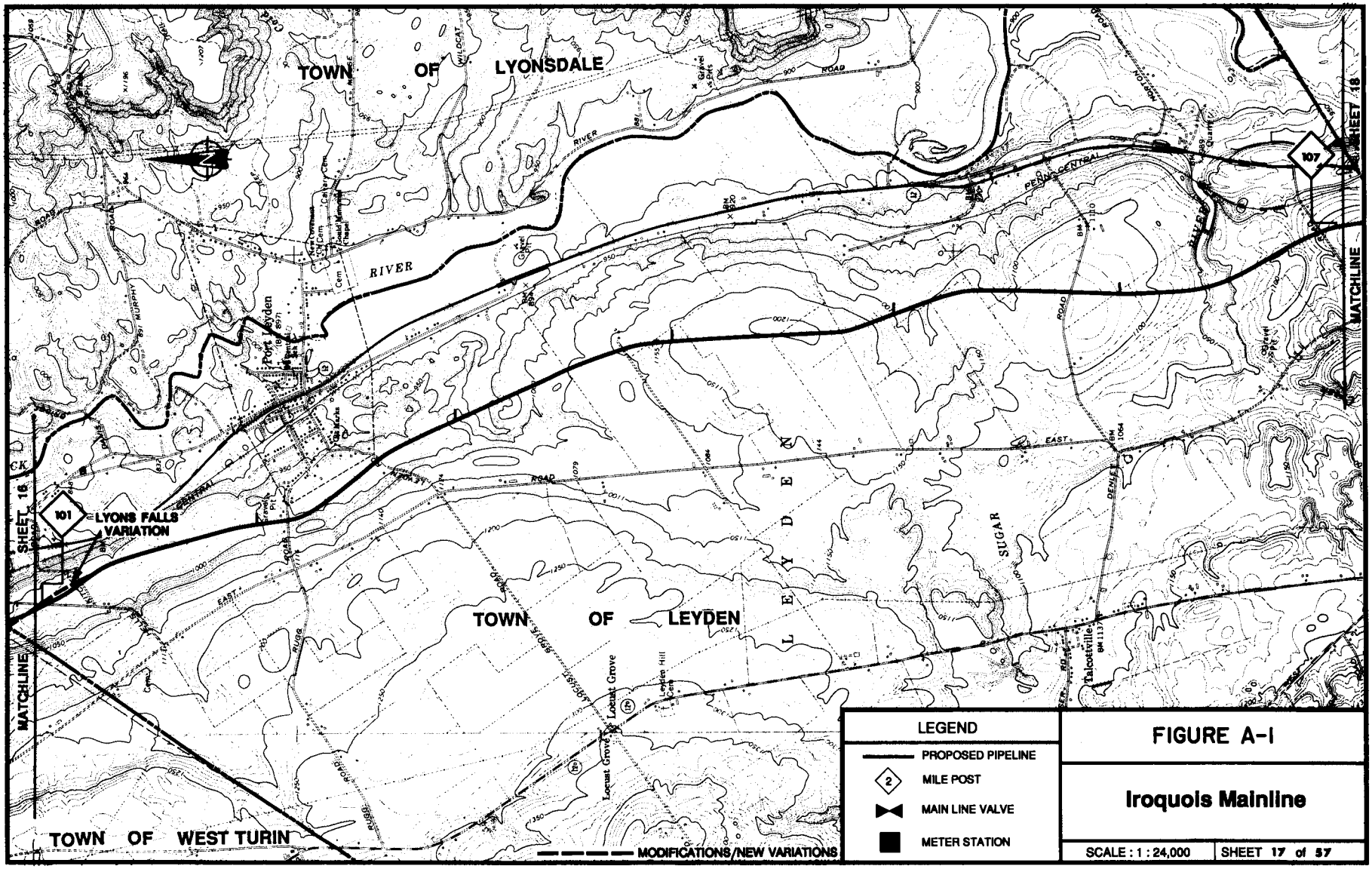


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 17 of 57

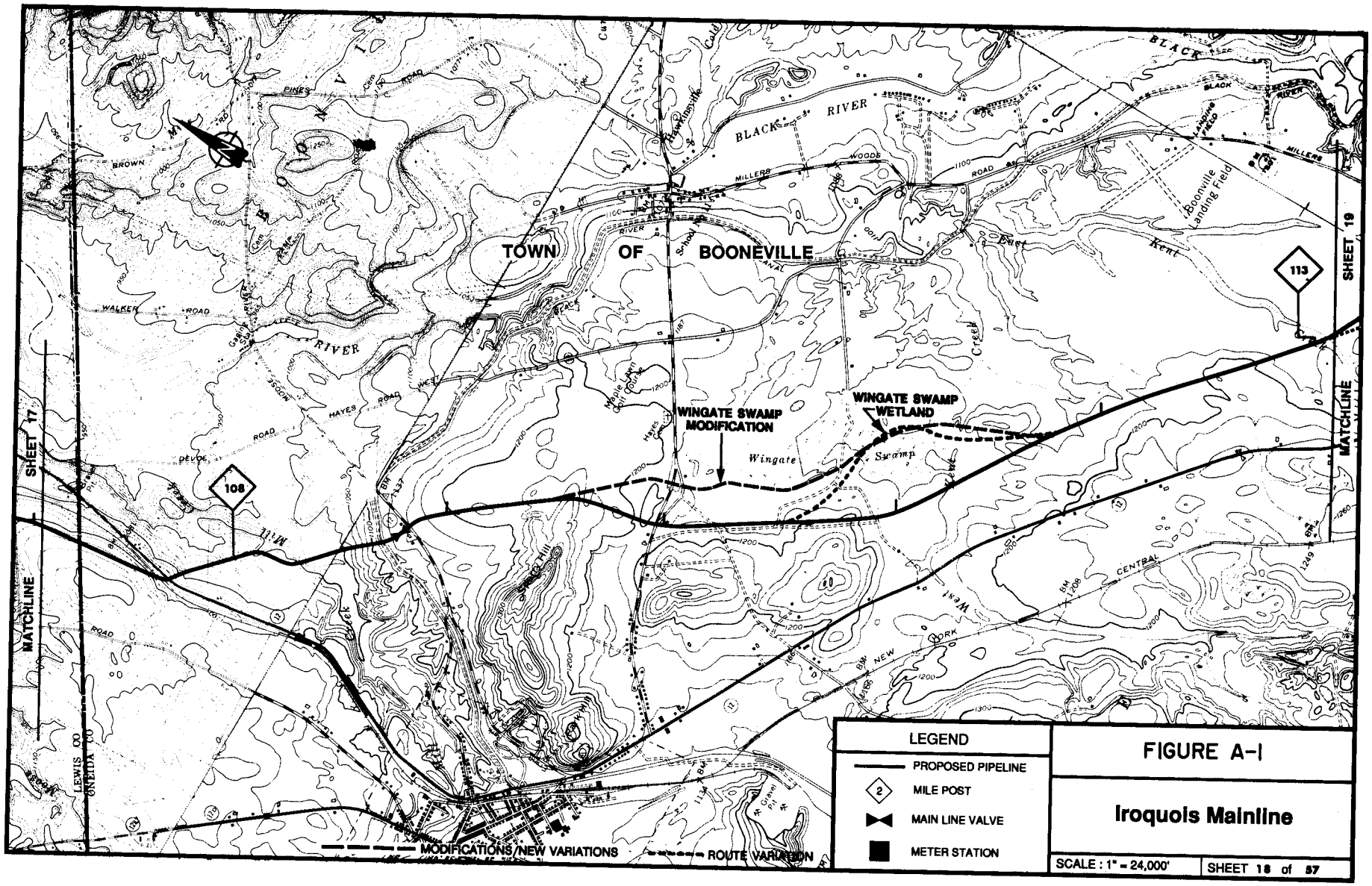


FIGURE A-I

Iroquois Mainline

SCALE : 1" = 24,000'

SHEET 18 of 57

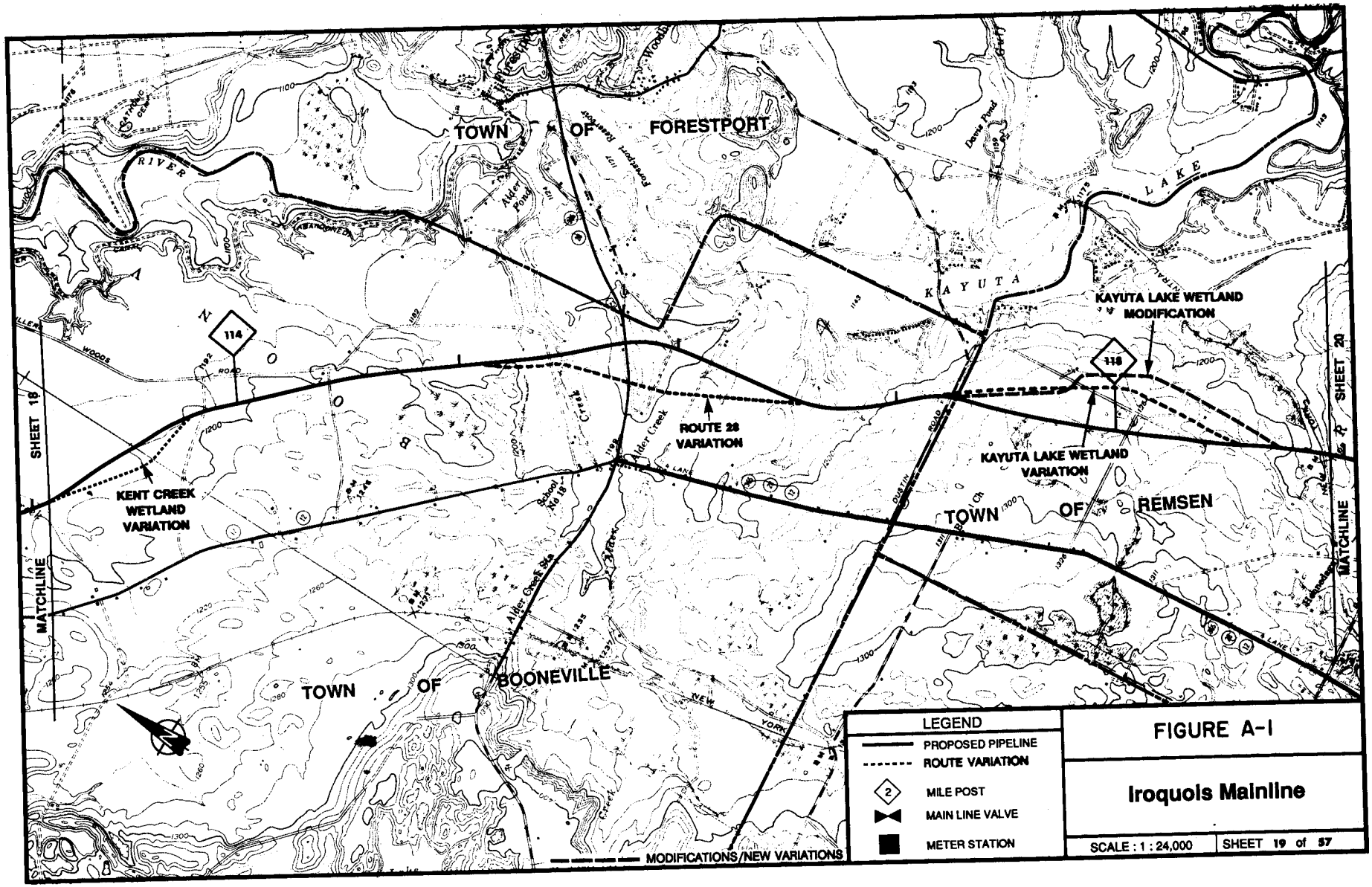


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 19 of 57

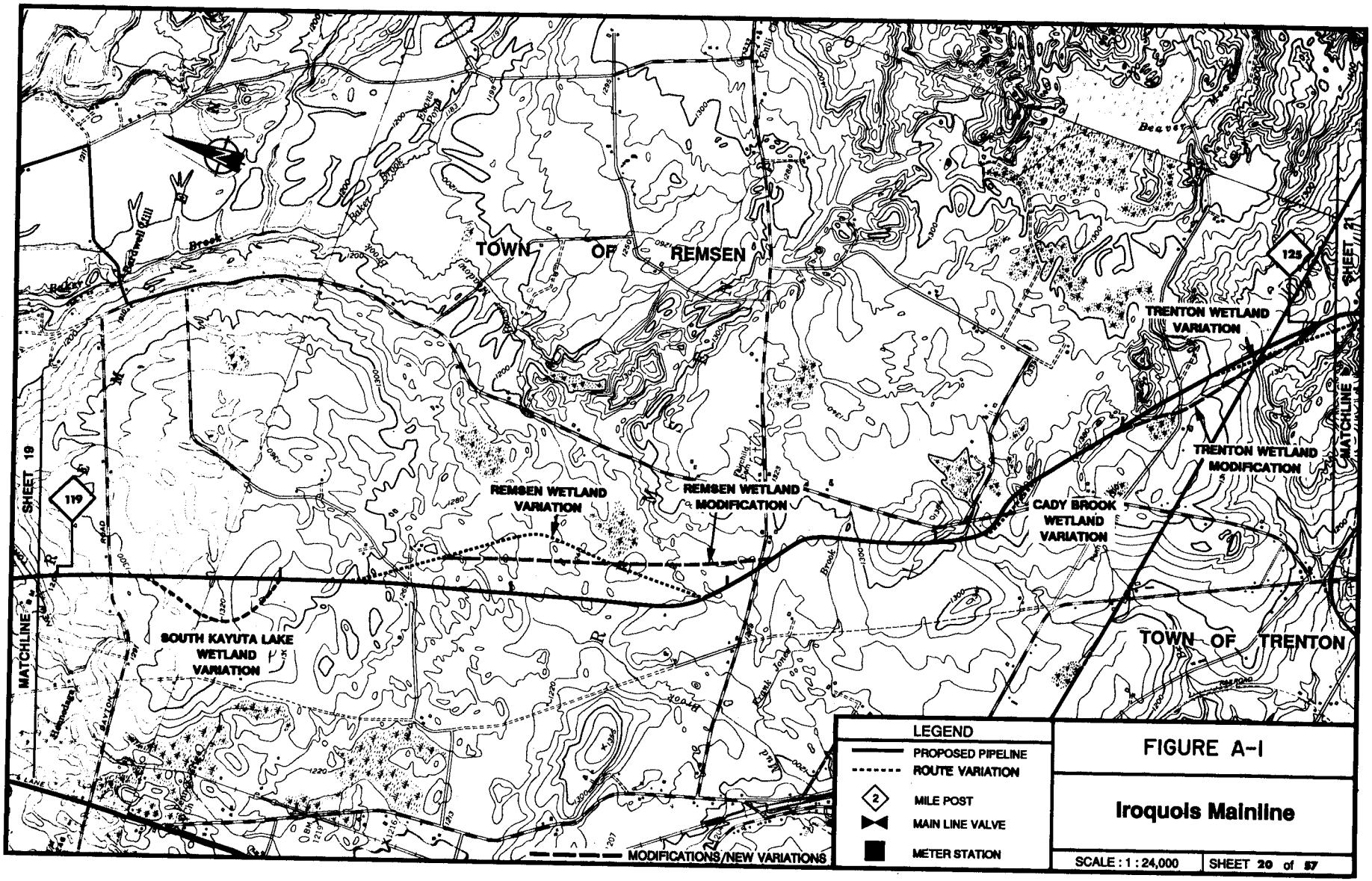


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 20 of 57

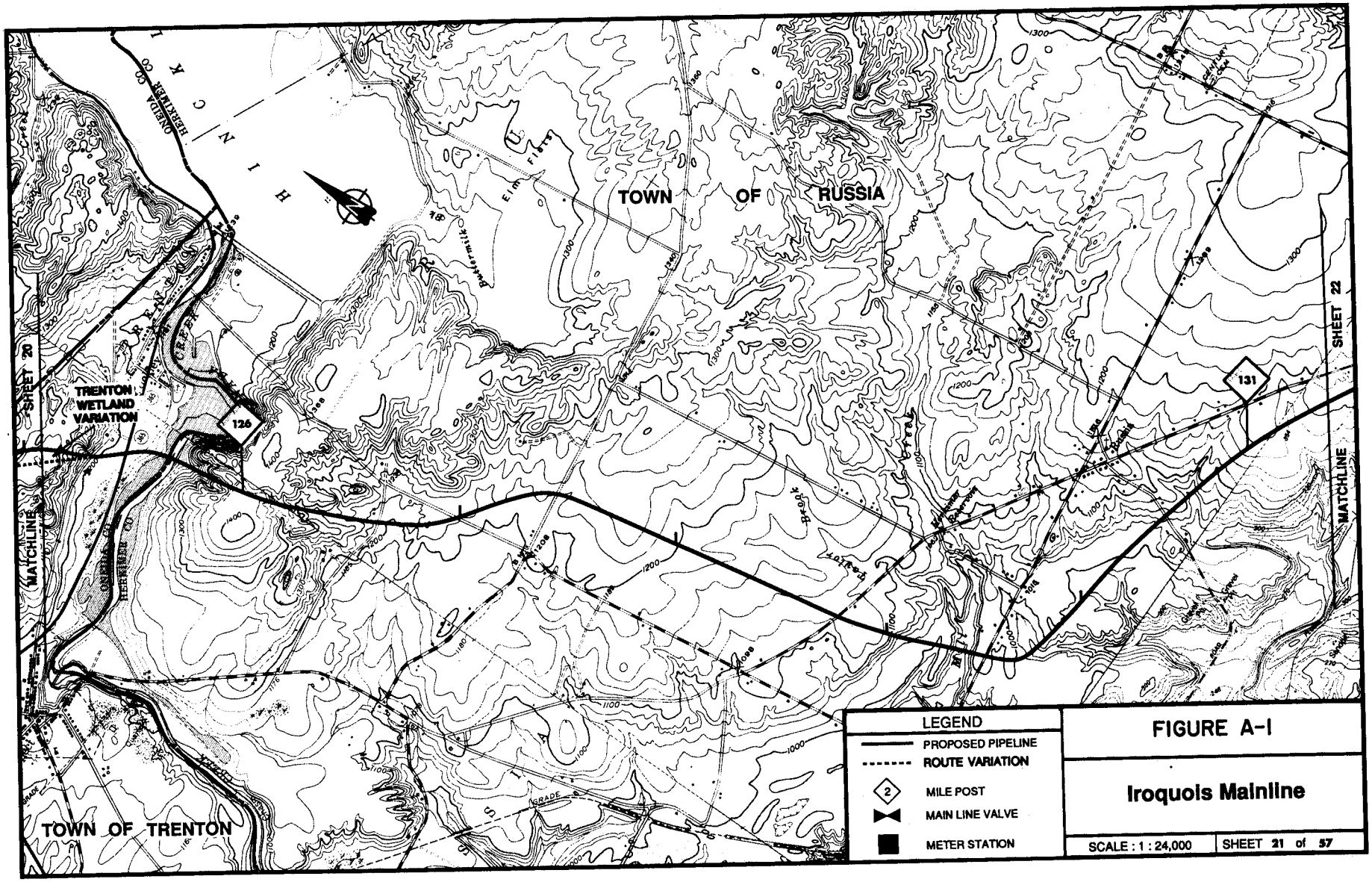
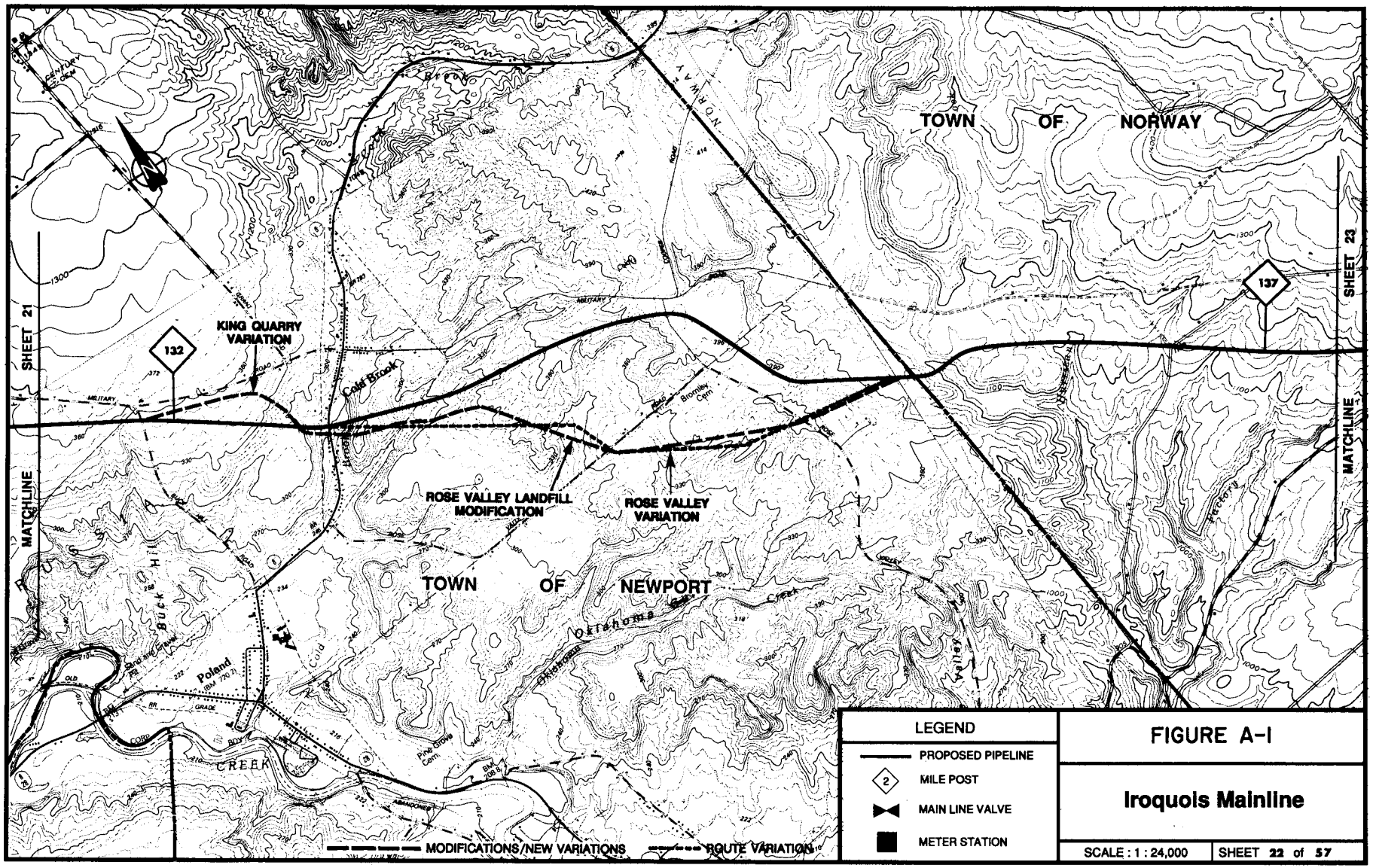


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 21 of 57



LEGEND	FIGURE A-I
PROPOSED PIPELINE	Iroquois Mainline
MILE POST	
MAIN LINE VALVE	
METER STATION	
	SCALE : 1 : 24,000 — SHEET 22 of 57

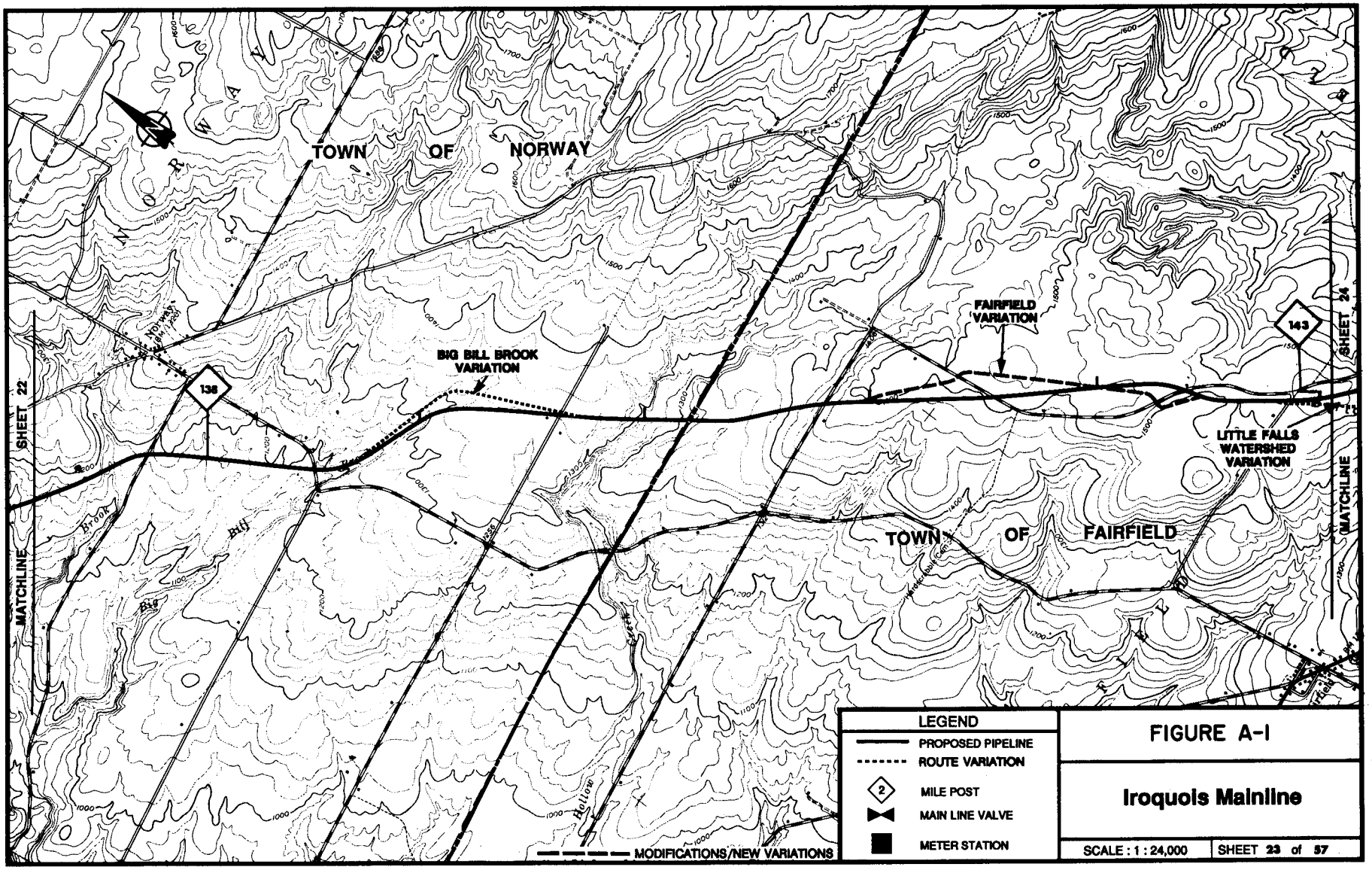


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 23 of 57

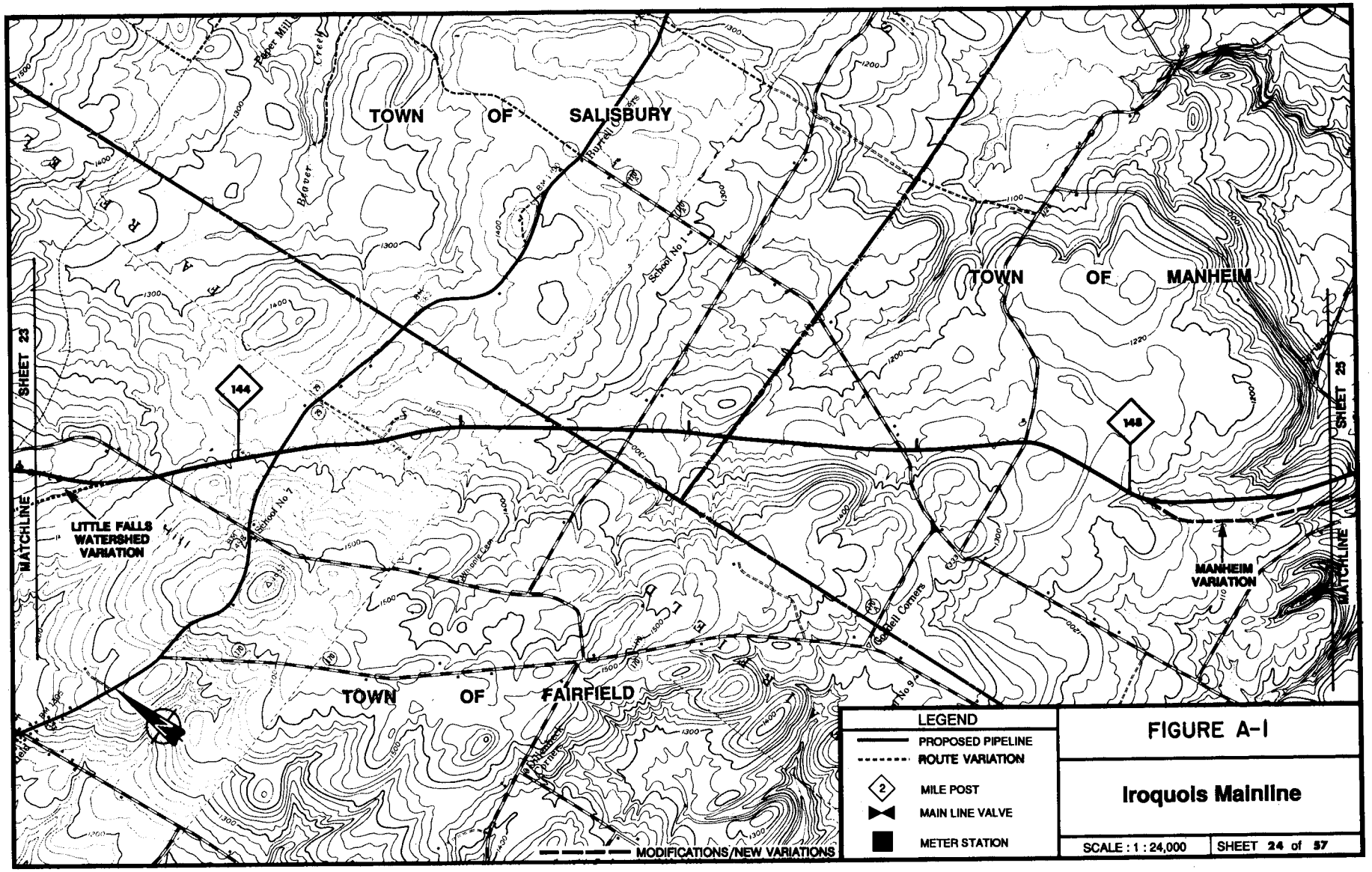
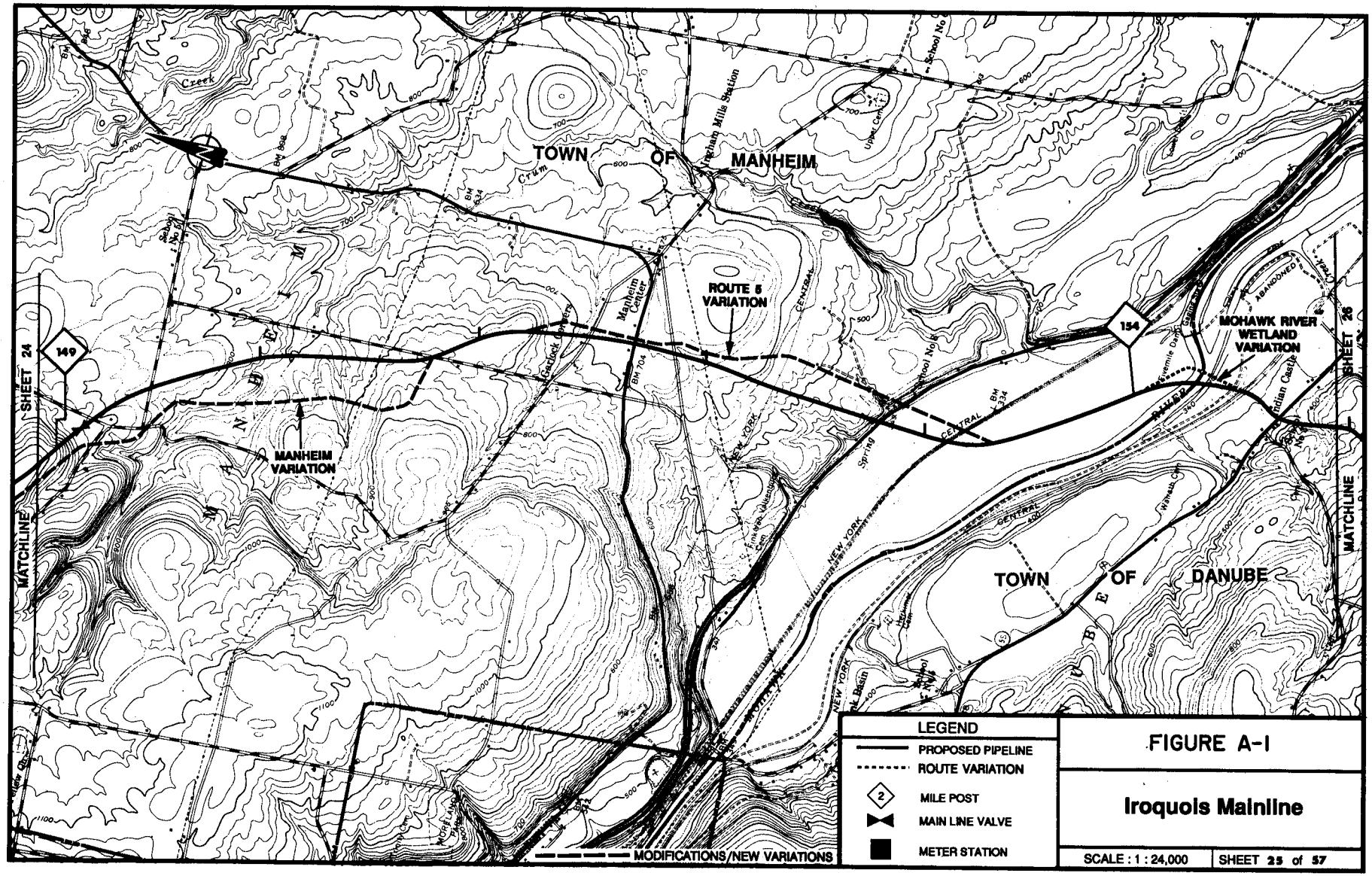


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 24 of 57


TOWN OF MANHEIM
TOWN OF DANUBE
ROUTE 5 VARIATION
MANHEIM VARIATION
MOHAWK RIVER WETLAND VARIATION
149
154
MATCHLINE SHEET 24
MATCHLINE SHEET 26
Manheim Center
Vrooman Mills Station
Upper Cemetery
School No 6
School No 5
School No 8
School No 9
Indian Castle
Wanesa Cem
Fairmile Dam
Gedlock Creek
Crum Creek
Spring
NEW YORK CENTRAL
ABANDONED
MODIFICATIONS/NEW VARIATIONS
LEGEND
PROPOSED PIPELINE
ROUTE VARIATION
MILE POST
MAIN LINE VALVE
METER STATION
FIGURE A-1
Iroquois Mainline
SCALE : 1 : 24,000
SHEET 25 of 57

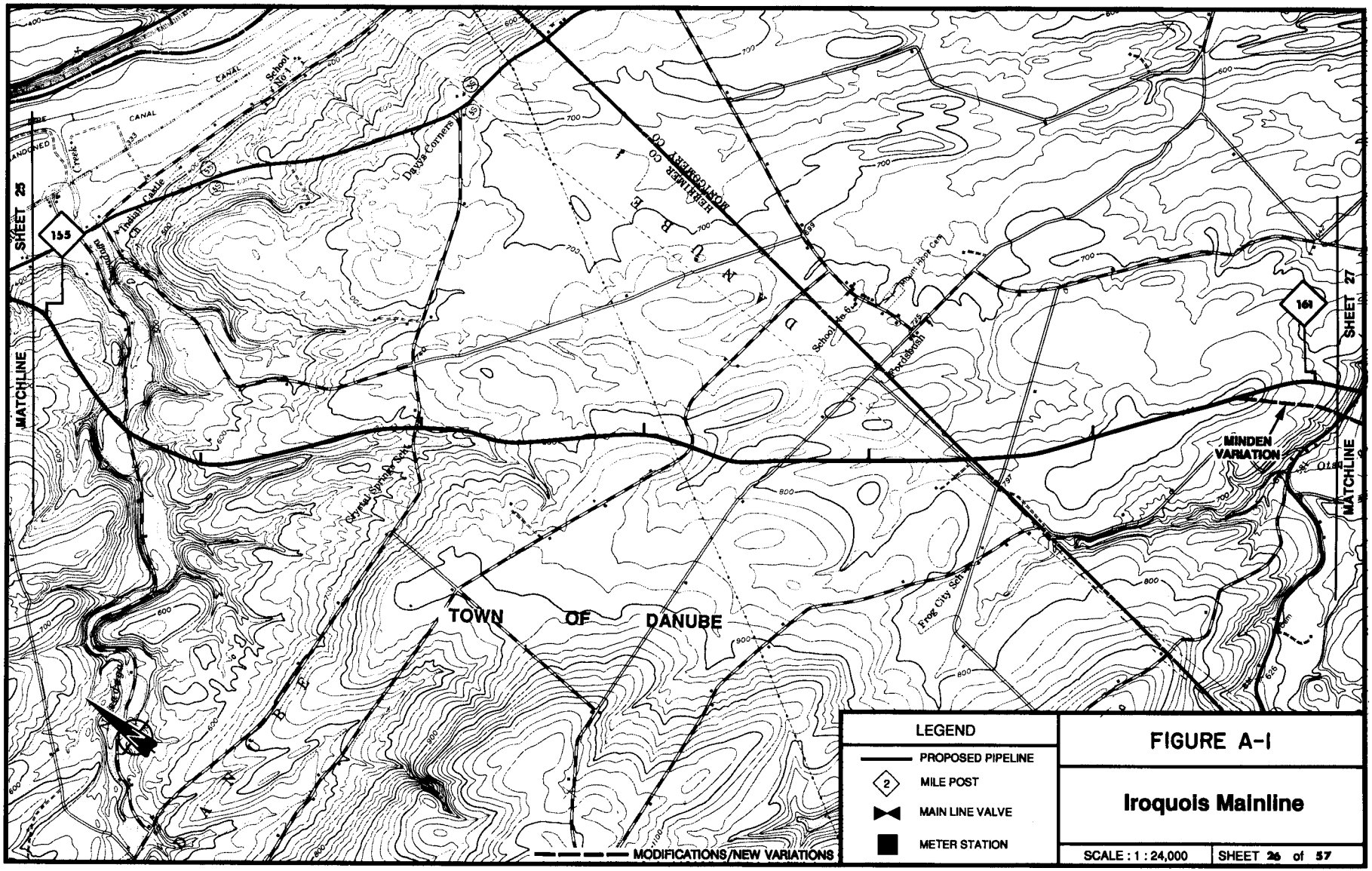
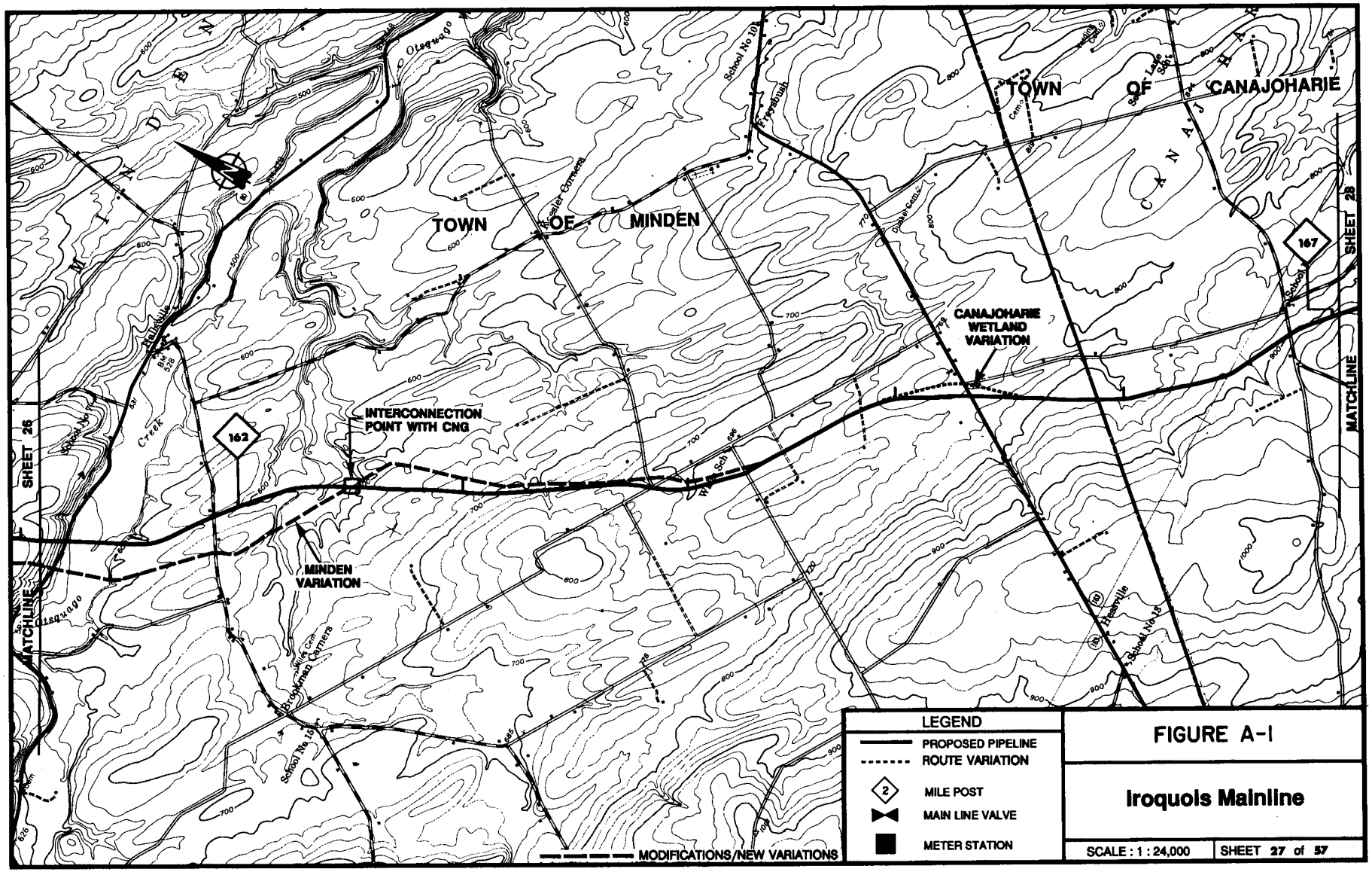


