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RCRA PART B PERMIT APPLICATION SECTION A: PART A PERMIT APPLICATION (MODIFIED) SECTION B: FACILITY DESCRIPTION VOLUME 1 OF 11 SEPTEMBER 22, 1990

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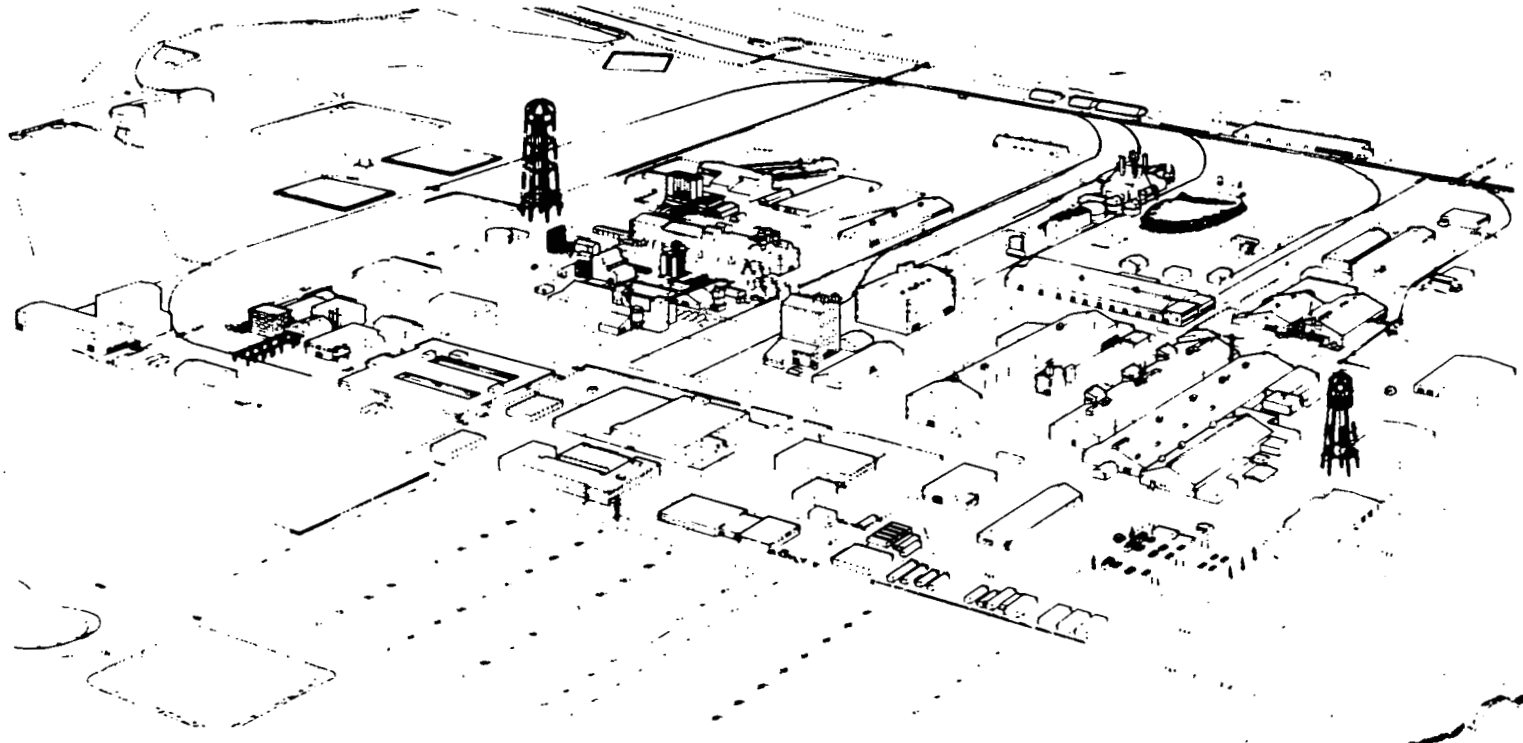
RCRA PART B PERMIT APPLICATION



SEPTEMBER 22, 1989

SECTION A: PART A PERMIT APPLICATION (MODIFIED)
SECTION B: FACILITY DESCRIPTION
(Volume 1 of 11)

FEED MATERIALS PRODUCTION CENTER
U.S. DEPARTMENT OF ENERGY
CINCINNATI, OHIO 45239-8705

U.S. EPA IDENTIFICATION NO. 0H6890008976
OHIO EPA PERMIT NO. 05-31-0681

RCRA PART B
PERMIT APPLICATION

SEPTEMBER 22, 1989

FEED MATERIALS PRODUCTION CENTER
U.S. DEPARTMENT OF ENERGY
CINCINNATI, OHIO 45239-8705

U.S. EPA IDENTIFICATION NO. OH6890008976
OHIO EPA PERMIT NO. 05-31-0681

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COMPLETENESS/TECHNICAL REVIEW CHECKLIST

Facility Name FEED MATERIALS PRODUCTION CENTER
ID No. _____
Date Part B Received _____
Date Review Due _____

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
A. PART A APPLICATION						Volume 1 of 11; Page A-1
B. FACILITY DESCRIPTION						
B-1	General description					Volume 1 of 11; Page B-1
B-2	Topographic map					Volume 1 of 11; Page B-6
B-2a	General requirements					Volume 1 of 11; Page B-6
B-2b	Additional requirements for land disposal facilities					Volume 1 of 11; Page B-11
B-3a	Seismic standard					Volume 1 of 11; Page B-13
B-3b	Floodplain standard					Volume 1 of 11; Page B-13
B-3b(1)	Demonstration of compliance					Volume 1 of 11; Page B-13
B-3b(1)(a)	Flood proofing and flood protection measures					Volume 1 of 11; Page B-14
B-3b(1)(b)	Flood plan					Volume 1 of 11; Page B-14
B-3b(2)	Waiver					Volume 1 of 11; Page B-14
B-3b(3)	Plan for future compliance with floodplain standard					Volume 1 of 11; Page B-14
B-4	Traffic information					Volume 1 of 11; Page B-14

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		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
C. WASTE CHARACTERISTICS						
C-1	Chemical and physical analyses, including sampling/analysis methods	___	___	___	___	Volume 2 of 11; Page C-1
C-1a	Containerized wastes	___	___	___	___	Volume 2 of 11; Page C-2
C-1b	Waste in tank systems	___	___	___	___	Volume 2 of 11; Page C-3
C-1c	Waste in piles	___	___	___	___	Volume 2 of 11; Page C-4
C-1d	Landfilled wastes	___	___	___	___	Volume 2 of 11; Page C-4
C-1e	Wastes incinerated and wastes used in performance tests	___	___	___	___	Volume 2 of 11; Page C-4
C-1f	Wastes to be land treated	___	___	___	___	Volume 2 of 11; Page C-5
C-2	Waste analysis plan					Volume 2 of 11; Page C-5
C-2a	Parameters and rationale	___	___	___	___	Volume 2 of 11; Page C-5
C-2b	Test methods	___	___	___	___	Volume 2 of 11; Page C-6
C-2c	Sampling methods	___	___	___	___	Volume 2 of 11; Page C-7
C-2d	Frequency of analyses	___	___	___	___	Volume 2 of 11; Page C-8
C-2e	Additional requirements for wastes generated off-site	___	___	___	___	Volume 2 of 11; Page C-9
C-2f	Additional requirements for ignitable, reactive or incompatible wastes	___	___	___	___	Volume 2 of 11; Page C-12

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D. PROCESS INFORMATION						
D-1	Containers					Volume 3 of 11; Page D-1
D-1a	Containers with free liquids					Volume 3 of 11; Page D-1
D-1a(1)	Description of containers	___	___	___	___	Volume 3 of 11; Page D-1
D-1a(2)	Container management practices	___	___	___	___	Volume 3 of 11; Page D-3
D-1a(3)	Secondary containment system design and operation					Volume 3 of 11; Page D-6
D-1a(3)(a)	Requirement for the base or liner to contain liquids	___	___	___	___	Volume 3 of 11; Page D-8
D-1a(3)(b)	Containment system drainage	___	___	___	___	Volume 3 of 11; Page D-10
D-1a(3)(c)	Containment system capacity	___	___	___	___	Volume 3 of 11; Page D-11
D-1a(3)(d)	Control of run-on	___	___	___	___	Volume 3 of 11; Page D-15
D-1a(3)(e)	Removal of liquids from containment systems	___	___	___	___	Volume 3 of 11; Page D-17
D-1b	Containers without free liquid					Volume 3 of 11; Page D-18
D-1b(1)	Test for free liquids	___	___	___	___	Volume 3 of 11; Page D-18
D-1b(2)	Description of containers	___	___	___	___	Volume 3 of 11; Page D-19
D-1b(3)	Container management practices	___	___	___	___	Volume 3 of 11; Page D-19
D-1b(4)	Container storage area drainage	___	___	___	___	Volume 3 of 11; Page D-19

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-2	Tanks systems					Volume 3 of 11; Page D-20
D-2a	Existing tank systems	___	___	___	___	Not Applicable
D-2a(1)	Assessment of existing tank system integrity	___	___	___	___	Not Applicable
D-2a(2)	External corrosion practices	___	___	___	___	Not Applicable
D-2b	New tank systems	___	___	___	___	Not Applicable
D-2b(1)	Assessment of new tank system integrity	___	___	___	___	Not Applicable
D-2b(2)	Exteral corrosion protection	___	___	___	___	Not Applicable
D-2b(3)	Description of tank system installation and testing plans and procedures	___	___	___	___	Not Applicable
D-2c	Dimensions and capacity of each tank	___	___	___	___	Not Applicable
D-2d	Description of feed systems, safety cutoff, bypass systems, and pressure control	___	___	___	___	Not Applicable
D-2e	Diagram of piping, instrumentation, and process flow for each tank system	___	___	___	___	Not Applicable
D-2f	Containment and detection of releases	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-2f(1)	Plans and description of the design, construction, and operation of the secondary containment system for each tank system	___	___	___	___	Not Applicable
D-2f(1)(a)	Tank age determination	___	___	___	___	Not Applicable
D-2f(1)(b)	Requirements for secondary containment and leak detection	___	___	___	___	Not Applicable
D-2f(1)(c)	Requirements for an external liner, vault, double-walled tank or equivalent device	___	___	___	___	Not Applicable
D-2f(1)(d)	Secondary containment and leak detection requirements for ancillary equipment	___	___	___	___	Not Applicable
D-2f(2)	Requirements for tank systems until secondary containment is implemented	___	___	___	___	Not Applicable
D-2f(3)	Variance from secondary containment requirements	___	___	___	___	Not Applicable
D-2f(3)(a)	Variance based on a demonstration of equivalent protection of groundwater and surface water	___	___	___	___	Not Applicable
D-2f(3)(b)	Variance based on a demonstration of no substantial present or potential hazard	___	___	___	___	Not Applicable
D-2f(3)(c)	Exemption based on no free liquids and location inside a building	___	___	___	___	Not Applicable
D-2g	Controls and practices to prevent spills and overflow	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-3	Waste piles					Volume 3 of 11; Page D-20
D-3a	List of wastes					Not Applicable
D-3b	Liner exemption					Not Applicable
D-3b(1)	Enclosed dry piles					Not Applicable
D-3b(1)(a)	Protection from precipitation					Not Applicable
D-3b(1)(b)	Free liquids					Not Applicable
D-3b(1)(c)	Run-on protection					Not Applicable
D-3b(1)(d)	Wind dispersal control					Not Applicable
D-3b(1)(e)	Leachate generation					Not Applicable
D-3b(2)	Alternate Design/No Migration					Not Applicable
D-3c	Liner engineering report					Not Applicable
D-3c(1)	Liner description					Not Applicable
D-3c(2)	Liner location relative to high water table					Not Applicable
D-3c(3)	Calculation of necessary soil liner thickness					Not Applicable
D-3c(4)	Liner strength requirements					Not Applicable
D-3c(5)	Liner strength demonstration					Not Applicable
D-3c(6)	Liner/waste compatibility testing results					Not Applicable
D-3c(7)	Liner installation					Not Applicable
D-3c(7)(a)	Synthetic liner seaming					Not Applicable
D-3c(7)(b)	Soil liner compaction					Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-3c(7)(c)	Installation inspection/ testing programs	___	___	___	___	Not Applicable
D-3c(8)	Liner coverage	___	___	___	___	Not Applicable
D-3c(9)	Liner exposure prevention	___	___	___	___	Not Applicable
D-3c(10)	Synthetic-liner bedding	___	___	___	___	Not Applicable
D-3d	Liner foundation report					Not Applicable
D-3d(1)	Liner foundation design description	___	___	___	___	Not Applicable
D-3d(2)	Subsurface exploration data	___	___	___	___	Not Applicable
D-3d(3)	Laboratory testing data	___	___	___	___	Not Applicable
D-3d(4)	Engineering analyses					Not Applicable
D-3d(4)(a)	Settlement potential	___	___	___	___	Not Applicable
D-3d(4)(b)	Bearing capacity and stability	___	___	___	___	Not Applicable
D-3d(4)(c)	Potential for bottom heave or blowout	___	___	___	___	Not Applicable
D-3d(4)(d)	Construction and operational loadings	___	___	___	___	Not Applicable
D-3d(5)	Foundation installation procedures	___	___	___	___	Not Applicable
D-3d(6)	Foundation installation inspection program	___	___	___	___	Not Applicable
D-3e	Leachate collection and removal system					Not Applicable
D-3e(1)	System design and operation	___	___	___	___	Not Applicable
D-3e(2)	Chemical resistance	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-3e(3)	Strength of materials					Not Applicable
D-3e(4)	Prevention of clogging					Not Applicable
D-3e(5)	Installation					Not Applicable
D-3e(6)	Maintenance					Not Applicable
D-3f	Run-on control system					Not Applicable
D-3f(1)	Calculation of peak flow					Not Applicable
D-3f(2)	Design and performance					Not Applicable
D-3f(3)	Construction					Not Applicable
D-3f(4)	Maintenance					Not Applicable
D-3g	Run-off control system					Not Applicable
D-3g(1)	Calculation of peak flow					Not Applicable
D-3g(2)	Design and performance					Not Applicable
D-3g(3)	Construction					Not Applicable
D-3g(4)	Maintenance					Not Applicable
D-3h	Management of collection and holding units					Not Applicable
D-3i	Control of wind dispersal					Not Applicable
D-3j	Groundwater monitoring exemption					Not Applicable
D-3j(1)	Engineered structure					Not Applicable
D-3j(2)	No liquid waste					Not Applicable
D-3j(3)	Exclusion of liquids					Not Applicable
D-3j(4)	Containment system					Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-3j(5)	Leak detection system	___	___	___	___	Not Applicable
D-3j(6)	Operation of leak detection system	___	___	___	___	Not Applicable
D-3j(7)	No migration	___	___	___	___	Not Applicable
D-3k	Treatment within the pile					Not Applicable
D-3k(1)	Treatment process description	___	___	___	___	Not Applicable
D-3k(2)	Equipment used	___	___	___	___	Not Applicable
D-3k(3)	Residuals description	___	___	___	___	Not Applicable
D-3l	Special management plan for piles containing wastes F020, F021, F022, F023, F026, and F027					Not Applicable
D-3l(1)	Waste description	___	___	___	___	Not Applicable
D-3l(2)	Soil description	___	___	___	___	Not Applicable
D-3l(3)	Mobilizing properties	___	___	___	___	Not Applicable
D-3l(4)	Additional management techniques	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-4	Surface impoundments					Volume 3 of 11; Page D-20
D-4a	List of wastes	___	___	___	___	Not Applicable
D-4b	Liner system exemption requests					Not Applicable
D-4b(1)	Exemption based on existing portion	___	___	___	___	Not Applicable
D-4b(2)	Exemption based on alternative design and location	___	___	___	___	Not Applicable
D-4c	Liner system, general items					Not Applicable
D-4c(1)	Liner system description	___	___	___	___	Not Applicable
D-4c(2)	Liner system location relative to high water table	___	___	___	___	Not Applicable
D-4c(3)	Loads on liner system	___	___	___	___	Not Applicable
D-4c(4)	Liner system coverage	___	___	___	___	Not Applicable
D-4c(5)	Liner system exposure prevention	___	___	___	___	Not Applicable
D-4d	Liner system foundation					Not Applicable
D-4d(1)	Foundation description	___	___	___	___	Not Applicable
D-4d(2)	Subsurface exploration data	___	___	___	___	Not Applicable
D-4d(3)	Laboratory testing data	___	___	___	___	Not Applicable
D-4d(4)	Engineering analyses					Not Applicable
D-4d(4)(a)	Settlement potential	___	___	___	___	Not Applicable
D-4d(4)(b)	Bearing capacity	___	___	___	___	Not Applicable
D-4d(4)(c)	Potential for excess hydrostatic or gas pressure	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-4e	Liner systems, liners					Not Applicable
D-4e(1)	Synthetic liners					Not Applicable
D-4e(1)(a)	Synthetic liner compatibility data					Not Applicable
D-4e(1)(b)	Synthetic liner strength					Not Applicable
D-4e(1)(c)	Synthetic liner bedding					Not Applicable
D-4e(2)	Soil liners					Not Applicable
D-4e(2)(a)	Material testing data					Not Applicable
D-4e(2)(b)	Soil liner compatibility data					Not Applicable
D-4e(2)(c)	Soil liner thickness					Not Applicable
D-4e(2)(d)	Soil liner strength					Not Applicable
D-4f	Liner system, leachate detection system					Not Applicable
D-4f(1)	System operation and design					Not Applicable
D-4f(2)	Equivalent capacity					Not Applicable
D-4f(3)	Grading and drainage					Not Applicable
D-4f(4)	System compatibility					Not Applicable
D-4f(5)	System strength					Not Applicable
D-4f(5)(a)	Stability of drainage layers					Not Applicable
D-4f(5)(b)	Strength of piping					Not Applicable
D-4f(6)	Prevention of clogging					Not Applicable
D-4g	Liner system, construction and maintenance					Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-4g(1)	Material specifications					Not Applicable
D-4g(1)(a)	Synthetic liners	___	___	___	___	Not Applicable
D-4g(1)(b)	Soil liners	___	___	___	___	Not Applicable
D-4g(1)(c)	Leachate detection system	___	___	___	___	Not Applicable
D-4g(2)	Construction specifications					Not Applicable
D-4g(2)(a)	Liner system foundation	___	___	___	___	Not Applicable
D-4g(2)(b)	Soil liner	___	___	___	___	Not Applicable
D-4g(2)(c)	Synthetic liners	___	___	___	___	Not Applicable
D-4g(2)(d)	Leachate detection system	___	___	___	___	Not Applicable
D-4g(3)	Construction quality control program	___	___	___	___	Not Applicable
D-4g(4)	Maintenance procedures for leachate detection system	___	___	___	___	Not Applicable
D-4g(5)	Liner repairs during operations	___	___	___	___	Not Applicable
D-4h	Prevention of overtopping					Not Applicable
D-4h(1)	Design features	___	___	___	___	Not Applicable
D-4h(2)	Operating procedure	___	___	___	___	Not Applicable
D-4h(3)	Overtopping prevention	___	___	___	___	Not Applicable
D-4h(4)	Freeboard requirements	___	___	___	___	Not Applicable
D-4h(5)	Outflow destination	___	___	___	___	Not Applicable
D-4i	Dike stability					Not Applicable
D-4i(1)	Engineer's certification	___	___	___	___	Not Applicable
D-4i(2)	Dike design description	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-4i(3)	Erosion and piping protection	___	___	___	___	Not Applicable
D-4i(4)	Subsurface soil conditions	___	___	___	___	Not Applicable
D-4i(5)	Stability analysis	___	___	___	___	Not Applicable
D-4i(6)	Strength and consolidation test results	___	___	___	___	Not Applicable
D-4i(7)	Dike construction procedures	___	___	___	___	Not Applicable
D-4i(8)	Dike construction inspection program	___	___	___	___	Not Applicable
D-4j	Special waste management plan for surface impoundments containing wastes F020, F021, F022, F023, F026, and F027					Not Applicable
D-4j(1)	Waste description	___	___	___	___	Not Applicable
D-4j(2)	Soil description	___	___	___	___	Not Applicable
D-4j(3)	Mobilizing properties	___	___	___	___	Not Applicable
D-4j(4)	Additional management techniques	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-5	Incinerators					Volume 3 of 11; Page D-20
D-5a	Justification for exemption	___	___	___	___	Not Applicable
D-5b	Trial burn					Not Applicable
D-5b(1)	New incinerator start-up/ shakedown conditions (reserved)	___	___	___	___	Not Applicable
D-5b(2)	Trial burn plan					Not Applicable
D-5b(2)(a)	Engineering description of incinerator	___	___	___	___	Not Applicable
D-5b(2)(b)	Sampling, analysis and monitoring procedures including QA/QC plan	___	___	___	___	Not Applicable
D-5b(2)(c)	Trial burn schedule	___	___	___	___	Not Applicable
D-5b(2)(d)	Test protocols	___	___	___	___	Not Applicable
D-5b(2)(e)	Pollution control equipment operation	___	___	___	___	Not Applicable
D-5b(2)(f)	Shutdown procedures	___	___	___	___	Not Applicable
D-5b(2)(g)	New incinerator post-trial burn operation (reserved)	___	___	___	___	Not Applicable
D-5c	Data in lieu of trial burn					Not Applicable
D-5c(1)	Engineering description of incinerator	___	___	___	___	Not Applicable
D-5c(2)	Expected incinerator operation	___	___	___	___	Not Applicable
D-5c(3)	Design and operating condition comparisons	___	___	___	___	Not Applicable
D-5c(4)	Results of previous trial burns					Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-5c(4)(a)	Sampling and analysis techniques	___	___	___	___	Not Applicable
D-5c(4)(b)	Methods and results	___	___	___	___	Not Applicable
D-5d	Determinations	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6	Landfills					Volume 3 of 11; Page D-21
D-6a	List of wastes	___	___	___	___	Volume 3 of 11; Page D-22
D-6b	Liner system exemption requests					Volume 3 of 11; Page D-22
D-6b(1)	Exemption based on existing portion	___	___	___	___	Not Applicable
D-6b(2)	Exemption based on alternative design and location	___	___	___	___	Not Applicable
D-6b(3)	Exemption for monofills	___	___	___	___	Not Applicable
D-6b(4)	Groundwater monitoring exemption					Not Applicable
D-6b(4)(a)	Engineered structure	___	___	___	___	Not Applicable
D-6b(4)(b)	No liquid waste	___	___	___	___	Not Applicable
D-6b(4)(c)	Exclusion of liquids	___	___	___	___	Not Applicable
D-6b(4)(d)	Containment system	___	___	___	___	Not Applicable
D-6b(4)(e)	Leak detection system	___	___	___	___	Not Applicable
D-6b(4)(f)	Operation of leak detection system	___	___	___	___	Not Applicable
D-6b(4)(g)	No migration	___	___	___	___	Not Applicable
D-6c	Liner system, general items					Volume 3 of 11; Page D-22
D-6c(1)	Liner system description	___	___	___	___	Not Applicable
D-6c(2)	Liner system location relative to high water table	___	___	___	___	Not Applicable
D-6c(3)	Loads on liner system	___	___	___	___	Not Applicable
D-6c(4)	Liner system coverage	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6c(5)	Liner system exposure prevention	___	___	___	___	Not Applicable
D-6d	Liner system, foundation					Not Applicable
D-6d(1)	Foundation description	___	___	___	___	Not Applicable
D-6d(2)	Subsurface exploration data	___	___	___	___	Not Applicable
D-6d(3)	Laboratory testing data	___	___	___	___	Not Applicable
D-6d(4)	Engineering analysis					Not Applicable
D-6d(4)(a)	Settlement potential	___	___	___	___	Not Applicable
D-6d(4)(b)	Bearing capacity	___	___	___	___	Not Applicable
D-6d(4)(c)	Stability of landfill slopes	___	___	___	___	Not Applicable
D-6d(4)(d)	Potential for excess hydrostatic or gas pressure	___	___	___	___	Not Applicable
D-6e	Liner system, liners					Not Applicable
D-6e(1)	Synthetic liners	___	___	___	___	Not Applicable
D-6e(1)(a)	Synthetic liner compatibility data	___	___	___	___	Not Applicable
D-6e(1)(b)	Synthetic liner strength	___	___	___	___	Not Applicable
D-6e(1)(c)	Synthetic liner bedding	___	___	___	___	Not Applicable
D-6e(2)	Soil liners	___	___	___	___	Not Applicable
D-6e(2)(a)	Material testing data	___	___	___	___	Not Applicable
D-6e(2)(b)	Soil liner compatibility data	___	___	___	___	Not Applicable
D-6e(2)(c)	Soil liner thickness	___	___	___	___	Not Applicable
D-6e(2)(d)	Soil liner strength	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6f	Liner system, leachate collection/detection systems					Volume 3 of 11; Page D-23
D-6f(1)	System operation and design	___	___	___	___	Not Applicable
D-6f(2)	Equivalent capacity	___	___	___	___	Not Applicable
D-6f(3)	Grading and drainage	___	___	___	___	Not Applicable
D-6f(4)	Maximum leachate head	___	___	___	___	Not Applciable
D-6f(5)	System compatibility	___	___	___	___	Not Applicable
D-6f(6)	System strength					Not Applicable
D-6f(6)(a)	Stability of drainage layers	___	___	___	___	Not Applciable
D-6f(6)(b)	Strength of piping	___	___	___	___	Not Applicable
D-6f(7)	Prevention of clogging	___	___	___	___	Not Applicable
D-6g	Liner system, construction and maintenance					Volume 3 of 11; Page D-23
D-6g(1)	Material specifications					Not Applicable
D-6g(1)(a)	Synthetic liners	___	___	___	___	Not Applicable
D-6g(1)(b)	Soil liners	___	___	___	___	Not Applicable
D-6g(1)(c)	Leachate collection/detection systems	___	___	___	___	Not Applicable
D-6g(2)	Construction specifications					Not Applicable
D-6g(2)(a)	Liner system foundation	___	___	___	___	Not Applicable
D-6g(2)(b)	Soil liner	___	___	___	___	Not Applicable
D-6g(2)(c)	Synthetic liners	___	___	___	___	Not Applicable
D-6g(2)(d)	Leachate collection/detection systems	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6g(3)	Construction quality control program					Not Applicable
D-6g(4)	Maintenance procedures for leachate collection/detection system					Not Applicable
D-6g(5)	Liner repairs during operations					Not Applicable
D-6h	Run-on and run-off control systems					Volume 3 of 11; Page D-23
D-6h(1)	Run-on control system					Volume 3 of 11; Page D-23
D-6h(1)(a)	Design and performance					Volume 3 of 11; Page D-23
D-6h(1)(b)	Calculation of peak flow					Volume 3 of 11; Page D-24
D-6h(2)	Runoff control system					Volume 3 of 11; Page D-24
D-6h(2)(a)	Design and performance					Volume 3 of 11; Page D-24
D-6h(2)(b)	Calculation of peak flow					Volume 3 of 11; Page D-25
D-6h(3)	Management of collection and holding units					Volume 3 of 11; Page D-25
D-6h(4)	Construction					Volume 3 of 11; Page D-25
D-6h(5)	Maintenance					Volume 3 of 11; Page D-26
D-6i	Control of wind dispersal					Volume 3 of 11; Page D-26
D-6j	Liquids in landfills					Volume 3 of 11; Page D-26
D-6j(1)	Bulk or noncontainerized free liquids					Volume 3 of 11; Page D-26
D-6j(2)	Containers holding free liquids					Volume 3 of 11; Page D-27
D-6j(3)	Restriction to small containers					Volume 3 of 11; Page D-27

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6j(4)	Nonstorage containers	___	___	___	___	Volume 3 of 11; Page D-27
D-6j(5)	Labpacks					Volume 3 of 11; Page D-27
D-6j(5)(a)	Inside containers	___	___	___	___	Volume 3 of 11; Page D-27
D-6j(5)(b)	Overpack	___	___	___	___	Volume 3 of 11; Page D-28
D-6j(5)(c)	Absorbent material	___	___	___	___	Volume 3 of 11; Page D-28
D-6j(5)(d)	Incompatible wastes	___	___	___	___	Volume 3 of 11; Page D-28
D-6j(5)(e)	Reactive wastes	___	___	___	___	Volume 3 of 11; Page D-28
D-6k	Containerized wastes	___	___	___	___	Volume 3 of 11; Page D-28
D-6l	Special waste management plan for landfills containing wastes F020, F021, F022, F023, F026, and F027					Volume 3 of 11; Page D-28
D-6l(1)	Waste description	___	___	___	___	Volume 3 of 11; Page D-29
D-6l(2)	Soil description	___	___	___	___	Volume 3 of 11; Page D-29
D-6l(3)	Mobilizing properties	___	___	___	___	Volume 3 of 11; Page D-29
D-6l(4)	Additional management techniques	___	___	___	___	Volume 3 of 11; Page D-29

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-7	Land treatment					Volume 3 of 11; Page D-29
D-7a	Treatment demonstration	___	___	___	___	Not Applicable
D-7a(1)	Demonstration wastes	___	___	___	___	Not Applicable
D-7a(2)	Demonstration data sources	___	___	___	___	Not Applicable
D-7a(2)(a)	Existing literature	___	___	___	___	Not Applicable
D-7a(2)(b)	Operating data	___	___	___	___	Not Applicable
D-7a(3)	Laboratory/field testing programs	___	___	___	___	Not Applicable
D-7a(3)(a)	Toxicity testing	___	___	___	___	Not Applicable
D-7a(3)(b)	Field plot testing	___	___	___	___	Not Applicable
D-7a(3)(c)	Laboratory testing	___	___	___	___	Not Applicable
D-7b	Land treatment program	___	___	___	___	Not Applicable
D-7b(1)	List of wastes	___	___	___	___	Not Applicable
D-7b(2)	Operating procedures	___	___	___	___	Not Applicable
D-7b(2)(a)	Waste application rates	___	___	___	___	Not Applicable
D-7b(2)(b)	Waste application methods	___	___	___	___	Not Applicable
D-7b(2)(c)	Control of soil pH	___	___	___	___	Not Applicable
D-7b(2)(d)	Enhancement of microbial or chemical reactions	___	___	___	___	Not Applicable
D-7b(2)(e)	Control of soil moisture	___	___	___	___	Not Applicable
D-7c	Unsaturated zone monitoring plan	___	___	___	___	Not Applicable
D-7c(1)	Soil-pore liquid monitoring	___	___	___	___	Not Applicable
D-7d(1)(a)	Sampling location	___	___	___	___	Not Applicable

	Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-7c(1)(b) Sampling frequency					Not Applicable
D-7c(1)(c) Sampling equipment					Not Applicable
D-7c(1)(d) Sampling equipment installation					Not Applicable
D-7c(1)(e) Sampling procedures					Not Applicable
D-7c(1)(f) Analytical procedures					Not Applicable
D-7c(1)(g) Chain of custody					Not Applicable
D-7c(1)(h) Background values					Not Applicable
D-7c(1)(i) Statistical methods					Not Applicable
D-7c(1)(j) Justification of Principle Hazardous Constituents					Not Applicable
D-7c(2) Soil core monitoring					Not Applicable
D-7c(2)(a) Sampling location					Not Applicable
D-7c(2)(b) Sampling frequency					Not Applicable
D-7c(2)(c) Sampling equipment					Not Applicable
D-7c(2)(d) Sampling procedures					Not Applicable
D-7c(2)(e) Analytical procedures					Not Applicable
D-7c(2)(f) Chain of custody					Not Applicable
D-7c(2)(g) Background values					Not Applicable
D-7c(2)(h) Statistical methods					Not Applicable
D-7c(2)(i) Justification of Principle Hazardous Constituents					Not Applicable
D-7d Treatment zone description					Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-7d(1)	Horizontal and vertical dimensions					Not Applicable
D-7d(2)	Soil survey					Not Applicable
D-7d(3)	Soil series descriptions					Not Applicable
D-7d(4)	Soil sampling data					Not Applicable
D-7d(5)	Seasonal high water table					Not Applicable
D-7e	Unit design, construction, operation, and maintenance					Not Applicable
D-7e(1)	Run-on control					Not Applicable
D-7e(2)	Run-off control					Not Applicable
D-7e(3)	Minimizing hazardous constituent run-off					Not Applicable
D-7e(4)	Management of accumulated run-on and run-off					Not Applicable
D-7e(5)	Control of wind dispersal					Not Applicable
D-7f	Food chain crops					Not Applicable
D-7f(1)	Food chain crop demonstration					Not Applicable
D-7f(1)(a)	Demonstration basis					Not Applicable
D-7f(1)(b)	Test procedures					Not Applicable
D-7f(2)	Cadmium-bearing wastes					Not Applicable
D-7f(2)(a)	Crops for human consumption					Not Applicable
D-7f(2)(b)	Animal feed					Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-7g	Waste management plan for land treatment units containing wastes F020, F021, F022, F023, F026, and F027	___	___	___	___	Not Applicable
D-7g(1)	Waste description	___	___	___	___	Not Applicable
D-7g(2)	Soil description	___	___	___	___	Not Applicable
D-7g(3)	Mobilizing properties	___	___	___	___	Not Applicable
D-7g(4)	Additional management techniques	___	___	___	___	Not Applicable
D-7h	Incompatible wastes	___	___	___	___	Not Applicable

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E. GROUNDWATER MONITORING						
E-1	Exemption from groundwater protection requirements					Volume 4 of 11; Page E-1
E-1a	Waste piles	___	___	___	___	Not Applicable
E-1b	Landfill	___	___	___	___	Not Applicable
E-1c	No migration	___	___	___	___	Not Applicable
E-2	Interim status period groundwater monitoring data	___	___	___	___	Volume 4 of 11; Page E-1
E-3	Aquifer identification	___	___	___	___	Volume 4 of 11; Page E-13
E-4	Contaminant plume description	___	___	___	___	Volume 4 of 11; Page E-25
E-5	Detection monitoring program	___	___	___	___	Volume 4 of 11; Page E-26
E-5a	Indicator parameters, waste constituents, reaction products to be monitored	___	___	___	___	Volume 4 of 11; Page E-26
E-5a(1)	Hazardous waste characterization	___	___	___	___	Volume 4 of 11; Page E-27
E-5a(2)	Behavior of constituents	___	___	___	___	Volume 4 of 11; Page E-30
E-5a(3)	Detectability	___	___	___	___	Volume 4 of 11; Page E-31
E-5b	Groundwater monitoring program	___	___	___	___	Volume 4 of 11; Page E-31
E-5b(1)	Description of wells	___	___	___	___	Volume 4 of 11; Page E-31
E-5b(2)	Representative samples	___	___	___	___	Volume 4 of 11; Page E-33
E-5b(3)	Locations of background groundwater monitoring wells that are not upgradient	___	___	___	___	Volume 4 of 11; Page E-34
E-5c	Background values	___	___	___	___	Volume 4 of 11; Page E-35

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-5c(1)	Data currently available					Volume 4 of 11; Page E-35
E-5c(1)(a)	Background groundwater quality data	___	___	___	___	___
E-5c(1)(b)	Sampling frequency	___	___	___	___	___
E-5c(1)(c)	Sampling quantity	___	___	___	___	___
E-5c(1)(d)	Background values	___	___	___	___	___
E-5c(2)	Plan for establishing groundwater quality data					Volume 4 of 11; Page E-35
E-5c(2)(a)	Well location	___	___	___	___	Volume 4 of 11; Page E-36
E-5c(2)(b)	Sampling frequency	___	___	___	___	Volume 4 of 11; Page E-36
E-5c(2)(c)	Sampling quantity	___	___	___	___	Volume 4 of 11; Page E-37
E-5c(2)(d)	Background values	___	___	___	___	Volume 4 of 11; Page E-37
E-5d	Sampling, analysis and statistical procedures	___	___	___	___	Volume 4 of 11; Page E-37
E-5d(1)	Sample collection	___	___	___	___	Volume 4 of 11; Page E-37
E-5d(2)	Sample preservation and shipment	___	___	___	___	Volume 4 of 11; Page E-38
E-5d(3)	Analytical procedure	___	___	___	___	Volume 4 of 11; Page E-38
E-5d(4)	Chain of custody	___	___	___	___	Volume 4 of 11; Page E-38
E-5d(5)	Additional requirements for compliance point monitoring					Volume 4 of 11; Page E-38
E-5d(5)(a)	Sampling frequency	___	___	___	___	Volume 4 of 11; Page E-38
E-5d(5)(b)	Compliance point groundwater quality values	___	___	___	___	Volume 4 of 11; Page E-38
E-5d(6)	Annual determination	___	___	___	___	Volume 4 of 11; Page E-39

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-5d(7)	Statistical determination	___	___	___	___	Volume 4 of 11; Page E-39
E-5d(7)(a)	Statistical procedure	___	___	___	___	Volume 4 of 11; Page E-40
E-5d(7)(b)	Results	___	___	___	___	Volume 4 of 11; Page E-42
E-6	Compliance monitoring program					Volume 4 of 11; Page E-43
E-6a	Waste description	___	___	___	___	Volume 4 of 11; Page E-44
E-6b	Characterization of contaminated groundwater	___	___	___	___	Volume 4 of 11; Page E-44
E-6c	Hazardous constituents to be monitored	___	___	___	___	Volume 4 of 11; Page E-45
E-6d	Concentration limits	___	___	___	___	Volume 4 of 11; Page E-46
E-6e	Alternate concentration limits					Volume 4 of 11; Page E-47
E-6e(1)	Adverse effects on groundwater quality	___	___	___	___	
E-6e(2)	Potential adverse effects	___	___	___	___	
E-6f	Groundwater monitoring system	___	___	___	___	Volume 4 of 11; Page E-47
E-6f(1)	Description of wells	___	___	___	___	Volume 4 of 11; Page E-47
E-6f(2)	Representative samples	___	___	___	___	Volume 4 of 11; Page E-47
E-6f(3)	Locations of background groundwater monitoring wells that are not upgradient	___	___	___	___	Volume 4 of 11; Page E-47
E-6f(3)(a)	Inability to determine upgradient	___	___	___	___	
E-6f(3)(b)	Representative samples of background groundwater quality	___	___	___	___	

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-6g	Background values					Volume 4 of 11; Page E-47
E-6g(1)	Data currently available					Volume 4 of 11; Page E-48
E-6g(1)(a)	Background groundwater quality data					
E-6g(1)(b)	Sampling frequency					
E-6g(1)(c)	Sampling quantity					
E-6g(1)(d)	Background values					
E-6g(2)	Plan for establishing groundwater quality data					Volume 4 of 11; Page E-48
E-6g(2)(a)	Background data					Volume 4 of 11; Page E-49
E-6g(2)(b)	Well location					Volume 4 of 11; Page E-49
E-6g(2)(c)	Sampling frequency					Volume 4 of 11; Page E-50
E-6g(2)(d)	Sampling quantity					Volume 4 of 11; Page E-50
E-6g(2)(e)	Background values					Volume 4 of 11; Page E-51
E-6h	Sampling, analysis and statistical procedures					Volume 4 of 11; Page E-51
E-6h(1)	Sample collection					Volume 4 of 11; Page E-51
E-6h(2)	Sample preservation and shipment					Volume 4 of 11; Page E-51
E-6h(3)	Analytical procedure					Volume 4 of 11; Page E-51
E-6h(4)	Chain of custody					Volume 4 of 11; Page E-52
E-6h(5)	Additional requirements for compliance point monitoring					Volume 4 of 11; Page E-52
E-6h(5)(a)	Sampling frequency					Volume 4 of 11; Page E-52

