2

Y/TS-838/R3

MARTIN MARIETTA

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PART B PERMIT APPLICATION FOR PRODUCTION ASSOCIATED UNITS AT THE OAK RIDGE Y-12 PLANT

Building 9206 Container Storage Unit
Building 9212 Container Storage Unit
Building 9720-12 Container Storage Unit
Cyanide Treatment Unit

Environmental Management Department

Health, Safety, Environment, and
Accountability Organization

September 1994

Prepared by
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee 37831
Managed by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

MANAGED BY
MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

September 1994 Y/TS-838/R3

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PART B PERMIT APPLICATION FOR PRODUCTION ASSOCIATED UNITS AT THE OAK RIDGE Y-12 PLANT

Building 9206 Container Storage Unit
Building 9212 Container Storage Unit
Building 9720-12 Container Storage Unit
Cyanide Treatment Unit

Environmental Management Department

Health, Safety, Environment, and Accountability Organization

Prepared by
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee 37831
Managed by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400
OS

DISCLAIMER

MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2009
OAK RIDGE, TENNESSEE 37831

September 22, 1994

Mr. R. J. Spence
Department of Energy, Oak Ridge Operations
Post Office Box 2001
Oak Ridge, Tennessee 37831

Dear Mr. Spence:

Notice of Deficiency (NOD) Response--Resource Conservation and Recovery Act (RCRA) Part B Permit Application for the Production Associated Units at the Oak Ridge Y-12 Plant

In reference to the letters dated July 14, 1994, "Notice of Deficiency, RCRA Part B Permit Application," and August 30, 1994, "Notice of Deficiency--Response Extension, RCRA Part B Permit Application," from the Tennessee Department of Environment and Conservation (TDEC) personnel, Enclosure 1 is a summary of the responses of the Y-12 Plant personnel to each of the TDEC comments listed in the subject NOD. Enclosure 2 is a revised and complete permit application entitled "Resource Conservation and Recovery Act Part B Permit Application for the Production Associated Units at the Oak Ridge Y-12 Plant," Document Y/TS-838/R3. Please note that changes made to the application are indicated in the right margin, except for the appendices which have been modified extensively.

Enclosure 3 is a computer disk containing the permit application as requested by TDEC personnel. As required in the NOD, please transmit four copies of Enclosures 1 and 2 (along with Enclosure 3) to the TDEC staff on or before October 1, 1994.

I certify that this document and all enclosures were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Note that the required permit certification has been signed and is included in Section N of the enclosed application.

Please direct any questions or comments to B. E. Skaggs at (615) 241-2582.

Very truly yours,

D. J. Bostock
Vice President and
Y-12 Plant Manager

Enclosures: As Stated

DJB:krl

cc/encs 1 & 2: B. C. DeMonia, DOE-ORO
C. H. Fritts
J. A. Kreykes
A. K. Lee, DOE-OSTI (2)
L. G. Loden
A. G. Mitchell
T. P. A. Perry
B. E. Skaggs
Y-12 Central Files
File-EMD-RC

cc: D. J. Bostock
T. R. Butz/R. M. Keyser/J. E. Powell
G. N. Cobham
C. D. Goins Jr.
J. S. Guilford
C. C. Hill
N. C. Jessen
C. M. LaBorde
M. E. Mitchell
M. K. Morrow

Enclosure 1
Letter, Bostock to Spence
Dated: September 22, 1994

LETTER TITLE

Notice of Deficiency (NOD) Response--Resource Conservation and Recovery Act (RCRA) Part B Permit Application for the Production Associated Units at the Oak Ridge Y-12 Plant

Notice of Deficiency
U.S. DOE Y-12 Plant
EPA ID: TN3 89-009-0001
Part B Permit Application
Dated, May 1992

1. "40 CFR 270.14(b)(2) as incorporated by reference at Tennessee Rule 1200-1-11-.07(5)(a) requires a basis for the hazard designation the wastes in these facilities will receive. A laboratory report on analysis results is also required. The application states, 'These data are considered classified for reasons of national security and can be made available for review by "Q" cleared regulatory personnel.' An employee with this clearance will review the hazard designation and the classified laboratory reports at a later date. Although 'Q' cleared personnel will review the classified information, all unclassified laboratory report results should be submitted along with your Part B application."

   Response: *Analytical data will be available to Q-cleared regulatory personnel. Typical unclassified analytical data is included in Appendix C-1.*

2. "40 CFR 264.175(b) as incorporated by reference at Tennessee Rule 1200-1-11-.06(9)(a) requires the following information pertaining to basic design parameters, dimensions, and materials of construction:

   1. Buildings 9206, 9212, and 9720-12
      a. Statement that the bases are free of cracks and gaps.
      b. Engineering evaluation of structural integrity of base.
      c. Discussion of compatibility of base with the wastes.
      d. Demonstration of imperviousness of base to wastes and precipitation.

   2. Cyanide Treatment Unit and Uranium Treatment Unit
      a. Discussion of compatibility of base with wastes.
      b. Engineering evaluation of structural integrity of base.
      c. Demonstration of imperviousness of base to wastes and precipitation."

   Response: *A statement that the bases are free of cracks and gaps has been added to Section C, along with a discussion regarding the ability of the bases to support the wastes. Also added is a discussion regarding the impervious bases at each unit and a discussion of compatibility of bases with the wastes. The Uranium Treatment Unit has been deleted from the revised permit application; therefore, comments regarding this unit are no longer applicable. A closure plan is being prepared for the Uranium Treatment Unit.*

3. "40 CFR 270.175(b)(3) as incorporated by reference at Tennessee Rule 1200-1-11-.06(9)(a) requires completed blueprints of all buildings and treatment units present in the Part B application. These are needed to calculate the capacity of, and better evaluate the containment and treatment units." Note: The above citation appears to be incorrect. It is assumed that the correct citation is 40 CFR 264.175(b)(3).

Response: The quoted citation does not require completed blueprints. Such drawings are not available. However, as requested in a telephone conversation with Ms. Jamie Burroughs of the Tennessee Department of Environment and Conservation, additional detail has been added to the plan drawings presented in Appendix D to assist in the evaluation of the units.

4. "40 CFR 264.193(a)-(f) as incorporated by reference Tennessee Rule 1200-1-11-.06(10)(a) includes certain requirements for the plans and description of design, construction, and operation of the secondary containment system. These include:

    1. Proof that the materials are compatible with the wastes in the tank system.

    2. Show system has sufficient strength and thickness to prevent failure caused by any of the following:
        a. pressure gradients (including static head and external hydrological forces).
        b. physical contact with the wastes.
        c. climatic conditions.
        d. stress of daily operation (including stresses from nearby vehicular traffic).

    3. Calculations to prove that it is placed on a foundation or base that is capable of providing support, resisting pressure gradients above and below the system, and preventing failure due to settlement, compression or uplift."

    Response: *This comment regarding tank systems is no longer applicable since the Uranium Treatment Unit has been removed from the revised permit application. A closure plan is being prepared for the Uranium Treatment Unit.*

5. "40 CFR 264.193(d)-(e) as incorporated by reference Tennessee Rule 1200-1-11.06(10)(a) requires a statement indicating that the external liner system is free of cracks or gaps."

    Response: *This comment regarding tank systems is no longer applicable since the Uranium Treatment Unit has been removed from the revised permit application. A closure plan is being prepared for the Uranium Treatment Unit.*

6. "40 CFR 264.193(f) as incorporated by reference Tennessee Rule 1200-1-11.06(10)(a) indicates secondary containment and leak detection requirements for ancillary equipment, including the following:

    1. Materials of construction used to construct or line the system. Show that these materials are compatible with the wastes in the tank system.

2. Calculations proving that the secondary containment system is placed on a foundation or base that is capable of providing support, resisting pressure gradients above and below the system, and preventing failure due to settlement, compression, or uplift.

3. Show that the system has sufficient strength and thickness to prevent failure caused by any of the following:
   a. pressure gradients (including static head and external hydrological forces).
   b. physical contact with the wastes.
   c. climatic conditions.
   d. stress of daily operation (including stresses from nearby vehicular traffic)."

Response: These comments regarding tank systems are no longer applicable since the Uranium Treatment Unit has been removed from the revised permit application. A closure plan is being prepared for this unit.

7. "40 CFR 264.195(c) as incorporated by reference Tennessee Rule 1200-1-11.06(10)(a) requires a schedule and procedure for inspecting a cathodic protection system if one is present at the facility. If one is not present at the facility please discuss why the cathodic protection system is not needed."

Response: These comments regarding tank systems are no longer applicable since the Uranium Treatment Unit has been removed from the revised permit application. A closure plan is being prepared for this unit.

8. "40 CFR 264.15(a)-(b) as incorporated by reference Tennessee Rule 1200-1-11.06(2)(a) specifies that certain equipment, if present at the facility, must be inspected on a regular basis, and must be included on an inspection schedule. These include:

   1. Monitoring Equipment
      a. hazardous gas detectors
      b. temperature gauges
      c. pH monitors

   2. Safety and Emergency Equipment
      a. decontamination equipment - including shovels, mops, empty drums, etc.

   3. Operating and Structural Equipment
      a. ventilation equipment."

Response: The inspection schedule and inspection logs have been updated to include the applicable items listed above. This updated information is located in Appendices F-1 and F-2 of the revised permit application.

9. "40 CFR 264.15 as incorporated by reference Tennessee Rule 1200-1-11.06(2)(a) specifies requirements for tank system inspection. These include:

    1. Must have a procedure for emptying a tank to allow entry and inspection when necessary to detect corrosion or erosion of tank sides and bottom.

    2. Must confirm proper orientation of cathodic protection system (if present) within six months after installation and a least annually thereafter."

    Response: These comments regarding tank systems are no longer applicable since the Uranium Treatment Unit has been removed from the revised permit application. A closure plan is being prepared for this unit.

10. "40 CFR 264.15(d) as incorporated by reference Tennessee Rule 1200-1-11.06(2)(a) specifies requirements for the inspection log. These include:

    1. Container inspection log
        a. The area that is to be inspected must be clearly labeled on the log sheet.
        b. The title 'Interim Status Facility' must be deleted.
        c. The inspection log needs to have an 'observation' section and a 'date and nature of repairs and remedial action' section. For an example look at the inspection log for your tanks.
        d. Please define all-weather surface in the standard that states, 'containers of waste shall be placed on an all-weather surface' (S-02).
        e. Problems, besides those listed, relating to container structural integrity need to be addressed.
        f. The standard which states, 'facility is being operated in accordance with current permit application' is too broad, please specify any additional types of problems to look for.
        g. All items listed on the inspection schedule must also be present on the log. The items which need to be added to the inspection log include: Pallets, building integrity, sumps, and ramps. Also list problems regarding these items that should be looked for during the inspection.

    2. Tank inspection log
        a. All items listed on the inspection schedule must also be present on the log. The items which need to be added to the inspection log include sumps, tank level markings, debris and refuse, and ladders. Also list problems that should be looked for during the inspection.
        b. Did the three blank spaces seen on the log hold any important information? If they did please send a copy of the inspection log minus the holes.

    3. Other logs
        a. Need inspection log for monitoring equipment.
        b. Inspection log needed for security equipment.
        c. Inspection log needed for safety and emergency equipment."

Response: The inspection schedule and inspection logs have been revised to include the applicable items listed above. This updated information is located in Appendices F-1 and F-2 of the revised permit application.

11. "40 CFR 264.50 through 40 CFR 264.56 as incorporated by reference Tennessee Rule 1200-1-11.06(4)(a) requires that Section G, the contingency plan section, be self contained in one portion of the application. Appendixes G-1 through G-4 need to be merged into Section G."

Response: The contingency plan has been revised to be a self-contained document. This revised plan is included as part of the revised permit application.

BESkaggs:krl
September 19, 1994

Enclosure 2
Letter, Bostock to Spence
Dated: September 22, 1994

LETTER TITLE

Notice of Deficiency (NOD) Response--Resource Conservation and Recovery Act (RCRA) Part B Permit Application for the Production Associated Units at the Oak Ridge Y-12 Plant

TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ACRONYMS

CFR	Code of Federal Regulations
COD	chemical oxygen demand
CWSA	Containerized Waste Storage Area
DARA	Disposal Area Remedial Action
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
HP	Health Physics
HSWA	Hazardous and Solid Waste Amendments
IH	Industrial Hygiene
IRWTA	Interim Reactive Waste Treatment Area
LDR	Land Disposal Restrictions
MMES	Martin Marietta Energy Systems, Inc.
NaK	sodium potassium
OJT	On-The-Job Training
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation
OSHA	Occupational Safety and Health Act
PED	Plant Emergency Director
PCB	polychlorinated biphenyl
PSS	Plant Shift Superintendent
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments Reauthorization Act
SID	Stream Identification
TCLP	Toxicity Characteristic Leaching Procedure
TDEC	Tennessee Department of Environment and Conservation
TOC	total organic carbon
UCN	Uniform Control Number

SECTION B
FACILITY DESCRIPTION

This section of the application provides a general description of the hazardous waste management facility as required by 40 CFR Part 270.14(b)(1) and Rules Governing Hazardous Waste Management in Tennessee, Rule 1200-1-11-.07(5)(a). This description is intended to provide guidance and facility orientation to the permit application reviewer and the permit writer for the Oak Ridge Y-12 Plant.

B-1 GENERAL DESCRIPTION

The Oak Ridge Y-12 Plant was built by the U.S. Army Corps of Engineers in 1943 as part of the Manhattan Project and was given the original mission to separate the fissionable isotope of uranium by the electromagnetic process. After World War II, the electromagnetic separation process was discontinued in favor of the more economical gaseous diffusion process. In recent years the Y-12 Plant staff has developed this facility into a highly sophisticated manufacturing and developmental engineering organization.

The U.S. Department of Energy (DOE) owns and operates the Y-12 Plant. Personnel from Martin Marietta Energy Systems, Inc., (Energy Systems) co-operate and manage the Y-12 Plant. Since 1984, the facility has been managed by Energy Systems personnel under a prime contract with DOE. The contract is administered by personnel at the DOE, Oak Ridge Operations Office.

The Y-12 Plant occupies approximately 800 acres in Anderson County, Tennessee, and is located southwest of the City of Oak Ridge. The site employs approximately 4,000 people including employees of the Oak Ridge National Laboratory assigned to the Y-12 Plant. Two surface streams, East Fork Poplar Creek and Bear Creek, border the facility on the south, east, and southwest sides of the Plant. There is access to the Y-12 Plant, that is controlled on Bear Creek Road on the north side of the facility; indirect access from Scarboro Road on the east side of the facility; and indirect access to the facility on the south side via Bethel Valley Road. A controlled access road from Bethel Valley Road by way of Mt. Vernon Road is located on the southwest side of the site.

It is the mission of the Y-12 Plant to serve as a key manufacturing technology center for the development and demonstration of unique materials, components, and services of importance to DOE and the nation. This is accomplished through the reclamation and

storage of nuclear materials, manufacture of nuclear materials, manufacture of components for the defense capabilities of the nation, support to national security programs, and services provided to other customers as approved by DOE.

This application covers a treatment unit with a container storage area and three other container storage areas. These units can be located on Map 2 in Appendix B-1. The four units included in this application are as follows:

1. Building 9206 Container Storage Area
2. Building 9212 Container Storage Area
3. Building 9720-12 Classified Container Storage Area
4. Cyanide Treatment Unit

All four of these units are associated with the recovery of enriched uranium and other metals from wastes generated during the processing of nuclear materials.

Building 9206 Container Storage Area

Building 9206 is one of two buildings at the Y-12 Plant that process enriched uranium-bearing materials, including organic solutions, for recovery of the uranium. Residues were generated during past recovery processes in which solid wastes, such as gloves, shoe scuffs, lab coats, etc., that were contaminated with enriched uranium, were burned. The resulting residue or ash is now stored for future recovery of the uranium contained in the ash. The ash is classified as a mixed (hazardous and radioactive) waste due to the presence of F-listed solvents in the original solid waste.

Also stored in Building 9206 are organic solutions and lab salvage, such as phosphoric acid, Freon, etc., all containing enriched uranium. These wastes are characterized as mixed waste due to the presence of F-listed solvents and the characteristics of toxicity and corrosivity. The areas have a total storage capacity of 3,975 gallons.

Building 9212 Container Storage Area

Building 9212, located on the north side of the protected area, south of Bear Creek Road is the other building at the Y-12 Plant that processes enriched uranium bearing-materials including organic solutions. Process operations within the building also generate solid waste contaminated with uranium. Similar to Building 9206, the solid waste was burned and the resulting ash stored in cans for future recovery of the enriched uranium.

Also stored in Building 9212 are organic solutions and lab salvage, such as phosphoric acid, Freon, etc., containing enriched uranium. These wastes are characterized was mixed waste due to the presence of F-listed solvents and the characteristics of toxicity and corrosivity. The areas have a total storage capacity of 3,814 gallons.

Building 9720-12 Classified Container Storage Area

Building 9720-12 is a storage area for hazardous, low-level radioactive, and mixed waste. Waste is stored at this building until appropriate recycle techniques can be scheduled. Wastes stored at this facility are contaminated with enriched uranium. Total storage capacity of Building 9720-12 container storage area is 32,500 gallons.

Cyanide Treatment Unit

The Cyanide Treatment Unit is located in Building 9201-5N in the northwest corner of the building's basement. The cyanide treatment--or destruction--operation consists of a cyanide treatment exhaust hood and a drum storage area which can store up to 2,200 gallons.

At present, the treatment process takes place in DOT-approved, plastic-lined drums. Drums of waste are placed under the cyanide treatment hood where the treatment takes place. The treatment capacity of the Cyanide Treatment Unit is 195 gallons per day.

B-2 TOPOGRAPHIC MAP

B-2a General Information

This section discusses the maps which comply to the requirements of 40 CFR Part 270.14(b)(19) and Tennessee Rule 1200-1-11-.07(5)(a)17. Appendix B-1 contains the maps that show the locations of these units as well as the general site plan, facility property boundaries, locations of buildings, and the contour of the site to show surface water flow. Due to the large number of units at the Y-12 Plant, several maps have been utilized to give the permit reviewer and writer a clearer understanding of the location of the four units in this package. The following maps are included in Appendix B-1 and have been provided to facilitate review:

Map 1: The Oak Ridge Y-12 Emergency Facilities Directory shows the general site plan. This map shows the locations of major plant buildings and other structures, the facility property boundaries, the legal boundaries of the site, the locations of portal controlled access roads, exclusion and protected areas of the plant, guard towers and

vehicular check points. The plant access roads as well as internal roads are also shown on this map. (Scale: 1 inch = 400 feet).

Map 2: The Oak Ridge Y-12 Plant Waste Unit Identification Key illustrates the storage, treatment, and disposal facilities located at the Y-12 Plant. Due to the large number of these facilities, a separate map has been used to give the permit writer and reviewer a clearer understanding of the locations of these facilities. (Scale: 1 inch = 800 feet).

Map 3: The Y-12 Plant Loading and Shipping Docks Map illustrates the loading and unloading docks and shipping docks around the plant. (Scale: 1 inch = 400 feet).

Map 4: The Y-12 Plant Floodplain Map shows the East Fork Poplar Creek 100-year floodplain and the surrounding surface waters. The 500-year floodplain and maximum probable flood is also shown for the Y-12 Plant. The four units in this package are not located within the 100-year floodplain of either Bear Creek or East Fork Poplar Creek. Flood control and drainage barriers are, therefore, not necessary. (Scale: 1 inch = 400 feet).

Maps 5 & 6: Y-12 Plant Sanitary Sewer System Master Plan and Y-12 Plant Storm Sewer Master Plan Maps. These maps illustrate the sanitary sewer system and the detailed storm water drainage system for the Y-12 Plant. (Scale: Sanitary Sewers - 1 inch = 530 feet, Storm Sewers - 1 inch = 200 feet).

A variance under Tennessee Rule 1200-1-11-.07(5) is necessary for the required map scale of one inch equals 200 feet for these maps. The size of the Y-12 Plant makes the use of the required scale difficult to utilize for review. A variance has been approved for alternate map scales to be used in the application. A copy of the approval letter is included in Appendix B-1.

Information required to be submitted in this section also includes the following areas:

- Solid Waste Management Units are addressed in Section M.

- Wind rose - Appendix B-2 includes information provided by wind roses taken from the data gathered from the two meteorological towers located at the east and west end of the plant.

- Injection and withdrawal wells. Not applicable. There are no injection wells or withdrawal wells at the facility. Therefore, there are none shown on the permit maps.

- Land Use. The surrounding land use around the Y-12 Plant is primarily wooded forest with some commercial development east of the plant.

- Loading and unloading areas. The loading and unloading areas for the container storage and treatment areas in this application are illustrated on Map 3 and also in the facility drawings referenced in Section D.

B-2b Additional Topographic Requirements for Land Storage, Treatment and Disposal Facilities and Post Closure Permits for Closed Land Units.

Not Applicable. None of these four units are hazardous waste land storage, treatment, or disposal units. Additional topographic information is not required of these hazardous waste management units in order to comply with the permit application regulations.

B-3 LOCATION INFORMATION

The locations of the four units in this permit application at the Y-12 Plant are illustrated in Map 2 of Appendix B-1. The specific identifying key numbers are summarized in Section B-1.

B-3a Seismic Considerations

Not Applicable. Since the Y-12 Plant is an existing facility and is not located in a political jurisdiction as specified in 40 CFR Part 264, Appendix VI, seismic considerations need not be addressed.

B-3b Floodplain Standard

Not Applicable. The units in this application are not located within the 100-year floodplain, therefore, this section is not required.

B-4 TRAFFIC INFORMATION

The Y-12 Plant is a major industrial type facility operated under contract to the U.S. Department of Energy. The road system and its construction are typical of an industrial complex or military facility with numerous production, storage, administrative, maintenance, and utility buildings. These roads can easily bear the weight of the waste hauling vehicles used for each hazardous waste management unit. Roads are mostly two-way and built of asphalt to accommodate heavy and light traffic including automobiles, light trucks, armored security vehicles, heavy trucks, and tractor trailers (including those used to move nuclear material). There are also some constructed gravel roads capable of carrying the intended traffic. Entry and exit are controlled by guarded, locked gates. Internal traffic is controlled by marked lanes and stop signs at intersections typical of municipal or industrial complex surface streets. Hazardous wastes transported within the Plant or off-site generally consist of dump truck loads of soils and drums on pallets, and may periodically include tanker loads of liquids such as oils.

The minimum requirement for construction of existing paved roads at Y-12 is 1.5 to 14.0 inches of asphaltic concrete pavement overlaid on 6.0 to 18.0 inches of compacted aggregate base. All new paved roads are constructed with a minimum of 1.5 inches of asphaltic concrete pavement overlaid on 8.0 inches of stabilized aggregate base course. All paved roads to be used for access to and exit from hazardous waste management unit areas are capable of bearing loads up to allowable state highway limitations.

Other roads used for access to and exit from hazardous waste management unit areas are constructed of crushed stone surfaces and are designed to provide all-weather utilization throughout the Y-12 Plant. These gravel access roads are constructed with a minimum of 6.0 inches of crushed stone on a prepared subgrade and are useable on a year-round basis. These gravel roads are designed to support the anticipated traffic to and from the hazardous waste management unit areas.

The access roads to the units are useable on a year-round basis to authorized personnel only. The types of vehicles typically used during operations are flatbed and pickup trucks. The fully loaded flatbed and pickup trucks will weigh about 16,000 and 8,500 pounds, respectively. The load bearing capacities of all access roads meet or exceed DOT, Bureau of Highways standards which are 33,000 lb per axle or 24,000 lb per axle for tandems or a maximum limit of 90,000 lb.

Building 9206 Container Storage Area

Access to Building 9206 is from First Street at the north entrance of the facility. The building is located at the intersection of E Road and First Street. These streets are typical paved streets and meet the minimum requirements as specified for a Y-12 Plant paved road. These roads are capable of handling traffic associated with the servicing of this facility.

Building 9212 Container Storage Area

Access to Building 9212 is from G Street on the west side of the facility. The facility is just south of Bear Creek Road in the protected area. G Street is designed to meet the minimum construction requirements as specified for paved roads at the Y-12 Plant. The street is capable of handling the anticipated traffic associated with the servicing of this unit.

Building 9720-12 Classified Container Storage Area

Building 9720-12 is located on Second Street at the intersection with K Road. All these roads are paved roads and are designed and constructed to meet the minimum requirements for the Y-12 Plant paved roads. These roads are capable of handling the associated traffic necessary to service this unit.

Cyanide Treatment Unit

The Cyanide Treatment Unit is housed in Building 9201-5N is located on the north side of First Street, at the intersection with J Road. All roads servicing this facility are paved roads and meet the minimum requirements for Y-12 Plant paved roads. These roads are capable of handling the associated traffic necessary to service this unit.

SECTION C
WASTE CHARACTERISTICS

This section of the application describes the chemical and physical nature of the hazardous wastes handled and stored in each of the following storage and treatment units:

1. Building 9206 Container Storage Area
2. Building 9212 Container Storage Area
3. Building 9720-12 Classified Container Storage Area
4. Cyanide Treatment Unit

This section also includes the waste analysis plan for sampling, testing, and evaluating the waste to assure that sufficient information is available for proper waste management. This information is submitted in response to the RCRA Part B Permit application requirements, as specified in 40 CFR Part 270.14(b)(2); and in Rules Governing Hazardous Waste Management in Tennessee, Rule 1200-1-11-.07(5)(a)2.

C-1 CHEMICAL AND PHYSICAL ANALYSIS

General Description

Buildings 9206 and 9212

Buildings 9206 and 9212 Container Storage Areas provide storage for mixed waste residues or ash. This ash resulted from the burning of solvent- and uranium-contaminated solid wastes. This ash does not contain free liquids. Uranium-bearing solutions generated during the uranium recovery process and laboratory analysis, are also stored in these areas. These solutions, as well as the residues, are considered mixed (hazardous and radioactive) wastes and are being stored prior to further uranium recovery.

Building 9720-12

Building 9720-12 provides storage for mixed (hazardous and radioactive) waste residues or ash. This ash resulted from the burning of solvent- and uranium-contaminated wastes. Unburned, solvent- and uranium-contaminated solid wastes are also stored in Building 9720-12. The wastes at Building 9720-12 contain no free liquids and are generated during the uranium recovery process.

Cyanide Treatment Unit

The Cyanide Treatment Unit provides storage and treatment of liquid waste solutions of metallic cyanide compounds from spent plating baths and other cyanide solutions. The pH of the cyanide wastes ranges from 5 to 11. The total cyanide concentration of untreated cyanide wastes ranges from 10 to 60,000 ppm. Typically, wastes generated on-site are received and treated in 55-gallon plastic lined drums. These wastes are characterized as mixed (hazardous and radioactive) wastes. Occasionally, cyanide-bearing wastes, generated off-site, may be treated at the Cyanide Treatment Unit.

Hazardous Characteristics

The storage and treatment units receive and treat only the following listed and characteristic wastes as defined in 40 CFR Part 261:

Building 9206 Container Storage Area	F001, F002, F005, D004 - D043
Building 9212 Container Storage Area	F001, F002, F005, D004 - D043
Building 9720-12 Classified Container Storage Area	F001, F002, F005, D004 - D043
Cyanide Treatment Unit	D002 - D011, F001, F007 - F012, P029, P030, P033, P098, P104, P106

F005-wastes are listed only for the toxicity characteristic for those storage units that do not store ignitable waste. A summary of the types of waste stored and/or treated at these units is shown in Table C-1.

Basis for Hazardous Designation

The hazard designation is based on process knowledge of the on-site generated liquid and solid waste streams and analytical data for cyanide solutions generated off-site. Data for wastes generated on-site are considered classified for reasons of national security and are available for review by "Q" cleared regulatory personnel. The information indicates the presence of F-listed solvents and TCLP metals in wastes at all the units. Specific P-listed wastes may also be present at the Cyanide Treatment Unit along with the characteristics of corrosivity and reactivity. See Appendix C-1 for typical unclassified analytical data.

TABLE C-1. TYPICAL TYPES OF WASTE STORED AND/OR TREATED

Location	Example[1]	Parameter	EPA Waste Code[2]
9206 and 9212	Ash, solutions	Halogenated and non-halogenated solvents, TCLP metals	F001, F002, F005 D004 - D043
9720-12	Ash and solid combustible material	Halogenated and non-halogenated solvents, TCLP metals	F001, F002, F005 D004 - D043
Cyanide Treatment Unit	Spent plating solutions, cyanide solutions	Cyanide and TCLP metals	D002 - D011, F001, F007 - F012, P029, P030, P033, P098, P104, P106

(1) All of these wastes could potentially be contaminated with enriched or depleted uranium.
(2) No other waste codes are processed at these units.

C-1a Containers

Buildings 9206 and 9212 Container Storage Areas

Buildings 9206 and 9212 Container Storage Areas provide storage for mixed waste residues or ash. This ash resulted from the burning of solvent- and uranium-contaminated solid wastes. This ash does not contain free liquids and is considered a mixed waste. The containers holding the ash are made of galvanized tin and are typically 7 inches in diameter and 14 inches in height. Each can will hold approximately 2 gallons of residue. Each of the cans has a lid that slides down over the sides of the can. The seam between the lid and the side is then taped to prevent opening and the can is labeled with a recycle batch card, for uranium accountability, and a hazardous waste tag (UCN-2114A)(see Appendix C-2). The can is then placed, single-stacked, on a steel shelf with adequate spacing to prevent criticality. The shelves are normally 3 to 7 racks high with 6 to 11 cans on each shelf. Movement of all cans to and from the storage racks is done by hand. The cans are compatible with the residues being stored.

Uranium-bearing solutions generated during the uranium recovery process and during laboratory analysis are also stored in these areas. These solutions are considered mixed waste and are being stored prior to further uranium recovery. The solutions are stored in polyethylene bottles which are typically 5 inches in diameter and 52 inches in height; these bottles hold approximately 3 gallons. The bottles are labeled with a recycle batch card, for uranium accountability, and a hazardous waste tag (UCN-2114A)(see Appendix C-2). The bottle is then placed in a steel rack with adequate spacing to prevent criticality. Movement of all bottles to and from the storage racks is done by hand. The bottles are compatible with the solutions being stored. All containers of hazardous waste are labeled with the words "Hazardous Waste."

Building 9720-12 Classified Container Storage Area

Some storage is provided for ash containers from the Building 9206 and 9212 Container Storage Areas; these containers are described above. However, wastes typically arrive and are stored at Building 9720-12 in 55-gallon drums. Drums are moved by fork truck and hand carts. The drums and cans are stored in the designated area at the west end of the building. The waste is characterized as a solid material contaminated with enriched uranium, TCLP metals and F-listed solvents. The containers contain no free liquids and are compatible with the waste stored in them. The containers are labeled with recycle batch cards and hazardous

waste tags. All containers of hazardous waste are labeled with the words "Hazardous Waste."

Cyanide Treatment Unit

Cyanide wastes from on-site generators typically arrive, are stored, and can be treated in DOT-specification 55-gallon, plastic-lined drums. These containers are compatible with the wastes stored in them. The drums can be stored in the adjacent storage area. All drums of hazardous waste are labeled with the words "Hazardous Waste" (typically UCN-2114A). After treatment, if the cyanide levels are less than 10 ppm, the drums are shipped to the West End Treatment Facility.

Occasionally, cyanide waste may be received from off-site generators. Containers received from off-site must be in the appropriate DOT-specification container which are compatible with the waste stored in them.

The specific parameters to be used for the proper management of the stored and treated wastes is the concentration of enriched uranium. The Cyanide Treatment Unit is an exception, since the concentration of cyanide is the major concern. Other considerations at these units include the presence of F-listed solvents and TCLP metals based on process knowledge. Specific P-listed and characteristic wastes defined in Section C-1 are also of concern at the Cyanide Treatment Unit. The safe handling of waste is of primary importance. Handling of a waste will occur only when material is being transferred to or removed from a storage or treatment area. All equipment used to transfer waste is compatible with the waste.

Waste acceptance criteria precludes the storage of reactive, incompatible, or ignitable waste at Buildings 9206, 9212, and 9720-12. Reactive waste (D003) is treated at the Cyanide Treatment Unit. Ignitable waste is not processed at the Cyanide Treatment Unit.

C-1b Tanks

Not applicable. The units covered in this permit application are not tanks; therefore, the requirements of this section do not apply.

C-1c Waste Piles

Not applicable. The units covered in this permit application are not waste piles; therefore, the requirements of this section do not apply.

C-1d Surface Impoundments

Not applicable. The units covered in this permit application are not surface impoundments; therefore, the requirements of this section do not apply.

C-1e Incinerators

Not applicable. The units covered in this permit application are not incinerators; therefore, the requirements of this section do not apply.

C-1f Landfills

Not applicable. The units covered in this permit application are not landfills; therefore, the requirements of this section do not apply.

C-1g Land Treatment

Not applicable. The units covered in this permit application are not land treatment facilities; therefore, the requirements of this section do not apply.

C-1h Additional Requirements for Land Storage, Treatment, and Storage Facilities

Not applicable. The units covered in this permit application are not land storage, treatment, or disposal facilities; therefore, the requirements of this section do not apply.

C-2 WASTE ANALYSIS PLAN

The waste analysis plan is included to describe the procedures for obtaining the chemical and physical characteristics of a waste. Characterization is necessary to ensure proper management of the waste and compliance with the EPA land disposal restrictions.

Due to the nature of Y-12 operations, all chemicals used in the various operations are identified either from original, manufacturer-labeled containers or by laboratory analysis requested by the individual generator. Mixtures of substances originate in the same fashion, and therefore are identifiable by means of the identifying tag system shown in Appendix C-2.

C-2a Parameters and Rationales

Buildings 9206, 9212, and 9720-12 Container Storage Areas

Waste sent to each of these locations is analyzed for enriched uranium. Process knowledge is used to determine the presence of other RCRA constituents.

Cyanide Treatment Unit

The cyanide waste solutions are generated in plating shops and other Y-12 Plant operations. On occasion, cyanide waste solutions may be received from off-site. These solutions are transported in compatible, DOT-specification containers to the Cyanide Treatment Unit where the cyanide is decomposed prior to further treatment. All drums of untreatable cyanide solutions are tested using the Prussian Blue Test.

After cyanide decomposition, each drum is sampled and analyzed for free cyanide, total cyanide, and cyanate concentrations to verify the effectiveness of treatment. Treated wastes found to have a cyanide concentration of 10 ppm or below are sent to the West End Treatment Facility. Treated waste with a cyanide concentration greater than 10 ppm is processed in the treatment unit again. Treated cyanide solutions are typically analyzed for the parameters shown in Table C-2 as part of the waste analysis plan for any wastes to be treated at West End Treatment Facility.

The cyanide solutions treated at this facility are not ignitable liquids.

C-2b Test Methods

The analytical methods are summarized in Table C-3.

If additional analysis is deemed necessary, wastes will be analyzed using methods described in EPA SW-846, EPA 600/4-79-020, or "Environmental and Effluent Analysis Manual, Nuclear Division Environmental Control."

C-2c Sampling Methods

Sampling:

The contents of each container of waste will be characterized by either process knowledge or analysis prior to transfer to the container. The characterization will remain valid until the process changes.

Container sampling of liquids will be performed by use of an all glass Coliwasa drum sampler as described in SW-846. The use of the Coliwasa sampler will provide a representative vertical cross section of the contents of the drum or container and thereby address any anomalies that could develop due to vertical stratification.

Solid wastes are sampled using the methods shown in Table C-4.

TABLE C-2. TYPICAL ANALYTICAL PARAMETERS FOR TREATED CYANIDE SOLUTIONS

pH	
Nitrates	
TOC	
U	Cl
	Total residual Cl
	F
As	PCB
Ba	Phosphates
Cd	Sulfates
Cr	Cyanide
Pb	COD
Hg	Suspended solids
Se	Dissolved solids
Ag	Alkalinity (as $CaCO_3$)
	Acidity
Cl hydrocarbons	Density
Al	Alpha activity
B	Beta activity
Be	Gamma activity
Ca	
Ce	Methylene chloride
Co	Methyl chloroform
Cu	Trichloroethylene
Fe	Perchloroethylene
Ga	Freon 113
K	Chlorobenzene
La	1,1-Dichloroethane
Li	1,1-Dichloroethylene
Mg	Chloroform
Mn	1,2-Dichloroethylene
Mo	1,1,2-Trichloroethane
Na	1,2-Dichloroethane
Nb	Carbon tetrachloride
Ni	
P	Acetone
Sc	Ethanol
Si	Methyl ethyl ketone
Sr	Phenol
Th	Carbon disulfide
Ti	Toluene
V	
Y	
Zn	
Zr	

TABLE C-3. TEST METHODS FOR PRODUCTION ASSOCIATED WASTES*

Analyte	Analytical Method
Uranium	2100
TCLP	1311
Volatile organics	5030, 8740
Semi-volatile organics	8250, 8270
Aqueous phase pH	9040

* Methods referenced from "Test Methods for Evaluating Solid Waste" (SW-846)

TABLE C-4. SAMPLING EQUIPMENT FOR PARTICULAR WASTE TYPES[a]

Waste Type	Waste location or container							
	Drum	Sacks and bags	Open-bed truck	Closed-bed truck	Storage tanks or bins	Ponds, lagoons and pits	Conveyor belt	Pipe
Moist powders or granules	Trier	Trier	Trier	Trier	Trier	Trier	Shovel	Dipper
Dry powders or granules	Thief	Thief	Thief	Thief	Thief	Trier	Shovel	Dipper
Sand or packed powders and granules	Auger	Auger	Auger	Auger	b	b	Dipper	Dipper
Large-grained solids	Large trier	Large trier	Large trier	Large trier	Large trier	Large trier	Trier	Dipper

[a] Source -- EPA-SW-846; sampling methods described therein will be utilized.

[b] This type of sampling situation can present significant logistical sampling problems; therefore, sampling equipment must be specifically selected or designed based on site and waste conditions. No general statement about appropriate sampling equipment can be made.

Sample Handling:

Once the sample is transferred to the sample container, the lid is closed tightly and taped closed. The exterior of the sample container is washed, dried, and a sample identification tag attached. At a minimum, the tag identifies the sample, the sample location, time of sample, sampler, preservatives, and a unique sample identification number. The sample containers are placed in a plastic bag, tied closed, and placed in a sample ice chest with ice or equivalent. An analytical request form and chain-of-custody form will accompany the sample to the laboratory. The analytical request form identifies the sample number with the tag that is affixed to the sample container(s).

Reporting:

All analytical results, generator information, and sample chain-of-custody documentation will be maintained in the operating record.

C-2d Frequency of Analysis

Buildings 9206, 9212, and 9720-12 Container Storage Areas

Sampling and analysis are not conducted for waste in containers which already have proper labels identifying the source of their contents and associated hazard classification. Generators are responsible for analyzing wastes when process changes occur to ensure accurate and up-to-date information for the storage unit operators. The contents of each unique batch of waste is characterized by either analysis or by process knowledge, before shipment to the storage areas.

If analytical results are not available, process knowledge will be used to determine the appropriate storage area to be used for the waste shipment. Characterization necessary to ensure safe handling, regulatory compliance, and compatibility will be required before a waste is transferred off-site. Characterization required for land disposal must be complete before the waste is removed. A waste characterization will remain valid until the generating process changes.

Cyanide Treatment Unit

Each drum or batch of waste is sampled and analyzed before and after treatment. Characterization necessary to ensure safe handling, regulatory compliance, and compatibility will be required before the treated waste is transferred off-site for final disposal.

C-2e Additional Requirements for Waste Generated Off-Site Cyanide Treatment Unit

The generator will be responsible for supplying all information required for each parameter identified by this waste analysis plan. No waste will be accepted into these units until all the required information has been adequately provided.

In order to minimize the exposure of personnel to radiation and hazardous wastes, the containers of waste will not be routinely resampled for the purpose of complying with the waste analysis requirements. Chain-of-custody seals will be used to ensure that the wastes have not been tampered with after sampling by the generator. The chain-of-custody procedures for shipping and receiving off-site generated wastes include the following:

- The generator will sample and analyze the wastes for verification parameters specified in Table C-2 prior to shipping the waste to the Cyanide Treatment Unit.

- Immediately after sampling, the waste container will be sealed by the generator and a chain-of-custody seal will be affixed to the container, with the identification number of the chain-of-custody seal recorded on the waste analysis sheet.

- The manifest will be given to the transporter. The transporter and generator will check the identification number on the chain-of-custody seal with the number recorded on the waste analysis sheet to ensure that they are the same. Both the generator and transporter will check, sign, and date the manifest before the shipment and transporter depart the generator site.

- Upon arrival at the Y-12 Plant Cyanide Treatment Unit, the transporter will give the manifest and waste analysis sheet to the operations supervisor. The transporter and the operations supervisor will check the number on the waste analysis sheet and on the manifest to ensure that they are the same. An operations supervisor will inspect the load and will match the identification number of the chain-of-custody seal and the waste containers to those recorded on the waste analysis sheet. An operations supervisor and transporter will then sign and date the manifest. Significant discrepancies are defined as a difference in the number of containers reported and the number received or a difference in the type of waste identified and that received. Any significant discrepancies will be handled in accordance with Tennessee Rule 1200-1-11-.06(5)(c), and copies of all discrepancy reports and resolutions will be entered in the

site operating records. The waste will not be off-loaded during resolutions of the discrepancies and if the discrepancy cannot be resolved within 10 days, the waste will be returned to the generator.

The hazardous waste generator will be responsible for characterizing their waste. Waste received from off-site generators will be accompanied by an LDR-notification that has been prepared in accordance with Tennessee Rule 1200-1-11-.10 and 40 CFR Part 268.7(a)1, 3, or 5 and signed by the generator.

See Section J for additional information regarding the written operating record.

C-2f Additional Requirements for Facilities Handling Ignitable, Reactive, or Incompatible Waste

Waste characteristics have been reviewed for compatibility using a Y-12 Plant hazardous waste compatibility table similar to the list found in Tennessee Rule 1200-1-11-.06, Appendix .06/B, Examples of Potentially Incompatible Waste. See Appendix C-3 and Sections C-1, C-3, C-5 for additional information.

Mixing of incompatible wastes will also be prevented by requirements that the on-site generators provide information based on process knowledge or on testing describing the waste contents and characteristics. A compatibility review is an element of the waste acceptance criteria. Personnel will determine compatibility using waste handling history and other available data.

Based on waste handling history, and a review of the incompatible groupings, wastes stored at Buildings 9206, 9212, and 9720-12 normally will not be reactive, ignitable, or incompatible.

Wastes stored and treated at the Cyanide Treatment Unit are considered to be reactive due to the presence of cyanide. Once the treatment process has been completed, the waste material is no longer considered reactive. Section F-5a discusses the procedures used to prevent accidental reaction of wastes.

C-3 LAND DISPOSAL RESTRICTIONS

C-3a Waste Characteristics

Specific data must be submitted by the generator to the owner/operator of a treatment or disposal facility to document whether the waste is restricted under the 40 CFR Part 268

requirements. This data will be obtained by analysis of container contents and by knowledge of process. Waste determined to be restricted will be stored separately from non-restricted waste.

C-3a(1) Solvent Wastes and Dioxin-Containing Wastes

The wastes generated at the Y-12 Plant do not contain dioxin or dioxin-containing constituents based on knowledge of the processes. The wastes could contain solvents in the F-listed solvent classification. Since the exact composition of the solvent constituents will vary, the wastes will be considered to be F001, F002, and/or F005 wastes. This characterization is based on analytical data and on knowledge of solvent use at the Y-12 Plant. The wastes stored or treated in each of the units meet the definition of nonwastewater as defined in 40 CFR Part 268.2.

C-3a(2) California List Wastes

The California List places restrictions on liquid hazardous wastes containing PCBs greater than or equal to 50 ppm, over 1,000 ppm halogenated organic constituents, and liquids testing less than or equal to a pH of 2. All of the wastes stored at these units could contain constituents exceeding the halogenated organic criteria. Based on knowledge of process, liquids testing less than or equal to 2 pH could be stored in containers. Testing will be conducted to ensure that PCBs are not present above 0.1 ppm. Wastes received in containers will be limited to those waste codes listed in Section C-1.

C-3a(3) First-Second-and-Third-Third Waste

Based on knowledge of the waste characteristics, the Cyanide Treatment Unit may receive P-listed wastes, and TCLP wastes, which are subject to land disposal restrictions under 40 CFR Part 268 (Tennessee Rule 1200-1-11-.10). Wastes received at this unit will be limited to those waste codes listed in Section C-1. The wastes meet the definition of nonwastewater as defined in 40 CFR Part 268.2.

C-3b Additional Requirements for Treatment Facilities

Cyanide Treatment Unit

All cyanide wastes treated at the Cyanide Treatment Unit are tested after each batch to ensure that the cyanide concentration is less than 10 ppm. If it is not, the batch is recycled for further treatment. All analytical test results are considered part of the operating records.

C-3c Additional Requirements for Disposal Facilities

Not applicable. The units covered in this permit application are not disposal facilities; therefore, the requirements for this section do not apply.

C-3d Additional Requirements for Surface Impoundments Exempted from Land Disposal Restrictions

Not applicable. The units covered in this permit application are not surface impoundments; therefore, the requirements for this section do not apply.

C-3e Requirements for Land Disposal Facilities With an Approved Exemption or Extension

Not applicable. The units covered in this permit application are not land disposal facilities; therefore, the requirements for this section do not apply.

SECTION D
PROCESS INFORMATION

This section discusses specific process information for the storage and treatment of hazardous wastes at four container storage areas and one treatment unit at the Y-12 Plant. These four units can be located on Map 2 in Appendix B-1. The four units addressed in this application include the following:

1. Building 9206 Container Storage Area
2. Building 9212 Container Storage Area
3. Building 9720-12 Classified Container Storage Area
4. Cyanide Treatment Unit

As required by 40 CFR Part 270.15 and Rules Governing Hazardous Waste Management in Tennessee, Rule 1200-1-11-.07(5)(b)1., this section describes the hazardous waste management processes used at the four areas.

Building 9206 Container Storage Area

Container storage at Building 9206 consists of storage and staging areas located on the first and second floors of the building. The container storage areas store residues and uranium-bearing solutions. Containers are stored in steel racks or on shelves. The total storage capacity of the container storage area at Building 9206 is 3,975 gallons.

Building 9212 Container Storage Area

Container storage at Building 9212 consists of storage and staging areas located on the first floor and mezzanine level. The container storage areas store residues and uranium-bearing solutions. Containers are stored in steel racks or on shelves. The total storage capacity of the container storage area at Building 9212 is 3,814 gallons.

Building 9720-12 Classified Container Storage Area

The Classified Container Storage Area is used for the storage of solid, mixed (radioactive and hazardous) wastes generated at the Y-12 Plant. The stored materials include combustible, solid wastes contaminated with enriched uranium and listed wastes. The total storage capacity of the container storage area at Building 9720-12 is 32,500 gallons.

Cyanide Treatment Unit

The Cyanide Treatment Unit is located in the northwest corner of the basement in Building 9201-5N. The cyanide treatment process converts cyanide in solution to carbon dioxide and nitrogen. The waste is currently treated in the drums in which it is stored. The treatment capacity of the unit is 195 gallons per day and the storage capacity is 2,200 gallons.

D-1 CONTAINER SYSTEMS

This section describes the storage and treatment capabilities of each unit.

D-1a Containers with Free Liquids

Some containers at Buildings 9206, 9212, and the Cyanide Treatment Unit have free liquids. The containers at Building 9720-12 do not have free liquids.

Wastes stored at Building 9206, 9212, and 9720-12 are characterized by the waste codes F001, F002, F005, D004 - D043. The waste stored at these units is in the form of residues and uranium-bearing solutions. Waste stored and treated at the Cyanide Treatment Unit are characterized as D002 - D011, F001, F007 - F012, P029, P030, P033, P098, P104, and P106, and are in the form of cyanide solutions.

D-1a(1) Basic Design Parameters, Dimensions and Materials of Construction

9206

Plan views of the container storage areas within Building 9206 are shown in Appendix D-1. The container storage areas contain the following number of storage racks:

Areas in 9206	Solutions Spaces	Residue Spaces
First Floor	138	166
Second Floor	0	185
Butler Building	72	1,068

Building 9206 is a major industrial-type building at the Y-12 Plant. Its construction is typical of an industrial or military facility. The building is capable of bearing the load of numerous types of production, storage, utility, and maintenance equipment, as well as personnel. The floors of the rooms on the first floor are constructed of concrete and covered with sheets of stainless steel. Seams in the stainless steel floor are welded which provides an impervious floor that is free of cracks and gaps. The floor on the second floor is concrete, covered with

asphalt tile and the floors in the Butler Building and the staging area are concrete. The concrete floors of the storage units are free of cracks and gaps and are sufficiently impervious to contain spills. All galvanized tin cans and polyethylene bottles are stored on steel shelves or racks. The shelves and racks are capable of supporting the weight of the waste containers. The racks, shelves, and floors are compatible with the wastes stored. The storage capacity of this area is 3,975 gallons.

9212

Plan views of the container storage areas within Building 9212 are shown in Appendix D-1. The container storage areas contain the following number of storage racks:

Areas in 9212	Solutions Spaces	Residue Spaces
C-1 Wing	315	0
C-1 Wing Mezzanine	163	598
C-1 Wing Corridor	0	216
Headhouse	0	161
Staging	0	12

Building 9212 is a major industrial-type building at the Y-12 Plant. Its construction is typical of an industrial or military facility. The building is capable of bearing the load of numerous types of production, storage, utility, and maintenance equipment, as well as personnel. The floor in the storage areas is stainless steel. Seams in the stainless steel floor are welded which provides an impervious floor that is free of cracks and gaps. The floor of the staging area is made of concrete and is free of cracks and gaps and is sufficiently impervious to contain spills. The racks, shelves, and floors are compatible with the wastes stored and are capable of supporting the weight of the waste containers. All galvanized tin cans and polyethylene bottles are stored on steel shelves or racks. The storage capacity of this area is 3,814 gallons.

9720-12

A plan view of the Classified Container Storage Area is shown in Appendix D-1. The container storage area measures 93 by 50 feet. The base of the storage area is the concrete floor of the building. All drums are stored on pallets, double-stacked, and contain no free liquids. Storage spaces for 384 galvanized tin cans are provided as well. The cans are stored

on elevated racks and contain no free liquids. The shelves and racks are capable of supporting the weight of the waste containers. The floor of the storage unit is free of cracks and gaps and is sufficiently impervious to contain spills. The racks, shelves, and floors are compatible with the wastes stored. The base of the storage area is sufficient to support the weight of the waste containers in the unit. The storage capacity for this area is 32,500 gallons.

Cyanide Treatment Unit

The Cyanide Treatment Unit is shown in plan view in Appendix D-1. The storage area can store up to forty, 55-gallon drums of cyanide waste. The area has a 2-inch curb on a concrete base floor that is free of gaps and cracks. Asphalt tiles have been applied to floor surface to prevent spills from migrating. All drums are stored single-stacked on pallets. The floor is capable of supporting the weight of the waste containers. The treatment capacity of the unit is 195 gallons/day; the storage capacity of the unit is 2,200 gallons.

Building 9201-5N is a major industrial-type building at the Y-12 Plant. Its construction is typical of an industrial or military facility. The building is capable of bearing the load of numerous types of production, storage, utility, and maintenance equipment, as well as personnel. The floor of the Cyanide Treatment Unit is the first floor, eight-inch concrete slab of Building 9201-5N. A 2-inch high, coated concrete ramp separates the Cyanide Treatment Unit from the other portion of the shared room. A 4-inch high concrete curb installed along the base storage cabinets also separates the Cyanide Treatment Unit from the rest of the room.

D-1a(2) Description of How Design Promotes Drainage or How Containers are Kept from Contact with Standing Liquids in Containment System

As was noted in Section B, the four container storage or treatment areas are located in buildings that are covered by roofs.

9206 and 9212

All Containers are stored on elevated racks or shelves to prevent contact with any liquids on the floor.

9720-12

Drummed wastes are stored upright on pallets to prevent possible contact with standing liquids. All cans stored are on elevated racks, similar to those in Buildings 9206 and 9212,

to prevent possible contact with any liquid on the floor. Waste containing free liquids is not stored in Building 9720-12.

Cyanide Treatment Unit

The unit is located in the basement of a Building 9201-5N. Drummed wastes are stored upright on pallets to prevent possible contact with standing liquids. A maximum of 2,200 gallons of drummed waste is stored at the Cyanide Treatment Unit and the drums are not stacked. Two-inch high, coated concrete curbs and ramps exist to prevent the flow of liquids to adjoining areas and to contain any spills or leaks within the area until they are properly removed.

D-1a(3) Capacity of the Containment System Relative to the Number and Volume of the Containers to be Stored

Conventional secondary containment is not provided for liquid waste storage areas at Buildings 9206 and 9212 due to criticality safety concerns. Because the wastes contain enriched uranium, construction of diking or other conventional secondary containment would result in unsafe storage geometries that could potentially result in a nuclear criticality accident. The safe storage of liquid wastes at Buildings 9206 and 9212 is of primary importance due to criticality safety. The volume of the largest liquid container is approximately 3 gallons. Buildings 9206 and 9212 are designed to prevent these materials from contacting humans or the environment. These buildings do not contain floor drains and door to the outside are sealed to prevent potential spills from migrating to the environment.

Free liquids are not stored at Building 9720-12. Secondary containment is not required since spills of liquid cannot occur.

Cyanide Treatment Unit

The maximum number of drums in this storage and treatment unit is 40, with a total capacity of 2,200 gallons. Calculations for secondary containment capacity are presented below:

Containment Volume

37 ft x 15.6 ft x 2/12 ft x 7.48 gal/ft^3 = 720 gal

26.5 ft x 17.2 ft x 2/12 ft x 7.48 gal/ft^3 = 568 gal

10 ft x 6.8 ft x 2/12 ft x 7.48 gal/ft^3 = 85 gal

12 ft x 9.1 ft = 109 gal

Containment Volume = 720 gal + 568 gal - 85 gal - 109 gal = 1,094 gal

Drum Displacement

$40 \times (2 \text{ ft})^2 \times \pi \times 0.25 \times 0.167 \text{ ft} = 21 \text{ ft}^3$

$21 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3 = 157 \text{ gal}$

Pallet Displacement

10 x 12 gal/pallet = 120 gal

Total Displacement = 157 gal + 120 gal = 277 gal

Total Available Secondary Containment

1,094 gal - 277 gal = 817 gallons

Excess Containment Capacity

10% required = 2,200 gal x 0.1 = 220 gal

817 gal - 220 gal = 597 gallons

Secondary containment volume is required to hold at least 10% of the volume of the containers. There is a 597-gallon excess of secondary containment capacity at the Cyanide Treatment Unit.

D-1a(4) Provisions for Preventing or Managing Run-On

The container storage areas at Buildings 9206, 9212, 9720-12, and the Cyanide Treatment Unit are completely enclosed with walls and a roof to prevent accumulation of rainfall in the storage and treatment areas. In addition, the Cyanide Treatment Unit is diked to prevent run-on from adjacent areas.

D-1a(5) How Accumulated Liquids can be Analyzed and Removed to Prevent Overflow Buildings 9206 and 9212

Accumulated liquids would only be present at Buildings 9206 and 9212 as a result of a spill or leak from the containers. If the spill or leak can be traced to a particular container, the characterization of the waste may already be known. If the source of the liquid cannot be identified, the collected material will be sampled and analyzed. Spilled or leaked waste liquid would be stored at the unit.

Removal of spilled liquids will be accomplished by the use of criticality safety-approved methods. Accumulated liquids will be removed immediately upon their discovery. See Sections F-2c and G-5f for additional information in the event of a release.

Building 9720-12

Accumulated liquid at 9720-12 would be from wind-driven precipitation or utility leaks since no free liquids are stored in these containers.

Cyanide Treatment Unit

Accumulated liquids at the Cyanide Treatment Unit could be present as a result of a spill or leak from the container within the diked area. If the spill or leak can be traced to a particular drum, the analysis may already be known. If the source of the liquid cannot be identified, the collected material will be sampled and analyzed. Spilled or leaked waste liquid would be treated at the unit.

Removal of spilled liquids will be accomplished by the use of portable pumps or by the use of absorbent material depending on the quantity of material present. Accumulated liquids will be removed immediately after their discovery. See Section F-2c and G-5f for additional information in the event of a release.

D-1b Containers Without Free Liquids

All wastes stored at Building 9720-12 and some of the wastes at Building 9206 and 9212 will be without free liquids. These wastes will be clearly defined by tagging. The waste stored at 9720-12 is characterized as solid, mixed waste.

D-1c(1) Container Management

Residues stored at Buildings 9206, 9212, and 9720-12 are stored in specially fabricated galvanized tin cans. The cans are typically 14 inches in height and 7 inches in diameter. They will hold approximately 2 gallons of residue. The cans have slip-type lids that slide down over the top of the vessel approximately 1 inch. The lid is then sealed with tape.

The cans are placed single-stacked on steel racks, typically with 3 to 7 shelves. Usually 6 to 11 cans can be stored on a shelf depending on the length of the rack. The cans are kept approximately 2 feet apart for criticality safety spacing requirements. Cans are transferred to and from the shelves by hand. Cans will be moved to the staging areas in Buildings 9206 and 9212 only when they are being removed from the area. These staging areas are a holding area during material transfer. Containers are inspected/audited monthly for uranium accountability.

Liquid storage bottles are approximately 52 inches in height and 5 inches in diameter. These containers are specially designed for criticality safe storage of nuclear materials. These bottles have a threaded lid and will hold approximately 3 gallons of waste. Bottles are transferred to and from the racks by hand. The bottles are stored approximately 2 feet apart for criticality safety.

Additional wastes at Building 9720-12 and the Cyanide Treatment Unit are typically stored in 55-gallon drums. The waste stored at Building 9720-12 is solid, mixed waste. A total of 144 pallets with 4 drums each can also be stored in the unit. Aisle spacing is typically 36 inches.

Wastes stored at the Cyanide Treatment Unit are stored in DOT-specification drums, typically 55-gallons, compatible with the cyanide solutions. Aisle spacing is adequate to allow inspections and movement of equipment. Containers are single-stacked.

Several steps have been taken to prevent hazards during loading/unloading operations. Drum handling operations typically take place when drums are placed into storage during treatment operations. To minimize the potential for accidents involving other vehicles and pedestrians, traffic flow is limited around the loading area during operations. All drum handling equipment used (carts, lifts, etc.) are specifically designed to transport or lift drums safely and without damage. Ramps or roll-over dikes have been constructed to allow wheeled vehicles (carts, forklifts, etc.) easy access to containers while still providing containment for spilled liquids.

All waste containers in the storage areas are sealed at all times except during filling operations (for solvents and other liquids), packing for shipment, or for sampling purposes. Containers are handled (i.e., moved, loaded onto trucks, filled, etc.) only under the direction of the production supervision. Funnels appropriately designed and fabricated are used with drums for pouring liquids. Wastes at the Cyanide Treatment Unit are treated in open containers. Procedures exist that detail the safe operation of the cyanide treatment process. See Section D-1c(2) for more information.

Drums used for hazardous waste storage are either new, reconditioned, or cleaned (by rinsing or other appropriate measure) or contain new material that is know to be compatible with the waste to be added. Polyethylene drum liners (4 ml) are used for wastes not compatible with steel drums. Drums containing incompatible wastes are generally

segregated by DOT hazard class and whenever possible, drums containing wastes known to be incompatible are stored in the different areas or kept separate via portable dikes.

All containers are observed during packing and loading operations. Also, all containers are inspected at least weekly on an individual basis for deterioration, corrosion, leakage, etc.; a listing, illustrative of the inspection technique for this facility, is given in Section F-2. Any container that does not pass inspection is replaced within 24 hours with one that meets the proper requirements.

The storage areas have aisles for the passage and maneuver of a drum dolly accessing the segregated waste storage area. This aisle is kept clear of drums or equipment; drums are sorted in the designated, segregated areas.

Aisle spacing is typically 3 feet by 5 feet wide with a minimum of 36 inches. Actual operating layouts of each of the areas is shown in D-1 through D-8.

Drums may be stacked only at Building 9720-12 and are stored on pallets. The maximum number of drums that could be stored in each unit is 576 at Building 9720-12, and 40 at the Cyanide Treatment Unit.

D-1c(2) Requirements for Ignitable or Reactive Wastes and Incompatible Wastes

The wastes stored at Buildings 9206, 9212, and 9720-12 are not ignitable, reactive, or incompatible (see Section C-1).

The cyanide wastes stored and treated at the Cyanide Treatment Unit are not ignitable or incompatible, but are considered to be reactive (D003). The treatment process eliminates the reactivity once it is complete.

The Cyanide Treatment Unit and the precious metals recovery operation share the same room; therefore, the possibility exists that the acids used in the precious metal recovery process and the cyanide wastes could, through accident, mix and generate hydrogen cyanide (HCN) gas. At present, curbing exists in the shared area to separate stored acids, stored cyanide wastes, acid exhaust hoods, and the cyanide treatment exhaust hoods. The exhaust hoods for these two processes are separate units with separate venting, and the drums of these incompatibles are physically separate in the room. Additionally, drums of acid and

cyanide are clearly marked "ACID" or "CYANIDE". Only material with an appropriate label is processed or stored in a process-specified hood.

The unit personnel are fully trained in precautions to prevent mixing acids and cyanides, and this topic is discussed frequently in regular safety meetings. Personnel are also trained by means of a sniff test developed by DuPont to recognize the odor of hydrogen cyanide gas.

No ignitable wastes are stored or processed at the Cyanide Treatment Unit.

Building 9201-5N is located more than 15 meters (50 feet) from the plant boundary.

D-2 TANK SYSTEMS

Not applicable. The units covered in this permit application are not tank systems; therefore, the requirements of this section do not apply.

D-3 WASTE PILES

Not applicable. The units covered in this permit application are not waste piles; therefore, the requirements of this section do not apply.

SECTION E
GROUNDWATER MONITORING

Groundwater monitoring is not required for Building 9206, 9212, and 9720-12 Container Storage Areas and the Cyanide Treatment Unit as per the requirements of 40 CFR Part 264, Subpart F and Tennessee Rule 1200-1-11-.07(5)(c) which exclude container storage areas from the groundwater monitoring requirement.

SECTION F
PROCEDURES TO PREVENT HAZARDS

This section of the application provides information concerning procedures to prevent hazards required by 40 CFR Part 270.14 and Rules Governing Hazardous Waste Management in Tennessee, Rule 1200-1-11-.07(5)(a). The following subject areas are addressed in this section: general security provisions, inspection schedules and requirements, preparedness and prevention requirements, and prevention of accidental ignition or reaction of ignitable, reactive, or incompatible wastes at Buildings 9206, 9212, and 9720-12 Container Storage Areas, and the Cyanide Treatment Unit.

F-1 SECURITY

F-1a Security Procedures and Equipment

The Y-12 Plant maintains security procedures and equipment that prevent the unknowing entry of persons or livestock onto the active portion of the facility which minimizes the possibility for unauthorized entry. The 24 hours per day, 7 days per week surveillance system is utilized at the Y-12 Plant, and one or more barriers are present to control entry.

F-1a(1) 24-Hour Surveillance System

The Y-12 Plant is a DOE facility which produces and handles nuclear materials. It is a fully secure facility completely surrounded by a barbed wire-topped, chain-linked fence eight feet in height. A security force and centralized security operations oversee the entire Y-12 Plant. The facility is continuously manned 24 hours per day, 7 days per week by armed guards from the Y-12 Plant Security Department. The perimeter of the facility is patrolled at intervals day and night via a system of patrol roads.

Most gates for pedestrian and vehicular access are manned by armed guards and only authorized personnel are admitted. All individuals entering the Y-12 Plant must be authorized by the Y-12 Plant Security Department.

The units in this permit application are all located within the fully secured (protected) area (see Map 1 in Appendix B-1). Access into the protected area is through continuously manned (24 hours per day) portals where ID badges are needed. Unauthorized personnel are not be permitted into the protected area.

F-1a(2) Barriers and Means to Control Entry

Controlled access through guarded portals limits the entry to the units in this permit application. Additional controls such as locked doors prevent the unauthorized entry to the units. See Section F-1a(1) for additional information.

F-1a(2)(a) Barrier

An eight foot high chain-linked fence topped with barbed wire completely surrounds all the units in this permit application. In addition, all the units are within the fully secured (protected) area. See Section F-1a(1) for additional information.

F-1a(2)(b) Means to Control Entry

Access to the units inside the protected area of the Y-12 Plant is controlled through guarded portals. Doors and gates to the units are locked during off-shift hours or when the authorized facility operator is not present. The gates or doors may be opened on off-shifts and weekends to allow overtime work. See Section F-1a(1) for additional information.

F-1a(3) Warning Signs

Individual RCRA units at the Y-12 Plant are posted with signs stating:

"Danger--Authorized Personnel Only"

or a similar message which indicates that only authorized personnel are allowed to enter and that entry onto the active portion can be dangerous. No languages other than English are necessary for the signs at this plant. All signs are located at each entrance and are legible from a distance of at least 25 feet and are visible from all angles of approach.

Signs are located on the sides of each unit that may be approached. They are either mounted on the unit or on boundary control devices at the edge of each unit.

F-1b Waiver

Not applicable. The Y-12 Plant does not request a waiver of the regulations stated in 40 CFR Part 264.14(a) and Tennessee Rule 1200-1-11.06(2)(e) concerning security of these units.

F-1b(1) Injury to Intruder

Not applicable. A waiver is not required; therefore, this section is not applicable.

F-1b(2) Violation Caused by Intruder

Not applicable. A waiver is not required; therefore, this section is not applicable.

F-2 INSPECTION SCHEDULE

F-2a General Inspection Requirements

Because of the diverse activities and the specialized nature of activities at the Y-12 Plant, authority and responsibility for inspections, record-keeping, and remedial actions are delegated among various groups and operating organizations. Inspection activities include coverage of the areas of fire control, emergency and spill response, health and safety, radiological safety, and specialized equipment unique to operations within the Y-12 Plant.

For the purposes of this application, the general inspection schedule for areas and/or equipment related to hazardous waste regulations is given in Appendix F-1. The schedule identifies the types and frequencies of inspections required by RCRA regulations, including monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment. Operating procedures exist for the units in this package which specify the types of inspection logs, frequency, and record-keeping requirements.

F-2a(1) Types of Problems

Types of problems to be looked for when inspecting monitoring equipment, safety and emergency equipment, security devices, operating and structural equipment, and areas subject to spills are listed in Appendix F-1.

F-2a(2) Frequency of Inspection

Inspection frequencies for plant-wide equipment and supplies are included in tables in Appendix F-1.

F-2b Specific Process Inspection Requirements

Inspection of each unit is conducted according to the inspection schedules in Appendix F-1 and/or the operating procedures. Results of each inspection are recorded on inspection log sheets. Information requested on the log sheets includes the inspector's name, date and time of inspection, items of inspection, types of problems encountered, status of the items, observations, and the date and nature of repairs and remedial actions. Typical problems encountered with each item on the inspection schedule are listed on the log sheet and serve as a reminder to the inspector to ensure a complete inspection. The inspector is required to check the status of each item and to indicate whether its condition is acceptable or

unacceptable. If the status of a particular item is unacceptable, appropriate and complete information is recorded, including date and nature of repairs and remedial action. Evaluation and/or correction of unacceptable items will be initiated within 24 hours of the inspection. Typical inspection log sheets are provided in Appendix F-2.

F-2b(1) Container Inspection

Inspections of the container storage areas are conducted according to the general description in Section F-2b and the inspection schedule in Appendix F-1. The container storage areas are inspected on a weekly basis, at a minimum, and recorded on the inspection logs. Typical logs are presented in Appendix F-2.

F-2b(2) Tank System Inspection

Not applicable. The units covered in this permit application are not tank systems; therefore, the requirements of this section do not apply.

F-2b(3) Waste Pile Inspection

Not applicable. The units covered in this permit application are not waste piles; therefore, the requirements for this section do not apply.

F-2b(4) Surface Impoundment Inspection

Not applicable. The units covered in this permit application are not surface impoundments; therefore, the requirements for this section do not apply.

F-2b(5) Incinerator Inspection

Not applicable. The units covered in this permit application are not incinerators; therefore, the requirements for this section do not apply.

F-2b(6) Landfill Inspection

Not applicable. The units covered in this permit application are not landfills; therefore, the requirements for this section do not apply.

F-2b(7) Land Treatment Inspection

Not applicable. The units covered in this permit application are not land treatment units; therefore, the requirements for this section do not apply.

F-2b(8) Miscellaneous Unit Inspections

Not applicable. The units covered in this permit application are not miscellaneous units; therefore, the requirements for this section do not apply.

F-2b(9) Subpart AA - Inspection Requirements (Organic Emissions from Process Vents)

Not applicable. The units in this permit application (containers, tanks) are not required to be monitored for organic emissions from process vents.

F-2b(10) Subpart BB - Inspection Requirements (Organic Emissions from Equipment Leaks at RCRA Units)

Not applicable. The units in this permit application are not required to be monitored or inspected for organic emissions from equipment leaks.

F-2c Remedial Action

Operational supervisors and responsible technicians are responsible for initiating requests for required maintenance activities when unacceptable conditions or problems are discovered during inspections of these facilities. If inspections reveal that non-emergency maintenance is needed, it will be completed as soon as possible in accordance with a schedule noted in the log, to preclude further damage and reduce the need for emergency repairs. The inspector instructs the responsible maintenance organization on the remedial actions to be taken to correct these deficiencies.

If a problem is imminent or has already occurred during the course of an inspection or any time between inspections, remedial actions will be initiated within 24 hours. In the event of an emergency involving the release of hazardous constituents to the environment, efforts will be directed toward activating the contingency plan, containing the hazard, removing it, and subsequently decontaminating the affected area. Refer to Section G, Contingency Plan, for further details.

F-2d Inspection Log

Container storage areas are inspected and information is recorded on the typical log sheets shown in Appendix F-2. The logs include spaces for the date of the inspection, identity of the inspector, and the specific items to be inspected and provides for records of remedial action.

After an inspection, each log sheet is filed at the responsible Department Head's office, and these records are kept in accordance with Recordkeeping, Section J.

F-3 WAIVER OF PREPAREDNESS AND PREVENTION REQUIREMENTS

The Y-12 Plant does not request a waiver of the preparedness and prevention requirements. Requirements of this subpart are primarily addressed in Sections D, F, and G of this application.

F-3a Equipment Requirements

Additional internal and external communication systems, emergency equipment, and fire control equipment are discussed in Section G, Contingency Plan.

F-3a(1) Internal Communications

The Y-12 Plant does not request a waiver of the preparedness and prevention requirements. Requirements of this subpart are primarily addressed in Sections D, F, and G of this application.

F-3a(2) External Communications

The Y-12 Plant does not request a waiver of the preparedness and prevention requirements. Requirements of this subpart are primarily addressed in Sections D, F, and G of this application.

F-3a(3) Emergency Equipment

The Y-12 Plant does not request a waiver of the preparedness and prevention requirements. Requirements of this subpart are primarily addressed in Sections D, F, and G of this application.

F-3a(4) Water for Fire Control

The Y-12 Plant does not request a waiver of the preparedness and prevention requirements. Requirements of this subpart are primarily addressed in Sections D, F, and G of this application.

F-3b Aisle Space Requirement

The Y-12 Plant does not request a waiver of the preparedness and prevention requirements. Requirements of this subpart are primarily addressed in Sections D, F, and G of this application.

F-4 PREVENTATIVE PROCEDURES, STRUCTURES, AND EQUIPMENT

F-4a Unloading Operations

Wastes received at the Cyanide Treatment Unit and Building 9720-12 Container Storage Area are typically delivered in drums, whereas wastes at Buildings 9206 and 9212 Container Storage Areas are generated at that particular location and are contained in tin cans or polyethylene bottles. Drums will normally be on pallets and are unloaded with a forklift or hand jack. In addition, adequate aisle space is maintained at all times. These unloading operations are conducted by trained facility personnel. Further information concerning spill or rupture or other emergency situations is found in Section G, Contingency Plan.

F-4b Run-Off

Run-off from the units is unlikely since each of the units are enclosed in buildings. In addition, precipitation is prevented from entering all buildings by the presence of roofs.

F-4c Water Supplies

By preventing run-off as described in F-4b, water supply contamination is prevented. Groundwater contamination is prevented by eliminating the discharge of hazardous materials onto the unprotected ground. Additionally, any spills or leaks would be contained by the design described in F-4b.

F-4d Equipment and Power Failure

Operations at the units should not be affected if a facility power outage occurs. If the lights, or other equipment should fail, personnel would cease loading, unloading, or transferring waste. The activities can be resumed when power is restored. No problems are anticipated from such a power interruption.

In the event of equipment failure such as truck or forklift breakdown, operations will be halted until a replacement is secured or repairs are completed. The majority of the operation is passive storage and containment. All plant-wide emergency alarms have backup power generators to insure continual power availability.

F-4e Personal Protection Equipment

The equipment appropriate for employees at specific facilities and areas of the plant is specified by the Plant Industrial Hygiene (IH) and Health Physics (HP) personnel. The plant IH and RP personnel utilize hazardous chemical data, material safety data sheets, and radiological information necessary to determine the appropriate type of personnel protection

needed. They also consider the characteristics of the waste types to be handled, including toxicity, ignitability, reactivity, corrosivity, routes of exposure, and other information. IH and HP personnel report to the Plant Shift Superintendent whenever the Contingency Plan is implemented, and they assist him in specifying the protective equipment for affected personnel such as fire fighters, rescue teams, spill cleanup personnel, and equipment decontaminators. Available equipment is listed in Section G. See Section H, Personnel Training, for a description of employee training in this subject area.

Personnel exposure to hazardous waste is minimized through the use of protective equipment as well as by safe handling practices. At a minimum, personnel in the storage areas wear safety glasses and safety shoes. If actual handling of hazardous waste is necessary, personnel will wear the above items plus gloves of the appropriate type such as cotton, nitrile rubber, or latex rubber, as specified by the Industrial Hygiene Department for the specific chemical or chemical class being handled as well as work boots with steel inserts and, when needed, respirators. Whenever required, other protective equipment is available, including but not limited to, hard hats with face shields, impermeable coveralls, self-contained breathing apparatuses, and acid suits. However, the actual requirement for specific safety equipment for the protection of personnel in the event of a spill or leak is determined on a case-by-case basis.

Good handling practices to prevent worker exposure include transferring hazardous wastes carefully, using proper equipment such as drum lifts, funnels, pumps, and pump adapters as well as sealing all containers before moving them. All operations are performed by fully trained laborers under the direction of the operating supervisor or the technician, who are familiar with the personnel protection procedures to be followed for the material being handled.

F-5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES

F-5a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Wastes

The wastes stored at Buildings 9206, 9212, and 9720-12 are neither reactive nor ignitable.

The wastes stored at the Cyanide Treatment Unit are reactive but not ignitable. Although reactive wastes may not be present at all times, a standard operating procedure for appropriate management of reactive wastes exists and is available for review. Accurate

identification of waste at the source of generation ensures that wastes are managed so as to prevent reactions, fires, or releases of waste constituents.

Only wastes compatible with the containers are stored. Therefore, no reactions will occur and the only source of ignition will be external to the containers. Nonsparking tools and equipment are used at the Cyanide Treatment Unit and personnel use nonsparking clothing and personnel protective equipment. Sources of ignition or reaction, including open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks, and spontaneous ignition are prohibited in the area. "No Smoking" signs are conspicuously placed inside the buildings and at all entries. Cutting, welding, or other operations in which a potential hazard exists will only be permitted in this area if a special work permit has been issued. The special work permit will list all precautions necessary to prevent ignition of the waste.

F-5b General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste

There are no ignitable, reactive, or incompatible wastes accepted at Buildings 9206, 9212, and 9720-12. A compatibility review will be conducted before incompatible wastes are moved into a unit.

There are reactive wastes accepted at the Cyanide Treatment Unit. Sections F-5a, F-5c and F-5d discuss the precautions taken to prevent reactions which:

1. Generate extreme heat or pressure, fire or explosions, or violent reactions;

2. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

3. Produce uncontrolled flammable fumes, dusts, or gases in sufficient quantities to pose a risk or fire or explosions;

4. Damage the structural integrity of the device or facility; or

5. Through other like means, threaten human health or the environment.

Segregation of wastes on the basis of generator information minimizes placement of incompatible wastes in the same storage or staging area, and will prevent heat or pressure

or cause violent reactions or other uncontrolled releases to the environment. All containers remain closed so that fumes, dusts, or gases are not released. Wastes are characterized in accordance with the Waste Analysis Plan in Section C.

F-5c Management of Ignitable or Reactive Wastes in Containers

The wastes stored at Buildings 9206, 9212, and 9720-12 Container Storage Areas are neither reactive nor ignitable.

The wastes stored at the Cyanide Treatment Unit may be reactive. Section F-5a discusses how reactive waste containers at this facility are protected from materials or conditions which could cause them to react. Wastes are characterized in accordance with the Waste Analysis Plan in Section C. Also, see Section D-1(c)(2).

Map 2 in Appendix B-1, Topographic Map, demonstrates that the Cyanide Treatment Unit is located at least 15 meters (50 feet) from the site property boundary.

F-5d Management of Incompatible Waste in Containers

The wastes stored at Buildings 9206, 9212, 9720-12 and the Cyanide Treatment Unit are not incompatible.

It is the responsibility of the generator to insure that incompatible wastes are not placed in the same container. Adequate aisle space is maintained to allow access for inspection. Containers are opened only when additional waste is added or samples are taken, and they are closed immediately afterward. The unit operators are trained in the proper handling of hazardous waste, including the importance of not adding an incompatible waste to a partially filled container. Wastes are mixed only if it is known from experience that they are compatible and after the contents of each drum are characterized. Hazardous wastes will not be placed into any unwashed container that previously held an incompatible waste or material. The use of properly washed containers, appropriate information, identification of the waste, and knowledge of waste compatibilities will prevent an operator from placing waste into a container that previously held an incompatible waste. Wastes are characterized in accordance with the Waste Analysis Plan in Section C, Waste Characteristics.

F-5e Management of Ignitable or Reactive Wastes in Tanks

Not applicable. The units in this permit application are not tank systems; therefore, the requirements of this section do not apply.

F-5f Incompatible Wastes in Tanks

Not applicable. The units in this permit application are not tank systems; therefore, the requirements of this section do not apply.

F-5g Ignitable or Reactive Wastes in Waste Piles

Not applicable. The units covered in this permit application are not waste piles; therefore, the requirements for this section do not apply.

F-5h Incompatible Wastes in Waste Piles

Not applicable. The units covered in this permit application are not waste piles; therefore, the requirements for this section do not apply.

F-5i Ignitable or Reactive Wastes in Surface Impoundments

Not applicable. The units covered in this permit application are not surface impoundments; therefore, the requirements for this section do not apply.

F-5j Incompatible Wastes in Surface Impoundments

Not applicable. The units covered in this permit application are not surface impoundments; therefore, the requirements for this section do not apply.

F-5k Ignitable or Reactive Wastes in Landfills

Not applicable. The units covered in this permit application are not hazardous waste landfills; therefore, the requirements for this section do not apply.

F-5l Incompatible Wastes in Landfills

Not applicable. The units covered in this permit application are not hazardous waste landfills; therefore, the requirements for this section do not apply.

F-5m Ignitable or Reactive Wastes in Land Treatment

Not applicable. The units covered in this permit application are not land treatment units; therefore, the requirements for this section do not apply.

F-5n Incompatible Wastes in Land Treatment

Not applicable. The units covered in this permit application are not land treatment units; therefore, the requirements for this section do not apply.

Y/TS-1015/R2

MARTIN MARIETTA

Resource Conservation and Recovery Act (RCRA) General Contingency Plan for Hazardous Waste Treatment, Storage, and Disposal Units at the Oak Ridge Y-12 Plant

Environmental Management Department

Health, Safety, Environment, and
Accountability Organization

August 1994

Prepared by the
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee 37831
Managed by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

MANAGED BY
MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

August 1994 Y/TS-1015/R2

Resource Conservation and Recovery Act (RCRA) Contingency Plan for Hazardous Waste Treatment, Storage, and Disposal Units at the Oak Ridge Y-12 Plant

Environmental Management Department

Health, Safety, Environment, and Accountability Organization

Prepared by the
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee 37831
Managed by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
GENERAL CONTINGENCY PLAN FOR
HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL UNITS
AT THE OAK RIDGE Y-12 PLANT

GENERAL FACILITY DESCRIPTION

The Oak Ridge Y-12 Plant was built by the U.S. Army Corps of Engineers in 1943 as part of the Manhattan Project and given the original mission of separating the fissionable isotope of uranium by the electromagnetic process. After World War II, the electromagnetic process was discontinued in favor of the more economical gaseous diffusion process. In recent years, the Y-12 Plant staff has developed this facility into a highly sophisticated manufacturing and developmental engineering organization.

The U.S. Department of Energy (DOE) owns and operates the Y-12 Plant. Martin Marietta Energy Systems, Inc., co-operates and manages the Y-12 Plant. Since 1984, the facility has been managed by Martin Marietta Energy Systems, Inc. personnel, under a prime contract with the U.S. DOE. The contract is administered by personnel at the DOE, Oak Ridge Operations.

The Y-12 Plant occupies approximately 800 acres in Anderson County, Tennessee, and is located southwest of the city of Oak Ridge. The site employs approximately 4,000 people, including employees of the Oak Ridge National Laboratory assigned to the Y-12 Plant. Two surface streams, East Fork Poplar Creek and Bear Creek, border the facility on the south, east, and southwest sides of the plant. There is access to the Y-12 Plant, controlled on Bear Creek Road, on the north side of the facility, indirect access from Scarboro Road on the east side of the facility, and indirect access to the facility on the south side via Bethel Valley Road. A controlled access road from Bethel Valley Road by way of Mt. Vernon Road is located on the southwest side of the site.

It is the mission of the Y-12 Plant to serve as a key manufacturing technology center for the development and demonstration of unique materials, components, and services of importance to the DOE and the nation. This is accomplished through the reclamation and storage of nuclear materials, manufacture of nuclear materials, manufacture of components for the defense capabilities of the nation, support to national security programs, and services provided to other customers as approved by DOE.

GENERAL INFORMATION

The Y-12 RCRA Contingency Plan will be continually reviewed and revised if any of the following occur: the facility permit is revised, the plan is inadequate in an emergency, the procedures herein can be improved, the operations of the facility change in a way that alters the

plan, the emergency coordinator changes, or the emergency equipment list changes. Copies of the Y-12 Emergency Management Plan are available at the Plant Shift Superintendent's Office and the Emergency Management Office. This document serves to supplement the Y-12 Emergency Management Plan to be appropriate for all RCRA hazardous waste treatment, storage, or disposal units. The 90-day accumulation areas at the Y-12 Plant have a separate contingency supplement as required by RCRA and are separate from this supplement.

The facility name, address, identification number, and owner/operator name are provided below:

U.S. Department of Energy Oak Ridge Y-12 Plant
Bear Creek Road
Post Office Box 2001
Oak Ridge, Tennessee 37831-8555
EPA ID TN3 89-009-0001
Owned and operated by U.S. Department of Energy
Managed and co-operated by Martin Marietta Energy Systems, Inc.

