390

3-402.~~8~~ 10

SUBMITTAL OF THE BOILER PLANT/WATER PLAN IMPLEMENTATION PLAN FOR ABOVE-GRADE DECONTAMINATION AND DISMANTLEMENT

09/12/96

DOE-1336-96
DOE-FN EPAS
~~100~~ 115
IMPLEM

Department of Energy
Ohio Field Office
Fernald Area Office
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155

390

SEP 1 2 1996

DOE-1336-96

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

SUBMITTAL OF THE BOILER PLANT/WATER PLANT IMPLEMENTATION PLAN FOR ABOVE-GRADE DECONTAMINATION AND DISMANTLEMENT

Reference: DOE-0904-96, Johnny Reising to James Saric and Tom Schneider, "Revised Schedule for Submittal of Draft Operable Unit 3 Implementation Plans to the U.S. Environmental Protection Agency and the Ohio Environmental Protection Agency," dated May 17, 1996.

The purpose of this letter is to transmit to the U.S. Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA) the enclosed draft version of the Boiler Plant/Water Plant Implementation Plan for Above-Grade Decontamination and Dismantlement. The submittal of this Implementation Plan to the EPAs fulfills the enforceable milestone of September 20, 1996, identified in the reference above.

If there are any questions concerning this document, please contact is John Trygier at (513) 648-3154.

Sincerely,

Susan M Pete for

Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Yockman

Enclosure: As stated

000001

cc w/enc:

R. L. Nace, EM-425/GTN
G. Jablonowski, USEPA-V, 5HRE-8J
R. Beaumier, TPSS/DERR, OEPA-Columbus
F. Bell, ATSDR
D. S. Ward, GeoTrans
R. Vandegrift, ODOH
S. McLellan, PRC
T. Hagen, FERMCO/65-2
J. Harmon, FERMCO/90
AR Coordinator/78

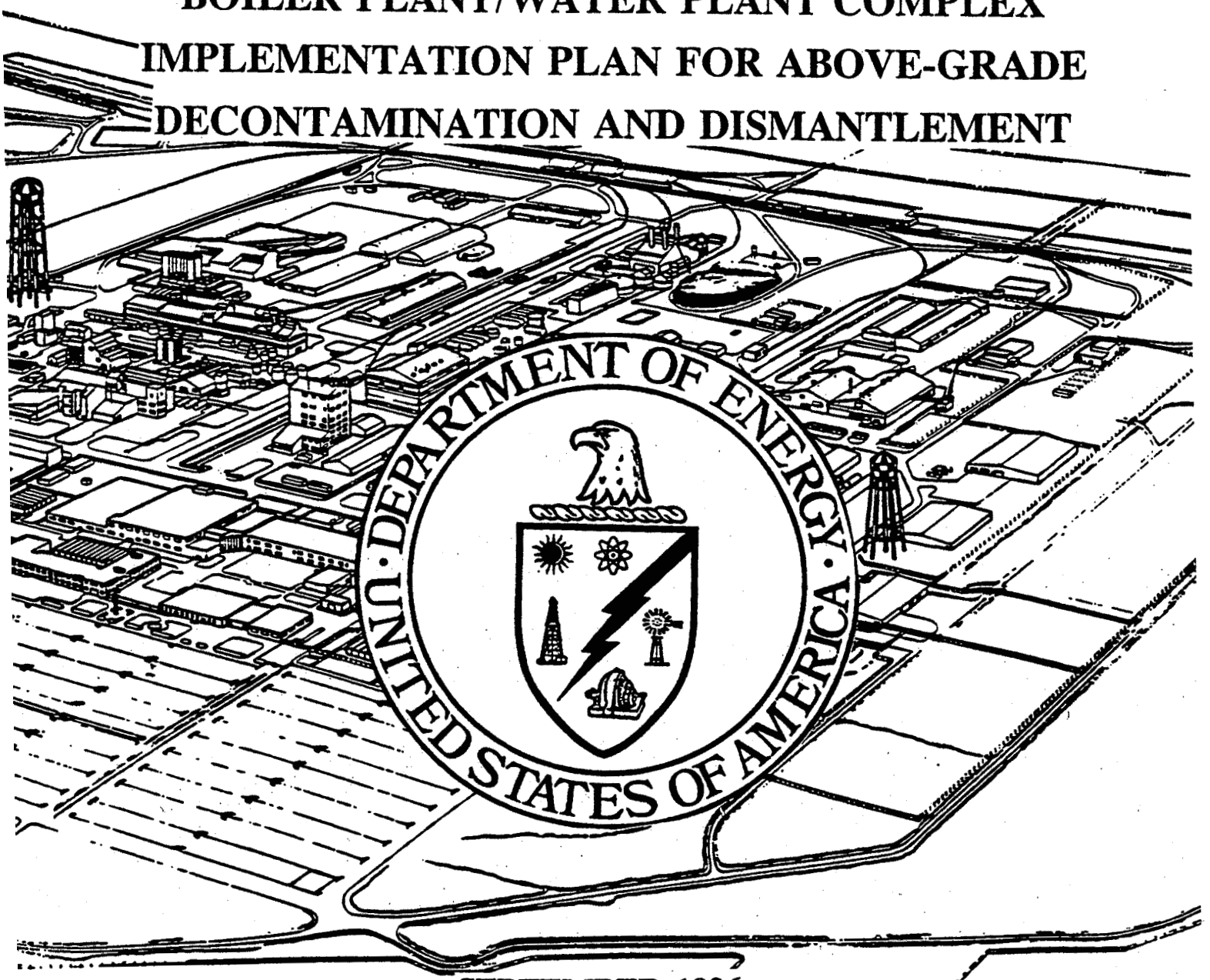
cc w/o enc:

C. Little, FERMCO/2
EDC, FDF/52-7

OPERABLE UNIT 3

390

BOILER PLANT/WATER PLANT COMPLEX IMPLEMENTATION PLAN FOR ABOVE-GRADE DECONTAMINATION AND DISMANTLEMENT



SEPTEMBER 1996

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

U.S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE

000003

DRAFT

DOCUMENT CONTROL NO. 2503-WP-0025 (Rev. A)

OPERABLE UNIT 3
INTERIM REMEDIAL ACTION

BOILER PLANT/WATER PLANT COMPLEX IMPLEMENTATION PLAN FOR ABOVE-GRADE DECONTAMINATION AND DISMANTLEMENT

SEPTEMBER 1996

DRAFT

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

U. S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE

FEMP DOCUMENT CONTROL NO. 2503-WP-0025 (REV. A)

Page left intentionally blank.

CONTENTS

FIGURES

TABLES

LIST OF APPENDICES

NOTATION

Abbreviations, Acronyms, and Initials

ACM	asbestos-containing material(s)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMU	concrete masonry unit
COC	Constituents of Concern
DF&O	Directors Findings and Orders
DOE	United States Department of Energy
D&D	decontamination and dismantlement
EL	End-loading [box]
FEMP	Fernald Environmental Management Project
HEPA	high-efficiency particulate air [filter]
HVAC	heating, ventilating, and air conditioning
HWMU	Hazardous Waste Management Unit
IROD	Operable Unit 3 Record of Decision for Interim Remedial Action
N/A	not applicable
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NPDES	National Pollutant Discharge Elimination System
NTS	Nevada Test Site
OEPA	Ohio Environmental Protection Agency
OSDF	On-site Disposal Facility
OU3	Operable Unit 3
OU3 RI/FS WPA	OU3 Remedial Investigation/Feasibility Study Work Plan Addendum
PPE	personal protective equipment
PSR	Prioritization and Sequencing Report
RCRA	Resource Conservation and Recovery Act
RD/RA	remedial design/remedial action
RI	remedial investigation
ROB	roll-off box
ROD	Record of Decision
RvA	Removal Action
SAP	Sampling and Analysis Plan
SCQ	FEMP Sitewide CERCLA Quality Assurance Project Plan

SOW	Statement of Work
SWIFTS	Sitewide Waste Information, Forecasting, and Tracking System
TL	top-loading [box]
TCLP	Toxicity Characteristic Leachate Procedure
TSI	thermal system insulation
U.S. EPA	United States Environmental Protection Agency
WAC	Waste Acceptance Criteria
WMB	white metal boxes (small)

Units of Measure

cm	centimeter(s)
cm^2	square centimeter(s)
dpm	disintegration(s) per minute
ft	foot (feet)
ft^2	square foot (feet)
ft^3	cubic foot (feet)
gal	gallon(s)
in	inch
mg/L	milligrams per liter
mrem/yr	millirem per year
pCi/g	picoCuries per gram
μg/g	microgram per gram

GLOSSARY

Amended water -

Water that contains an additive (e.g., surfactant) which changes the polarity of water from polar to non-polar. Such water has an increased ability to penetrate material, thus allowing for better particle-holding properties (e.g., asbestos fibers).

Boiler Plant/Water Plant Complex -

A group of Operable Unit 3 (OU3) components that were included in one remedial design effort for remediation; and includes the following components: Boiler Plant (10A); Boiler Plant Maintenance Building (10B); Wet Salt Storage Bin (10C); Utilities Heavy Equipment Building (10E); Water Plant (20B); Cooling Towers (20C); Railroad Scale House (24A); Process Trailers (G-006); Pipe Bridges (G-008); and Railroad Tracks (G-001).

Complex -

A set of components grouped for inclusion into a design package by location, scope of work required, availability for remediation, and cost of dismantlement to be remediated under one or more project(s).

Component -

The smallest physically distinct unit of Operable Unit (OU3) that is considered separately in the development and implementation of a remediation project including, but not limited to, buildings, pads, roads, piping/utilities, and ponds/basins.

Construction debris -

A category of bulk material to be removed from structures during dismantlement, consisting of non-structural construction material such as interior walls, interior framing, suspended ceilings, floor tile, and doors.

Containment structures -

A barrier constructed to prevent or minimize the spread of contamination during decontamination and dismantlement activities.

Decontamination residues -

Residues, hold-up material, or sludges that may be encountered in equipment or process lines during dismantlement activities, or generated as a result of decontamination activities (e.g., wash down of building interior).

Dynamic dismantlement -

A group of dismantlement techniques that incorporate the free fall of a structure. These techniques may include shape charges, tripping the structure, and pulling the structure over.

End-loading boxes -

An end-loading metal box measuring approximately 8' x 8' x 20' with a gross weight capacity of 42,000 lbs. These containers have a volume capacity of

971 cubic feet (ft^3) and a burial volume of 1,280 ft^3. Also known as ISO or SEA/LAND containers.

Engineering controls -

Eliminate hazards by mechanical means or by process design; apparatus and/or mechanisms which physically prevent entry, minimize hazards, or create some kind of barrier.

Hold-up material -

Includes material (both liquid and solid) within any process equipment or reservoir other than residuals which remains affixed to the interior surfaces of various pumps, piping, vessels, or other surfaces of equipment.

Interim remedial action -

Course of action that may be pursued in the short term, before a final Record of Decision, to reduce existing risks at a Superfund site. Also refers to the OU3 interim remedial action to dismantle all OU3 structures.

Interim storage area -

On-site area for temporary storage of material or debris generated during the OU3 interim remedial action.

Interval Period -

The period between the issuance of the OU3 Record of Decision for Interim Remedial Action and the issuance of the OU3 Record of Decision for Final Remedial Action.

Material -

Solids and liquids generated from decontamination and dismantlement operations; includes non-recoverable/non-recyclable material (waste) and recoverable/recyclable material.

Primary material -

Material generated as a result of dismantlement activities of a specific project, including the structure, associated equipment, and contents of the building.

Process knowledge -

Information available about a specific process, based on documentation of past operations or on information obtained from individuals who participated in the operation. This information includes, but is not limited to, process chemistry, history of accidents/spills, maintenance chemicals/materials, and other uses of the process vessels or work space.

Queuing area -

An area established within the construction boundaries that is used for placement of full containers to await relocation by Fernald Environmental Management Project (FEMP) waste management for interim storage or disposition.

Remedial action -

An action that is consistent with the final remedy following a formal examination of the nature and extent of the release, or threat of release of contaminants into the environment, assessment of the risk, and selection of the final remedy based on an evaluation of possible alternatives.

Remedial design -

The technical analysis and procedures that follow the selection of a site remedy, resulting in a detailed set of plans and specifications for implementation of the remedial action.

Remediation subcontractor -

The group, or groups, subcontracted to the FEMP environmental restoration management contractor, who will be responsible for implementation of the remedial action.

Removal action -

Any action necessary to abate an immediate or imminent threat to health and the environment, including actions necessary to monitor, assess, or evaluate the threat.

Roll-off box -

A reinforced top-loading metal box measuring approximately 7' x 5.5' x 22' with the gross weight capacity of 16.95 tons. These containers have a volume capacity of 810 ft^3.

Secondary waste -

Waste other than primary material associated with a remedial action, generated as a result of occupying a job site, conducting decontamination and dismantlement activities, using personal protective equipment, and demobilization activities.

Sequence -

The logical order, developed during the remedial design, in which components within complexes are scheduled for remediation.

Staging area -

A temporary holding area established outside of the construction boundary for empty containers prior to use.

Surface decontamination -

The reduction of existing surface contamination levels, thereby reducing direct exposure potential, as well as reducing available sources for wind-borne or water-borne contamination.

Top-loading metal box -

A top-loading metal box measuring approximately 8' x 8' x 20', with a gross weight capacity of 18 tons. These containers have a volume capacity of 971 ft^3 and a burial volume of 1,280 ft^3.

Transite -

Common construction material used as sheeting for walls and roofs for many OU3 components. It consists of a mixture of asbestos and cement.

White metal box -

A top-loading metal box measuring approximately 3' x 4' x 6,' with a gross weight capacity of 3.4 tons. These containers have a volume capacity of 82 ft^3 and a burial volume of 105 ft^3. Also known as B-25s.

1.0 INTRODUCTION

1.1 Project Statement

The purpose of this implementation plan is to summarize the *Boiler Plant/Water Plant (BP/WP) Complex*[1] project-specific design and field activities planned for decontamination and dismantlement (D&D) of the above-grade portions of ten *components* located in Operable Unit 3 (OU3) at the U.S. Department of Energy's (DOE) Fernald Environmental Management Project (FEMP) in Fernald, Ohio. At- and below-grade remediation is not included within the scope of this project. This implementation plan summarizes the *remedial design* through the pre-final stage and is being submitted to the U.S. Environmental Protection Agency (U.S. EPA) and the Ohio Environmental Protection Agency (OEPA) as a deliverable as specified in the OU3 Remedial Design/Remedial Action (RD/RA) Work Plan for Interim Remedial Action (DOE 1995a) and the OU3 Remedial Design Prioritization and Sequencing Report (PSR) (DOE 1995a). In so doing, this implementation plan replaces the submittal of multiple design and construction documents that were described in Sections 4.5 and 4.6 of the OU3 RD/RA Work Plan.

The contents of this implementation plan were prepared based primarily on program-specific information presented in the OU3 RD/RA Work Plan, project-specific strategies developed for the remediation subcontract Statement of Work (SOW) (Part 6 of the bid document), and performance specifications (Part 7 of the bid document).

1.2 Scope of Work

This implementation plan includes the following project-specific D&D activities for the above-grade portions of the BP/WP Complex. The components included in the Complex include:

- Building 10A - Boiler Plant;
- Building 10B - Boiler Plant Maintenance Building;
- Component 10C - Wet Salt Storage Bin;
- Building 10E - Utilities Heavy Equipment Building;
- Building 20B - Water Plant Building;

---

1 *Words that have been italicized are defined in the glossary.*

- Component 20C - Cooling Towers;
- Component 24A - Railroad Scale House;
- Component G-001 - Railroad Tracks (related portions);
- Component G-006 - Process Trailers (related portions); and
- Component G-008 - Pipe Bridges.

This implementation plan does not address all of the components within the *Boiler Plant/Water Plant Complex* as identified by the OU3 PSR. The OU3 PSR defined the BP/WP Complex as also including the Pump Station and Power Center (Building 20A), the Process Water Storage Tank (Component 20H), and the Coal Pile (Component P-005). The Pump Station and Power Center Building is currently providing power to the Maintenance Buildings, the Cooling Towers, the Tank Farm, and several office trailers. Building 20A has also been identified as the subcontractor's point source for electrical power during dismantlement. Component 20H is currently needed to store water as a backup to the city water source. Therefore, remediation of Components 20A and 20H will be included in the Maintenance Complex remediation project. Since the submittal of the OU3 PSR, the Coal Pile has been consumed. Therefore, any remaining coal fines are considered at-grade and will be remediated by the Soil Excavation Project. The sequence, schedule, and component-specific requirements for remediation of at- and below-grade dismantlement, as discussed in the OU3 PSR, is contingent on RD/RA scheduling for soil remediation within the former Production Area and will be addressed in the appropriate RD/RA submittal for the Soil Remediation Project.

The PSR defined the Miscellaneous Complex as including components that would be dismantled throughout the OU3 remedial action on an available basis. The Process Trailers (G-006), Pipe Bridges (G-008) and Railroad Tracks (G-001), which are in close proximity to the BP/WP Complex and are unoccupied and/or disconnected and available for dismantlement, have been included in this design package.

The key elements of the BP/WP D&D project that are addressed in this implementation plan include:

- asbestos abatement/removal;
- above-grade component dismantlement;
- *material* management;

- environmental monitoring;
- proposed sampling;
- project schedule; and
- project management responsibilities.

In accordance with the OU3 Record of Decision for Interim Remedial Action (IROD) (DOE 1994), remediation activities have been planned using a performance-based methodology. The BP/WP Complex remedial design has been prepared using performance-based specifications as described in Section 4.5 of the OU3 RD/RA Work Plan. These performance specifications, listed in Appendix B of this implementation plan, meet the remedial objectives stated in the IROD and were used as the basis for developing the remediation approach presented in this document. The performance specifications developed for the BP/WP Complex are identical to the performance specifications included in Appendix B of the OU3 RD/RA Work Plan, except for several design changes, regarding contamination release levels for materials, made recently as a result of the development of the OU3 Feasibility Study and the Removal Action 17 (RvA 17) Work Plan (DOE 1996a). The affected design specifications are discussed in Sections 2.3.4 and 2.5.5. This implementation plan has incorporated into text various key performance requirements stipulated by the specifications using references to specific sections that pertain to a particular remedial activity.

The use of performance specifications in the remedial design requires that the *remediation subcontractor* develop work plans, subject to DOE approval, that will specify remediation methods necessary to meet project objectives. The *sequence* of remedial activities and methods defined in the remediation subcontractor's work plans may differ from that presented in this implementation plan, should an alternate sequence be proposed and approved by DOE. Substantive changes in the scope or intent of this plan will require U.S. EPA and OEPA notification/approval prior to implementation of the activities. Nonsubstantive, but otherwise significant, deviations to specific methods or techniques proposed in this plan will be reported in the final remedial action report prepared following completion of this D&D project.

1.3 Plan Organization

This implementation plan is comprised of five sections and four appendices. Section 1 contains the remedial action project statement, scope of work, an overview of this implementation plan, and a brief description of the BP/WP Complex. Section 2 describes the overall approach to the BP/WP Complex remediation project as developed during remedial design. That approach includes a sequence of action, a plan for materials management, environmental monitoring activities, and a generalized, task approach for implementing above-grade remediation. Section 3 presents specific aspects of the remedial tasks for each component contained in the BP/WP Complex. Section 4 presents the schedule for implementation of the D&D project. Section 5 describes the project management approach beyond what was described in the OU3 RD/RA Work Plan.

Appendix A contains a summary of environmental and occupational sampling based on the assumptions in the Sampling and Analysis Plan (SAP) for the OU3 interim remedial action and on the remediation requirements presented in this plan. Appendix B lists the performance specifications developed for the OU3 interim remedial action, as applied to the BP/WP Complex D&D project. Appendix C provides drawings that show floor plans and building elevations. Appendix D contains photographs of notable features of, within, or around the buildings to provide an overall perspective of the buildings, associated equipment, and appurtenances.

1.4 Location of the Boiler Plant/Water Plant Complex

Most of the BP/WP Complex is located between 2nd and 3rd Streets, in the north central portion of the former production area, as shown (shaded) in Figure 1-1. Building 24A is depicted in Figure 1-2 due to its remote location from the rest of the complex. Building 24A is located northwest of the complex, directly north of the Third Street Dirt Pile and directly west of the Quonset Huts.

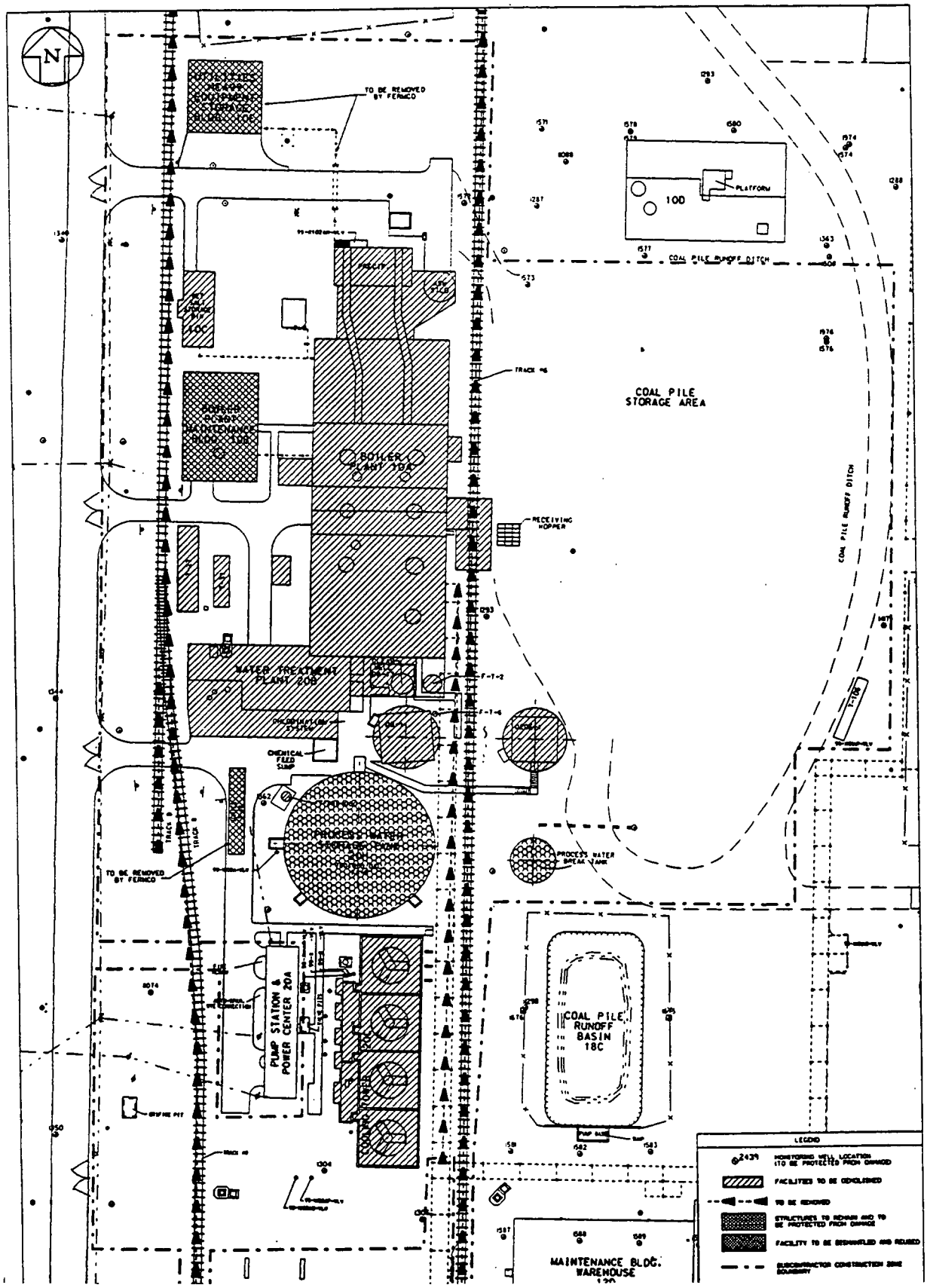


FIGURE 1-1 BP/WP Complex and Construction Area

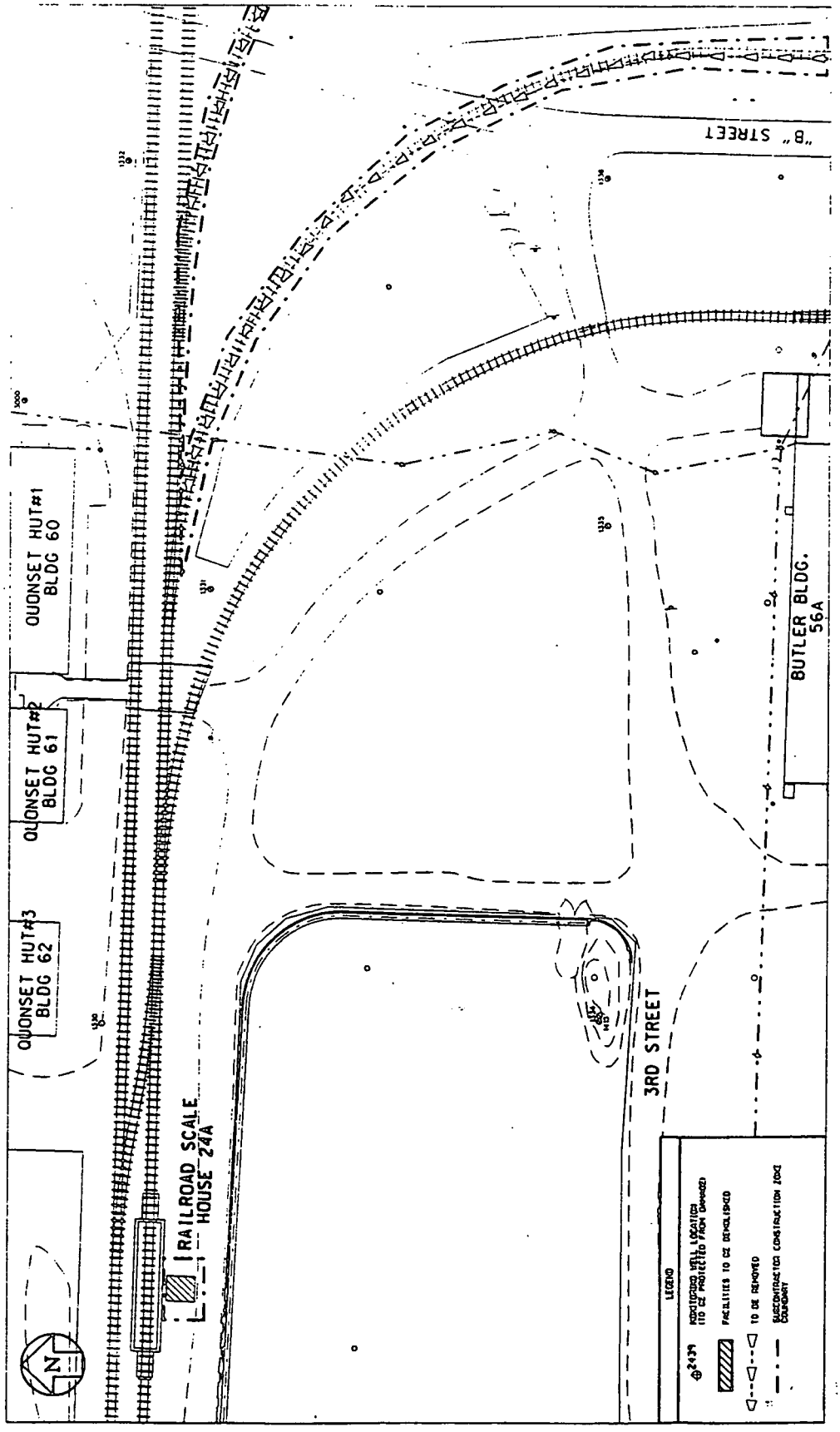


FIGURE 1-2 Building 24A and Construction Area

2.0 GENERAL PROJECT REMEDIATION APPROACH

The overall approach to the decontamination and dismantlement of the BP/WP Complex incorporates the applicable programmatic elements and tasks that were described in Section 3 of the OU3 RD/RA Work Plan. This section describes key aspects of the project-specific approach.