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 26 of 57



LEGEND

- PROPOSED PIPELINE
- ROUTE VARIATION
- MILE POST
- MAIN LINE VALVE
- METER STATION

FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 27 of 57

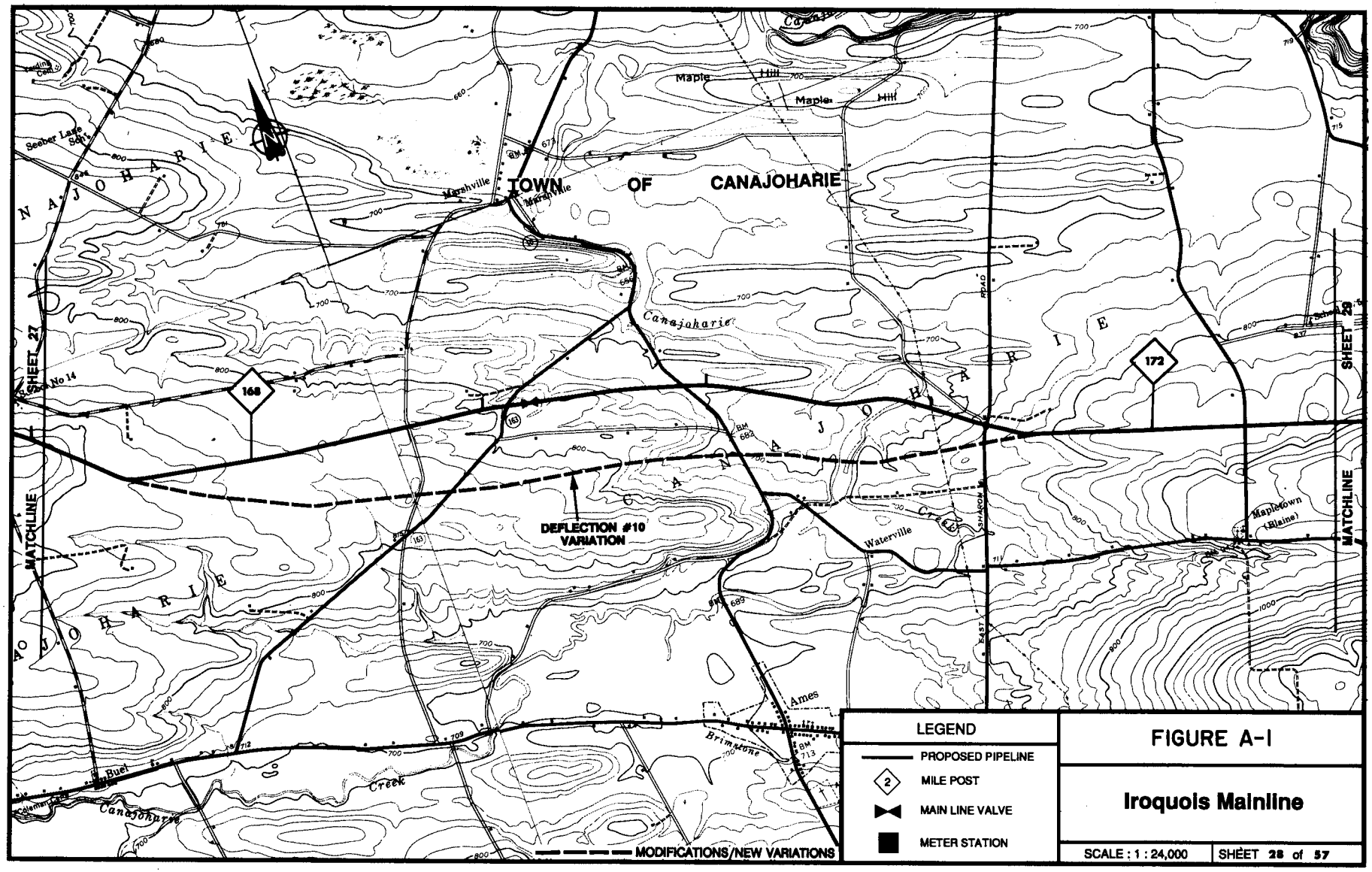


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 28 of 57

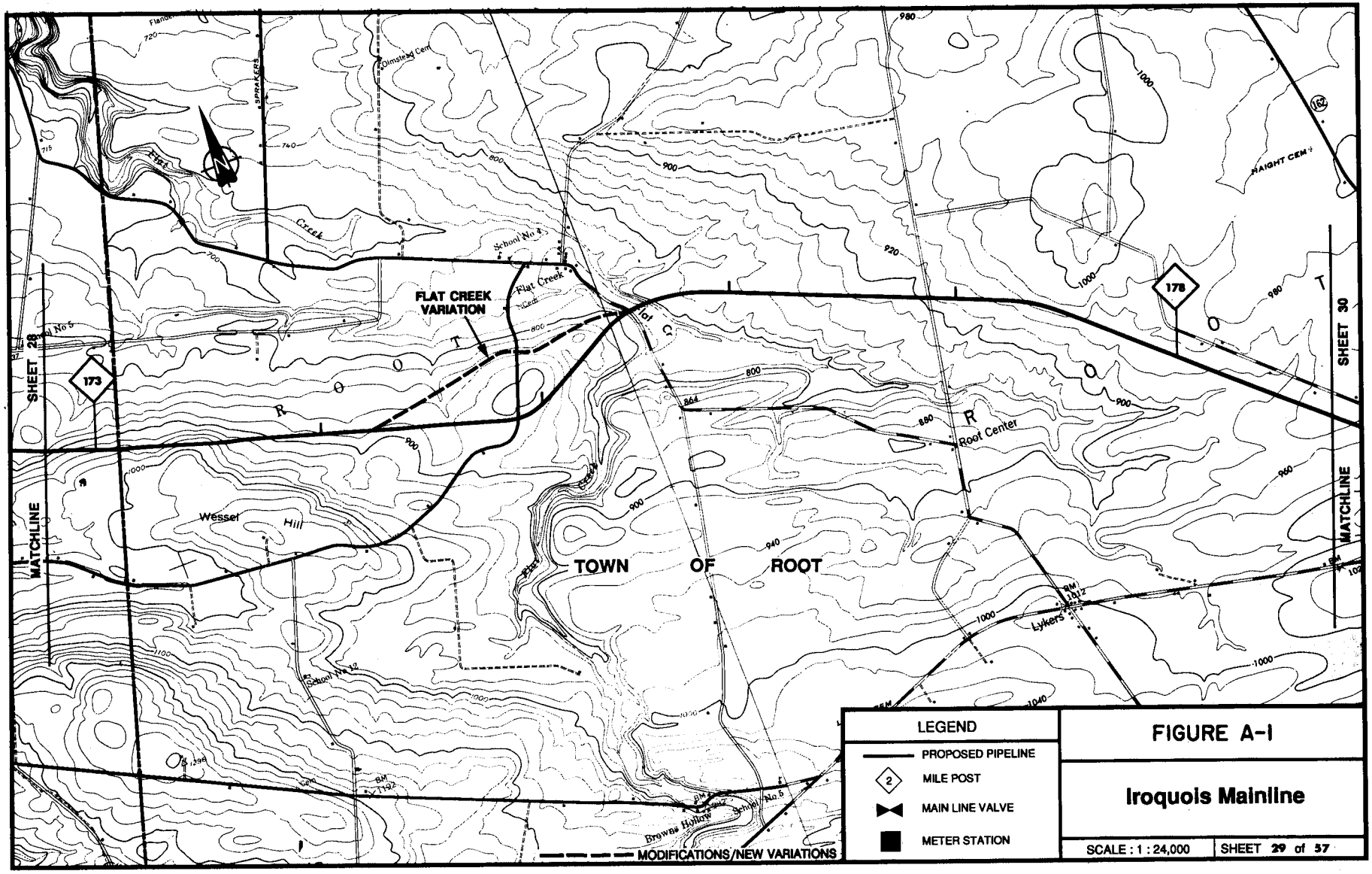


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 29 of 37

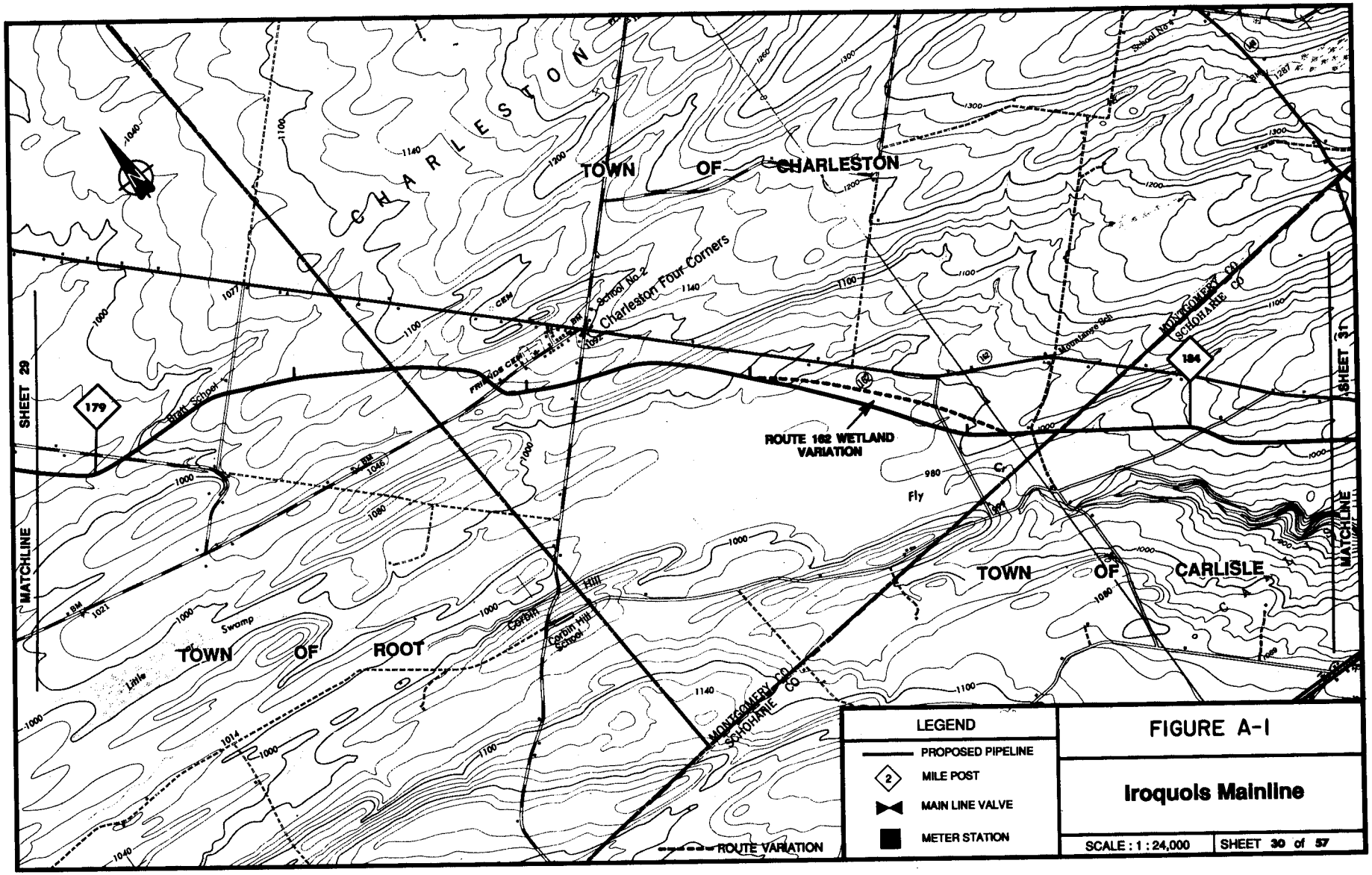


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 30 of 57

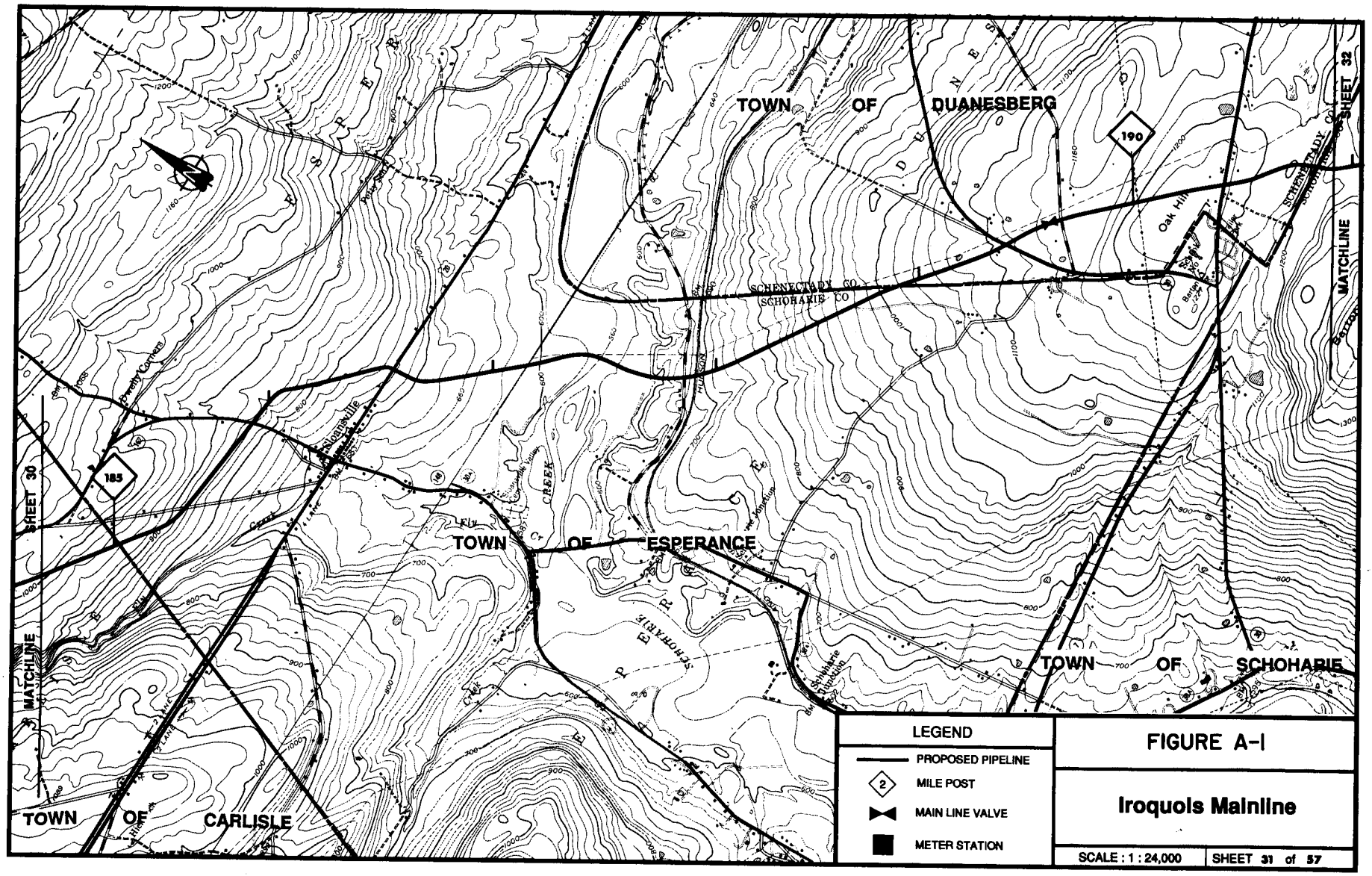


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 31 of 57

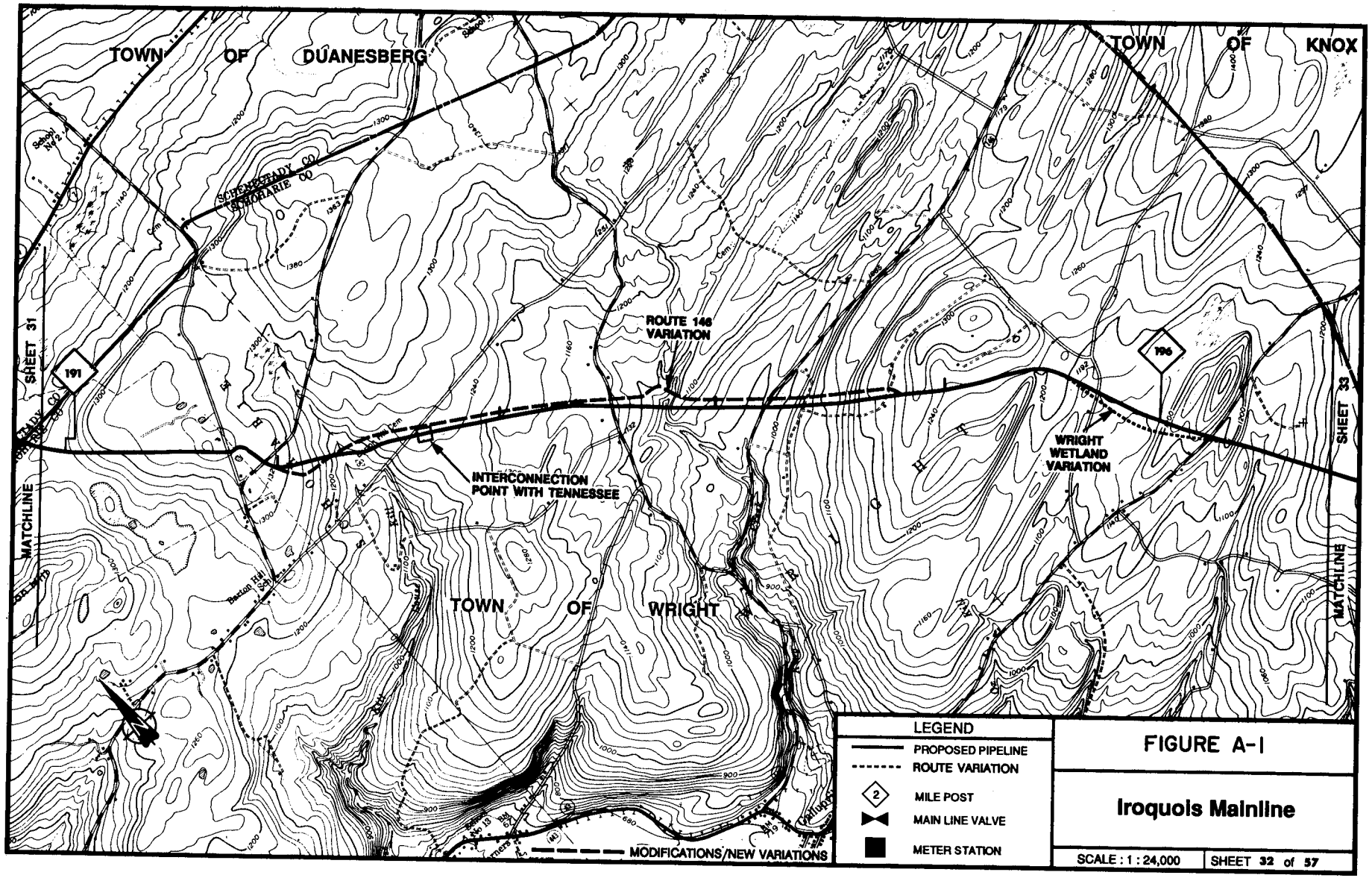
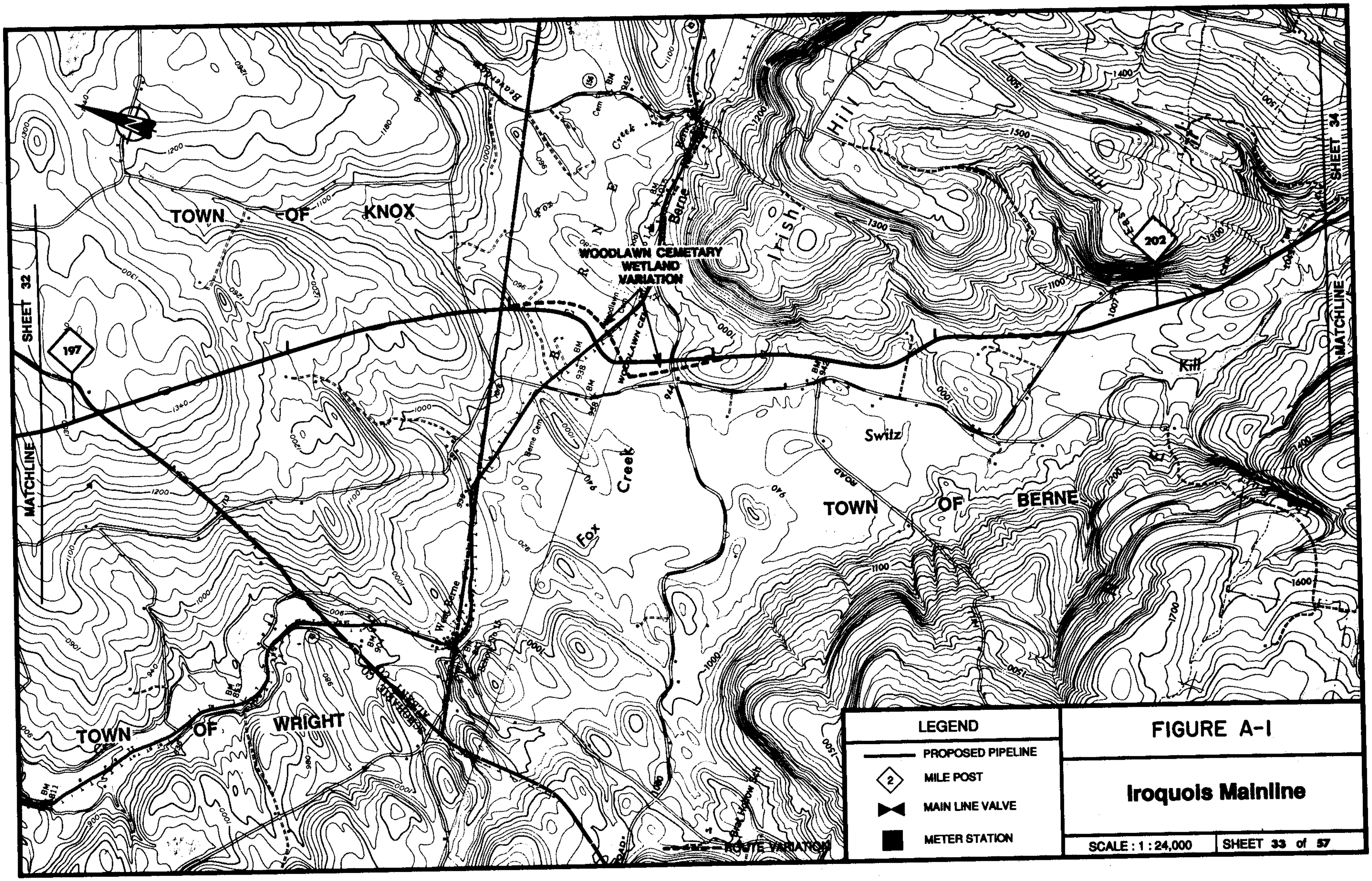


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 32 of 57



MATCHLINE SHEET 32
MATCHLINE SHEET 34
197
202
TOWN OF KNOX
TOWN OF BERNE
TOWN OF WRIGHT
WOODLAWN CEMETARY
WETLAND
VARIATION
Irish Hill
Fox Creek
Switz
Kill
ROAD
West Berne
ROUTE VARIATION
LEGEND
PROPOSED PIPELINE
MILE POST
MAIN LINE VALVE
METER STATION
FIGURE A-I
Iroquois Mainline
SCALE : 1 : 24,000
SHEET 33 of 57

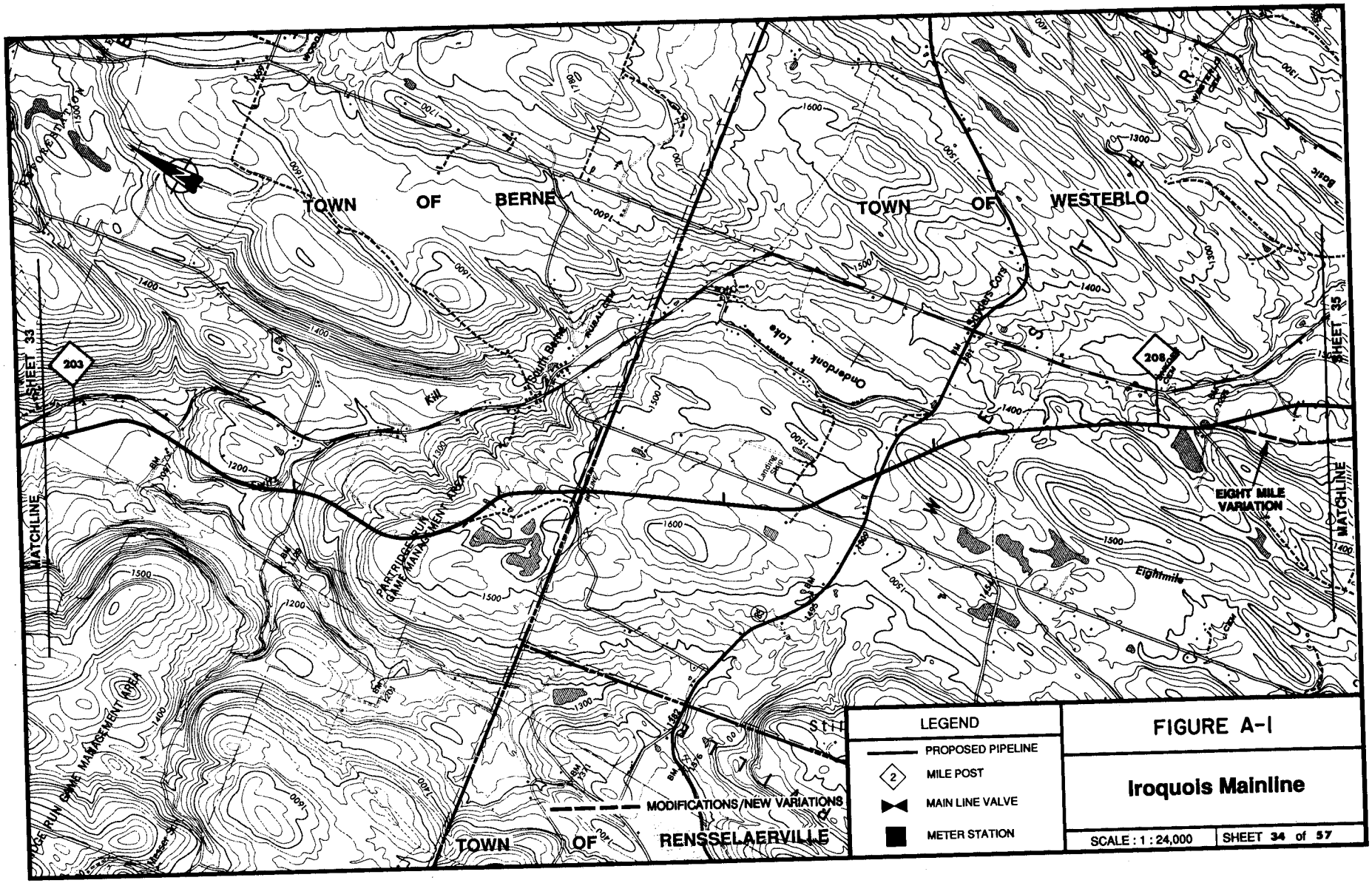


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 34 of 57

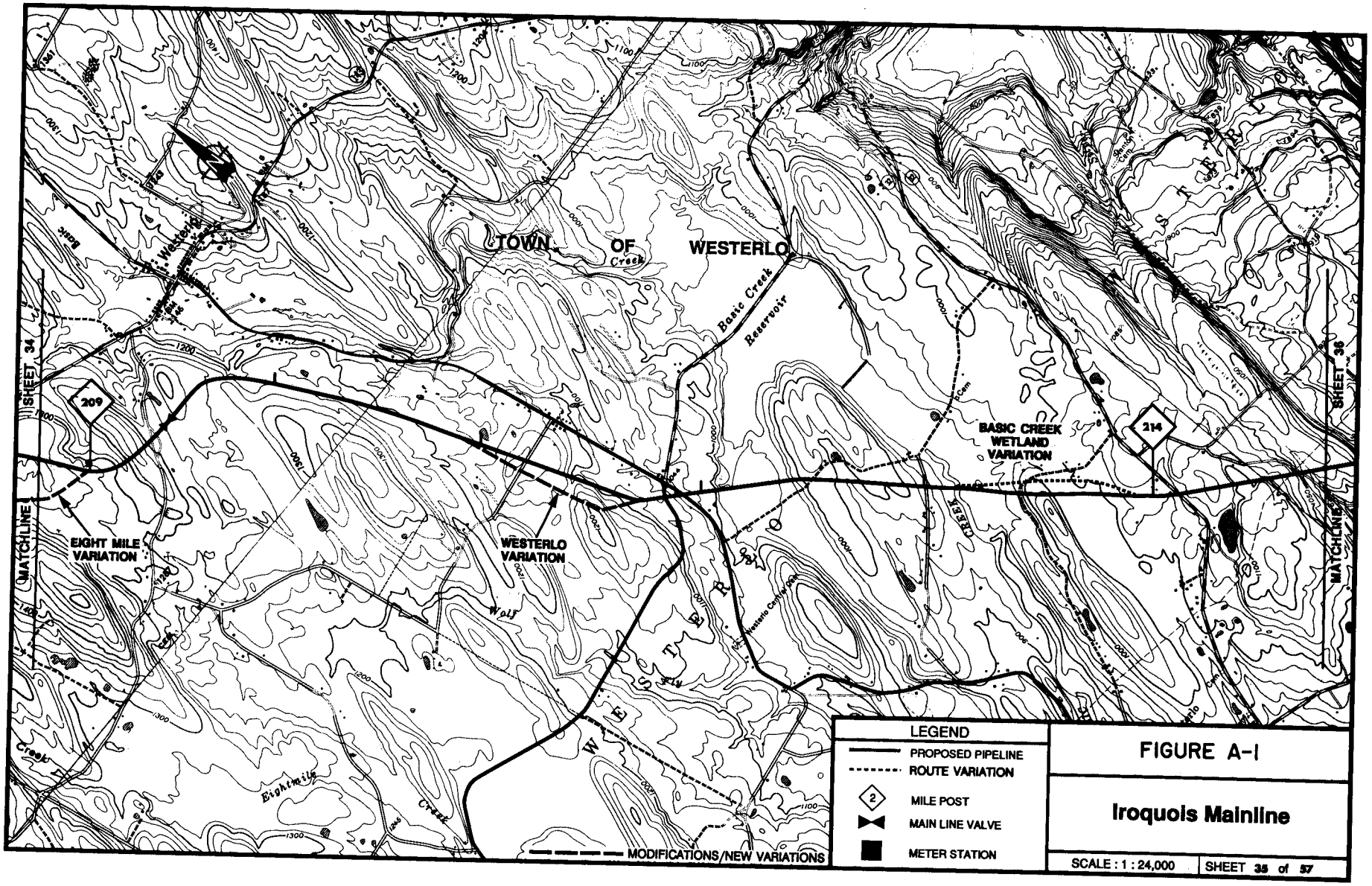


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 35 of 57

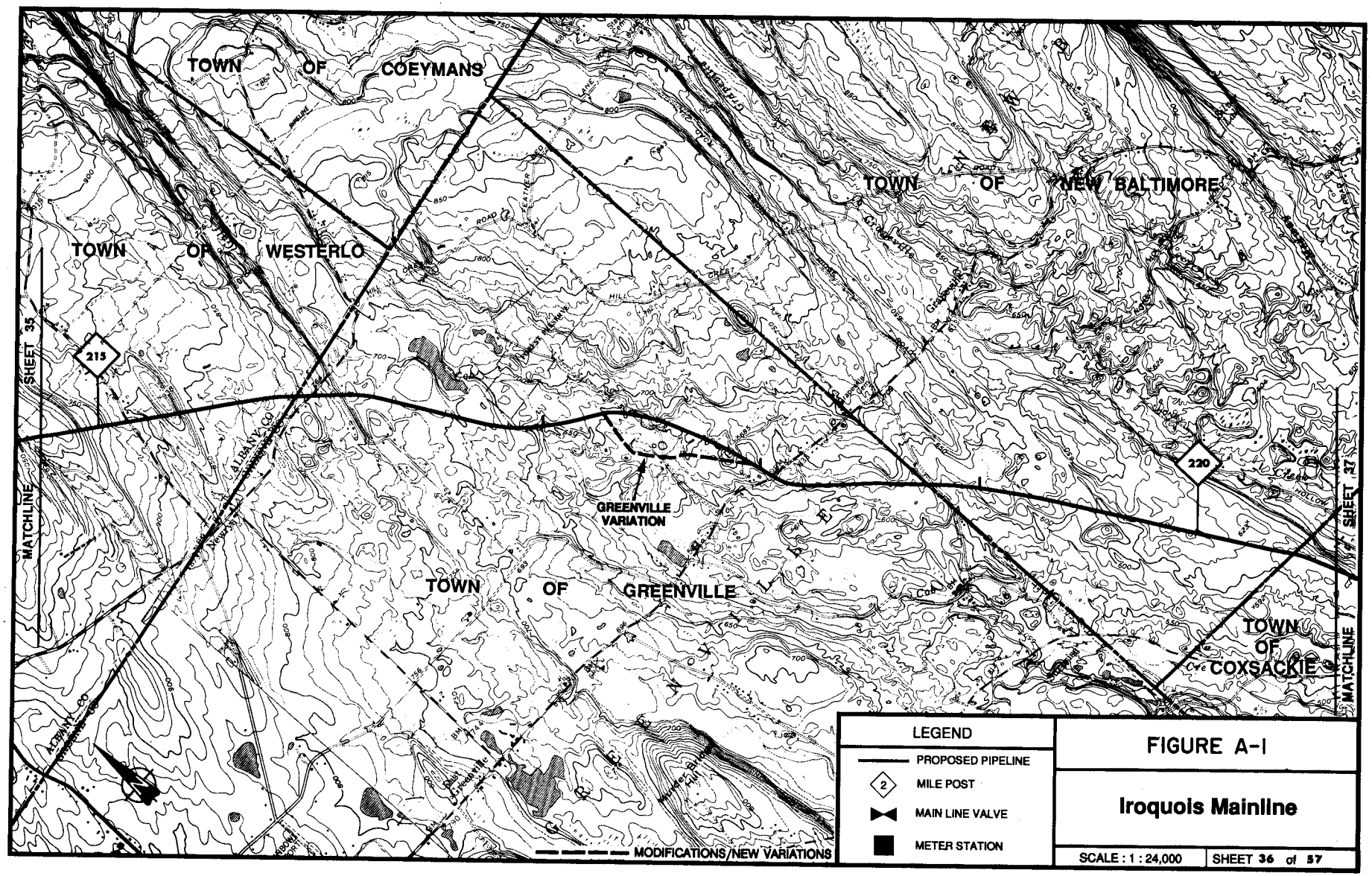
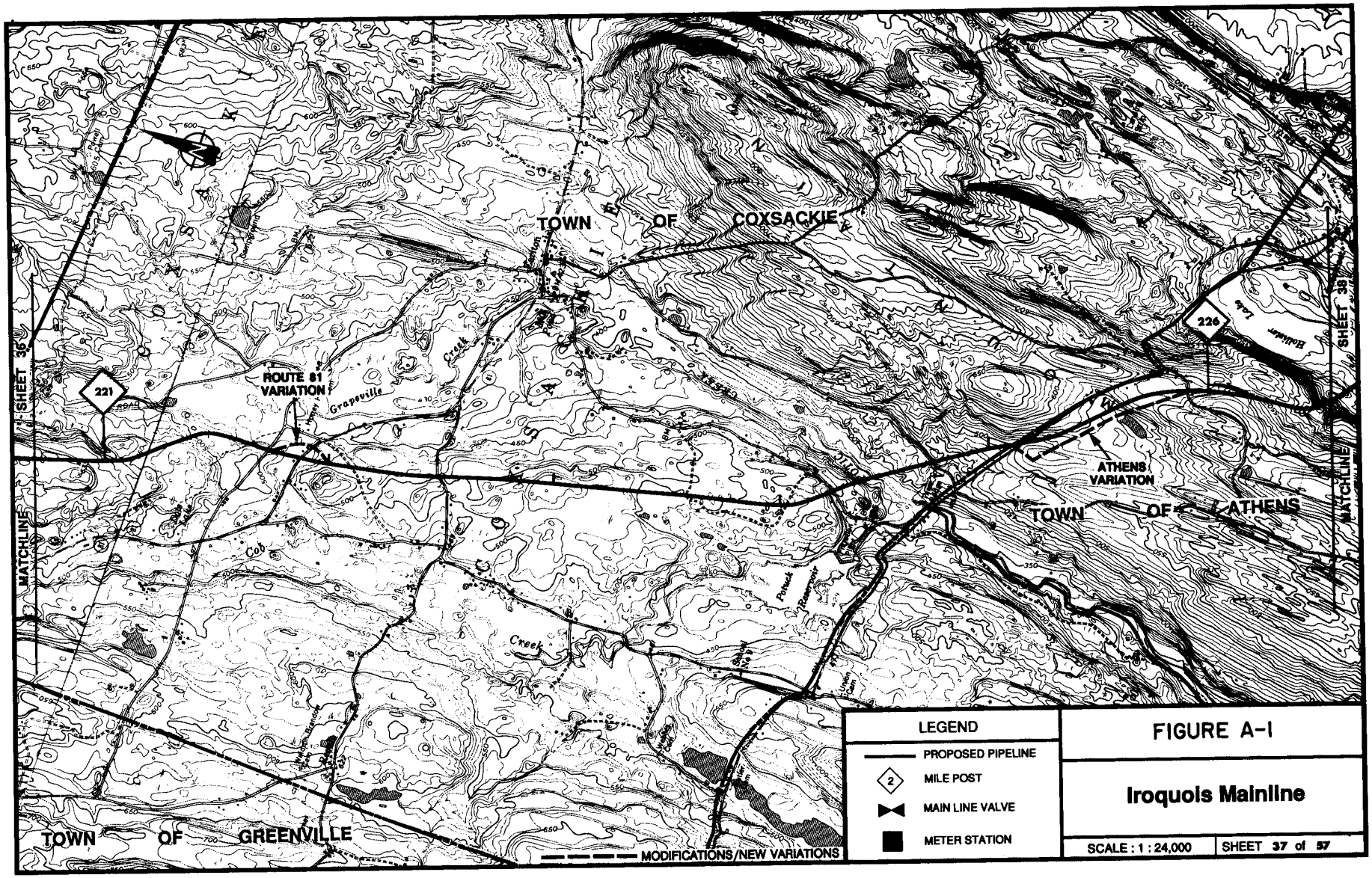