The overall layout of the Y-12 Plant and the location of RCRA units are shown in Figure 1, "Y-12 Plant RCRA Waste Unit Locations." Figure 2, "Y-12 Plant Emergency Facilities Directory," shows the locations of assembly stations, boundaries, and access controls to the plant. Figure 3, "Y-12 Plant Bear Creek Burial Ground Waste Unit Map," shows the units located at the west end of the plant, Gamewell alarm box locations, boundaries, and access controls to these areas. Figure 4, "Y-12 Plant Evacuation Routes", shows a typical evacuation route that could be used to evacuate the Y-12 Plant in the event of an emergency. The Plant Emergency Director (PED) will ultimately determine and direct all personnel to the appropriate evacuation routes.

EMERGENCY COORDINATORS

The emergency coordinator at the Y-12 Plant is the PED. The Y-12 Plant has several Plant Shift Superintendents (PSS) who share the responsibilities of the PED. At least one PSS is on duty 24 hours per day, every day of the year, and can be reached at (615) 574-7172 at the Emergency Operations Center (EOC) in Building 9706-2. The alternate EOC is located in Building 9709 and the phones are transferred if the operations are being conducted at this building. The PSS on duty is responsible for providing continuous plantwide emergency direction as the PED. If the PED is incapacitated during an emergency, the Site Security Commander on duty is his alternate until another PSS can report to the scene. The PSS, or alternate, has access to names, telephone numbers, and addresses of all emergency personnel and will determine who must be contacted to provide emergency activity support.

The duties of the PED as the Emergency Coordinator include:

- Receiving notice that an incident has occurred;
- Evaluating the threat;
- Activating internal alarm systems to notify or evacuate personnel, if appropriate;
- Proceeding immediately to obtain information concerning released materials and initiating appropriate activities for characterizing and abating the release;
- Ensuring that necessary on-site notifications are made;
- Performing an assessment of the potential for off-site effects upon the public health and environment and notifying DOE-Oak Ridge EOC of the same;
- Initiating and directing a plan of action;
- Mobilizing sufficient forces, including technical assistance, to respond to the emergency at hand;
- Directing the overall effort to respond to plant emergencies in such a way as to ensure that all emergency groups, both local and plantwide function as a team.
- Delegating authority in any capacity necessary if the need arises during an emergency;
- Authorizing all rescue efforts requiring any employee experiencing illness or injury;
- Seeing that off-site medical facilities are notified immediately when a seriously ill or injured patient is en route, and provide the nature of the injury or illness;
- Ensuring that a medical department staff member, a supervisor, or someone knowledgeable as to the circumstances or acquainted with the details of any serious accident or illness accompanies the patient to the emergency room;
- Determining the accessibility of plant areas after an accident and authorizing reentry of evacuated areas;

- Under special conditions, requesting the designation of a technical group to assist in evaluating the advisability of reentry;

- Terminating emergency status when the threat is entirely gone;

- Authorizing, when applicable, the sounding of the "all clear" signal at the termination of an emergency; and

- Restoring the plant to normal operations.

The names and work numbers of the PSS are provided below:

Name	Building Location	Work Phone
W. M. Bradley	9706-2	(615) 574-7172
L. K. Brooks	9706-2	(615) 574-7172
J. D. Chapman	9706-2	(615) 574-7172
E. Manis	9706-2	(615) 574-7172
P. C. Norris	9706-2	(615) 574-7172
C. L. Beeler	9706-2	(615) 574-7172
G. L. Calvert	9706-2	(615) 574-7172

Emergency resource books containing lists of emergency response telephone numbers (Emergency Response Organization personnel, facilities, off-site agencies, outside support organizations, etc.) are readily available to the PED in the EOC and alternate EOC. Telephone listings are revised as changes occur. In addition, a quarterly review is conducted by the Emergency Preparedness Operations Department Manager. The PED has the authority to commit the necessary resources to implement the contingency plan.

IMPLEMENTATION

The decision to implement this contingency plan, as part of the Emergency Management Plan, depends upon whether an imminent or actual incident could threaten human health or the environment.

The contingency plan will be implemented by the PED in the following situations:

- A fire and/or explosion occurs, such that:
  - The potential for human injury exists;
  - Toxic fumes that could endanger human health or the environment are released;
  - The fire could spread on site or off site and possibly ignite other flammable materials or cause heat-induced explosions;
  - The use of water and/or chemical fire suppressants could result in contaminated runoff that could endanger human health or the environment; and/or
  - An imminent danger exists that an explosion could ignite other hazardous wastes at the facility and possibly result in the release of toxic materials.

- A spill or release of a hazardous material occurs such that:
  - The spill could result in release of flammable liquids or vapors, thus causing a fire or gas explosion hazard;
  - The spill could cause the release of toxic liquids or fumes that could endanger human health or the environment; and/or
  - The spill cannot be contained on site, resulting in off-site soil contamination and/or ground or surface water pollution that could endanger human health or the environment.

Many ways of discovering a spill or release of chemicals are possible. These include: routine and scheduled inspections of process equipment and material storage areas; unusual or strong chemical odors which may indicate a leak; and instrumentation such as level alarms, automatic sump pumps, and pH meters which may also reveal chemical spills or system malfunctions.

CONTROL PROCEDURES – INCIDENT COMMANDER

The incident commander is defined as the person assuming command and control of emergency response at the scene of the incident. The incident commander will be the operations supervisor on duty for a specific unit or, in the absence of a supervisor, the first arriving emergency response officer designated by the PED. The incident commander will be responsible for the following:

- Initial assessment of the incident scene to the PED;

- Establishing control and setting up the command post for emergency response;

- Initial evaluation of the magnitude of the problem;

- Evacuation of personnel from immediate danger;

- Arranging for assembly, organization, and briefing of emergency response personnel who have been summoned;

- Providing updated information on conditions, progress of response, and additional manpower or equipment needs to the PED;

- Directing operational changes needed (e.g., shutting off process flows);

- Implementing applicable prearranged plans and procedures; and

- Continuing to provide incident control until relieved by an alternate incident commander.

The following actions will be taken in areas affected by a fire or explosion:

1. Work in the affected areas will be shut down immediately.

2. Feedlines and additional equipment will be shut down, as necessary and practical.

3. The PED will be contacted.

4. The area will be cleared of all personnel not actively involved in fighting the fire. These persons are to report to the designated assembly points for accountability.

5. All injured persons will be removed, and medical treatment will be administered by Medical Department personnel with outside assistance, as required.

EMERGENCY RESPONSE PROCEDURES – EMERGENCY COORDINATOR

The PED is responsible for the overall direction of emergency response efforts as follows:

- Directs emergency service units and local emergency squads.

- Ensures that the incident commander at the scene of the emergency, evaluates:
  - Radiation and general safety situations as they affect the immediate and adjacent areas,
  - Need for interrupting utility services such as process water, ventilation, oxygen, natural gas, and electricity, and

- Need for operational changes.

- Considers the need for and arranges for any large-scale alert, evacuation, general alert, invocation of mutual assistance agreements, and procurement of additional emergency personnel or emergency equipment.

- Keeps Y-12 Plant management and appropriate staff groups informed.

- Determines when the emergency is over, and orders the "all clear" signal.

The Emergency Management Department staff is responsible for:

- Y-12 Plant-wide emergency planning.

- Updating the Emergency Management Plan.

- Planning for practice exercises.

- Coordinating the organization and training of emergency service units and local emergency organizations.

- Ensuring that plans are in place for receiving and evaluating emergencies.

- Ensuring that plans are in place for activating internal alarm systems to alert/evacuate personnel.

- Planning coordination for the emergency response team; determine if outside assistance is required.

- Ensuring that plans are in place to report incidents to personnel at the DOE, Oak Ridge Operations in accordance with DOE Order 5000.3A "Occurrence and Processing of Operations Information."

Notification

The employee discovering a potential emergency incident will notify his immediate supervisor and/or the PED. The PED will immediately activate the internal alarm system to notify or evacuate personnel, if appropriate. The PED will also notify the Plant Manager, the Production Manager, the Environmental Coordinator, and Organization Managers of the operations involved.

In the event that outside assistance is required, the PED will notify appropriate state and/or emergency response agencies.

Identification of Hazardous Materials

The incident commander will immediately attempt to identify the character, exact source, amount, and aerial extent of the material involved in the fire or release. The initial identification method will be by visual analysis of the material and location of the release. Plant records, including inventories and process and waste log sheets, are available at the operating department offices of the RCRA units to aid in estimating the composition and quantity of released material. In the event of a spill, a sample of the spilled material is taken if the material enters a storm drain, there is some question as to the identity of the material, or the material is suspected to contain polychlorinated biphenyls (PCBs). The Health, Safety, Environment, and Accountability Organization staff will sample to verify hazardous material identification, determine boundaries of contaminated areas and contaminant concentrations, and verify proper cleanup after cleanup activities are completed.

Information such as storm sewer locations and topographic information is available to support the PED in the process of identifying potential flow/contamination paths and determine appropriate control actions.

Hazard Assessment

Assessment of possible hazards to human health or the environment will be made using the following methods:

1. Process knowledge (i.e., knowledge of the nature of waste materials released);
2. Review of Material Safety Data Sheets, if available;
3. Chemical analysis/monitoring data;
4. Results of modeling for releases to air, surface water, or groundwater; and
5. Specific health-based and environmental criteria or limits which may be exceeded.

Based on the hazard assessment, evacuation of the immediate unit area, entire facility, or local areas outside the facility may be necessary.

Off-Site Notification/Evacuation

The Y-12 Emergency Management Plan describes the methods used for notification of Y-12 emergency response personnel and appropriate federal, state, and local emergency response centers. Individuals or groups that may be notified include, but are not limited to, the following:

- DOE Oak Ridge Operations EOC,
- DOE Headquarters EOC (through the Oak Ridge Operations EOC voice bridge),
- Tennessee Emergency Management Agency,
- National Response Center,
- Local Emergency Planning Councils,
- Affected county notification points,
- City of Oak Ridge (Anderson County),
- Regional U.S. Environmental Protection Agency, and
- Other agencies as required by regulatory guidance.

Evacuation of nonessential personnel is ordered by the PED if it is determined that a threat to the safety of plant personnel exists. Evacuation routes will be determined by the PED; however typical evacuation routes are shown in Figure 4.

Prevention of Recurrence or Spread

After incident mitigation, a recovery manager will be appointed to return the incident scene to preincident conditions and analyze the root cause of the incident.

Storage and Treatment of Released Material

Any hazardous materials that results from a release, fire, or explosion at the Y-12 Plant will be contained, removed, and placed in 55-gallon drums (or smaller containers if appropriate). Leaking or damaged containers will be placed in 85-gallon overpack drums so they can be stored until treatment or disposal arrangements are finalized.

Contaminated absorbent materials, protective clothing, and other disposable material used in remediation of the emergency and subsequent decontamination activities will be placed in 55-gallon drums and stored at a RCRA storage unit pending treatment or disposal. These items will be handled with the same degree of caution as the wastes themselves so that public health and the environment are not further threatened.

Immediately after an emergency, the emergency coordinator will make arrangements for treatment, storage, or disposal of recovered waste, contaminated soil, surface water, or any other contaminated material. Emergency and spill response equipment available for cleanup, storage, and treatment are identified in the Y-12 Emergency Management Plan.

Incompatible Waste

In order to prevent reactions caused by proximity of incompatible substances, wastes which have been spilled or released must be segregated from other wastes or materials which are incompatible. It is a duty of the Spill Response Coordinator to ensure that wastes which may be

incompatible with the released material are not treated, stored, or disposed of in the vicinity of the spill or fire until cleanup procedures are completed.

Incompatible wastes are unlikely to be treated, stored, or located in the affected areas until cleanup is completed because of the waste segregation practices used at the facility. If possible, no additional wastes will be stored in the affected area until the cleanup is completed. If waste storage there is necessary, wastes will be placed only in those areas where no incompatible wastes are present.

Postemergency Equipment Maintenance

All emergency response elements will ensure that team equipment is properly decontaminated, supplies are restocked, and the team is returned to preemergency readiness.

Container Spills and Leakage

In the event of a hazardous material spill or release, the following general procedures will be used for rapid and safe response and control of the situation. Spills or releases and impending spills or releases discovered during routine inspections will be handled in the same manner as described below for spill and release emergencies. These are general guidelines, and circumstances may dictate some alterations to these procedures.

If an employee discovers a chemical spill or process upset resulting in a hazardous material release, he or she will immediately report it to the area supervisor. The area supervisor or the employee will contact the PED. When contacted, the PED will obtain information pertaining to the following:

1. The material spilled or released,
2. Location and source of the release or spillage of hazardous material,
3. An estimate of the quantity released and the rate at which it is being released,
4. The direction in which the spill, vapor, or smoke release is heading,
5. Any injuries involved, and
6. Fire and/or explosion or possibility of these events.

This information will help the PED to assess the magnitude and potential seriousness of the spill or release. The PED will contact and deploy the necessary in-plant personnel. If additional assistance is required, the PED will also contact the other Oak Ridge plants that have agreed to provide assistance and the agencies discussed in the Coordination Agreements section of this plan.

The initial response to any emergency will be to protect human health and safety, and then the

environment. Identification, containment, treatment, and disposal assessment will be the secondary responses.

Medical assistance for injured persons will be obtained from the Y-12 Health Services staff.

Cleanup personnel summoned by the PED will don protective clothing and equipment, as specified by the Health, Safety, Environment, and Accountability Organization staff. If a flammable waste is involved, all ignition sources will be removed, and spark and explosion-proof equipment and clothing will be used for containment and cleanup activities. If possible, cleanup personnel will try to stop the leak. Special materials, such as tank patch kits, will be kept on hand for temporary repairs. All surrounding materials that could be reactive with the waste materials will be removed. The major components of the waste will be determined.

Absorbent pads, booms, earth, sandbags, sand, and other inert materials will be used to contain, divert, and clean up a spill if it has not been contained by a dike or sump. Sewer plugs are available, if required, to isolate a spill. Spills contained within a dike or sump may be pumped back into the appropriate storage tank or drum, if it is structurally sound. All containment and cleanup materials will be placed in drums for proper disposal. Some items, such as absorbent rags or booms, may have to be cut up. All recovered liquid wastes and contaminated soil that cannot be returned to their original storage tanks or containers will be placed in drums for removal to an approved storage or disposal site.

Most tank and container spills and leaks are contained within the dikes and sumps provided in the tank and container areas. Small spills occurring in a diked area are directed to the sump provided in that area. Immediately after the spill is detected, the Waste Management Organization staff will be summoned to remove any standing liquids (as described above) and arrange to have the spilled material taken to a unit approved to handle that particular waste. If necessary, a portable sump pump will be used to pump the diluted waste material into 55-gallon drums. The transfer of the spilled material will be performed within 24 hours or at the earliest practical time if it is demonstrated that the material cannot be transferred within 24 hours.

If, for some reason, a chemical spill is not contained within a dike or sump area, an appropriately sized area of isolation will be established around the spill. The size of the area will generally depend on the size of the spill and the materials involved. An area at least 50 feet in all directions will be isolated. For large spills, an area at least 100 feet in all directions will be isolated. When any spill occurs, only those persons involved in overseeing or performing emergency operations will be allowed within the designated hazard area. If possible, the area will be roped or otherwise blocked off. All persons not actively involved in managing the spill will be kept upwind.

If the PED determines that Y-12 and the other DOE plants are unable to handle the emergency, then local, state, and federal authorities will be notified of the situation. When necessary, evacuation of all potentially affected plant areas will begin as soon as possible.

All emergency equipment used for spill management must be cleaned by the responsible personnel so that it is fit for use prior to resumption of plant operations in the affected areas.

Tank Spills and Leakage

In the event of a hazardous material spill or release, the procedures described for container spills and leakage apply for tank releases.

EMERGENCY EQUIPMENT

A listing of typical emergency and spill response equipment for the Y-12 Plant is listed in Appendix B. The specific emergency and spill response equipment is provided in the Y-12 Emergency Management Plan. In addition, emergency equipment is maintained at the units in this plan for minor releases which include, but is not limited to, absorbent material, fire extinguishers, shovels, shoe scuffs, gloves, eye protection, and protective clothing. The inspection lists and frequency for inspection of the spill response equipment at the units are presented in the Y-12 Emergency Management Plan.

COORDINATION AGREEMENTS

The Y-12 Emergency Management Plan details all coordination agreements currently held with local agencies. These agreements provide for emergency assistance to other participants in the event of major fires, explosions, natural disasters accidents involving hazardous/radiological materials, and situations that could endanger life, public safety, or the environment or that have an extensive area impact. This agreement includes the K-25 Site, the Y-12 Plant, and ORNL. Examples of these agreements are provided in Appendix C. A copy of this plan has been provided to all mutual aid organizations. Designated emergency coordinators will commit the necessary resources to implement the contingency plan. The PED will request assistance, when necessary, from other DOE sites. Each plant will have authority to provide emergency equipment and personnel upon request. The Emergency Directors' telephone numbers are:

Y-12 Plant	615-574-7172
K-25 Site	615-574-3282
ORNL	615-574-6606
DOE Security	615-576-1004

EVACUATION PLAN

All emergencies at the Y-12 Plant warrant prompt and deliberate action. Criteria for evacuation have been established. The PED is responsible for determining whether evacuation is necessary. The Y-12 Emergency Management Plan contains details of this criteria. If evacuation of the Y-12 Plant is necessary evacuation routes that would typically be used are illustrated in Figure 4.

REQUIRED REPORTS

The PED will note in the operating record the time, date, and details of any incident which required implementation of the Contingency Plan. Internal reports will be filed as required by DOE and Martin Marietta Energy Systems, Inc., personnel.

Within 15 days after the incident, personnel from the Y-12 Plant will submit a written report on the incident which required implementation of the Contingency Plan to the DOE staff for review and transmittal to the Commissioner of the Tennessee Department of Environment and Conservation, as required by Tennessee Rule 1200-1-11-.06(5)(c). The report will include:

- Name, address, and telephone number of the owner or operator;
- Name, address, and telephone number of the facility;
- Date, time, and type of incident (e.g., fire, explosion);
- Name and quantity of material(s) involved;
- The extent of injuries, if any;
- An assessment of actual or potential hazards to public health or the environment, where this is applicable; and
- Estimated quantity and disposition of recovered material that resulted from the incident.

APPENDIX A

UNIT-SPECIFIC EMERGENCY and WASTE DESCRIPTIONS

This section summarizes unit-specific contingency and waste description information for the treatment, storage, and disposal units below.

Cyanide Treatment Unit

The Cyanide Treatment Unit is located in Building 9201-5N. The nearest Gamewell box is located on the south wall outside of Building 9201-5N. This Gamewell box is connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System. A telephone is available in the room where the unit is located. An eyewash and safety shower station is also available in this room. Two-way radios are available to communicate with the PED office, if emergency assistance is necessary.

The Cyanide Treatment Unit treats cyanide wastes that have been generated in various plant operations.

Kerr Hollow Quarry Treatment Unit

The Kerr Hollow Quarry Treatment Unit is located 0.4 miles west of the intersection of Scarboro Road and Bethel Valley Road on the north side of Bethel Valley Road. A public address system is installed at this unit, along with closed circuit television. Two-way radios are used, and a telephone is available in the guard shack for communication with the PED office, if emergency assistance is required.

This unit no longer receives hazardous waste. Closure of this unit is complete and approval is pending.

Garage Underground Tanks

The Garage Underground Tanks are located near Building 9737. A Gamewell box is located nearby at the service station and connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System. Two-way radios are used by personnel at this site to provide communication with the PED office, if emergency assistance is needed. A phone is available in Building 9712 East End Garage, as well as an eyewash/safety shower station.

This unit no longer receives hazardous waste. It is currently undergoing closure.

Walk-In Pits

The Walk-In Pits are located north of Disposal Area Remedial Action (DARA) Solids Storage

Unit, in the Bear Creek Burial Grounds. The nearest available phone, Gamewell box, eyewash and safety shower are located at the DARA Liquid Storage and Treatment Unit. The Gamewell box is connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System. Two-way radios are used for communication with the PED office, if emergency assistance is needed.

Closure of this unit is complete and approval is pending.

Interim Drum Yard

Interim Drum Yard is located near Building 9720-32. The nearest available Gamewell box is located on the east end of Building 9720-32. This Gamewell box is connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. A portable eyewash and safety shower are used by personnel at this unit. Two-way radios are used for communication with the PED if emergency assistance is needed, and a phone is also available nearby in Building 9401-5.

This unit no longer receives hazardous waste and the closure plan has been submitted for this unit. Approval and closure activities are pending.

Building 9720-9, Storage Unit

Building 9720-9 is located on Third Street. Two Gamewell boxes are located at the east and west sides of the building and connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. Telephones and two-way radios are also used by personnel to provide communication with the PED office, if emergency assistance is needed. Two eyewash/safety showers are provided and located at the west and south sides of the building.

This unit provides storage for hazardous, nonhazardous, and mixed waste. Waste is stored at this unit until waste analysis and appropriate treatment or disposal can be arranged. All classes of RCRA wastes, except for K-listed wastes, and hazardous wastes from specific sources (40 CFR Part 261.32 and Tennessee Rule 1200-1-11.02(4)) are stored in this unit.

RCRA and Mixed Waste Storage and Staging Unit, Building 9720-31

Building 9720-31 is located on West Third Street. Two Gamewell boxes are located on the east and west side of the building and connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. Telephones and two-way radios are also used by personnel to provide communication with the PED offices, if emergency assistance is needed.

This unit is used to store solids, liquids, and sludge wastes, which typically are hazardous, nonhazardous, or mixed waste. It is a one-story structure constructed of light-weight, concrete

block, masonry walls and partitions. The building is partitioned into fifteen rooms: one supply room, seven staging rooms, and seven storage rooms. Normally, the largest containers in any of the staging or storage rooms are 55-gallon drums, however, 85-gallon overpack containers may be used to store waste. Waste stored in the staging and storage rooms may be in Department of Transportation-specification containers or the original product containers.

Building 9811-1 RCRA Tank Storage Unit (OD-7)

Building 9811-1 RCRA Tank Storage Unit is located at the intersection of West Second Street and K Road. It is served by an auxiliary fire alarm pull box which is inside the south side of Building 9811-1. Additional alarm boxes are located at Building 9720-16, and at the intersection of Second Street and K Road which is southwest of OD-7. These boxes are connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. Two fire hydrants are located near this unit. One is approximately 20 feet north of the RCRA Storage Unit, and the second hydrant is located approximately 75 feet southwest. Telephones and two-way radios are used by personnel to provide communication with the PED office, if emergency assistance is needed. A telephone is also located in the OD-7 operator trailer for communication with emergency personnel. A safety shower/eyewash assembly is planned for installation at a future date at the drum loading/unloading area and the transfer station as part of an OD-7 upgrade project.

This unit is designated as the primary storage unit for nonignitable and nonreactive, mixed waste oils and solvents. Contaminated oils, nonchlorinated solvents, some toxicity characteristic wastes, and used oil may also be accepted at the unit. The storage tank area of the unit consists of a 51- x 58-foot, concrete, diked area. Positioned within the diked area are four, 30,000-gallon tanks and one, 10,000-gallon tank. Two additional 10,000-gallon tanks will be installed at a future date.

Building 9811-1 - RCRA Container Storage Unit (OD-8)

Building 9811-1 is located at the intersection of West Second Street and K Road. A Gamewell box is located on the south side of the building (inside) and connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. A safety shower/eyewash is located at the north side of the building.

This unit is used primarily as a storage area for containerized liquid waste until the waste has been characterized to allow transfer to other treatment, storage, or disposal units. Contaminated liquids with a concentration of greater than 50 ppm PCBs will not be stored at this unit.

Waste Oil/Solvent Storage Unit (OD-9)

The Waste Oil/Solvent Storage Unit is located on Old Bear Creek Road, and served by an auxiliary fire alarm pull box. The Gamewell box is connected to the existing plant Gamewell Fire

Alarm System and the Plant Monitoring System. Two fire hydrants are available for use and are freeze-proof. One hydrant is located along the site access road approximately 60 feet east of the truck entrance to the building. The second hydrant is on the north side of Old Bear Creek Road, near the site egress road, approximately 100 feet southwest of the facility truck exit area. Telephones and two-way radios are used by personnel to provide communication with the PED office, if emergency assistance is needed. Two safety shower/eyewash assemblies, both of which are freeze-proof, are located at the northeast corner of the tank area (in the truck loading pad adjacent to the drum storage area) and on the floor of the containment structure. Potable water is supplied to both units and is identified by green lights installed above each unit. The eye/face units are push bar operated with stay-open valves.

This unit typically receives and stores nonignitable and nonreactive mixed waste oil/solvents that may contain water, be contaminated with PCBs greater than 50 ppm, and contain chlorinated organic solvents. This unit may also store used oil. The liquid wastes are stored here in tanks and drums until sufficient volume is accumulated for transportation to an outside facility for recovery or disposal.

Liquid Organic Solvent Storage Unit (OD-10)

The Liquid Organic Solvent Storage Unit is located in the Bear Creek Burial Grounds, and served by an auxiliary fire alarm pull box which is located approximately 40 feet south of the unit. An additional Gamewell box is accessible at the intersection of Bear Creek Road and the access road to OD-10. This Gamewell box is connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System. A freeze-proof fire hydrant is located approximately 200 feet south of the unit. Two-way radios provide communication between the unit and the PED office, if emergency assistance is necessary. Three safety shower/eyewash assemblies are provided at OD-10, which includes two located in the staging area (north and south side) and the third located in the tank area. Potable water is supplied to these assemblies, which are push bar operated with stay-open valves. Each unit is identified by a green light installed above each assembly.

This unit receives and stores liquid organic wastes generated in the Y-12 Plant. These wastes typically include waste oil and combustible and flammable waste liquids that may be defined as mixed waste or used oil. The liquids received at this unit are pumped into the tanks for storage until sufficient quantity is accumulated for final disposal or recovery.

Building 9409-5 Storage Unit

The Building 9409-5 Storage Unit is located on Third Street. The nearest Gamewell box is located in Building 9409-2. This Gamewell box is connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System. No phone is available, and this unit is no longer in

service. Two-way radios are used to communicate with the PED office, if emergency assistance is needed.

This unit no longer receives hazardous waste. It is currently undergoing closure.

East Chestnut Ridge Waste Pile

The East Chestnut Ridge Waste Pile is located on South Patrol Road. Two-way radios are used to communicate with the PED office, if emergency assistance is required. The nearest Gamewell box is located southwest of the unit across the street from the Containerized Waste Storage Area. This Gamewell box is connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System.

This waste pile is used for the storage of soils and spoils contaminated with hazardous and low-level radioactive materials, asbestos, and roofing materials from the closure of RCRA sites at the Y-12 Plant. Additional contaminated soils may be moved to the East Chestnut Ridge Waste Pile if excavation activities continue at the Y-12 Plant.

Containerized Waste Storage Area (CWSA)

The CWSA is located on South Patrol Road. A Gamewell box is located south, directly across the street from the CWSA, and is connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. Two-way radios are also used to provide communication with the PED office, if emergency assistance is needed. A portable safety shower/eyewash is provided during operations.

The CWSA consists of three concrete pads measuring 170 feet long and 50 feet wide. The central and eastern concrete pads are covered by open-sided dome tents and store hazardous, nonhazardous, or mixed wastes. The western concrete pad is not covered, and no wastes are stored there. Each pad has a one-foot impermeable dike surrounding it to contain spills. The pads and dikes are sloped toward a 60-gallon sump located on the southeast corner of the pads to catch spilled material and manage rainwater.

Classified Container Storage Unit, Building 9720-25

Building 9720-25 is located on M Street. Two Gamewell boxes are located inside the building and connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. Telephones and two-way radios are also used by personnel to provide communication with the PED office, if emergency assistance is needed.

Building 9720-25 is a storage unit designed for storage of classified wastes generated at the Y-12 Plant. The wastes include materials, fabricated parts, and containers which have been

security classified to prevent dissemination of potentially vital information. Storage in one part of this unit of classified waste, contaminated with hazardous constituents, is necessary due to present uncertainties as to final modes of treatment and/or disposal of classified and/or hazardous waste materials. The stored materials include hazardous and mixed wastes.

Oil Land Farm Soils Containment Pad

The Oil Land Farm Soils Containment Pad is located west of the main plant area on Bear Creek Road. A telephone is available nearby in the sampling trailer, or two-way radios are used to communicate with the PED office, if emergency assistance is needed. The nearest eyewash/safety shower station is located at the Liquid Organic Solvent Storage Unit, which lies west of this location on Bear Creek Road.

This unit provides storage for contaminated soils and excavation wastes that were generated during RCRA closure of the Oil Land Farm and Oil Retention Ponds at the Y-12 Plant. These soils were contaminated with hazardous, mixed, or radioactive wastes. Contaminants include organics, heavy metals, pesticides, PCBs, and radionuclides. The unit provides interim storage for excavation wastes pending scheduling of the soils for final treatment or disposal.

DARA Solids Storage Unit

The DARA Solids Storage Unit is located west of the main plant area on Bear Creek Road. A Gamewell box is located near the unloading pad adjacent to the DARA Solids Storage Unit at the DARA Liquid Storage and Treatment Unit. This Gamewell box is connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System. A telephone is available in the operator's trailer south of the DARA Liquid Storage and Treatment Unit, and two-way radios are also used to communicate with the PED office, if emergency assistance is needed. Eyewash/safety shower stations are available on the unloading pad at DARA Liquid Storage and Treatment Unit.

The DARA Solids Storage Unit provides storage for contaminated sediments and excavation wastes generated during closure of the Oil Retention Ponds. These sediments are contaminated with PCBs and volatile organic compounds. They will be stored in the unit until they can be scheduled for final treatment or disposal.

Interim Reactive Waste Treatment Area (IRWTA)

The IRWTA is located west of the main plant area on Bear Creek Road, and served by an auxiliary fire alarm pull box near the trailers at the closed Sanitary Landfill I. Two-way radios are used to provide communication with the PED office, if emergency assistance is needed. Portable eyewash systems are used during operation. In addition, the Y-12 Fire Department staff is at the unit during the treatment process to assist, if needed.

This interim unit was designed for the treatment of sodium potassium (NaK) generated during maintenance activities at the Y-12 Plant. The unit currently operates in accordance with an open burning permit. The IRWTA is used approximately once per year dependent upon the generation of NaK wastes. The Fire Department staff are present through the duration of the burn to ensure safe treatment of the NaK, which is water reactive. The Contingency Plan will also be implemented if an emergency arises. The NaK has a mineral oil layer which takes approximately seven hours to burn. The NaK itself will burn away in approximately 45 minutes. All wastes and equipment are removed from the treatment area when the burn is completed.

Building 9201-4, Container Storage Area

Building 9201-4 is located on First Street. Gamewell boxes are located within Building 9201-4 and connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. Two-way radios are used, and a telephone is available on the first floor in the southwest corner of the building for communication with the PED office, if emergency assistance is needed.

This unit is located within the exclusion area of the Y-12 Plant and is used to store mercury-contaminated solids such as soil or insulation in containers. Building 9201-4 provides container storage for 55-gallon drums of hazardous and mixed waste resulting from decontamination and decommissioning activities.

Building 9212 Container Storage Area

The Building 9212 Container Storage Area is located in Building 9212. Telephones are available in nearby supervisors' offices. Eyewash/safety showers are available at each location. Two-way radios are also used to communicate with the PED office, if emergency assistance is needed. Gamewell boxes are located throughout Building 9212. These Gamewell boxes are connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System.

This area is used to store organic solutions and residues awaiting recovery of enriched uranium. The solutions and residues are mixed wastes.

Building 9206 Container Storage Area

The Building 9206 Container Storage Area is located in Buildings 9206 and 9720-17. For areas located in Building 9206, Gamewell boxes are located near Rooms 24 and 30. Eyewash and safety shower stations are also located in these rooms. For the area located in Building 9720-17, a Gamewell box and a telephone are located in the corridor outside the area. A telephone is available in Room 18 of Building 9206. Two-way radios are also available in these buildings for communication with the PED office, if emergency assistance is needed. Gamewell boxes are connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System.

Building 9206 is the other building at the Y-12 Plant used to store organic solutions and residues awaiting recovery of enriched uranium. The solutions and residues are mixed wastes.

Uranium Treatment Unit

The Uranium Treatment Unit is located near Building 9767-2. Eyewash/safety shower stations are available at this unit, and the nearest Gamewell box is located 75 feet north of the area on the East Dock between Doors 4 and 5. This Gamewell box is connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System. Two-way radios are used and a phone is available nearby in Building 9767-2 to communicate with the PED office, if emergency assistance is needed.

The Uranium Treatment Unit is located on the east side of Building 9206, outside and adjacent to the loading dock. The unit consists of two, 300-gallon polytanks located within a diked drum storage area that stores up to eighteen, 55-gallon drums. This unit treats organic solutions which are mixed wastes.

RCRA and PCB Container Storage Area, Building 9720-58

Building 9720-58 is located on Old Bear Creek Road. Two Gamewell boxes are provided at the east and west sides of Building 9720-58 and connected to the existing plant Gamewell Fire Alarm System and the Plant Monitoring System. Telephones and two-way radios are also used by personnel to provide communication with the PED office, if emergency assistance is needed. A portable eyewash system is provided in the operation trailer adjacent to the unit. A safety shower/eyewash system is also provided at Unit OD-9 that is located directly west of Building 9720-58.

Building 9720-58 is utilized as a storage and staging area for PCB-contaminated equipment (e.g., transformer, capacitors, and electrical switch gear). The area is also used to store RCRA hazardous waste and used as a staging area for other waste materials awaiting off-site shipment. Waste is consolidated at this area until waste analysis and appropriate disposal arrangements can be initiated.

Building 9720-12 Classified Container Storage Area

The Building 9720-12 Classified Container Storage Area is located on West Second Street. The nearest Gamewell box is located in the northwest corner of Building 9720-12. This Gamewell box is connected to the existing plant Gamewell Fire Alarm System and Plant Monitoring System. Portable eyewash and safety shower stations are used. Two-way radios are used to communicate with the PED office if emergency assistance is needed.

Building 9720-12 is a storage unit for hazardous, nonhazardous, and mixed waste. Waste is stored at this building until waste analysis and appropriate recycling techniques can be arranged.

APPENDIX B

EMERGENCY and SPILL RESPONSE EQUIPMENT

Spill Response Trailer Equipment and Supplies

The Y-12 Plant Spill Response Trailer, maintained by the Fire Department, is located in the plant and contains supplies and equipment for the response team. The following is an indication of the typical contents of that trailer:

Respirators
Rubber Boots
Rain Suits
Paper Suits
Rubber Gloves
Acid-type Gloves
Acid Suits
Respirator Cartridges (Combination)
Flagging
Stakes
Face Shields (complete)
Chemical Splash Goggles
Flashlights
Extra Batteries
Caution Lights (flashing)
Shovels, Round Point
Shovels, Square Point
Sledgehammer
Broom (street type)
Tape
Hose Clamps
Plastic Bags (small)
Full Face Respirator
Absorbent Diapers
Sample Bottles
Rope
Twine
Rubber Aprons
Ax
Ladder (10 ft.)
Reflector Vest (orange)
Water (for pump)
Demineralized Water
Pipe Wrench
Pliers
Pliers, Needle Nose
Adjustable Wrench
Vise Grips
Screwdriver (flat tip)
Screwdriver (Phillips head)
Channel Lock Pliers
Teflon Tape
3" to 2" Pipe Coupling, Stainless
Plastic Bags (large)
3" Threaded Coupling
Fire Extinguisher

Building 9720-41

Additional supplies and equipment is located in Building 9720-41. Typical supplies and equipment are listed below:

Pigs
Gas and Air Driven Pumps
Oil Skimmer Booms
Sandbags
Empty Drums (including overpack drums)
Absorbent Diapers
Hoses
Gloves
Ear Plugs
Safety Glasses
Generators
Lighting Systems

Building 9753

Additional supplies and equipment is located in Building 9753. Typical supplies and equipment are listed below:

Leather Gloves
Rubber Gloves
Flashlights
Flashlight Batteries
Chemical Splash Goggles
Shovels
Picks
Boots
Sand Bags
Plastic, 20' x 100' Rolls
Plastic Bags
Barrels
Road Cones
Flagging Strips
Rope
Absorbent Diapers
Paper Suits
Rain Suits

Fire-Fighting and Medical Response Vehicles:

The Y-12 Plant Fire Department typically operates the following fire-fighting and medical response vehicles:

Fire Pumper No. 1
Fire Pumper No. 2
Fire Pumper Backup
Cardox Fire Fighting Truck
Emergency Response Truck
Fire Chief's Truck
Service Van
Routine Transportation Van
Fire Fighting Equipment Truck
Routine Transportation Truck
Fire Captains' Truck
Medical and Routine Transportation Truck
Ambulance No. 1
Ambulance Backup
Ambulance Backup
Emergency Spill Response Truck

APPENDIX C
EXAMPLES OF EMERGENCY MUTUAL AID COORDINATION AGREEMENTS

Department of Energy
Field Office, Oak Ridge
P.O. Box 2001
Oak Ridge, Tennessee 37831—

January 11, 1994

Mr. Frank K. Martin, Director
Energy Systems Protective Services
Martin Marietta Energy Systems, Inc.
P. O. Box 2009
Oak Ridge, TN 37831-8107

Dear Frank,

MUTUAL AID AGREEMENT FOR EMERGENCY AMBULANCE SERVICE, EAST TENNESSEE REGION

Enclosed is a copy of the subject agreement which has been executed by the Oak Ridge Operations Office (ORO) and the Tennessee Department of Health. This is a progressive agreement which enhances the emergency medical response system throughout the sixteen county East Tennessee region.

The ORO Emergency Operations Center (EOC) will serve as the point of contact for the Regional Response Communications Center (RRCC) for requests to ORO for support from Martin Marietta Energy Systems under the agreement. Based upon conversations with your staff, the Y-12 Plant Shift Superintendent (PSS) will serve as the point of contact for the ORO EOC for requests for the Energy Systems Oak Ridge facilities to provide support under the agreement. Likewise, the Y-12 PSS will coordinate any requests from Energy Systems for support for the Oak Ridge facilities and forward such requests to the RRCC through the ORO EOC.

This letter constitutes advance authorization for offsite response of Energy Systems emergency medical resources under the provisions of this Mutual Aid Agreement when such requests are received by the Y-12 PSS from the ORO EOC.

Also enclosed is a copy of the East Tennessee Medical Regional Understanding for the Activation of Mutual Aid. This document should be used as guidance in your preparation of implementing procedures for this agreement. Please ensure that your procedures provide for periodic updates to the ORO EOC concerning any activities being conducted offsite and notification to the ORO EOC of termination of such activities.

As with other mutual aid agreements, the decision to offer units for offsite response should be predicated upon consideration of facilities' conditions at the time and the maintenance of an appropriate reduced level of response capability for the Oak Ridge facilities.

Questions may be addressed to Bobby Davis of my staff at 6-9725. Your support is appreciated.

Sincerely,

R. R. Nelson
Acting Assistant Manager
for Defense Programs

Enclosures

cc: w/encls.
Ron Hultgren, ER-10
John Rothrock, SE-33
Bill Phelps, DP-82
Karen Edwards, AD-440
Tom Tison, EW-96
Bob Spence, DP-81

MUTUAL AID AGREEMENT FOR EMERGENCY AMBULANCE SERVICE

EAST TENNESSEE REGION

THIS AGREEMENT entered into and executed this 1st day of October 1993 between the U.S. Department of Energy (DOE), Oak Ridge Operations Office and Licensed Ambulance Service (County or Private) to provide for the joint operations of Emergency Ambulance Service within the geographical boundaries of the 16 county East Tennessee Region.

WHEREAS, pursuant to the provisions of Tennessee Code Annotated (T.C.A.) 7-61-102, a county is authorized to provide ambulance services as a public service; and,

WHEREAS, T.C.A. 7-61-104(b), authorizes cooperation between cities and counties for the provision of ambulance services and T.C.A. 12-9-101, et. seq., same being the "Interlocal Cooperation Act" provides legal authority for the parties to cooperate on the basis of mutual advantage to provide Emergency Ambulance Services in facilities for the needs and development of local communities; and further the Atomic Energy Act, 42 United States Code (U.S.C.) 2011 et seq., the Department of Energy Organization Act, 42 U.S.C. 7101 et seq., and the Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121 et seq., provide further authority for the DOE to enter into this agreement;

WHEREAS, it is necessary and desirable that an agreement be executed authorizing the interchange of such Emergency Ambulance Service between the parties.

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES AND CONDITIONS CONTAINED HEREIN, THE PARTIES AGREE AS FOLLOWS:

1. Duration of Agreement

A. This agreement shall be effective as to each party when it has been approved by the governing bodies of the licensed ambulance services and shall continue to be effective for five (5) years from that date or until termination. The agreement may be terminated by any party by giving the other parties 30 days written notice.

B. Termination of this agreement may be effected by the governing body of each party adopted with the same formality as at the parties original approval of this agreement; provided that no such termination shall be effective until the expiration of 30 days after termination by either governing body. All the rights, remedies, and obligations of the parties will remain in effect until such 30 days expire.

C. The DOE will not be required to provide 30 days written notice if DOE determines that the department's mission or other national security matters make termination necessary.

2. Services Provided

Each party agrees that its emergency services and resources will be available to answer emergency calls within the jurisdiction of the other

in order to provide adequate and timely Emergency Ambulance Service in accordance with the policies and procedures as provided in Paragraph 4; provided, however, that no party to this agreement shall be required to make resources available or render service to any other party when by providing such services an unreasonable danger to lives or property of that party's residence or employees would result. The responsible persons designated by the governing bodies of each ambulance service or the service director for either party shall determine what resources and services can be reasonably provided this agreement. Neither party will be required to obtain additional resources of any nature to carry out this agreement.

3. Emergencies

Upon request by any of the parties and upon notification of an emergency occurring within the jurisdiction serviced by either party, the county or service may enter into the geographical boundaries of the other party to offer and render such Emergency Ambulance Service as either party deems appropriate under the circumstances. The county or service may provide such equipment and personnel of their ambulance service as it deems appropriate under the particular circumstances. An emergency occurrence as defined by this agreement consists of a situation beyond the normal and routine services being provided on a regular basis by the responsible agency so that local resources are overwhelmed. This agreement in no situation releases either party from having available resources in order to fulfill day-to-day obligations being incurred by that party routinely.

When a party responds to an emergency within the geographical boundaries of one of the other parties as contemplated by this agreement, the responding party may, but is not obligated to, charge a fee for services it deems necessary. Such fee would not be charged to the party requesting assistance but to the individual(s) transported by the responding party.

4. Policies and Procedures

The governing bodies of each licensed ambulance service do by this agreement authorize the county executive, mayor, ambulance service director, or their designee to establish the necessary policies and procedures to be followed in requesting and responding to requests for assistance provided such are authorized by applicable state or federal law, the ambulance service agreement if applicable and the mutual aid agreement.

5. Authority for Responding Personnel

A. In all occasions where emergency ambulance personnel travel from their geographical boundaries to that of another the jurisdiction, authority, rights, privileges, and immunities which they have in their jurisdiction shall extend to and be available to them in the geographical area they respond to.

B. The senior officer of the Emergency Ambulance Service, or his or her designee within his jurisdiction on the scene of an emergency shall be

in command of the emergency as to strategy, tactics, and overall direction of the operation. Additional resources from outside the East Tennessee Region; i.e., ambulance, air ambulances, hospital bed count, etc., will be coordinated by the Regional EMS Director.

All orders or directions regarding the operations of the party and the jurisdiction of the other party shall be relayed to the senior officer in command of the party acting outside its jurisdiction provided, however, that neither this agreement or any agreements executed contemporaneous herewith shall be construed as creating a duty on the part of any party to stay at the scene of the emergency except as may be decided by the senior officer of that party.

C. Either party may depart the scene of the emergency at any time the senior officer of that party deems it appropriate at which time the senior officer of the other party shall be in complete command.

D. The Regional Resource Coordination Center will be used to coordinate communications with responding parties.

6. Liability

At any time a party requests the aid of another party, the requesting party shall not be liable for damages to the equipment or personnel of the responding party. Neither shall the requesting party, its officers, agents, or employees be liable for any damages caused by negligence of the

personnel of the responding party while en route to or returning from the scene of an emergency.

7. Waiver of Claims

Each party hereby waives any and all claims against the other party for any costs, losses, damages, personal injuries, or wrongful death arising out of the operations of this agreement or for any loss or damage to their respective employees and property which may occur in the performance or nonperformance of this agreement. Each party will be responsible for furnishing its own equipment and personnel and shall be responsible for all expenses necessary for their operation.

8. Limits of Liability

This agreement is construed by the parties to be a function of the local governments to the extent that liability arises out of the performance of this agreement. Ambulance services under government control will avail themselves of the protection of the Tennessee Governmental Tort Liability Act as found in T.C.A. 19-20-101, et seq.

9. Entire Agreement

This agreement contains the entire agreement between the parties. Should a court of confident jurisdiction declare any provision of this agreement to be null and void or unenforceable, such provision shall be stricken but

such determination shall not affect the validity of the remaining portions of this agreement.

U. S. DEPARTMENT OF ENERGY

Joe La Grone
Manager

10-1-93
Date

TENNESSEE DEPARTMENT OF HEALTH
EAST TENNESSEE REGION

Larry Hutsell
Regional Emergency Medical Services Director

9-21-93
Date

APPENDIX F

LETTERS OF AGREEMENT/MEMORANDUMS OF UNDERSTANDING

A local law enforcement mutual agreement has been made between the City of Oak Ridge and DOE. This letter can be accessed through the City of Oak Ridge.

M E M O R A N D U M

TO: Honorable Mayor and
Members of City Council

FROM: M. Lyle Lacy, III
City Manager

DATE: November 3, 1983

SUBJECT: SUPPLEMENTAL AGREEMENT WITH THE DEPARTMENT OF ENERGY FOR MUTUAL AID FIRE PROTECTION

The attached Resolution authorizes the City of Oak Ridge to enter into a Supplement Agreement to the existing mutual aid agreement with the Department of Energy.

This nation's experience with large scale disasters has focused attention on the importance of formulating plans and organizational procedures for systematically mobilizing regional fire forces. Experience in major disasters has shown that for successful disaster operations, it is imperative that such plans be incorporated into each participating fire department's normal organizational procedures. To cope with large scale disasters, many localities and states have adopted laws which permit formal mutual aid agreements.

The concept of mutual aid in the provision of emergency services is based on the establishment of a prearranged plan or agreement wherein two or more authorities agree to provide assistance to each other. It is a relationship in which each participant stands prepared to render assistance to other parties in the event that an emergency occurs of a magnitude beyond the individual members' response capabilities. Mutual aid plans may encompass the following functions: supplemental coverage when the manpower and equipment of the requesting department are responding to an emergency and are engaged to such an extent that its ability to furnish adequate protection for subsequent alarms has been dangerously reduced; provision of additional units to assist at major fires or emergencies that might exceed the requesting department's capabilities; and provision of specialized types of firefighting equipment not possessed by the requesting department. Typically, parties to mutual aid plans limit such assistance so that their own jurisdictions remain adequately protected.

From as early as 1960, mutual aid fire protection agreements have existed between the City and the various federal agencies responsible for operation of the government plants and laboratory in Oak Ridge. The last of these agreements, executed on May 3, 1976 between the United States Energy

Research and Development Administration, is still in force. Since then, federal legislation has been passed (Public Law 498, 93rd Congress) which provides for the filing of claims with the United States Fire Administration to recover the amount of direct losses and expenses incurred by municipalities as a result of fighting fires on federal property under such mutual aid agreements. These changes and developments have created the need to update the existing May 3, 1976 mutual aid agreement through the execution of this supplement.

Approval of the attached Resolution is recommended.

H. Lyle Lacy, III

fmf

Attachment

NUMBER 11-129-83

RESOLUTION

WHEREAS, the City of Oak Ridge and the Department of Energy desire to enter into a Supplemental Agreement to furnish assistance in fighting fires, and

WHEREAS, City Ordinance No. 39-60, dated July 17, 1960, authorized the Mayor of the City of Oak Ridge to execute an agreement entitled "Mutual Aid Fire Protection Agreement" between the City and the United States Atomic Energy Commission, and

WHEREAS, Chapter 223, Public Acts of 1957 (Section 6-54-601 et seq., Tennessee Code Annotated) authorizes municipalities of the State of Tennessee to enter into contracts to furnish mutual aid assistance in fighting fires, and

WHEREAS, it is in the best interest of the City of Oak Ridge to execute the same.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCILMEN OF THE CITY OF OAK RIDGE, TENNESSEE:

That the City of Oak Ridge enter into the Supplemental Agreement to the existing mutual aid agreement with the Department of Energy.

BE IT FURTHER RESOLVED that the Mayor is authorized to execute all documents necessary to accomplish the same.

This the 7th day of November 1983.

APPROVED AS TO FORM
AND LEGALITY:

William E. Lantrip
City Attorney

Mayor

City Clerk

MUTUAL AID FIRE PROTECTION AGREEMENT

THIS AGREEMENT entered into this 4th day of June, 19 85, by and among the City of Oak Ridge; the Town of Oliver Springs; Anderson County Volunteer Fire Department, Marlow Unit; and the Karns Volunteer Fire Department.

WHEREAS, Section 6-54-601 and Sections 12-9-108 of Tennessee Code Annotated authorize the parties to this Agreement in this state to enter into a mutual firefighting assistance agreement; and

WHEREAS, the parties hereto desire to avail themselves of the authority conferred by this law; and

WHEREAS, the purpose of this Agreement is to provide each of the parties, through their mutual cooperation, a predetermined plan by which each render aid to the other in case of emergency which demands fire protection services to a degree beyond the existing capabilities of either party; and

WHEREAS, it is deemed to be in the public interest for the parties hereto to enter into an agreement for mutual assistance in fire protection and in order to increase fire defenses and to ensure fire control, as well as to provide necessary reserves for adequate community protection;

NOW THEREFORE, in consideration of the mutual covenants contained herein by and between the parties hereto, it is hereby agreed as follows:

1. The parties, in accordance with the provisions hereof, will respond to calls for fire protection assistance upon request for such assistance made by the senior fire official on duty, or the Chief of the Fire Department of the requesting party, hereinafter referred to as "Requester." All requests shall be made to the Fire Chief or senior fire official on duty of the responding party, hereinafter referred to as "Responder." Assistance shall be rendered according to the procedures established in operational plans to be developed and agreed to by the individual parties, and in accordance with the provisions hereof.

2. Upon receipt of a request for assistance by the senior fire official on duty from the requesting party (Requester), and upon a determination by the senior fire official on duty of the responding party (Responder) that assistance may be given without impairing the capacity to provide fire protection within its own jurisdiction, the Responder may furnish such apparatus, staff and assistance to the Requester as deemed appropriate by Responder. Any response shall be made at the sole discretion of the Responder. Assistance shall be rendered according to the procedures established in the operational plan developed and agreed to by all parties to this Agreement and the provisions hereof.

3. A request for aid as provided in Paragraph 1 shall be minimally for one fire truck and two Firefighters. The maximum response shall be 50 percent of the available personnel and resources of the Responder.

4. No party to this Agreement shall be required hereunder to dispatch apparatus, equipment or personnel to the assistance of any other but every effort should be made to furnish such assistance if, in the sole discretion of the Responder, such dispatch would not impose upon its community a serious impairment to its fire defenses and fire protection.

5. If the Responder determines no assistance can be rendered, or if an emergency occurs in the jurisdiction of the Responder in the course of responding to a request under this Agreement, and the Responder determines, that it cannot provide the minimal response under this Agreement, the Responder shall inform the Requester of this decision immediately or as soon thereafter as possible.

In the event two or more requests for mutual aid assistance are made at the same time which would preclude provision of the minimum request under this Agreement by the Responder, the Responder shall determine, in its sole discretion, how to respond to the requests including the discretion to send all available resources under this Agreement to the jurisdiction which is considered by the Responder to have the most serious emergency, or by deploying resources to each requesting jurisdiction. The Responder shall immediately or as soon thereafter as possible inform the Requesters of the decision.

6. The respective jurisdictions may recall at any time equipment and/or personnel dispatched to any other when, in the sole opinion of the Responder, protection needs in the area from which the equipment and personnel were dispatched so require.

7. Each of the parties to this Agreement agrees, upon request of the appropriate officials as set out in Paragraph 1 of this Agreement, to maintain their departments in readiness to answer fire calls in the other jurisdictions when one of the jurisdictions is rendering firefighting assistance to another jurisdiction in response to an assistance request from such other jurisdiction pursuant to this Agreement.

8. The Responder shall only dispatch personnel that are responsible and properly trained, and the conduct and actions of said personnel shall be the responsibility of the Responder.

9. The services performed and expenditures made under this Agreement are to be made solely for public and governmental purposes.

10. Any personnel shall only be utilized in the course and scope of their employment. Such personnel shall be and remain under the direct and immediate control of the senior firefighting officer dispatched with such personnel, and such officer shall ultimately direct and control or approve the utilization of such personnel. Such personnel shall in no case be deemed employees or agents of, nor loaned servants to the Requester.

11. When assistance is rendered pursuant to this Agreement by a party hereto outside of its jurisdiction, such party, governmental entity, agency, and personnel shall enjoy, maintain, and have available, all rights, privileges and immunities provided by law.

12. Each party to this Agreement jointly and severally hereby release, remise, and forever discharge each and every other party hereto from any and all actions, causes of action, suits, claims, damages, costs, and expenses whatsoever in law or in equity which now exist or which may hereafter arise by reason of any matter, cause, thing, action, or inaction under, pursuant to, or in accordance with this Agreement.

13. All parties hereto agree to assume and pay all costs and expenses incurred for their own personnel and equipment in responding to a request for assistance and no such charges shall be made or assessed to any Requesting Party hereunder, provided, however, the Requesting Party, Paragraph 12 not withstanding, agrees and shall pay the cost for any special chemicals used by the Responding Party from its own supply. Such costs shall be paid promptly on presentation of an itemized statement.

14. Each party to this Agreement shall assume all costs of salaries, wages, bonuses or other compensation for its own personnel who respond for duty under the terms of this Agreement and shall assume all costs involving the use of apparatus, equipment and tools used specifically in response to the request for aid and shall make no charge for such use to the party requesting assistance; provided, however, any special chemicals used by the responding party from its own supply shall be paid for by the party requesting the aid upon receipt of an itemized statement of costs for such chemicals.

15. Equipment and personnel dispatched by the Responder in response to a request will operate under the immediate supervision and control of the senior firefighting official in charge of the dispatched equipment and personnel, but under the general direction of the senior firefighting official of the Requester at the scene of the fire.

16. It is agreed by the parties to this Agreement that no requests will be made, nor any assistance rendered, for fires occurring outside the jurisdictional limits of the Requester.

17. It is further understood by the parties to this Agreement that no assistance will be rendered in cases of civil disorder, or riots, except that assistance will be rendered in cases of major conflagrations during a firefighters' strike where the safety and lives of citizens are in imminent peril.

18. This Agreement shall be valid only when it is executed by the Chief Executive Officer of the respective parties pursuant to the authority duly granted by the governing bodies of such parties.

19. This Agreement supersedes and replaces any and all mutual aid agreements previously entered into among the parties hereto and shall remain in effect until terminated by all parties hereto in the form of written notice setting forth the date of termination. Any one party hereto may withdraw from this Agreement and terminate it with regard to that party. Such withdrawal shall be made by 30 days written notice to all other parties, but such notice shall not terminate the Agreement among the remaining parties.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

Approved as to Form
and Legality

William E. Lantrip
City Attorney

CITY OF OAK RIDGE

By: Ray H. Pruitt
Mayor

Attest: Jacqueline J. Bernard
City Clerk

TOWN OF OLIVER SPRINGS

By: Keith Jamison
Mayor

Attest: Chester Franklin

ANDERSON COUNTY VOLUNTEER FIRE DEPARTMENT, MARLOW UNIT

By: Clyde E. Wilson
CHAIRMAN OF TRUSTEES

Attest: [illegible]
ADMINISTRATIVE OFFICER

KARNS VOLUNTEER FIRE DEPARTMENT

By: Virgil R. Hollow
PRESIDENT

Attest: Collier L. Brewer

During an Emergency Evacuation, Go to Assembly Station 10

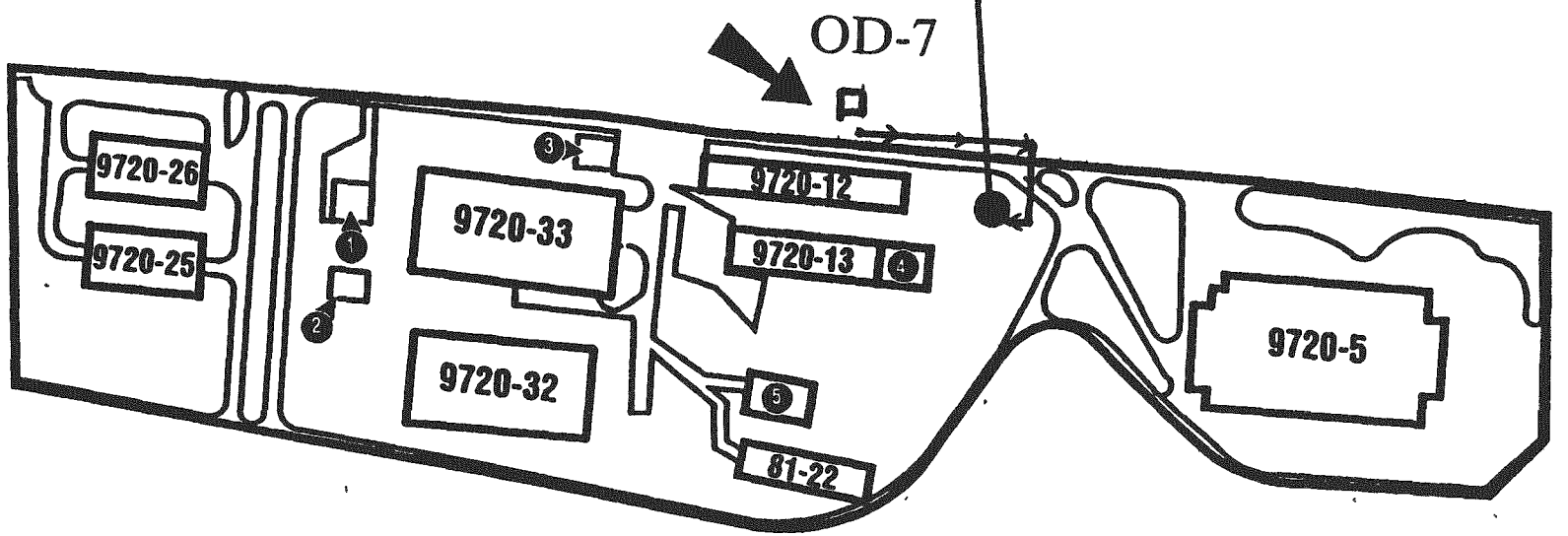


Figure 5

OD-7

EVACUATION ROUTE

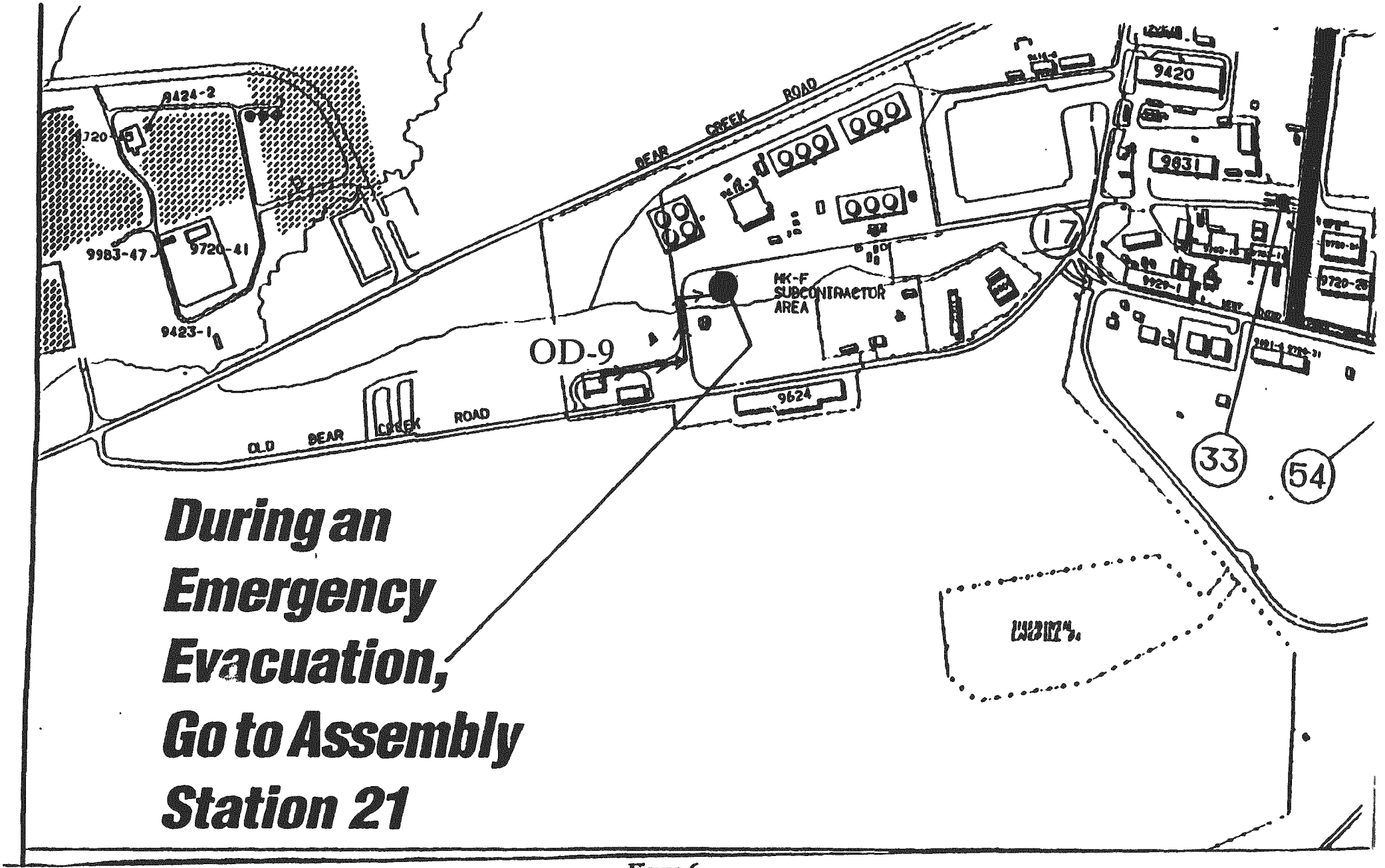


Figure 6

OD-9

EVACUATION ROUTE

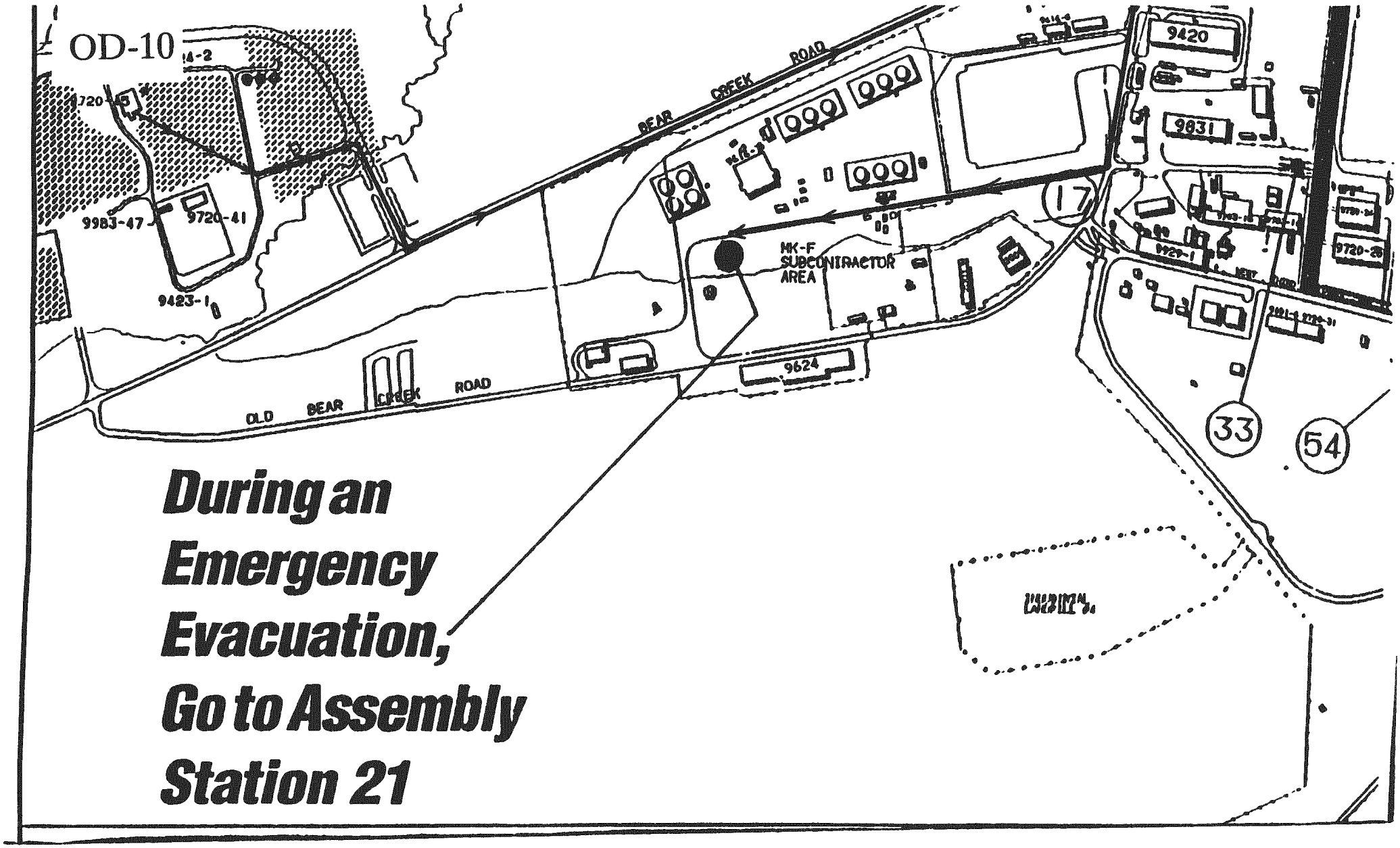


Figure 7

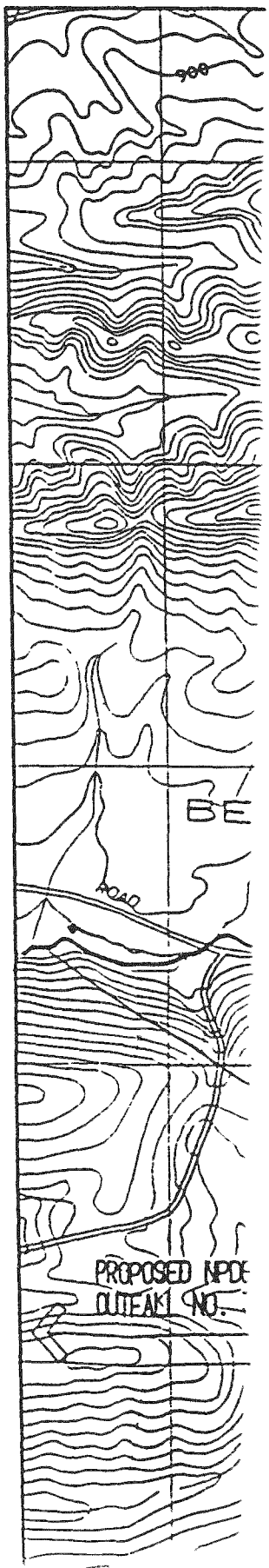
OD-10

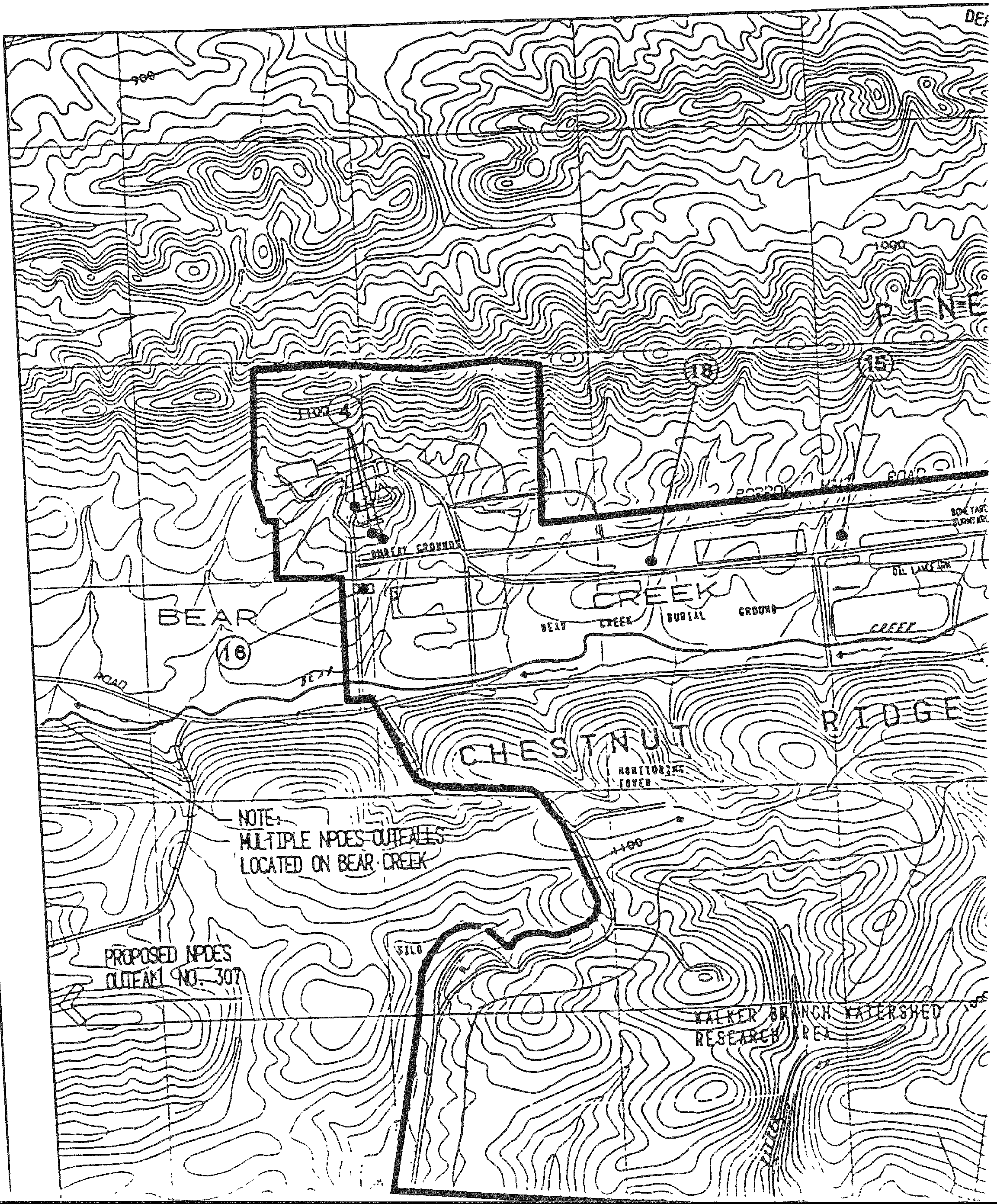
EVACUATION ROUTE

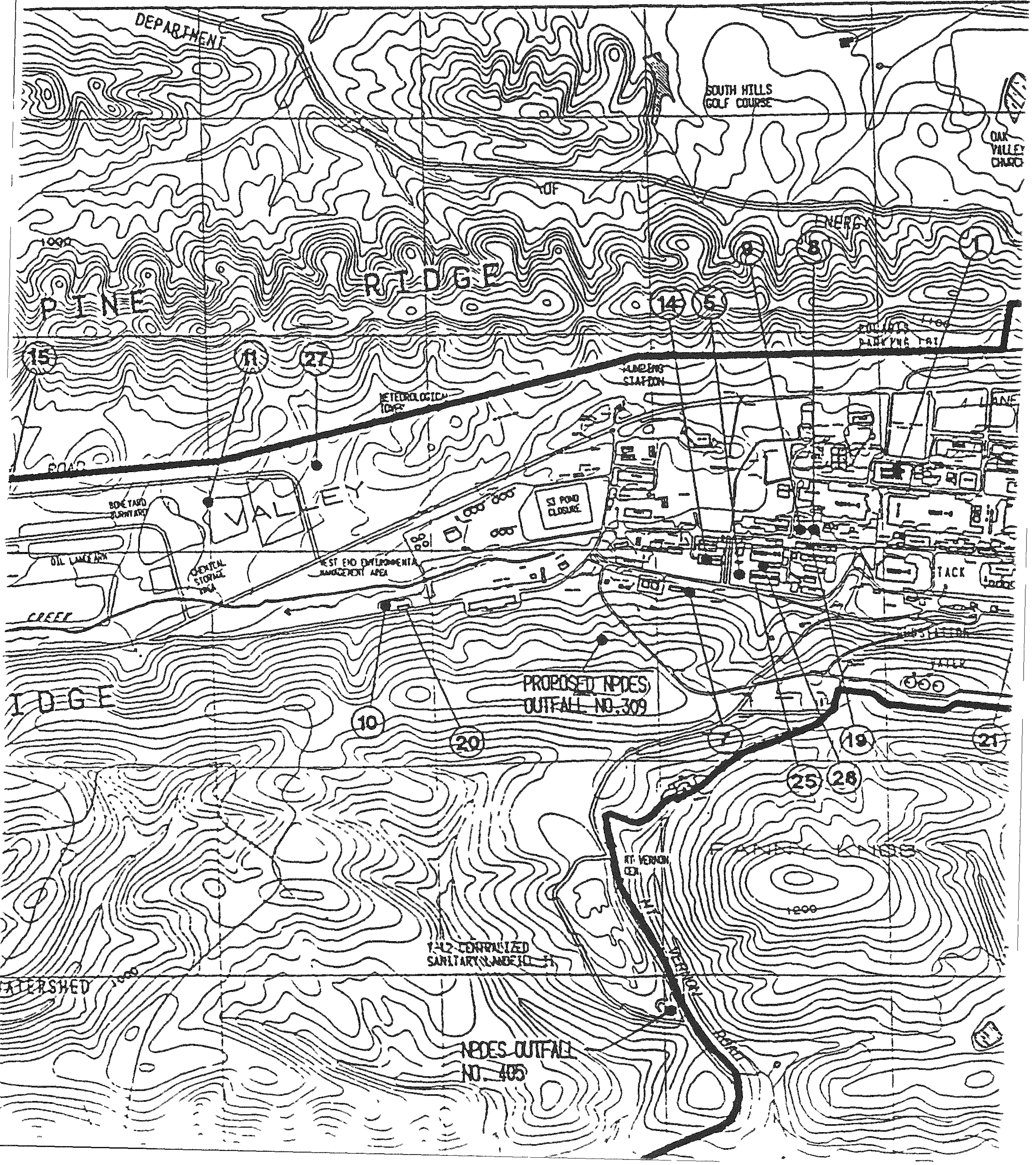
OAK RIDGE Y-12 PLANT

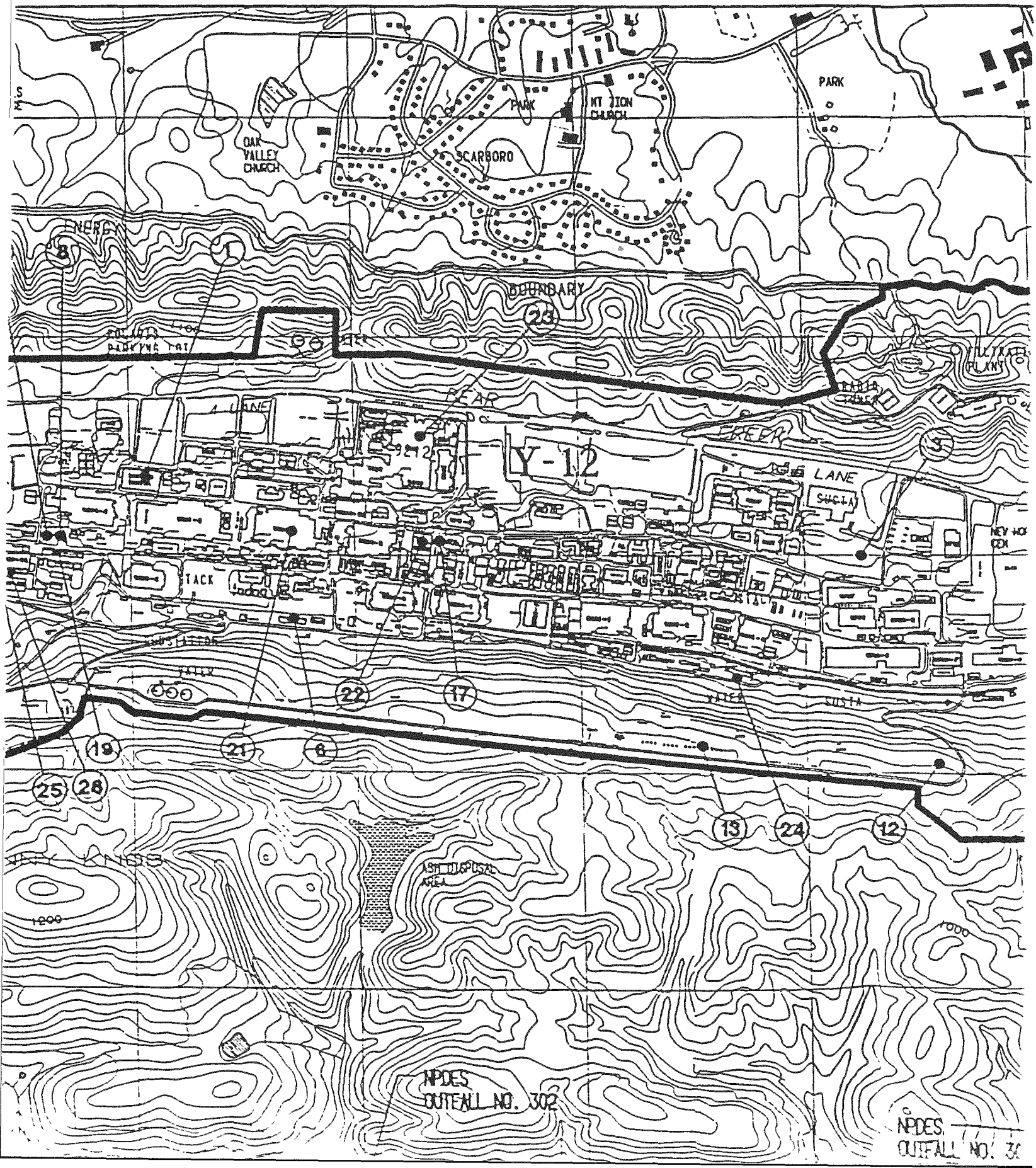
WASTE UNIT IDENTIFICATION KEY

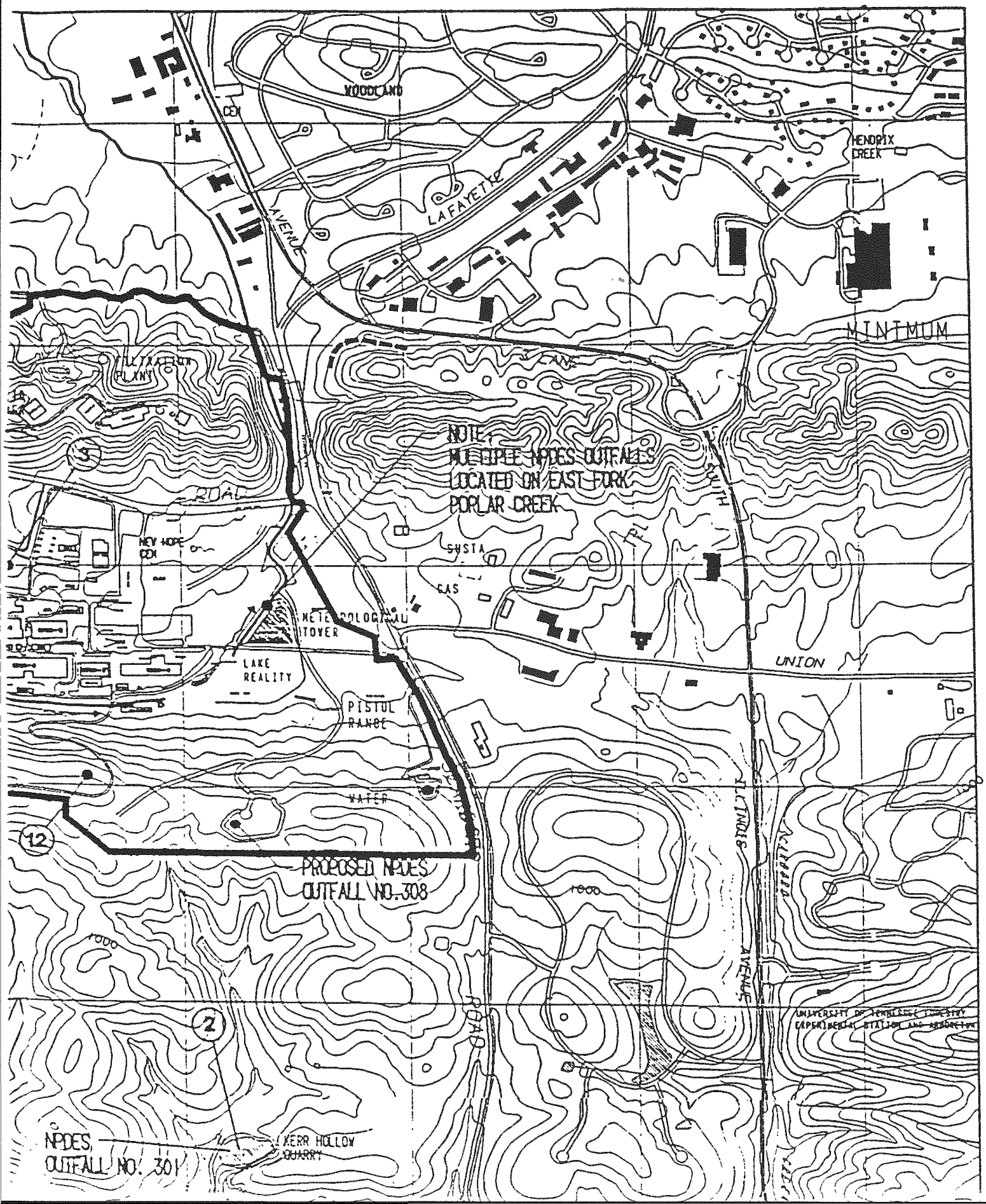
APPLICATION LINE	EPA PROCESS CODE	DESCRIPTION
1	T04 S01	CYANIDE TREATMENT UNIT
2	T02	KERR HOLLOW QUARRY TREATMENT UNIT
3	S02	GARAGE UNDERGROUND TANKS
4	D80	WALK-IN PITS
5	S01	INTERIM DRUM YARD
6	S01	BUILDING 9720-9 STORAGE UNIT
7	S01	RCRA & MIXED WASTE STORAGE & STAGING BUILDING 9720-31
8	S02	BUILDING 9811-1 RCRA TANK STORAGE UNIT
9	S01	BUILDING 9811-1 RCRA CONTAINER STORAGE UNIT
10	S02 S01	WASTE OIL/SOLVENT STORAGE UNIT
11	S02 S01	LIQ. ORGANIC SOLVENT STOR. UNIT
12	S03	EAST CHESTNUT RIDGE WASTE PILE
13	S01	CONTAINERIZED WASTE STORAGE AREA
14	S01	CLASSIFIED CONTAINER STORAGE UNIT BUILDING 9720-25
15	S03	OIL LANDFARM SOILS CONTAINMT. PAD
16	S03	DISPOSAL AREA REMEDIAL ACTION (DARA) SOLIDS STORAGE UNIT
17	T01 S01	URANIUM TREATMENT UNIT
18	T04	INTERIM REACTIVE WASTE TREATMT AREA
19	S01	BUILDING 9720-12 CLASSIFIED CONTAINER STORAGE AREA
[illegible]	[illegible]	RCRA AND PCB CONTAINER