2.1 Sequencing of Remediation

The primary factors that determine the sequence for the remediation of components in the BP/WP Complex is the proximity of surrounding structures, physical constraints of the site, and availability of the components. Such constraints have impacts on determining and coordinating the use of material handling areas and subcontractor staging and storage areas, and the provision of adequate space for dismantlement operations.

Since Buildings 10A and 20B are physically connected to one another, are the largest buildings and are centrally located within the complex, the D&D of these buildings will be performed first and as one unit. The remaining BP/WP Complex components will be decontaminated and dismantled separately, but concurrent with, the Building 10A and 20B activities. It is anticipated that these latter components will be decontaminated and dismantled in the following order: 1) Utilities Heavy Equipment Building (10E); 2) Railroad Scale House (24A); 3) Wet Salt Storage Bin (10C); 4) Trailers (G-006), Pipe Bridges (G-008) and Railroad Tracks (G-001); 5) Cooling Towers (20C); and 6) Boiler Plant Maintenance Building (10B). However, the D&D subcontractor will propose a sequence for approval by DOE.

2.2 Characterization of the BP/WP Complex

The processes and operations within the BP/WP Complex included the production of steam and water treatment. These operations used water pumped from extraction wells, as well as chemical constituents during the water treatment process. Section 3 of this plan describes relevant process information to provide a context for component remediation.

Sections 2.2 and 2.3 of the OU3 Remedial Investigation/Feasibility Study (RI/FS) Report (DOE 1996b) details the sampling approach taken for each major medium for each process area

within a component. Based on field radiological and chemical screening and other criteria, not all components within the BP/WP Complex met the requirement for intrusive sampling and therefore, were not sampled. Attachment A.IV of Appendix A of the OU3 RI/FS Report summarizes the contamination found within each component sampled during the OU3 characterization effort.

The components within the BP/WP Complex have some localized low-level radiological contamination. The components sampled show radiological results very near the baseline levels listed in Attachment A.I, Appendix A of the OU3 RI/FS Report. After the results of the initial radiological surveys did not exceed the intrusive sampling criteria, Components 10C, 10E, and 20B were not sampled. Any system that has cooling water or condensate supplied to it will be treated as potentially contaminated based on the preliminary surveys.

Preliminary radiological contamination surveys of the boilers, condensate system, and cooling water systems in Building 10A were done to verify contamination levels in these systems. Surveys showed high levels of fixed radiological contamination within the boilers and deaerator tank. Fixed contamination was found in all of the systems surveyed. Loose contamination was found in the condensate return tank and deaerator tank. There was no loose contamination found on the externals of these systems.

In addition to localized radiological contamination, inorganic contamination was found in some components. The highest levels of contamination found in concrete and masonry media was chromium. Two concrete samples from the Boiler Plant exceeded 20 times the Toxicity Characteristic Leachate Procedure (TCLP) level for chromium. However, the leachate rate of chromium in a concrete matrix was demonstrated to be less than 4 percent (refer to Table A.II-4 of Appendix A, of the OU3 RI/FS Report). Therefore, this concrete is not identified as a RCRA material.

Steel with lead-base paint does not exhibit the toxicity characteristic. Therefore, dismantled steel is not considered a RCRA material (refer to Section 2.6.2 of Attachment A.III, Appendix A of the OU3 RI/FS Report).

Based on the information from the OU3 RI/FS Report, additional field surveying was completed in July 1996. For example, paint from several painted surfaces within components was

screened for lead using a portable X-ray Fluorescence (XRF) analyzer. Fifty-five samples were taken from surfaces in the Boiler Plant (10A) and 12 samples were taken from surfaces in the Water Plant (20B). The results of the XRF survey indicate that the majority of the equipment and structures in these two buildings do contain lead paint. As a result, all painted surfaces will be managed as lead-based.

Pre-design samples were also collected from the refractory materials inside the boiler to verify the presence of asbestos contamination. Although this data indicated that the materials sampled were not asbestos-containing material (ACM), not all types of insulating material could be sampled due to limited access. These materials include felt blanket, shiptile and block insulation. Vendor literature indicates asbestos-containing materials are present inside the boilers. Due to the physical proximity of the vendor-identified ACM to the sampled material, all insulating media will be managed as ACM until proven otherwise.

The above-referenced RI data, additional field surveying and radiological survey data provides alpha removable, beta-gamma removable, and total beta-gamma radiological information. These data have been used in support of the following BP/WP Complex D&D planning and design efforts including, but not limited to:

- developing the safety assessment documentation to support the proposed activities;
- enhancing the project-specific health and safety plan and determining potential concerns for worker protection based on the suggested decontamination and dismantlement techniques;
- enhancing the subcontractor's understanding of expected contamination levels;
- determining personnel monitoring requirements;
- determining the need for project-specific radiological ambient air monitors;

- identifying radiological contamination areas to determine if decontamination and/or removal prior to the subcontractor activities if required; and

- determining disposition options for various primary and secondary material streams generated by the project activities.

2.3 Materials Management

The BP/WP Complex is a non-process related Complex and therefore, it is anticipated that it will not require washing of the interior surfaces and equipment. No process/hold-up material is in the Complex and demolition debris will not be shipped offsite for disposal. The material management strategies developed for this project are outlined in this section. These management strategies are based on Section 3.4 of the existing OU3 RD/RA Work Plan.

D&D subcontractor requirements for managing material are specified in Section 01120 of the performance specifications (Debris/Waste Handling Criteria) and in the project-specific Waste Management Plan. The Waste Management Plan is a plan which gives the D&D subcontractor a general overview of waste handling criteria applicable to this project. This plan addresses waste minimization in that it stipulates that the subcontractor will, whenever possible, dismantle lead flashing in a manner that will facilitate recycling (i.e., maximize straight lengths and minimize inaccessible surfaces). Based on the requirements specified in Section 01120, a mobilization work plan that details waste handling methods and procedures will be prepared by the D&D subcontractor. Waste minimization will be accomplished, in part, by unpacking equipment and material prior to entering the radiologically controlled area whenever possible, limiting the number of tools and equipment that could become contaminated, and not bringing any hazardous material to the construction zone (Section 01120). The D&D subcontractor will also be directed (Section 05126) to maximize straight lengths and minimize inaccessible surfaces of structural steel during dismantling activities, and to segregate the dismantled steel accordingly. This requirement will enhance the feasibility of unrestricted release recycling of the steel members or make eventual placement of the steel in the on-site disposal facility (OSDF) more efficient.

2.3.1 Primary Materials Management

Primary materials, including dismantlement debris and other bulk waste materials from the BP/WP Complex components will be managed in accordance with decisions made in the OU3 IROD, OU3 RD/RA Work Plan, RvA 17 (Improved Storage of Soils and Debris), the Waste Management Plan, and the requirements specified in Section 01120 of the performance specifications. Upon approval of implementation strategies for actions authorized under the OU3 Record of Decision (ROD) for Remedial Action (DOE 1996c), material management (i.e. treatment, storage and disposal) provisions contained in the final OU3 RD/RA Work Plan documentation will supersede those referenced here. Sections 2.3.3 and 2.3.4 below describe key aspects of the current material management strategy.

Existing process knowledge, radiological survey data, data from the OU3 RI/FS, and supplemental field surveying data are the main sources of information used to determine the primary material management requirements. Where data are insufficient, additional sampling may be performed to characterize materials to establish or to verify if materials meet the requirements for interim storage or anticipated disposition. Appendix A of this implementation plan summarizes anticipated sampling and analysis to determine acceptance of material for all disposition options considered for this project.

2.3.2 Secondary Waste Management

Management of *secondary wastes* includes handling, potential sampling, storage, and disposition of waste materials generated during remediation. Such waste includes vacuumed dust, filters, filter cake, personal protective equipment (PPE), spent consumables, and wastewaters. Since the BP/WP Complex was not a uranium production facility, nor was it ever used as a warehouse for nuclear material, it is anticipated that all demolition debris generated from this project will be eligible for either free-release/recycling or placement in the on-site disposal facility (OSDF). In the event wastewater is generated at the project site(e.g., dust suppression), water will be collected in the Coal Tunnel Sump located in the basement of Building 10A then transferred to the Coal Pile Runoff Basin and managed through the FEMP Waste Water Treatment System, in accordance with the FEMP National Pollutant Discharge Elimination System (NPDES) permit.

2.3.3 Estimates of Material Volumes

Materials to be generated during this project have been categorized according to the same classification system identified in Table 3-1 of the OU3 RI/FS Report. The volumes and weights of materials to be generated during the BP/WP Complex D&D are presented in Tables 2-1 and 2-2, respectively. Materials were assigned to a specific container according to current OU3 RI/FS and RvA 17 strategies. RvA 17 updated the material segregation and containerization criteria (MSCC) document that was presented in Appendix A of the OU3 RD/RA Work Plan. The requirements of the updated MSCC, as it pertains to this project, have been applied to Table 2-1. The volume estimates associated with each material segregation category are listed according to general material type, volume, and weight, and the type and number of containers needed. Estimates for spent PPE and consumables are included as either non-regulated ACM or miscellaneous materials, depending on the activity undertaken when these materials will be generated.

The bulked and unbulked volume and weight estimates in Tables 2-1 and 2-2, respectively were developed by reviewing engineering drawings and performing field inspections to identify and quantify materials. Although both bulked and unbulked volume estimates are listed in Table 2-1, the primary interest for material management is with the bulked estimates. Bulked estimates are necessary for estimating the number of containers needed for the project and the size of stockpiles that can be expected. Note that Buildings 10E and 10B are planned for relocation and reuse; therefore, their respective material volumes do not affect container or storage needs for this project. Each type of material listed in Table 2-1 has been assigned a bulking factor based on compaction data obtained from size reduction and containerization of such materials during RvA 19 - Plant 7 Dismantling, Plant 4 Dismantling, and from construction industry standards. These bulking factors were originally identified and published in Table A.3-1 of the OU3 PSR but have been updated to reflect OU3 RI/FS Categories and other refinements.

The estimates for material tonnage in Table 2-2 were calculated by multiplying material densities (available from construction standards) with unbulked volume estimates. As referenced in the OU3 PSR, these material volume and weight estimates have been taken from the FEMP Sitewide Waste Information, Forecasting, and Tracking System (SWIFTS) database,

TABLE 2-1 Bulked and Unbulked Material Volume Estimates (ft^3)

Component	Vol. Type	Accessible Metals	Inaccessible Metals	Process-Related Metals	Painted Light-Gauge Metals	Concrete	Non-Regulated ACM	Regulated ACM[1]	Misc. Materials[2]	Component/ Complex Totals
10A	Bulked	30,059	191,717	(0)	296	3,033	5,817	1,255	5,519	237,696
	(Unbulked)	(1,800)	(56,387)	(0)	(148)	(2,333)	(4,847)	(369)	(2,759)	(69,386)
10B	Bulked	687	388	0	40	754	(0)	(0)	219	2,088
	(Unbulked)	(41)	(114)	(0)	(20)	(580)	(0)	(0)	(109)	(864)
10C	Bulked	120	68	0	0	778	0	32	148	1,146
	(Unbulked)	(7)	(20)	(0)	(0)	(598)	(0)	(9)	(74)	(708)
10E	Bulked	204	223	0	26	0	0	0	464	917
	(Unbulked)	(12)	(66)	(0)	(13)	(0)	(0)	(0)	(232)	(323)
20B	Bulked	3,378	16,513	0	46	426	197	950	2,428	24,298
	(Unbulked)	(224)	(4,856)	(0)	(23)	(328)	(164)	(279)	(1,214)	(7,088)
20C	Bulked	380	6,201	0	537	0	521	271	9,850	17,760
	(Unbulked)	(23)	(1,823)	(0)	(268)	(0)	(434)	(80)	(4,925)	(7,553)
24A	Bulked	0	7	0	0	468	0	4	120	599
	(Unbulked)	(0)	(2)	(0)	(0)	(360)	(0)	(1)	(60)	(423)
Misc[7]	Bulked	600	2,550	0	20	26	0	0	5,700	8,896
	(Unbulked)	(200)	(750)	(0)	(10)	(20)	(0)	(0)	(2,850)	(3,830)
Total	Bulked	35,428	217,667	0	965	5,485	6,535	2,512	24,448	293,040
	(Unbulked)	(2,307)	(64,018)	(0)	(483)	(4,220)	(5,445)	(739)	(12,224)	(89,437)
Container/Quantity[3]		None	None	na	None	None	ROB[5][6]/6	ISO[5]/3	ROB[5]/30	
Interim Storage Configuration[4]		Stockpile	Stockpile	na	Stockpile	Stockpile	ROB	ISO	ROB	
Disposition		On-Property	On-Property	na	On-Property	On-Property	On-Property	On-Property	On-Property	

(1) Excludes gutter cleanout which will be placed in drums (volume estimated at less than one drum).
(2) Excludes compactibles which will be placed in a dumpster as refuse for compaction.
(3) ISO: *End-Loading Container*/Sea-Land boxes) holds up to 971 cubic feet and/or 42,000 lbs. of material; ROB: *Roll-Off Box* holds 810 cubic feet and/or 16.95 tons of material.
(4) Currently, the preferred location for interim storage of containerized and stockpiled materials is the Plant 1 Storage Pad.
(5) Container is volume restricted.
(6) Transite will be handled separately from other Non-Regulated ACM. Transite will be band-wrapped, stacked on pallets, and stored in a stockpile configuration.
(7) Miscellaneous includes above grade utilities, trailers, railroad tracks, and other related structures/facilities.

TABLE 2-2 Material Weight Estimates (tons)

Component Designation	Accessible Metals	Inaccessible Metals	Process-Related Metals	Painted Light-Gauge Metals	Concrete	Non-Regulated ACM	Regulated ACM	Misc. Materials	Component/ Complex Totals
10A	440	893	0	10	64	301	1	45	1,755
10B	10	8	0	3	16	0	0	1	39
10C	2	1	0	0	45	0	.1	.2	48
10E	3	3	0	2	0	0	0	1	9
20B	55	222	0	4	25	9	.1	17	333
20C	5.5	213	0	5.3	0	24	.5	73	321
24A	0	1	0	0	10	0	.1	1	12
Miscellaneous[1]	74	87	0	1.5	1	0	0	35	198
Complex Total	589	1428	0	25.5	161	335	1.8	173	2,713

(1) Miscellaneous includes above grade utilities, trailers, railroad tracks, and other related structures/facilities.

which is the official FEMP database for materials and is updated as project-specific data is applied.

Container types and storage configuration are based on the category of material, characteristics of the material, and anticipated disposition based on the current strategies presented in the OU3 RI/FS report and RvA 17 Work Plan. Material/container combinations, being either weight or volume restricted, are used to calculate the number of containers required. Disposition of material listed in Tables 2-1 and 2-2 is provided for under the OU3 IROD and is also consistent with the "Selected Remedy" that is discussed in the OU3 ROD for Final Remedial Action.

2.3.4 Material Handling, Staging, Interim Storage, and Disposition

Material Handling/Staging

Pursuant to Section 01120 of the performance specifications, material generated from the decontamination and dismantlement of the BP/WP Complex will be reduced in size, segregated, and containerized. It is anticipated that some larger pieces of debris (e.g., vessels, compressors, generators, etc.) may require special handling due to potential disposition options and/or health and safety issues. Filled containers will be weighed, inspected, sealed, and tagged for on-site movement. The MSCC will be used as the basis for all containerizing activities. However, as noted in Section 2.3.3, the MSCC, which was originally presented in Appendix A of the OU3 RD/RA Work Plan, has been updated to be consistent with RvA 17 and the OU3 RI/FS Report.

Pursuant to Section 01120 of the performance specifications, the D&D subcontractor will establish a *queuing area* having a controlled boundary within the construction site. Empty containers and container preparation materials will be delivered to this area for use by the D&D subcontractor.

Compressed gases, explosives, free-liquids, fine particulates, hazardous wastes, corrosive materials and etiological agents will not be allowed in containers that hold debris. Sampling of waste containers designated for off-site shipments will be performed by FEMP waste management personnel in accordance with the OU3 RD/RA SAP and Waste Acceptance Criteria (WAC).

In addition, a satellite accumulation area and a 90-day storage area will be established where all generated, removed hazardous waste will be taken once a day. These areas, which will be controlled by FEMP personnel, will be established in locations which will ensure minimal disruption of construction activities. Containers used for ACM will require additional preparation, including the use of polyethylene sheeting as secondary containment.

Full containers destined for off-site shipment (e.g., recycling/reuse) will be delivered to an on-property packaging/staging area for sampling (if necessary), container inspection, and sealing. Material destined for on-site temporary storage will be delivered directly to the designated interim storage facility.

Interim Storage/Disposition

The RvA 17 Work Plan has identified the Plant 1 Storage Pad, other existing storage pads, and/or foundations of dismantled buildings as allowable interim storage locations until such time as the on-site disposal facility is functional. Currently, the Plant 1 Storage Pad is the preferred location for interim storage, for both stockpiling and container storage, of all materials from the BP/WP Complex decontamination and dismantlement project that have been designated for on-site disposal; however, other comparable storage locations with appropriate *engineering controls* may be used. The Plant 1 Storage Pad is identified in a plate map contained in Volume 1 of OU3 RD/RA Work Plan for Interim Remedial Action as three distinct but connected areas occupied by component identifier 74T. Such materials will be managed in accordance with the requirements of RvA 17 and addenda and will remain in interim storage until FEMP Waste Management can dispose of them under existing arrangements. Since the BP/WP Complex was not a uranium production facility, nor was it ever used as a warehouse for nuclear material, it is anticipated that all demolition debris generated from this project will be eligible for either free-release/recycling or placement in the on-site disposal facility (OSDF). However, in the event hazardous and/or mixed wastes are identified, appropriate disposition will be designated.

Upon implementation of the OU3 final remedial action, disposition of materials would occur according to requirements specified in a remedial action work plan. The material acceptance criteria referenced in Section 3.4 and Appendix A of the OU3 RD/RA Work Plan also apply to the disposition strategy for this project.

2.4 Environmental Monitoring

The OU3 RD/RA Work Plan sufficiently addresses groundwater and surface water monitoring (Sections 3.7.1 and 3.7.2, respectively) that will be performed in support of the BP/WP Complex remediation project. Environmental air quality monitoring during the BP/WP Complex D&D project will rely on the current site-wide monitoring program as discussed in Section 3.7.3 of the OU3 RD/RA Work Plan. Figure 2-1 illustrates the locations of these monitors.

Based on the factors listed in Section 3.7.3 of the OU3 RD/RA Work Plan, air emissions computer modeling was performed to determine the potential dose impact from atmospheric emissions that could occur during remediation. The results of that modeling effort indicate levels of radiological emission will not exceed the 1.0×10^{-1} millirem (0.1 mrem)/year threshold at the project boundary that would require continuous emissions monitoring. As a point of reference for this threshold value, pursuant to Subpart H of the National Emissions Standards for Hazardous Air Pollutants (NESHAPs), the allowable off-site maximum for radiological emissions is 10 mrem/year.

Supplemental radiological air monitoring will not be required for the D&D of this complex based on: 1) current radiological survey data indicates that contamination within the BP/WP Complex is contained and easily controlled; 2) Radiological Environmental Monitoring (REM) engineering calculations and process knowledge indicate that natural uranium is trapped or fixed inside very few of the BP/WP Complex systems; and 3) the U.S. EPA CAP88 computer modeling indicates that the emissions from the D&D of the BP/WP Complex would be 0.002 mrem/year, significantly less than 0.1 mrem/year monitoring and notification criteria for the D&D of the BP/WP Complex. This modeling is consistent with and conservative to the D&D of the BP/WP Complex. Data from the 1995 Fernald Site Environmental Report confirm the data received from the model.

Given the low dose magnitudes, a project specific air monitoring network is not necessary. Results for airborne uranium contamination during those projects have been approximately 95 percent below the DOE maximum off-site guidelines of 0.1 pCi/m^3. The relationship between pCi/year and mrem/year may be understood by the conversion factor used to equate the two terms at the FEMP: if inhaled continuously (24 hours/day, 365 days/year) 0.1 pCi/m^3 of uranium in air will result in a dose of 100 mrem/yr. It should be noted that various

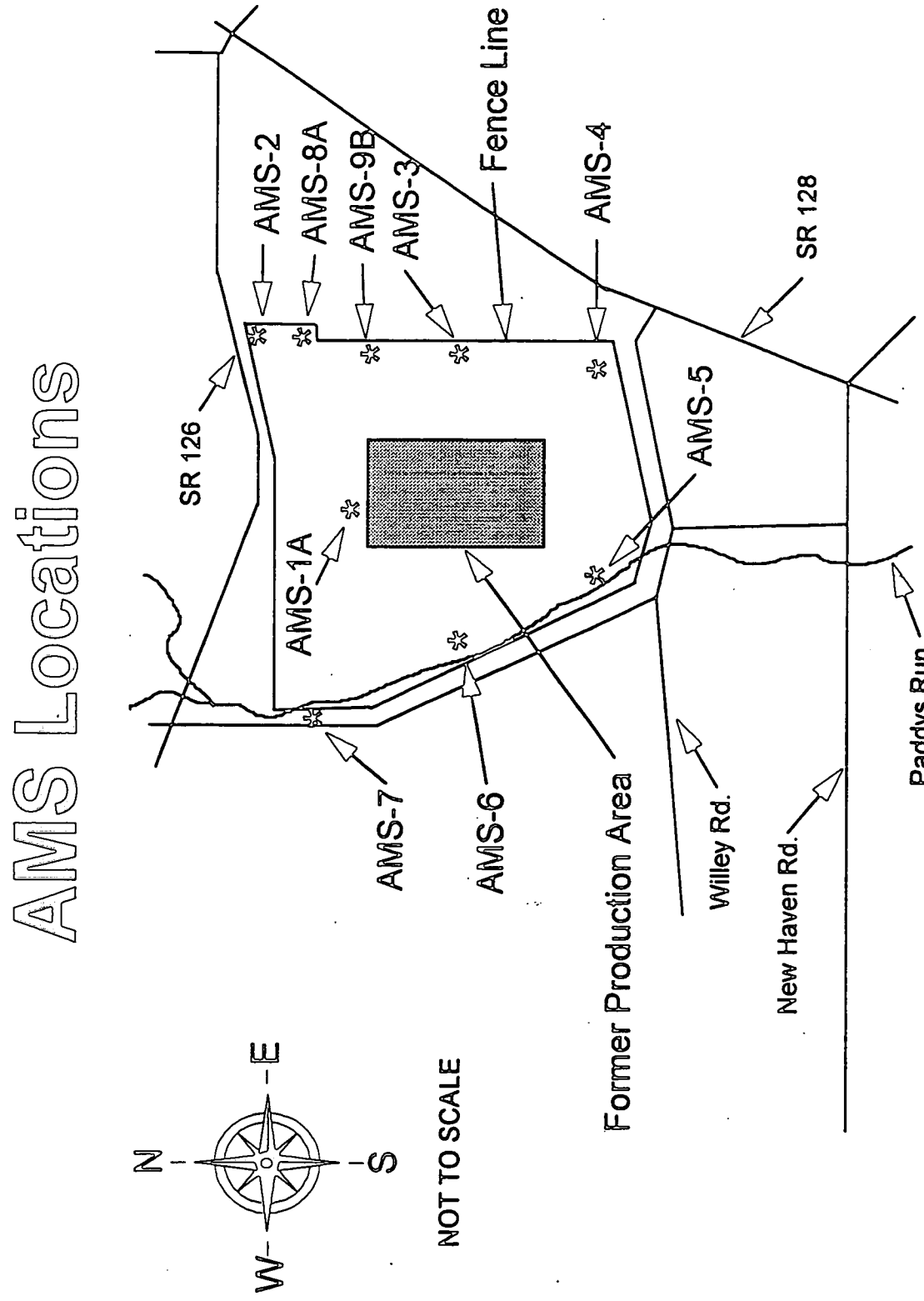


FIGURE 2-1 Fenceline Air Monitoring Locations at the FEMP

assumptions have been incorporated into this conversion factor. Mitigative measures that might be employed in the event of exceedance of the set criterion would include an increase in engineering and administrative controls during a particular task that has been identified as the cause or probable cause of the elevated radiological levels. Such controls could include negative pressure within an enclosed work area using additional HEPA filtration units or additional surface cleaning (wash) steps before removing material from the model.

2.5 Remediation Activities

A general approach to the above-grade decontamination and dismantlement of the BP/WP Complex is described in the following subsections. Section 3 elaborates on this discussion by identifying component-specific interests concerning the remedial tasks. The tasks are as follows:

- Task I - Preparatory Action - Inventory Removal;
- Task II - Preparatory Action - Facility Shutdown;
- Task III - Hazardous Waste Management Units;
- Task IV - Asbestos Removal;
- Task V - Surface Decontamination; and
- Task VI - Above-Grade Dismantlement.

Although the six remedial tasks are generally described in the order in which they will be performed, the actual order for performing these activities may differ from the sequence presented in this plan as a result of evaluation and selection of alternate methods by the remediation subcontractor as approved by DOE. In addition, some of the tasks may not be applicable to one or more of the components.

As required by Section 01515 of the performance specifications (Mobilization), the following activities will take place prior to the implementation of remediation activities discussed in Section 3. The remediation subcontractor will mobilize in preparation for the D&D activities by establishing a break room, clean room, shower facilities, material handling and containerization area, access and egress roadways to and from the job site, and the construction zone boundary. The proposed construction zone boundary that was delineated in the project design is depicted in Figure 1-1 and 1-2. The remediation subcontractor will also

deliver equipment, materials, and office and storage trailers to the site as necessary to perform remediation activities. A sign-in station will be established at the entrance to the job site for posting of permits and health and safety plans. Additional radiological control boundaries will be established prior to starting remediation activities in order to locate contaminated material staging areas as well as access and egress points to and from contaminated areas.

