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**U.S. Army Corps of Engineers
Baltimore District**

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**Remedial Design for Interim Removal Actions
Operable Units 1 and 2
Former Lake Ontario Ordnance Works
Lewiston and Porter
Niagara County, New York**

**Intermediate Design Analysis Report
Component Two (Somerset Property)**

30% Design Submittal

Contract Number DACA31-96-D-0006
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September 1997

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
Baltimore District
10 South Howard Street
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**INTERMEDIATE DESIGN ANALYSIS REPORT
COMPONENT TWO (SOMERSET PROPERTY)
60% DESIGN SUBMITTAL**

Prepared for

**U.S. ARMY CORPS OF ENGINEERS
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TABLE OF CONTENTS

Section	Page
1. INTRODUCTION.....	1-1
1.1 PROJECT DESCRIPTION	1-1
1.2 GENERAL SITE BACKGROUND AND AREAS OF CONCERN	1-2
1.2.1 General Background	1-2
1.2.2 Areas of Concern	1-7
1.3 RECOMMENDATIONS OF ENGINEERING EVALUATION/ COST ANALYSIS	1-10
1.3.1 Chemical Waste Sewer System/Lift Stations.....	1-11
1.3.2 Aqueous Matrix (for above Areas).....	1-11
1.3.3 Miscellaneous Containerized Liquids and Oil.....	1-11
1.3.4 Asbestos-Containing Materials.....	1-12
1.4 OBJECTIVE AND SCOPE OF DAR	1-12
1.5 DOCUMENT OUTLINE	1-12
2. GENERAL DESIGN CONCEPTS.....	2-1
2.1 REMOVAL OF ASBESTOS MATERIAL/CONTAINERIZED MATERIAL (SOMERSET PROPERTY)	2-1
2.1.1 Site Background	2-1
2.1.2 Preferred Removal Action.....	2-15
2.2 CHEMICAL WASTE SEWER SYSTEM AND LIFT STATIONS.....	2-16
2.2.1 Site Background	2-16
2.2.2 Preferred Removal Action.....	2-17
2.2.3 Liquid Removal	2-17
2.2.4 Removal of Sludges from Lift Stations.....	2-18
2.2.5 Identification of Potential Tie-Ins and Pipeline Integrity	2-18
2.2.6 Power Washing the Sewer System	2-20
2.2.7 Sealing the System	2-21
2.3 APPLICABLE PERMITS	2-21

LIST OF APPENDICES

APPENDIX A—RESPONSE TO COMMENTS

APPENDIX B—INDEX OF PLANS AND SPECIFICATIONS

APPENDIX C—GENERAL SITE PLAN

**APPENDIX D—LAKE ONTARIO ORDNANCE WORKS
ASBESTOS SURVEY-SOMERSET GROUP PROPERTY**

LIST OF FIGURES

Title	Page
Figure 1-1 LOOW Location Map	1-3
Figure 1-2 LOOW Study Area Location Map	1-5
Figure 2-1 AFP-68 Area.....	2-3
Figure 2-2 Buildings #1, #2, and Areas 21, 27, & 41 Sample Location Map.....	2-5
Figure 2-3 Areas 30, 30A, & 31 Sample Location Map	2-7
Figure 2-4 Temporary Building #3, Areas 10 & 18 North & South Sample Location Map.....	2-9
Figure 2-5 Areas 3 & 5 Sample Location Map.....	2-11
Figure 2-6 Area 6 Salt Electrolysis Area Sample Location Map	2-13
Figure 2-7 Chemical Waste Sewer and Lift Stations Removal Action Flow Diagram..	2-19

LIST OF ACRONYMS

ACM	asbestos-containing material
AFP-68	Air Force Plant 68
CENAB	U.S. Army Corps of Engineers Baltimore District
Chem-Trol	Chem-Trol Pollution Services, Inc.
CWM	Chemical Waste Management
DAR	Design Analysis Report
DERP	Defense Environmental Restoration Program
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
HASP	Health and Safety Plan
HRS	Hazard Ranking System
LOOW	Lake Ontario Ordnance Works
NESHAP	National Emission Standards for Hazardous Air Pollutants
NYSDEC	New York State Department of Environmental Conservation
PRDI	preliminary remedial design investigation
RCRA	Resource Conservation and Recovery Act
RI/FS	remedial investigation/ feasibility study
SCA	SCA Chemical Services, Inc.
SOW	scope of work
TNT	trinitrotoluene
TSD	treatment, storage, and disposal
USACE	U.S. Army Corps of Engineers
WESTON®	Roy F. Weston, Inc.

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The U.S. Army Corps of Engineers Baltimore District (CENAB) has retained Roy F. Weston, Inc. (WESTON®) to develop the remedial design for interim removal actions for Operable Unit Nos. 1 and 2 (OU No. 1 and OU No. 2) at the former Lake Ontario Ordnance Works (LOOW) located in Niagara County, New York. The remedial design is being performed in two phases in accordance with the CENAB scope of work (SOW) dated 23 May 1996. The first phase, the predesign phase, includes the preparation of the planning documents and completion of the preliminary remedial design investigation (PRDI) and report.

The purpose of the PRDI was to provide supplemental data for the second phase of the remedial design, the design for the selected remedy presented in the Final Engineering Evaluation/Cost Analysis (EE/CA) dated March 1995. The supplemental data collected during the PRDI augments the existing data obtained from previous investigations at the LOOW site. An objective of the PRDI included determining if explosive compounds are present in the standing water and sediments in the chemical waste line lift stations of the former high-energy fuels plant, closest to the TNT pipelines, to determine the appropriate handling and disposal requirements for the remedial design.

A summary of the results of the previous investigations is provided in Section 2 of the Remedial Design Work Plan dated October 1996. The results of the PRDI are presented in the final PRDI Report dated May 1997. The findings and conclusions of the previous investigations and PRDI are discussed in this document with regard to the basis of the proposed interim removal actions of the subject areas.

The remedial design will be completed in the following stages: 30%, 60%, 90%, and 100% designs. This Design Analysis Report (DAR) is part of the 60% remedial design submittal. This DAR provides a discussion of the general design concepts and approach to the remediation of each subject area on the Somerset property. The 60% design includes the preparation of

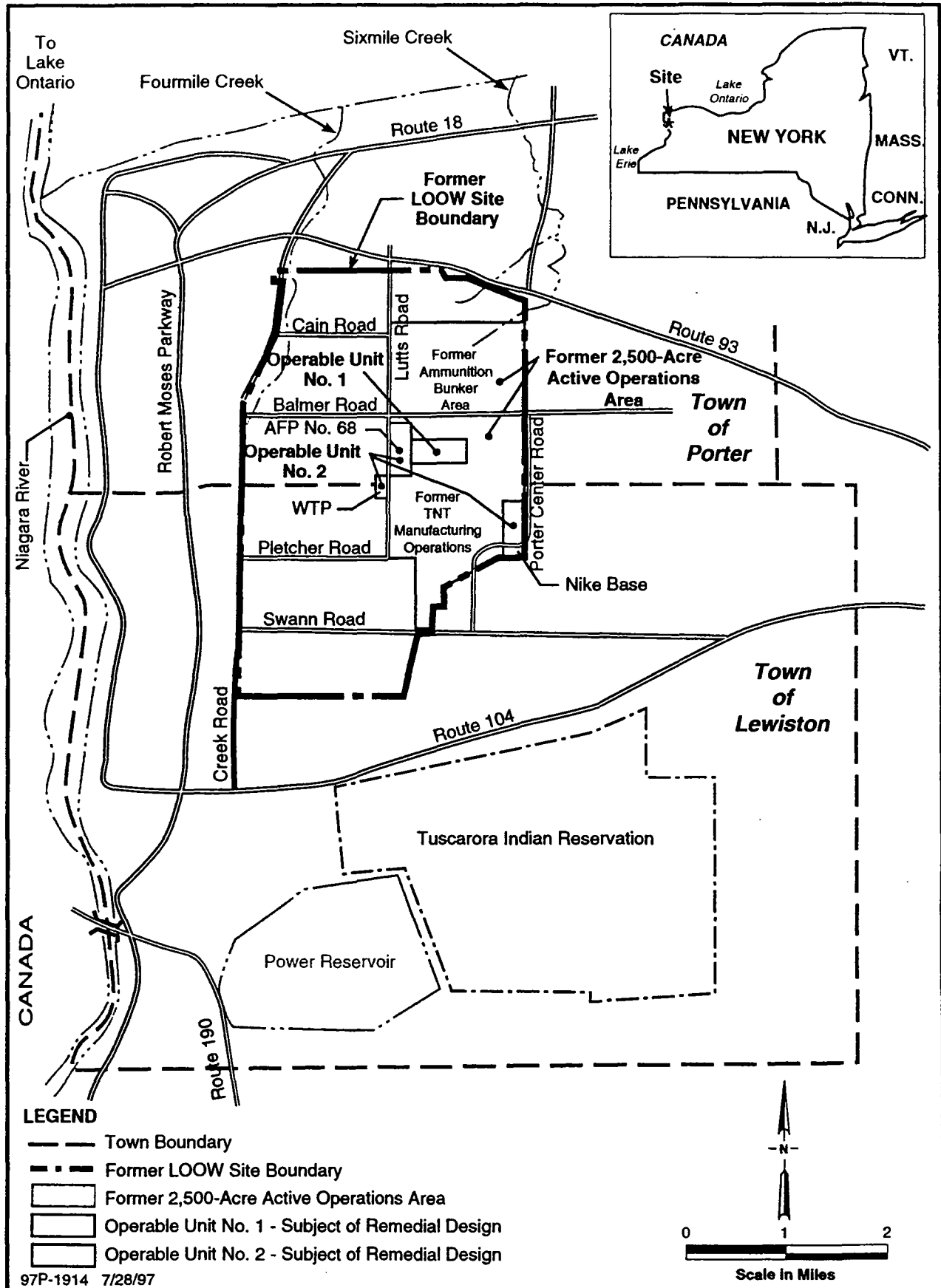
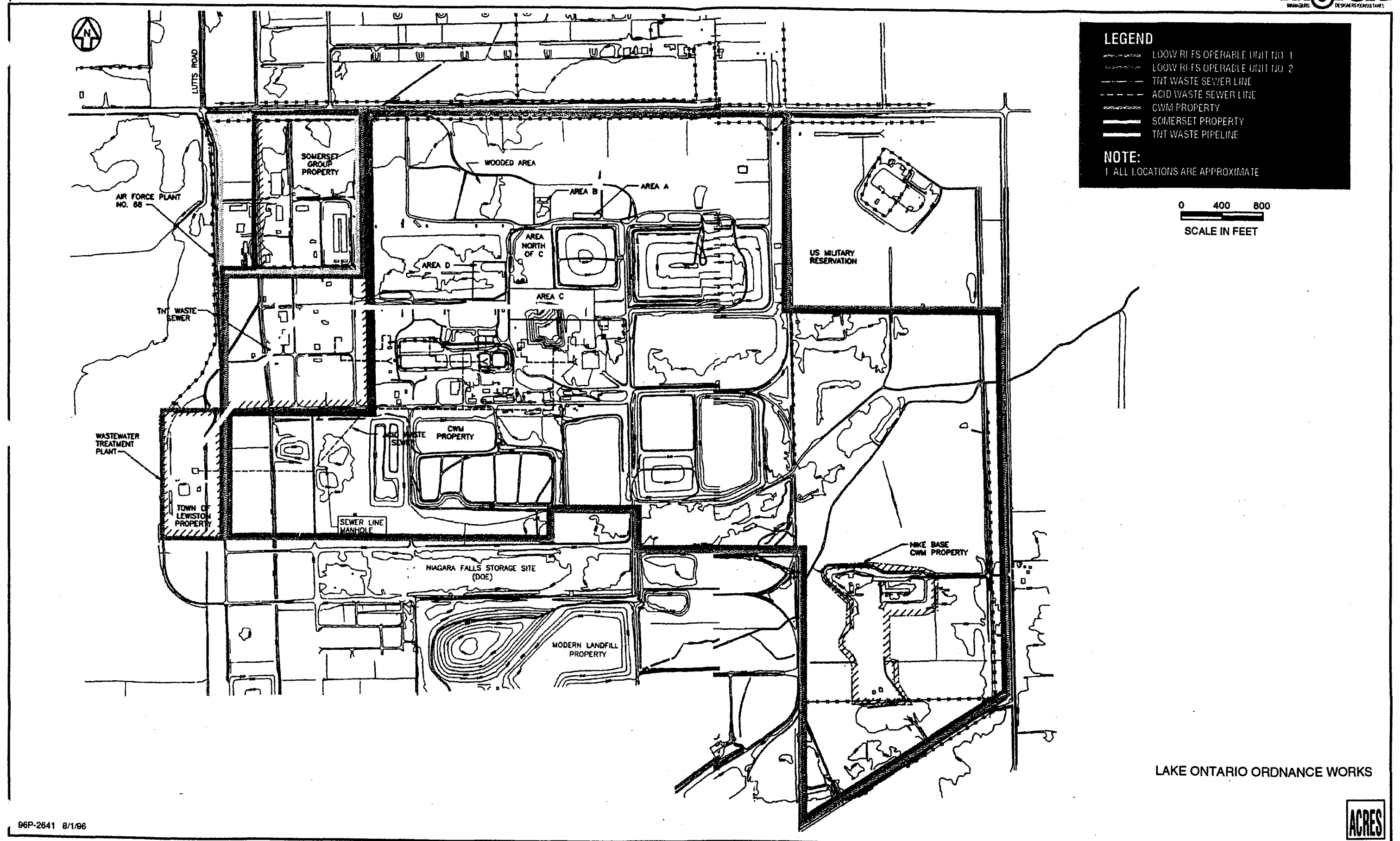