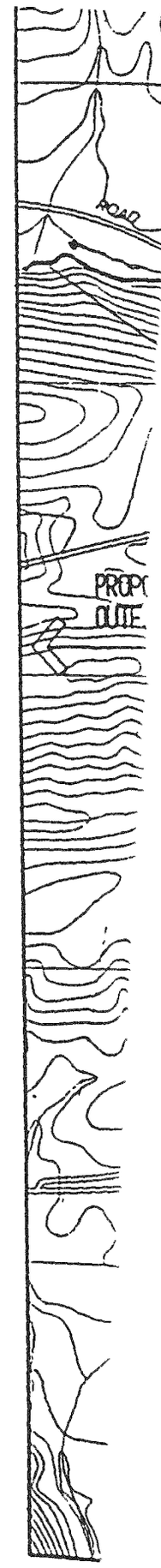

PINE
BEAR
CREEK
BEAR CREEK BURIAL GROUNDS
BURIAL GROUNDS
CHESTNUT
RIDGE
MONITORING TOWER
NOTE:
MULTIPLE NPDES OUTFALLS
LOCATED ON BEAR CREEK
SILO
PROPOSED NPDES
OUTFALL NO. 307
WALKER BRANCH WATERSHED
RESEARCH AREA
18
15
4
16
1100


DEPARTMENT
SOUTH HILLS GOLF COURSE
OAK VALLEY CHURCH
OF
ENERGY
PINE RIDGE
15
11
27
14
5
8
8
METEOROLOGICAL TOWER
PUMPING STATION
ROAD
VALLEY
S3 POND CLOSURE
OIL LANDFARM
CHEMICAL STORAGE AREA
WEST END ENVIRONMENTAL MANAGEMENT AREA
CREEK
PROPOSED NPDES OUTFALL NO. 309
RIDGE
10
20
19
21
25
28
MT. VERNON CEM.
Y-12 CENTRALIZED SANITARY LANDFILL II
WATERSHED
NPDES OUTFALL NO. 405


OAK VALLEY CHURCH
SCARBORO
PARK
MT ZION CHURCH
PARK
BOUNDARY
BEAR
Y-12
LANE
TACK
NPDES OUTFALL NO. 302
NPDES OUTFALL NO. 3


WOODLAND
HENDRIX CREEK
LAFAYETTE
AVENUE
MINIMUM
FILTRATION PLANT
NOTE:
MULTIPLE NPDES OUTFALLS LOCATED ON EAST FORK POPLAR CREEK
SYSTA
GAS
METEOROLOGICAL TOWER
LAKE REALITY
PISTOL RANGE
UNION
WATER
PROPOSED NPDES OUTFALL NO. 308
ILLINOIS AVENUE
NPDES OUTFALL NO. 301
KERR HOLLOW QUARRY
UNIVERSITY OF TENNESSEE FORESTRY EXPERIMENTAL STATION AND ARBORETUM

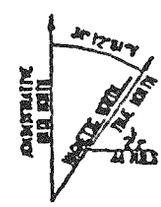
	S01	
2	T02	KERR HOLLOW QUARRY TREATMENT UNIT
3	S02	GARAGE UNDERGROUND TANKS
4	D80	WALK-IN PITS
5	S01	INTERIM DRUM YARD
6	S01	BUILDING 9720-9 STORAGE UNIT
7	S01	RCRA & MIXED WASTE STORAGE & STAGING BUILDING 9720-31
8	S02	BUILDING 9811-1 RCRA TANK STORAGE UNIT
9	S01	BUILDING 9811-1 RCRA CONTAINER STORAGE UNIT
10	S02 S01	WASTE OIL/SOLVENT STORAGE UNIT
11	S02 S01	LIQ. ORGANIC SOLVENT STOR. UNIT
12	S03	EAST CHESTNUT RIDGE WASTE PILE
13	S01	CONTAINERIZED WASTE STORAGE AREA
14	S01	CLASSIFIED CONTAINER STORAGE UNIT BUILDING 9720-25
15	S03	OIL LANDFARM SOILS CONTAINMT. PAD
16	S03	DISPOSAL AREA REMEDIAL ACTION (DARA) SOLIDS STORAGE UNIT
17	T01 S01	URANIUM TREATMENT UNIT
18	T04	INTERIM REACTIVE WASTE TREATMT AREA
19	S01	BUILDING 9720-12 CLASSIFIED CONTAINER STORAGE AREA
20	S01	RCRA AND PCB CONTAINER STORAGE AREA, BUILDING 9720-58
21	S01	BUILDING 9201-4 CONTAINER STORAGE AREA
22	S01	BUILDING 9206 CONTAINER STORAGE AREA
23	S01	BUILDING 9212 CONTAINER STORAGE AREA
24	S02	BLDG 9409-5 STORAGE UNIT
25	S01	BLDG 9720-32 PRODUCTION WASTE STORAGE UNIT (FUTURE)
26	S01	BLDG 9720-59 CLASSIFIED WASTE STORAGE UNIT (FUTURE)
27	S01	OAK RIDGE RESERVATION STORAGE UNITS (FUTURE)



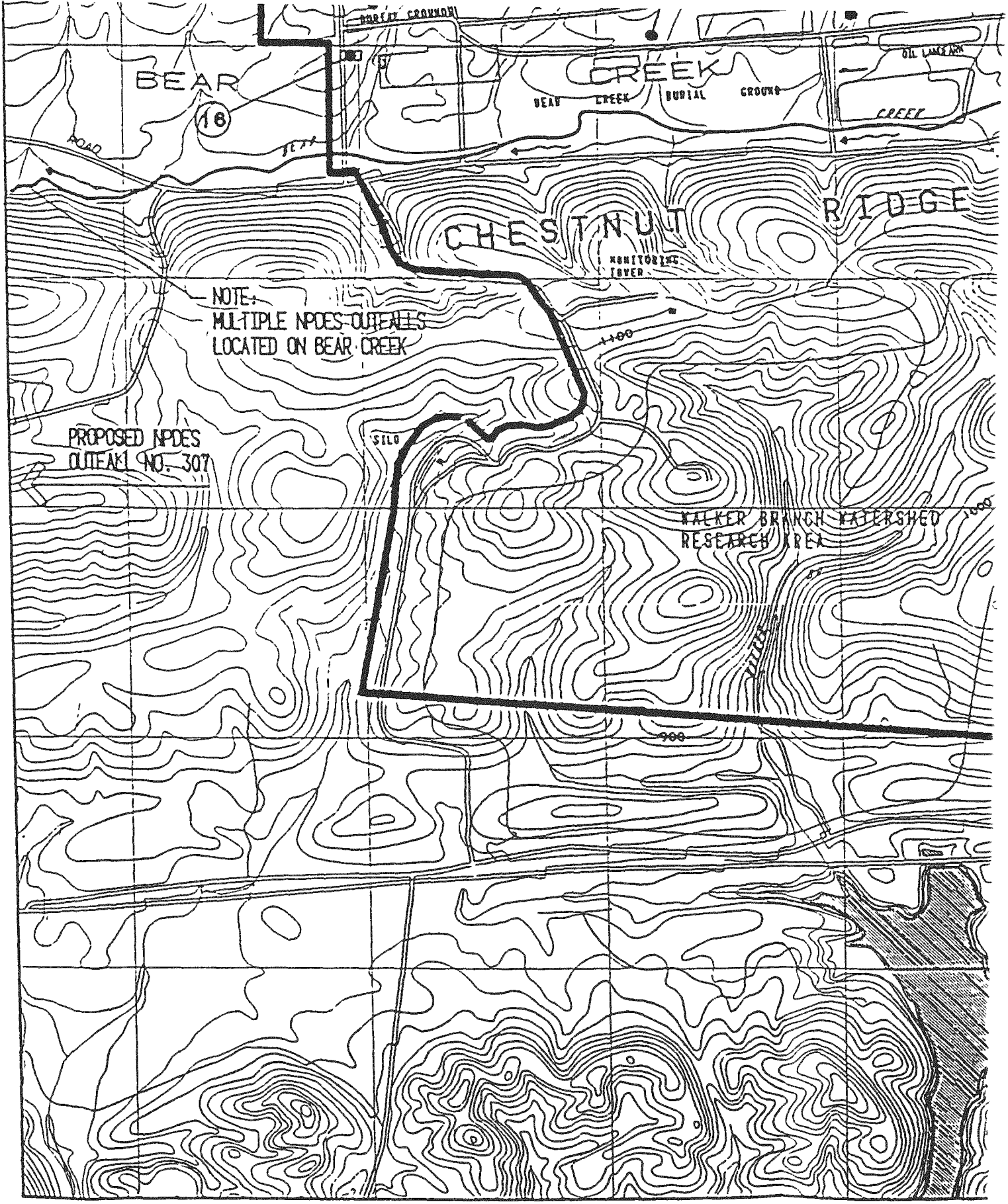
MARTIN MARIETTA

Y-12 PLANT RCRA WASTE UNIT LOCATIONS

0 400 800 1600 SCALE FEET	PES/216/100992	REV 21
	PREPARED BY PES GEODATA GROUP	11/18/93



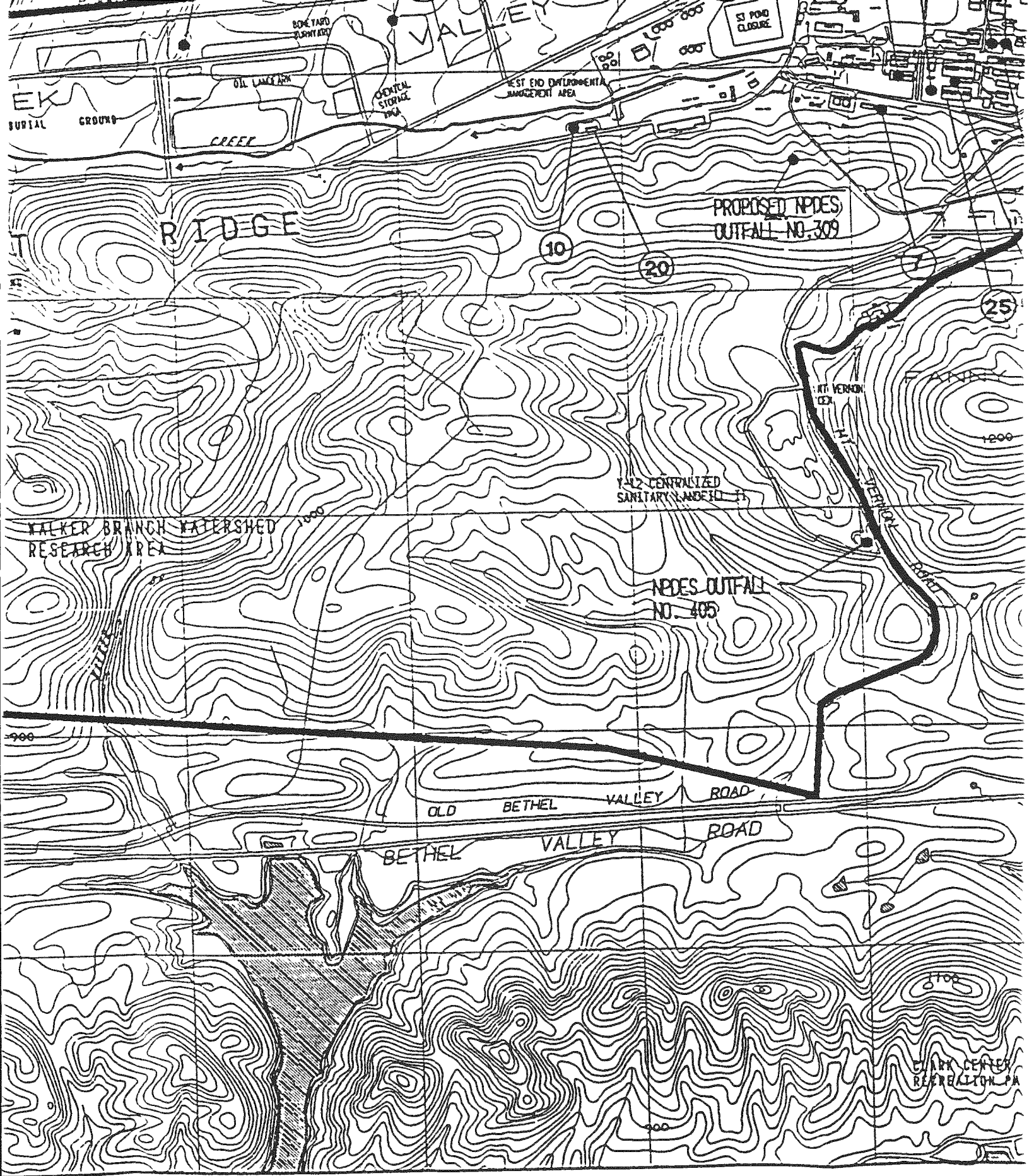
DECLINATION OF GRID 35°17'57" E OF TRUE NORTH
1987 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

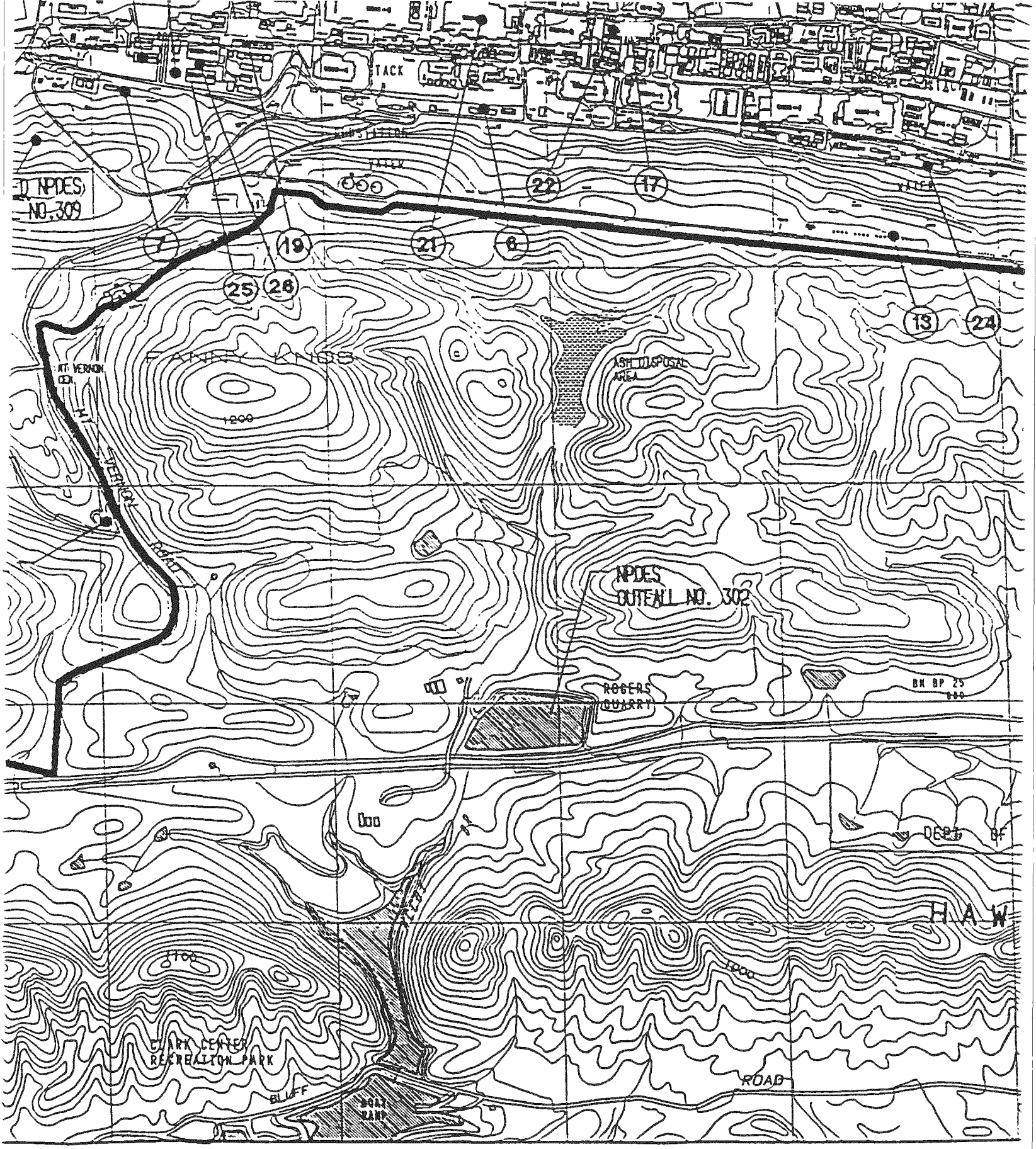


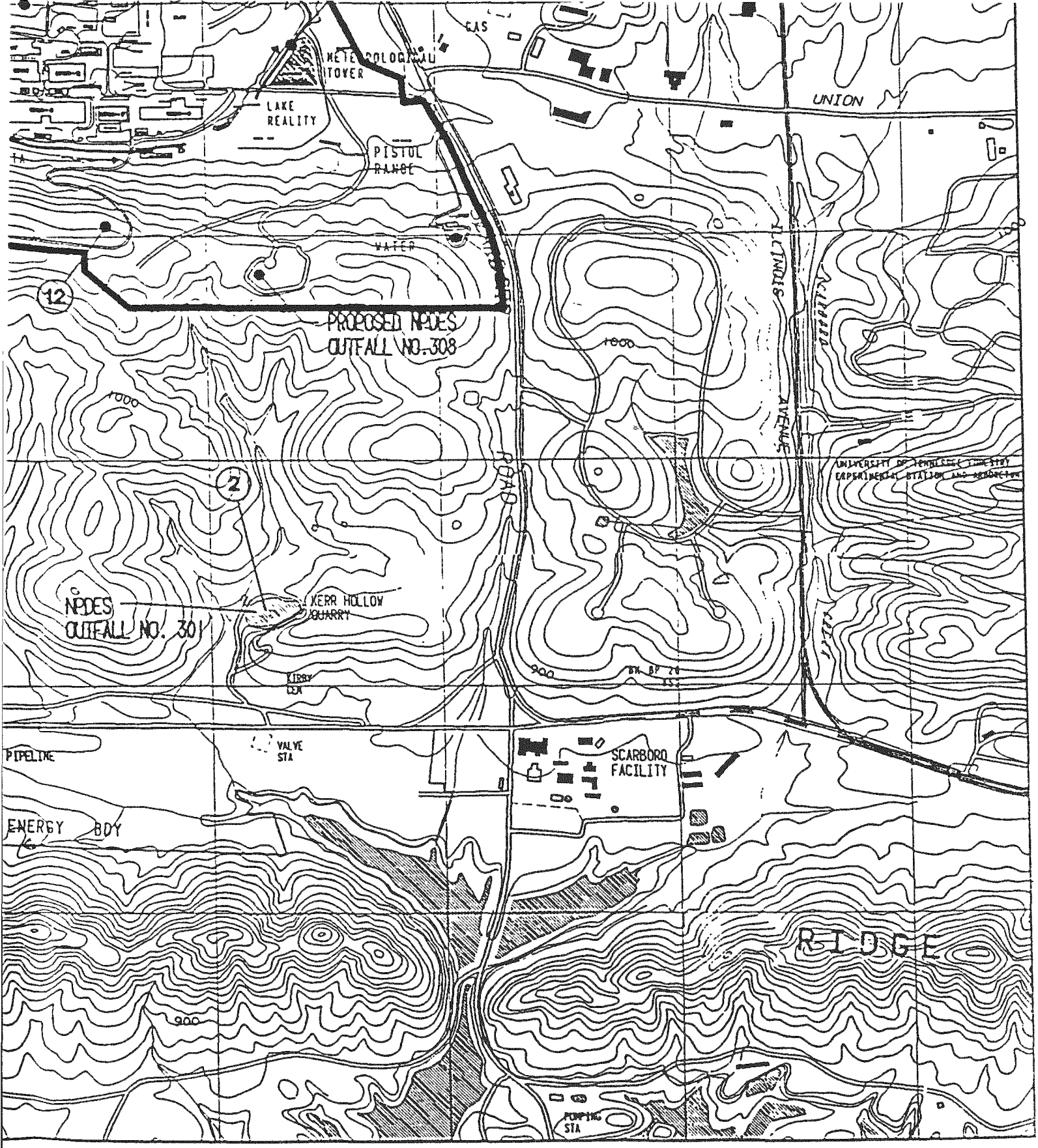
EA
EA

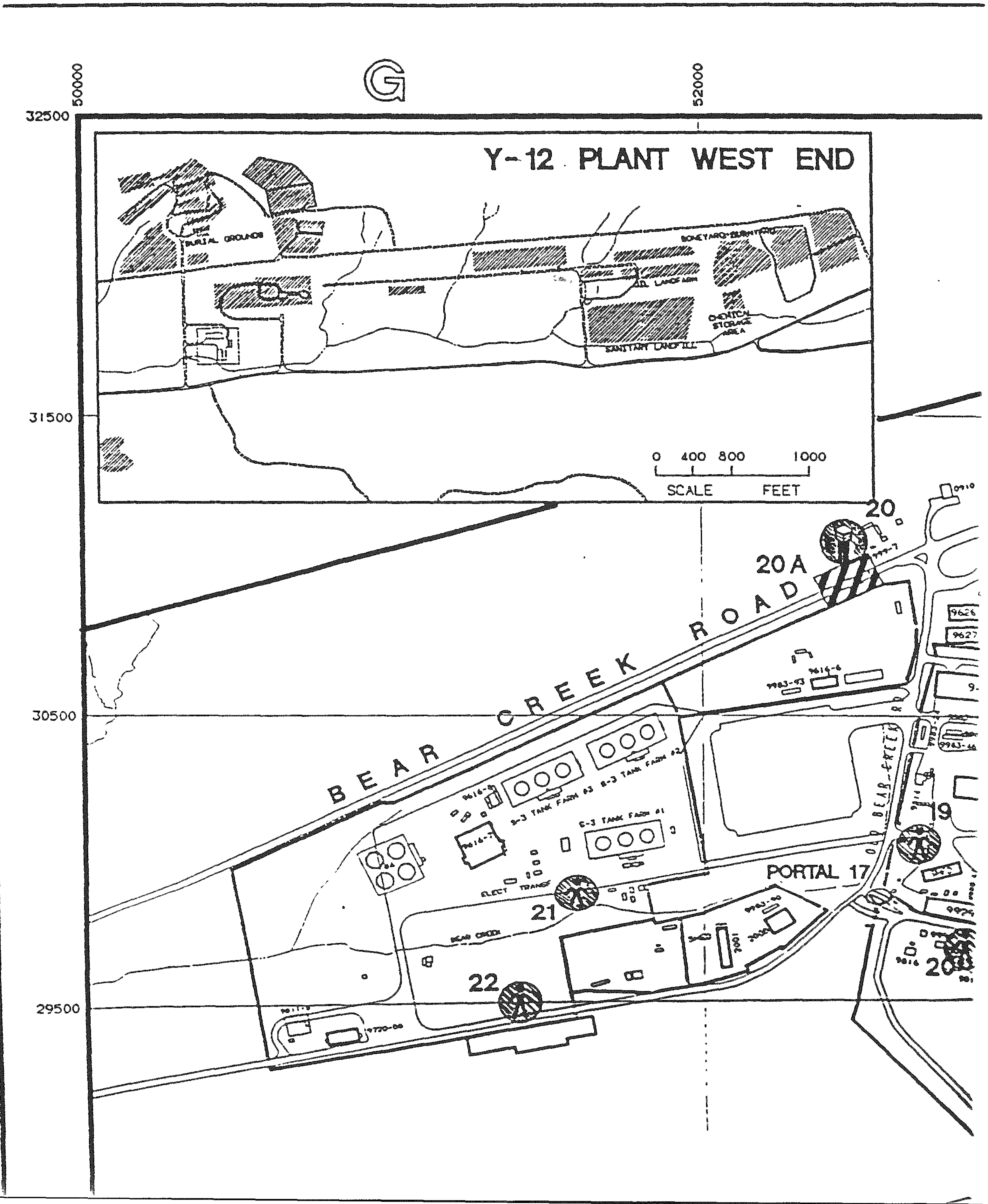
S

NORTH
OF SHEET


VALLEY
BONE YARD BURIAL YARD
OIL LANDFARM
CHEMICAL STORAGE AREA
WEST END ENVIRONMENTAL MANAGEMENT AREA
S1 POND CLOSURE
BURIAL GROUND
CREEK
RIDGE
PROPOSED NPDES OUTFALL NO. 309
10
20
25
MT VERNON
MT VERNON ROAD
Y-12 CENTRALIZED SANITARY LANDFILL II
WALKER BRANCH WATERSHED
RESEARCH AREA
NPDES OUTFALL NO. 405
OLD BETHEL VALLEY ROAD
BETHEL VALLEY ROAD
CLARK CENTER RECREATION AREA

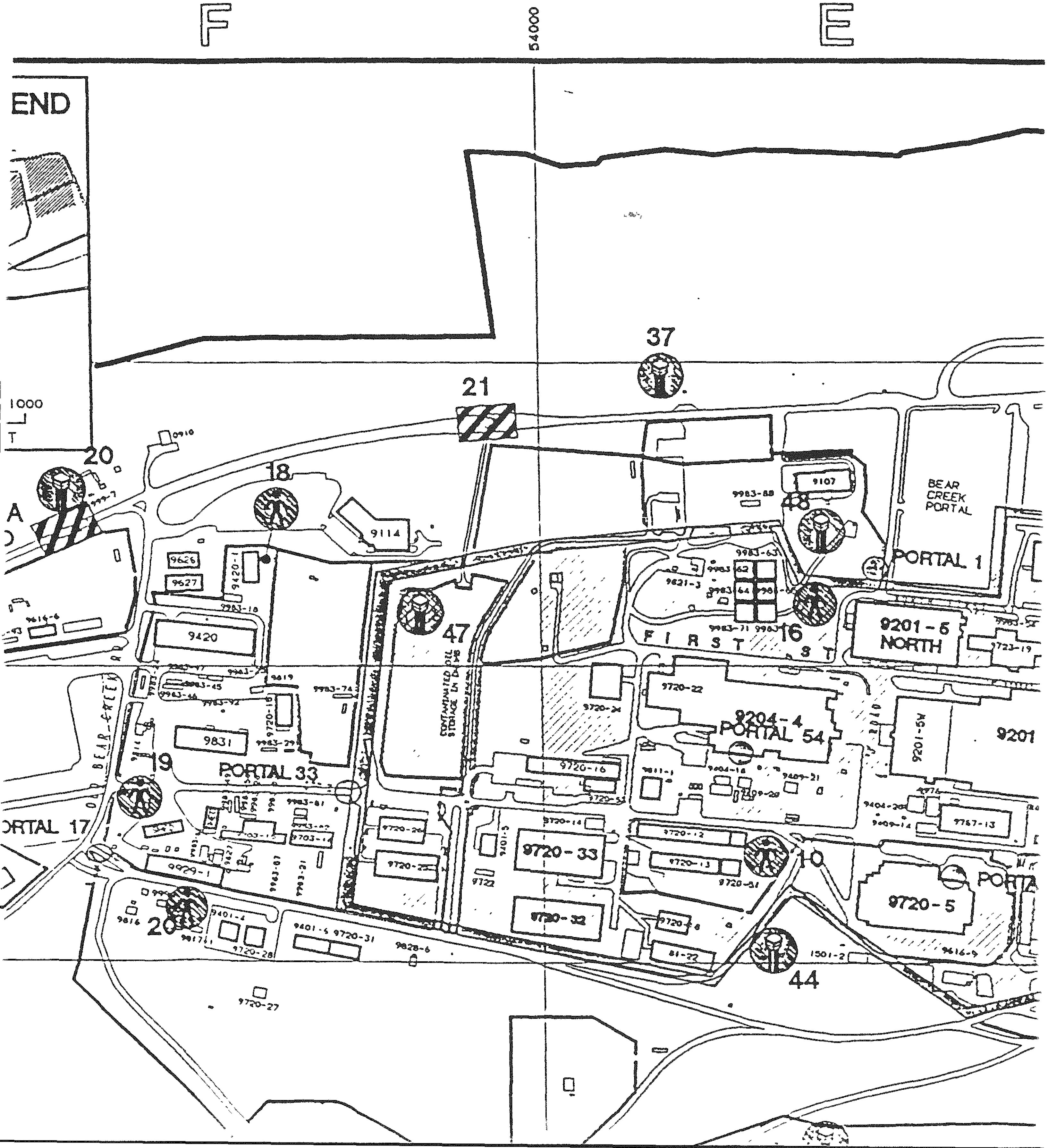

NPDES
NO. 309
NPDES
OUTFALL NO. 302
ROGERS
QUARRY
ASH DISPOSAL
AREA
FANNY KNOB
MT. VERNON
ROAD
CLARK CENTER
RECREATION PARK
BLUFF
ROAD
22
17
19
21
6
25
26
13
24


GAS
METEOROLOGICAL TOWER
LAKE REALITY
PISTOL RANGE
WATER
UNION
ILLINOIS AVENUE
12
PROPOSED NPDES OUTFALL NO. 308
1000
2
ROAD
NPDES OUTFALL NO. 301
KERR HOLLOW QUARRY
KIRBY
900
PIPELINE
VALVE STA
SCARBORO FACILITY
ENERGY BOY
RIDGE
PUMPING STA

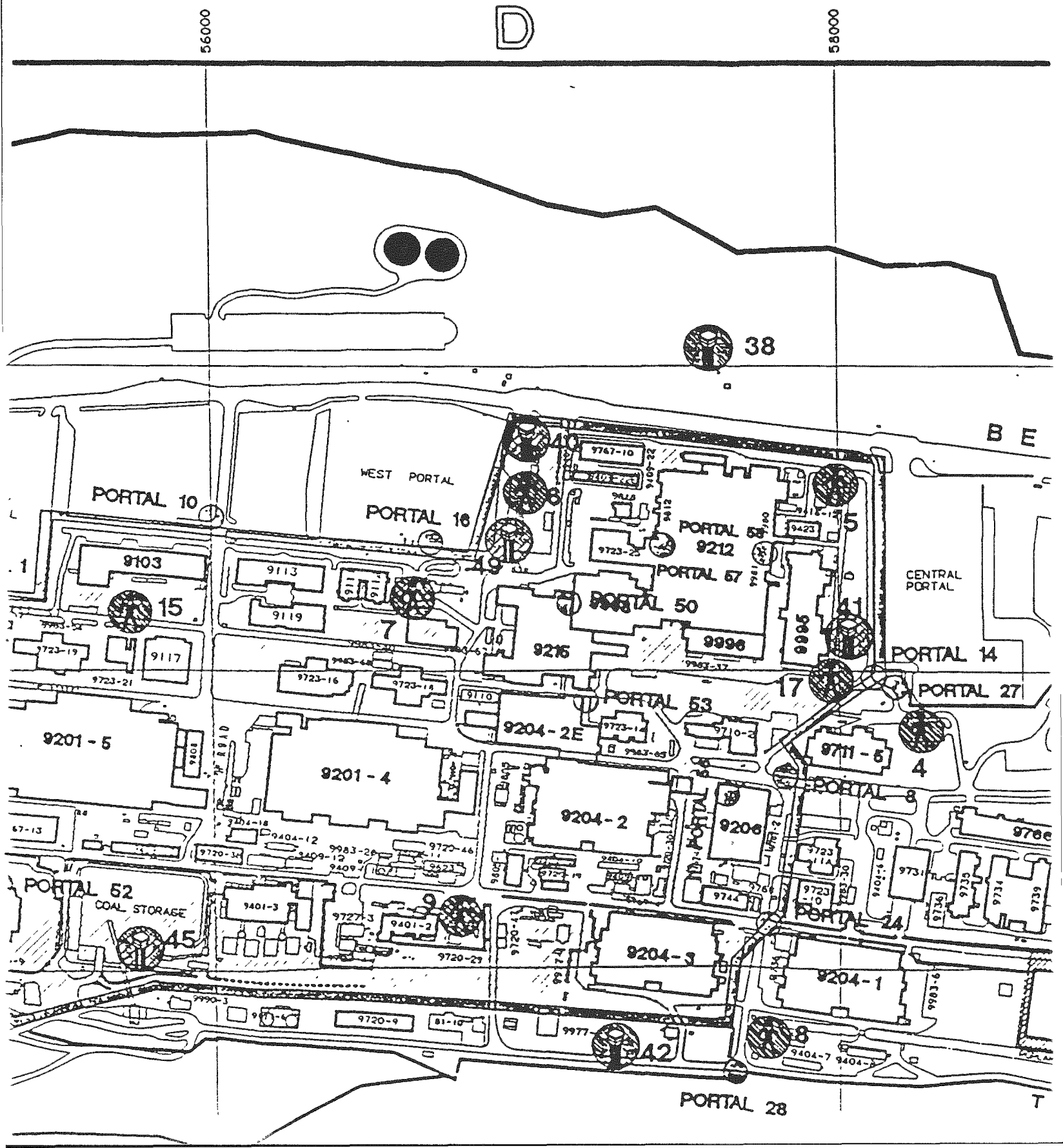


G
50000
52000
32500
31500
30500
29500
Y-12 PLANT WEST END
BURIAL GROUNDS
BONEYARD-BURNYARD
LANDFARM
CHEMICAL STORAGE AREA
SANITARY LANDFILL
0 400 800 1000
SCALE FEET
BEAR CREEK ROAD
20
20 A
19
21
22
PORTAL 17
S-3 TANK FARM #3
S-3 TANK FARM #2
S-3 TANK FARM #1
ELECT TRANSF
BEAR CREEK
9626
9627
9616-6

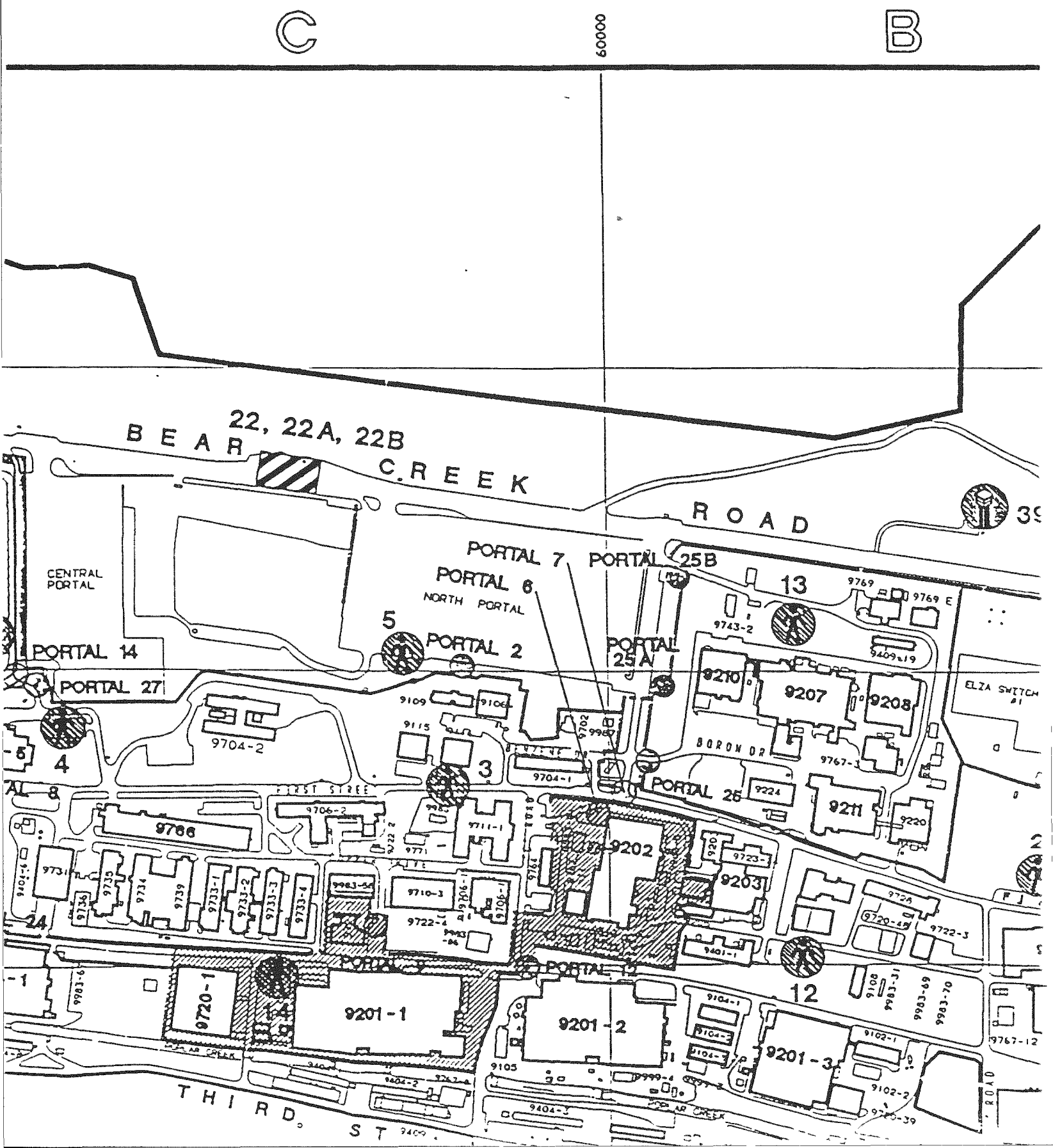
OA

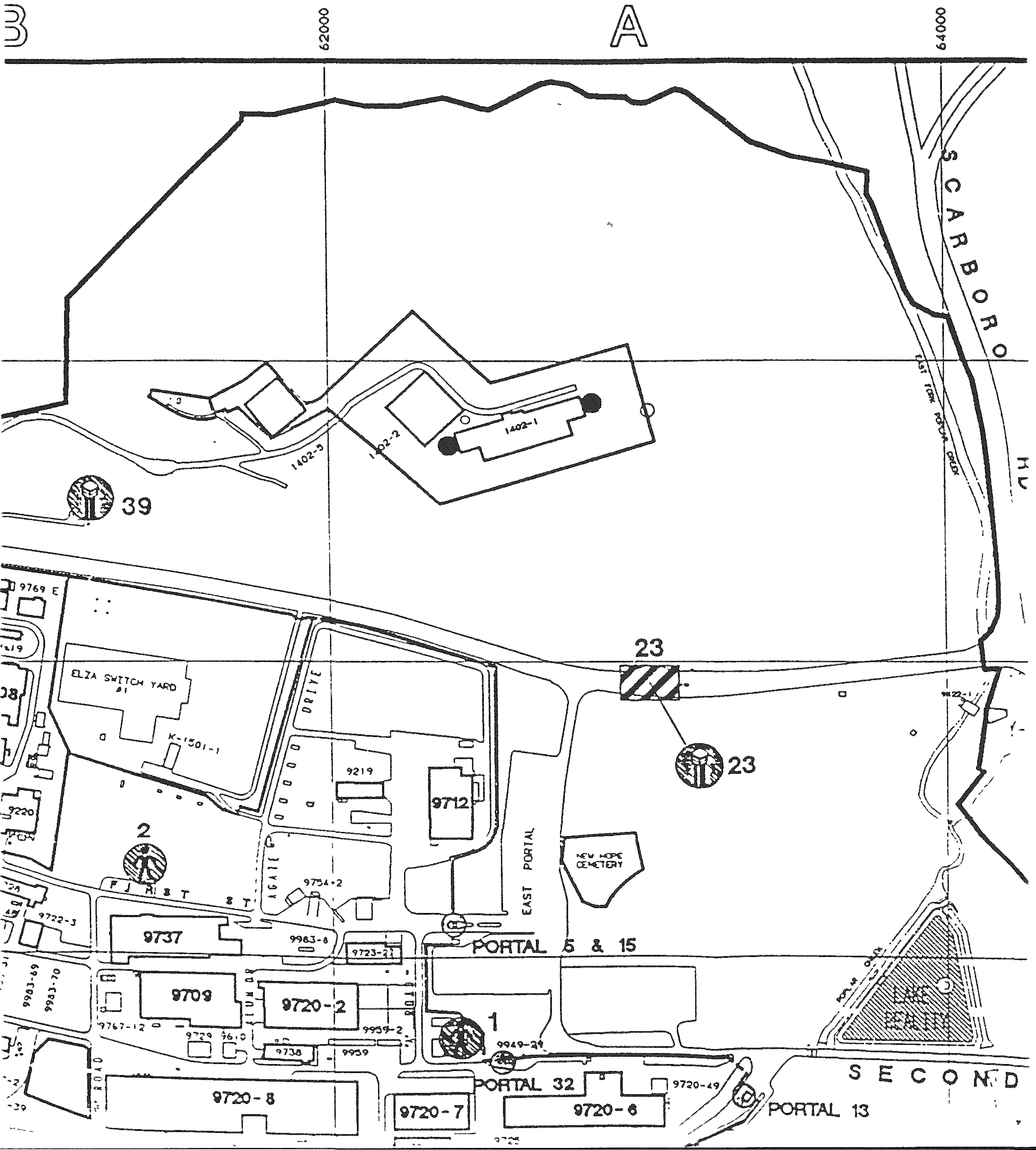

F
54000
E
END
1000
20
18
21
37
9114
9107
BEAR
CREEK
PORTAL
48
PORTAL 1
9626
9627
9420
9831
PORTAL 33
19
47
CONTAMINATED OIL STORAGE IN D
16
F I R S T S T
9201-5
NORTH
9720-22
9204-4
PORTAL 54
9201
9201-5W
9720-16
9720-33
9720-32
9720-13
9720-5
9720-31
9720-28
9720-27
9929-1
9401-4
9828-6
1501-2
9616-9
PORTAL 17
20
10
44
9767-13

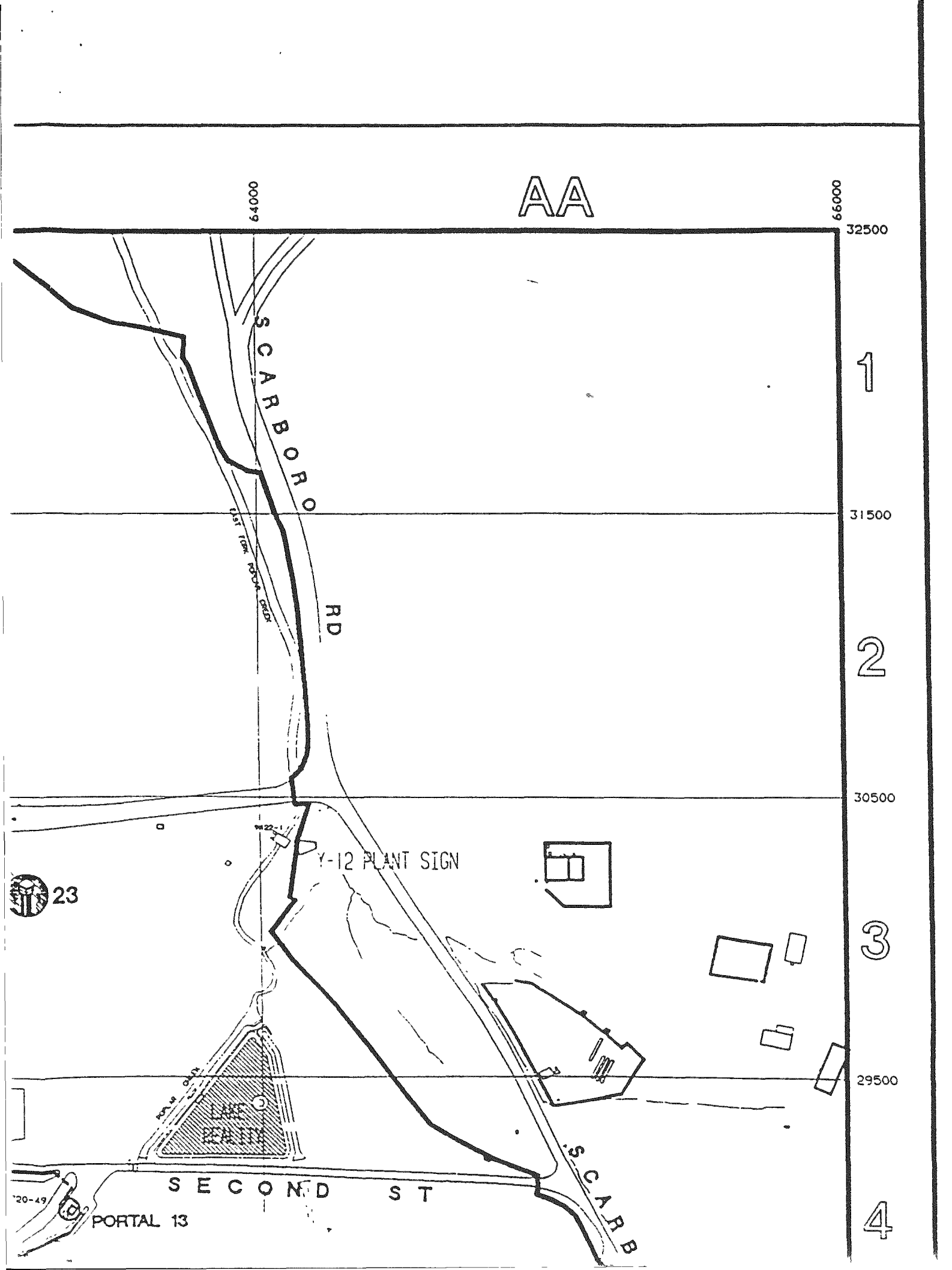
OAK RIDGE Y-12 FAC

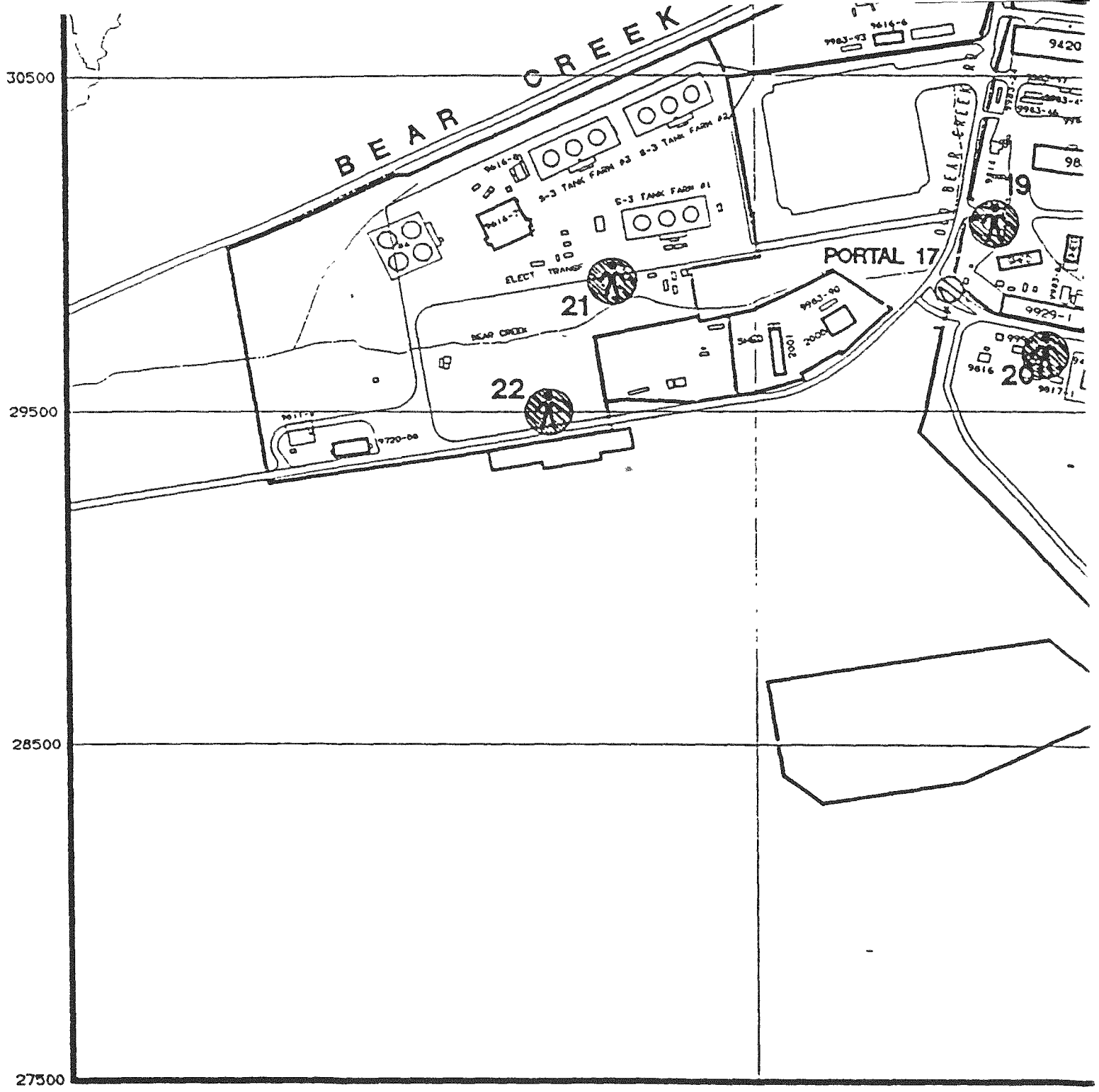


FACILITIES MAP



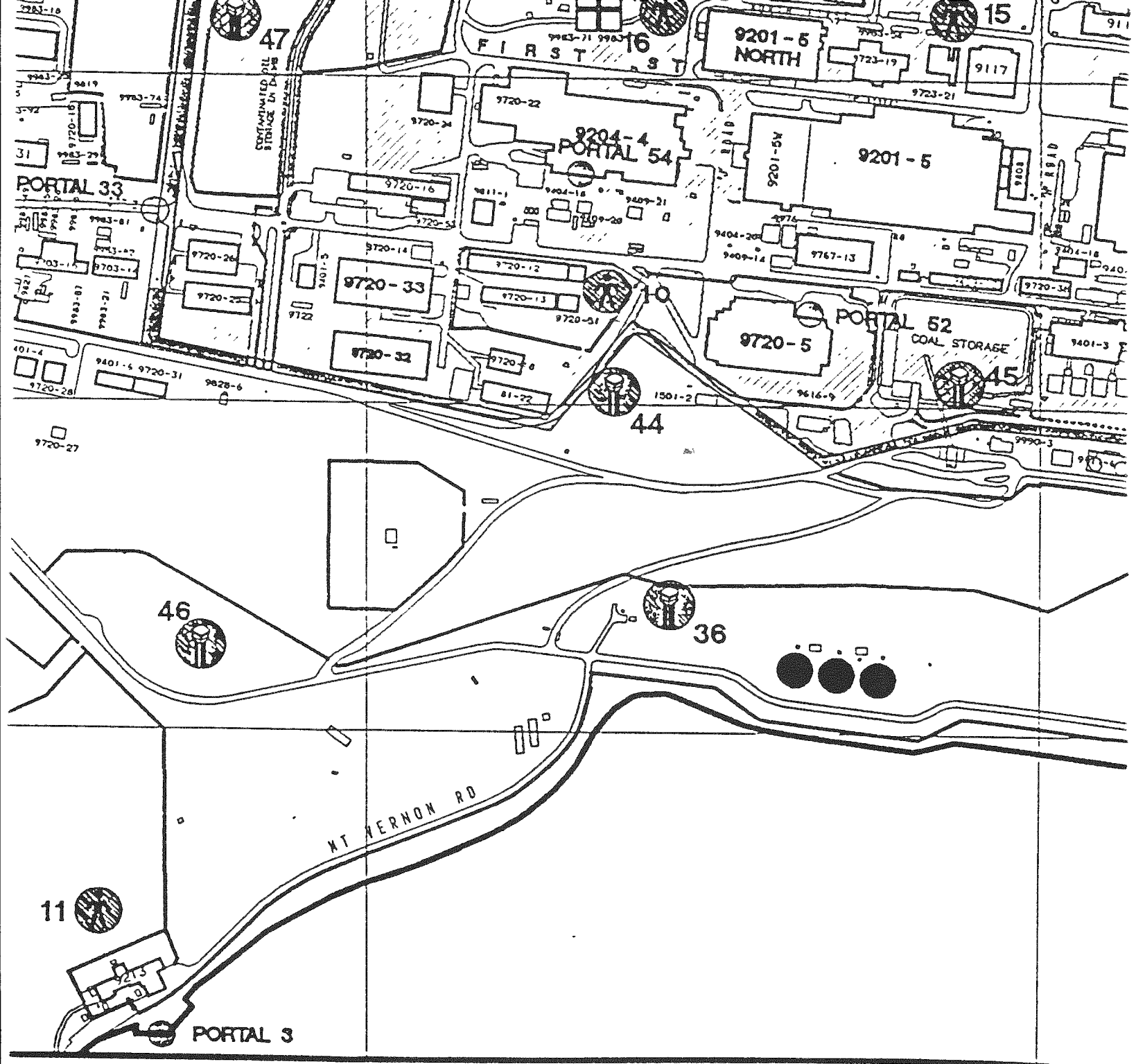

62000
A
64000
SCARBORO
RD
EAST FORK POPLAR CREEK
1402-1
1402-2
1402-3
39
9769 E
ELZA SWITCH YARD #1
K-1501-1
DRIVE
23
23
9219
9712
9220
2
EAST PORTAL
NEW HOPE CEMETERY
FIRST ST
AGATE
9754-2
9722-3
9737
9983-8
9723-21
PORTAL 5 & 15
9983-69
9983-70
9709
9720-2
9767-12
9729
9610
9959-2
1
9949-24
9738
9959
PORTAL 32
9720-49
SECOND
9720-8
9720-7
9720-6
PORTAL 13
LAKE REALITY
POPLAR CREEK

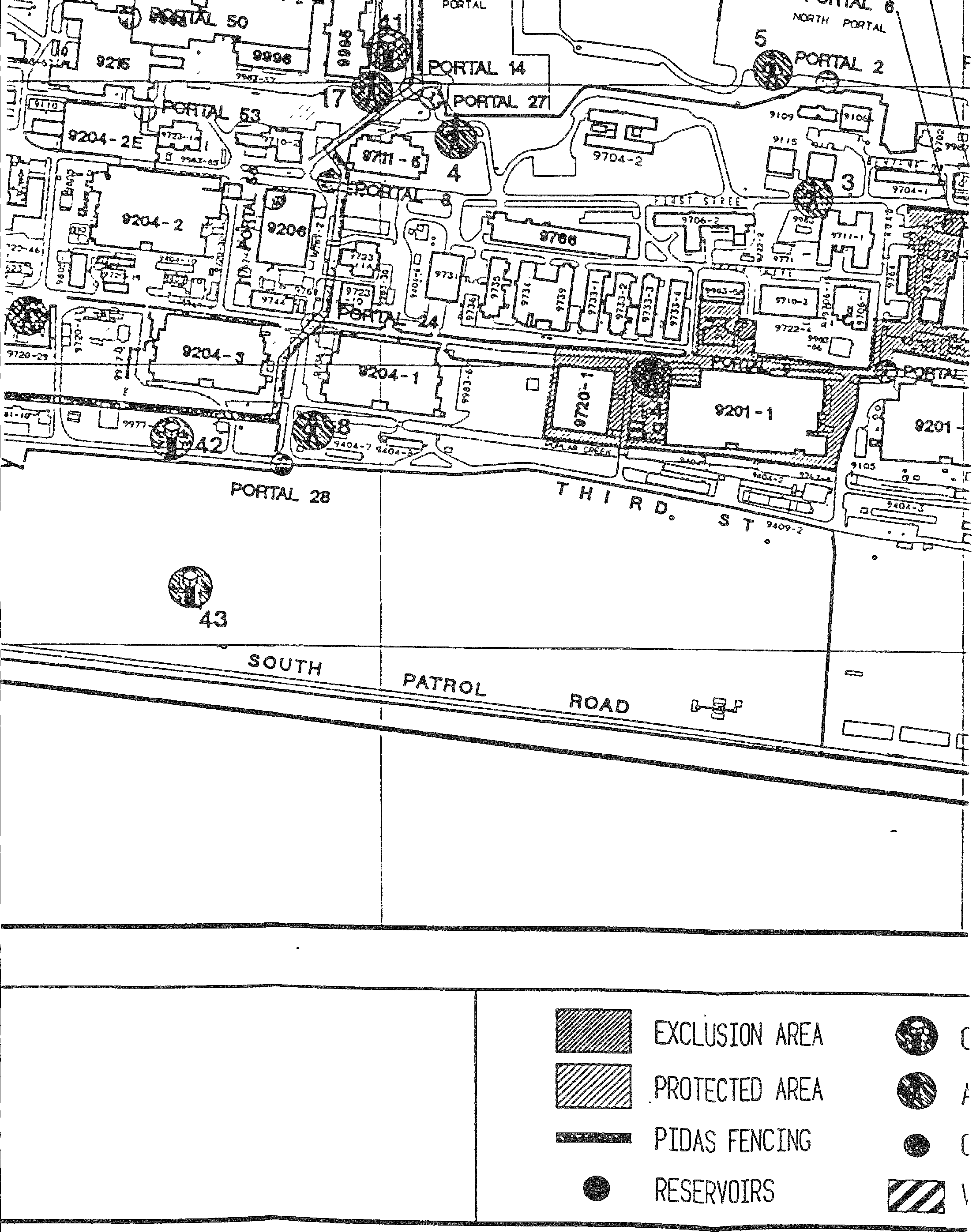

AA
64000
66000
32500
31500
30500
29500
1
2
3
4
SCARBORO RD
EAST FORK POPLAR CREEK
Y-12 PLANT SIGN
23
LAKE REALTY
SECOND ST
PORTAL 13
S CARB



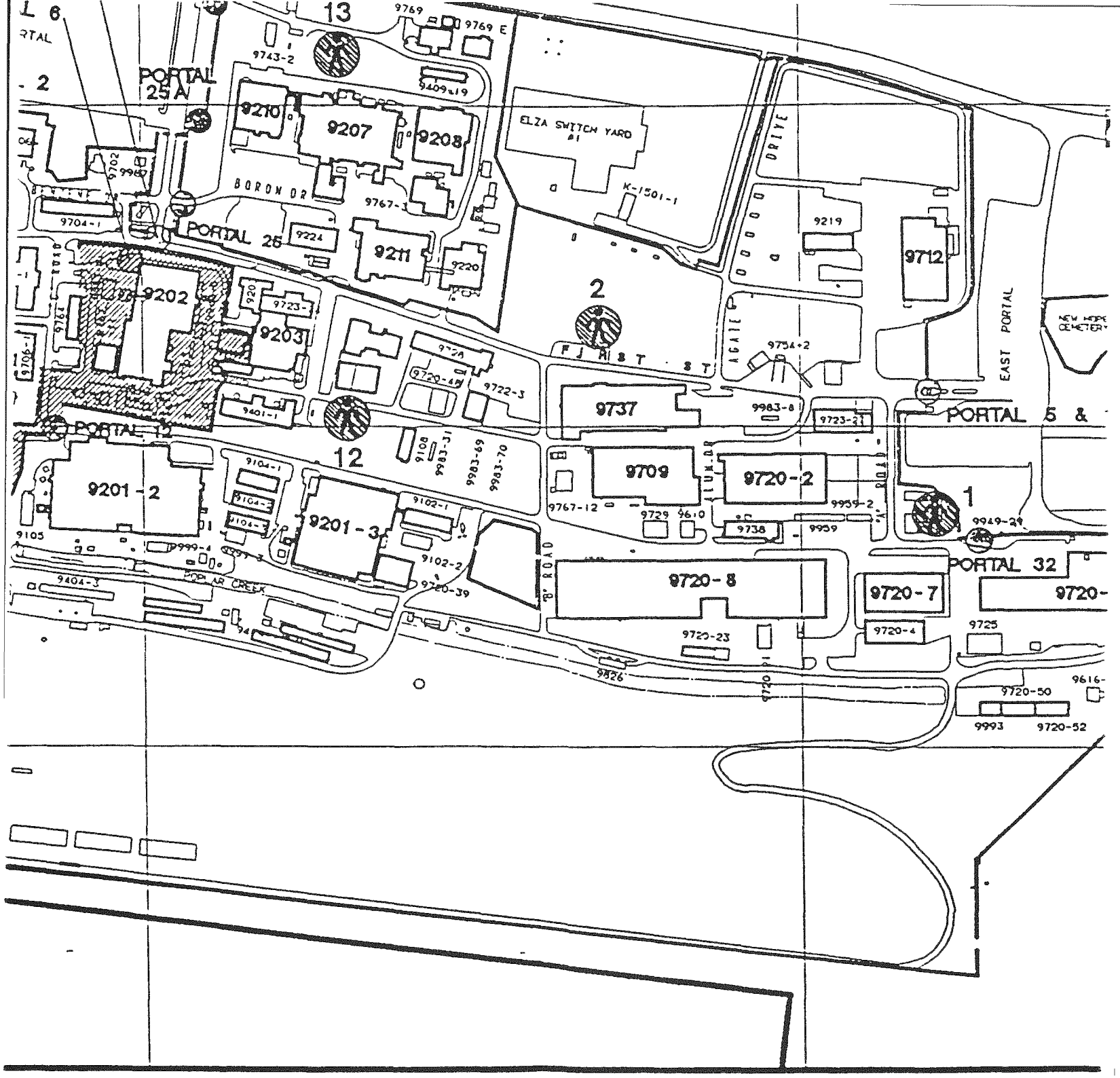
NORTH
TRUE
GRID

THE GRID AND COORDINATES AS SHOWN
REPRESENT THE Y-12 PLANT GRID SYSTEM


47
16
15
FIRST ST
9201-5 NORTH
9204-4
PORTAL 54
9201-5
PORTAL 33
9720-33
9720-5
PORTAL 52
COAL STORAGE
45
44
46
36
MT VERNON RD
11
PORTAL 3



PORTAL 50
PORTAL 14
PORTAL 27
PORTAL 53
PORTAL 8
PORTAL 24
PORTAL 28
PORTAL 2
NORTH PORTAL
9216
9996
9204-2E
9204-2
9206
9204-3
9204-1
9711-5
9704-2
9704-1
9706-2
9766
9731
9734
9739
9733-1
9733-2
9733-3
9733-4
9710-3
9722-4
9720-1
9201-1
9744
9977
9404-7
9720-29
9109
9115
9105
9409-2
9404-3
FIRST STREET
POPLAR CREEK
THIRD ST.
SOUTH PATROL ROAD
4
5
3
17
42
43
EXCLUSION AREA
PROTECTED AREA
PIDAS FENCING
RESERVOIRS



GUARD TOWERS

ASSEMBLY STATIONS

GUARD PORTALS

VEHICULAR CHECK POINTS

FENCING

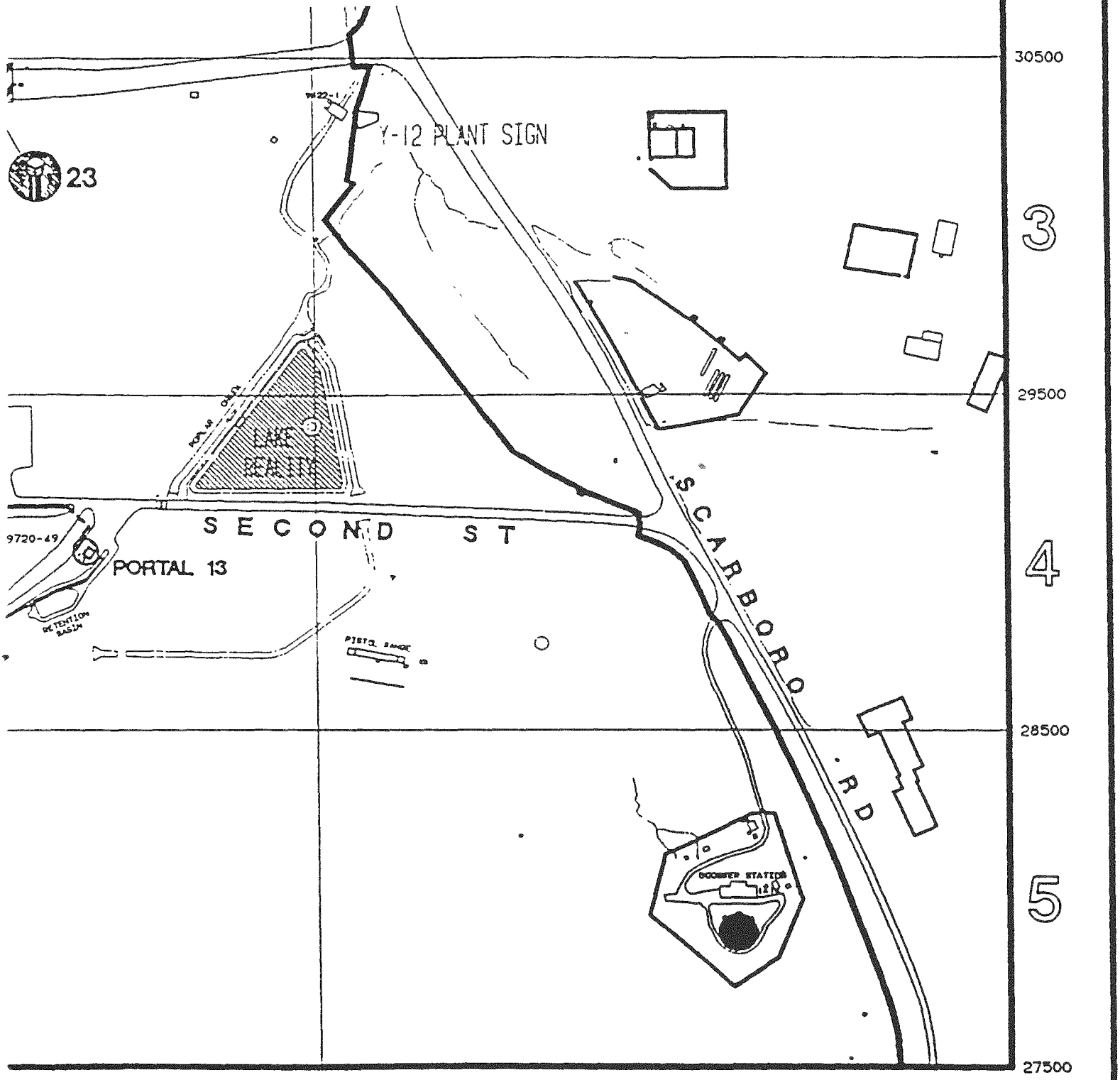
229 FENCING

PES/071/03089

PREPARED BY GEODA

0 400

SCALE



	(REV 2)	MARTIN MARIETTA ENERGY SYSTEMS, INC.
:OUP/JHW	09/15/93	OPERATED FOR THE DEPARTMENT OF ENERGY UNDER U.S.GOVERNMENT CONTRACT DE-AC-05-840R21400 OAK RIDGE, TENNESSEE • PADUCAH, KENTUCKY
1600 FEET		# Y-12 PLANT # EMERGENCY FACILITIES DIRECTORY

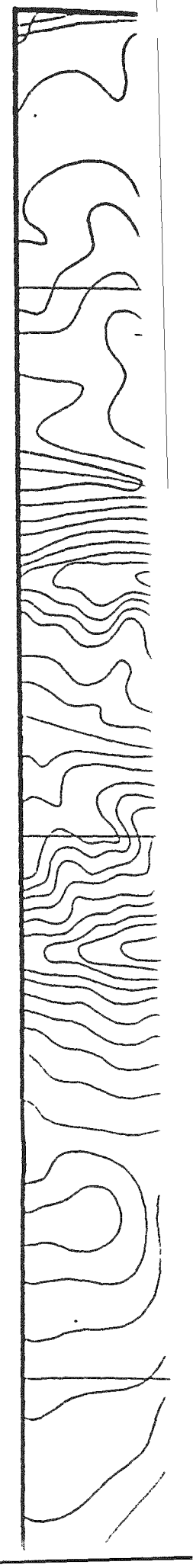
BEAR CREEK BURIAL GROUNDS

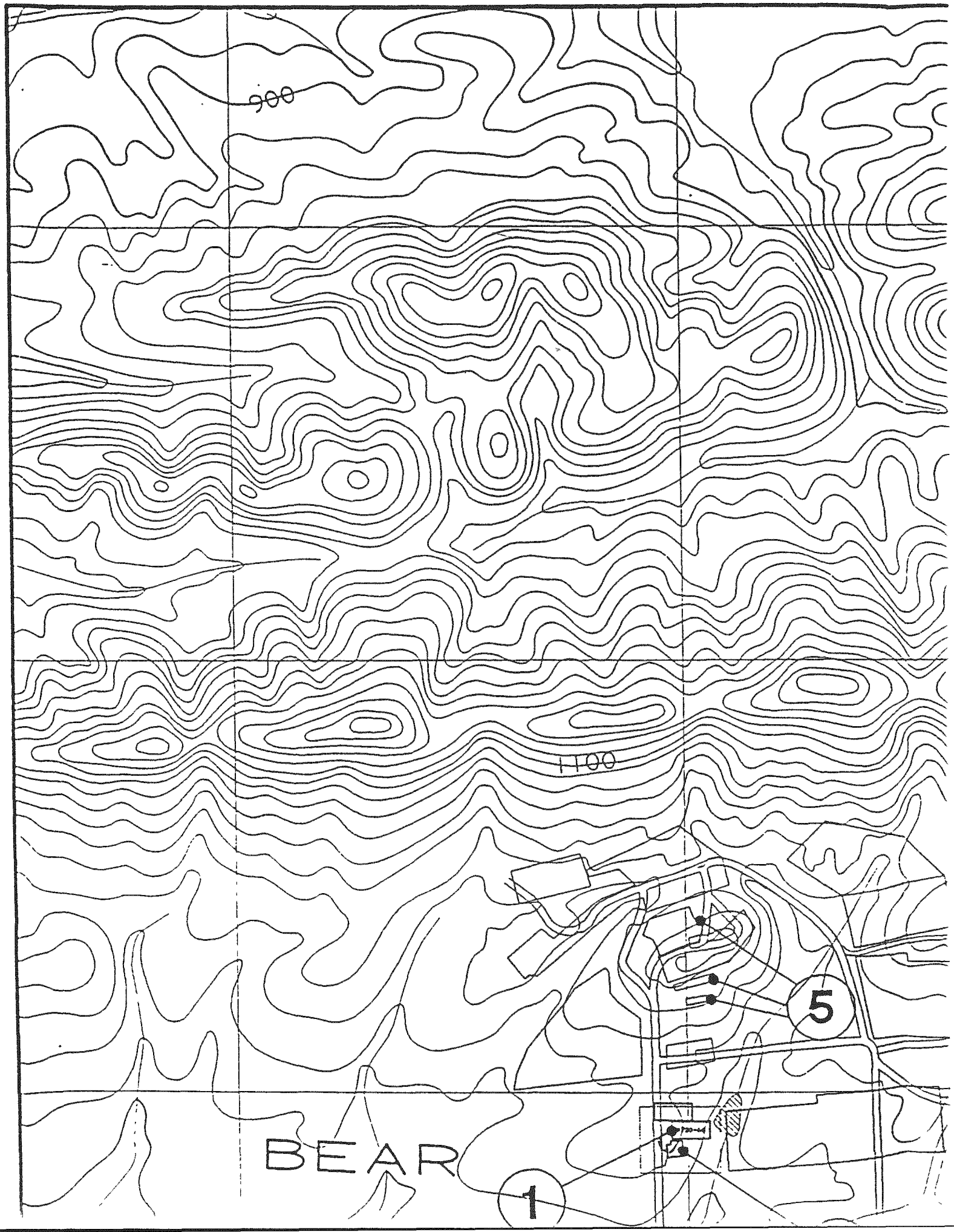
LEGEND

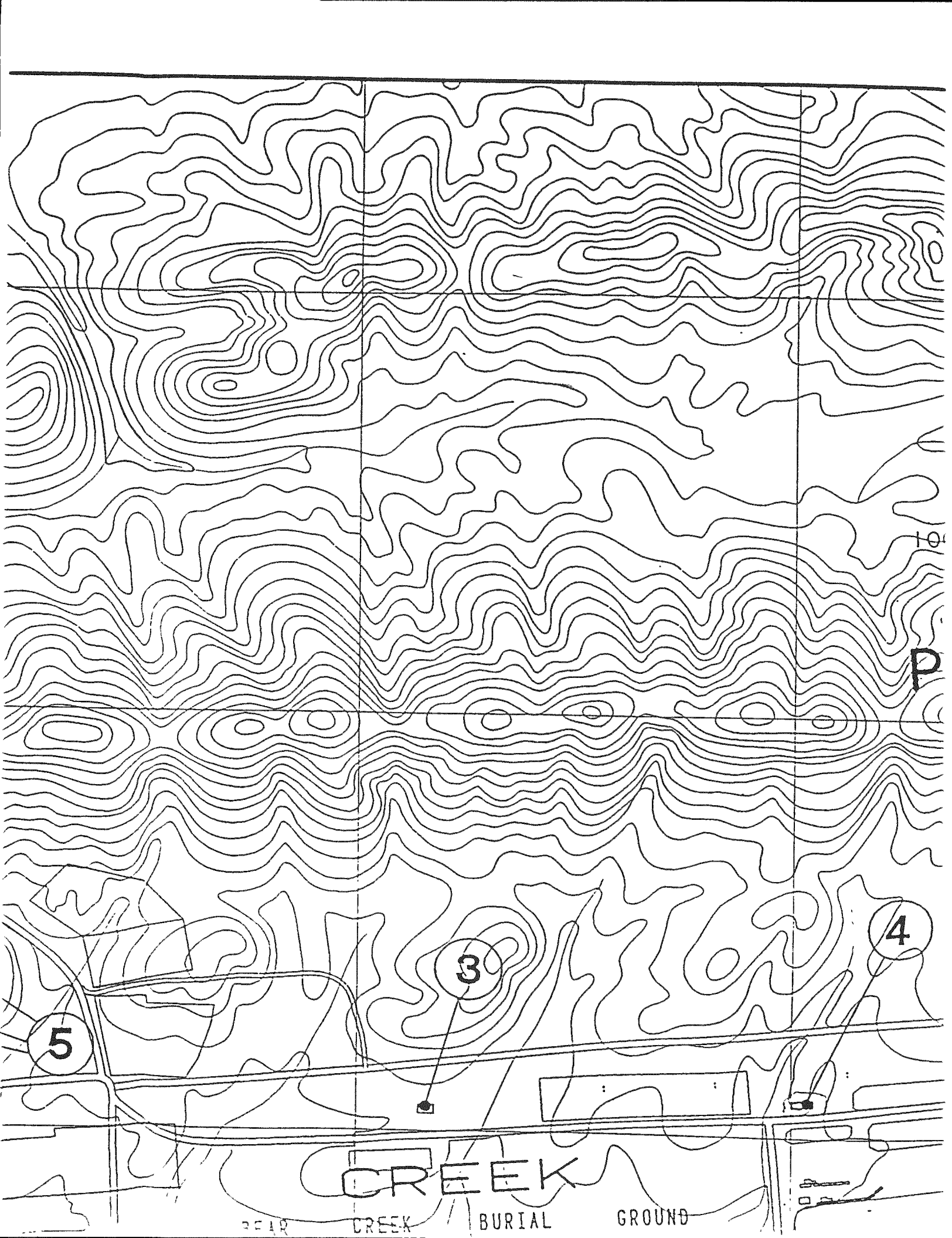
1. DARA SOLIDS STORAGE UNIT
2. DARA LIQUID STORAGE & TREATMENT UNIT
3. INTERIM REACTIVE WASTE TREATMENT AREA
4. OIL LANDFARM SOILS CONTAINMENT PAD
5. WALK-IN PITS
6. LIQUID ORGANIC SOLVENT STORAGE UNIT

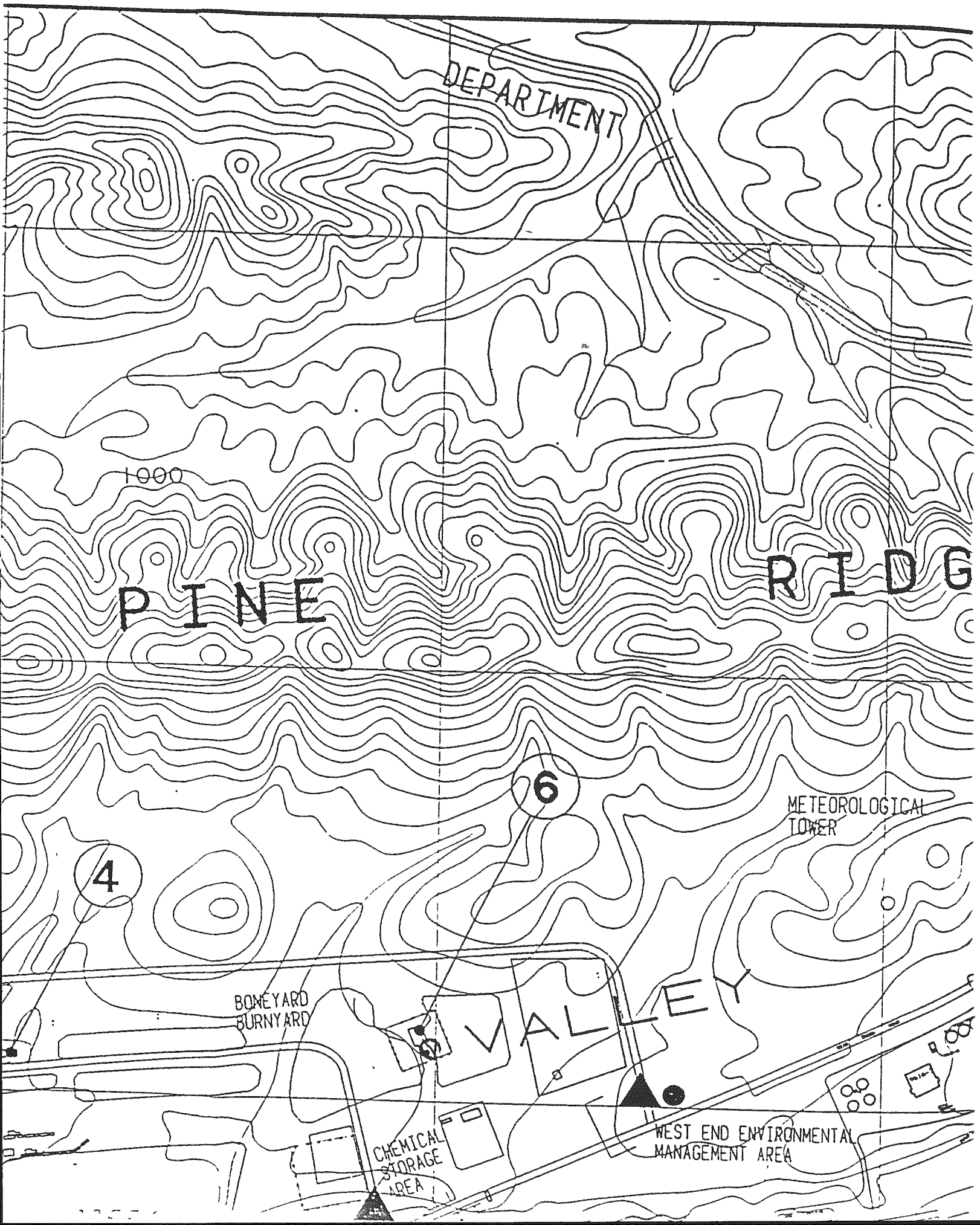
GAMEWELL BOX LOCATIONS

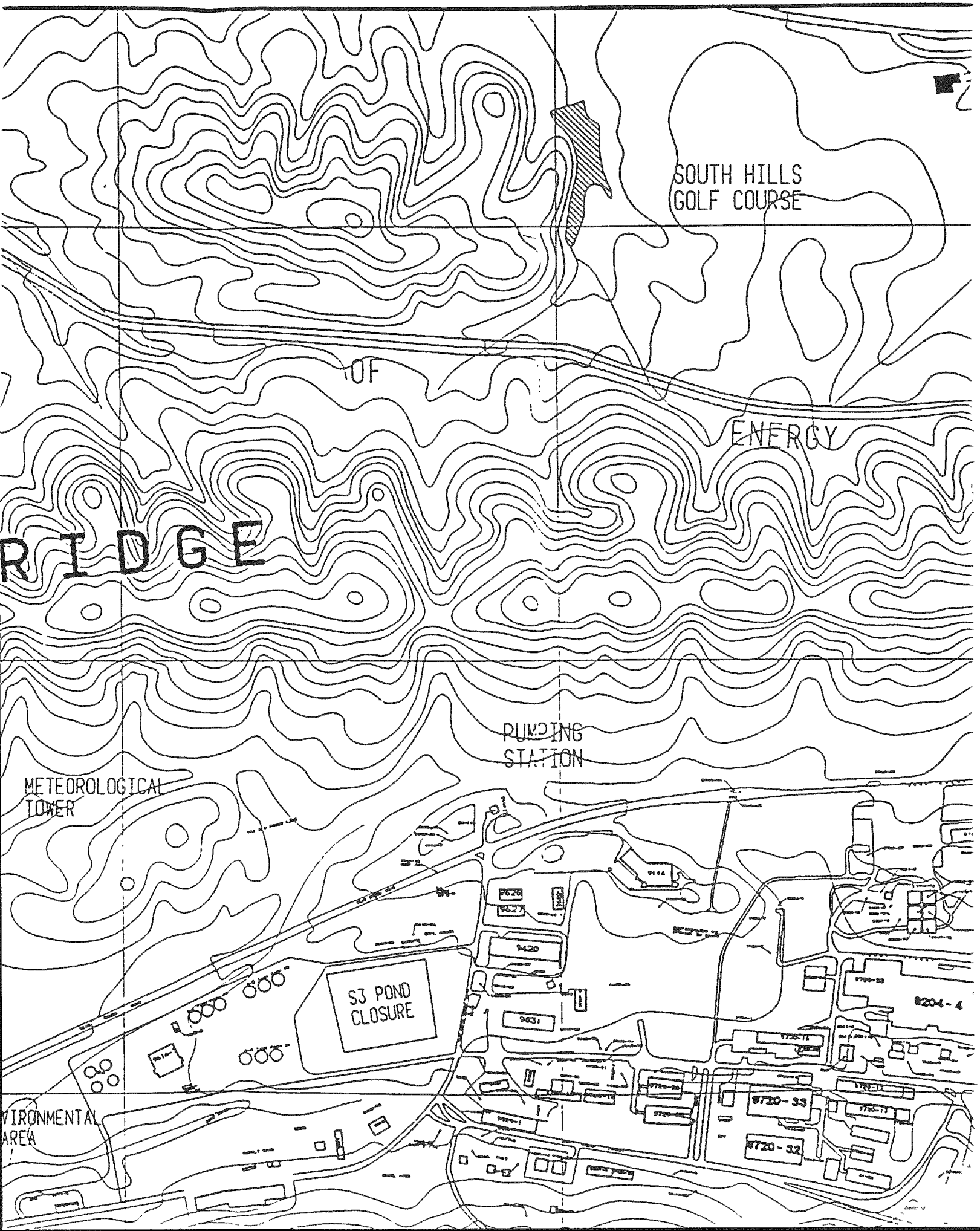
ACCESS CONTROL GATES




900
1100
5
BEAR
1


3
4
5
CREEK
BEAR CREEK BURIAL GROUND


DEPARTMENT
1000
PINE
RIDG
6
METEOROLOGICAL
TOWER
4
BONEYARD
BURNYARD
VALLEY
CHEMICAL
STORAGE
AREA
WEST END ENVIRONMENTAL
MANAGEMENT AREA