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 36 of 57



LEGEND	FIGURE A-1
PROPOSED PIPELINE	Iroquois Mainline
MILE POST	
MAIN LINE VALVE	
METER STATION	
	SCALE : 1 : 24,000 — SHEET 37 of 57

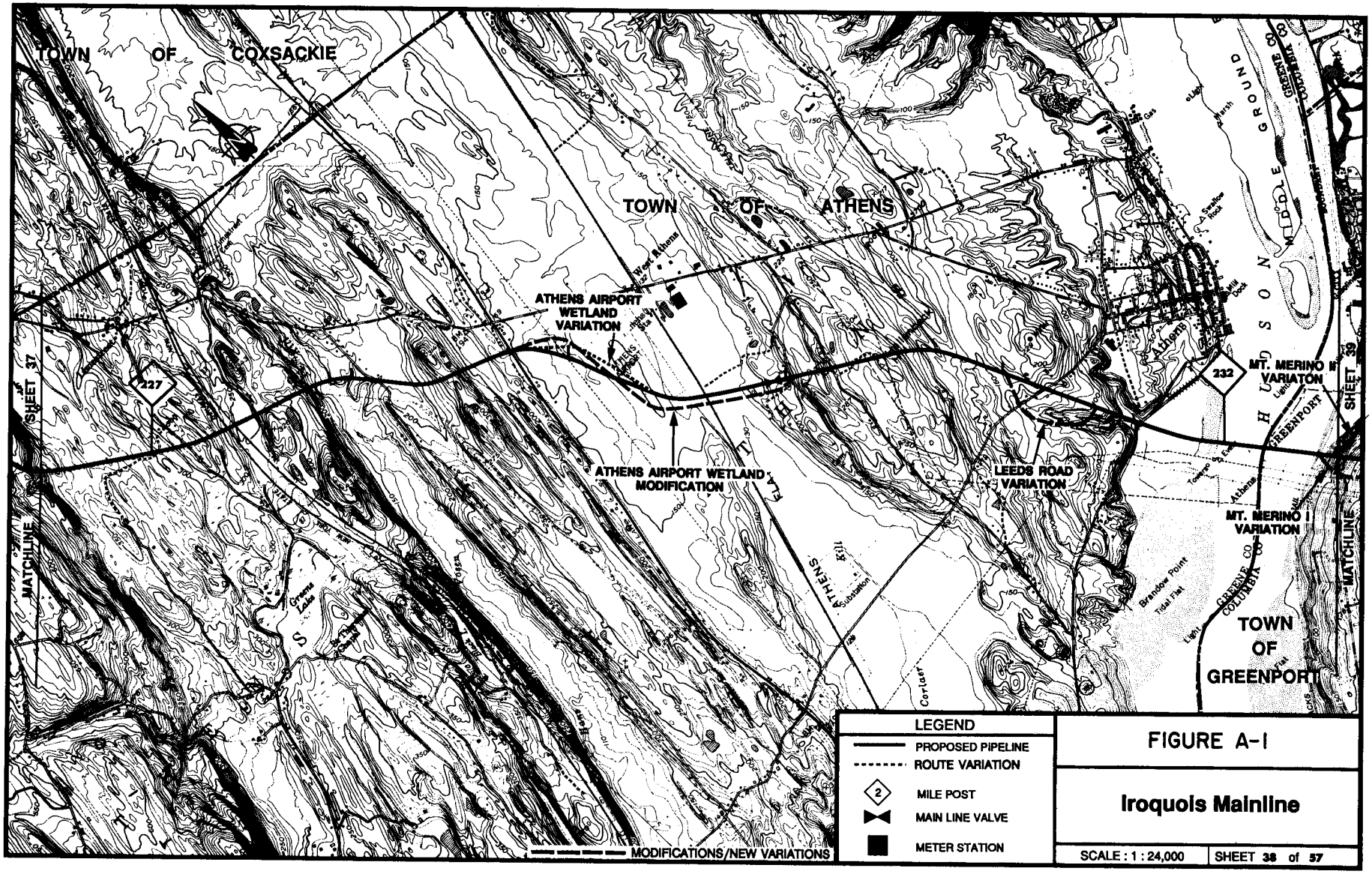


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 38 of 57

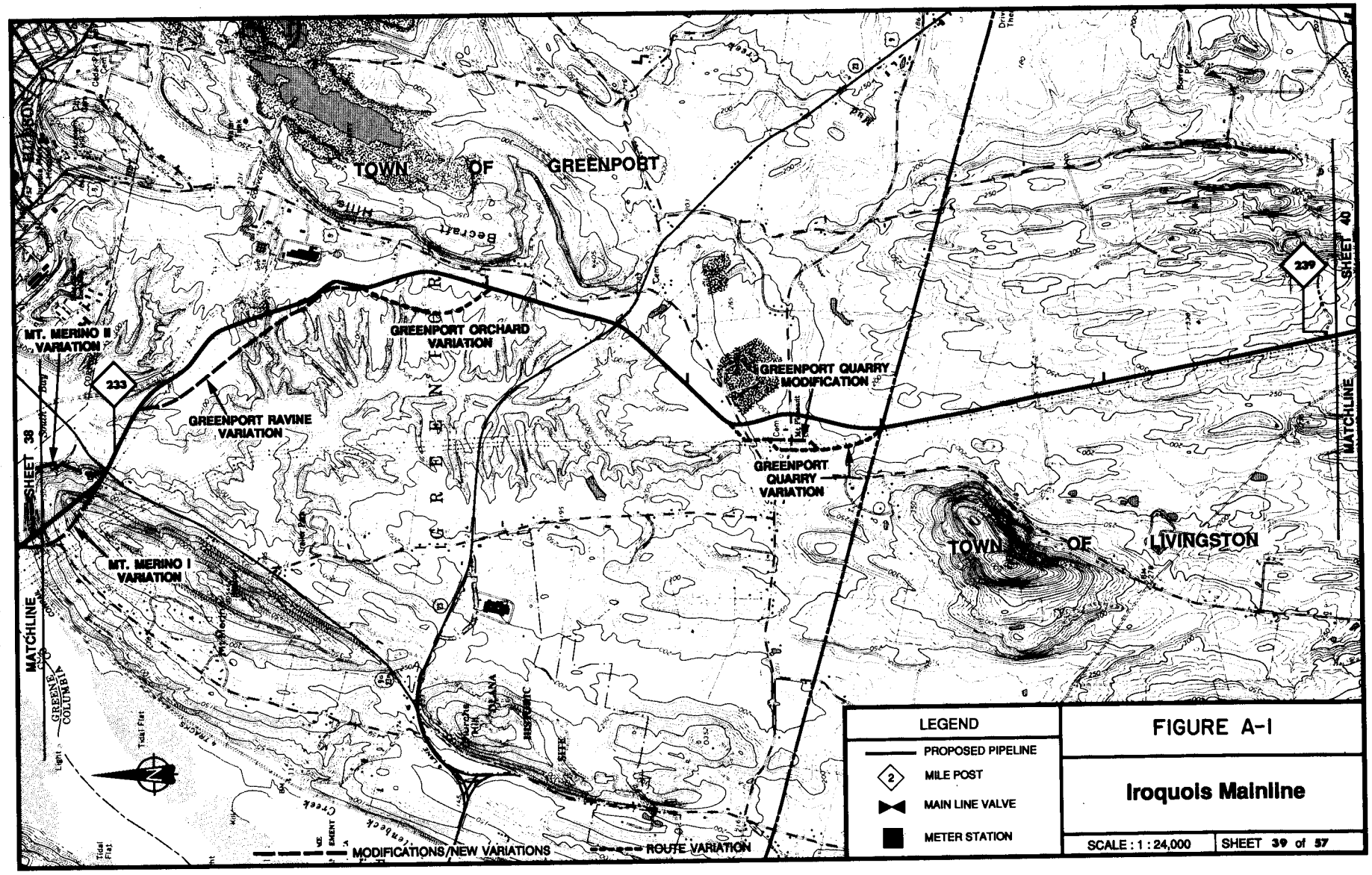


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 39 of 57

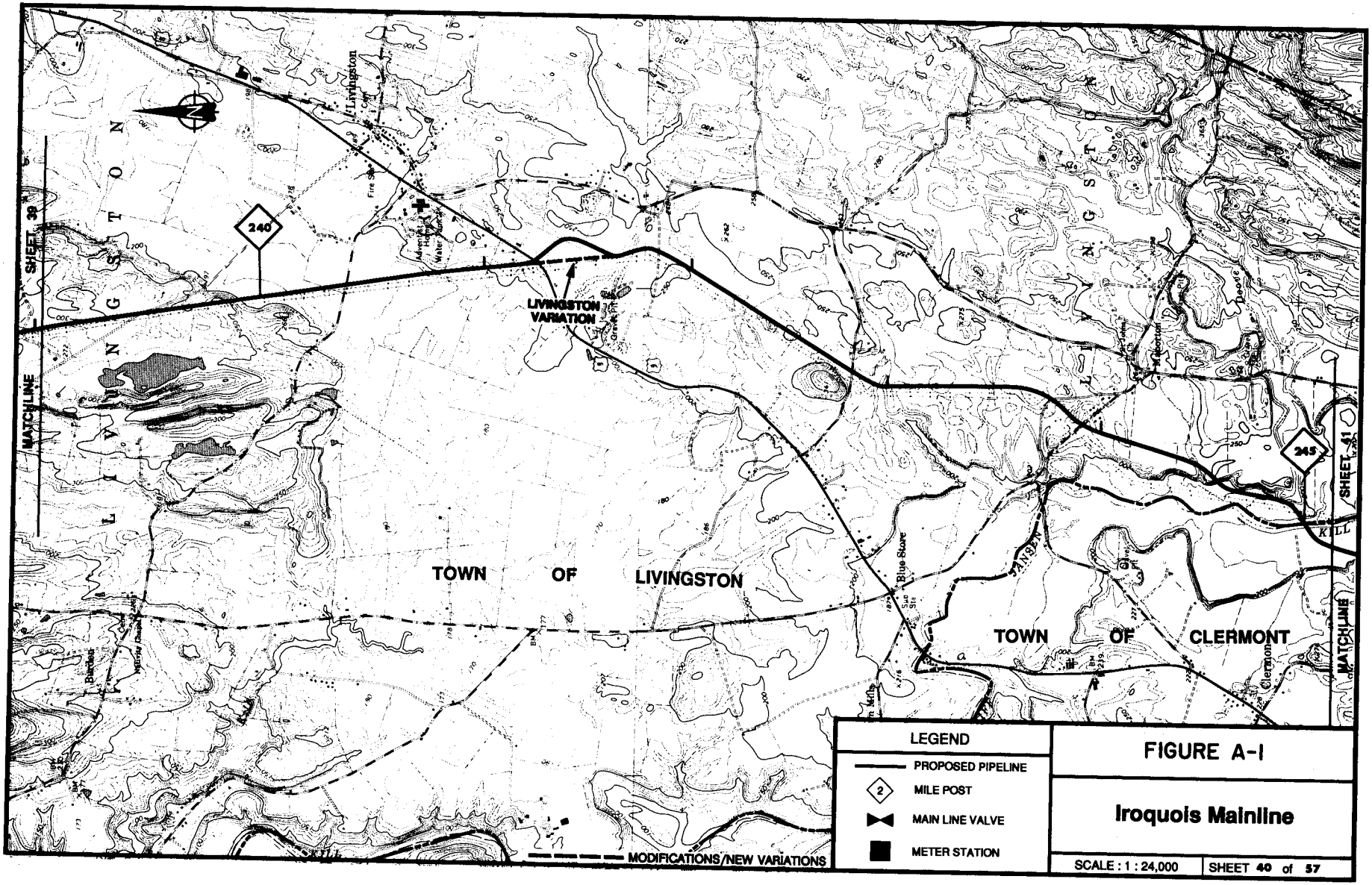
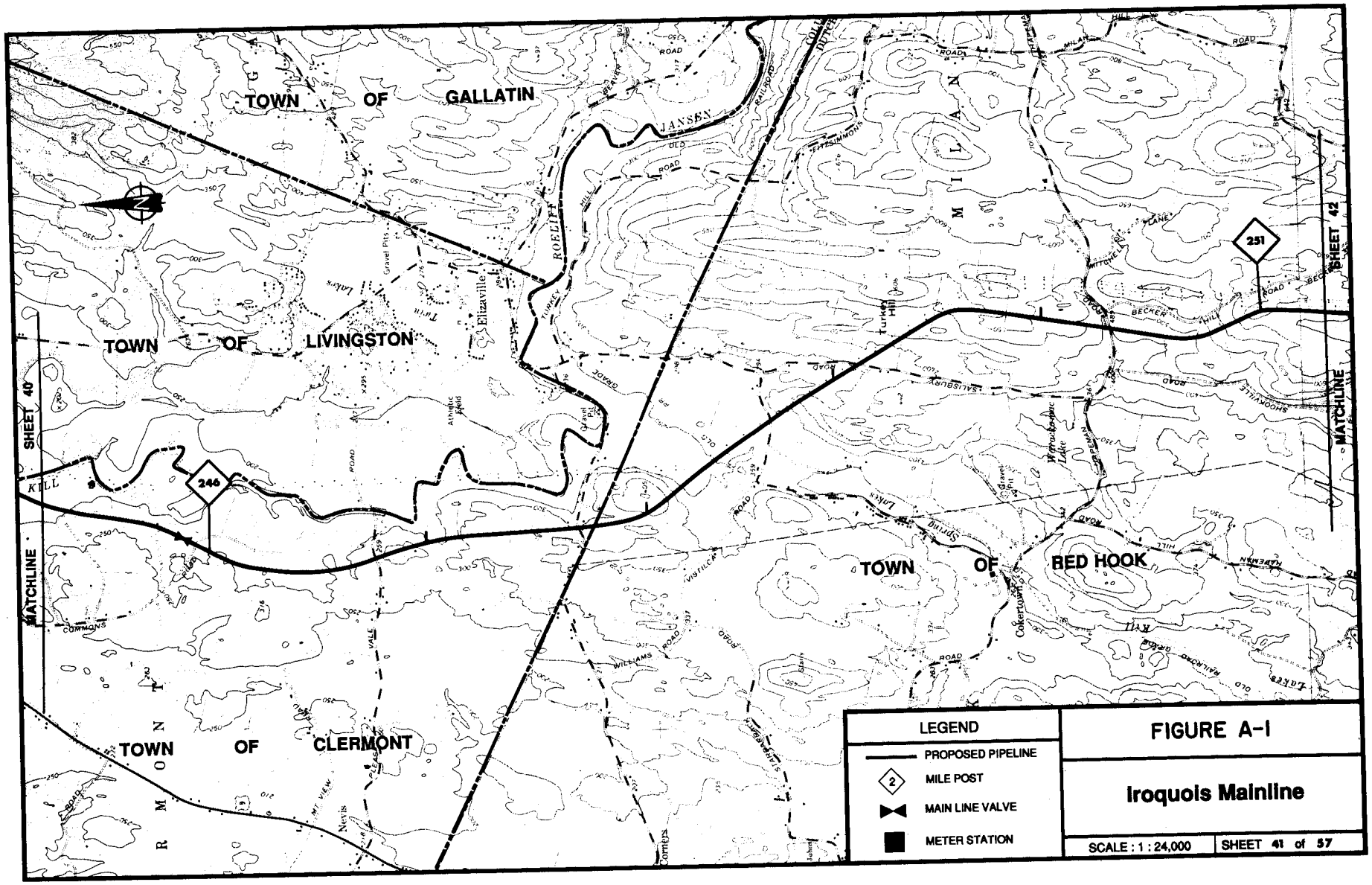


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 40 of 57



LEGEND	FIGURE A-1
PROPOSED PIPELINE	Iroquois Mainline
MILE POST	
MAIN LINE VALVE	
METER STATION	
SCALE : 1 : 24,000	SHEET 41 of 57

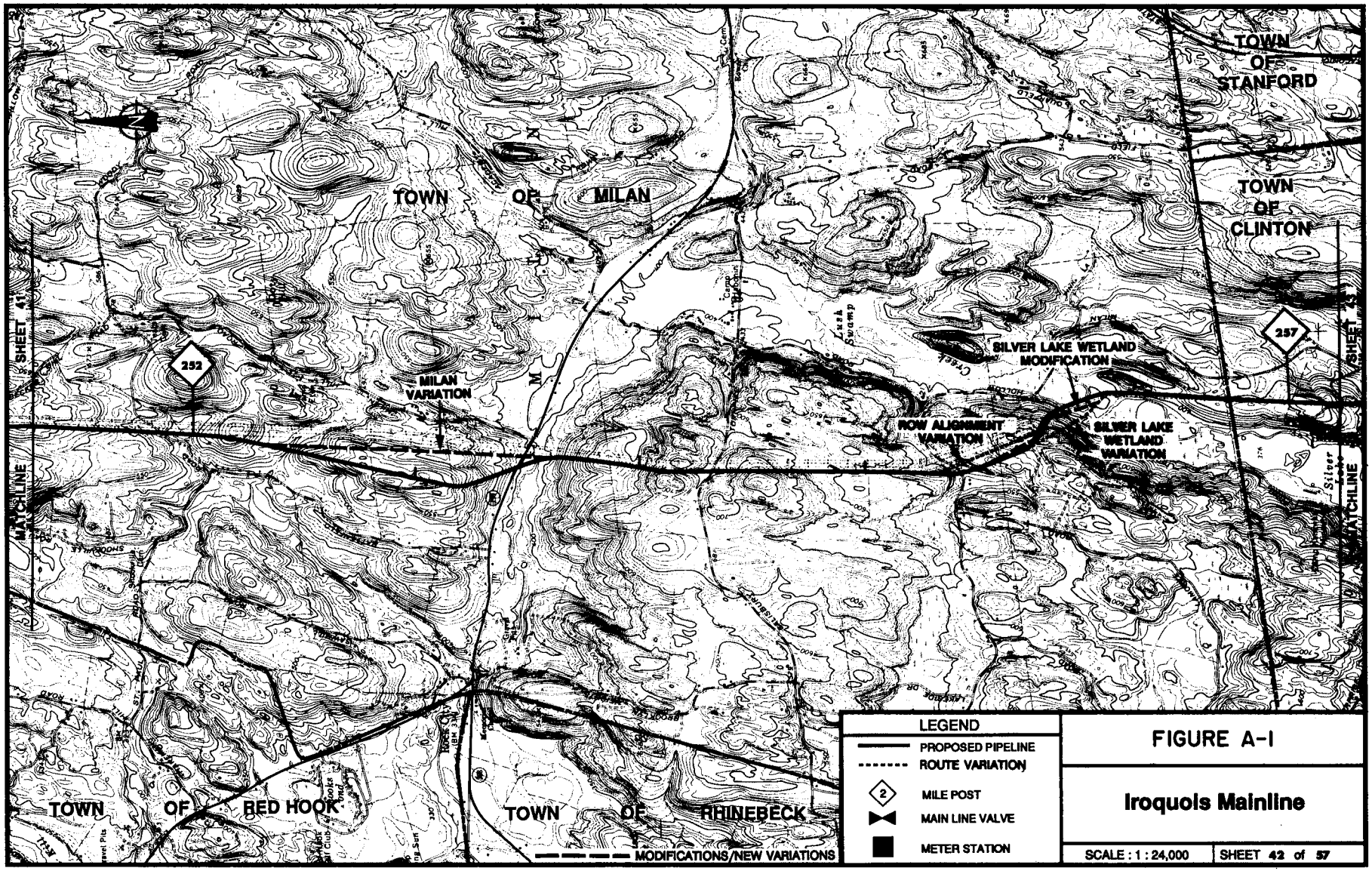


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 42 of 57

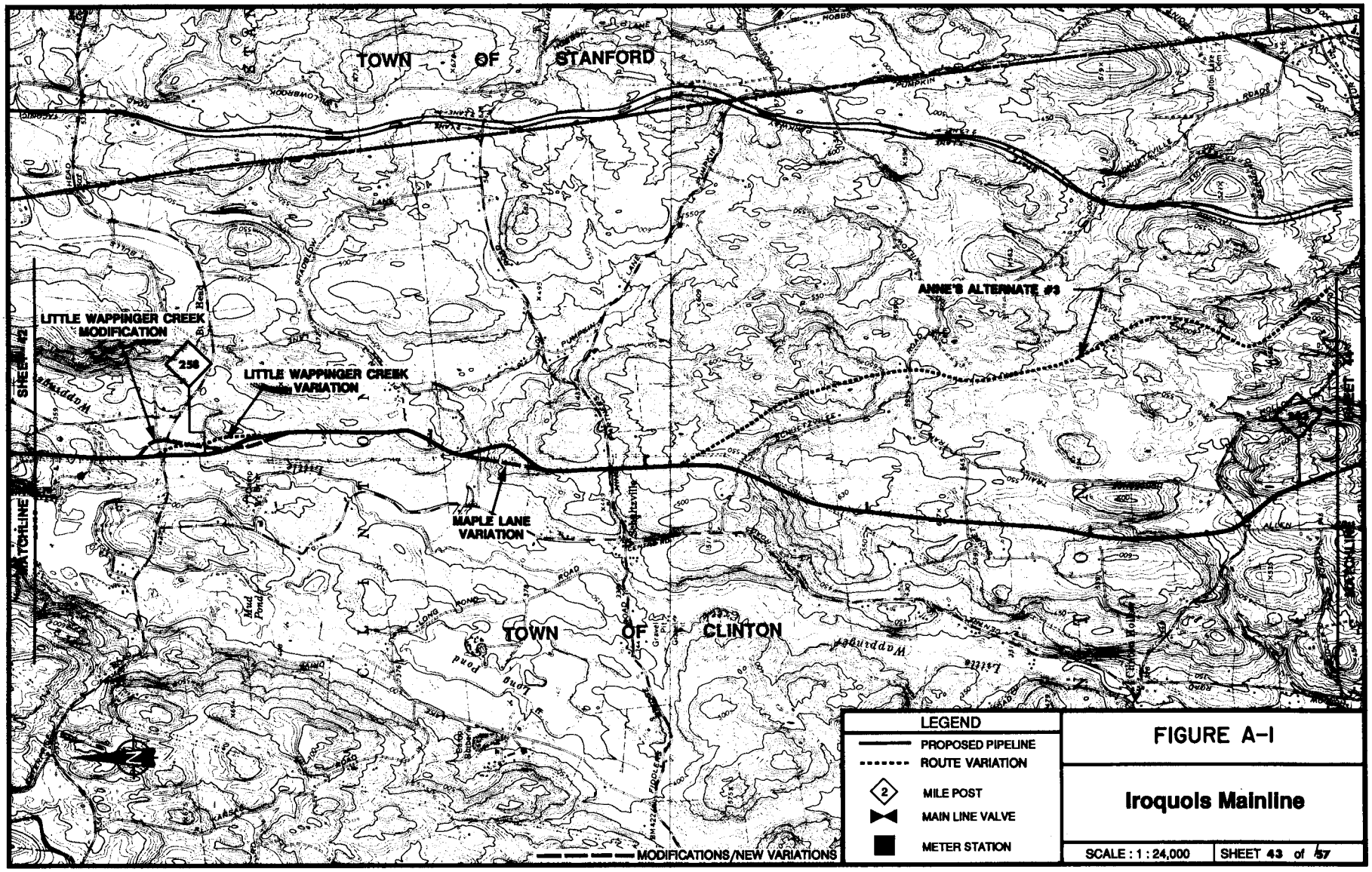


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 43 of 57

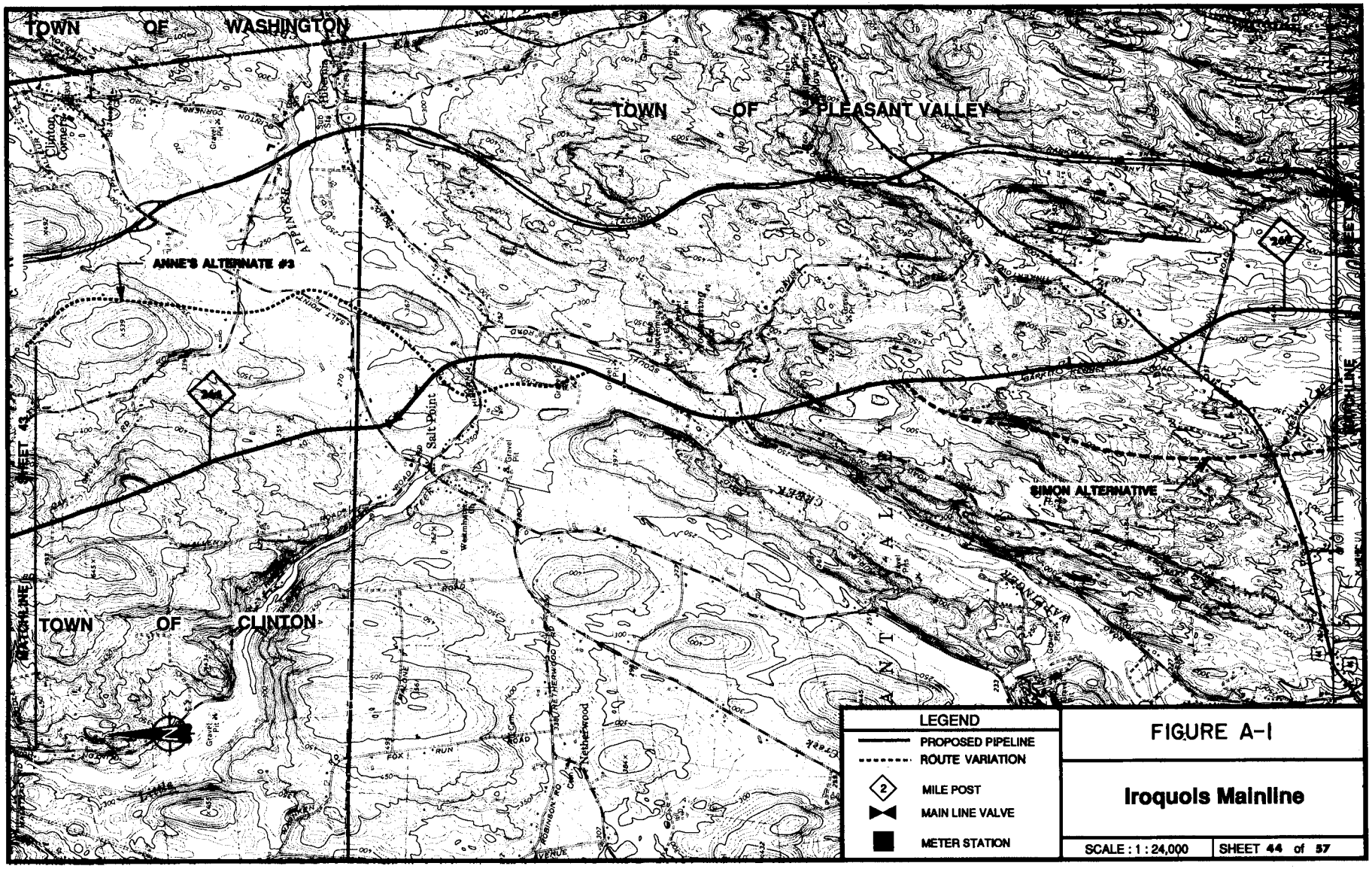


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 44 of 57

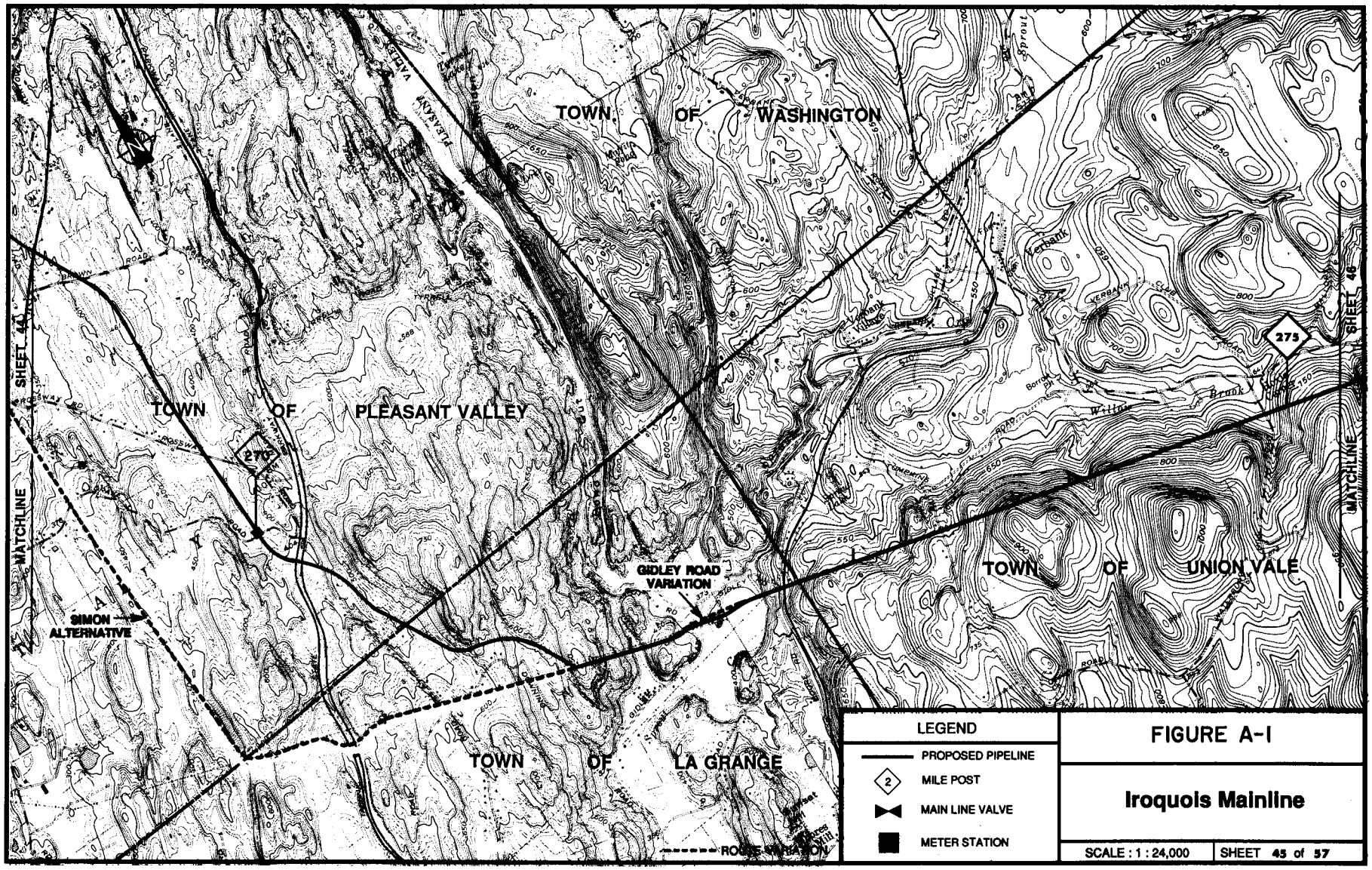
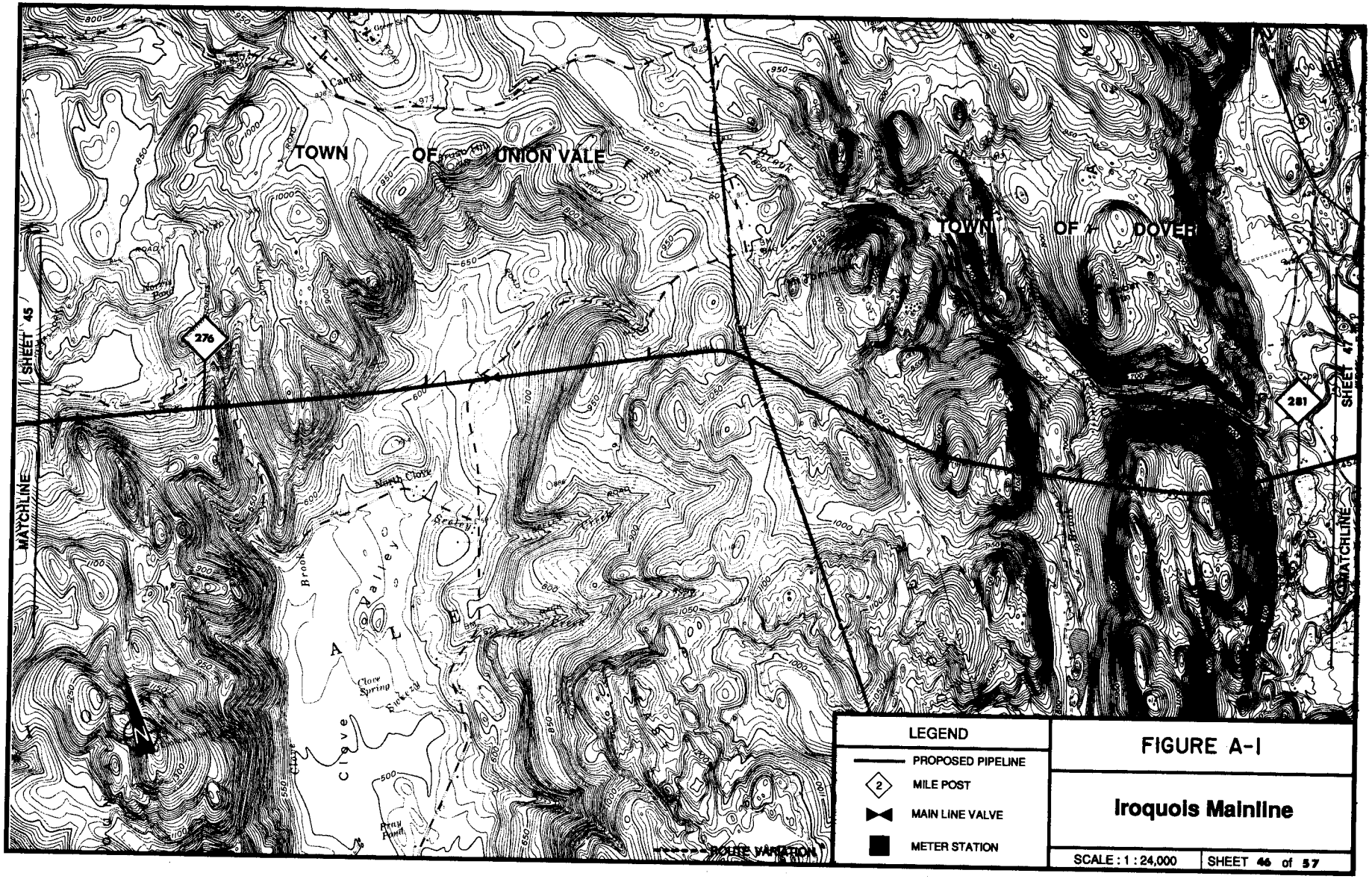


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 45 of 57


TOWN OF UNION VALE
TOWN OF DOVER
MATCHLINE SHEET 45
MATCHLINE SHEET 47
276
281
Clove Valley
Clove Brook
Clove Spring
Bakery
Beekman
Camp
Norris Pond
Gray Pond
ROUTE VARIATION
LEGEND
PROPOSED PIPELINE
MILE POST
MAIN LINE VALVE
METER STATION
FIGURE A-1
Iroquois Mainline
SCALE : 1 : 24,000
SHEET 46 of 57