FIGURE 1-1 LOOW LOCATION MAP



Portions of the LOOW site have since been used by several branches of DOD and the U.S. Department of Energy (DOE) for various manufacturing and storage activities, including the pilot production of high-energy fuels. In 1955, the Navy and Air Force acquired 360 and 200 acres, respectively, of the former TNT plant. The acquisition of the properties by the Navy and the Air Force was for the joint development of a boron- and lithium-based high-energy rocket fuel production plant. The Air Force subsequently assumed responsibility for the project, which was identified as Air Force Plant 68 (AFP-68). Part of the construction of AFP-68 involved tying in the AFP-68 sanitary, stormwater, and chemical waste sewer systems into the former TNT wastewater treatment plant located approximately 1,000 ft southwest of AFP-68. AFP-68 was decommissioned in 1959 while still in pilot-plant status.

In 1972, Chem-Trol Pollution Services, Inc. (Chem-Trol) acquired portions of the LOOW for the development of a hazardous waste treatment, storage, and disposal (TSD) facility. Chem-Trol was acquired by SCA Chemical Services, Inc. (SCA) in 1973 and was subsequently acquired by Chemical Waste Management (CWM) in the early 1980s. In 1969, the Somerset Group obtained an approximate 100-acre section of the former LOOW property that contained AFP-68. Around 1979, the southern half of the former AFP-68 (about 50 acres) was sold to SCA. This section is currently owned by CWM. The portions of the former TNT and AFP-68 site specifically addressed by the PRDI are situated on property currently owned by CWM and the Town of Lewiston. CWM operates the site as a Resource Conservation and Recovery Act (RCRA) TSD facility. The portion of the site owned by the Town of Lewiston is currently unused.

1.2.2 Areas of Concern

Under the authority of the Defense Environmental Restoration Program (DERP), the U.S. Army Corps of Engineers (USACE) has undertaken a remedial investigation/feasibility study (RI/FS) at the LOOW site. As part of the RI/FS, USACE has investigated areas grouped into two separate operable units, OU No. 1 and OU No. 2 (Figure 1-1 and Figure 1-2).

Operable Unit No. 1

OU No. 1 consists of the following seven areas on property currently owned by CWM as shown in Figure 1-2:

- An area originally suspected to contain approximately 30 buried drums, identified as Area A.
- An area used for the open incineration of wastes from AFP-68, identified as Area B.
- Three areas, originally suspected to contain a buried drum trench containing 200 to 300 drums also related to AFP-68, identified as Areas C, D, and Area North of C.
- An area originally suspected to contain buried drums located west of Area B, identified as the Wooded Area.
- The underground TNT and acid waste sewer systems from the original LOOW TNT manufacturing plant.

Remedial investigations for OU No. 1 were conducted in 1988 and 1989. The investigations verified the presence of buried drums and localized soil and groundwater contamination in Area A, and contaminated sediments and localized groundwater contamination in Area B. The buried drums encountered in Area A were generally in a highly deteriorated condition and not intact. None of the suspected buried drums in Areas C, D, and the Area North of C were found, nor were any drums or contamination found in the Wooded Area. Investigations of the buried TNT sewer system identified the presence of TNT residues in the sewer system.

Based upon the findings of the RI, which included a qualitative risk assessment, an FS for OU No. 1 was initiated in 1989 with an advance final FS report completed in 1990. On 6 January 1992 the New York State Department of Environmental Conservation (NYSDEC) formally approved the preferred remedial alternative, which consisted of the excavation of contaminated drums and soils from Areas A and B and disposal of these materials at an approved RCRA-permitted landfill. A final recommended approach to the remediation of the TNT pipelines was not presented to NYSDEC until the results of further investigation were available. The PRDI provided supplemental data for the purpose of finalizing the remedial approach and design for the TNT pipelines. The draft report (February 1997) and final PRDI report (May 1997) were

submitted to NYSDEC for review and comment. The 30% design, including the DAR was submitted on 16 April 1997 to NYSDEC. Response to comments received from NYSDEC and USACE reviewers are provided in Appendix A of this report.

Operable Unit No. 2

OU No. 2, as shown in Figure 1-2, consists of the former AFP-68, located on properties owned by CWM and the Somerset Group; a portion of the former NIKE Missile Base, located on CWM property; and the former LOOW wastewater treatment plant, located on property owned by the Town of Lewiston.

The first investigations of OU No. 2 began during RI activities for OU No. 1, during which time (1988) USACE performed a reconnaissance survey of those properties comprising OU No. 2 plus the existing TNT buildings located on CWM property. The reconnaissance survey consisted of a detailed site walkover that included confirming site conditions with numerous available site maps and as-built drawings. A summary report of this survey was prepared in late 1988. In 1992, USACE initiated a confirmation study of the OU No. 2 areas of concern, excluding the TNT buildings.

Because no previous sampling had been performed at any of the OU No. 2 study areas and under the supposition that contamination existed in some of those areas, the confirmation study investigations included some investigative aspects more applicable to an RI. These additional investigations included monitoring well installation and groundwater sampling, perimeter and personnel exposure air monitoring, Hazard Ranking System (HRS) II scoring, and a preliminary contamination assessment that incorporated many aspects of a baseline risk assessment.

The results of the OU No. 2 investigation were summarized in a Preliminary Contamination Assessment Report that was issued final in December 1992. The results indicated the presence of several contaminant source areas, specifically portions of the AFP-68 chemical waste sewer system, loose asbestos-containing material (ACM) located within and around several of the former facility buildings, and miscellaneous containers of hazardous liquids and oils stored within buildings and concrete pads of various locations within the former AFP-68.

In 1994 USACE performed an EE/CA for portions of OU Nos. 1 and 2. The EE/CA was prepared to address non-time-critical removal actions in the following areas:

- OU No. 1
 - Area A—buried drum trench on the CWM property.
 - Area B—burn pit area on the CWM property.
 - TNT pipelines on the CWM property.
- OU No. 2
 - AFP-68 consisting of the following:
 - ♦ Chemical waste sewer system sewage and sludges located on the CWM property and the Somerset Group property.
 - ♦ Loose ACM on the Somerset Group property.
 - ♦ Miscellaneous containers of hazardous liquids and oils on the Somerset Group property.

A summary of the EE/CA recommendations for the above-listed subject areas is presented in the following subsection.

1.3 RECOMMENDATIONS OF ENGINEERING EVALUATION/COST ANALYSIS

The intent of the non-time-critical removal actions at the LOOW site is to reduce the threat of exposure and/or contaminant migration from identified source areas until a final remedial action(s) is implemented. Specific objectives for accomplishing this goal were defined as:

- Removal of previously identified contaminated sediment, soil, and drums from the Area A drum trench and the Area B burn pit.
- Removal of contaminated materials associated with the former TNT pipeline system.
- Removal of accumulated sludges and liquids in the chemical waste sewer system and associated lift stations.
- Dewatering of all areas, as needed, to remediate the above-referenced areas.
- Removal of loose ACM and miscellaneous containerized liquids and oils identified during previous site investigation on the Somerset Group property.

- Proper treatment and/or disposal of all wastestreams from the removal actions.
- Restoration of all disturbed areas.

Based on the EE/CA, interim removal action remedies were selected for the LOOW areas of concern. The remedial design consists of the preparation of design plan and specifications for the selected removal actions detailed in the subsections that follow. This DAR outlines the general design concepts and approach for the removal actions for only the Somerset property highlighted below.

1.3.1 Chemical Waste Sewer System/Lift Stations

The highest ranked removal action consists of the following:

- Removal of the bottom sludges by vacuum extraction.
- Treatment of the removed sludges by thermal destruction at an existing off-site permitted incinerator.
- High-pressure water jet cleaning of the lift stations and trunkline. The sludge/wastewater mixture from the cleaning operation would be vacuumed into a tank truck and transferred to a competitively bid, permitted treatment facility.
- Final sealing of the lift stations by rewelding the manhole covers to reduce the safety hazard.

1.3.2 Aqueous Matrix (for above Areas)

The liquids present in the excavations, pipeline systems, and lift stations will be collected as part of the removal action and pumped into a tank truck for transfer for treatment to a competitively bid permitted treatment facility. Treatment requirements will be determined based on sampling results for the contaminated water.

1.3.3 Miscellaneous Containerized Liquids and Oil

These materials will be properly containerized, as needed, and transferred to a permitted off-site facility for cost-effective recycling, treatment, or alternate disposal method.

1.3.4 Asbestos-Containing Materials

Loose ACM will be removed by a licensed asbestos contractor and transferred to one of several nearby 6NYCRR Part 360-permitted landfills.

1.4 OBJECTIVE AND SCOPE OF DAR

The objective of this DAR is to present the preliminary design approach to the remediation of the subject areas based on the recommendations of the EE/CA, results of the PRDI, and comments received on the 30% design submittal. The preliminary design outlined in this document includes a description of the primary components or steps in the interim response action for each area. The corresponding design plans and specifications are referenced for each of these components.