SOUTH HILLS
GOLF COURSE
OF
ENERGY
RIDGE
PUMPING
STATION
METEOROLOGICAL
TOWER
S3 POND
CLOSURE
9420
9631
9720-33
9720-32
8204-4
VIRONMENTAL
AREA

LEGEND

1. DARA SOLIDS STORAGE UNIT
2. DARA LIQUID STORAGE & TREATMENT UNIT
3. INTERIM REACTIVE WASTE TREATMENT AREA
4. OIL LANDFARM SOILS CONTAINMENT PAD
5. WALK-IN PITS
6. LIQUID ORGANIC SOLVENT STORAGE UNIT

GAMEWELL BOX LOCATIONS

ACCESS CONTROL GATES

DOE 229 BOUNDARY

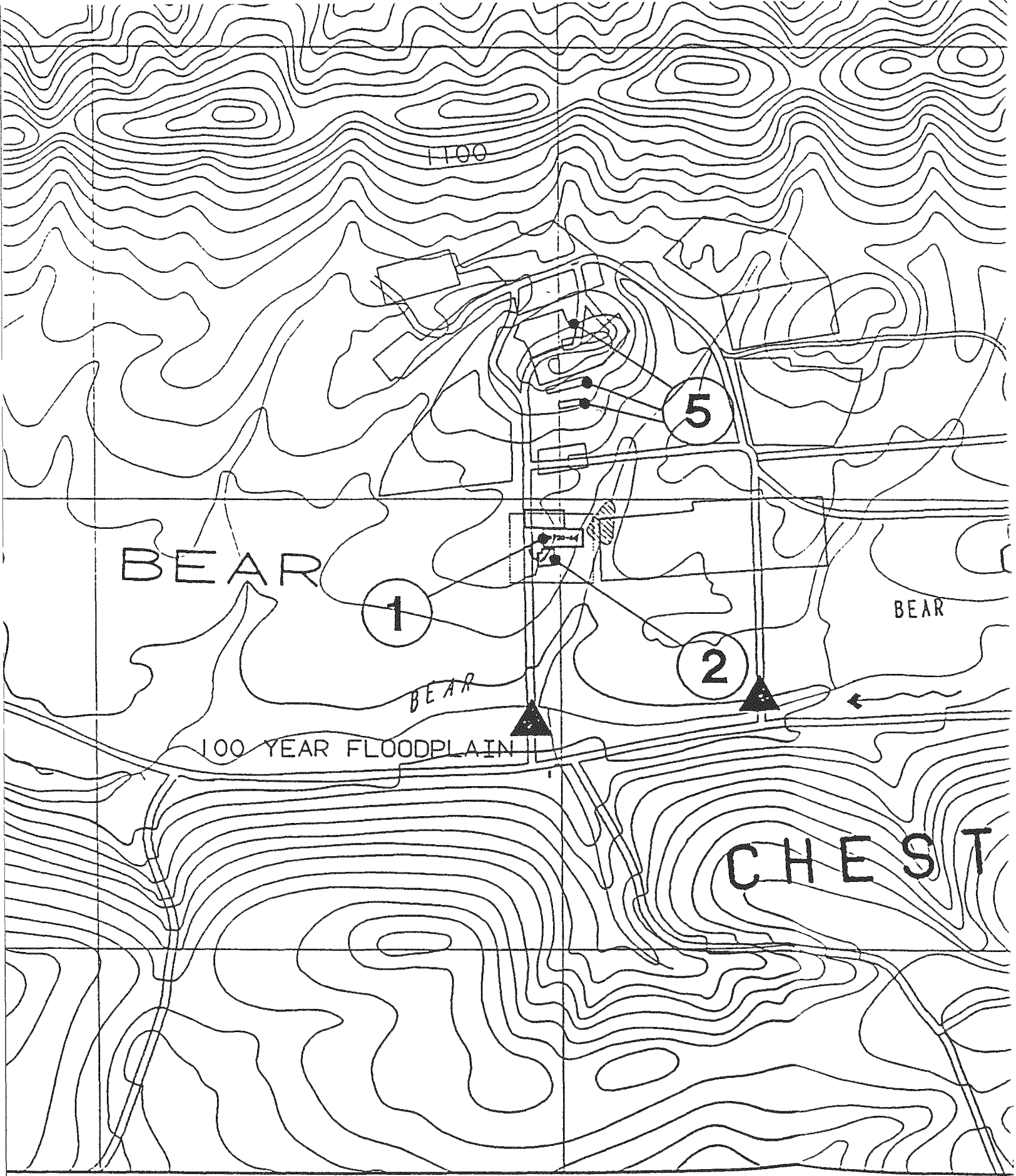
MARTIN MARIETTA

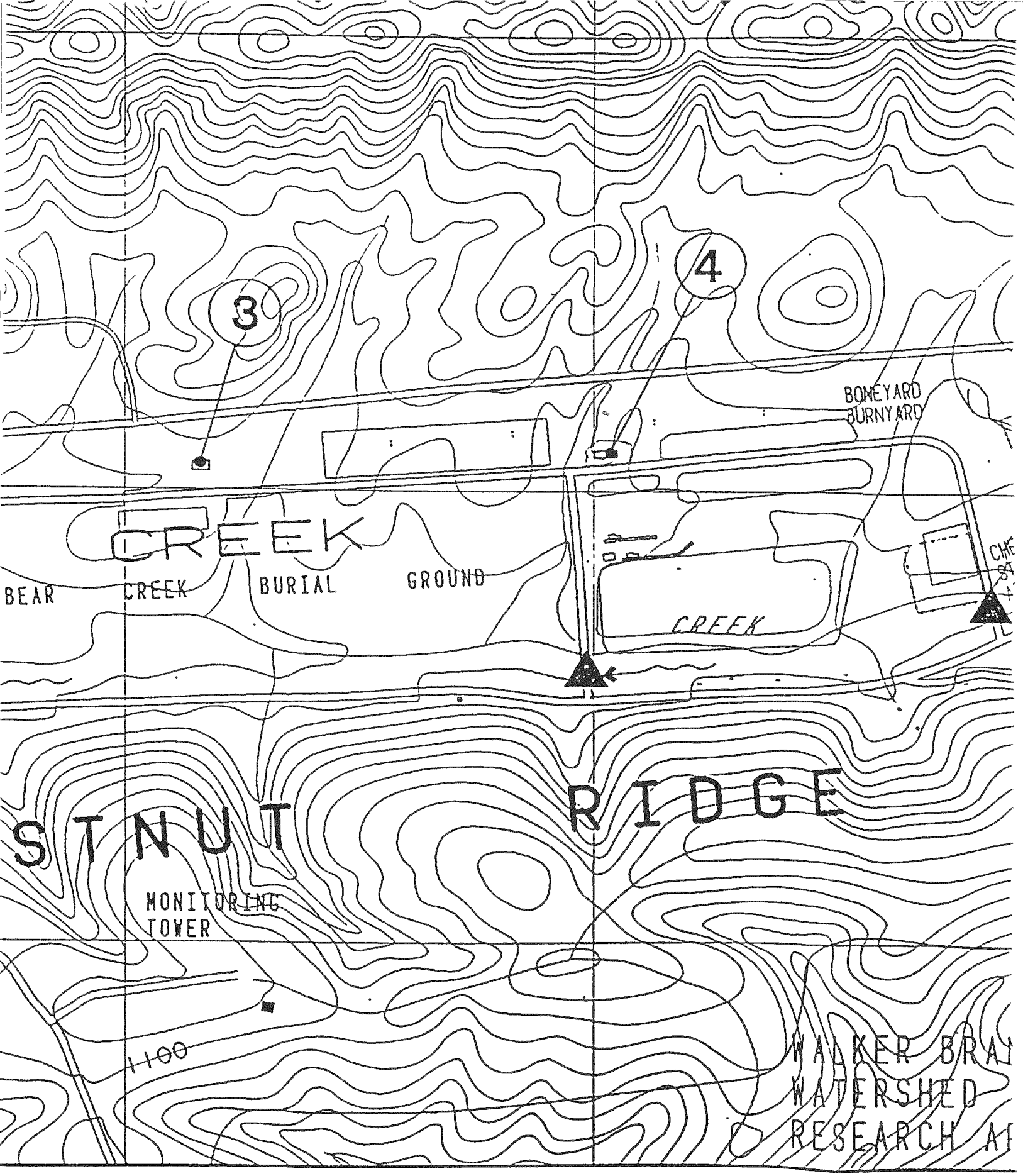
Y-12 PLANT WASTE UNITS

SFP/284/081192	(REV 1)
PREPARED BY PES GEODATA GROUP	11/18/93

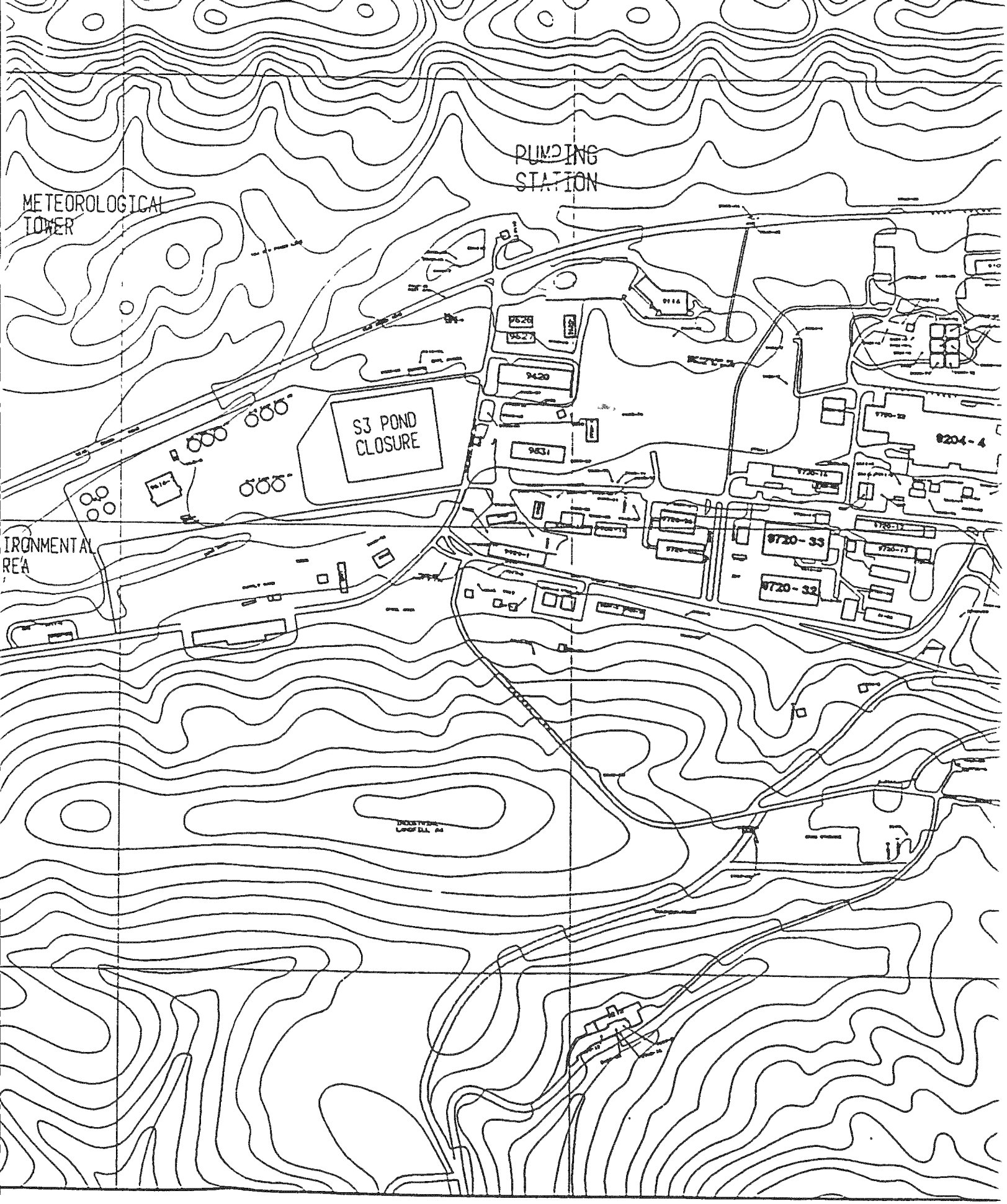
NORTH
TRUE GRID

0 200 400 800
SCALE FEET


1100
5
BEAR
1
BEAR
2
BEAR
100 YEAR FLOODPLAIN
CHEST


3
4
BONEYARD
BURNYARD
CREEK
BEAR
CREEK
BURIAL
GROUND
CREEK
STNUT
RIDGE
MONITORING
TOWER
1100
WALKER BRA
WATERSHED
RESEARCH A


INE
6
METEOROLOGICAL TOWER
VALLEY
BONEYARD BURNYARD
CHEMICAL STORAGE AREA
WEST END ENVIRONMENTAL MANAGEMENT AREA
GE
WALKER BRANCH WATERSHED RESEARCH AREA


PUMPING STATION
METEOROLOGICAL TOWER
S3 POND CLOSURE
IRONMENTAL
REA
9720-33
9720-32
9204-4

OAK RIDGE Y-12 PLANT

EVACUATION ROUTES

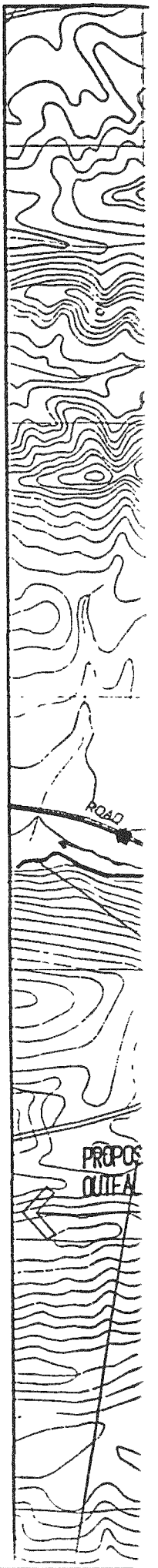
APPLICATION LINE	EPA PROCESS CODE	DESCRIPTION
1	T04 S01	CYANIDE TREATMENT UNIT
2	T02	KERR HOLLOW QUARRY TREATMENT UNIT
3	S02	GARAGE UNDERGROUND TANKS
4	D80	WALK-IN PITS
5	S01	INTERIM DRUM YARD
6	S01	BUILDING 9720-9 STORAGE UNIT
7	S01	RCRA & MIXED WASTE STORAGE & STAGING BUILDING 9720-31
8	S02	BUILDING 9811-1 RCRA TANK STORAGE UNIT
9	S01	BUILDING 9811-1 RCRA CONTAINER STORAGE UNIT
10	S02 S01	WASTE OIL/SOLVENT STORAGE UNIT
11	S02 S01	LIQ. ORGANIC SOLVENT STOR. UNIT
12	S03	EAST CHESTNUT RIDGE WASTE PILE
13	S01	CONTAINERIZED WASTE STORAGE AREA
14	S01	CLASSIFIED CONTAINER STORAGE UNIT BUILDING 9720-25
15	S03	OIL LANDFARM SOILS CONTAINMT. PAD
16	S03	DISPOSAL AREA REMEDIAL ACTION (DARA) SOLIDS STORAGE UNIT
17	T01 S01	URANIUM TREATMENT UNIT
18	T04	INTERIM REACTIVE WASTE TREATMT AREA
19	S01	BUILDING 9720-12 CLASSIFIED CONTAINER STORAGE AREA
20	S01	RCRA AND PCB CONTAINER STORAGE AREA, BUILDING 9720-58
21	S01	BUILDING 9201-4 CONTAINER STORAGE AREA
22	S01	BUILDING 9206 CONTAINER STORAGE AREA
23	S01	BUILDING 9212 CONTAINER STORAGE AREA
24	S02	BLDG 9409-5 STORAGE UNIT
25	S01	BLDG 9720-32 PRODUCTION WASTE STORAGE UNIT (FUTURE)
26	S01	BLDG 9720-59 CLASSIFIED WASTE STORAGE UNIT (FUTURE)
27	S01	OAK RIDGE RESERVATION STORAGE UNITS (FUTURE)

LEGEND

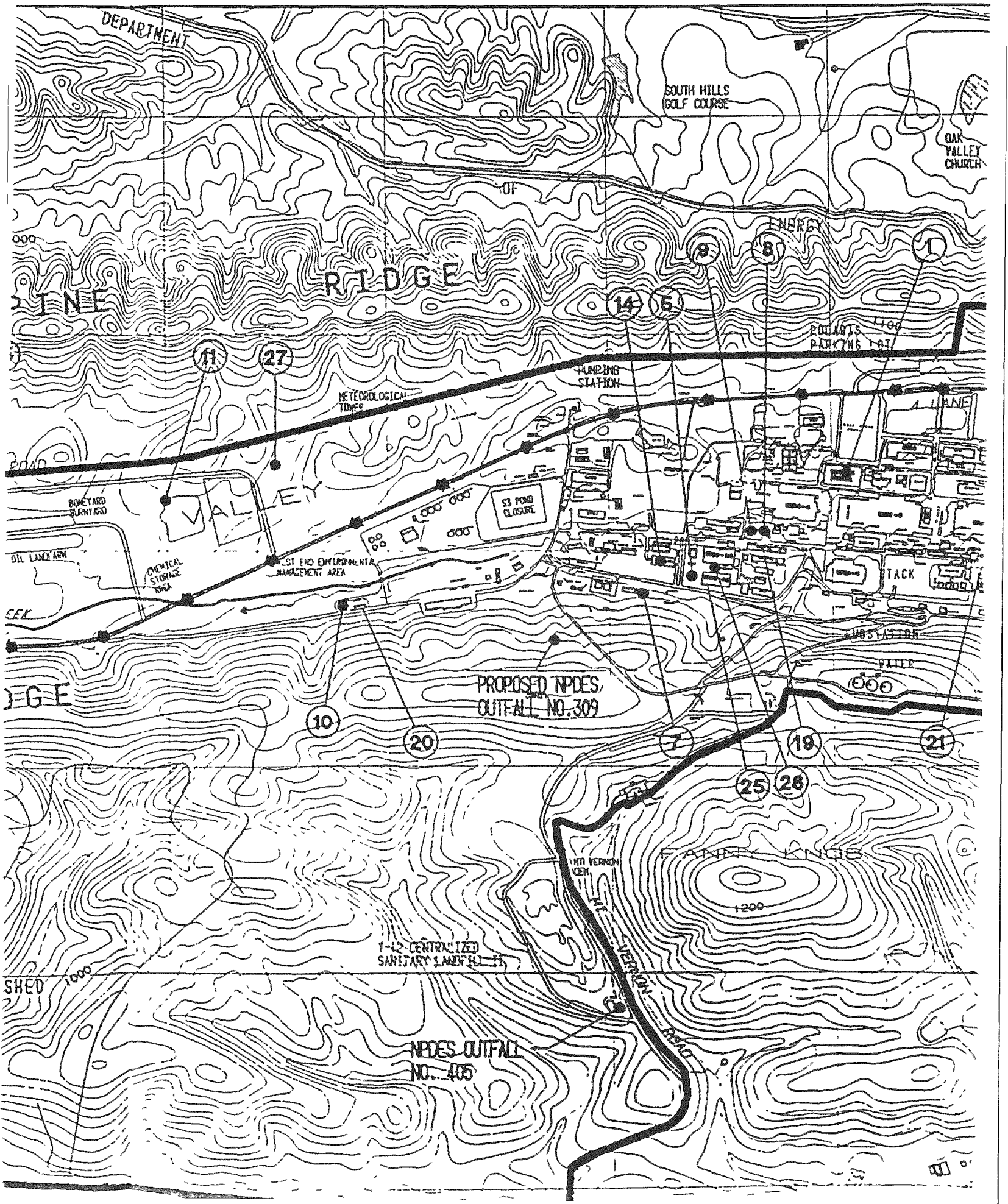
——— BEAR CREEK ROAD

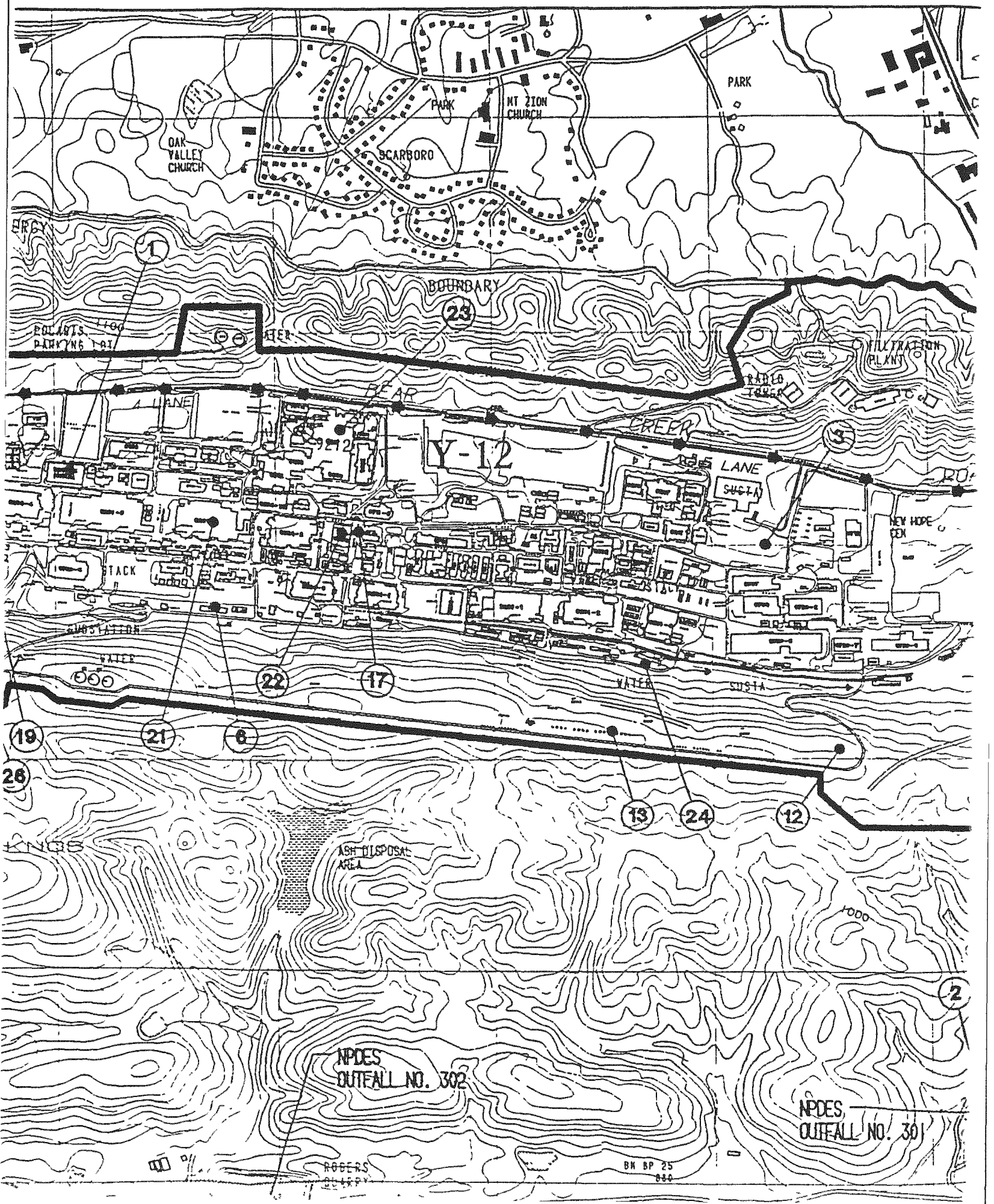
SCARBORO ROAD

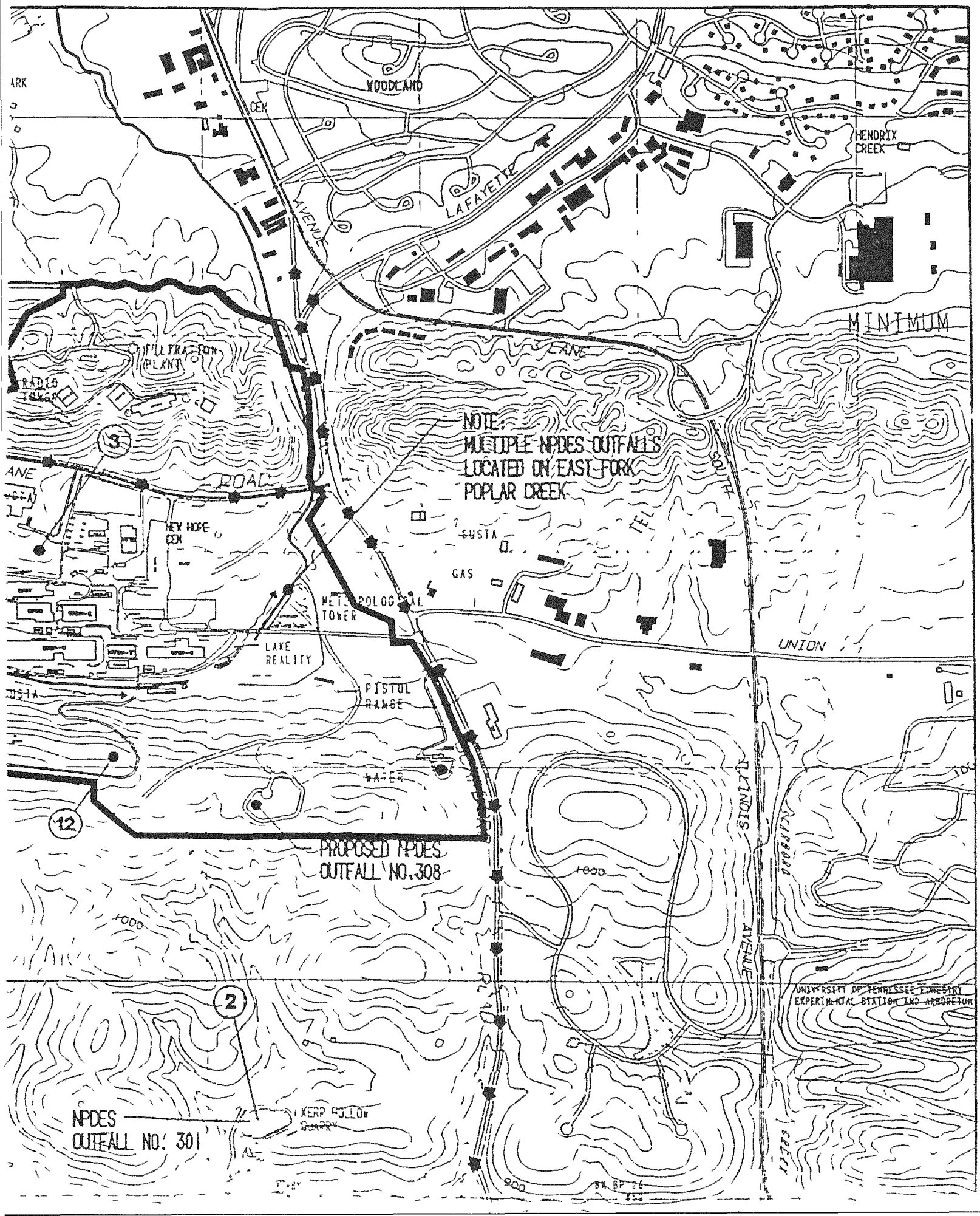
➡ TYPICAL EVACUATION ROUTE




900
1000
PIN
18
15
4
1100
BURIAL GROUND
BEAR
CREEK
16
BEAR CREEK BURIAL GROUND
OIL LEASE ARM
CREEK
ROAD
BEAR
CHESTNUT
RIDGE
MONITORING TOWER
NOTE:
MULTIPLE NPDES OUTFALLS
LOCATED ON BEAR CREEK
1100
PROPOSED NPDES
OUTFALL NO. 307
SILO
WALKER BRANCH WATERSHED
RESEARCH AREA
900


DEPARTMENT
SOUTH HILLS
GOLF COURSE
OAK
VALLEY
CHURCH
RIDGE
ENERGY
PUMPING
STATION
METEOROLOGICAL
TOWER
BONEYARD
BURNYARD
VALLEY
OIL LANDFARM
CHEMICAL
STORAGE
AREA
ST END ENVIRONMENTAL
MANAGEMENT AREA
S3 POND
CLOSURE
TACK
SUBSTATION
WATER
PROPOSED NPDES
OUTFALL NO. 309
MT VERNON
OEM
1200
1-42 CENTRALIZED
SANITARY LANDFILL II
NPDES OUTFALL
NO. 405
VERNON
ROAD
11
27
14
5
8
8
1
10
20
7
19
21
25
26

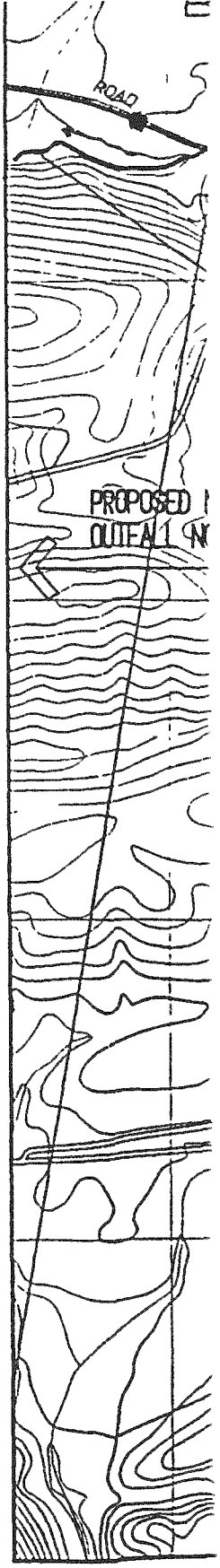

PARK
MT ZION CHURCH
OAK VALLEY CHURCH
SCARBORO
PARK
BOUNDARY
23
1
PARKING LOT
FILTRATION PLANT
RADIO TOWER
BEAR CREEK
Y-12
LANE
SUSTA
NEW HOPE
STACK
SUBSTATION
WATER
22
17
19
21
6
26
13
24
12
ASH DISPOSAL AREA
2
NPDES OUTFALL NO. 302
NPDES OUTFALL NO. 301
ROGERS
BM BP 25


WOODLAND
HENDRIX CREEK
LAFAYETTE
AVENUE
MINIMUM
LANE
FILTRATION PLANT
RADIO TOWER
3
ROAD
NEW HOPE CEM
NOTE:
MULTIPLE NPDES OUTFALLS LOCATED ON EAST FORK POPLAR CREEK
SOUTH
TEL
GUSTA
GAS
METEOROLOGICAL TOWER
UNION
LAKE REALITY
PISTOL RANGE
WATER
12
PROPOSED NPDES OUTFALL NO. 308
SCARBORO
SCENIC
AVENUE
UNIVERSITY OF TENNESSEE FORESTRY EXPERIMENTAL STATION AND ARBORETUM
2
NPDES OUTFALL NO. 301
KERR HOLLOW QUARRY
900

11	S02 S01	LIQ. ORGANIC SOLVENT STOR. UNIT
12	S03	EAST CHESTNUT RIDGE WASTE PILE
13	S01	CONTAINERIZED WASTE STORAGE AREA
14	S01	CLASSIFIED CONTAINER STORAGE UNIT BUILDING 9720-25
15	S03	OIL LANDFARM SOILS CONTAINMT. PAD
16	S03	DISPOSAL AREA REMEDIAL ACTION (DARA) SOLIDS STORAGE UNIT
17	T01 S01	URANIUM TREATMENT UNIT
18	T04	INTERIM REACTIVE WASTE TREATMT AREA
19	S01	BUILDING 9720-12 CLASSIFIED CONTAINER STORAGE AREA
20	S01	RCRA AND PCB CONTAINER STORAGE AREA, BUILDING 9720-58
21	S01	BUILDING 9201-4 CONTAINER STORAGE AREA
22	S01	BUILDING 9206 CONTAINER STORAGE AREA
23	S01	BUILDING 9212 CONTAINER STORAGE AREA
24	S02	BLDG 9409-5 STORAGE UNIT
25	S01	BLDG 9720-32 PRODUCTION WASTE STORAGE UNIT (FUTURE)
26	S01	BLDG 9720-59 CLASSIFIED WASTE STORAGE UNIT (FUTURE)
27	S01	OAK RIDGE RESERVATION STORAGE UNITS (FUTURE)

LEGEND

- BEAR CREEK ROAD
- SCARBORO ROAD
- TYPICAL EVACUATION ROUTE
- 229 SITE BOUNDARY
- DOE RESERVATION BOUNDARY
- ANDERSON/ROANE COUNTY LINE



MARTIN MARIETTA ENERGY SYSTEMS, INC.

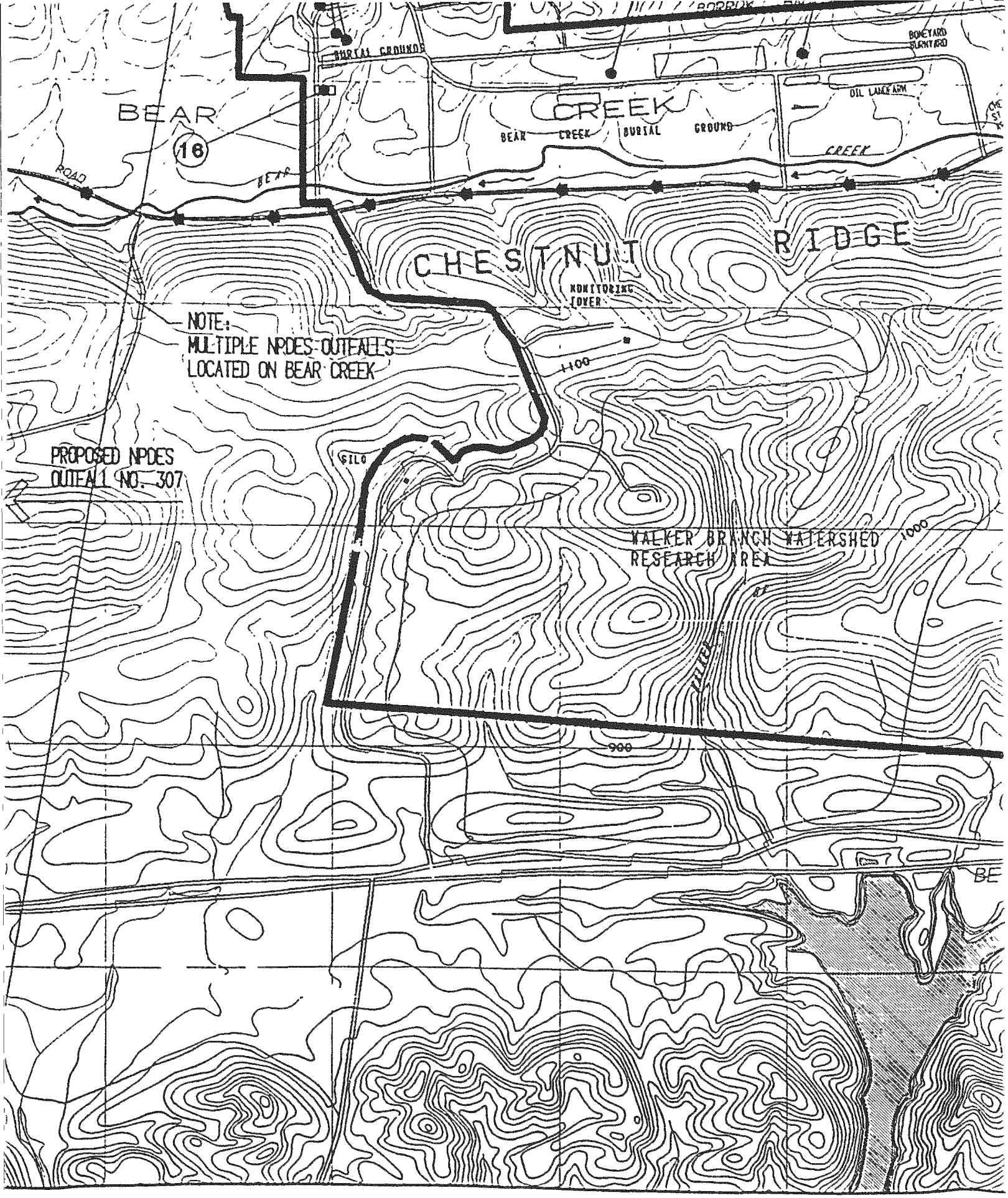
Y-12 PLANT EVACUATION ROUTES

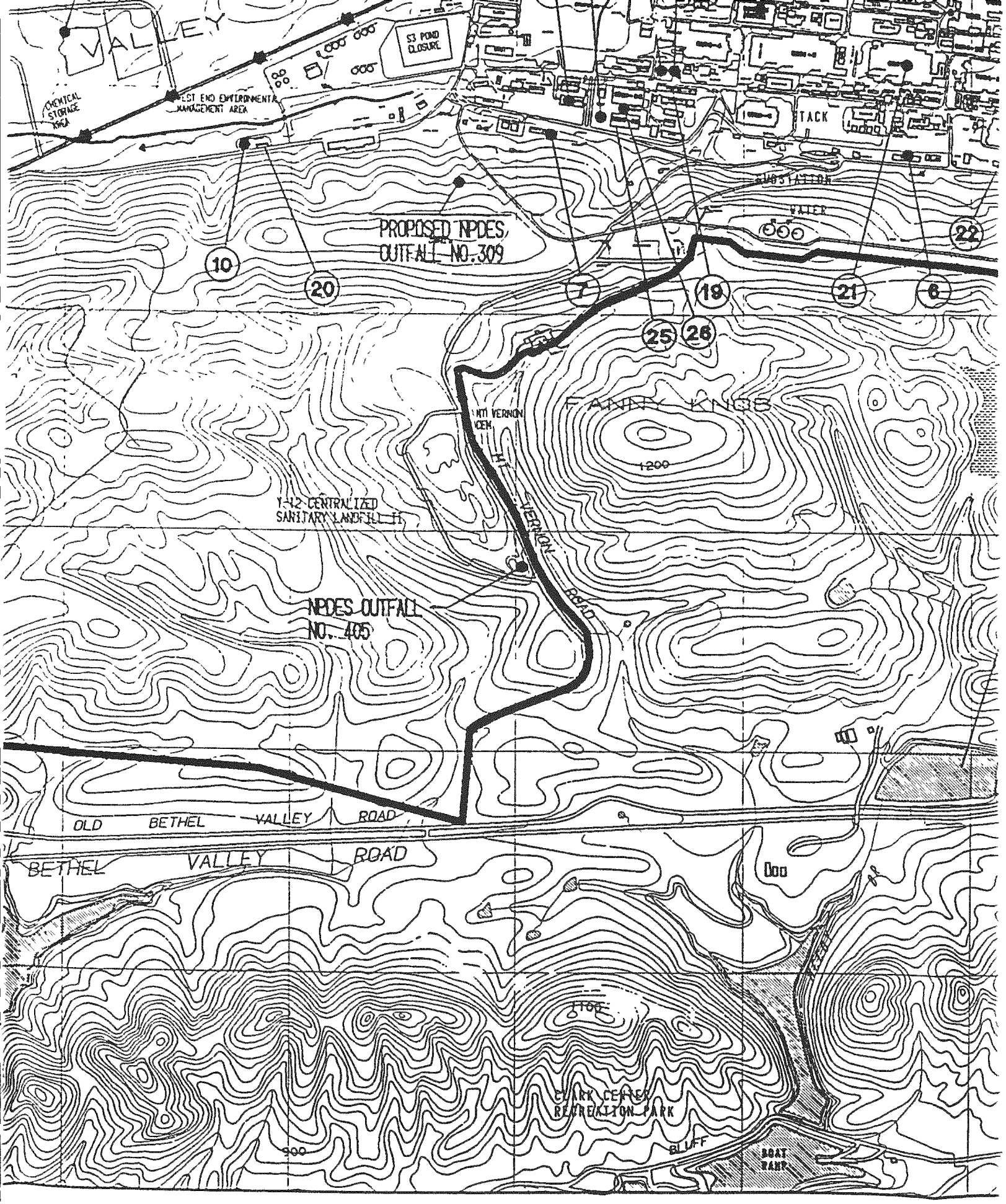
SCALE 0 400 800 1600 FEET

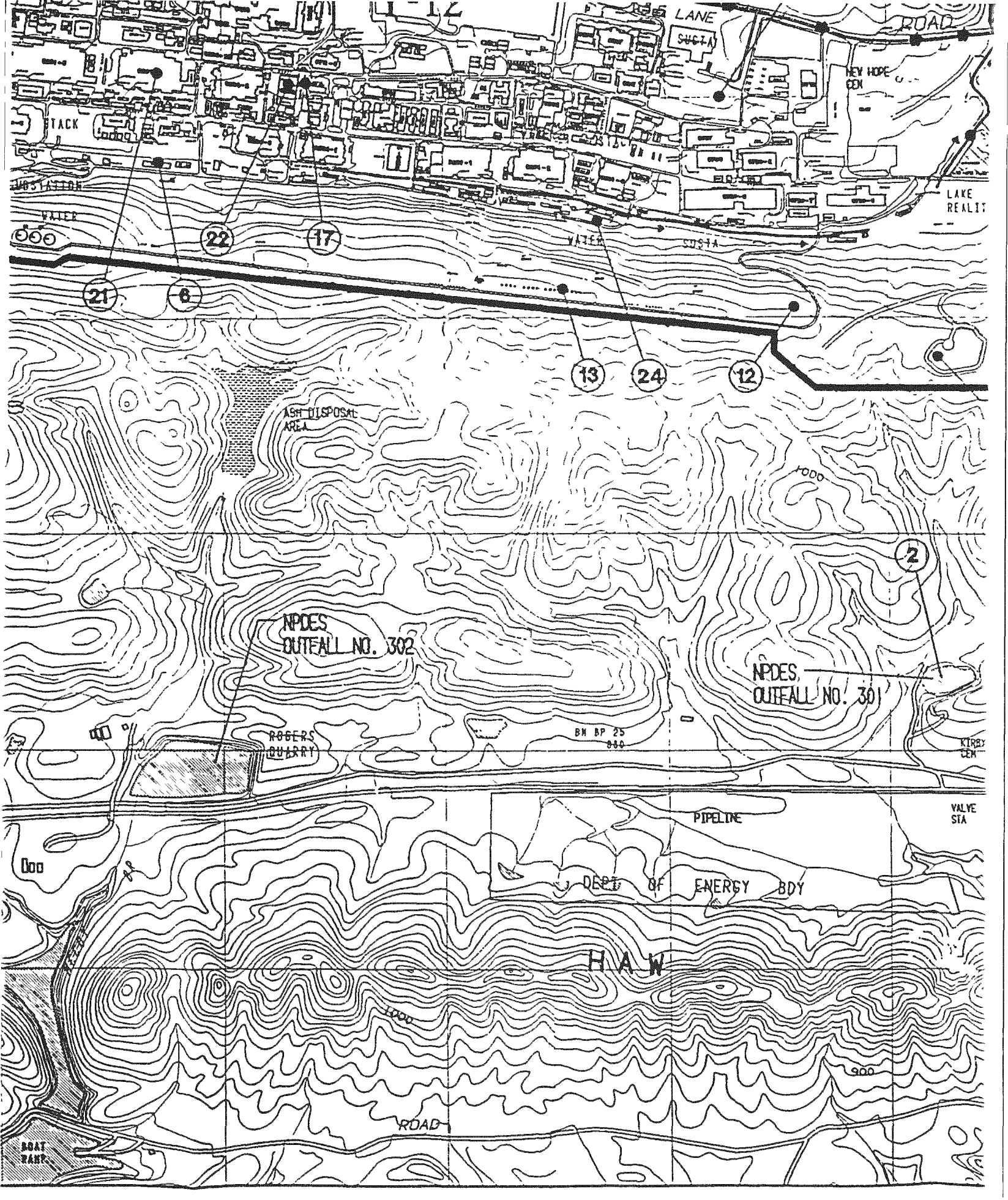
CV/GIS-496/041694 (REV 0)

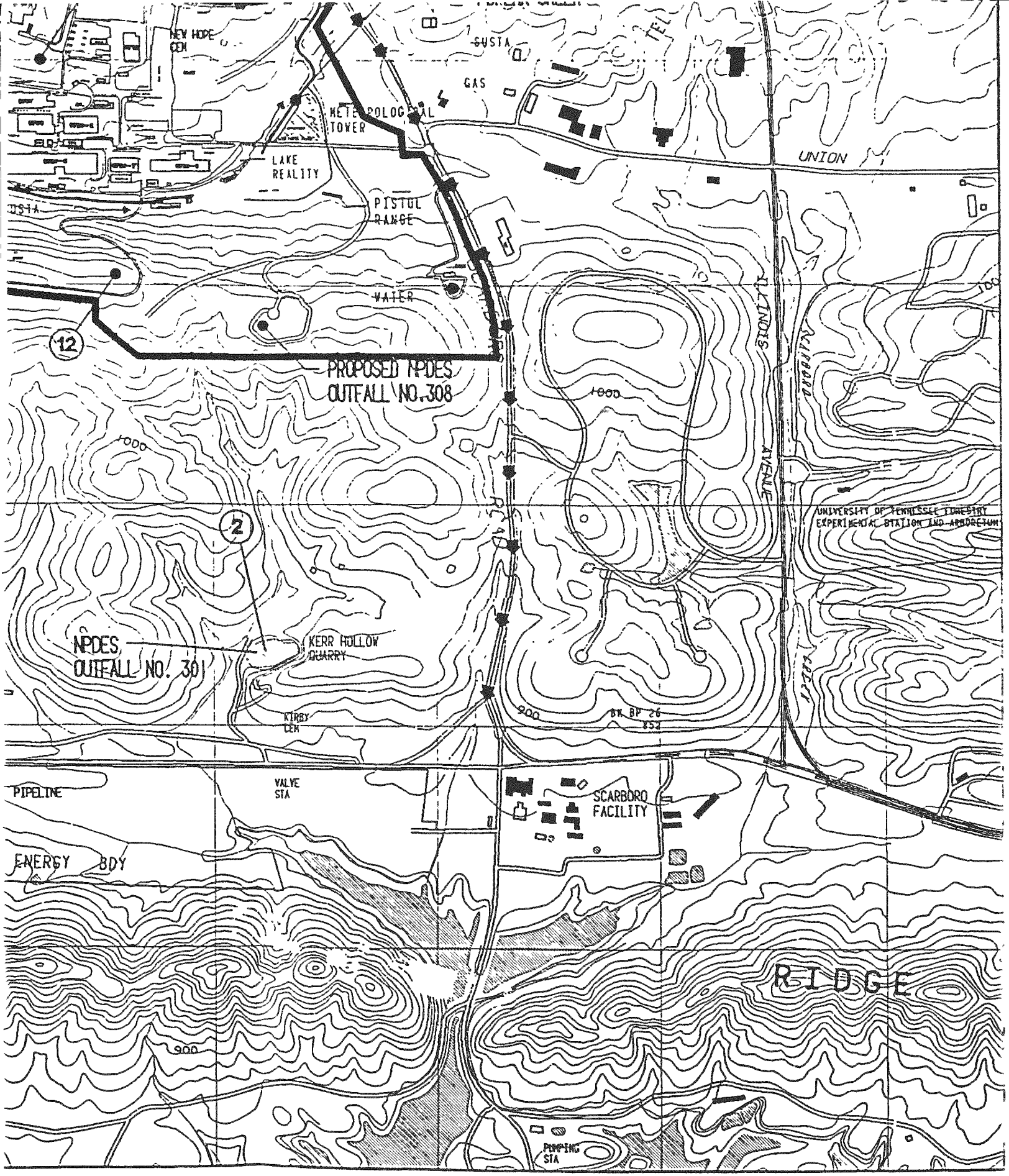
PREPARED BY CIVIL ENGINEERING/ GIS APPLICATIONS CENTER 04/16/94

NORTH TRUE / GRID


BURIAL GROUNDS
BONEYARD BURNYARD
BEAR CREEK
16
BEAR CREEK BURIAL GROUND
OIL LAND FARM
ROAD
BEAR
CREEK
CHESTNUT RIDGE
MONITORING TOWER
NOTE:
MULTIPLE NPDES OUTFALLS
LOCATED ON BEAR CREEK
1100
PROPOSED NPDES
OUTFALL NO. 307
SILO
WALKER BRANCH WATERSHED
RESEARCH AREA
1000
900


VALLEY
S3 POND CLOSURE
CHEMICAL STORAGE AREA
WEST END ENVIRONMENTAL MANAGEMENT AREA
STACK
SUBSTATION
WATER
PROPOSED NPDES OUTFALL NO. 309
10
20
7
19
21
6
22
25
26
FAIRY KNOB
MT VERNON CEM.
MT. VERNON ROAD
1200
Y-12 CENTRALIZED SANITARY LANDFILL II
NPDES OUTFALL NO. 405
OLD BETHEL VALLEY ROAD
BETHEL VALLEY ROAD
1100
CLARK CENTER RECREATION PARK
BLUFF
BOAT RAMP
900


LANE
ROAD
SUSTA
HEY HOPE CEM
TACK
SUBSTATION
WATER
LAKE REALIT
22
17
21
6
13
24
12
ASH DISPOSAL AREA
2
NPDES OUTFALL NO. 302
NPDES OUTFALL NO. 301
ROGERS QUARRY
BM BP 25
KIRBY CEM
PIPELINE
VALVE STA
DEPT OF ENERGY BDY
H A W
ROAD
BOAT RAMP


NEW HOPE CEM
SUSTA
GAS
METEOROLOGICAL TOWER
LAKE REALITY
PISTOL RANGE
WATER
UNION
ILLINOIS AVENUE
PROPOSED NPDES OUTFALL NO.308
12
2
NPDES OUTFALL NO. 301
KERR HOLLOW QUARRY
KIRBY CEM
BM BP 26 852
UNIVERSITY OF TENNESSEE FORESTRY EXPERIMENTAL STATION AND ARBORETUM
PIPELINE
VALVE STA
SCARBORO FACILITY
ENERGY BDY
RIDGE
PUMPING STA
1000
900

External Distribution:

Mr. Mack Bailey
Fire Department Chief
City of Oak Ridge
Post Office Box 1
Oak Ridge, Tennessee 37831

Mr. David Bolling
Anderson County Executive
100 North Main Street
Clinton, Tennessee 37716

Mr. Timothy Braaten
Chief of Police
City of Oak Ridge
Post Office Box 1
Oak Ridge, Tennessee 37831

Mr. Wayne Britt
University of Tennessee Lifestar
1924 Alcoa Highway, Box 103
Knoxville, Tennessee 37920

Mr. Jeff Broughton
City Manager
City of Oak Ridge
Post Office Box 1
Oak Ridge, Tennessee 37831

Mr. Arnold Clower
Roane County Sheriff
100 Race Street
Kingston, Tennessee 37763

Mr. Kenneth Fritts
Anderson County Local Emergency Planning Committee
Route 2, Box 980
Heiskell, Tennessee 37754

Mr. David L. Hatton
Chief, Volunteer Fire Department
Anderson County Marlow Unit
Route 8, Box 410
Clinton, Tennessee 37716

Mr. Virgil Hubbard
Chief, Karns Volunteer Fire Department
Post Office Box 7184
Knoxville, Tennessee 37921

Mr. Larry Hutsell, Director
Regional Emergency Medical Services
Tennessee Department of Health
1522 Cherokee Trail
Post Office Box 59019
Knoxville, Tennessee 37950-9019

Mr. Phil Keith
Knox County Local Emergency Planning Committee
City-County Building
Knoxville, Tennessee 37901

Mr. George Matthews
Administrator
Methodist Medical Center of Oak Ridge
990 Oak Ridge Turnpike
Oak Ridge, Tennessee 37830

Mr. Robert McKamey
Anderson County Ambulance Service
103 South Charles Seiver Boulevard
Clinton, Tennessee 37716

Mr. Bowden Ladd
Roane County Ambulance Service
Route 8, Box 198
Harriman, Tennessee 37748

Mr. LeRoy Mitchell
Roane County Emergency Director
Post Office Box 43
Rockwood, Tennessee 37854

Mr. Russell Newman
Tennessee Emergency Management Agency
836 Louisville Road
Alcoa, Tennessee 37701

The Honorable James L. Session
Mayor of Oliver Springs
607 Easterbrook Avenue
Oliver Springs, Tennessee 37840

Mr. Charles Sitzlar
Tennessee Emergency Management Agency
836 Louisville Road
Alcoa, Tennessee 37701

Ms. Lacy Suiter
Tennessee Emergency Management Agency
State Emergency Operations Center
3041 Sideo Drive
Nashville, Tennessee 37204-1502

Mr. Lloyd Terry
Loudon County Local Emergency Planning Committee
Post Office Box 312
Loudon, Tennessee 37774

Mr. Ken Yeager
Roane County Local Emergency Planning Committee
Post Office Box 43
Rockwood, Tennessee 37854

Internal Distribution:

M. R. Anderson
D. M. Best
D. L. Bird
L. Boshears
S. A. Bowen
R. W. Boyd
J. T. Bryson
R. W. Burnett
L. C. Cappiello
J. A. Coffey
D. L. Daniels
C. D. Davis
D. E. Deel
J. C. Drewery
O. E. Duncan
M. S. Dunn
H. J. Foster
R. V. Fowler
J. R. Frost
M. A. Guinn
L. Y. Guerrero
C. C. Hill
W. Howard, Jr.
G. L. Humphrey
K. D. Hunt
P. L. Hyman
C. E. Irwin
M. E. Johnson
M. H. Johnson
R. M. Keyser/J. E. Powell
C. M. LaBorde/M. S. Burris
A. K. Ladd
A. K. Lee
L. G. Loden
M. E. Manning
J. C. Mathis
R. L. McDougal
C. Metz
C. O. Miller III
A. G. Mitchell
M. E. Mitchell/T. P. A. Perry
R. W. Mitchell
J. S. Parrott
R. D. Parsons
M. O. Phillips
J. J. Plante
P. D. Psihogios
L. L. Radcliffe/J. L. Sager, DOE-ORO
W. J. Redmond
G. A. Renfroe
T. Scott
R. W. Sellars
B. E. Skaggs
R. R. Smith
R. J. Spence/B. C. DeMonia, DOE-ORO
J. C. Stutts
E. J. Tobler
L. L. Triplett
E. Turnbill
J. L. Villarreal
T. R. Vincent
D. R. Walker
G. H. Winebarger/J. T. Foust
C. F. Wisener
W. B. Woods
R. C. Wright
Y-12 Central Files
File - EMD - RC

SECTION H
PERSONNEL TRAINING

H-1 OUTLINE OF TRAINING PROGRAM

The information contained in this section of the permit application outlines the training programs for personnel at the Y-12 Plant who are directly involved with the operation of hazardous waste management units in accordance with the requirements of 40 CFR Parts 264 and 270, and Rules 1200-1-11-.07 and -.06 of the Rules Governing Hazardous Waste Management in Tennessee.

H-1a Job Titles and Tasks

Responsibility involving compliance with RCRA resides with the responsible department head and/or supervisor for each unit. The Staff Engineer for each unit provides technical support and project management related to the physical aspects and compliance requirements of the unit. Sampling, verification of waste streams, documentation, and quality control regarding storage and management procedures is the responsibility of the operating organizations of the Buildings 9206, 9212, and 9720-12 Container Storage Areas and the operating organization of the Cyanide Treatment Unit. Actual handling of wastes and movement of wastes into and out of the building is performed by trained operators working at the specific units. The job titles, tasks, and task descriptions for each position are presented in Appendix H-1. The minimum information provided in the job descriptions are as follows:

- Position title,
- Basic function of position,
- Major environmental duties and responsibilities, and
- Formal education required.

H-1b Training Content, Frequency, and Techniques

The workers receive documented performance-based training and job-specific training. Training techniques are patterned after the performance-based training and include, but are not limited to, classroom, on-the-job, and required reading materials.

Procedures exist which delineate training responsibilities and structures within the Y-12 Plant. All personnel who work at the units in this permit receive initial and annual refresher OSHA Hazard Communications Training, initial OSHA/SARA 40-hour or 24-hour training,

8-hour OSHA/SARA supervisor training or 8-hour refresher OSHA/SARA training, annual respirator training, annual RCRA training, and biennial radiation protection and criticality safety training. The frequency of the course training is also presented in Appendix H-1. Specific modules used are listed in the following paragraph.

Basic Training: The basic training program includes, but is not limited to, the following subject areas:

- 24-Hour OSHA/SARA Training: All personnel working at the units in this application receive the 24-Hour Hazardous Waste Management Training and an annual 8-hour refresher as required by OSHA per SARA. Supervisors receive an additional 8 hours of training as required.

- Hazard Communications Training: All personnel receive the initial Hazard Communications training and annual refresher as required by OSHA. Specific modules listed below are included as part of this training as applicable.

- RCRA Annual Training: This module presents the basic requirements for compliance with RCRA and includes proper hazardous waste management and documentation. This module is updated annually as needed and presented to the applicable personnel. Personnel responsible for completing manifests receive an additional hour of training specifically addressing the proper completion of manifests for off-site shipment of hazardous wastes.

  Specifically, the following subjects will be covered in the annual RCRA refresher training:

- Hazard Communication/Toxicology: This training program is designed to inform employees of the potential harmful effects of chemicals. The program examines the nature of toxic effects, the dose/response relationship, routes of entry of toxic substances, and various acute and chronic effects.

- Hazard Communication/Chemical Safety: Training will outline an overview of the health and safety hazards that chemicals pose and good chemical safety practices, thus motivating workers to take precautions to protect themselves. It describes the different forms of chemicals, routes of exposure, common signs and symptoms of

exposure, and the effects of exposure. Materials described include carcinogens, corrosives, toxins, irritants, sensitizers, and chemicals that have target organ effects. The importance of using labels and material safety data sheets, as well as the measuring and monitoring of the job environment, will be detailed.

- Corrosives: This module presents the hazards that corrosives pose, describes the exposure symptoms, discusses containers and storage, outlines personal safety precautions, and explains what to do in the event of an emergency.

- Solvents: This module concentrates on the health and safety precautions when working with solvents.

- Poisons: This module discusses the different forms of poisons, safe handling procedures, and proper storage. It emphasizes personal protection as well as emergency methods and first aid. This module places emphasis on compressed gases because of their widespread use and the physical hazards that they pose.

- Gases: This module discusses proper moving and storing of gas cylinders, the effect of different gases on the body, personal protection, what to do in an emergency, and special instructions for emergency and rescue personnel.

- Oxidizers: This module addresses the proper safety and health measures when handling oxidizers.

- Explosives: This module stresses the importance of using the correct tools and equipment, maintaining a proper work environment, checking labels and material safety data sheets, and checking process sheets for all operations or processes which involve potential explosion hazards.

- Protective Clothing: In dealing with chemical hazards, the most important line of defense against personal contact and contamination is protective clothing. Training details the correct methods of selecting and wearing protective equipment including gloves, aprons, goggles, etc., as required.

- Respiratory Protection: In order to protect the respiratory tract against irritating and poisonous gases, fumes, smoke, and dusts, the worker must be knowledgeable

in the proper use of the respirator. Information on the various types of respirators, the requirements to ensure a good fit, and emergency actions are presented in this module. Workers will also be trained on the specific respiratory hazards, requirements, and issue procedures for their specific job.

- Radiological Protection: Informs workers about the hazards associated with radiation exposure and presents methods of controlling dose levels to within acceptable limits. Training will be presented in two modules, "Basic Radiation Theory" and "Biological Effects of Ionizing Radiation" or an equivalent course.

- Criticality Safety: The concepts and required safety controls related to criticality safety are explained in this module.

Job Qualification: Currently, on-the-job training (OJT) of operators is conducted under the direct supervision of the operations supervisor. This training includes operational and job safety requirements. However, in order to improve, formalize, and document the required OJT, the job task analysis for each of these facilities has been completed. Based on this job task analysis and specific safety requirements for each facility, lesson plans for OJT will be completed and will be performed by OJT instructors who have successfully completed the Supervisors On-The-Job Training course. At the completion of training, a formal test is given. The test may be written and/or oral, depending upon the nature of work being conducted at the facility. In addition to the written and/or oral examination, the operator will be required to demonstrate his proficiency in the required tasks. Failure of the test requires the technician/laborer to undergo further training. Though the lesson plans will be specifically directed at the proper operation of the facilities, general topics to be included as applicable are: (1) conducting routine checks and inspections, (2) job-specific personal protective equipment training, and (3) maintaining records and data. OJT refresher training will be provided every two years.

Emergency Preparedness: The training program is designed to ensure that personnel not only handle hazardous wastes in a safe manner, but also properly respond to emergency situations. The program trains hazardous waste handling/management personnel to maintain compliance under both normal operating conditions and emergency conditions.

Training elements addressing non-routine and emergency situations (unscheduled shutdowns and startups related to storms, power outages, fires, explosions, spills) as applicable include:

1. Contingency Plan requirements and implementation,

2. Procedures for locating, using, inspecting, repairing, and replacing facility emergency and monitoring equipment, including personal safety, fire control, and spill control equipment and alarm and communication systems,

3. Response to fires or explosions,

4. Response to incidents and procedures for containing, controlling, and mitigating spills, and any surface or groundwater contamination,

5. Shutdown of operations, power failure procedures and any other emergency operating procedures, and

6. Procedures for evacuation of nearby areas.

In addition to the hazardous waste management personnel, a plant emergency squad is on duty for response to all fires and other general plant emergencies. This emergency squad is trained with classroom training methods and fire drills. The classroom training is required for introductory training and as an annual review for each member of the squad.

Annual Training Records Review: The Facility Supervisor assigned to the units performs a review of the training records for the division at least annually.

H-1c Training Director

The personnel training program is directed by a Divisional Training Manager who is familiar with plant operations, facility design, and operating procedures. This manager is required to have a minimum of a bachelors degree or equivalent education and/or experience and process knowledge, and demonstrated knowledge of instructional system design and technology. The Training Coordinators and the OJT Trainers who perform the training matrix to the Training Manager. The qualifications required for these positions are included in the job descriptions found in Appendix H-1.

H-1d Relevance of Training to Job Position

The training program is designed in some areas to provide training to personnel at levels that are relevant to their positions within the plant. Operators are more specifically trained

to maintain proper and safe operating procedures and to respond effectively in the event of a spill or other emergency. The completed job task analysis for each of these four units will be utilized to update and improve the existing training as applicable in order to continue to make the training more relevant to the specific job position being trained.

H-2 IMPLEMENTATION AND DOCUMENTATION OF TRAINING PROGRAM

H-2a Implementation

All personnel must complete this training within six months from their date of assignment to a hazardous waste management job. No employee assigned to perform a hazardous waste management job works unsupervised prior to completion of the training program.

H-2b Recordkeeping

Please see Section J, Recordkeeping, for information.

SECTION I
CLOSURE PLAN, POST CLOSURE PLAN, AND FINANCIAL REQUIREMENTS

I-1 CLOSURE PLANS

This closure plan has been prepared for the Buildings 9206, 9212 and 9720-12 Container Storage Areas, and the Cyanide Treatment Unit at the Y-12 Plant. These units will be considered active units and operated in compliance with all applicable requirements for active units (including inspections, fire prevention, etc.) until closure activities are initiated. Complete facility descriptions are provided in Section B, Facility Description.

The Oak Ridge Y-12 Plant is located in Anderson County and is co-operated and managed by Martin Marietta Energy Systems Inc., personnel for the DOE. The EPA identification number for the Y-12 Plant is TN3 89-009-0001.

If changes occur in the operating plans or unit design that may affect the closure plan, it will be amended. Amendments to the closure plan may also be necessary if: (1) new technologies are developed, (2) changes occur in operating requirements or contingencies, and (3) changes occur in the land-use patterns around the site.

I-1a Closure Performance Standard

This closure plan is designed to ensure that, after closure, the unit will not require further maintenance and controls; to minimize or eliminate threats to human health or the environment; and to avoid the escape of hazardous wastes, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to ground or surface waters, or to the atmosphere.

This standard will be accomplished through the removal of all RCRA hazardous wastes stored in containers at the units. These wastes will be transferred to an appropriately permitted facility for storage, treatment, or disposal. In addition, to minimize residual contamination on-site, the storage or treatment building area and appurtenances will be cleaned until the facility has been satisfactorily decontaminated.

Efforts to be made to satisfy closure requirements are presented in the following sections.

I-1b Partial Closure and Final Closure Activities

Partial closure for the units in this application is not anticipated. If it becomes necessary to

partially close any of the units described in this permit application, the procedures described in Section I-1e(1), Closure Procedures, will be followed for the type of unit being closed.

Final closure of the units will consist of the removal of all hazardous wastes and hazardous waste residues remaining at the unit and the decontamination or disposal of the containment structure components and auxiliary equipment. All hazardous wastes and residues will be containerized and transported to an approved RCRA permitted facility for storage or treatment. Closure procedures are described in Section I-1e, Closure procedures.

I-1c Maximum Waste Inventory

The following table represents the maximum waste inventory that will be in storage at the units (Refer to Table D-1).

Unit ID	Capacity (gal)
9206	3,975
9212	3,814
9720-12	32,500
Cyanide Treatment Unit	2,200

All hazardous wastes remaining in these units at the time of closure will be transferred to a permitted facility for storage or treatment. The procedures for removing, transporting, and/or storing the remaining hazardous waste and decontamination debris from the units are described in Section I-1e(1), Closure Procedures and Section I-1b, Partial Closure Procedures.

I-1d Schedule for Closure

The proposed schedule for final closure for Buildings 9206, 9212 and 9720-12 Container Storage Areas and the Cyanide Treatment Unit is included as Table I-1. Because the units in this permit application are container storage areas associated with enriched uranium production, the same schedule can be followed for each individual unit. The units are expected to be closed in the year 2025.

I-1d(1) Time Allowed For Closure

All hazardous wastes will be treated, removed off-site, or disposed of on-site from the units within 90 days from receipt of the final volume of hazardous waste. Closure activities will be completed within 180 days from the closure plan approved by the State. The actual times for each step of the closure activities are shown in Table I-1.

I-1d(1)(a) Extensions for Closure Time

It is not anticipated that an extension of time for closure activities will be required. However, if closure cannot be completed within the specified time, a request for an extension of closure time will be submitted to the Commissioner in accordance with Tennessee Rule 1200-1-11-.06(7)(d).

I-1e Closure Procedures

Before closure activities begin, the units will be surveyed by the Y-12 Health Physics Organization personnel and a safety plan will be prepared based on the site conditions. The plan will identify radiological and chemical hazards as well as controls to reduce worker risk. Additional activities for closure follow.

I-1e(1) Inventory Removal, Disposal, and Decontamination of Equipment

Closure activities for all the units in this permit application will be performed in a similar manner.

Step 1: Removal of Waste Inventory

All containers of hazardous waste will be transferred to an approved facility for storage or treatment. Equipment to be used will be, but is not limited to, forklift truck, hand pallet jack, and/or hand dolly.

Step 2: Decontamination of Building, Equipment, and Structures

The walls, floors, and miscellaneous fixtures (i.e., shelves, windows, etc.) in the building will be cleaned and rinsed with water and detergent, if needed. All wash and rinse waters will be collected, drummed, and stored at an approved on-site storage facility pending the analysis from samples taken from the water. Based on the analytical results, the drummed water will be disposed of in an appropriate manner.

TABLE I-1. CLOSURE SCHEDULE FOR THE PRODUCTION ASSOCIATED UNITS

Action	Expected * Completion
• Notify Tennessee Department of Health and Environment of intent to initiate	-180 days
• Receipt of final volume of wastes; initiate closure	0
• Remove inventory, load and transfer	90
• Decontaminate building, equipment, and structures	110
• Decontaminate equipment	115
• Sample building surfaces	120
• Analyze samples and results	150
• Prepare documentation for certification by an independent Professional Engineer	175
• Closure Certification by DOE	180
or	
• Repeat building decontamination, surface sampling, and sample analysis prior to decontamination of equipment	**
• Independent Professional Engineer and Department of Energy certify closure	

* Number of days following initiation of closure.

** If decontamination must be repeated, extension of the closure schedule beyond the maximum of 180 days will be requested.

Step 3: Decontamination of Equipment

This step will involve the decontamination or washing of residuals that may adhere to the equipment used in steps 1 and 2. The wash and rinse solutions will be disposed of in the same manner as the wash water generated in step 2, Decontamination of Building.

Step 4: Verification of Decontamination

Rinse water samples will be analyzed for the hazardous constituents formerly stored in the container storage and treatment areas as an indicator of decontamination verification. Contamination will be considered complete if the concentration of these constituents in the water are less than the RCRA regulated levels. The sample will be analyzed by EPA method ("Test Methods for Evaluating Solid Waste", SW-846). Sampling and analytical quality assurance/quality control will be conducted as specified in SW-846 (see Table I-1 for schedule). Further water and surfactant/water rinses will be used if decontamination of an item is not complete. These rinses will be repeated until decontamination criteria are met.

Step 5: Additional Decontamination

If residual contamination exists after a third washing, the areas will be sandblasted until contamination is no longer exhibited. Spent sand will be collected and stored pending selection of an approved disposal method.

Step 6: Certification

Documentation for certification by an independent Professional Engineer will be prepared. Final certification of closure by DOE and MMES will be performed.

I-1e(2) Closure of Disposal Units

Not applicable. Requirements of this section do not apply to the container storage areas or the treatment unit in this permit application.

I-1e(3) Closure of Containers

The closure procedures described in Section I-1e, Closure Procedures, will be followed for the closure of the container storage units containing the maximum waste inventory specified in I-1c.

I-1e(4) Closure of Tanks

Not applicable. Requirements of this section do not apply to the container storage areas or the treatment unit in this permit application.

I-1e(5) Closure of Waste Piles

Not applicable. Requirements of this section do not apply to the container storage areas or the treatment unit in this permit application.

I-1e(6) Closure of Surface Impoundments

Not applicable. Requirements of this section do not apply to the container storage areas or the treatment unit in this permit application.

I-1e(7) Closure of Incinerators

Not applicable. Requirements of this section do not apply to the container storage areas or the treatment unit in this permit application.

I-1e(8) Closure of Landfills

Not applicable. Requirements of this section do not apply to the container storage areas or the treatment unit in this permit application.

I-1e(9) Closure of Land Treatment

Not applicable. Requirements of this section do not apply to the container storage areas or the treatment unit in this permit application.

I-1e(10) Closure of Miscellaneous Units

Not applicable. Requirements of this section do not apply to the container storage areas or the treatment unit in this permit application.

I-2 POST-CLOSURE PLAN

Hazardous waste or hazardous waste residues will not remain at the units after closure; therefore, this section is not required.

I-2a Inspection Plan

Hazardous waste or hazardous waste residues will not remain at the units after closure; therefore, this section is not required.

I-2b Monitoring Plan

Hazardous waste or hazardous waste residues will not remain at the units after closure; therefore, this section is not required.

I-2c Maintenance Plan

Hazardous waste or hazardous waste residues will not remain at the units after closure; therefore, this section is not required.

I-2d Land Treatment

Hazardous waste or hazardous waste residues will not remain at the units after closure; therefore, this section is not required.

I-2e Post-Closure Care for Miscellaneous Units

Hazardous waste or hazardous waste residues will not remain at the units after closure; therefore, this section is not required.

I-2f Post-Closure Security

Hazardous waste or hazardous waste residues will not remain at the units after closure; therefore, this section is not required.

I-2g Post-Closure Contact

Hazardous waste or hazardous waste residues will not remain at the units after closure; therefore, this section is not required.

I-3 CERTIFICATION AND NOTICES REQUIRED FOR CLOSURES

I-3a Certification of Closure

Within 60 days of completing final closure of the units, DOE will submit, in writing, a closure certification to the Commissioner. The certification will verify that the units were closed in accordance with the specifications of the approved closure plan. The certification will be signed by DOE and an independent registered professional engineer and submitted by registered mail.

I-3b Survey Plat

Not applicable. A survey plat is not required for the clean closure of a container storage or treatment unit.

I-3c Notice to Local Land Authority

Not applicable. This section is not required for the clean closure of a container storage or treatment unit.

I-3d Post-Closure Certification

Not applicable. This section is not required for the clean closure of a container storage or treatment unit.

I-3e Notice in Deed to Property

Not applicable. This section is not required for the clean closure of a container storage or treatment unit.

I-4 CLOSURE COST ESTIMATE

Under 40 CFR Part 264.140(c), federal facilities are exempt from the requirements of this section.

I-5 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE

Under 40 CFR Part 264.140(c), federal facilities are exempt from the requirements of this section.

I-6 POST-CLOSURE COST ESTIMATE

Under 40 CFR Part 264.140(c), federal facilities are exempt from the requirements of this section.

I-7 FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE

Under 40 CFR Part 264.140(c), federal facilities are exempt from the requirements of this section.

I-8 LIABILITY REQUIREMENTS

Under 40 CFR Part 264.140(c), federal facilities are exempt from the requirements of this section.

I-9 STATE FINANCIAL MECHANISM

Under 40 CFR Part 264.140(c), federal facilities are exempt from the requirements of this section.

SECTION J
RECORDKEEPING

This section of the application outlines the recordkeeping and reporting requirements for hazardous waste management units as required by 40 CFR Part 264 and Rule 1200-1-11-.06 of the Rules Governing Hazardous Waste Management in Tennessee.

J-1 MANIFEST REQUIREMENTS

Buildings 9206, 9212, and 9720-12 Container Storage Areas do not receive hazardous wastes from off-site; however, the Cyanide Treatment Unit accepts wastes from off-site on special occasions.

Procedures for accepting waste from off-site at the Cyanide Treatment Unit are described in Section C-2e. Wastes will not be accepted for treatment from off-site without a hazardous waste manifest, or without an accompanying shipping paper, unless the waste is excluded from the manifest requirement by 40 CFR Part 261.5. Unmanifested Waste Reports will be prepared and submitted, as necessary and as required by 40 CFR Part 264.76.

J-2 OPERATING RECORD

Records and results of waste analyses, as required in 40 CFR Part 264.73(b)(3) and Tennessee Rules 1200-1-11-.02 and .06(5)(d)2(iii), are recorded and maintained in the operating files and databases of the operating organizations. The management, including storage and/or treatment, of hazardous wastes is tracked at all times.

For nonroutine wastes, the Y-12 Plant uses the "Request for Transfer, Storage or Disposal of Radioactive, Hazardous and Special Wastes" form (UCN-2109), which is located in Appendix C-1, for identification of waste materials. For routine wastes, the Y-12 Plant uses a "Blanket Request" process or "Stream Identification (SID) Number" process which assigns a specific waste stream a number to allow tracking of the waste. Upon generation of a routine or nonroutine waste, log sheets, completed forms, and generation records are provided by the generator, including the description and quantity of waste materials. These forms are assigned a unique number to facilitate entry into the waste tracking systems used by the Waste Management organization. The completed forms are reviewed by a technician or engineer from Waste Management organization to determine the appropriate storage, treatment, or disposal method which is recorded on the form and entered into the data base as applicable. After transporting the waste to the appropriate on-site storage or treatment

unit or off-site disposal facility, the forms are signed and maintained by Waste Management organization personnel. Finally, operating logs are maintained which include the current quantity and type of wastes located at each facility.

The Y-12 Plant Waste Analysis Plan, discussed in Section C, defines the information required to safely store wastes in these units in accordance with RCRA regulations.

An incident requiring implementation of the Contingency Plan would be reported per Section G. A detailed, written report would be submitted by the Y-12 Plant Environmental Management Department to the TDEC within 15 days of the incident, and a file copy would be maintained by the Environmental Management Department. The report would include:

1. name, address, and telephone number of the owner or operator;
2. name, address, and telephone number of a contact at the unit;
3. date, time, and type of incident (e.g., fire, explosion);
4. name and quantity of material(s) involved;
5. extent of injuries, if any;
6. assessment of actual or potential hazards to public health or environment, if applicable; and
7. estimated quantity and disposition of recovered material that resulted from the incident.

Records of inspections for the units in this permit application are maintained by the appropriate Production Department. These records will be retained by the Production Department until three years after the certified closure of the unit. Inspection logs are completed per Section F, Procedures to Prevent Hazards. Copies of example inspection log sheets are provided in Appendix F-2. Groundwater monitoring data is not required for these facilities (Section E).

The DOE is the owner of the Y-12 Plant. The units addressed in this application receive wastes from the Y-12 Plant only, except for the Cyanide Treatment Unit which, on special occasions, may accept wastes from off-site. Off-site generators using the Cyanide Treatment Unit will be notified of the status of the Y-12 Plant RCRA permits.

The closure and postclosure cost estimates are not required for federal facilities as indicated in Section I, Closure Plans.

The units addressed in this application are not surface impoundments, waste piles, land treatment units, or landfills. Therefore, no Land Disposal Restricted Certification Program is required. In addition, the requirements of groundwater data recordkeeping are not required.

The training records for personnel in the operating organizations are maintained by the organization training department. The training coordinator assigned to a designated operating or engineering department maintains these records for that specific department. Training information is discussed in Section H.

Preparation of the annual and biennial reports on the hazardous waste activities at the Y-12 Plant is coordinated and maintained by the Environmental Management Department with data supplied by the Waste Management organization and waste generating divisions. These reports address the amount of waste generated, the amount of waste shipped off-site, the amount received, and the amount of waste currently on site.

As part of the annual report on the hazardous waste activities at the Y-12 Plant, wastestream specific waste minimization information is submitted to the TDEC for the Y-12 Plant. This annual report certification is prepared and maintained on file by the Environmental Management Department. Additionally, the biennial Waste Minimization Report is submitted to the EPA which contains similar information. The Y-12 Waste Minimization Program is designed to reduce the volume and toxicity of hazardous wastes generated at the Y-12 Plant and provides information on the methods of reducing waste to minimize the threat to human health and the environment.

The operating records and reports are prepared, maintained, and available for inspection. Training records on current personnel are kept until closure of the hazardous waste management units. The training records of former employees are maintained for a minimum of 3 years from the date the employee last worked at the Y-12 Plant. Personnel training records accompany the employee during any transfer within the company.

SECTION K
OTHER FEDERAL LAWS

The Y-12 Plant has reviewed and considers to be in compliance with the following Federal Laws:

- Fish and Wildlife Coordination Act of 1934
- National Historic Preservation Act of 1966
- Wild and Scenic Rivers Act of 1968
- Coastal Zone Management Act of 1972
- Endangered Species Act of 1973
- Occupational Safety and Health Act of 1970
- National Environmental Policy Act, January 1, 1970
- Federal Water Pollution Control Act of 1977
- Clean Water Act
- National Emission Standards for Hazardous Air Pollutants, and
- Toxic Substances Control Act
- Clean Air Act.

Information will be provided by the Y-12 Plant personnel at the request of the TDEC staff.

SECTION L
ORGANIC AIR EMISSIONS

Organic air emissions monitoring is not required for Buildings 9206, 9212, 9720-12 Container Storage Areas, and the Cyanide Treatment Unit as per the requirements of 40 CFR Part 264, Subparts AA and BB.

SECTION M
SOLID WASTE MANAGEMENT UNITS

Based on information from the State, material on solid waste management units at the Oak Ridge Y-12 Plant is not required for individual Part B permit applications because the entire ORR is covered by the ORNL Hazardous and Solid Waste Amendments Permit (HSWA TN001) for Building 7652 (a hazardous waste storage facility). The HSWA Permit was issued on September 26, 1986.