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-6h(5)(b)	Testing for Appendix VIII hazardous constituents					Volume 4 of 11; Page E-52
E-6h(5)(c)	Compliance point groundwater quality values					Volume 4 of 11; Page E-52
E-6h(6)	Annual determination					Volume 4 of 11; Page E-52
E-6h(7)	Statistical determination					Volume 4 of 11; Page E-54
E-6h(7)(a)	Statistical procedure					Volume 4 of 11; Page E-54
E-6h(7)(b)	Results					Volume 4 of 11; Page E-57
E-7	Corrective action program					Volume 4 of 11; Page E-60
E-7a	Characterization of contaminated groundwater					Not Available
E-7b	Concentration limits					Not Available
E-7c	Alternate concentration limits					Not Available
E-7c(1)	Adverse effects on groundwater quality					Not Available
E-7c(2)	Potential adverse effects					Not Available
E-7d	Corrective action plan					Not Available
E-7d(1)	Location					Not Available
E-7d(2)	Construction detail					Not Available
E-7d(3)	Plans for removing wastes					Not Available
E-7d(4)	Treatment technologies					Not Available
E-7d(5)	Effectiveness of correction program					Not Available
E-7d(6)	Reinjection system					Not Available

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-7d(7)	Additional hydrogeologic data					Not Available
E-7d(8)	Operation and maintenance					Not Available
E-7d(9)	Closure and post-closure plans					Not Available
E-7e	Groundwater monitoring program					Not Available
E-7e(1)	Description of wells					Not Available
E-7e(2)	Representative samples					Not Available
E-7e(3)	Locations of background groundwater monitoring wells that are not upgradient					Not Available
E-7f	Background values					Not Available
E-7f(1)	Data currently available					Not Available
E-7f(1)(a)	Background groundwater quality data					Not Available
E-7f(1)(b)	Sampling frequency					Not Available
E-7f(1)(c)	Sampling quantity					Not Available
E-7f(1)(d)	Background values					Not Available
E-7f(2)	Plan for establishing groundwater quality data					Not Available
E-7f(2)(a)	Background data					Not Available
E-7f(2)(b)	Well location					Not Available
E-7f(2)(c)	Sampling frequency					Not Available
E-7f(2)(d)	Sampling quantity					Not Available
E-7f(2)(e)	Background values					Not Available

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-7g	Sampling, analysis and statistical procedures					Not Available
E-7g(1)	Sample collection					Not Available
E-7g(2)	Sample preservation and shipment					Not Available
E-7g(3)	Analytical procedure					Not Available
E-7g(4)	Chain of custody					Not Available
E-7g(5)	Additional requirements for compliance point monitoring					Not Available
E-7g(5)(a)	Sampling frequency					Not Available
E-7g(5)(b)	Testing for Appendix VIII hazardous constituents					Not Available
E-7g(5)(c)	Compliance point groundwater quality values					Not Available
E-7g(6)	Annual determination					Not Available
E-7g(7)	Statistical determination					Not Available
E-7g(7)(a)	Statistical procedure					Not Available
E-7g(7)(b)	Results					Not Available

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F. PROCEDURES TO PREVENT HAZARDS						Volume 7 of 11; Page F-1
F-1	Security					Volume 7 of 11; Page F-1
F-1a	Security procedures and equipment					Volume 7 of 11; Page F-2
F-1a(1)	24-hour surveillance system	___	___	___	___	Volume 7 of 11; Page F-2
F-1a(2)	Barrier and means to control entry					Volume 7 of 11; Page F-2
F-1a(2)(a)	Barrier	___	___	___	___	Volume 7 of 11; Page F-2
F-1a(2)(b)	Means to control entry	___	___	___	___	Volume 7 of 11; Page F-3
F-1a(3)	Warning signs	___	___	___	___	Volume 7 of 11; Page F-3
F-1b	Waiver					Volume 7 of 11;
F-1b(1)	Injury to intruder	___	___	___	___	Volume 7 of 11;
F-1b(2)	Violation caused by intruder	___	___	___	___	Volume 7 of 11; Page F-4
F-2	Inspection schedule					Volume 7 of 11; Page F-4
F-2a	General inspection requirements	___	___	___	___	Volume 7 of 11; Page F-4
F-2a(1)	Types of problems	___	___	___	___	

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-2a(2)	Frequency of inspections	___	___	___	___	Volume 7 of 11; Page F-5
F-2b	Specific process inspection requirements					Volume 7 of 11; Page F-5
F-2b(1)	Container inspection	___	___	___	___	Volume 7 of 11; Page F-5
F-2b(2)	Tank system inspection					Volume 7 of 11; Page F-6
F-2b(2)(a)	Tank system external corrosion and releases	___	___	___	___	Volume 7 of 11; Page F-6
F-2b(2)(b)	Tank system construction materials and surrounding area	___	___	___	___	Volume 7 of 11; Page F-6
F-2b(2)(c)	Tank system overfilling control equipment	___	___	___	___	Volume 7 of 11; Page F-6
F-2b(2)(d)	Tank system monitoring and leak detection equipment	___	___	___	___	Volume 7 of 11; Page F-6
F-2b(2)(e)	Tank system cathodic protection	___	___	___	___	Volume 7 of 11; Page F-6
F-2b(3)	Waste pile inspection					Volume 7 of 11; Page F-6
F-2b(3)(a)	Run-on and run-off control system	___	___	___	___	Volume 7 of 11; Page F-6

	Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-2b(3)(b) Wind dispersal system	___	___	___	___	Volume 7 of 11; Page F-6
F-2b(3)(c) Leachate collection and removal system	___	___	___	___	Volume 7 of 11; Page F-6
F-2b(4) Surface impoundment inspection					Volume 7 of 11; Page F-7
F-2b(4)(a) Condition assessment					Volume 7 of 11; Page F-7
F-2b(4)(a)(1) Overtopping control system	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(4)(a)(2) Impoundment contents	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(4)(a)(3) Deterioration	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(4)(b) Structural integrity	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(5) Incinerator inspection					Volume 7 of 11; Page F-7
F-2b(5)(a) Incinerator and associated equipment	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(5)(b) Incinerator waste feed cut-off system and associated alarms	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(6) Landfill inspection					Volume 7 of 11; Page F-7
F-2b(6)(a) Run-on and run-off control system	___	___	___	___	Volume 7 of 11; Page F-7

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-4	Preventive procedures, structures, and equipment					Volume 7 of 11; Page F-15
F-4a	Unloading operations	___	___	___	___	Volume 7 of 11; Page F-15
F-4b	Run-off	___	___	___	___	Volume 7 of 11; Page F-17
F-4c	Water supplies	___	___	___	___	Volume 7 of 11; Page F-20
F-4d	Equipment and power failure	___	___	___	___	Volume 7 of 11; Page F-21
F-4e	Personnel protection equipment	___	___	___	___	Volume 7 of 11; Page F-21
F-5	Prevention of reaction of ignitable, reactive, and incompatible wastes					Volume 7 of 11; Page F-22
F-5a	Precautions to prevent ignition or reaction of ignitable or reactive wastes	___	___	___	___	Volume 7 of 11; Page F-22
F-5b	General precautions for handling ignitable or reactive waste and mixing of incompatible waste	___	___	___	___	Volume 7 of 11; Page F-25
F-5c	Management of ignitable or reactive wastes in containers	___	___	___	___	Volume 7 of 11; Page F-25

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-2b(6)(b)	Wind dispersal control system	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(6)(c)	Leachate collection and removal system	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(7)	Land treatment facility inspection					Volume 7 of 11; Page F-7
F-2b(7)(a)	Run-on and run-off control system	___	___	___	___	Volume 7 of 11; Page F-7
F-2b(7)(b)	Wind dispersal control system	___	___	___	___	Volume 7 of 11; Page F-7
F-3	Waiver or documentation of preparedness and prevention requirements					Volume 7 of 11; Page F-8
F-3a	Equipment requirements					Volume 7 of 11; Page F-9
F-3a(1)	Internal communications	___	___	___	___	Volume 7 of 11; Page F-9
F-3a(2)	External communications	___	___	___	___	Volume 7 of 11; Page F-10
F-3a(3)	Emergency equipment	___	___	___	___	Volume 7 of 11; Page F-11
F-3a(4)	Water for fire control	___	___	___	___	Volume 7 of 11; Page F-14
F-3b	Aisle space requirement	___	___	___	___	Volume 7 of 11; Page F-14
F-2b(8)	Miscellaneous Unit Inspection					Volume 7 of 11; Page F-7
F-2c	Rimedial Action					Volume 7 of 11; Page F-7
F-2d	Inspection Log					Volume 7 of 11; Page F-8

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-5d	Management of incompatible wastes in containers	___	___	___	___	Volume 7 of 11; Page F-27
F-5e	Management of ignitable or reactive wastes in tank systems	___	___	___	___	Volume 7 of 11; Page F-27
F-5f	Management of incompatible wastes in tanks systems	___	___	___	___	Volume 7 of 11; Page F-27
F-5g	Management of ignitable or reactive wastes placed in waste piles	___	___	___	___	Volume 7 of 11; Page F-27
F-5h	Management of incompatible wastes placed in waste piles	___	___	___	___	Volume 7 of 11; Page F-28
F-5i	Management of ignitable or reactive wastes placed in surface impoundments	___	___	___	___	Volume 7 of 11; Page F-28
F-5j	Management of incompatible wastes placed in surface impoundments	___	___	___	___	Volume 7 of 11; Page F-28
F-5k	Management of ignitable or reactive wastes placed in landfills	___	___	___	___	Volume 7 of 11; Page F-28
F-5l	Management of incompatible wastes placed in landfills	___	___	___	___	Volume 7 of 11; Page F-28
F-5m	Management of ignitable or reactive wastes placed in land treatment units	___	___	___	___	Volume 7 of 11; Page F-28
F-5n	Management of incompatible wastes placed in land treatment units	___	___	___	___	Volume 7 of 11; Page F-28

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
6. CONTINGENCY PLAN						
G-1	General information	___	___	___	___	Volume 8 of 11; Page G-1/G-15
G-2	Emergency coordinators	___	___	___	___	Volume 8 of 11; Page G-16
G-3	Implementation	___	___	___	___	Volume 8 of 11; Page G-19
G-4	Emergency response procedures					Volume 8 of 11; Page G-22
G-4a	Notification	___	___	___	___	Volume 8 of 11; Page G-24
G-4b	Identification of hazardous materials	___	___	___	___	Volume 8 of 11; Page G-31
G-4c	Assessment	___	___	___	___	Volume 8 of 11; Page G-33
G-4d	Control procedures	___	___	___	___	Volume 8 of 11; Page G-38
G-4e	Prevention of recurrence or spread of fires, explosions, or releases	___	___	___	___	Volume 8 of 11; Page G-51
G-4f	Storage and treatment of released material	___	___	___	___	Volume 8 of 11; Page G-51
G-4g	Incompatible waste	___	___	___	___	Volume 8 of 11; Page G-52
G-4h	Post-emergency equipment maintenance	___	___	___	___	Volume 8 of 11; Page G-52
G-4i	Container spills and leakage	___	___	___	___	Volume 8 of 11; Page G-53
G-4j	Tank spills and leakage					Volume 8 of 11; Page G-54
G-4j(1)	Tank spills and leakage	___	___	___	___	Volume 8 of 11; Page G-54

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
G-4j(2)	Spills and leaks from tanks containing wastes F020, F021, F022, F023, F026, and F027	___	___	___	___	Volume 8 of 11; Page G-54
G-4k	Surface impoundments spills and leakage					Volume 8 of 11; Page G-54
G-4k(1)	Emergency repairs					Not Applicable
G-4k(1)(a)	Stopping waste addition	___	___	___	___	Not Applicable
G-4k(1)(b)	Containing leaks	___	___	___	___	Not Applicable
G-4k(1)(c)	Stopping leaks	___	___	___	___	Not Applicable
G-4k(1)(d)	Preventing catastrophic failure	___	___	___	___	Not Applicable
G-4k(1)(e)	Emptying the impoundment	___	___	___	___	Not Applicable
G-4k(2)	Certification	___	___	___	___	Not Applicable
G-4k(3)	Repairs as a result of sudden drop	___	___	___	___	Not Applicable
G-4k(3)(a)	Existing portions of surface impoundment	___	___	___	___	Not Applicable
G-4k(3)(b)	Other portions of surface impoundment	___	___	___	___	Not Applicable
G-5	Emergency equipment	___	___	___	___	Volume 8 of 11; Page G-55 thru G-75
G-6	Coordination agreements	___	___	___	___	Volume 8 of 11; Page G-75
G-7	Evacuation plan	___	___	___	___	Volume 8 of 11; Page G-76
G-8	Required reports	___	___	___	___	Volume 8 of 11; Page G-79
G-4l	Waste Pile Spills and Leakage					Volume 8 of 11; Page G-55
G-4m	Landfill Leakage					Volume 8 of 11; Page G-55
G-4m(1)	Liner Repair and Replacement					Volume 8 of 11; Page G-55
G-4m(2)	Assessment Monitoring Program					Volume 8 of 11; Page G-55

(over)

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
H. PERSONNEL TRAINING						
H-1	Outline of the training program					Volume 9 of 11; Page H-1
H-1a	Job title/job description	___	___	___	___	Volume 9 of 11; Page H-1
H-1b	Training content, frequency, and techniques	___	___	___	___	Volume 9 of 11; Page H-2
H-1c	Training director	___	___	___	___	Volume 9 of 11; Page H-3
H-1d	Relevance of training to job position	___	___	___	___	Volume 9 of 11; Page H-4
H-1e	Training for emergency response	___	___	___	___	Volume 9 of 11; Page H-4
H-2	Implementation of training program	___	___	___	___	Volume 9 of 11; Page H-7

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I. CLOSURE AND POST-CLOSURE REQUIREMENTS						
I-1	Closure plans					Volume 10 of 11; Page # Varies
I-1a	Closure performance standard	___	___	___	___	Volume 10 of 11; Per Closure Plan
I-1b	Partial and final closure activities	___	___	___	___	Volume 10 of 11;
I-1c	Maximum waste inventory	___	___	___	___	Volume 10 of 11;
I-1d	Inventory removal, disposal or decontamination of equipment	___	___	___	___	Volume 10 of 11;
I-1d(1)	Closure of containers	___	___	___	___	Volume 10 of 11;
I-1d(2)(a)	Closure of tank systems	___	___	___	___	Volume 10 of 11;
I-1d(2)(b)	Closure of tank systems without secondary containment	___	___	___	___	Volume 10 of 11;
I-1d(3)	Closure of waste piles	___	___	___	___	Volume 10 of 11;
I-1d(4)	Closure of surface impoundments	___	___	___	___	Volume 10 of 11;
I-1d(5)	Closure of incinerators	___	___	___	___	Volume 10 of 11;
I-1d(6)	Closure of land treatment facilities					Volume 10 of 11;

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-1d(6)(a)	Continuance of treatment					Volume 10 of 11; Page # Varies
I-1d(6)(b)	Vegetative cover					Volume 10 of 11; Per Closure Plan
I-1e	Closure of disposal units					Volume 10 of 11;
I-1e(1)	Disposal impoundments					Volume 10 of 11;
I-1e(1)(a)	Elimination of liquids					Volume 10 of 11;
I-1e(1)(b)	Waste stabilization					Volume 10 of 11;
I-1e(2)	Cover design					Volume 10 of 11;
I-1e(3)	Minimization of liquid migration					Volume 10 of 11;
I-1e(4)	Maintenance needs					Volume 10 of 11;
I-1e(5)	Drainage and erosion					Volume 10 of 11;
I-1e(6)	Settlement and subsidence					Volume 10 of 11;
I-1e(7)	Cover permeability					Volume 10 of 11;
I-1e(8)	Freeze/thaw effects					Volume 10 of 11;
I-1f	Schedule for closure					Volume 10 of 11;
I-1g	Extensions for closure time					Volume 10 of 11;

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-2	Post-closure plan					Volume 10 of 11; Page # Varies
I-2a	Inspection plan	___	___	___	___	Volume 10 of 11; Per Closure Plan
I-2b	Monitoring plan	___	___	___	___	Volume 10 of 11;
I-2c	Maintenance plan	___	___	___	___	Volume 10 of 11;
I-2d	Land treatment	___	___	___	___	Volume 10 of 11;
I-3	Notice in deed	___	___	___	___	Volume 10 of 11;
I-4	Closure cost estimate	___	___	___	___	Volume 10 of 11;
I-5	Financial assurance mechanism for closure					Volume 10 of 11;
I-5a	Closure trust fund	___	___	___	___	Volume 10 of 11;
I-5b	Surety bond					Volume 10 of 11;
I-5b(1)	Surety bond guaranteeing payment into a closure fund	___	___	___	___	Volume 10 of 11;
I-5b(2)	Surety bond guaranteeing performance of closure	___	___	___	___	Volume 10 of 11;
I-5c	Closure letter of credit	___	___	___	___	Volume 10 of 11;
I-5d	Closure insurance	___	___	___	___	Volume 10 of 11;

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-5e	Financial test and corporate guarantee for closure	___	___	___	___	Volume 10 of 11; Page # Varies
I-5f	Use of multiple financial mechanisms	___	___	___	___	Volume 10 of 11; Per Closure Plan
I-5g	Use of financial mechanism for multiple facilities	___	___	___	___	Volume 10 of 11;
I-6	Post-closure cost estimate	___	___	___	___	Volume 10 of 11;
I-7	Financial assurance mechanism for post-closure care					Volume 10 of 11;
I-7a	Post-closure trust fund	___	___	___	___	Volume 10 of 11;
I-7b	Surety bond					Volume 10 of 11;
I-7b(1)	Surety bond guaranteeing payment into a post-closure trust fund	___	___	___	___	Volume 10 of 11;
I-7b(2)	Surety bond guaranteeing performance of post-closure care	___	___	___	___	Volume 10 of 11;
I-7c	Post-closure letter of credit	___	___	___	___	Volume 10 of 11;
I-7d	Post-closure insurance	___	___	___	___	Volume 10 of 11;

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-7e	Financial test and corporate guarantee for post-closure care	___	___	___	___	Volume 10 of 11; Page # Varies
I-7f	Use of multiple financial mechanisms	___	___	___	___	Volume 10 of 11; Per Closure Plan
I-7g	Use of a financial mechanism for multiple facilities	___	___	___	___	Volume 10 of 11;
I-8	Liability requirements					Volume 10 of 11;
I-8a	Coverage for sudden accidental occurrences					Volume 10 of 11;
I-8a(1)	Endorsement or certification	___	___	___	___	Volume 10 of 11;
I-8a(2)	Financial test for liability coverage	___	___	___	___	Volume 10 of 11;
I-8a(3)	Use of multiple insurance mechanisms	___	___	___	___	Volume 10 of 11;
I-8b	Coverage for nonsudden accidental occurrences					Volume 10 of 11;
I-8b(1)	Endorsement or certification	___	___	___	___	Volume 10 of 11;
I-8b(2)	Financial test for liability coverage	___	___	___	___	Volume 10 of 11;

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-8b(3)	Use of multiple insurance mechanisms	___	___	___	___	Volume 10 of 11; Page # Varies
I-8c	Request for variance	___	___	___	___	Volume 10 of 11; Per Closure Plan
I-9	State mechanisms					Volume 10 of 11;
I-9a	Use of state-required mechanism	___	___	___	___	Volume 10 of 11;
I-9b	State assumption of responsibility	___	___	___	___	Volume 10 of 11;

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
J. CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS						
J-1	Solid waste management units	____	____	____	____	Volume 11 of 11; Page J-1
J-1a	Characterize the solid waste management unit	____	____	____	____	Volume 11 of 11; Page J-1
J-1b	No solid waste management units	____	____	____	____	Volume 11 of 11; Page J-16
J-2	Releases					Volume 11 of 11; Page J-17
J-2a	Characterize releases	____	____	____	____	Volume 11 of 11; Page
J-2b	No releases	____	____	____	____	Volume 11 of 11; Page
K. OTHER FEDERAL LAWS						
L. PART B CERTIFICATION						

RCRA PART B
PERMIT APPLICATION

SECTION A - PART A PERMIT APPLICATION
(MODIFIED)

SEPTEMBER 22, 1989

FEED MATERIALS PRODUCTION CENTER
U.S. DEPARTMENT OF ENERGY
CINCINNATI, OHIO 45239-8705

U.S. EPA IDENTIFICATION NO. OH6890008976
OHIO EPA PERMIT NO. 05-31-0681

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch)

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program
(Read the "General Instructions" before starting.)

255

I. EPA I.D. NUMBER: F OH 6 8 9 0 0 0 8 9 7 6

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI (except VI-B which must be completed regardless). Complete all Items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

I. EPA I.D. NUMBER	OH 6890008976
III. FACILITY NAME	FEED MATERIALS PRODUCTION CENTER
V. FACILITY MAILING ADDRESS	U.S. DEPARTMENT OF ENERGY P.O. BOX 398705 CINCINNATI, OHIO 45239-8705
VI. FACILITY LOCATION	7400 WILLEY ROAD FERNALD , OHIO

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		
D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		X
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP FEED MATERIALS PRODUCTION CENTER

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 CRAIG, JACK ENGINEER	513 738 6159

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 POST OFFICE BOX 398705

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 CINCINNATI	OH	45239

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 7400 WILLEY ROAD

B. COUNTY NAME

HAMILTON

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 FERNALD	OH	45239	031

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CONTINUED FROM THE FRONT

VII. SIC CODES (enter in order of priority)

A. FIRST	B. SECOND
7 1281 91 (specify) PRODUCTION OF URANIUM METALS AND COMPOUNDS	7 (specify) 255
C. THIRD	**D. FOURTH**
7 (specify)	7 (specify)

VIII. OPERATOR INFORMATION

A. NAME: 8 U.S DEPT. OF ENERGY

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL, M = PUBLIC (other than federal or state), S = STATE, O = OTHER (specify), P = PRIVATE

D. PHONE (area code & no.): A

E. STREET OR P.O. BOX: POST OFFICE BOX 398705

F. CITY OR TOWN: B CINCINNATI

G. STATE: OH

H. ZIP CODE: 45239

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	9 N	OH0095580	
D. PSD (Air Emissions from Proposed Sources)	9 P		
B. UIC (Underground Injection of Fluids)	9 U		
E. OTHER (specify)	9		(specify)
C. RCRA (Hazardous Wastes)	9 R		
E. OTHER (specify)	9		(specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED

COMMENTS FOR OFFICIAL USE ONLY

C

LOCATION OF RCRA TREATMENT, STORAGE, AND DISPOSAL FACILITIES

CODE DESCRIPTION		DIMENSIONS
A = Waste Pit No. 4 (Inactive)	D	170′ x 320′ x 400′ x 320
B = Building 83 x Storage Warehouse	S	250′ x 900′
C = Proposed RCRA Warehouse	S	80′ x 120′
D = Trane Thermal Liquid Incinerator (Inactive)	T	52′ x 50′
E = Plant 2/3 Storage Pad (Inactive)	S	105′ x 45′
F = Plant 8 Warehouse	S	60′ x 170′
G = Barium Chloride Salt Treatment Facility (Inactive)	T	75′ x 50′
H = Tank for Bulk Storage of Solvents, T-5 (Inactive)	S	10′ x Diameter
H = Tank for Bulk Storage of Solvents, T-6 (Inactive)	S	10′ x Diameter
I = Pilot Plant Warehouse	S	62′ x 7′
J = KC-2 Warehouse - Bay 5	S	70′ x 36′
J = KC-2 Warehouse - Bay 6	S	70′ x 36′
J = KC-2 Warehouse - Bay 7	S	20′ x 70′
K = Plant 9 Warehouse	S	60′ x 170′
L = Storage Pad North of Plant 6 (Inactive)	S	8′ x 40′
1 = Plant 6 Warehouse	S	100′ x 170′
N = Plant 1 Storage Pad (Inactive)	S	675′ x 750′

D = Disposal
S = Storage
T = Treatment

XI. MAPS

There are seventeen (17) RCRA Storage, Treatment, or Disposal Units at the Feed Materials Production Center (FMPC). They are shown on the topographic maps provided and identified/classified on a separate sheet.

The only drinking water wells within one-quarter mile of the production or Waste Pit Areas are those that supply the FMPC. On the topographic maps provided they are shown as Production Wells #1 through #3. Those offsite drinking water wells which are located within the limits of these maps have been shown. Owner/User information is provided on a separate sheet.

Within the bounds of the FMPC, no continuously flowing springs are known to exist.

FEED MATERIALS PRODUCTION CENTER
U.S. DEPARTMENT OF ENERGY

OFFSITE DRINKING WATER WELLS

Location*	Sampling Point**	Owner/User
307	10	Best Panel Homes 11301 Paddy's Run Road Hamilton, OH 45013
310	11	Verdie Estes [redacted]
311 A & B	12 & 26	Henry Knollman [redacted]
402	13	William Knollman [redacted]
401	14	Bryon Knollman [redacted]
309	22	Donald Gieringer [redacted]
308	30	Robert Badinghaus [redacted]
212	NA	Schaefer Box Company 11875 Paddy's Run Road Hamilton, OH 45013
322	NA	Holt 11521 Paddy's Run Road Hamilton, OH 45013

*Dames & Moore Well Users Inventory
**WMCO Monitoring Site

OUTFALL LOCATION

Outfall No.	Latitude Deg	Min	Sec	Longitude Deg	Min	Sec	Receiving Water
001	39	17	53	84	40	48	Great Miami River
002	39	17	36	84	41	21	Storm Sewer Outfall Ditch to Paddy's Run

FORM 3510-3 RCRA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER: F

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS
		255

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

☐ 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

☐ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5				
X-2	T03	20	E		6				
1	S01	502480	G		7				
2					8				
3					9				
4					10				

Continued from the front.

III. PROCESSES *(continued)*

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES *(code "T04")*. FOR EACH PROCESS ENTERED HERE, INCLUDE DESIGN CAPACITY.

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IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER – Enter the four–digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four–digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY – For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non–listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE – For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non–listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non–listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non–listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K054	900	P	T03 D80	
X-2	D002	400	P	T03 D80	
X-3	D001	100	P	T03 D80	
X-4	D002				included with above

66

CONTINUE ON PAGE

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

EPA I.D. NUMBER (enter from page 1) W

FOR OFFICIAL USE ONLY W DUP DUP 255

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
1	F002	61,000	P	S01	
2	D008	30,000	P	S01	
3	F002				INCLUDED ABOVE
4	D010	37,000	P	S01	
5	F002				INCLUDED ABOVE
6	F005				INCLUDED ABOVE
7	D001	40	P	S01	
8	D002				INCLUDED ABOVE
9	D007				INCLUDED ABOVE
10	F002	175,000	P	S01	
11	D001	33,000	P	S01	
12	F001				INCLUDED ABOVE
13	D001	6,000	P	S01	
14	F002				INCLUDED ABOVE
15	D001	11,000	P	S01	
16	D008	235,000	P	S01	
17	D007	16,000	P	S01	
18	D001	5,000	P	S01	
19	D002				INCLUDED ABOVE
20	D007				INCLUDED ABOVE
21	D006	10,000	P	S01	
22	D008	270,000	P	S01	
23	F002	3,300	P	S01	
24	D005	16,000	P	S01	
25	D004	637,000	P	S01	
26	D006				INCLUDED ABOVE

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CONTINUE ON REVE

DUP DUP

255

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARDOUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
27	D008				INCLUDED ABOVE
28	D010				INCLUDED ABOVE
29	D008	500	P	S01	
30	D001	19,000	P	S01	
31	D005				INCLUDED ABOVE
32	D007				INCLUDED ABOVE
33	F002	500	P	S01	
34	D001	500	P	S01	
35	D007	33,000	P	S01	
36	D009	4,500	P	S01	
37	F002	17,000	P	S01	
38	D002	1,500	P	S01	
39	D001	920	P	S01	
40	F003				INCLUDED ABOVE
41	P015	5	P	S01	
42	D001	21	P	S01	
43	F001	130,000	P	S01	
44	D001	300	P	S01	
45	P119	2	P	S01	
46	188	3	P	S01	
47	P120	1	P	S01	
48	U227	3	P	S01	
49	U228	3	P	S01	
50	D009	3	P	S01	
51	D002	18	P	S01	
52	D005	1	P	S01	

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CONTINUE ON 63

(enter "A", "B", "C", etc. behind the "3" to identify photocopied pages)

DUP DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

255

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
53	D008	3,500	P	S01	
54	D005	7,800	P	S01	
55	D008				INCLUDED ABOVE
56	D005	98,000	P	S01	
57	D004	37,000	P	S01	
58	D006				INCLUDED ABOVE
59	D008				INCLUDED ABOVE
60	D001	117,000	P	S01	
61	F001				INCLUDED ABOVE
62	D001	35,072	P	S01	
63	F001				INCLUDED ABOVE
64	F001	1,300	P	S01	
65	D005	20,000	P	S01	
66	F002	1,400	P	S01	
67	D008	38,000	P	S01	
68	F002				INCLUDED ABOVE
69	F002	12,000	P	S01	
70	D006	1,400	P	S01	
71	D007				INCLUDED ABOVE
72	D008				INCLUDED ABOVE
73	F001	41,000	P	S01	
74	D002	953,000	P	S01	
75	D006	5,200	P	S01	
76	D008				INCLUDED ABOVE
77	D001	200	P	S01	
78	F002				INCLUDED ABOVE

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CONTINUE ON

(Number "4", "5", "6", etc. behind the "3" to identify photocopied pages)

DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D.1.)
79	F002	17,000	P	S01	
80	F002	1,429,000	P	S01	
81	F002	500	P	S01	
82	D006	1,000	P	S01	
83	D009				INCLUDED ABOVE
84	F002	32,000	P	S01	
85	D005	59,000	P	S01	
86	F001	9,500	P	S01	
87	D005	35,000	P	S01	

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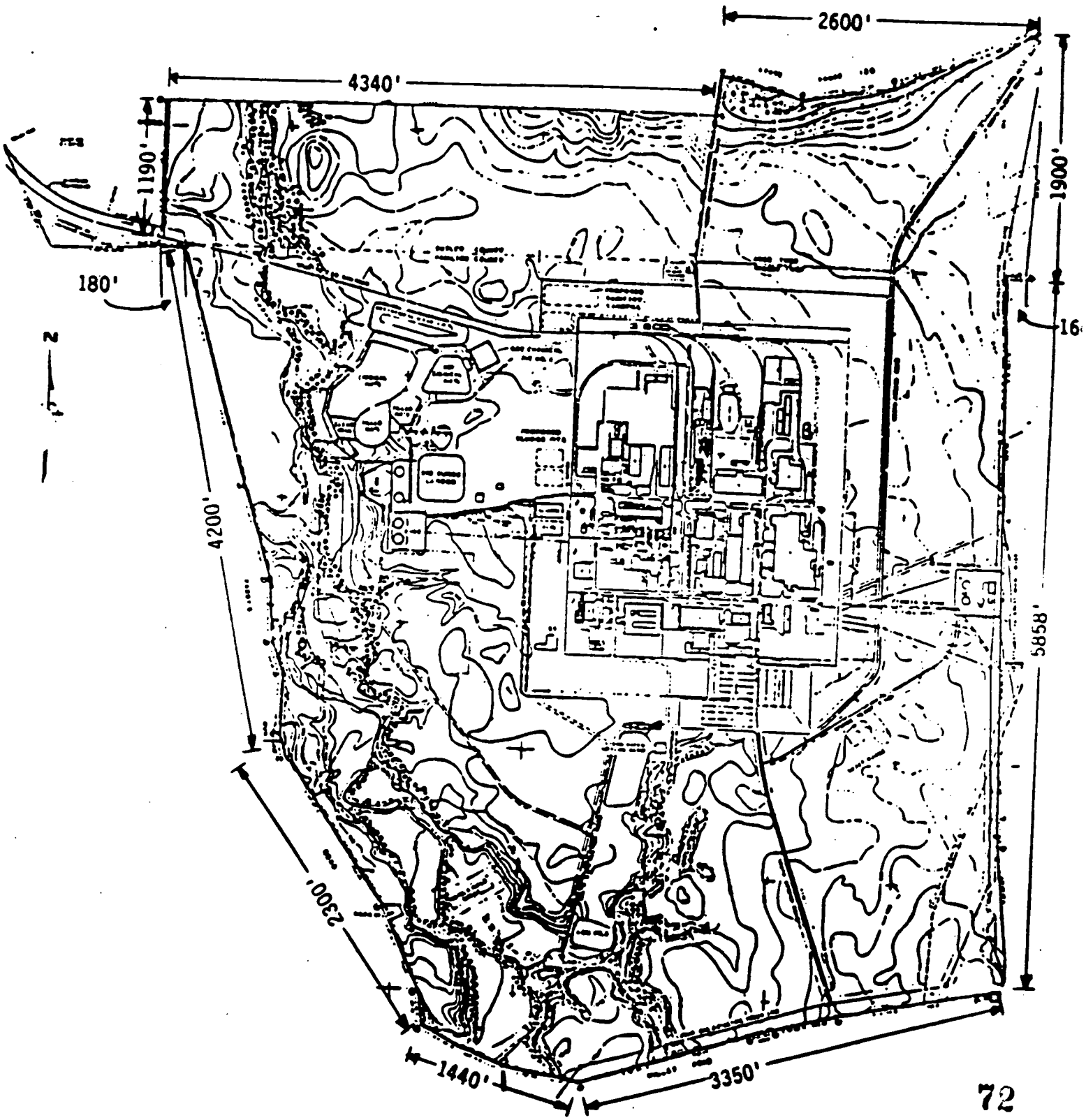
CONTINUE ON

V. FACILITY DRAWING

The Feed Materials Production Center is located on a 1,050 acre Federal Reservation in Hamilton and Butler Counties in Ohio, it is approximately 20 miles N.W. of downtown Cincinnati, midway between Ross, Ohio and Fernald, Ohio. Due to the size of the FMPC, two maps have been provided to indicate the Waste Management units and their boundaries. The first map describes the boundaries of the FMPC reservation and the second map shows the location and boundaries of each Waste Management unit within the 136 acre FMPC Production Area.