Section 2 of this DAR presents the general design concepts to the interim removal action of asbestos and containerized material and the chemical waste sewer based on the results of the PRDI and comments received on the 30% design submittal.

1.5 DOCUMENT OUTLINE

This DAR has been prepared in accordance with the CENAB SOW dated 23 May 1996. The document has been organized as follows:

- Section 1—Introduction
- Section 2—General Design Concepts

The list of preliminary design plans and specifications are provided as Appendix B to this report. The general site plans and environmental checklist are also provided as Appendix C to this report.

2. GENERAL DESIGN CONCEPTS

2.1 REMOVAL OF ASBESTOS MATERIAL/CONTAINERIZED MATERIAL (SOMERSET PROPERTY)

2.1.1 Site Background

Loose ACM identified on the Somerset property with the former AFP-68 will be removed as part of the Interim Removal Action. A preliminary estimate of the amount of ACM was made during the USACE Reconnaissance Survey in 1988 conducted by Acres (EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). ACM found on the Somerset property within the former AFP-68 includes pipe and hopper insulation, corrugated asbestos panels, and bags of asbestos mortar. At the time of the survey the materials were identified as suspected ACM. Analyses of representative samples of these materials were performed during the Preliminary Contamination Assessment completed by Acres in 1992 (EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). The analyses indicated that most, but not all, of the materials did contain asbestos.

The ACM found throughout the former AFP-68 occur in four main varieties: corrugated panels, pipe insulation, hopper insulation, and bags of asbestos-containing mortar (see Figures 2-1 through 2-6). The corrugated panels had functioned as exterior walls and roofs of some of the process area structures. Most of these panels were removed from the structures during the decommissioning of AFP-68 and can currently be found throughout the former plant area. On the Somerset Group Property, the current Owner had most of the loose panels collected and placed in stacks throughout the property. The corrugated panels are generally nonfriable but because of past site activities, there is an abundance of broken and crushed panels throughout the area. The areal and subsurface extent of broken and crushed ACM, predominantly around Building #6-01, has not been defined during previous investigations.

Many of the buildings and process area structures had asbestos-insulated pipes. Because many of these buildings and structures are in various states of deterioration, much of the pipe insulation has been exposed to the elements and has significantly deteriorated. As a result, pipe insulation

can be found on the ground surface, primarily beneath the overhead piping, but also spread throughout the surrounding areas. The quantity of loose deteriorated pipe insulation and intact insulation has not been estimated during previous investigations. Two asbestos-insulated hoppers exist in the salt electrolysis building in Area 6. The insulation is generally nonfriable and is somewhat contained on the hoppers.

Bags of asbestos mortar are located on the lower level of the salt electrolysis building in Area 6 and in the combustibles warehouse in Area 30A. There are an estimated twenty 94-pound bags of mortar in Area 6, some of which are partially opened (Acres, EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). Because the exterior walls of the building no longer exist, the bags of mortar are exposed to the weather, resulting in the spread of asbestos-containing dust throughout the area.

There are about ten 94-pound bags of asbestos mortar in the combustibles warehouse in Area 30A (Acres, EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). This building is in fair structural condition and the bags of mortar are fairly well protected from the weather.

Miscellaneous Liquids and Oils

Several containers of miscellaneous liquids and oils have been identified throughout the Somerset portion of AFP-68 (Acres, EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). These miscellaneous liquids and oils will be removed as part of the Interim Removal Action. One 55-gallon open-top drum of oil is located in Building 6-02 in Area 6. Approximately 16 gallons of miscellaneous laboratory chemicals are located in the combustibles warehouse in Area 30A. Some labels still present on some of the bottles of chemicals identified hydrochloric acid, pentane, and sodium hydroxide. Finally, there are two 5-gallon metal containers and sixteen 1-gallon glass containers of chromic acid on the foundation of former Temporary Building No. 1. These latter containers are open to the weather and the metal containers are showing signs of corrosion.

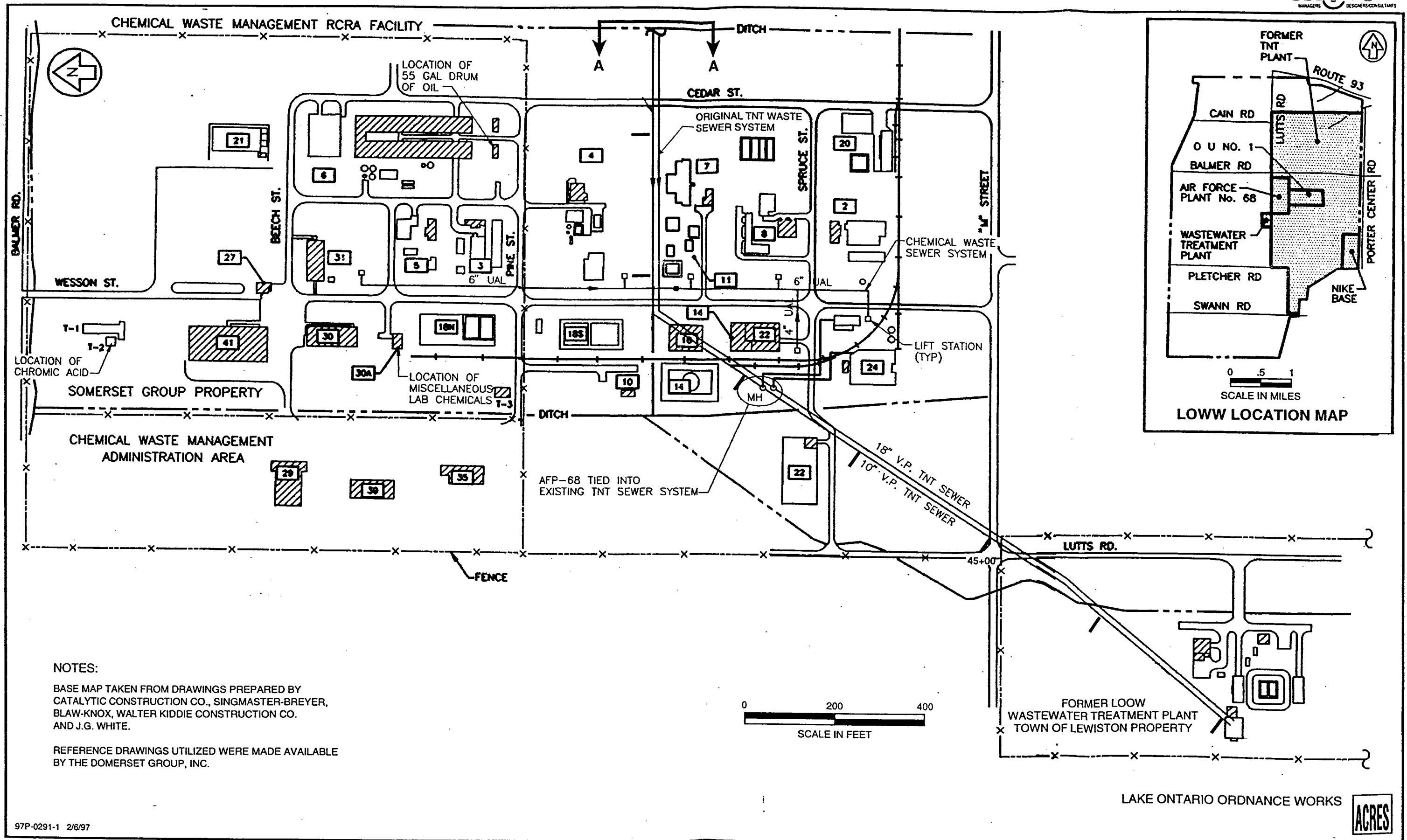
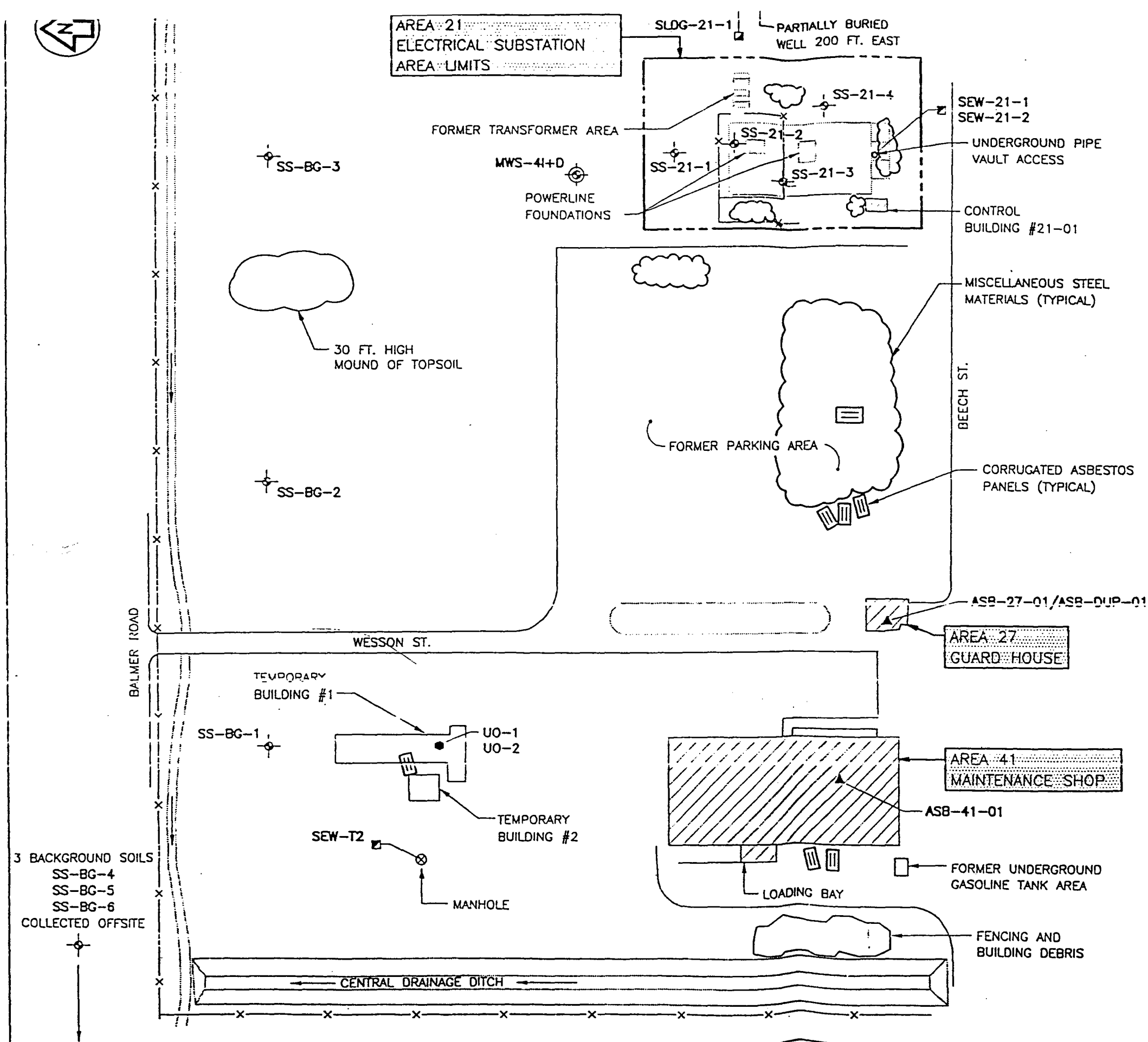