SECTION N
CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system and of those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Department of Energy
Owner and Operator

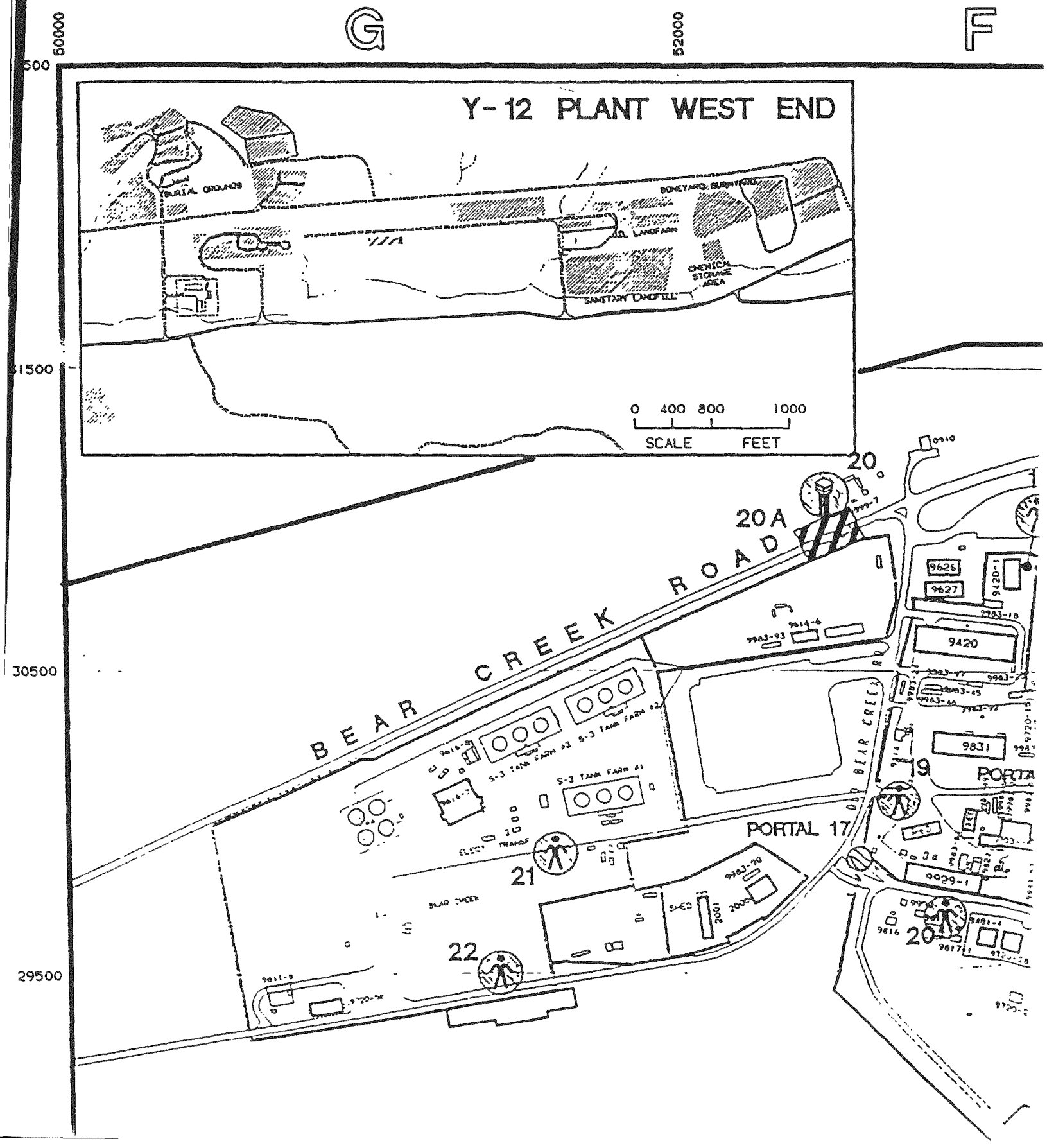
Date Signed

Martin Marietta Energy Systems, Inc.
Co-Operator

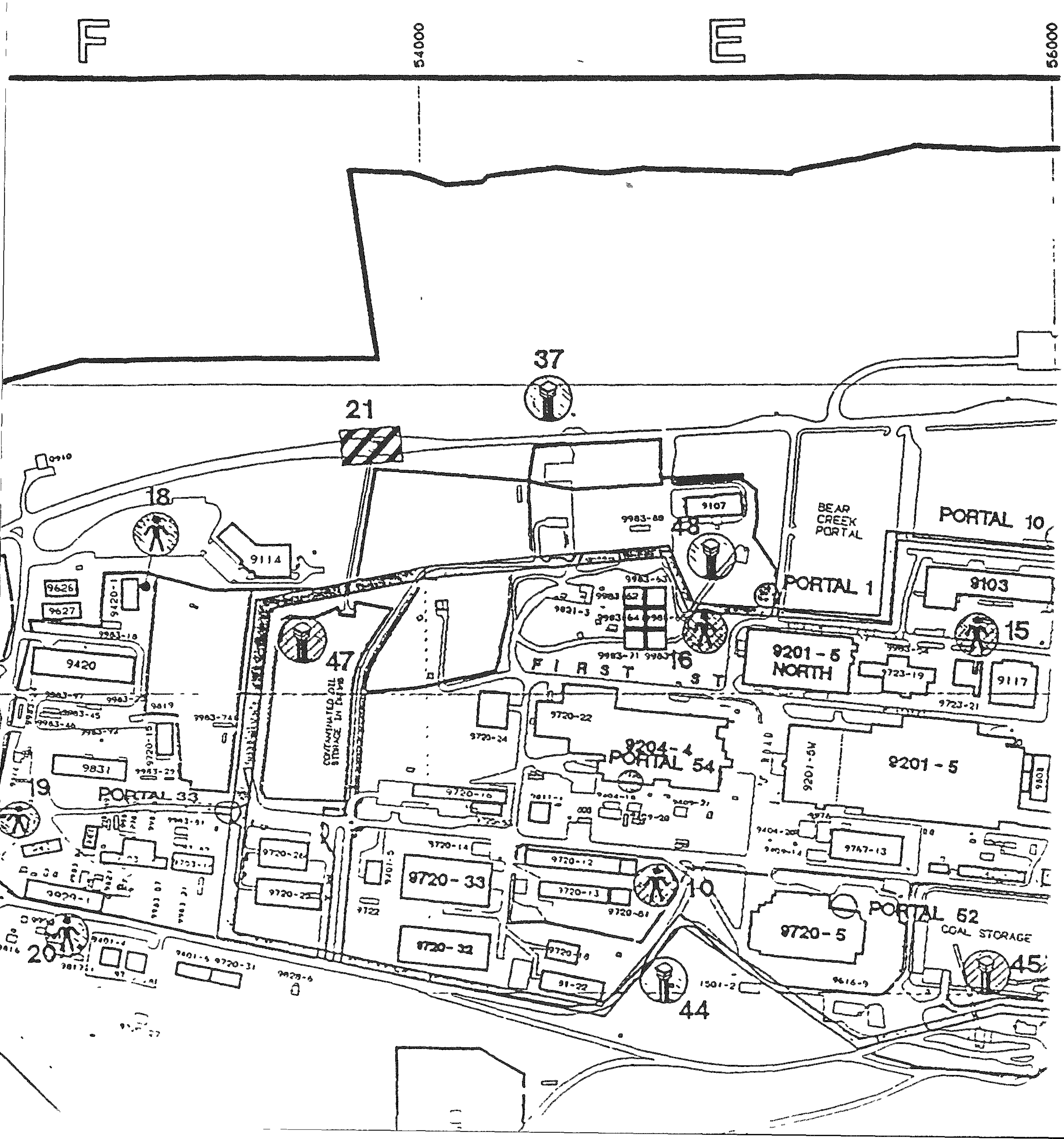
9/22/94
Date Signed

The Department of Energy and its operating contractor, Martin Marietta Energy Systems, Inc., have jointly signed this application as the operator of the permitted facility. The Department has determined that dual signatures best reflect the actual apportionment of responsibility under which the Department's RCRA responsibilities are for policy, programmatic, funding and scheduling decisions, as well as general oversight, and the contractor's RCRA responsibilities are for day-to-day operations, including but not limited to, recordkeeping, reporting, and contingency planning. For purposes of the certification required by 40 CFR Section 270.11(d) and Tennessee Rule 1200-1-11-.07(2)(a)10, the Department's and Martin Marietta Energy Systems, Inc.'s, representatives certify, to the best of their knowledge and belief, the truth, accuracy and completeness of the application for their respective areas of responsibility.

APPENDIX B-1
MAPS

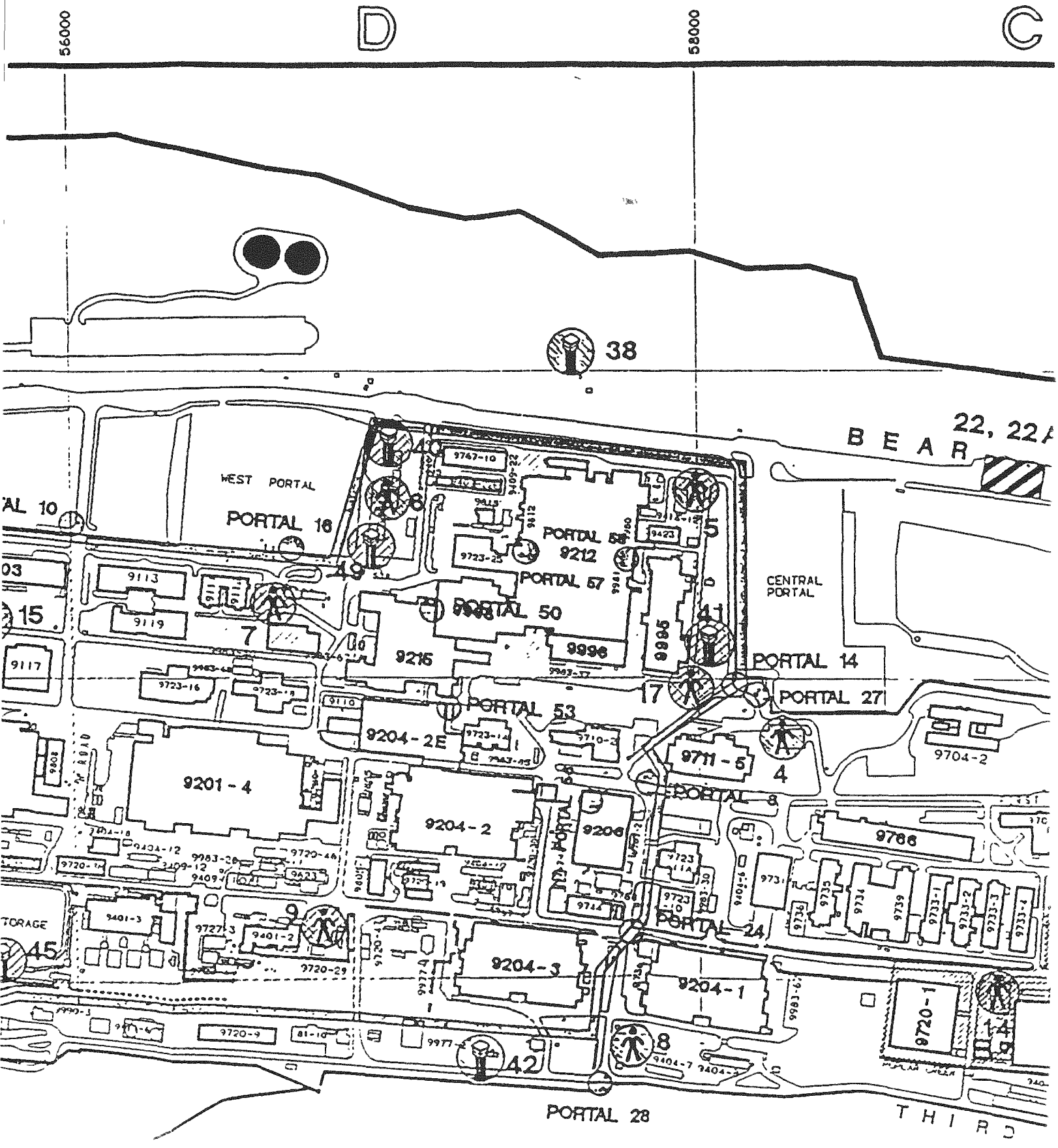

50000
G
52000
F
Y-12 PLANT WEST END
BURIAL GROUNDS
BONEYARD/BURNYARD
SANITARY LANDFILL
CHEMICAL STORAGE AREA
0 400 800 1000
SCALE FEET
31500
20
20A
BEAR CREEK ROAD
30500
9626
9627
9420
9831
PORTAL 17
21
22
29500

OAK

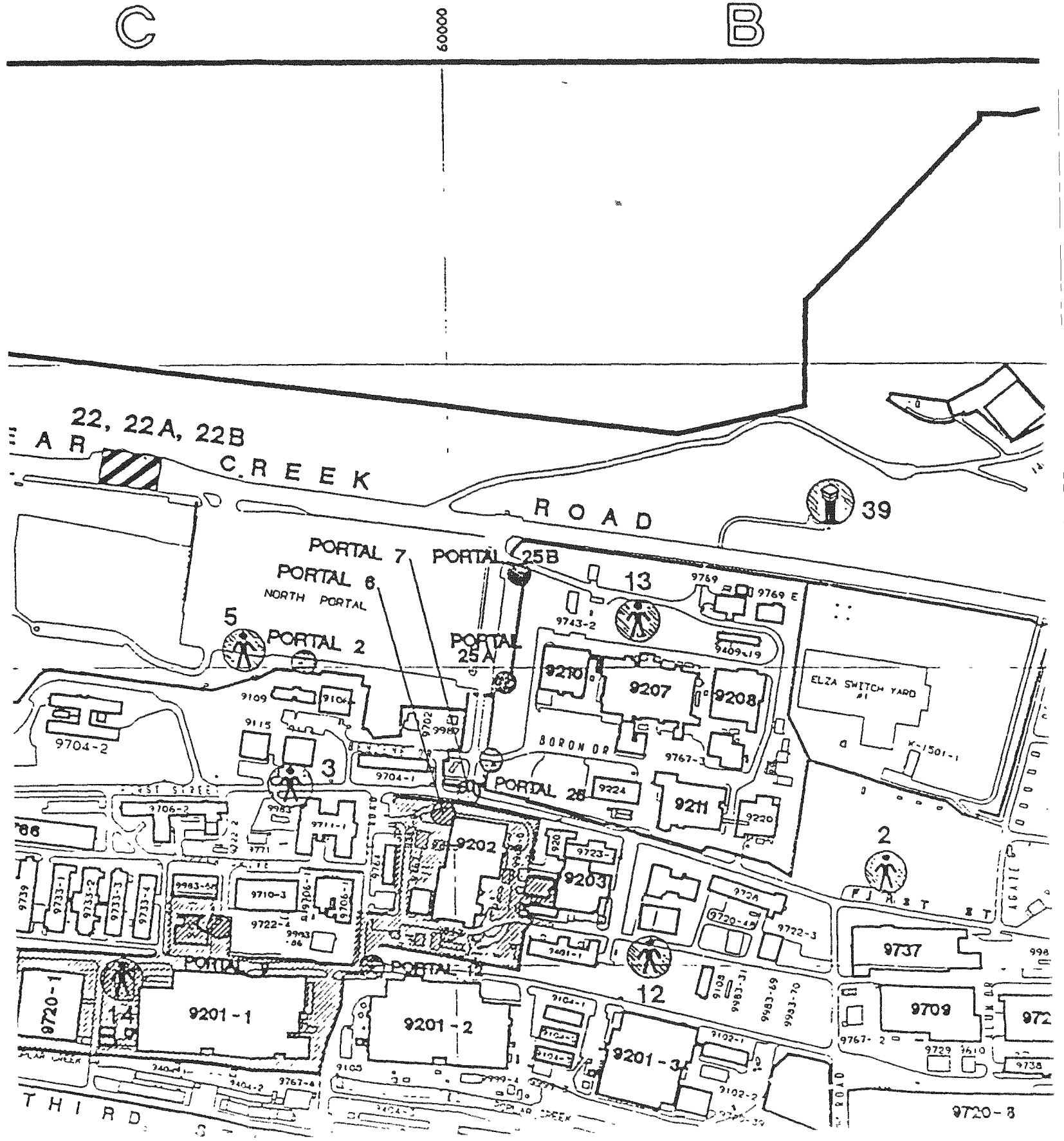


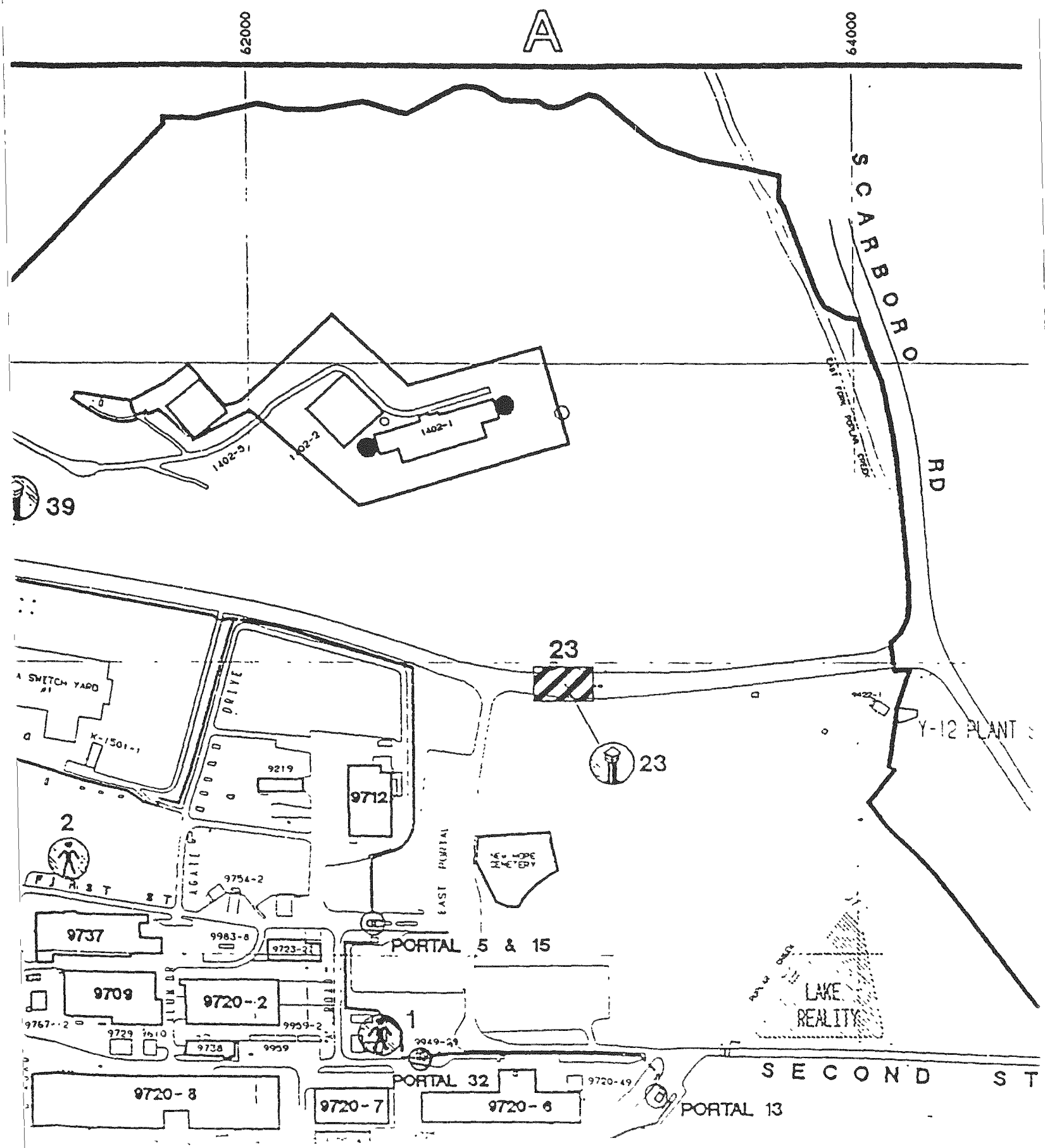
F
54000
E
56000
37
21
18
48
47
16
15
19
20
10
44
45
9114
9107
9983-89
BEAR CREEK PORTAL
PORTAL 10
PORTAL 1
9103
9626
9627
9420-1
9420
9983-18
9819
9831
9720-15
PORTAL 33
CONTAMINATED OIL STORAGE IN DRUMS
FIRST ST
9821-3
9983-71
9201-5 NORTH
9723-19
9117
9723-21
9720-22
9720-24
9204-4
PORTAL 54
9201-5N
9201-5
9808
9720-16
9720-14
9720-26
9720-25
9720-33
9401-5
9722
9720-12
9720-13
9720-81
9720-32
9720-18
9720-5
PORTAL 52
COAL STORAGE
9404-20
9747-13
9616-9
1501-2
9401-6
9720-31
9401-4
9817
9816

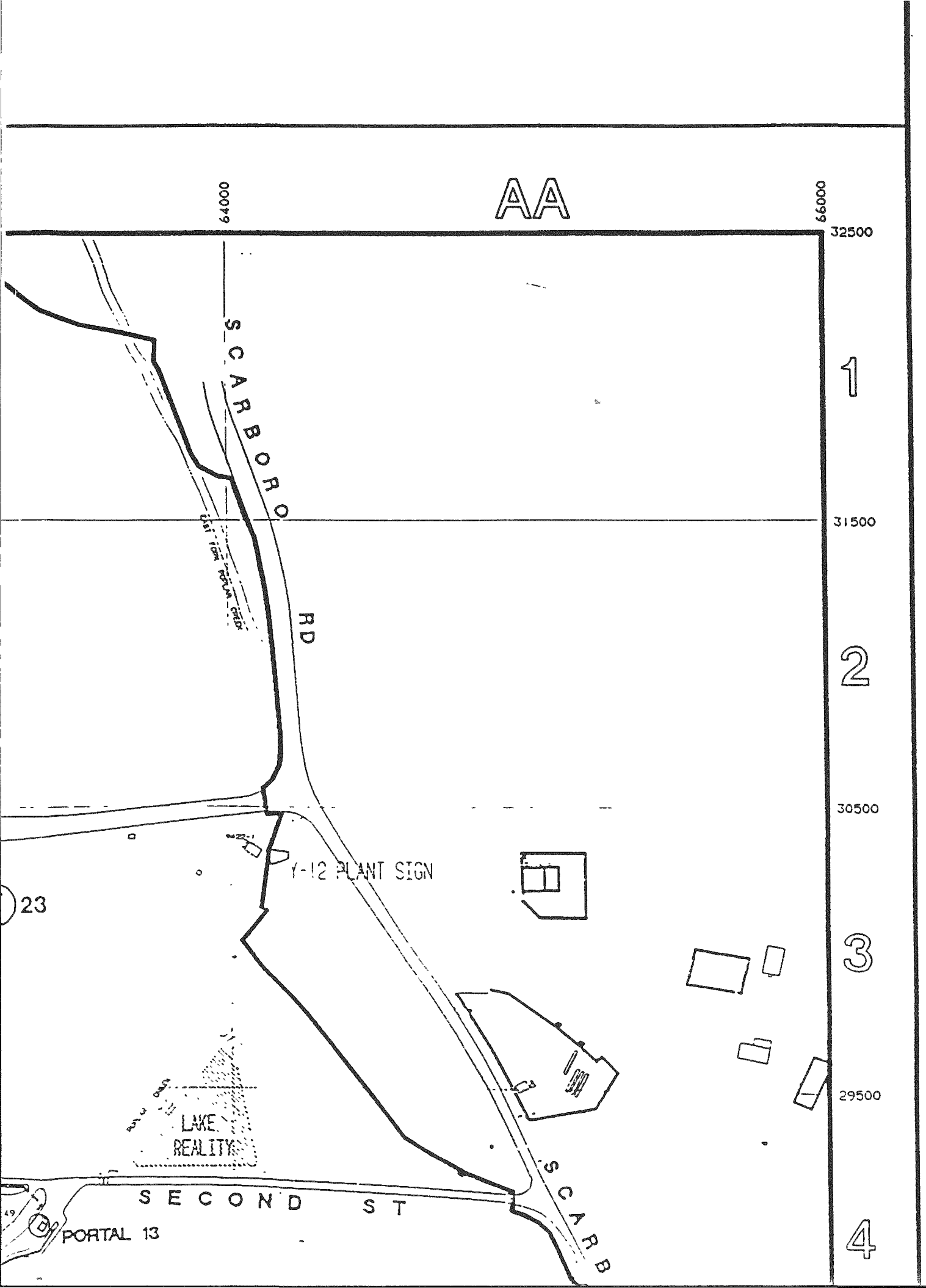
RIDGE Y-12 FACILI

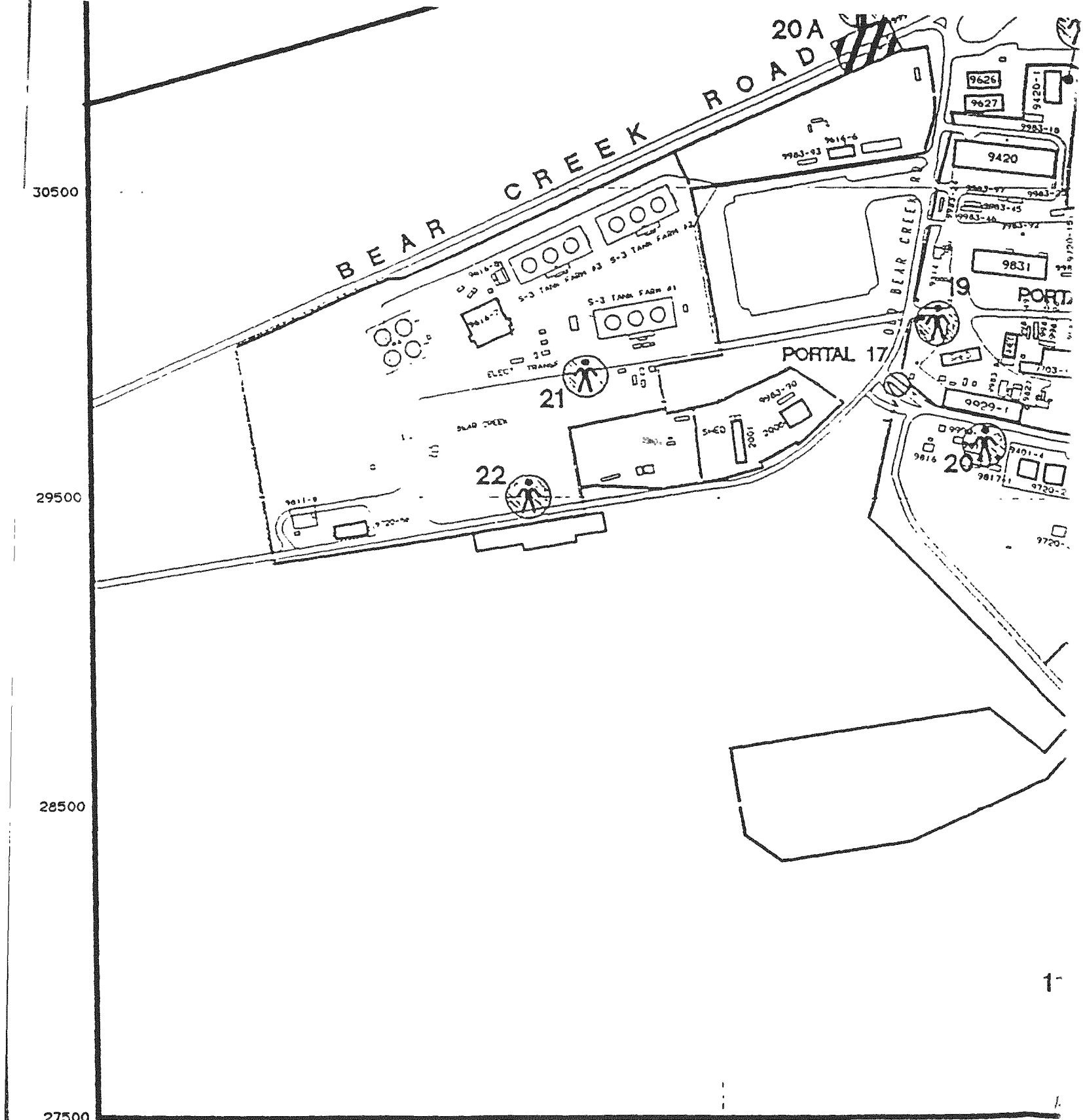


CILITIES MAP

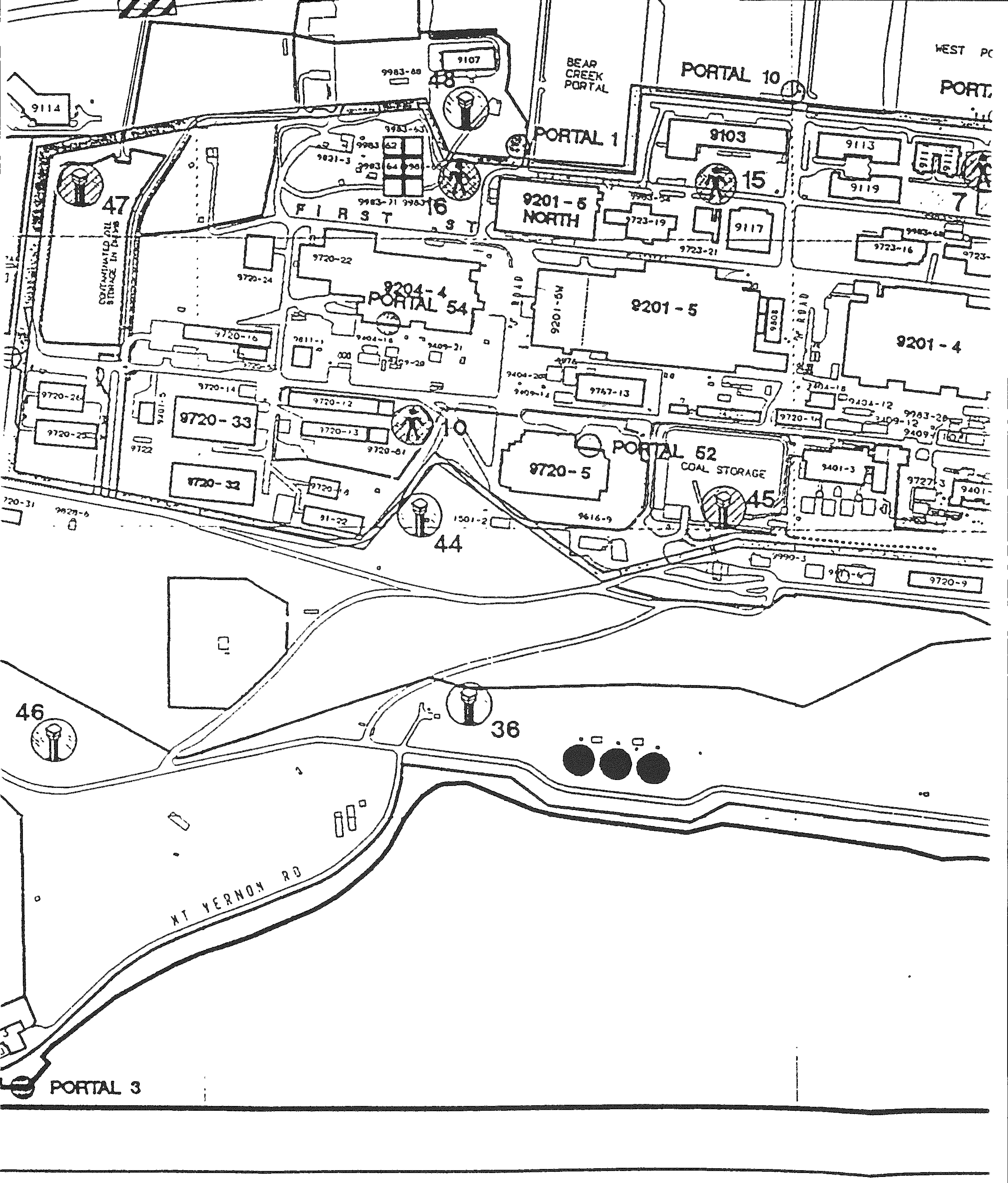


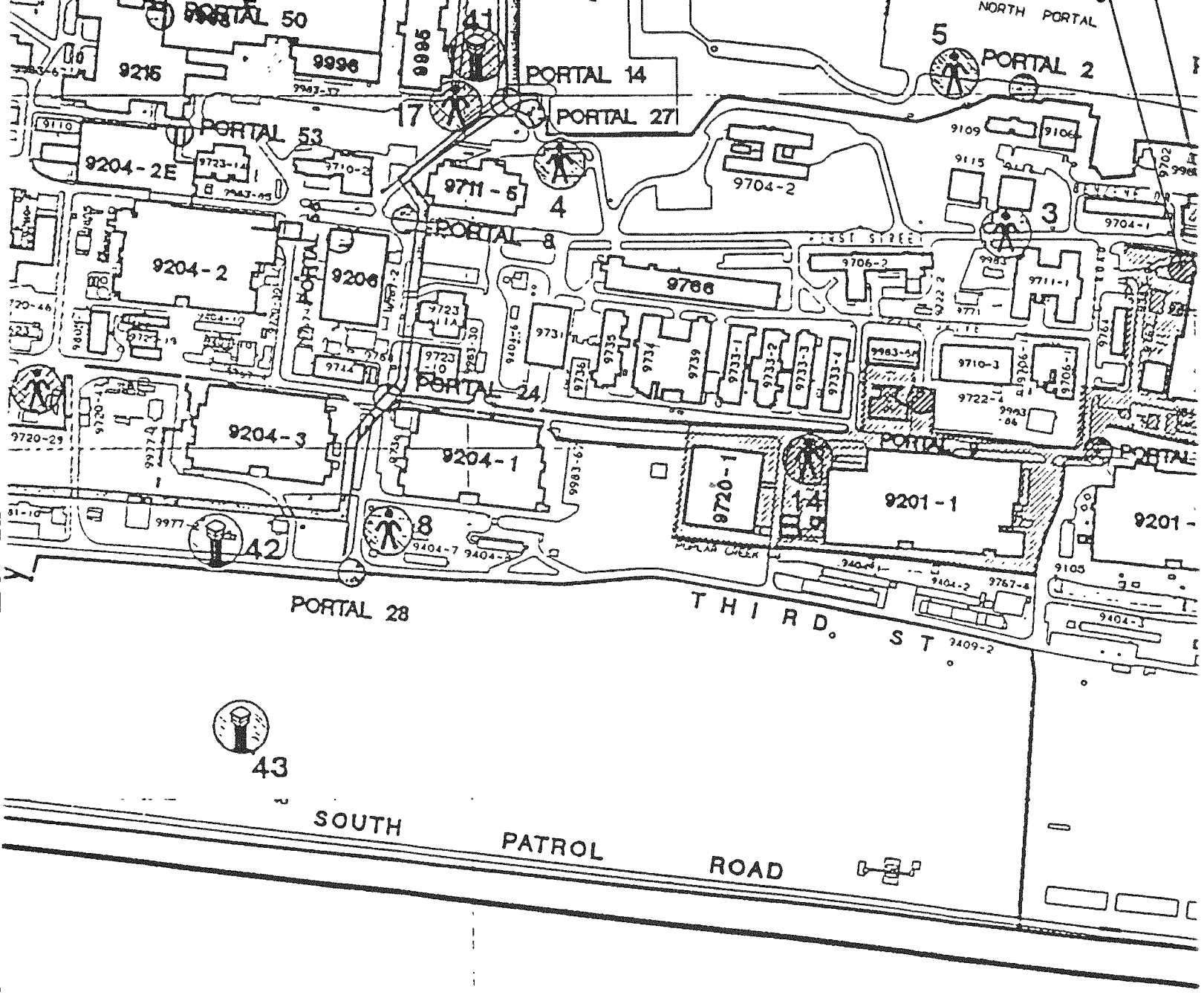

A
62000
64000
SCARBORO RD
1402-1
1402-2
1402-3
39
23
23
Y-12 PLANT
9219
9712
2
9754-2
9737
9983-8
9723-31
PORTAL 5 & 15
9709
9720-2
9767-2
9729
9738
9959-2
9959
1
9949-29
PORTAL 32
9720-49
SECOND ST
9720-8
9720-7
9720-6
PORTAL 13
LAKE REALITY
EAST PERIMETER
AGATE
DRIVE


AA
64000
66000
32500
31500
30500
29500
1
2
3
4
SCARBORO RD
Y-12 PLANT SIGN
23
LAKE REALITY
SECOND ST
PORTAL 13
SCARB



THE GRID AND COORDINATES AS SHOWN


9107
9114
BEAR CREEK PORTAL
PORTAL 10
WEST PO
PORTAL 1
9103
9113
9119
9117
47
48
16
15
7
FIRST ST
9201-5 NORTH
9723-19
9723-21
9723-16
9720-22
9720-24
9204-4
PORTAL 54
9201-5W
9201-5
9808
9201-4
9720-16
9720-14
9720-12
9720-13
9720-33
9720-32
9720-26
9720-25
9722
9767-13
10
9720-5
PORTAL 52
COAL STORAGE
9401-3
45
44
1501-2
9616-9
9990-3
9720-9
46
36
MT VERNON RD
PORTAL 3

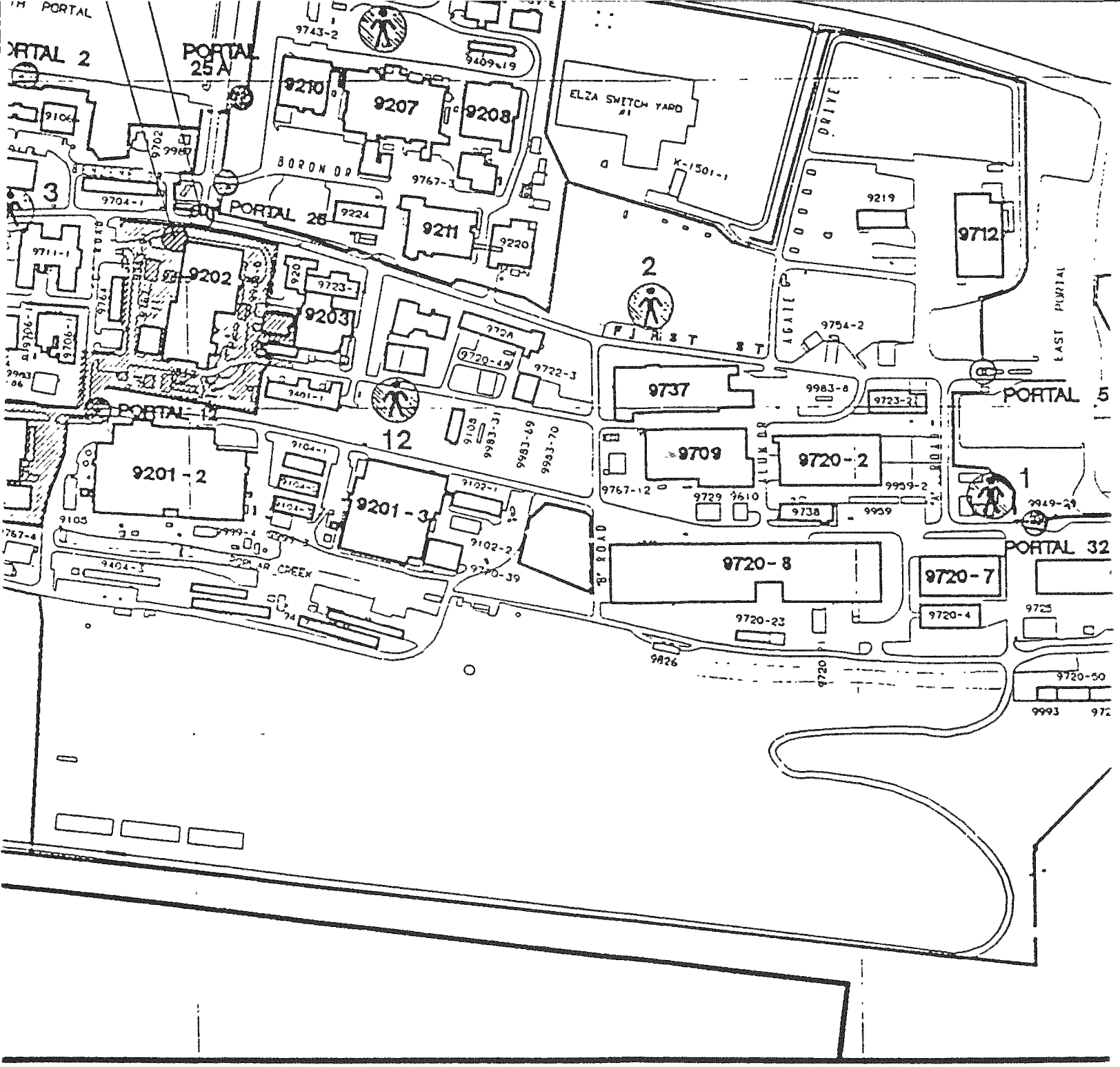


EXCLUSION AREA

PROTECTED AREA

PIDAS FENCING

RESERVOIRS



REA — GUARD TOWERS — FENCING

REA — ASSEMBLY STATIONS — 229 FENCING

NG — GUARD PORTALS

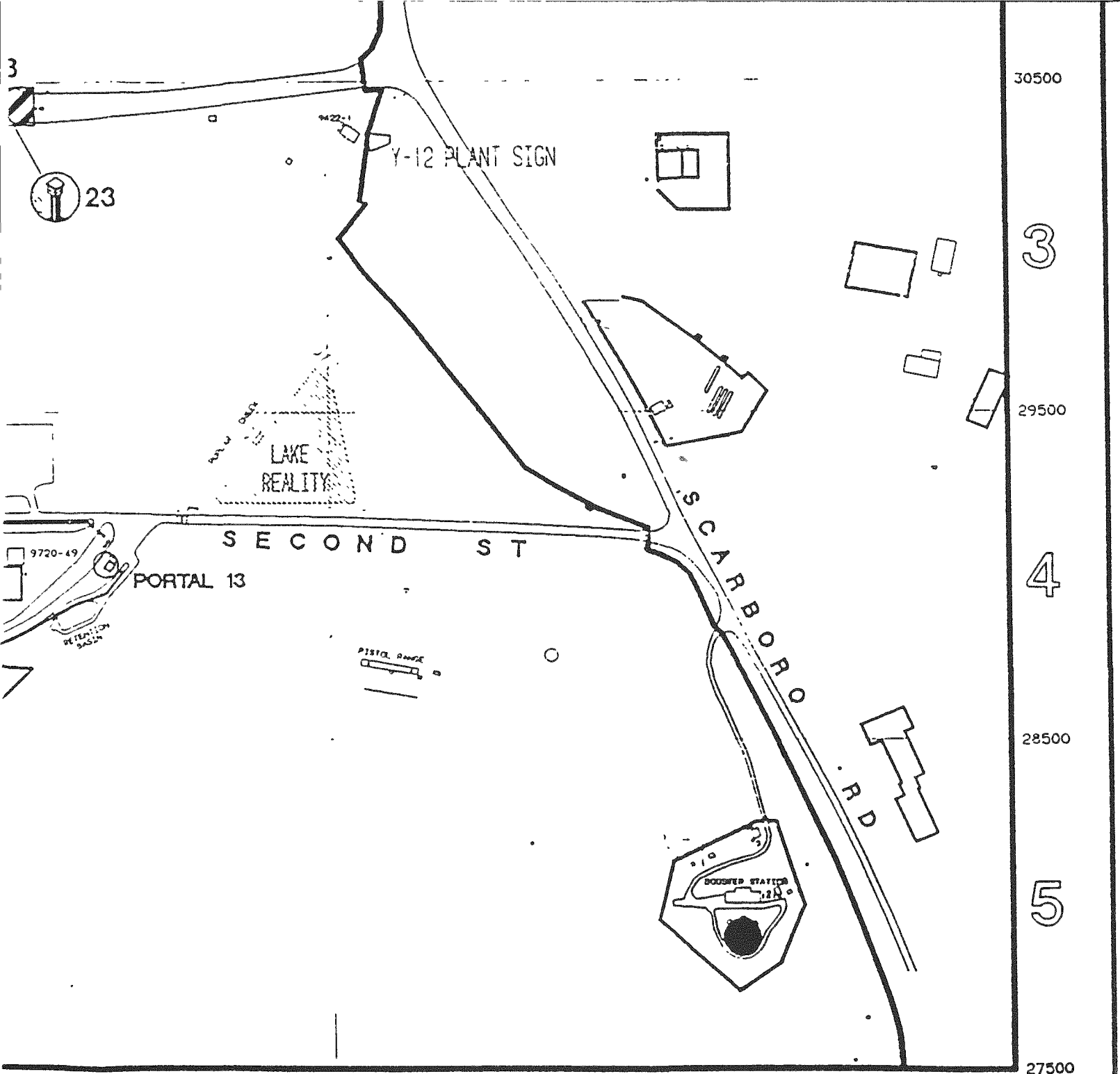
VEHICULAR CHECK POINTS

PES/071/03(

PREPARED BY GE

0 400

SCALE



	(REV 2)	MARTIN MARIETTA ENERGY SYSTEMS, INC.	
GROUP/JHW	09/15/93	OPERATED FOR THE DEPARTMENT OF ENERGY UNDER U.S. GOVERNMENT CONTRACT DE-AC-05-840R21400 OAK RIDGE, TENNESSEE • PADUCAH, KENTUCKY	
300 1600 FEET		# Y-12 PLANT # EMERGENCY FACILITIES DIRECTORY	

OAK RIDGE Y-12 PLANT

WASTE UNIT IDENTIFICATION KEY

APPLICATION LINE	EPA PROCESS CODE	DESCRIPTION
1	T04 S01	CYANIDE TREATMENT UNIT
2	T02	KERR HOLLOW QUARRY TREATMENT UNIT
3	S02	GARAGE UNDERGROUND TANKS
4	D80	WALK-IN PITS
5	S01	INTERIM DRUM YARD
6	S01	BUILDING 9720-9 STORAGE UNIT
7	S01	RCRA & MIXED WASTE STORAGE & STAGING BUILDING 9720-31
8	S02	BUILDING 9811-1 RCRA TANK STORAGE UNIT
9	S01	BUILDING 9811-1 RCRA CONTAINER STORAGE UNIT
10	S02 S01	WASTE OIL/SOLVENT STORAGE UNIT
11	S02 S01	LIQ. ORGANIC SOLVENT STOR. UNIT
12	S03	EAST CHESTNUT RIDGE WASTE PILE
13	S01	CONTAINERIZED WASTE STORAGE AREA
14	S01	CLASSIFIED CONTAINER STORAGE UNIT BUILDING 9720-25
15	S03	OIL LANDFARM SOILS CONTAINMT. PAD
16	S03	DISPOSAL AREA REMEDIAL ACTION (DARA) SOLIDS STORAGE UNIT
17	T01 S01	URANIUM TREATMENT UNIT
18	T04	INTERIM REACTIVE WASTE TREATMT AREA
19	S01	BUILDING 9720-12 CLASSIFIED CONTAINER STORAGE AREA
20	S01	RCRA AND PCB CONTAINER STORAGE AREA. BUILDING 9720-58
21	S01	BUILDING 9201-4 CONTAINER STORAGE AREA
22	S01	BUILDING 9206 CONTAINER STORAGE AREA
23	S01	BUILDING 9212 CONTAINER STORAGE AREA

ANT

EY

UNIT

IT

NIT

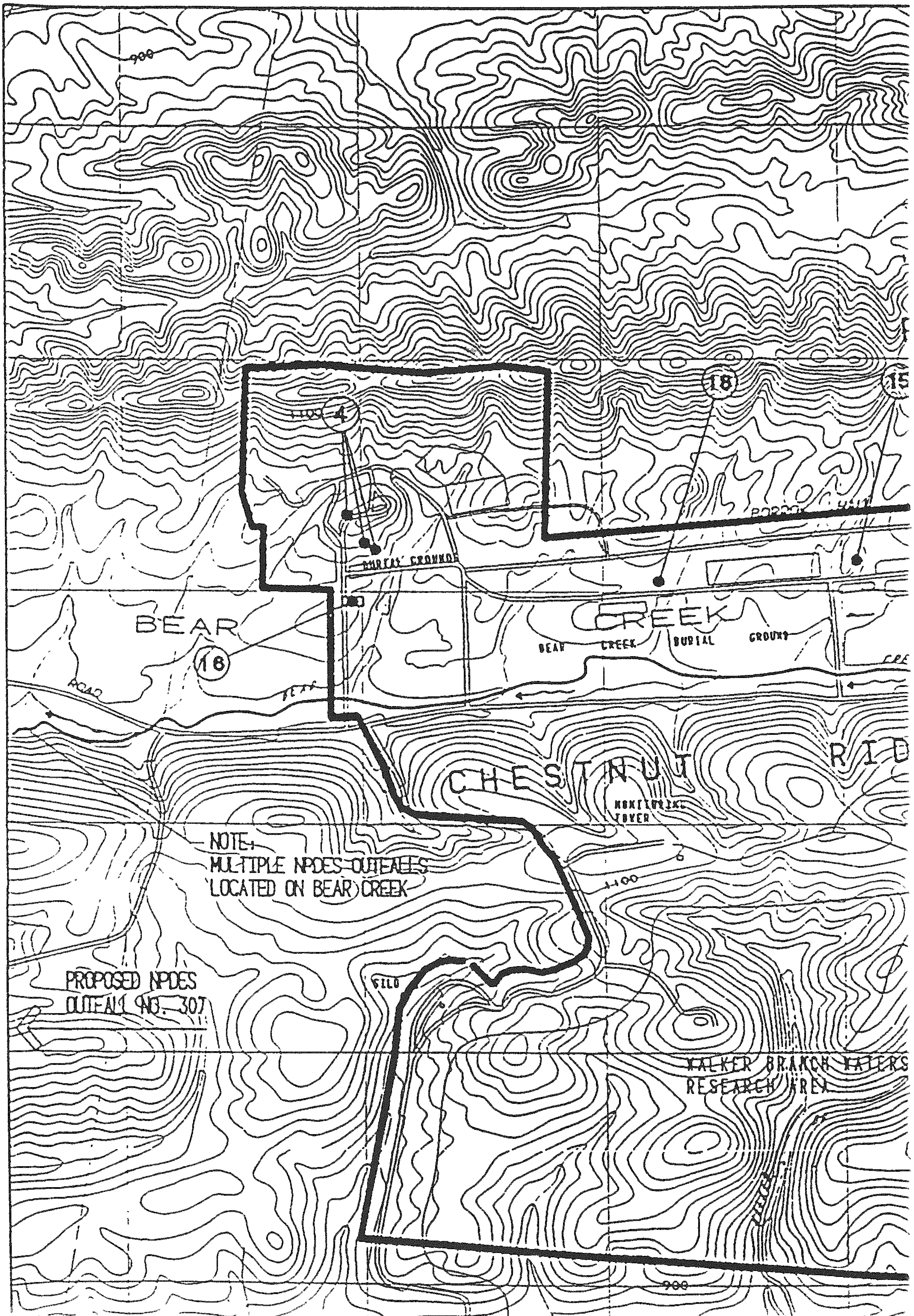
LE
AREA
UNIT

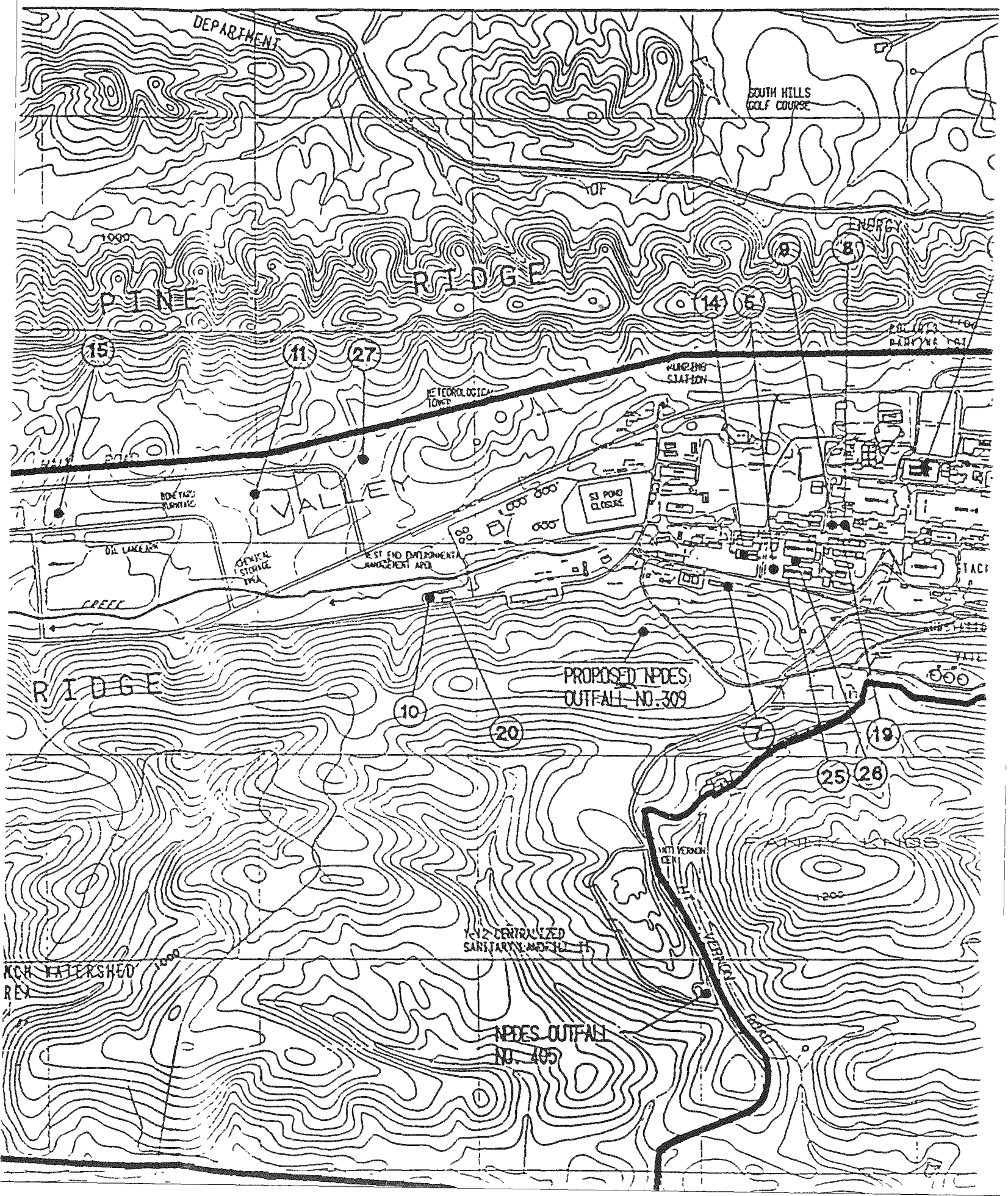
. PAD
N

MT AREA

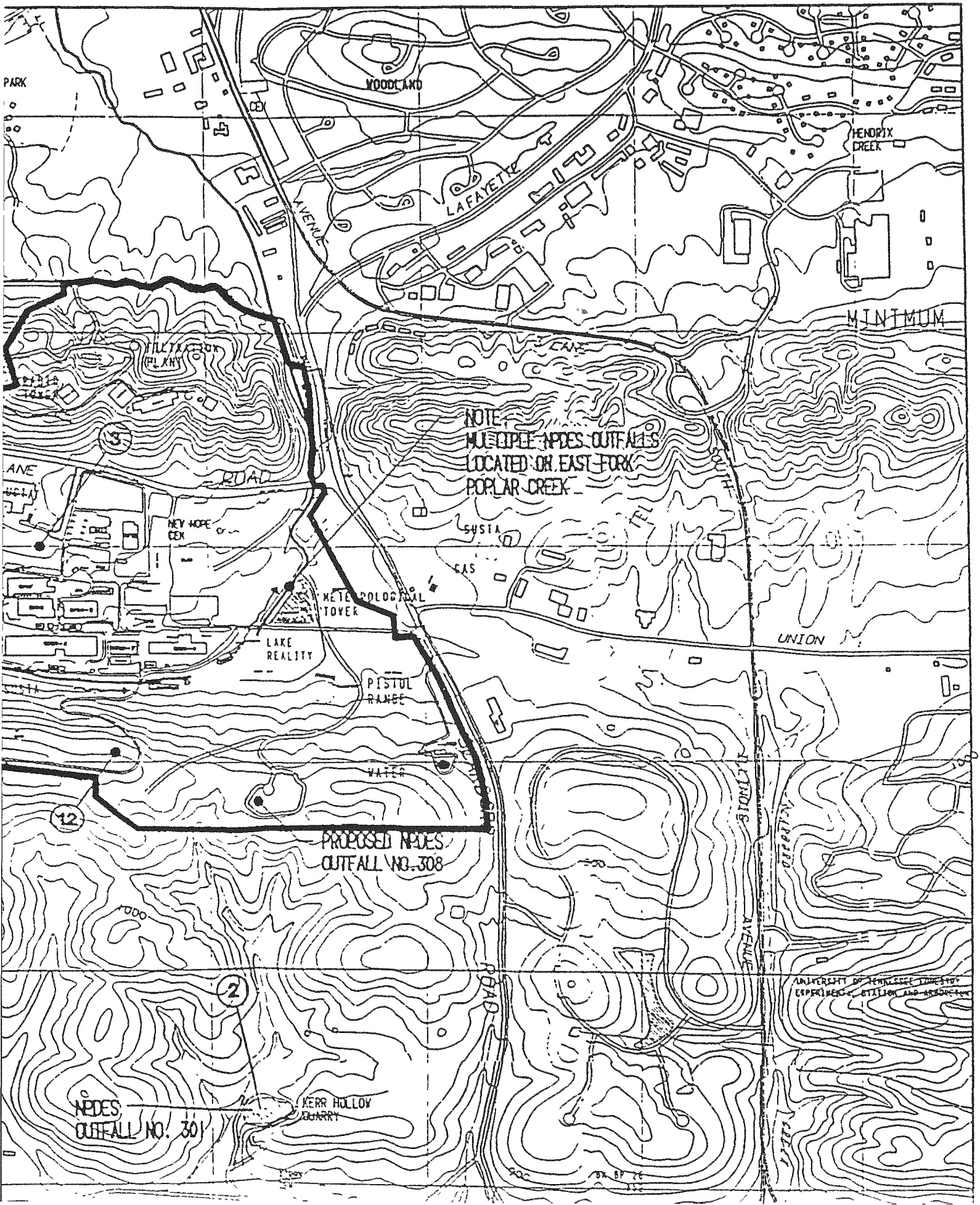
58

AGE AREA




DEPARTMENT
SOUTH HILLS
GOLF COURSE
PINE
RIDGE
VALLEY
RIDGE
METEOROLOGICAL
TOWER
PUMPING
STATION
SS POND
CLOSURE
WEST END ENVIRONMENTAL
MANAGEMENT AREA
CENTRAL
STORAGE
AREA
OIL LANDFARM
CREEK
PROPOSED NPDES
OUTFALL NO. 309
Y-12 CENTRALIZED
SANITARY LANDFILL II
NPDES OUTFALL
NO. 405
VERNON
MT. VERNON
CEM.
ROAD
15
11
27
14
5
8
8
10
20
7
19
25
26


PARK
MT ZION
CHURCH
OAK
VALLEY
CHURCH
SCARBORO
PARK
BOUNDARY
1
23
Y-12
LANE
ROAD
3
NEW HOPE
CEM
22
17
19
21
6
26
13
24
12
2
NPDES
OUTFALL NO. 302
NPDES
OUTFALL NO. 301

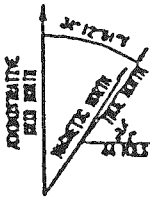

PARK
WOODLAND
HENDRIX CREEK
LAFAYETTE
AVENUE
MINIMUM
CANE
FILTRATION PLANT
NOTE:
MULTIPLE NPDES OUTFALLS
LOCATED ON EAST FORK
POPLAR CREEK
3
ROAD
NEW HOPE CEK
METEOROLOGICAL TOWER
LAKE REALITY
PISTOL RANGE
WATER
UNION
12
PROPOSED NPDES
OUTFALL NO. 308
2
NPDES
OUTFALL NO. 301
KERR HOLLOW QUARRY
BIONIC AVENUE
ROAD

6	S01	BUILDING 9720-9 STORAGE UNIT
7	S01	RCRA & MIXED WASTE STORAGE & STAGING BUILDING 9720-31
8	S02	BUILDING 9811-1 RCRA TANK STORAGE UNIT
9	S01	BUILDING 9811-1 RCRA CONTAINER STORAGE UNIT
10	S02 S01	WASTE OIL/SOLVENT STORAGE UNIT
11	S02 S01	LIQ. ORGANIC SOLVENT STOR. UNIT
12	S03	EAST CHESTNUT RIDGE WASTE PILE
13	S01	CONTAINERIZED WASTE STORAGE AREA
14	S01	CLASSIFIED CONTAINER STORAGE UNIT BUILDING 9720-25
15	S03	OIL LANDFARM SOILS CONTAINMT. PAD
16	S03	DISPOSAL AREA REMEDIAL ACTION (DARA) SOLIDS STORAGE UNIT
17	T01 S01	URANIUM TREATMENT UNIT
18	T04	INTERIM REACTIVE WASTE TREATMT AREA
19	S01	BUILDING 9720-12 CLASSIFIED CONTAINER STORAGE AREA
20	S01	RCRA AND PCB CONTAINER STORAGE AREA, BUILDING 9720-58
21	S01	BUILDING 9201-4 CONTAINER STORAGE AREA
22	S01	BUILDING 9206 CONTAINER STORAGE AREA
23	S01	BUILDING 9212 CONTAINER STORAGE AREA
24	S02	BLDG 9409-5 STORAGE UNIT
25	S01	BLDG 9720-32 PRODUCTION WASTE STORAGE UNIT (FUTURE)
26	S01	BLDG 9720-59 CLASSIFIED WASTE STORAGE UNIT (FUTURE)
27	S01	OAK RIDGE RESERVATION STORAGE UNITS (FUTURE)

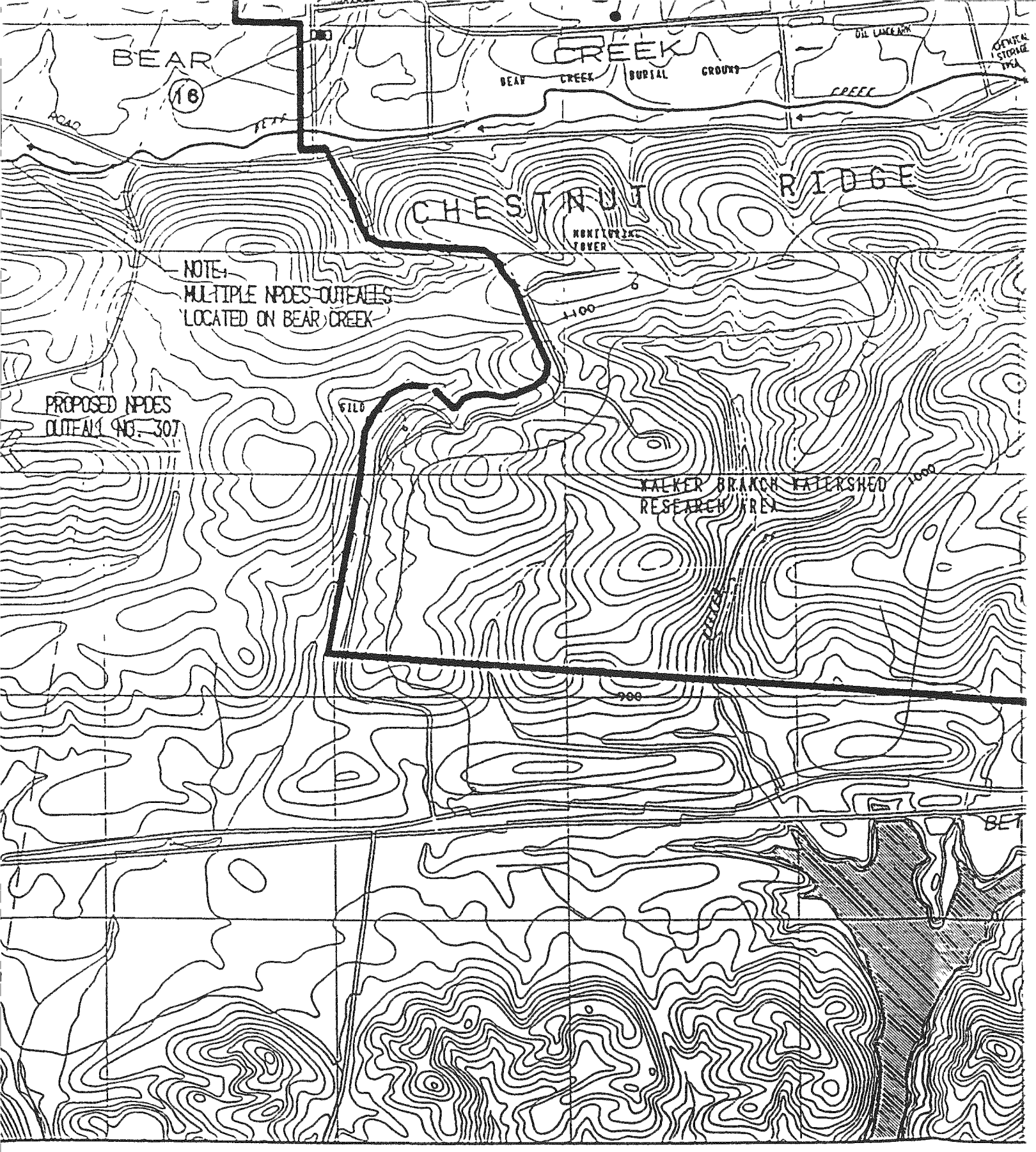
MARTIN MARIETTA

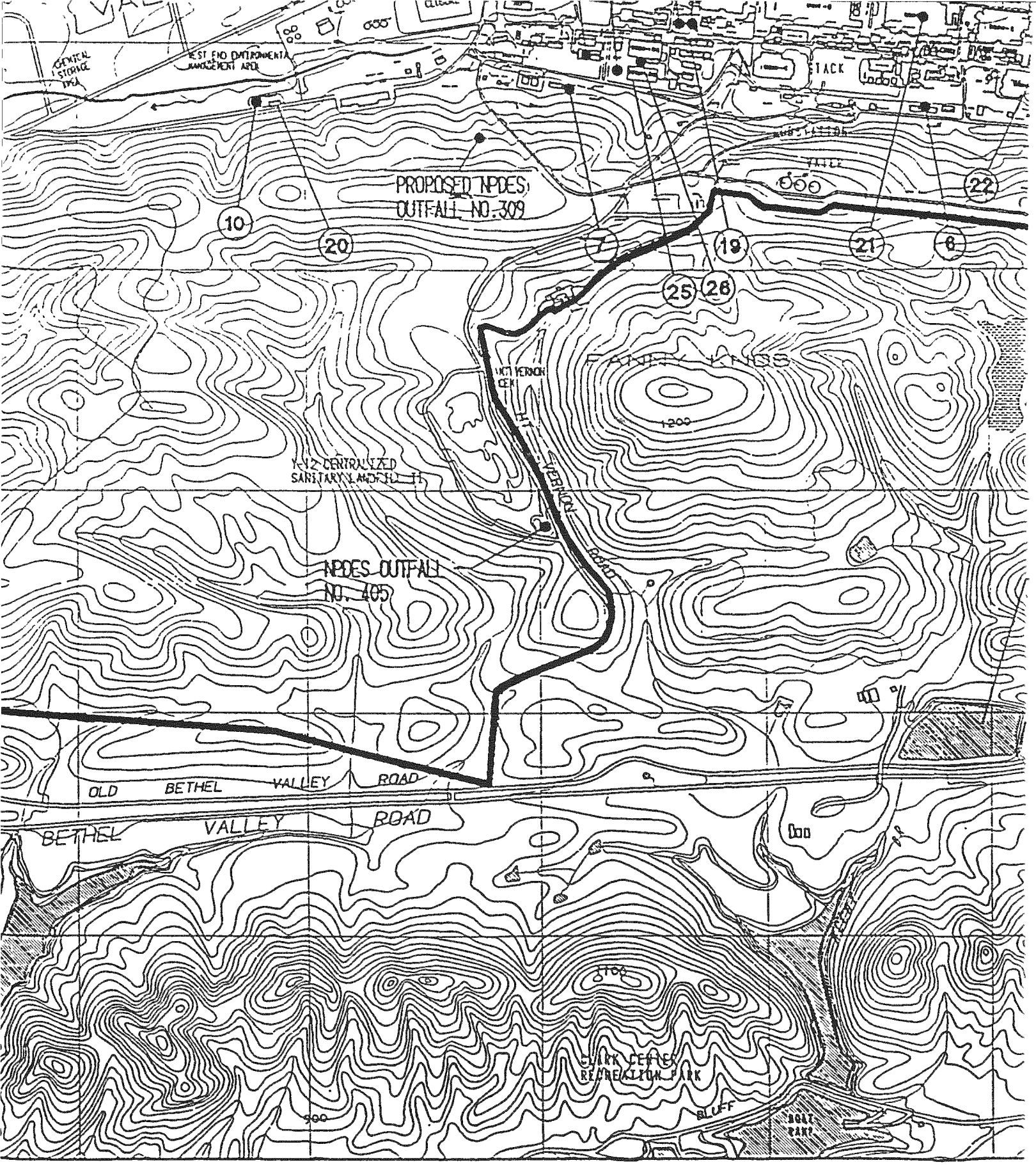
Y-12 PLANT RCRA WASTE UNIT LOCATIONS

PES/216/100992	REV 21
PREPARED BY PES GEODATA GROUP	11/18/93

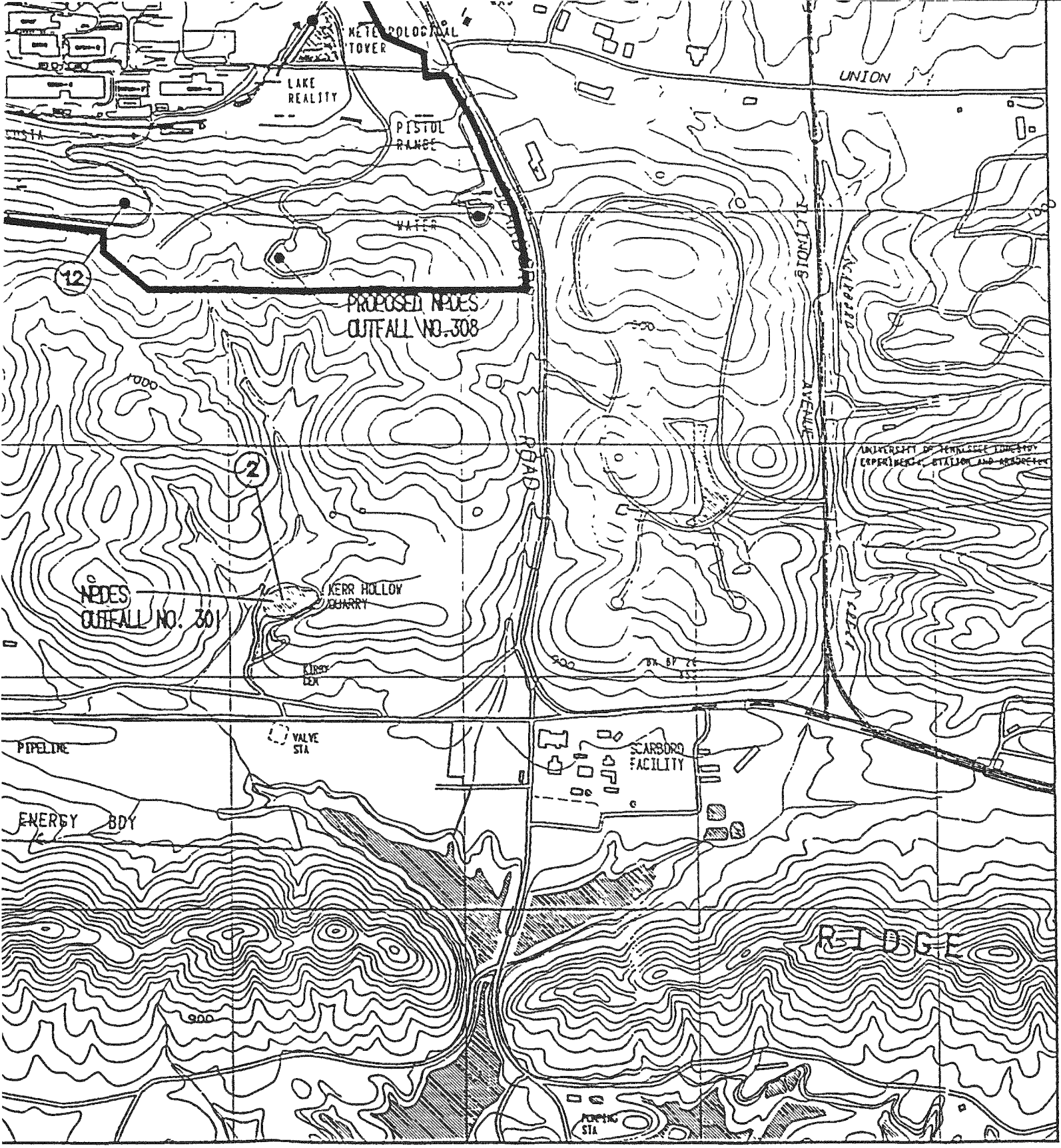


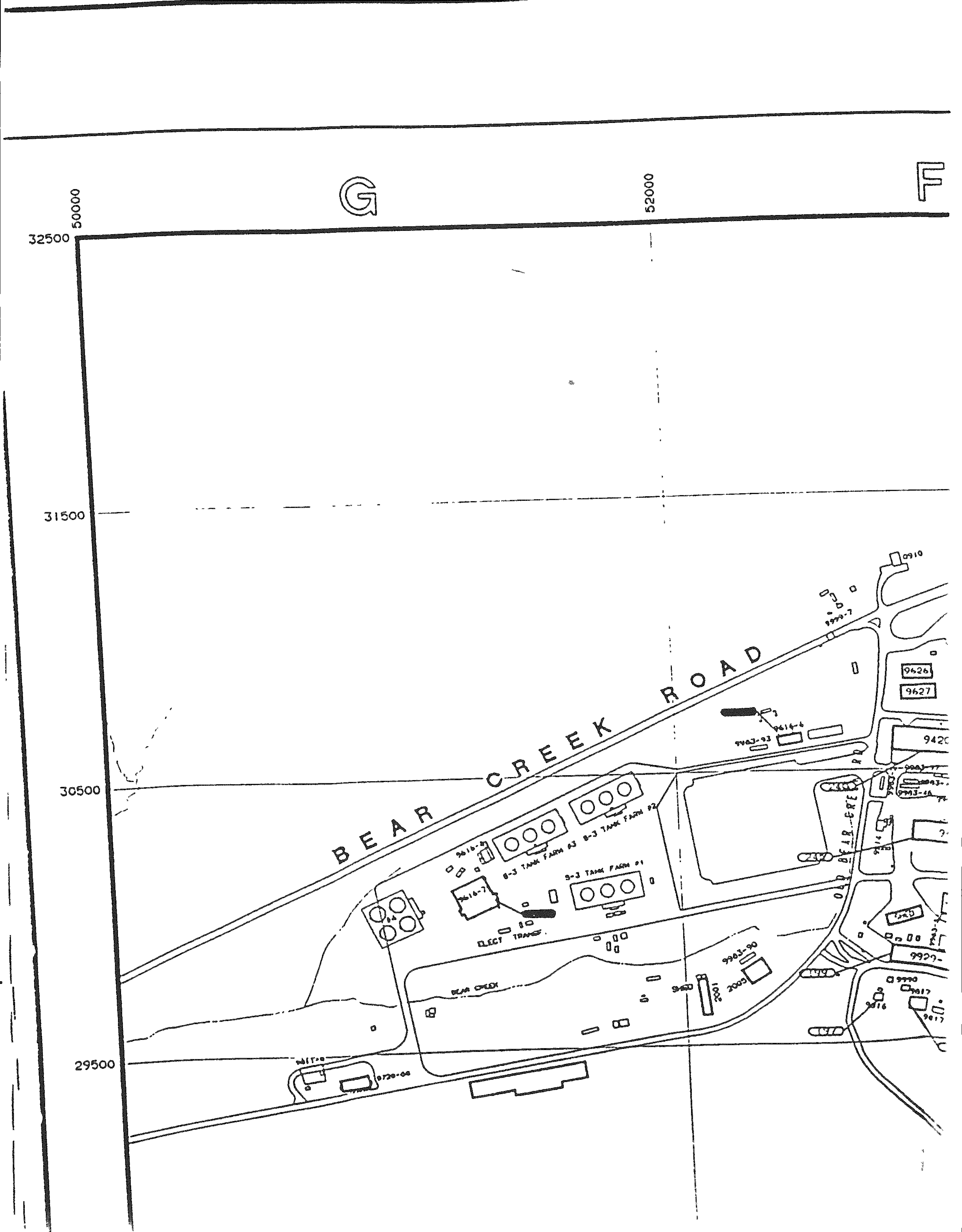
DECLINATION OF GRID 34°12'54"Y OF TRUE NORTH
1987 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET


BEAR
CREEK
16
BEAR CREEK BURIAL GROUND
OIL LEASE
CHESTNUT RIDGE
MONITORING TOWER
NOTE:
MULTIPLE NPDES OUTFALLS
LOCATED ON BEAR CREEK
PROPOSED NPDES
OUTFALL NO. 307
WILD
WALKER BRANCH WATERSHED
RESEARCH AREA
1100
1000
900


PROPOSED NPDES
OUTFALL NO. 309
NPDES OUTFALL
NO. 405
Y-12 CENTRALIZED
SANITARY LANDFILL II
MT VERNON
CEM
MT VERNON
ROAD
OLD BETHEL VALLEY ROAD
BETHEL VALLEY ROAD
CLARK CENTER
RECREATION PARK
BLUFF
BOAT
RAMP
10
20
19
21
6
22
25
26
1200
900


STACK
22
17
19
21
6
26
13
24
12
2
NPDES
OUTFALL NO. 302
NPDES
OUTFALL NO. 301
ROGERS
QUARRY
PIPELINE
ENERGY
BDY
HAW
ROAD
BLUFF
1000
900

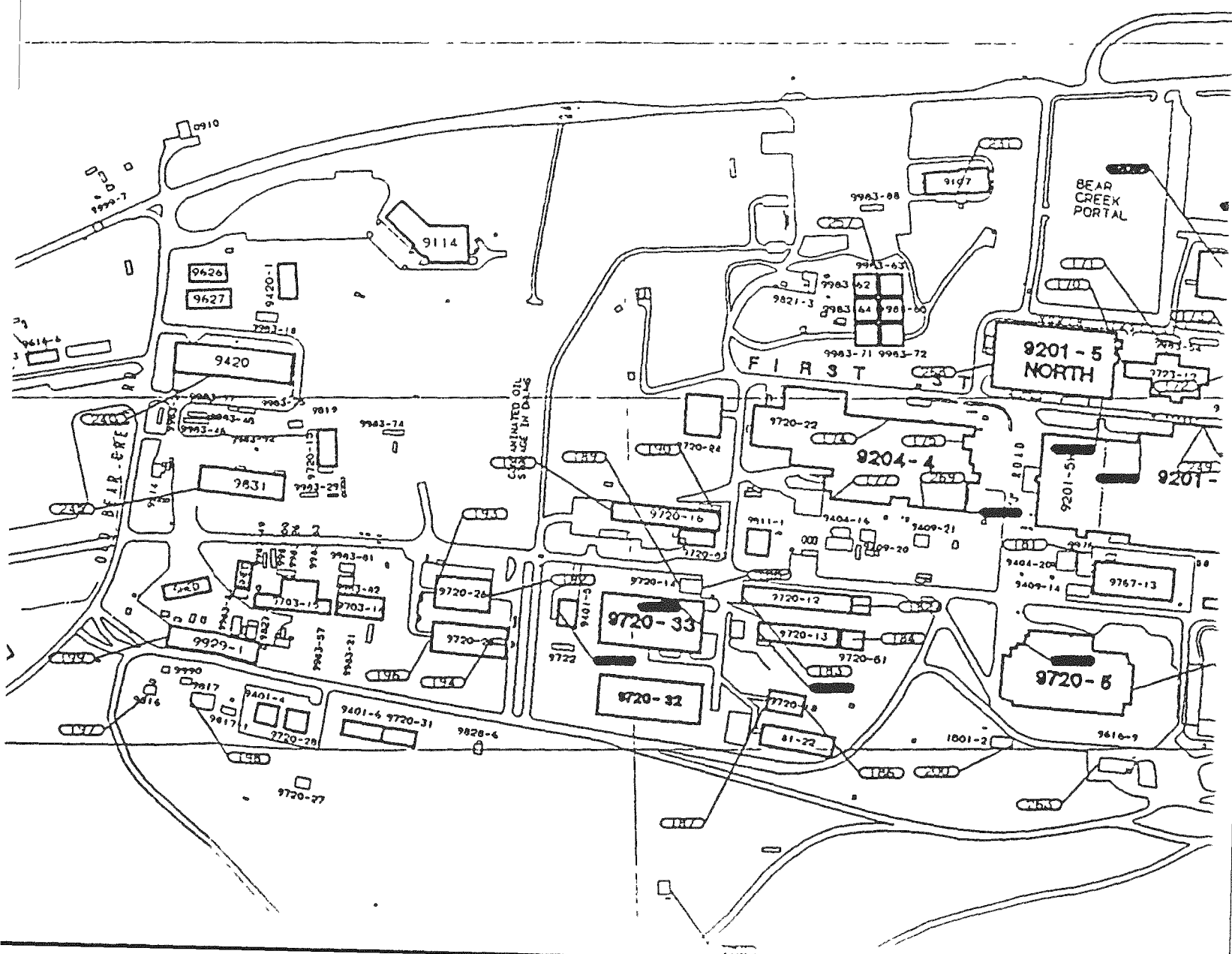

METEOROLOGICAL TOWER
LAKE REALITY
PISTOL RANGE
UNION
WATER
12
PROPOSED NPDES OUTFALL NO. 308
2
NPDES OUTFALL NO. 301
KERR HOLLOW QUARRY
PIPELINE
VALVE STA
SCARBORO FACILITY
ENERGY BDY
RIDGE
POWING STA



50000
G
52000
F
32500
31500
30500
29500
BEAR CREEK ROAD
B-3 TANK FARM #3
B-3 TANK FARM #2
B-3 TANK FARM #1
9616-7
9616-6
ELECT TRANSF.
BEAR CREEK
OLD BEAR CREEK RD
9626
9627
9420
0910
9963-90
2001
2005
9990
9617
9616
9929-