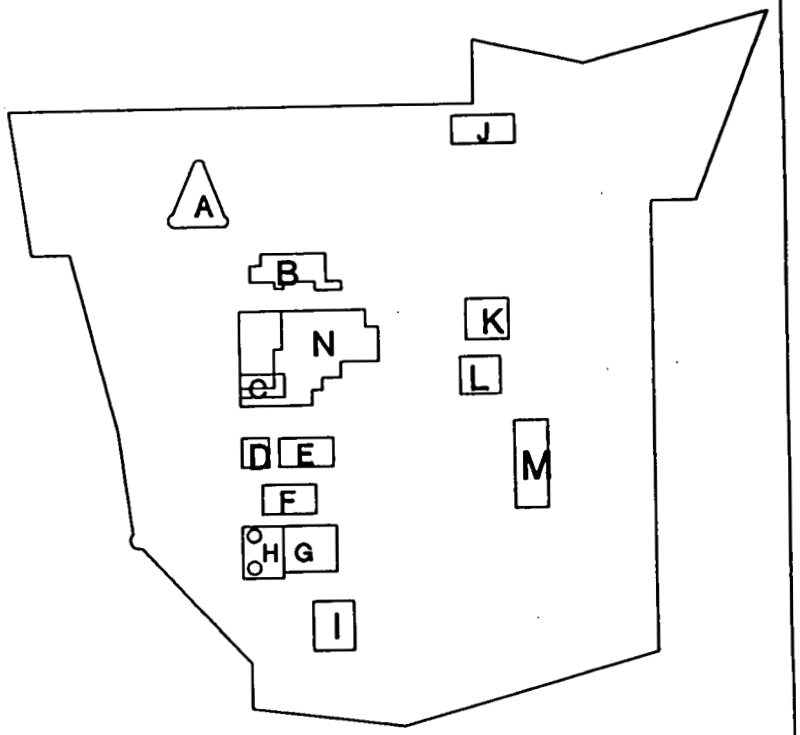
FMPC BOUNDARY



Feed Material Production Center

Treatment, Storage, and Disposal Area Dimensions

N



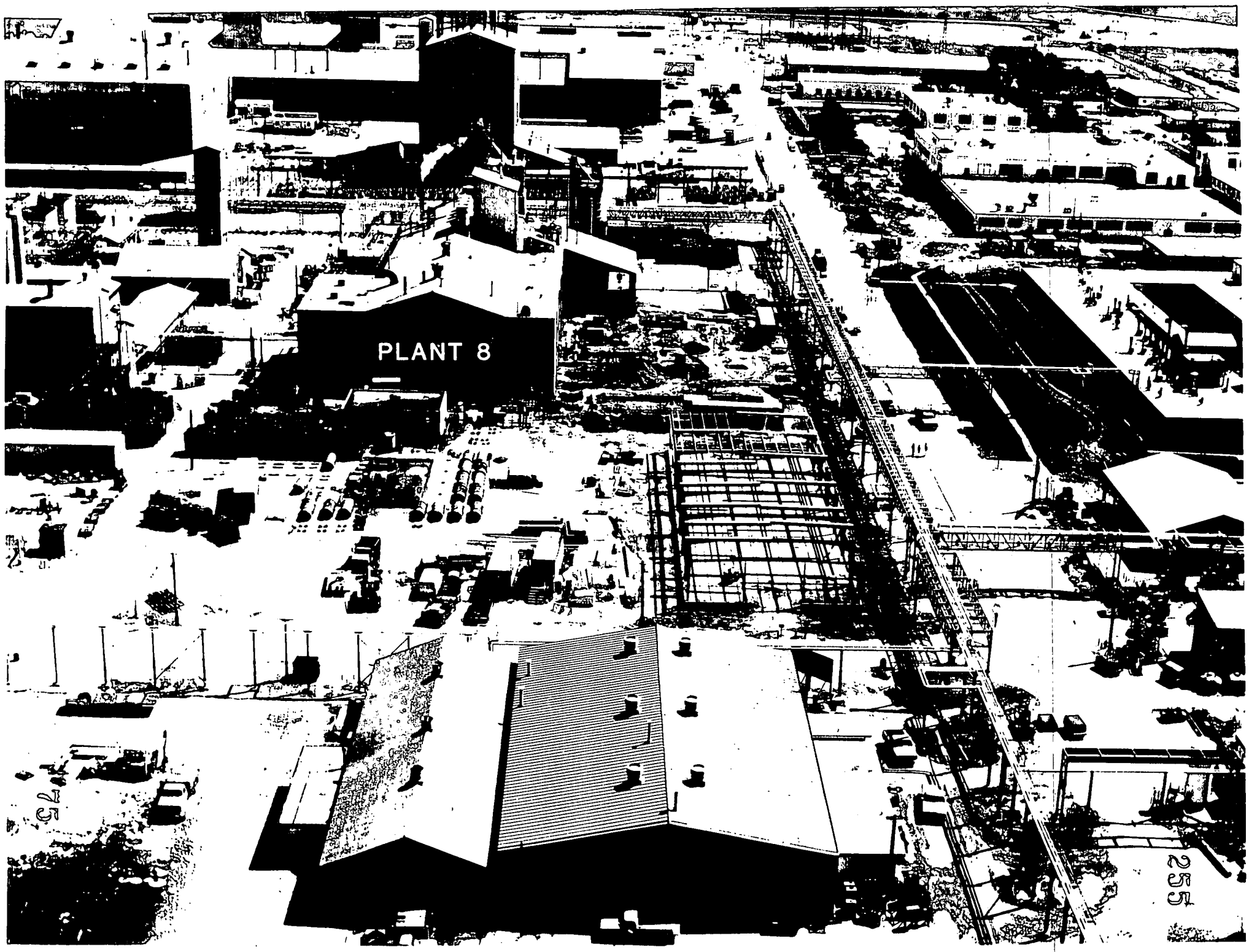
Description

Code	Dimensions
A = Waste Pit No. 4 *	D 170'x 320'x400'x320'
B = Proposed Bldg. 83X Warehouse	S 250'x 900'
C = Proposed RCRA Warehouse	S 80' x 120'
D = Trane Thermal Liquid Incinerator *	T 52'x50'
E = Plant 2/3 Storage Pad *	S 105' x 45'
F = Bldg. 80 Storage Warehouse	S 60' x 170'
G = Barium Chloride Salt Treatment Facility *	T 75' x 50'
H = Tank for Bulk Storage of Solvents, T-5 *	S 10' Diameter
H = Tank for Bulk Storage of Solvents, T-6 *	S 10' Diameter
I = Pilot Plant Warehouse	S 62' x 7'
J = KC-2 Warehouse - Bay 5	S 70' x 36'
J = KC-2 Warehouse - Bay 6	S 70' x 36'
J = KC-2 Warehouse - Bay 7	S 70' x 36'
K = Bldg. 81 Storage Warehouse	S 60' x 170'
L = Storage Pad North of Plant 6 *	S 8' x 40'
M = Bldg. 79 Storage Warehouse	S 100' x 170'
N = Plant 1 Storage Pad *	S 675' x 760'

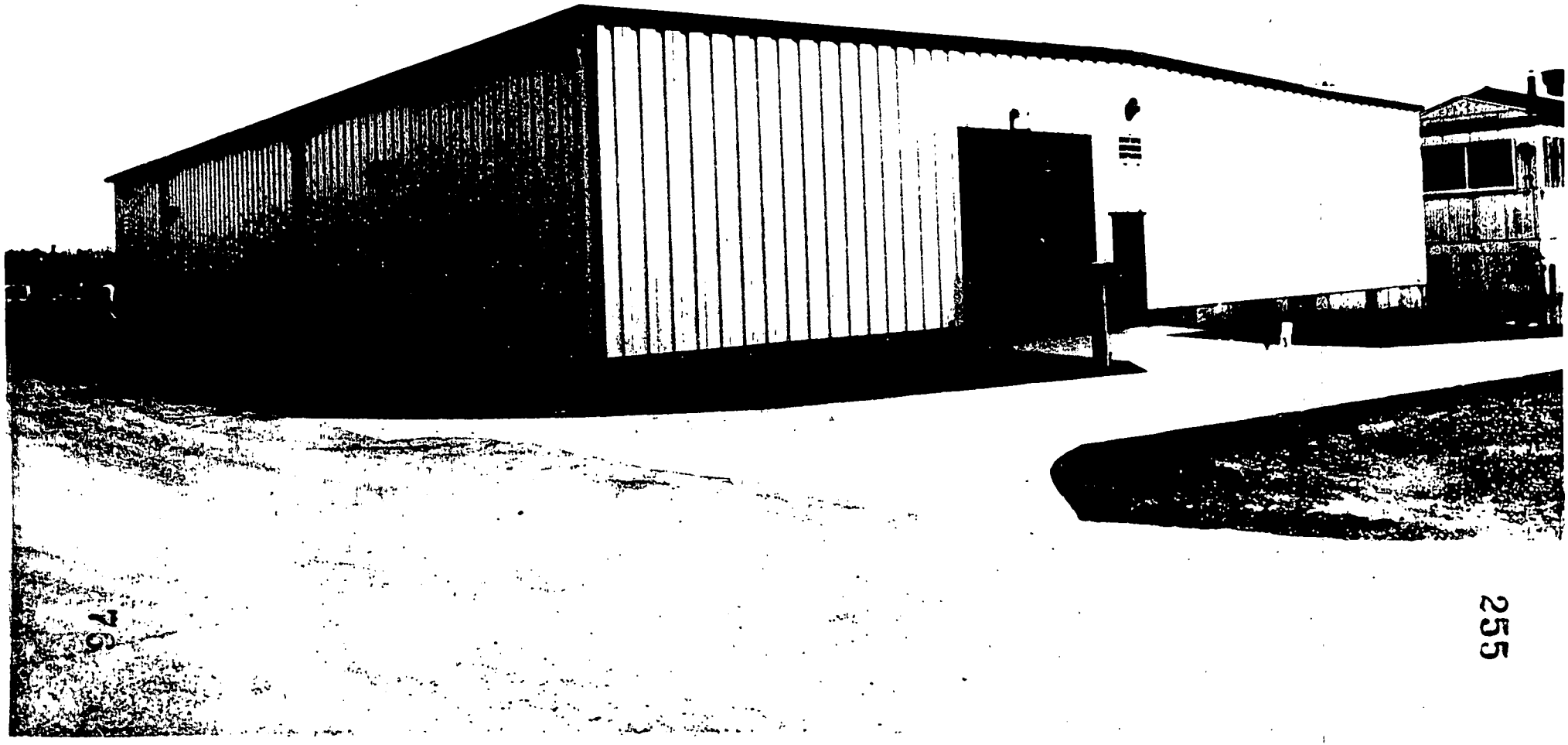
* = TSD units which are no longer in operation
D = Disposal
S = Storage
T = Treatment

VI. PHOTOGRAPHS

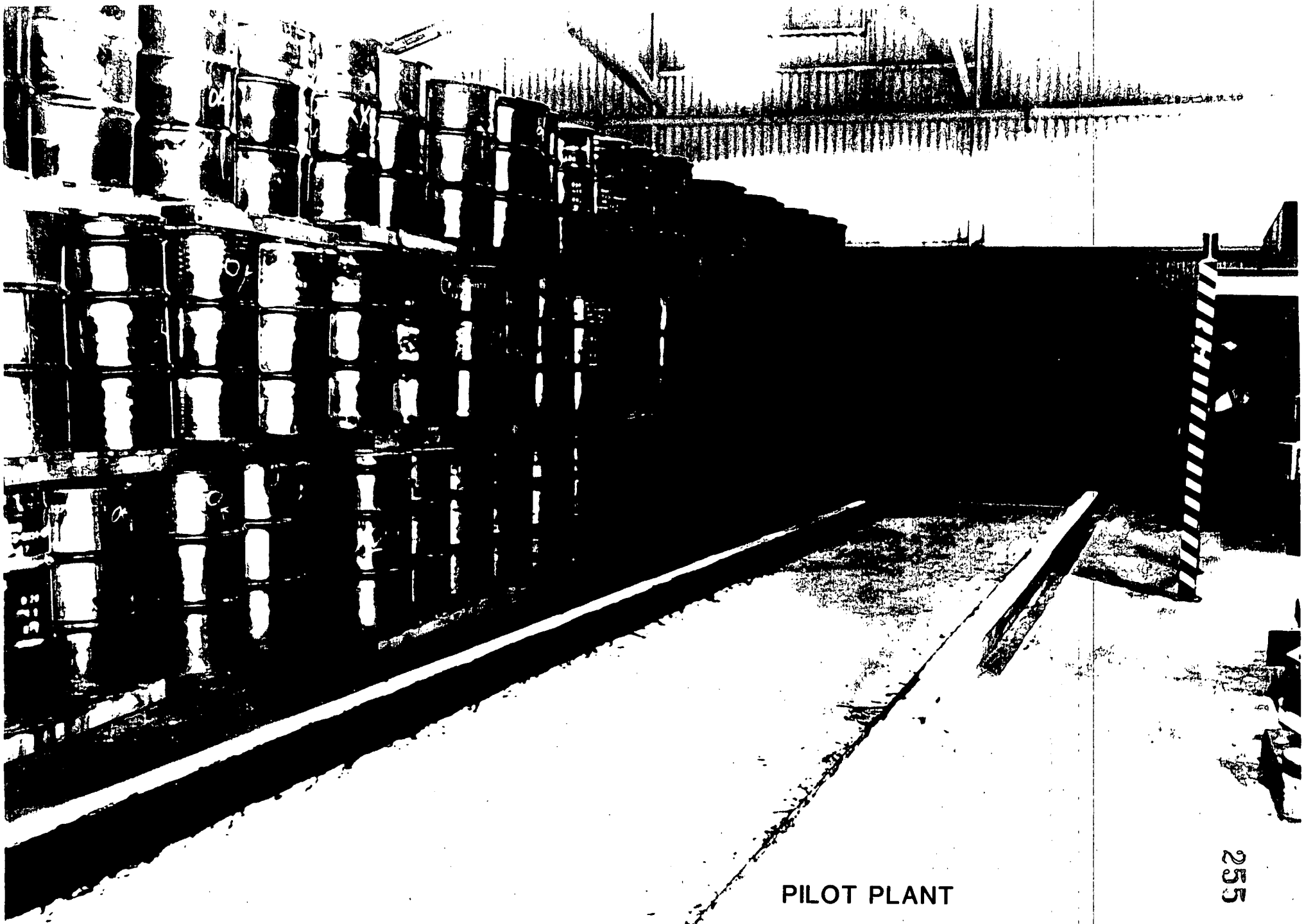
Photographs on all past, present, and future Treatment, Storage or Disposal Areas are identified on the following pages.


PLANT 8

PLANT 9 (1) LEVEL

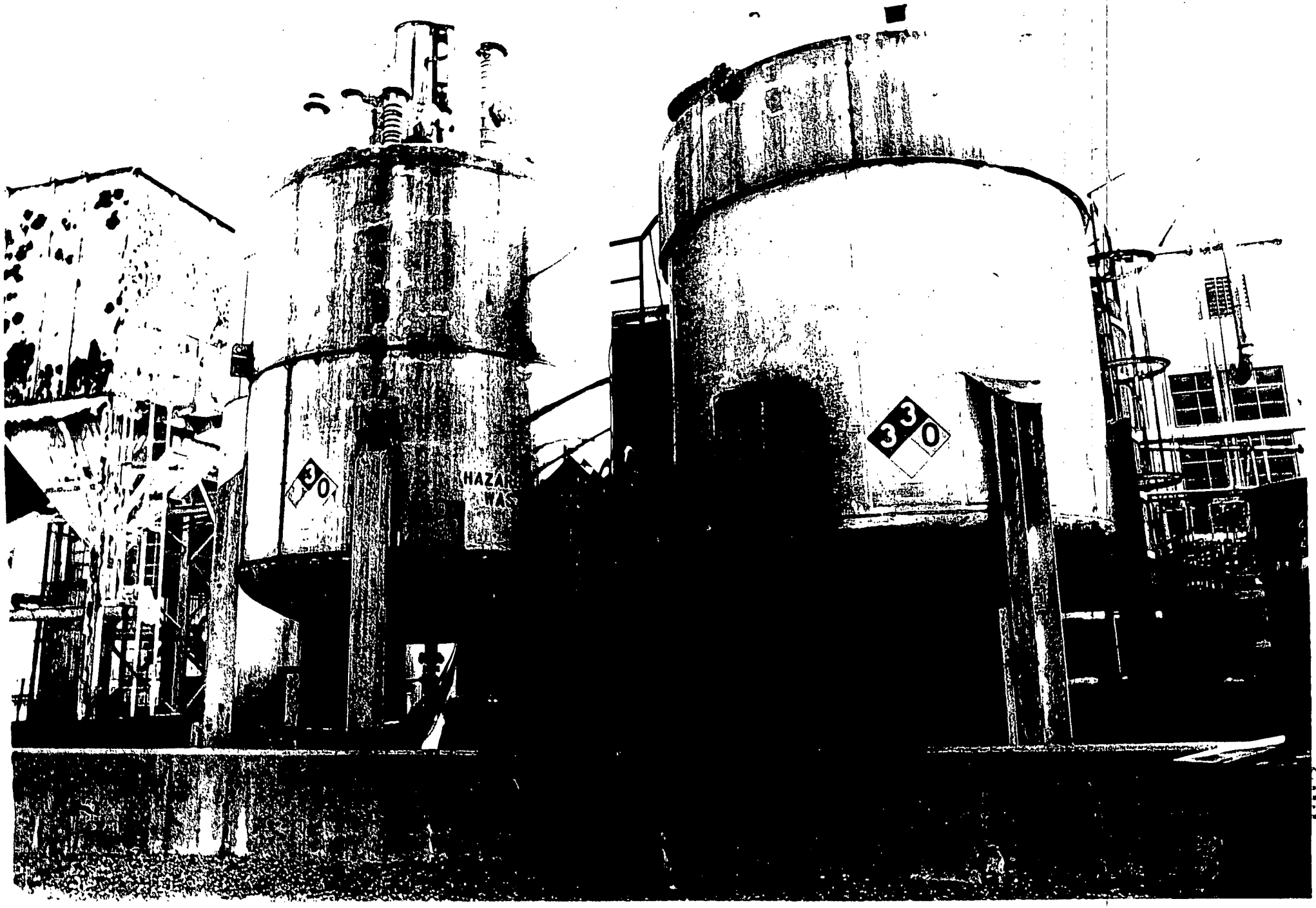


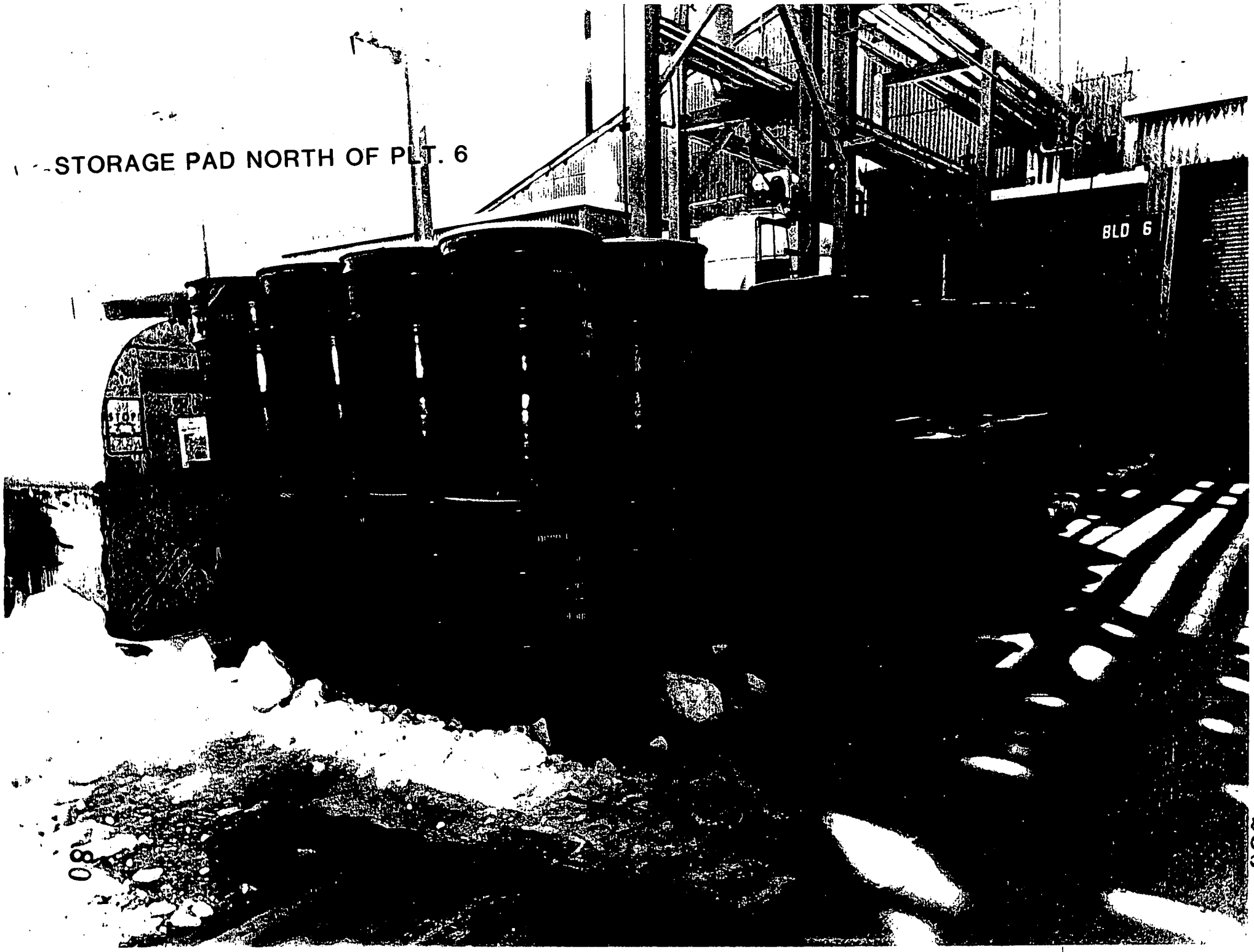
KC-2 WAREHOUSE BAYS 5, 6 & 7



PILOT PLANT

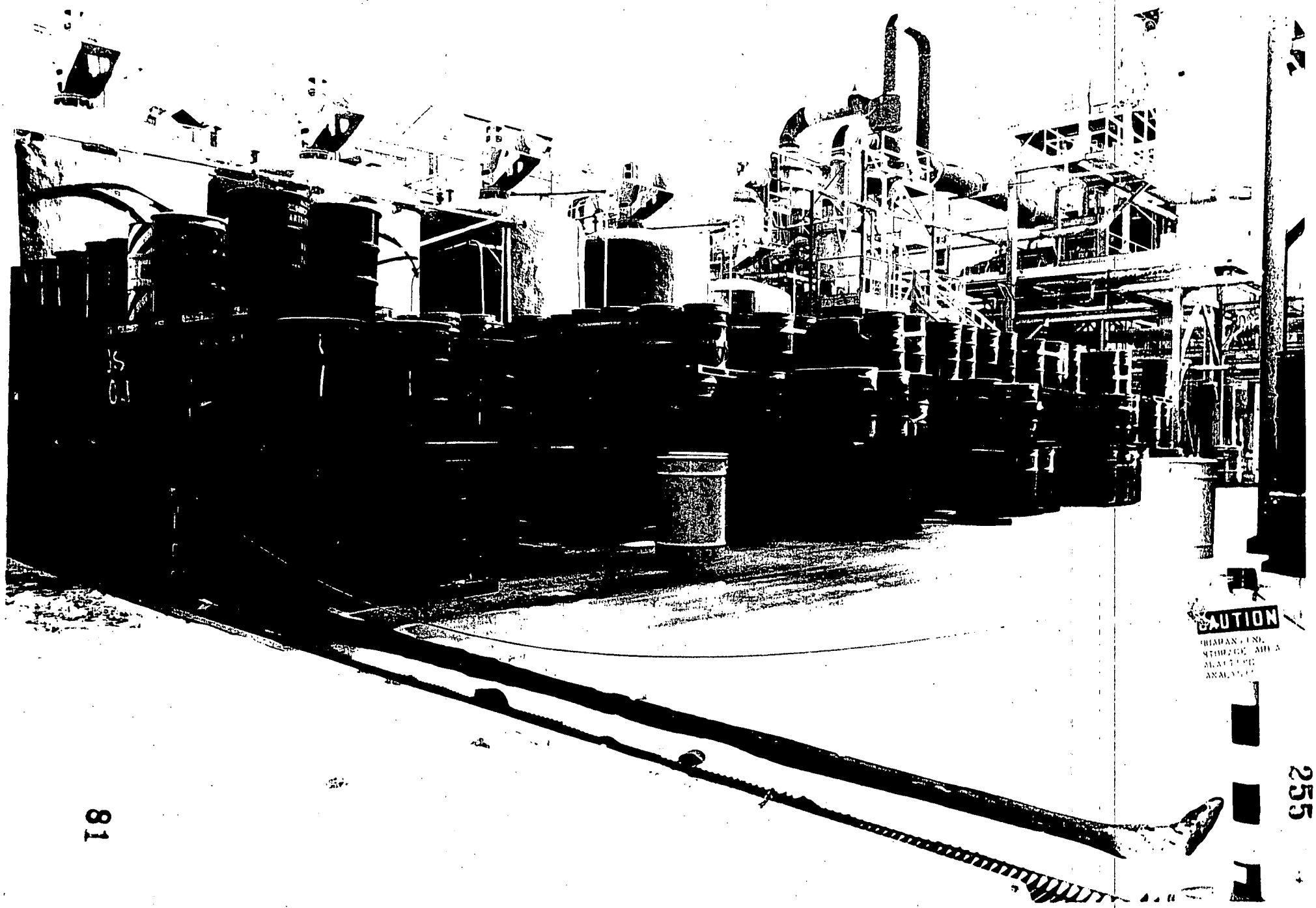
BULK STORAGE TANKS T5 & T6

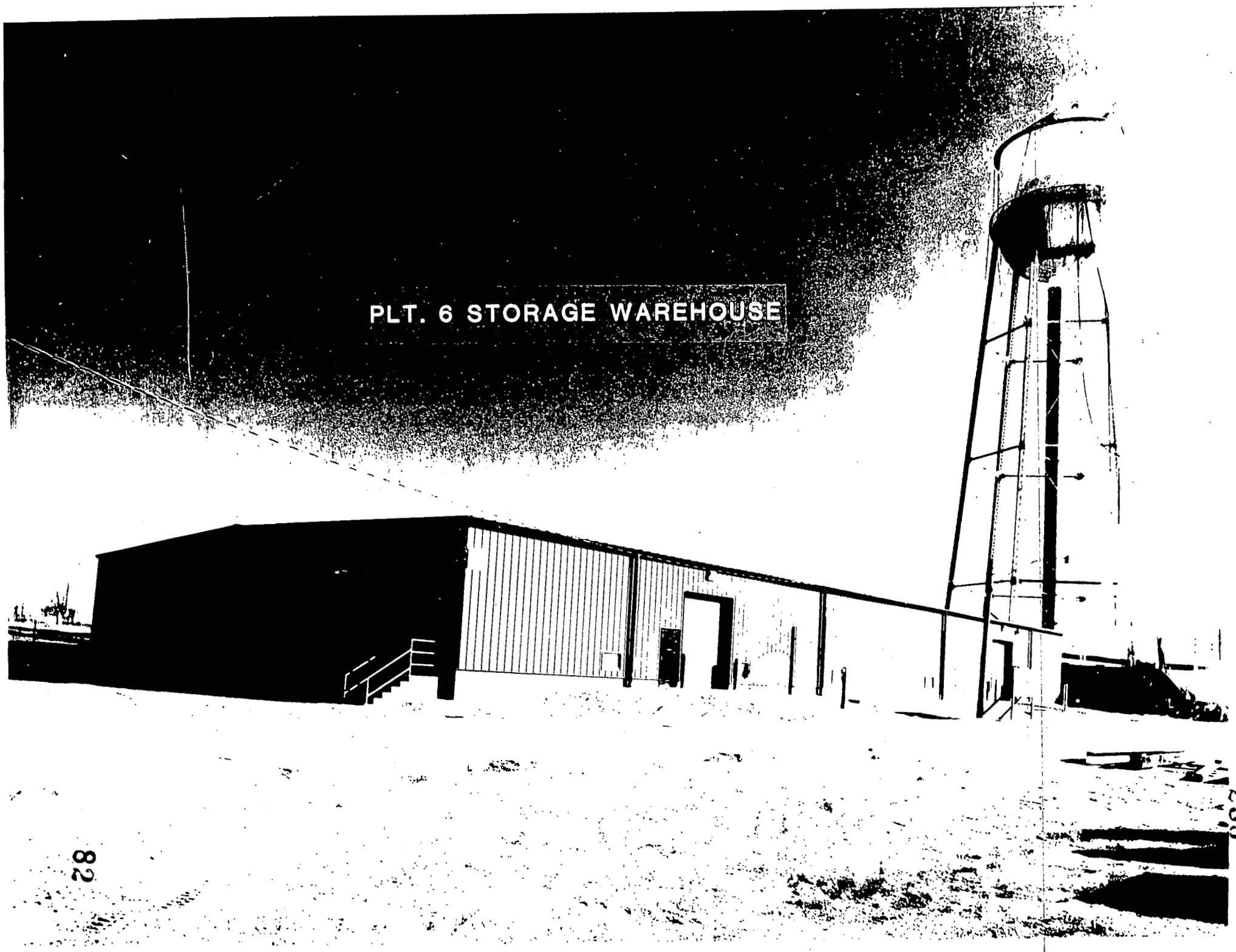




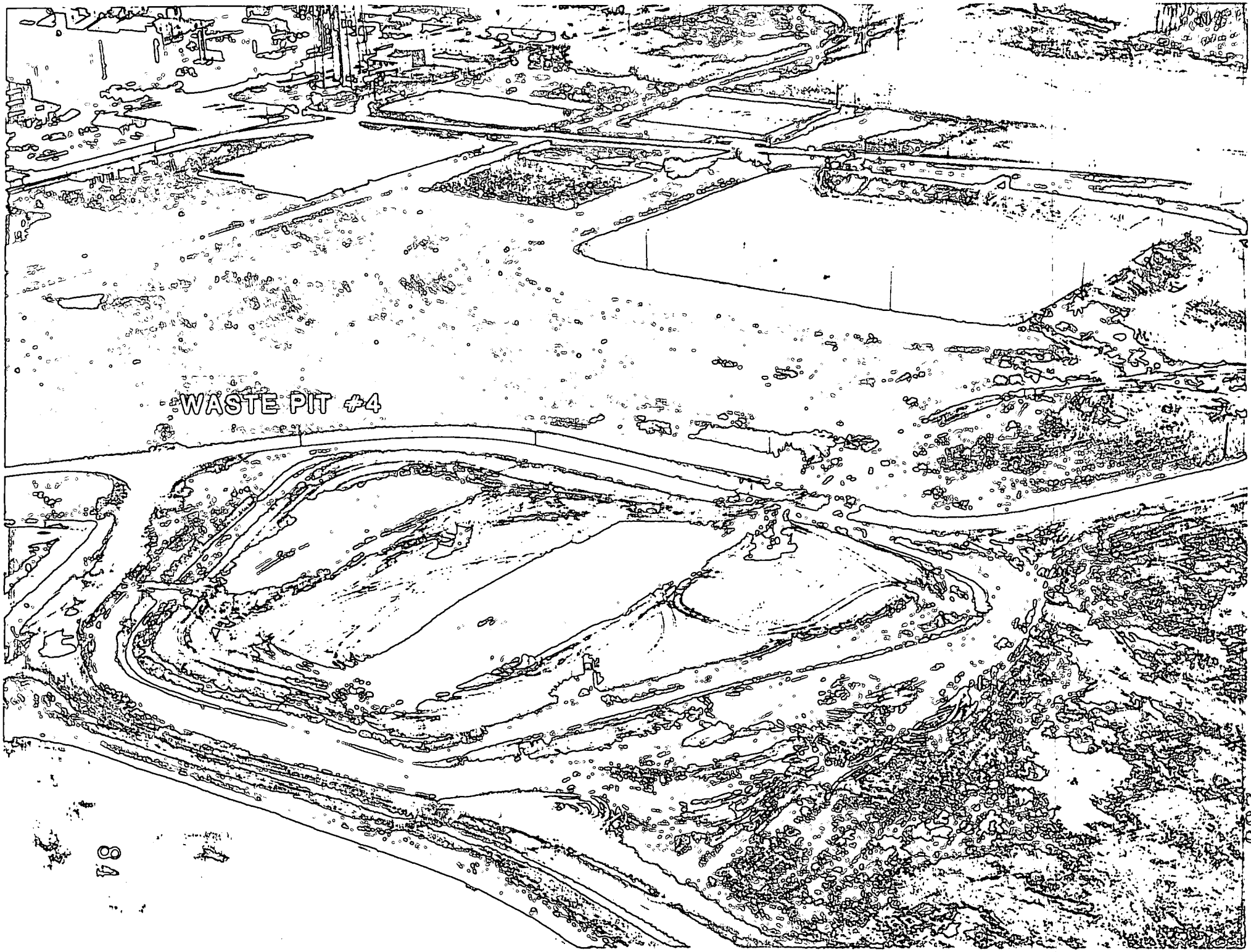
STORAGE PAD NORTH OF PLT. 6

PLANT 2/3 STORAGE PAD

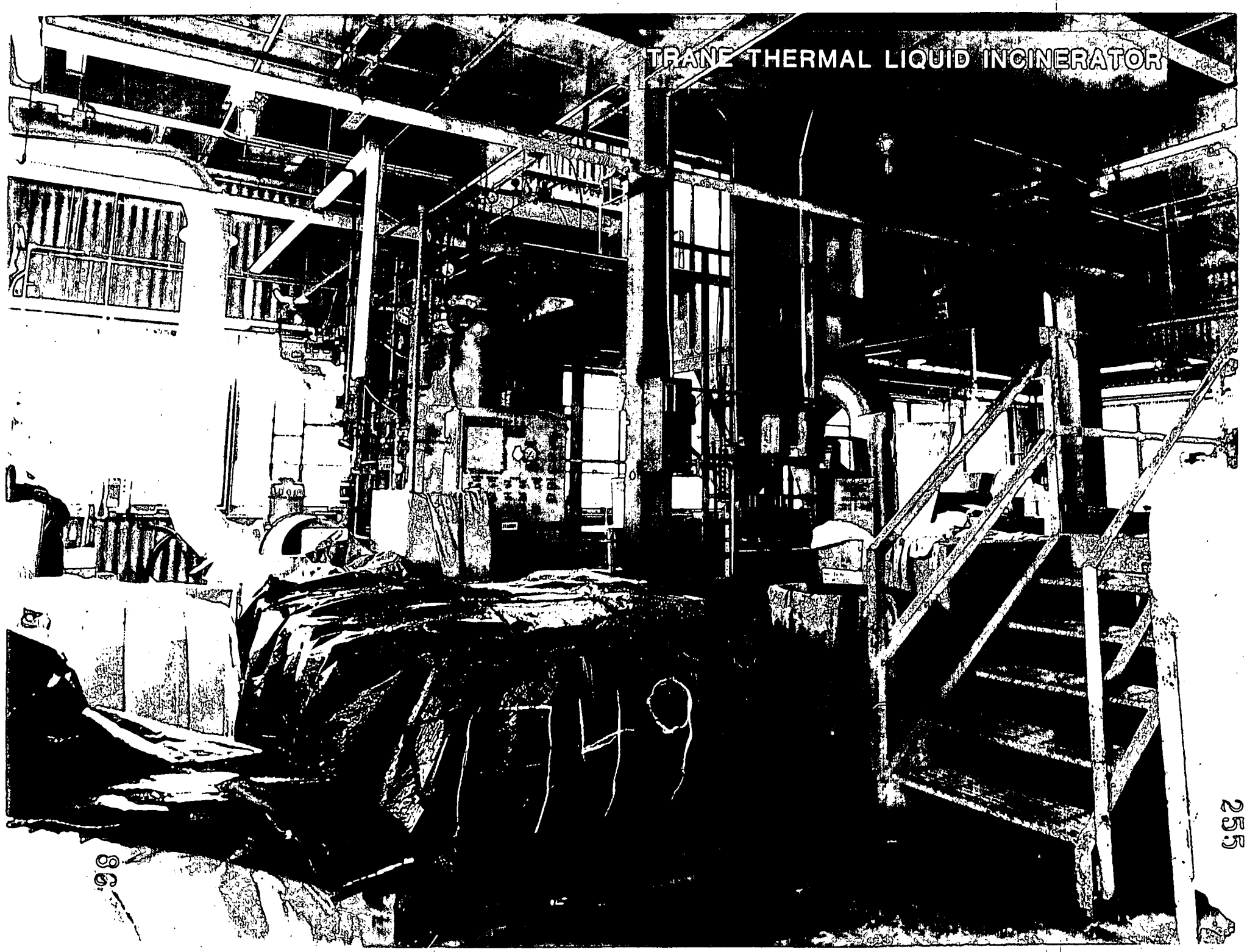


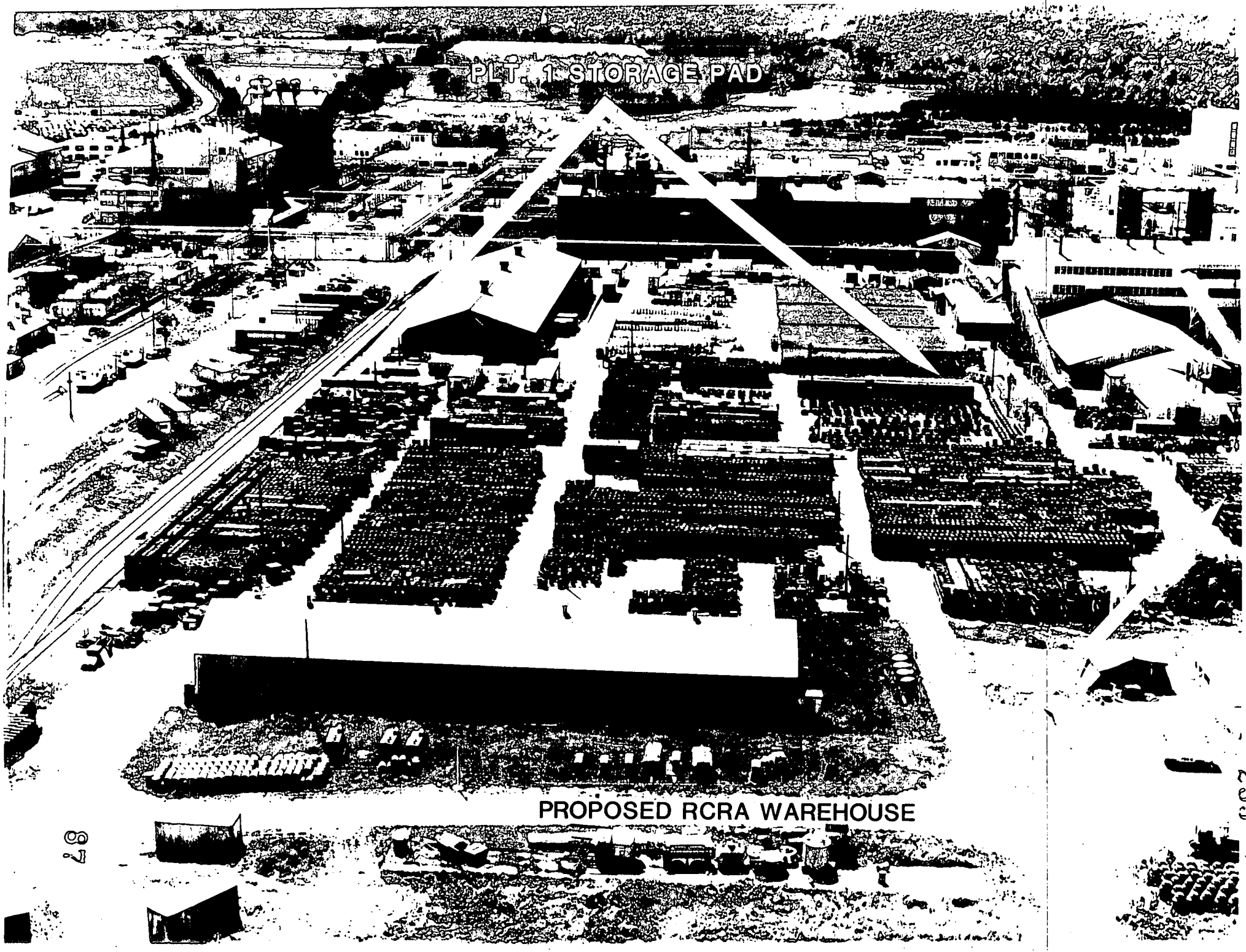

PLT. 6 STORAGE WAREHOUSE

BARIUM CHLORIDE WASTE SALT TRE


WASTE PIT #4

PROPOSED BLDG. 83X STORAGE WAREHOUSE


TRANE THERMAL LIQUID INCINERATOR


PLT. 1 STORAGE PAD
PROPOSED RCRA WAREHOUSE

PERMIT LIST

Pursuant to the Code of Federal Regulations 40, Part 270.13, the following is a list of all permits or construction approvals received or applied for under the specified programs:

1) Hazardous Waste Management Program under RCRA

Part A Permit Application	7/7/84
Revision 1	
Revision 2	
Revision 3	
Revision 4	
Revision 5	7/27/88
Revision 6	3/22/89
Part B Permit Application	11/85
Closure Plans:	
Barium Chloride Treatment Facility	9/3/87
Trane Incinerator	2/18/88
Waste Pit No. 4	9/28/87

2) Underground Injection Control Program (UIC) under the SWDA

None

3) National Pollutant Discharge Elimination System (NPDES) program under CWA

OH0009580

4) Prevention of Significant Deterioration (PSD) program under the Clean Air Act

None

5) Nonattainment Program under the Clean Air Act

None

6) National Emission Standards for Hazardous Air Pollutants (NESHAPs) preconstruction approval under the Clean Air Act

NESHAP approval of construction received from EPA for the following:

1. UF_6 to UF_4 Reduction Facility #2, 8/10/88
2. Thorium Repackaging, 8/10/88

PERMIT LIST (cont.)

NESHAP applications for approval of construction submitted for the following:

1. Ingot O. D. Lathe, 8/10/88
2. Plasma Spray Crucible Coating Station, 8/10/88
3. Crucible Grit Blaster, 8/10/88
4. West Wagner Cold Saw, 8/10/88
5. Graphite Wagner Cold Saw, 8/10/88
6. W. Mold Reconditioning Booth, 8/10/88
7. W. Remelt Crucible Lid Cleaner, 8/10/88
8. Flat Ingot Model 4 Milling Machine, 8/10/88
9. Flat Ingot Model 4A Milling Machine, 8/10/88
10. Flat Ingot Model 4B Milling Machine, 8/10/88
11. Flat Ingot 425-20 Milling Machine, 8/10/88
12. Flat Ingot No. 6 Milling Machine, 8/10/88
13. Flat Ingot K&T A Milling Machine, 8/10/88
14. Flat Ingot K&T B Milling Machine, 8/10/88
15. Graphite Milling Machine, 11/23/88
16. Plant 6 Sump and Waste Treatment System, 11/23/88
17. Plant 6 Scrap Pickling Project, 12/15/88

7) Ocean Dumping permits under the Marine Protection Research and Sanctuaries Act

None

8) Dredge or Fill permits under Section 404 of the CWA

None

9) Other relevant environmental permits, including State Permits

State of Ohio 05-31-0681

Wastewater Treatment Facility
Ohio EPA Permits-To-Install (PTIs)

	Project	Submitted	PTI No.	Issued
1.	Water Pollution Control	4/11/84	05-1043	NA
2.	Stormwater/Spill Retention Facility	9/30/87	05-1043	11/18/87
3.	Process Wastewater Biodenitrification	3/11/89	05-3672	4/26/89
4.	Biodenitrification Surge Lagoon Facility	11/18/87	05-2872	12/16/87
5.	Plant 6 Sump Reconstruction	3/31/87	05-2405	7/27/87

PERMIT LIST (cont.)