Additionally, the remediation subcontractor is required to develop and submit work plans covering various aspects of the project. One such plan provides details relative to how the remediation subcontractor will protect adjacent facilities (required by Section 01515). Other plans are required for controlling fugitive emissions (performance specifications 03315 and 15067) and storm water run-off protection and erosion control, (Section 01515). Throughout the remediation activities, the remediation subcontractor will be responsible for notifying DOE of conditions in the field that require environmental response. All conditions that necessitate a response will be dealt with immediately.

2.5.1 Preparatory Action: Inventory Removal (Task I)

Since the BP/WP Complex was not directly involved with the production of uranium and the complex was not used as a warehouse to store radioactive materials; no hold-up or product inventories are present in the BP/WP Complex components. Therefore, future references and discussions of Task I are omitted in this workplan.

2.5.2 Preparatory Action: Facility Shutdown (Task II)

Facility shutdown activities are underway for components contained within the BP/WP Complex. This activity will be performed by FEMP personnel. Facility shutdown will consist of:

- utility reduction/alterations;
- dismantling and relocating salvageable and reusable equipment;
- removing contents of equipment, tanks and sumps;
- general housekeeping; and
- relocating personnel.

Since the BP/WP Complex was not directly involved with the production of uranium and the complex was not used as a warehouse to store radioactive materials, no process hold-up materials are to be removed during facility shutdown. Non-process residuals are to be removed by FEMP Facilities Shutdown personnel or the D&D subcontractor.

The BP/WP Complex is subject to a general facility review to reduce potential hazards from the work environment for the remediation subcontractor; to provide FEMP Health and Safety and Waste Management organizations with known starting conditions that are needed to develop the Safety Analysis, work permits, and Health and Safety Plan for remediation activities; and to aid in determining disposition options for the remediation materials. All systems will be inspected to ensure any previously undetected material is located, quantified, and removed. Inspection techniques included visual inspection or non-destructive analysis.

A general cleaning operation will be performed to remove dust and loose debris from easily accessible building surfaces, walls, and floors. The purpose of this activity will be to remove loose chemical contamination held within the dust, thereby reducing the potential personnel exposure during aggressive remediation activities.

All steam, potable water, electrical, fire protection systems, compressed air, communication systems, and radiation detection alarms will be de-energized and terminated at the equipment or at the building exterior to establish the known condition of each energy source within the remediation area. The fire alarm and radiation detection alarm systems will be re-routed and activated as required. In addition, residuals and sludges from tanks and sumps will be removed by Facilities Shutdown personnel prior to turnover to the D&D subcontractor.

2.5.3 Hazardous Waste Management Units [HWMU] (Task III)

No HWMUs were located within the Boiler Plant/Water Plant Complex. Therefore, future references and discussions of Task III are omitted.

2.5.4 Asbestos Removal (Task IV)

The removal of ACM from components will be conducted by a remediation subcontractor qualified to conduct asbestos abatement operations. This activity will involve removing all

friable types of asbestos, typically consisting of thermal system insulation (TSI) on pipes and equipment. The requirements for ACM removal are specified in Section 01516 of the performance specifications and are summarized in this section.

The preferred method for removing ACM on piping is to remove the pipe and ACM as a single unit. A glove bag will be placed around the pipe cut location and the ACM will be removed to allow for a pipe cut without disturbing adjacent ACM or releasing internal radiological contamination. The preferred method for cutting the pipe includes using reciprocating saws, portable band saws, or mechanical shears. This method may require the use of secondary containment and the use of air cleaning units.

The standard procedure to be followed for non-pipe insulation, or where the glove-bag method is not practical for pipe insulation, is as follows:

1) isolate the ACM work area;

2) install a containment barrier, which includes covering the walls, ceiling, and floor with polyethylene sheeting;

3) install air cleaning units in the ACM containment area;

4) wet the ACM with an *amended water* solution;

5) remove the ACM by cutting it into manageable sections;

6) after completing all removal work, surfaces from which ACM have been removed shall be wet brushed or cleaned by an equivalent method to remove all visible ACM residue;

7) wet-clean all ACM work area surfaces to remove all visible ACM;

8) apply encapsulant to all surfaces in the ACM work area;

9) perform asbestos clearance testing to release the ACM work area; and

10) perform additional wipe-downs or apply a second application of encapsulant if the fiber count is elevated.

By erecting individual asbestos abatement *containment structures*, the area that could potentially be affected by asbestos contamination will be minimized. Removal of non-friable ACM (e.g., floor tile, transite siding, roof materials) will be performed, as described in Section 2.5.6 of this plan, in a manner that does not release asbestos fibers to the environment.

2.5.5 Surface Decontamination (Task V)

The practice of washing down all of the equipment and the structure, prior to removing equipment from the building and prior to opening of the structure to the environment was required in previous D&D activities. This was required to reduce the surface radiological contamination to a level that would: 1) prevent the maximum exposed individual at the site boundary from exceeding any exposure limit; 2) protect worker safety from radiological contamination; and 3) prevent environmental releases during D&D and interim storage of debris. Radiological contamination surveys taken of the BP/WP Complex have shown that contamination exists inside the boiler water/steam piping and tanks, condensate and feed piping, and in the air systems. The majority of this contamination is fixed radiological contamination on the interior of the piping and equipment. At this time, no removable contamination found has been on the exterior surfaces of structural materials or equipment.

Based on the survey data, the practice of washing down the equipment and structure will not have any net benefit for the D&D of the BP/WP Complex and, therefore, will not be performed. The D&D subcontractor will use good radiological and housekeeping practices. The D&D subcontractor will undergo routine monitoring to assist them in identifying potential elevated sources of activity. Contamination surveys will be ongoing during the D&D operations of the Complex. If warranted, washing of components may be implemented as needed. In addition, based on existing radiological contamination surveys and/or RI data, it is anticipated that the following buildings do not contain radiological contamination: Boiler Plant Maintenance Building (10B), Wet Salt Storage Bin (10C), Utilities Heavy Equipment Building (10E), and Process Trailers (G-006). Future references and discussions of Task V are omitted in this workplan.

2.5.6 Above-Grade Dismantlement (Phase VI)

Above-grade dismantlement of the Boiler Plant/Water Plant Complex will generally follow the order of subtasks listed below:

1) bulk removal operations, including electrical, piping, construction debris, and heating, ventilation and air conditioning (HVAC) systems (Section 15066 of performance specifications);

2) interior and exterior equipment removal (Section 15065 of performance specifications), some equipment may remain until removal in conjunction with #5 below;

3) interior transite panel removal (Section 07415 of performance specifications);

4) exterior transite removal (Section 07415 of performance specifications);

5) structural steel removal (Section 05126 of performance specifications); and

6) Concrete Masonry Unit (CMU) secondary containment and pier removal (Section 03315 of performance specifications).

Other activities that support this remedial task include lifting and rigging (Section 14955 of performance specifications), and ventilation and containment (Section 15067 of performance specifications).

A general discussion of above-grade dismantlement tasks are described below. The building-specific above-grade dismantlement tasks are discussed in Section 3.

Bulk Removal

Prior to breaching any system, the remediation subcontractor and FEMP Construction Management will verify that all the systems are de-energized. Depending on their size, all piping, valves, electrical components, conduit, wire, cable trays, construction debris, and HVAC systems may remain in place during demolition or removed and reduced in size.

Methods such as reciprocating saws, portable band saws, and mechanical shears are the preferred methods for bulk removal. Methods that volatilize the paint and contamination can be used, provided that additional safety and health requirements for worker protection are met (e.g., abrasive sanding or scaling of paint (minimum of 8" wide) prior to torch cutting to reduce volatilization of paint). These methods include the use of respiratory protection and portable air cleaning units. Periodic radiological surveys will be performed to ensure that the potential for airborne radioactivity is minimized and to reduce the potential for cross-contamination. Note that removable contamination has not been detected to date and is not expected in this complex.

Equipment Removal

Equipment within the BP/WP Complex has been identified and classified based on size and disposition requirements. As equipment is removed, the internal building surfaces and floor area previously covered by the equipment will be visually inspected to ensure the absence of free liquids or solids. If these materials are found, an evaluation will be initiated by FEMP Construction Management to determine the appropriate removal and handling requirements for the material (see Section 15065 of the performance specifications).

Based on the equipment to be removed and the requirements for removal as specified by Section 15065 of the performance specifications, the subcontractor is required to submit for approval a detailed work plan including the sequence, methods of removal and dismantlement, equipment required, catalog cut sheets, drawings and method and materials to control possible generation of airborne contaminants from cutting operations, etc. (Section 15065). Staging of removed equipment will occur within the *queuing area* of the construction area.

Interior Panel Removal

Transite Panel Removal: Prior to removing the transite panels, a coating of amended water will be applied to lock down any loose fibers. A screw gun is the preferred method for removing the panels. If the fasteners cannot be removed with a screw gun, then the area around the fastener will be sprayed with a fixative allowing the fastener to be removed. Prior to any fixation, Section 07415 of the performance specifications requires the remediation subcontractor to demonstrate the proposed method to be utilized. After the screw is removed, the fixative will be reapplied. If a broken panel is encountered, then the area around the break will be sprayed with amended water and the fragmented pieces will be encapsulated with the

fixative. HEPA vacuums will be available to collect any loose material. The batt insulation will be removed and bagged. As the insulation is removed, a visual inspection and a radiological survey will be performed on the newly exposed surfaces, as appropriate. Indications of friable asbestos will require gathering the loose material and locking the remaining fibers in place. If radiological survey results indicate the need to perform decontamination or lock down of the areas to levels consistent with surrounding building surfaces, then these activities will be performed. Fasteners and molding that hold the panels and insulation in place will also be removed as part of this operation.

Exterior Panel Removal

Transite Panel Removal: Section 07415 of the performance specifications specifies that the subcontractor shall maintain the integrity of the exterior of the building until the transite and insulation has been removed and encapsulant, lock-down, or surfactant has been applied to the interior surface of exterior panels. Prior to removing the transite panels, a coating of amended water will be applied to lock down any loose fibers. A screw gun is the preferred method for removing the panels. If the fasteners cannot be removed with a screw gun, the area around the fastener will be sprayed with a fixative, thus allowing the fastener to be removed. As with interior transite, prior to applying fixative, Section 07415 of the performance specifications requires the remediation subcontractor to demonstrate the proposed method to be utilized. After the screw is pried out, the fixative will be reapplied. If a broken panel is encountered, the area surrounding the break will be sprayed with amended water and the fragmented pieces will be encapsulated with a fixative. HEPA vacuums will be available to collect any loose material.

A wall climbing device is the preferred method for removing the wall panels thus allowing the panels to be removed and stacked on the wall climber for transport to the ground level.

Metal Panel Removal: Screw guns are the preferred method for removing the metal panels. Optional methods of drilling out the fastener or prying the fastener out may be used to remove the panels. As the panels are removed, a radiological survey will be performed on the newly exposed surfaces to ensure contamination levels are within the established guidelines, as appropriate. Louvers, gutters, downspouts, and flashing will be removed as they are encountered.

Structural Steel Removal

In order to prepare the component for structural steel removal, all remaining items, such as non-load bearing steel members, windows and frames, doors, gutters and down spouts, will be removed using hand tools and oxy-acetylene torches.

Lead-based paint will be removed using abrasive sanding or scaling of paint in an area sufficiently wide prior to torch cutting to reduce volatilization of the paint.

Tripping techniques utilizing mechanical or explosive methods are the preferred *dynamic dismantlement* techniques for components included in this project. Hydraulic shears or oxy-acetylene torches will be used to reduce the size of the structural steel frame. The component-specific dismantlement techniques are presented in Section 3. Contamination surveys taken of the BP/WP Complex have shown that contamination exists on the water/steam side of the boiler, condensate and feed piping, and in the air systems. The majority of this contamination is fixed contamination on the interior of the piping and equipment. At this time, none of the removable contamination found has been on the exterior surfaces or approached the removable limit.

The remediation subcontractor will be required, pursuant to Section 05126 of the performance specifications, to specify in a structural steel removal work plan the following methods:

- detailed sequence of dismantlement, including equipment;
- methods for contamination control, including fugitive emissions during size-reduction;
- methods for size-reduction;
- collection of lead paint chips in lay-down and size-reduction areas;
- methods and materials to be used for cutting lead painted steel; and
- calculations to verify structural integrity of partially dismantled structure, as applicable.

Provisions that identify material size reduction requirements for the BP/WP Complex are currently specified in the performance specifications under Section 01120, and Section 05126. Although a recycling contract does not yet exist for the materials to be generated from this project, potentially recyclable materials will be handled in a manner compatible with recycling. It should be emphasized that recycling of materials may still be employed at a later phase in the project, material dismantlement and sizing requirements may have to be modified accordingly to ensure that materials are properly prepared for recycling. In the event that recycling is found to be an acceptable disposition option during project implementation, the subcontract would be revised through appropriate change documents.

If controlled explosive methods are used, Section 05126 further states that a detailed work plan will need to satisfy the following key requirements:

- methods and materials to be used;
- means to protect adjacent structures and equipment, material, and underground utilities from damage, including protection from projectiles;
- methods and materials to control fugitive emissions;
- contingency plan for detonation failure; and
- evidence of previous work experience using controlled explosives to take down multi-story structures near other structures within the last five years.

If controlled explosive methods are used, Section 03315 of the performance specification requires that the subcontractor take several precautions to control fugitive emissions, including, but not limited to, the following:

- wet dust suppression by using amended water sprayed in a finely atomized manner so as to provide a hydraulic mist envelope over the entire structure and footprint of the fall area of the structure during the entire felling operation; and

- use of a wetted non-woven geotextile fabric, placed on the grade slab and extended beyond the perimeter of the building at a distance equal to the building height to prevent exterior debris from becoming airborne due to air pressure developed during the felling operation.

Section 05126 provides direction to the subcontractor in several other ways relative to the removal of structural steel. The subcontractor's responsibility for avoiding damage to adjacent structures, material, and equipment during dismantlement activities is emphasized. Lead-based paint chips and debris, released during structural steel dismantlement, shall be collected and managed in accordance with Section 01120.

CMU Secondary Containment and Pier Removal

Concrete Masonry Unit (CMU) walls shall be removed using non-explosive methods. The CMU secondary containments and piers will be radiologically surveyed prior to removal to determine the need for engineering controls, such as an enclosure with ventilation or water sprays to minimize fugitive dust, during removal operations. The remaining CMU will be leveled to within one inch of the remaining slab to minimize the chance for water accumulation and potential personnel hazards.

The foundations of the structures will remain in place as part of this remedial action. Section 01515 of the performance specification addresses requirements relative to the preparation of the base slab during demobilization. Specifically, all openings in the slab will be filled with granular material and grout to provide a flat uniform surface to minimize the chance for water accumulation and migration, and potential personnel hazards. All wire and cable will be cut away at grade from the conduit embedded in the concrete. Conduit and other slab obstructions will be cut away to grade level, plugged, and covered with grout to grade level.

Page left intentionally blank.

3.0 COMPONENT-SPECIFIC REMEDIATION

This section describes component-specific remediation tasks identified for the BP/WP Complex D&D project. Background information on components presented in this section was obtained primarily from the OU3 RI/FS Work Plan Addendum (WPA) and the OU3 RI/FS Report. Information regarding the remediation approach was obtained from the remediation subcontract Statement of Work (SOW), performance specifications, the OU3 RD/RA Work Plan, and project-specific strategies developed by FEMP organizations for managing certain activities that do not fall within the scope of work for the remediation subcontractor.

As stated in Section 2, Inventory Removal (Task I), Hazardous Waste Removal (Task III) and Surface Decontamination (Task IV) were reviewed and determined not to be relevant to this D&D project.

3.1 Building 10A - Boiler Plant

Background

Building 10A is an open area structure constructed with a structural steel frame, transite panels, and a concrete floor (Type A), with area dimensions of 72 ft. by 163 ft. and stands five stories high. Building 10A is located directly west of the railroad tracks next to the former Coal Pile location. A railroad car shaker shed, electrostatic precipitators and fly ash silo are among the ancillary facilities attached to the building. The basement is irregularly shaped 72 ft. by 97 ft., and 15 ft. deep. This component used 4 coal-fired steam boilers to provide steam service to the entire FEMP site for heating.

Process Area - The component contains 4 coal-fired boilers, 2 electrostatic precipitators and related feed conveyors. Building 10A received water from three sources, including the Water Plant (Component 20B listed below), condensate return to the system (which may present a pipe internal radiological contamination issue) and process water.

Facility Shutdown (Task II)

Building 10A Facility Shutdown activities will consist of the following:

Utility reduction/alterations; dismantling and relocating salvageable and reusable equipment; removing contents of equipment, tanks and sumps; general housekeeping; relocating personnel. The oil will be drained out of all locked and tagged equipment. Mercury switches and boiler feed chemicals will be removed and dispositioned in accordance with applicable RCRA regulations.

Asbestos Waste Removal (Task IV)

Individual asbestos work areas will be established within Building 10A - Boiler Plant, and other components as appropriate. Most of the ACM is in good condition and has not caused any building areas to be designated as asbestos areas due to the concern for friable asbestos. Establishing individual work areas will minimize the amount of area required to be released from asbestos concerns after asbestos removal activities are completed. The ACM from the equipment, the interior walls, and from areas that have the potential to be disturbed during bulk removal and equipment removal operations will be removed.

Most internally radiologically contaminated piping will be removed during Task IV, since this method requires work to be performed using a glove bag which will minimize the potential for any airborne radiological contamination release. In Building 10A a final asbestos removal effort will take place subsequent to the completion of the bulk removal and equipment removal operations. The equipment removal will simplify the remaining asbestos removal activities due to the improved access.

Above-Grade Dismantlement (Task VI)

Building 10A dismantlement will consist of removing the building contents and structure that are described in the preceding background discussion down to the concrete grade. All interior debris and equipment located in the basement and sub-basement will be removed prior to dynamic deconstruction. Below-grade concrete (basement) will remain. Some of the larger pieces of equipment may remain in the building through dynamic deconstruction. Final disposition of the materials will be evaluated in accordance with the draft Fernald Methodology for Scrap Metal Disposition Alternatives and will be consistent with the Record of Decision for Final Remedial Action of Operable Unit 3. Disposition options include recycling, reuse, as well as on- and off-site disposal. Specific material quantity estimates for Building 10A are included in Tables 2-1 and 2-2 by OU3 FS material category. After building is down and debris removed basement will be fenced to prevent falls.

3.2 Building 10B - Boiler Plant Maintenance

Background

Building 10B is constructed with a poured concrete base and floor, a structural steel frame and corrugated steel siding and roofing (Type C). This building is 40 ft. by 60 ft., single level, and 16 ft. high. Building 10B is adjacent to the west side of the Boiler Plant (component 10A above). This component was used to provide maintenance for the boiler plant equipment. This structure was built in 1994 and will be dismantled for reuse at the FEMP or at another DOE facility.

Process Area - The area was used to store equipment, tools and a vented basin for solvent cleaning of equipment.

Facility Shutdown (Task II)

Tools and spare parts will be removed to a radiologically-clean lay down area, surveyed, inventoried and redistributed for reuse at the FEMP.

Asbestos Removal (Task IV)

There is no asbestos identified in this component.

Above-Grade Dismantlement (Task VI)

Building 10B dismantlement will consist of removing the building contents and structure that are described in the preceding background discussion. This building will be systematically dismantled that will allow for reuse by another remediation project at the FEMP. The building is not scheduled for dismantlement until late 1998 or early 1999. In the interim, it is anticipated that this building will be used as an asbestos change-out area/office-break area by the D&D subcontractor. Specific material quantity estimates for Building 10B are included in Tables 2-1 and 2-2 by OU3 FS material category.

3.3 Component 10C - Wet Salt Storage

Background

Component 10C - Wet Salt Storage consists of a 17 ft. by 42 ft. rectangular concrete tank. Component 10C is located directly north of the Boiler Plant Maintenance Building (Component

10B). The bin was used to store salt solution for regenerating the zeolite water softeners. Sodium chloride was received by truck, dumped into the bin and dissolved in water.

Process Area - Salt storage bin and salt solution.

Facility Shutdown (Task II)

Facility Shutdown activities include the removal of the remaining salt solution in the Wet Salt Storage (10C).

Asbestos Removal (Task IV)

Individual asbestos work areas will be established within Component 10C - Wet Salt Storage, as appropriate. Most of the ACM is in good condition and has not caused any building areas to be designated as friable asbestos areas. Establishing individual work areas will minimize the amount of area required to be released from asbestos concerns after asbestos removal activities are completed.

The ACM will be removed from areas that have the potential to be disturbed during bulk removal and equipment removal operations. If damaged ACM is encountered during removal activities, then air sampling may be performed, if appropriate. If the asbestos fiber count is elevated, then a sealant will be applied to the surfaces to lock down the loose fibers. An additional air sampling test will then be performed to verify the lock down effectiveness.

Above-Grade Dismantlement (Task VI)

Component 10C dismantlement will consist of removing the tank contents and structure that are described in the preceding background discussion. Specific material quantity estimates for Building 10C are included in Tables 2-1 and 2-2 by OU3 FS material category.

3.4 Building 10E - Utilities Heavy Equipment

Background

Building 10E - Utilities Heavy Equipment is a single level building constructed of a poured concrete base and floor, a structural steel frame and corrugated steel siding and roofing (Type C), and has dimensions of 40 ft. by 40 ft., 16 ft. high. Building 10E is located northwest of

the Boiler Plant (Component 10A). This structure was built in 1994 and will be systemically dissembled for reuse at another FEMP location.

Process Area - This building is used to store equipment for the Boiler Plant (Building 10A).

Facility Shutdown (Task II)

Building 10E will be swept and drums of oil left over from maintenance activities will be removed and dispositioned according to FEMP procedures. Tires, currently located in the building, from the IONICS trailer (see Section 3.9) will be removed and placed back on the trailer prior to relocation.

Asbestos Removal (Task IV)

There is no asbestos identified in this component.

Above-Grade Dismantlement (Task VI)

Building 10E dismantlement will consist of removing the building contents and structure that are described in the preceding background discussion. This building will be dismantled and reassembled in the vicinity of the AWWT for reuse to support the AWWT operation. Specific material quantity estimates for Building 10E are included in Tables 2-1 and 2-2 by OU3 FS material category.

3.5 Building 20B - Water Plant

Background

Building 20B - Water Plant has a structural steel frame, metal and transite panels, and a concrete floor. It also has an above ground concrete tank, next to the main building (the tank has a capacity of 750,000 gallons of water). The building is a combination type A/C, two floor structure with dimensions of 50 ft. x 78 ft. x 19 ft. high. This component includes the clearwell building attached at the east end of the building and the two above-ground lime reactivator tanks. This component provided treatment of all FEMP (drinking and process) water using alum and lime. This component will be removed with the clearwell, condensate tank and sulfuric acid tank. These items will be removed prior to dismantlement of the south side of Component 10A.

Process Area - There are 9 pressurized sand filters, 2 lime feeders and related pumps, 2 alum feeders and related pumps. Water was pumped from three production wells located at the west side of the process area. The extracted water was transferred to the aboveground concrete storage tank, was adjusted with alum and lime to produce water soft enough to be used in the boilers in the Boiler Plant (component 10A above) and for drinking water.

Facility Shutdown (Task II)

Building 20B Facility Shutdown activities will consist of the following:

Utility reduction/alterations; dismantling and relocating salvageable and reusable equipment; removing contents of equipment, tanks and sumps; general housekeeping; relocating personnel. The oil will be drained out of all locked and tagged equipment. Mercury switches and boiler feed chemicals will be removed and dispositioned in accordance with applicable RCRA regulations. A water bypass lines will be installed to close water off from the entire building to prevent the pipes from freezing in the winter.

Asbestos Removal (Task IV)

Most of the asbestos insulation has been removed from Building 20B. For the asbestos that is remaining, individual asbestos work areas will be established within Building 20B - Water Plant Building, as appropriate. Most of the ACM is in good condition and has not caused any building areas to be designated as friable asbestos areas. Establishing individual work areas will minimize the amount of area required to be released from asbestos concerns after asbestos removal activities are completed. Asbestos piping removal will be conducted in a manner to control both the asbestos and loose radiological contamination inside the piping.

Above-Grade Dismantlement (Task VI)

Building 20B dismantlement will consist of removing the building contents and structure that are described in the preceding background discussion. Specific material quantity estimates for Building 20B are included in Tables 2-1 and 2-2 by OU3 FS material category.

3.6 Component 20C - Cooling Towers

Background

Component 20C - Cooling Towers consist of 31 ft. x 96 ft. wooden structure, measuring 42 ft. high. This component provides air cooling of site cooling water in mechanical draft-type towers. Four axial flow fans are in this component. Deconstruction of this component is not expected until mid FY98, when new cooling towers unit will be online in the Administrative Area of the facility.

Process Area - There are 4 induced-draft cooling tower assemblies, 5 electric-driven pumps, one of which is equipped with a steam turbine backup.

Facility Shutdown (Task II)

Water service to the cooling towers will be shut off and the basin drained. Electrical utilities to the towers will be disconnected.

Asbestos Removal (Task IV)

Individual asbestos work areas for the piping will be established within Component 20C - Cooling Towers, as appropriate. Most of the ACM is in good condition and has not caused any building areas to be designated as friable asbestos areas. Establishing individual work areas will minimize the amount of area required to be released from asbestos concerns after asbestos removal activities are completed.

Above-Grade Dismantlement (Task VI)

Component 20C dismantlement will consist of removing the 4 axial flow fans that are described in the preceding background discussion. Specific material quantity estimates for Component 20C are included in Tables 2-1 and 2-2 by OU3 FS material category.

3.7 Component 24A - Railroad Scale House

Background

The Railroad Scale House (24A) is a single level building constructed of wood framing, cement block and concrete floors (Type B), with dimensions of 13 ft. x 14 ft. x 9 ft. high. Building

24A is located south of the main railroad tracks, which run east/west through the northern part of the site.

Process Area - The Railroad Scale House was used to weigh incoming and outgoing railcars.

Facility Shutdown (Task II)

The Railroad Scale House has not been used since the use of railroad cars for shipments was ended.

Asbestos Removal (Task IV)

There is no asbestos identified in this component.

Above-Grade Dismantlement (Task VI)

Building 24A dismantlement will consist of removing the structure that is described in the preceding background discussion. Specific material quantity estimates for Building 24A are included in Tables 2-1 and 2-2 by OU3 FS material category.

3.8 Component G-001 - Railroad Tracks

Background

Within the FEMP boundaries across the central and north central production area are approximately 3 miles of railroad track and associated hardware. Rail service was provided to the majority of the process area via a connection with CSX Railroad in the northwest quadrant of the FEMP site. The boundary of the D&D railroad track removal includes the two tracks immediately adjacent to the east and west sides of the BP/WP Complex, extending from the southern edge of Building 12A north to the corresponding rail spur at the main tracks coming into the site.

Facility Shutdown (Task II)

This component has no inventory or storage areas.

Asbestos Removal (Task IV)

There is no asbestos identified in this component.

Above-Grade Dismantlement (Task VI)

The steel rails and railroad ties will be removed and managed under the BP/WP Complex Waste Management Plan.