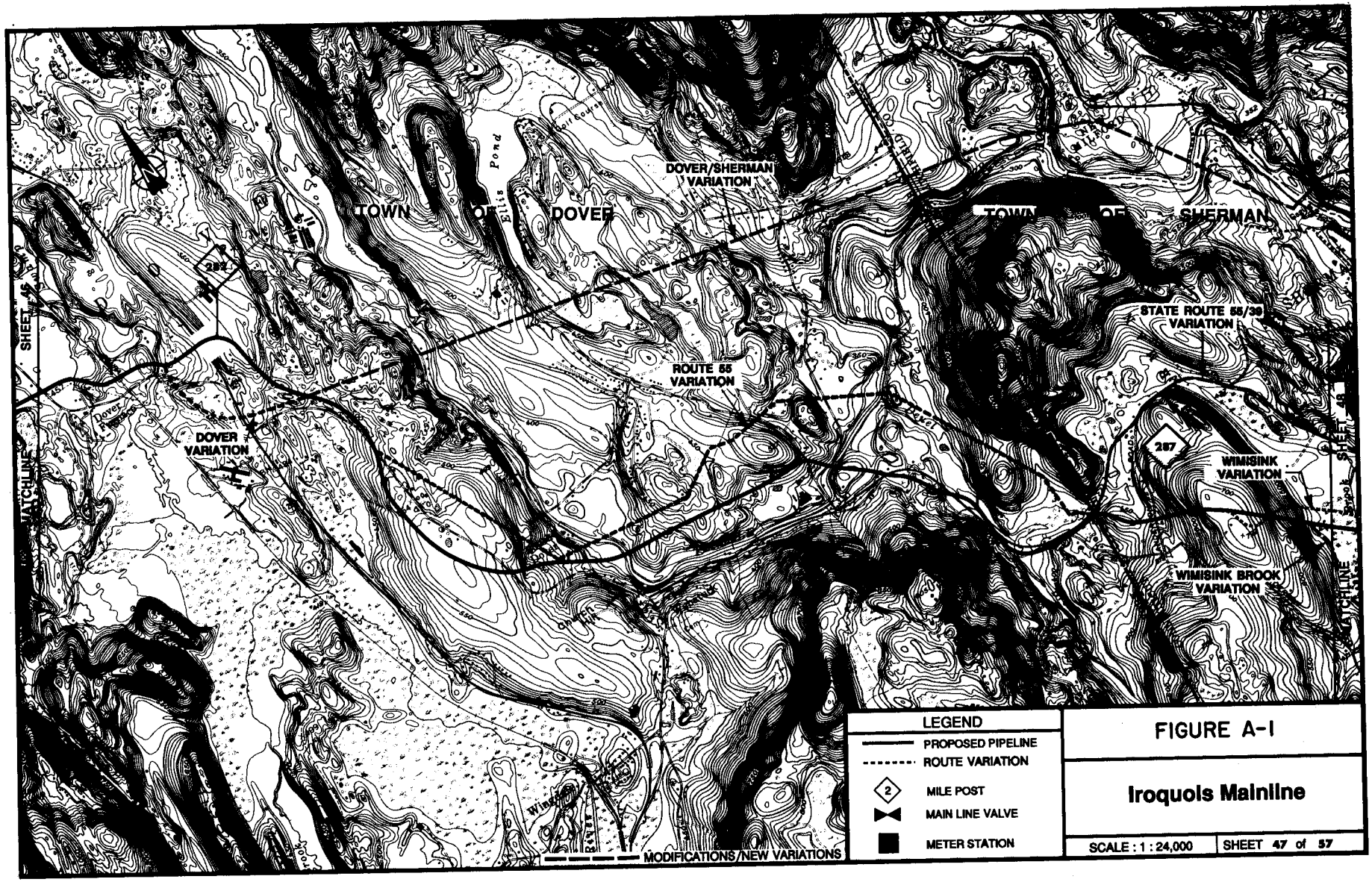


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 47 of 57

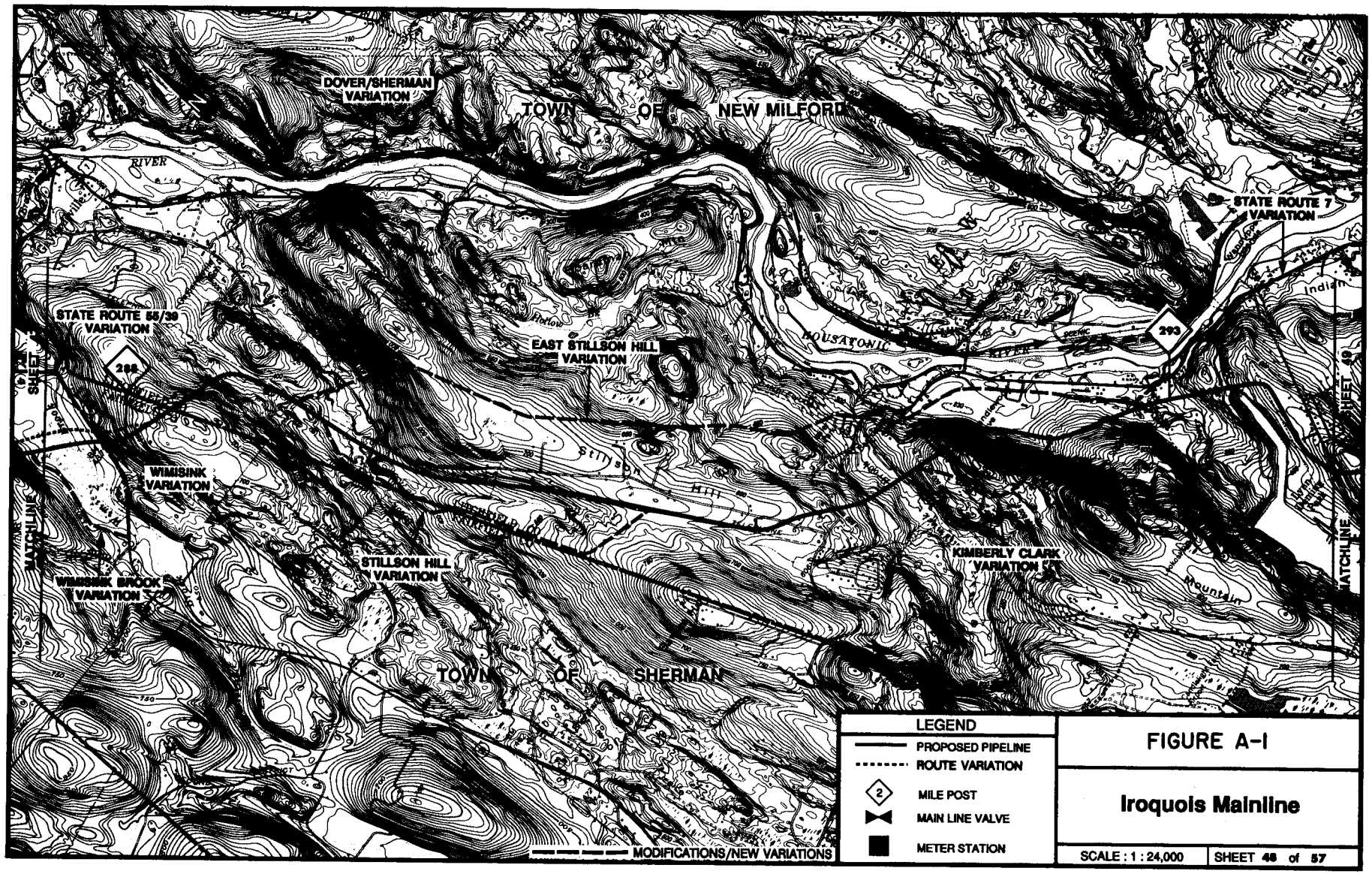


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 48 of 57

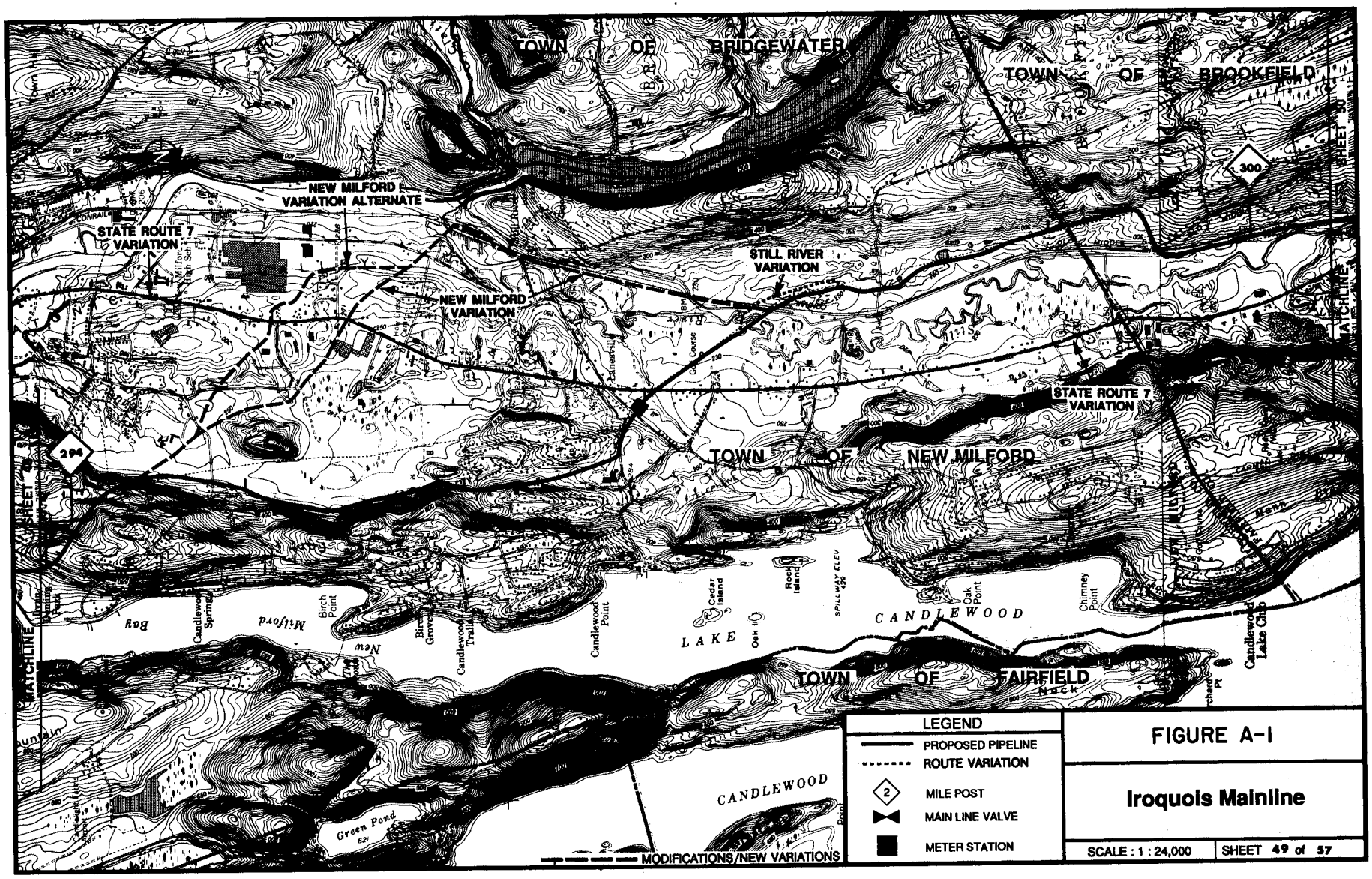


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 49 of 57

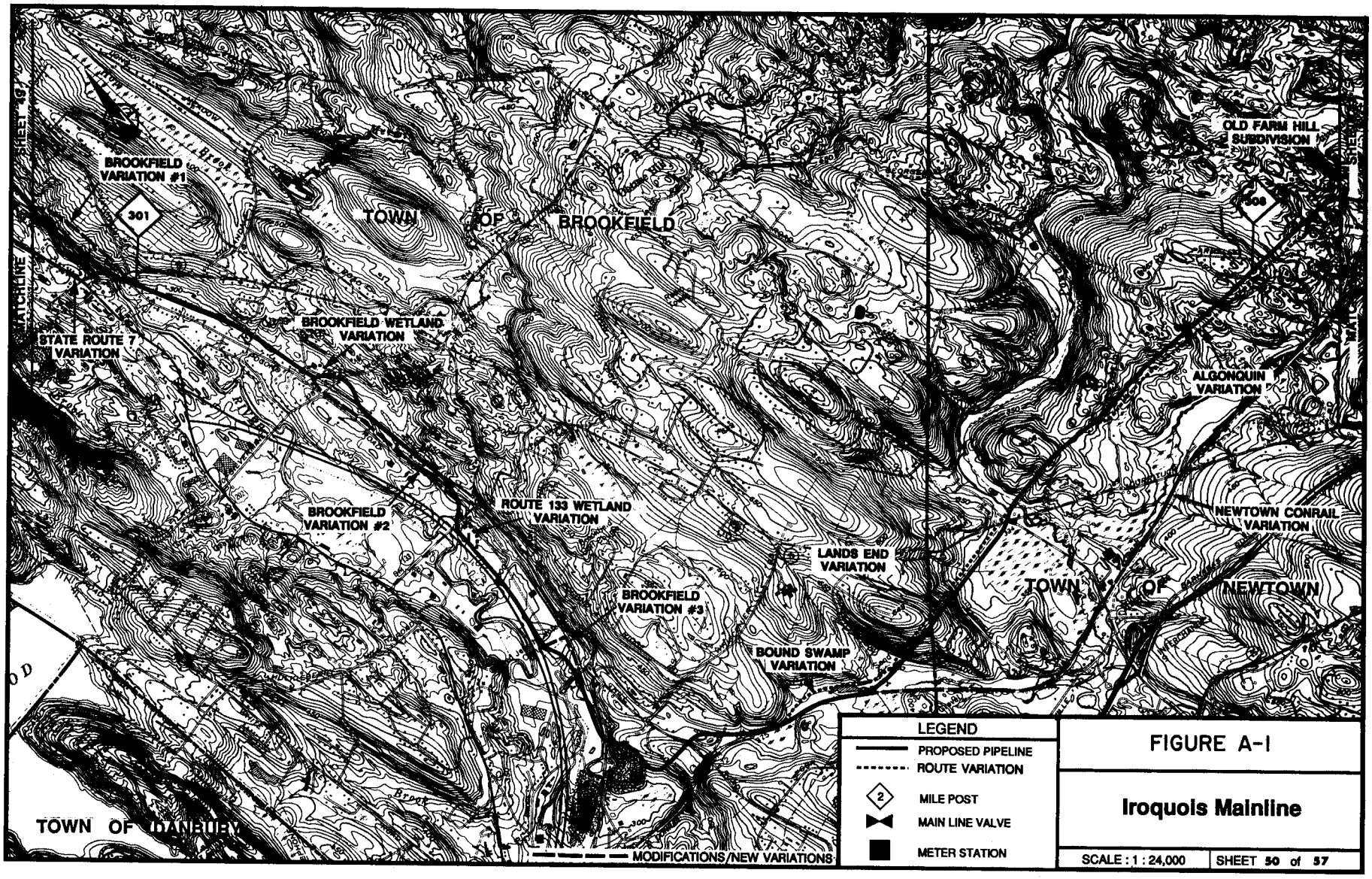


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 50 of 57

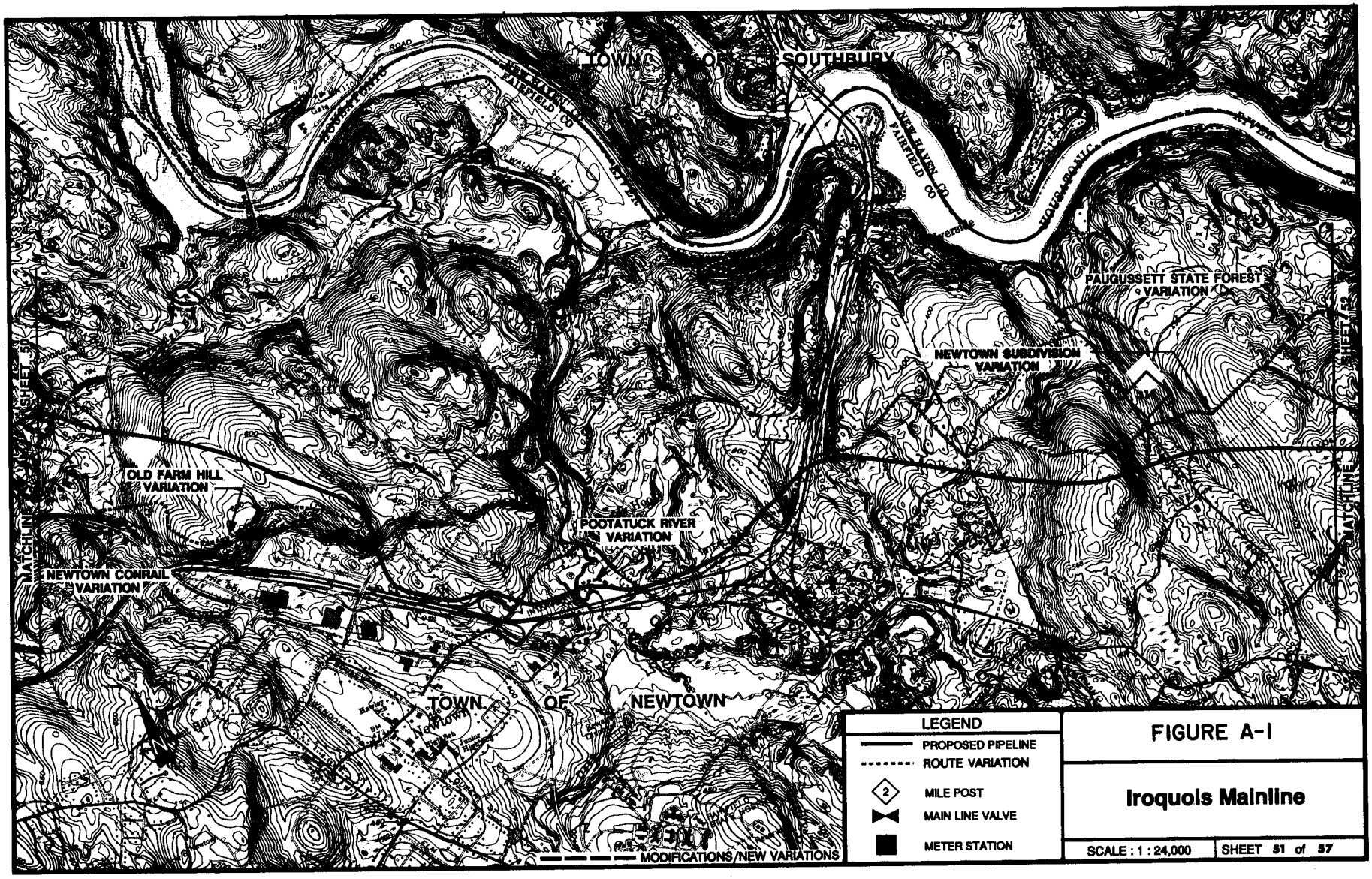


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 51 of 57

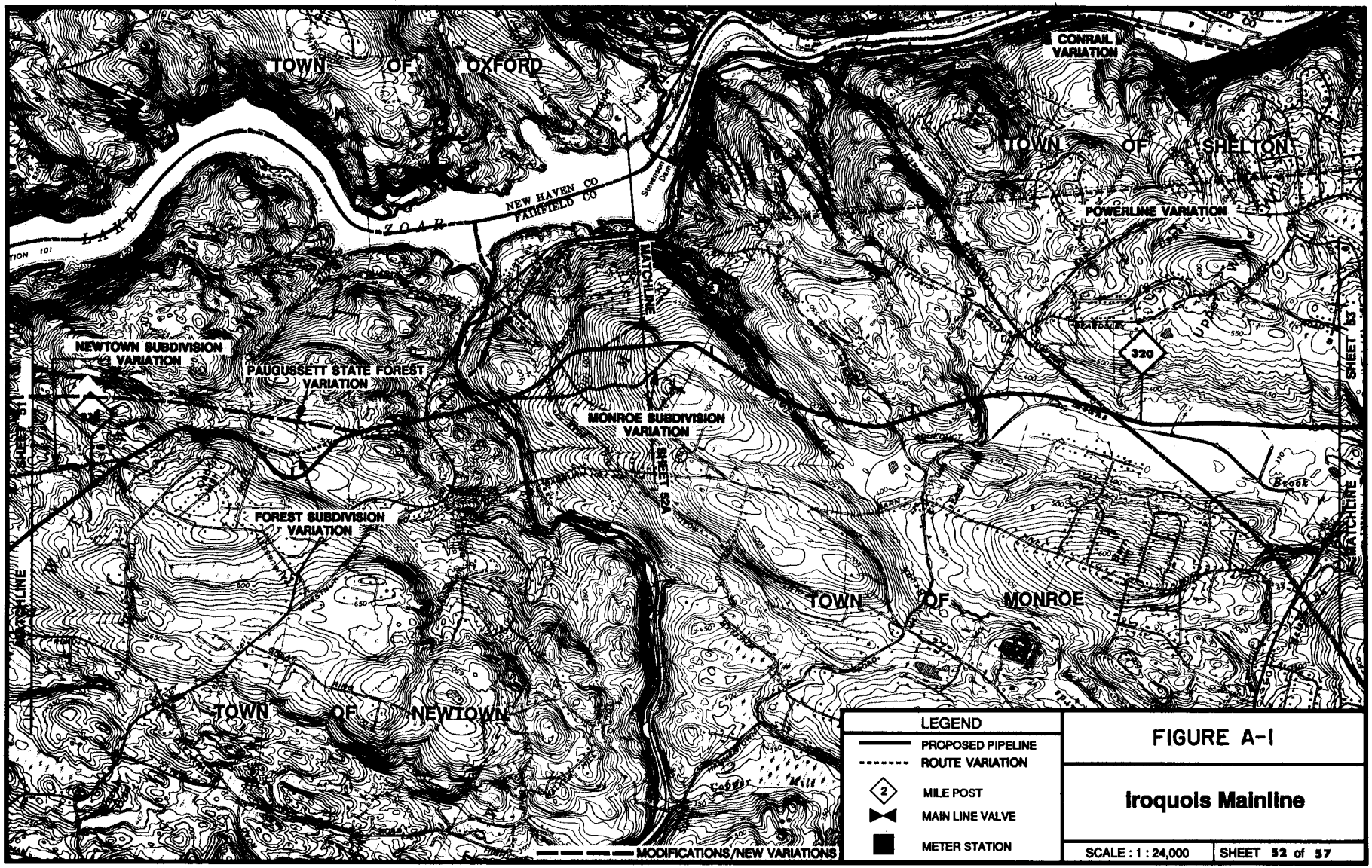


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 52 of 57

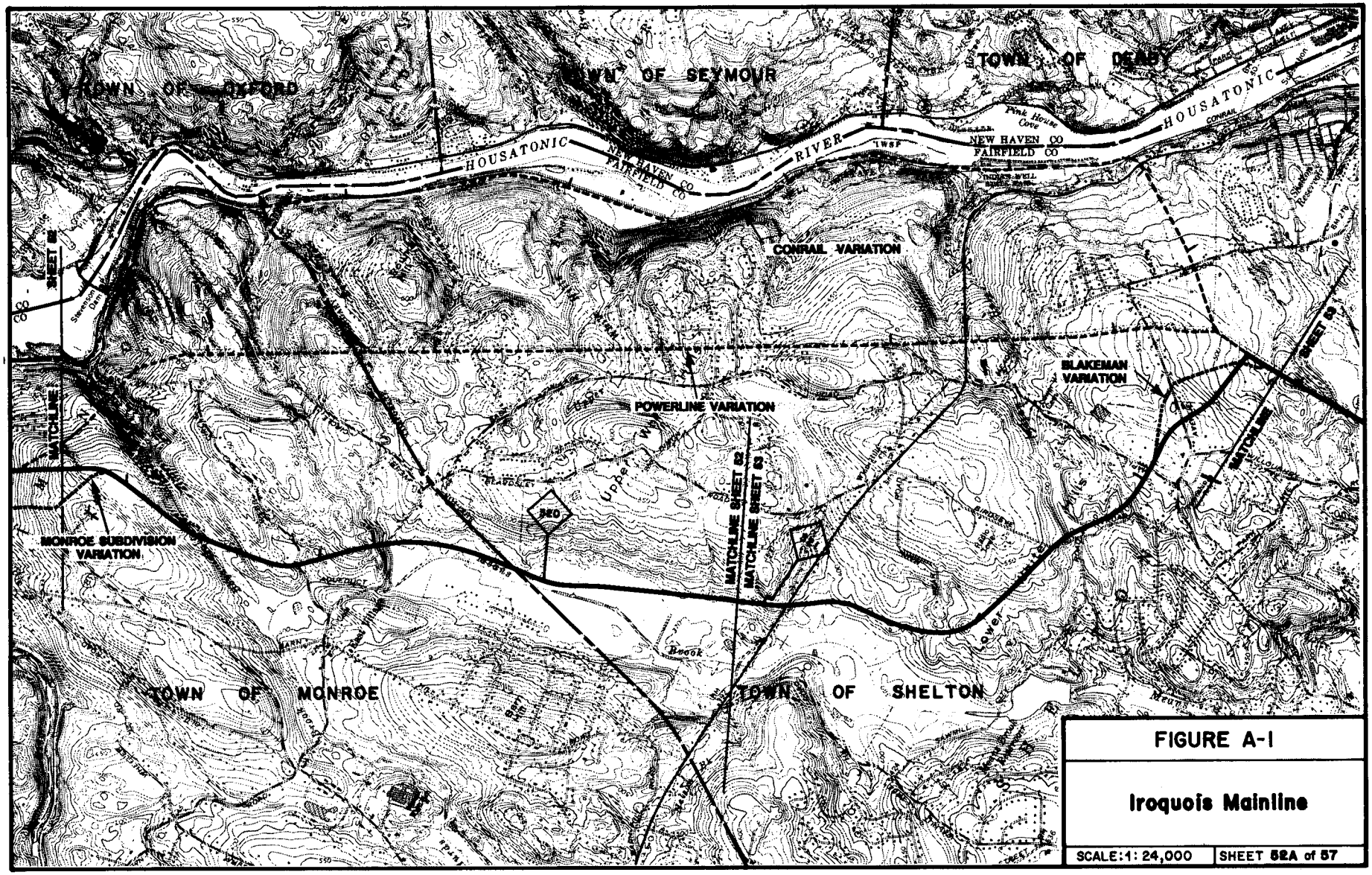


FIGURE A-1

Iroquois Mainline

SCALE: 1: 24,000 | SHEET 52A of 57

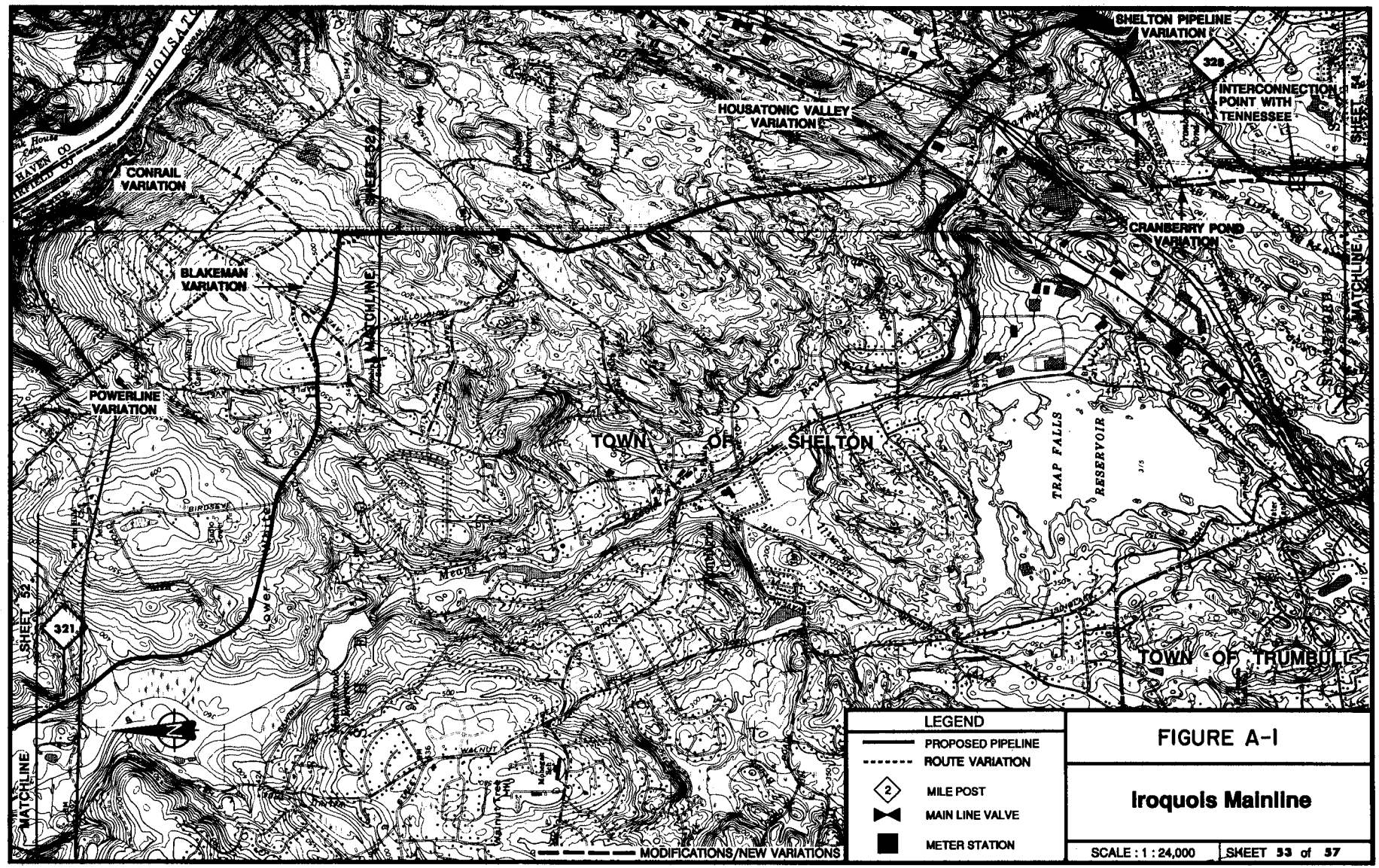


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 53 of 57

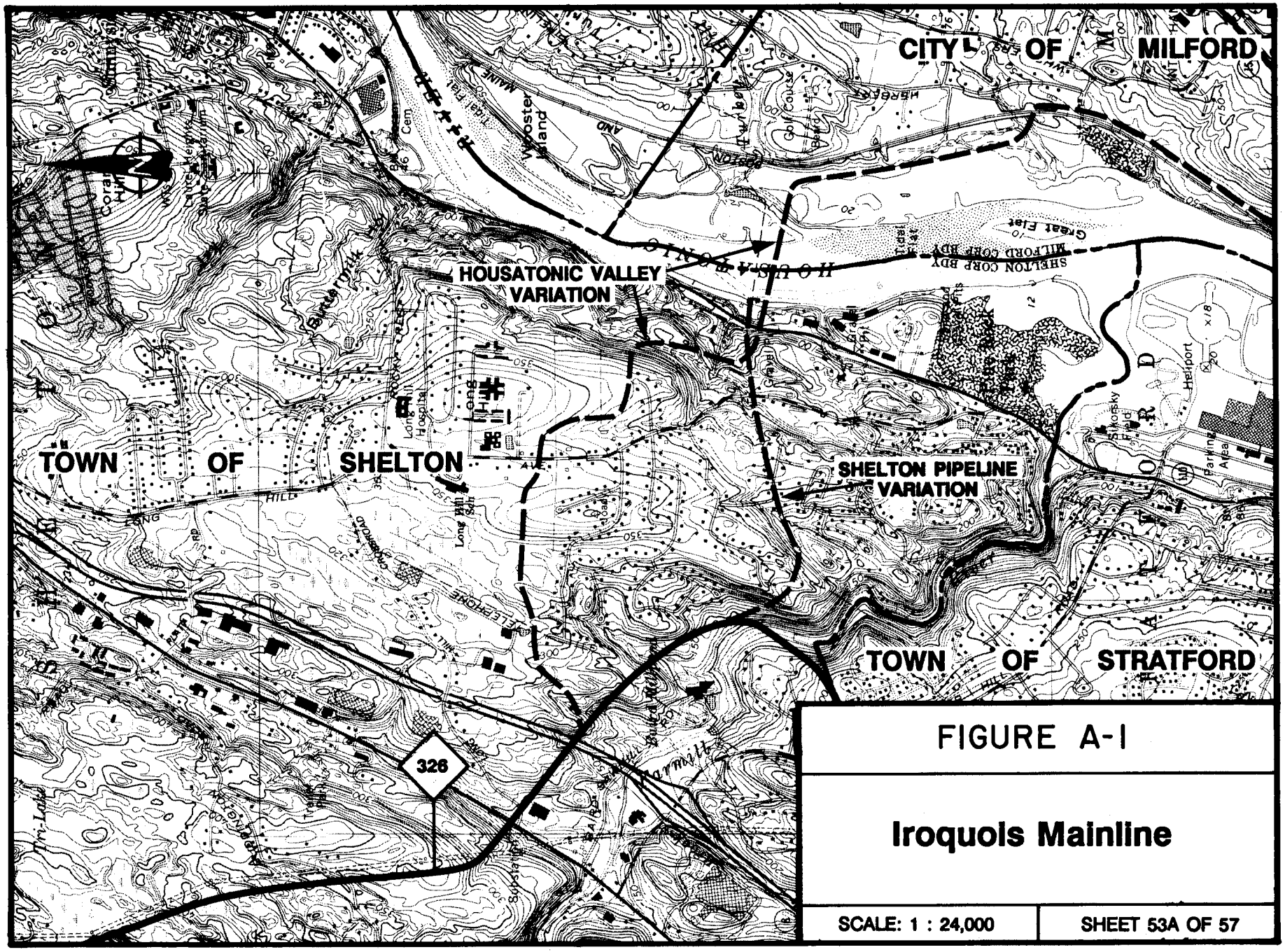


FIGURE A-1

Iroquois Mainline

SCALE: 1 : 24,000	SHEET 53A OF 57

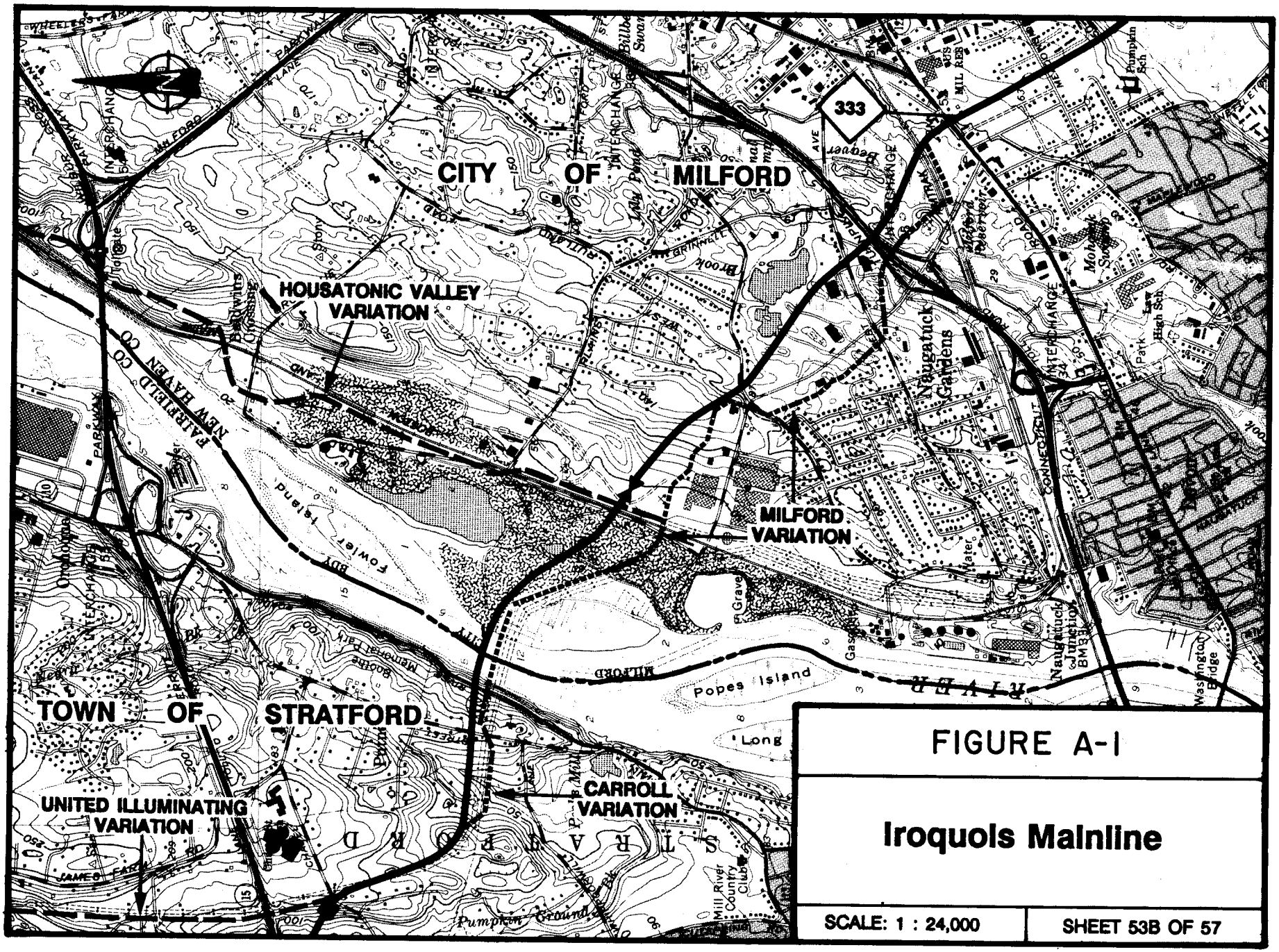


FIGURE A-1

Iroquois Mainline

SCALE: 1 : 24,000	SHEET 53B OF 57

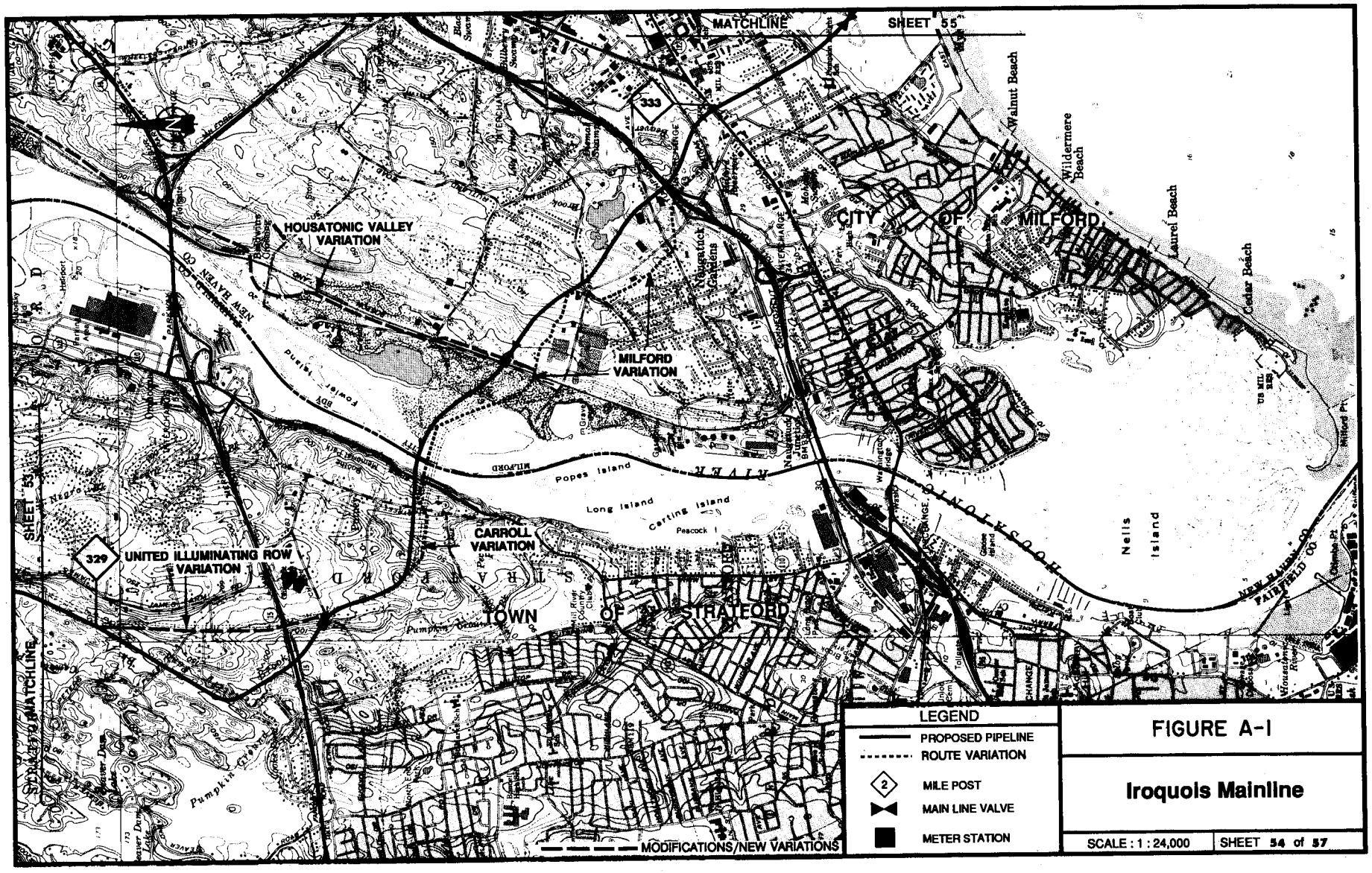


FIGURE A-1

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 54 of 57

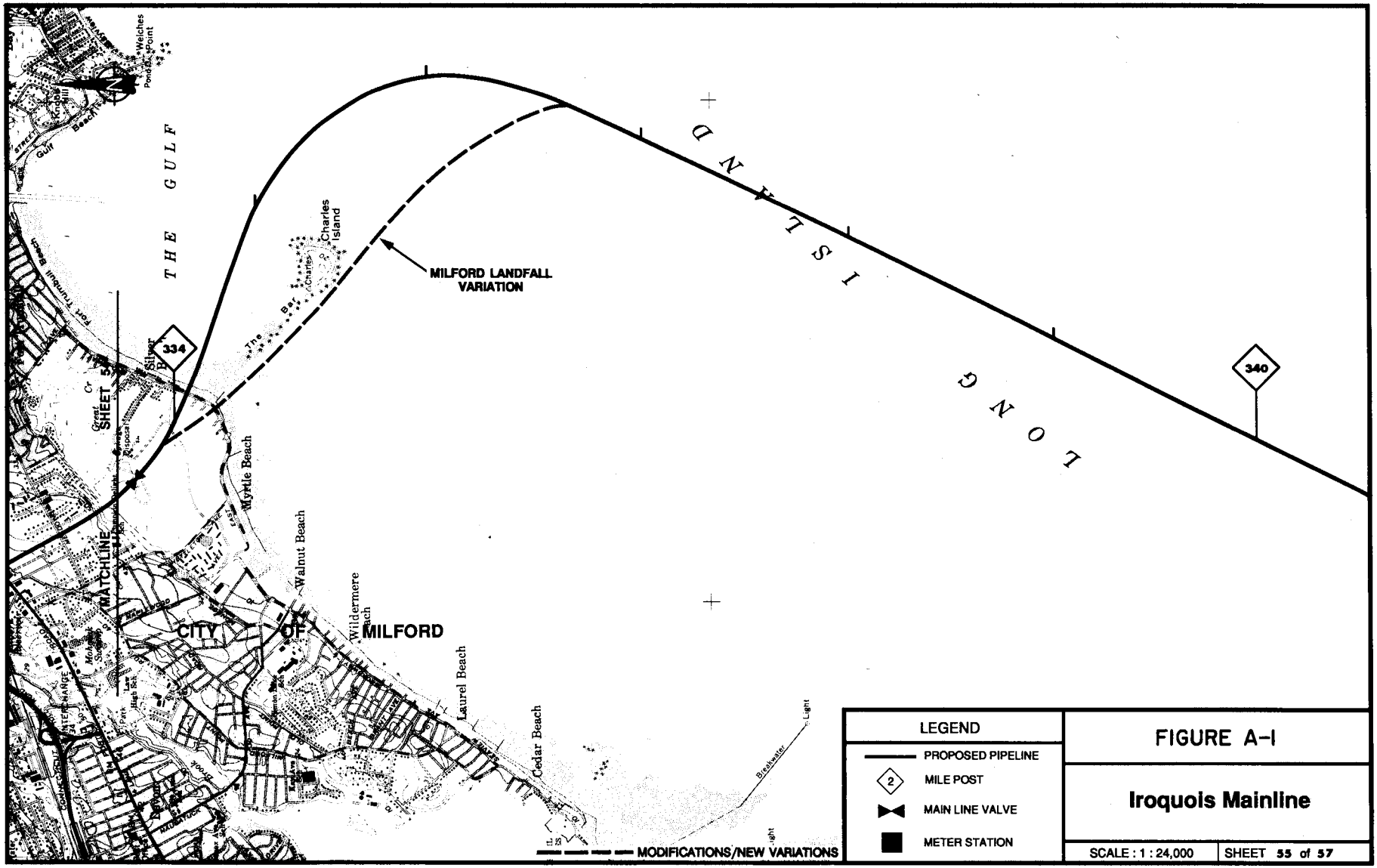
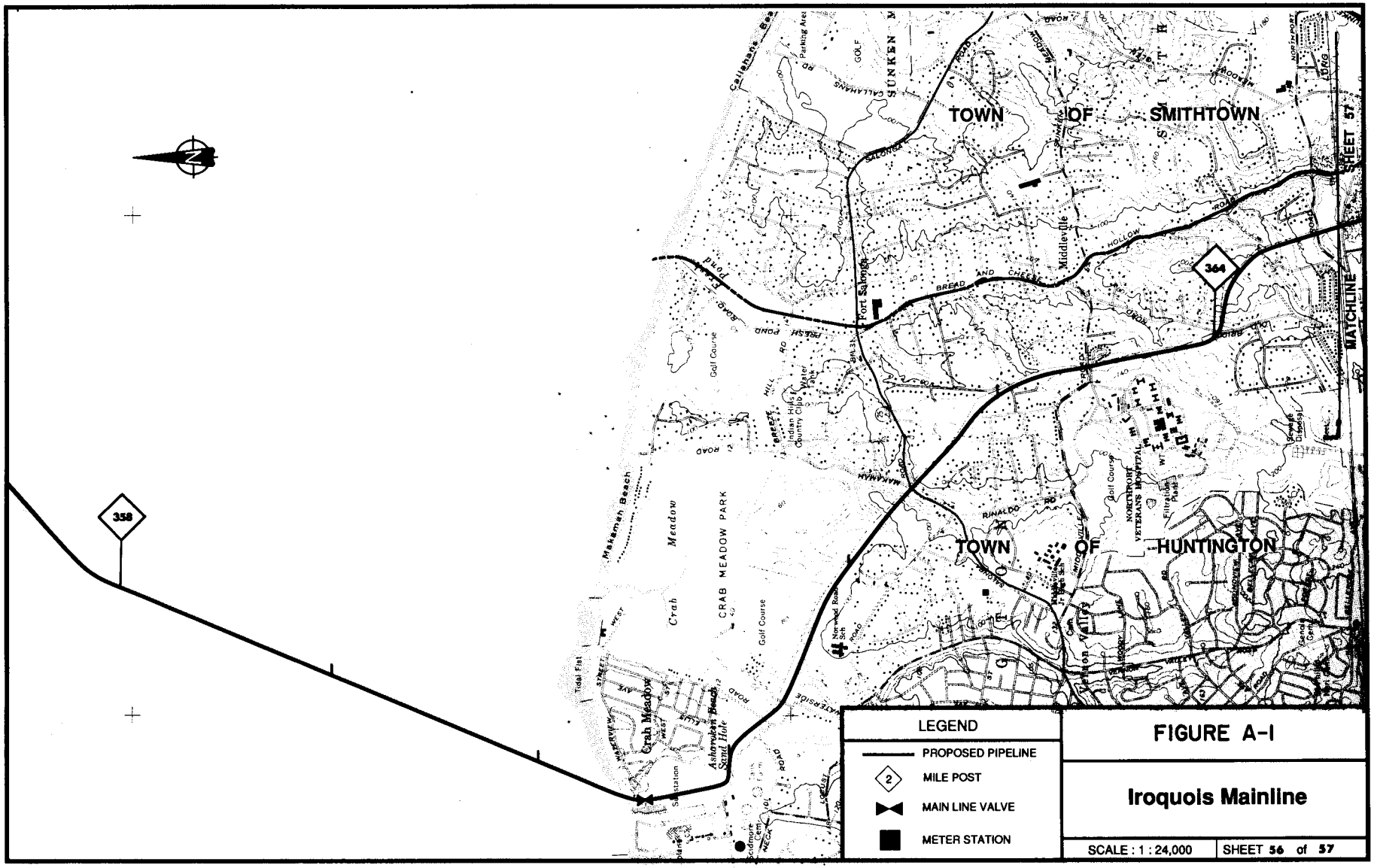


FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000 | SHEET 55 of 57


358
364
TOWN OF SMITHTOWN
TOWN OF HUNTINGTON
CRAB MEADOW PARK
Crab Meadow
Makemah Beach
Ashmokan Beach
Sand Hole
Port Salonga
Middleville
Indian Hills Country Club
Golf Course
NORTHPORT VETERANS HOSPITAL
Filtration Plant
Vanderbilt Museum
Tidal Flat
Sewage Disposal
Parking Area
SHEET 57
MATCHLINE
LEGEND
PROPOSED PIPELINE
MILE POST
MAIN LINE VALVE
METER STATION
FIGURE A-I
Iroquois Mainline
SCALE : 1 : 24,000
SHEET 56 of 57

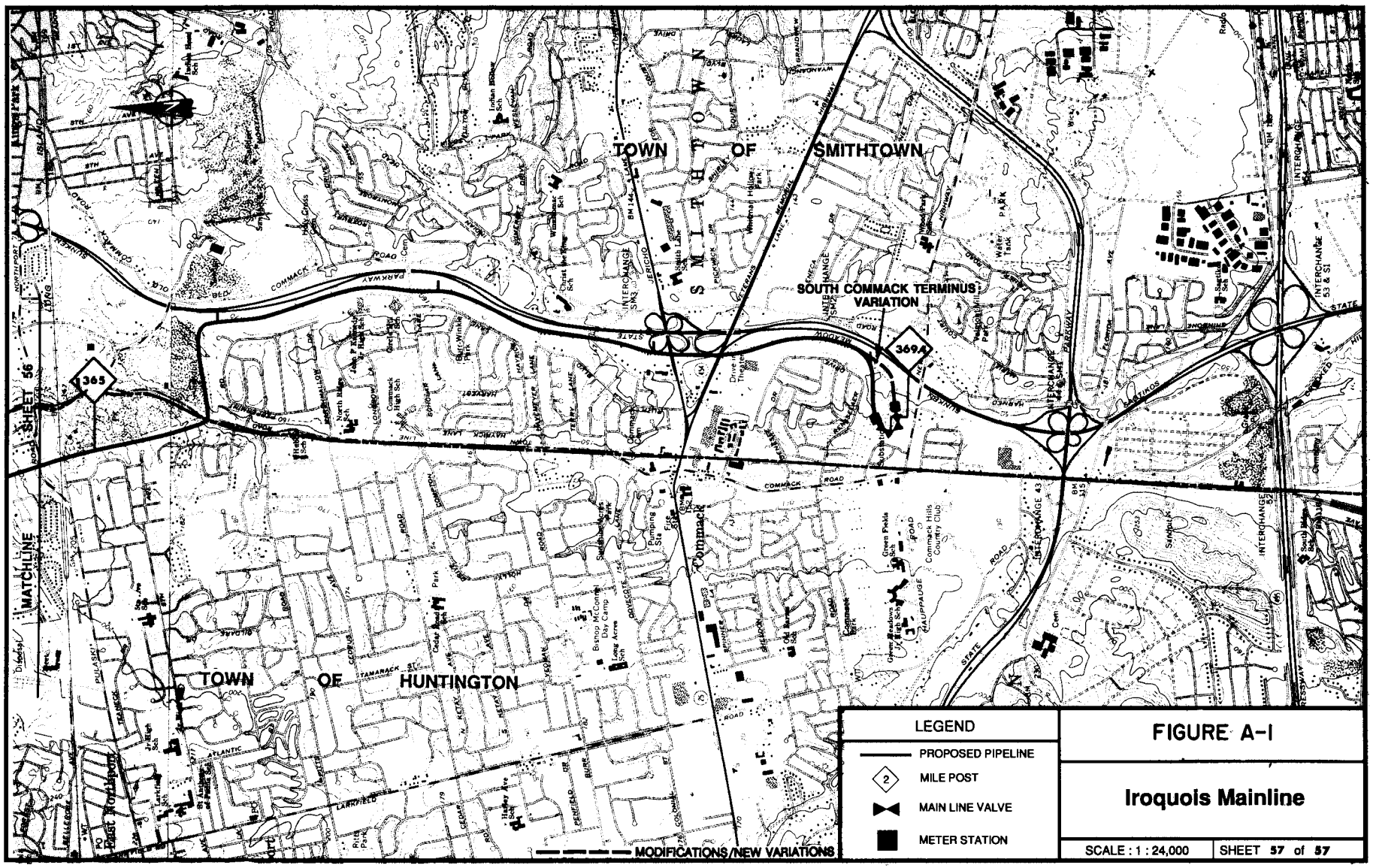
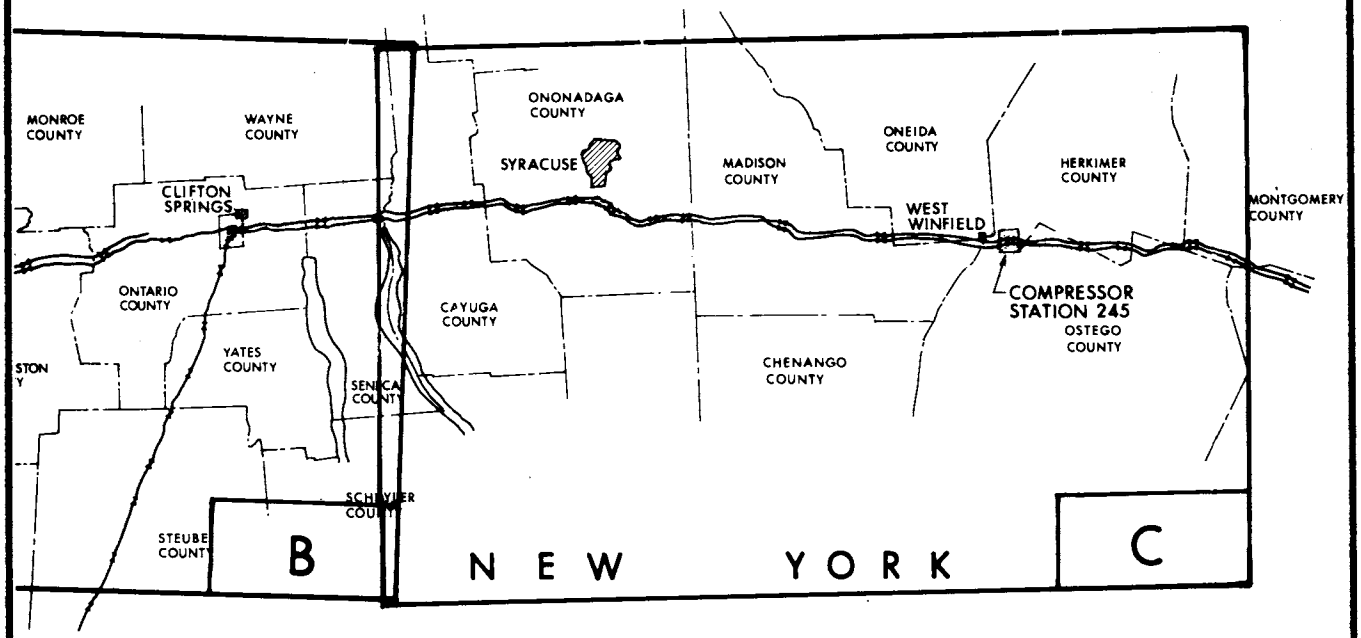


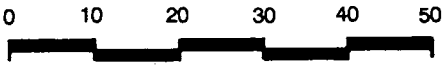
FIGURE A-I

Iroquois Mainline

SCALE : 1 : 24,000

SHEET 57 of 57





Scale in Miles

FIGURE A-2

TENNESSEE GAS PIPELINE
KEY MAP

Scale as shown	Sheet 1 of 2

KEY
MAP (# OF SHEETS)
D SCHORARIE/ALBANY LOOP (4)
D COLUMBIA/BERKSHIRE LOOP (7)
F WORCESTER LOOP (2)
E CONCORD LATERAL (2)
E HAVERHILL LATERAL (2)
F LINCOLN EXTENSION (1)
F WALLINGFORD LATERAL (1)
F SPRINGFIELD LATERAL (1)