	Project	Submitted	PTI No.	Issued
6.	Tank Farm Padwater Collection and Neutralization Sump	11/25/87	05-2873	1/26/88
7.	General Sump/Lime Handling System	9/1/88	05-3368	11/8/88
8.	Modification Plant 8 Sump	11/22/88	05-3518	1/3/89
9.	Decontamination and Decommissioning Facility	9/15/88	05-3390	11/8/89

FMPC Ohio Air Permits

- See Attached List -

FMPC - Ohio Air Permits
31-August-89

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
1	Large auger sampler	1-001	P162
1	Pincutter	1-002	P163
1	Fitzpatrick mill	1-003	P163
1	Safe geom feed dumping stat	1-004	P165
1	D105 digester	1-005	P166
1	Titan mill dumping station	1-006	P167
1	Titan mill	1-007	P168
1	Titan mill packaging stat	1-008	P177
1	East packaging station	1-009	P178
1	Shot blaster	1-012	P179
2/3	Liquid waste incinerator	None	14-400
2/3	Solid waste incinerator	None	N001
2/3	Slg leach digestion (D1-1)	2-001	P113
2/3	Slg leach digestion (D1-2)	2-002	P113
2/3	Slg leach digestion (D1-3)	2-003	P113
2/3	Ref thick slur proc (D1-4)	2-004	P116
2/3	Slg leach digestion (D1-5)	2-005	P117
2/3	Slg leach digestion (D1-6)	2-006	P118
2/3	Ref thick slur proc (D1-7)	2-007	P119
2/3	Slg leach digestion (D1-8)	2-008	P120
2/3	Slg leach digestion (D1-9)	2-009	P145
2/3	Uranyl nitrte st tk (D1-10)	2-010	T021
2/3	Uranyl nitrte st tk (D1-11)	2-011	T022
2/3	Uranyl nitrate st tk (F1-1)	2-012	T023
2/3	Uranyl nitrate st tk (F1-2)	2-013	T024
2/3	Uranylnitrate st tk (F1-25)	2-014	T025
2/3	Uranylnitrate st tk (F1-26)	2-015	T026
2/3	Uranylnitrate st tk (F2E-9)	2-016	T027
2/3	Uranylnitrate st tk (F2E-10)	2-017	T028
2/3	Nitric acid st (F1-18)	2-018	T005
2/3	Nitric acid st (F1-17)	2-019	T006
2/3	Charcoal solv tr (F2E-1)	2-020	P214
2/3	W. metal diss (F2E-11)	2-021	P215

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
2/3	Nitric acid st tk (F1-23)	2-023	T007
2/3	Dil nitric st tk (F1-24)	2-024	T008
2/3	Nitric acid st tk (F1-8)	2-025	T009
2/3	Uranylnitrate st tk (F2E-6)	2-026	T029
2/3	Nitric acid wash st (F2E-7)	2-027	T030
2/3	Uranyl nitrate st (F2E-5)	2-028	T032
2/3	Uranyl nitrate st (F2E-8)	2-029	T031
2/3	Slopwater st tk(F2E-4(25A))	2-030	T033
2/3	Slopwater st tk(F2E-4(26A))	2-031	T034
2/3	Slg leach dumping station	2-032	P122
2/3	B raffinate storage 2A	2-034	T091
2/3	B raffinate storage 2B	2-035	T090
2/3	Solvent storage tk (G2-4)	2-036	T109
2/3	Duty solvent stor (D1-117)	2-037	T110
2/3	Slopwater st tk (D1-129)	2-038	T036
2/3	A raffinate st tk (D1-123)	2-039	T089
2/3	Slopwater st tk (D1-130)	2-040	T035
2/3	Slopwater st tk (D1-131)	2-041	T044
2/3	Neut. of solvent (F1-502)	2-042	P121
2/3	Water mix tank (F1-504)	2-043	P205
2/3	Solvent st tk (F1-506)	2-044	T051
2/3	Extraction settler (Y1)	2-046	P123
2/3	Extraction settler (Y2)	2-047	P124
2/3	Extraction settler (Y3)	2-048	P125
2/3	Extraction settler (Y4)	2-049	P126
2/3	Extraction settler (Y5)	2-050	P127
2/3	Extraction settler (Y6)	2-051	P128
2/3	Extraction settler (Y7)	2-052	P129
2/3	Extraction settler (Y8)	2-053	P130
2/3	Extraction settler (Y9)	2-054	P131
2/3	Extraction settler (Y10)	2-055	P132
2/3	Extraction settler (Y11)	2-056	P133
2/3	Extraction settler (Y12)	2-057	P134

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
2/3	Extraction settler (Y13)	2-058	P135
2/3	Extraction settler (Y14)	2-059	P136
2/3	Extraction settler (Y15)	2-060	P137
2/3	Extraction settler (Y16)	2-061	P138
2/3	Extraction settler (Y17)	2-062	P139
2/3	Extraction settler (Y18)	2-063	P140
2/3	Extraction settler (Y19)	2-064	P141
2/3	Extraction settler (Y20)	2-065	P142
2/3	Extraction settler (Y21)	2-066	P143
2/3	Extraction settler (Y22)	2-067	P144
2/3	Caustic storage (D1-174)	2-068	T050
2/3	Decanter (process)	2-069	P160
2/3	Carbonate st tk (F1-500)	2-070	T052
2/3	Carbonate st tk (F1-501)	2-071	T053
2/3	Decanter (F1-107)	2-072	P161
2/3	Raff mixer tk (D1-110)	2-073	P207
2/3	Raff st tk (D1-111)	2-074	T054
2/3	Raff mixer tk (D1-125)	2-075	P209
2/3	Raff storage (D1-126)	2-076	T055
2/3	TBP & kerosene mixing	2-077	P211
2/3	A-1 column (D1-128)	2-078	P187
2/3	A-2 column (D1-102)	2-079	P188
2/3	A-3 column (D1-100)	2-080	P189
2/3	A-4 column (D1-127)	2-081	P190
2/3	B-1 column (D1-103)	2-082	P191
2/3	B-3 column (D1-101)	2-083	P192
2/3	C-1 column (D1-104)	2-084	P193
2/3	C-2 column (D1-112)	2-085	P194
2/3	C-3 column (D1-114)	2-086	P195
2/3	C-4 column (D1-113)	2-087	P196
2/3	Sulfuric acid storage	2-088	T067
2/3	Dirty solv storage tk 5A	2-089	T066
2/3	Dirty solv storage tk 5B	2-090	T065

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
2/3	Dirty solv storage tk 17A	2-091	T064
2/3	Dirty solv storage tk 17B	2-092	T063
2/3	Dirty solv storage tk 17C	2-093	T062
2/3	Solvent storage tk (F1-512)	2-094	T068
2/3	Nitric acid stor (F2E-501)	2-095	T010
2/3	Nitric acid stor (F2E-502)	2-096	T011
2/3	OK liq stor tk (F3E-222)	2-097	T069
2/3	OK liq stor tk (F3E-223)	2-098	T070
2/3	OK liq stor tk (F3E-224)	2-099	T071
2/3	OK liq stor tk (F3E-225)	2-100	T072
2/3	Denitration pot (D1-201)	2-101	P146
2/3	Denitration pot (D1-202)	2-102	P147
2/3	Denitration pot (D1-203)	2-103	P148
2/3	Denitration pot (D1-204)	2-104	P149
2/3	Denitration pot (D1-205)	2-105	P150
2/3	Denitration pot (D1-206)	2-106	P151
2/3	Denitration pot (D1-207)	2-107	P152
2/3	Denitration pot (D1-213)	2-113	P153
2/3	Denitration pot (D1-214)	2-114	P154
2/3	Denitration pot (D1-215)	2-115	P155
2/3	Denitration pot (D1-216)	2-116	P156
2/3	Denitration pot (D1-217)	2-117	P157
2/3	Denitration pot (D1-218)	2-118	P158
2/3	Denitration pot (D1-219)	2-119	P159
2/3	Condensate stor tk (F1-208)	2-120	T078
2/3	N. oliver filter (D1-301)	2-121	P197
2/3	S. oliver filter (D1-302)	2-122	P198
2/3	S.L. stor tk (F1-301)	2-123	T047
2/3	S.L. stor tk (F1-302)	2-124	T048
2/3	S.L. stor tk (F1-303)	2-125	T049
2/3	Filtrate stor tk (F1-308)	2-126	T073
2/3	Filtrate stor tk (F1-309)	2-127	T074
2/3	Neut of filter cake(F1-313)	2-128	P199

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
2/3	Lime stor (F1-314)	2-129	T075
2/3	Neut of filter cake(F1-318)	2-130	P200
2/3	Nitric acid stor (D3-2)	2-134	T012
2/3	Nitric acid stor (D3-27)	2-135	T013
2/3	Nitric acid stor (F3-12)	2-136	T014
2/3	Nitric acid stor (F3-19)	2-137	T015
2/3	Dil nitric stor (F3-22)	2-138	T016
2/3	Dil nitric stor (F3-23)	2-139	T017
2/3	Dil nitric stor (F3-24)	2-140	T018
2/3	Dil nitric stor (F3-25)	2-141	T019
2/3	Cond hold tk (F3E-7)	2-142	T020
2/3	Filtrate stor (SL) (F1-310)	2-143	T077
2/3	Filtrate stor (SL) (F1-311)	2-144	T079
2/3	Filtrate stor (SL) (F1-312)	2-145	T080
2/3	Filtrate stor (SL) (F1-317)	2-146	T081
2/3	Raff stor tk (F1-400)	2-147	T059
2/3	Raff stor tk (F1-401)	2-148	T057
2/3	Raff stor tk (F1-402)	2-149	T058
2/3	Raff stor tk (F1-403)	2-150	T056
2/3	Evap stor tk (F1-405)	2-151	T102
2/3	Acid cond stor (F1-407)	2-152	T082
2/3	Evap prod stor (F3E-404)	2-153	T103
2/3	Evap prod stor (F3E-405)	2-154	T104
2/3	Uranyl nitrte stor(F3E-406)	2-155	T043
2/3	Filtrate stor (SL)(F3E-408)	2-156	T085
2/3	Filtrate stor (SL)(F3E-409)	2-157	T101
2/3	Slopwater stor tk (F2E-601)	2-158	T046
2/3	Thickener tk(proc)(F2E-602)	2-159	P201
2/3	Slopwater stor tk (F1-608)	2-160	T045
2/3	MgO slurry tk (F1-611)	2-163	P206
2/3	Raff thickner slur (F1-612)	2-164	T061
2/3	Nitricacid washstor(F1-613)	2-165	T083
2/3	Uranyl nitr stor tk(F2-605)	2-167	T042

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
2/3	Uranyl nitr stor tk(F2-606)	2-168	T041
2/3	Uranyl nitr stor tk(F2-607)	2-169	T040
2/3	Uranyl nitr stor tk(F2-608)	2-170	T039
2/3	North packaging station	2-171	P202
2/3	South packaging station	2-172	P203
2/3	Nitr acid stor tk (F3-2)	2-173	T084
2/3	Nitr acid stor tk (F1-201)	2-174	T087
2/3	A raff stor (D1-124)	2-175	T060
2/3	Uranyl nitr stor (E1-200)	2-176	T038
2/3	Uranyl nitr stor (E1-201)	2-177	T037
2/3	Ammonia stripper	2-178	P006
2/3	Metal dissolver	2-179	14-1511
4	Bank 7	4-001	P083
4	Bank 8	4-002	P081
4	Bank 9	4-003	P082
4	Talcum reactor bank 7	4-004	P083
4	Talcum reactor bank 8	4-005	P081
4	Talcum reactor bank 9	4-006	P086
4	Portable packaging station	4-007	P087
4	Packaging station no. 1	4-008	P088
4	Packaging station no. 2	4-009	P089
4	Packaging station no. 3	4-010	P090
4	Drumming station	4-011	P110
4	Drum dumper	4-012	P111
4	Reject green salt	4-013	P112
4	Nitric acid tk 1300-tk farm	4-021	14-1137
4	Nitric acid tk 1400-tk farm	4-022	14-1137
4	Dil HF stor tk 1500-tk farm	4-023	14-1137
4	Dil HF stor tk 1600-tk farm	4-024	14-1137
4	AHF st tk-tkfarm T-19X-1800	4-025	T128
4	AHF st tk-tkfarm T-19X-1900	4-026	T129
4	AHF st tk-tkfarm T-19X-2000	4-027	T130
4	AHF st tk-tkfarm T-19X-2100	4-028	T131

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
5	East jolters, jolter A	5-001	P033
5	East jolters, jolter B	5-002	P033
5	East jolters, jolter C	5-003	P033
5	East jolters, jolter D	5-004	P033
5	East jolters, jolter E	5-005	P033
5	East jolters, jolter F	5-006	P033
5	West jolters, jolter H	5-007	P056
5	West jolters, jolter I	5-008	P056
5	West jolters, jolter J	5-009	P056
5	West jolters, jolter K	5-010	P056
5	West jolters, jolter L	5-011	P056
5	# 1 "F" machine	5-012	P061
5	# 3 "F" machine	5-013	P062
5	# 4 "F" machine	5-014	P063
5	# 5 "F" machine	5-015	P064
5	East side capping station	5-016	P062
5	West side capping station	5-017	P064
5	Breakout	5-018	P094
5	Slag crushing (east)	5-019	P038
5	Breakout, west	5-020	P095
5	Slag C, west	5-021	P039
5	E - casting no. 1	5-022	P040
5	E - casting no. 2	5-023	P040
5	E - casting no. 3	5-024	P040
5	E - casting no. 4	5-025	P040
5	E - casting no. 5	5-026	P040
5	E - casting no. 6	5-027	P040
5	E - casting no. 7	5-028	P040
5	E - casting no. 8	5-029	P040
5	E - casting no. 9	5-030	P040
5	E - casting no. 10	5-031	P040
5	E - casting no. 11	5-032	P040
5	E - casting no. 12	5-033	P040

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
5	E - casting no. 13	5-034	P040
5	E - casting no. 14	5-035	P040
5	W - casting no. 15	5-036	P067
5	W - casting no. 16	5-037	P067
5	W - casting no. 17	5-038	P067
5	W - casting no. 18	5-039	P067
5	W - casting no. 19	5-040	P067
5	W - casting no. 20	5-041	P067
5	W - casting no. 21	5-042	P067
5	W - casting no. 22	5-043	P067
5	W - casting no. 23	5-044	P067
5	W - casting no. 24	5-045	P067
5	W - casting no. 25	5-046	P067
5	W - casting no. 26	5-047	P067
5	W - casting no. 27	5-048	P067
5	W - casting no. 28	5-049	P067
5	E - burnout	5-050	P065
5	W - burnout	5-051	P011
5	E - separation booth	5-052	P065
5	Mold reconditioning	5-053	P054
5	Mold oven	5-054	P175
5	Gr mold machin-Monarch lathe	5-058	P176
5	Lehmann ODturning,block gr	5-061	P218
5	O. D. turning 16A	5-062	P169
5	O. D. turning 16B	5-063	P170
5	Cutting blocks	5-064	P171
5	Horizontal milling	5-065	P172
5	Slag storage bin no. 1	5-067	P091
5	Slag storage bin no. 2	5-068	P091
5	Undersized Slag Milling	5-069	P101
5	Slag storage bin no. 3A	5-070	P101
5	Slag storage bin no. 4	5-071	P101
5	Slag storage bin no. 5	5-072	P101

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
5	Slag storage bin no. 6	5-073	P101
5	Slag storage bin no. 7	5-074	P101
5	Slag storage bin no. 8	5-075	P101
5	Oversized Slag Milling	5-076	P091
5	Slag storage bin no. 250	5-078	P108
5	Slag storage bin no. 251	5-079	P108
5	West mold recond. booth	5-080	14-980
5	Ingot Separation Booth	5-081	14-980
5	West remelt crucible cleanr	5-082	14-972
5	West Wagner coldsaw,U ingot	5-084	P054
5	Crucible grit blaster	5-085	P230
5	Plasma spray-cruciblecoatng	5-086	P230
5	Ingot pickling facility	5-092	P007
5	Graphite band saw	5-093	14-762
5	Graphite mill 415-16	5-094	14-1094
5	West separation booth	5-095	P054
5	East derby breakout	5-096	14-1483
5	West derby breakout	5-097	14-1483
5	Enriched slag milling	5-098	14-1516
6	Finish core machining	6-003	P032
6	Centerless grinding	6-004	P211
6	Tool grinding	6-005	P031
6	Test mat'ls machining - A	6-006	P028
6	Test mat'ls machining - B	6-007	P029
6	Test mat'ls machining - C	6-008	P023
6	O.D. turning of test cores	6-009	P023
6	Extrusion blanking - 5A	6-010	P025
6	Extrusion blanking - 6A	6-011	P026
6	Extrusion blanking - 2E	6-012	P096
6	Extrusion blanking - 3E	6-013	P097
6	Extrusion blanking - 4E	6-014	P098
6	Blanking bar ends	6-015	P023
6	Extrusion core blnkng no.35	6-016	P023

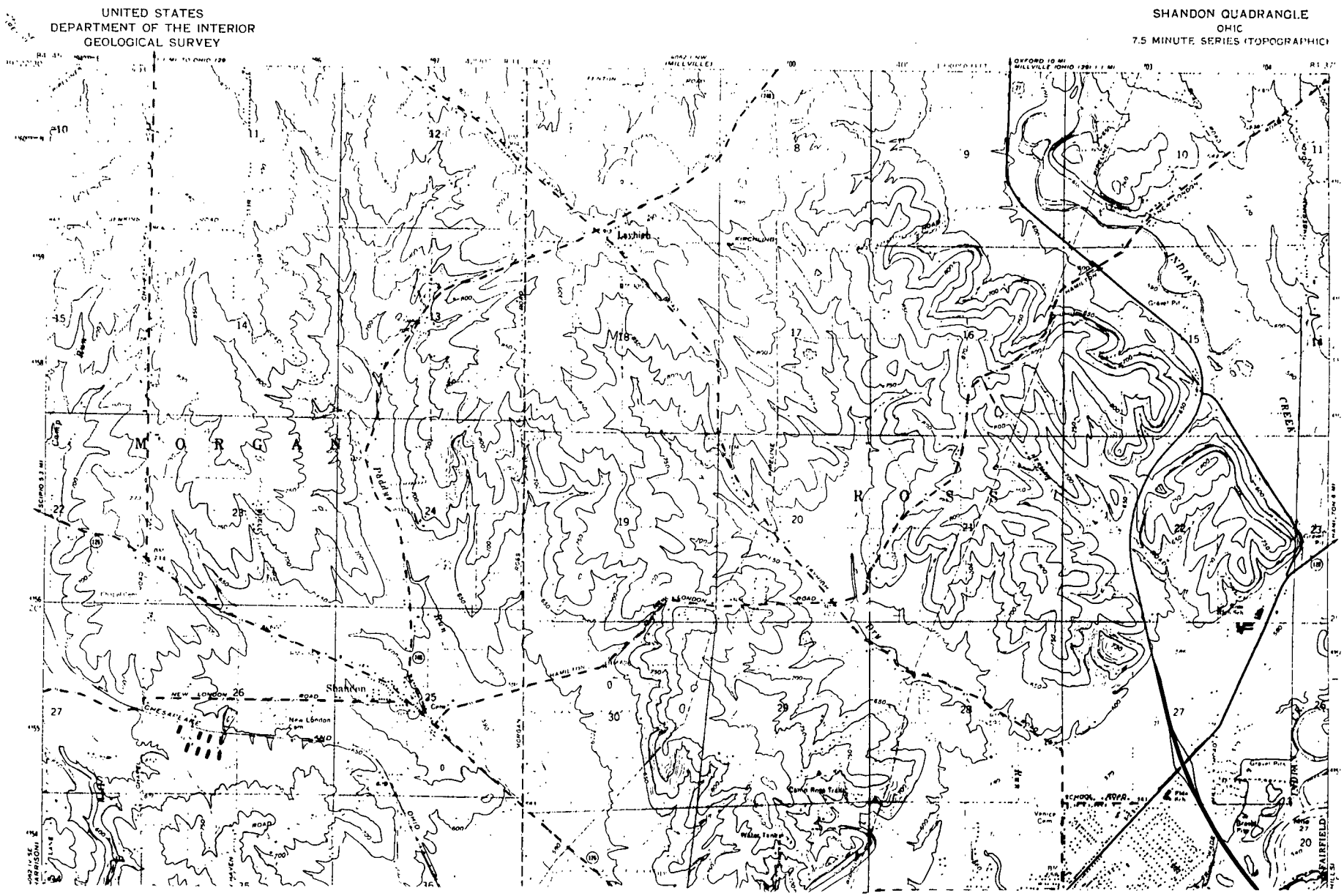
Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
6	Chip pickling	6-018	P212
6	Tool grinding G & L no. 62A	6-019	P022
6	Tool grinding G & L no. 62B	6-020	P022
6	Tool grinding G & L no. 70	6-021	P022
6	Tool grinding CMM - no. 1	6-022	P022
6	Tool grinding CMM - no. 2	6-023	P022
6	Internal-external grinding	6-024	P022
6	Surface grinding	6-025	P022
6	Tool grinding G & L no. 10	6-026	P022
6	Tool grinding G & L no. 5	6-027	P022
6	Tool grinding do all	6-028	P022
6	Surface grinding do all	6-029	P022
6	Surface grinding Thompson	6-030	P022
6	Brazing	6-031	P022
6	Cut-off	6-032	P022
6	Tool grinding std. electric	6-033	P022
6	Surface cleaning	6-034	P022
6	Wire brushing	6-035	P022
6	Belt sanding	6-036	P022
6	Tool grinding V & M	6-037	P022
6	Tool grinding Rockwell	6-038	P022
6	Tool grinding Sheffield	6-039	P022
6	Scrap pickling	6-040	P217
6	Slug pickling	6-041	P210
6	Fresh acid receiving tank	6-042	T092
6	Spent acid tank	6-043	T093
6	Spent acid tank (6000 gal)	6-044	T094
6	Decantation tank	6-045	T095
6	Scrap pickling facility	6-053	14-1432
8	Rotary kiln	8-001	P180
8	Muffle furnace	8-002	P181
8	Primary calciner	8-003	P182
8	Oxidation furnace #1	8-004	P183

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
8	Oxidation furnace #2	8-005	P184
8	Box furnace	8-006	P185
8	Rotex screening	8-007	P186
8	Drum washer	8-013	P204
8	Caustic stor tank A	8-021	T002
8	Caustic stor tank B	8-022	T003
8	Caustic stor tk (F43-108)	8-023	T004
8	Filtrate stor tk (21A)	8-024	T096
8	Filtrate stor tk (22A)	8-025	T097
8	Filtrate stor tk (25A)	8-026	T098
8	Filtrate stor tk (28A)	8-027	T099
8	Accountability tank	8-028	T100
8	Drum reconditioning	8-030	P231
8	Drum coating line	8-031	K001
9	Separation booth	9-001	P020
9	Crucible charg./burnout stn.	9-002	P020
9	Remelt furnace # 91	9-003	P020
9	Remelt furnace # 92	9-004	P020
9	J & L model 30 lathe	9-005	P219
9	North Duomatic lathe	9-006	P012
9	East Duomatic lathe	9-007	P013
9	North Gisholt lathe	9-008	P014
9	South Gisholt lathe	9-009	P015
9	Nitric storage tank	9-010	T001
9	Zirnlo Process HNO3 Declad Tk.	9-011	P008
9	Mold cleaning station	9-012	P020
9	W & S turret lathe	9-013	P016
9	Gisholt turret lathe	9-014	P017
13	North spent solv tk	13-001	T121
13	South spent solv tk	13-002	T120
13	Spil stor tk westside(F100)	13-003	T107
13	Spil stor tk westside(F101)	13-004	T106
13	Solvent stor tk (T5)	13-008	T108

Plant Number	Source Description	FMPC I.D.#	OEPA I.D.#
13	Solvent stor tk (T6)	13-009	T105
13	Caustic stor tank	13-010	T086
13	Nitric acid stor tk	13-011	T088
13	Derby shot blaster	13-013	P213
13	Crucible grit blaster	13-014	P174
13	Pilot plant remelt furnace	13-015	P173
13	UF6-UF4 #1	13-020	14-623
13	UF6-UF4 #2	14-006	14-652
B.P.	Boiler #1	10-001	B001
B.P.	Boiler #2	10-002	B002
B.P.	Boiler #3	10-003	B003
misc.	FMPC dry cleaning facility	11-001	D001
misc.	Mntnce shp dieslfuel stg tk	12-002	T117
Misc.	General sump	18-001	14-1510
Misc.	No.3 wellpumphouse strge tk	20-001	T116
Misc.	RR enghous dieslfuel stg tk	24-001	T113
Misc.	Garage gas strge tank WMCO	31-001	G001
Misc.	Garage gas strge tk vanpool	31-002	G002
Misc.	Garage diesel fuel strge tk	31-003	T115
Misc.	Truck dock kerosene strg tk	31-004	T114
Misc.	Wstepitarea dieslfuel st tk	46-001	T118
Misc.	Methanol storage tank	46-003	T127
Misc.	K-65 silo #1	65-001	T111
Misc.	K-65 silo #2	65-002	T112

FIGURE A-1

LOCATION OF FMPC RELATIVE
TO SURROUNDING COMMUNITY



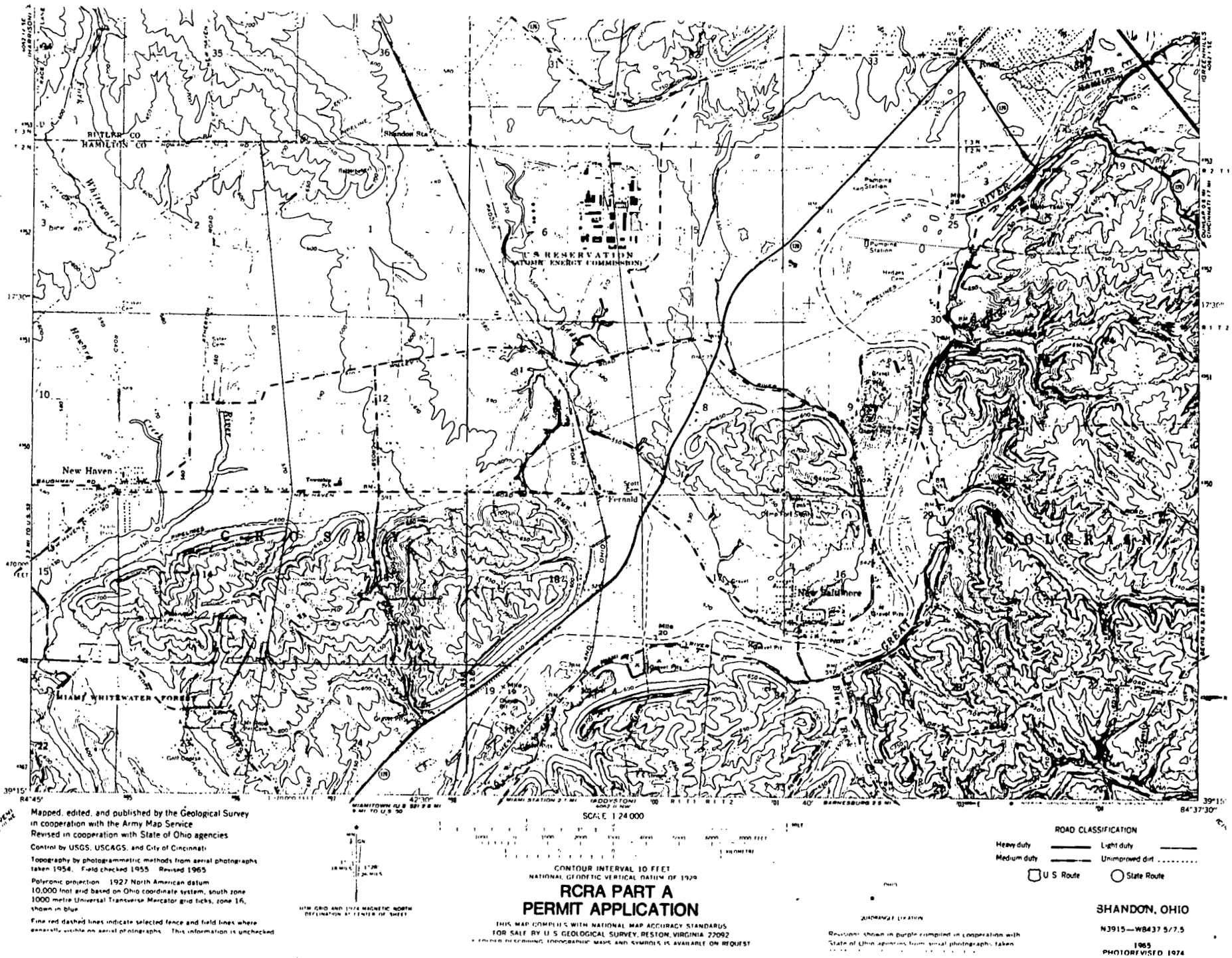
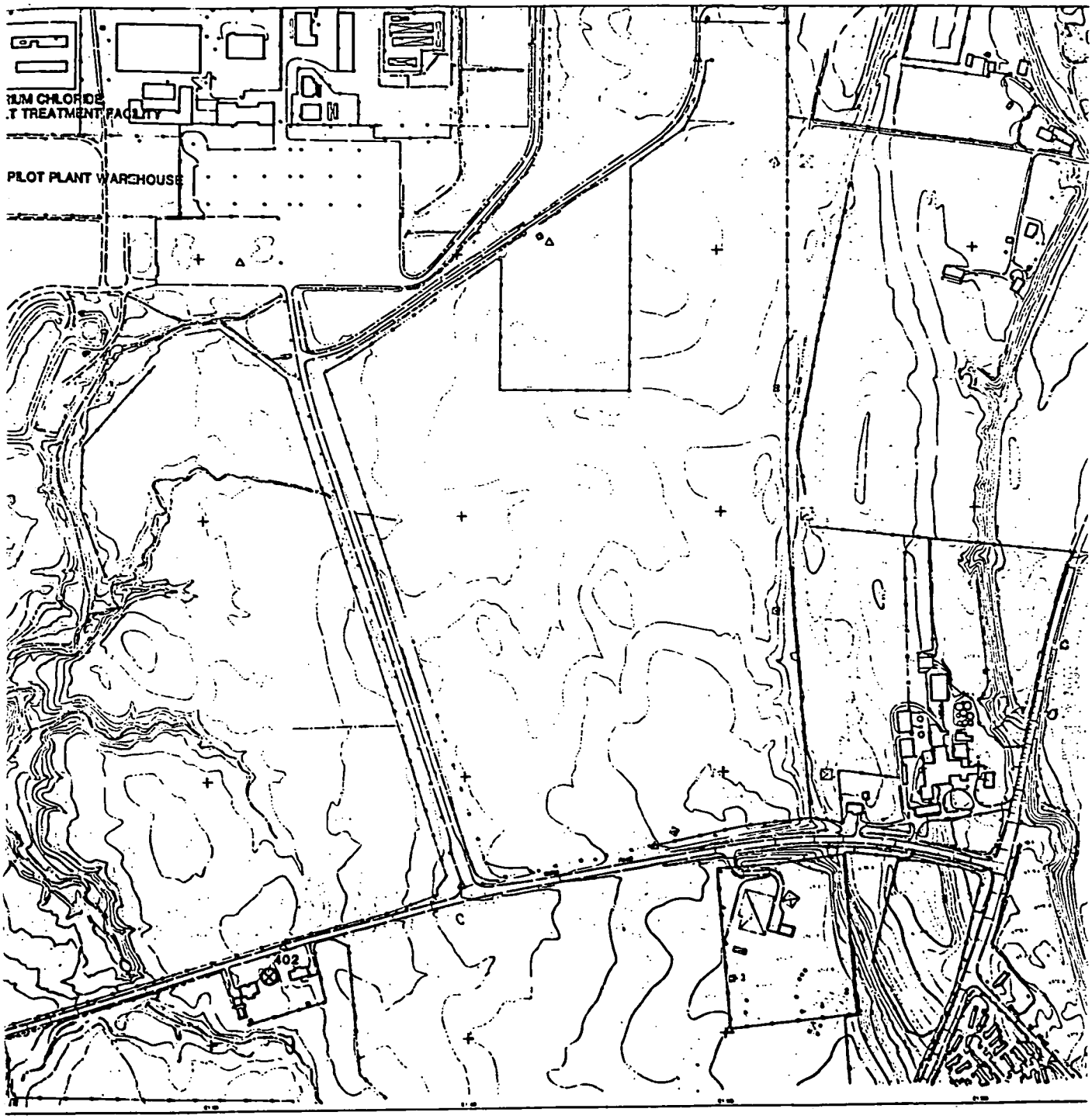


Figure A-1(continued)

FIGURE A-2

UNIT LOCATION MAP - SOUTH SECTION

255



RT A PERMIT APPLICATION

ial Production Center

LEGEND:

■ = INACTIVE

⊗ = DRINKING WELLS

⊗ = PRODUCTION WELLS

WESTON

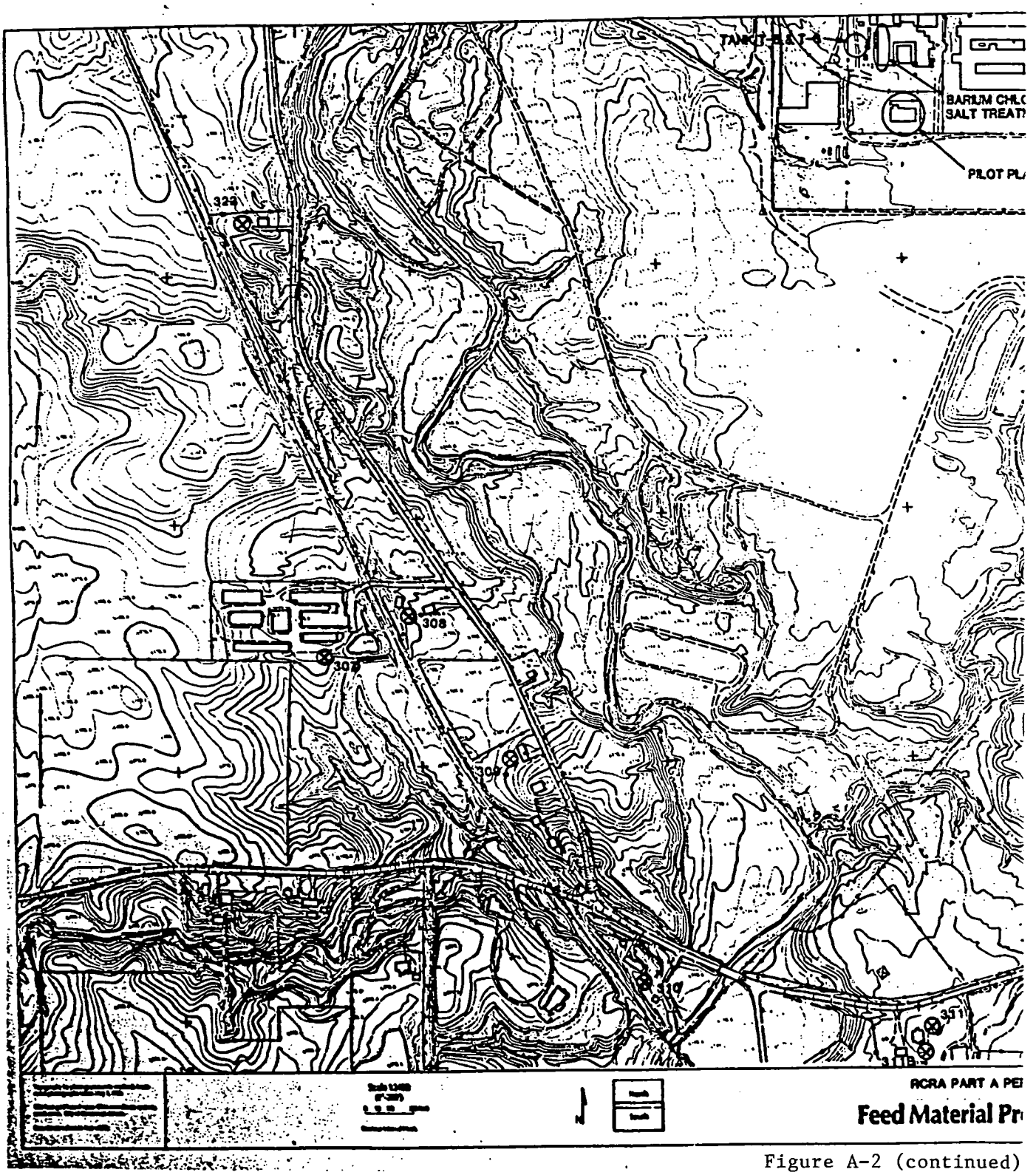
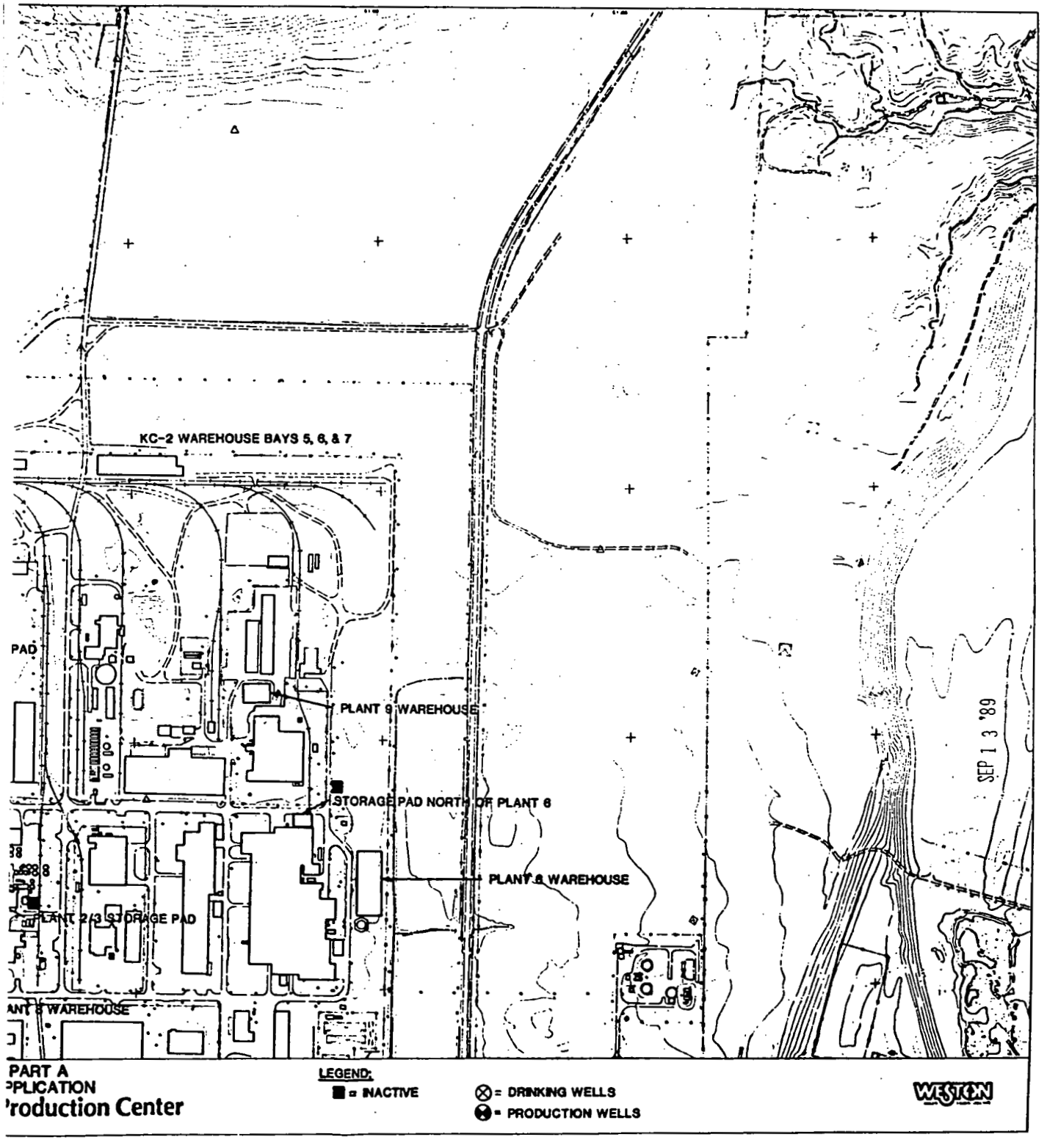