FIGURE 2-1 AFP-68 AREA
2-3



- LEGEND
- ⊕ MONITORING WELL
 - ▲ ASBESTOS CONTAINING MATERIAL
 - SEWAGE AND SLUDGE SAMPLE
 - ▣ SEWAGE SAMPLE ONLY
 - ▤ SLUDGE SAMPLE ONLY
 - UNKNOWN LIQUID/OIL SAMPLE
 - SURFACE WATER AND SEDIMENT SAMPLE
 - SURFACE WATER SAMPLE ONLY
 - SEDIMENT SAMPLE ONLY
 - ⊕ SURFACE SOIL SAMPLE
 - SANITARY SEWER
 - WASTEWATER SEWER
 - CHEMICAL WASTE SEWER

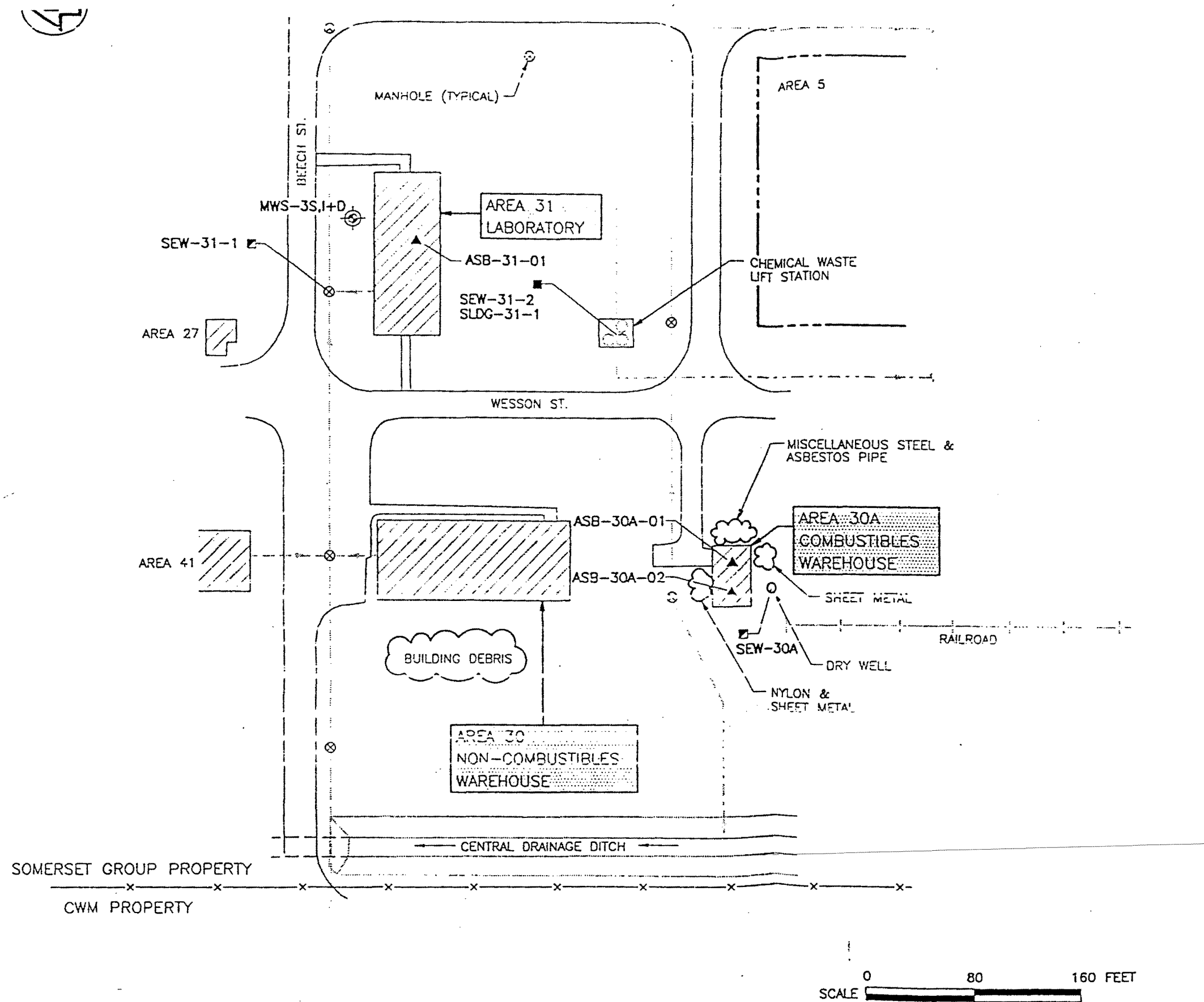
0 100 200 FEET
SCALE

Figure 2-2

LOOW RI/FS - OPERABLE UNIT NO. 2
BUILDINGS #1, #2 & AREAS 21, 27 & 41
SAMPLE LOCATION MAP

ACRI

4



- LEGEND**
- ⊕ MONITORING WELL CLUSTER
 - ▲ ASBESTOS CONTAINING MATERIAL
 - SEWAGE AND SLUDGE SAMPLE
 - ▣ SEWAGE SAMPLE ONLY
 - ▤ SLUDGE SAMPLE ONLY
 - UNKNOWN LIQUID/OIL SAMPLE
 - SURFACE WATER AND SEDIMENT SAMPLE
 - SURFACE WATER SAMPLE ONLY
 - SEDIMENT SAMPLE ONLY
 - ⊕ SURFACE SOIL SAMPLE
 - SANITARY SEWER
 - WASTEWATER SEWER
 - CHEMICAL WASTE SEWER

Figure 2-3

LOOW RI/FS - OPERABLE UNIT NO. 2
 AREAS 30, 30A & 31
 SAMPLE LOCATION MAP



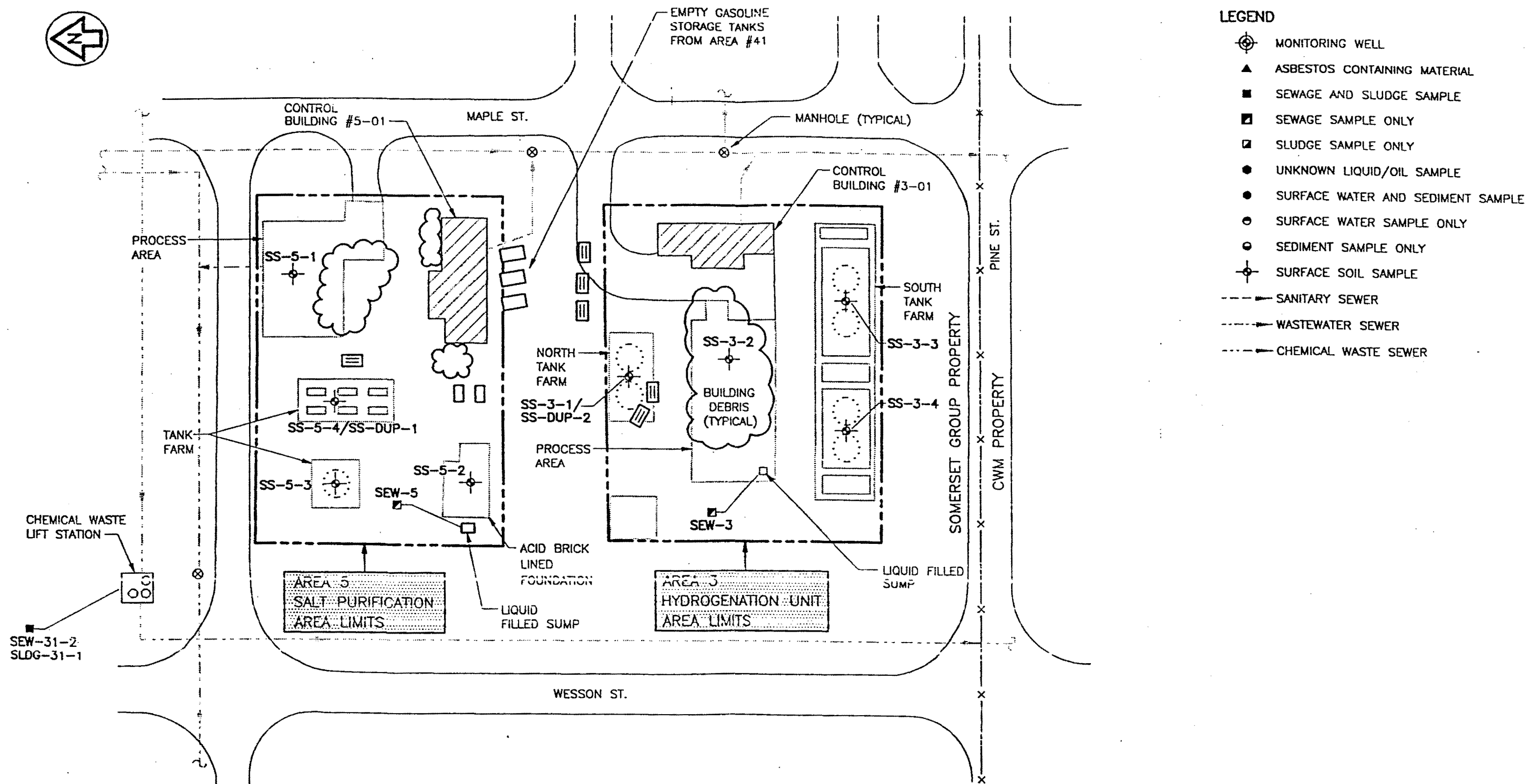
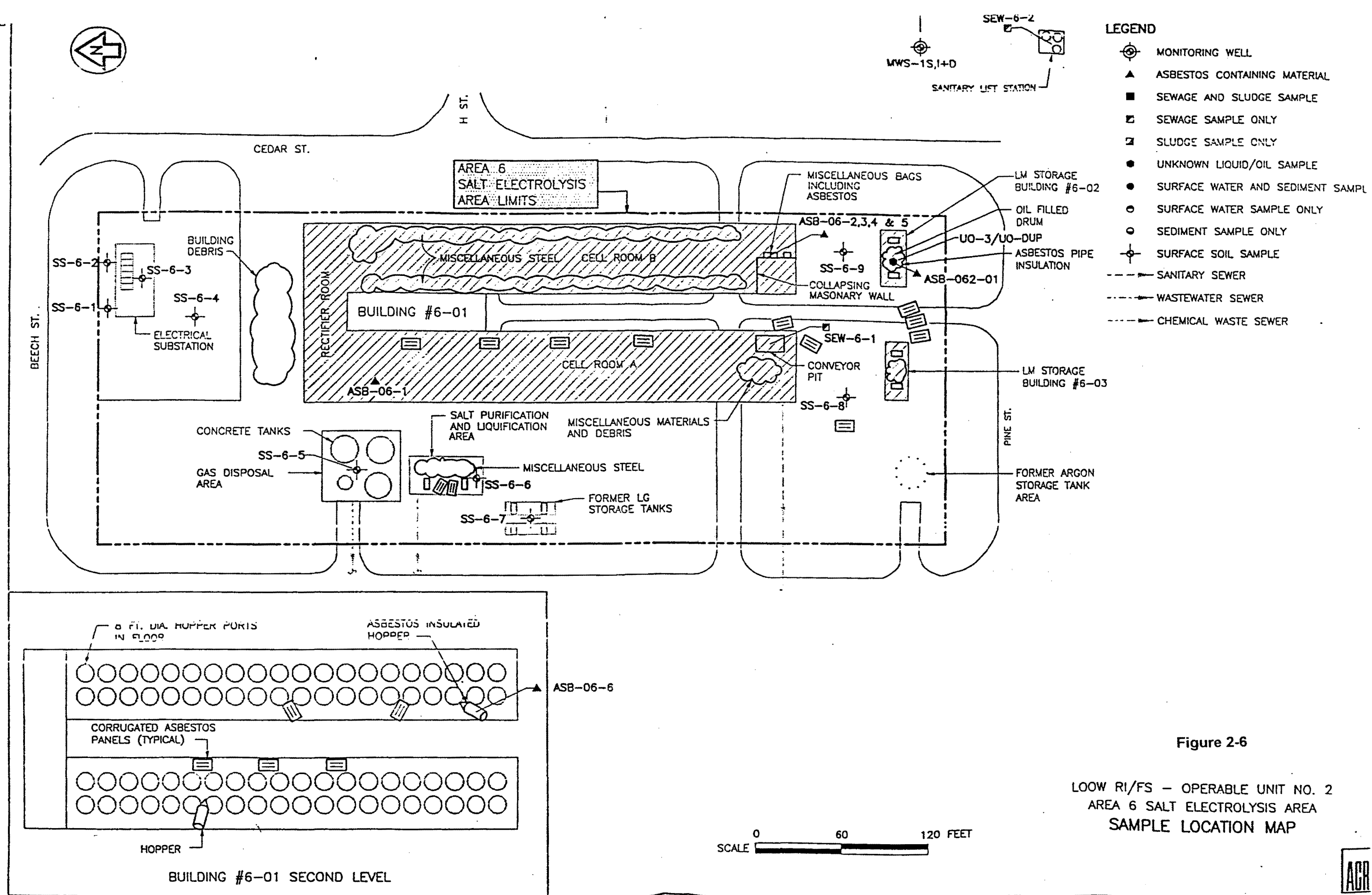