3.9 Component G-006 - Process Trailers

Background

The Process Trailers are mobile office trailers approximately 40 ft. long. The IONICS trailer is considered salvageable equipment and will be removed from the area by FEMP personnel prior to D&D. The other two trailers are in poor condition and will be dismantled as scrap by the D&D subcontractor during the D&D project.

Process Area - The trailers were used as office space with desks and lights.

Facility Shutdown (Task II)

Facility Shutdown activities for the Process Trailers will consist of: Utility reduction/alterations; dismantling and relocating salvageable and reusable equipment; general housekeeping; and relocating personnel. The contents of the IONICS trailer will be placed in a safe configuration for movement and reuse to another location. The contents of the other two trailers will be inventoried and dispositioned by FEMP personnel.

Asbestos Removal (Task IV)

There is no asbestos identified in this component.

Above-Grade Dismantlement (Task VI)

The IONICS trailer will be removed as salvageable equipment from the area by FEMP personnel. The other two trailers are in poor condition and will be dismantled as scrap by the D&D subcontractor during the D&D project.

3.10 Component G-008 - Pipe Bridges

Background

The Pipe Bridges (G-008) are structural steel bridges for support of FEMP steam service and related piping. They are used to support piping and steam lines supplying steam to FEMP buildings.

Process Area - The pipe bridge is located on the east side of Buildings 10A and 20C and run in a north/south direction from Building 10A to the south side of the Main Maintenance Building (12A).

Facility Shutdown (Task II)

This component has no inventory or storage areas.

Asbestos Removal (Task IV)

Individual asbestos work areas for the piping will be established within Component G-008 - Pipe Bridges, as appropriate. Most of the ACM is in good condition and has not caused any areas to be designated as asbestos areas due to the concern for friable asbestos. Establishing individual work areas and using proper glove bagging techniques will minimize the amount of area required to be released from asbestos concerns after asbestos removal activities are completed.

Above-Grade Dismantlement (Task VI)

After all piping is verified as out of service and after the insulation around all piping remaining on the pipe bridges is verified to be non-ACM, the pipe bridges will be dismantled.

4.0 SCHEDULE

This section presents the implementation schedule for the BP/WP Complex remedial action project. Figure 4-1 presents a schedule for implementation of field activities for the BP/WP Complex remediation project. Figure 4-1 displays the primary milestones for this project. Inadequate funding of this project is a critical factor in maintaining this schedule.

Although interim reporting will not be provided specifically for this D&D project, DOE will keep the community informed of remedial action schedules and any new findings or significant developments within OU3 through the Fernald Report. The Fernald Report is a monthly report that summarizes clean-up progress and remedial plans and activities to over 1,100 stakeholders, including U.S. EPA and Ohio EPA. DOE also intends to continue its community outreach activities by keeping in close contact with community organizations by maintaining open two-way communication throughout the project. Additionally, DOE and other site personnel anticipate regularly attending local citizen and government meetings to provide verbal progress reports and answer questions on key site issues.

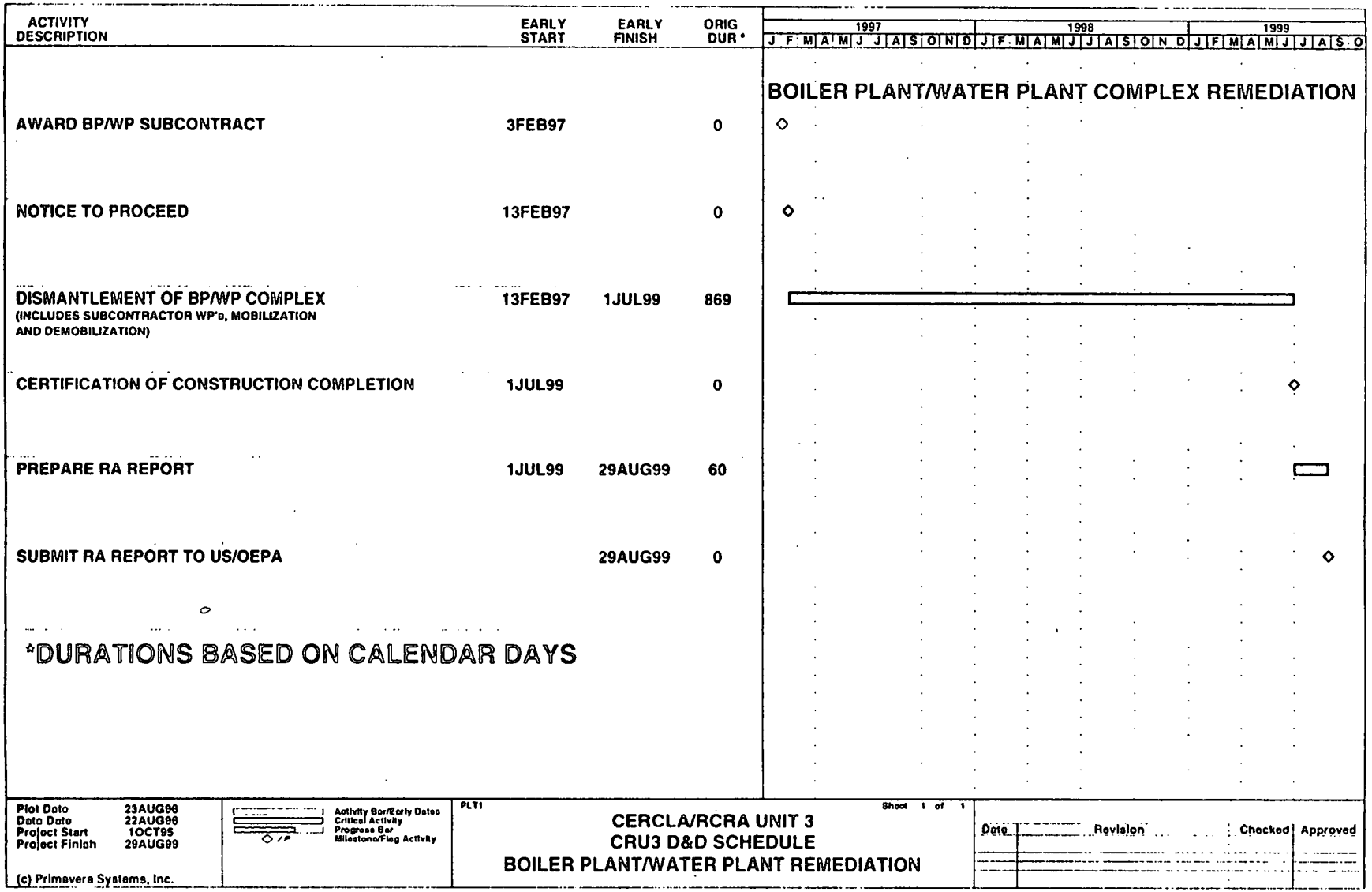


FIGURE 4-1 Remediation Schedule

5.0 MANAGEMENT

The implementation of BP/WP Complex remediation action will be performed through a coordinated effort by the remediation subcontractors, FEMP organizations, remedial design subcontractor, and DOE project management. Section 7 of the OU3 RD/RA Work Plan provides the overall management structure applied to this remediation project. A description of project-specific management responsibilities has been highlighted for BP/WP Complex in this section.

DOE will provide direct project oversight in two ways, both of which become a concerted effort that ensures performance of remedial activities in adherence to project specifications and requirements. The DOE Office of Safety Assessment will assign a Facility Representative to the Fernald Area Office whose responsibilities will be to perform independent field oversight of all remedial activities performed under this project. This individual will be experienced/knowledgeable in the areas of engineering, construction, quality assurance/quality control, and health and safety; and will be responsible for daily inspections of all field activities and necessary reporting to the DOE Program Manager at the Fernald Field Office. The Facility Representative will have the authority to stop work if conditions warrant such action. DOE Fernald Area Office will also conduct field oversight through technical leads responsible for construction, engineering, quality assurance and quality control, and health and safety. The DOE Facilities Representative and technical leads will immediately notify the DOE Program Manager of any issues or problems that arise in an effort to seek prompt resolution.

The DOE Program Manager and the environmental management contractor will oversee the remedial action through its Design-Engineering-Construction (DEC) team review and approval process and by performing the following functions:

- ensuring that the selection of qualified subcontractor(s) is based on meeting prequalification criteria, demonstrate a good safety record, possess similar work experience, and rank high on a detailed technical proposal assessment;
- assuring that the apparent low bidder is responsive and responsible;
- reviewing, commenting, and approving of remediation subcontractor work plans;

- prior to commencing some of the activities (e.g., material handling), ensuring that the performance specifications are going to be met by requiring the remediation subcontractor to demonstrate to the FEMP the ability of its proposed methods to meet the performance specifications;

- conducting an alignment meeting, pre-construction meetings, and weekly coordination meetings with the remediation subcontractor to address all concerns, schedule status, planning, progress, deviations;

- performing quality assurance and quality audits of all remediation tasks to determine adherence to performance specifications by conducting inspections of the remedial activities performed by the remediation subcontractor and those performed by FEMP work forces/labor support contractors in support of the remedial action;

- verifying work is performed in compliance with approved health and safety plans; and

- performing pre-final and final inspections.

The subcontracting strategy calls for a multi-disciplined subcontract team, each with specific remediation tasks. One remediation subcontract will include decontamination and dismantlement of the components included within the BP/WP Complex project, which includes the responsibility for material segregation and loading, container weighing, tagging and movement of containers to and from queuing area. Another subcontract will be used for re-routing alarm and communication systems.

REFERENCES

U.S. Department of Energy, 1990, *Radiation Protection of the Public and the Environment,* DOE Order 5400.5, Office of Environment, Safety and Health, Washington, D.C.

U.S. Department of Energy, 1993, *Operable Unit 3 Remedial Investigation and Feasibility Study, Work Plan Addendum*, Final, prepared by Fernald Environmental Restoration Management Corporation, Cincinnati, Ohio.

U.S. Department of Energy, 1994, *Operable Unit 3 Record of Decision for Interim Remedial Action,* Final, prepared by Fernald Environmental Restoration Management Corporation, Cincinnati, Ohio.

U.S. Department of Energy, 1996b, *Operable Unit 3 Remedial Investigation and Feasibility Study Report*, Final, prepared by Fernald Environmental Restoration Management Corporation, Cincinnati, Ohio.

U.S. Department of Energy, 1995a, *Operable Unit 3 Remedial Design/Remedial Action Work Plan for Interim Remedial Action*, Final, prepared by Fernald Environmental Restoration Management Corporation, Cincinnati, Ohio.

U.S. Department of Energy, 1995b, *Operable Unit 3 Remedial Design Prioritization and Sequencing Report*, Final, prepared by Fernald Environmental Restoration Management Corporation, Cincinnati, Ohio.

U.S. Department of Energy, 1996c, *Removal Action 17 Work Plan*, Final (Revision), prepared by Fernald Environmental Restoration Management Corporation, Cincinnati, Ohio.

U.S. Department of Energy, 1996, *Operable Unit 3 Draft Record of Decision for Final Remedial Action*, prepared by Fernald Environmental Restoration Management Corporation, Cincinnati, Ohio. Submitted by U.S. Department of Energy.

D

R

A

Page left intentionally blank.

F

T

D

R

APPENDIX A

A

PROPOSED SAMPLING

F

T

D

R

A

Page left intentionally blank.

F

T

APPENDIX A

PROPOSED SAMPLING

The following methodologies were developed based on the data needs identified in the Sampling and Analysis Plan for the OU3 RD/RA Work Plan for the final remedial action. A project-specific summary of the sample types are included in this implementation plan and are based on assumptions outlined below.

Characterization Screening

Screening has been conducted using X-ray Fluorescence (XRF) screening of media for lead-based paint. Screening has been conducted for fixed and removable radioactive contamination using Geiger-Mueller radiological contamination meters.

Asbestos

This category represents samples which were collected to verify the presence of ACM in media and whether the ACM is regulated or non-regulated.

Secondary Waste (Decontamination Water)

Due to the low levels of radionuclide contaminants in the Boiler Plant/Water Plant Complex, sampling of the secondary waste will not be necessary. Sufficient process knowledge exists to allow any secondary waste to be contained and sent to the on-site waste water treatment plant for treatment prior to discharge to the Great Miami River.

Nevada Test Site (NTS) Confirmatory

Since no Category C debris is anticipated to be generated, waste originating from the Boiler Plant/Water Plant Complex will be placed in the OSDF and will not be sent to NTS. Confirmatory sampling will not be required.

Envirocare of Utah

Mixed waste, such as radiologically contaminated lead flashing, originating from the Boiler Plant/Water Plant Complex may be disposed of at an off-site mixed waste disposal facility. If this is necessary, confirmatory sampling will be required to verify whether or not the debris meets the WAC for the disposal facility.

Asbestos Air Monitoring

Asbestos air sampling will occur over the duration of the asbestos removal activity. Interior and exterior containment perimeter monitoring will be conducted during asbestos removal activities to detect any releases of friable asbestos to protect worker health. Occupational breathing zone air monitor samples will also be utilized during asbestos removal within enclosed areas.

Radiological Air Monitoring

Existing fence line environmental air monitoring stations located around the perimeter of the BP/WP Complex will be sampled weekly by FERMCO personnel during dismantlement operations. Occupational air samplers will be worn by at least twenty-five percent (25%) of the workers in each work group/crew (minimum of 1 worker) when entering a radiological area controlled for contamination or airborne radioactivity. More specific information on radiological worker protection can be found in the Radiation Requirements Plan of the IFB.

APPENDIX B

PERFORMANCE SPECIFICATIONS

D

R

A

Page left intentionally blank.

F

T

APPENDIX B

PERFORMANCE SPECIFICATIONS

The performance specifications listed on the following page identifies Revision 3 to the specifications that were prepared during the remedial design for BP/WP Complex. Other design changes made pursuant to interim guidance on decontamination criteria have been detailed in Sections 2 and 3 of this implementation plan.

This page intentionally blank.

390

GENERIC

PERFORMANCE SPECIFICATIONS

TABLE OF CONTENTS

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07415	TRANSITE REMOVAL	1	09/13/96

DIVISION 8 - 12 (NOT USED)

DIVISION 13 - SPECIAL CONSTRUCTION (NOT USED)

DIVISION 14 - CONVEYING SYSTEMS

14955	LIFTING AND RIGGING	1	09/13/96

DIVISION 15 - MECHANICAL

15065	EQUIPMENT DISMANTLEMENT	1	09/13/96
15066	INTERIOR DISMANTLEMENT	1	09/13/96
15067	VENTILATION AND CONTAINMENT	1	09/13/96

DIVISION 16 - (NOT USED)

APPENDIX C

DESIGN DRAWINGS

D

R

A

Page left intentionally blank.

F

T

APPENDIX C
DESIGN DRAWINGS

The following drawings are copies of the blueprint drawings that were reviewed during the remedial design for the BP/WP Complex. Figures C-1 to C-9 are the 3 floor plans of the Boiler Plant (Building 10A) including the boilers. Figure C-10 shows the Boiler Plant Maintenance Building (Building 10B) floor plan. Figure C-11 shows the Wet Salt Storage Bin (Component 10C) electrical power system. Figures C-12 is a floor plan for the Utilities Heavy Equipment Storage (Building 10E) plan and details. Figures C-14 through C-18 are different views of the Water Plant (Building 20B): piping, structural, and mechanical drawings. Figures C-18 and C-19 are drawings of the Reactivator tank and cover (part of the Water Plant - 20B). Figure C-20 is the Cooling Tower (part of the Water Plant - 20B) section and elevation drawings. Figure C-21 and C-22 are the Railcar Scale House (Component 24A): Plans, elevation and sections and floor plan, respectively. The key features shown in these drawings (Process Areas and related equipment) are discussed in Section 3 of this implementation plan.

FIGURES

FIGURE C-1: Boiler House east and west views #3007-C-1002-A Rev.3

FIGURE C-2: Boiler House elevations of outside coal handling equipment #3007-H-77-A Rev.1

FIGURE C-3: Boiler Plant floor plan basement #10X-5500-A-00609 Rev.2

FIGURE C-4: Boiler Plant floor plan first floor #10X-5500-A-00610 Rev.3

FIGURE C-5: Boiler Plant floor plan at elevation #10X-5500-A-00611 Rev.4

FIGURE C-6: Boiler Plant floor plan at elevation #10X-5500-A-00612 Rev.1

FIGURE C-7: Boiler Plant floor plan at elevation #10X-5500-A-00613 Rev.1

FIGURE C-8: Boiler Plant Condensate Storage Tank #3007-F-03-B Rev. 3

FIGURE C-9: Boiler Plant - Revision of Ash Conveyor System #10-4006 Rev.0

FIGURE C-10: Boiler Plant Maintenance Building floor plan #10E-5500-A-00629 Rev.2

FIGURE C-11: Wet Salt Storage Bin electrical power system #3008-C-3017-A Rev.0

FIGURE C-12: Utilities Heavy Equipment storage plans, sections, and elevations #10F-4445-A-00633 Rev.2

FIGURE C-13: Water Plant piping sections and details #20X-3900-P-00287 Rev.1

FIGURE C-14: Water Plant mechanical Dust collector #20X-3900-M-00296 Rev.0

FIGURE C-15: Water Treatment Plant floor plan #20X-5500-A-00399 Rev.2

FIGURE C-16: Water Treatment Plant plans, elevations, and sections #5250-20A-5021 Rev.1

FIGURE C-17: Water Treatment Plant (South Area) #3008-C-3011-A Rev.0

FIGURE C-18: Water Treatment Plant Reactivation Tank cover arrangement and details #20-4004 Rev.0

FIGURE C-19: Water Treatment Plant Reactivation Tank proposed cover (3-19-54) #20-4006 Rev.0

FIGURE C-20: Cooling Tower section and electrical #20C-5500-A-00354 Rev.0

FIGURE C-21: Railcar Scale House, plans, elevation, and sections #3024-C-2001-A Rev.0

FIGURE C-22: Railcar Scale House floor plan #24B-5500-A-00097 Rev.0

3007-C-1002-A

WEST ELEVATION

EAST ELEVATION

DETAIL (7) CORNER ROLL

DETAIL (8) JAMB

DETAIL (9) HEAD

HORIZONTAL SLIDING DOORS

WINDOW SCHEDULE

SEC D-D

SEC C-C

SEC B-B

SEC A-A

VERTICAL SPACING OF CHANNEL GIRTS

UNITED STATES ATOMIC ENERGY COMMISSION

FEED MATERIALS PRODUCTION CENTER
FERNALD AREA

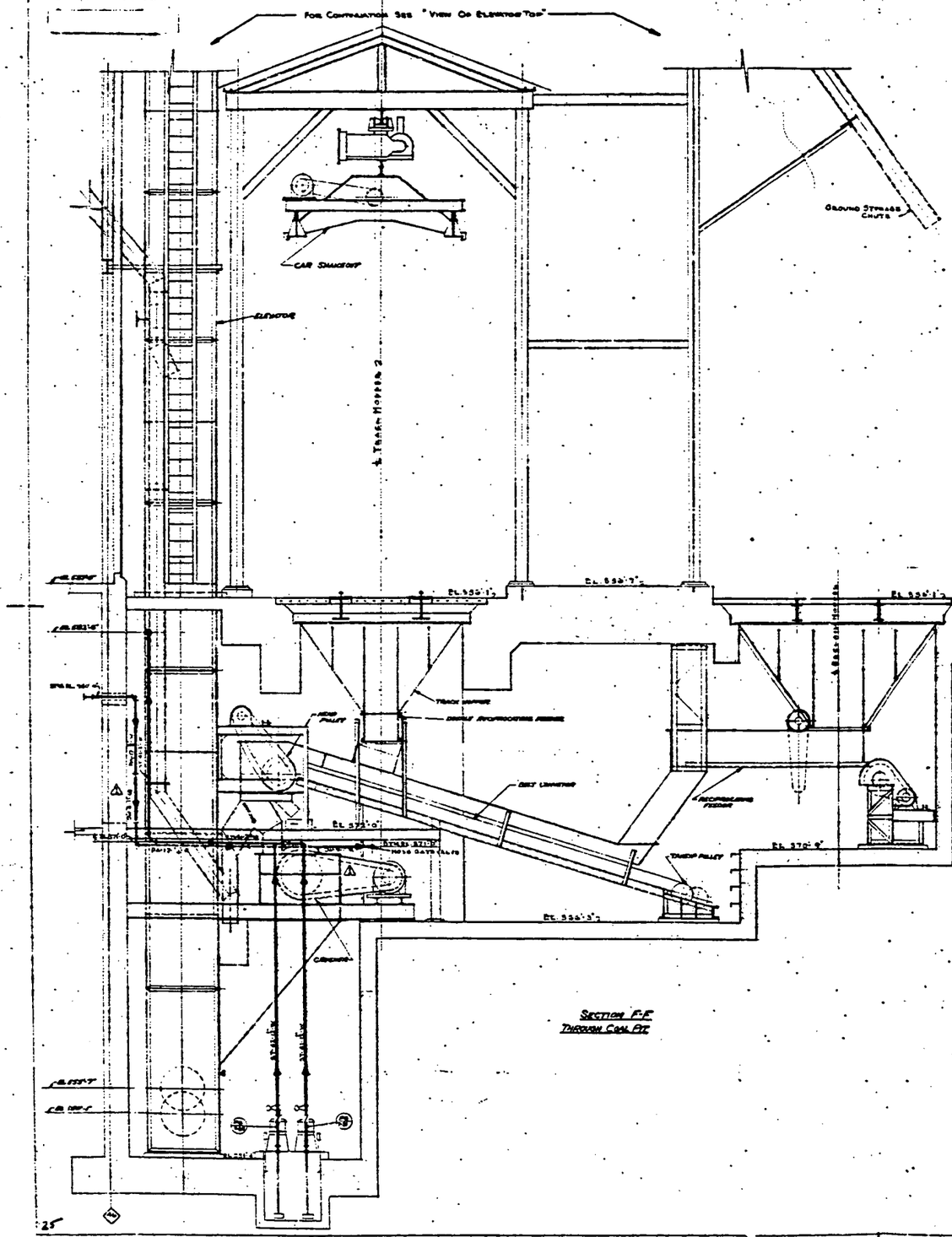
ARCHITECTURAL
EAST AND WEST ELEVATIONS
POWER PLANT CICT-1

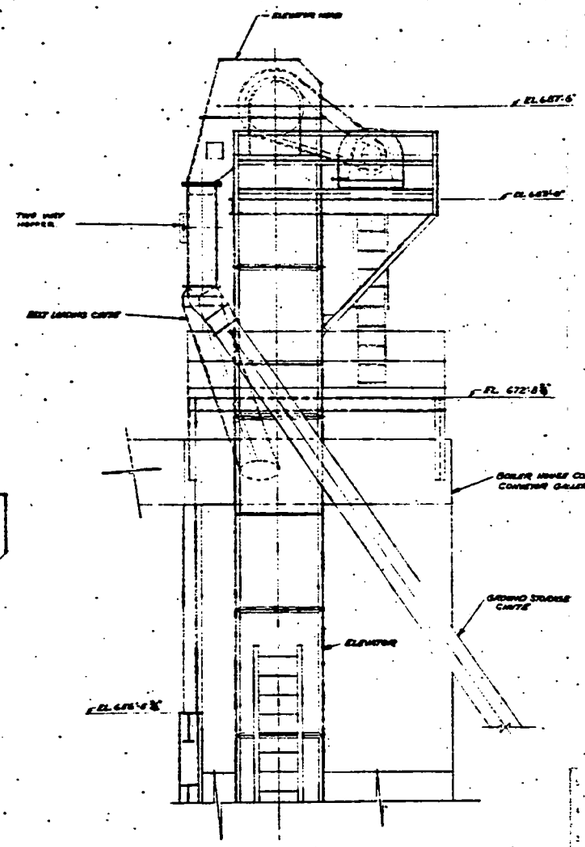
APPROVED FOR CONSTRUCTION

3007-C-1002-A | 5

INDEX CODE
10X1950 0100002

3007-H-77-A





NOTES:
FOR LIST OF REFERENCE DRAWINGS & GENERAL NOTES SEE DWG. 3007-H-874

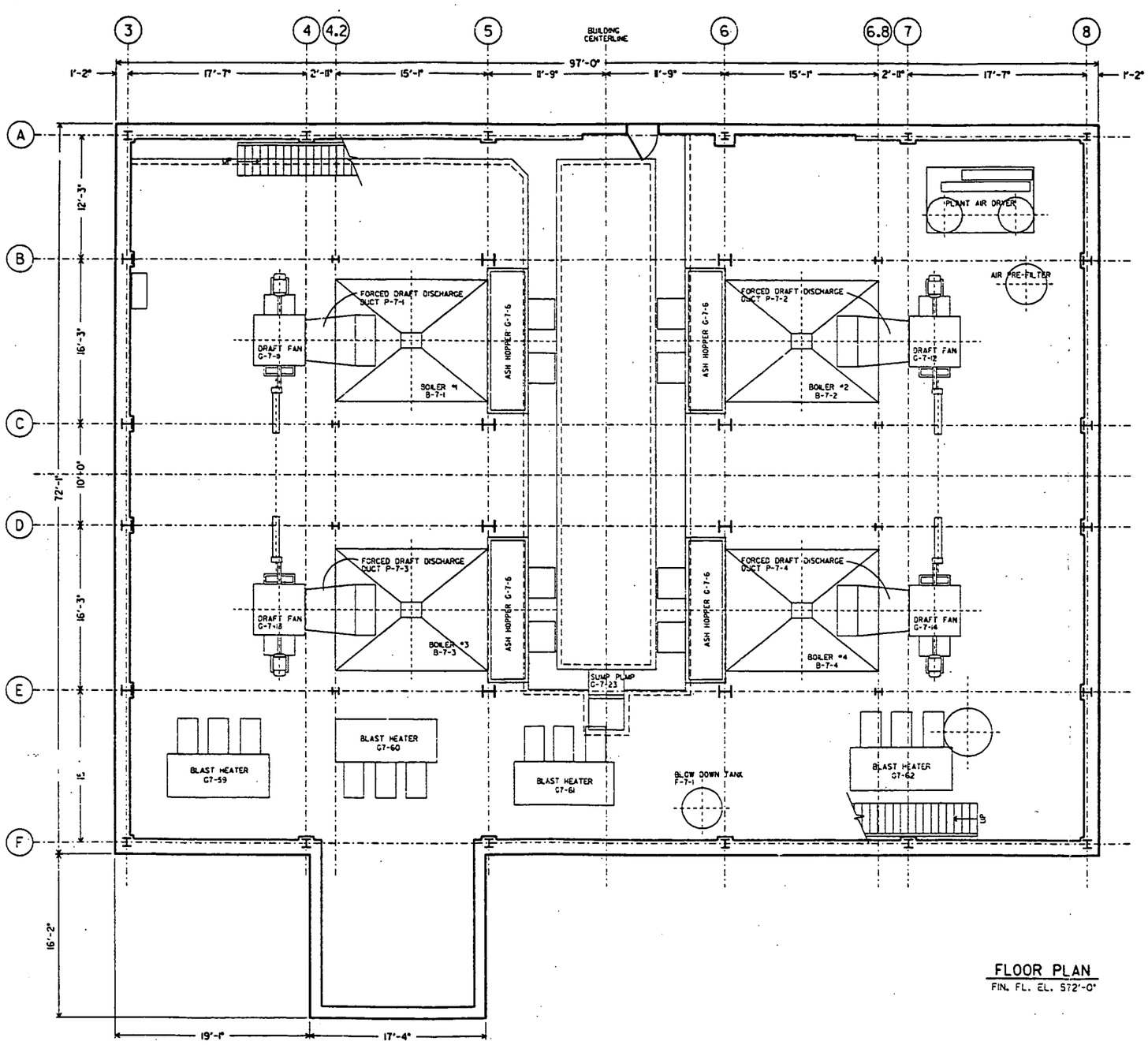
⚠ NOTE: FOR PLAN - SEE DWG. 3007-H-76-A

SCALE FOR THIS DRAWING

INDEX CODE
10 X. 950 P 00167

PRINT RECORD

FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO
BOILER HOUSE-ELEVATIONS OF OUTSIDE COAL HANDLING EQUIPMENT
10-15-51
3/8"-1'-0"
APPROVED FOR CONSTRUCTION
3007-H-77-A



FLOOR PLAN
FIN. FL. EL. 572'-0"

INFORMATION ONLY
CADD SERVICES
AUG 27 '96

000076

NO.	REVISIONS	DATE	DWN. BY	APPD.
2	UPDATED	9/7/94	S.J.S.	GEP
1	REDRAWN ON CAD	3/4/9	S.J.S.	GEP
0	DRAWN BY PDT+CO ARCHITECTS/PLANNERS			

REF. DWG. NO.

NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± 1/8
ANGLES ± 0° - 30'
DECIMALS
.X ± .1
.XX ± .03
.XXX ± .005
.XXXX ± .0050
ORIG. RELEASE DATE

APPROVALS			
			SAFETY ENG.
CIVIL & STR.			MAINTENANCE
ELECTRICAL			
ENGINEER			O.A.
INSTRUMENT			
MECHANICAL			FIRE PROTECT.
			WASTE MANAGE.
CHECKED			D.O.E.
APPROVED		11/15/95	SECURITY

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO
FERNALD, OHIO
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY

PLANT 10A — BASEMENT
BOILER PLANT
FLOOR PLAN
3/16" = 1'-0"

RES #148	
DATE 10-28-90	10X-5500-A-00609 | 2
DRAWN LJS	

390

IX 1 2 3 4 4.2 5 6 6.8 7 8 9 10

177'-0"

14'-0" 15'-6" 16'-6" 17'-7" 2'-8" 15'-4" 23'-6" 15'-4" 2'-8" 17'-7" 15'-6" 16'-6" 1'-2" TYP.

A B CX C DX D E F

72'-1" 12'-3" 14'-3" 2'-0" 10'-0" 2'-0" 14'-3" 15'-0"

CENTERLINE

BUILDING CENTERLINE

8'-9" 8'-9" 1'-0"

RAILCAR COAL RECEIVING HOPPER

STARTER AND CONTROL CENTER FOR PLANT AIR COMPRESSORS

MOTOR GENERATOR SET

MOTOR DRIVE AIR COMPRESSOR C-7-16

AFTERCOOLER C-7-16A-12

INSTRUMENT PANEL

TURBINE DRIVE AIR COMPRESSOR C-7-12

UP

DN

BOILER CONTROL PANEL INCLUDING 4 MONITOR PANELS AND ONE MASTER PANEL (CENTERED ON FIRING AISLE)

MCC M7-3A
MCC M7-4
MCC M7-5

BOILER #1 B-7-1

BOILER #2 B-7-2

BOILER #3 B-7-3

BOILER #4 B-7-4

AIR DRYER C-7-10

HOT WATER HEAT EXCHANGER

AUX INSTRUMENT AIR COMPRESSOR M-7-10

S.U.E. OFFICE

M.R.

OFFICE

BAR GRATING FLOOR

TEMPORARY CONTROL ROOM

INSTRUMENT PANEL

DEAERATING HEATER C-7-1

TURBINE DRIVE MAIN FEED PUMP C-7-19

MOTOR DRIVE AUX FEED PUMP C-7-20

TURBINE DRIVE MAIN FEED PUMP C-7-21

MOTOR DRIVE AUX FEED PUMP C-7-22

TURBINE DRIVE AUX CONDENSATE PUMP C-7-31

MOTOR DRIVE CONDENSATE PUMP C-7-33

MOTOR DRIVE CONDENSATE PUMP C-7-32

SALT STORAGE TANK

BRINE STORAGE TANK

TREATED WATER DIST PUMP

TREATED WATER DIST PUMP GBS

TURBINE DRIVE BACKWASH PUMP 68-16

MOTOR DRIVE BACKWASH PUMP 68-17

ZEOLITE SOFTENER D-9

ZEOLITE SOFTENER D-8

ZEOLITE SOFTENER D-7

PROCESS DIST PUMP 68-8

PROCESS DIST PUMP 68-7

CONTROL CABINET

(PROPOSED) RELOCATED 36" DRUM

MAKE UP AIR INTAKE HOUSE

(PROPOSED) NEW ADDITION FOR RELOCATED GAS-FIRED BOILER

E 43+24.59
S 11+04.17

FLOOR PLAN
FIN FL EL 587'-0"

INFORMATION ONLY
AUG 27 '96

000077

NO.	REVISIONS	DATE	DWN. BY	APPD.
3	UPDATED (MCC's M7-3A, 4, & 5)	09-4-95	J.M.P.	G.E.P.
2	UPDATED	2/1/94	S.J.S.	G.E.P.
1	REDRAWN ON CAD	7/6/93	S.J.S.	G.E.P.
0	DRAWN BY PDT+CO ARCHITECTS/PLANNERS			

DO NOT SCALE REDUCED DRAWING

NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

APPROVALS

CIVIL & STR.		SAFETY ENG.
ELECTRICAL		MAINTENANCE
ENGINEER		O.A.
INSTRUMENT		
MECHANICAL		FIRE PROTECT.
		WASTE MANAGE
CHECKED	GP	O.O.E.
APPROVED	9/16/93	SECURITY

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO
FERNALD, OHIO
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY

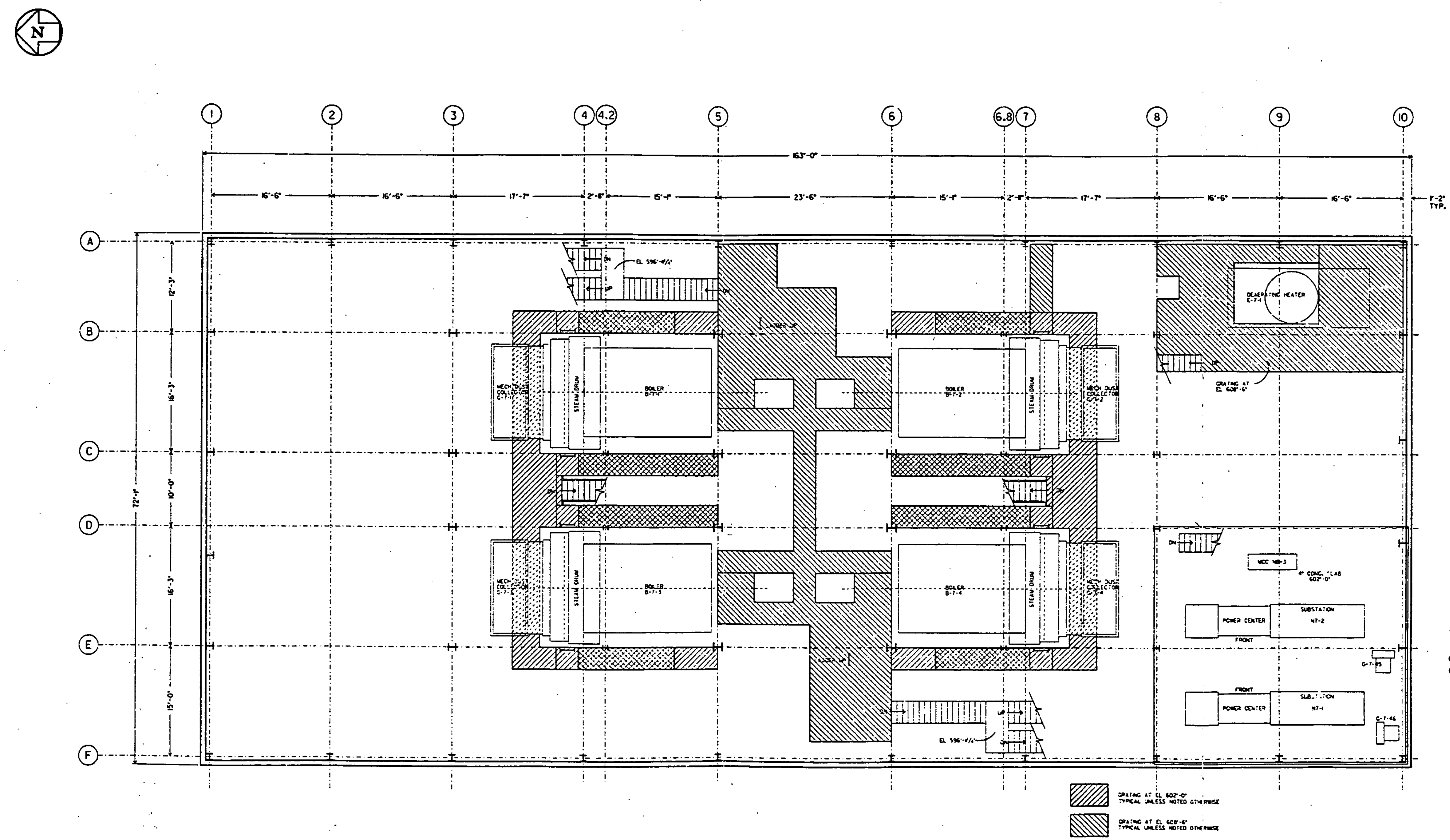
PLANT 10A — FIRST FLOOR

BOILER PLANT
FLOOR PLAN
3/16" = 1'-0"

RES. YMD
DATE 10-28-93
DRAWN L.J.S.

10X-5500-A-00610 | 3

390



INFORMATION ONLY

AUG 27 '96

000078

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
4	ADDED MCC NB-3	[illegible]	J.M.P.	GEP	
3	UPDATED	[illegible]	S.J.S.	GEP	
2	ADDED CONCRETE SLAB AT 602'-0"	[illegible]	R.J.W.	GEP	
1	REDRAWN ON CAD	[illegible]	S.J.S.	GEP	
0	DRAWN BY PDT+CO ARCHITECTS/PLANNERS				10X-1450-S-00218

NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

DO NOT SCALE REDUCED DRAWING

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO
FERNALD, OHIO
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY

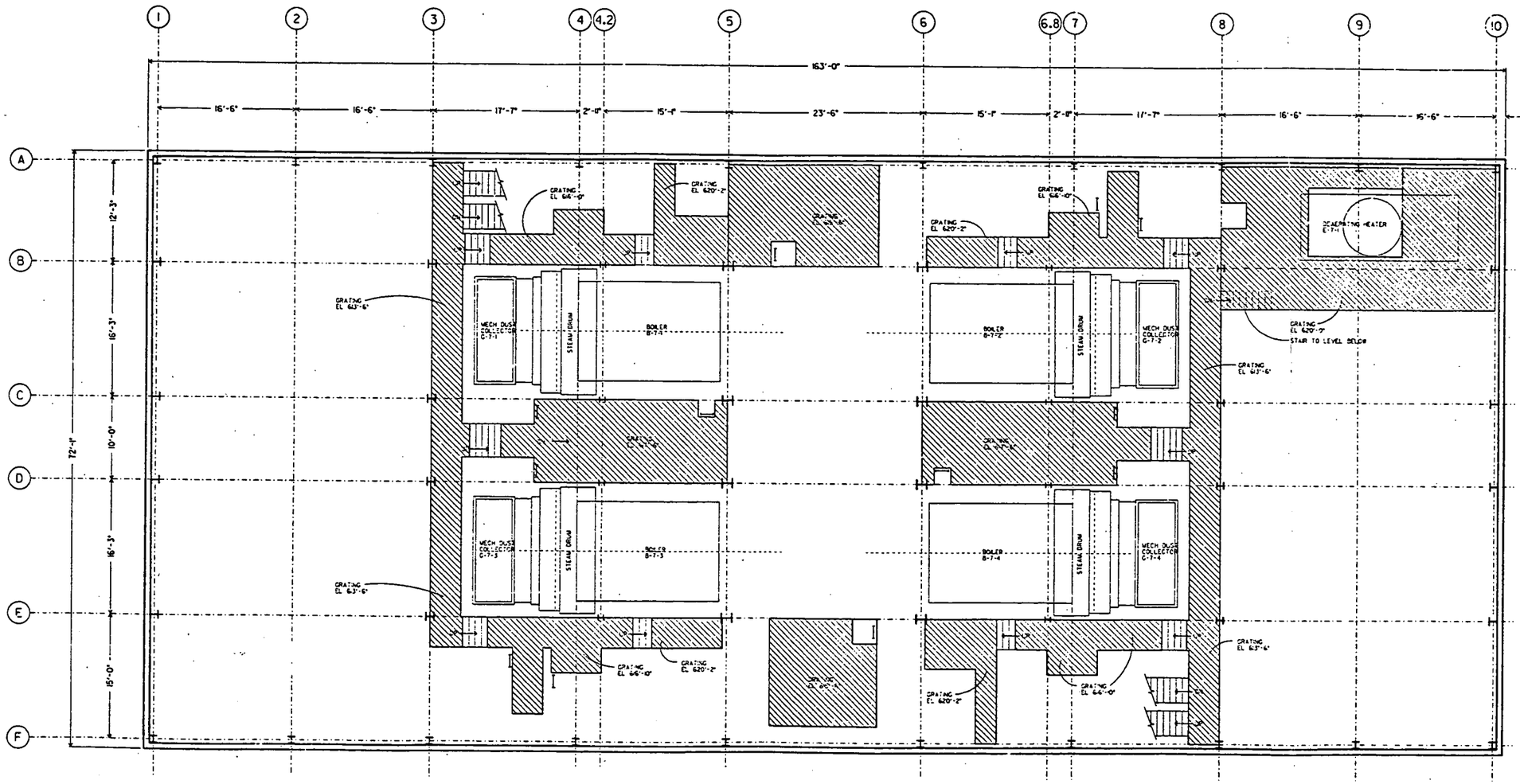
PLANT 10A — EL 602'-0" THRU 608'-6"

BOILER PLANT FLOOR PLAN

3/16" = 1'-0"

10X-5500-A-00611 — 4

390



FLOOR PLAN

DO NOT SCALE REDUCED DRAWING

000079

NO.	REVISIONS	DATE	DWN. BY	APPD.
1	REDRAWN ON CAD	1/19	S.J.S.	
0	DRAWN BY PDT+CO ARCHITECTS/PLANNERS			

NO.	REVISIONS	DATE	DWN. BY	APPD.

REF. DWG. NO.

NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

APPROVALS

CIVIL & STR.		SAFETY ENG.	
ELECTRICAL		MAINTENANCE	
ENGINEER		Q.A.	
INSTRUMENT			
MECHANICAL		FIRE PROTECT.	
		WASTE MANAGE	
CHECKED	GP	D.O.E.	
APPROVED		SECURITY	

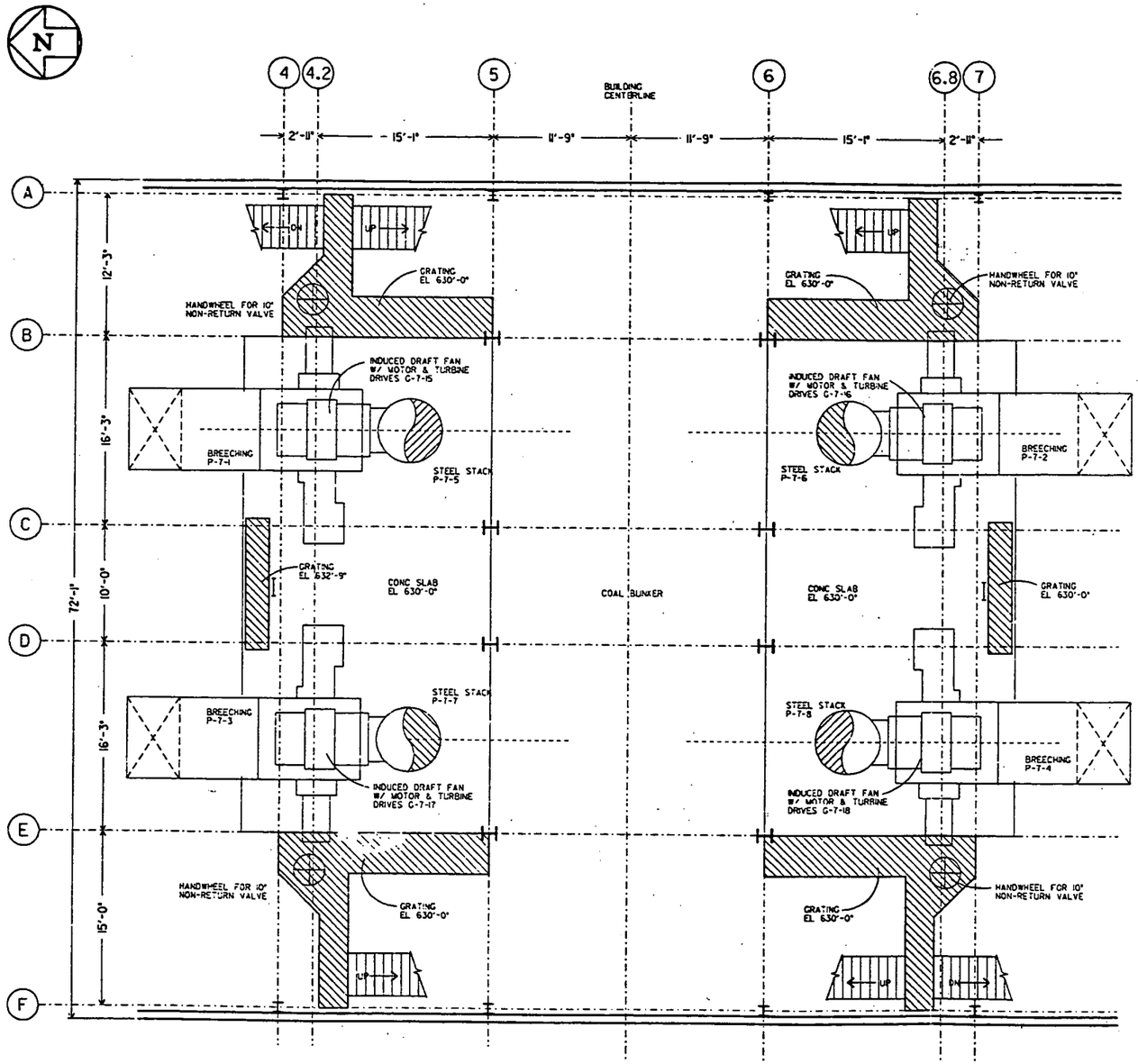
WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO
FERNALD, OHIO
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY

PLANT 10A — EL 613'-6" THRU 620'-0"
BOILER PLANT
FLOOR PLAN
3/16" = 1'-0"
DES. THK 1
DATE 10-29-90
DRAWN LJS
10X-5500-A-00612 | 1

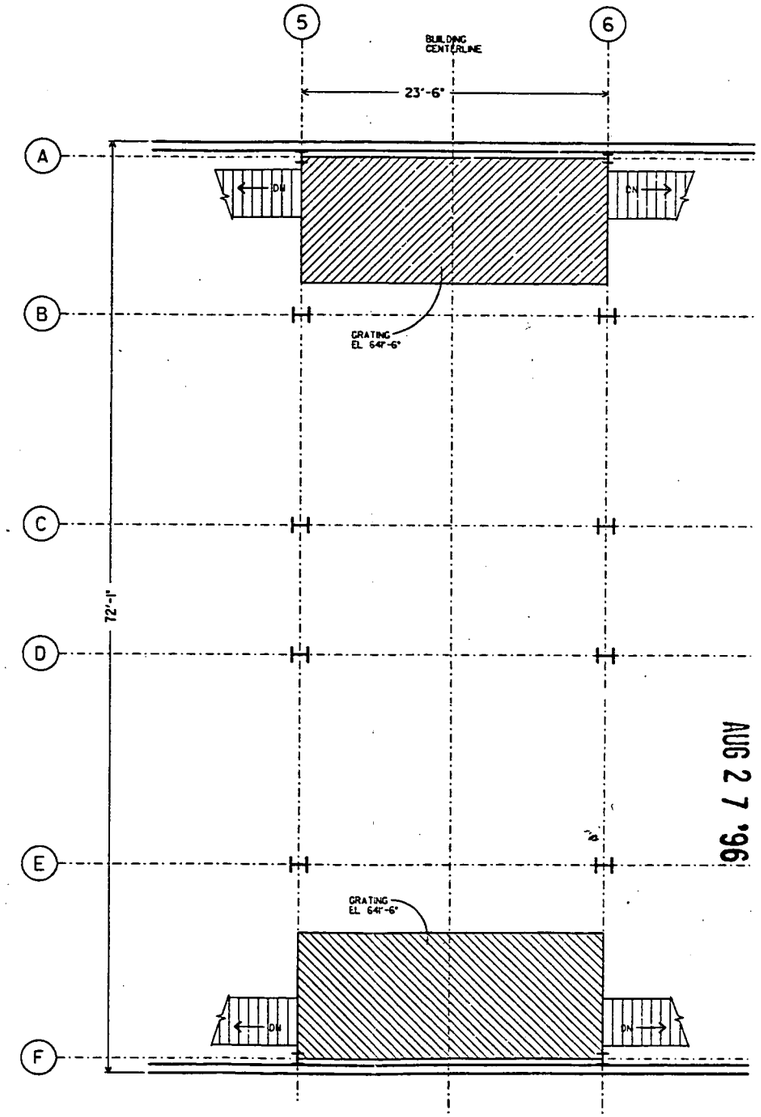
CADD/CAE/CAM DATA INFORMATION ONLY

AUG 27 '96

390



FLOOR PLAN
FL EL 630'-6"



FLOOR PLAN
FL EL 641'-6"

DO NOT SCALE REDUCED DRAWING

000080

INFORMATION ONLY
CAD/CAE

AUG 27 '96

NO.	REVISIONS	DATE	DWN. BY	APP'D.
1	REDRAWN ON CAD		WH	SLS
0	DRAWN BY PDT+CO ARCHITECTS/PLANNERS			

NO.	REVISIONS	DATE	DWN. BY	APP'D.

REF. DWG. NO.

NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
FRACTIONS ± 1/8
ANGLES ± 0° - 30'
DECIMALS
.X ± 0.1
.XX ± 0.03
.XXX ± 0.005
.XXXX ± 0.0050
CAD RELEASE DATE

APPROVALS			
			SAFETY ENG.
CIVIL & STR.			MAINTENANCE
ELECTRICAL			
ENGINEER			O.A.
INSTRUMENT			
MECHANICAL			FIRE PROTECT.
			WASTE MANAGE
CHECKED	ZP		O.O.E.
APPROVED	CE PAUL	10/5/90	SECURITY

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO
FERNALD, OHIO
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY

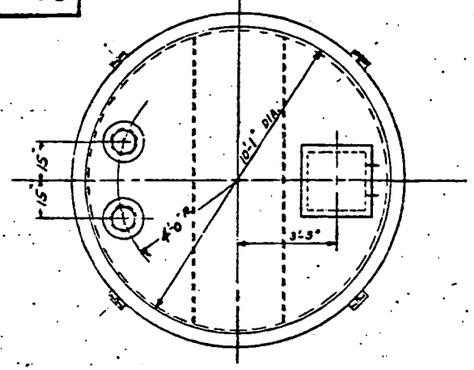
PLANT 10A — EL 630'-6" AND 641'-6"
BOILER PLANT
FLOOR PLANS
3/16" = 1'-0"

RES. MGR.	
DATE	10-28-90
DRAWN	LJS

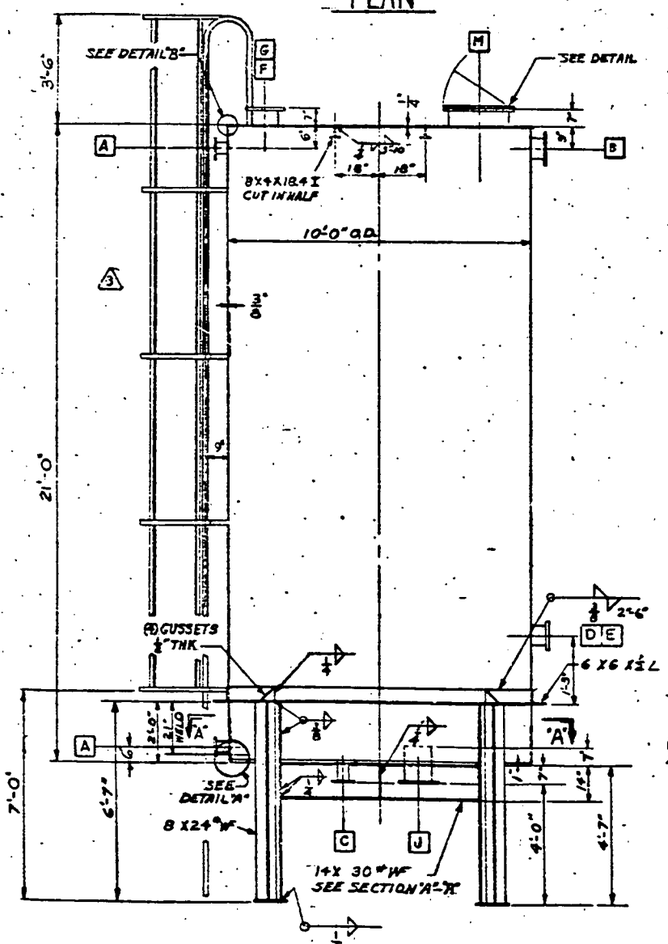
10X-5500-A-00613 | 1

3007-F-03-B

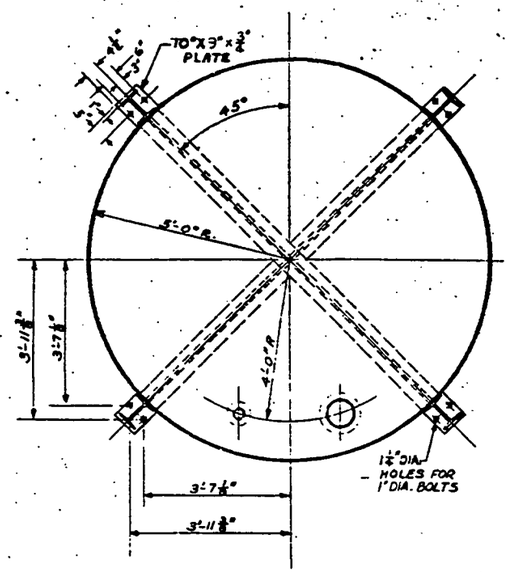
390



PLAN

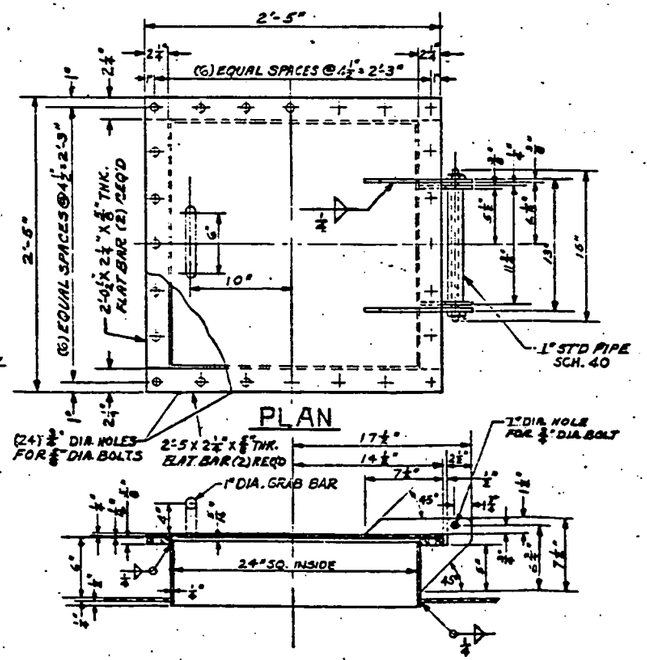


ELEVATION



SECTION "A"-"A"

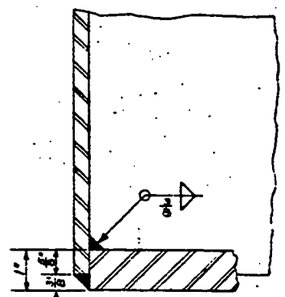
SCALE 1/2" = 1'-0"



PLAN

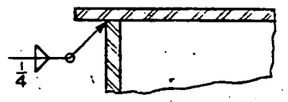
24" MANHOLE DETAIL

SCALE 1 1/2" = 1'-0"



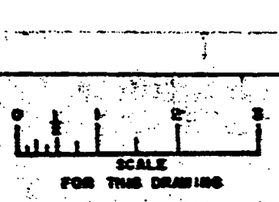
DETAIL "A"

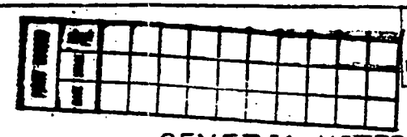
SCALE 6" = 1'-0"



DETAIL "B"

SCALE 6" = 1'-0"





REQ'D ONE
REQ. NO. 3007-F-Z
PUR. ORD. NO. 3000-1188

GENERAL NOTES

VESSEL TO BE ALL WELDED CONSTRUCTION IN ACCORDANCE WITH LATEST REVISION OF AMERICAN WELDING SOCIETY PROCEDURE.