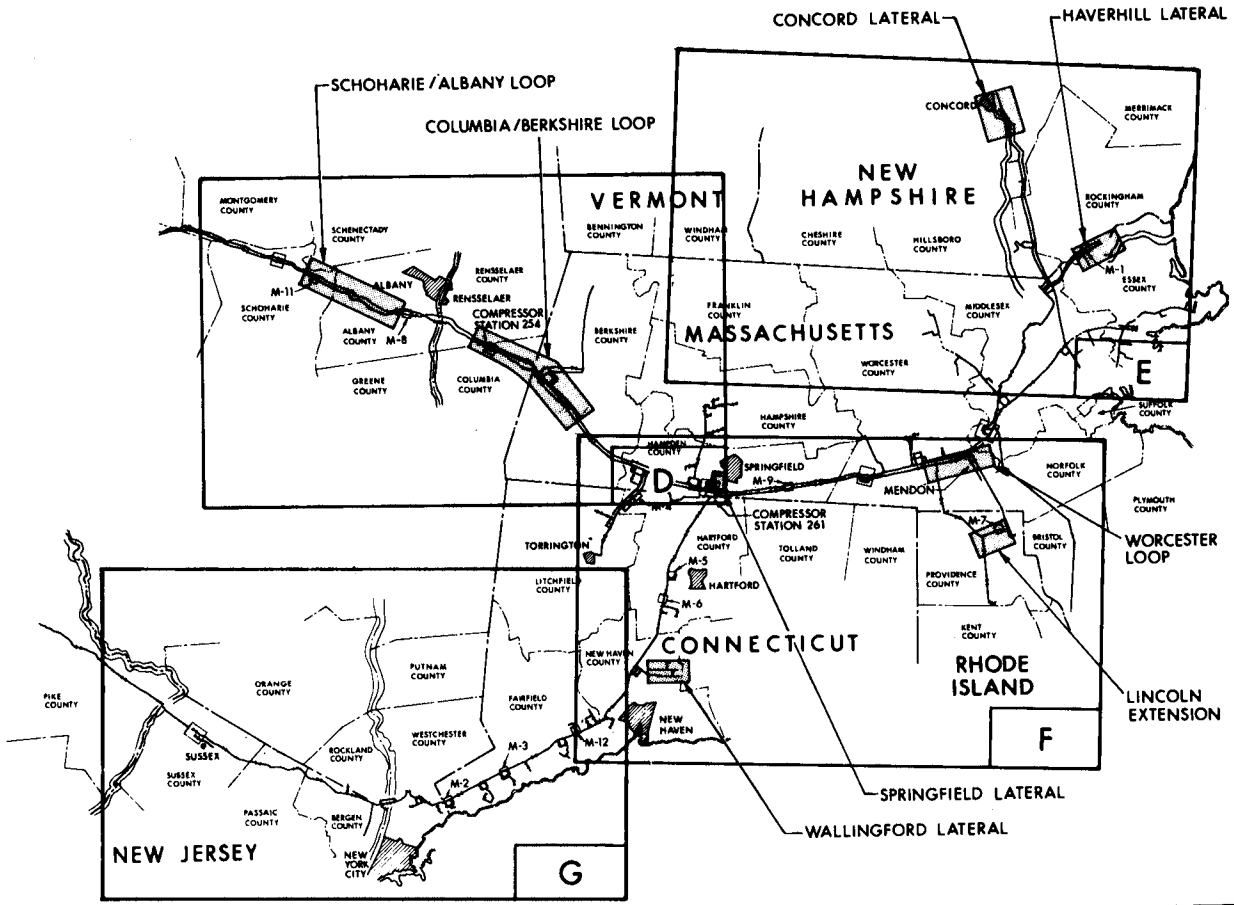


FIGURE A-2

TENNESSEE GAS PIPELINE
KEY MAP

Scale as shown | Sheet 2 of 2

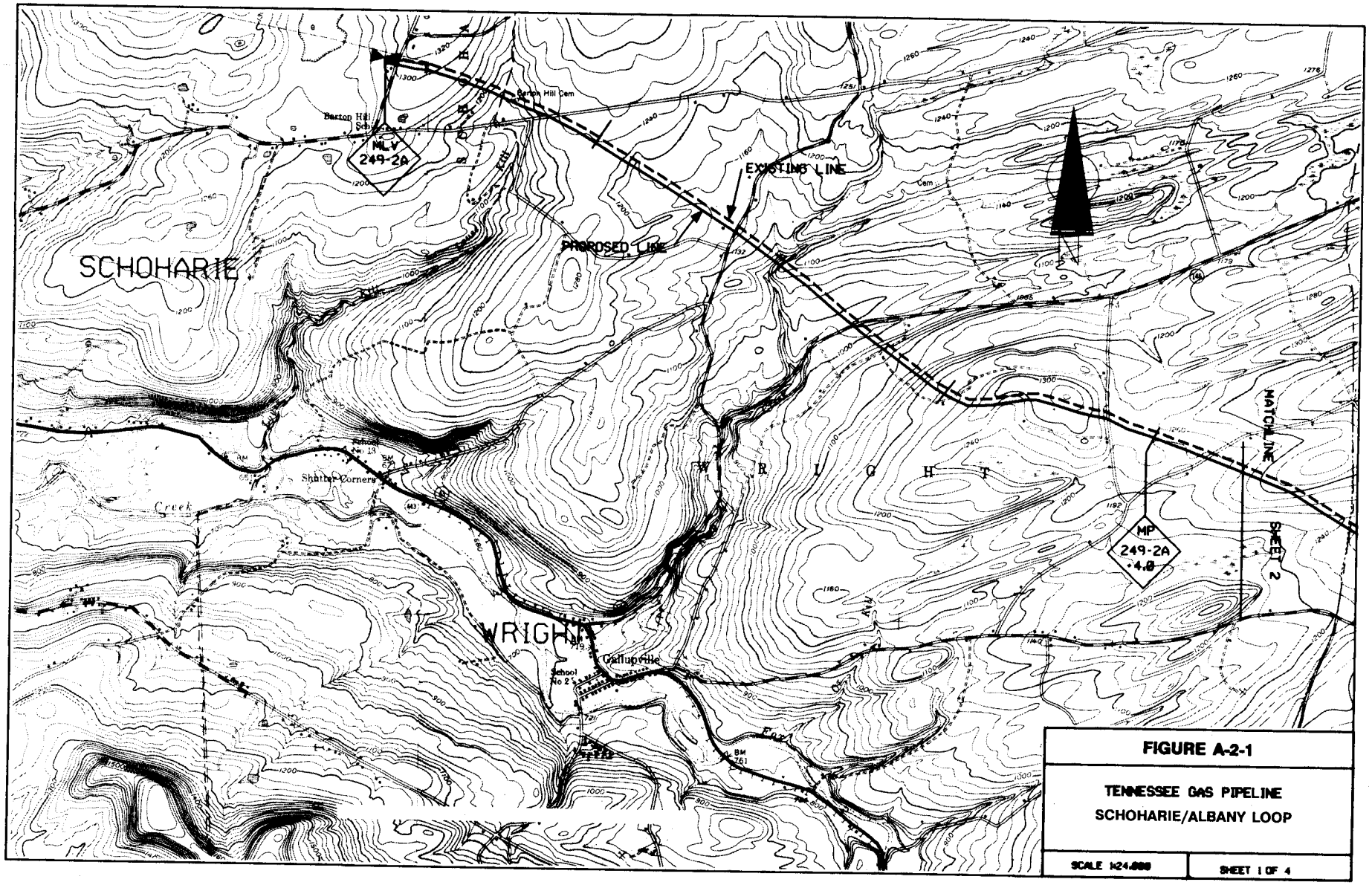


FIGURE A-2-1

TENNESSEE GAS PIPELINE
SCHOHARIE/ALBANY LOOP

SCALE 1:24,000	SHEET 1 OF 4

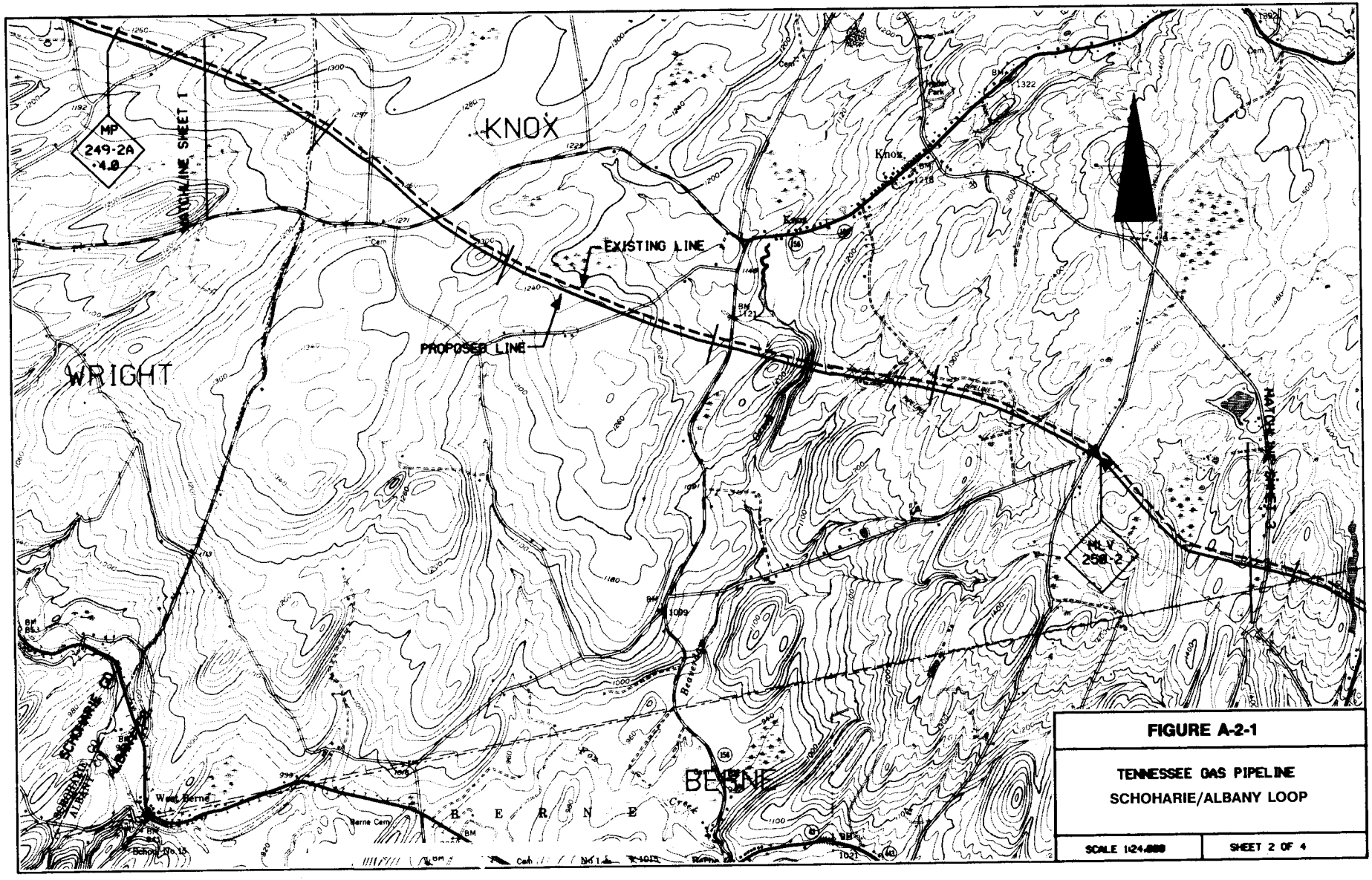


FIGURE A-2-1

TENNESSEE GAS PIPELINE
SCHOHARIE/ALBANY LOOP

SCALE 1:24,000	SHEET 2 OF 4

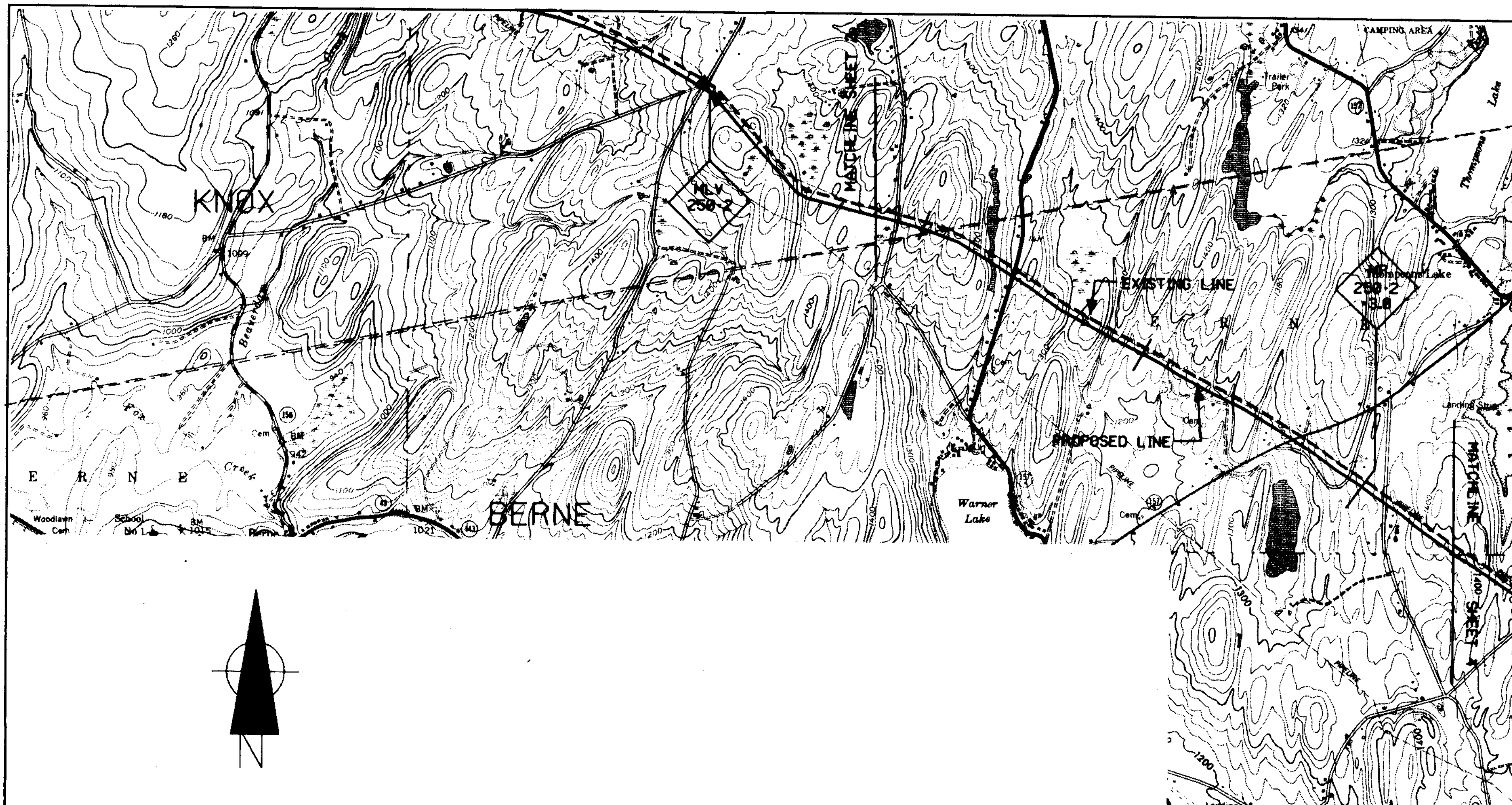


FIGURE A-2-1

TENNESSEE GAS PIPELINE

SCHOHARIE/ALBANY LOOP

SCALE 1:24,000	SHEET 3 OF 4

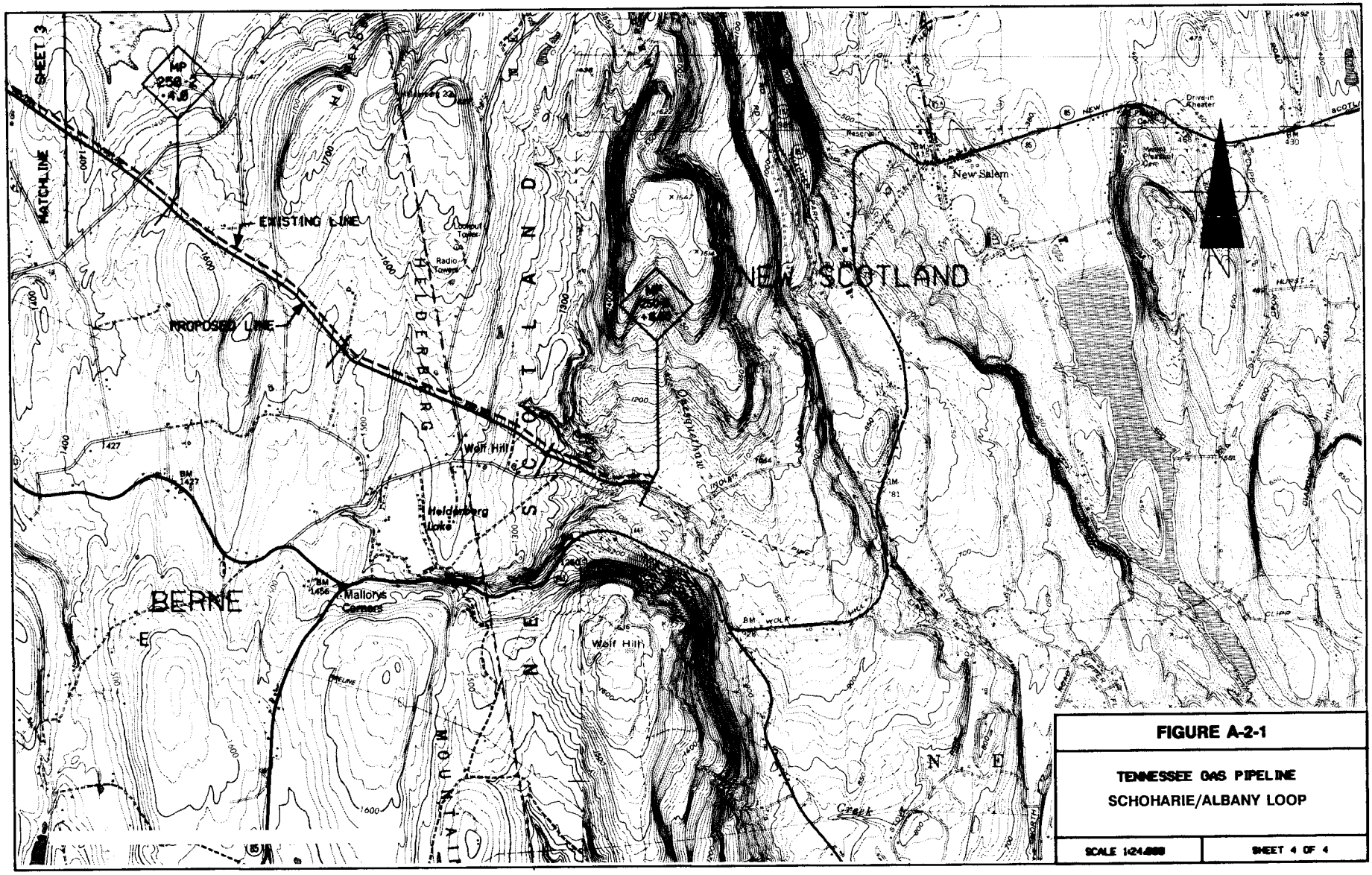


FIGURE A-2-1

TENNESSEE GAS PIPELINE
SCHOHARIE/ALBANY LOOP

SCALE 1:24,000	SHEET 4 OF 4

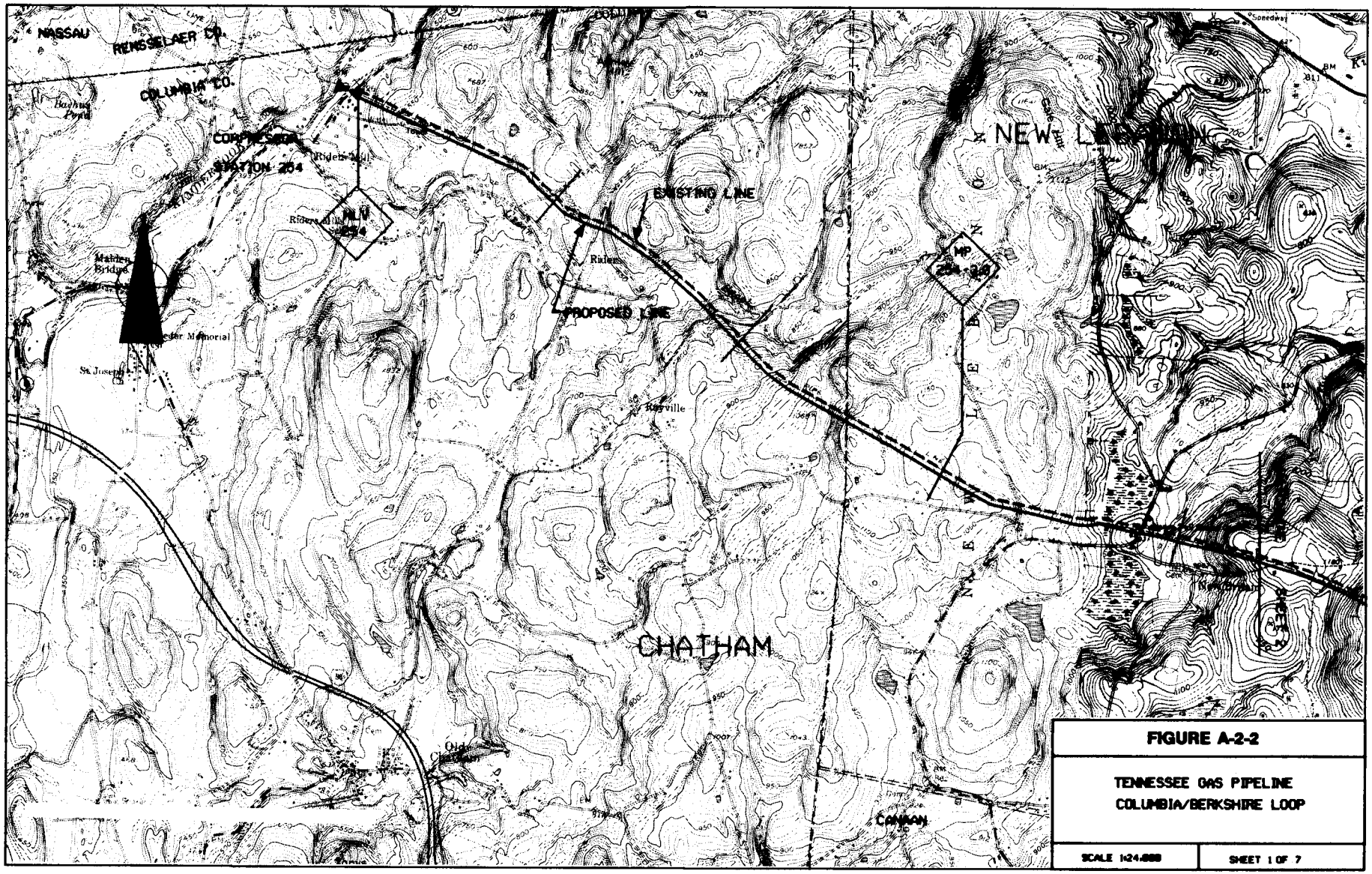


FIGURE A-2-2

TENNESSEE GAS PIPELINE
COLUMBIA/BERKSHIRE LOOP

SCALE 1:24,000 | SHEET 1 OF 7

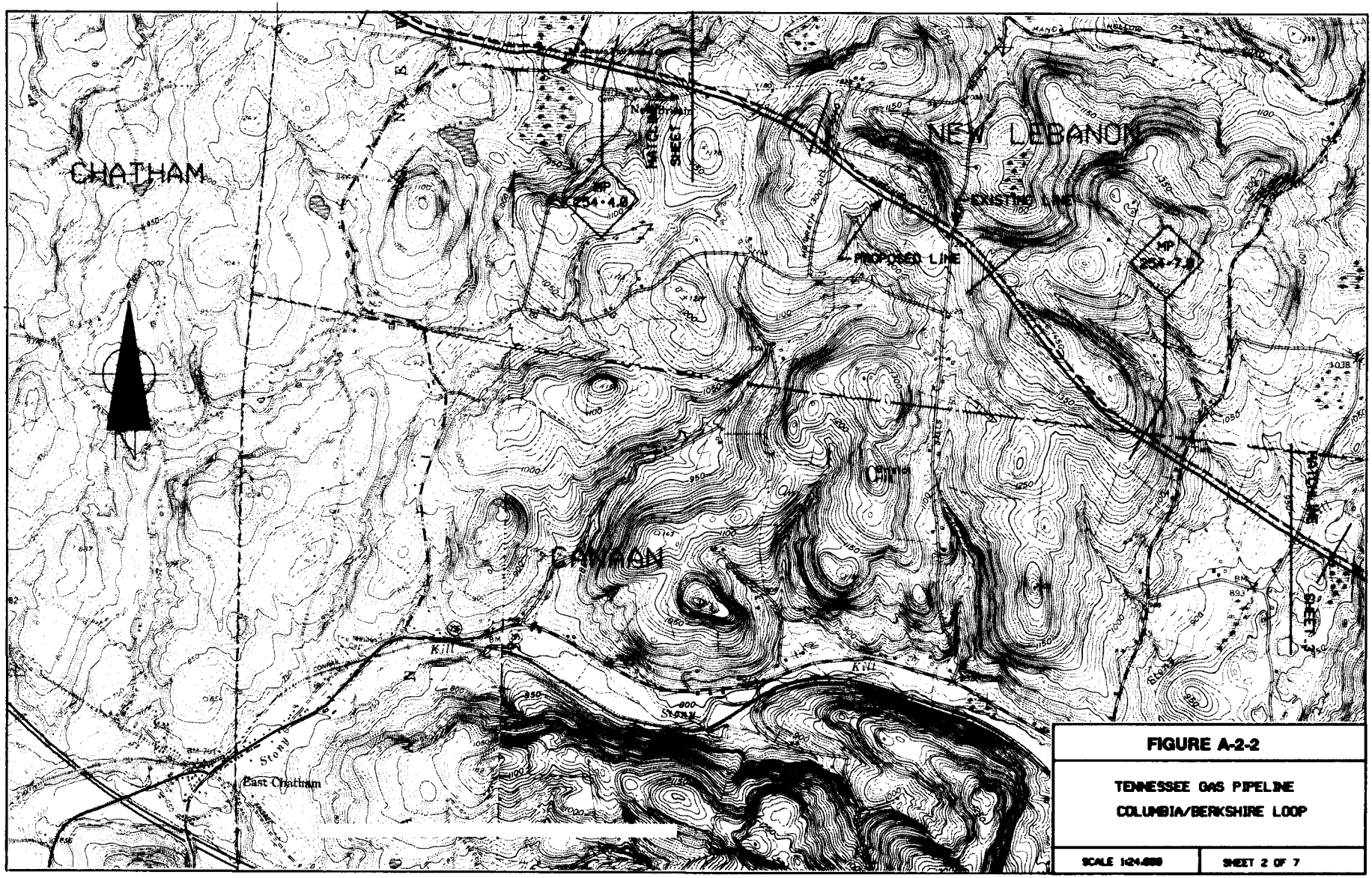


FIGURE A-2-2

TENNESSEE GAS PIPELINE
COLUMBIA/BERKSHIRE LOOP

SCALE 1:24,000	SHEET 2 OF 7

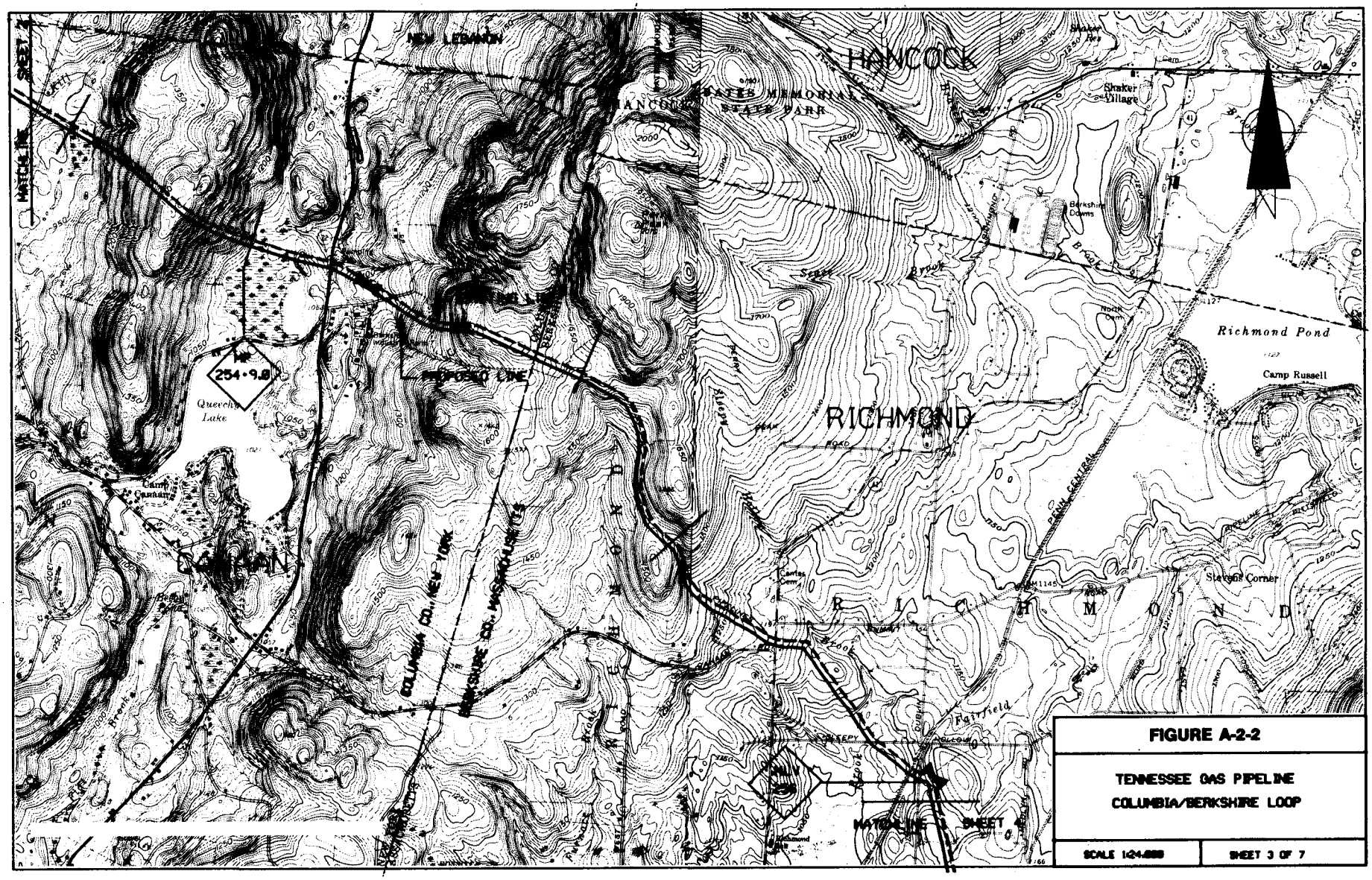


FIGURE A-2-2

TENNESSEE GAS PIPELINE
COLUMBIA/BERKSHIRE LOOP

SCALE 1:24,000 | SHEET 3 OF 7

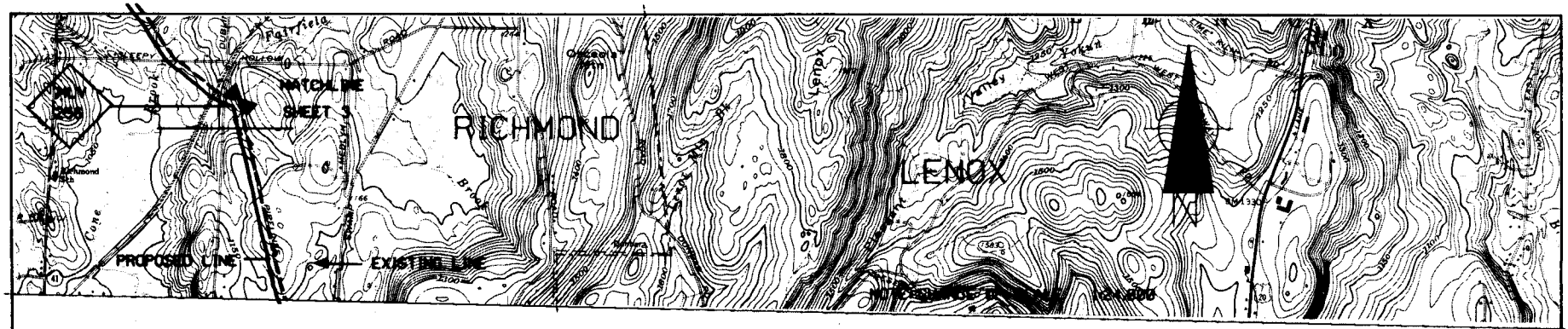


FIGURE A-2-2

TENNESSEE GAS PIPELINE

COLUMBIA/BERKSHIRE LOOP

SCALE 1:24,000	SHEET 4 OF 7

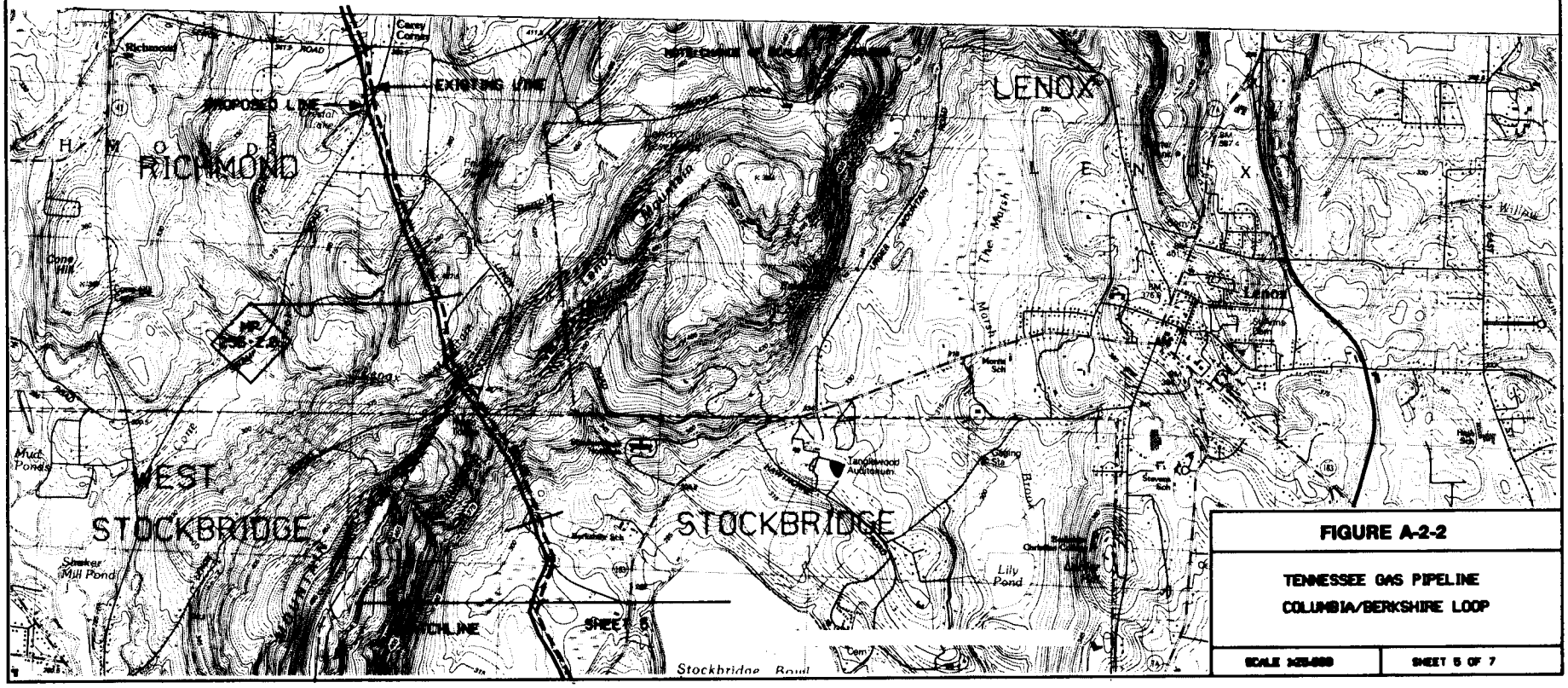


FIGURE A-2-2

TENNESSEE GAS PIPELINE
COLUMBIA/BERKSHIRE LOOP

SCALE 1:25,000	SHEET 5 OF 7

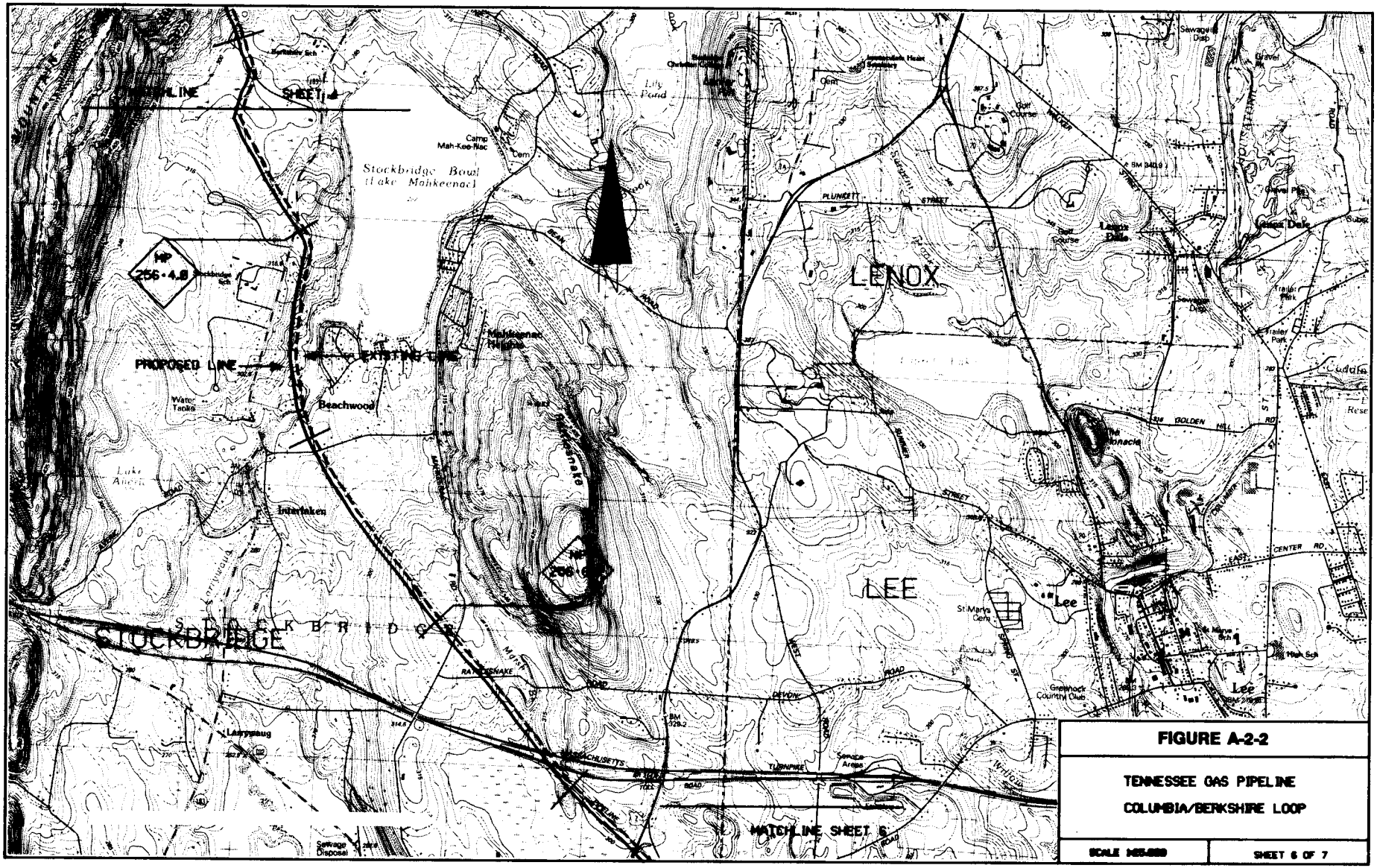


FIGURE A-2-2

TENNESSEE GAS PIPELINE

COLUMBIA/BERKSHIRE LOOP

SCALE 1:25,000

SHEET 6 OF 7

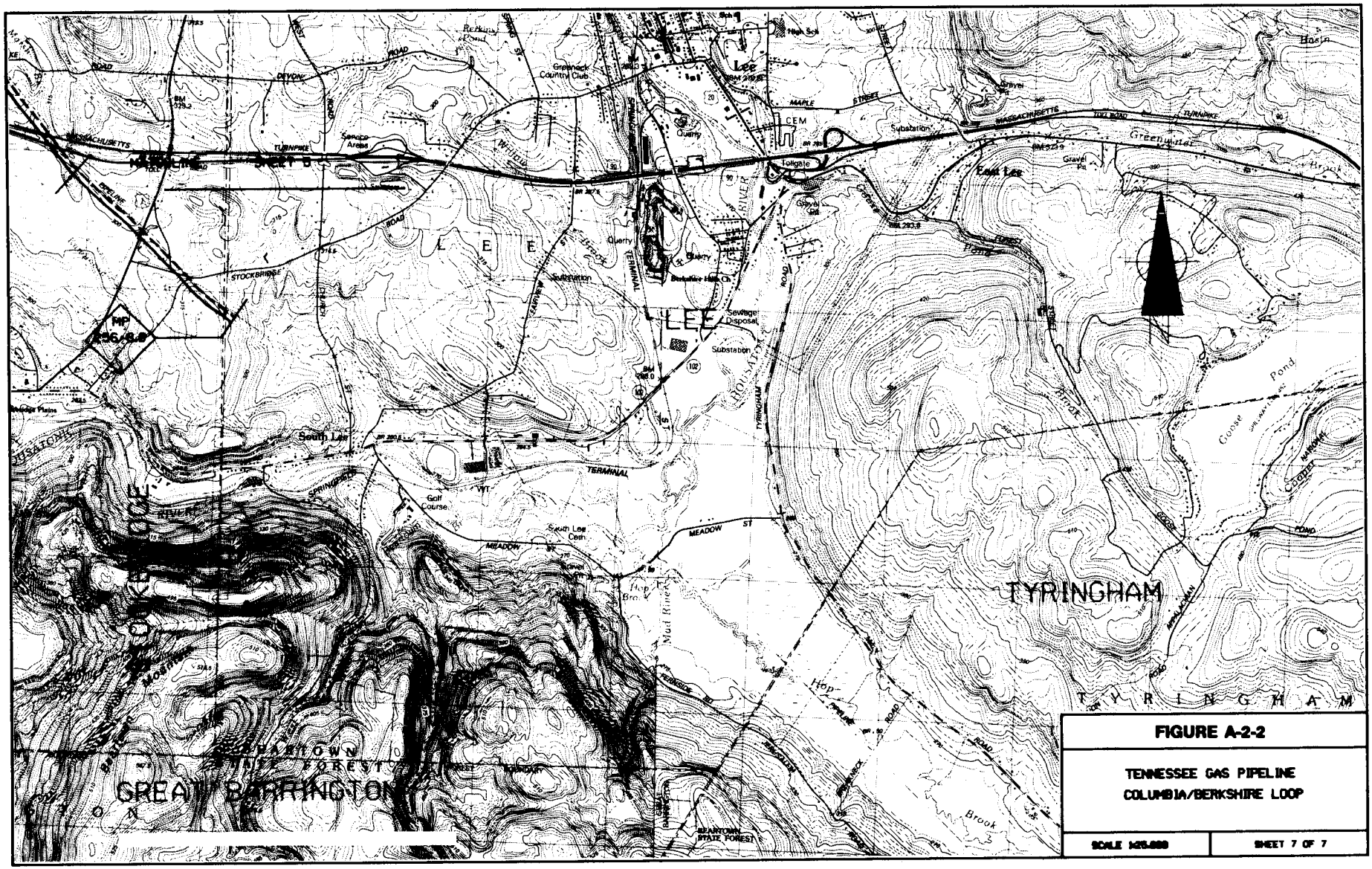


FIGURE A-2-2

TENNESSEE GAS PIPELINE
COLUMBIA/BERKSHIRE LOOP

SCALE 1:25,000 | SHEET 7 OF 7

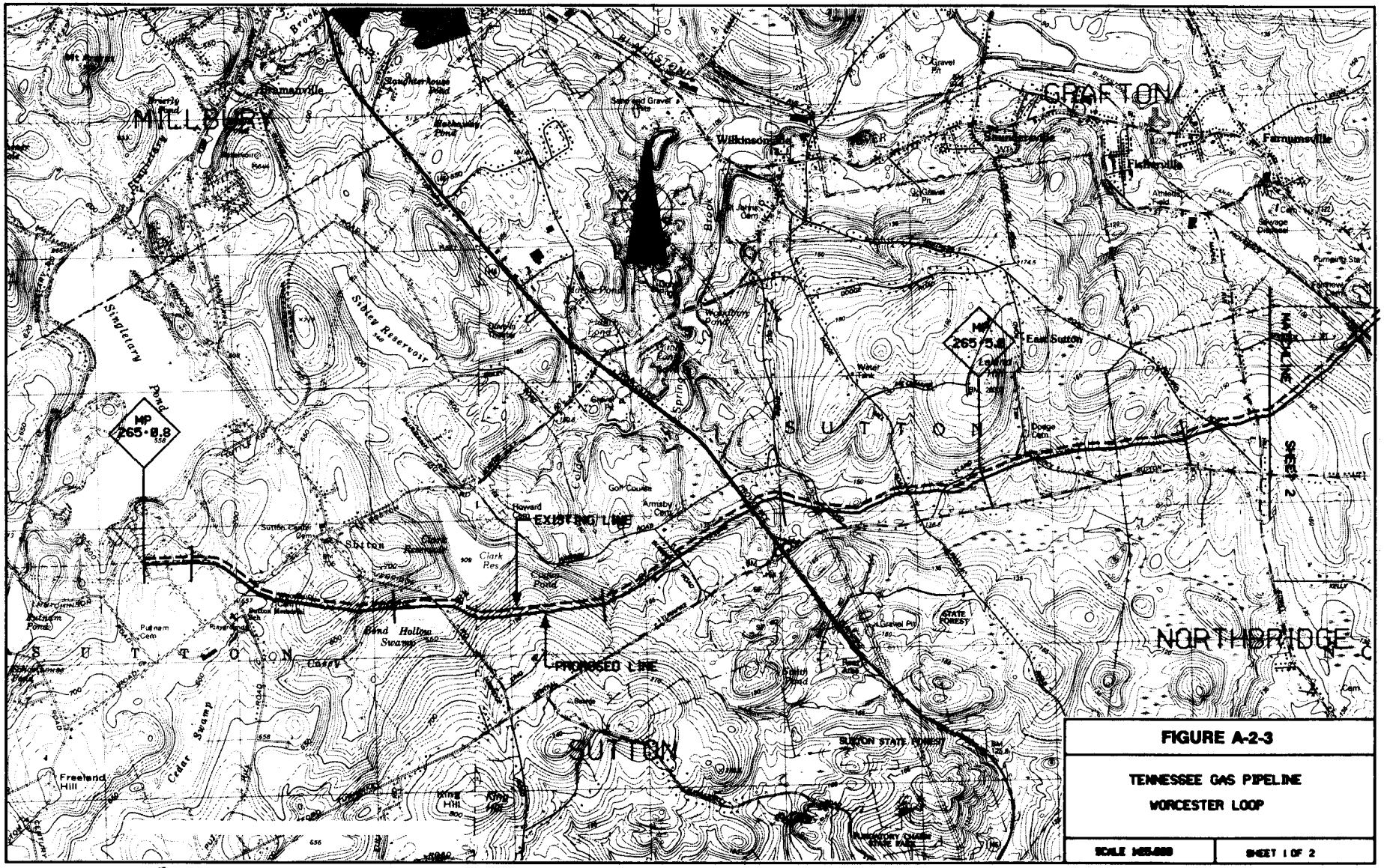


FIGURE A-2-3

TENNESSEE GAS PIPELINE
WORCESTER LOOP

SCALE 1:25,000	SHEET 1 OF 2

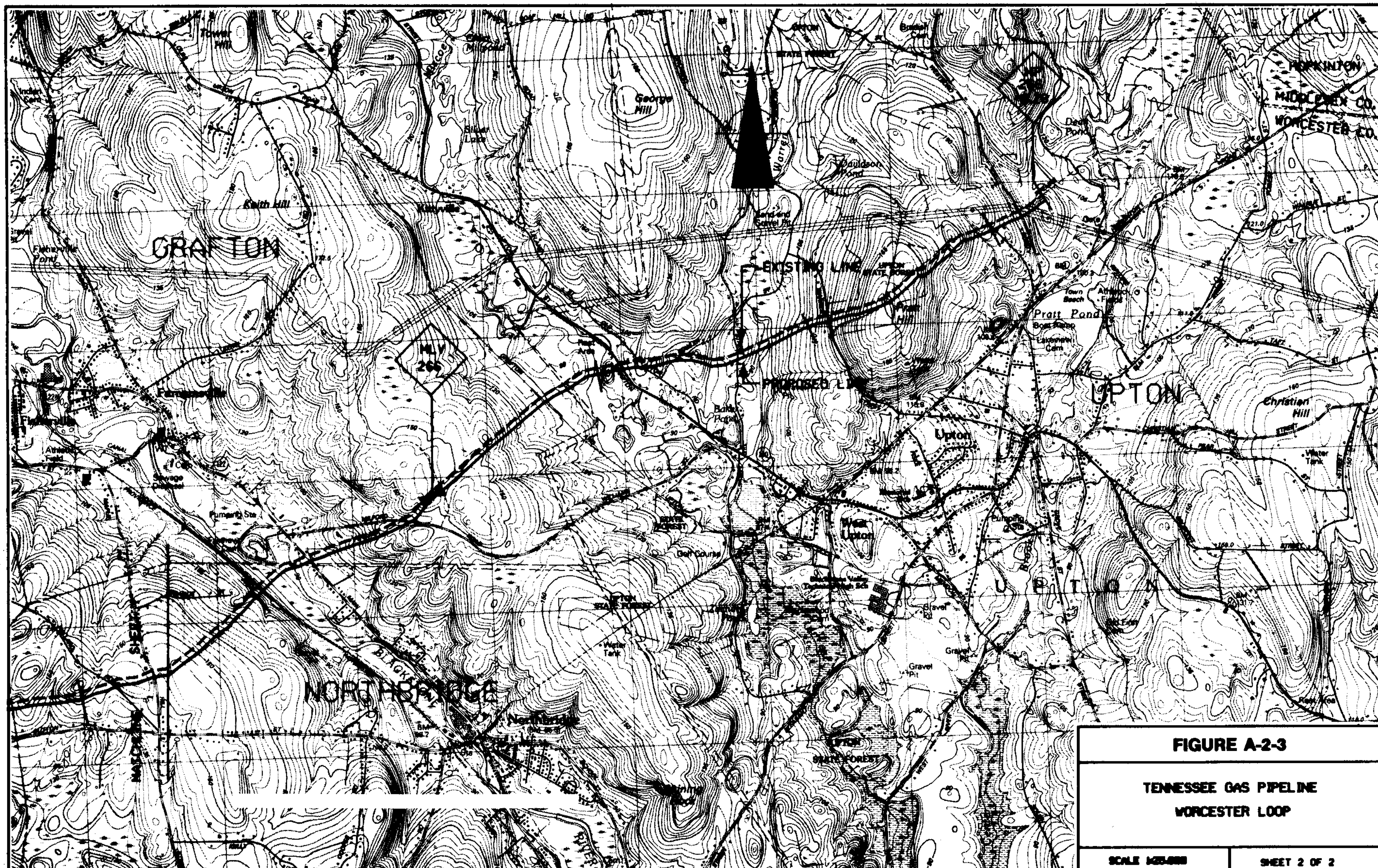


FIGURE A-2-3

TENNESSEE GAS PIPELINE
WORCESTER LOOP

SCALE 1:25,000 | SHEET 2 OF 2

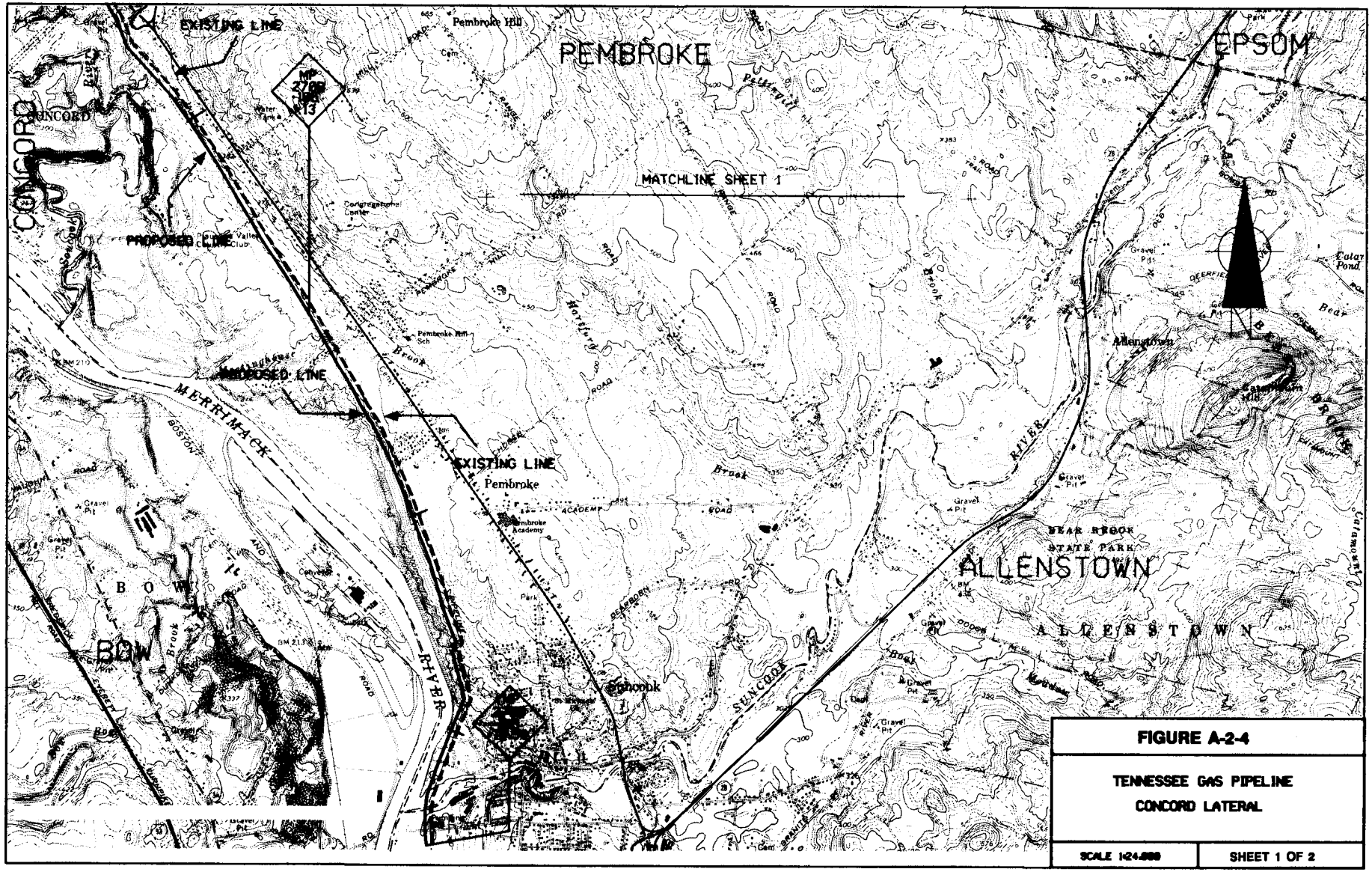


FIGURE A-2-4

TENNESSEE GAS PIPELINE
CONCORD LATERAL

SCALE 1:24,000	SHEET 1 OF 2

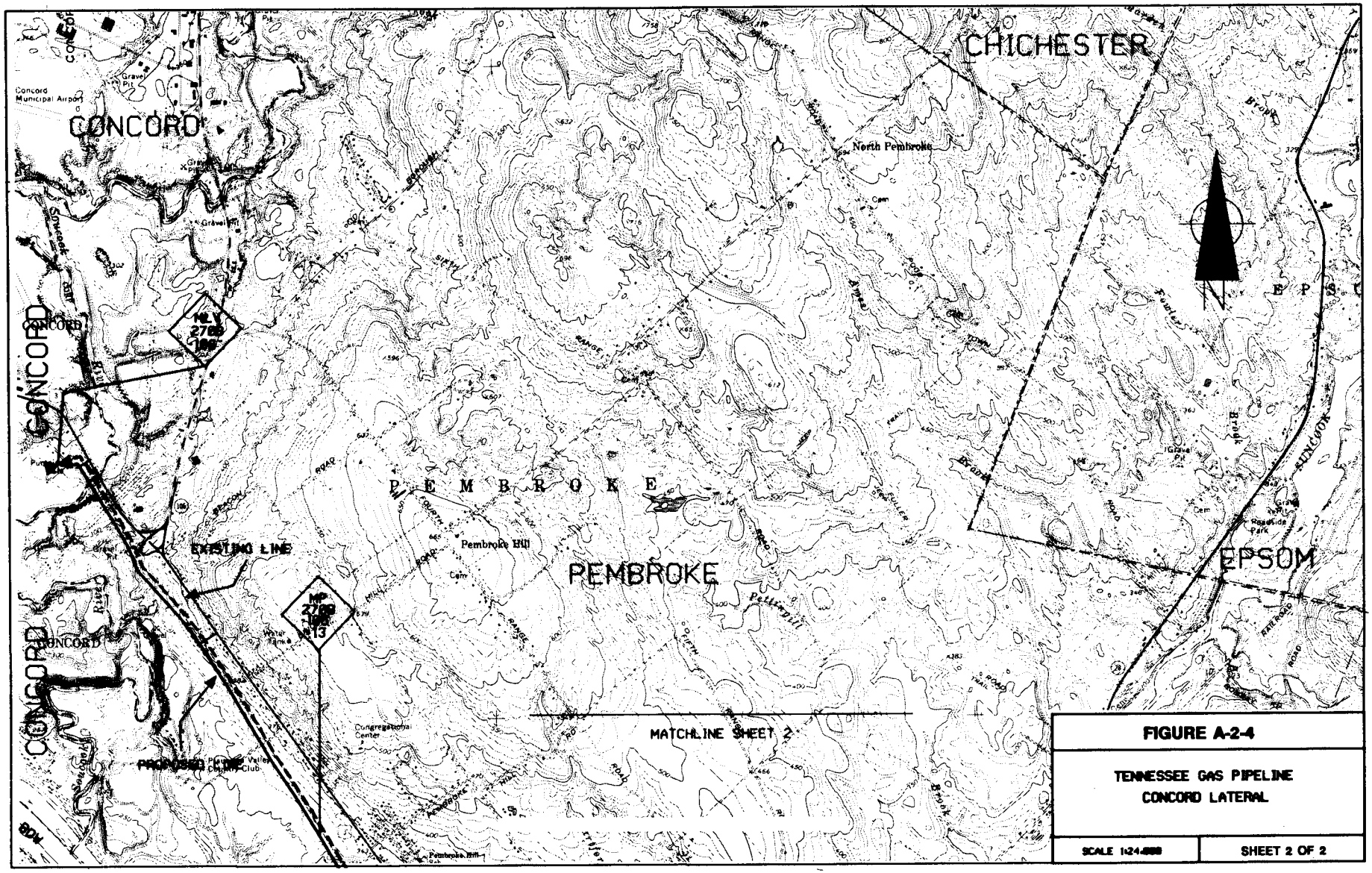


FIGURE A-2-4

TENNESSEE GAS PIPELINE
CONCORD LATERAL

SCALE 1:24,000 | SHEET 2 OF 2

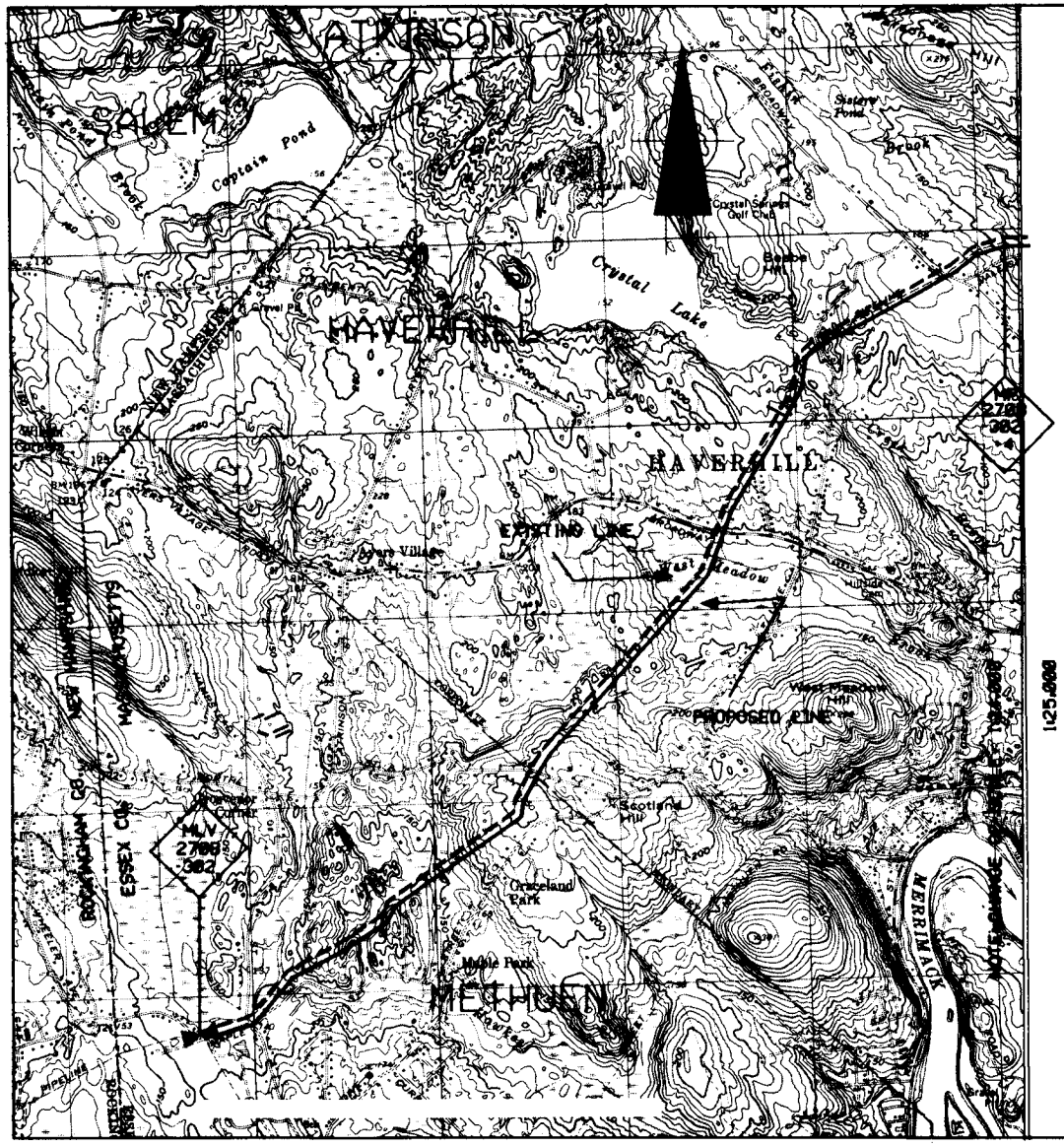
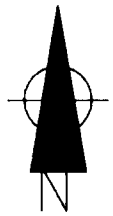


FIGURE A-2-5

TENNESSEE GAS PIPELINE

HAVERHILL LATERAL

SCALE 1:24,000	SHEET 1 OF 2



NOTE: CHANGE OF SCALE 1:24,000

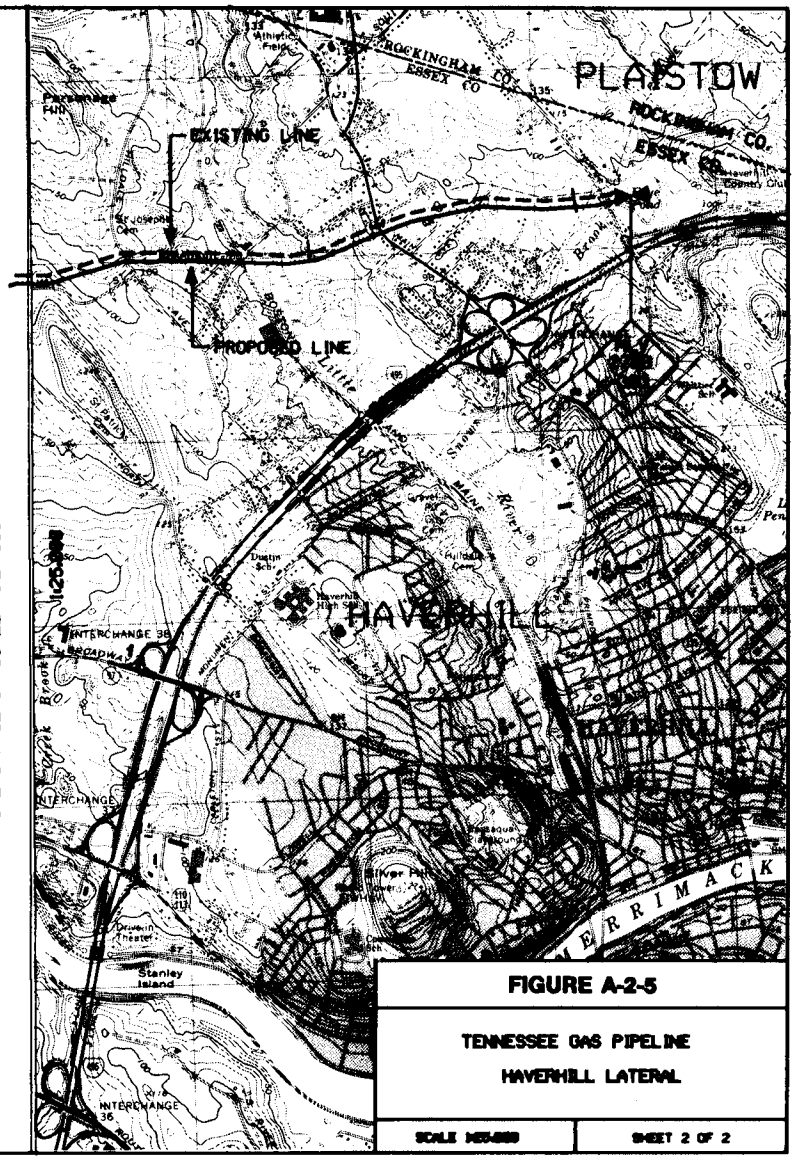


FIGURE A-2-5

TENNESSEE GAS PIPELINE
HAVERHILL LATERAL

SCALE [illegible]	SHEET 2 OF 2

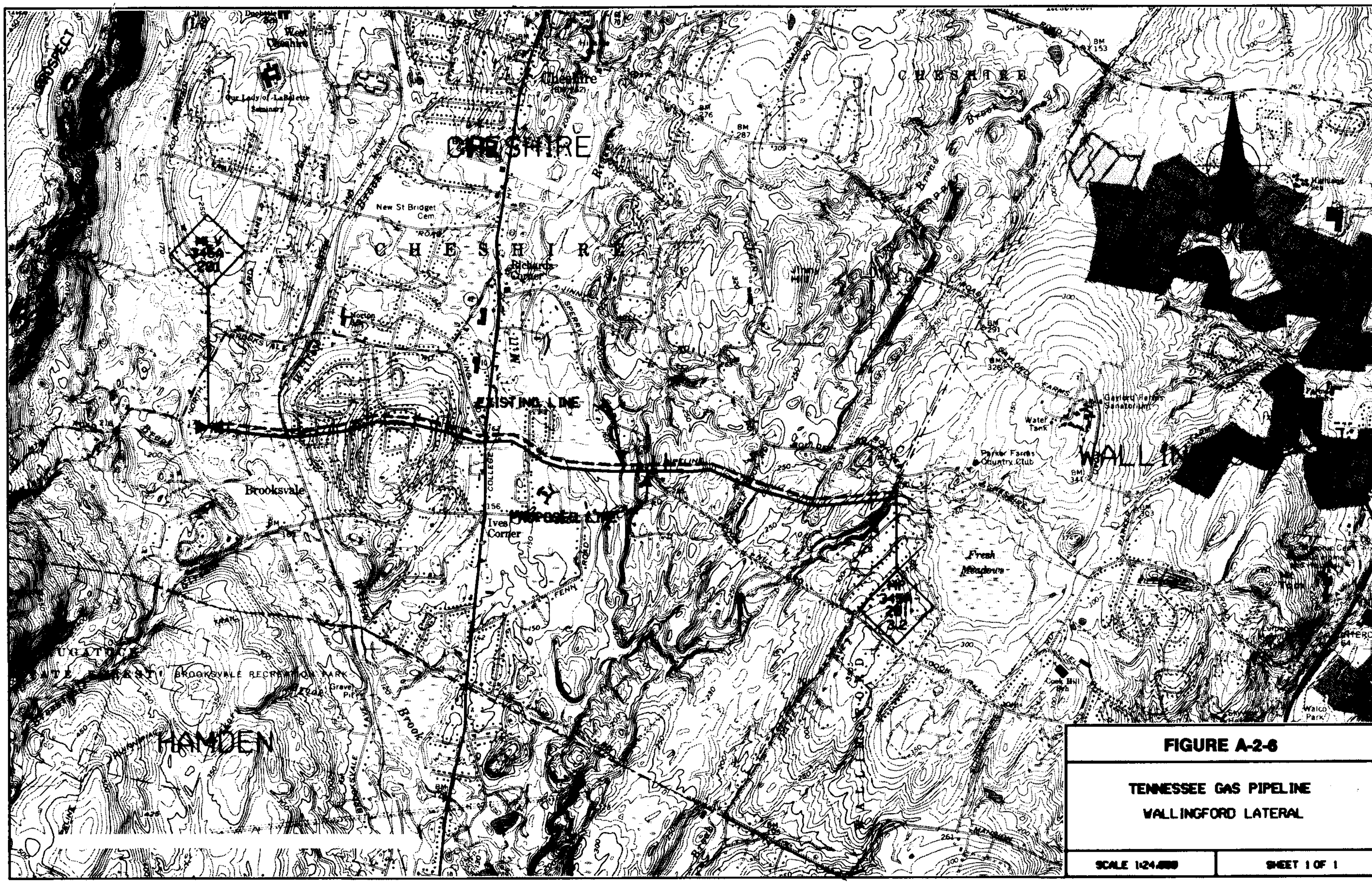
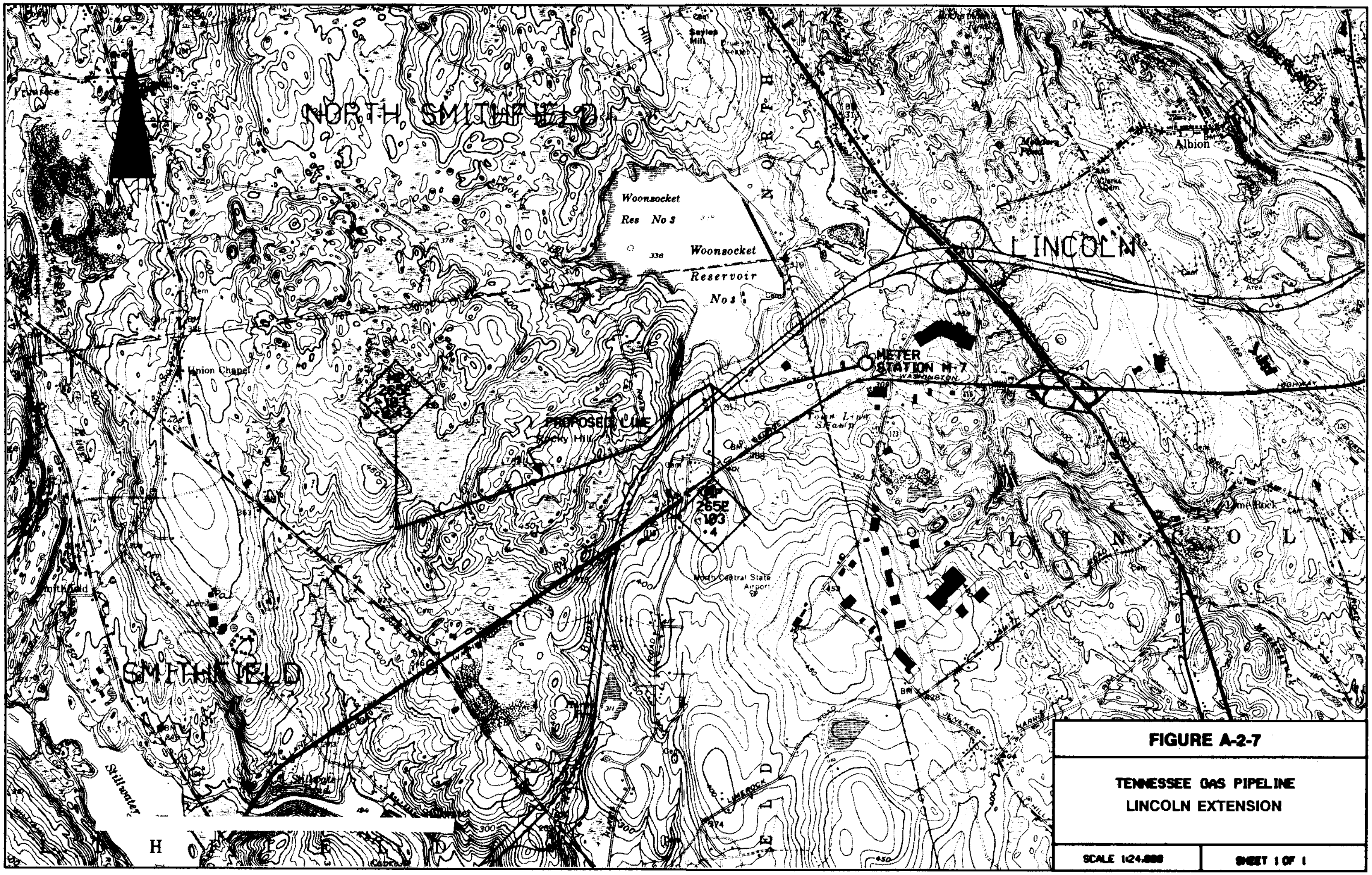