Figure 2-5

LOOW RI/FS - OPERABLE UNIT NO. 2
AREAS 3 & 5
SAMPLE LOCATION MAP

SCALE 0 50 100 FEET



2.1.2 Preferred Removal Action

Asbestos

The removal action recommended in the EE/CA is the removal of loose ACM by a licensed asbestos Contractor and disposal at a 6NYCRR Part 360 landfill permitted to accept ACM. Requirements for asbestos removal and disposal are provided in the contract specifications (Section 02080: Asbestos Abatement).

Loose ACM identified within buildings will be removed following applicable OSHA regulations (29 CFR 1910.1001, Occupational Safety and Health Standards, Asbestos, including Appendices A through I and 29 CFR 1926.1101, Safety and Health Regulations for Construction, Asbestos, including Appendices A through K) for ACM. Because the outer walls of several buildings have been removed, construction of temporary containment areas will be required to maintain a negative pressure environment in accordance with OSHA regulations. Because the building is open and is a large structure, the Contractor will separate the building into manageable sections instead of completing the entire building at one time. The Contractor will be required to be licensed to perform asbestos work in New York and comply with all licensing regulations. Other applicable regulations include:

- 34 CFR, Part 231, Appendix C, Procedures for Containing and Removing Building Materials Containing Asbestos.
- 40 CFR Part 61, Subpart M: U.S. Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos.
- 29 CFR 1910.134: OSHA General Industry Respirator Requirements.

The Contractor will be responsible for personal air sampling of personnel and an independent Contractor will be responsible for conducting clearance sampling of the individual areas in compliance with all OSHA regulations.

The extent and quantity of loose ACM, particularly on the ground surface around Area 6, and the condition and quantity of ACM pipe insulation has not been defined in previous investigations. These quantities are required to develop the remedial design cost estimate and for potential

Contractors to develop their cost proposals for the removal action. An asbestos survey to define these quantities is therefore recommended at this time. A proposed scope of work for the recommended asbestos survey is provided in Appendix D.

Depending on the extent and quantity of loose ACM on the ground surface an applicable alternative could include closure in-place using a closure cover system in accordance with Part 360 regulations for ACM.

Removal and containerization of ACM outside of existing buildings will require controlled wetting down of the ACM to control potential admissions. An air monitoring program would be required to ensure dust control measures are effective.

Miscellaneous Liquids and Oils

The chosen removal action is transfer of the liquids to approved containers and transport by land to a permitted off-site facility for recycling or treatment and disposal. All miscellaneous liquids and oils will be collected and containerized as specified in Section 02144: Miscellaneous Liquids and Oils, and transported and disposed of in accordance with Section 02120: Transportation and Disposal of Hazardous and Non-Hazardous Materials.

2.2 CHEMICAL WASTE SEWER SYSTEM AND LIFT STATIONS

2.2.1 Site Background

The chemical waste sewer system located on the Somerset and CWM properties was determined during the RI to contain numerous contaminants at substantial concentrations. Based on past observations of liquid levels within the lift stations, it appears that the liquid levels are constant and do not represent groundwater levels. This would imply that the contaminants may be confined within the sewer system. The portions of the sewer system to be addressed include the chemical waste lift stations (typically 10 ft by 10 ft by 10.5 ft) in Areas 4, 7, 8, 22, 31, and adjacent to the oil/water separator in Area 24 North; and associated interconnecting sewer lines. Based on

available site drawings, the sewer lines range in size from 4 to 6 inches in diameter. Any contamination beyond the confines of the sewer system will be addressed in future investigations.

Based on field observations and information obtained from the drawings, the following materials are identified for remediation:

- Contaminated liquid and sludge within the chemical waste lift stations estimated at 29,000 gallons of sewage and 2 yd³ of sludge.
- Contaminated liquid and sludge within the interconnecting sewer lines estimated at 1,000 gallons of sewage and 2 yd³ of sludge.

It is assumed that only sewage and sludge materials within the chemical waste sewer system lift stations and main trunklines will be remediated at this time. It is also assumed that the remediation will not include any materials within the system downgradient of the oil/water separator in Area 24.

2.2.2 Preferred Removal Action

The removal action recommended in the EE/CA is the removal of the accumulated water and sludges from the chemical lift stations. After removal of the liquids and sludges, the chemical lift stations and trunklines will be cleaned by high-pressure water jets to remove any sediment collected in the sewer pipelines. All water collected will be disposed of at the on-site aqueous treatment facility and sludges transferred to an existing permitted incinerator for disposal. Upon completion of solids removal and cleaning, the chemical lift stations will be sealed at the ground surface. Requirements for the remediation of the chemical sewer line are provided in the contract specifications (Section 02142: Remediation of Chemical Waste Sewers and Lift Stations).

2.2.3 Liquid Removal

The Contractor will initially remove the contaminated liquids from the chemical waste sewer system and lift stations. The chemical waste lift stations (typically 10 ft by 10 ft by 10.5 ft) can be used as sumps during removal activities. The liquids will be pumped from the chemical lift stations into a temporary storage vessel (i.e., tanker truck or temporary tank), and sampled and analyzed

to determine specific treatment/disposal requirements. The liquids within the lift stations will not be completely removed to avoid mixing and removal of the contaminated bottom sludge. The liquids will be stored until the results of the analysis are available (see Figure 2-7).

Upon characterization of the liquids and determination of treatment/disposal requirements, the stored liquids will be transported by a licensed waste hauler to a competitively bid permitted treatment/disposal facility. Transportation and disposal requirements for liquids are provided in the contract specifications (Section 02120: Transportation and Disposal of Hazardous and Non-Hazardous Materials).

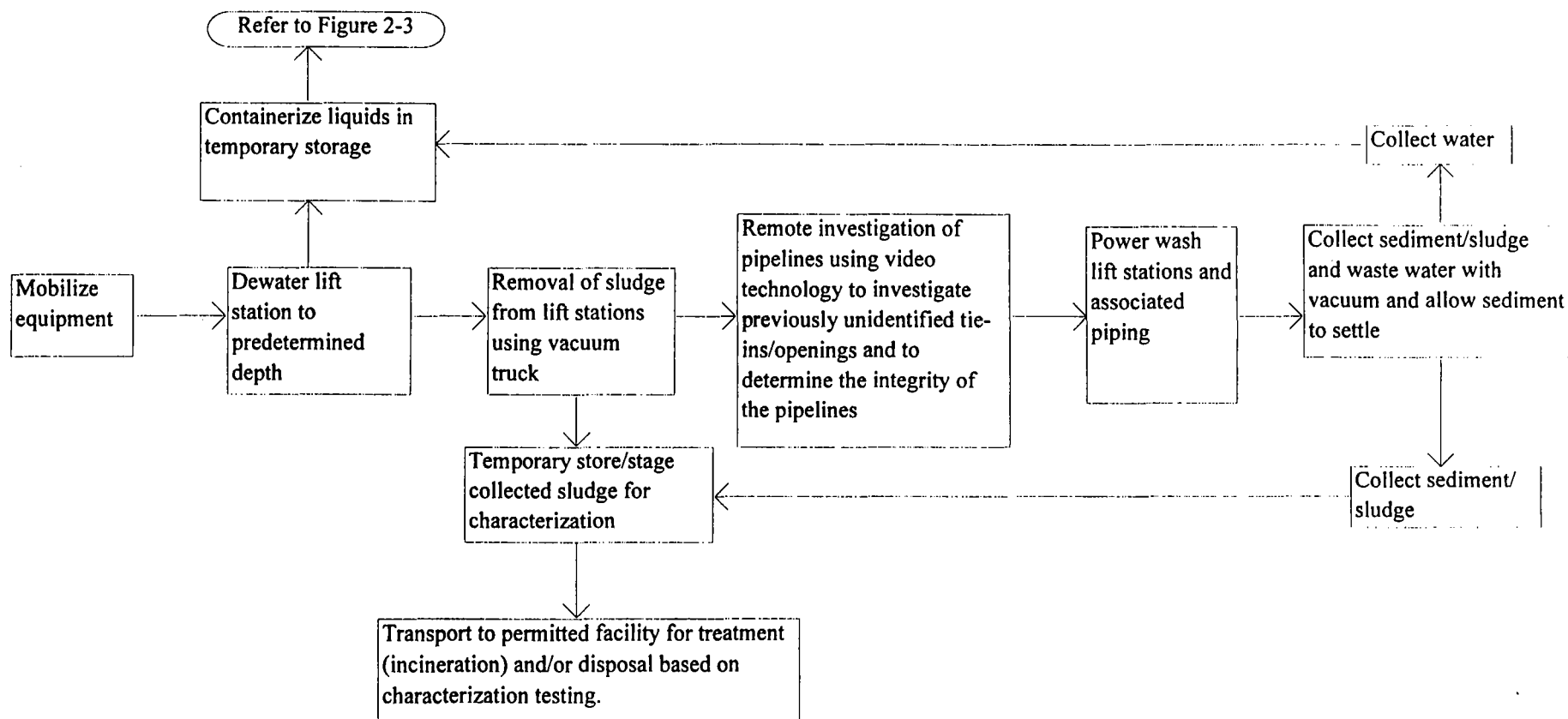
2.2.4 Removal of Sludges from Lift Stations

After the liquids in the Chemical Waste Sewer Lift Stations have been pumped down to a predetermined depth, the sediments in the lift stations will be removed by vacuum and containerized. Due to Land Ban considerations, incineration may be the only treatment option available. Transportation and disposal requirements for sediments will be provided in the contract specifications (Section 02120: Transportation and Disposal of Hazardous and Non-Hazardous Materials). The Contractor will be responsible for performing any necessary sampling and analysis and stabilization of sludges as required by the accepting facility.