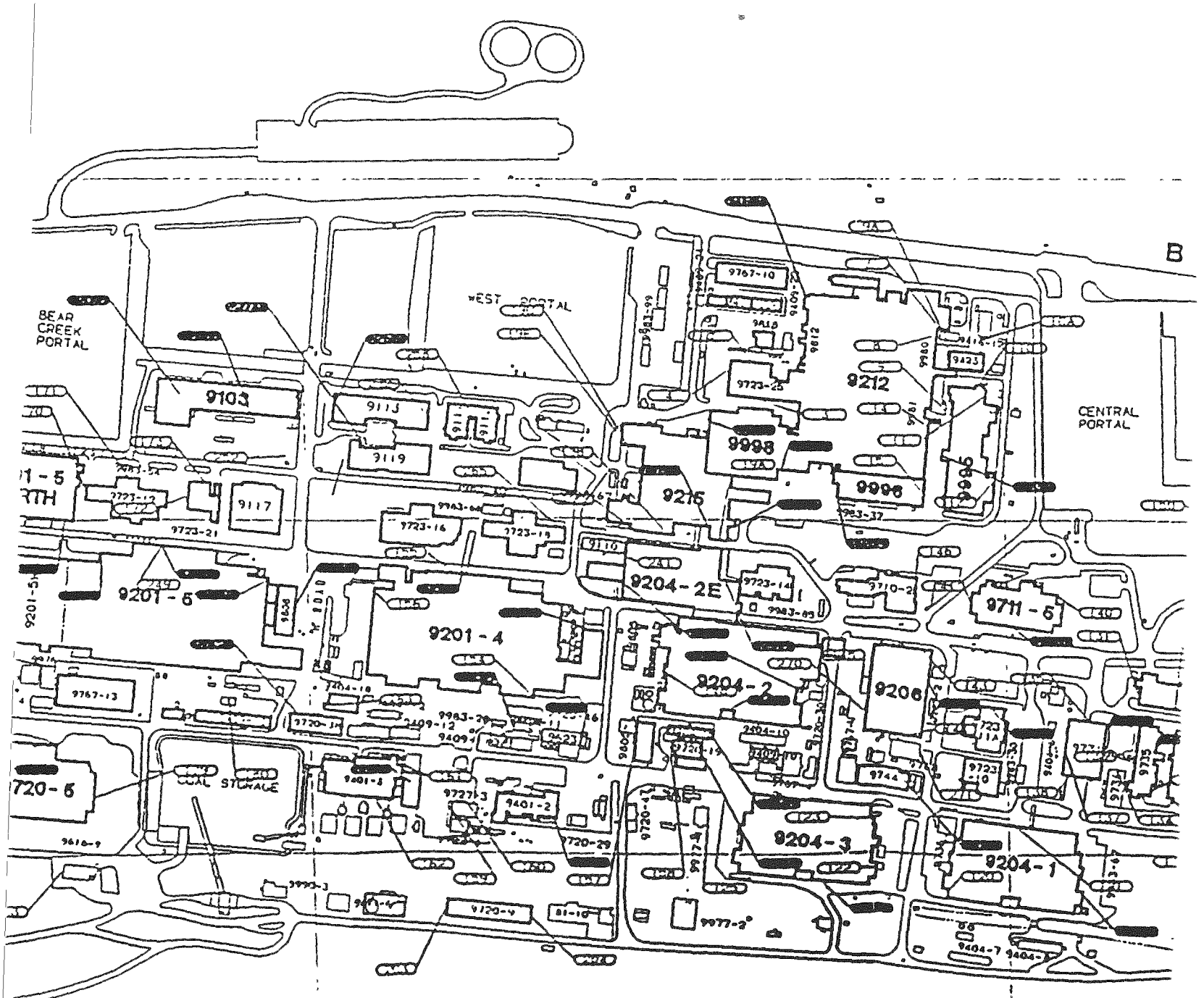
Y-12 P

F 54000 E



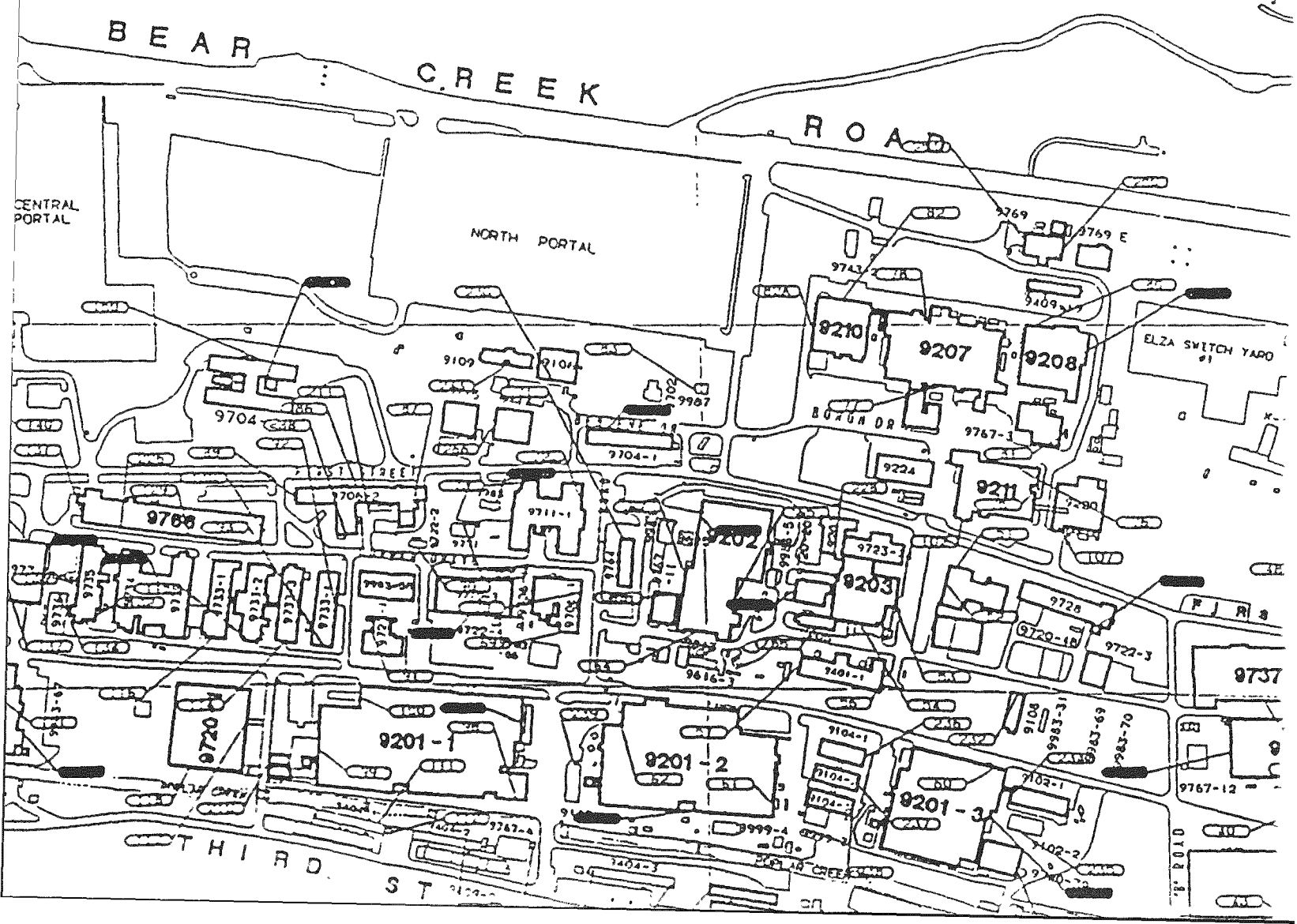
PLANT LOADING A

56000 D 58000

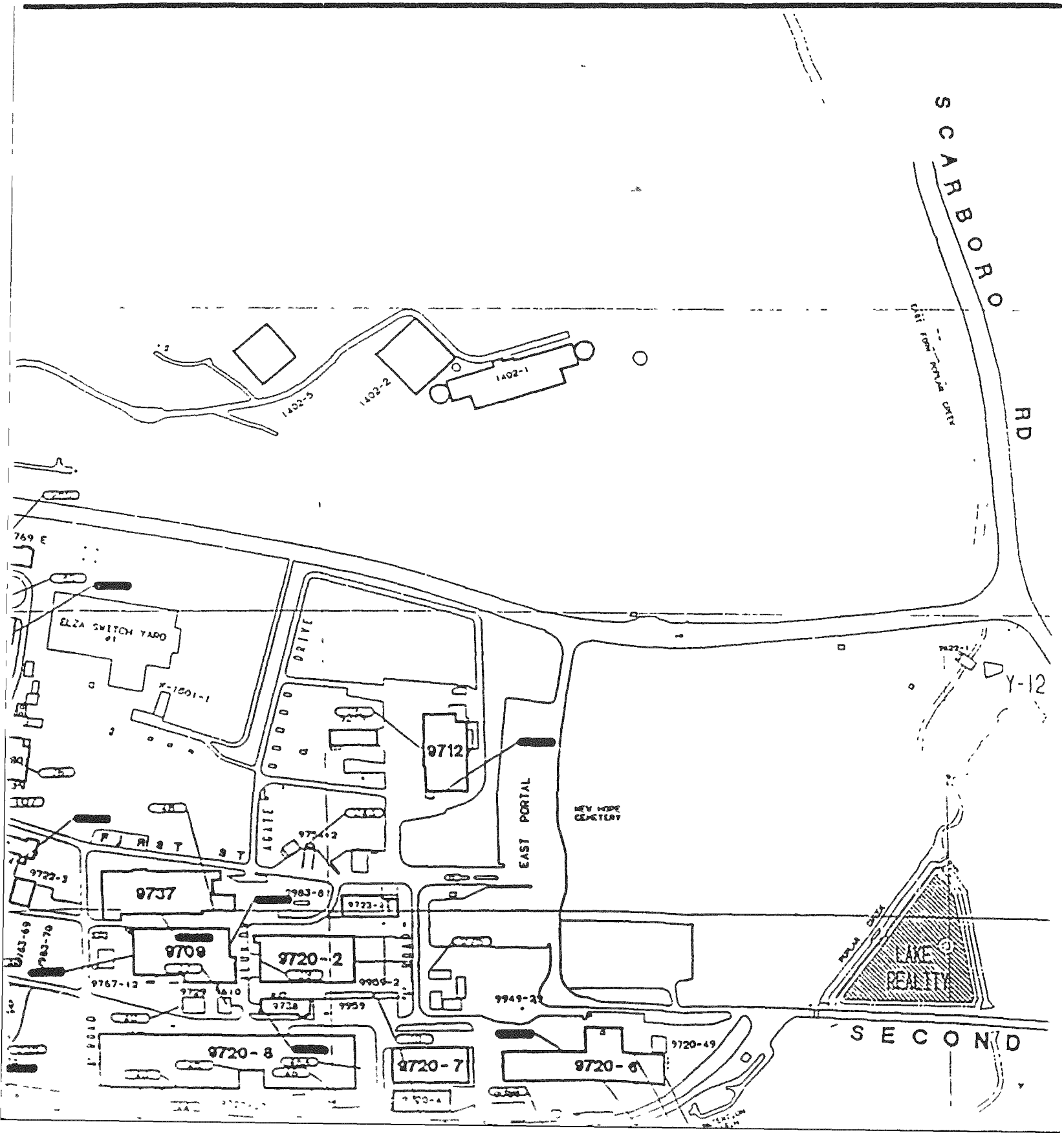


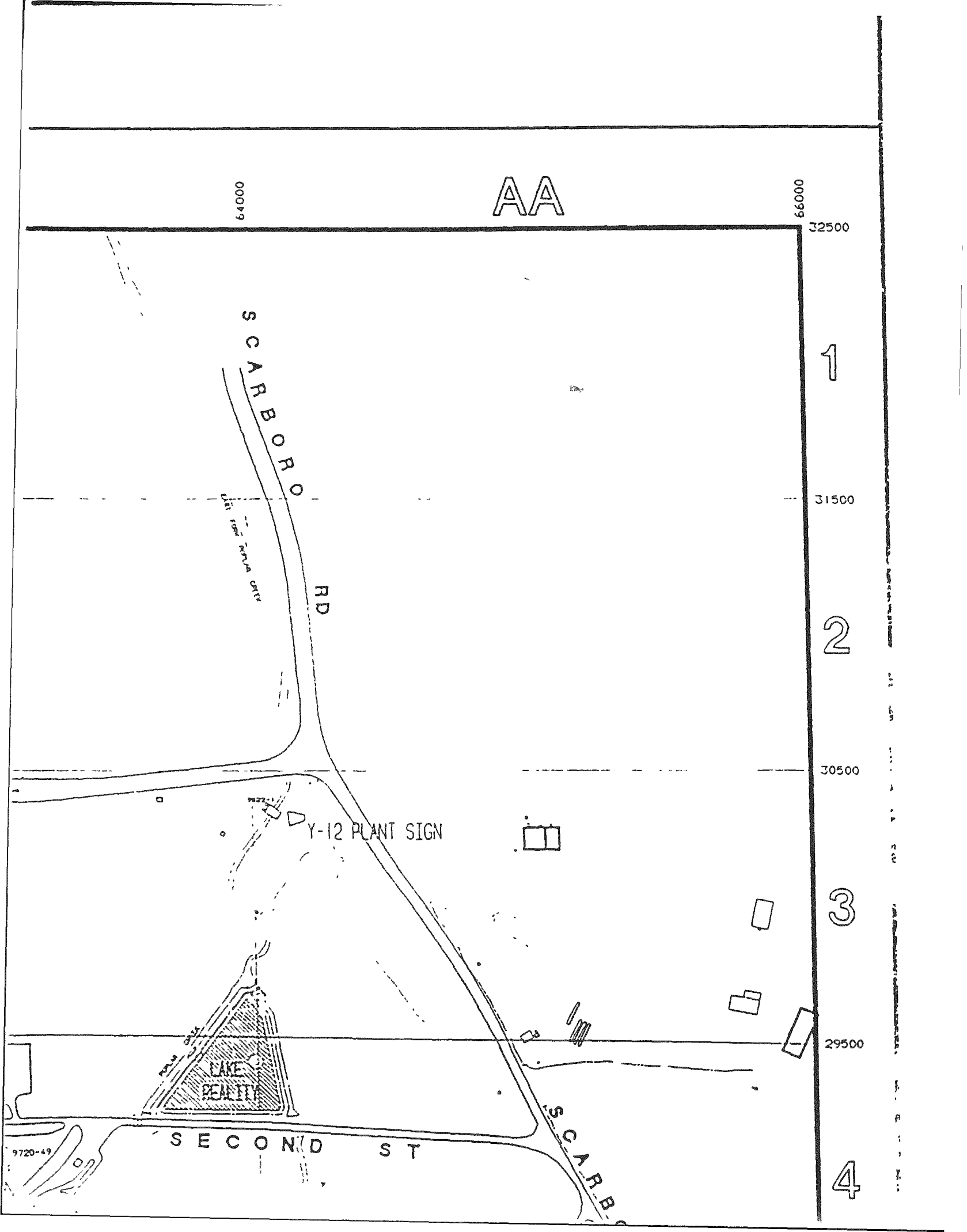
AND SHIFTING DC

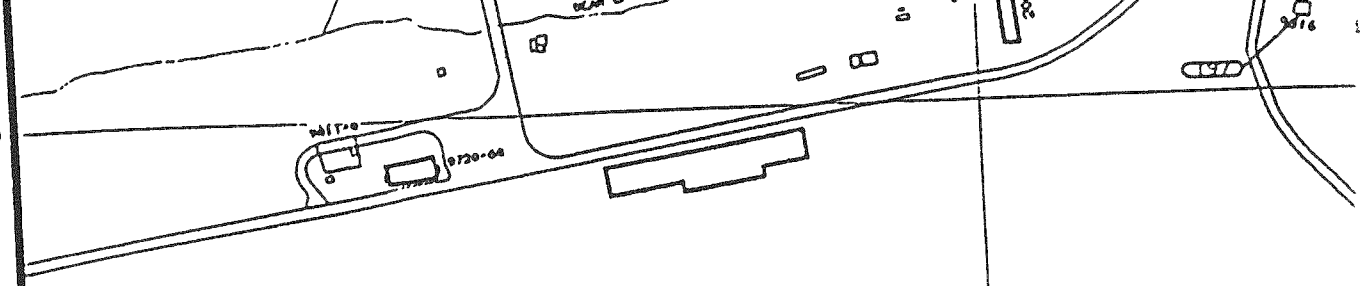
C 60000 B



62000 A 64000




AA
64000
66000
32500
31500
30500
29500
1
2
3
4
SCARBORO RD
Y-12 PLANT SIGN
LAKE REALITY
SECOND ST
9720-49



29500

28500

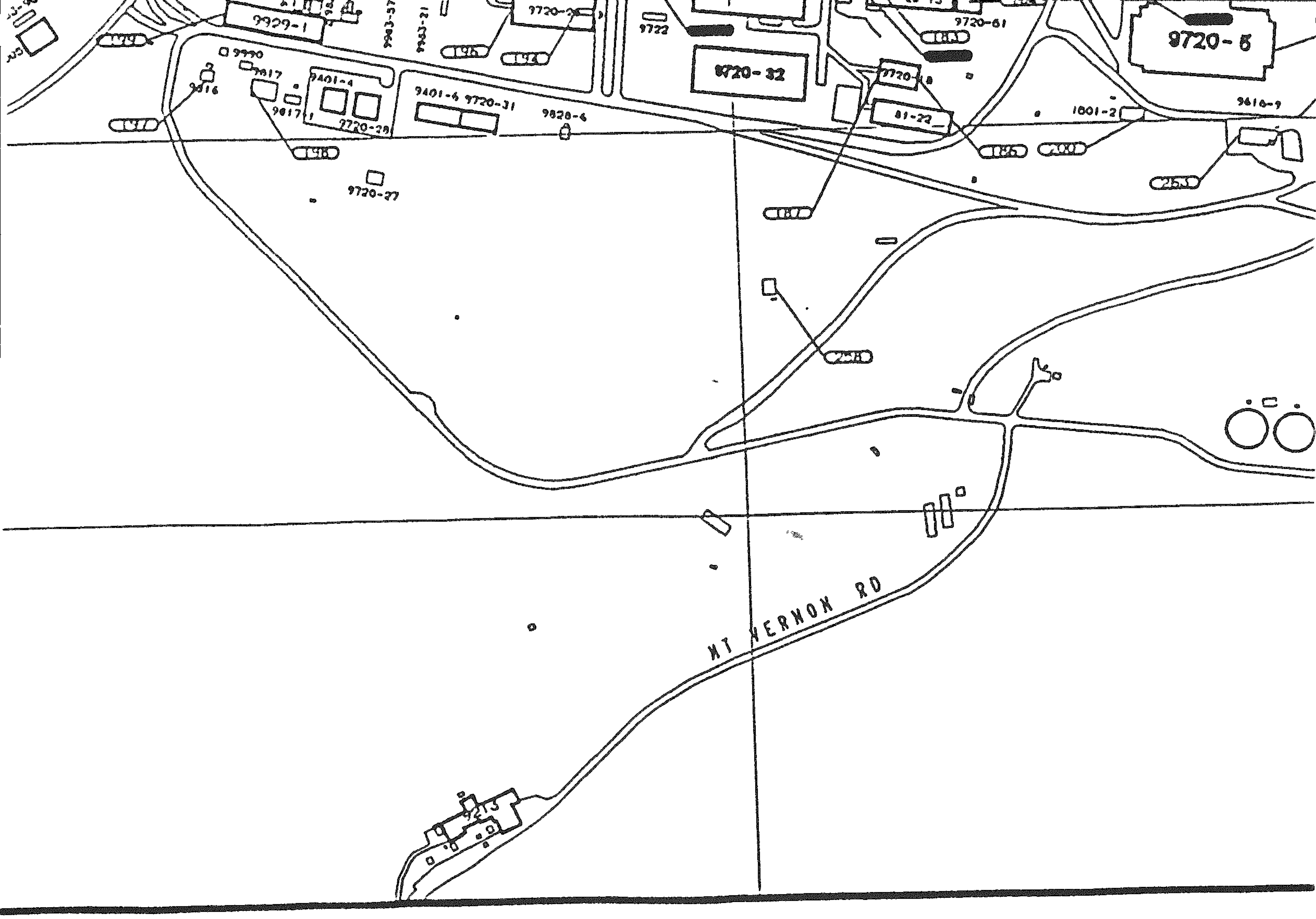
NORTH
TRUE
GRID

THE GRID AND COORDINATES AS SHOWN
REPRESENT THE Y-12 PLANT GRID SYSTEM

27500

DOCK ONLY

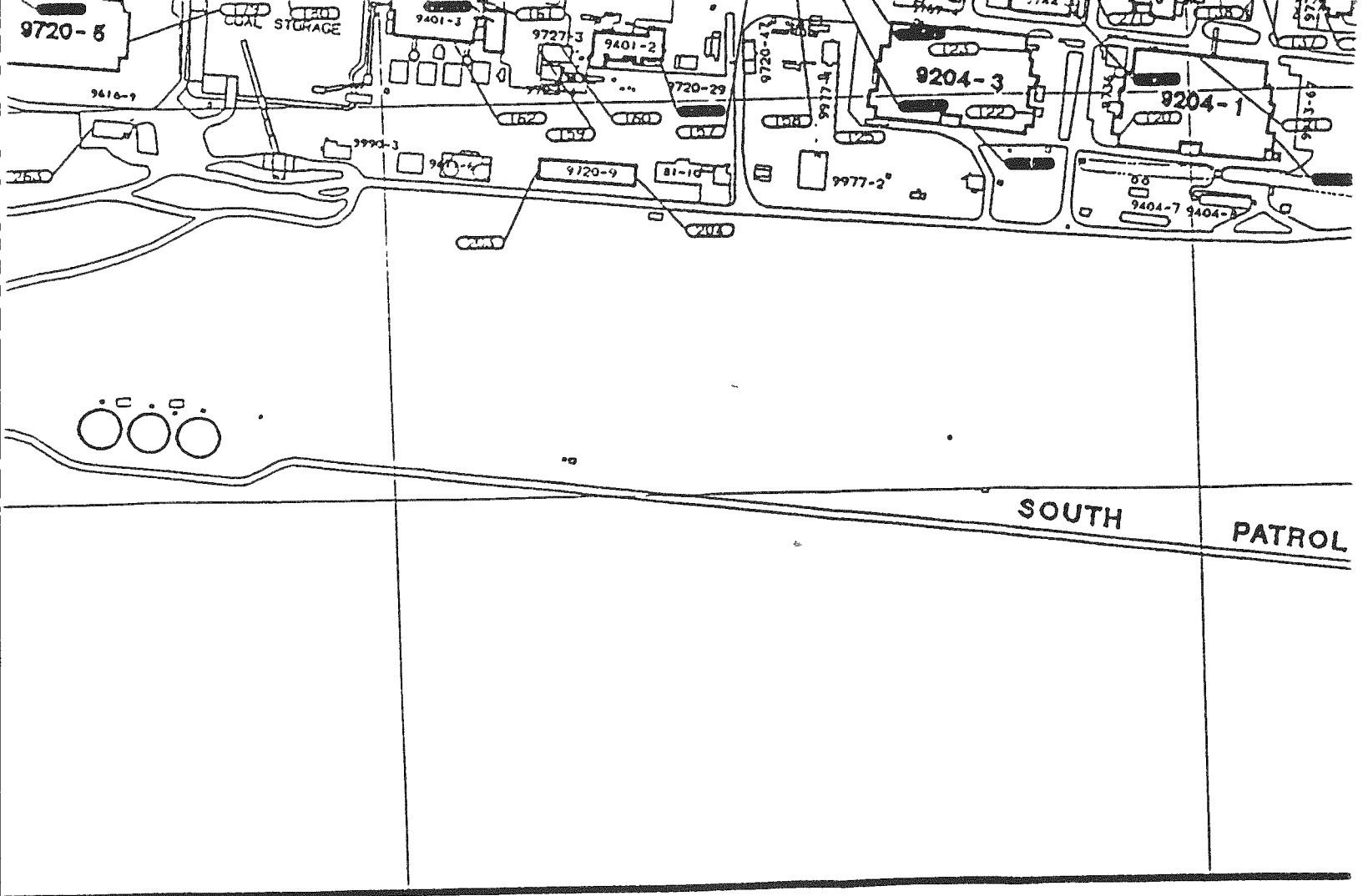
3	S.W. CORNER 9723-25	D-2
4	WEST SIDE 9723-25	D-2
5	N. SIDE 9723-25	D-2
7	N.E. CORNER 9212	D-2
8	N.E. CORNER 9212	D-2
9	E. SIDE 9981	D-2
9A	E. SIDE 9212	D-2
10	N. SIDE 9995	D-2
10A	S.W.CORNER SHED	D-2
11	N.E. CORNER 9995	D-2
12	E. SIDE 9995	D-2
14	E. SIDE 9212	D-2
15	N.E. SIDE 9996	D-2
19A	S.E.CORNER 9215	D-2
19B	S. SIDE 9215	D-2
19C	S.W. CORNER 9215	D-2
19D	W. SIDE 9215	D-2
19E	N.W. 9215	A-3
26	W. SIDE 9712	A-4
30	S. SIDE 9959-2	A-4
32	N.E. SIDE 9720-6	A-4
33	E. END 9720-6	A-4
34	S. SIDE 9720-6	A-4
35	N.W. CORNER 9720-7	B-4
37	E. SIDE 9610	B-4
39	W. SIDE 9720-2	B-4
40	W. SIDE 9729	B-4
41	S. SIDE 9720-8	B-4
42	S. SIDE 9720-8	B-4
43	S. SIDE 9720-8	B-4
44	S. SIDE 9720-8	B-4
45	S. SIDE 9720-8	B-4
46	S. SIDE 9720-8	B-4
46A	E. SIDE 9720-8	A-4
48	S. SIDE E. END 9737	B-3
51	N. SIDE 9723-4	B-3
52	W. SIDE 9723-4	B-3
53	E. SIDE 9203	B-3
54	S. SIDE 9203	B-3
55	S. SIDE 9205	B-3
56	E. SIDE 9401-1	B-3
57	W. END 9401-1	B-3
60	N.E. CORNER 9201-3	B-4
61	S.E. CORNER 9201-2	B-4
62	N.W. CORNER 9201-2	C-4
64	S. SIDE 9202	B-3
65	E. SIDE 9202	B-3
67	W. SIDE 9202	C-3
68	W. SIDE 9202	C-3
69	S. SIDE 9706-1	C-3
70	E. SIDE 9706-1A	C-3
71	W. SIDE 9764	C-3
72	E. SIDE 9711-1	C-3
73	N.W. CORNER 9711-1	C-3
75	E. SIDE 9211	B-3
76	N. SIDE 9211	B-3



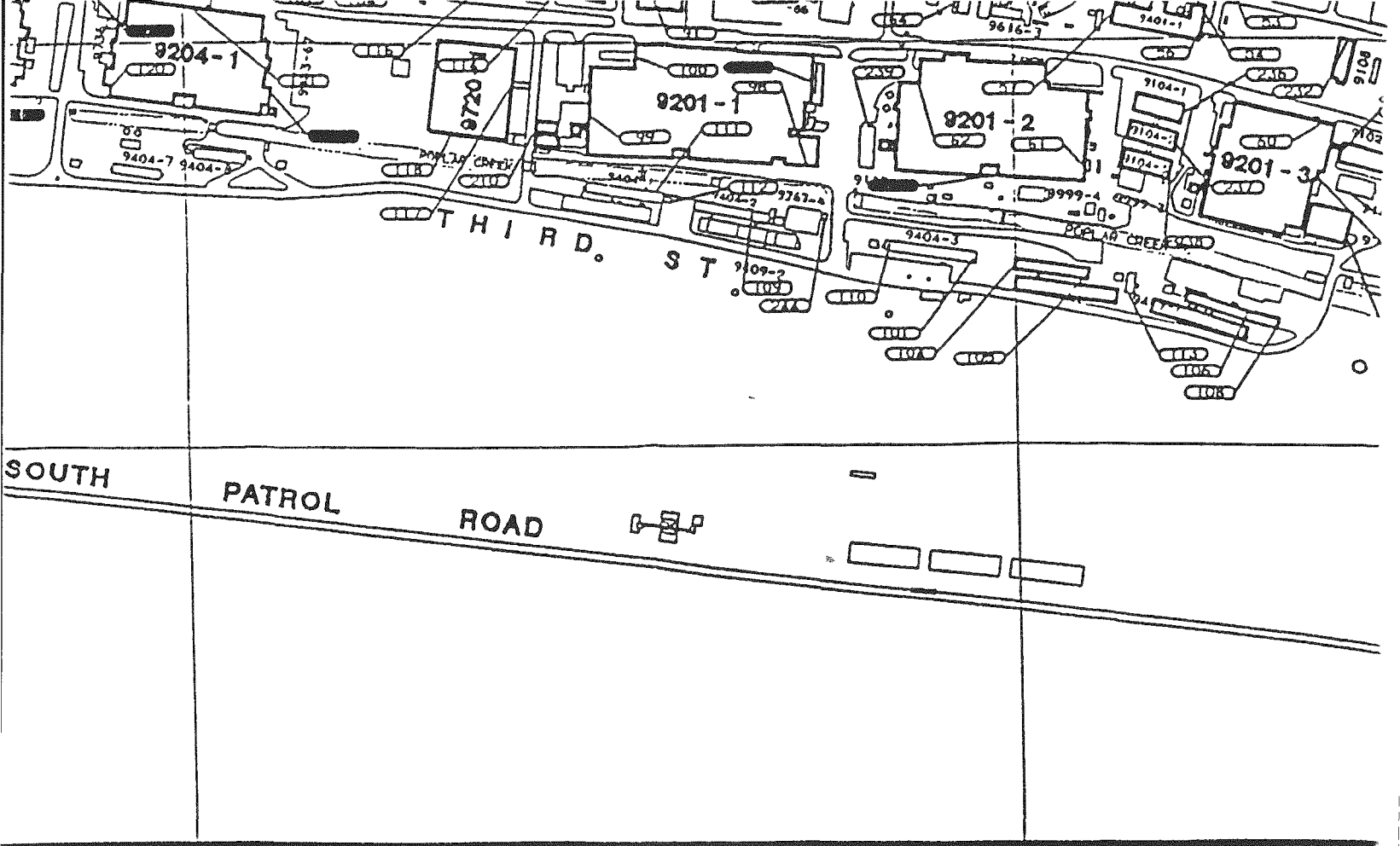
-8.........B-4
-8.........B-4
-8.........B-4
-8.........B-4
-8.........B-4
-8.........A-4
END 9737...B-3
3-4........B-3
3-4........B-3
3..........B-3
3..........B-3
5..........B-3
1-1........B-3
-1.........B-3
9201-3....B-4
9201-2....B-4
9201-2....C-4
2..........B-3
2..........B-3
2..........C-3
2..........C-3
06-1.......C-3
06-1A......C-3
64.........C-3
11-1.......C-3
R 9711-1....C-3
11.........B-3
11.........B-3

77 S. SIDE 9207..........B-3
78 N. SIDE 9207..........B-2
80 N.W. CORNER 9208......B-3
81 E. SIDE 9767-3........B-3
82 N. SIDE 9210..........B-2
82A W. SIDE 9210..........B-2
83 S. SIDE 9987..........B-3
85 N. SIDE 9771..........C-3
86 N. SIDE 9706-2........C-3
87 E. END 9706-2.........C-3
88 S. SIDE 9706-2........C-3
89 W. END 9706-2.........C-3
90 S. SIDE 9722-2........C-3
91 W. SIDE 9723-1........C-3
92 E. SIDE 9733-4........C-3
93 S. SIDE 9733-4........C-3
98 S.E. CORNER 9201-1....C-4
99 W. SIDE 9201-1........C-4
100 N.W. CORNER 9201-1....C-4
101 E. SIDE 9404-3........C-4
102 S.W. CORNER 9211......B-3
104 W. END 9404-4.........B-4
105 E. END 9404-4.........B-4
106 N. SIDE 9404-5........B-4
107 S. SIDE 9220..........B-3
108 E. END 9404-5.........B-4
109 N. SIDE 9404-2........C-4
110 W. END 9404-3.........C-4

111 N. SIDE 9404-1........C-4
112 E. END 9404-1.........C-4
113 S. SIDE 9419-1........B-4
114 S. END 9733-3.........C-3
115 S. END 9733-2.........C-3
116 S. END 9733-1.........C-3
117 E. SIDE 9720-1........C-4
118 S. SIDE 9720-1........C-4
120 S.W. CORNER 9204-1....C-4
121 N. SIDE 9204-1........C-3
122 E. END 9204-3.........D-4
123 N.E. CORNER 9204-3....B-4
125 E. SIDE 9977-1........D-3
129 S. SIDE 9766..........C-3
130 E. END 9766...........C-3
131 W. END 9766...........C-3
132 S. SIDE 9735..........C-3
133 W. SIDE 9735..........C-3
134 N. END 9736...........C-3
135 N. END 9731...........C-3
137 W. SIDE 9731..........C-3
138 S. END 9731...........C-3
140 N.E. CORNER 9711-5....C-3
141 W. END 9711-5.........D-3
143 N.E. CORNER 9206......D-3
144 S. SIDE 9206..........D-3
145 W. SIDE 9206..........D-3
146 E. SIDE 9710-2........D-3



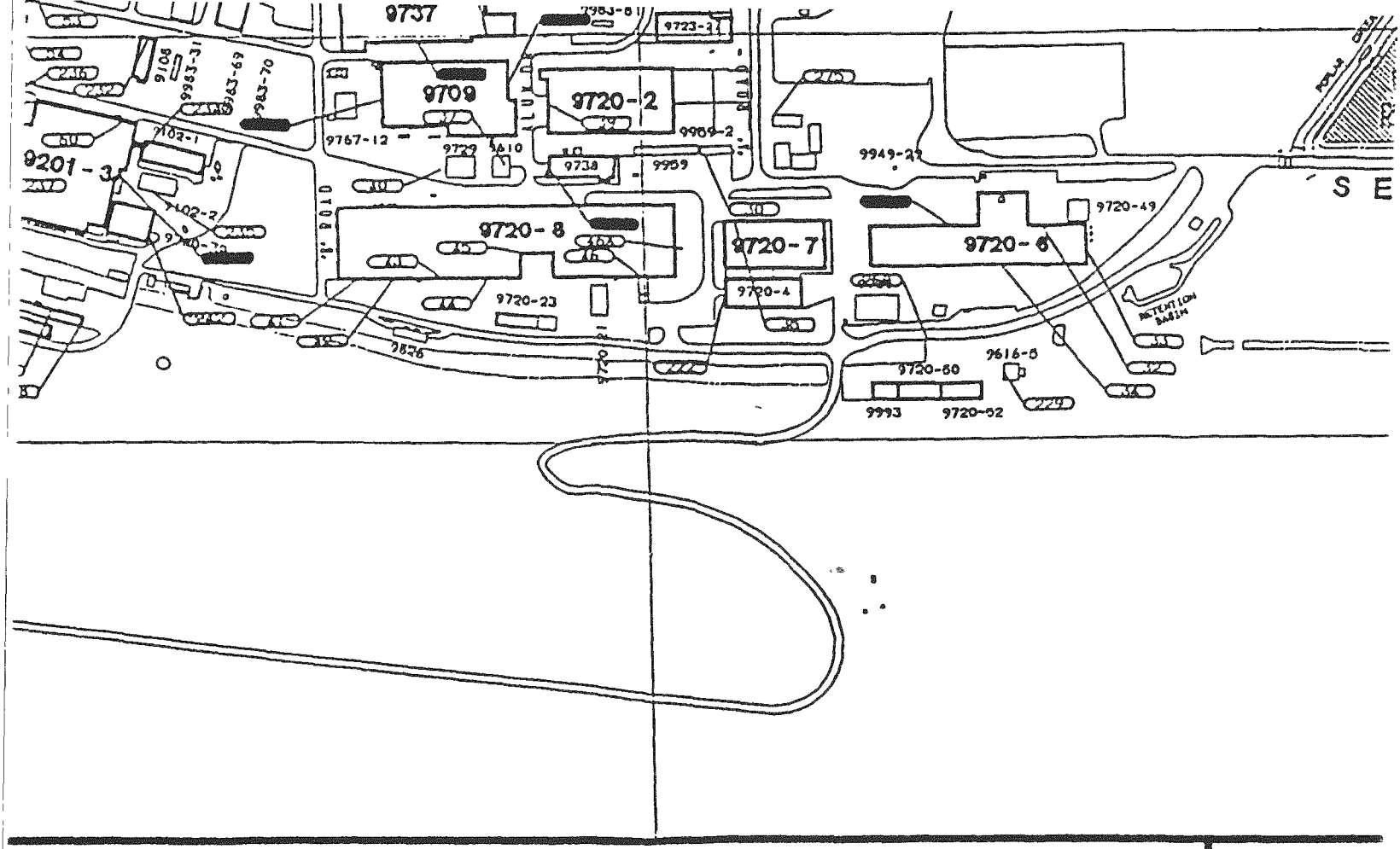
C-4	148	W. SIDE 9204-2.....D-3	189	W. END 9720-14.....E-3	239	N. SIDE		
C-4	150	N. SIDE 9704-2.....C-3	190	E. END 9720-16.....E-3	240	S. SIDE		
B-4	154	S.E. CORNER 9201-4...D-3	191	W. END 9720-16.....E-3	241	S.E. C		
C-3	155	N. SIDE 9201-4.....D-3	192	E. END 9720-26.....F-3	242	E. SIDE		
C-3	156	N.W. CORNER 9201-4...D-3	193	W. END 9720-26.....F-3	243	S. SIDE		
C-3	157	W. SIDE 9805-1.....D-3	194	E. END 9720-25.....F-3	244	E. SIDE		
C-4	158	W. SIDE 9720-19.....D-3	196	W. END 9720-25.....F-3	245	S.W. C		
C-4	159	W. SIDE 9727-3.....D-3	197	S. SIDE 9816.....F-3	249	N. 920		
C-4	160	N. SIDE 9727-3.....D-3	198	W. END 9817.....F-3	250	S. SID		
C-3	161	N.E. CORNER 9401-3...D-3	199	W. END 9929-1.....F-3	251	W. SID		
D-4	162	S. SIDE 9401-3.....D-3	200	E. END 1601-2.....E-3	252	S.E. C		
B-4	163	W. END 9404-18.....D-3	203	W. END 9720-9.....D-4	253	S. 911		
D-3	170	W. END 9723-19.....E-2	204	E. END 9720-9.....D-4	257	N.BETW		
C-3	171	N. SIDE 9723-19.....E-2	210	W. SIDE 9732-1.....C-3	258	E. SID		
C-3	172	W. END 9723-21.....E-2	211	S. SIDE 9706-2.....C-3	260	E. SID		
C-3	173	N. SIDE 9723-21.....E-2	222	W. END 9720-4.....A-4	263	W. SID		
C-3	174	N. SIDE 9204-4.....E-3	226	S. SIDE 9766.....C-3	265	N.E. 9		
C-3	175	N.E. CORNER 9204-4...E-3	228	S.W. CORNER 9203.....B-3	266	W. SID		
C-3	177	S.W. CORNER 9204-4...E-3	229	W. SIDE 9616-5.....A-4	267	N.SIDE		
C-3	179	E. SIDE 9720-5.....E-3	230	S. SIDE 9106.....C-3	268	W. SID		
C-3	180	N. SIDE 9404-13.....E-3	231	S. SIDE 9107.....E-2	269	S. SID		
C-3	181	N. SIDE 9976.....E-3	232	N. SIDE 9108.....B-4	270	W. SID		
C-3	182	E. END 9720-12.....E-3	233	S. SIDE 9109.....C-3	271	E. SID		
D-3	183	W. END 9720-12.....E-3	234	W. SIDE 9102-1.....B-4	272	E. SID		
D-3	184	E. END 9720-13.....E-3	235	S.W.CORNER 9102-2...B-4	275	W. SID		
D-3	186	E. END 9720-18.....E-3	236	E. SIDE 9104-1.....B-4				
D-3	187	W. END 9720-18.....E-3	237	E. SIDE 9104-2.....D-4				
D-3	188	E. END 9720-14.....E-3	238	E. SIDE 9104-3.....D-4				



..E-3
..E-3
..E-3
..F-3
..F-3
..F-3
..F-3
..F-3
..F-3
..F-3
..E-3
..D-4
..D-4
..C-3
..C-3
..A-4
..C-3
..B-3
..A-4
..C-3
..E-2
..B-4
..C-3
..B-4
..B-4
..B-4
..D-4
..D-4

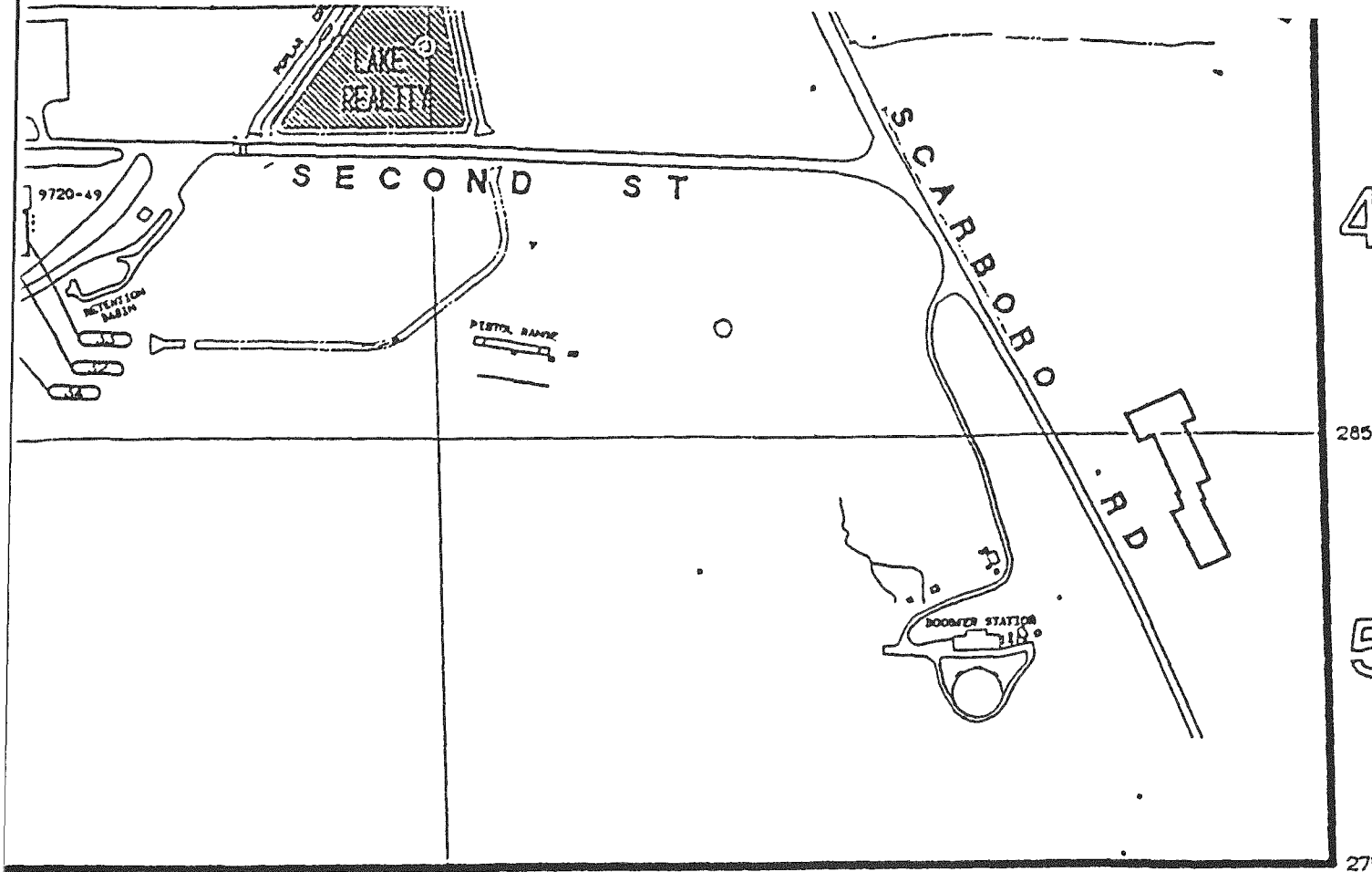
239	N. SIDE 9105	C-4
240	S. SIDE 9420	F-2
241	S.E. CORNER 9110	D-3
242	E. SIDE 9720-39	B-4
243	S. SIDE 9754-2	B-3
244	E. SIDE 9767-8	C-4
245	S.W. CORNER 9831	F-3
249	N. 9201-5 2 FL @ RP	E-2
250	S. SIDE 9769	B-2
251	W. SIDE 9769	B-2
252	S.E. CORNER 9983-41	E-2
253	S. 9111,9112	D-2
257	N.BETWN 9983-62 & 63	E-2
258	E. SIDE 9824-4	E-4
260	E. SIDE 9725	A-4
263	W. SIDE 9616-9	E-3
265	N.E. 9723-18	D-3
266	W. SIDE 9116 RM.135	C-3
267	N.SIDE E END 9714 9 MI.W Y-12	
268	W. SIDE 9201-5N	E-2
269	S. SIDE 9204-4	E-3
270	W. SIDE 9206	D-3
271	E. SIDE 9720-17	D-3
272	E. SIDE 9103	E-2
275	W. SIDE 9983-AH	A-4

6	N.W. CORNER 9212	D-2
13	W. SIDE 9995	D-2
16	W. END 9996	D-2
17	E. SIDE 9998	D-2
18	E. SIDE 9215	D-2
19	S.E. CORNER 9215	D-2
20	N.W. CORNER 9998	D-2
25	W. SIDE 9404-11	D-3
31	N. SIDE 9720-6	A-4
36	W. SIDE 9738	B-4
38	E. SIDE 9709	B-4
38B	E. SIDE 9709	B-4
47	S. SIDE 9737	B-4
50	S.E. CORNER 9728	B-3
59	E. SIDE 9201-3	B-4
63	S. SIDE 9201-2	C-4
66	W. SIDE 9720-20	B-3
74	N. SIDE 9704-1	C-3
79	E. SIDE 9208	B-3
84	E. SIDE 9983	C-3
119	S.E. SIDE 9204-1	C-4
124	S. SIDE 9204-3	D-4
136	E. SIDE 9731	C-3
139	S. SIDE 9711-5	C-3
142	N.W. CORNER 9720-38	E-3
147	E. SIDE 9204-2	D-3
149	S. SIDE 9204-2	D-3
150A	E. SIDE 9704-2	C-3



..D-2	164	E. SIDE 9808.....E-3	261 S.E. CORNER 9616-7...G-3
..D-2	167	N.E. CORNER 9201-5...E-3	262 W. SIDE 9113.....D-2
..D-2	168	N. SIDE 9201-5.....E-3	264 S. SIDE 9710-3.....C-3
..D-2	169	N. SIDE 9201-5.....E-3	273 E. SIDE 9744.....D-3
..D-2	178	N.W. CORNER 9720-5...E-3	274 N. SIDE 9119 IST FL .D-2
..D-2	185	W. END 9720-13.....E-3	(MIDDLE WEST)
..D-2	201	E. END 9720-33.....E-3	
..D-3	202	E. SIDE 9720-19.....D-3	
...A-4	207	N. CENTER 9103-IBM...E-2	
...B-4	208	S. SIDE 9103.....E-2	
...B-4	209	N.E. CORNER 9201-1...C-4	
...B-4	212	E. SIDE 9204-2E.....D-3	
...B-4	213	S.W. CORNER 9204-2E..D-3	
...B-3	214	S.E. CORNER 9204-4...E-3	
...B-4	215	E. SIDE 9206.....D-3	
...C-4	216	S.E. CORNER 9201-5N..E-2	
...B-3	217	S.E. CORNER 9401-2...D-3	
...C-3	218	S.E. CORNER 9401-3...D-3	
...B-3	219	N.E. 9404-9.....D-3	
...C-3	220	S. SIDE 9712.....A-3	
...C-4	221	N. SIDE 9720-3.....D-3	
...D-4	223	N. SIDE 9723-11A.....D-3	
...C-3	225	CENTER 9739.....C-3	
...C-3	227	N.W. CRN 9202 BSMT...B-3	
8..E-3	254	N.W. CORNER 9616-6...F-2	
...D-3	255	S.E. 9623.....D-3	
...D-3	256	S.W. 9401-5.....F-3	
...C-3	259	N. 9201-4 2ND FL RMP.D-3	

PES/188/072591	(REV
PREPARED BY: PES GEODATA GROUP	2/21/
0 200 400 800	
SCALE	F



...G-3
...D-2
...C-3
...D-3
L .D-2

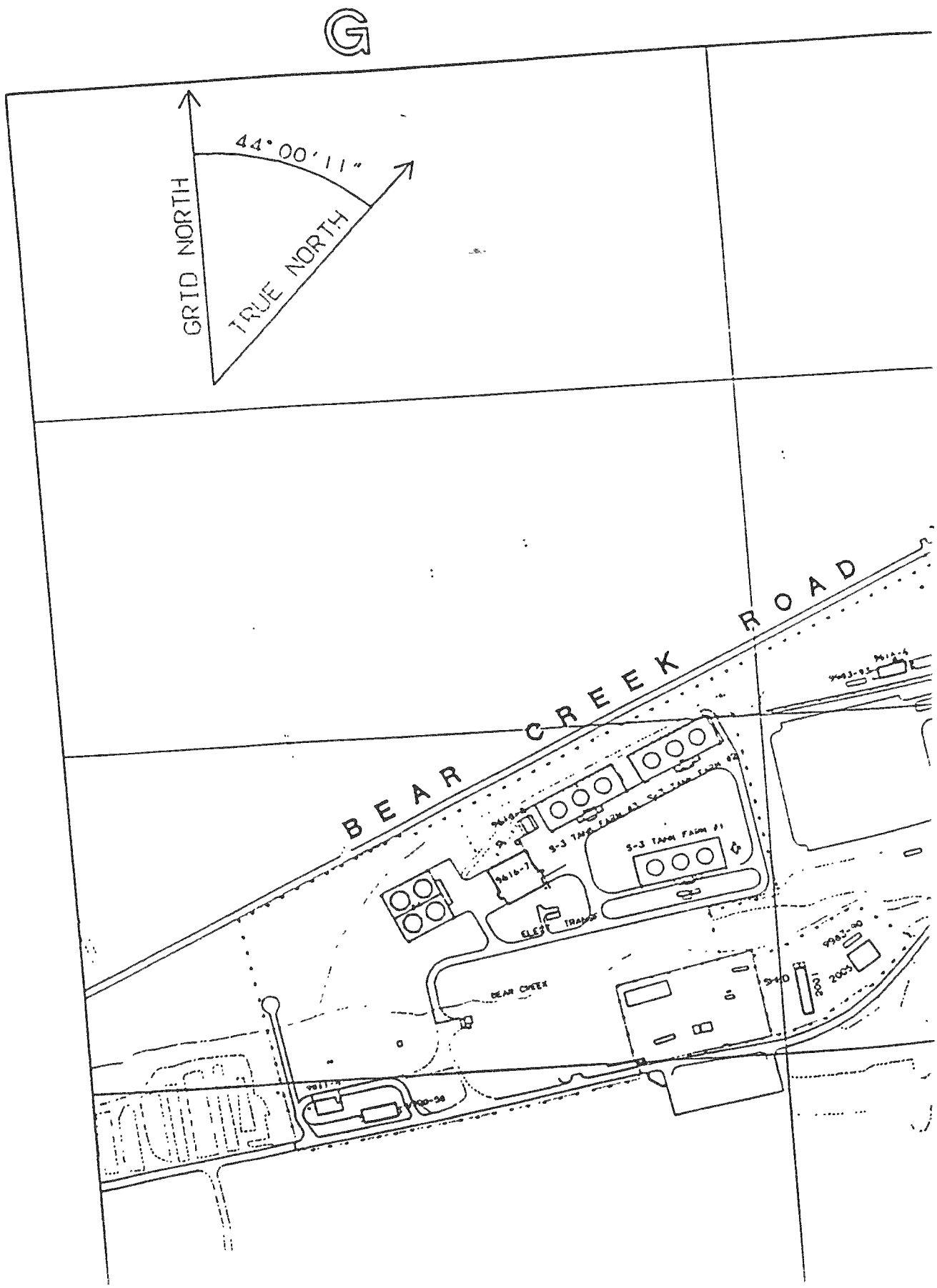
LEGEND

DOCK ONLY

M & P STATION AND DOCK

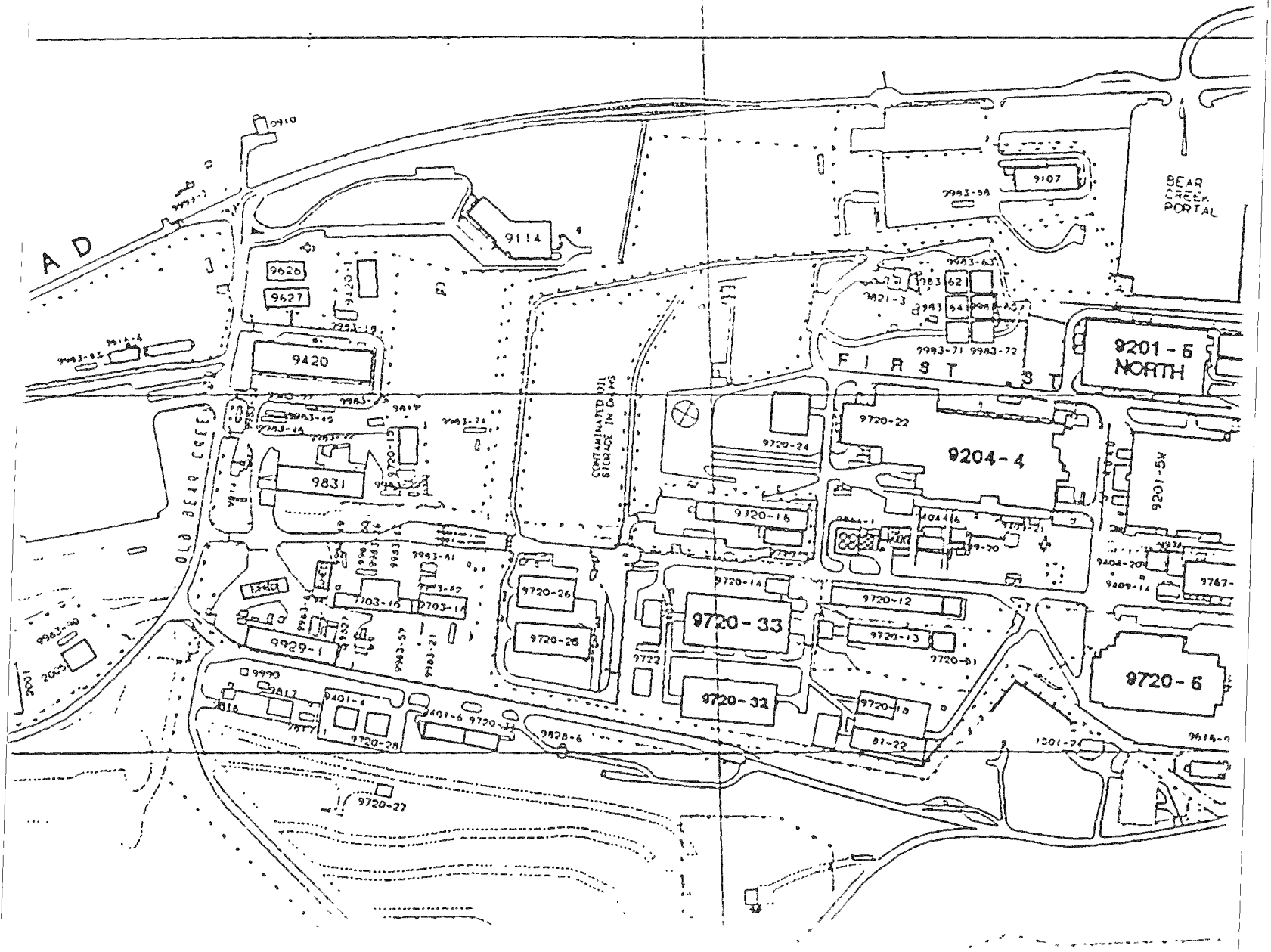
	(REV 1)	MARTIN MARIETTA ENERGY SYSTEMS, INC.
ODATA GROUP	2/21/92	DOE FIELD OFFICES OAK RIDGE, TENNESSEE • PADUCAH, KENTUCKY
800 1600 FEET		Y-12 PLANT LOADING AND SHIPPING DOCKS

C


G
GRID NORTH
44° 00' 11"
TRUE NORTH
BEAR CREEK ROAD
BEAR CREEK

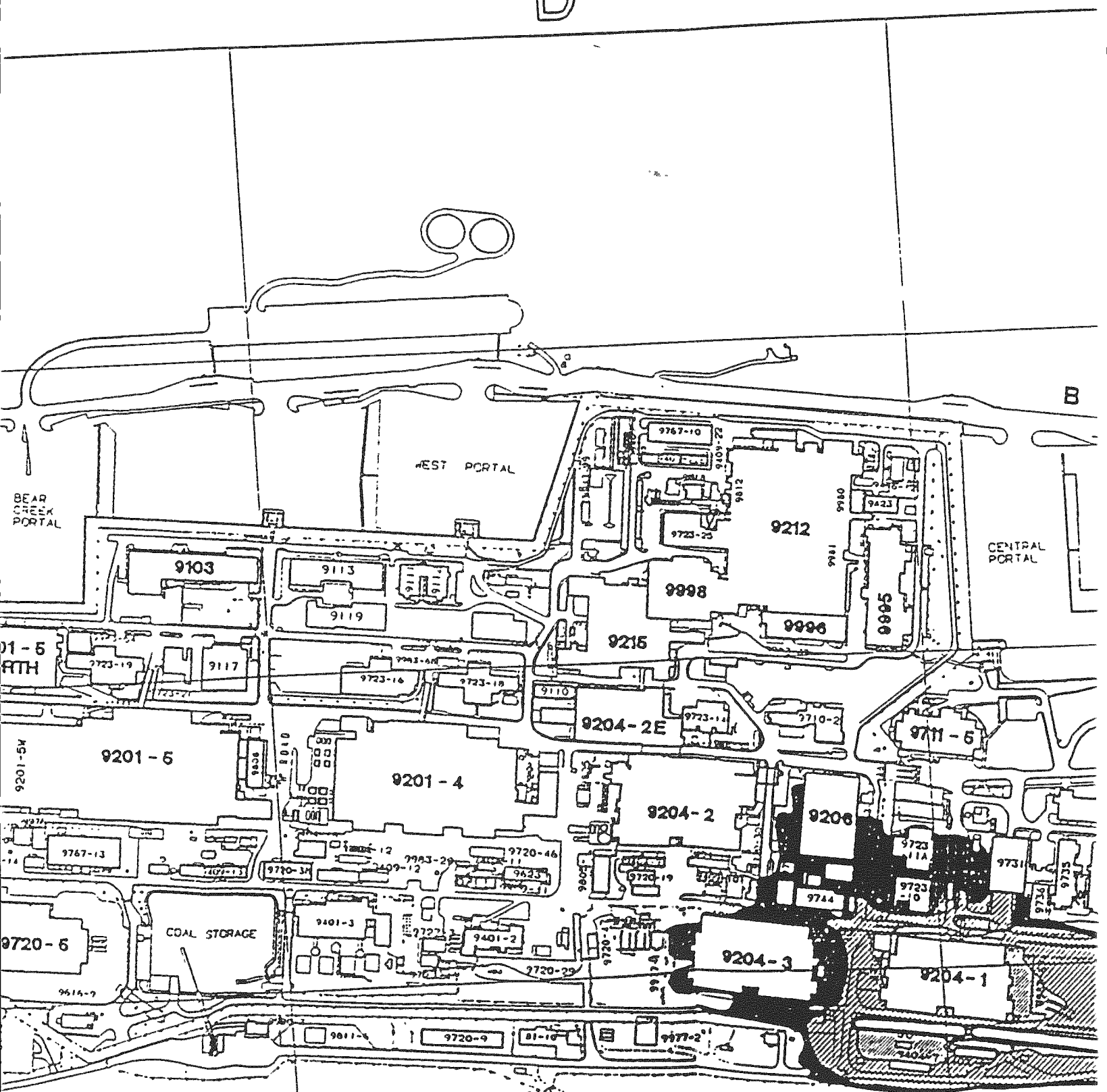
F

E

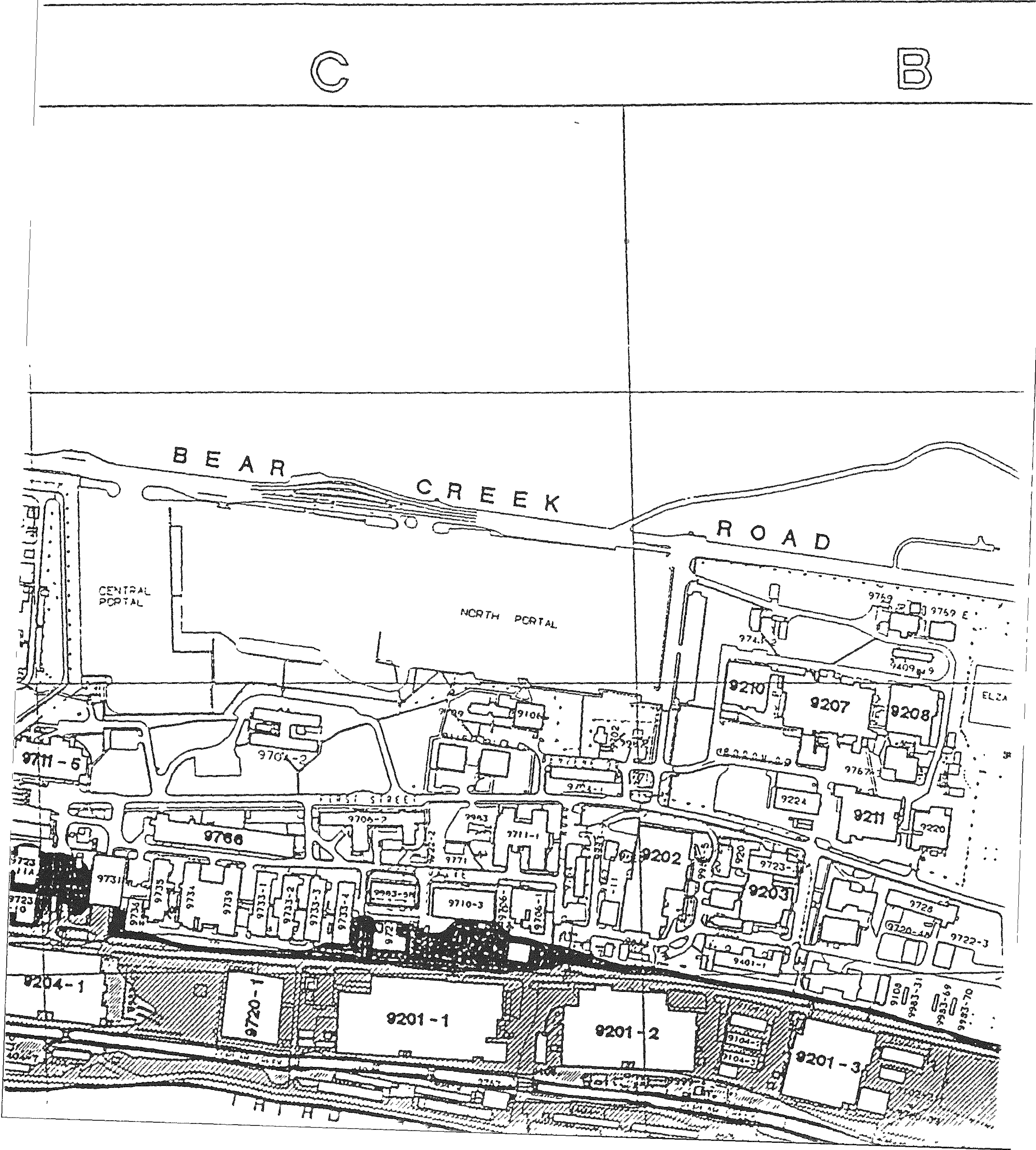

9114
9626
9627
9420
9831
9929-1
9107
BEAR CREEK PORTAL
9201-5 NORTH
9204-4
9720-33
9720-32
9720-6
9720-27
FIRST
OLD BEAR CREEK

Y-12 FLOOD

D


B
BEAR CREEK PORTAL
WEST PORTAL
CENTRAL PORTAL
9103
9113
9119
9117
9212
9998
9996
9995
9215
9204-2E
9201-5
9201-4
9204-2
9206
9711-5
9731
9744
9720-6
COAL STORAGE
9204-3
9204-1
9720-9

OD PLAIN


C
B
BEAR CREEK ROAD
CENTRAL PORTAL
NORTH PORTAL
9759
9759 E
9409-9
9210
9207
9208
ELZA
9711-5
9704-2
9106
9766
9706-2
9983
9711-1
9202
9224
9211
9220
9723-
9731
9735
9734
9739
9733-1
9733-2
9733-3
9733-4
9710-3
9203
9728
9722-3
9401-1
9204-1
9720-1
9201-1
9201-2
9104-
9201-3
9108


B
A
SCARBO
1402-1
1402-2
1402-5
9208
9220
9219
9712
9737
9709
9720-2
9720-8
9720-7
9720-6
EAST PORTAL
DRIVE
FIRST ST
NEW HOPE CEMETERY
LAKE ONTARIO
SECO

AA

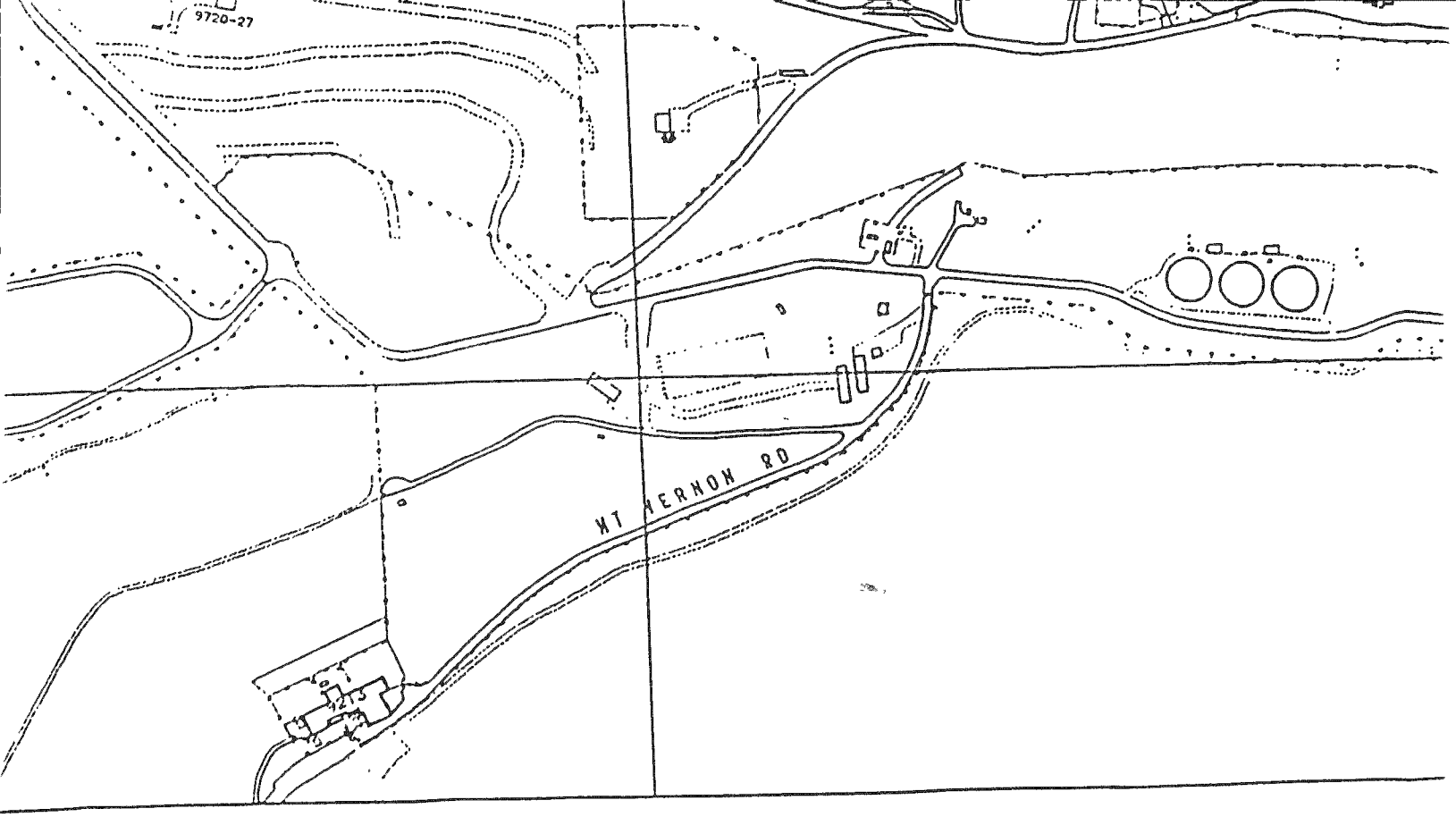
LEGEND

PROBABLE MAXIM

MAXIMUM PROBAE

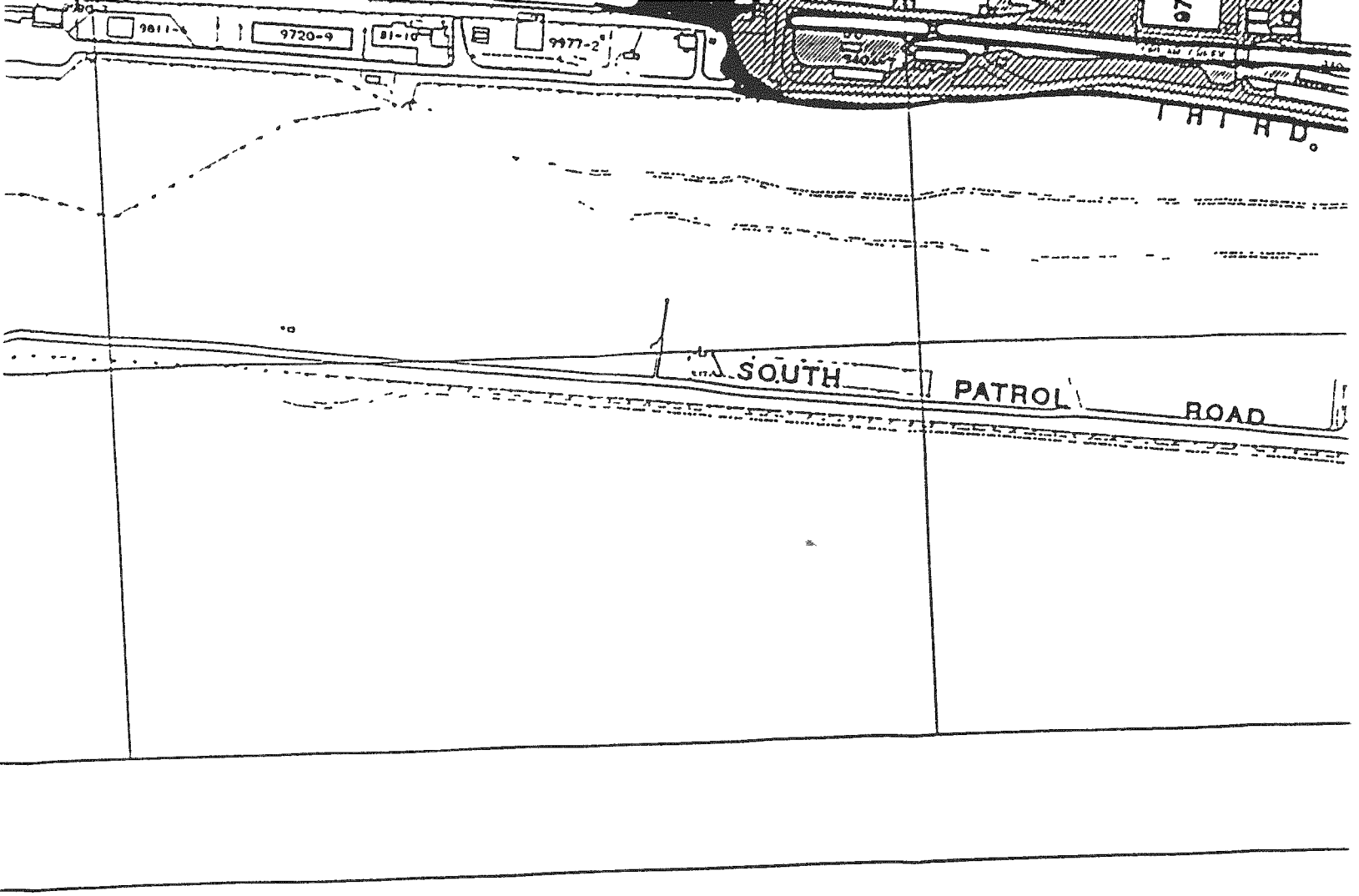
500 YEAR FLOO

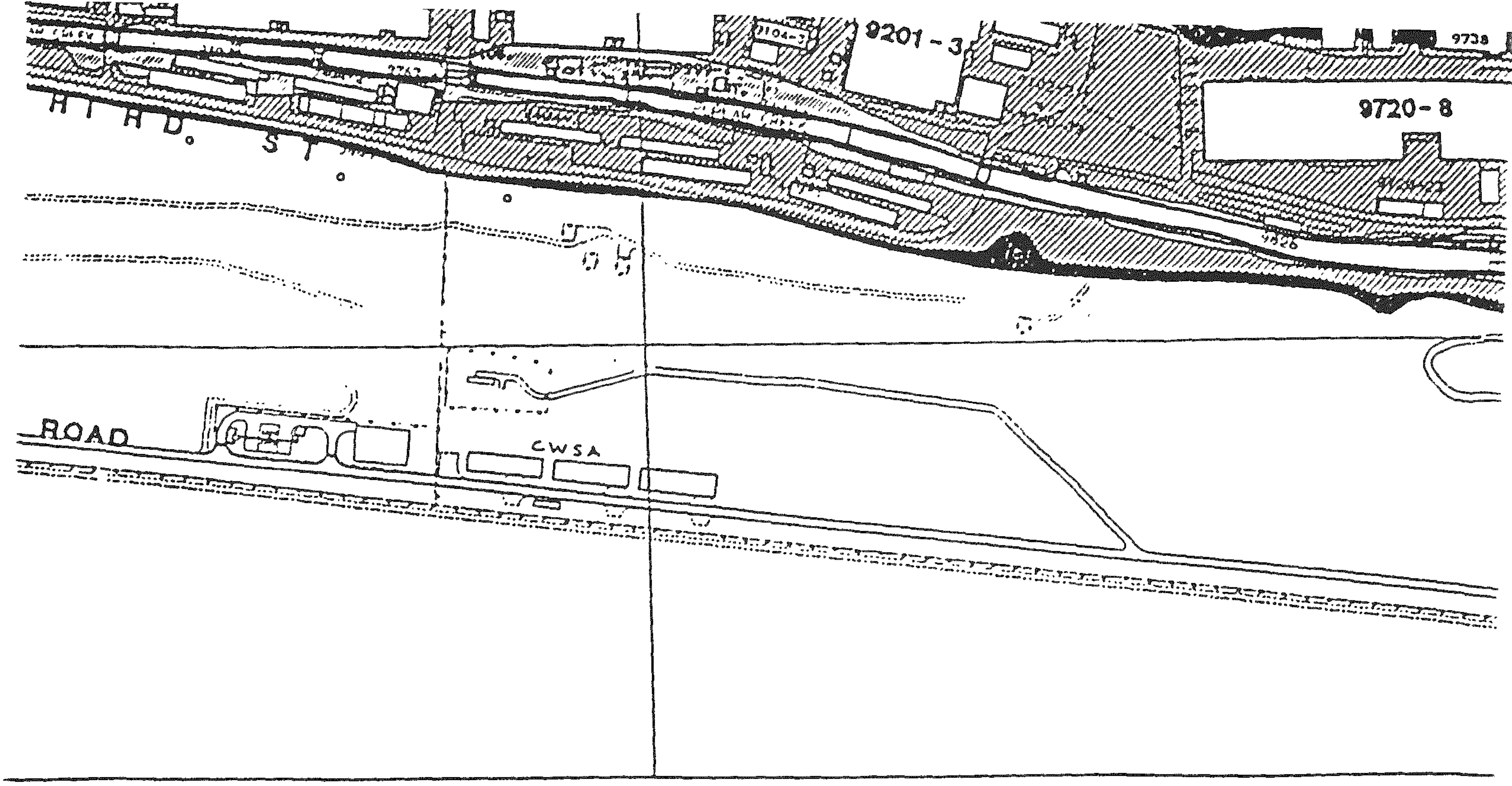
100 YEAR FLOOI

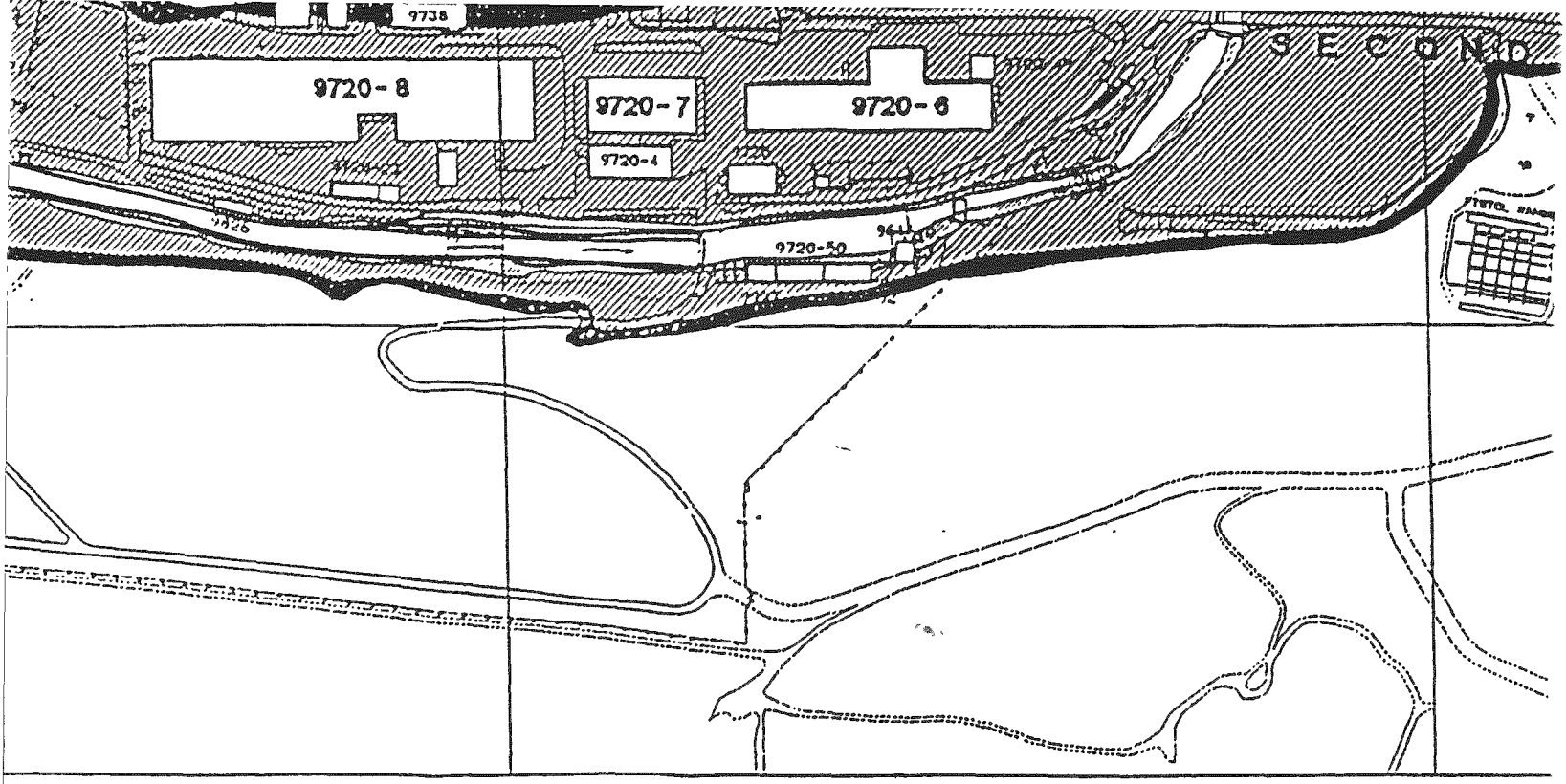


I FLOOD

E FLOOD


9720-9
81-10
9977-2
SOUTH
PATROL
ROAD

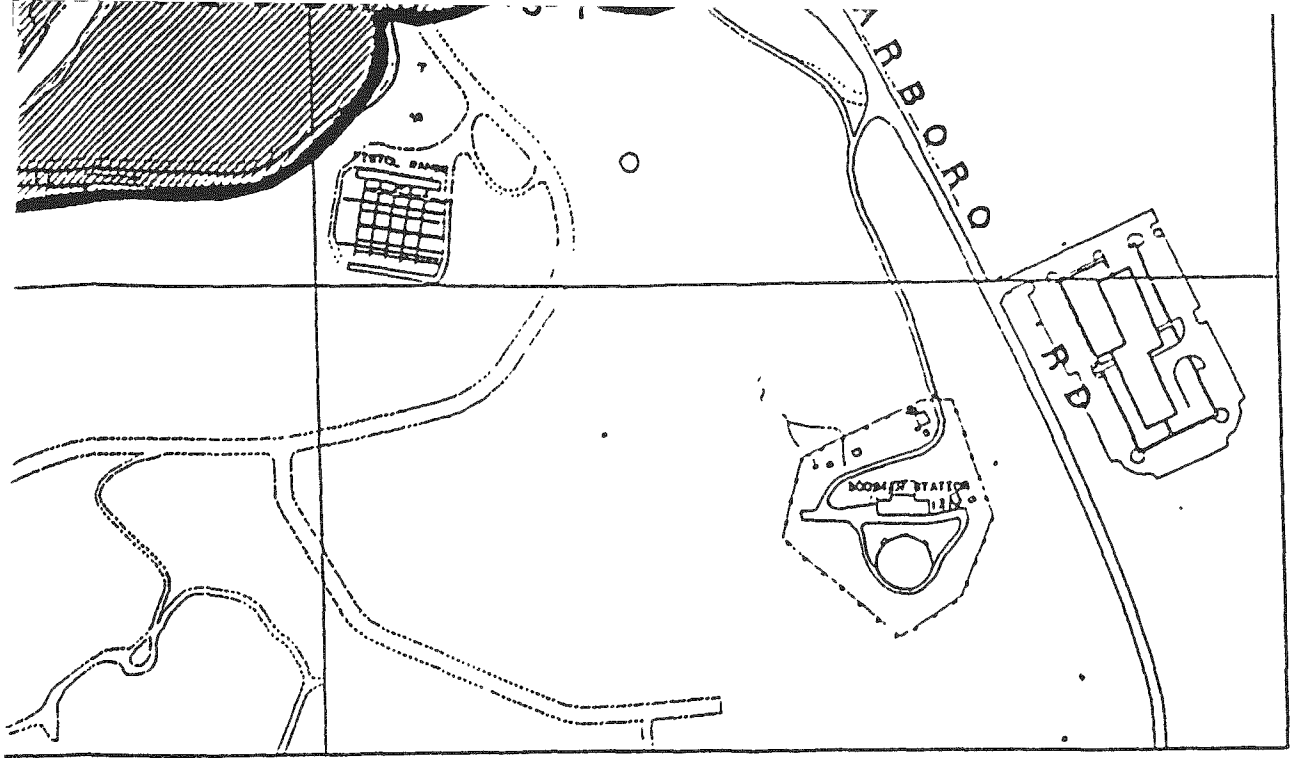

9201 - 3
9738
9720- 8
ROAD
CWSA



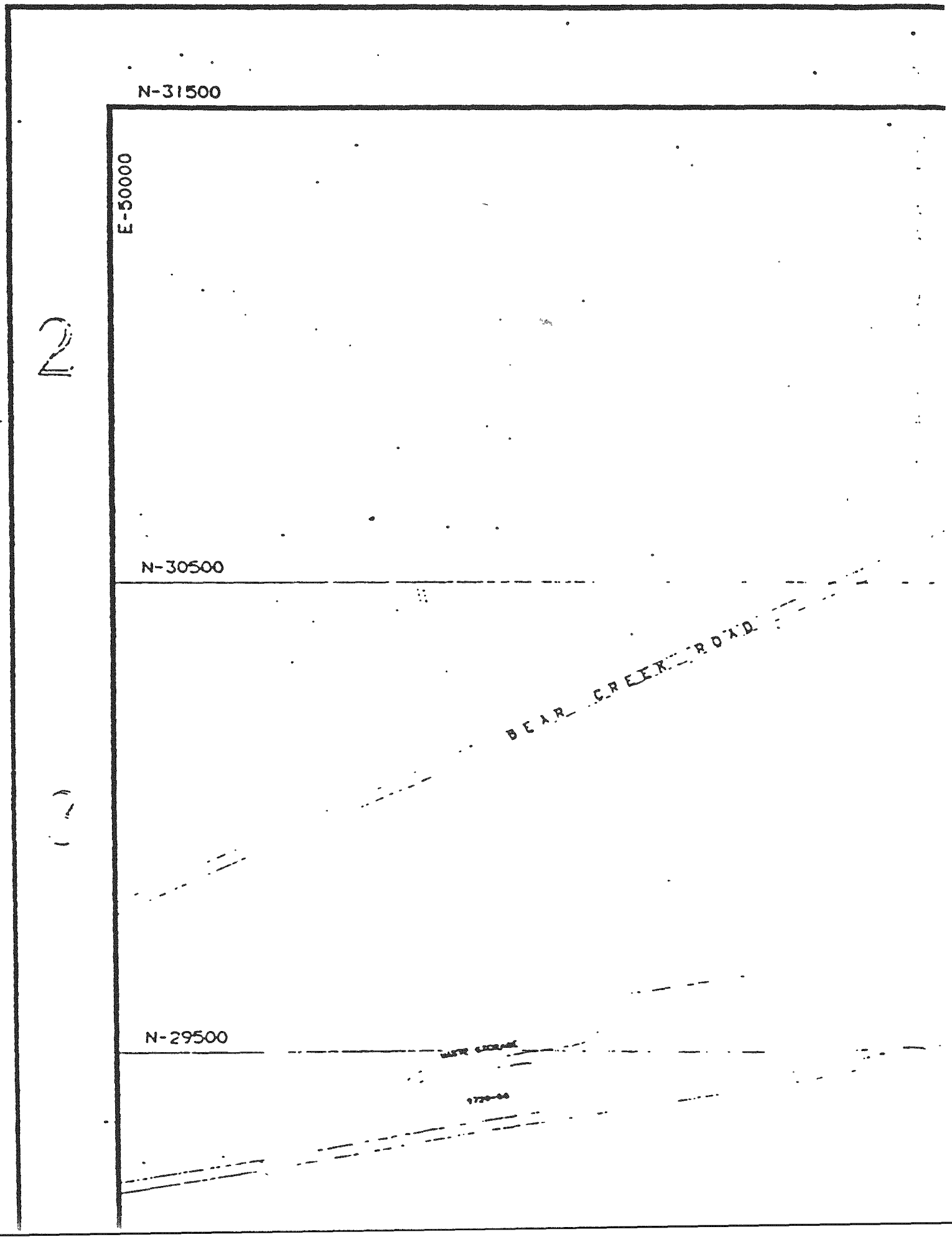
MARTIN MARIETTA ENERGY SYSTE

DOE FIELD OFFICES, OAK RIDGE, TENNESSEE • PADUCAH

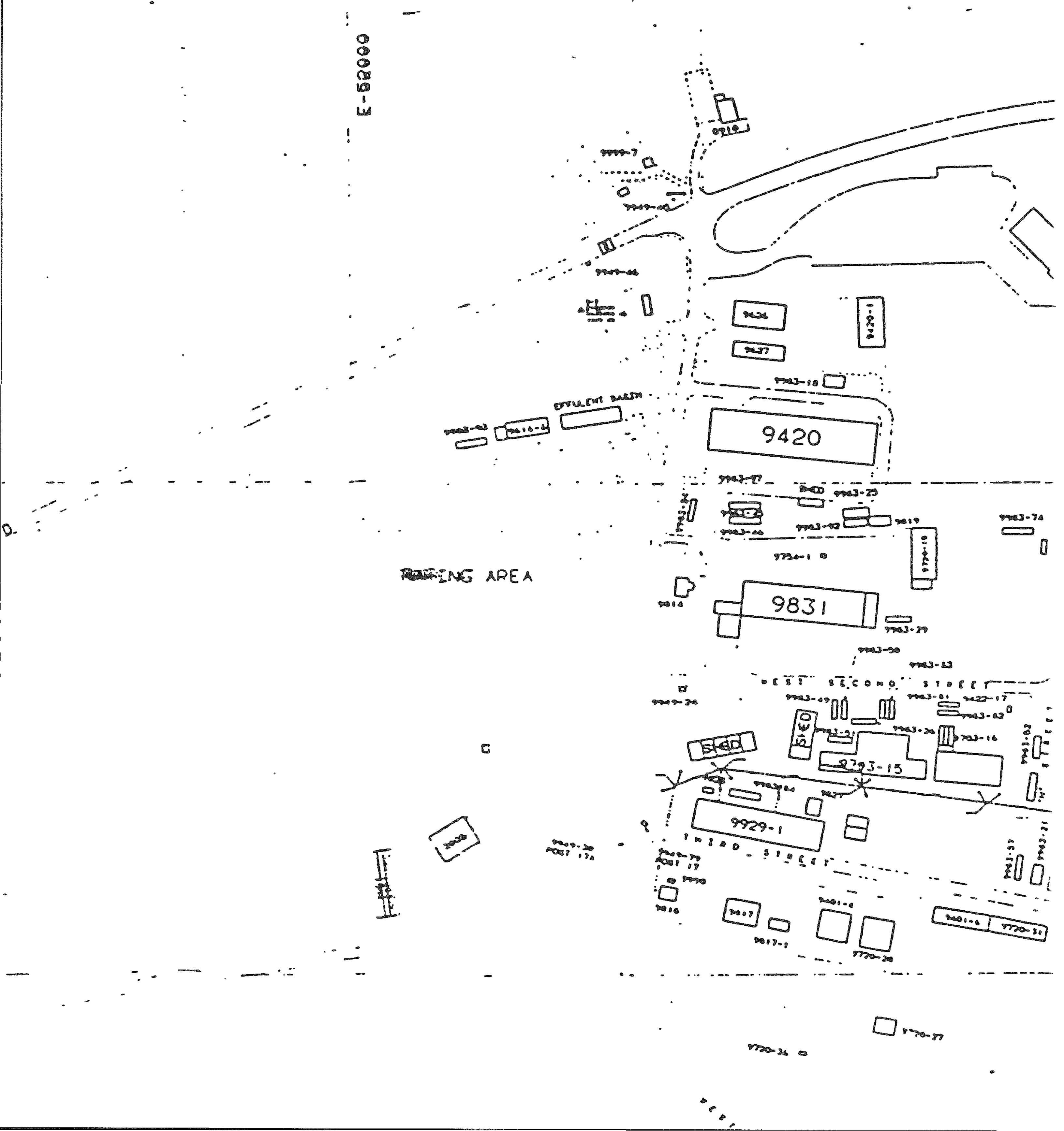
Y-12 FLOOD PLAIN



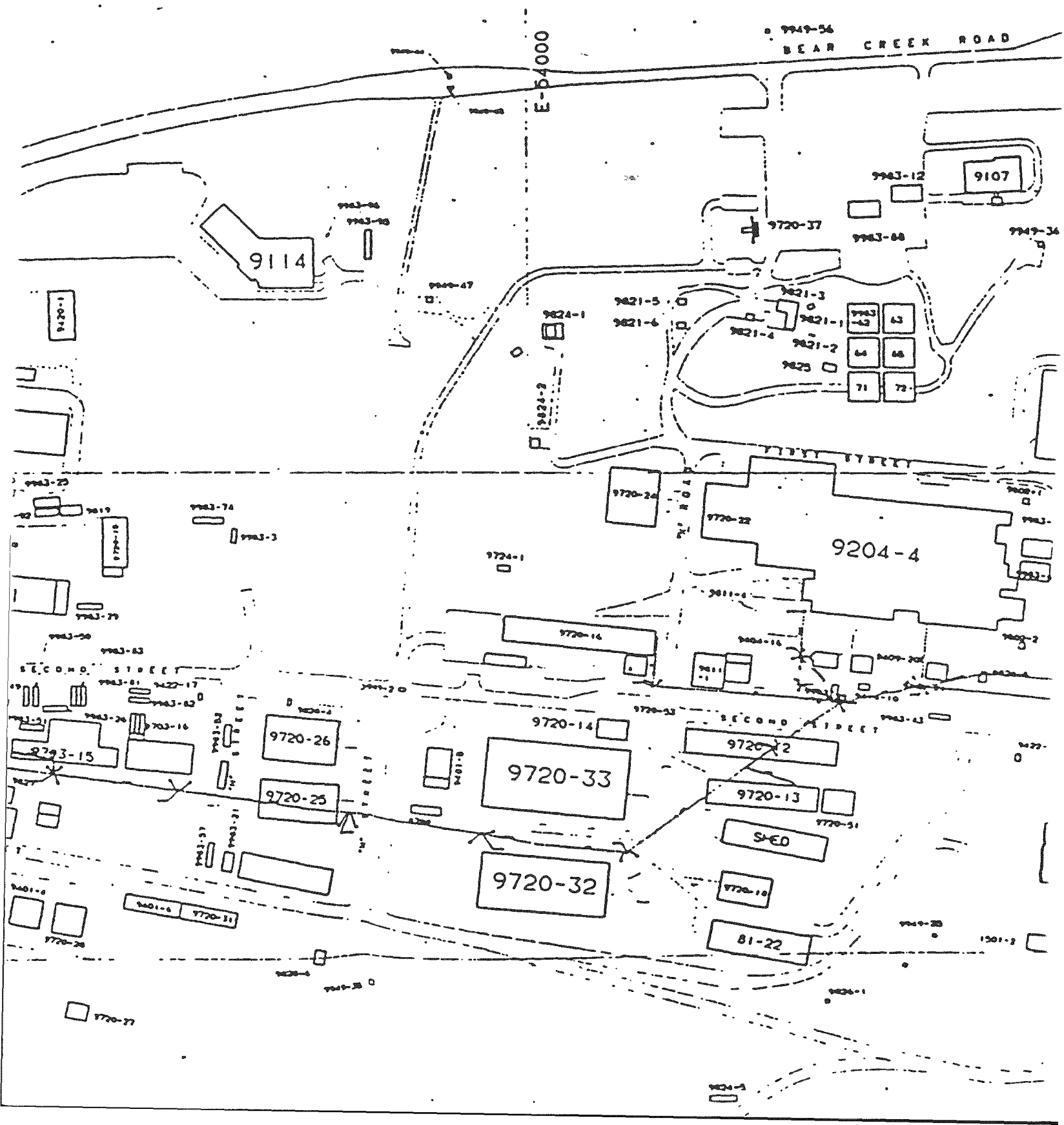
RIETTA ENERGY SYSTEMS, INC.	PES/061/021490	(REV 0)
AK RIDGE, TENNESSEE • PADUCAH, KENTUCKY	PREPARED BY PES GEODATA GROUP	
Y-12 LOOD PLAIN	SCALE= 0 300 600 1200	