FIGURE A-2-6

TENNESSEE GAS PIPELINE
WALLINGFORD LATERAL

SCALE 1:24,000 | SHEET 1 OF 1


NORTH SMITHFIELD
SMITHFIELD
LINCOLN
Woonsocket Res No 3
Woonsocket Reservoir No 3
Albion
Union Chapel
PROPOSED LINE
METER STATION H-7
North Central State Airport
Stillwater
FIGURE A-2-7
TENNESSEE GAS PIPELINE
LINCOLN EXTENSION
SHEET 1 OF 1

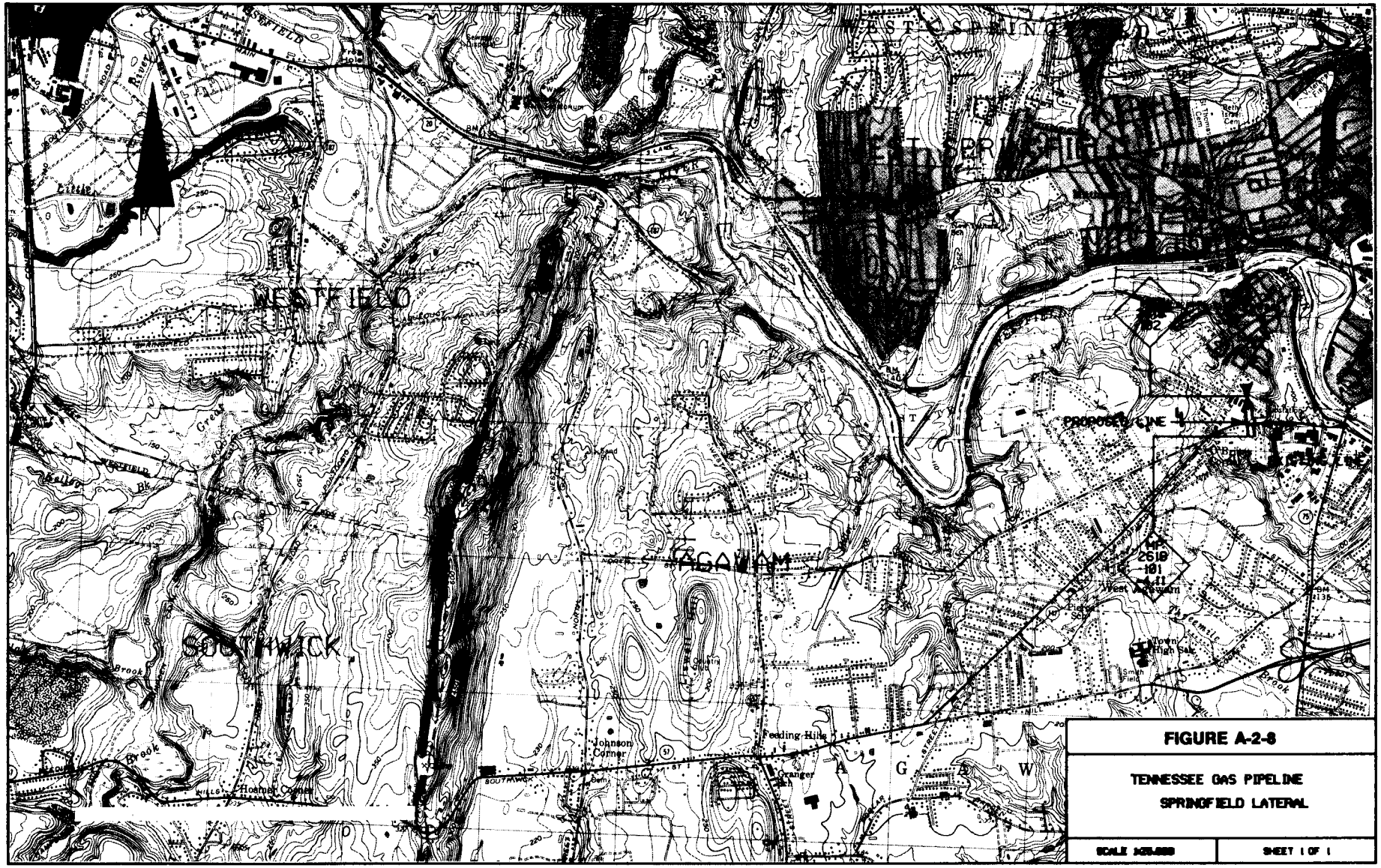
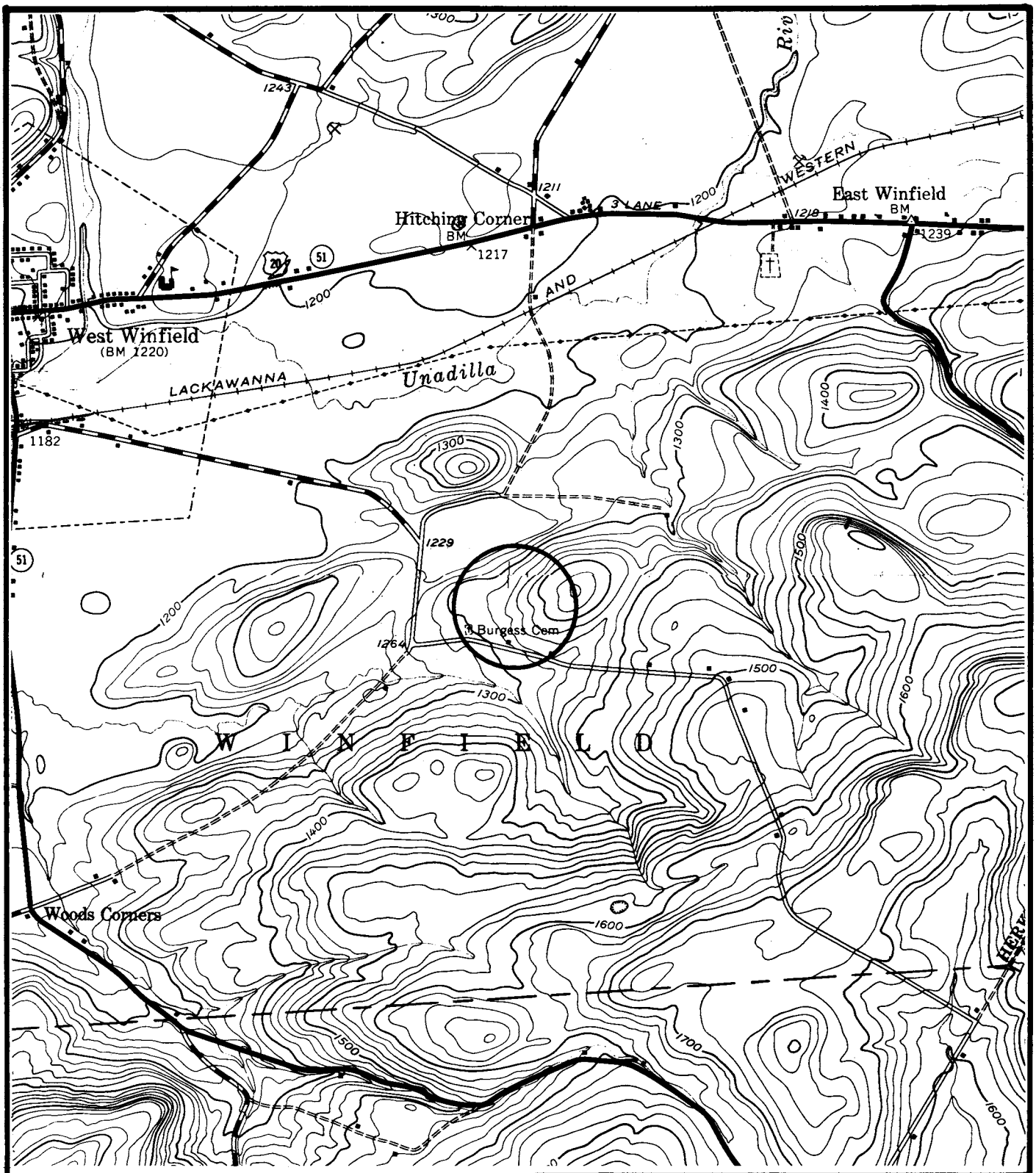