SHELL & HEADS A.S.T.M. A-285 GR. C. FLANGE GRADE
SUPPORTS: A.S.T.M. A-7 OR EQUAL
FLANGES A.S.T.M. A-181, GR. I
COUPLINGS A.S.T.M. A-181. GR. I
GASKETS 1/16" THK. COMP. ASBESTOS MELRATH "125
PIPE: A.S.T.M. A-53, GR. A

REMOVE ALL RUST, GREASE, MILL SCALE ETC.
ALL EXTERNAL CARBON STEEL MEMBERS SHALL BE PAINTED WITH ONE SHOP COAT OF RED LEAD.

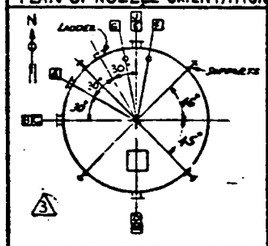
NORTH ARROW AND ITEM No. TO BE PAINTED ON VESSEL.

TEST:
TANK TO BE WATER TIGHT (STATIC HEAD)

SHIPPING WEIGHT	18,000 LB.
OPERATING WEIGHT	120,000 LB.
TEST WEIGHT	120,000 LB.
CAPACITY	12,300 GAL.

REFERENCE:
VESSEL TO BE FABRICATED TO C.C.CO. SPECS. FOR ATMOS. TANKS & HOPPERS INDEX PART IX SEC. 1A.
REFERENCE DWG.
LADDER DETAILS - C.C.CO. DWGS. DSJ-503 & DSJ-504.
THIS DWG. SUPERSEDES DR. 3007-F-03-B DATED AUG. 7, 1951

PLAN OF NOZZLE ORIENTATION



NO.	DATE	DESCRIPTION	BASE BY	APP'D
5				
4				
3	10/22/51	ADDED LADDER TO VESSEL & NOZZLE ORIEN	W.C.	
2	9/28/51	REDESIGNED & REDRAWN	K.P.A.	
1				

REVISIONS

AUG 27 '96

COMP.	NO. REQ'D	SIZE	RATING & FACING	PROJECTION FROM ℄ OF VESSEL	SERVICE	REMARKS
M	1	24"			MANHOLE	SEE DETAIL
J	1	10"	150# R.S.A. FLAT FACE		SUCTION	
G	1	10"			EMERGENCY MAKE UP	
F	1	10"			VENT TO ATMOSPHERE	
E	1	8"		5'-6"	OVERFLOW	
D	1	6"		5'-6"	RETURN	
C	1	4"			DRAIN	
B	1	6"	150# R.S.A. FLAT FACE	5'-6"	OVER-FLOW	
A	2	2"	150# ASA FLAT FACE	5'-6"	LEVEL CONTROL	

NOZZLE SCHEDULE

APPROVED FOR A. E. C. BY
DATE

UNITED STATES ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS OFFICE

CONTRACT No. AT(30-1)-1290
FEED MATERIAL PRODUCTION CENTER
FERNALD AREA

CONDENSATE STORAGE TANK
ITEM - F 7-2

DATE	9-28-51
SCALE	3/8"=1'-0" UNLESS OTHERWISE NOTED
DRAWN	W. A. M.
CHECKED	K.P.A. 10/3/51

OFFICE OF
CATALYTIC CONSTRUCTION CO.
1523 WALNUT STREET
PHILA. 2, PA.

APPROVED FOR CONSTRUCTION

DRAWING NO. 3007-F-03-B

REVISION NO. 3

INDEX CODE

PL. & AR.	CRNL	CE	SER. NO.
10 X	1950	M	000072

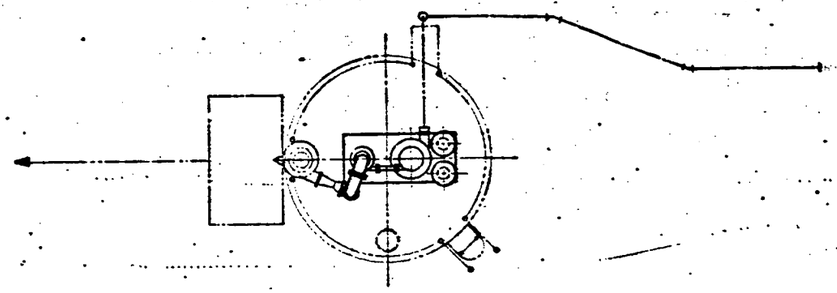
000081

CADD CONVERSION ONLY

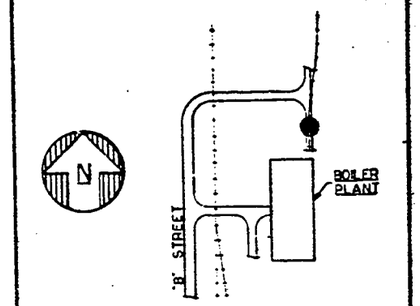
REVISED STATUS

10-4006

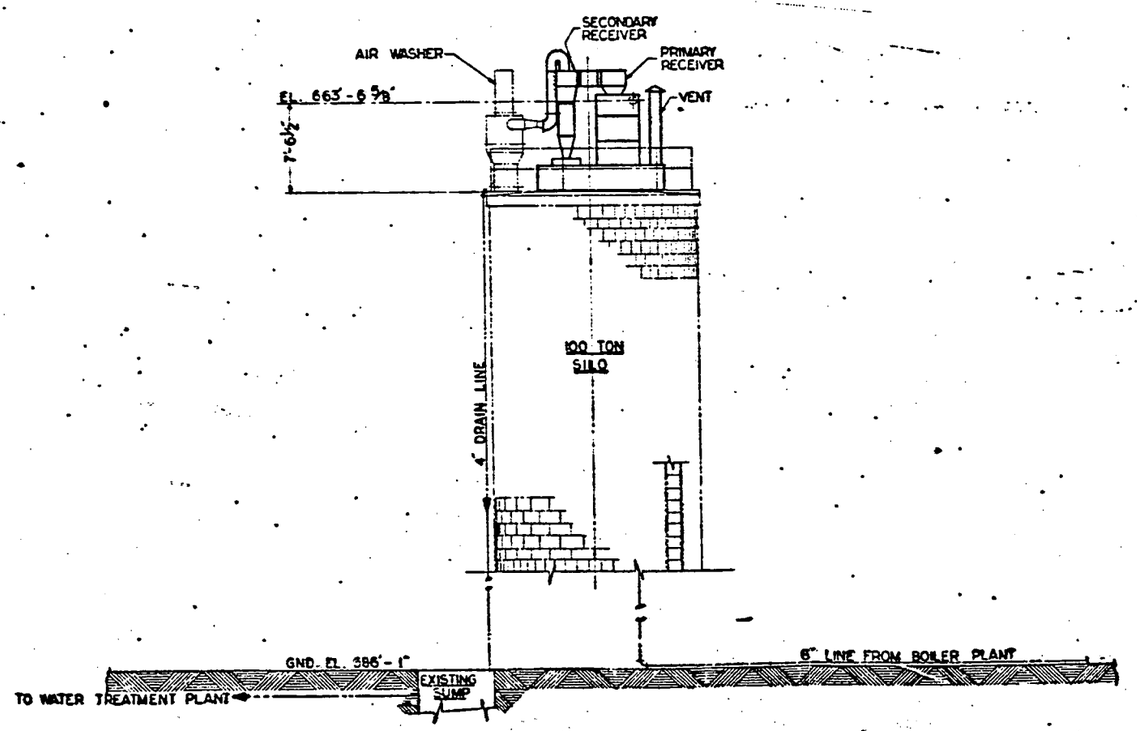
11	9-7-56	0
6	7-27-56	0
5	9-26-56	0



PLAN



PLOT PLAN
SCALE - 1" - 100'



WEST ELEVATION

GENERAL NOTES

1- HEAVY LINES INDICATE EQUIPMENT TO BE REVISED.
2- REFER TO UNITED CONVEYOR CORP. PRINTS HELD BY E. RIESTENBERG.

AUG 27 '96

SCALE FOR THIS DRAWING

INFORMATION ONLY

CADD SERVICES

REF. DWG. NO.	REF. DWG. TITLE	REVISIONS	DATE	BY

INDEX CODE

PL. & M.	DWG. NO.	SHT. NO.
10 X 5500	100084	

000082

NATIONAL LEAD COMPANY OF OHIO
FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO

U.S. ATOMIC ENERGY COMMISSION

BOILER PLANT

REVISION OF ASH CONVEYOR SYSTEM
PLAN & ELEVATION

BOILER PLANT ENGR.

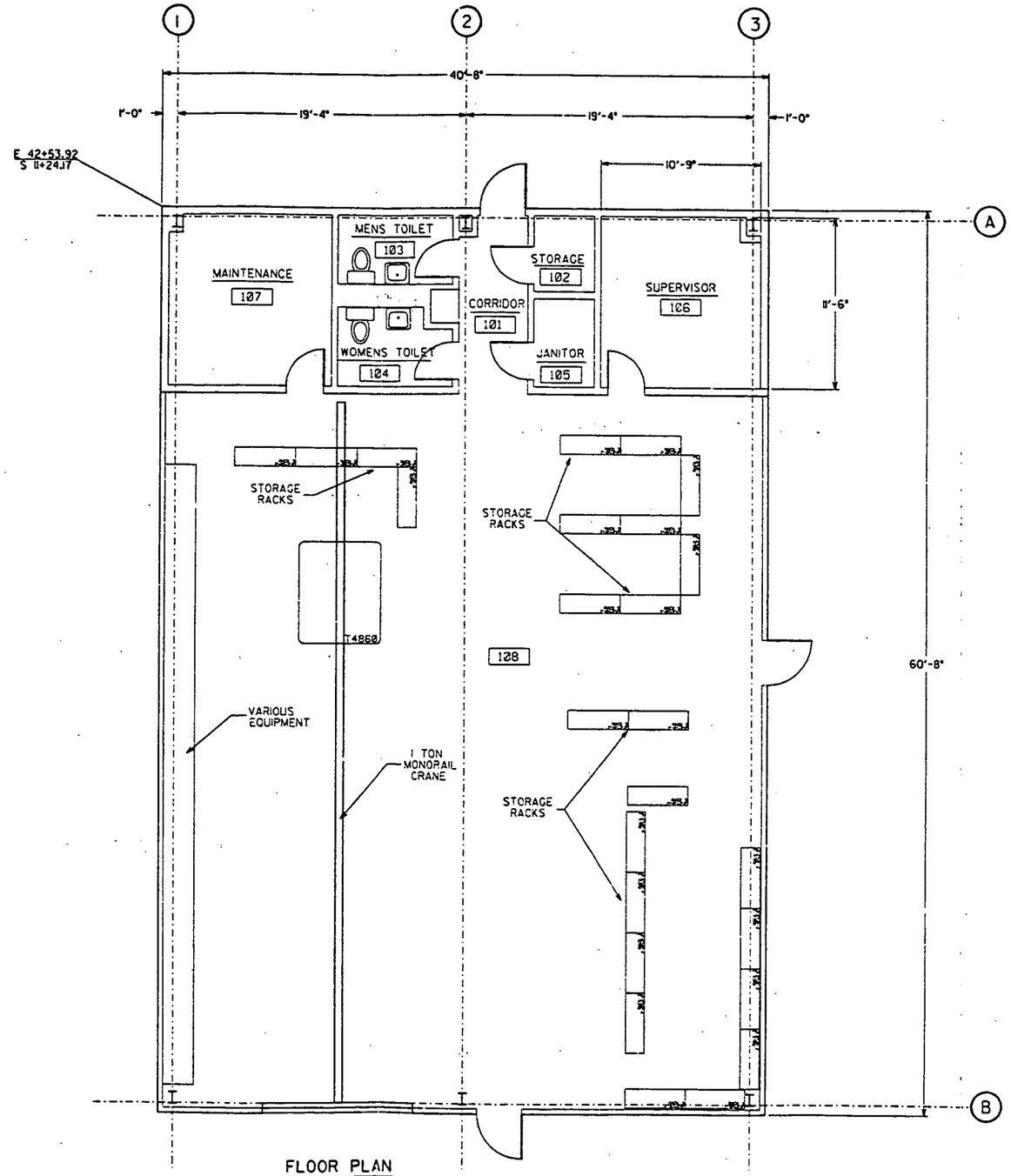
PROJECT NO. 10-9 CP-F-56-56

DRAWN TRACED CHECKED APPROVED

DATE 9-24-56 DWG. NO. 10-4006

SCALE 3/8"-1'-0" REV. 0

390



FLOOR PLAN

FIN FL EL 587'-0"

NOTE:
1. FOR A.M. KINNEY DESIGN DWG.S ON THIS BLDG. SEE /AMK/BLDG108 DIRECTORY.

000083

AUG 27 '96

INFORMATION ONLY

CADD SERVICES

NO.	REVISIONS	DATE	DWN. BY	APPD.
2	UPDATED	8/8/96	SLS	RJT
1	CORRECTED COORDINATES	7-12	RJB	RJT

REF. DWG. NO.

NOTE:
WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTIONS ± 1/8
ANGLES ± 0° - 30'
DECIMALS
.X ± 0.1
.XX ± 0.05
.XXX ± 0.005
FINAL RELEASE DATE

APPROVALS

CIVIL & STR.		SAFETY ENG.	
ELECTRICAL		MAINTENANCE	
ENGINEER		O.A.	
INSTRUMENT			
MECHANICAL		FIRE PROTECT.	
		WASTE MANAGE	
CHECKED	GEP	D.O.E.	
APPROVED	G. E. PAUL 11/1/92	SECURITY	

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO
FERNALD, OHIO
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY

BUILDING 108 — FIRST FLOOR
BOILER PLANT MAINTENANCE BLDG.
FLOOR PLAN
1/4" = 1'-0"

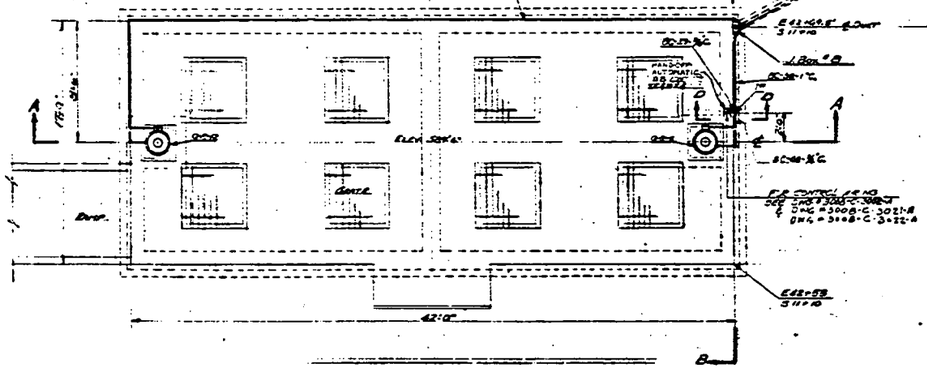
RES #148
DATE Jan. 29, 1992
DRAWN JBW

10E-5500-A-00629 | 2

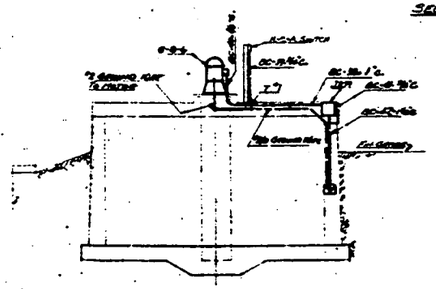
3008-C-3017A

390

N

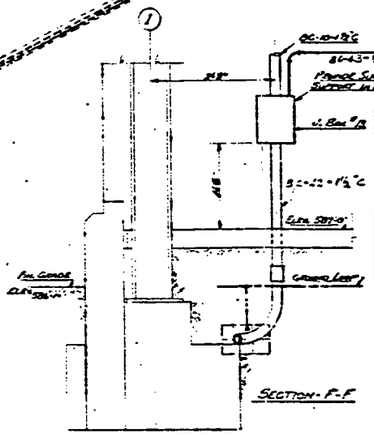


SECTION-A-A

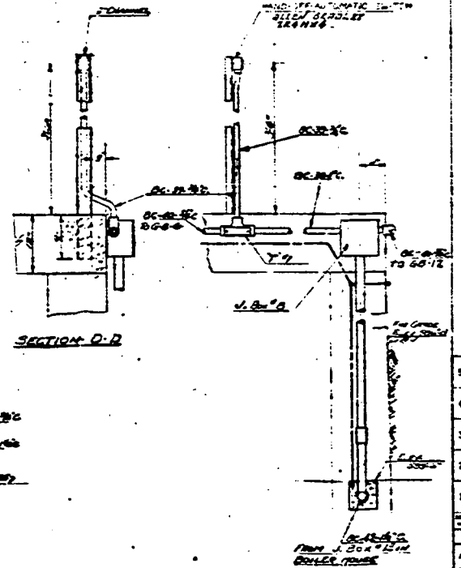


SECTION-B-B

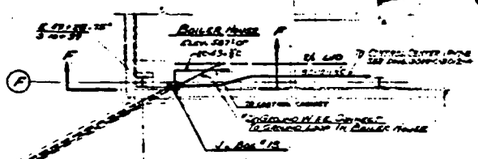
SECTION-E-E

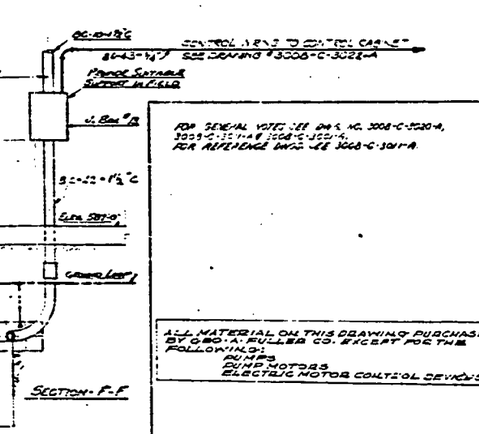


SECTION-F-F



SECTION-D-D





FOR GENERAL NOTES SEE DWG. NO. 3008-C-3020-A,
3008-C-3021-A & 3008-C-3022-A.
FOR REFERENCE DWGS. SEE 3008-C-3011-A.

ALL MATERIAL ON THIS DRAWING PURCHASED BY GEO. A. FULLER CO. EXCEPT FOR THE FOLLOWING:
PUMPS
DIESEL MOTORS
ELECTRIC MOTOR CONTROL DEVICES

SCALE FOR THIS DRAWING

AUG 27 '96

CONFORMED

CAD GENERATED

REVISIONS					
NO.	DATE	DESCRIPTION	MADE BY	CHK'D	APP'D
5					
4					
3					
2					
1					

APPROVED FOR A. E. C. BY: _____
DATE: _____

UNITED STATES ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS OFFICE

000084

CONTRACT No. AT(30-1)-1060

FEED MATERIALS PRODUCTION CENTER
FERNALD AREA

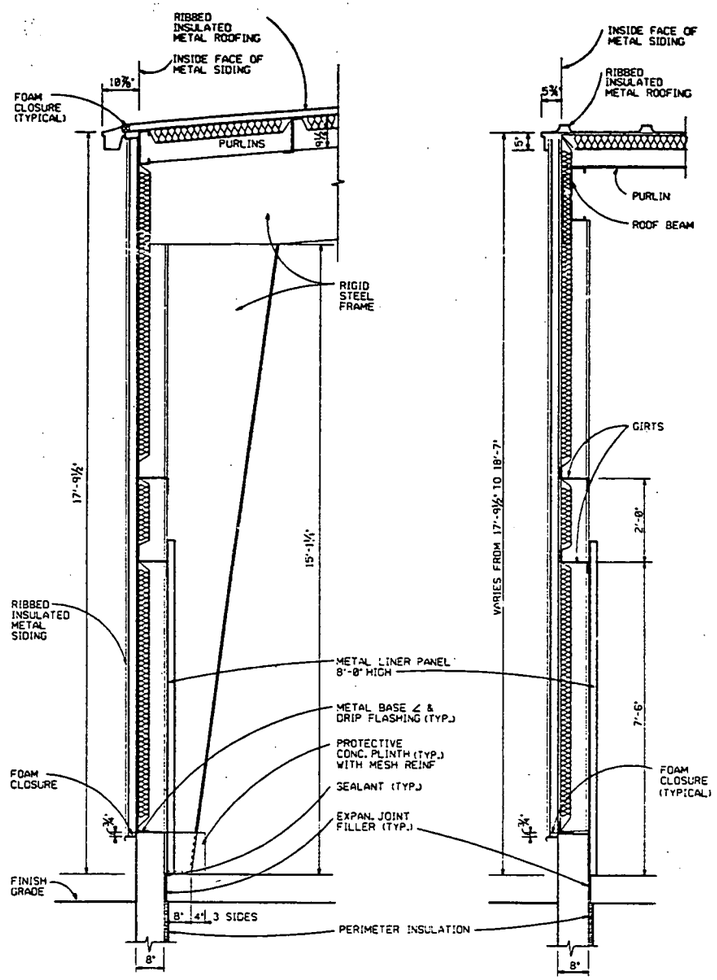
ELECTRICAL POWER SYSTEM
CONDUIT and GROUNDING LAYOUT PLAN
WET SALT STORAGE BIN - WATER TREATMENT PLANT

DATE	APPR'D BY	CHK'D
3-3-62	CATALYTIC CONSTRUCTION CO. 1500 WALNUT STREET PHILA. 2, PA.	
MADE REVISED Authorized Chg.		
	APPROVED FOR CONSTRUCTION	
DESIGNED J.W	DRAWING NO. 3008-C-3017-A	REVISION NO. 0

PRINT RECORD

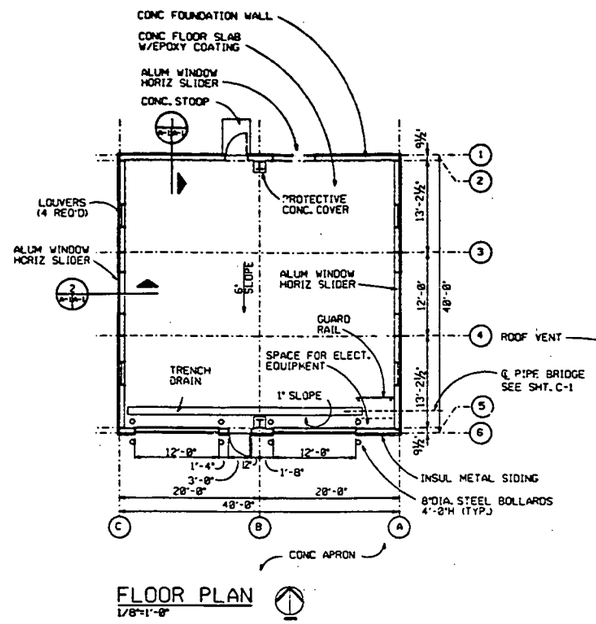
DATE	BY	DATE	BY
2-20-62	C.W.		
3-1-62	J.W.		
3-2-62	A.D.		