Figure A-2 (continued)

FIGURE A-3

UNIT LOCATION MAP - NORTH SECTION



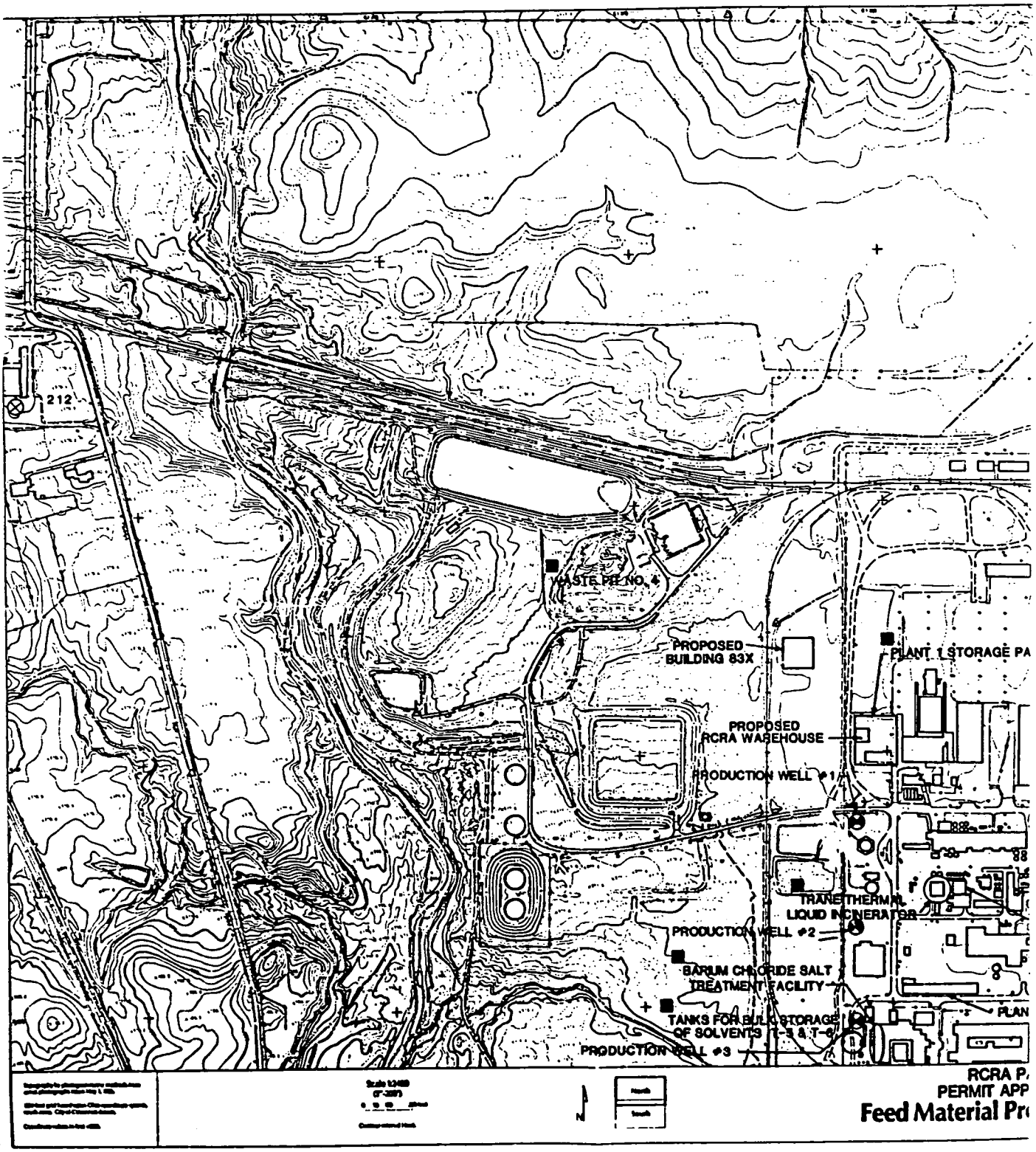


Figure A-3 (continued)

RCRA PART B
PERMIT APPLICATION

SECTION B - FACILITY DESCRIPTION

SEPTEMBER 22, 1989

FEED MATERIALS PRODUCTION CENTER
U.S. DEPARTMENT OF ENERGY
CINCINNATI, OHIO 45239-8705

U.S. EPA IDENTIFICATION NO. OH6890008976
OHIO EPA PERMIT NO. 05-31-0681

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None

SECTION B - FACILITY DESCRIPTION

Part B Permit Application
Feed Materials Production Center
Fernald, Ohio

This section provides a general description of the FMPC facility as required by Federal regulation 40 CFR 270.14(b) and Ohio regulation 3745-50-44(a)(1). More complete and detailed information can be found in other parts of this permit application. Section C-1 contains a waste characterization of each of the hazardous waste streams at the FMPC. Section D describes the specific process information for the processes used at the FMPC to handle and store RCRA hazardous waste streams and radioactive mixed waste streams.

B-1 GENERAL DESCRIPTION

All hazardous waste management units identified within this section of the permit application are located within the Feed Materials Production Center (FMPC) facility boundary. The FMPC is owned and operated by the United States Department of Energy (DOE). Operational guidance and program direction for the FMPC are administered through the DOE Oak Ridge Operations Office (ORO) Weapons Division.

The FMPC is located on a 1050-acre Federal Reservation in the Ohio counties of Hamilton and Butler. The FMPC is situated approximately 20 miles northwest of Cincinnati, Ohio between the small villages of Ross and Fernald. Figure B-1 shows the location of the FMPC relative to the surrounding community. (Note: Figures and Tables are located at the end of this section.)

The FMPC is a large-scale integrated production facility for supplying uranium metal for the DOE defense programs. Because the FMPC operations involve uranium, most of the hazardous waste at the facility is considered

radioactive mixed waste, ie. hazardous waste mixed with radioactive material. Only the hazardous component of the radioactive mixed waste is regulated under the Resource Conservation and Recovery Act (RCRA). Unless otherwise delineated, all references herein to hazardous waste mean radioactive mixed waste.

Specific radioactive mixed waste streams generated or stored at the FMPC include: 1,1,1-trichloroethane; barium chloride; oils containing lead and/or 1,1,1-trichloroethane; tetrachloroethylene; and other miscellaneous spent halogenated solvents. Degreasing operations onsite are the principal source for generation of 1,1,1-trichloroethane. Contaminated oils are generated mainly from the FMPC machining operations. RCRA regulated burnable wastes such as oils are being stored at the FMPC until they can be sent to the K-1435 Incinerator in Oak Ridge, Tennessee. This incinerator is in the process of being permitted by the United States Environmental Protection Agency to burn radioactive mixed waste. Once permitting is completed, the burnable radioactive mixed waste will be sent to Oak Ridge for incineration. Permitting of the incinerator is anticipated by January 1990.

Off-site wastes resulting from DOE programs at other facilities have been received at the FMPC. Wastes from these off-site facilities are considered radioactive mixed wastes.

The following describes the radioactive mixed waste Treatment, Storage, and Disposal (TSD) units that are or will be located within the FMPC facility boundary:

- Plant 6 Warehouse - Building 79 (Storage Unit): This storage unit measures 100′ x 170′ and serves as a storage area for hazardous waste. The floor space is divided into three areas by means of containment dikes.

- KC-2 Warehouse, Bays #5, #6, and #7 (Storage Unit): This warehouse contains three storage bays wherein various hazardous wastes are stored. The bays measure 70′ x 36′, 70′ x 36′, and 20′ x 70′, respectively.

- Pilot Plant Warehouse - Building 68 (Storage Unit): The Pilot Plant Warehouse - Building 68 is a hazardous waste storage unit. Drums of RCRA hazardous waste are stored in a 62′ x 7′ diked area. This area is completely enclosed within the warehouse and accounts for only a portion of the warehouse's total available floor space.

- Plant 8 Warehouse - Building 80 (Storage Unit): The unit measures 60′ x 170′. Built in November 1988, this unit stores drums of radioactive mixed waste.

- Plant 9 Warehouse - Building 81 (Storage Unit): The unit measures 80′ x 100′ and was completed in November 1988. This unit may store radioactive mixed waste.

- Proposed RCRA Warehouse (Storage Unit): This storage unit will be built on the Plant 1 Storage Pad northeast of Plant 1. The unit will be a pre-engineered structure (80′ x 120′) with a paved access leading to two electrically operated roll-up steel doors.

- Proposed Building 83X Warehouse (Storage Unit): This warehouse will be divided into three areas measuring 80′ x 500′, 45′ x 45′, and 50′ x 160′. It will be used to store radioactive mixed waste.

- Waste Pit #4 (Disposal Unit): This 53,000 yd^3 clay-lined covered pit, which occupies 2.2 acres, operated from 1960 through 1985 as a disposal unit for various materials, including process residues, noncombustible trash, asbestos, construction rubble and graphite. A total of 1.43×10^6 pounds of low-level radioactive waste were disposed in this unit. However, during the years from 1981 through 1983,

approximately 23,500 pounds of barium chloride ($BaCl_2$), a hazardous waste salt shipped to the FMPC from RMI, were buried in the pit. The presence of barium (Ba) in this unit in concentrations above the toxicity limits of greater than 100 parts per million (ppm) subjects this unit to RCRA regulations. Interim closure of this unit was completed in July 1989, with the construction of a clay cap and installation of a flexible membrane covering.

- Bulk Solvent Storage Tank, T-5 (Storage Unit): This above-ground unit, located west of the Pilot Plant, has a total storage capacity of 10,000 gallons. This unit ceased operation in July 1989 when the contents were removed and placed in drummed interim storage at the FMPC. Interim storage of the waste will continue until such time when the wastes can be shipped to the K-1435 Incinerator in Oak Ridge, TN for final disposition. Closure of this unit will begin upon approval of the closure plan by the Ohio Environmental Protection Agency (OEPA).

- Bulk Solvent Storage Tank, T-6 (Storage Unit): This above-ground unit is located immediately adjacent to storage unit T-5 and is nearly identical in all respects. Likewise, the liquid hazardous waste was removed and placed in drummed interim storage at the FMPC until such time when it can be shipped to the K-1435 Incinerator in Oak Ridge, TN for final disposition. Closure of this unit will begin following approval of the closure plan by the OEPA.

- Storage Pad North of Plant 6 (Storage Unit): This small 8′ x 40′ concrete pad north of Plant 6 has been identified as a hazardous waste storage unit because it stored drums containing waste oils containing lead and 1,1,1-trichloroethane generated by the FMPC Plant 6 machining operations and furnace salt. Closure of this unit will begin following approval of the closure plan by the OEPA.

- Plant 1 Storage Pad (Storage Unit): This concrete storage pad is an irregular shape and measures approximately 375,000 ft^2. Radioactive

mixed wastes were previously stored here. Closure of this unit will begin following approval of the closure plan by the OEPA.

- Trane Thermal Liquid Incinerator (Treatment Unit): This unit was used to burn radioactive waste oils generated at the FMPC and operated from 1980 until May 7, 1986. The oil incinerated in this unit has been characterized as radioactive mixed waste because of the presence of lead and 1,1,1-trichloroethane. Closure of this unit will begin pending approval of the closure plan by the Ohio Environmental Protection Agency.

- Plant 2/3 Storage Pad (Storage Unit): This 105′ x 45′ unit functioned as a dual-purpose staging area for oils, which were to be shipped to the DOE K-1435 Incinerator in Oak Ridge, Tennessee or which were to be burned in the adjacent Trane Incinerator at the FMPC. Drummed oil was received here from the FMPC machining operations. As described above, some of these oils were determined to be radioactive mixed waste (containing lead and 1,1,1-trichloroethane). Drums of spent TBP and kerosene, dust collector residue, and magnesium fluoride were also stored on this pad. The Plant 2/3 Storage Pad is being closed as part of the Trane Incinerator closure.

- Barium Chloride Waste Salt Treatment Facility (Treatment Unit): This unit functioned as a pilot scale operation from December 1985, until March 1986, (a total run time of four months). A process was developed to convert water- soluble barium chloride ($BaCl_2$) to water-insoluble barium sulfate ($BaSO_4$) using existing equipment in the FMPC Pilot Plant. The process was comprised basically of four tanks, two plate and frame filter presses, and associated piping. The process involved digestion of the $BaCl_2$ in water, filter press removal of uranium, and precipitation of $BaSO_4$ upon addition of ammonium sulfate ($(NH_4)_2SO_4$). During the four-month operational test period, a total of 28 drums (18,300 lbs.) of $BaCl_2$ were processed and converted into $BaSO_4$. This

unit is currently undergoing closure and will be closed in accordance with an approved closure plan.

The locations of these TSD units are presented in Figures B-2 and B-3, which also are the required topographic maps.

B-2 TOPOGRAPHIC DESCRIPTION

B-2a General Requirements

Several maps and drawings have been provided to satisfy the topographic map requirements in OAC 3745-50-44(A)(19) and (B)(3) and 40 CFR, 270.14(b)(19). The site plan, production facility boundaries, and locations of all on-site buildings are shown in Figures B-2 and B-3. The locations of the TSD hazardous waste management units are identified and marked.

- Topography: Figures B-2 and B-3 also show the topography of the FMPC site and the surrounding area of approximately 1000 feet beyond the property line. The topography was made by photogrammetric methods from aerial photographs taken May 3, 1986, using a 1000 foot grid based upon the Ohio coordinate system, south zone, City of Cincinnati datum, coordinate values in feet x 1000.

  All of the production facilities are shown on these drawings and are oriented in a north/south direction and occupy approximately 136 acres in the center of the site. Topographically, the production area is on a relatively level plane at about 580 feet above sea level. North of the production area the elevation rises to about 700 feet at the northern boundary of the site. The western and southern edges of the site slope toward Paddy's Run to an elevation of about 550 feet.

- One Hundred Year Floodplain Area: The floodplain of the FMPC facility is shown on Figures B-4 and B-5. The information was taken from FIRM FLOOD INSURANCE RATE MAP, Panel 10 of 105, (community-panel) number 390204 001 B, effective date June 1, 1982, and the Weston contour maps figure B-2 and B-3. The floodplain is explained in more detail in Section B-3b.

- Legal Boundaries: Figures B-4 and B-5 are the plat plans of the FMPC site and the surrounding area. The legal boundaries are shown on this drawing.

- Access Control: The main access to the facility is from the south off Willey Road about 3300 feet west of State Route 128. A second access road to the facility is from the north off State Route 126. The main vehicle traffic entrance to the production area is located on the south side, through a locked gate that is under 24-hour surveillance by an armed guard. There is a personnel gate entrance into the plant proper and an entrance through the administration office--both are under armed guard. Also, there is a construction entrance to the plant through a locked gate located on the north side. When this gate is open, entrance into the plant proper is only possible if other, internal gates are open. When both the north construction gate and internal gates are open, the construction gate is under constant surveillance by an armed guard.

- Wind Rose: A wind rose indicating the wind speed and direction, based on the average hourly surface wind observations taken at the Greater Cincinnati Airport, is shown on Figure B-4.

- Map Orientation: The plant orientation as to Grid North, True North and Magnetic North is shown on Figure B-5.

- Injection and Withdrawal Wells: There are no known injection wells located in the vicinity of the FMPC site. There are three production (withdrawal) wells located in the southwest quadrant of the production area of the facility shown on Figure B-17. The depth of each of the wells is 210 feet and the depth to water of the three wells is between 55 and 60 feet. All water used at the FMPC facility is supplied by these production wells. Total water usage at the FMPC averages approximately 420,000 gallons per day; pump capacity of the three wells is 3,880,000 gallons per day.

- Off-site Wells: Several private drinking water wells within the 1000 feet of the property boundary are shown on Figures B-2 and B-3.

- Surface Water: Surface water bodies within 1,000 feet of the FMPC include Paddy's Run and the FMPC storm sewer system. Paddy's Run is a creek that runs inside and along the west FMPC property line.

  Surface water runoff from the production, administration, and parking lot areas is collected in a series of catch basins and is piped through an underground storm sewer system. In the 60 inch trunk line leading from the 136 acre production area, there is a 14 inch high dam that diverts flow to a low-flow pumping station having a capacity of approximately 450 gallon per minute. This station discharges into a force main that flows east approximately .8 mile and empties into the Great Miami River.

The overflow from the lift station, along with the flow from the downstream administration and parking areas, empties into one of two lined retention basins located south of the parking lot. The inflow to the basins is controlled by sluice gates located at the entrance to each basin. While water is flowing into the on-line basin, the water, which was previously collected in the off-line basin, is allowed to remain in the basin for 24 hours to allow suspended solids to settle. After 24 hours the off-line settled basin is emptied by pumping into a force main to the river by a 300 gallons per minute (gpm) pump. After the off-line basin is emptied, the basin sluice gates are reconfigured and the active basin is taken off-line for settling. The basins are designed to hold a 10-year 24-hour rainfall runoff. One basin has a capacity of 6.0×10^6 gallons and the second has a capacity of 4.2×10^6 gallons. In the event of overfill of the two basins, there is an overflow spillway that empties into the adjacent drainage ditch that discharges to Paddy's Run.

In case of an emergency, the lift station flow is either diverted to the general sump or is shut down, and all of the flow is directed to the online retention basin. The water in the retention basins can likewise be delivered to the general sump where it is treated as required and tested before it is sent to the Great Miami River.

The surface water from the surfaces of Waste Storage Pits 1, 2, 3, and 5 flows by gravity into the FMPC clearwell, an in-ground clay-lined basin. From there it is pumped into the Biosurge Lagoon, a flow equalization basin. Water collected in Waste Storage Pit 6 is likewise pumped to the Biosurge Lagoon. The water is pumped from the Biosurge Lagoon into the Biodenitrification treatment system, after

which it is directed into the general sump for pretreatment. The water subsequently goes through the sewage treatment plant and is discharged into the Great Miami River.

- Surrounding Land Use: The surrounding area land usages are shown on Figures B-4 and B-5. The major economic activities in the area are dairy farming, agricultural production, raising beef cattle, and small industry. Major farm crops include sweet corn, field corn, soybeans, and wheat.

  Population distribution located within a 10 mile radius of the FMPC facility is shown by compass sector in Table B-1.

- Hazardous Waste Management Units: The FMPC hazardous waste treatment, storage and disposal units are identified in Section B-1 and shown on Figures B-2 and B-3.

- Building and Structures: All buildings and major structures located within the production area of the FMPC are shown and identified on Figure B-6, Production Area Plot Plan.

- Sanitary and Process Sewers: The FMPC has separate process and sanitary sewer systems. All process and sanitary sewer waters are eventually sent to the NPDES-permitted, on-site wastewater treatment facilities. The FMPC sanitary treatment plant is a typical trickling filter type system consisting of a grit chamber, primary settling, trickling filters, secondary settling, and ultraviolet disinfection. There are also aerobic sludge digestion and sludge drying beds. The design capacity of the treatment plant is 500,000 gallons per day while the average flow per day is 125,000 gallons. The sewage treatment facility discharges into the Great Miami River.

- Traffic Information: The plant-wide road system is shown on Figures B-4, B-5 and B-6. Detailed traffic information is given in Section B-4.

- Loading and Unloading Areas: A detailed discussion of the loading and unloading areas of each of the treatment, storage, and disposal units located at the FMPC can be found in Section F-4, Preventive Procedures, Structures, and Equipment.

- Fire Control Facilities: Fire control facilities, including fire equipment, hydrants, and fire extinguishers are discussed in Section G, Contingency Plan.

B-2b Additional Requirements for Land Disposal Facilities

The FMPC Waste Pit 4 is listed landfill disposal unit for hazardous waste. Waste Pit No. 4 is a 53,000 cubic yard clay-lined pit located between the production area and the western boundary of the site. The location and topography of Waste Pit No.4 is shown in Figure B-2.

- Property Boundaries: The legal boundaries are shown on Figure B-4 and B-5. The proposed point of compliance is illustrated on Figure B-7.

- Groundwater Monitoring Well Locations: As part of the groundwater monitoring program at the FMPC, 9 RCRA monitoring wells, shown in Figure B-7, have been drilled in the Waste Pit Storage Area. The well network, designated as part of the Assessment Monitoring Program, enables representative groundwater samples to be collected from the till and three depths in the sand and gravel aquifer. These wells are located upgradient and downgradient of the waste

pit area. Detailed information is discussed in Section E of the RCRA Permit Application.

- Groundwater Flow Direction and Rate: Groundwater in the till in the eastern section of the FMPC site generally flows from the north east in a southwesterly direction at a rate of .001 to .3 feet per day. There is also a mound in the western portion of the waste pit area that has a radial flow from it.

  In the sand and gravel aquifer the groundwater flow tends generally eastward to southeastward across the waste pit area. The rate of flow is approximately 2.5 to 3 feet per day. Figures B-8 and B-9 prepared for the Fernald RI/FS U.S. Department of Energy, Oak Ridge Operations by Advance Science Inc., show the water level contours and indicate the direction of groundwater flow.

  Using site boring logs and related information, three cross sections have been created to depict subsurface conditions at specific locations in the waste pit areas. Figure B-10 shows the location where sections A-A′, B-B′ and C-C′ were taken. The actual cross sections are shown in Figures B-11, B-12 and B-13. Descriptions of the subsurface strata and the aquifers as indicated in the hydrogeologic cross sections are found in Section E.
  No plume of RCRA constituent contaminated groundwater has been delineated at the FMPC.

B-3 Location Information

B-3a Seismic Considerations

The OAC Title 3745 Chapter 50-44 and 40 CFR, 264, Appendix VI do not require the applicant to address seismic considerations.

B-3b 100-Year Floodplain Standard

The eastern boundary of the site is located approximately 3/4 of a mile west of the Great Miami River (GMR). The 100 year floodplain elevation of the GMR nearest the FMPC is approximately 548 feet above mean sea level. The information is taken from FIRM Flood Insurance Rate Map, Panel 10 of 105, (community-panel number 390204 001 B), effective date June 1, 1982 and the Weston topography maps of May 3, 1986, Figures B-2 and B-3. The boundaries for Hamilton County in the area of FMPC are shown on Figure B-4 and B-5.

The cross-hatched areas of the map, as shown in Figures B-4 and B-5, are those within the 100 year floodplain (zone A). A narrow band along the western side of the site is within the 100 year floodplain of Paddy's Run. The remainder of the facility is in Zone C (Areas of minimal flooding). The FMPC hazardous waste management units are located above the 100-year floodplain of the Great Miami River and Paddy's Run. Therefore, there is no need to provide flood control barriers.

B-3b(1) Demonstration of Compliance

The FMPC RCRA waste management units are located outside the 100-year floodplain.

B-3b(1)(a) Flood Proofing and Flood Protection Measures

This section is not required.

B-3b(1)(b) Flood Plan

This section is not required.

B-3b(2) Waiver

This section is not required.

B-3b(3) Plan for Future Compliance with Floodplain Standard

This section is not required.

B-4 Traffic Information

The primary entrance to the FMPC facility is located at the south side of the site. This entrance is off of Willey Road (which is off of State Route 128). Plant personnel, contractors, and some shipments are received through this entrance. It is approximately .5 miles from this entrance to Willey Road. A secondary entrance is located on the east side of the site on an access road between the primary entrance and State Route 126. This entrance is identified as the Receiving Building for miscellaneous receipts. A third entrance to the site is not used except in case of emergencies and is located at the north side of the site. This gate could be used, if it is absolutely necessary, for transporting waste off-site or on-site. This entrance is off of State Route 126 which intersects with State Route 128 at Ross, Ohio, northeast of the DOE/FMPC facility. State Routes 126, 128, and Willey Road are school bus routes and are well travelled and marked highways with speed limits of 55 miles per hour (Figure B-14).

Access to the facility is limited by perimeter fences and gates under continuous 24 hour, 7-day per week control by armed security patrolmen as described in Section F-1, Security.

Production facilities at the FMPC are located on approximately a 136 acre area. Waste generation varies according to production and remedial activities at the facility as will transportation of wastes. Figures B-2 and B-3 identify RCRA hazardous waste storage areas and Figure B-15 shows an example of a traffic route for transportation of hazardous waste. Traffic control signals within the FMPC facility consist of stop signs, yield signs, and speed limit signs (Figure B-16). All main roads within the plant site are two-way with an in-plant speed limit of 20 mph. Access roads have speed limits of 40 mph. There are no stacking or turning lanes within the plant. Within the site vehicles consist primarily of trucks, 4-wheel trailers, other company personnel transport vehicles, and industrial equipment. All employee vehicles are confined to the parking lots and entrance roads. The number of vehicles on plant roads varies from none to several depending on the time of day; however, vehicle traffic is normally light.

RCRA waste shipments to and from the site vary, depending on the following factors:

- Rate of production
- Capacity of FMPC hazardous waste storage
- Availability of off-site treatment/disposal for radioactive mixed waste
- Remedial activities.

Waste shipments to the site currently number approximately two per year. Other on-site traffic movement includes waste shipments from satellite accumulation areas to RCRA storage areas. Other waste movement, from storage area to storage area, is not a normal or scheduled activity and, thus, cannot be planned regularly. FMPC bases its selection of waste movement routes on the shortest route, the best road, and the least populated area, when possible. Most roadways are also used for pedestrian

traffic, therefore, caution is used in movement of wastes to ensure that loads are secured and will not endanger pedestrian traffic.

Existing on-site roads at the FMPC consist of two inches of bituminous concrete pavement (blacktop) overlaid on a 6 to 8 inch reinforced concrete slab pavement. The slab pavement is overlaid on 6 to 12 inches of compacted aggregate base. All new major roads are constructed of a similar cross section as the existing roads or of an asphaltic concrete surface wearing course overlaid on a stabilized aggregate base course. Maintenance of the FMPC's road system is conducted under FMPC's yearly program of road upgrading, which is conducted by Maintenance Operations and will consist of repaving or replacement, as needed.

All on-site roads are capable of bearing loads up to allowable state highway limitations of 80,000 pounds. On-site hazardous waste is moved on 4-wheel trailers with a maximum of eight drums per trailer properly marked, labeled, and secured together for safe transport. These 4-wheel trailers are flat beds with four small wheels and a tongue on the front for pulling and are pulled by a tow motor. All drums are loaded using a fork lift. Off-site shipments are loaded into semi-trailers at the storage area or at the loading dock. These semi-trailers normally weigh up to 32,000 lbs. and are loaded with about 45,000 lbs. of wastes when transporting off-site. They can haul up to 95 drums if the weight limits are met; however, the number of drums depends upon each drum's individual weight, which averages about 600 lbs. The loaded vehicle of hazardous waste exits the facility through the south entrance. Because the on-site roads are capable of bearing loads of 80,000 pounds, the plant and access roads can easily bear the weight of the waste hauling trucks.

Loading and unloading of hazardous wastes occurs at all FMPC waste generation, satellite accumulation, and storage areas for on-site movement. The waste storage locations at the FMPC include the areas designated in Section D of the application. Loading and unloading of

hazardous wastes is performed by qualified and RCRA-trained operators. Loading and unloading activities take place at specified loading docks at designated generation, accumulation, or storage facilities. Movement of wastes off-site sometimes requires wastes to be moved to the loading dock, where they are loaded onto semi-trailers. Wastes to be shipped off-site depart the FMPC via the south entrance. Wastes received for storage at the FMPC are unloaded at the designated storage area or the loading dock on 2nd Street.

Routes and distances from generation and satellite accumulation areas to FMPC hazardous waste storage units will vary according to the generation of wastes. Figure B-16 illustrates an example traffic route from a generation point to an FMPC RCRA storage facility, and from the storage facility through the south entrance to an off-site destination.

The enclosed traffic information is intended to make hazardous waste transport on-site and off-site at the FMPC as safe as possible, in compliance with all Transportation and Safety requirements, and as expedient as possible.

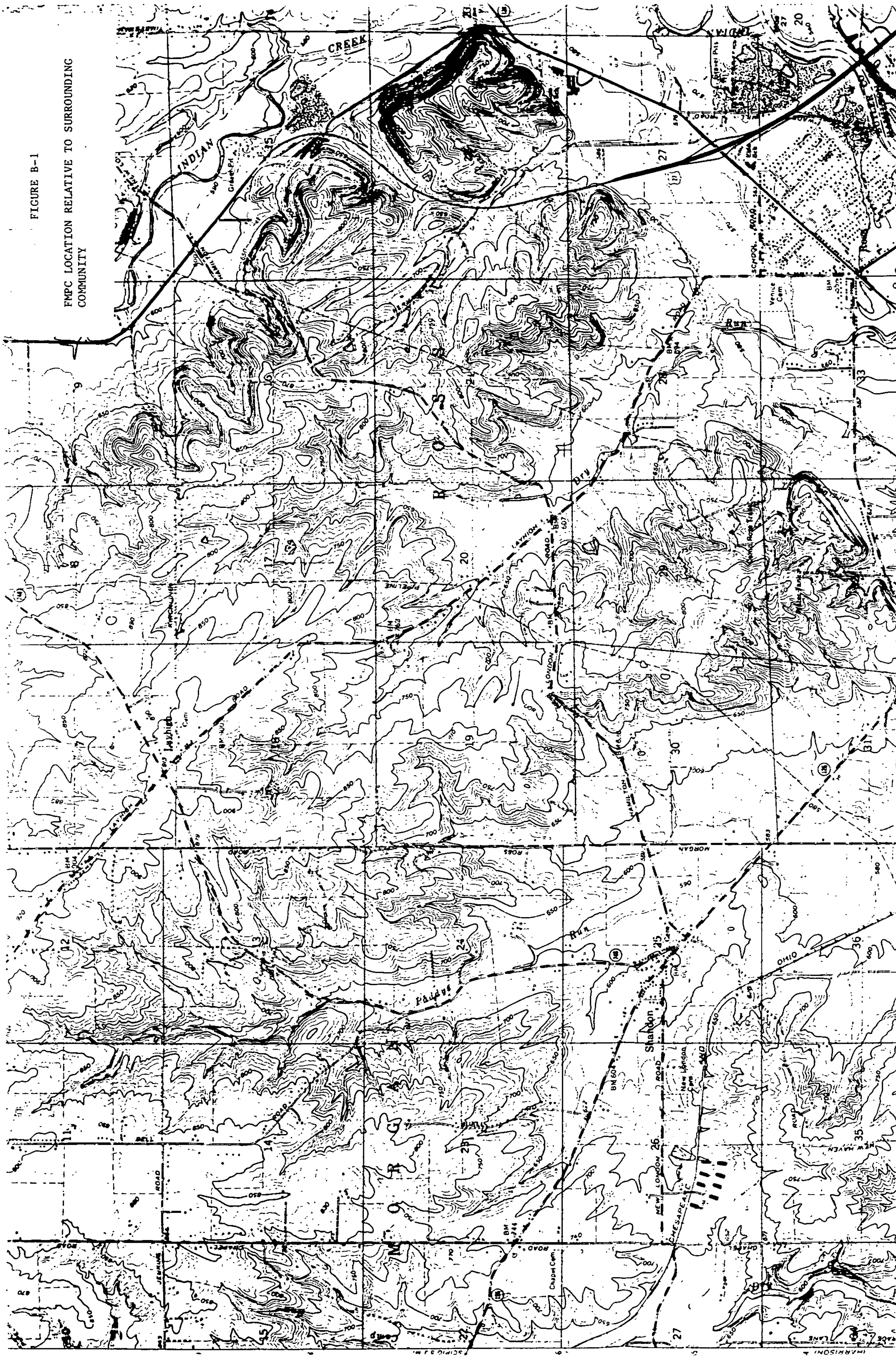
TABLE B-1
POPULATION DISTRIBUTION
WITHIN 10 MILES OF THE FMPC FACILITY

Estimated Population		
Compass Sector	0-8 km 0-5 mi	8-16 km 5-10 mi
N	445	3,395
NNE	221	18,959
NE	489	32,001
E	512	40,770
ESE	713	54,533
SE	1,606	36,467
SSE	985	28,932
S	669	19,214
SSW	390	4,217
SW	185	2,957
WSW	440	4,961
W	519	1,765
WNW	157	1,361
NW	511	1,433
NNW	519	1,134
TOTALS	10,850	277,859
TOTALS IN ALL SECTORS:	288,709	

Based on "Report of Findings, Population Studies for DOE, Feed Materials Production Center, Near Fernald, Ohio", May 18, 1981.

FIGURE B-1

FMPC LOCATION RELATIVE TO SURROUNDING COMMUNITY



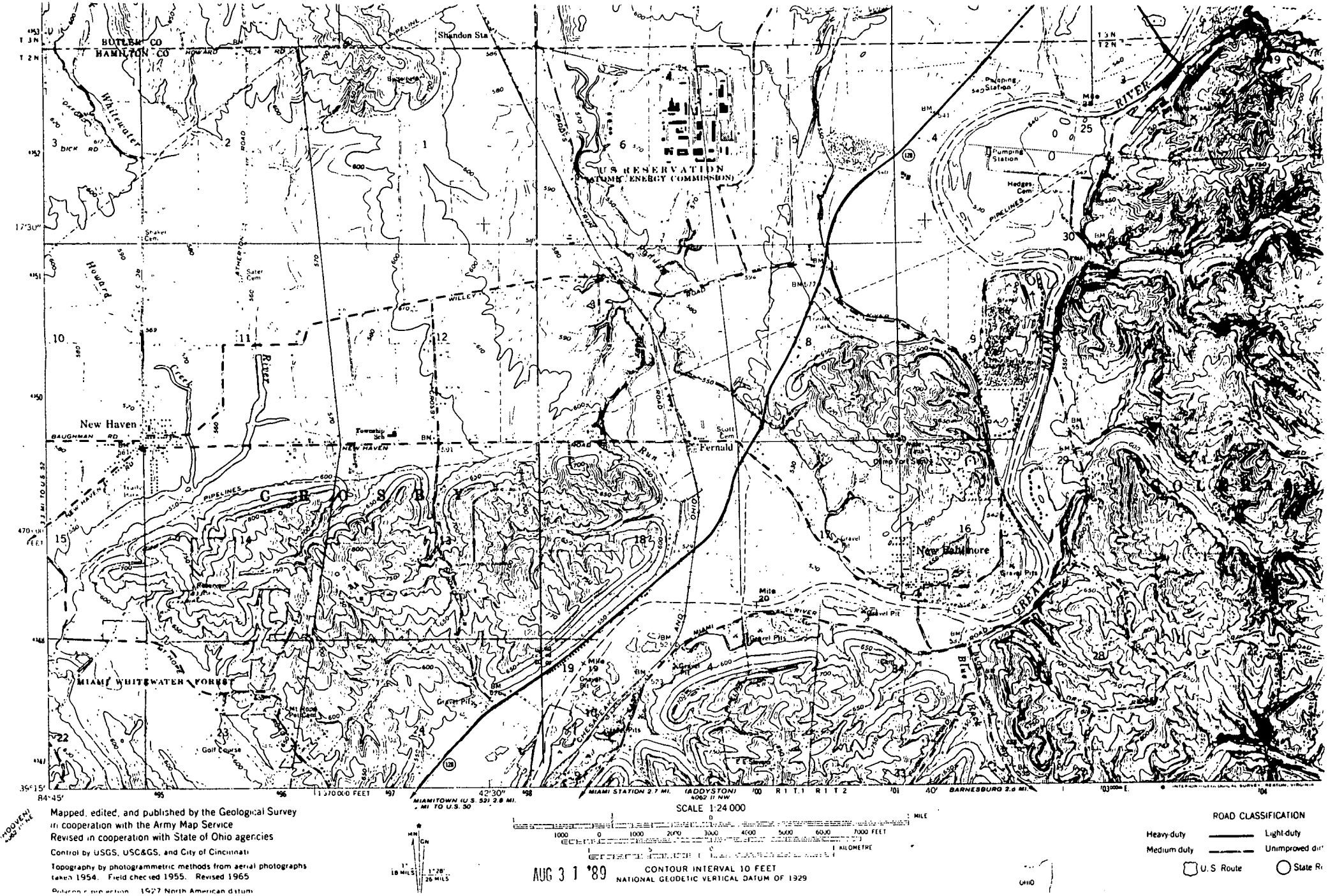
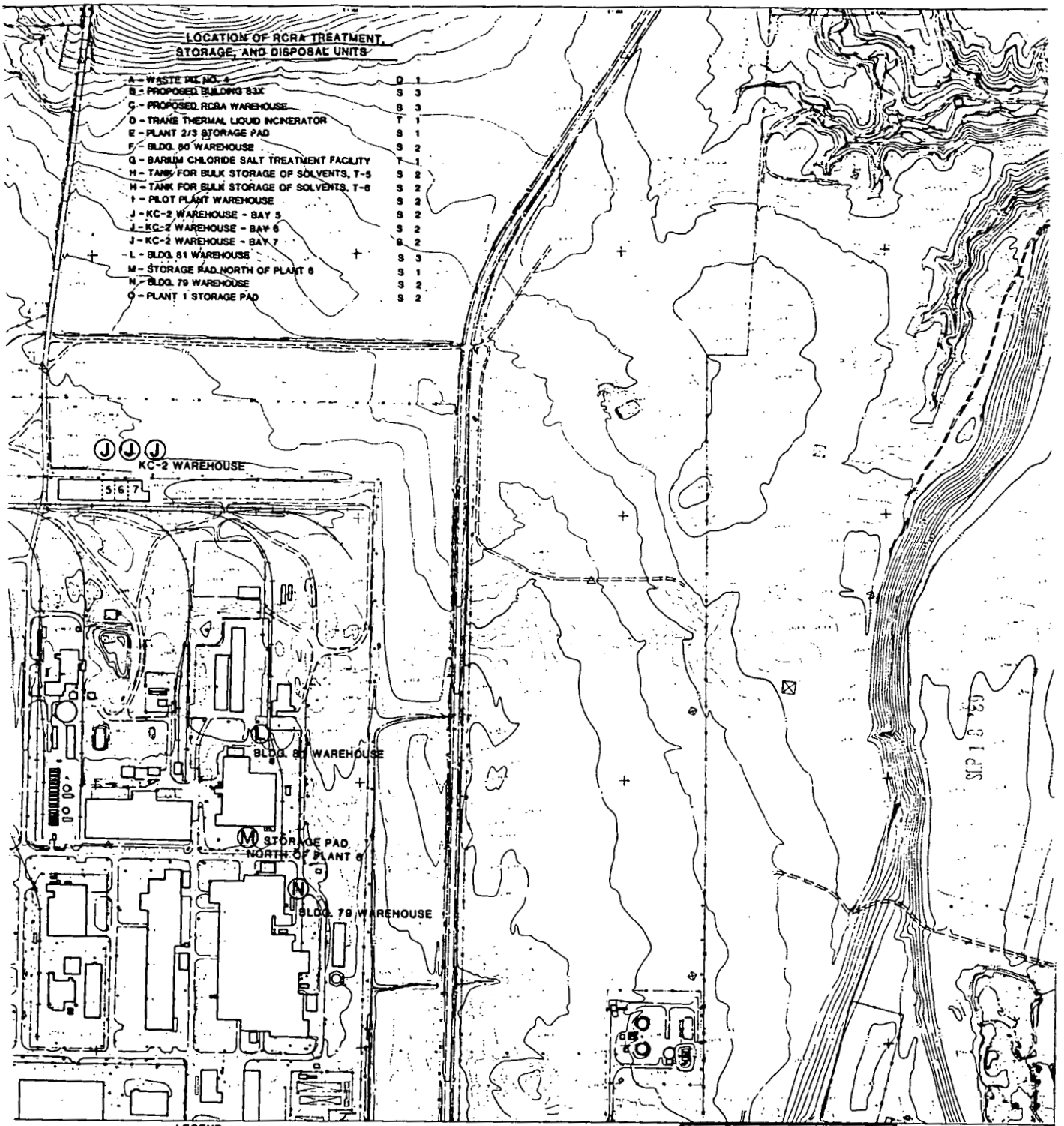


Figure B-1 (continued)

FIGURE B-2

Weston Map North Section



ATION

ction Center

LEGEND:

⊗ = DRINKING WATER WELL
D = DISPOSAL
S = STORAGE
T = TREATMENT

1 = TSD UNITS WHICH ARE NO LONGER IN OPERATION.
2 = TSD UNITS WHICH ARE IN OPERATION BY MARCH 23, 1989.
3 = TSD UNITS WHICH WILL BE PLACED IN OPERATION AFTER MARCH 23, 1989.