2.2.5 Identification of Potential Tie-Ins and Pipeline Integrity

Prior to removal of sediment by high-pressure water jets from the chemical waste sewer system, the Contractor will be required to investigate previously unidentified tie-ins and determine the integrity of the sewer pipeline through remote methods such as a pipeline (downhole) videocamera or other approved methods. The purpose of this remote investigation is to identify potential openings in the pipeline that could lead to a release of contaminants during flushing activities.

Figure 2-7
Chemical Waste Sewer System and Lift Stations Removal Action Flow Diagram



2-19

2.2.6 Power Washing the Sewer System

The chemical sewer system will be power washed with a high-pressure water, pipe washing system. The power wash system shall be capable of effectively removing sediments from the pipeline and clean the inner surfaces of the pipe without causing damage to the pipeline. The power wash system shall also be capable of removing debris that may stop the forward travel of the washer system.

The Contractor will power wash the sewer pipeline in specified intervals. Specified intervals will consist of sewer pipeline sections located between chemical lift stations. When a section has been power washed, the Contractor will proceed toward the next chemical sewer lift station and continue the process until the sewer system designated for remediation has been completed.

Access to the sewer pipeline for insertion of the power wash system will be gained through the chemical sewer lift stations. The chemical sewer lift stations will be used as sumps to collect the wash water and sediments as they are removed. The power wash system will be inserted and extended into the pipe until the next chemical sewer lift station on the line is encountered. The power wash system would then be withdrawn to flush the sludges from the line and into the lift stations. Each pipeline segment will be flushed once and then sealed to prevent the backwash of the next pipeline section from entering into the washed section.

There may be material plugs, or other obstructions in the lines to stop the progress of the power wash system. If this situation is encountered, the Contractor shall try to loosen the blockage by working the power wash system from both sides of the blockage.

The collected wash water may be combined with water initially vacuumed from the sewer system and handled accordingly. Sediments removed during power washing activities may be combined with the sludges initially removed from the lift stations and handled accordingly.

The Contractor will be responsible for developing an approved Health and Safety Plan (HASP) and a Contingency Plan for release of material prior to commencing removal of material from the

chemical waste sewer system. The HASP shall include requirements and procedures for potentially entering the lift stations that are confined spaces and may require Level B PPE.

2.2.7 Sealing the System

When power washing and removal operations have been completed, the system will be sealed to prevent unauthorized access into the lift stations. The sealing will be completed by rewelding the chemical lift stations manhole covers, which will be performed by a certified welder.

2.3 APPLICABLE PERMITS

The Contractor will be required to obtain all necessary permits to conduct/complete removal actions. Potentially applicable permits include, but are not limited to, the following:

- Excavation/utility clearance Permit for Areas A, B, the TNT pipeline, and other areas, as required.
- Erosion and Sedimentation Control Permit.
- Construction Permit.
- New York Department of Labor permit for asbestos abatement.

APPENDIX A

RESPONSE TO COMMENTS

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Garger, CENAB-EN-:

Comment 671753-24, page 1-10

Section 1.3 - add the word "critical" between "non-time" and "removal actions"

Response:

Revision will be made.

Comment 671753-25, page 1-13

Section 1.4, 2nd paragraph, line 4 - suggest adding the words "associated with landfill expansion" after "construction activities".

Response:

Clarification will be made.

Comment 671753-26, page 2-13

Section 2.1.9, line 5, - delete one of the "will be completed by the contractor" statements.

Response:

Deletion will be made.

Comment 671753-27, page 2-39

Section 2.3.1 - there appears to be some text missing between page 2-26 and 2-39.

Response:

The repeated last two lines on page 2-39 from the proceeding paragraph will be deleted.

Comment 671753-28, page 3-15

Section 3.3.2, remove this section since it is inappropriate to discuss the bioremediation as part of this effort.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Response:

This section will be revised to state that following the removal of sediments from the pipeline the contractor is responsible for the containerization and transport of the sediments to a designated treatment/disposal facility. The evaluation and final treatment/disposal of the pipeline sediments is being performed through a separate research and development contract under the direction of USACE, Baltimore District.

Since this effort is not within WESTON's scope of work, it is our understanding that the USACE, Baltimore District will provide prior to the 90% design submittal, the requirements for moisture content, containerization, and transport of the sediments and contaminated soils to the designated treatment/disposal site. All references to bioremediation will be deleted as directed.

Comment 671753-29, page 3-21

Section 3.4.1.1 - add the reference for the requirements for excavation outlined in EM 385-1-1, 3 Sept. 96, Section 25.

Response:

Reference will be added.

Comment 671753-30, Appendix

General comment: What will be the clean up criteria for asbestos in soil around BLDG. 6 for the purposes of estimating extent of contamination and cost of remediation.

Response:

Based on our discussion at the 30% Design meeting on 20 May 1997, no clean-up criteria for asbestos in soil was known by the team. CENAB has since contacted NYSDEC regarding this matter, but Kent Johnson (NYSDEC) was not aware of a specific criteria. Jim Davis (WESTON) mentioned that the clean-up of asbestos fragments observed outside of enclosed buildings at the Childersburg Army Ammunitions Plant was conducted by collecting and bagging for disposal all visible pieces by trained asbestos abatement workers.

Based on the areal extent and depth of asbestos containing materials determined from the proposed survey, potential options will be evaluated and presented for review and comment.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Noble, CENAB-EN-HI:

Comment 671753-48, page 2-14, Tab 2-1

Also applies to page 3-10, section 3.2. The NY guidance memorandum cited for soil clean-up levels, HWR-92-4046, has an update which came out in 1994. Perhaps there is even a 1996 update. Please research and use the most current guidance from the state of New York.

Response:

WESTON will obtain the most current update of the NYSDEC guidance memorandum and revise if appropriate, the clean-up criteria referenced in the DAR.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Marsh, CENAB-EN-H:

Comment 6671753-107, page 2-13, section 2.1.10, paragraph 2

This section indicates that a 200 SF grid will be utilized for confirmation sampling. This needs to be evaluated based on the site.

Response:

As discussed at the 30% design meeting on 20 May 1997, the confirmation sampling will be performed after the designated limits of the Area A excavation are completed and initial field screening methods do not indicate elevated concentrations of organic compounds. If sustained PID/FID readings above background are observed on soil samples removed from the walls of the excavation, the contracting officer may direct the contractor to continue excavation or perform verification sampling. For the excavation walls a grid area of 400 sq. ft (10' x 40' narrow side wall) to 550 sq. ft. (10' x 55', long side wall) or a total of 20 sidewall samples is recommended to be collected and analyzed using rapid (24 hr or less) turn-around analysis. The bottom of Area A will be excavated to the depth clean-up criteria are met (estimated at 10 ft) or to 6 inches below the top of the clay layer, whichever comes first. It is recommended that confirmation samples be performed on the bottom of the excavation to document the level of clean-up, in the case that the clay layer is encountered first, the results would not be used to extend the depth of the excavation. A grid area of approximately 1100 sq. ft. (20' x 55') or 8 total floor samples is suggested. The total confirmation samples would therefore be 28, if no sample exceeded the clean-up criteria and no additional excavation beyond the initial limits was performed

Comment 6671753-108, page 2-13, section 2.1.10, paragraph 3

This section indicates that additional excavations will be 2 ft internals on the walls and 1 ft intervals on the floor. Explain why these are different.

Response:

As discussed at the 20 May 1997 meeting, the base of the excavation will be limited to the depth clean-up criteria are met (estimated at 10 ft) or 6 inches into the clay layer, whichever comes first. Due to the potential of encountering the clay layer above the estimated depth, the thickness of the lift to be removed was limited to 2 ft. Furthermore, it is on a practical level easier to remove a 1 ft lift on the bottom of an excavation than the side wall. Excavation of the side walls will be extended at 2 ft intervals or as directed by the contracting officer based on field screening techniques and confirmation sampling and analysis.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-109, page 2-14, Table 2-1

There are several blank cells on this table. If there is no value for a specific cell, please identify (i.e., dash -). This will indicate that there is no value, and not that one has been forgotten.

Response:

The table will be revised to show either a number or dash (signifying no criteria exists) in each cell.

Comment 6671753-110, page 2-25, section 2.2.10, paragraph 2

Same comments as numbers 2 and 3 above.

Based on the discussions at the 20 May meeting, the following confirmation sampling program is proposed for Area B:

- Contaminated pond sediment (estimated volume 3,000 yd³ based on a 24,500 ft² area 3 ft in depth) - Following removal of the sediment to a depth of 3 ft, the area will be screened with a FID/PID. If sustained readings above background are observed the contracting officer may direct the contractor to excavate and remove another foot or collect verification samples using an approximately 4,000 sq. ft grid area (5-6 samples total). Based on the results of the 24 hr. turn around verification sampling, an additional 1 ft of material will be excavated and removed from within the designated grid.
- Contaminated berm materials at approximately 6,000 yd³ (based on 33,000 ft² of berm at an average height of 5 ft): similar approach suggested for a total of 8-9 samples.

Contaminated mounded sediment and soil within the ponded area estimated at 1,300 yd³ (based on a 7,150 ft² area with an average thickness of 5 ft): Similar approach recommended including first, excavation to 5 ft below the existing surface, field screening and then either further excavation or verification sampling. Total samples for the first round of verification sampling is 2 samples.

- Contaminated soils within the former surface depression south of the present burn pit boundaries, estimated at 1,700 yd³ (based on the depression dimensions of 100 ft long by 25 ft wide by 18 ft deep). Since this is a below

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

ground excavation, sidewall and floor confirmation samples are recommended. The sidewall confirmation sampling would occur after field screening and be performed on an approximate grid area of 450 sq. ft (18' x 25' narrow sidewall) or one sample per side, and of 450 sq. ft (9' x 50' on long sidewall) or 4 samples per side. The total sidewall samples would then be 10. The floor samples would be taken using a grid area of 625 sq. ft (25' x 25') or 4 samples. If the clay layer is encountered the excavation will proceed 6 inches into the clay layer and confirmation samples collected. No further excavation will occur after the top 6 inches of the clay layer is removed. The results of the confirmation samples, at this depth will be used only to document clean-up achieved. If the clay layer is not encountered, excavation will proceed until clean criteria are met (estimated at 18 ft).

Comment 6671753-111, page 3-7, section 3.1.3, paragraph 2

Change the date to October 1996.

Response:

Date will be changed.

Comment 6671753-112, page 3-7, section 3.1.3, paragraph 5

This comment is just a note. This section indicates that a drawing exists that discharge from the sludge basins was to the North TNT line. This is the first that this reviewer has heard of this drawing. It would be beneficial to see that drawing.

Response:

The referenced drawing has been provided with these responses.

Comment 667173-113, page 3-8, section 3.1.4, paragraph 2

This section indicates that the farthest downstream sampling point was Station 25+00, this does not agree with 3.1.3 paragraph 4 (30+80). Coordinate.

Response:

The correction will be made.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-114, page 3-11, section 3.3.1, paragraph 1

The third and fourth sentences do not agree. Coordinate.

Response:

The word compares in the forth sentence will be changed to contrasts.