N-31500
E-50000
N-30500
BEAR CREEK ROAD
N-29500

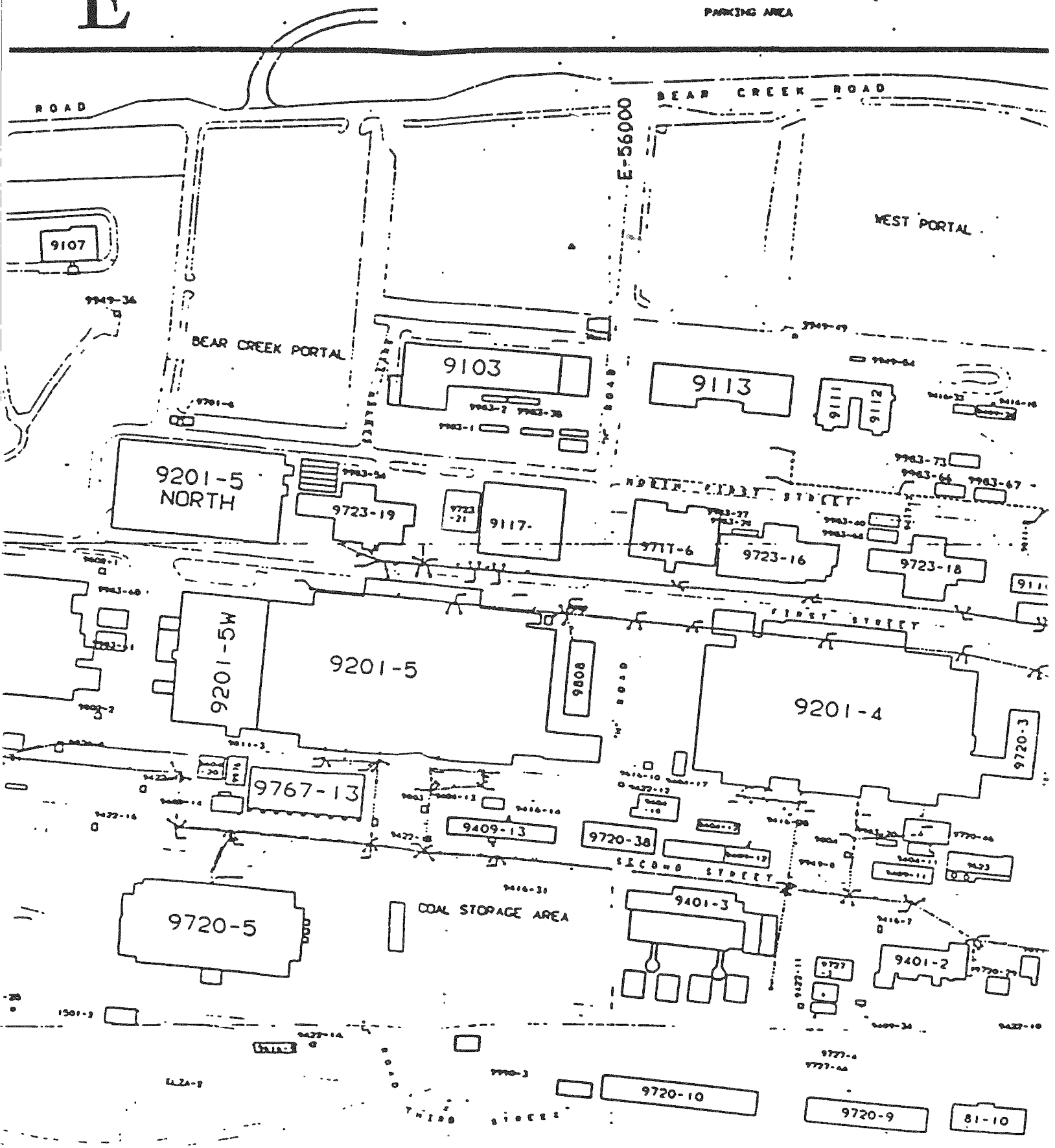
F


E-52000
EFFLUENT BASIN
9420
ING AREA
9831
WEST SECOND STREET
SHED
SHED
9929-1
THIRD STREET

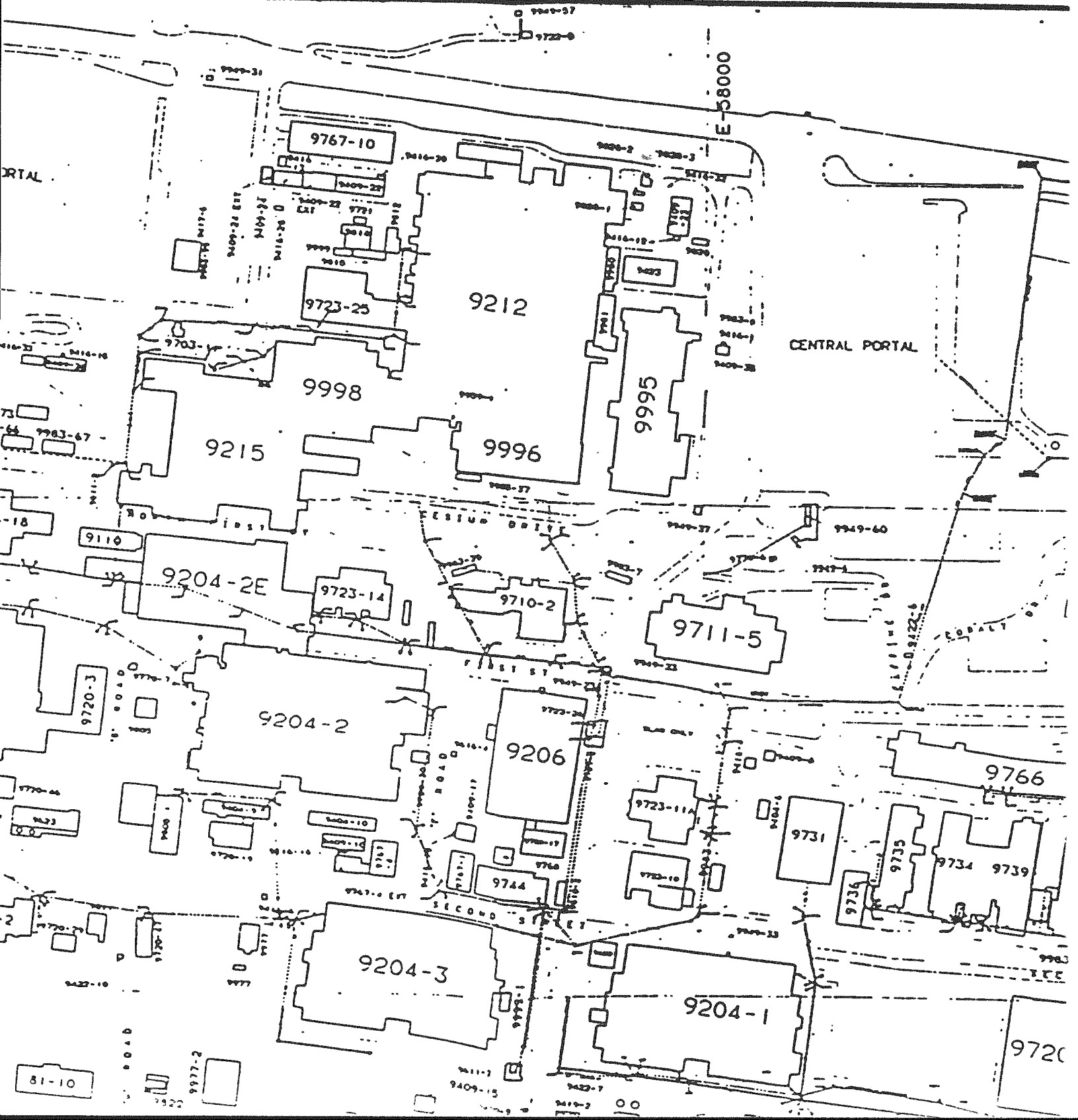
E


BEAR CREEK ROAD
E-64000
9114
9107
9204-4
9720-33
9720-32
9720-26
9720-25
9720-14
9720-12
9720-13
9793-15
SHED
81-22
SECOND STREET
9720-37
9720-24
9720-22
9720-16
9724-1
9821-1
9821-2
9821-3
9821-4
9821-5
9821-6
9823
9824-1
9824-2
9949-36
9949-47
9949-56
9963-12
9963-68
9963-74
9963-3
9963-79
9963-80
9963-83
9963-81
9963-82
9963-26
9963-31
9963-32
9963-33
9963-43
9963-23
9963-25
9963-27
9963-28
9963-29
9963-30
9963-34
9963-35
9963-36
9963-37
9963-38
9963-39
9963-40
9963-41
9963-42
9963-44
9963-45
9963-46
9963-48
9963-49
9963-50
9963-51
9963-52
9963-53
9963-54
9963-55
9963-56
9963-57
9963-58
9963-59
9963-60
9963-61
9963-62
9963-63
9963-64
9963-65
9963-66
9963-67
9963-69
9963-70
9963-71
9963-72
9963-73
9963-75
9963-76
9963-77
9963-78
9963-84
9963-85
9963-86
9963-87
9963-88
9963-89
9963-90
9963-91
9963-92
9963-93
9963-94
9963-95
9963-96
9963-97
9963-98
9963-99
9963-100
9963-101
9963-102
9963-103
9963-104
9963-105
9963-106
9963-107
9963-108
9963-109
9963-110
9963-111
9963-112
9963-113
9963-114
9963-115
9963-116
9963-117
9963-118
9963-119
9963-120
9963-121
9963-122
9963-123
9963-124
9963-125
9963-126
9963-127
9963-128
9963-129
9963-130
9963-131
9963-132
9963-133
9963-134
9963-135
9963-136
9963-137
9963-138
9963-139
9963-140
9963-141
9963-142
9963-143
9963-144
9963-145
9963-146
9963-147
9963-148
9963-149
9963-150
9963-151
9963-152
9963-153
9963-154
9963-155
9963-156
9963-157
9963-158
9963-159
9963-160
9963-161
9963-162
9963-163
9963-164
9963-165
9963-166
9963-167
9963-168
9963-169
9963-170
9963-171
9963-172
9963-173
9963-174
9963-175
9963-176
9963-177
9963-178
9963-179
9963-180
9963-181
9963-182
9963-183
9963-184
9963-185
9963-186
9963-187
9963-188
9963-189
9963-190
9963-191
9963-192
9963-193
9963-194
9963-195
9963-196
9963-197
9963-198
9963-199
9963-200
9963-201
9963-202
9963-203
9963-204
9963-205
9963-206
9963-207
9963-208
9963-209
9963-210
9963-211
9963-212
9963-213
9963-214
9963-215
9963-216
9963-217
9963-218
9963-219
9963-220
9963-221
9963-222
9963-223
9963-224
9963-225
9963-226
9963-227
9963-228
9963-229
9963-230
9963-231
9963-232
9963-233
9963-234
9963-235
9963-236
9963-237
9963-238
9963-239
9963-240
9963-241
9963-242
9963-243
9963-244
9963-245
9963-246
9963-247
9963-248
9963-249
9963-250
9963-251
9963-252
9963-253
9963-254
9963-255
9963-256
9963-257
9963-258
9963-259
9963-260
9963-261
9963-262
9963-263
9963-264
9963-265
9963-266
9963-267
9963-268
9963-269
9963-270
9963-271
9963-272
9963-273
9963-274
9963-275
9963-276
9963-277
9963-278
9963-279
9963-280
9963-281
9963-282
9963-283
9963-284
9963-285
9963-286
9963-287
9963-288
9963-289
9963-290
9963-291
9963-292
9963-293
9963-294
9963-295
9963-296
9963-297
9963-298
9963-299
9963-300
9963-301
9963-302
9963-303
9963-304
9963-305
9963-306
9963-307
9963-308
9963-309
9963-310
9963-311
9963-312
9963-313
9963-314
9963-315
9963-316
9963-317
9963-318
9963-319
9963-320
9963-321
9963-322
9963-323
9963-324
9963-325
9963-326
9963-327
9963-328
9963-329
9963-330
9963-331
9963-332
9963-333
9963-334
9963-335
9963-336
9963-337
9963-338
9963-339
9963-340
9963-341
9963-342
9963-343
9963-344
9963-345
9963-346
9963-347
9963-348
9963-349
9963-350
9963-351
9963-352
9963-353
9963-354
9963-355
9963-356
9963-357
9963-358
9963-359
9963-360
9963-361
9963-362
9963-363
9963-364
9963-365
9963-366
9963-367
9963-368
9963-369
9963-370
9963-371
9963-372
9963-373
9963-374
9963-375
9963-376
9963-377
9963-378
9963-379
9963-380
9963-381
9963-382
9963-383
9963-384
9963-385
9963-386
9963-387
9963-388
9963-389
9963-390
9963-391
9963-392
9963-393
9963-394
9963-395
9963-396
9963-397
9963-398
9963-399
9963-400
9963-401
9963-402
9963-403
9963-404
9963-405
9963-406
9963-407
9963-408
9963-409
9963-410
9963-411
9963-412
9963-413
9963-414
9963-415
9963-416
9963-417
9963-418
9963-419
9963-420
9963-421
9963-422
9963-423
9963-424
9963-425
9963-426
9963-427
9963-428
9963-429
9963-430
9963-431
9963-432
9963-433
9963-434
9963-435
9963-436
9963-437
9963-438
9963-439
9963-440
9963-441
9963-442
9963-443
9963-444
9963-445
9963-446
9963-447
9963-448
9963-449
9963-450
9963-451
9963-452
9963-453
9963-454
9963-455
9963-456
9963-457
9963-458
9963-459
9963-460
9963-461
9963-462
9963-463
9963-464
9963-465
9963-466
9963-467
9963-468
9963-469
9963-470
9963-471
9963-472
9963-473
9963-474
9963-475
9963-476
9963-477
9963-478
9963-479
9963-480
9963-481
9963-482
9963-483
9963-484
9963-485
9963-486
9963-487
9963-488
9963-489
9963-490
9963-491
9963-492
9963-493
9963-494
9963-495
9963-496
9963-497
9963-498
9963-499
9963-500
9963-501
9963-502
9963-503
9963-504
9963-505
9963-506
9963-507
9963-508
9963-509
9963-510
9963-511
9963-512
9963-513
9963-514
9963-515
9963-516
9963-517
9963-518
9963-519
9963-520
9963-521
9963-522
9963-523
9963-524
9963-525
9963-526
9963-527
9963-528
9963-529
9963-530
9963-531
9963-532
9963-533
9963-534
9963-535
9963-536
9963-537
9963-538
9963-539
9963-540
9963-541
9963-542
9963-543
9963-544
9963-545
9963-546
9963-547
9963-548
9963-549
9963-550
9963-551
9963-552
9963-553
9963-554
9963-555
9963-556
9963-557
9963-558
9963-559
9963-560
9963-561
9963-562
9963-563
9963-564
9963-565
9963-566
9963-567
9963-568
9963-569
9963-570
9963-571
9963-572
9963-573
9963-574
9963-575
9963-576
9963-577
9963-578
9963-579
9963-580
9963-581
9963-582
9963-583
9963-584
9963-585
9963-586
9963-587
9963-588
9963-589
9963-590
9963-591
9963-592
9963-593
9963-594
9963-595
9963-596
9963-597
9963-598
9963-599
9963-600
9963-601
9963-602
9963-603
9963-604
9963-605
9963-606
9963-607
9963-608
9963-609
9963-610
9963-611
9963-612
9963-613
9963-614
9963-615
9963-616
9963-617
9963-618
9963-619
9963-620
9963-621
9963-622
9963-623
9963-624
9963-625
9963-626
9963-627
9963-628
9963-629
9963-630
9963-631
9963-632
9963-633
9963-634
9963-635
9963-636
9963-637
9963-638
9963-639
9963-640
9963-641
9963-642
9963-643
9963-644
9963-645
9963-646
9963-647
9963-648
9963-649
9963-650
9963-651
9963-652
9963-653
9963-654
9963-655
9963-656
9963-657
9963-658
9963-659
9963-660
9963-661
9963-662
9963-663
9963-664
9963-665
9963-666
9963-667
9963-668
9963-669
9963-670
9963-671
9963-672
9963-673
9963-674
9963-675
9963-676
9963-677
9963-678
9963-679
9963-680
9963-681
9963-682
9963-683
9963-684
9963-685
9963-686
9963-687
9963-688
9963-689
9963-690
9963-691
9963-692
9963-693
9963-694
9963-695
9963-696
9963-697
9963-698
9963-699
9963-700
9963-701
9963-702
9963-703
9963-704
9963-705
9963-706
9963-707
9963-708
9963-709
9963-710
9963-711
9963-712
9963-713
9963-714
9963-715
9963-716
9963-717
9963-718
9963-719
9963-720
9963-721
9963-722
9963-723
9963-724
9963-725
9963-726
9963-727
9963-728
9963-729
9963-730
9963-731
9963-732
9963-733
9963-734
9963-735
9963-736
9963-737
9963-738
9963-739
9963-740
9963-741
9963-742
9963-743
9963-744
9963-745
9963-746
9963-747
9963-748
9963-749
9963-750
9963-751
9963-752
9963-753
9963-754
9963-755
9963-756
9963-757
9963-758
9963-759
9963-760
9963-761
9963-762
9963-763
9963-764
9963-765
9963-766
9963-767
9963-768
9963-769
9963-770
9963-771
9963-772
9963-773
9963-774
9963-775
9963-776
9963-777
9963-778
9963-779
9963-780
9963-781
9963-782
9963-783
9963-784
9963-785
9963-786
9963-787
9963-788
9963-789
9963-790
9963-791
9963-792
9963-793
9963-794
9963-795
9963-796
9963-797
9963-798
9963-799
9963-800
9963-801
9963-802
9963-803
9963-804
9963-805
9963-806
9963-807
9963-808
9963-809
9963-810
9963-811
9963-812
9963-813
9963-814
9963-815
9963-816
9963-817
9963-818
9963-819
9963-820
9963-821
9963-822
9963-823
9963-824
9963-825
9963-826
9963-827
9963-828
9963-829
9963-830
9963-831
9963-832
9963-833
9963-834
9963-835
9963-836
9963-837
9963-838
9963-839
9963-840
9963-841
9963-842
9963-843
9963-844
9963-845
9963-846
9963-847
9963-848
9963-849
9963-850
9963-851
9963-852
9963-853
9963-854
9963-855
9963-856
9963-857
9963-858
9963-859
9963-860
9963-861
9963-862
9963-863
9963-864
9963-865
9963-866
9963-867
9963-868
9963-869
9963-870
9963-871
9963-872
9963-873
9963-874
9963-875
9963-876
9963-877
9963-878
9963-879
9963-880
9963-881
9963-882
9963-883
9963-884
9963-885
9963-886
9963-887
9963-888
9963-889
9963-890
9963-891
9963-892
9963-893
9963-894
9963-895
9963-896
9963-897
9963-898
9963-899
9963-900
9963-901
9963-902
9963-903
9963-904
9963-905
9963-906
9963-907
9963-908
9963-909
9963-910
9963-911
9963-912
9963-913
9963-914
9963-915
9963-916
9963-917
9963-918
9963-919
9963-920
9963-921
9963-922
9963-923
9963-924
9963-925
9963-926
9963-927
9963-928
9963-929
9963-930
9963-931
9963-932
9963-933
9963-934
9963-935
9963-936
9963-937
9963-938
9963-939
9963-940
9963-941
9963-942
9963-943
9963-944
9963-945
9963-946
9963-947
9963-948
9963-949
9963-950
9963-951
9963-952
9963-953
9963-954
9963-955
9963-956
9963-957
9963-958
9963-959
9963-960
9963-961
9963-962
9963-963
9963-964
9963-965
9963-966
9963-967
9963-968
9963-969
9963-970
9963-971
9963-972
9963-973
9963-974
9963-975
9963-976
9963-977
9963-978
9963-979
9963-980
9963-981
9963-982
9963-983
9963-984
9963-985
9963-986
9963-987
9963-988
9963-989
9963-990
9963-991
9963-992
9963-993
9963-994
9963-995
9963-996
9963-997
9963-998
9963-999
9963-1000

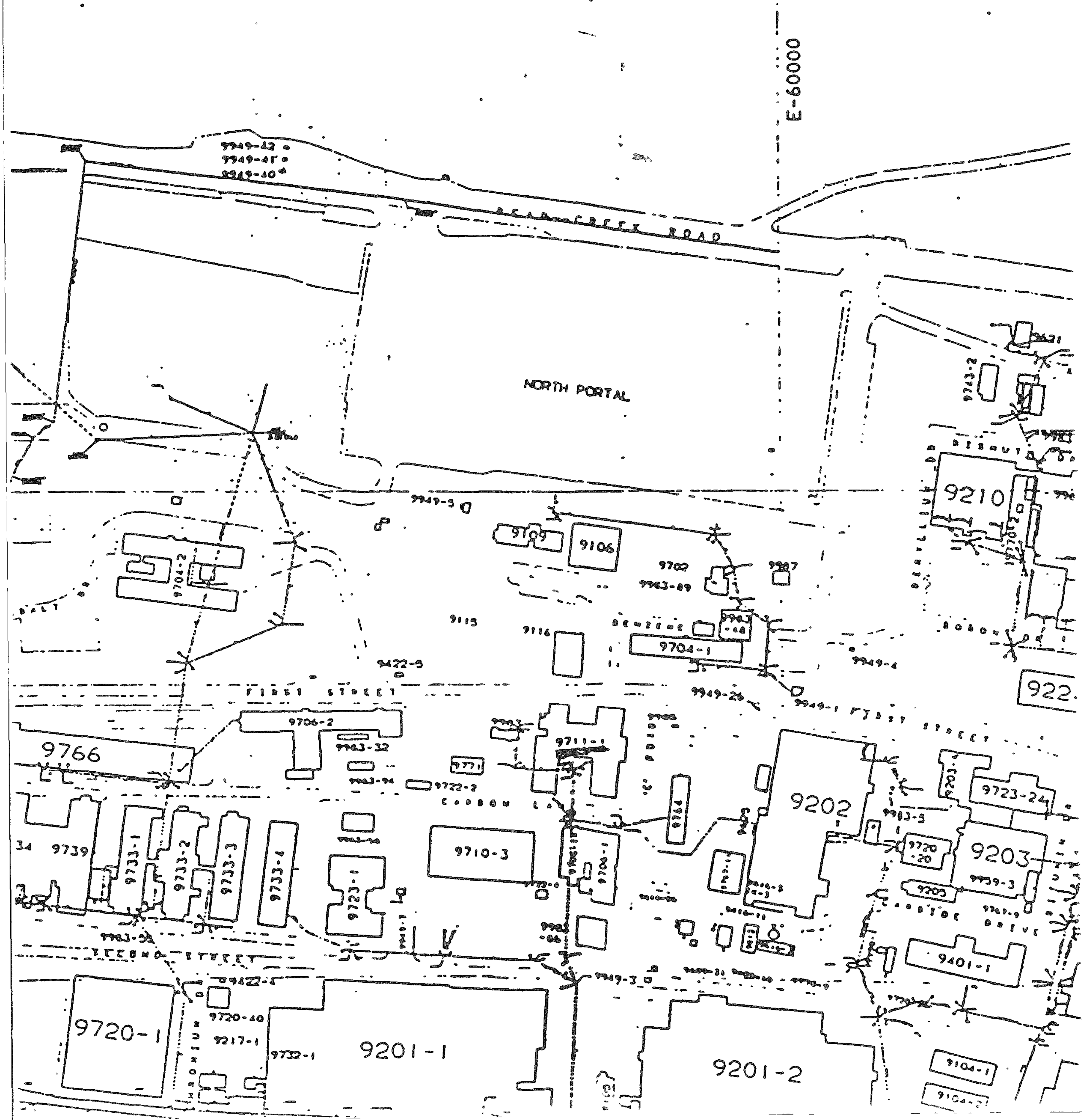
E


PARKING AREA
ROAD
BEAR CREEK ROAD
E-56000
WEST PORTAL
9107
BEAR CREEK PORTAL
9103
9113
9201-5
NORTH
9723-19
9117
9723-16
9723-18
9201-5W
9201-5
9808
9201-4
9720-3
9767-13
9409-13
9720-38
9720-5
COAL STORAGE AREA
9401-3
9401-2
9720-10
9720-9
81-10

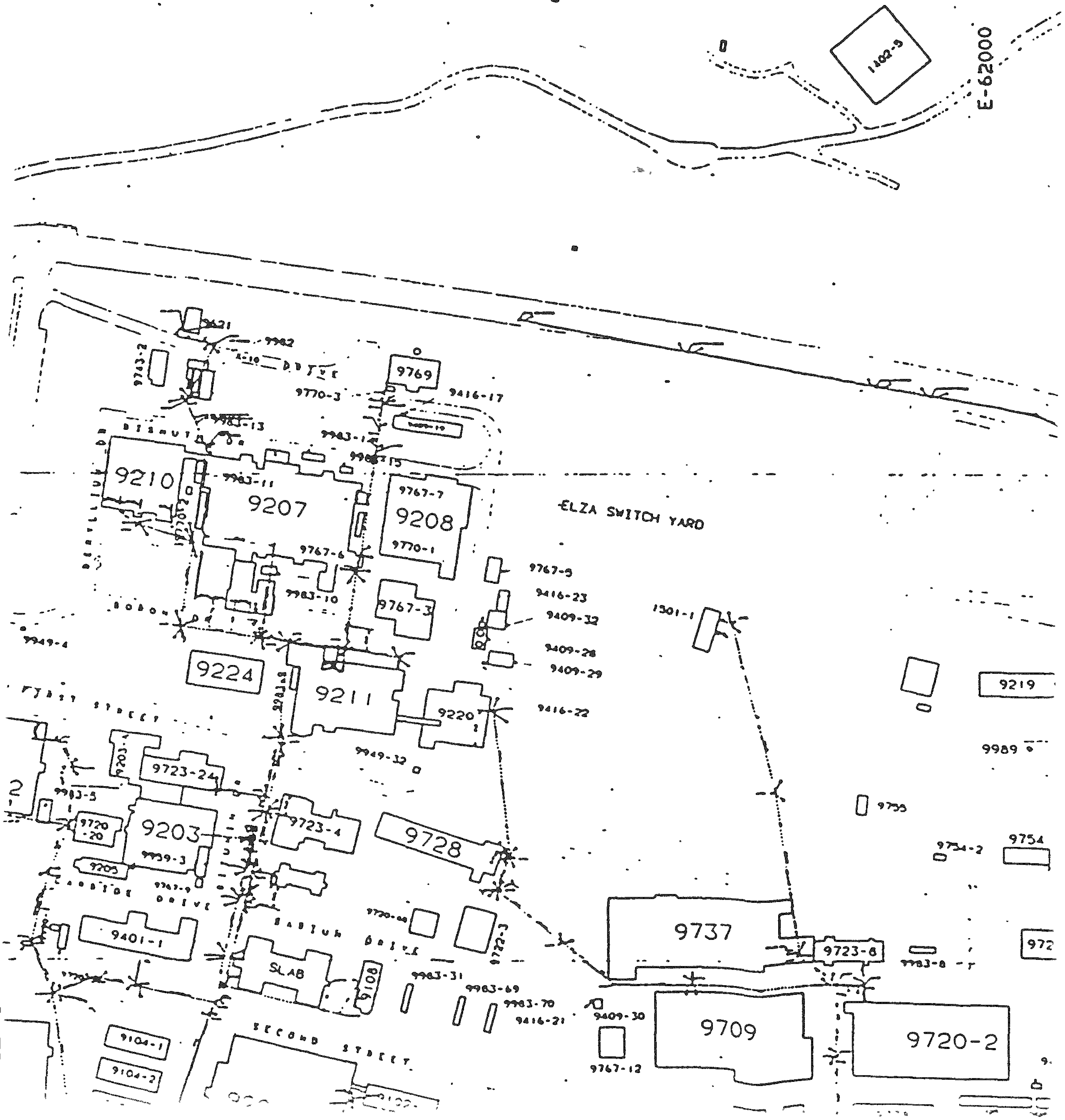
D


9767-10
9212
9723-25
9703-1
9998
9215
9996
9995
CENTRAL PORTAL
9110
9204-2E
9723-14
9710-2
9711-5
9720-3
9204-2
9206
9766
9731
9744
9204-3
9204-1
81-10

C

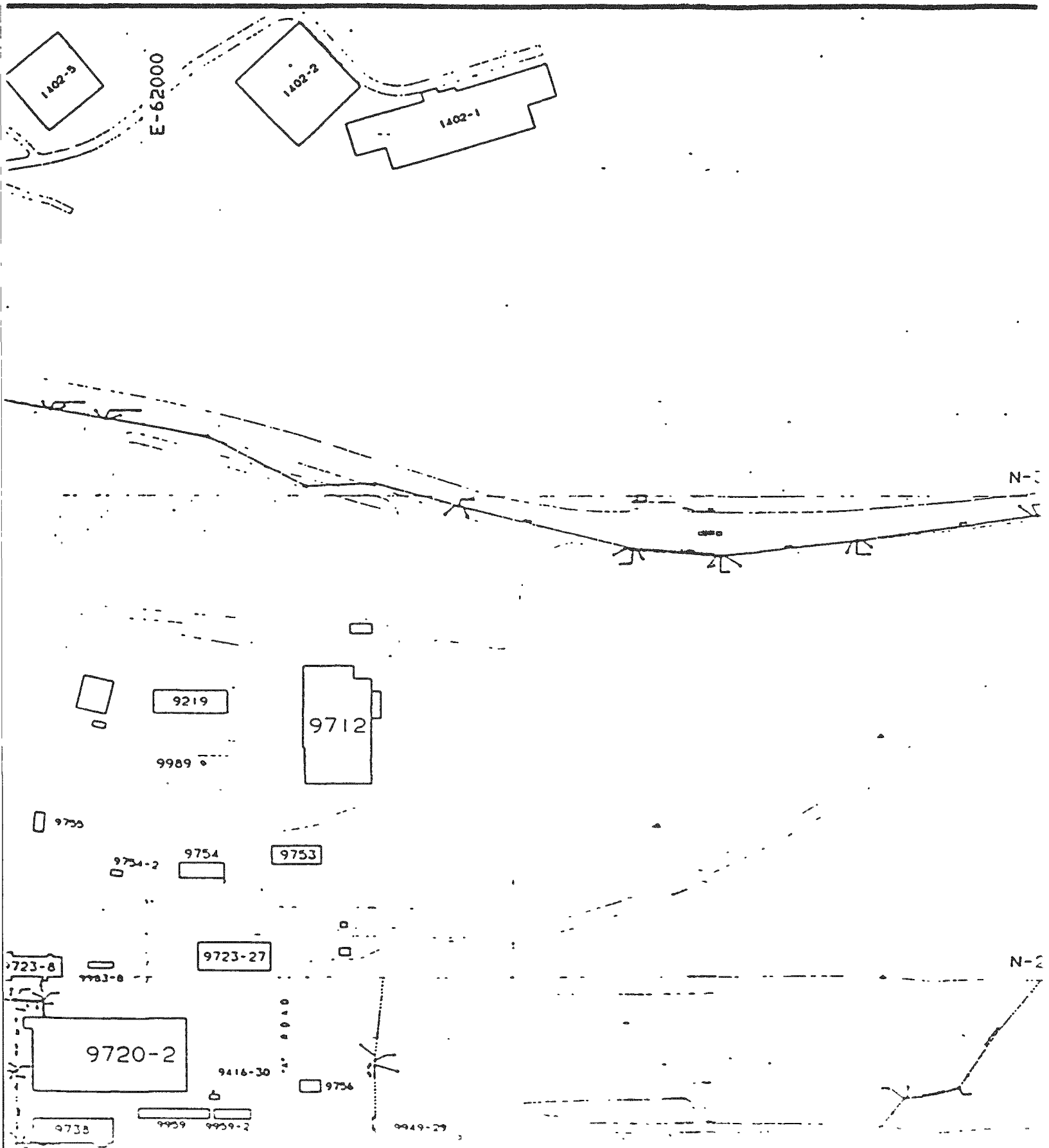

E-60000
BEAR CREEK ROAD
NORTH PORTAL
9949-42
9949-41
9949-40
9743-2
9210
9106
9109
9702
9963-69
9704-2
9704-1
9116
9115
9422-5
9949-4
9949-26
9949-1
FIRST STREET
9706-2
9766
9963-32
9771
9722-2
9711-1
9764
9202
9723-24
9963-5
9720-20
9203
9939-3
9205
9739
9733-1
9733-2
9733-3
9733-4
9710-3
9723-1
9704-1
9401-1
SECOND STREET
9949-3
9422-4
9720-40
9217-1
9720-1
9732-1
9201-1
9201-2
9104-1
9104-2
922

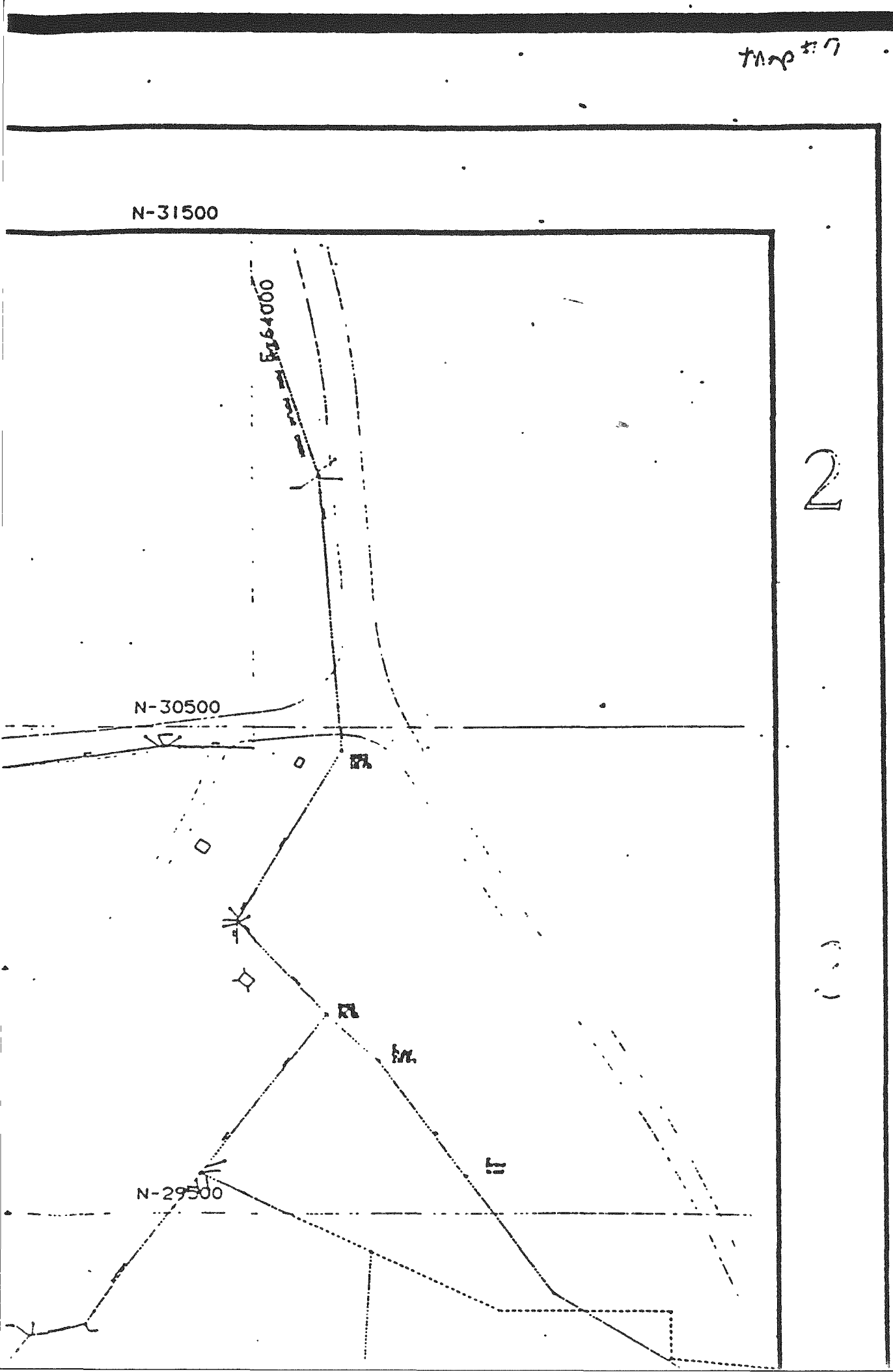
B

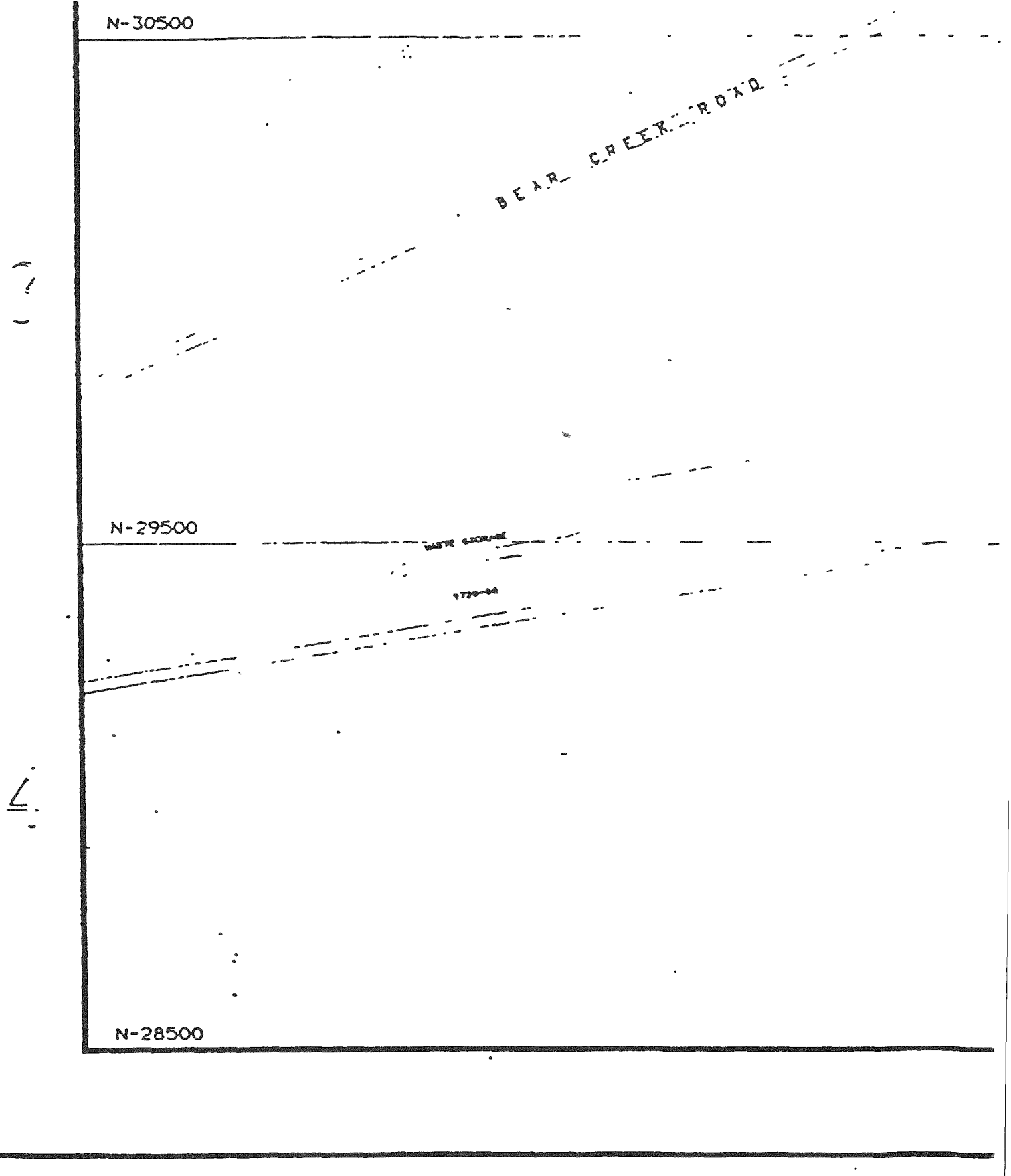


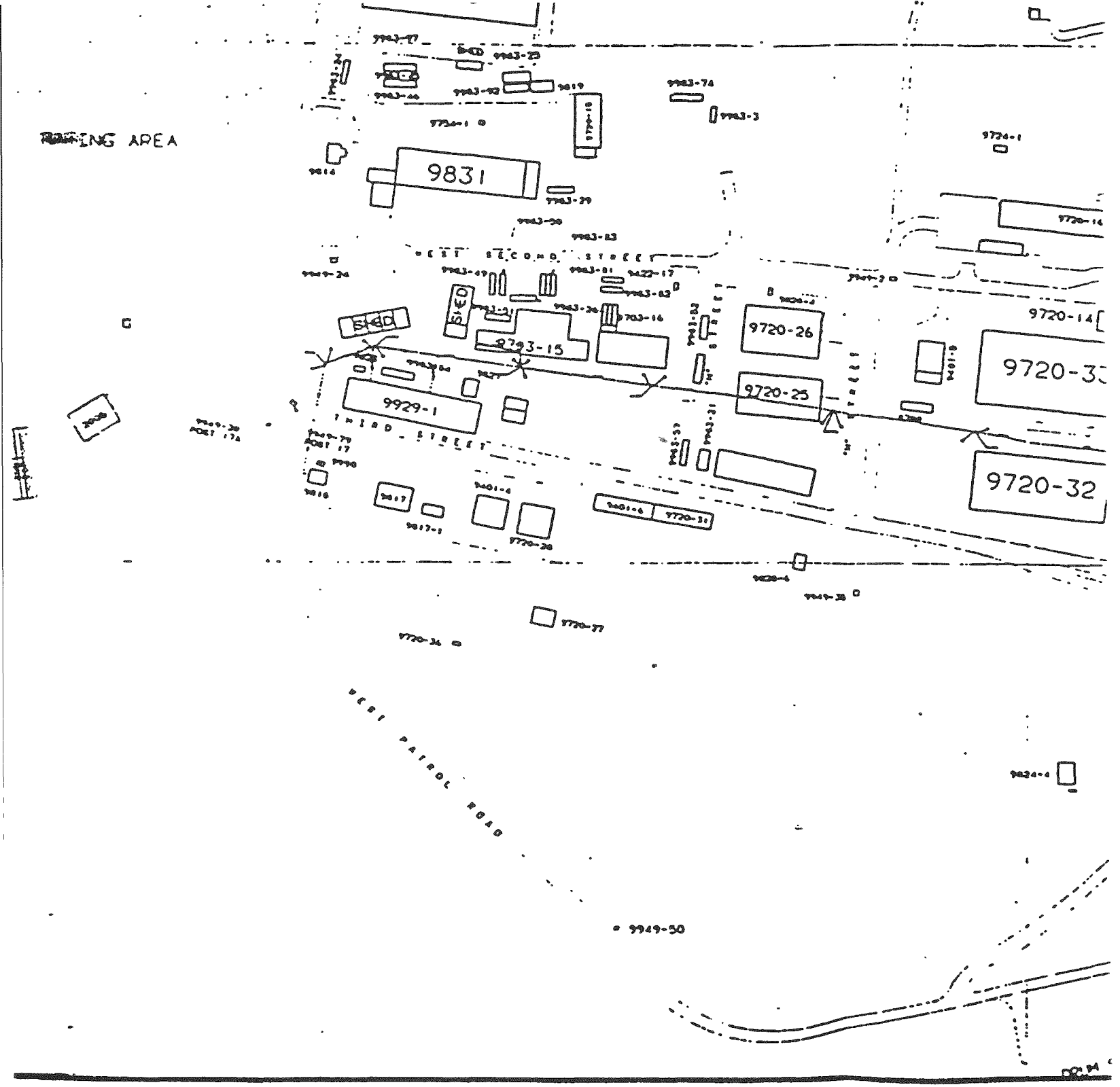
E-62000
9769
9770-3
9416-17
9983-13
9983-12
9983-11
9210
9207
9208
9767-7
9770-1
9767-6
9983-10
9767-3
9767-5
9416-23
9409-32
9409-28
9409-29
9416-22
ELZA SWITCH YARD
1301-1
9224
9211
9220
9219
9989
9949-4
9949-32
9723-24
9983-5
9720-20
9203
9723-4
9728
9755
9754-2
9754
9401-1
SLAB
9108
9983-31
9983-69
9983-70
9416-21
9409-30
9737
9723-8
9983-8
9709
9720-2
9767-12
9104-1
9104-2
SECOND STREET

A

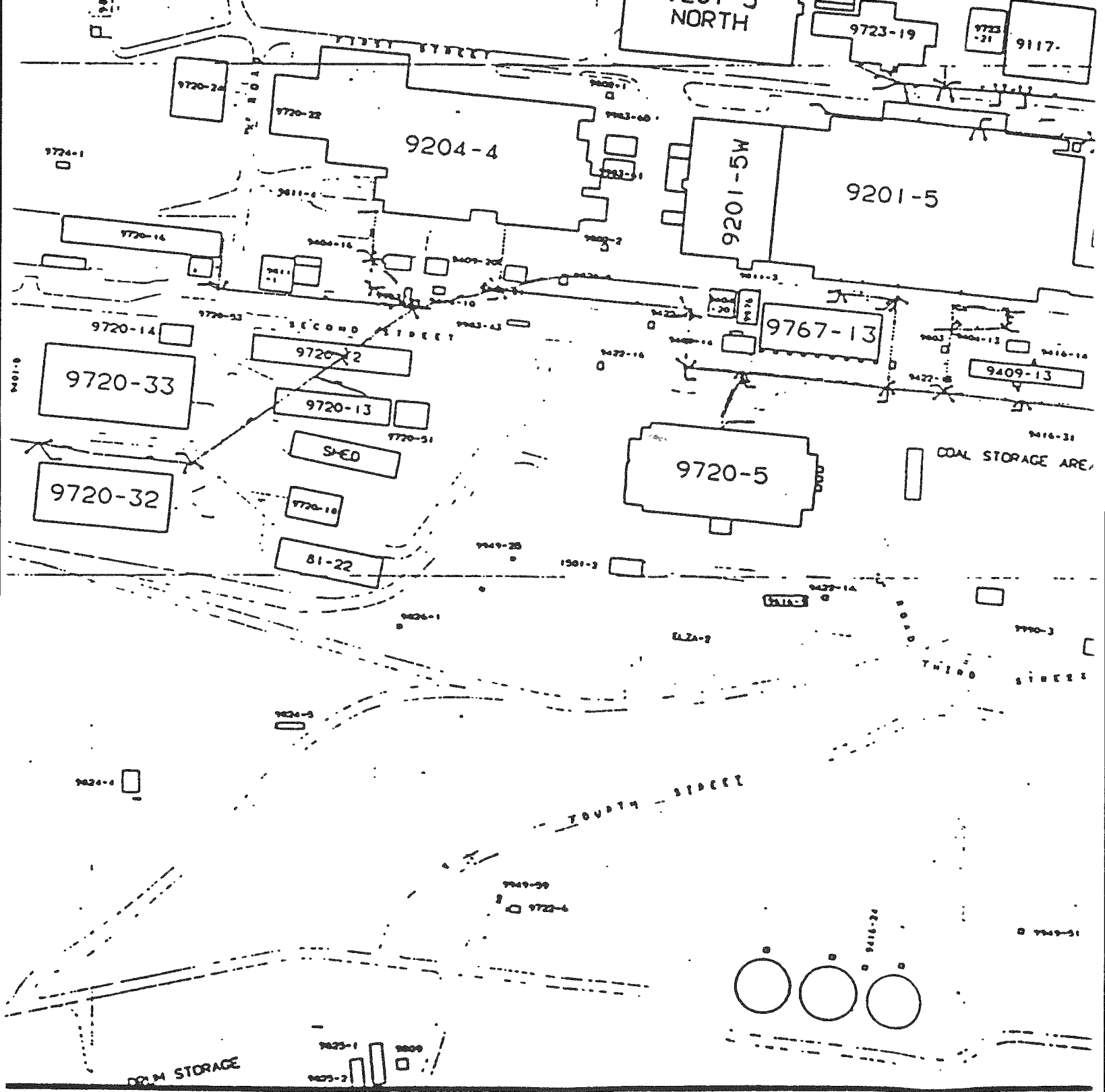

1402-3
E-62000
1402-2
1402-1
9219
9712
9989
9755
9754-2
9754
9753
9723-8
9723-27
9720-2
9416-30
9756
9738
9959
9959-2
9949-29


N-31500
N-30500
N-29500

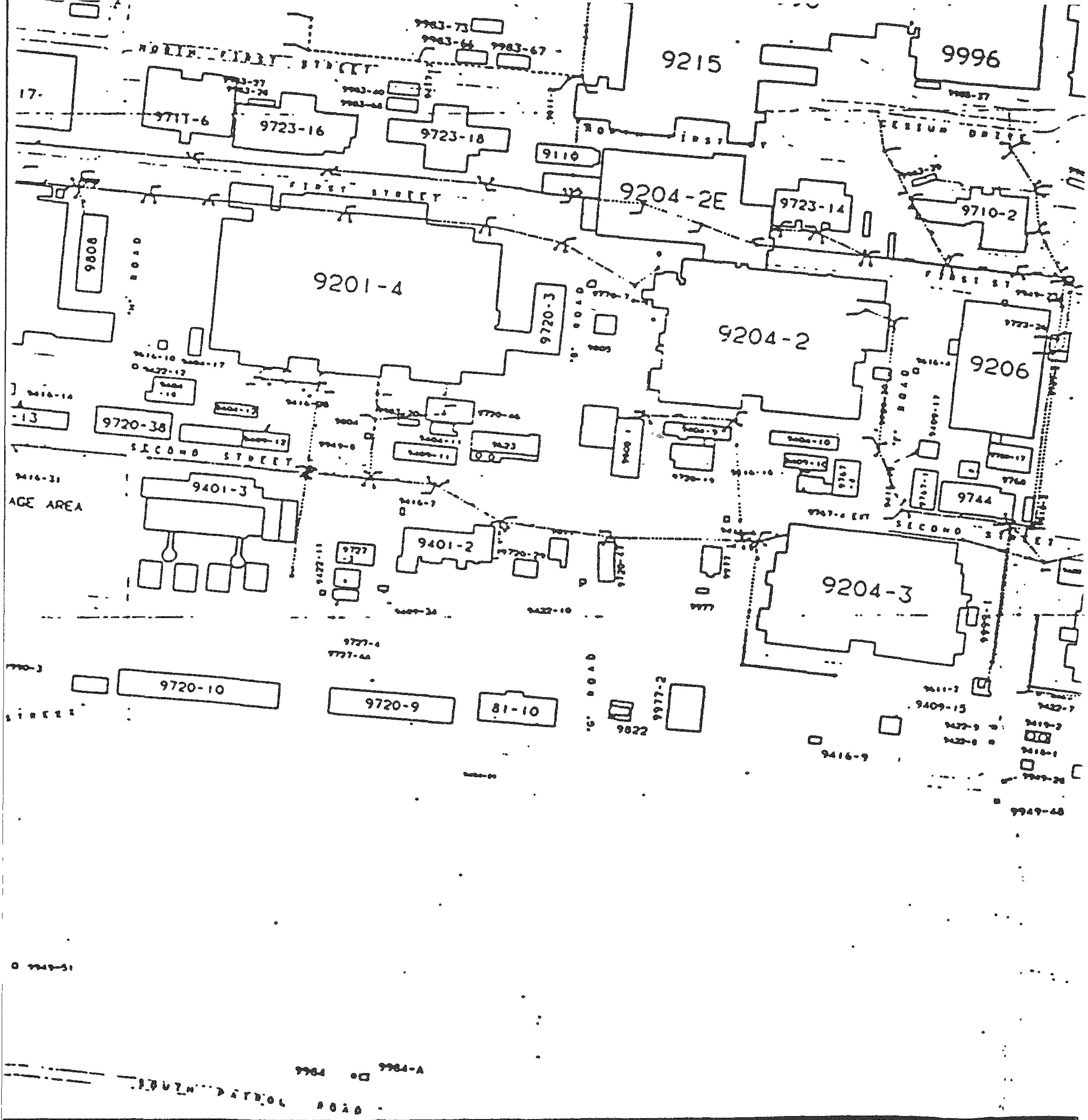

N-30500
BEAR CREEK ROAD
N-29500
WASTE STORAGE
9720-68
N-28500


PARKING AREA
9831
9720-26
9720-25
9720-32
9929-1
9793-15
WEST SECOND STREET
INLAND STREET
WEST PATROL ROAD
9949-50

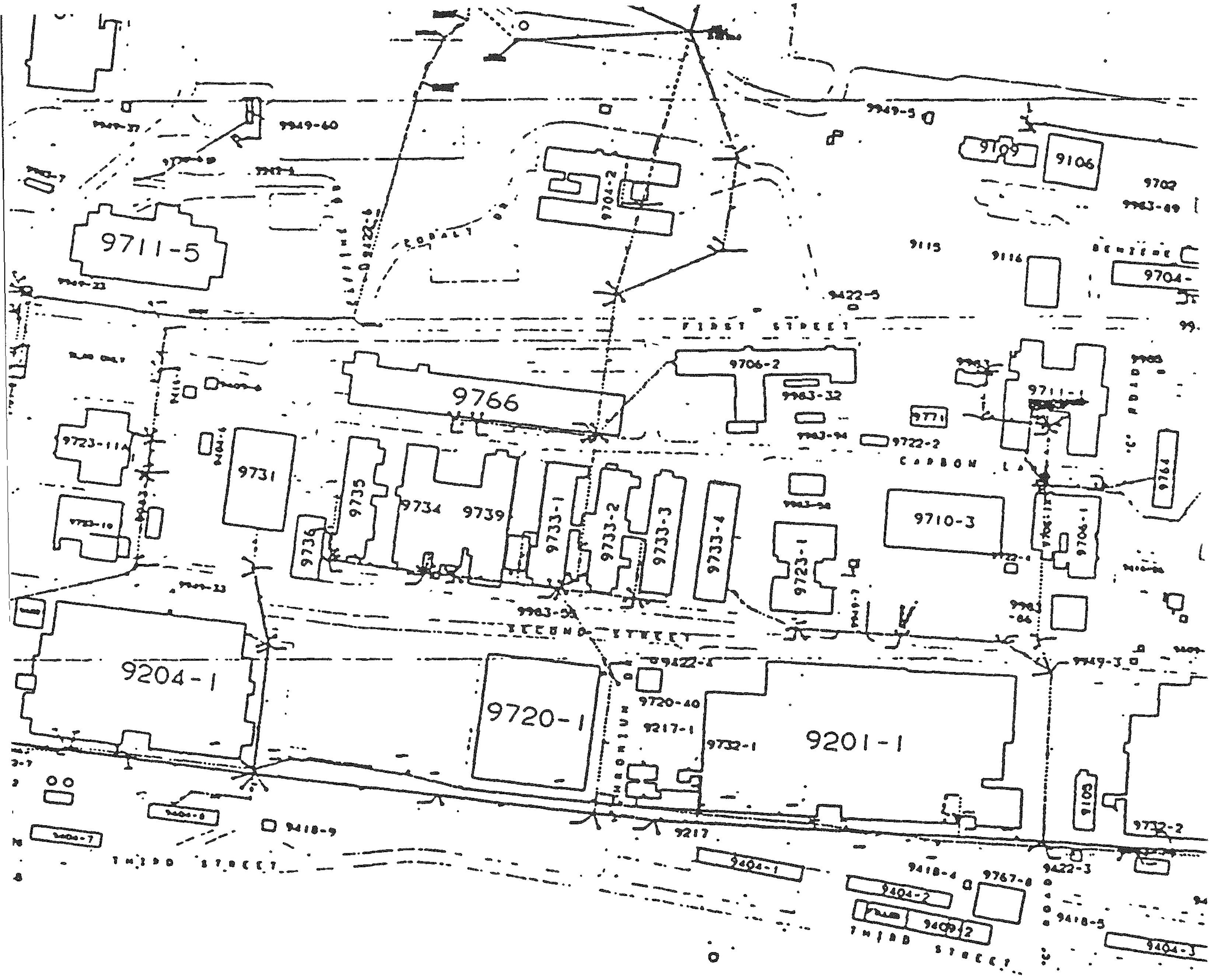
F


NORTH
9723-19
9204-4
9201-5W
9201-5
9720-33
9720-14
9720-12
9720-13
SHED
9720-32
9720-5
9767-13
9409-13
COAL STORAGE ARE
SECOND STREET
THIRD STREET
FOURTH STREET
DRUM STORAGE

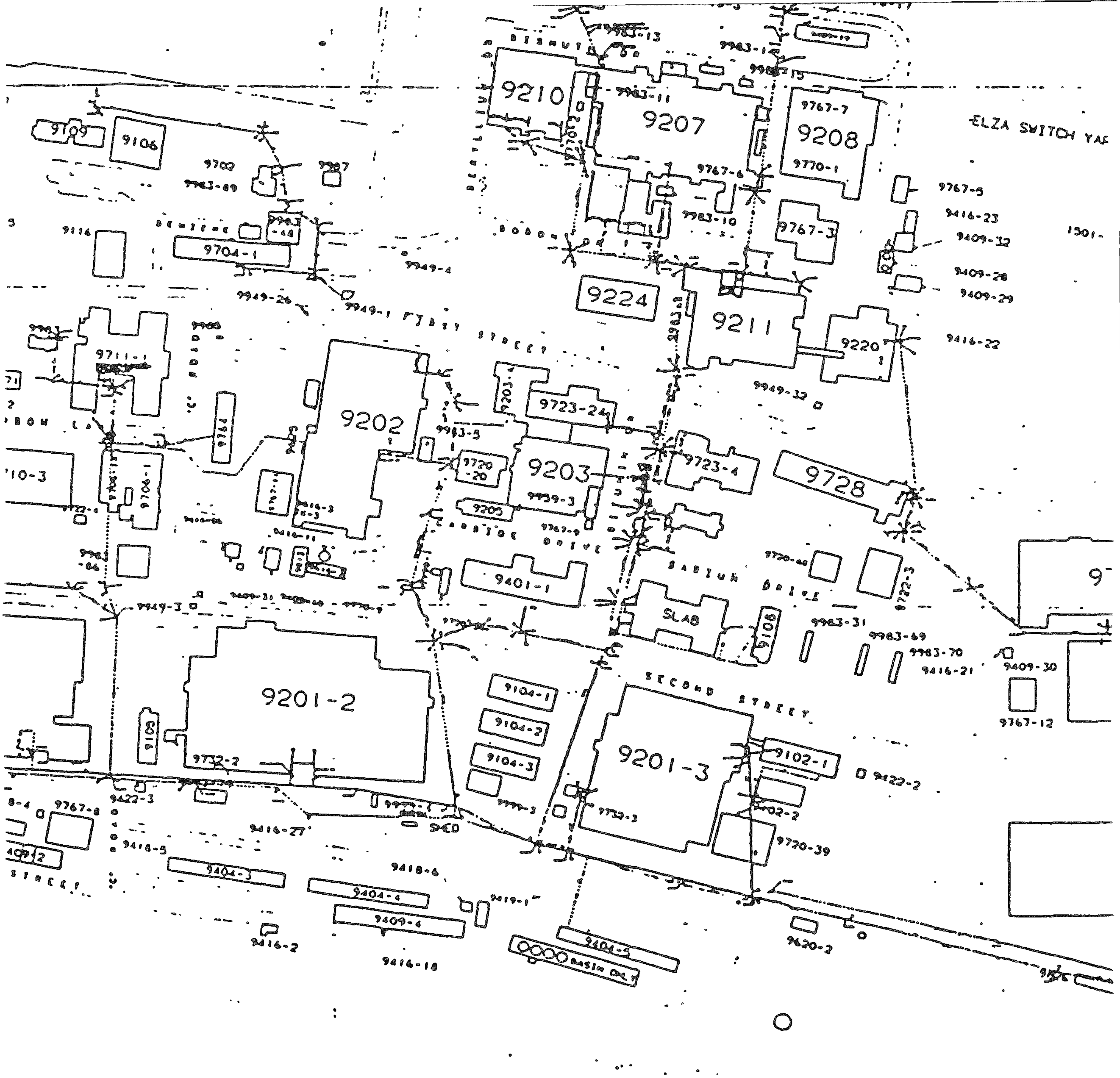
E


9215
9996
9717-6
9723-16
9723-18
9110
9204-2E
9723-14
9710-2
9808
9201-4
9720-3
9204-2
9206
9720-38
SECOND STREET
9401-3
AGE AREA
9401-2
9744
9204-3
9720-10
9720-9
81-10
9822
9977-2
9409-15
9416-9
9949-48
9949-51
9984
9984-A

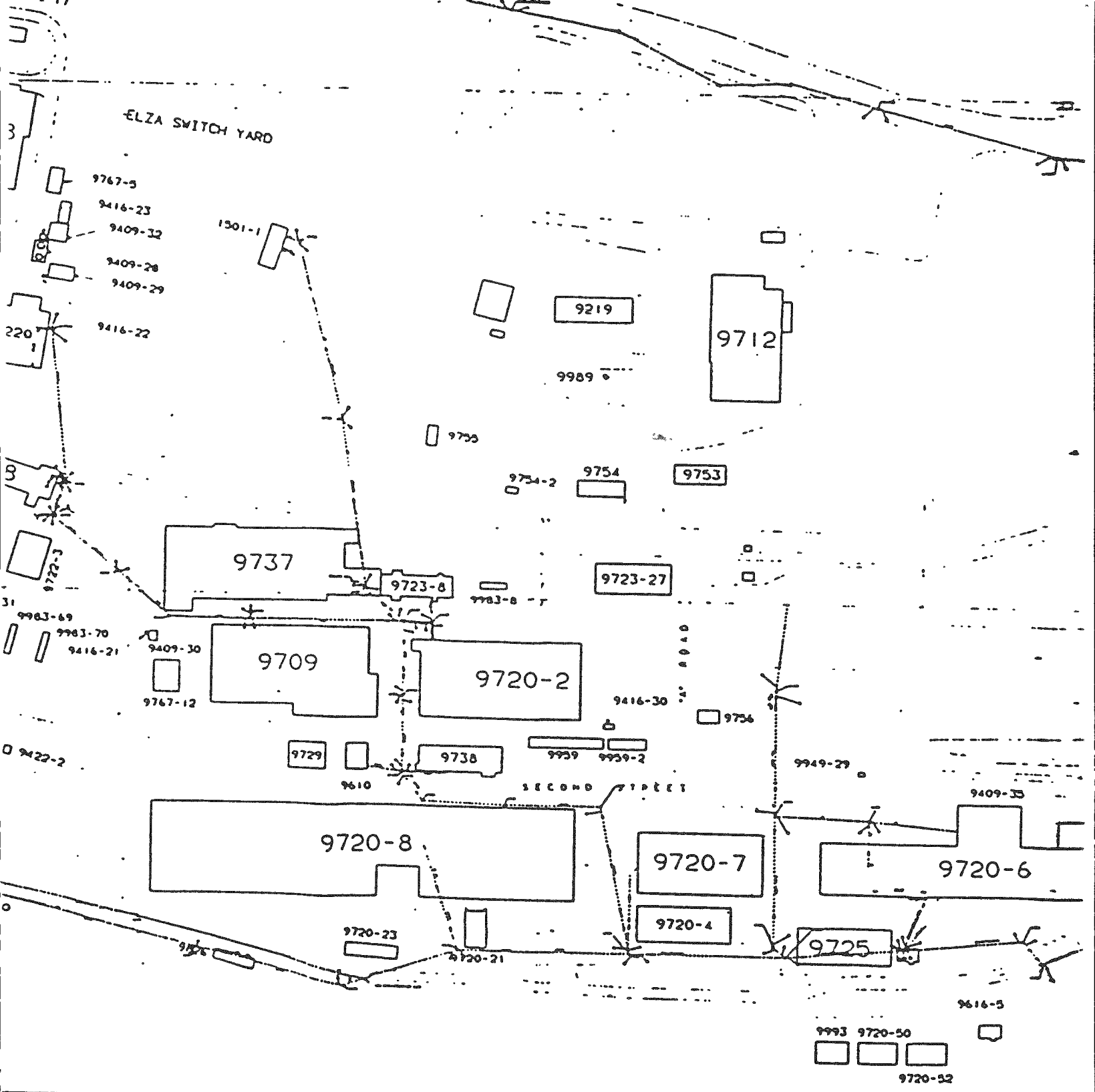
D

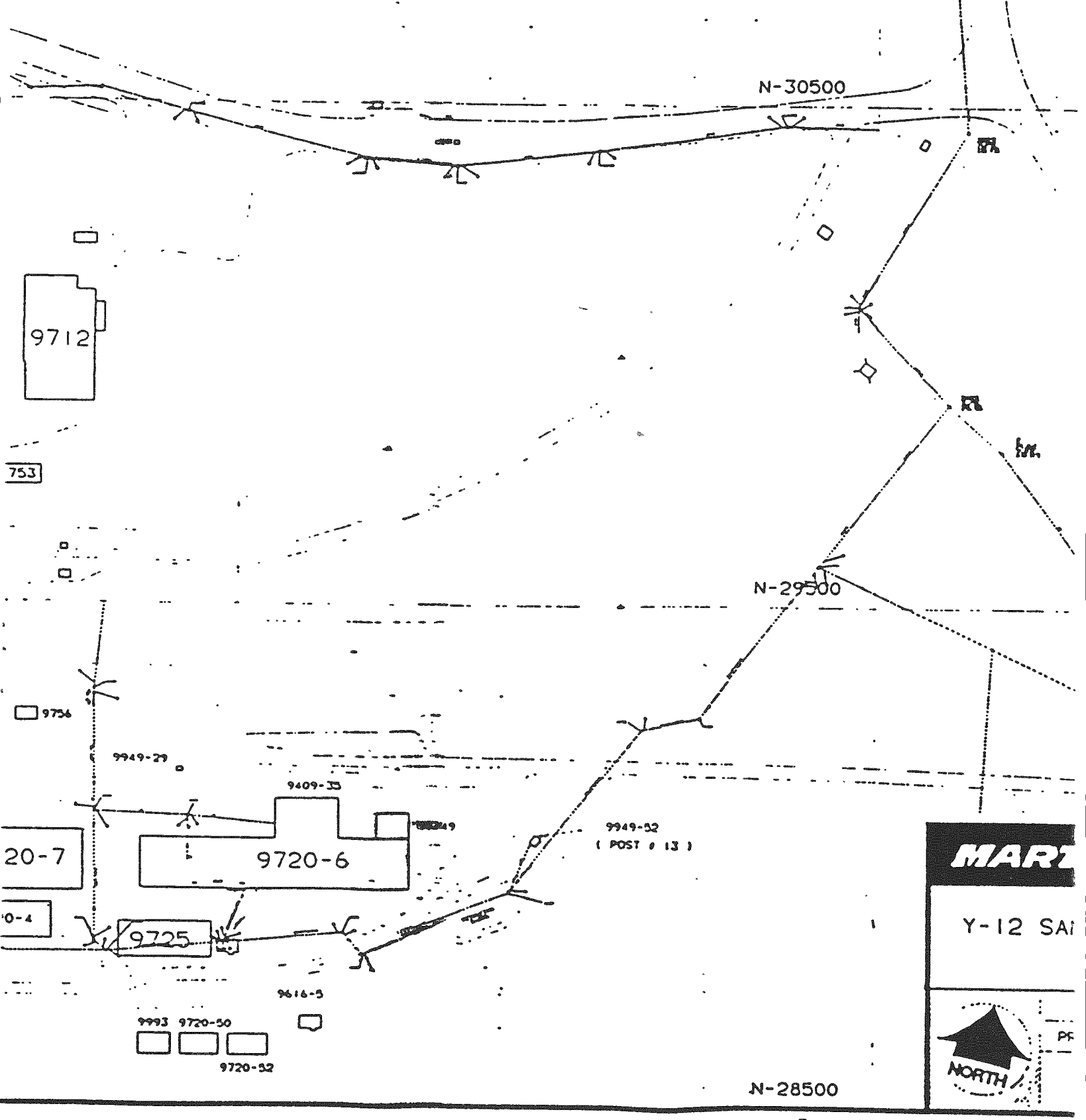

9711-5
9949-60
9704-2
9949-5
9109
9106
9702
9704-
9422-5
FIRST STREET
9706-2
9766
9963-32
9723-11A
9731
9735
9734
9739
9736
9733-1
9733-2
9733-3
9733-4
9723-1
9710-3
9711-1
9771
9722-2
CARBON LA
9706-1
9764
SECOND STREET
9204-1
9720-1
9422-4
9720-40
9217-1
9732-1
9201-1
9949-3
9732-2
9217
9418-9
THIRD STREET
9404-1
9404-2
9418-4
9767-8
9422-3
9418-5
9404-3

C

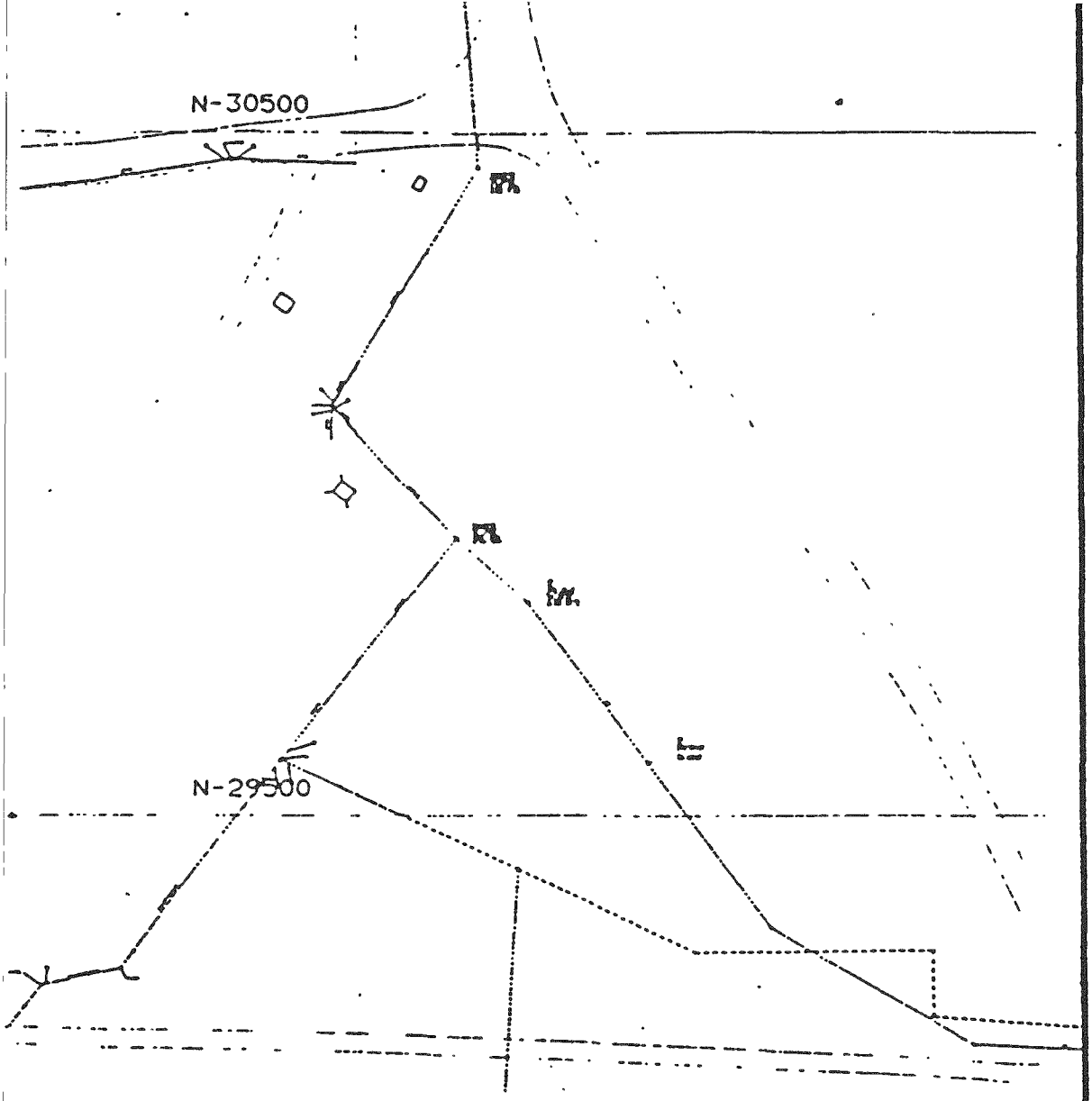

9210
9207
9208
ELZA SWITCH YA
9109
9106
9704-1
9224
9211
9220
9711-1
9202
9723-24
9720
-20
9203
9723-4
9728
9205
9939-3
9401-1
SLAB
9108
9201-2
9104-1
9104-2
9104-3
9201-3
9102-1
9732-2
9422-3
9767-8
9422-2
9720-39
9404-3
9404-4
9409-4
9404-5
BASIN DRY
9416-2
9416-18
9620-2
SHED
FIRST STREET
SECOND STREET
CARBIDE DRIVE
9767-7
9770-1
9767-6
9767-3
9767-5
9416-23
9409-32
9409-28
9409-29
9416-22
9949-32
9983-5
9983-31
9983-69
9983-70
9416-21
9409-30
9767-12
9949-3
9949-4
9949-26
9949-1
9416-27
9418-5
9418-6
9419-1
9733-3
9702
9983-69
9983-10
9983-11
9983-13
9983-14
9983-15
9116
9710-3
9706-1

B


ELZA SWITCH YARD
9767-5
9416-23
9409-32
9409-28
9409-29
9416-22
1301-1
9219
9712
9989
9755
9754-2
9754
9753
9737
9723-8
9723-27
9722-1
9983-69
9983-70
9416-21
9409-30
9767-12
9709
9720-2
9416-30
9756
9729
9738
9959
9959-2
9610
SECOND STREET
9949-29
9409-35
9720-8
9720-7
9720-6
9720-4
9725
9720-23
9720-21
9616-5
9993
9720-50
9720-52
B
A


N-30500
9712
753
N-29500
9756
9949-29
9409-35
9720-6
9949-32
(POST # 13)
20-7
9725
9616-5
9993
9720-50
9720-52
N-28500
MARI
Y-12 SAI
NORTH

A



949-52
OST # 13)

MARTIN MARIETTA

Y-12 SANITARY SEWER SYSTEM MASTER PLAN

NORTH

PREPARED BY FP DICKEY 05-14-90

0 100 200 400 1000

SCALE (FEET)

Map 6

The Y-12 Plant Storm Sewer System Master Plan Map

The Y-12 Plant Storm Sewer System Master Plan Map has been determined by the U.S. Department of Energy to contain UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION (UCNI) and is not to be disseminated to the public. The document must be protected as required in 10 CFR Part 1017 and its implementing orders. Unauthorized dissemination of the material is subject to civil and criminal sanctions under section 148 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2168).

The Y-12 Plant Storm Sewer System Master Plan Map was submitted as a part of the first revision of this document. If additional copies of this map are needed, please contact C. M. LaBorde at (615) 576-5603.