INDEX CODE				
PL & AR.	ORIG.	CL.	SER. NO.	REV.
18X	5500	X	01046	0

RES 1238

WESTON

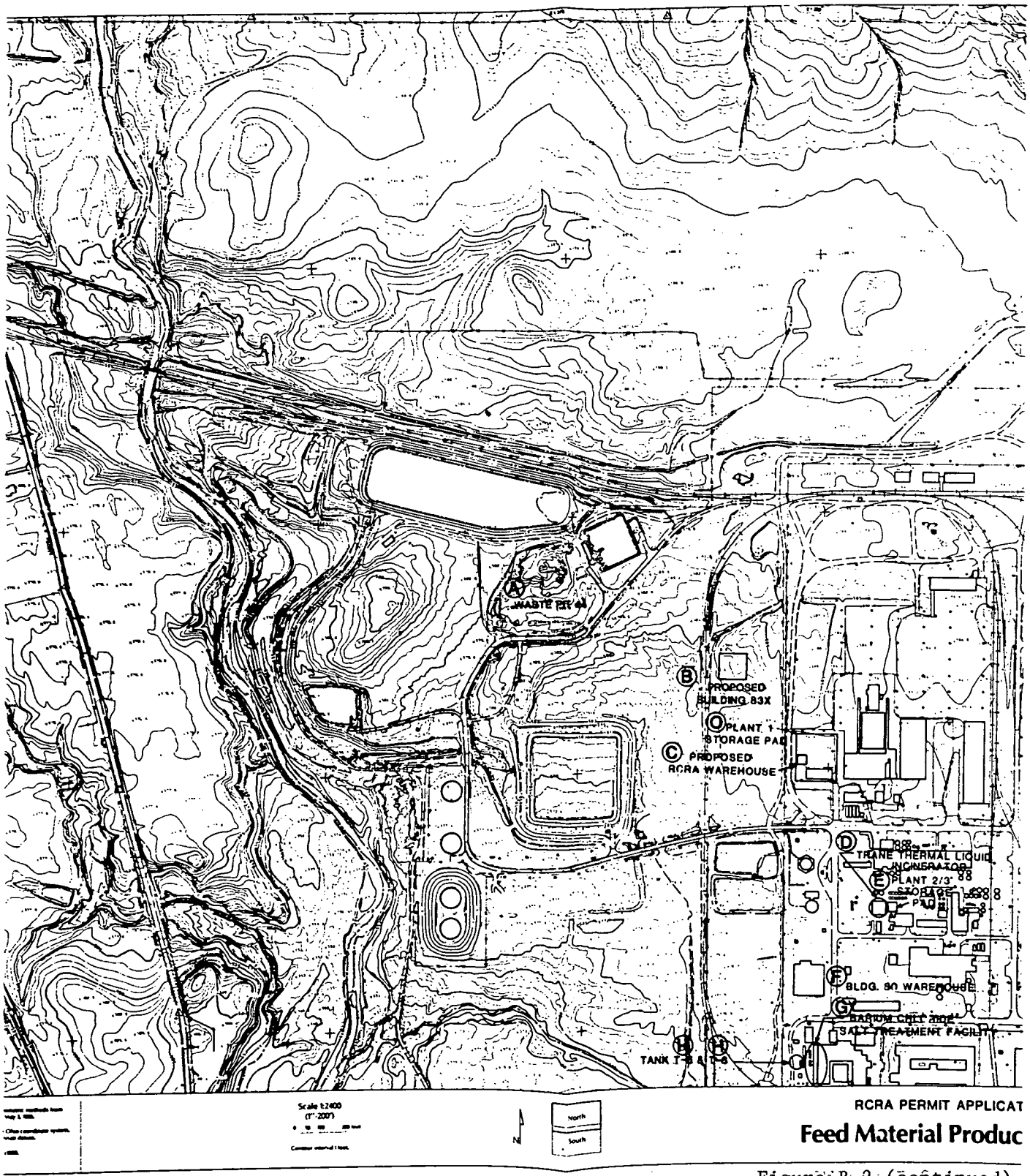


Figure B-2 (continued)

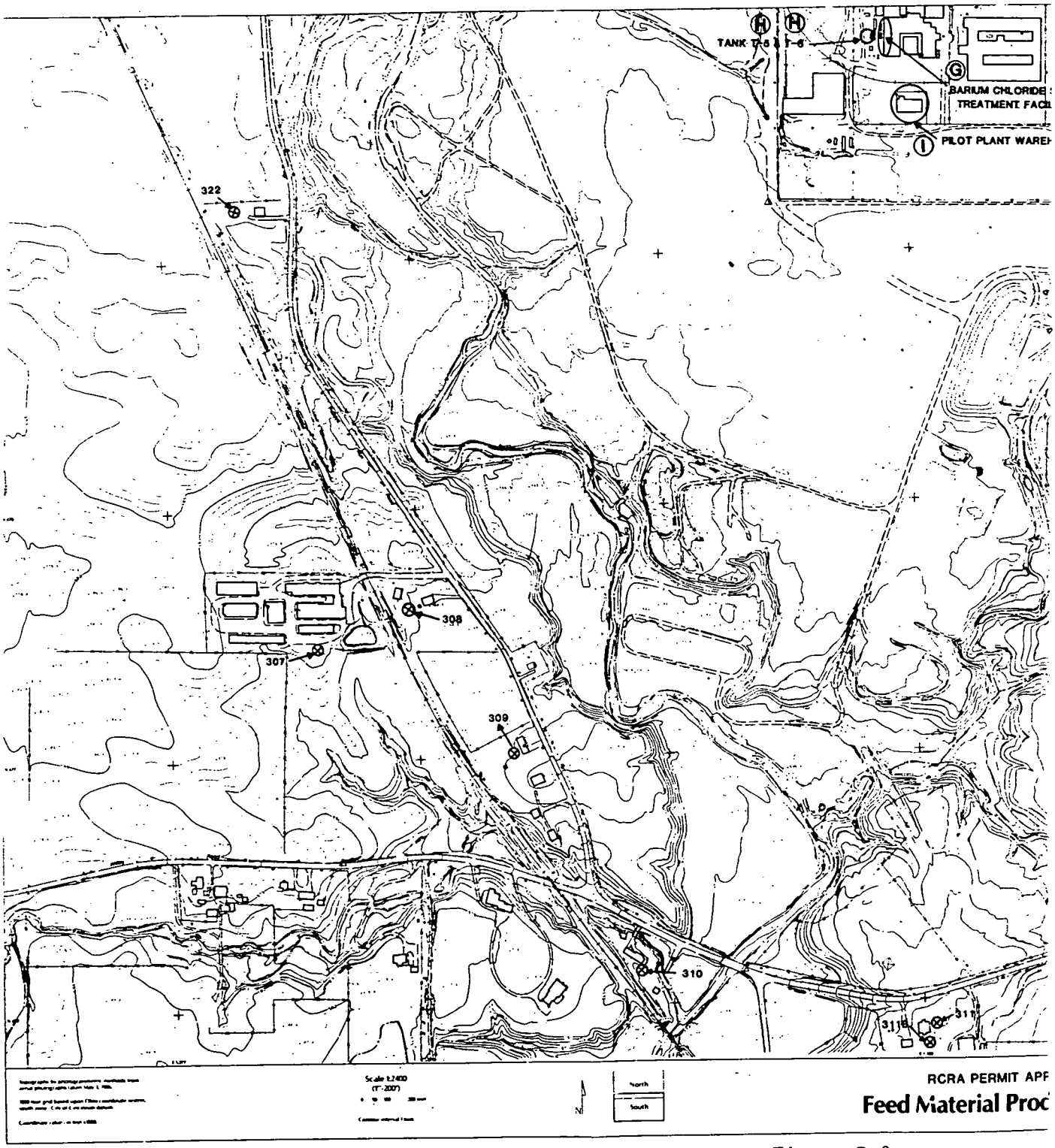
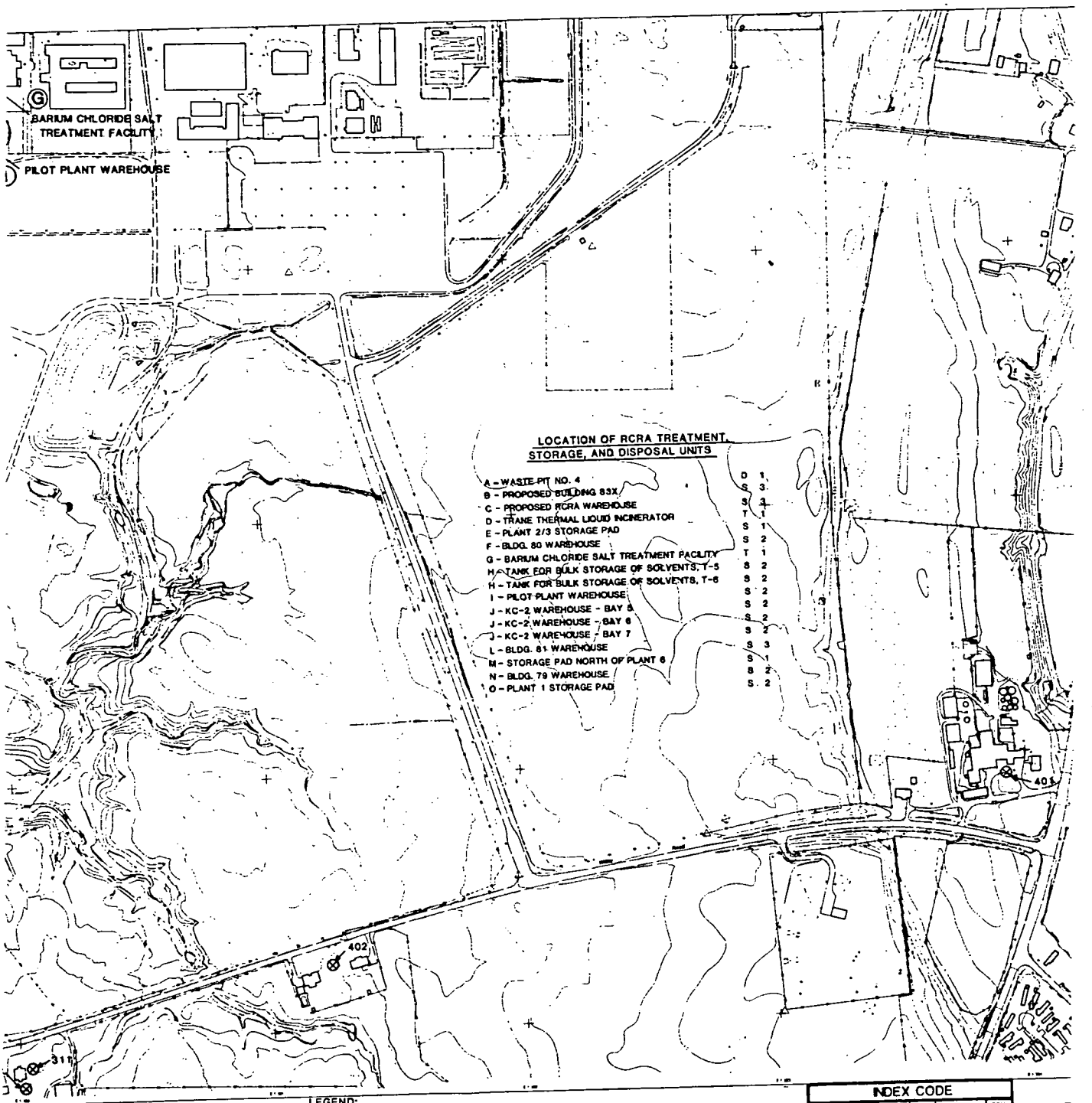

TANK
BARIUM CHLORIDE
TREATMENT FAC
PILOT PLANT WARE
322
308
307
309
310
311
Scale 1:2400
North
South
RCRA PERMIT APP
Feed Material Proc

Figure B-3



RCRA PERMIT APPLICATION

I Material Production Center

LEGEND:

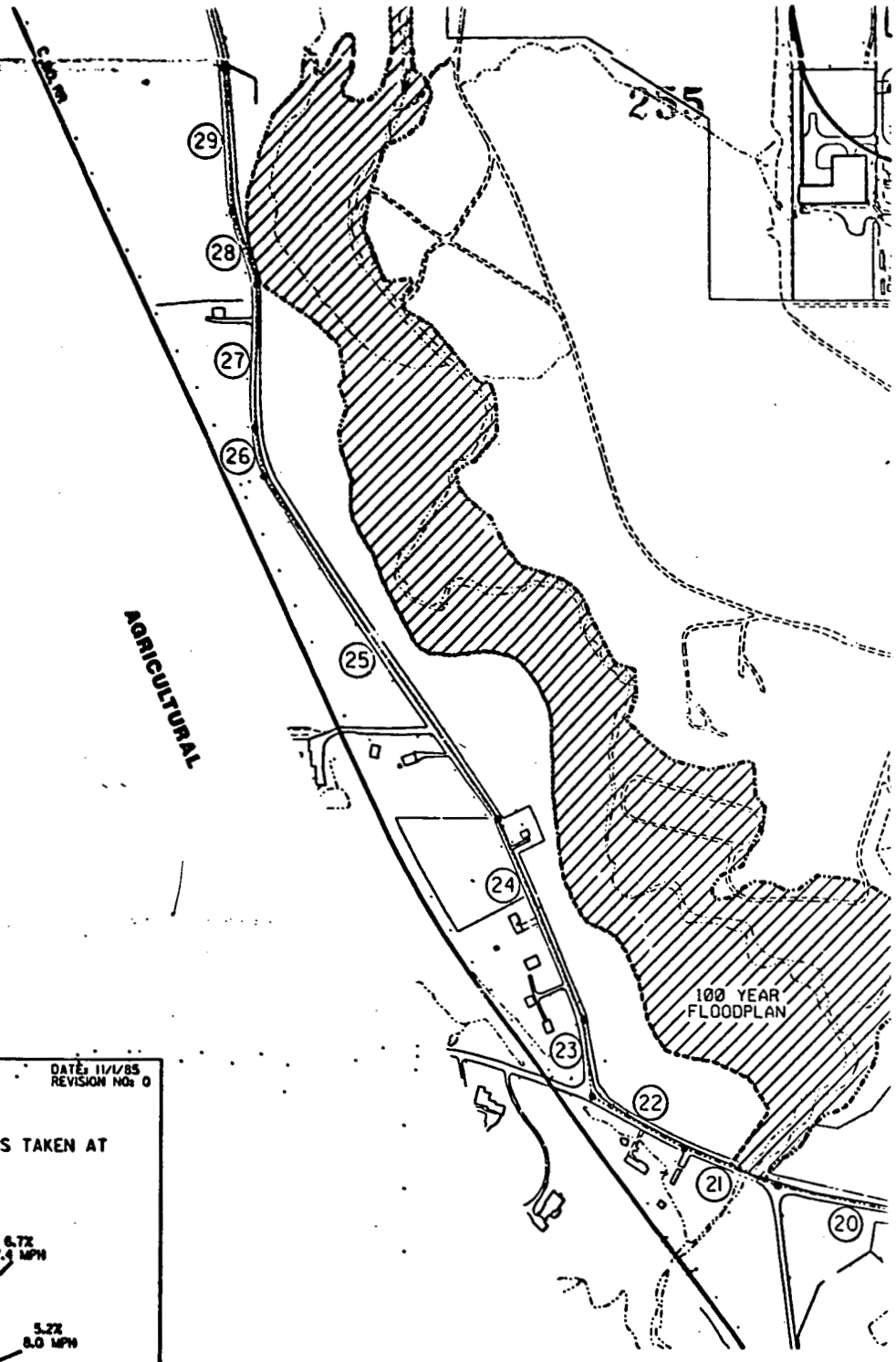
⊗ = DRINKING WATER WELL
D = DISPOSAL
S = STORAGE
T = TREATMENT

1 = TSD UNITS WHICH ARE NO LONGER IN OPERATION.
2 = TSD UNITS WHICH ARE IN OPERATION BY MARCH 23, 1989.
3 = TSD UNITS WHICH WILL BE PLACED IN OPERATION AFTER MARCH 23, 1989.

INDEX CODE				
BLD AR.	ORIG.	CL.	SER NO	REV.
18X	5500	X	01045	0

RES1238

Figure B-3 (continued)



FMPC ORIGIN

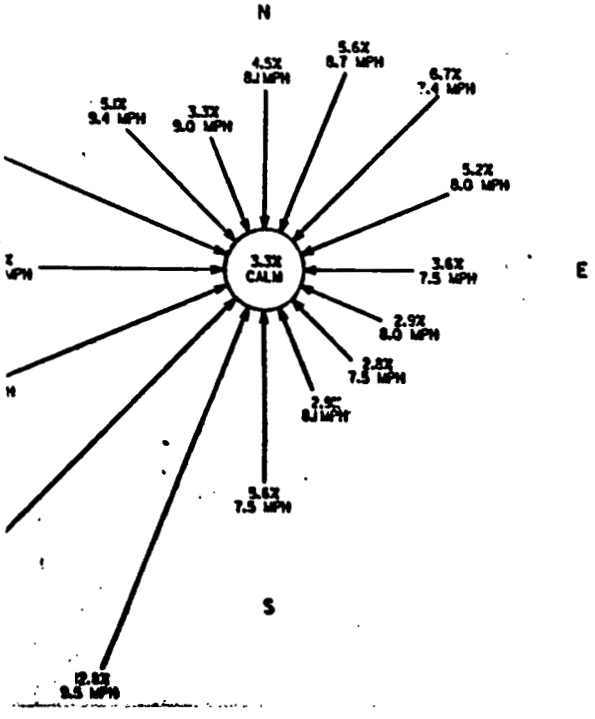
1. FMPC COORD: N 09:09 E 33:38
2. OHIO STATE PLANE COORD: N 452,784.678 E 1,376,378.543
3. USGS (APPROX): N 39°18'35" W 84°42'17"

BOUNDARY DESCRIPTION		
RING & DISTANCE	NO.	BEARING & DISTANCE
97' W - 1207.33'	19	S 72°38' W - 1438.48'
08' E - 4357.77'	20	N 78°48' W - 588.97'
51' E - 338.08'	21	N 68°24' W - 356.69'
4'59' E - 672.58'	22	N 81°35' W - 388.88'
9'01' E - 751.88'	23	N 6°48' W - 271.48'
6'44' E - 588.08'	24	N 24°51' W - 773.48'
6'04' E - 831.38'	25	N 34°57' W - 1465.08'
36'35' W - 2838.85'	26	N 1 1'27' E - 172.85'
9'46'28' W - 152.08'	27	N 8°43' E - 581.58'
03'15' E - 2818.08'	28	N 19°12' W - 267.68'
12'15' E - 808.08'	29	N 3°48' W - 585.78'
46'58' E - 1621.47'	30	N 16°28' W - 788.68'
43'43' E - 217.88'	31	N 15°16' W - 2012.08'
58'43' E - 1284.56'	32	S 98°08' W - 182.52'
8'13' W - 231.25'	33	N 89°46'38' W - 864.68'
9'45' W - 1148.15'	34	N 25°03'38' W - 1083.18'
5'25' W - 532.98'	35	R=1349.69' - ARC=1283.49'
3'23' W - 288.18'	36	S 76°09'38' E - 438.58'

DATE: 11/1/85
REVISION NO: 0

WIND DIRECTION AND SPEED OCCURRENCES

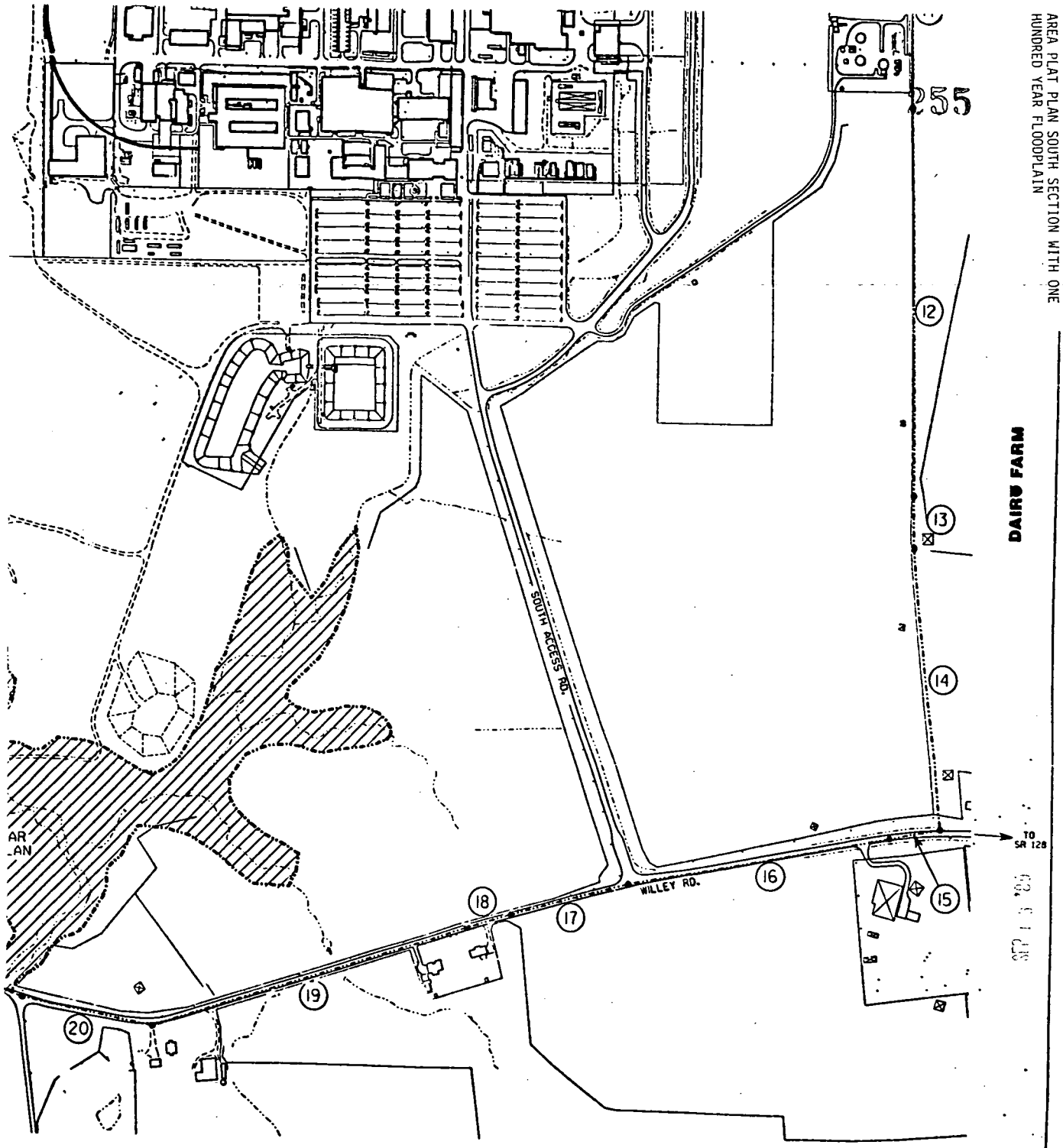
ED ON HOURLY SURFACE WIND OBSERVATIONS TAKEN AT ATER CINCINNATI AIRPORT.



FEED MATERIALS

OWNED AND OPER
DEPAR

Figure B-4



ERIALS PRODUCTION CENTER

) AND OPERATED BY THE UNITED S.ATES
DEPARTMENT OF ENERGY

Figure B-4 (continued)

FIGURE B-5

AREA PLAT PLAN NORTH SECTION WITH
HUNDRED YEAR FLOODPLAIN

SEE FIGURE B-4 FOR
SOUTH SECTION AND LEGEND

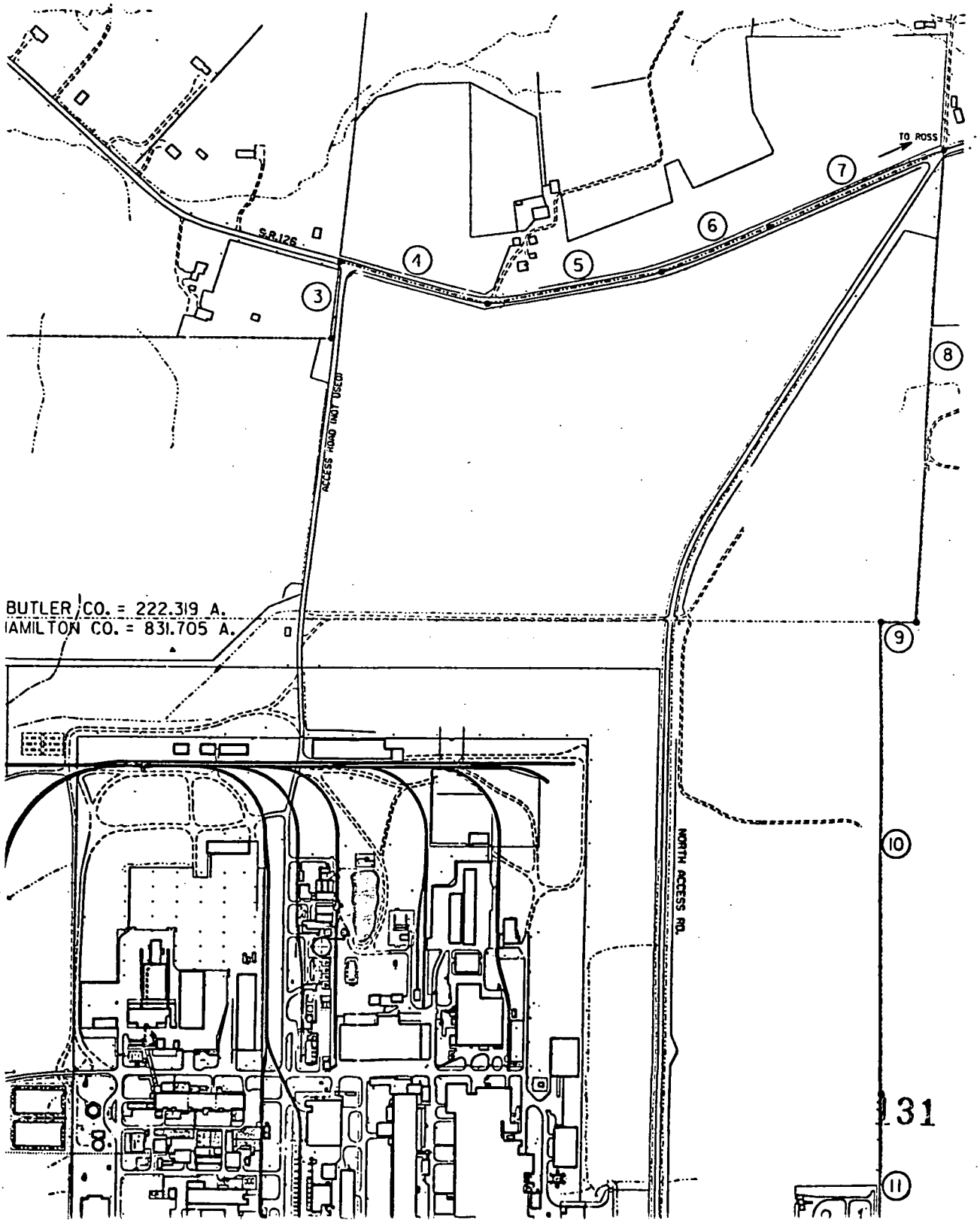


Figure B-5 (continued)

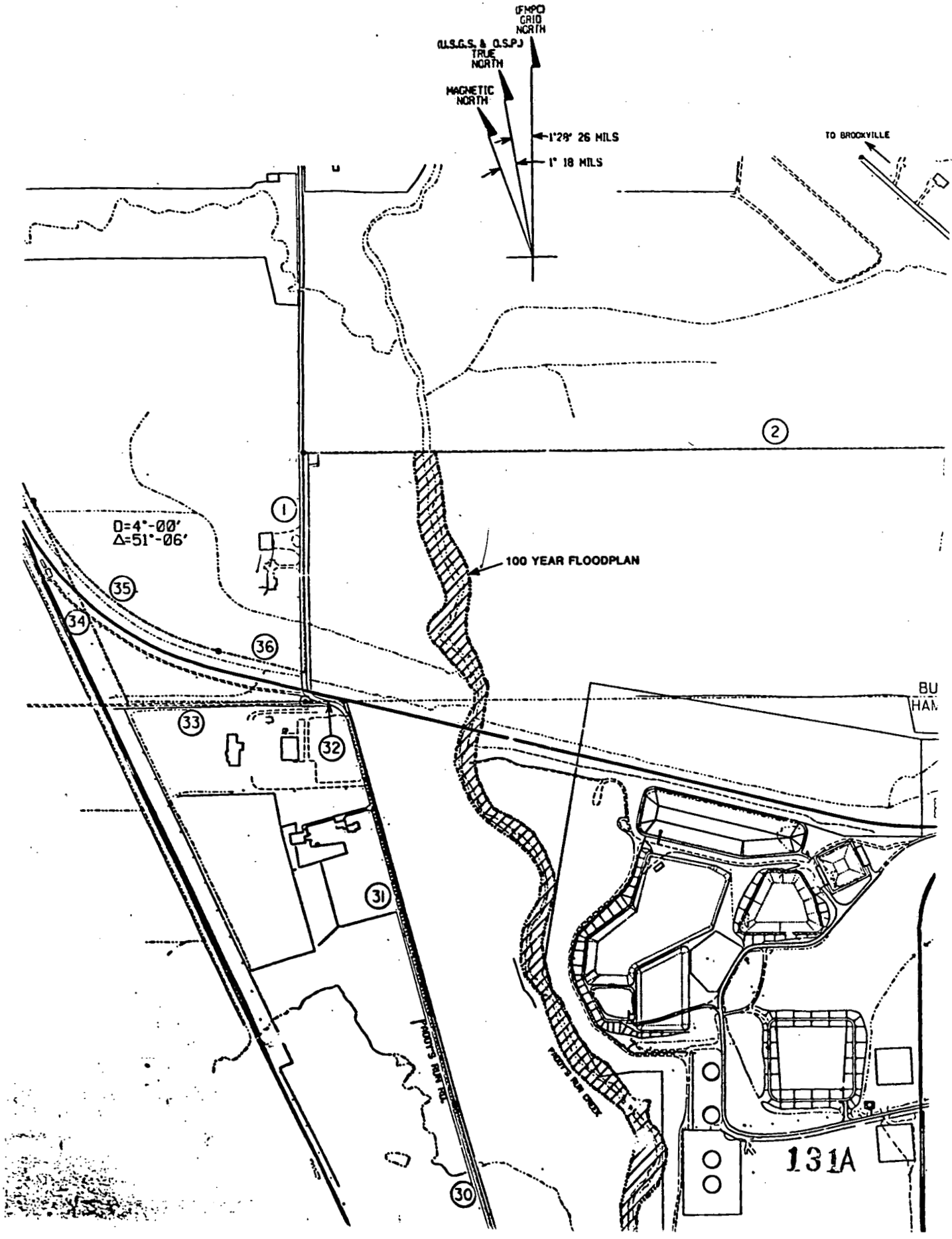
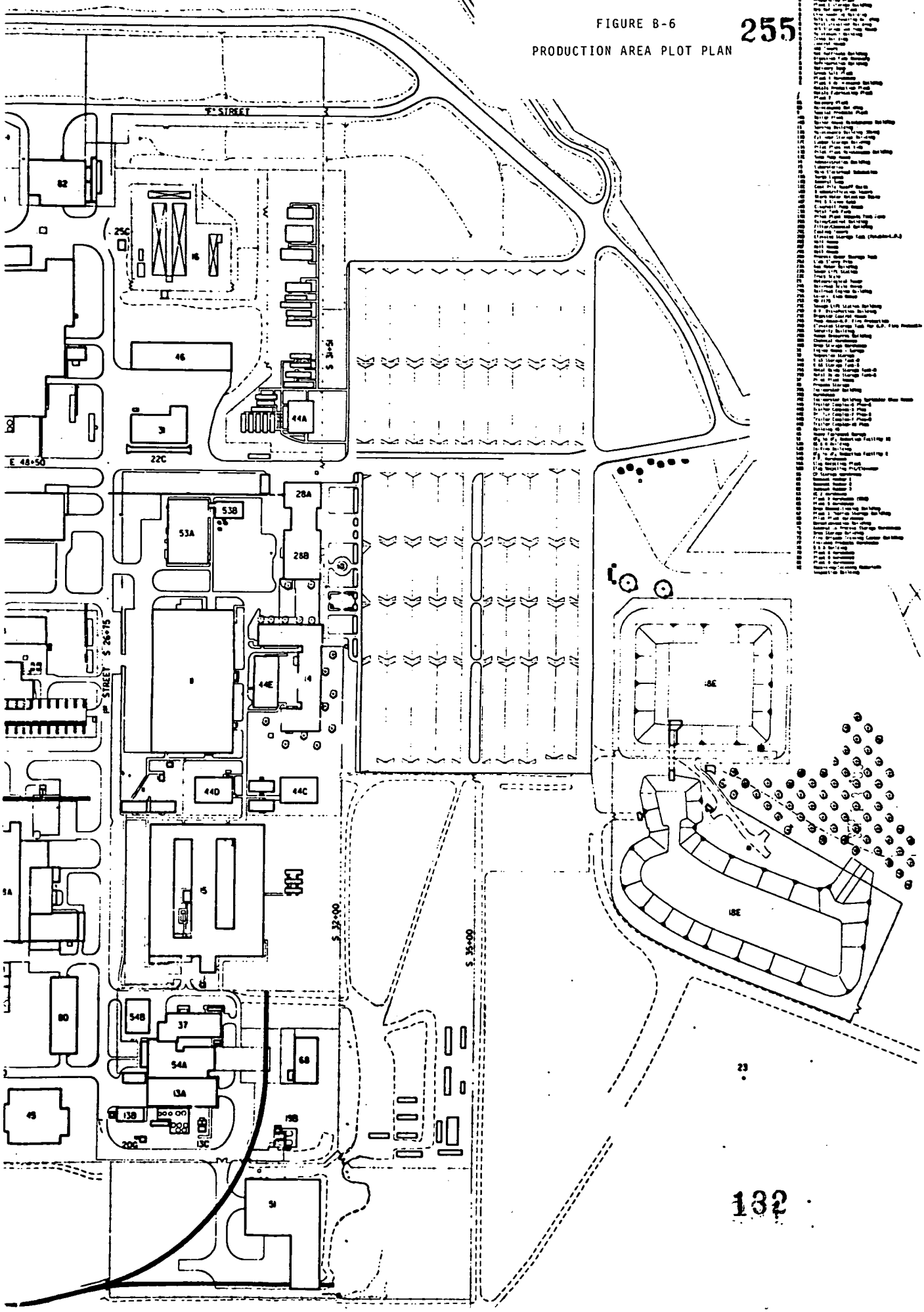