INDEX CODE
208:1450 E 00022

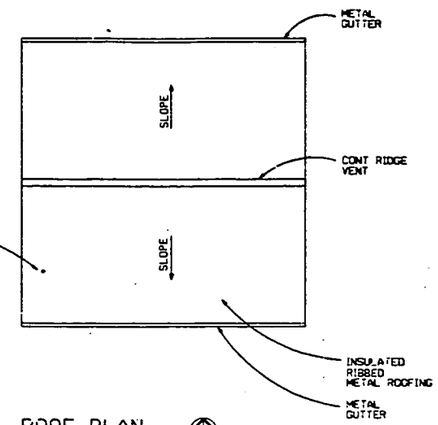


WALL SECTION 1/3/4"=1'-0"

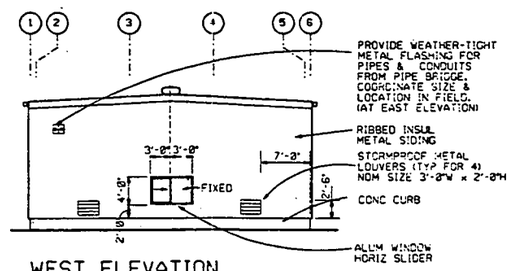
WALL SECTION 2/3/4"=1'-0"



FLOOR PLAN 1/8"=1'-0"

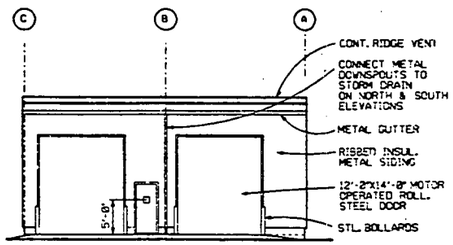


ROOF PLAN 1/8"=1'-0"

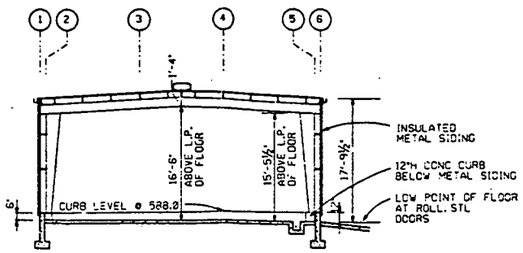


WEST ELEVATION 1/8"=1'-0"

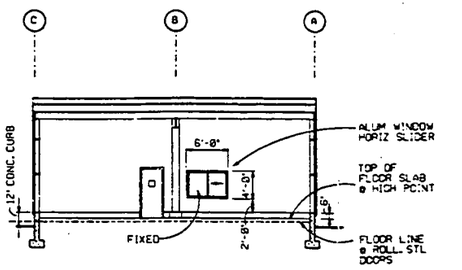
NOTE: EAST ELEVATION SIMILAR, EXCEPT PIPE FLASHING AS NOTED.



SOUTH ELEVATION 1/8"=1'-0" NOTE: NORTH ELEVATION SIMILAR EXCEPT NO ROLL ST. DOORS



BUILDING SECTION LOOKING EAST 1/8"=1'-0"



BUILDING SECTION LOOKING NORTH 1/8"=1'-0"

0 4' 8' 16' 24'
1/8"=1'-0"

0 6" 1' 2' 3' 4'
3/4"=1'-0"

NOTES

GENERAL NOTES

1. PRE-ENGINEERED BUILDING DESIGN, AS SHOWN. COLUMN LINES, OVERALL BUILDING DIMENSIONS, MAY VARY FROM THOSE SHOWN FOR OTHER ACCEPTABLE PRE-ENGINEERED BUILDING SYSTEMS, SUBJECT TO WEMCO APPROVAL.
2. STEEL FRAMING FOR ALL DOOR AND LOUVER OPENINGS TO BE PROVIDED BY MFR OF PRE-ENGINEERED BUILDING.
3. LOUVERS TO BE ALUMINUM STORMPROOF & ADJUSTABLE WITH ALUM. BIRD SCREENS
4. CONTINUOUS RIDGE VENT, PROVIDED BY MFR OF PRE-ENGINEERED BUILDING, TO BE ADJUSTABLE BY PULL CORD.
5. HOLLOW METAL SWING DOORS TO BE 3'-0" x 7'-0", 1¾" THICK. FRAMES TO BE 2" x 5¾" HOLLOW METAL. 18"X18" VISION PNL. W/¼" WIRE GLASS.
6. METAL ROOFING AND SIDING TO BE INSULATED. U-VALUES .264 (SIDING), .245 (ROOF).
7. ROOF VENT FLASHING, PROVIDED BY MFR OF PRE-ENGINEERED BUILDING.

AUG 27 '96

INFORMATION ONLY

CADD SERVICES

2	GENERAL REV. FOR FEMP SYSTEM	DLS 1/28/94	DEV 3/28/94	E
1	RECORD DRAWING	JRH 12-31-93		
0	CFC	DHZ 9-17-93	JRH 8-25-92	

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
A. M. KINNEY, INC
CONSULTING ENGINEERS
CINCINNATI, OHIO

A-E PROJECT NO. 02900

PROJECT NAME
ENVIRONMENTAL, HEALTH & SAFETY IMPROVEMENTS

DRAWING TITLE
UTILITIES HEAVY EQUIPMENT STORAGE PLANS, SECTIONS & ELEVATIONS

DRAWN BY	DATE	ORIGINAL DESIGNED BY	DATE	CHECKED BY	DATE
DLS	8-90	EHZ	8-90	EHZ	6-92
ACTIVITY NO. 10		CAD		SCALE AS NOTED	CLASS
JOHN HUI YUAN		ORIGINAL RELEASED J.F. CONNERTON 8-25-92		JOB APPROVED J.R. HUGHES 8-25-92	
87-D-159	0087502 #BS1.1-3.2.88		18F-4443-A-60633	SHEET NO. A-1	NO. OF SHEETS 2

00008

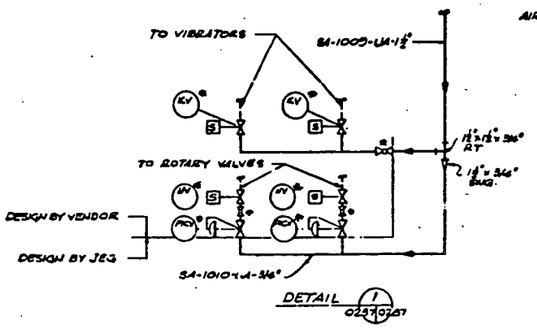
DO NOT SCALE REDUCED DRAWING

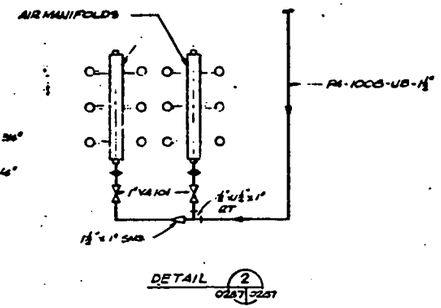
REFERENCE DRAWING	
DRAWING NO.	TITLE
001-P-01918	REFERENCES, SYMBOLS & NOTES
P-00285	PLAN OUT. GRADE & EL 597'-2½"
P-00286	PLAN ABOVE EL 597'-2½"
S-00324	UNDERGROUND PIPING PLAN
1 20X-M-00290	P & I.D.

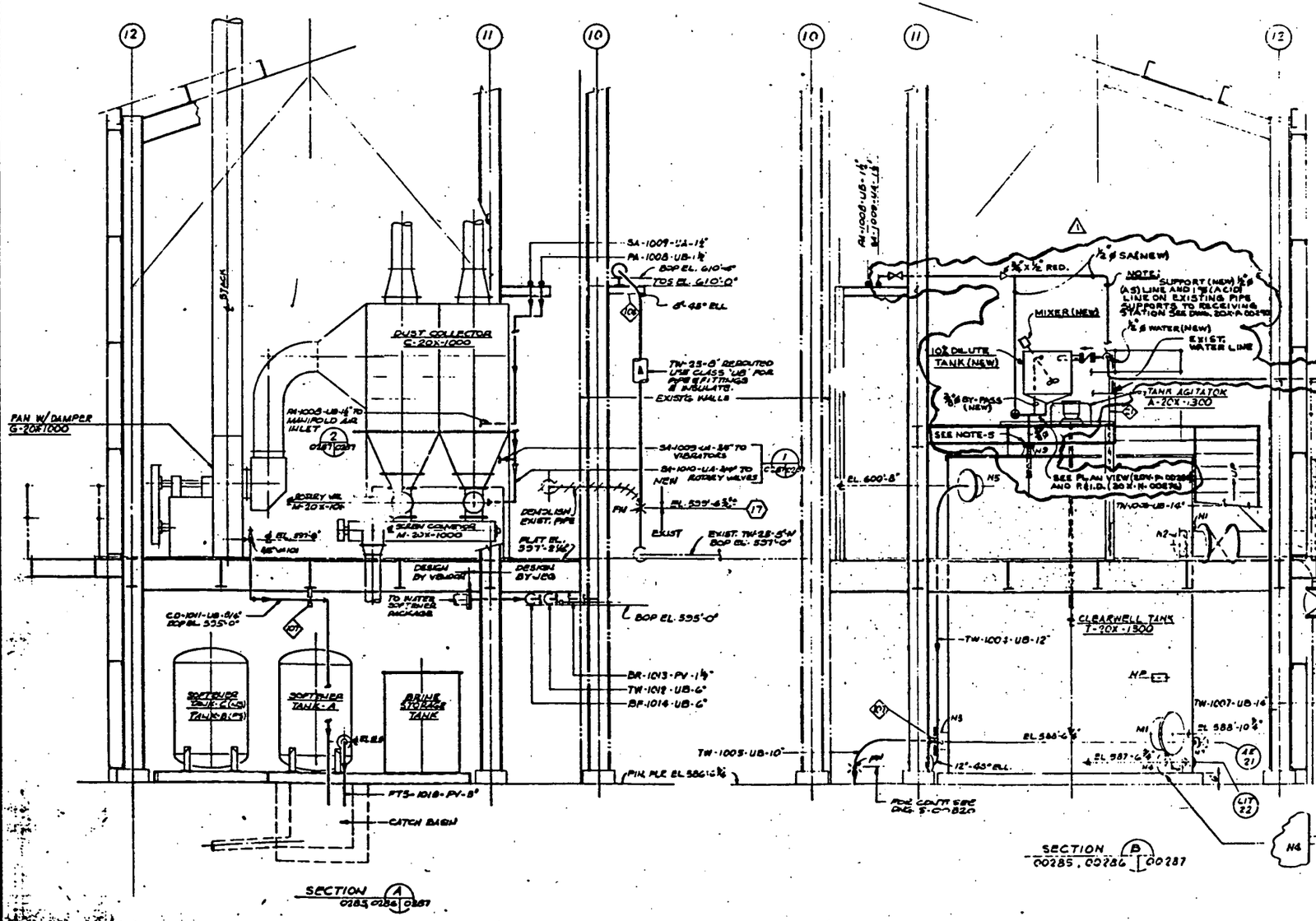
390

NOTES:

1. FOR ACTUAL DUST COLLECTOR & FAN LOCATIONS REFER TO MECHANICAL DWG NOS. M-00294, 00295 & 00296.
2. FIELD TO VERIFY PIPING DIMENSIONS, ELEVATIONS AND LOCATIONS PRIOR TO FABRICATION.
3. ⊕ & ⊖ VERIFY WITH VENDOR DRAWING.
4. ⊕ SUPPLIED BY EQUIPMENT VENDOR.
5. 1½" ø ISO* BLIND FLG. R.F. & D. TAPPED FOR ¾" ø PIPE.







DIMENSIONS SHOWN ON THIS DESIGN DRAWING INCLUDE THE BEST AVAILABLE DATA FROM OPERATING CONTRACTORS' RECORD FILES AND DATA TAKEN FROM CURRENT MANUFACTURER'S DATA SHEETS. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF EXISTING CONDITIONS AND FOR ANY DIMENSIONAL ADJUSTMENTS REQUIRED TO MATCH ACTUAL EQUIPMENT AND MATERIAL SELECTIONS.

ANY CHANGES REQUIRED BY THE CONSTRUCTION CONTRACTOR TO MATCH HIS SELECTED EQUIPMENT OR MATERIALS SHALL BE MARKED IN RED ON THE SITE CONSTRUCTION DRAWING AND SIGNED BY THE RESPONSIBLE A/E TITLE III REPRESENTATIVE BEFORE PROCEEDING WITH THE CHANGE.

000086

AUG 7 '98

DO NOT SCALE REDUCED DRAWING

REV NO	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS AND DATE	DOE
1	REVISED PER R.E.S.R 1682	9/14/98	
0	CERTIFIED FOR CONSTRUCTION	6/11/98	9/18/98

UNITED STATES DEPARTMENT OF ENERGY

JACOBS ENGINEERING GROUP INC.
PASADENA, CALIFORNIA

CONTRACT NO N-77208 A/E NO 3900

PROJECT NAME
PRODUCTIVITY RETENTION

DRAWING TITLE
WATER TREATMENT PIPING SECTIONS & DETAILS

DRAWN BY	DATE	DESIGNED/CHECKED BY	DATE	CHECKED BY	DATE
L. BURANDAY	5/16/88	R.C.P. CASTILLO	7-8-88	W.Y. KUWAYE	7-12-88

PLANT	BLDG	FLOOR	SCALE	CLASS
FMPC	20		3/8"=1'-0"	

SUBMITTED FOR APPROVAL	APPROVAL RECOMMENDED	DRAWING APPROVED
A-E DATE 11-13-98	OPER. CONTRACTOR DATE	DOE DATE 11/13/98

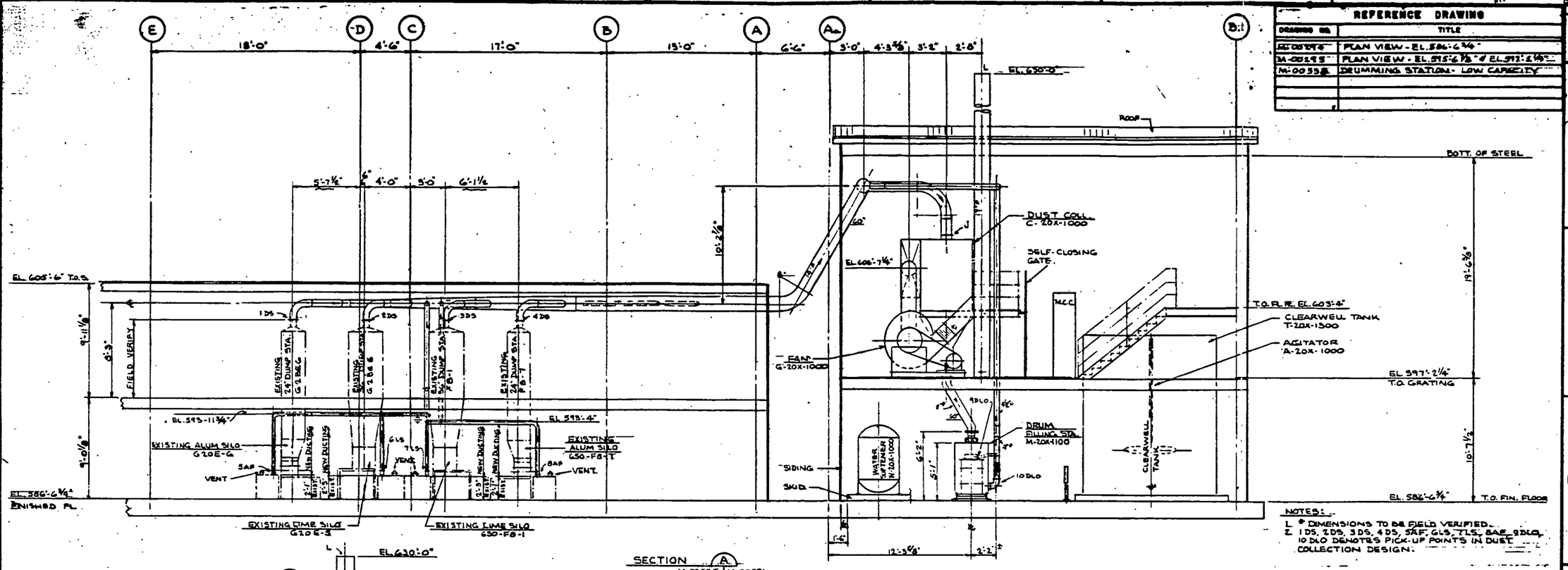
WSS CODE
FOR INFORMATION ONLY
JEG PROJECT NO 01A175 00005 LEVEL 3 X LEVEL 4 P103

PROJECT NO 20X 3900 P 00287 REV NO 1

CAD SERVICES

INFORMATION ONLY

REFERENCE DRAWING	
DRAWING NO.	TITLE
M-00294	PLAN VIEW - EL. 586'-6 3/4"
M-00295	PLAN VIEW - EL. 595'-6 7/8" & EL. 597'-2 1/4"
M-00338	DRUMMING STATION - LOW CAPACITY



NOTES:
1. * DIMENSIONS TO BE FIELD VERIFIED.
2. 1DS, 2DS, 3DS, 4DS, SAF, GLS, TLS, BAE, 9DLO, 10 DLO DENOTES PICK-UP POINTS IN DUST COLLECTION DESIGN.

DO NOT SCALE REDUCED DRAWING

					7/96	
0	CERTIFIED FOR CONSTRUCTION				10/2/89	
NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	OPER	DOE	INITIALS AND DATE	

UNITED STATES DEPARTMENT OF ENERGY

JACOBS ENGINEERING GROUP INC.
PASADENA, CALIFORNIA

CONTRACT NO. N-7720a A-E NO. 3900

PROJECT NAME: PRODUCTIVITY RETENTION

DRAWING TITLE: WATER TREATMENT MECHANICAL DUST COLLECTOR ELEVATIONS

DRAWN BY	DATE	DESIGNED, CHECKED BY	DATE	CHECKED BY	DATE
T. Rubio	9/29/89			C. Rowlands	10/2/89

PLANT	BLDG.	FLOOR	SCALE	CLASS
PMPC			3/8"=1'-0"	U

SUBMITTED FOR APPROVAL	APPROVAL RECOMMENDED	DRAWING APPROVED
DATE 10/2/89	OPER CONTRACTOR DATE 10/2/89	DOE DATE 10/2/89

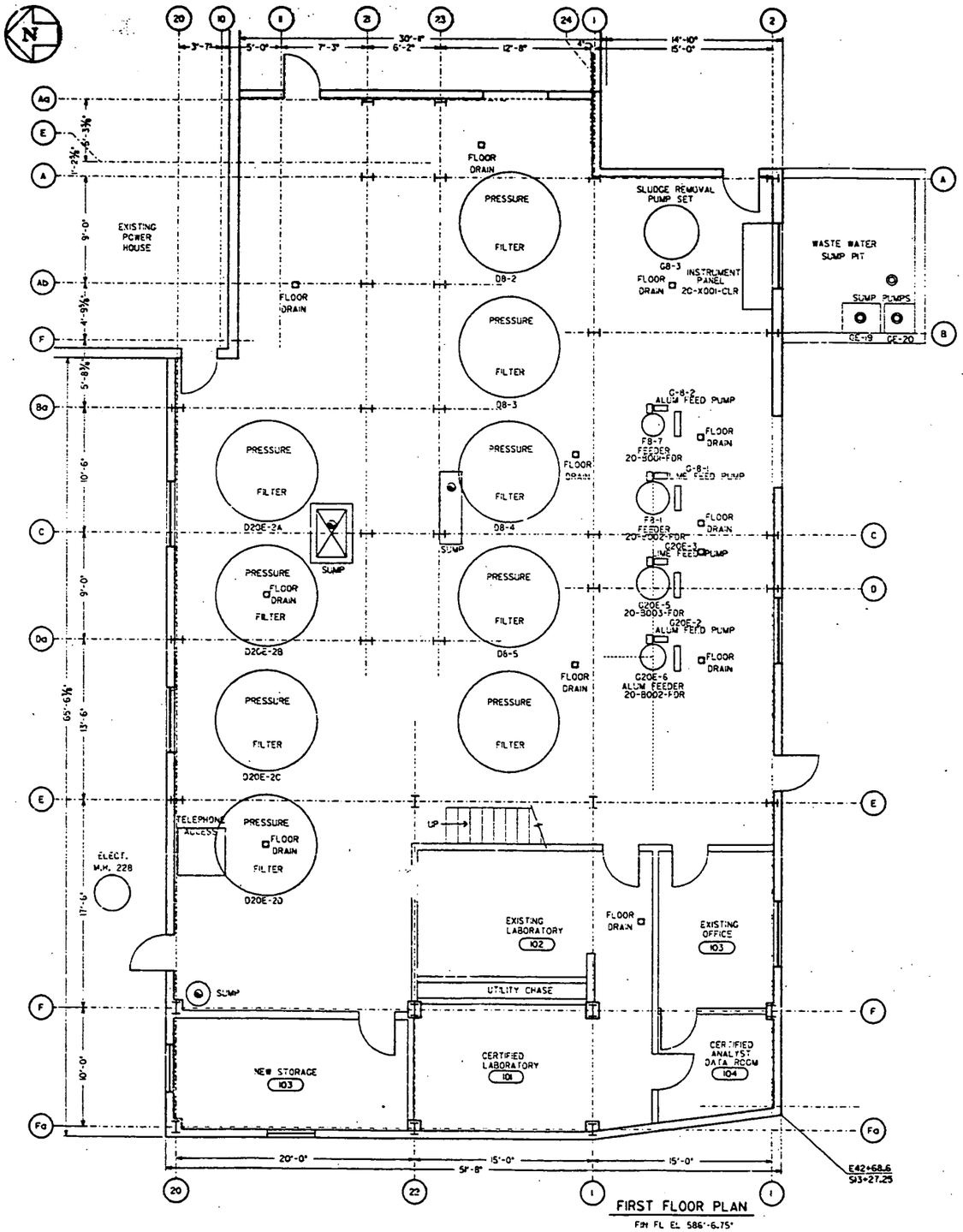
WBS CODE FOR INFORMATION ONLY: PROJECT NO. 01-A175-00 | LEVEL 05 | LEVEL 6 | LEVEL 7 M1103

PROJECT NO. | DRAWING NUMBER: 20X 3900 M 00296 | REV NO. 0

0000837

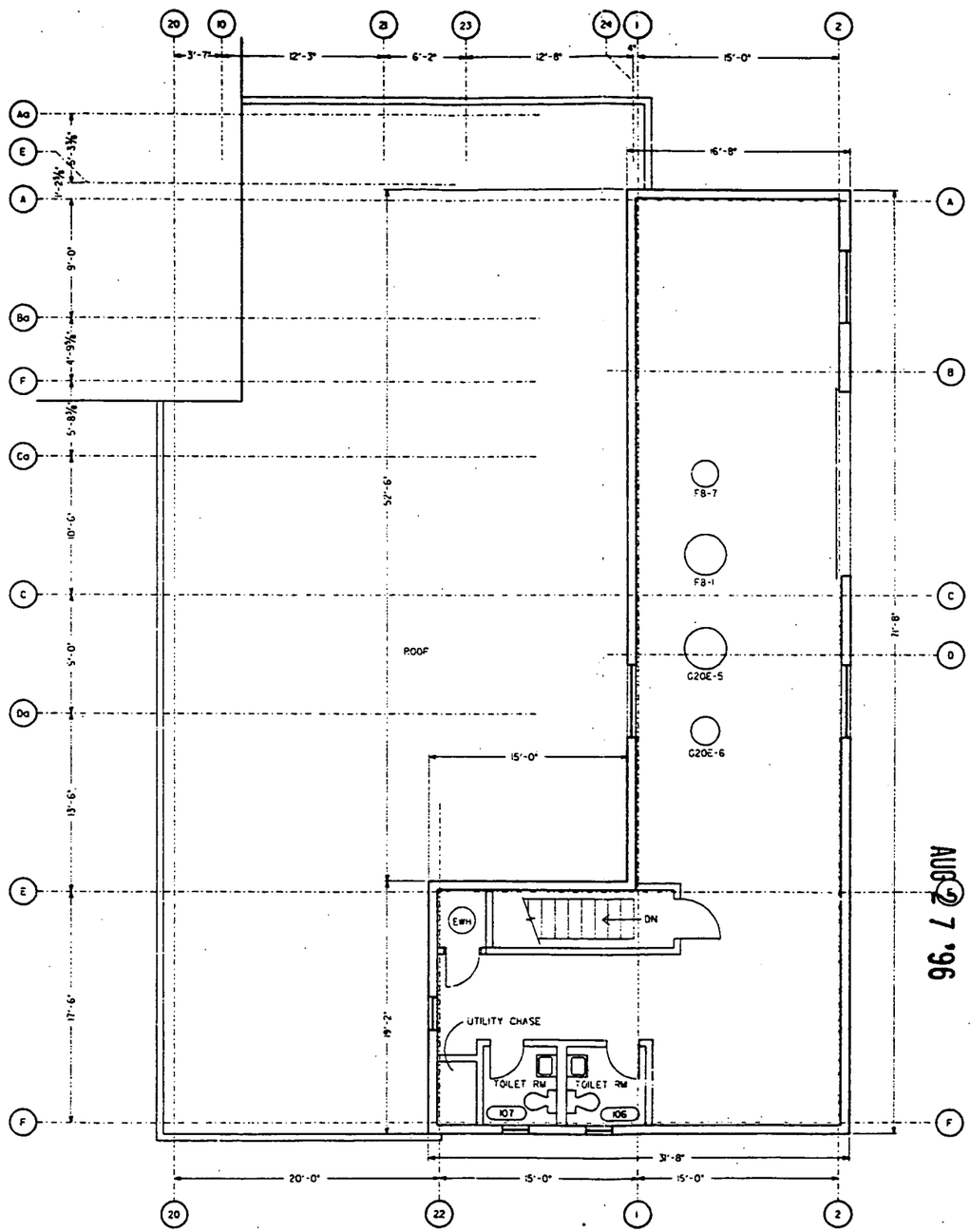
CAD GENERATED

INFORMATION ONLY



FIRST FLOOR PLAN

F/H FL EL 586'-6.75"



SECOND FLOOR PLAN

F/H FL EL 535'-6"

DO NOT SCALE REDUCED DRAWING

000088

NO.	REVISIONS	DATE	DWN. BY	APPD.
2	UPDATED	1/98	JSW	REP
1	REDRAWN ON CAD	1/89	S.J.S.	G.E.P.
0	DRAWN BY PDT-CO ARCHITECTS/PLANNERS			

NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

APPROVALS			
CHEMICAL		H.R.S. & T.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		MIL. SAFETY	
ENGINEER		O.A.	
INSTRUMENT		PRODUCTION	
MECHANICAL		FIRE & SAFETY	
		WASTE MANAGE.	
CHECKED		D.O.E.	
APPROVED		SECURITY	

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO
FERNALD, OHIO
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY

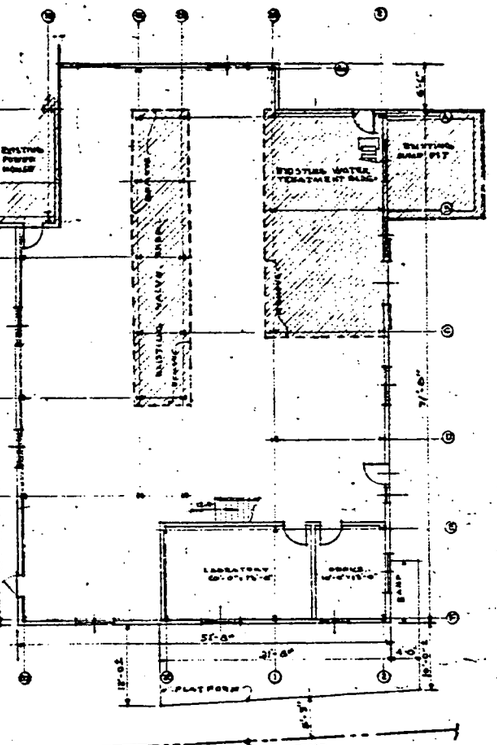
BUILDING 206 — 1ST AND 2ND FLRS.
WATER TREATMENT PLANT
FLOOR PLAN
1/4" = 1'-0"