TENNESSEE DEPARTMENT OF CONSERVATION
Customs House
701 Broadway
Nashville, TN 37243

October 24, 1991

Mr. Robert J. Spence
Y-12 Site Manager
Department of Energy
P.O. Box 2001
Oak Ridge, TN 37831-8555

RE: Resource Conservation and Recovery Act Part B Permit Maps

Dear Mr. Spence:

The Division of Solid Waste Management is in receipt of your October 9, 1991, letter requesting a variance from the mapping scales required in Rule 1200-1-11-.07(5)(a)17 of the Tennessee Hazardous Waste Management Regulations.

Due to the nature of the Department of Energy Reservation at Oak Ridge, the Division of Solid Waste Management does not foresee any problem with granting this request. You may use the scales that have been requested in your letter.

Please feel free to contact either Bill Krispin or Jackie Okoreeh-Baah if you have any questions regarding this letter.

Sincerely,

Tom Tiesler, Director
Division of Solid Waste Management

JTT/BK/F1011297

cc: Sherry Lankford, DOE
William Brown, MMES/Y-12
Gary Bodenstein, DOE
W. G. McMillan, DOE
James Scarbrough, EPA
Bill Krispin, TDEC/SWM
Jackie Okoreeh-Baah, TDEC/SWM
Earl Leming, TDEC

APPENDIX B-2
WIND ROSES

WIND ROSE for Tower W(60m) for 01/01/90 – 12/31/90

with 94.3% of possible data

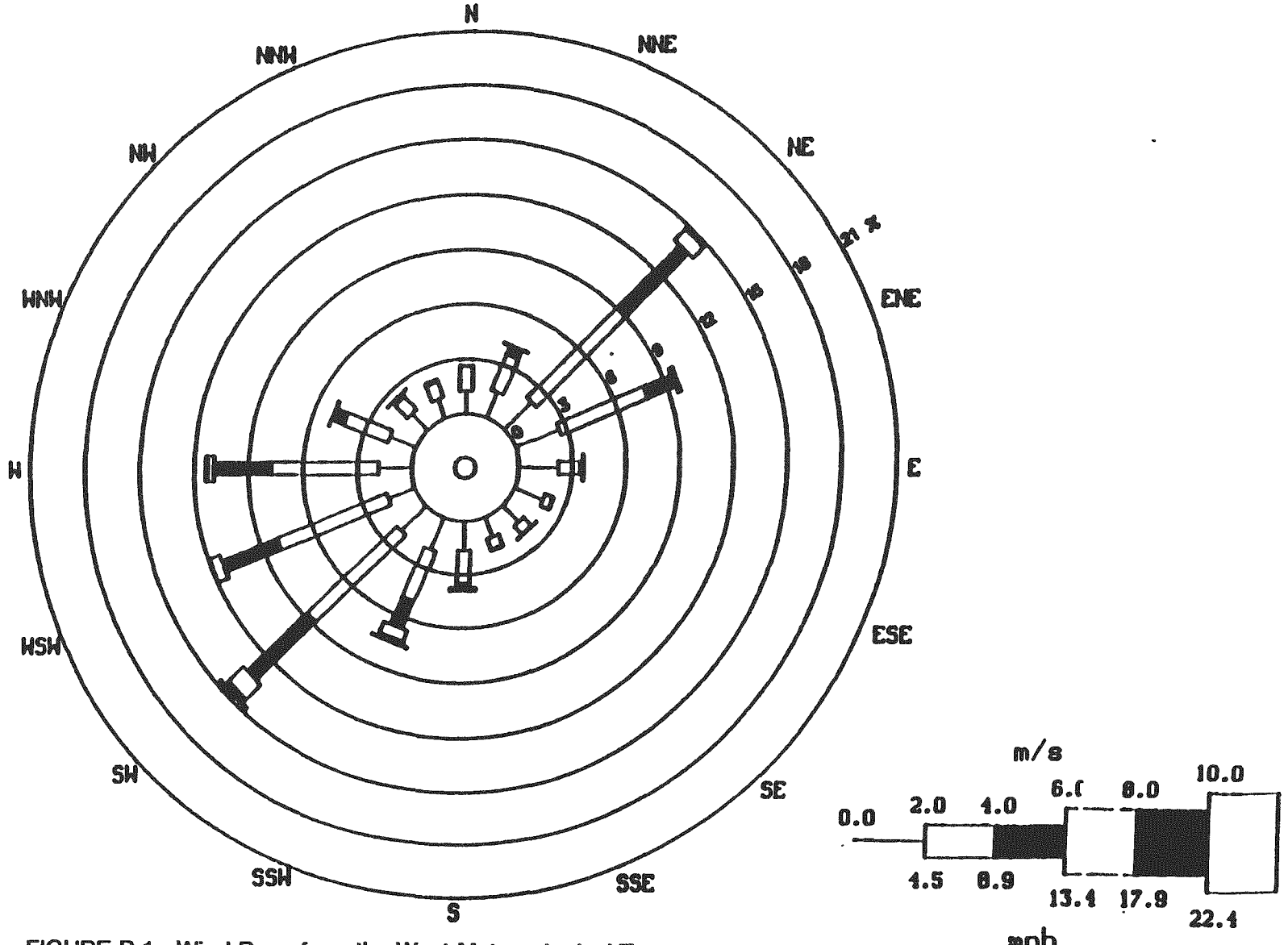


FIGURE B-1. Wind Rose from the West Meteorological Tower at 60 meters at the Y-12 Plant

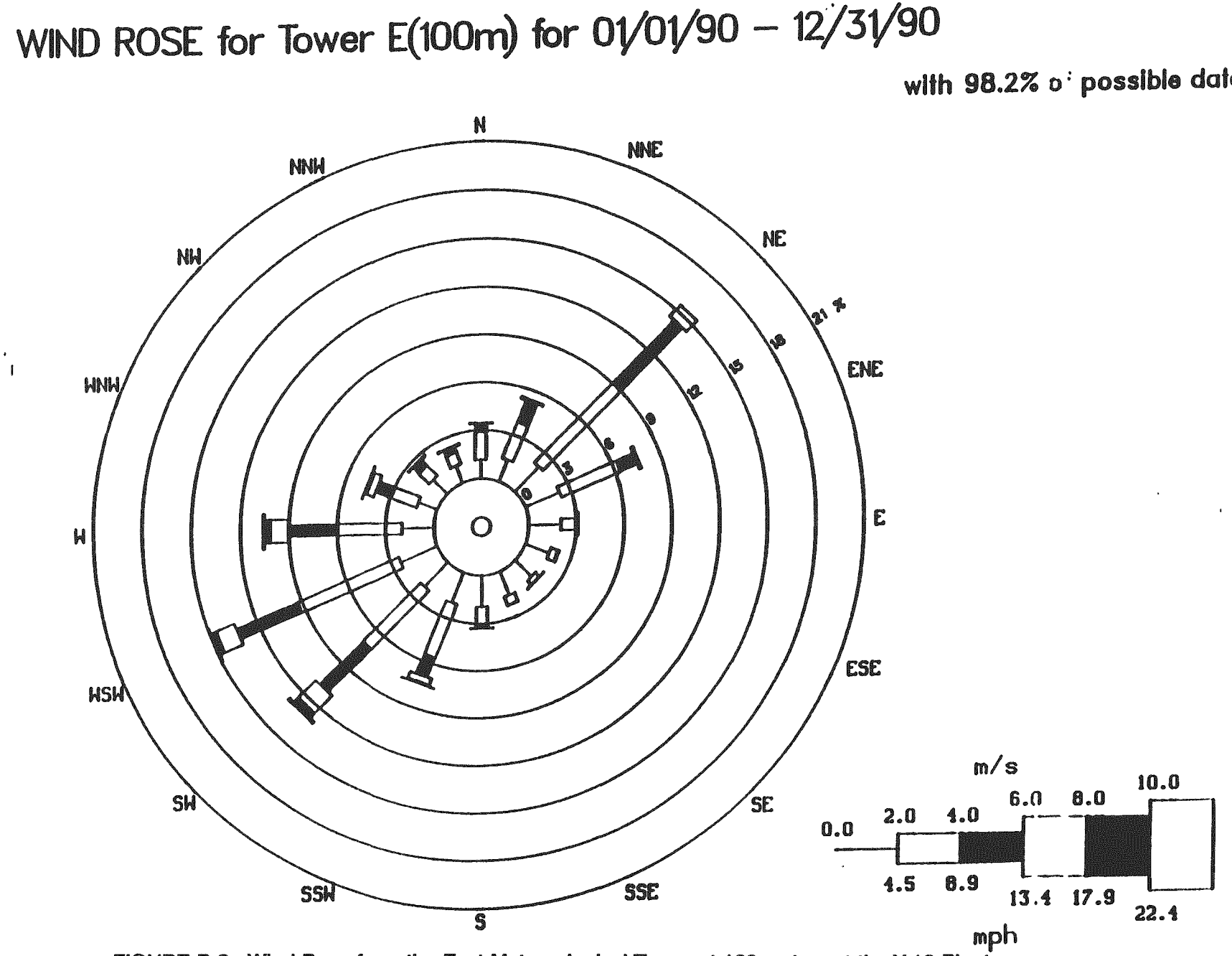


FIGURE B-2. Wind Rose from the East Meteorological Tower at 100 meters at the Y-12 Plant

APPENDIX C-1
TYPICAL WASTE ANALYSIS DATA

WTP

SID - 38

LAB RESULTS

11/ 7/1986

LOC: 9201-5N DECOMPOSED CYANIDE REQ #: 536125
SAMPLE PT: SAMPLE DATE: 10/29/1986 REQUESTOR: J J RUSSELL

ALL RESULTS IN MG/L UNLESS OTHERWISE NOTED

ICP

Ag	0.43	Fe	170	P	30
Al	35			Pb	< 5.0
As	< 0.005	K	7900		
B	4.3			Si	5.9
Ba	1.6	Li	0.12	Sr	0.56
Be	< 0.03	Mg	38	Th	< 4.0
Ca	420	Mn	12	Ti	2.9
Cd	< 0.30	Mo	< 0.40	V	< 0.10
		Na	11000		
Co	0.19	Nb	< 2.0	Zn	0.46
Cr	3.2	Ni	7.7	Zr	< 0.20
Cu	0.26				

Hg	0.003	Se	< 0.005
Total Residual Cl		F	0.50
PCB	< 0.001	Cl Hydrocarbons	< 0.01
Phosphates	90	Sulfates	56900
Cyanide	< 0.10	Nitrates	< 1000
COD chemical oxygen demand	6040	TOC total organic carbon	500
Suspended Solids	5048	pH	8.0
Dissolved Solids	282912	Alkalinity(as CaCO3)	2040
Density	1.1900	Acidity	
U	12	235 U	

** RADIOLOGICAL PARAMETERS ** (PER ML)

Alpha Activity	0.008uCi	Beta Activity	< 1.0pCi
Gamma Activity	< 2.0pCi		

ORGANICS

Methylene Chloride	< 0.50
Methyl Chloroform	< 0.50
Trichloroethyelene	< 0.50
Perchloroethylene	< 0.50
Phenols	0.44

Notes or Additional Results

TOTAL RESIDUAL CHLORINE 6.0 MG/L

SID - 38

LAB RESULTS

11/ 4/1986

LOC: 9201-5N DECOMPOSED CYANIDE REQ #: 536126
SAMPLE PT: SAMPLE DATE: 10/29/1986 REQUESTOR: J J RUSSELL

DUPLICATE ANALYSIS

Uranium	0 PPM
U 235	1.03 Wt %

RADIOACTIVITY CALCULATION

REQUISITION NUMBER 536125

URANIUM	12.	PPM
U235	0.00	WT %
ALPHA ACTIVITY	0.0077000	uCi/ML
BETA ACTIVITY	0.0000010	uCi/ML
DENSITY	1.1900	

SPECIFIC ACTIVITY OF SOLUTION 0.0064714 uCi/GM

THIS SHIPMENT IS "RADIOACTIVE" BY DOT STANDARDS

APPENDIX C-2
WASTE IDENTIFICATION FORMS

MARTIN MARIETTA

WASTE ITEM DESCRIPTION

R .0837

WASTE ITEM IDENTIFICATION

ste Item ID Number	I2. Generator s Name (Print)	I3. Badge No.	I4 Generator s Phone No.	I5. MS	I6. Charge Number/WO

I7. Origin Div	I8. Origin Date	I9. Origin Site	I10. Origin Facility	I11. Origin Room/Area	I12. Radiological Area?
					☐ Yes ☐ No

I13. Est. Net Volume	I14. Units	I15. Est. Gross Weight	I16. Units	(Reserved)

CONTAINER INFORMATION (1 of) If more than one attach Waste Container List (UCN-2109A)

C1. Container ID. No.	C2. Container Type	C3. Holding Site	C4. Holding Facility	C5. Holding Room/Area

WASTE CATEGORY

W1. Process Stream ID	W2. Process Category	W3. Process Activity

W4. Physical Form	W5. Material Type	W6. AWA No.

W7. Waste Description

W8. Waste Category (Check all)

	Yes	No		Yes	No
Chemical			Biological		
Radioactive			Accountable		
Asbestos			Carcinogen		
San/Ind			Compactible		
Const Debris			Recyclable		
Medical			Classified		

CHEMICAL WASTE

M1. RCRA?	M2. RCRA 90-day Start Date	M3. PCB?	M4. PCB Start Date	M5. PCB Conc. (PPM)
☐ Yes ☐ No		☐ Yes ☐ No		

M6. Determination Method (Check ONE)	M7. Determination Document Number(s)	M8. Flash Pt.	M9. pH
☐ Analysis ☐ Process Knowledge ☐ Reference	M10. EPA Waste Code Numbers		

I1. Substance ID	M12. Vol %	M13. Substance Name

RADIOACTIVE WASTE

R1. RAD Category (Check ONE)	R2. RAD Handling Type	R3. UCN 2681 No.
☐ TRU ☐ High-Level ☐ Low-Level ☐ Special ☐ VLA	☐ Contact ☐ Remote	

R4. Determination Method (Check ONE)	R5. Determination Document Number(s)	
☐ Analysis ☐ Process Knowledge ☐ Reference	R6. Chemical Form	(Reserved)

R7. Isotope	R8. Est. Qty	R9. Units	R7. Isotope	R8. Est. Qty	R9. Units	R7. Isotope	R8. Est. Qty	R9. Units

HANDLING INFORMATION

H1. Handling Instructions

H2. Respirator ☐ None ☐ Half ☐ Full

H3. Cartridge Type

H4. HP Tag Color	Surface Contamination (dpm/100 cm²) Transfer.	Surface Contamination (dpm/100 cm²) Direct Read.	Dose Rate at Surface (mrem/hr)	Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
Alpha					
Beta/Gamma					
Neutron					

kup Site	H6. Pickup Facility	H7. Pickup Area

SIGNATURES and APPROVALS

S1. Generator	Badge	Date

S2. HP Technician	Badge	Date

S3. Verification Officer	Badge	Date

S4. Derivative Classifier	Badge	Date

MARTIN MARIETTA

WASTE ITEM/CONTAINER LIST

(Continuation Page ____ of ____)

R :0837

Sequence Number	Referenced from WID (UCN-2109)*	
1	I1. Waste Item ID Number	C1. Container ID. No.

*ALL WASTE ITEM/CONTAINERS ON THIS FORM HAVE THE SAME CHARACTERISTICS AS ITEM/CONTAINER NUMBER 1

Sequence Number	I1. Waste Item ID Number	C1. Container ID. No.	I8. Origin Date	M2. RCRA 90-day Start Date	M4. PCB Start Date	
	I13. Est. Net Volume	I14. Units	H4. HP Tag Color	Surface Contamination (dpm/100 cm²) Transfer. / Direct Read.	Dose Rate at Surface (mrem/hr) / Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	I15. Est. Gross Weight	I16. Units	Alpha			
Comments			Beta/Gamma			
			Neutron			

Sequence Number	I1. Waste Item ID Number	C1. Container ID. No.	I8. Origin Date	M2. RCRA 90-day Start Date	M4. PCB Start Date	
	I13. Est. Net Volume	I14. Units	H4. HP Tag Color	Surface Contamination (dpm/100 cm²) Transfer. / Direct Read.	Dose Rate at Surface (mrem/hr) / Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	I15. Est. Gross Weight	I16. Units	Alpha			
Comments			Beta/Gamma			
			Neutron			

Sequence Number	I1. Waste Item ID Number	C1. Container ID. No.	I8. Origin Date	M2. RCRA 90-day Start Date	M4. PCB Start Date	
	I13. Est. Net Volume	I14. Units	H4. HP Tag Color	Surface Contamination (dpm/100 cm²) Transfer. / Direct Read.	Dose Rate at Surface (mrem/hr) / Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	I15. Est. Gross Weight	I16. Units	Alpha			
Comments			Beta/Gamma			
			Neutron			

Sequence Number	I1. Waste Item ID Number	C1. Container ID. No.	I8. Origin Date	M2. RCRA 90-day Start Date	M4. PCB Start Date	
	I13. Est. Net Volume	I14. Units	H4. HP Tag Color	Surface Contamination (dpm/100 cm²) Transfer. / Direct Read.	Dose Rate at Surface (mrem/hr) / Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	I15. Est. Gross Weight	I16. Units	Alpha			
Comments			Beta/Gamma			
			Neutron			

Sequence Number	I1. Waste Item ID Number	C1. Container ID. No.	I8. Origin Date	M2. RCRA 90-day Start Date	M4. PCB Start Date	
	I13. Est. Net Volume	I14. Units	H4. HP Tag Color	Surface Contamination (dpm/100 cm²) Transfer / Direct Read	Dose Rate at Surface (mrem/hr) / Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	I15. Est. Gross Weight	I16. Units	Alpha			
Comments			Beta/Gamma			
			Neutron			

SIGNATURES and APPROVALS

S1. Generator	Badge	Date	S2. HP Technician	Badge	Date
S3. Verification Officer	Badge	Date	S4. Derivative Classifier	Badge	Date

U :109A (8-93)

R 00837

Attach Container Packing List and/or Barcode Labels Here (staple)

WASTE MANAGEMENT SECTION

EPA Codes					
DOT Rad > =2000 ☐ Yes ☐ No	Required Labels/Markings/Tags Correct ☐ Yes ☐ No	DOT Shipping Name			
Hazard Class/Division	DOT ID Number	Packing Group	Sample Request Number	Date Sampled	Sampling Code Number
1 Yr. Storage Deadline for RCRA (Date)	9 Month/1 Year PCB Date	Required Protective Equipment			
Field Review Signature (TSD)			Badge Number	Date	
Onsite TSD Facility	Date Waste Received	Bay	Shelf	Column	Row
Operator s Signature			Badge Number	Date	
Movement History from	to	to	Date Moved		
Operator s Signature			Badge Number	Date	
Disposal Method/Code	Disposal Facility/Company	Transporter s Name/Company			
Waste Manifest Number	CD Receipt Date	Waste Destination			
Shipping Coordinator s Signature			Badge Number	Date	
Disposal Instructions					
Certification Officer Signature			Badge Number	Date	

☆ U.S. GOVERNMENT PRINTING OFFICE: 1993—750—181/80026

ENERGY SYSTEMS WASTE DISPOSAL REQUEST

UCN-2109 Profile Sheet

WASTE ITEM IDENTIFICATION

- I1 Waste Item ID Number. The unique ID number of the waste item
- I2 Generator's Name: The name of the individual responsible for the generation of the waste
- I3 Badge No. The badge number of the waste generator.
- I4 Generator's Phone No. Phone number where the waste generator can be reached
- I5 MS. Mail Stop
- I6 Charge Number/WO/Project Number (for ER only): A valid work order, account number, or project number for waste handling charges
- I7 Origin Div. The division code of the originating division
- I8 Origin Date. The date that the waste was generated
- I9 Origin Site. The site (plant) where the waste was generated
- I10 Origin Facility: The facility (building) where the waste was generated
- I11 Origin Room/Area. The room or area where the waste was generated
- I12 Radiological Area. The generation area is a radiological area (yes or no)
- I13. Est. Net Volume. The estimated net volume of the waste material
- I14 Units. Volume units
- I15 Est. Gross Weight: The estimated gross weight of the waste material
- I16 Units: Weight units

CONTAINER INFORMATION

- C1. Container ID No.: The unique ID number of the shipping/storage container for this waste item
- C2 Container Type: The type code for the shipping/storage container
- C3 Holding Site: The site (plant) where the waste was held during accumulation
- C4 Holding Facility: The facility (building) where the waste was held during accumulation
- C5. Holding Room/Area: The room number or area identifier where the waste was held during accumulation

WASTE CATEGORY

- W1 Process Stream ID. The ID number of the process stream which generated the waste
- W2. Process Category: The category of the process which generated this waste
- W3. Process Activity: The descriptive name of the generation process
- W4. Physical Form: The physical form of the waste material
- W5 Material Type: The sub-category of the physical form of the waste material
- W6. AWA Number: Asbestos Work Authorization Number
- W7 Waste Description: Further specification of the waste, including descriptive information
- W8. Waste Category. Specific categories for the waste material (check each one either "YES" or "NO")

CHEMICAL WASTE

- M1. RCRA (Y/N)?: The waste contains RCRA regulated material
- M2. RCRA 90-Day Start Date: The date RCRA waste was placed in a 90-day storage area
- M3. PCB (Y/N)?: The waste contains PCB regulated material
- M4. PCB Start Date: The date PCB waste material was removed from service
- M5. PCB Conc.(PPM): The PCB concentration in parts per million (if "less than" nnn, enter nnn)
- M6. Determination Method: The method used to determine the chemical characteristics
- M7 Determination Document Number(s): Document numbers that substantiate the determination of the characteristics
- M8 Flash Point. The flash point of the waste material (degrees C)
- M9 pH. The relative acidity of the waste material (pH)
- M10 EPA Waste Code Numbers: The EPA waste code numbers determined from the waste characteristics
- M11 Substance ID. The ID number of a chemical constituent of the waste (either its CAS number or MSDS record number)
- M12. Vol %. The percent by volume for the chemical substance
- M13. Substance Name: The common name of the chemical substance

RADIOACTIVE WASTE

- R1. Rad Category: The radioactive waste category code (check one)
- R2. Rad Handling Type: The radioactive waste handling code
- R3 UCN 2681 Number: The ID number of the UCN-2681 "Accountability Transfer" form associated with this waste (if any)
- R4 Determination Method: The method used to determine the radioactive characteristics (check one)
- R5. Determination Document Number(s): Document numbers that substantiate the determination of the characteristics
- R6 Chemical Form: The chemical form of the waste material
- R7 Isotope ID. The ID number of a particular radioactive isotope contained in this waste item
- R8 Est. Quantity. The estimated quantity of this isotope
- R9 Quan. Units. The units for the isotope quantity (grams or curies)

HANDLING INFORMATION

- H1 Handling Instructions: General handling instructions for the waste
- H2 Respirator: Respirator requirements for handling this waste
- H3. Cartridge Type. Respirator cartridge type to be used (if applicable)
- H4 HP Survey Data (completed by Health Physics technician)
  - HP Tag Color: The color code of the survey tag (G,Y,R,B)
  - Surface Contamination: The transferrable and Direct Reading count rates (dpm/100 cm2)
  - Dose Rate at Surface: The dose rate measured at the surface (mrem/hr)
  - Dose Rate at 1 Meter: The dose rate measured at 1 meter (mrem/hr)
  - *Instrument ID: The health physics instrument ID number ("M" number) Example:* M123456
- H5 Pickup Site: The site (plant) where the waste is to be picked up
- H6 Pickup Facility: The facility (building) where the waste is to be picked up
- H7 Pickup Room/Area: The room number or area identifier where the waste is to be picked up

SIGNATURES AND APPROVALS

- S1 Generator: The signature of the waste generator, certifying that the information on the form is complete and accurate
- S2 HP Technician. The signature and badge number of the HP technician certifying that the HP survey information is correct
- S3 Verification Officer: The signature and badge number of an authorized person certifying that the form has been completed properly
- S4 Derivative Classifier. Determines the waste item security classification and reviews the form for classified information

Is waste classified [] Yes [] No

WSIN CALL-IN

Waste Stream ID _____ WTP Request No. _____
Date Request Initiated _____ Date Request Rec. _____
Pick-Up Facility ID _____ Generator Division/Plant _____
Contact Name _____ Phone No. _____ Badge No. _____
Material Form (Circle one) SOLID GAS SLUDGE LIQUID AEROSOL OIL
Waste Stream Description _____

Contaminants (Circle one) ASBESTOS/BERYLLIUM/CARCINOGEN/MERCURY/PCB/OTHER
Radioactive [] Yes [] No If Yes, [] Depleted [] Enriched
RCRA [] Yes []No (If Yes List Codes) _____
Respirator Required [] Yes [] No If Yes, [] Mask [] Cartridge
H.P. Tag Color _____ Total No. of Containers _____ Charge No. _____

FIELD REVIEW

Environmental TC _____ Badge No. _____ Date Assigned _____
Date of Field Review _____
Hazards _____ Hazard Class _____ DOT Name _____
Request rejected [] Yes [] No If Yes, Reason and Date _____

SAMPLING HISTORY

WTP PSM # _____

LIMS No. _____ Code No. _____ Date _____
LIMS No. _____ Code No. _____ Date _____
LIMS No. _____ Code No. _____ Date _____
LIMS No. _____ Code No. _____ Date _____

MOVEMENT HISTORY

WTP Movement No. _____

Delivery Site _____ Delivery Date _____
Transporter's Signature _____ Badge No. _____
Transporter's Signature _____ Badge No. _____
Environmental TC Signoff _____ Location _____

Movement No. _____

Delivery Site _____ Delivery Date _____
Transporter's Signature _____ Badge No. _____
Transporter's Signature _____ Badge No. _____
Environmental TC Signoff _____ Location _____

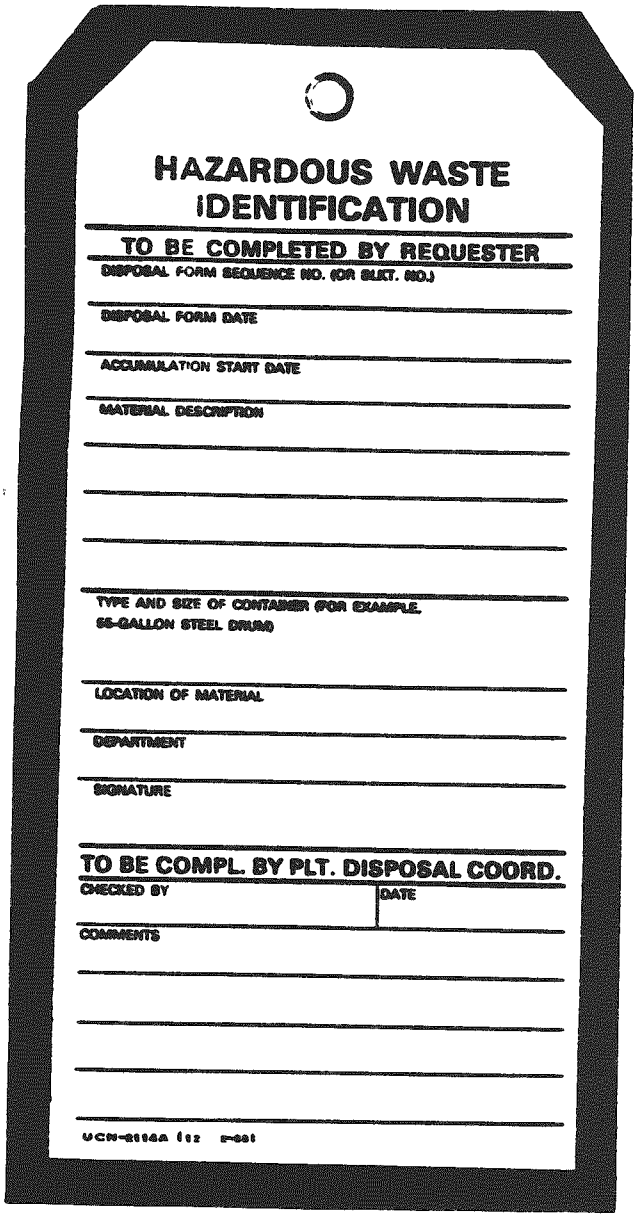
DISPOSAL INFORMATION

WTP Movement No. _____

Disposal Facility _____ Tank No. _____ Date _____
Facility Operator (Signature and Badge No. _____)
Driver's Signature _____ Badge No. _____ Date _____
Driver's Signature _____ Badge No. _____ Date _____

WASTE ITEMS					
ITEM NO.	CONTAINER	BARCODE	ACCUMULATION START DATE	WEIGHT/ LBS	VOLUME/UNITS

HAZARDOUS WASTE IDENTIFICATION TAG 2114A AND
WASTE IDENTIFICATION TAG 2114B



HAZARDOUS WASTE
IDENTIFICATION

TO BE COMPLETED BY REQUESTER

DISPOSAL FORM SEQUENCE NO. (OR BLKT. NO.)

DISPOSAL FORM DATE

ACCUMULATION START DATE

MATERIAL DESCRIPTION

TYPE AND SIZE OF CONTAINER (FOR EXAMPLE, 55-GALLON STEEL DRUM)

LOCATION OF MATERIAL

DEPARTMENT

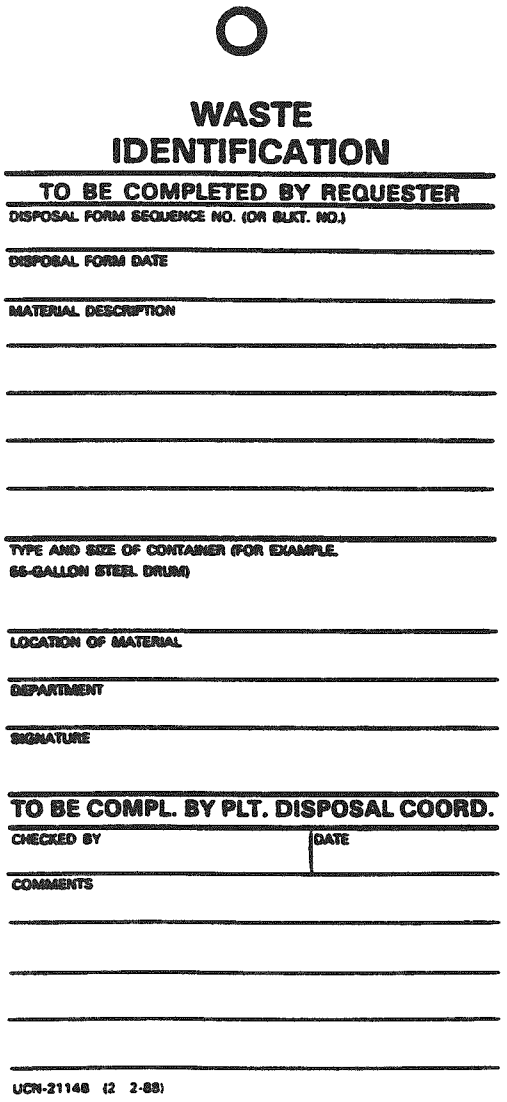
SIGNATURE

TO BE COMPL. BY PLT. DISPOSAL COORD.

CHECKED BY | DATE

COMMENTS

UCN-2114A (12 2-88)



WASTE
IDENTIFICATION

TO BE COMPLETED BY REQUESTER

DISPOSAL FORM SEQUENCE NO. (OR BLKT. NO.)

DISPOSAL FORM DATE

MATERIAL DESCRIPTION

TYPE AND SIZE OF CONTAINER (FOR EXAMPLE, 55-GALLON STEEL DRUM)

LOCATION OF MATERIAL

DEPARTMENT

SIGNATURE

TO BE COMPL. BY PLT. DISPOSAL COORD.

CHECKED BY | DATE

COMMENTS

UCN-2114B (2 2-88)

SAMPLE REQUISITION REQUEST

REQUEST OR CONTACT _____

REQUESTOR'S I.D. NO. _____ REQUESTOR'S PHONE NO. _____

MATERIAL DESCRIPTION _____

PICK-UP BUILDING _____ PICK-UP DOCK _____

CONTAINER TYPE _____ NO. OF CONTAINERS _____

SAMPLE REQUISITION NO. (LIMS) _____

SAMPLE CODE(S) _____ SAMPLE DATE _____

QC SAMPLE CODE _____

RESPIRATOR REQUIREMENTS _____

_____

DATE RESULTS REQUIRED BY _____

SAMPLING PLAN _____

_____

_____

_____

APPENDIX C-3
EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to operators of storage facilities and to indicate the need for special precautions when handling and storing potentially incompatible waste materials. This list is not intended to be exhaustive.

In the list below, the mixing of a Group A material with a Group B material my have the potential consequences as noted.

Group 1-A	Group 1-B
Acetylene sludge	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte, acid
Caustic wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkalines	Pickling liquor and other corrosive acids
Lime wastewater	Spent acid
Lime and water	Spent mixed acid
Spent caustic	Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

APPENDIX C-3 (Continued)
EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Group 2-A	Group 2-B
Aluminum	Groups 1-A or 1-B waste
Beryllium	
Calcium	
Lithium	
Magnesium	
Potassium	
Sodium	
Zinc powder	
Other reactive metals and metal hydrides	

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 3-A	Group 3-B
Alcohols	Concentrated waste
Water	Groups 1-A or 1-B
	Calcium
	Lithium
	Metal hydrides
	Potassium
	SO_2Cl_2, $SOCl_2$, PCl_3SiCl_3
	Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

APPENDIX C-3 (Continued)
EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Group 4-A	Group 4-B
Alcohols	Concentrated waste
Aldehydes	Groups 1-A or 1-B
Halogenated hydrocarbons	Group 2-A wastes
Nitrated hydrocarbons	
Unsaturated hydrocarbons	
Other reactive organic compounds and solvents	

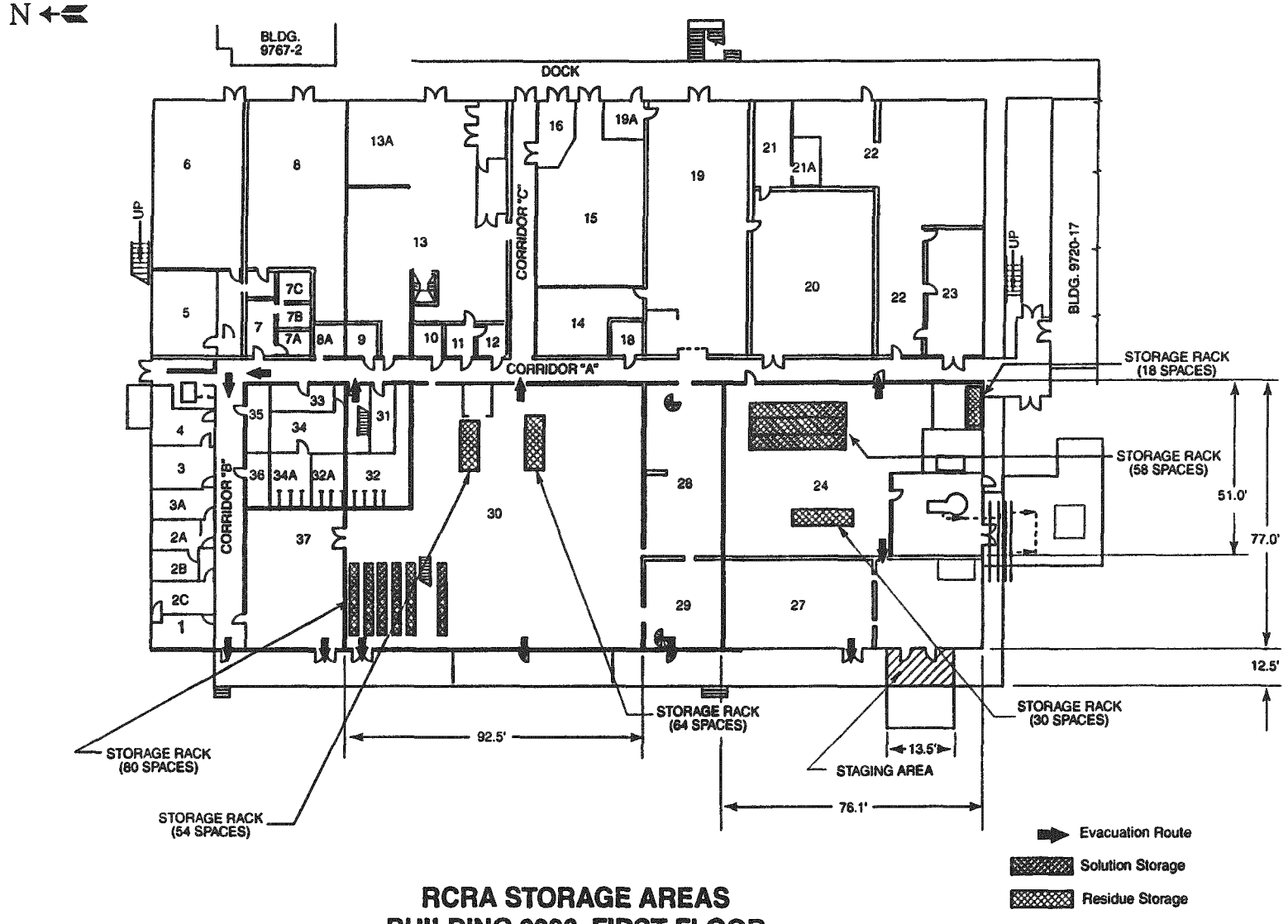
Potential consequences: Fire, explosion, or violent reaction.

Group 5-A	Group 5-B
Spent cyanide and sulfide solutions	Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6-A	Group 6-B
Chlorates	Acetic acid and other organic acids
Chlorine	Concentrated mineral acids
Chlorites	Group 2-A wastes
Chromic acid	Group 4-A wastes
Hypochlorides	Other flammable and combustible wastes
Nitrates	
Nitric acid, fuming	
Perchlorates	
Permanganates	
Peroxides	
Other strong oxidizers	

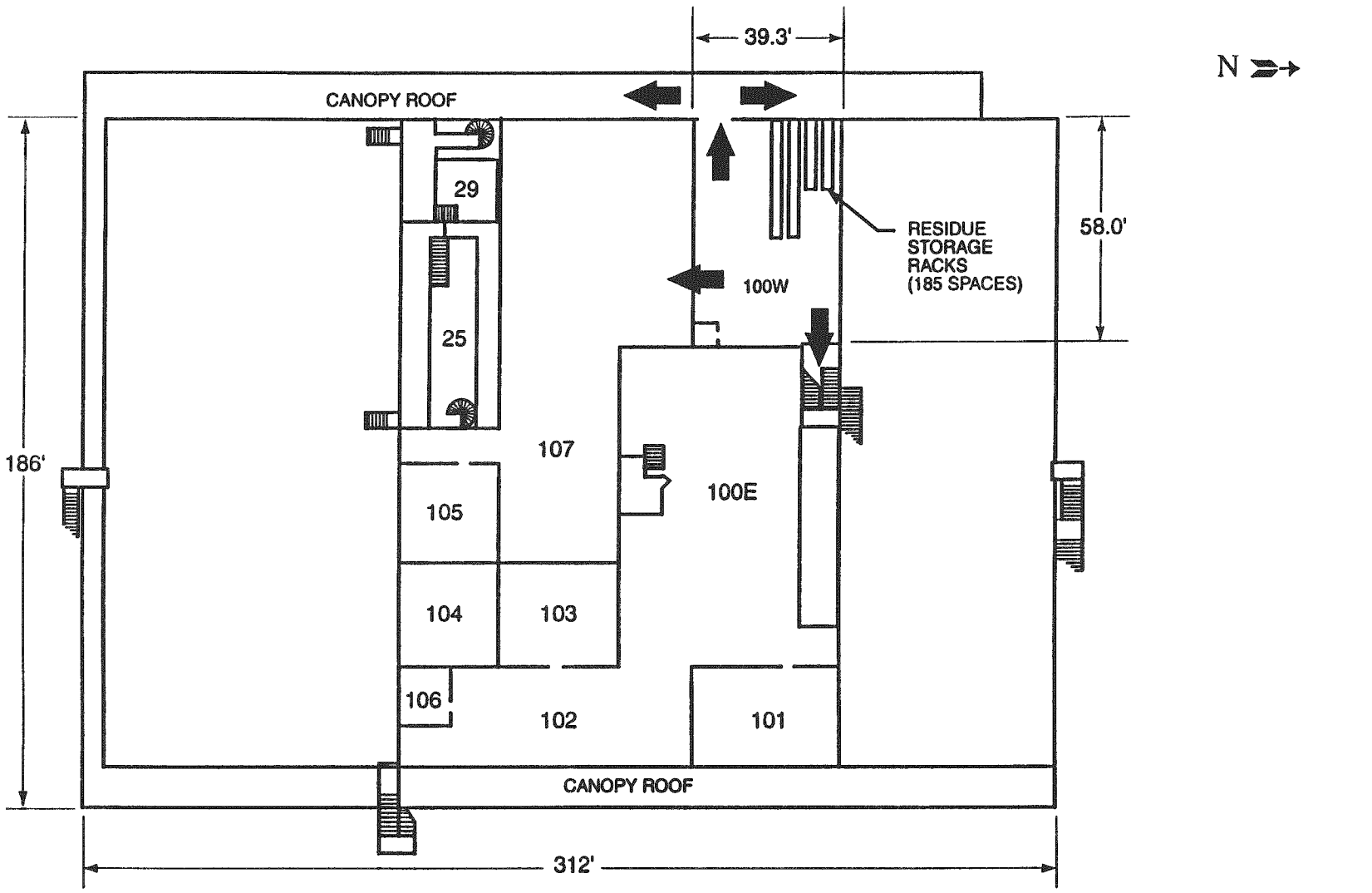
Potential consequences: Fire, explosion or violent reaction.



RCRA STORAGE AREAS
BUILDING 9206, FIRST FLOOR
U.S. DOE Y-12 PLANT

FIGURE D-1

Y-GA 92-2334R2 lhm

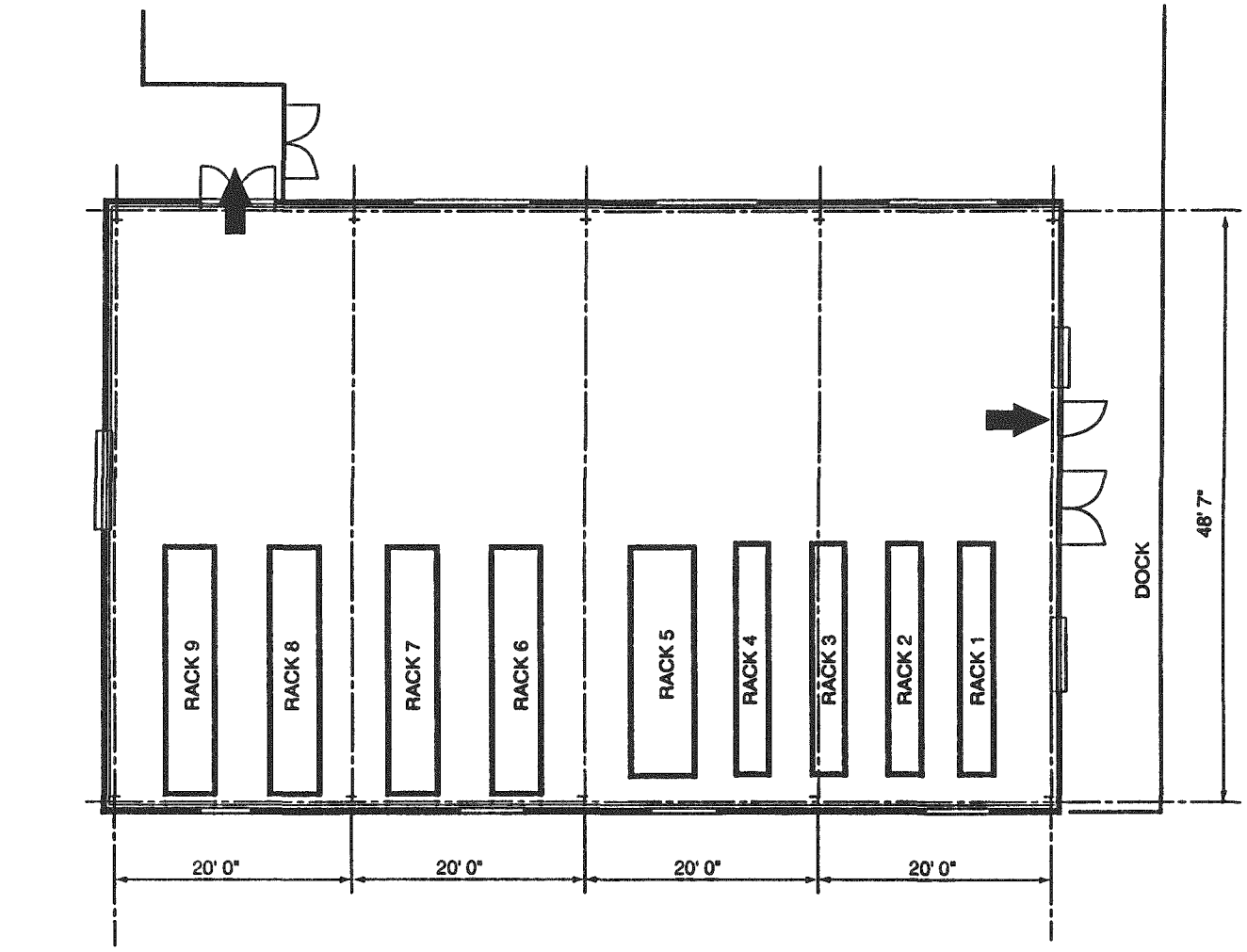


RCRA STORAGE AREAS
BUILDING 9206, 2nd FLOOR
U.S. DOE Y-12 PLANT

FIGURE D-2

Y-GA 94-1432 lhm

RACK	RESIDUE SPACES	SOLUTION SPACES
1	96	18
2	96	18
3	96	18
4	96	18
5	140	0
6	136	0
7	136	0
8	136	0
9	136	0

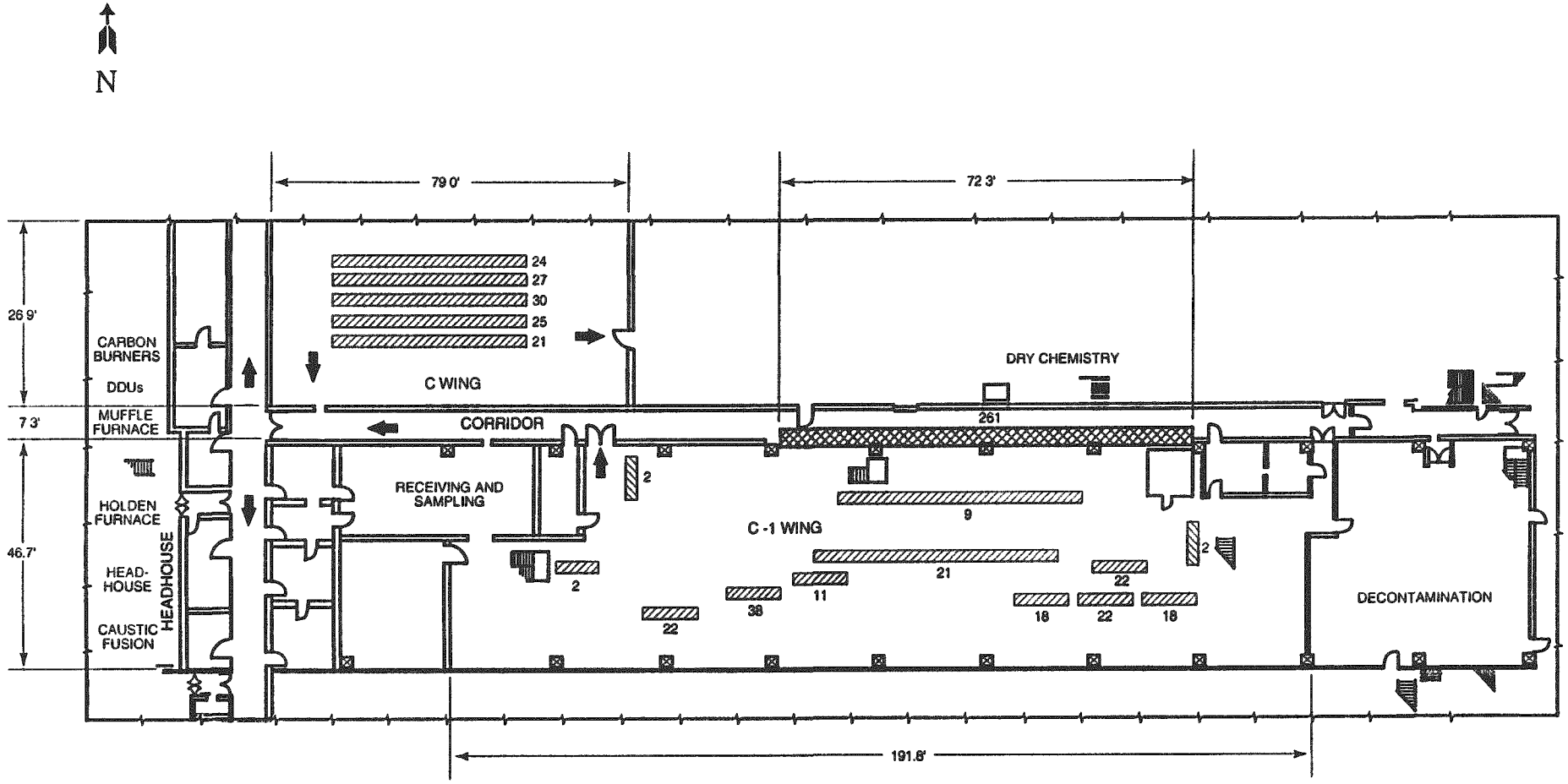


RCRA STORAGE AREA
BUILDING 9206, BUTLER BUILDING (9720-17)
U.S. DOE Y-12 PLANT

EVACUATION ROUTE

FIGURE D-3

Y-GA 94-789R lhm

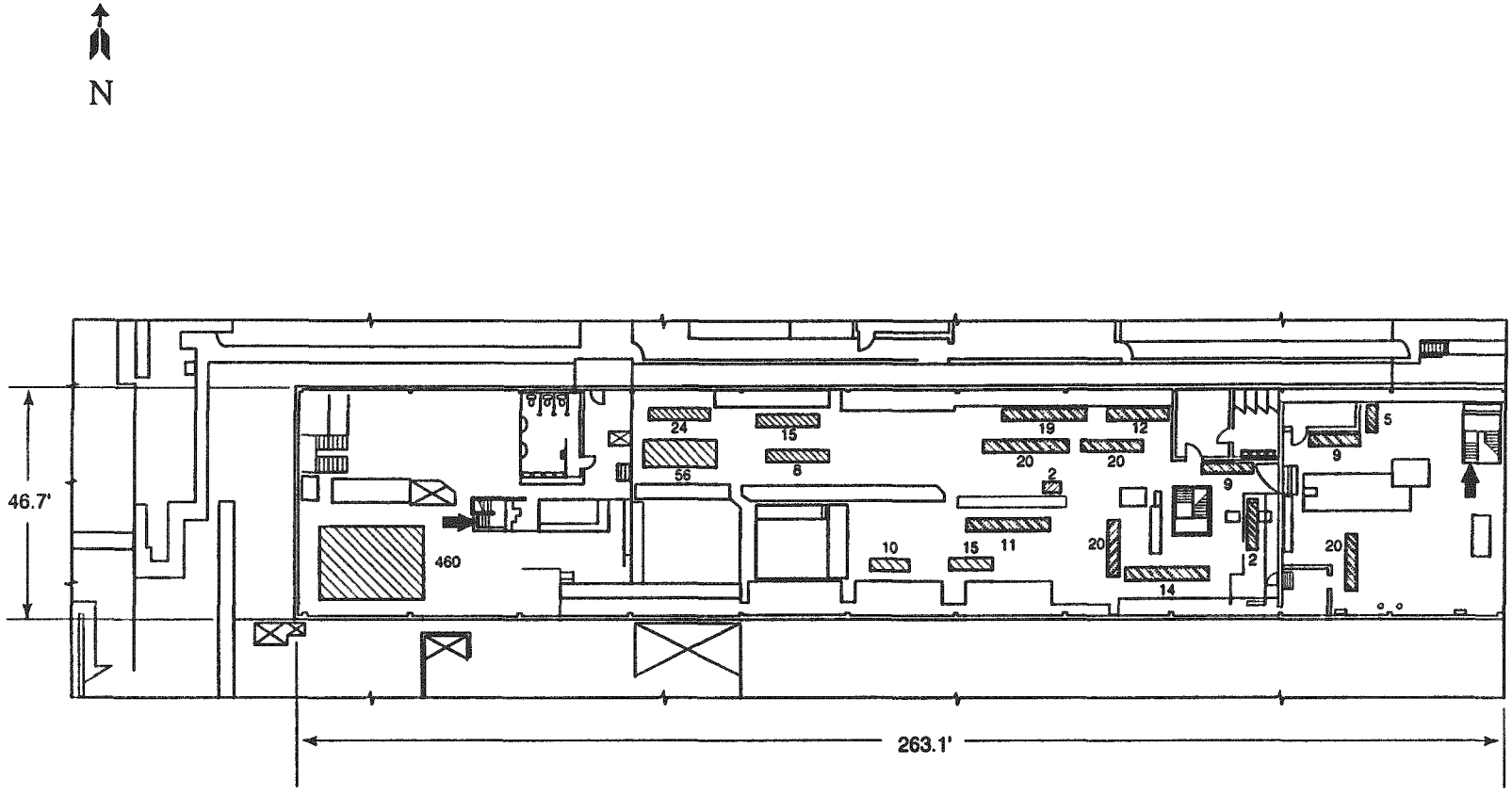


RCRA STORAGE AREA
BUILDING 9212, C-1 WING, 1st FLOOR
U.S. DOE Y-12 PLANT

Legend
- Residue Storage
- Solution Storage
- # Number of spaces
- Evacuation Route

Y-GA 94-1468 lhm

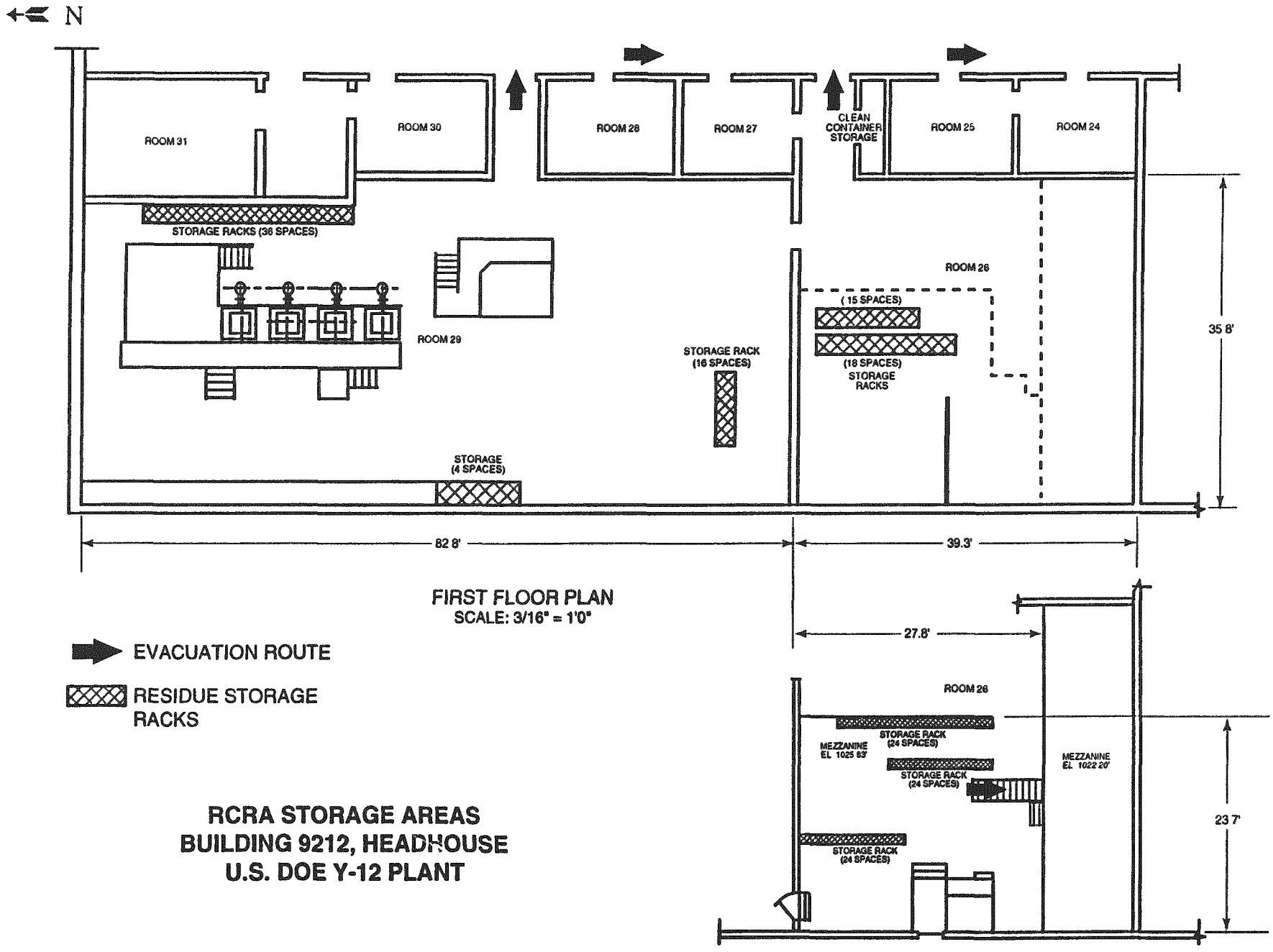
FIGURE D-4



RCRA STORAGE AREAS
BUILDING 9212, C-1 WING MEZZANINE
U. S. DOE Y-12 PLANT

Legend
- Residue Storage Racks
- # No. of spaces
- Solution Storage Racks
- Evacuation Route

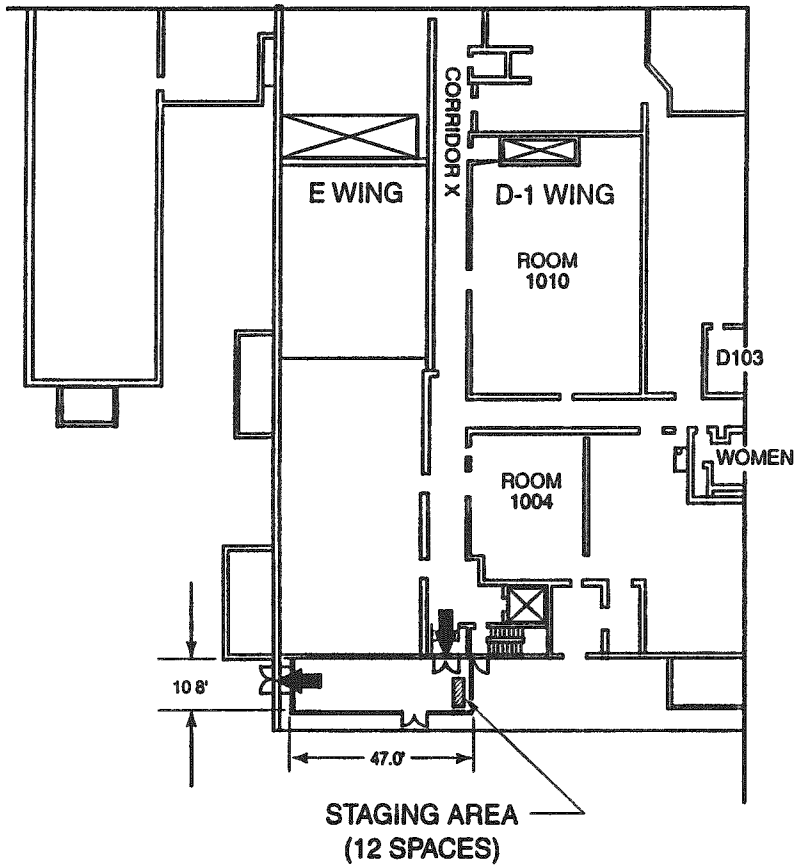
FIGURE D-5



RCRA STORAGE AREAS
BUILDING 9212, HEADHOUSE
U.S. DOE Y-12 PLANT

FIGURE D-6

N

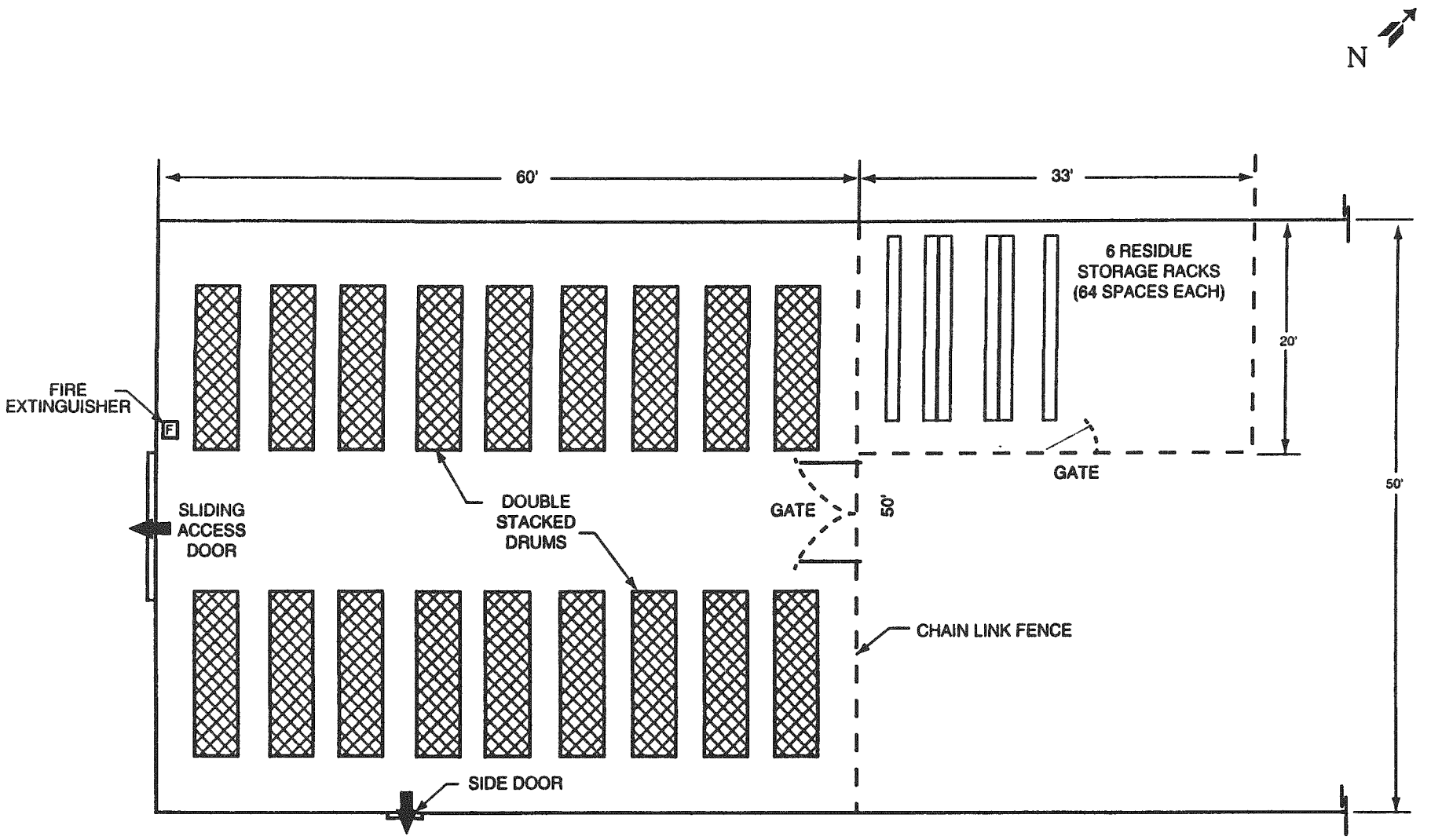


RCRA STORAGE AREA
BUILDING 9212
U.S. DOE Y-12 PLANT

EVACUATION ROUTE

FIGURE D-7

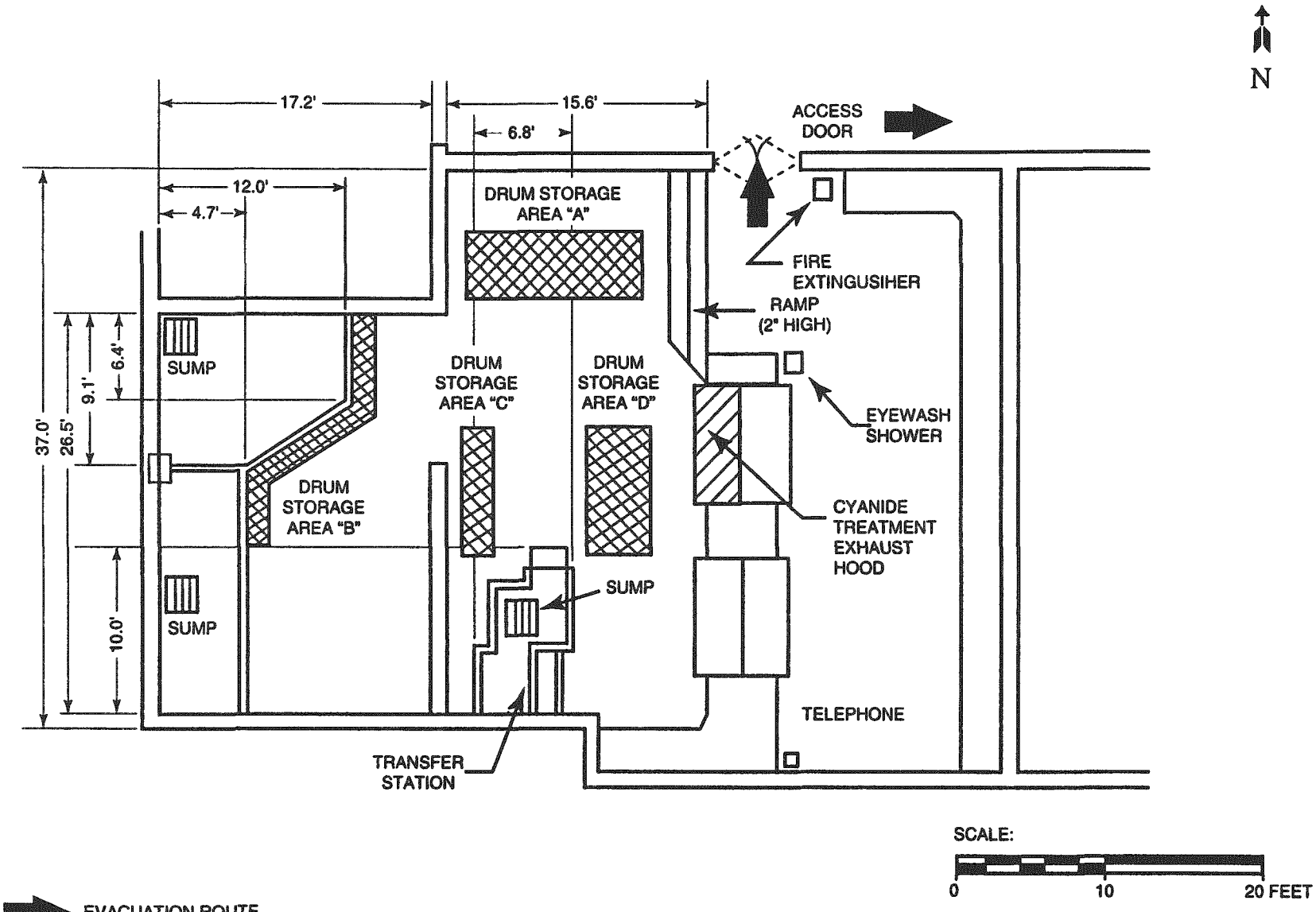
Y-GA 92-2312R2 ihm



BUILDING 9720-12 CLASSIFIED
CONTAINER STORGE AREA LAYOUT
U.S. DOE Y-12 PLANT

FIGURE D-8

Y-GA 94-1463 lhm



CYANIDE TREATMENT UNIT
BUILDING 9201-5N, BASEMENT
U.S. DOE Y-12 PLANT

Y-GA 94-1433 lhm

FIGURE D-9

TABLE F-1. GENERAL INSPECTION SCHEDULE

Specific Item	Types of Problems	Frequency of Inspection
Fire alarm system	Power failure	Annually
Telephone system	Power failure, cut lines	As used
Public address (PA) system	Power failure, speakers	Daily
Two-way radios	Transmitter or receiver, batteries	As used
Mops, sponges	Out of stock	Weekly
Breathing Equipment: disposable respirators, cartridges	Out of stock, exhausted canisters, leaks, tears, rips	As used
Protective Clothing: Tyvex suits, gloves, and booties	Out of stock, holes, rips, tears	Weekly
Fire extinguishers	Missing, recharge needed, wrong type	Weekly
Eyewash	Water pressure, leaking, and drainage	Weekly
Face shields and extra protective eye glasses	Broken, dirty equipment, out of stock	As used
Emergency shower	Water pressure, leaking, drainage	Monthly

TABLE F-2. CONTAINER STORAGE AREA INSPECTION SCHEDULE

Specific Item	Types of Problems	Frequency of Inspection
Container placement	Aisle space	Weekly
Sealing of containers	Open lids	Weekly
Labeling of containers	Improper identification, date missing	Weekly
Container structural integrity	Corrosion, leakage, structural defects	Weekly
Building integrity	Damage, sagging, leaking	Weekly
Floors or bases	Cracks, deterioration, spalling in concrete, wet spots	Weekly
Danger signs	Damaged, missing, or illegible signs	Weekly
Loading and unloading areas	Spills and leaks	As used

TABLE F-3. DAILY INSPECTION LOG SHEET FOR PRODUCTION ASSOCIATED UNITS

Unit inspected (circle one): 9206 9212 9720-12 Cyanide Treatment Unit

Inspector's Signature: _____ **Date:** _____ **Time:** _____

General Inspection Items	Types of Problems	√ = Acceptable X = Unacceptable NA = Not Applicable	Observations, Date and Nature of Repairs, Remedial Action
Telephone system (as used)	Power failure, cut lines		
Public address (PA) system	Power failure, speakers		
Two-way radios (as used)	Transmitter or receiver, batteries		
Breathing equipment: disposable respirators, cartridges	Out of stock, exhausted canisters, leaks, tears, rips		
Face shields, and extra protective eye glasses	Broken, dirty equipment, out of stock		
Container Inspection Items	**Types of Problems**	**√ = Acceptable X = Unacceptable NA = Not Applicable**	**Observations, Date and Nature of Repairs, Remedial Action**
Loading and unloading areas (as used)	Spills and leaks		
Additional Comments:			

TABLE F-4. WEEKLY INSPECTION LOG SHEET FOR PRODUCTION ASSOCIATED UNITS

Unit inspected (circle one): 9206 9212 9720-12 Cyanide Treatment Unit

Inspector's Signature: _____ **Date:** _____ **Time:** _____

General Inspection Items	Types of Problems	√ = Acceptable X = Unacceptable NA = Not Applicable	Observations, Date and Nature of Repairs, Remedial Action
Fire alarm system (annually)	Power failure		
Mops, sponges	Out of stock		
Protective clothing: suits, gloves, booties	Out of stock, inoperative, holes, rips, tears		
Fire extinguishers	Missing, recharge needed, wrong type		
Eyewash	Water pressure, leaking, drainage		
Emergency shower (monthly)	Water pressure, leaking, drainage		
Container Inspection Items	**Types of Problems**	**√ = Acceptable X = Unacceptable NA = Not Applicable**	**Observations, Date and Nature of Repairs, Remedial Action**
Container placement and stacking	Aisle space, height of stacks		
Sealing of containers	Open containers		
Labeling of containers	Improper identification, storage or accumulation start date missing		
Container integrity	Corrosion, leakage, structural defects		
Building integrity	Building is damaged, sagging, or leaking		
Floors or bases	Cracks, deterioration, spalling in concrete, wet spots		
Danger signs	Damaged or missing, illegible signs (one needed on each approach)		

Additional Comments:

APPENDIX H-1

FACILITY SUPERVISOR JOB DESCRIPTION
(For Environmental Activities Only)

Position Title: Facility Supervisor (Team Leader for Cyanide Treatment Unit)

Basic Function of Position: Provide technical support for waste management operations.

Major Environmental Duties and Responsibilities:
- Supervises technicians and operators in all aspects of operation of the facility, including loading, unloading, sampling, storage, inspections, maintenance, and emergency response.
- Inspects RCRA waste treatment and storage tank areas, tanks, dikes, transfer areas, piping, pumps, valves, and waste handling equipment.
- Inspects emergency response equipment including fire extinguishers, communications and alarm facilities, and spill cleanup equipment.
- Initiates appropriate remedial actions for spills, leaks, or defective equipment and ensures timely completion of remedial actions.
- Responsible for the recording of all inspections, remedial actions and their completion and maintains a file of all inspections, logs, and records.
- Works with technicians to identify, sample, and pack drums.
- Schedules all facility maintenance and oversees maintenance activities to ensure that proper procedures and safety precautions are followed, and no spill, fire, other release, or contamination of the facility, personnel, or the environment occurs.

Formal Education Required:
- High school diploma and 3 years of facility experience.

Specialized Knowledge or Training:
- 24-hour OSHA/SARA Training - one time only
- 8-hour OSHA/SARA Refresher - annual
- RCRA Training - annual
- Criticality Safety - biennial
- Hazard Communication - annual
- Radiation Protection - biennial
- Fire Protection - one time only
- Security Program - annual
- Emergency Preparedness - annual
- Respiratory Training - annual

APPENDIX H-1 (Continued)

TECHNICIAN JOB DESCRIPTION
(For Environmental Activities Only)

Position Title: Technician (Electroplater for Cyanide Treatment Unit)

Basic Function of Position: Provides routine technically related operational support for waste management operations.

Major Environmental Duties and Responsibilities:

- Inspects the containers and containment system for leaks or deterioration caused by corrosion or other factors, and material handling equipment.
- Inspects emergency response equipment including fire extinguishers, communications and alarm equipment, and spill cleanup equipment.
- Records inspection activity on inspection log and maintains a file of logs and records.
- Notifies Facility Supervisor of observed problems at the facility, emergency situations, and the need for contingency and/or remedial action.
- Verifies waste stream identification and documentation.
- Takes sample of waste streams from containers as required for analysis.
- Assures proper handling and storage of wastes, including separation of incompatible wastes, prevention of their contact or mixing, and separate storage of ignitables and reactives.
- Assures proper documentation of waste stream identification and storage location, inventory, inflow and outflow.
- Assists in immediate response to spills and notifies the PSS office and Staff Engineer.

Formal Education Required:

- Bachelors degree in engineering and/or equivalent education and/or experience.

Specialized Knowledge or Training:

- 24-hour OSHA/SARA Training - one time only
- 8-hour OSHA/SARA Refresher - annual
- RCRA Training - annual
- Criticality Safety - biennial
- Hazard Communication - annual
- Radiation Protection - biennial
- Fire Protection - one time only
- Security Program - annual
- Emergency Preparedness - annual
- Respiratory Training - annual

APPENDIX H-1 (Continued)

HOURLY WORKER JOB DESCRIPTION
(For Environmental Activities Only)

Position Title: Hourly Worker, Waste Management Organization

Basic Function of Position: Under direct supervision, performs daily operational activities at waste management facilities including the transferring of wastes and handling of waste containers.

Major Environmental Duties and Responsibilities:
- Assists with operations involving hazardous waste treatment and storage.
- Moves full and empty containers as required.
- Assists in emergency spill response and cleanup and fire control, and takes other emergency action in accordance with established procedures.
- Performs duties under the direction of the technician present.

Formal Education Required:
- No minimum requirements.

Specialized Knowledge or Training:
- Requires completion of waste management training program. Additionally, requires individuals to be designated respirator wearers.
- 24-hour OSHA/SARA Training - one time only
- 8-hour OSHA/SARA Refresher - annual
- RCRA Training - annual
- Criticality Safety - biennial
- Hazard Communication - annual
- Radiation Protection - biennial
- Fire Protection - annual
- Security Program - annual
- Emergency Preparedness - annual
- Respiratory Training - annual
- Fork-lift Truck Drivers Training - every 3 years

CHEMICAL OPERATOR JOB DESCRIPTION
(For Environmental Activities Only)

Position Title: Chemical Operator (Electroplater for Cyanide Treatment Unit)

Basic Function of Position: Follows established methods and techniques in performing a single or sequence of operations required in various waste treatment processes associated with the chemical and physical change of materials. Adjusts, regulates, controls, and operates a wide variety of standard and specialized waste treatment processes and associated equipment. Uses various measuring and recording equipment and devices. Maintains detail records of process parameters.

Major Environmental Duties and Responsibilities:
- Moves full and empty containers as required.
- Performs duties under the direction of the Facility Supervisor present.
- Must be able to perform basic arithmetic calculations including fractions and decimals.
- Performs single or sequence of operations required to transfer and/or treat various wastes.
- Monitors controls and processes to assure proper operation, transfer, and/or treatment.
- Maintains necessary operating records.

Formal Education Required:
- High School diploma and/or equivalent education and/or experience.

Specialized Knowledge or Training:
- 24-hour OSHA/SARA Training - one time only
- 8-hour OSHA/SARA Refresher - annual
- RCRA Training - annual
- Criticality Safety - biennial
- Hazard Communication - annual
- Radiation Protection - biennial
- Fire Protection - one time only
- Security Program - annual (as needed)
- Emergency Preparedness - annual
- Respiratory Training - annual (as needed)

APPENDIX H-1 (Continued)

TRAINING MANAGER JOB DESCRIPTION
(For Environmental Activities Only)

Position Title: Training Manager

Basic Function of Position: Manage the training program of the organization and assure that the required training for compliance with RCRA is implemented, and documented.

Major Environmental Duties and Responsibilities:

- Organized and direct the function of training in a cost-effective manner to assure compliance with the training requirements of RCRA.
- Supervise any of the training positions reporting to the training manager. These positions may include training supervisors, instructional technologists, curriculum developers, training coordinators, training administrators, training instructors, on-the-job trainers, and/or subject matter experts.
- Analyze resource needs and create section training budget based on all requirements including RCRA.
- Develop long-range training plans for qualification of personnel in assigned section.
- Interface with management, DOE, and other agencies to determine training requirements including RCRA.
- Ensure all training meets DOE and Y-12 Plant standards as well as RCRA requirements including assuring that the required annual RCRA training is performed and documented.
- Develop long-range training plans for training staff to assure compliance with RCRA.
- As applicable to RCRA compliance, oversee training contracts to ensure deliverables meet DOE and Y-12 Plant standards of training.

Formal Education Required:

- Bachelors degree with formal training in adult learning, training analysis, design, development, implementation, evaluation, or equivalent work experience in a training function which demonstrates skills and knowledge have been acquired and utilized.

Specialized Knowledge or Training:

- Successful completion of the DOE Basic Instructor course (Train-the-Trainer)
- Successful completion of the Supervisor's On-The-Job Training course.
- 24-hour OSHA/SARA Training - one time only
- Criticality Safety - biennial
- Hazard Communication - annual
- Radiation Protection - biennial
- Fire Protection - annual
- Emergency Preparedness - annual

APPENDIX H-1 (Continued)

TRAINING ADMINISTRATOR JOB DESCRIPTION
(For Environmental Activities Only)

Position Title: Training Administrator

Basic Function of Position: Provide assigned division with plant oversight technical training support to assure that all training requirements are met based on RCRA.

Major Environmental Duties and Responsibilities:

- Work with other training organizations to ensure that training programs meet DOE and Y-12 Plant standards as well as comply with the RCRA training requirements. Provide written approval of acceptable programs.
- Work with other training organizations to develop long-range training plans for qualification of personnel in assigned section including annual RCRA training for the appropriate personnel.
- Interface with management, DOE, and other agencies to determine training requirements including RCRA.
- Work with other training organizations to develop long-range training plans for training staff.
- Develop training standards which will enhance the quality of training at Y-12 including performing periodic audits to assure compliance.
- Complete any other assignments assigned by their training manager in order to assure compliance with RCRA.

Formal Education Required:

- Bachelors degree with formal training in training analysis, design, development, implementation, evaluation, or equivalent work experience in a training function which demonstrates these skills and knowledge have been acquired and utilized effectively.
- In lieu of a BS/BA degree, three years of progressively expanding responsibilities in training related work.

Specialized Knowledge or Training:

- Successful completion of the DOE Basic Instructor course (Train-the-Trainer).
- Successful completion of Radiation Protection Instructor's course.
- 24-hour OSHA/SARA Training - one time only
- 8-hour OSHA/SARA Refresher - annual
- RCRA Training - annual
- Criticality Safety - biennial
- Hazard Communication - annual
- Radiation Protection - biennial
- Fire Protection - annual
- Security Program - annual
- Emergency Preparedness - annual

TRAINING COORDINATOR JOB DESCRIPTION
(For Environmental Activities Only)

Position Title: Training Coordinator

Basic Function of Position: Develop, facilitate, and implement training activities for the personnel in assigned section of the specific division

Major Environmental Duties and Responsibilities:
- In areas of subject matter experience, specifically RCRA, develop training courses using the Instructional System Development design.
- Using developed RCRA course material, instruct personnel in job required curriculum at least annually.
- Evaluate students for successful completion of RCRA training.
- In areas of subject matter experience, specifically RCRA, assist other instructors as required by the training manager in the development and delivery of course material.
- Establish and maintain all documentation of appropriate training files.
- Complete any other assignments assigned by their training manager.

Formal Education Required:
- High school diploma or equivalent.

Specialized Knowledge or Training:
- Trained in hazardous waste management procedures and regulations.
- Successful completion of the DOE Basic Instructor course (Train-the-Trainer).
- Successful completion of Radiation Protection Instructor's course.
- Criticality Safety - biennial
- RCRA Training - annual
- Hazard Communication - annual
- Radiation Protection - biennial
- Urinalysis - one time only
- Fire Protection - annual
- Security Program - annual
- Emergency Preparedness - annual
- Respiratory Training - annual

APPENDIX H-2 (Continued)

ON-THE-JOB TRAINER JOB DESCRIPTION
(For Environmental Activities Only)

Position Title: On-The-Job Trainer

Basic Function of Position: Assist in the development of on-the-job training (OJT) courses, instruct personnel, evaluate trained personnel, and evaluate training.

Major Environmental Duties and Responsibilities:
- In areas of subject matter experience, specifically RCRA compliance and hazardous waste management, assist in the development of OJT courses.
- Using developed OJT course material, instruct personnel in job required curriculum for RCRA compliance and proper hazardous waste management.
- Evaluate RCRA training to ensure quality of program.
- Complete any other training assignments assigned by training manager.

Formal Education Required:
- High school diploma or equivalent.

Specialized Knowledge or Training:
- Trained in hazardous waste management procedures.
- Successful completion of the Supervisor's On-The-Job Training course.
- 24-hour OSHA/SARA Training - one time only
- 8-hour OSHA/SARA Refresher - annual
- RCRA Training - annual
- Criticality Safety - biennial
- Hazard Communication - annual
- Radiation Protection - biennial
- Fire Protection - annual
- Security Program - annual
- Emergency Preparedness - annual
- Respiratory Training - annual

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

A. K. Lee, DOE-OSTI
9731, MS-8175