FIGURE B-6

PRODUCTION AREA PLOT PLAN



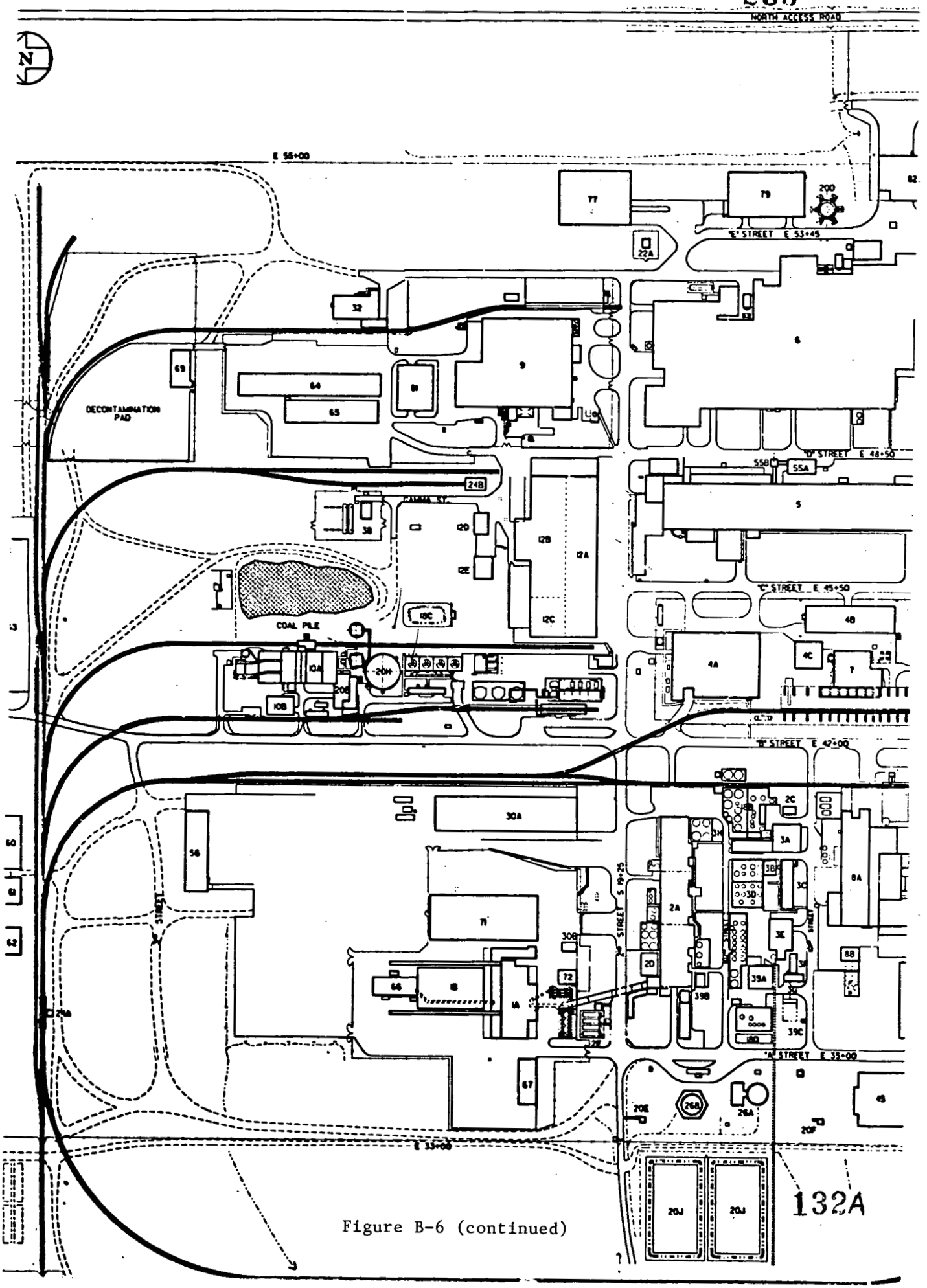


Figure B-6 (continued)

FIGURE B-255

RCRA WELLS

RCRA GROUNDWATER MONITORING WELLS

SCALE

R.E.S.-1238
DATE: 7/12/89
FILENAME: ZFA1:[100,4]RCRA.DGN
O= RCRAWELLS

FEED MATERIALS PRODUCTION CENTER

OWNED AND OPERATED BY THE UNITED STATES
DEPARTMENT OF ENERGY

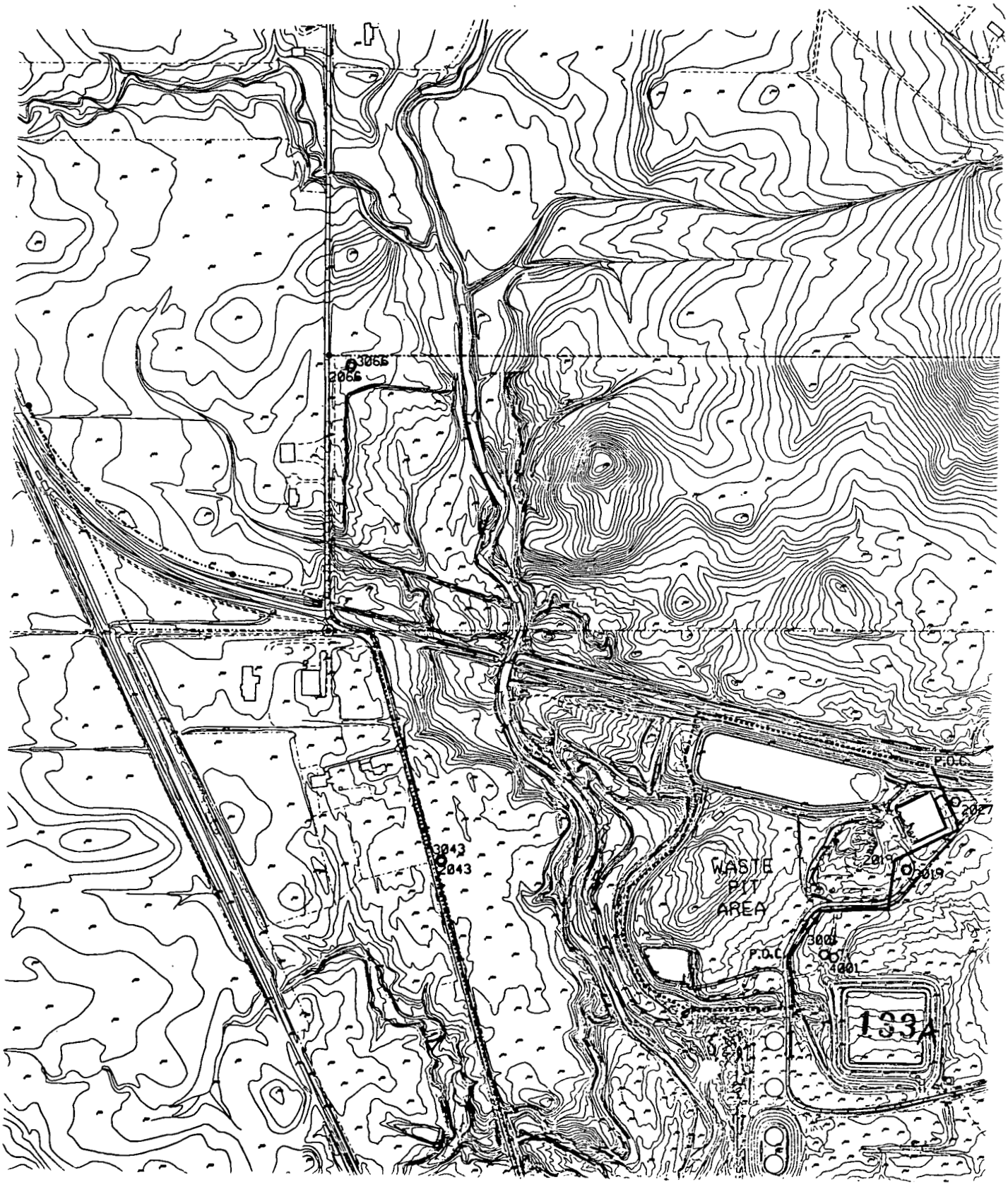
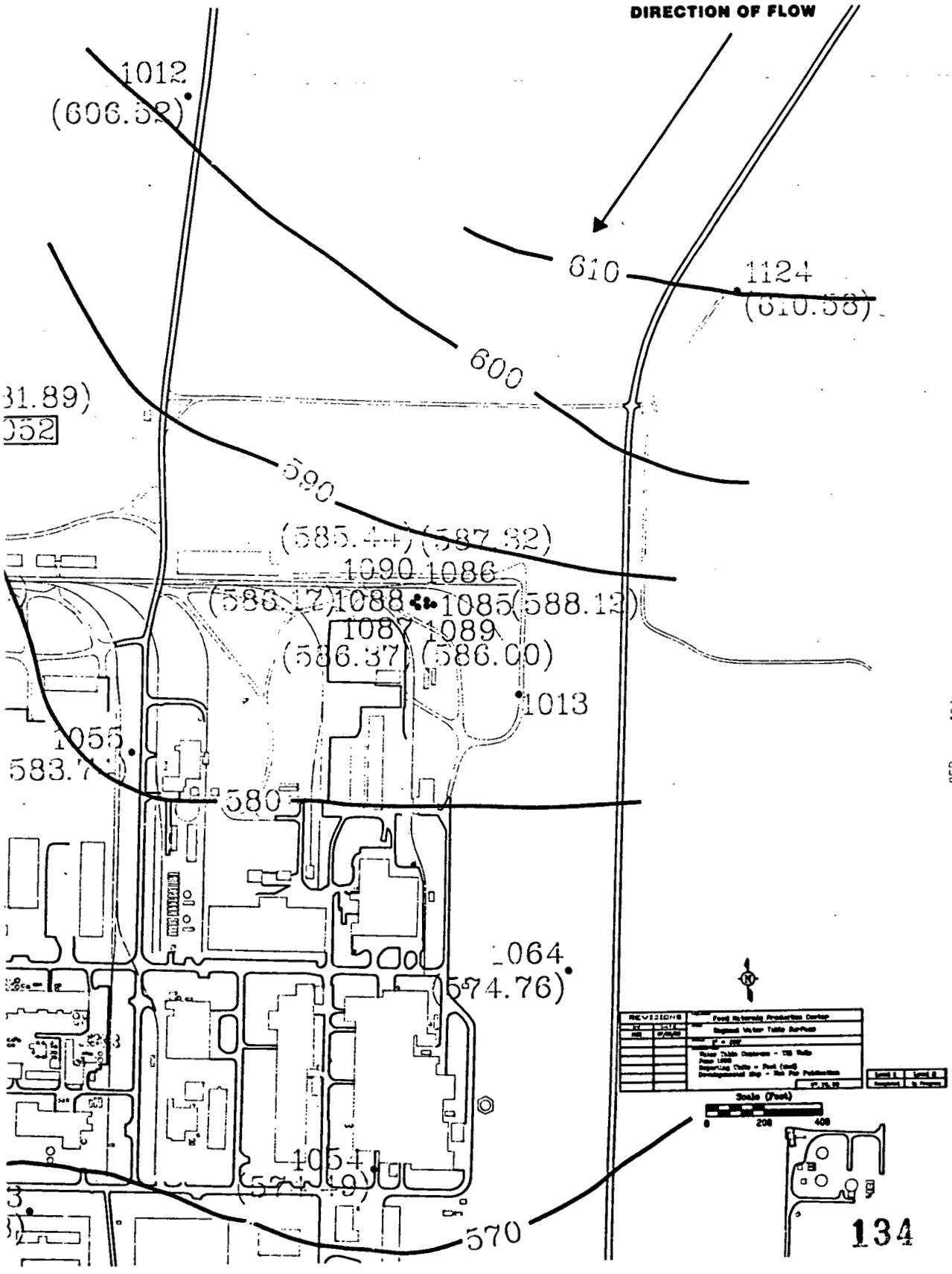


FIGURE B-8

WATER TABLE CONTOURS - TILL WELLS
MAP BASE PLANS



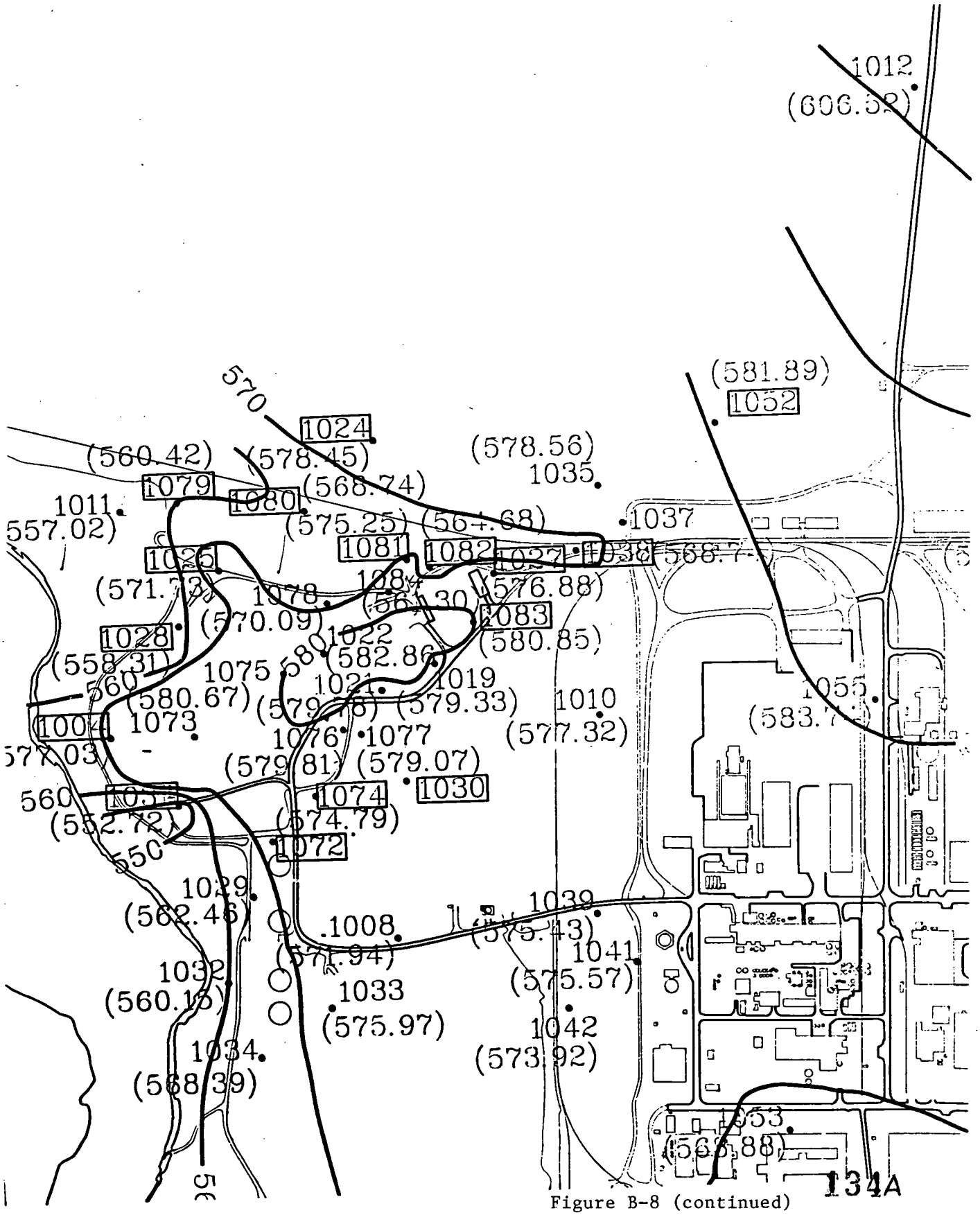
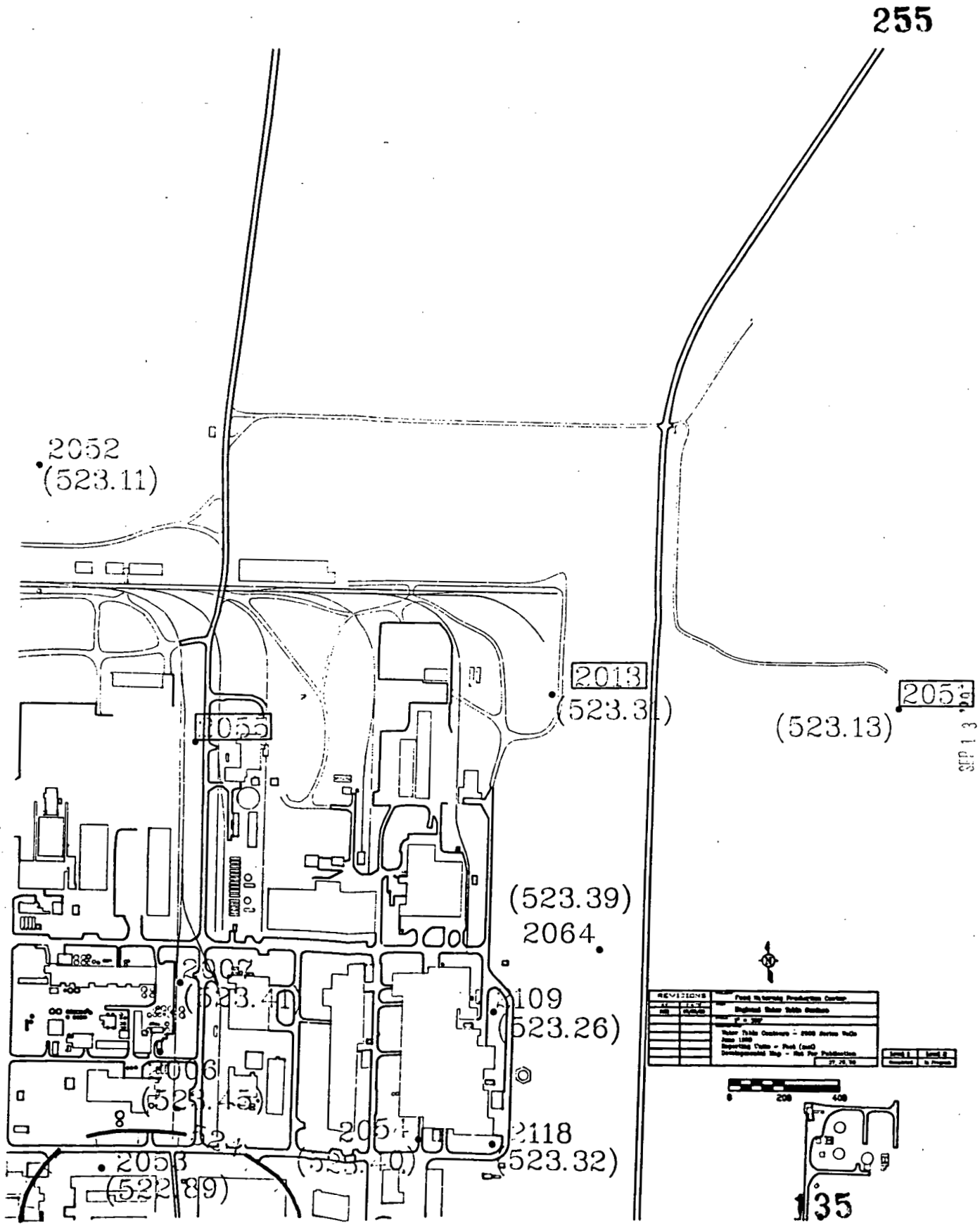


Figure B-8 (continued)

FIGURE B-9

WATER TABLE CONTOURS - 2000 SERIES WELLS



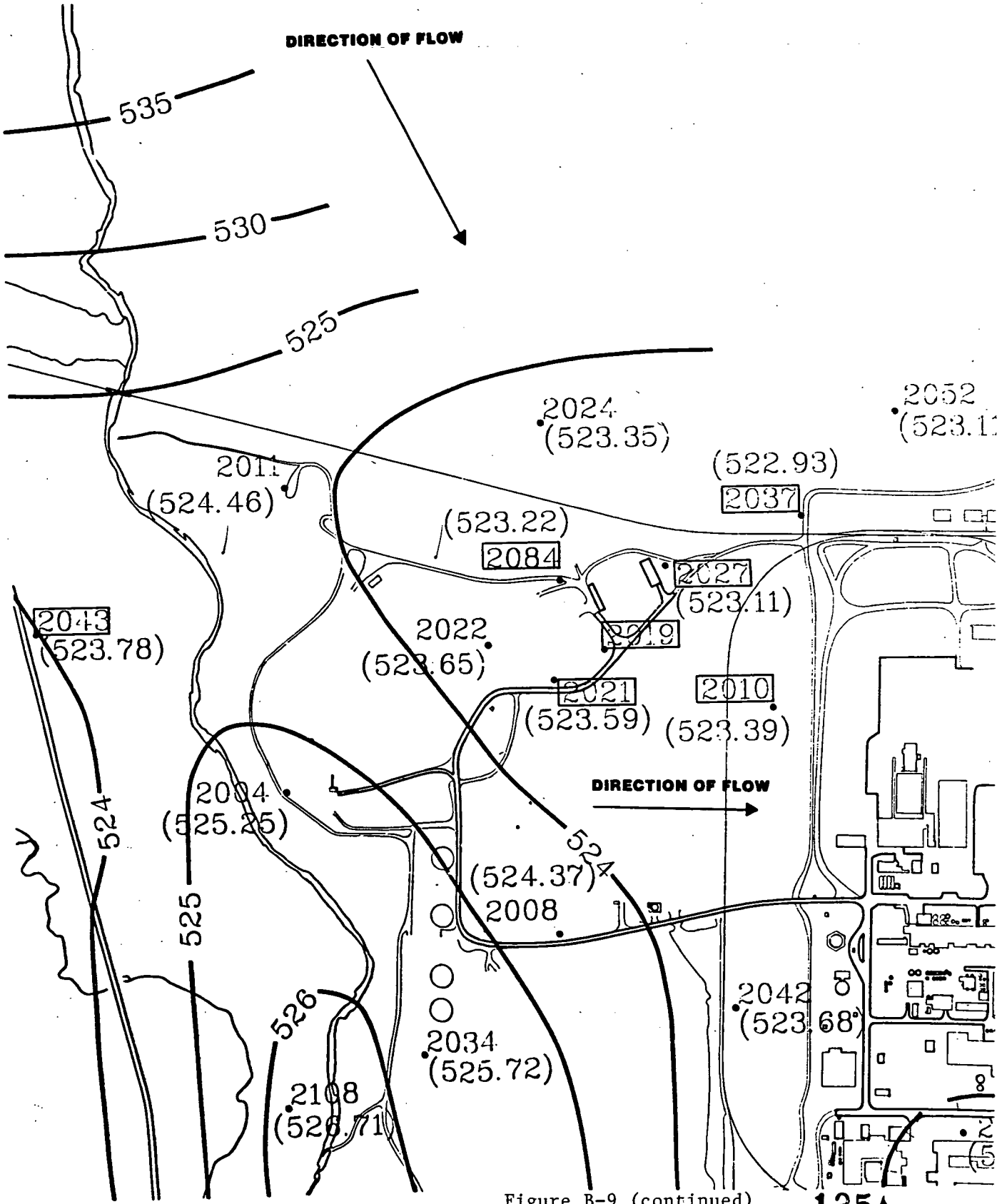
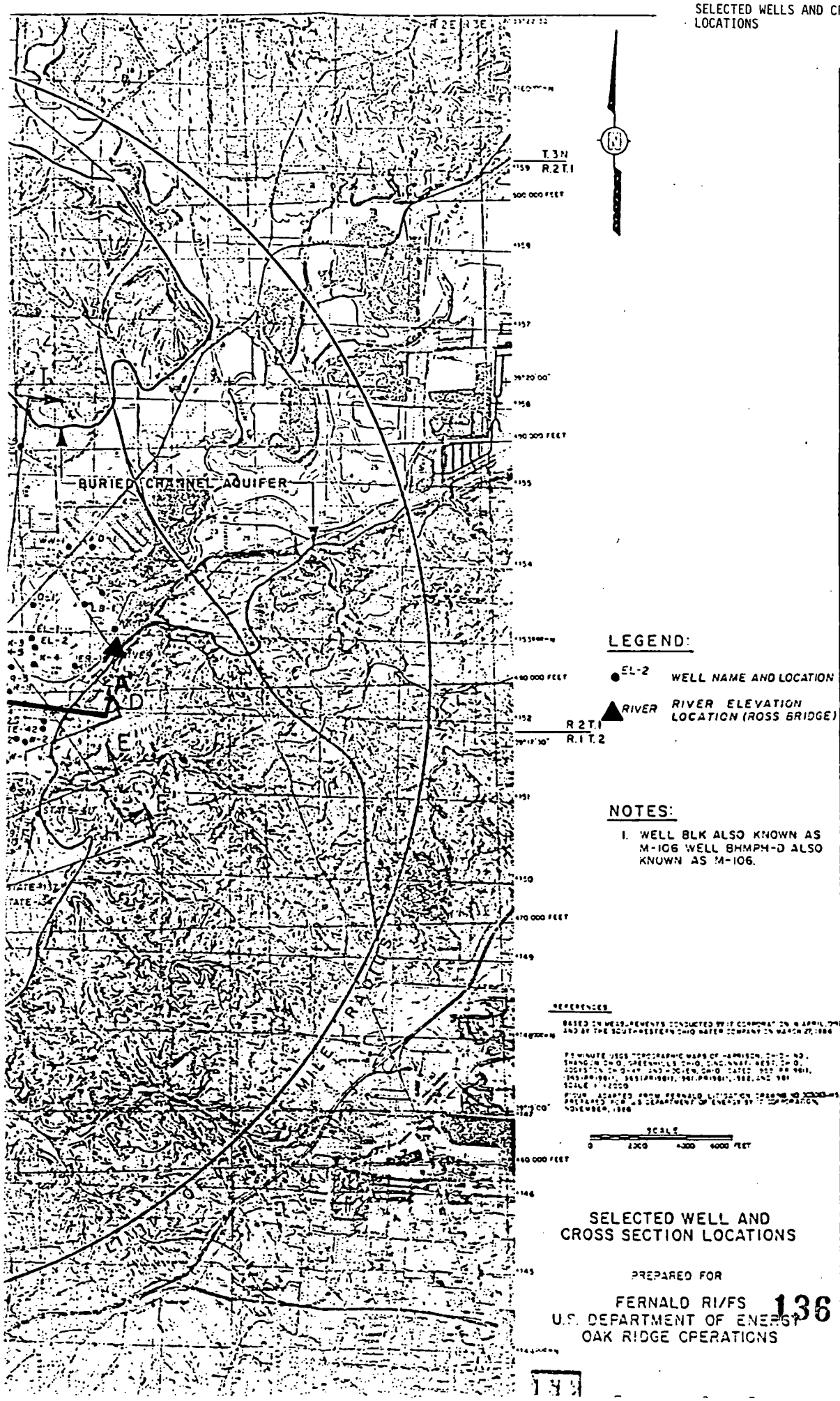


Figure B-9 (continued)

FIGURE B-10

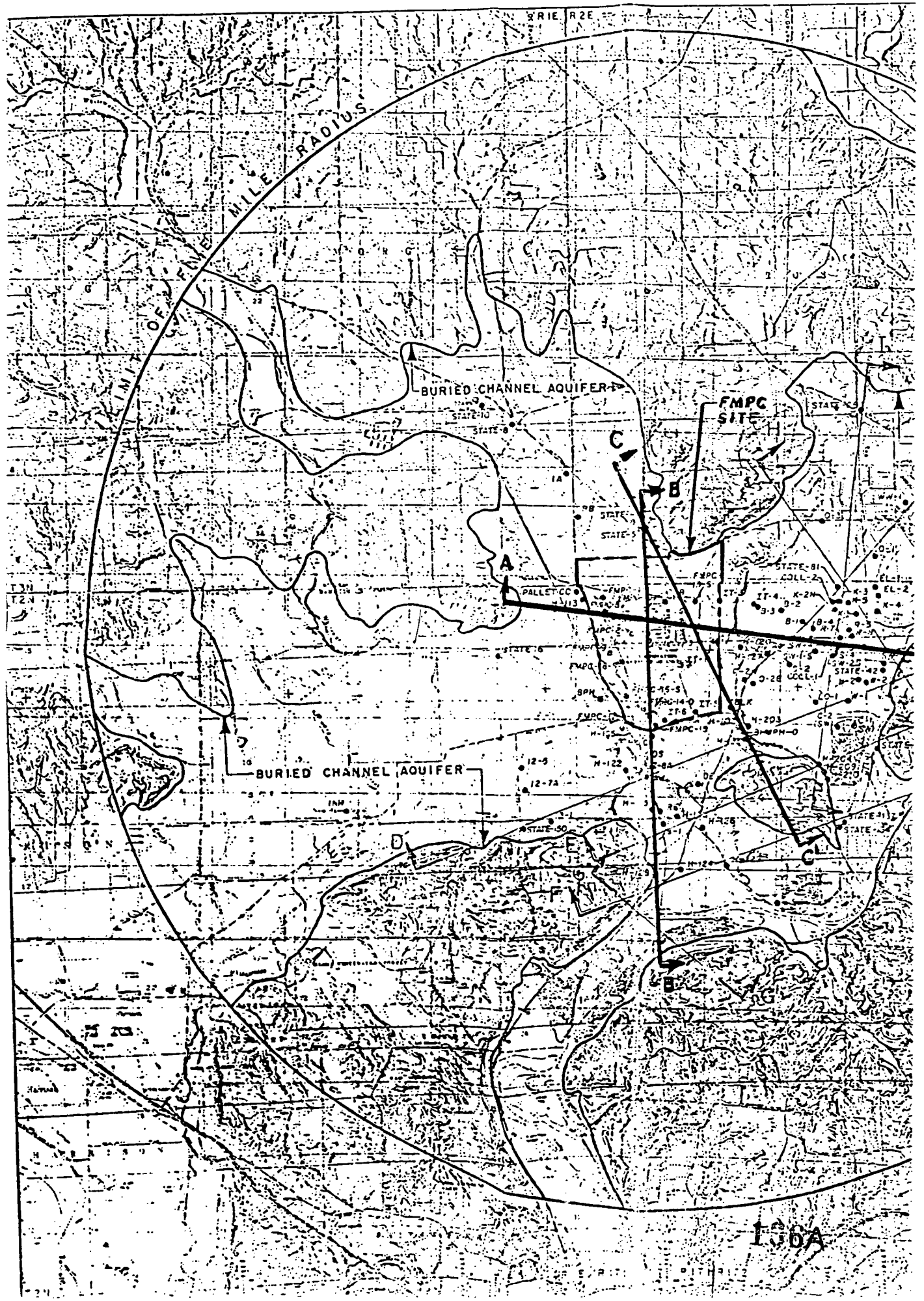
SELECTED WELLS AND CROSS SECTION LOCATIONS

255



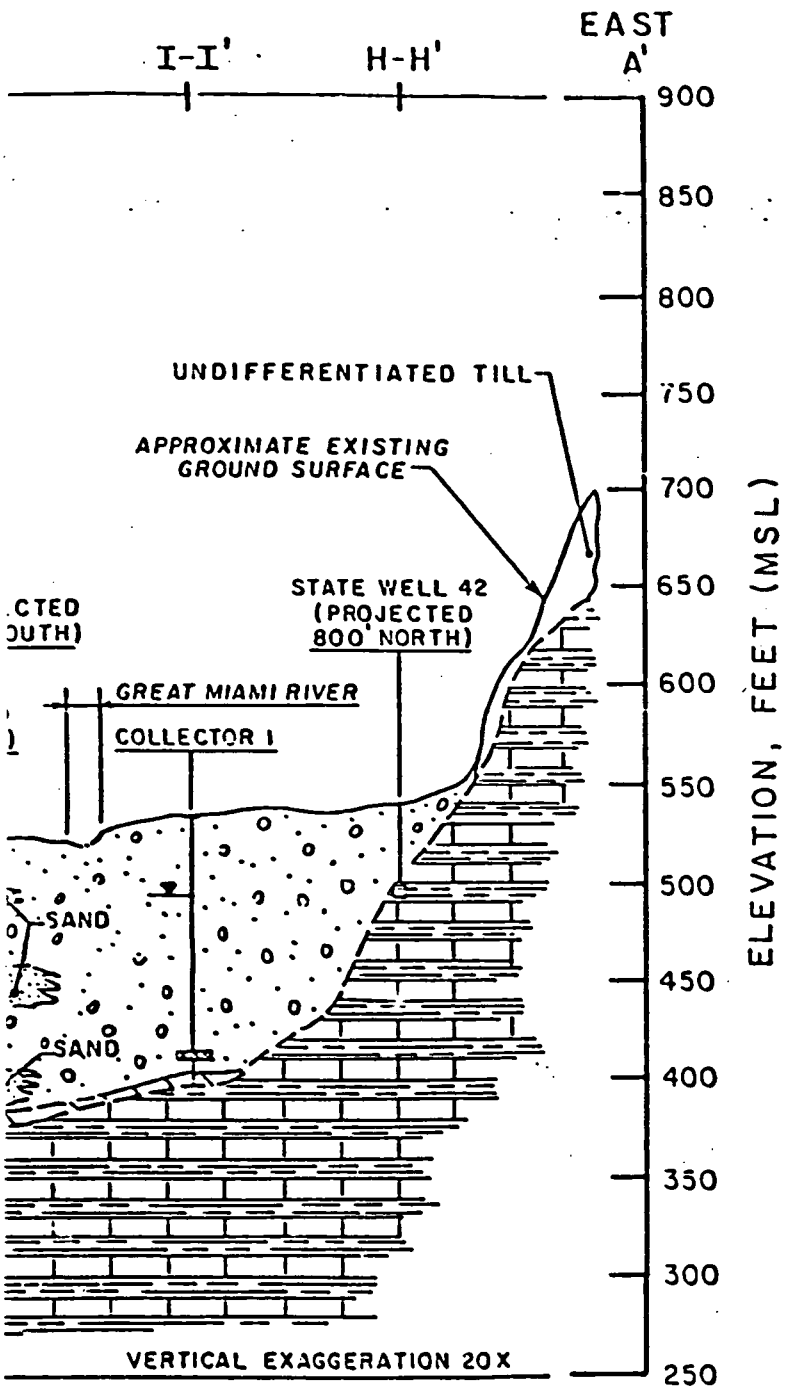
136

SEP 1 3 '90


FIVE MILE RADIUS
BURIED CHANNEL AQUIFER
FMPC SITE
BURIED CHANNEL AQUIFER
A
B
C
D
E
F
G
PALLET CC
STATE-10
STATE-8
STATE-5
STATE-16
STATE-150
STATE-81
STATE-42
STATE-31
COLL-2
T3N
T2N
R2E

1.6A

HYDROGEOLOGIC CROSS SECTION A-A'



LEGEND:

OPEN INTERVAL

WATER LEVELS (MEASURED 3/27/86 THRU 4/11/86.)

REFERENCES:

MODIFIED FROM U.S.G.S. PROFESSIONAL PAPER No. 605-A USING AVALIABLE OHIO STATE WATER WELL RECORDS, SOWC WATER WELL DATA, DAMES AND MOORE DOE, FEED MATERIALS PRODUCTION CENTER GROUND WATER STUDY TASKS A AND C REPORTS AND IT BORING LOGS.

FIGURE ADAPTED FROM FERNALD LITIGATION DRAWING NO. 303063-816. PREPARED FOR U.S. DEPARTMENT OF ENERGY BY IT CORPORATION, NOVEMBER, 1986.

FIGURE B-11

NOTE:

FOR LOCATION OF CROSS SECTION A-A' SEE FIGURE B-10.

HYDROGEOLOGIC CROSS SECTION A-A'

PREPARED FOR

FERNALD RI/FS
U.S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

Creating a Safer Tomorrow

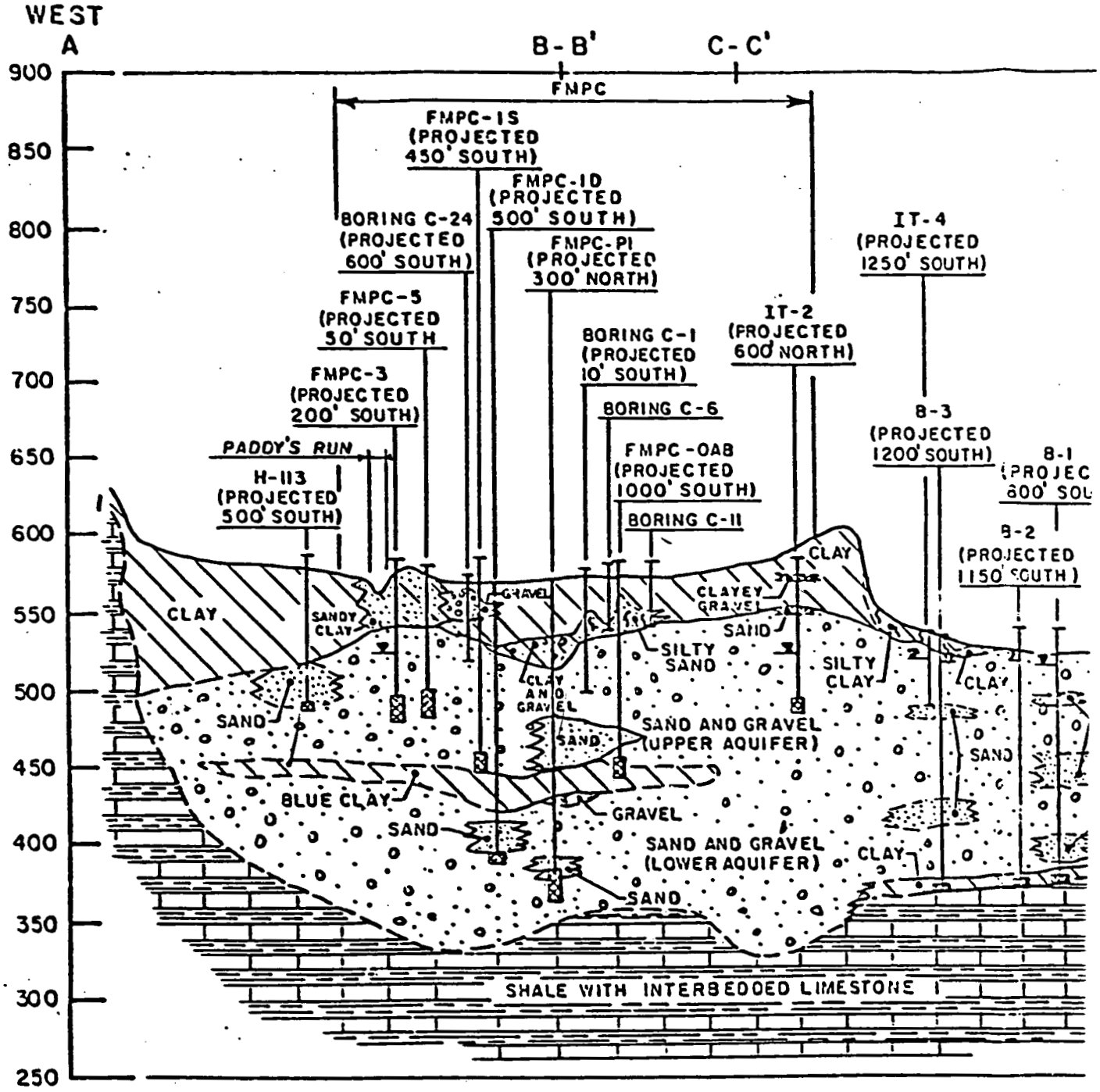


Figure B-11 (continued)

CROSS SECTION A-A'

(LOOKING NORTH)

VERTICAL SCALE

0 100 200 FEET

137A

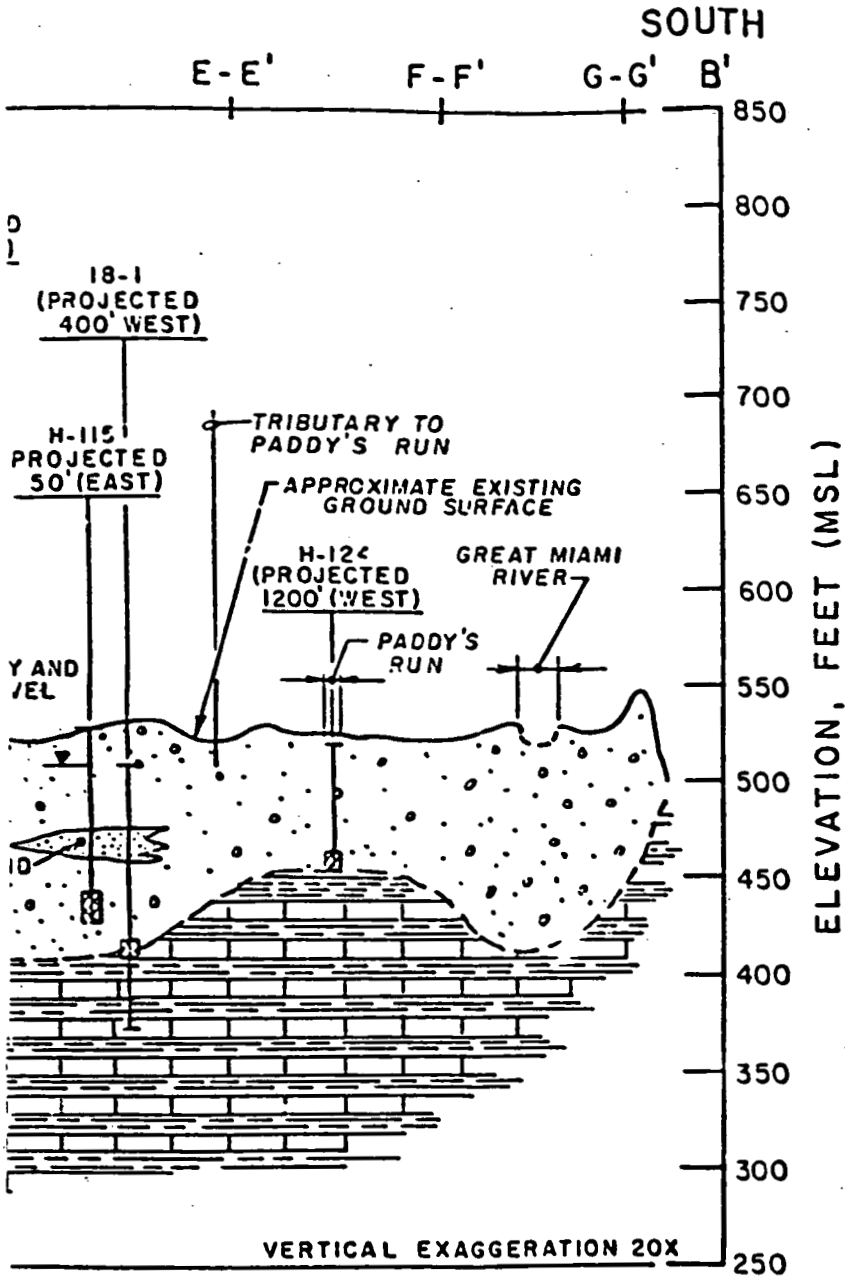
HORIZONTAL SCALE

0 2000 4000 FEET

ORING LOGS AND RELATED INFORMATION
T SUBSURFACE CONDITIONS ONLY AT
PECIFIC LOCATIONS AND DATES INDICATED.
CONDITIONS AND WATER LEVELS AT
R LOCATIONS MAY DIFFER FROM CONDITIONS
RRING AT THESE BORING LOCATIONS ALSO
ASSAGE OF TIME MAY RESULT IN A
GE IN THE CONDITIONS AT THESE
G LOCATIONS.