FIGURE A-2-8

TENNESSEE GAS PIPELINE
SPRINGFIELD LATERAL

SCALE 1:24,000	SHEET 1 OF 1



N

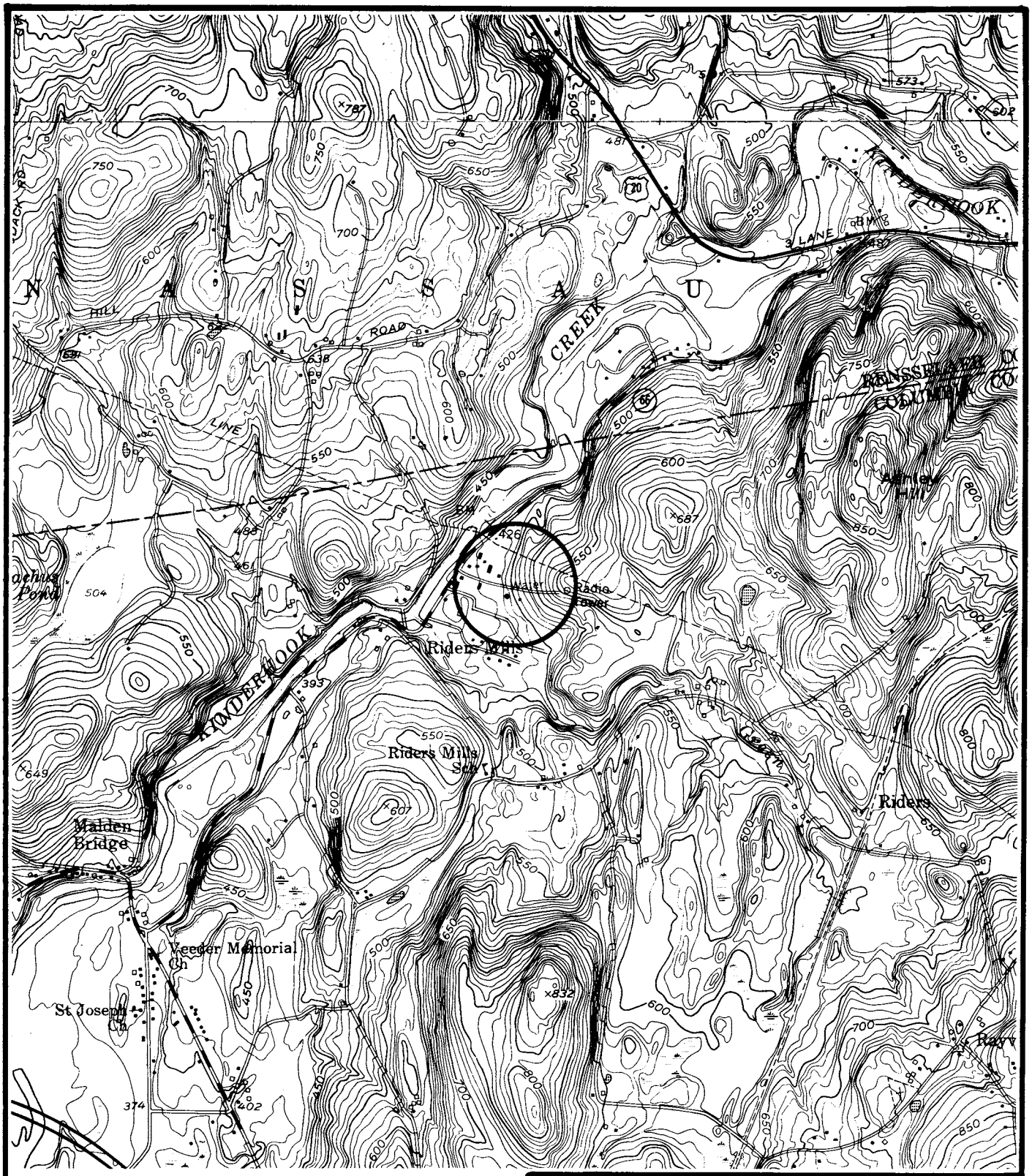
0 2000 4000 6000

SCALE IN FEET

FIGURE A-2-9

COMPRESSOR STATION 245
LOCATION MAP

SCALE AS SHOWN



N

0 2000 4000 6000

SCALE IN FEET

FIGURE A-2-10

COMPRESSOR STATION 254
LOCATION MAP

SCALE AS SHOWN

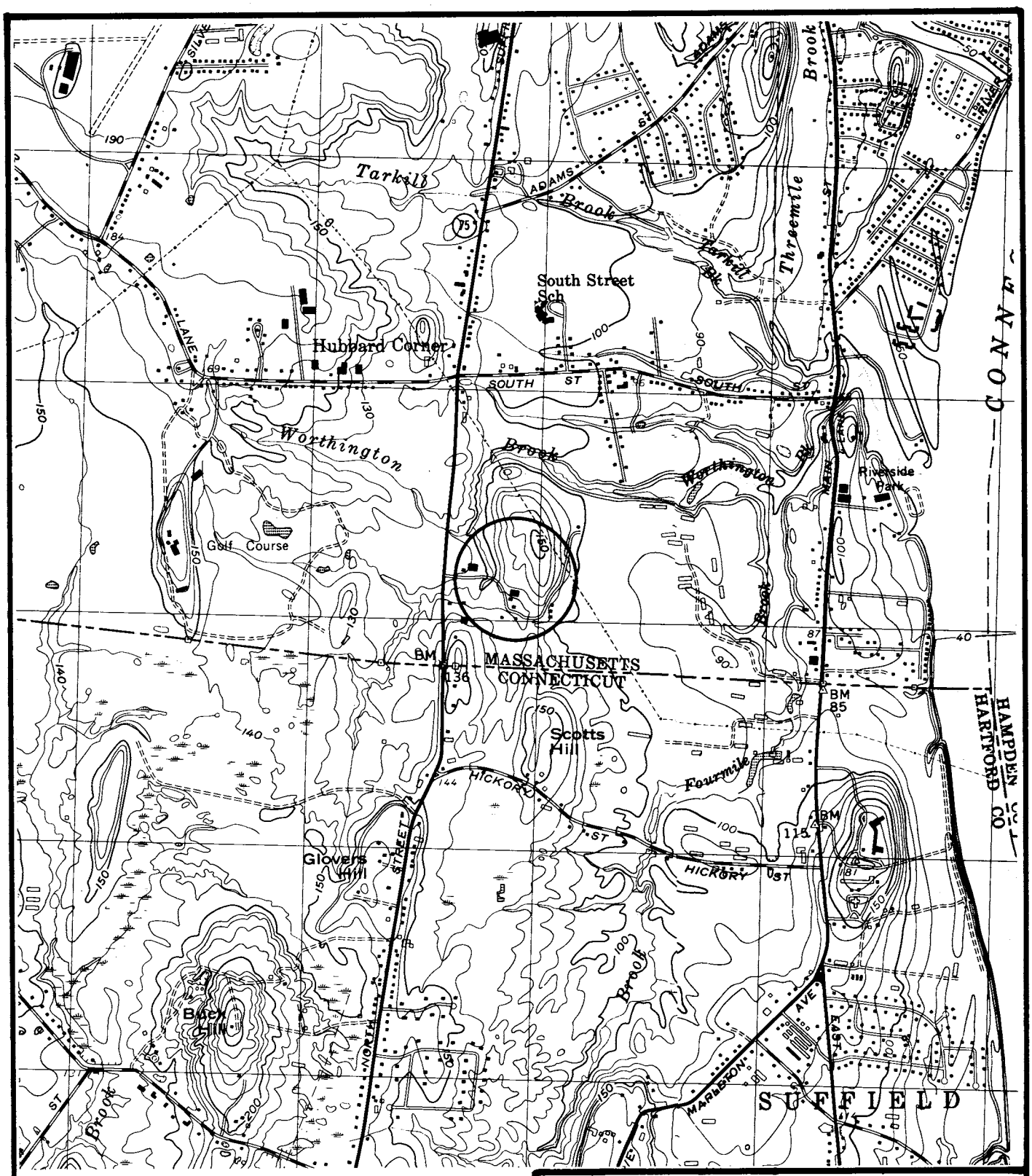


FIGURE A-2-11

COMPRESSOR STATION 261
LOCATION MAP

SCALE AS SHOWN

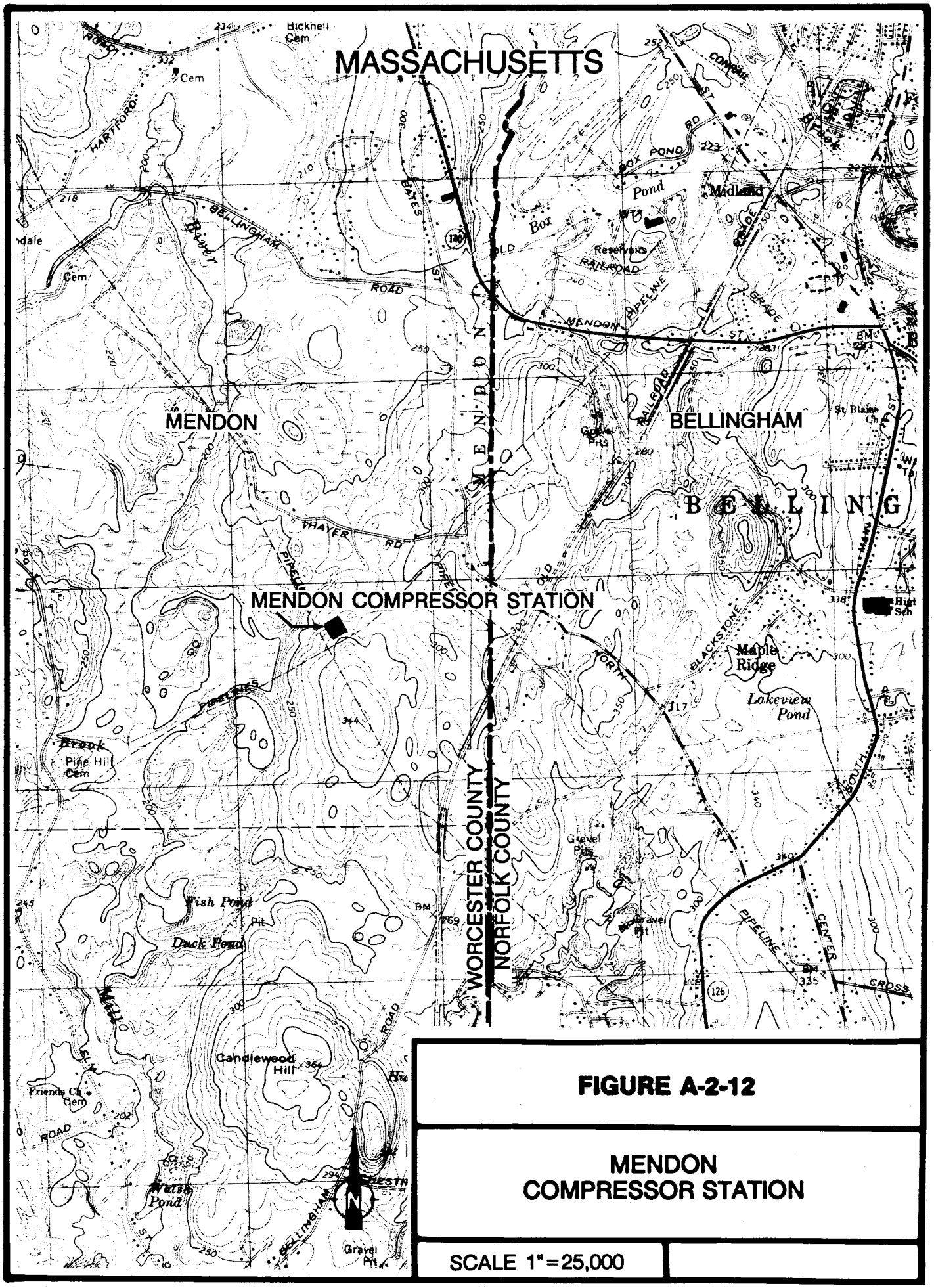


FIGURE A-2-12

MENDON COMPRESSOR STATION

SCALE 1"=25,000

0 2000 4000 6000

Scale in Feet

N

FIGURE A-2-13

PROPOSED

METER STATION M-1

SCALE AS SHOWN	**SHEET 1 OF 11**

0 2000 4000 6000

Scale in Feet

N

FIGURE A-2-13

MODIFIED

METER STATION M-2

SCALE AS SHOWN	**SHEET 2 OF 11**

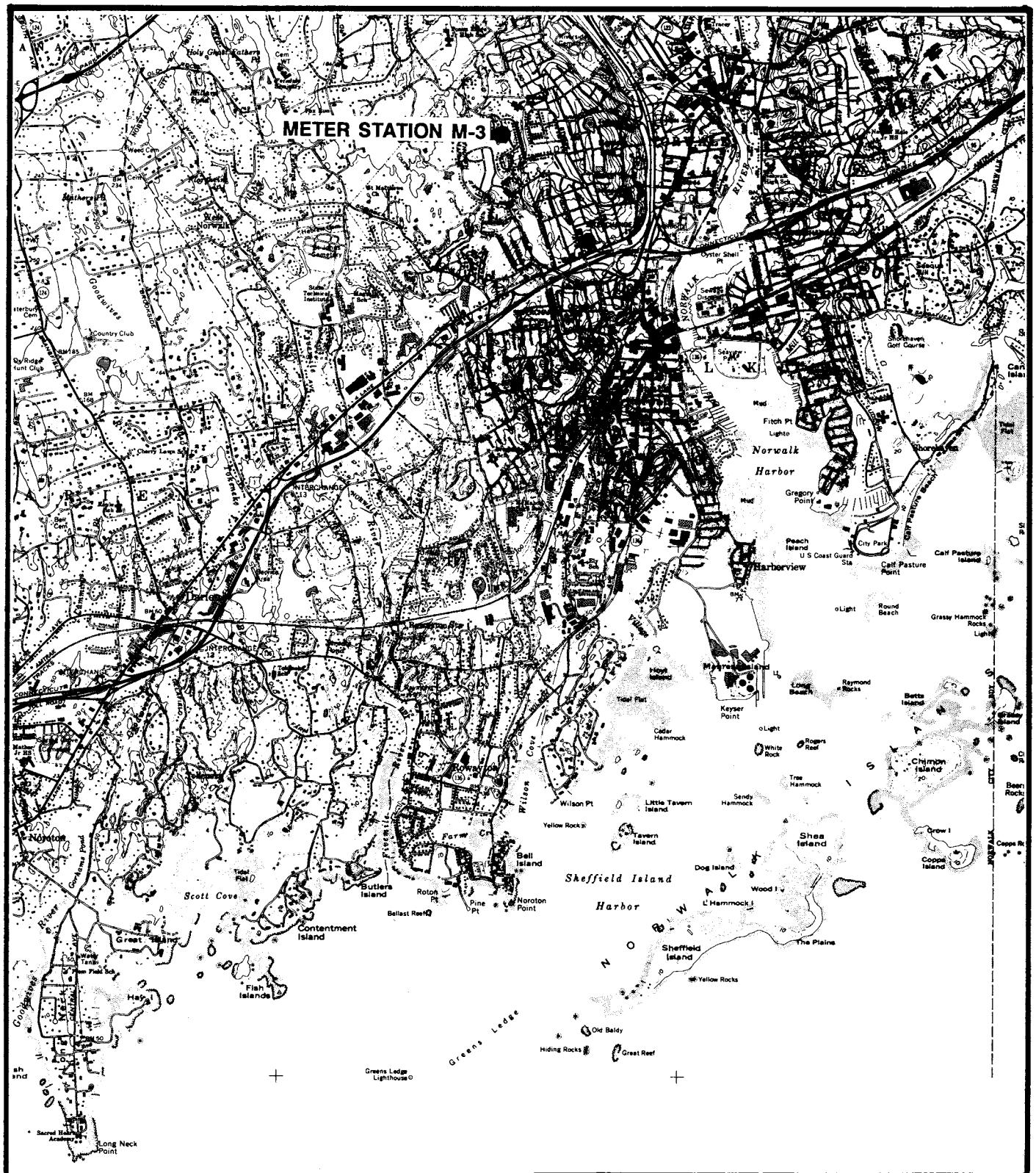


FIGURE A-2-13

MODIFIED
METER STATION M-3

SCALE AS SHOWN | **SHEET 3 OF 11**

0 2000 4000 6000

Scale in Feet

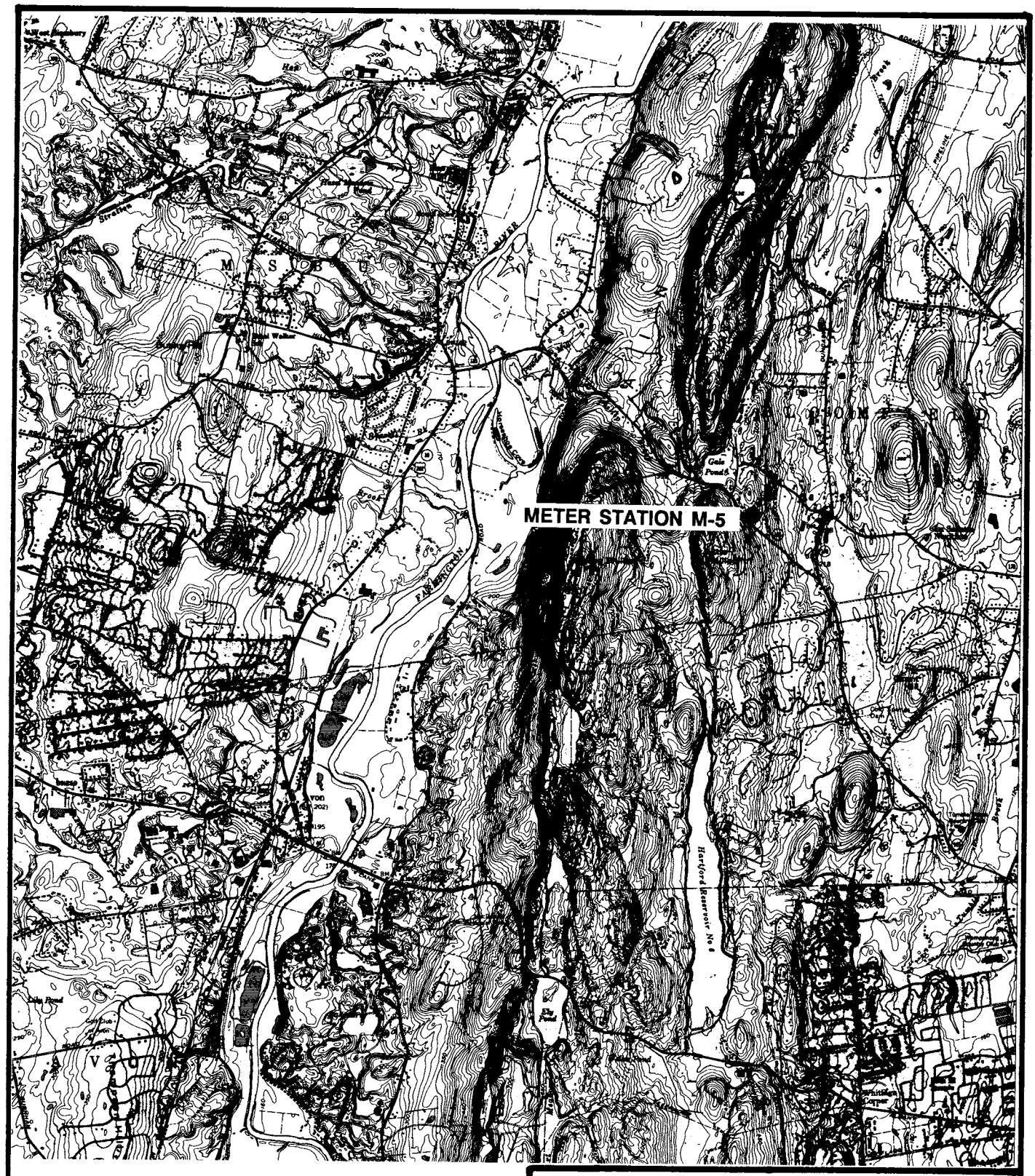
N

FIGURE A-2-13

MODIFIED

METER STATION M-4

SCALE AS SHOWN	**SHEET 4 OF 11**



N

0 2000 4000 6000

Scale in Feet

FIGURE A-2-13

MODIFIED

METER STATION M-5

SCALE AS SHOWN	**SHEET 5 OF 11**

0 2000 4000 6000

Scale in Feet

N

FIGURE A-2-13

MODIFIED

METER STATION M-6

SCALE AS SHOWN	**SHEET 6 OF 11**

N

0 2000 4000 6000

Scale in Feet

FIGURE A-2-13

PROPOSED

METER STATION M-7

SCALE AS SHOWN	**SHEET 7 OF 11**

FIGURE A-2-13

PROPOSED

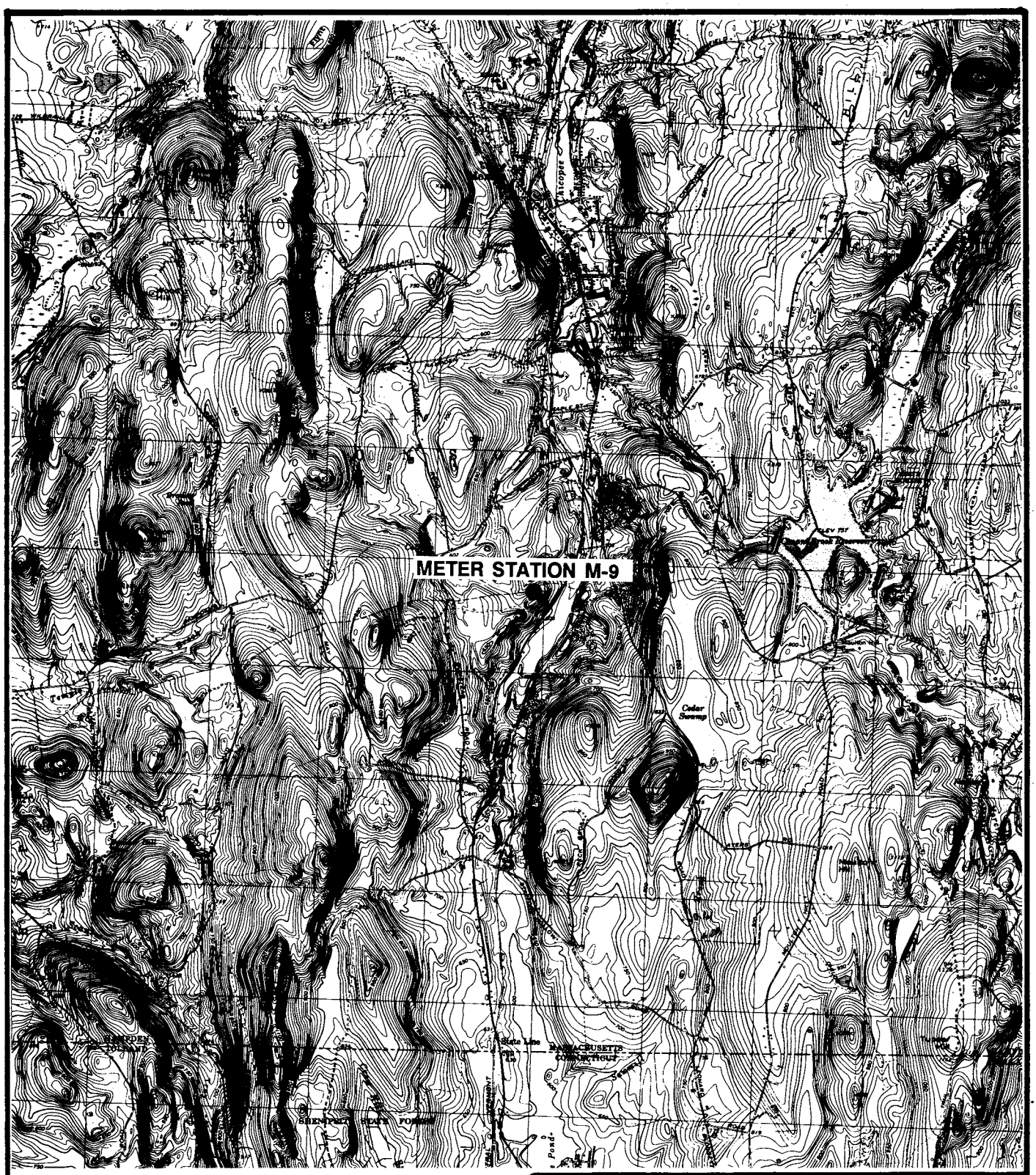
METER STATION M-8

N

0 2000 4000 6000

Scale in Feet

SCALE AS SHOWN	SHEET 8 OF 11



N

0 2000 4000 6000

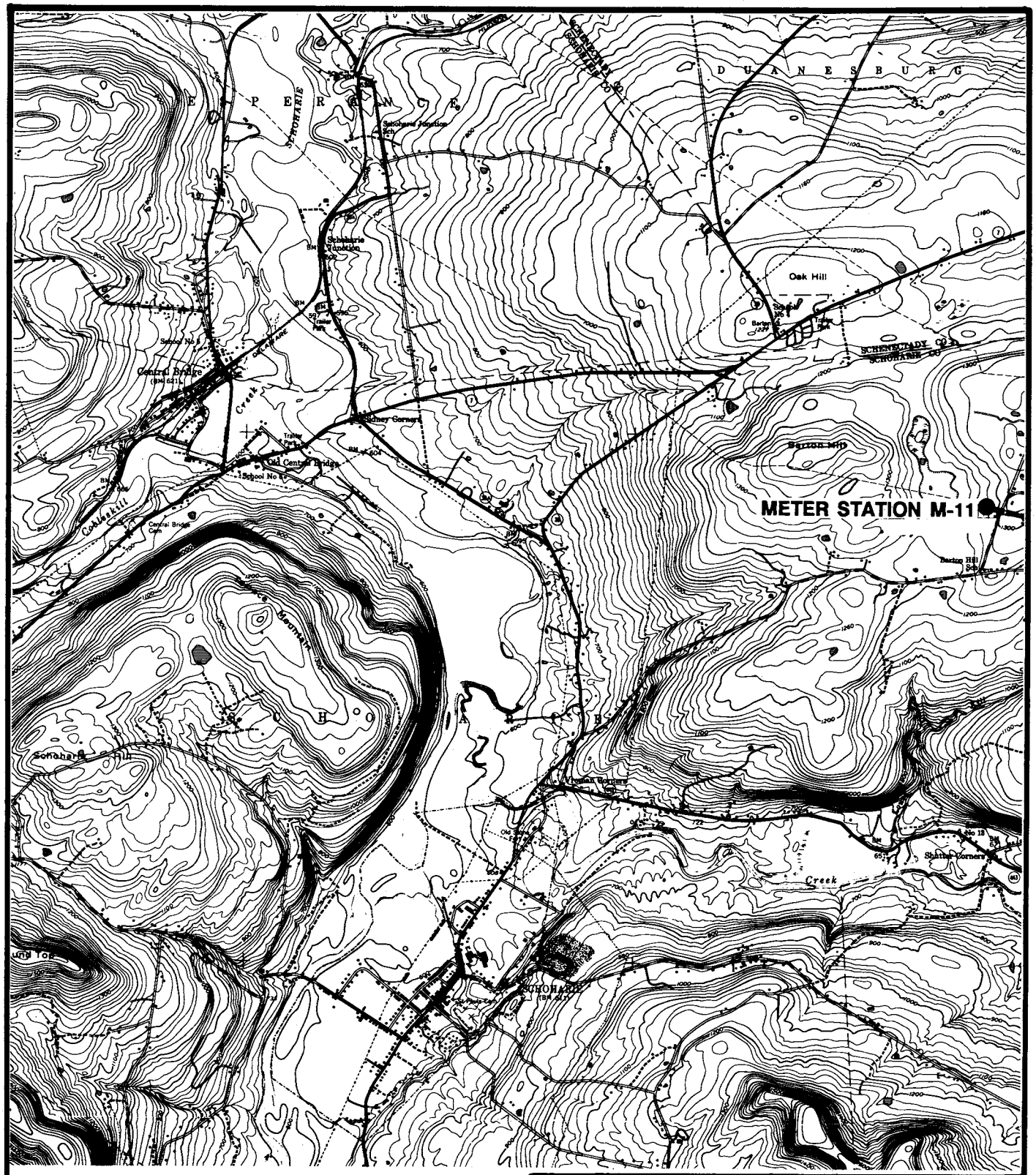
Scale in Feet

FIGURE A-2-13

PROPOSED

METER STATION M-9

SCALE AS SHOWN	**SHEET 9 OF 11**



N

0 2000 4000 6000

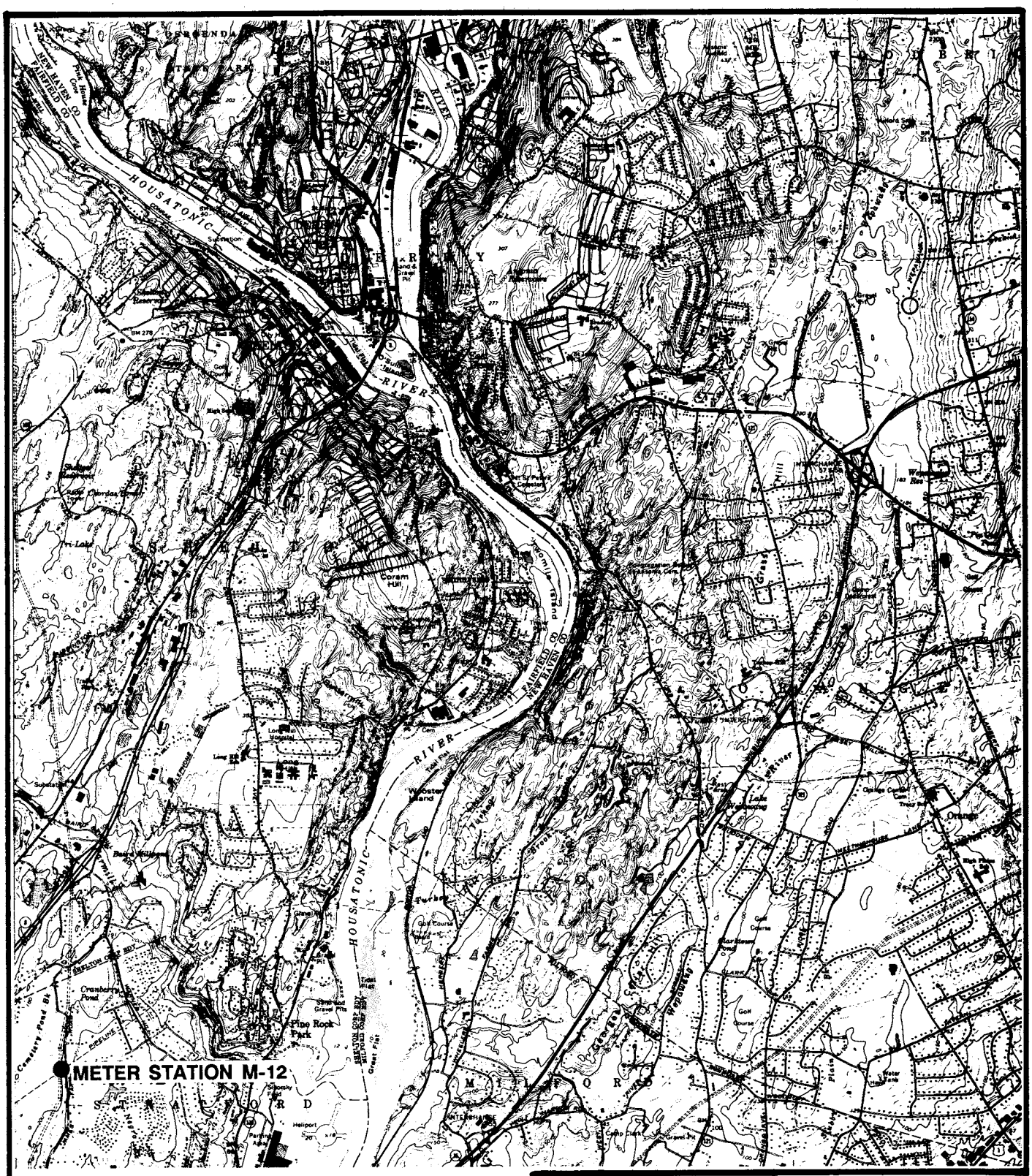
Scale in Feet

FIGURE A-2-13

PROPOSED

METER STATION M-11

SCALE AS SHOWN	**SHEET 10 OF 11**



N

0 2000 4000 6000

Scale in Feet

FIGURE A-2-13

PROPOSED

METER STATION M-12

SCALE AS SHOWN	**SHEET 11 OF 11**

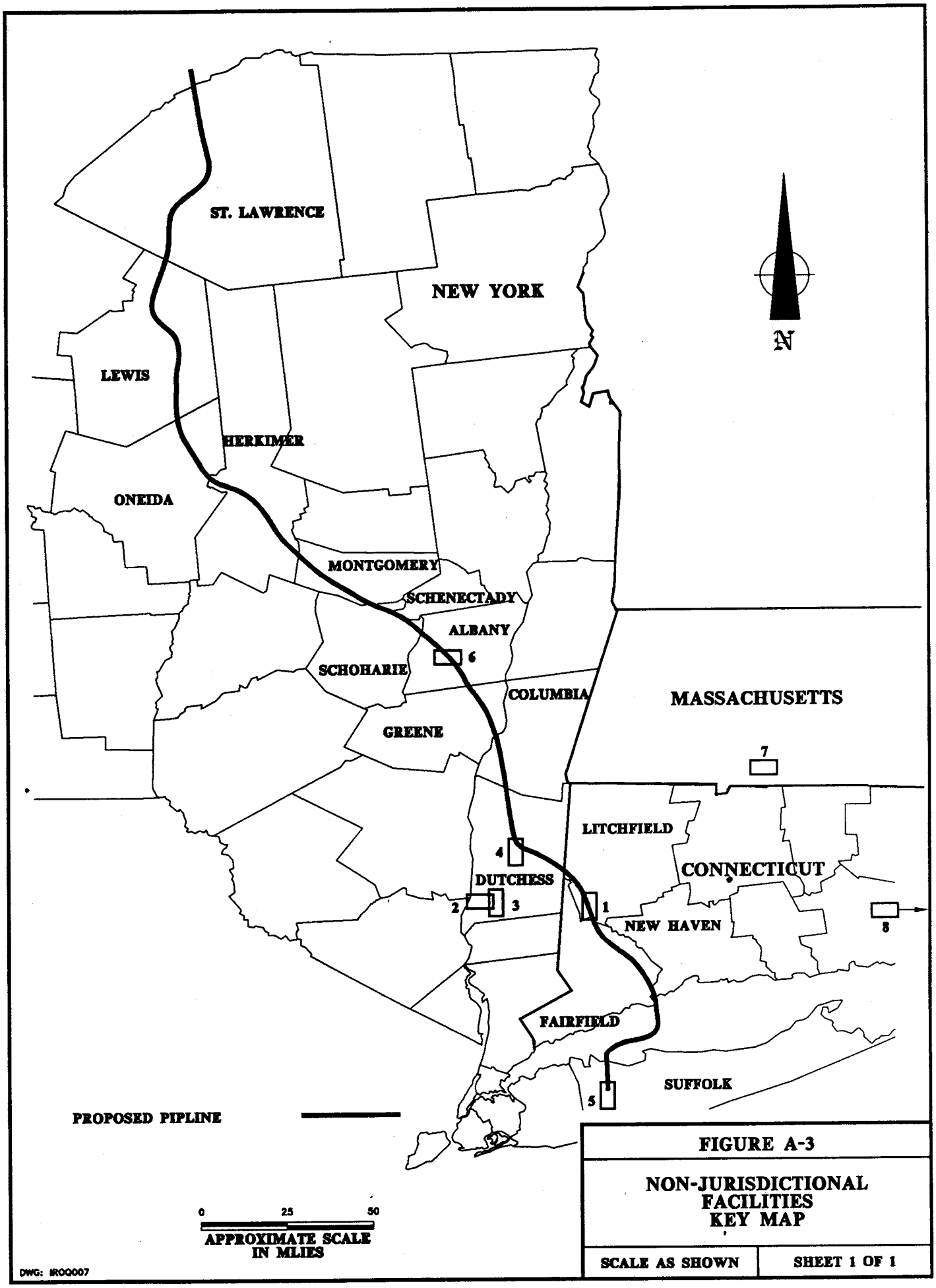


FIGURE A-3

NON-JURISDICTIONAL FACILITIES KEY MAP

SCALE AS SHOWN | SHEET 1 OF 1

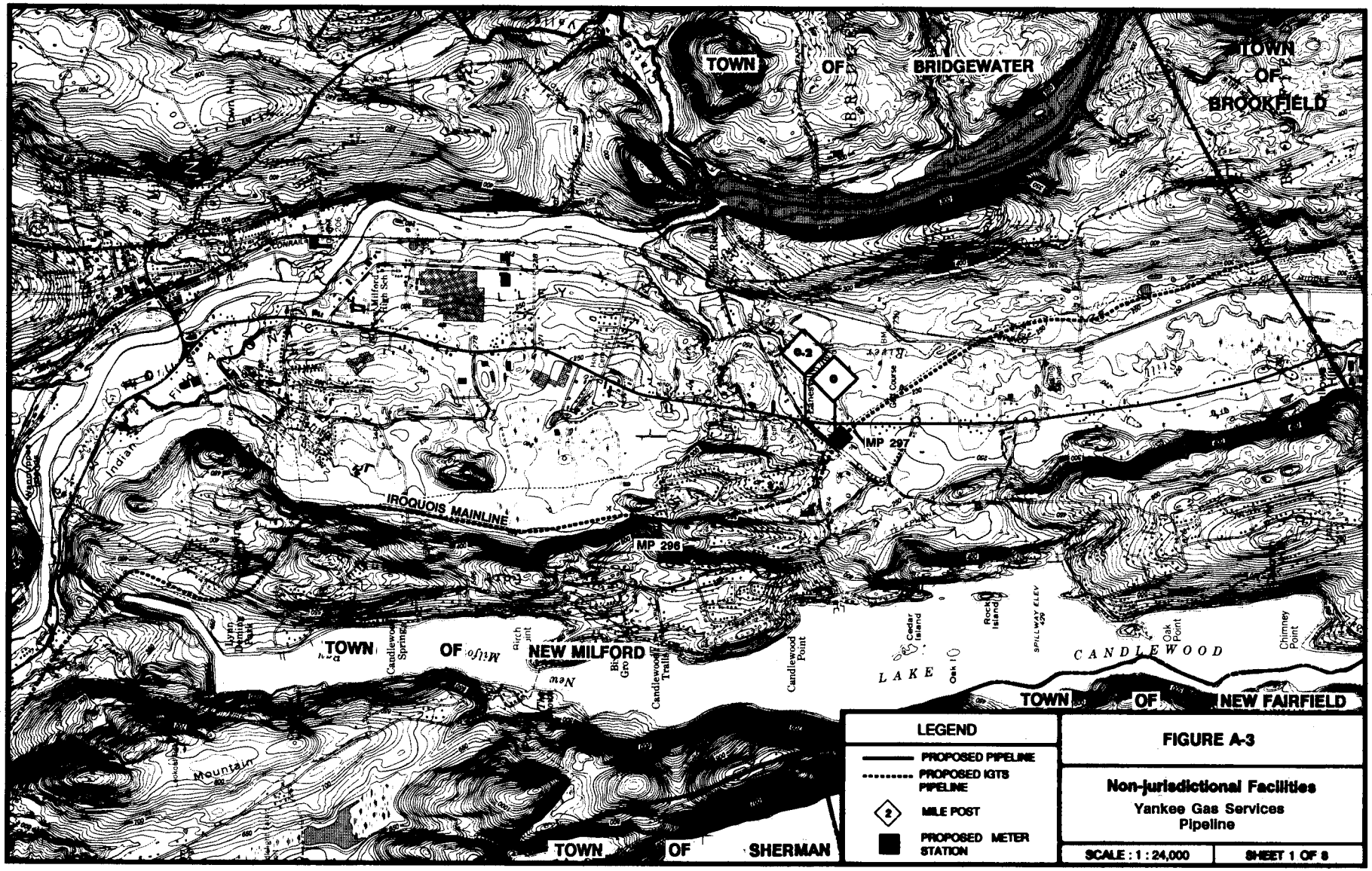


FIGURE A-3

Non-jurisdictional Facilities

Yankee Gas Services Pipeline

SCALE : 1 : 24,000

SHEET 1 OF 8

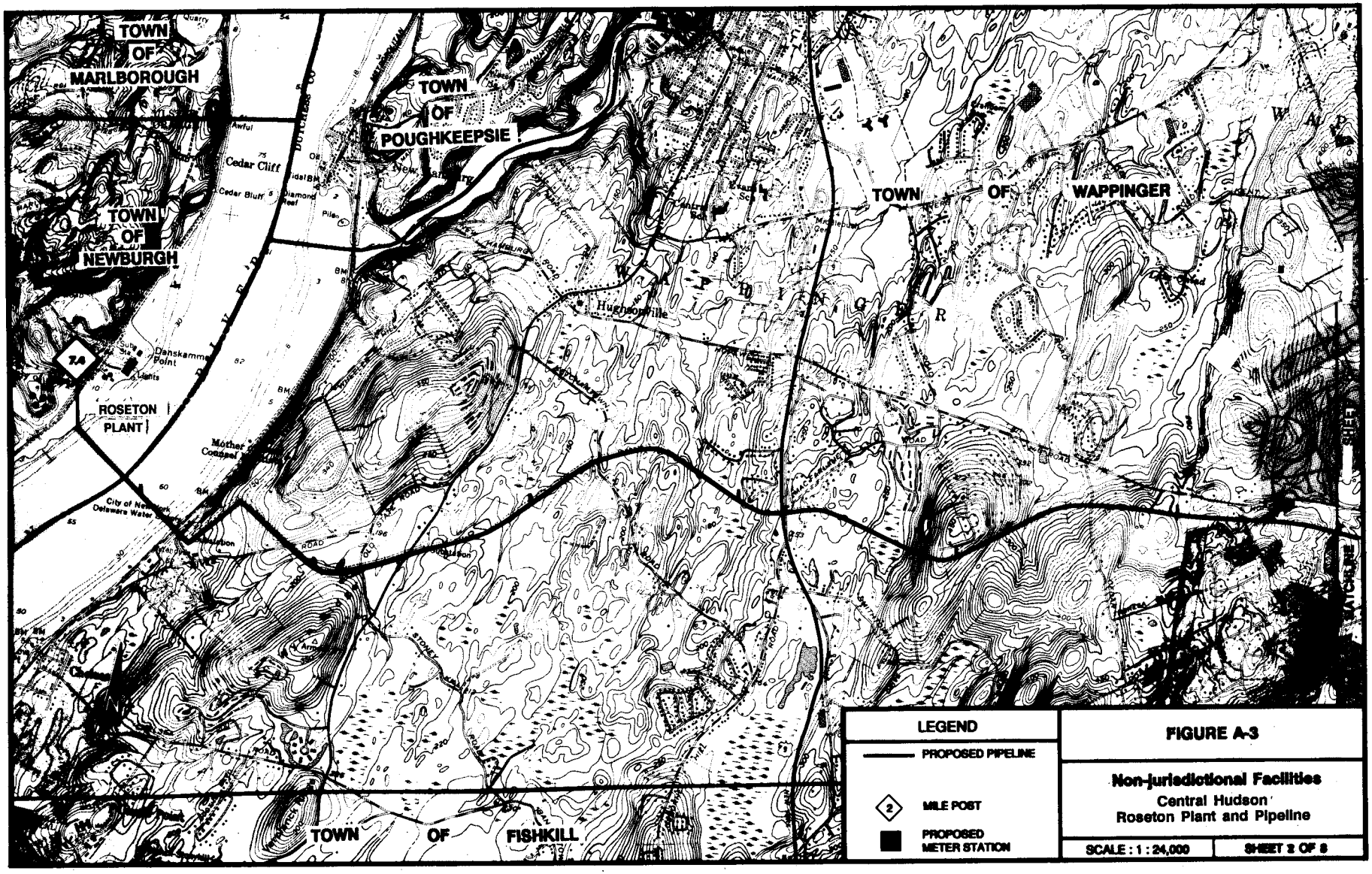


FIGURE A-3

Non-jurisdictional Facilities
Central Hudson
Roseton Plant and Pipeline

SCALE : 1 : 24,000 | SHEET 2 OF 8

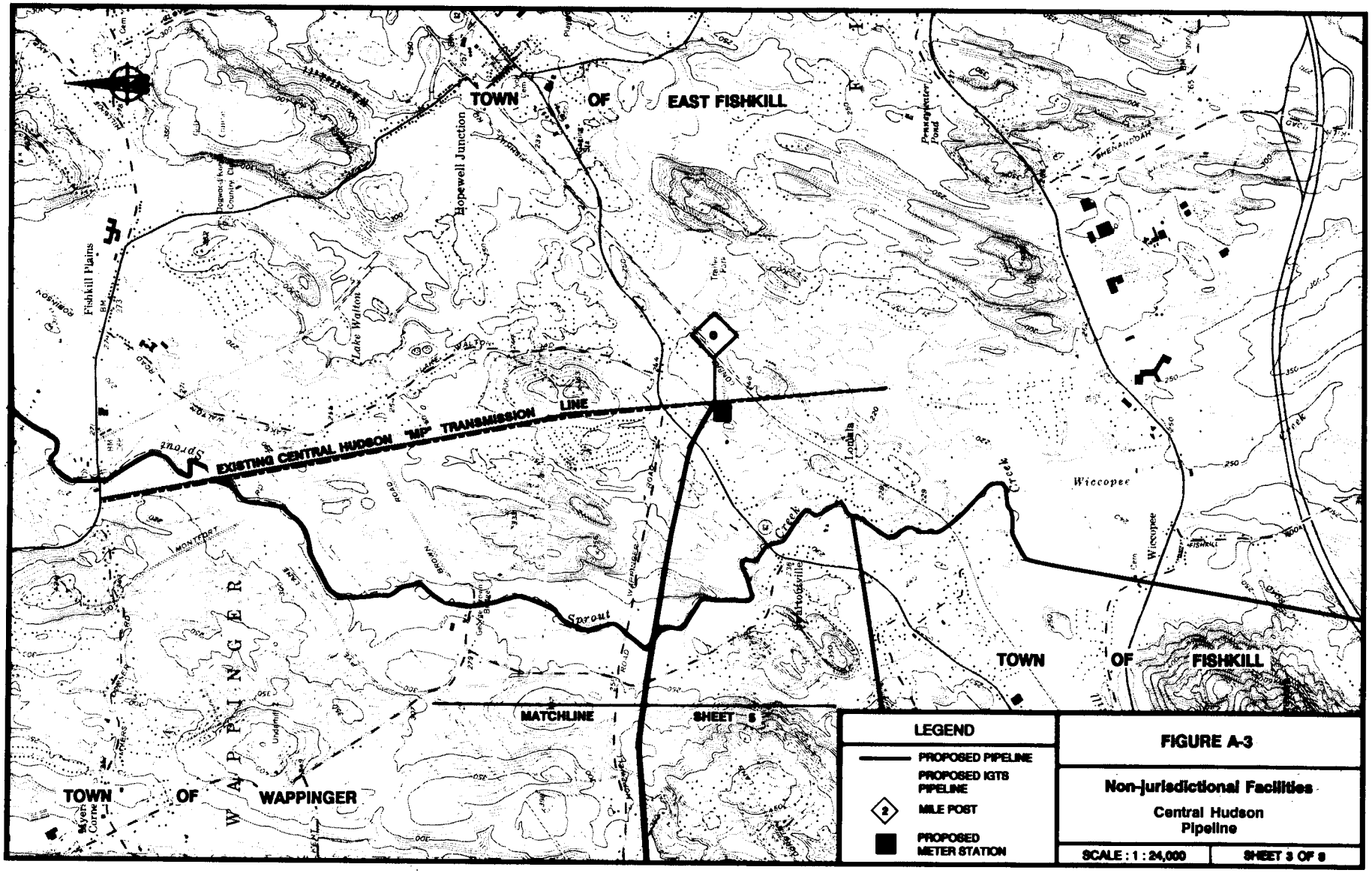


FIGURE A-3

Non-jurisdictional Facilities

Central Hudson Pipeline

SCALE : 1 : 24,000 | SHEET 3 OF 8

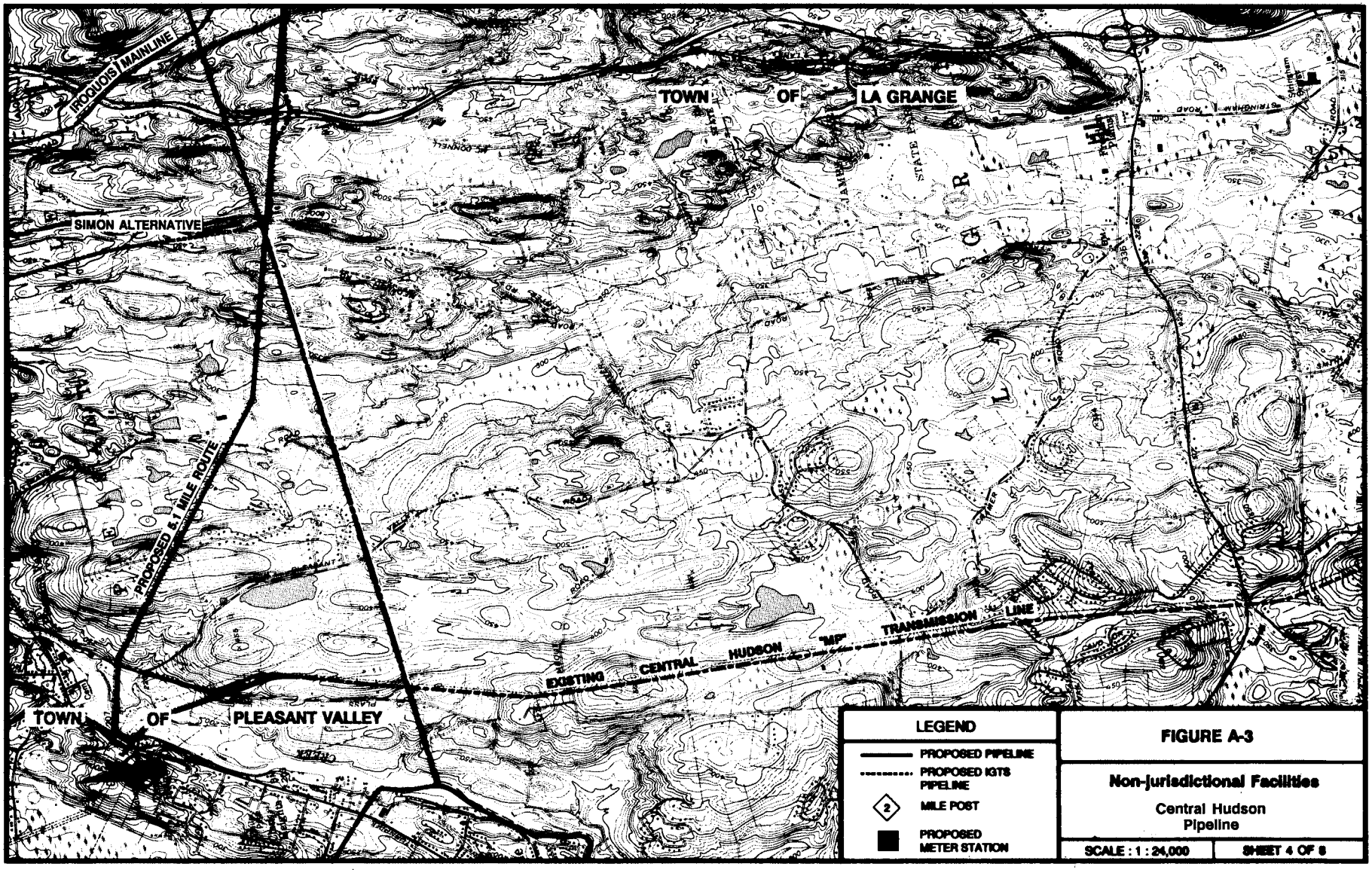


FIGURE A-3

Non-jurisdictional Facilities

Central Hudson Pipeline

SCALE : 1 : 24,000

SHEET 4 OF 8

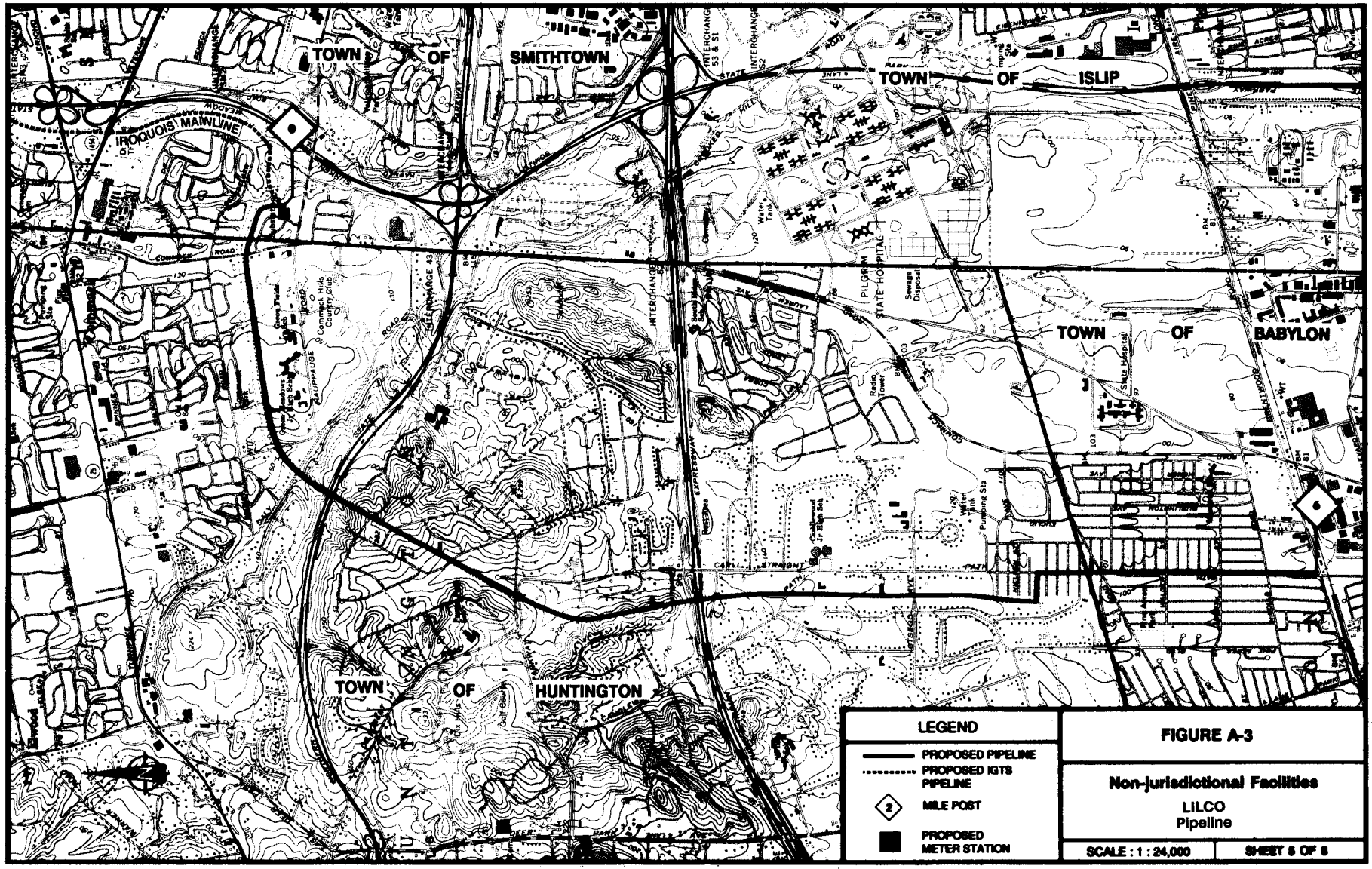


FIGURE A-3

Non-jurisdictional Facilities

LILCO
Pipeline

SCALE : 1 : 24,000

SHEET 5 OF 8

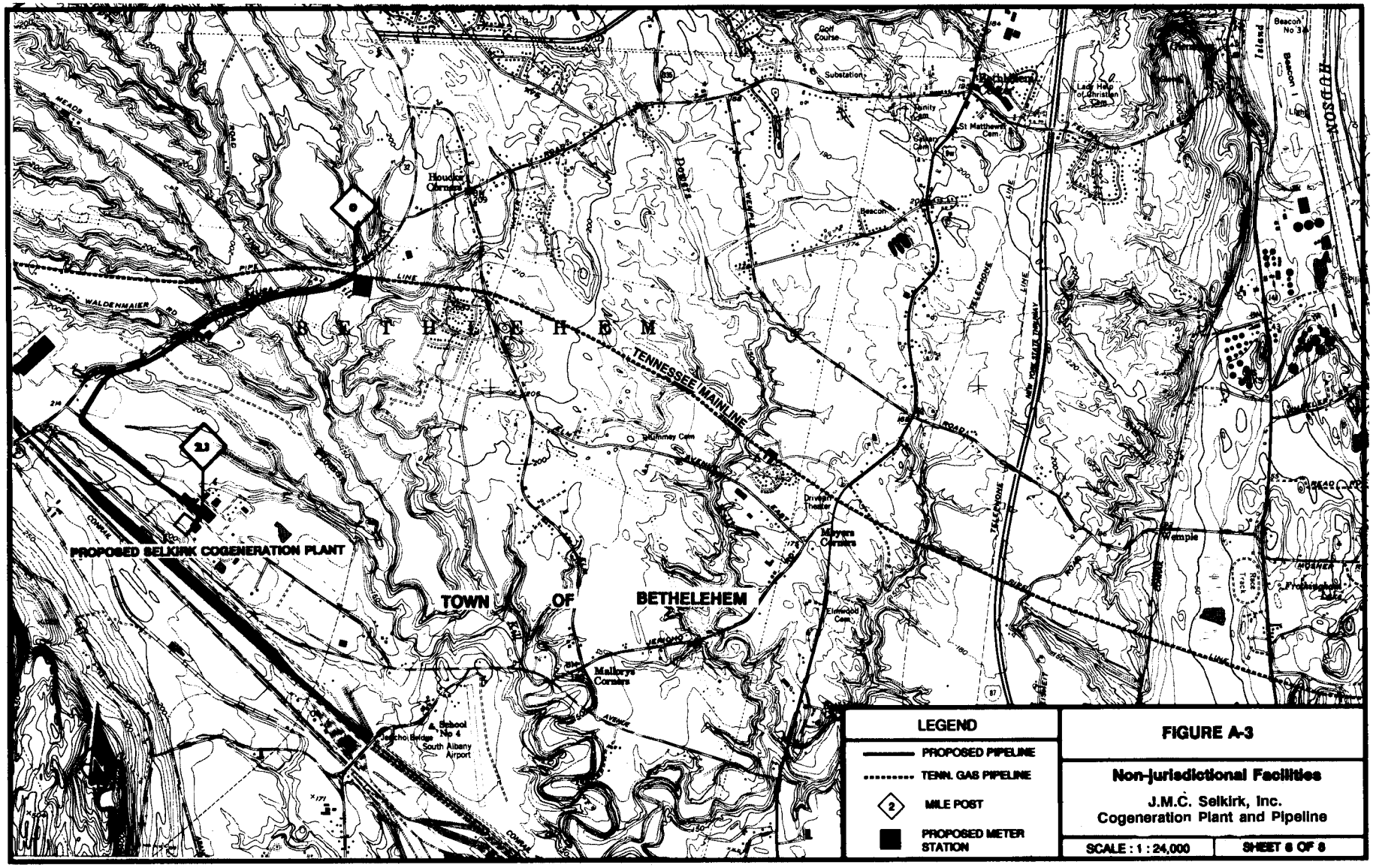
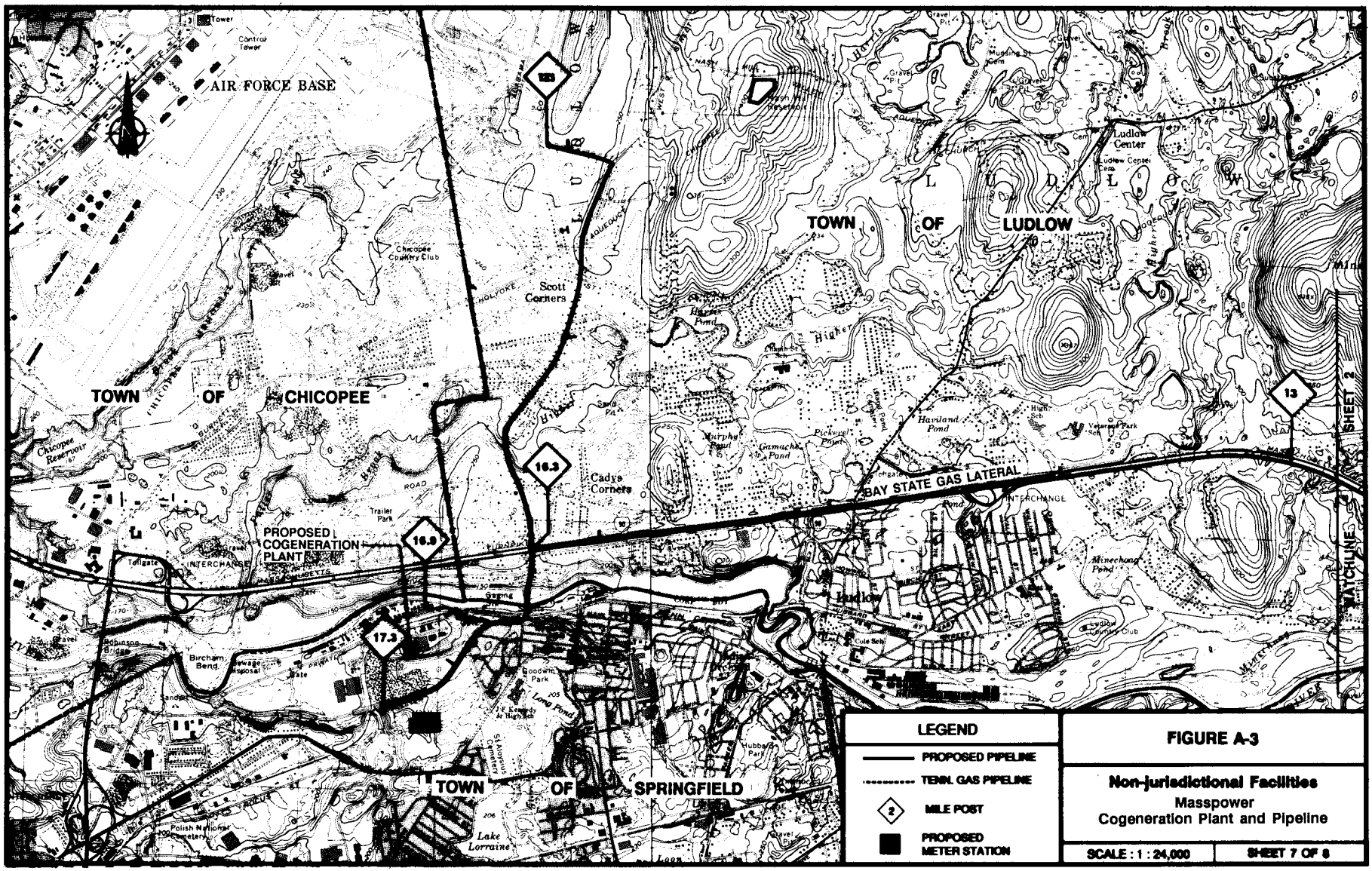


FIGURE A-3

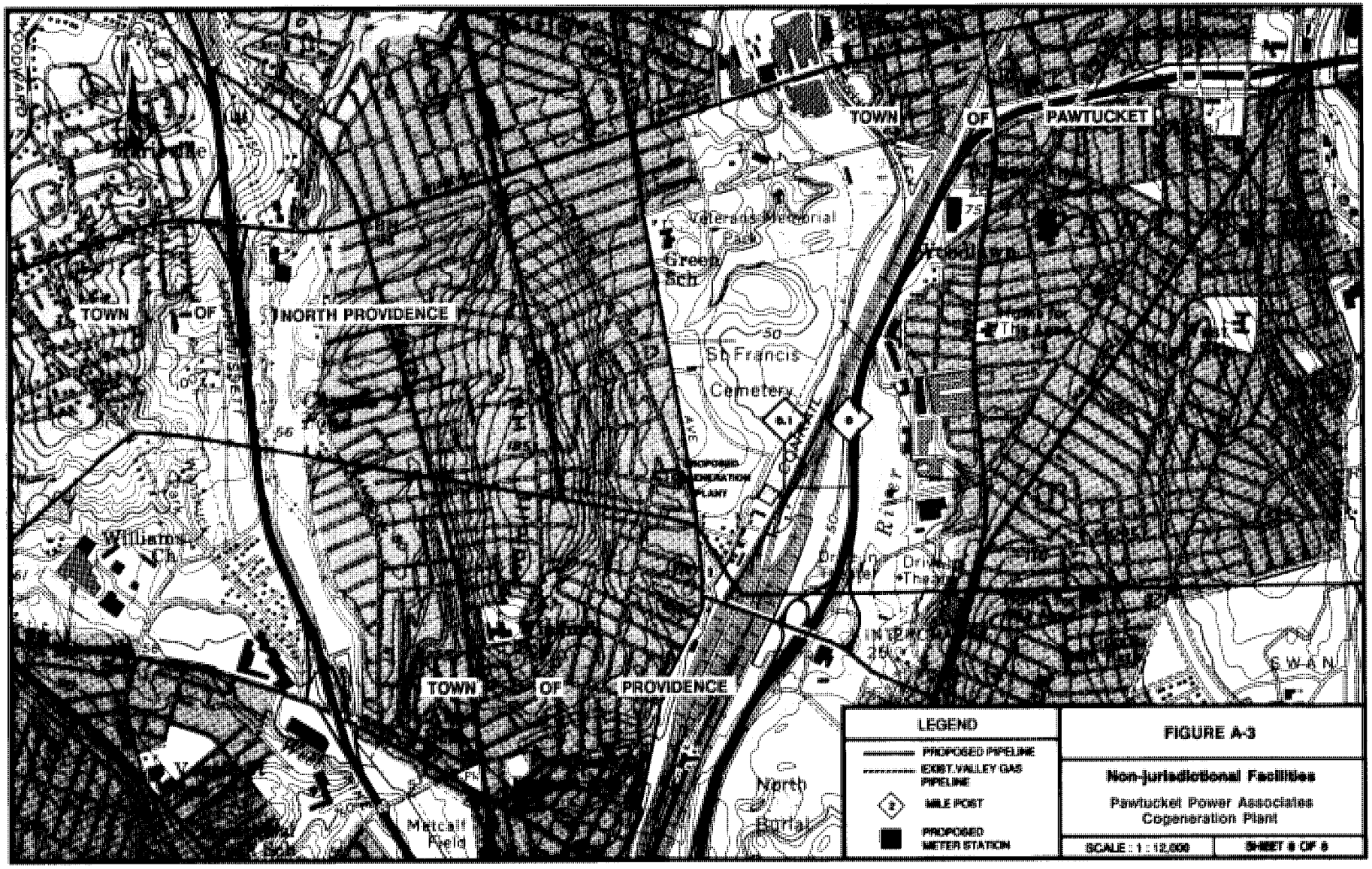
Non-jurisdictional Facilities

J.M.C. Selkirk, Inc.
Cogeneration Plant and Pipeline

SCALE : 1 : 24,000 | SHEET 6 OF 8



LEGEND	FIGURE A-3
PROPOSED PIPELINE	**Non-juriedictional Facilities**
TENN. GAS PIPELINE	Masspower
MILE POST	Cogeneration Plant and Pipeline
PROPOSED METER STATION	SCALE : 1 : 24,000 — SHEET 7 OF 8



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