Comment 6671753-115, page 3-15, section 3.3.2

This reviewer does not agree with this section. Further discussions between Weston and the Corps are warranted.

Response:

See response to comment Number 671753-28 (Garger).

Comment 667153-116, page 3-23, section 3.4.1.3

This section indicated that the pipeline will be dewatered from the upstream access point if a pressure head exists. As long as the head is not excessive (i.e. gradient above ground surface), the head will aid in dewatering the pipeline from the downgradient access point. Suggest discussions on this matter.

Response:

The text will be revised and reflected in the specifications that the pipeline may be dewatered from the downgradient access point if an excessive pressure head does not exist. Excessive pressure was observed in the pipeline below station 25+00. The contractor shall utilize the existing manholes, where present, to release the pressure head prior to accessing the pipeline.

Comment 6671753-117, page 3-24

1. Paragraph 2 - This section indicates that confirmation samples will be collected at 25 ft. internals. This is extremely excessive and unnecessary. The interval will need to be evaluated somewhat based on field conditions, however, and average interval of several hundred feet (200-500') is more reasonable.

2. Paragraph 3 - This section indicates removal and resampling at 6" intervals, this may not be practical during construction activities. This will need to be discussed.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

The use of field screening methods during construction activities may be appropriate. These should be added to the next submission of plans/specifications.

Response 1:

Based on discussions at the May 20 meeting, the confirmation samples along sections of the pipeline that have been completely removed will be based on visual evidence of staining and spillage and through field test kits for TNT. The specifications will require visual inspection and field testing prior to collecting and analyzing soil samples. At a minimum, confirmation samples will be taken at the ends of each removed/or flushed section and at 250 ft for sections less than 500 ft and at 500 ft intervals for sections greater than 500 ft intervals for sections completely removed.

Response 2:

As discussed, the use of field test kits for TNT will be used by the contractor to identify remaining hot spots. It is suggested that the field test kits be used to determine if the clean-up criteria is met or whether additional excavation is needed. Laboratory confirmation sampling will then be used to verify field test results that indicate clean-up criteria has been attained.

The use of field screening methods will be added to text and the specifications.

Comment 6671753-118, page 3-25, section 3.4.1.6

Soils/sediments - This section will need to be modified based on discussions regarding the use of biotreatment methods.

Response:

This section will be revised to state that the contractor is responsible for containerization and transport of the pipeline sediments and contaminated soils (soils that exceed clean-up criteria and cannot be backfilled) to a designated treatment/disposal facility as directed by USACE, Baltimore District. The contractor is responsible for the disposal of the concrete and pipeline from those sections that are designated to be removed. The contractor is also responsible for treatment/disposal of waters collected from the pipelines and excavations.

WESTON is to confirm that local facilities will accept the concrete and pipeline materials based on field screening using Webster's Reagent to confirm the materials are non-detonable. WESTON will also confirm that CWM will accept liquids for the pipeline.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-119, page 3-28, section 3.4.2.1, paragraph 3

This section may need to be revised based on discussions regarding use of downstream access points.

Response:

See response to comment Number 6671753-116 (Marsh).

Comment 6671753-120, page 3-29, section 3.4.2.3, paragraph 2

This section indicates that laterals will be removed. The potential to leave them in place needs to be provided.

Response:

WESTON will review the available information to determine which laterals are likely intact and could be flushed in place. The specifications will allow closure in-place of the laterals unless the condition of the pipeline precludes the use of this method.

Comment 6671753-121, page 3-30, section 3.4.2.4, paragraph 2

This section should require a liner at the sumps.

Response:

The section will be revised to reflect the requirements of a liner at the sumps.

Comment 6671753-122, page 4-1, section 4.1

This section will need to be revised based on discussions regarding the use of biotreatment.

Response:

See responses to comment Number 6671753-115 (Marsh).

Comment 6671753-123, page 4-2, C-D1-C-D2

The potential to leave this section in place needs to be evaluated.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Response:

The cost evaluation was provided at the request of CENAB at the previous meeting on the results of the PRDI held on 22 January 1997. Based on the discussion at the 30% Design meeting, this section will not be included in the 60% Design submittal.

Comment 6671753-124, page 4-7, C-D3-C-D4

Based on the depth to pipe in this section the potential to leave this section in place needs to be evaluated.

Response:

Based on the discussion at the 30% Design meeting on 20 May 1997, the sections of the pipeline that will be indicated for closure in-place are shown on the marked-up Figures 4-1 and 4-2. These revisions will be reflected in the 60% Design submittal.

Comment 6671753-125, page 4-8, Table 4-1

There are different mobilization/demobilization rates for the different treatment methods. Explain.

Response:

See response to comment Number 667153-123 (Marsh).

Comment 6671753-126, Appendix A

CWM Property - Add Transportation/Handling Explosives.

Response:

As discussed at the 20 May meeting, CENAB will determine where the contractor is to transport the pipeline sediments and contaminated soil and will provide to WESTON the requirements for moisture content, containerization and transportation of these materials. WESTON will provide CENAB with information gathered to date regarding transport of explosives.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-127; Appendix A

Drawing Index - This section indicates that profile drawings for the pipelines will be provided. Do these exist or will they be generated?

Response:

The profile drawings will be prepared using the depth to pipeline measurements taken during the PRDI.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Kent Johnson, NYSDEC:

Comment 1: Page 2-7, Section 2.1.5, Excavation and Removal of Soils and Drums:

Additional details are needed to describe what is meant by the statement - "First, the area must be surveyed to establish the initial limits of contamination".

Response:

This statement will be clarified to state that the area define in the EE/CA and shown on the design drawings will be staked out by the contractor. Acres has surveyed these areas and will provide WESTON with the coordinates for the design drawings.

Comment 2: Page 2-9, Section 2.1.6, Second Paragraph:

Please clarify the meaning of the second sentence of this paragraph.

Response:

This sentence will be deleted.

Comment 3: Page 2-9, Section 2.1.6, First Paragraph:

Use of roll-off containers for excavated soils which are contaminated will minimize the need for confirmation sampling of this stockpile area.

Response:

This section will be revised to allow for the use of roll-off containers for excavated soils. The specifications will also reflect this.

Comment 4: Page 2-10, Section 2.1.7:

For the treatment and discharge of collected groundwater and surface waters, the COE should check the costs and feasibility of: CWM treatment, local POTW treatment, and/or obtaining a SPDES permit.

Response:

WESTON will investigate the feasibility of these options and allow the contractor to select among the feasible options for the most cost effective method.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

CWM will be contacted to discuss this issue.

Comment 5: Page 2-13, Section 2.1.10:

Confirmation samples should be analyzed for Hazardous Substance List Volatile Organics.

Response:

Since these areas have already been thoroughly investigated and the containments of concern identified, it is recommended that a partial VOC list be used for confirmation sampling to allow for rapid turn-around of samples and minimization of both potentially contaminated groundwater and surface water collection, treatment and discharge.

Comment 6: Page 2-14, Table 2-1:

The Table must also include the clean-up criteria for water used in flushing the TNT pipelines.

Response:

We request further discussion of this comment with NYSDEC. The objective of the Interim Removal Action is to remove the material that has been identified as a potential risk. After flushing in-place, removal of the pipeline contents will be verified with a video camera. No confirmation sampling is proposed.

Comment 7: Page 2-23, Section 2.2.9:

Please see previous comments on treatment and discharge to surface water.

Response:

See response to comment No. 4.

Comment 8: Page 2-25, Section 2.2.10:

Confirmation samples should be analyzed for Hazardous Substance List Volatile Organics, Lithium and Boron.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Response:

See response to comment No. 5.

Comment 9: Page 2-41, Section 2.3.2, Asbestos:

Please cite the 6 NYCRR part 360 regulation for an in-place closure cover system.

Response:

Since asbestos is the only "solid waste" present in this area, an alternative cover that allows for the maintenance of "wet" moisture conditions may be more appropriate than an impermeable Part 360 cover system. CENAB is also still evaluating the options for remediation of the loose asbestos in this area.

Comment 10: Page 2-41, Section 2.4.4:

The pipeline camera survey of the chemical waste sewer system should include the entire system, to the extent possible.

Response:

The camera survey is proposed for the chemical waste sewer line shown on the drawings to be flushed.

Comment 11: Page 3-8, Section 3.1.3:

Please provide details on the statement: "All of the outlet lines from the oil/water separator are scheduled to be sealed with cement grout by CWM."

Response:

CWM is to plug the discharge points from the oil/water separator identified during the PRDI.

Comment 12: Page 3-15, Section 3.3.2:

A determination as to the appropriateness of bioremediation of the pipeline sediments cannot be made at this time. Once the pilot study being conducted by the USACE Waterways Experimental Station is completed and a report is submitted, through review of the technology will be performed.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Response:

The sections discussing bioremediation will be deleted as directed by CENAB.

Comment 13: Page 3-18, Section 3.3.3:

Has any progress been made with the New York National Guard to secure access to their property in case crystalline materials are encountered?

Response:

CENAB to comment.

Comment 14: Page 3-29, Section 29, Section 3.4.2.4:

If feasible, the filtering and recirculation of wash water used for power washing the pipelines may result in a reduction in the amount of water used and treated.

Sections of the pipeline which have the presence of sediment and debris indicated by the video survey must have a post-washing confirmation survey to assure satisfactory decontamination of the pipe.

Response:

Concur.

Comment 15: Page 3-31, Section 3.4.2.6:

What are the proposed parameters of analysis for the TNT line confirmation sample?

How will the decontamination of the TNT pipelines be confirmed?

When back filling the temporary sumps/access points, the fill material should be of sufficiently low permeability to prevent the pipeline and/or bedding from becoming a preferential pathway to contaminant migration.

Response:

Confirmation that the contents of the pipeline have been removed will be performed using a video camera. No confirmation sampling is proposed.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

The pipeline will be plugged using a bentonite grout at the access points. The sump areas will be lined and backfilled with soils that do not exceed the clean-up criteria. The local soils are clayey and generally possess a low permeability.

Comment 16: Page 4-7, Section 4.1:

Is location D4 the point where the chemical waste sewer system ties in?

Response:

This is the approximate location where it is suspected that the tie-in to the oil-water separator is located. The actual point of connection was not located during the PRDI.

APPENDIX B

INDEX OF PLANS AND SPECIFICATIONS

APPENDIX B

LAKE ONTARIO ORDNANCE WORKS (LOOW) SOMERSET PROPERTY

INDEX OF SPECIFICATIONS

Division 1 - Special Clauses

<u>Section No.</u>	<u>Title</u>
01030	Job Conditions
01110	Safety, Health, and Emergency Response (HTRW/UST)
01300	Submittal Procedures
01310	Project Schedule
01440	Contractor Quality Control
01450	Chemical Data Quality Control
01500	Temporary Construction Facilities
01561	Environmental Protection
01720	As-Built Drawings

Division 2 - Site Work

02080	Asbestos Abatement
02120	Transportation and Disposal of Hazardous and Non- Hazardous Materials
02141	Dewatering Liquids and Handling
02142	Remediation of Chemical Waste Sewers and Lift Stations
02143	Decontamination of Construction Equipment
02144	Miscellaneous Liquids and Oils

**LAKE ONTARIO ORDNANCE WORKS (LOOW)
SOMERSET PROPERTY**

Drawing Index — 60% Design

- Cover Sheet
- Overall Site Plan and Existing Conditions
- Location of Asbestos/Containerized Materials Plan (to be provided in 90% Design)
- Asbestos Remediation Staging Area Plan (to be provided in 90% Design)
- Chemical Waste Sewer Site Plan
- Site and Erosion Control Details

APPENDIX C

GENERAL SITE PLAN

NOTE: See Plate 2 of the Drawings.