EPTH AND THICKNESS OF THE SUBSURFACE STRATA
ATED ON THE SECTIONS WERE GENERALIZED FROM
NTERPOLATED BETWEEN THE TEST BORINGS
MATION ON ACTUAL SUBSURFACE CONDITIONS
S ONLY AT THE LOCATION OF THE TEST BORINGS
IT IS POSSIBLE THAT SUBSURFACE CONDITIONS
EEN THE TEST BORINGS MAY VARY FROM THOSE
ATED

T CORPORATION



LEGEND:

OPEN INTERVAL

WATER LEVELS (MEASURED 3/27/86 TO 4/11/86.)

REFERENCES:

U.S.G.S PROFESSIONAL PAPER No. 505-A
OHIO STATE WATER WELL RECORDS, SOWC
WATER WELL DATA, DAMES AND MOORE
DOE, FEED MATERIALS PRODUCTION
CENTER GROUND WATER STUDY TASK C
REPORT AND IT BORING LOGS.

FIGURE ADAPTED FROM FERNALD LITIGATIC
DRAWING NO. 303063-817. PREPARED FOR
U.S. DEPARTMENT OF ENERGY BY
IT CORPORATION, NOVEMBER, 1986.

NOTE:

FOR LOCATION OF CROSS SECTION B-B' SEE FIGURE B-10.

FIGURE B-12

HYDROGEOLOGIC CROSS SECTION B-B'

PREPARED FOR

FERNALD RI/FS
U.S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

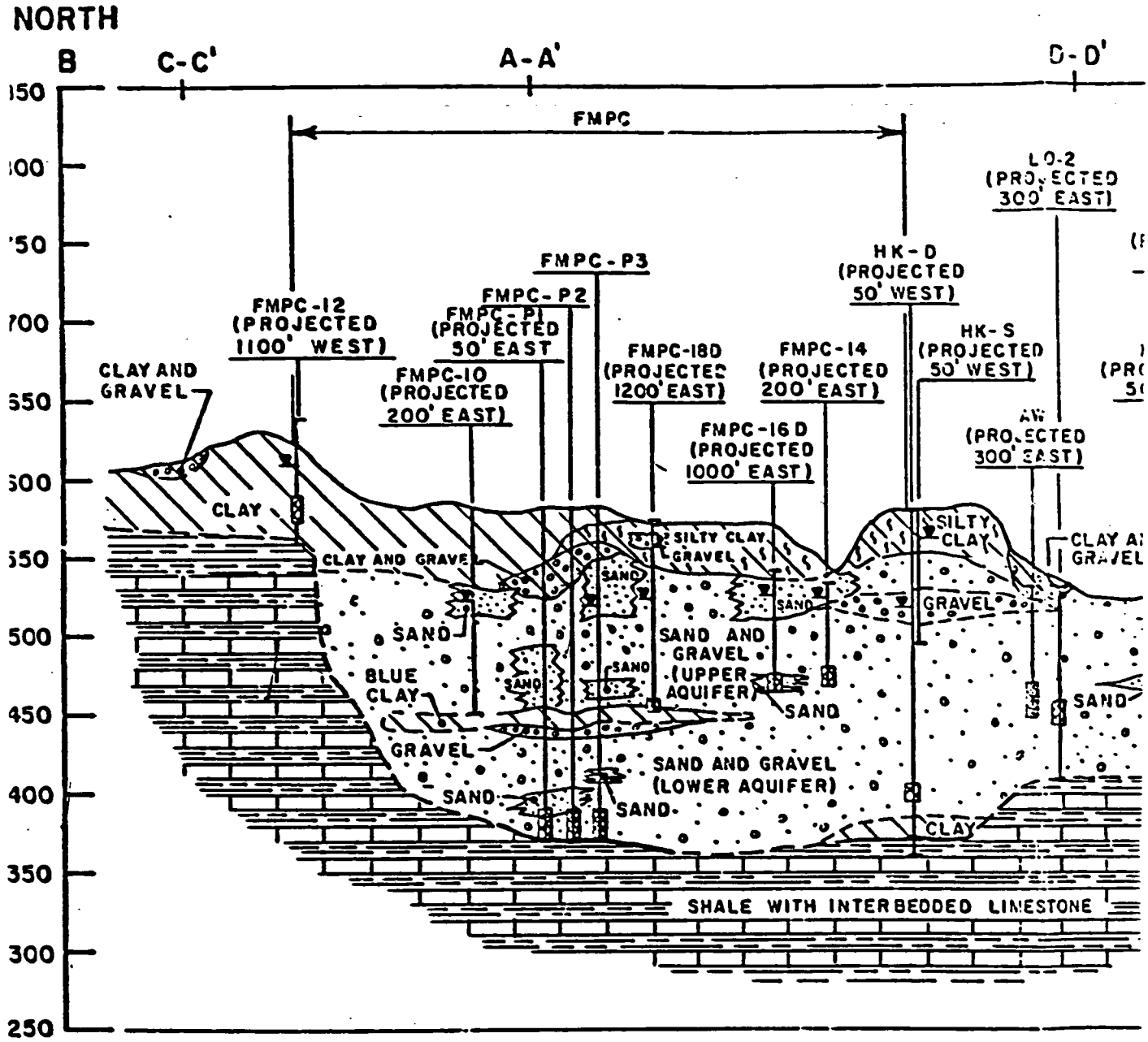


Figure B-12 (continued)

CROSS SECTION B-B'

(LOOKING EAST)

VERTICAL SCALE

0 100 200 FEET

HORIZONTAL SCALE

0 2000 4000 FEET

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS. ALSO THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS WERE GENERALIZED FROM AND INTERPOLATED BETWEEN THE TEST BORINGS. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE LOCATION OF THE TEST BORINGS AND IT IS POSSIBLE THAT SUBSURFACE CONDITIONS BETWEEN THE TEST BORINGS MAY VARY FROM THOSE INDICATED.

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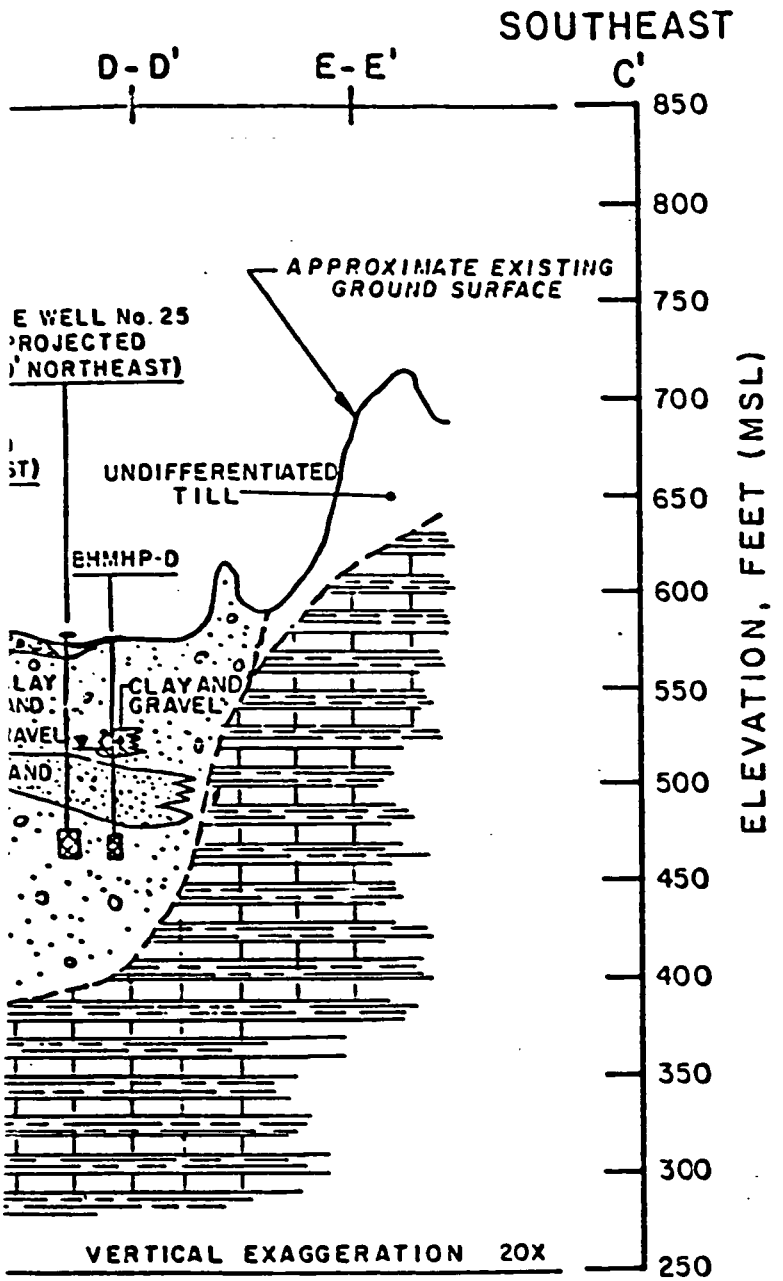

LEGEND:

OPEN INTERVAL

WATER LEVELS (MEASURED 3/27/86 THRU 4/11/86.)

REFERENCES:

U.S.G.S. PROFESSIONAL PAPER No. 605
OHIO STATE WATER WELL RECORDS, SOW
WATER WELL DATA, DAMES AND MOORE
DOE, FEED MATERIALS PRODUCTION CENTER GROUND WATER STUDY TASK C REPORT TASK C REPORT, AND IT BORIN LOGS.

FIGURE ADAPTED FROM FERNALD LITIGAT DRAWING NO. 303063-818. PREPARED FOR U.S. DEPARTMENT OF ENERGY BY IT CORPORATION, NOVEMBER, 1986.

NOTE:

FOR LOCATION OF CROSS SECTION C-C' SEE FIGURE B-10.

FIGURE B-13

HYDROGEOLOGIC CROSS SECTION C-C'

PREPARED FOR

FERNALD RI/FS
U.S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

IT ... Creating a Safer Tomorro

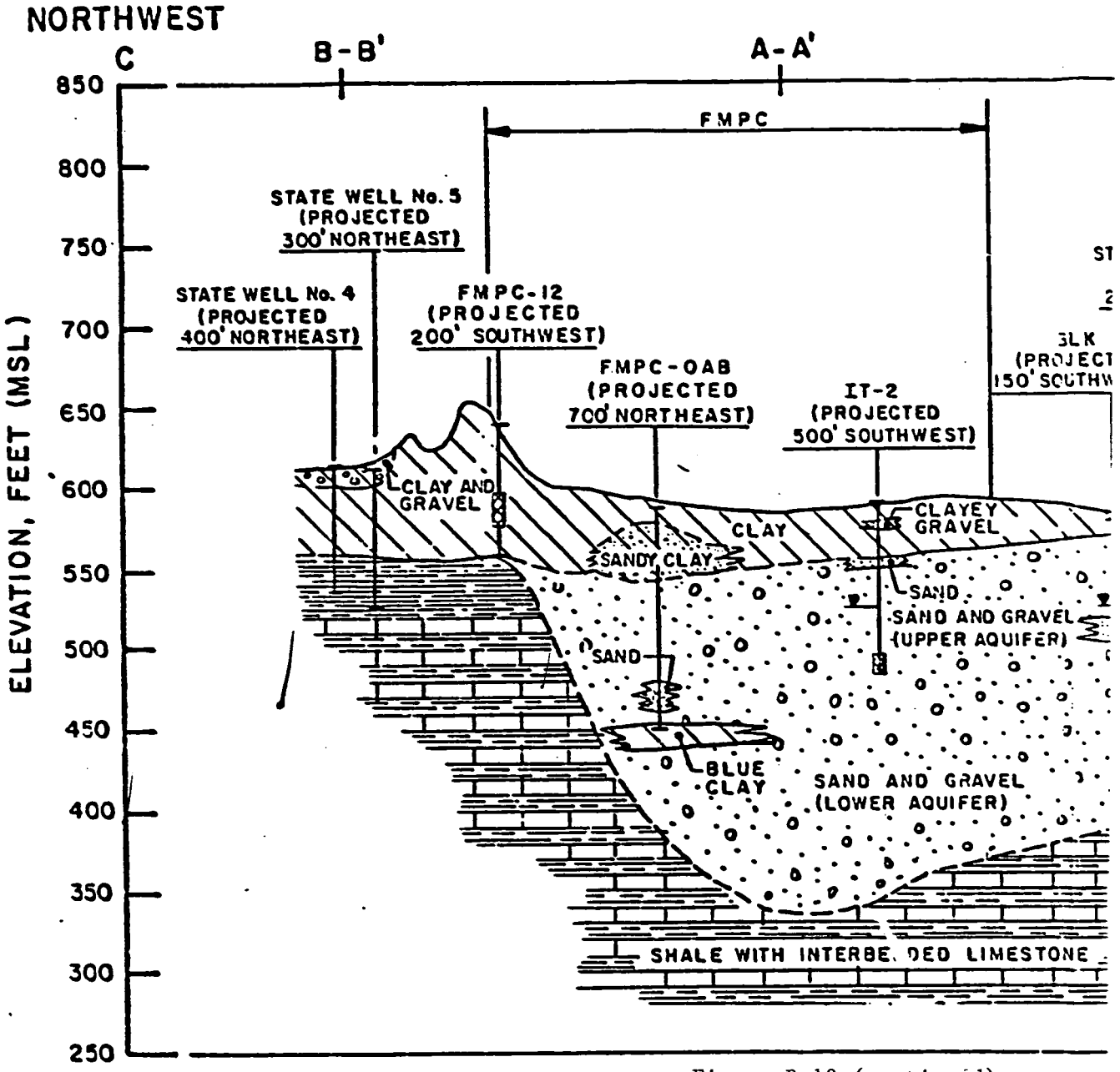

Figure B-13 (continued)

CROSS SECTION C-(

(LOOKING NORTHEAST)

VERTICAL SCALE

0 100 200 FE

HORIZONTAL SCALE

0 2000 4000 FE

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS. ALSO THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS WERE GENERALIZED FROM AND INTERPOLATED BETWEEN THE TEST BORINGS. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE LOCATION OF THE TEST BORINGS AND IT IS POSSIBLE THAT SUBSURFACE CONDITIONS BETWEEN THE TEST BORINGS MAY VARY FROM THOSE INDICATED.

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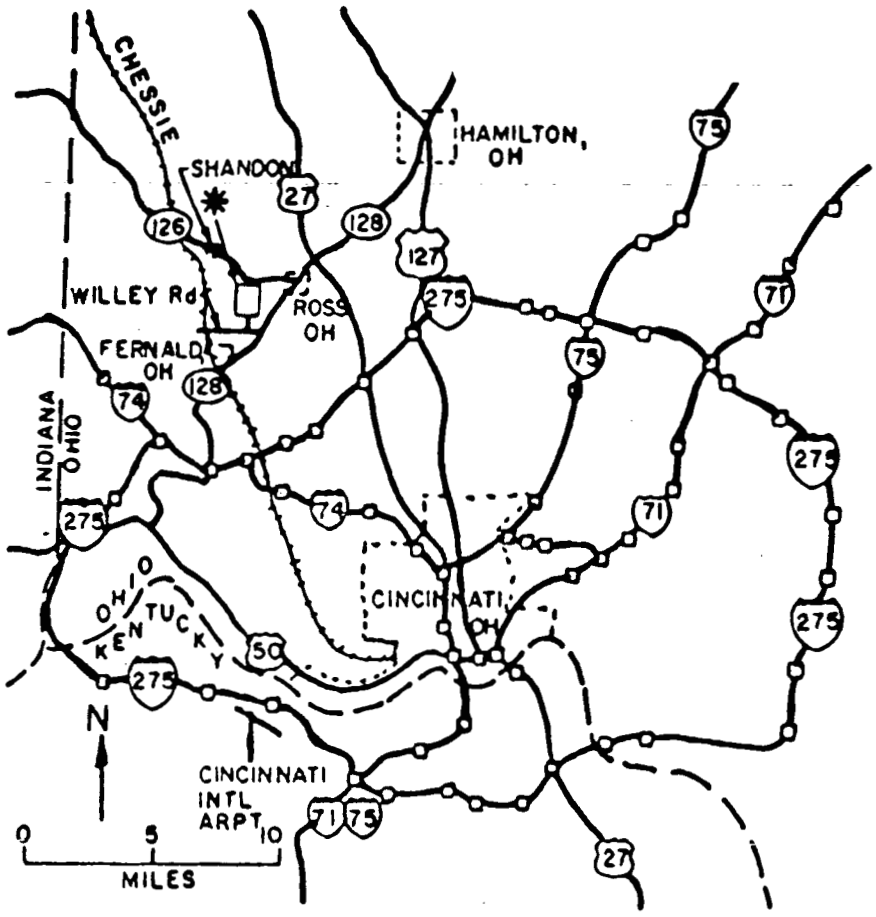
FIGURE B-14

STATE ROUTES AND WILLEY ROAD



* Fernald

FIGURE B-15

EXAMPLE OF TRAFFIC ROUTES FOR HAZARDOUS WASTE SHIPMENTS

255

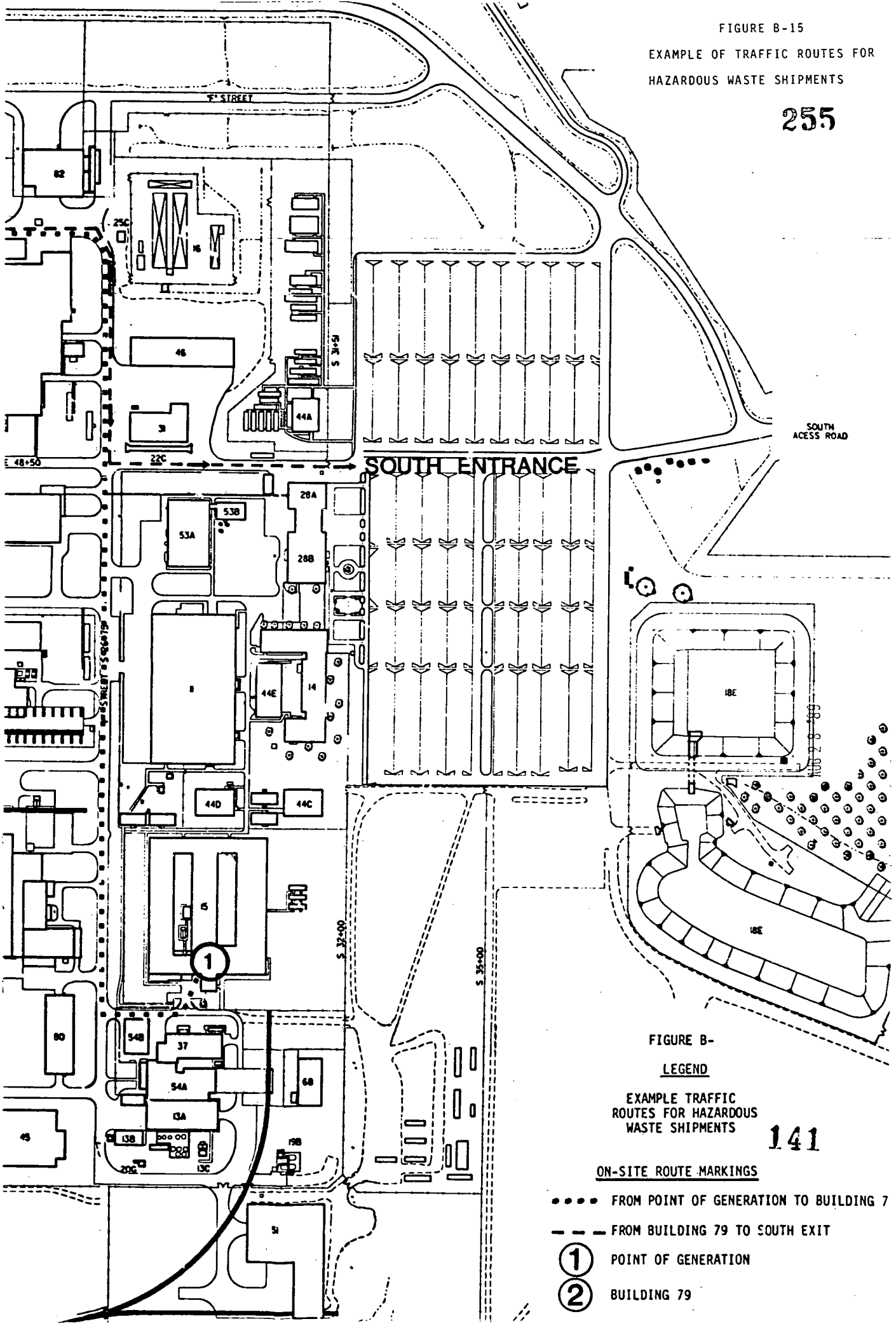


FIGURE B-

LEGEND

EXAMPLE TRAFFIC ROUTES FOR HAZARDOUS WASTE SHIPMENTS

141

ON-SITE ROUTE MARKINGS

- - - - FROM POINT OF GENERATION TO BUILDING 7

— — — FROM BUILDING 79 TO SOUTH EXIT

(1) POINT OF GENERATION

(2) BUILDING 79

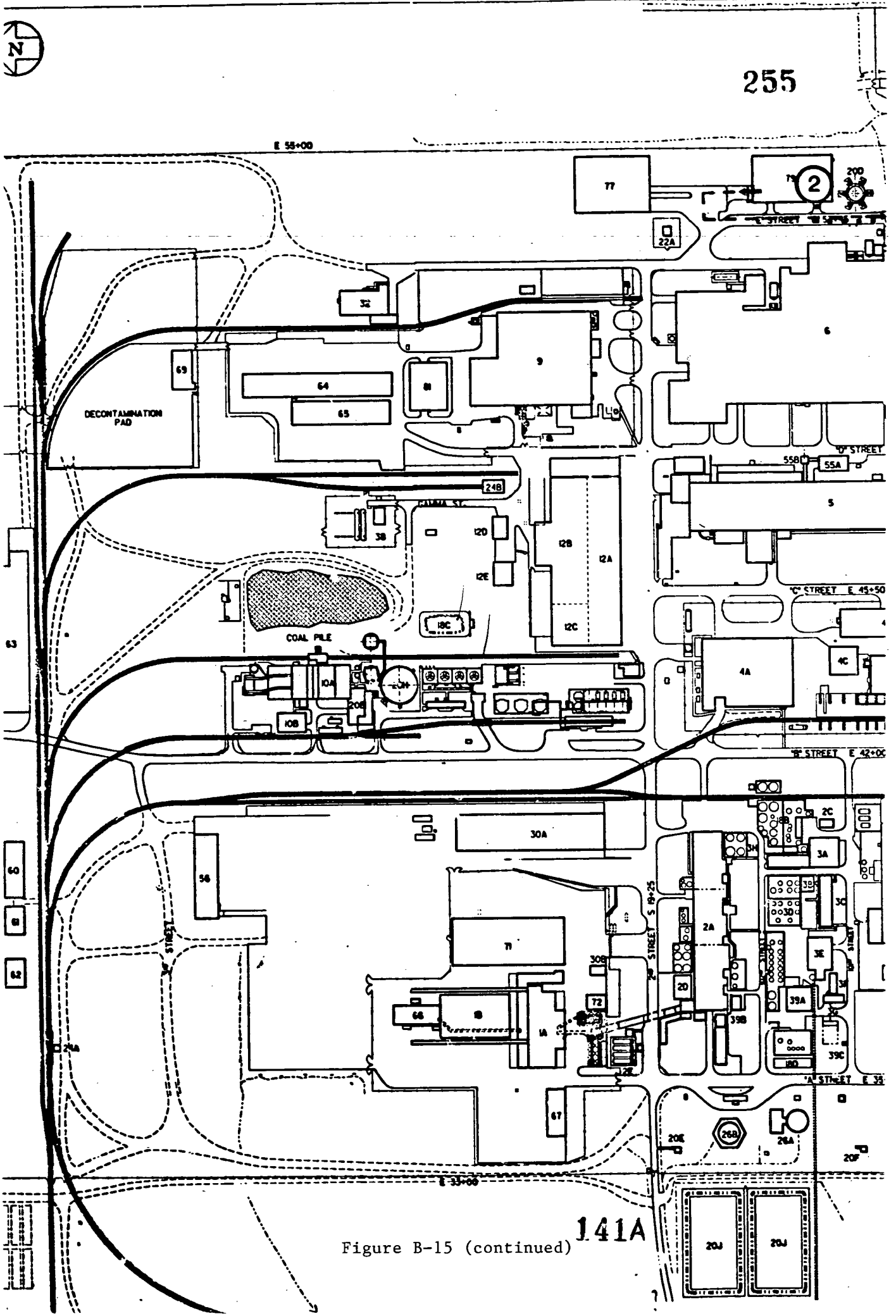


Figure B-15 (continued)

FIGURE B-16

IN-PLANT TRAFFIC CONTROL SIGNALS

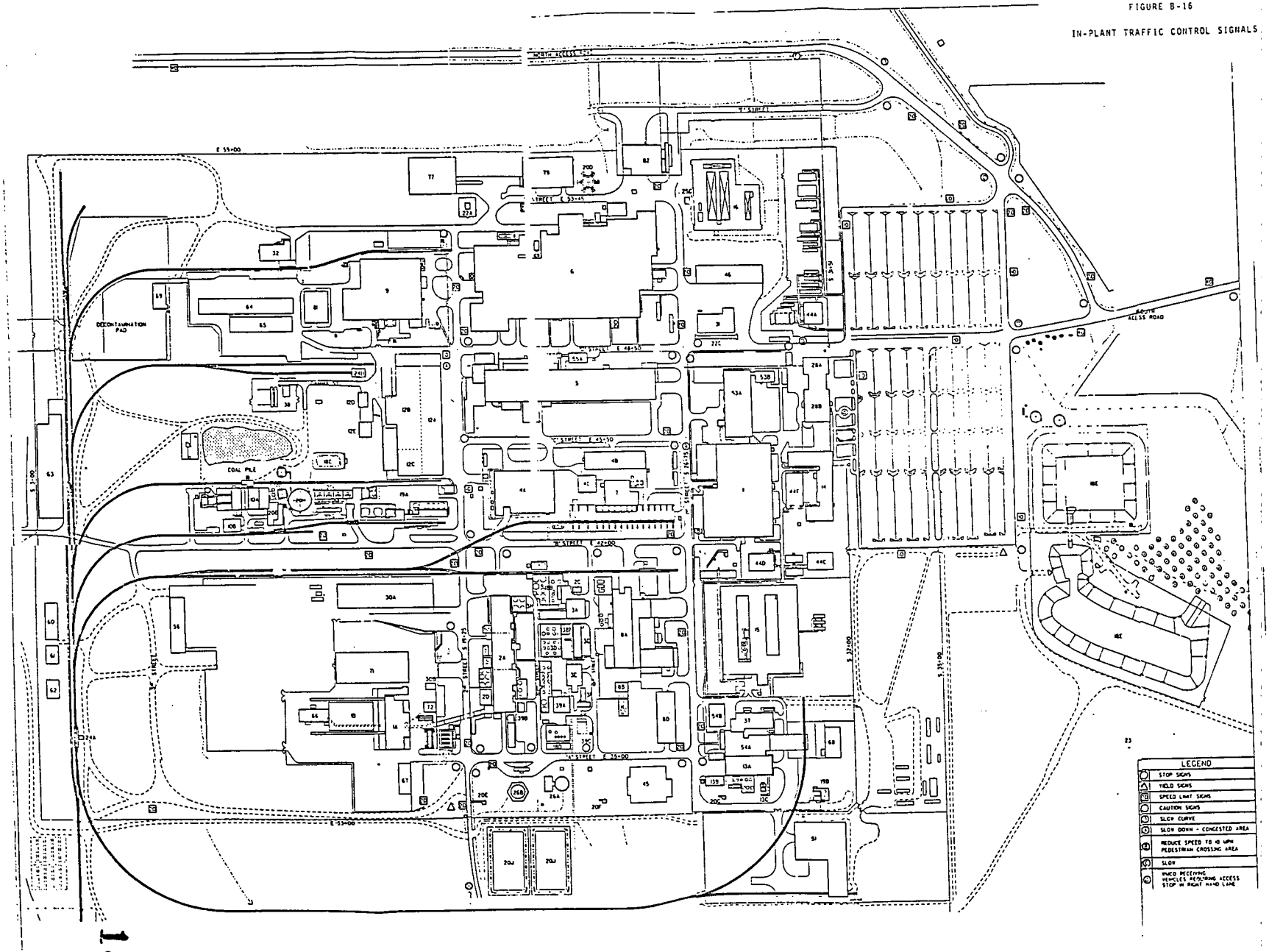
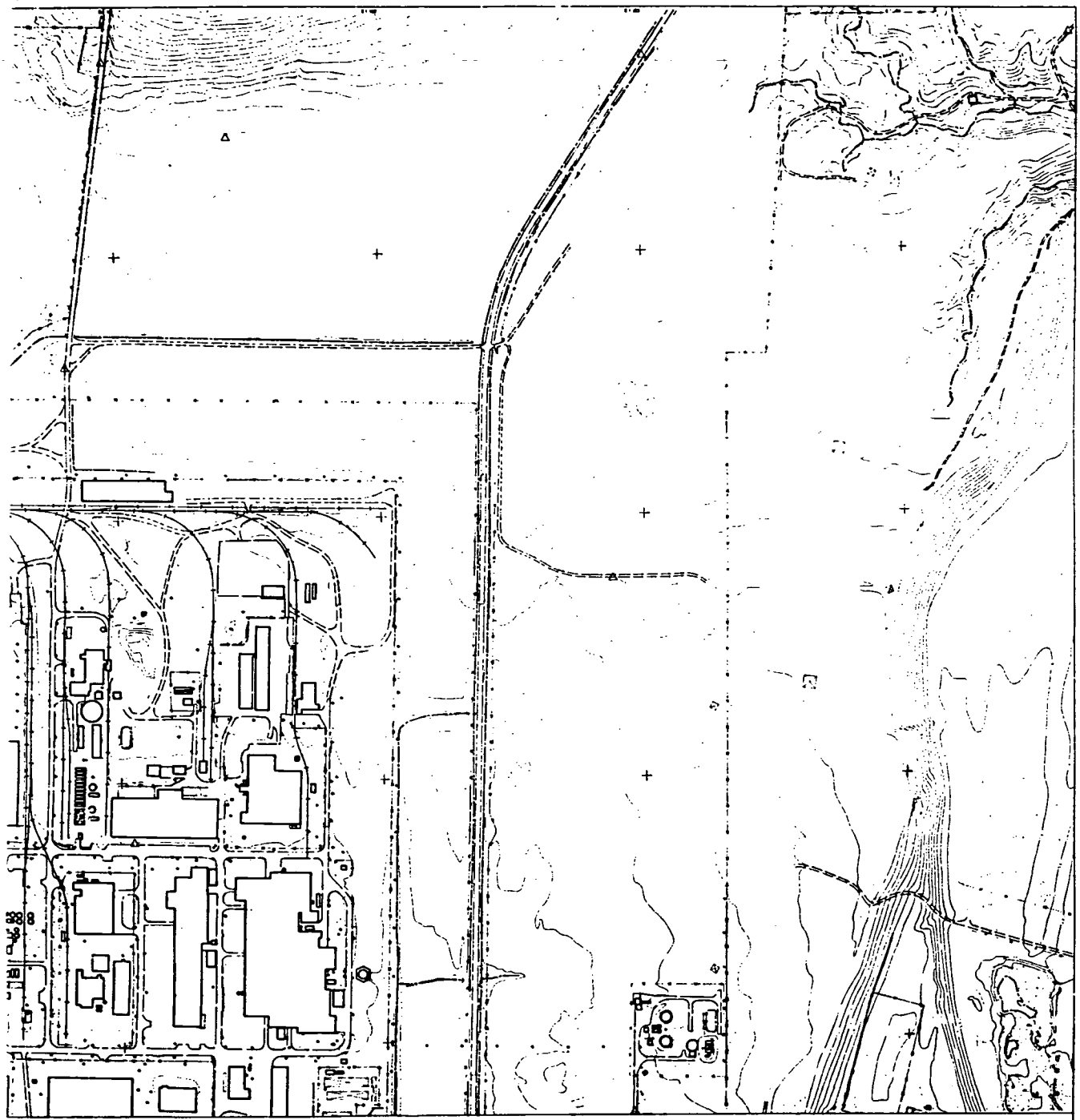


FIGURE B-17

PRODUCTION WELLS 255



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LEGEND:
⊗ PRODUCTION WELLS

WESTON

142A

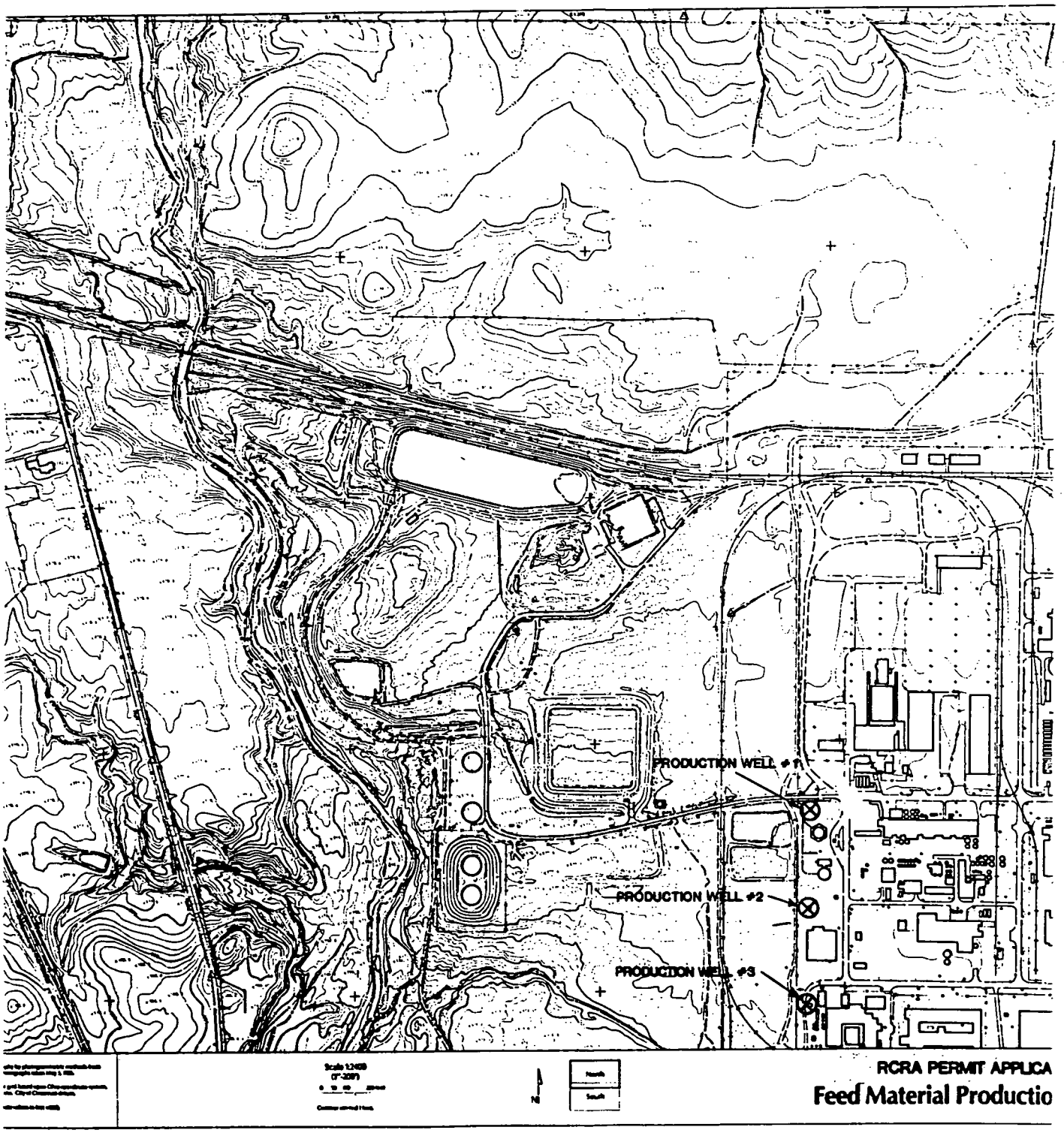

Figure B-17 (continued)