ACRES

SUBJECT:

FIGURE 1

ASBESTOS SAMPLES
LOCATIONS

Project No. W34201141 File No. _____
Calc. By KC Date 5
Ck'd By _____ Date _____
App. By _____ Date _____
Calc. No. _____ Sheet 1 of 1

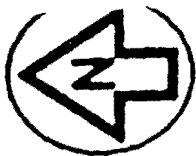
BALMER RD.

WESSON ST.

BEECH ST.

PINE ST.

SOMERSET GROUP PROPERTY



T-1
T-2

41

27

21

6

31

5

18N

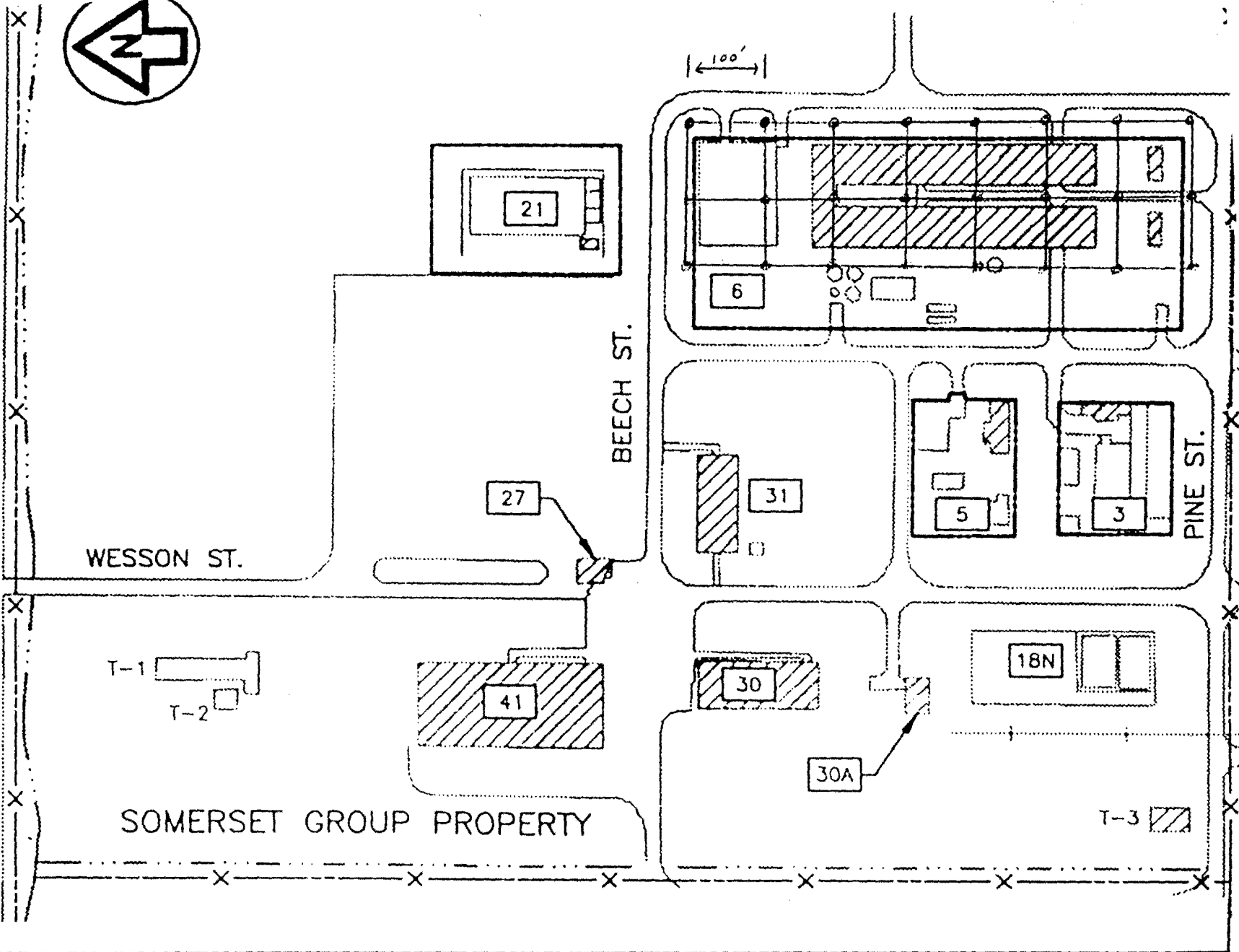
T-3

30A

30

3

100'



APPENDIX D

**LAKE ONTARIO ORDNANCE WORKS
ASBESTOS SURVEY-SOMERSET GROUP PROPERTY**

LAKE ONTARIO ORDNANCE WORKS SCOPE OF WORK ASBESTOS SURVEY – SOMERSET GROUP PROPERTY

1 INTRODUCTION

The Somerset Group property is located on a portion of former Air Force Plant 68 (AFP-68), which was constructed in 1957 at the former Lake Ontario Ordnance Works site located in Niagara County, New York. AFP-68 was decommissioned in 1959 while in pilot-plant status. As a result of the construction, operation, and decommissioning of AFP-68, various presumed asbestos-containing materials (PACMs) are present throughout the Somerset Group property.

Under the Defense Environmental Restoration Program, the U.S. Army Corps of Engineers (USACE) is addressing asbestos contamination which poses a potential health risk on the Somerset Group property. This Scope of Work defines the services to be performed to quantify the asbestos-containing materials for the purpose of providing information for bid solicitation for an interim remedial action.

PACMs present at the Somerset Group property include corrugated wall panel, pipe insulation, hopper insulation, and bagged asbestos mortar. This Scope of Work identifies those tasks to be performed to quantify only loose and friable asbestos-containing materials. Those materials that do not appear to be loose or in a deteriorating condition, such as the corrugated panels attached to buildings, will not be included in the quantity estimates.

2 SCOPE OF SERVICES

The scope of services to be provided has been divided into three tasks: asbestos survey; asbestos sampling/analysis; and reporting.

2.1 Asbestos Survey

Acres will perform a field survey to quantify loose asbestos-containing materials on the building floors and ground surface. The surface area and vertical extent of the loose asbestos materials on building and ground surfaces will be estimated. Intact asbestos-containing insulation around piping will be documented along with the observed characteristics of the material (e.g., deteriorated, intact, partially fallen off, etc.). The field survey will include written and photographic (or video) documentation.

2.2 Asbestos Sampling/Analysis

Contamination of building surfaces and exterior ground surfaces has occurred as a result of the widespread distribution and deteriorating condition of some asbestos-containing materials. The area surrounding Building No. 6 is a particular area of concern with respect to asbestos contamination. Acres proposes to perform sampling and analyses of site soils around Building No. 6 to quantify the amount of asbestos contamination.

In order to quantify the lateral extent of asbestos contamination in site soils concentrated around Building No. 6, Acres will establish a 100 ft by 100 ft grid around the building as indicated in Figure 1. Acres will then collect representative samples of the upper 4 inches of the surface soils at grid node locations. Samples will not be collected where grid nodes are located on concrete or other structural surfaces. However, additional surface soil samples will be collected in the general building vicinity to result in a total of 26 soil samples. All asbestos sampling will be conducted by certified asbestos technicians using OSHA-approved asbestos sampling procedures per 29CFR 1926.1101.

Upon collection, Acres will submit the samples to the analytical laboratory for asbestos analyses by polarized light microscopy (PLM).

2.3 Reporting

Upon receipt of all analytical results, Acres will prepare a bound summary report providing written observations, photographs, laboratory results, and quantity estimates. The report will also present recommendations for the most cost-effective approach for removal or encapsulation of asbestos-containing material that poses an immediate potential risk (e.g., covering areas around the building which contain loose asbestos material on the ground surface, encasing intact pipe insulation, etc.). Acres will also evaluate methods of stabilization through encasement in areas where asbestos-containing material is not currently loose but may pose a future threat of release due to exposure.

Acres will provide 10 copies of a bound draft report. Acres will provide one copy of responses to review comments on the draft report to Weston. Acres will then incorporate agreed-upon comment responses into a final report and submit 10 copies of the final report to Weston.

Acres' estimate assumes that the field survey and asbestos sampling will be performed when the ground surface is free of snow cover.

APRIS

SUBJECT:

FIGURE 1

ASBESTOS SAMPLING
- 02-28-00-05

Project No. W3424141 File No.

Calc. By KLC Date 4/9/97

Ck'd By Date

App. By Date

Calc. No. Sheet 1 Of 1

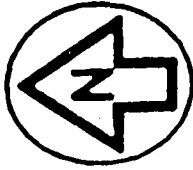
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WESSON ST.

BEECH ST.

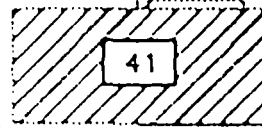
PINE ST.

SOMERSET GROUP PROPERTY

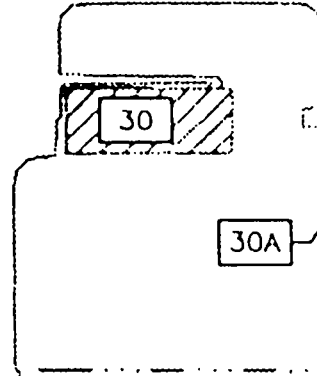
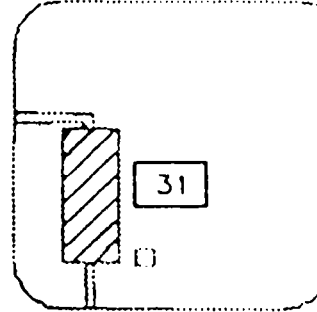
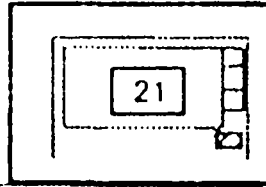


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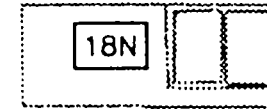
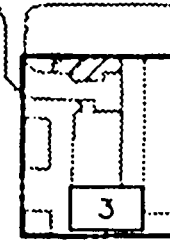
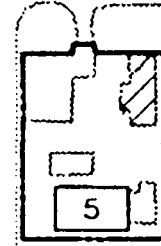
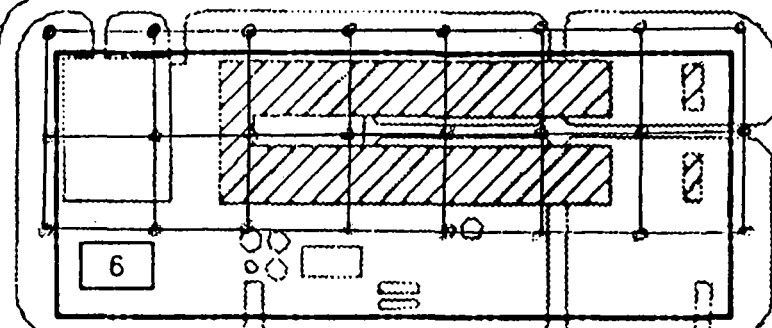
T-1
T-2



27



30A



T-3