DES. ind
DATE 10/1/92
DRAWN
20X-5500-A-00395 | 2

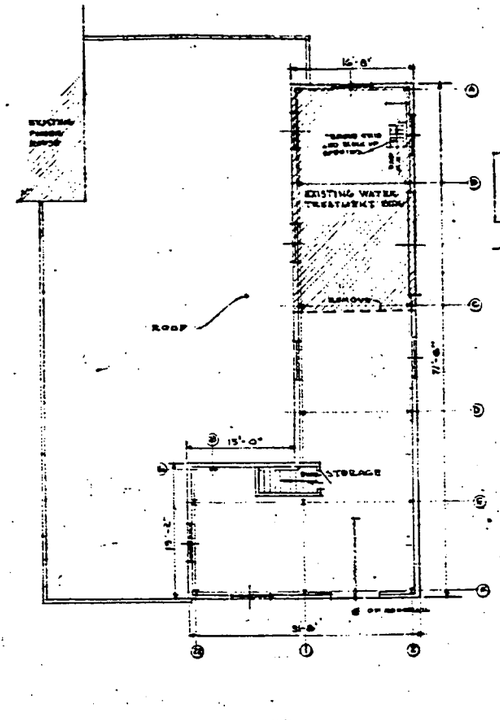
INFORMATION ONLY
CADD SERVICES
AUG 7 '96

(Fax: m/700 ws7) V7W6/mw2 Wed Jan 8 16:18:14 CST 1997

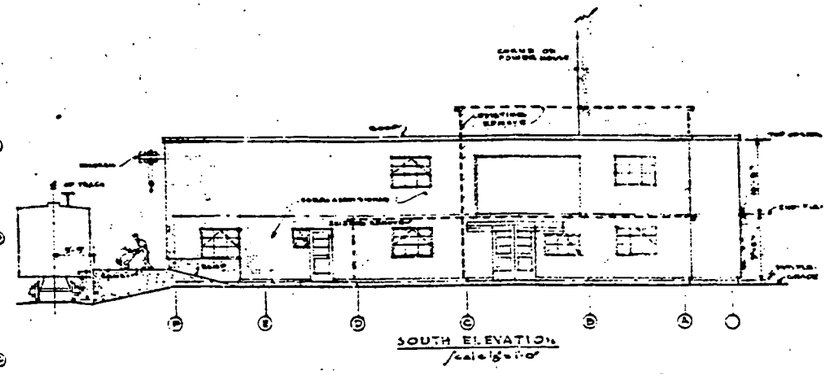
390



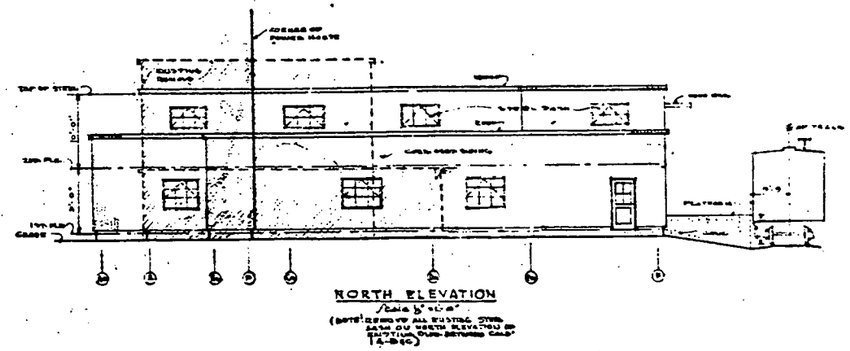
FIRST FLOOR PLAN
AT EL. 560'-6"
Scale 1/8"=1'-0"



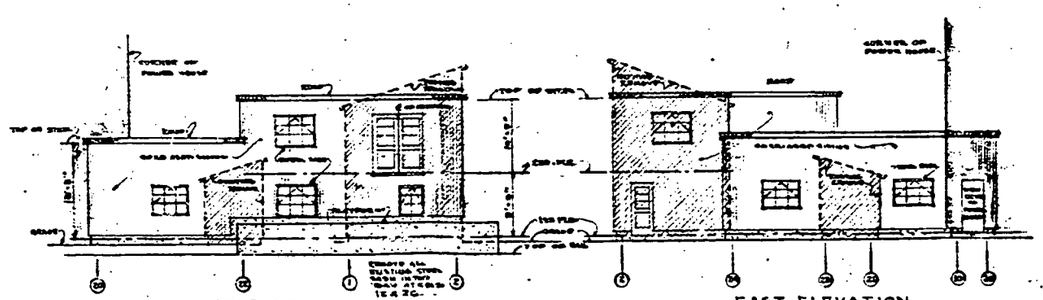
SECOND FLOOR PLAN
AT EL. 585'-6"
Scale 1/8"=1'-0"



SOUTH ELEVATION
Scale 1/8"=1'-0"

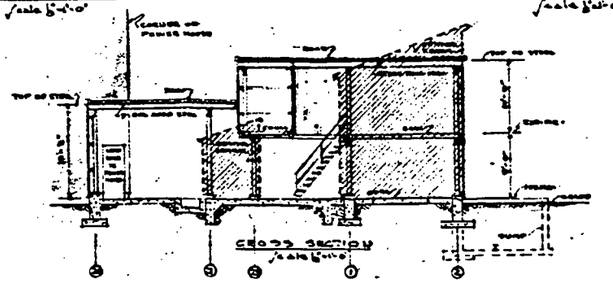


NORTH ELEVATION
Scale 1/8"=1'-0"
(DETAILS SIMILAR TO ALL EXISTING OTHER SIDES OF SOUTH ELEVATION OF EXISTING CHEMICAL BLDG. (4-B40))



WEST ELEVATION
Scale 1/8"=1'-0"

EAST ELEVATION
Scale 1/8"=1'-0"



CROSS SECTION
Scale 1/8"=1'-0"

SCALE FOR THIS DRAWING

NOT TO BE USED FOR CONSTRUCTION

INDEX FILE
20X 7000 A00092

AUG 27 '55

NOTE

1. REMOVE EXISTING WALLS & PARTS AT COLS. 21-A-B-C-D-E & 23-A-B-C-D-E AT EL. 585'-6" HEIGHT OF ABOVE COLS AS SHOWN ON THIS DWG.
2. REMOVE INT. FLOOR WALLS AT COLS. 21-A-B-C-D-E & 23-A-B-C-D-E BETWEEN 14 & 22 AT INT. & 2ND FLRS. REMOVE EXISTING ROOF & EXTEND OR SHORTEN COLS. AS SHOWN ON THIS DWG.
3. USE STRUCTURAL STEEL TO CONFORM TO THE LATEST A.I.S.C. CODE
4. WINDOWS TO BE COMMERCIAL PROJECT. TYPE OF STEEL SECT.
5. [illegible]

DRAWING NO. 5250-20A-5021 REV. 1

REFERENCE DRAWING	NO.
BILL OF MATERIAL	REF.
SPECIFICATION	REF.

U. S. ATOMIC ENERGY COMMISSION

SINGMASTER & BREYER
CONSULTANTS & CHEMICAL ENGINEERS
420 LEXINGTON AVE. NEW YORK 17, N.Y.

NATIONAL LEAD COMPANY OF OHIO
OPERATING CONTRACTOR OF
FEED MATERIALS PRODUCTION CENTER
FERNALD OHIO

WATER TREATMENT PLANT EXP.
FILTER & CHEMICAL BUILDING
PLANS, ELEVATIONS & SECTION

DES.	CHKD.	
ARCH.	JWG	
CHEM.	R.L.S.	
DRFT.	JH	
TRACED		

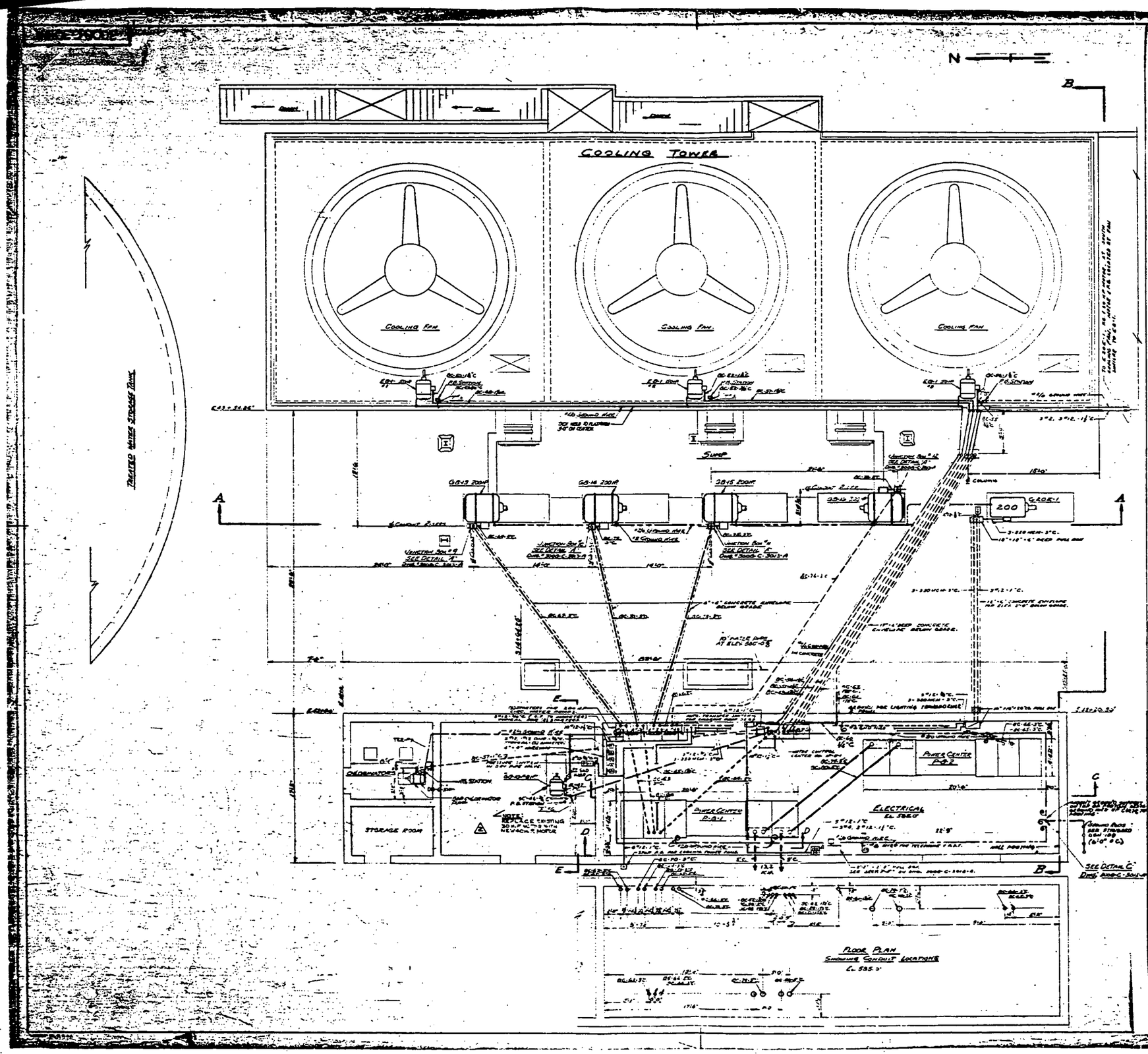
APPROVED DATE
S S S — TITLE
N.L.CO. — TITLE
A.E.C. — TITLE
TRACED D.E.D. CHECKED J.F.B. DATE
DATE 5-31-55 DWG. NO. 5250-20A-5021 REV. 1
SCALE 1/8"=1'-0"

REVISIONS	DATE	BY	CHK.	NO.
APPROVED AS NOTED COMMENTS COMPLIED WITH 6-17-55 JFB				

INFORMATION ONLY

CAT

000089



GENERAL NOTES

1. ——— REPRESENTS GROUND WIRE.
2. —9 DOT REPRESENTS THE POINT WHERE GROUND WIRE LEAVES THE CONCRETE.
3. EXTEND GROUND WIRE APPROX. 4'0" ABOVE CONCRETE - FLOOR OR GRADE, EXCEPT WHERE NOTED OTHERWISE. SEE COIL & REMOVE FOR PROTECTION OF WIRE DURING CONSTRUCTION.
4. ——— REPRESENTS CONDUIT UNDER FLOOR SLAB OR CONDUIT UNDERGROUND.
5. ——— REPRESENTS EXPOSED CONDUIT.
6. ALL UNDERGROUND CONDUITS ENTERING BLDGS TO BE ENCASED IN 6000 CONCRETE UP TO THE INSIDE OF OUTSIDE BLDG WALL.
7. ALL GROUND WIRE & CONNECTIONS TO BE INSTALLED IN ACCORDANCE WITH THE N.E.C. & CATALYTIC SPECS.
8. SEE DWG NO. 3008-C-3020-A & 3008-C-3001-A FOR OTHER GENERAL NOTES.

PRINT RECORD

DATE	STAGE	BY	DATE	STAGE	BY	DATE	STAGE	BY
3-31	C	RB						
5-31	R							
6-01	I							

REFERENCE DRAWINGS

3008-C-3001-A	SINGLE LINE DIAGRAM
3008-C-3004-A	MISCELLANEOUS WIRING DIAGRAM
3008-C-3013-A	ELECTRICAL POWER SYSTEM - SECTIONS A-A, B-B, C-C & H-H
3008-C-3014-A	ELECTRICAL POWER SYSTEM - CONTROL CENTERS
3008-C-3017-A	ELECTRICAL POWER SYSTEM - UNIT SUB STATIONS & SW. - WATER TREATMENT PLANT - CONDUIT & GROUNDING LAYOUT
3008-C-3020-A	ELECTRICAL LIGHTING LAYOUT - SOUTH AREA - WATER TREATMENT PLANT
3008-C-3021-A	ELECTRICAL LIGHTING LAYOUT - NORTH AREA - WATER TREATMENT PLANT
3008-C-3022-A	ELECTRICAL POWER SYSTEM - CONDUIT & GROUNDING LAYOUT - NORTH AREA - WATER TREATMENT PLANT
3008-C-3023-A	ELECTRICAL - UNDERGROUND DUCT & SERVICE ENTRANCE - SOUTH AREA - WATER TREATMENT PLANT
3008-C-3032-A	CONTROLS & CONTROL WIRING FOR WATER TREATMENT PLANT
3008-C-3049-A	CONTROL & INSTRUMENT DIAGRAM
3008-C-3044-A	CONDUIT & CABLE SCHEDULE
1129-C-3015	ELEVATED WATER STORAGE TK

DO NOT SCALE REDUCED DRAWING

INDEX CODE
20B1450E00018

NO.	DATE	DESCRIPTION	BY	APP'D
5				
4				
3				
2	7-31-52	ADDED NOTE PER R.E.L.S. #1377	RCM	
1	5-23-52	REVISED PER 3-B PLANT EXPANSION DRAWINGS.	ATW	

REVISIONS

APPROVED FOR A.E.C. BY _____ DATE _____

UNITED STATES ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS OFFICE

CONTRACT No. AT(30-1)-1060

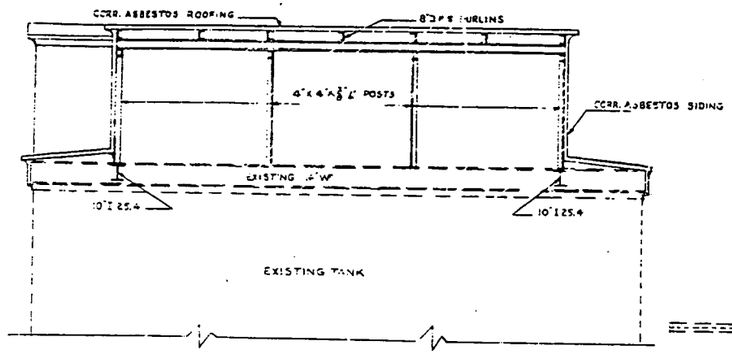
FEED MATERIALS PRODUCTION CENTER
FERNALD AREA

ELECTRICAL POWER SYSTEM CONDUIT AND GROUNDING LAYOUT PLAN
SOUTH AREA WATER TREATMENT PLANT

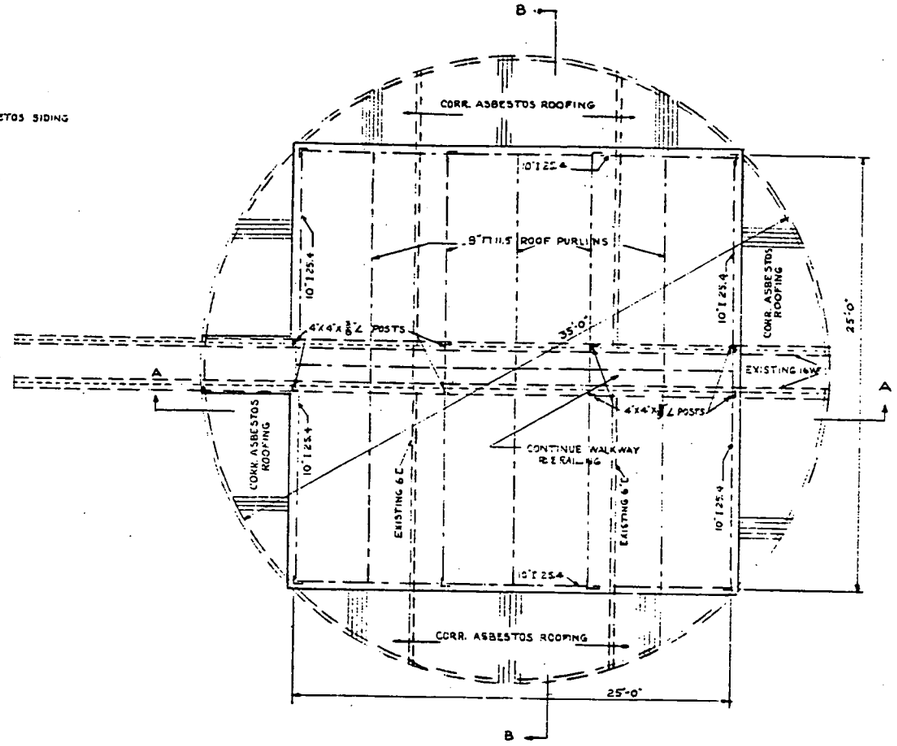
DATE 5-21-52	OFFICE OF CATALYTIC CONSTRUCTION CO. 1500 WALNUT STREET PHILA 2 PA.	SCALE 1/8" = 1'-0"
DES. AND DRAWN	APPROVED FOR CONSTRUCTION	
CHECKED		
APPROVED	DRAWING NO. 3008-C-3011-A	SHEET NO. 2

20-4004

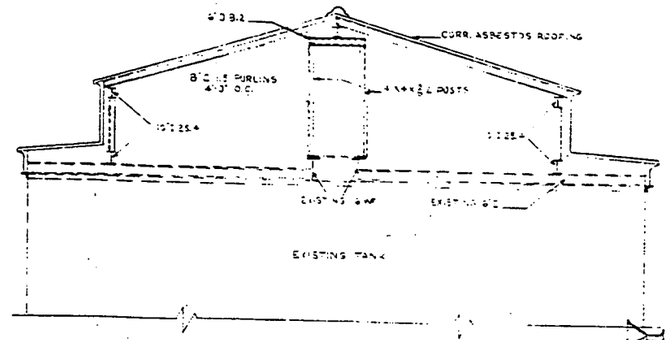
390



SECTION "A.A"

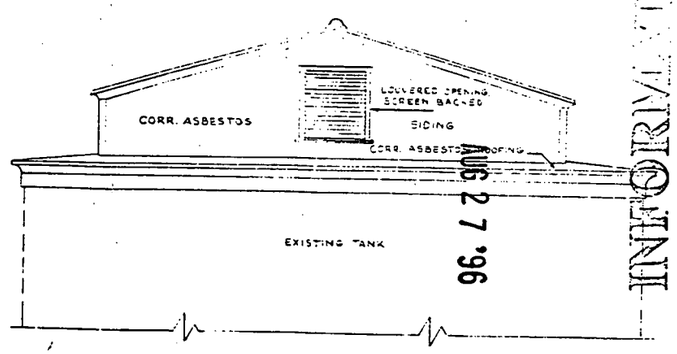


PLAN

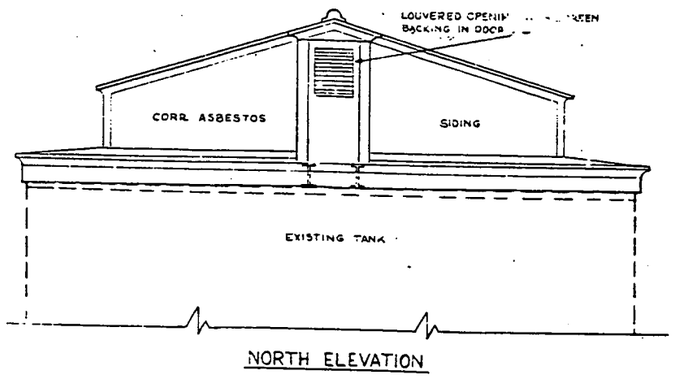


SECTION "B.B"

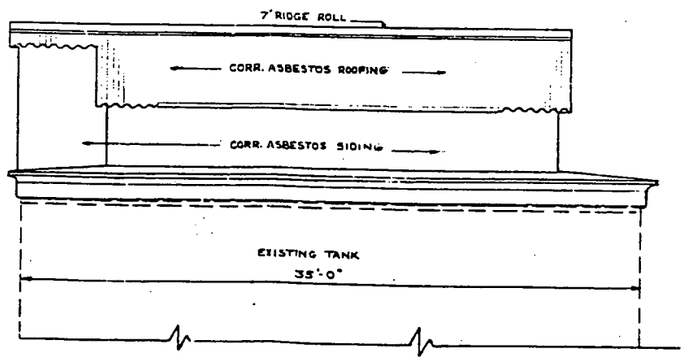
NOTES:
1. PAINT ALL STEEL INTERIOR MEMBERS WITH ALUMINUM PAINT.



SOUTH ELEVATION



NORTH ELEVATION



WEST ELEVATION

SCALE FOR THIS DRAWING

INFORMATION ONLY

DEC 7 '96

CAD

INDEX CODE
PLANT 20R 5500 A 00135

		4				
		3				
		2				
FD300B-C-02-A	PROPOSED COVER FOR REACTIVATOR	1				
REF. DWG. NO.	REF. DWG. TITLE	NO.	REVISIONS	DATE	BY	

NATIONAL LEAD COMPANY OF OHIO
FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO

U.S. ATOMIC ENERGY COMMISSION

PLANT 20
REACTIVATOR TANK
PROPOSED COVER

000091

DEPARTMENT: B.M.
DRAWN: JFS
TRACED:
DATE: 3-13-54
SCALE: 1"=1'-0"
CHECKED: CHS 3-17-54
APPROVED: [illegible] 3-19-54
DWG. NO. 20-4004
REV.
CP-F-54-30

20-4006

390

BASE FRAMING PLAN AT TOP OF EXIST. TANK

ROOF FRAMING PLAN

DETAIL "X"

SEC. 5-5

DETAIL "Y"

SEC. A-A

SEC. ELEV 7-7

SEC. ELEVATION 1-1

SEC. ELEVATION 2-2

SEC. ELEV 6-6

SEC. ELEVATION 3-3

SEC. SECTION 4-4

SEC Y-Y

SEC-PLAN 2-2

PLAN V-V

ELEV. W-W

AREAS TO BE COVERED WITH ¼" STEEL PL. SEE SEC B-B & DETAIL "C"

SCALE FOR THIS DRAWING

AUG 2 1956

REF. DWG. NO.	REF. DWG. TITLE	NO.	REVISIONS	DATE	BY
FF1006-D81-B8	REMOVE WATER-SHIELDING FT. REACTIVATOR ASSEMBLY	4			
20-4006	REACTIVATOR TANK-PROPOSED COVER	3			
		2			
		1			

INDEX CODE
PLANT | ACCT. NO. | SUB ACCT. NO.
20C | 5500 | 00138

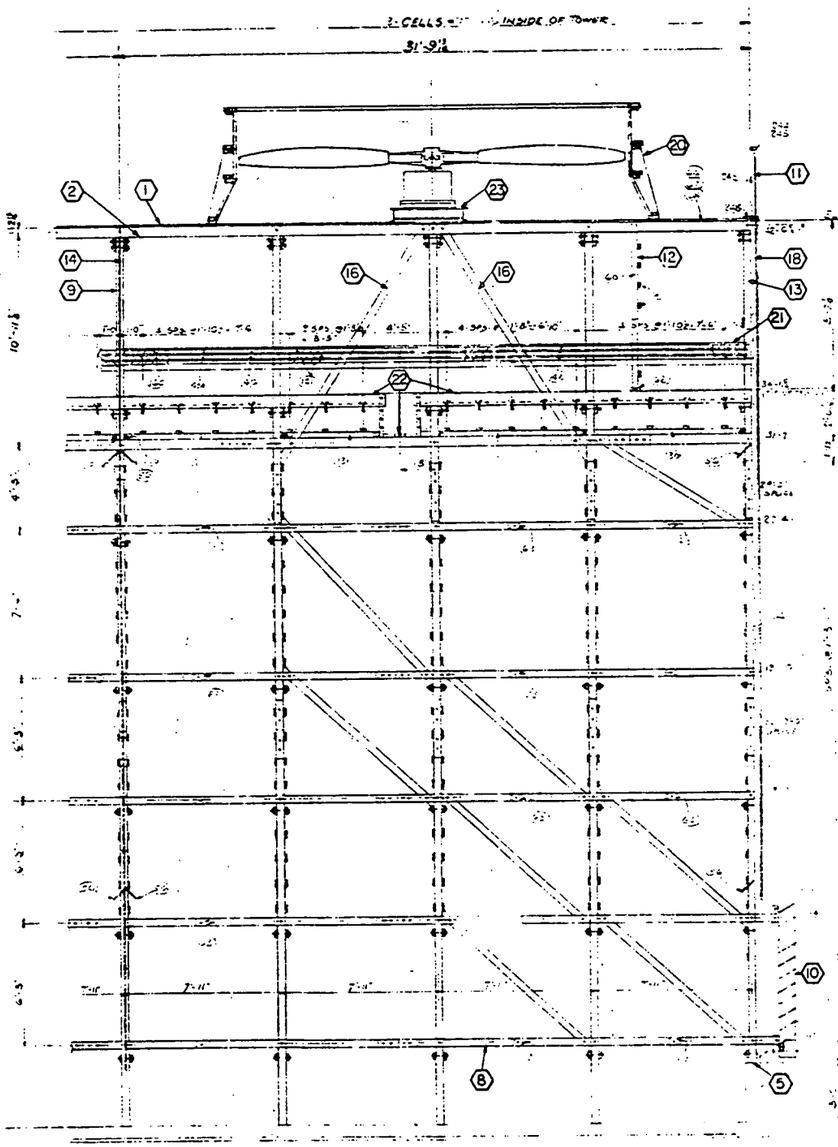
NATIONAL LEAD COMPANY OF OHIO
FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO

U.S. ATOMIC ENERGY COMMISSION

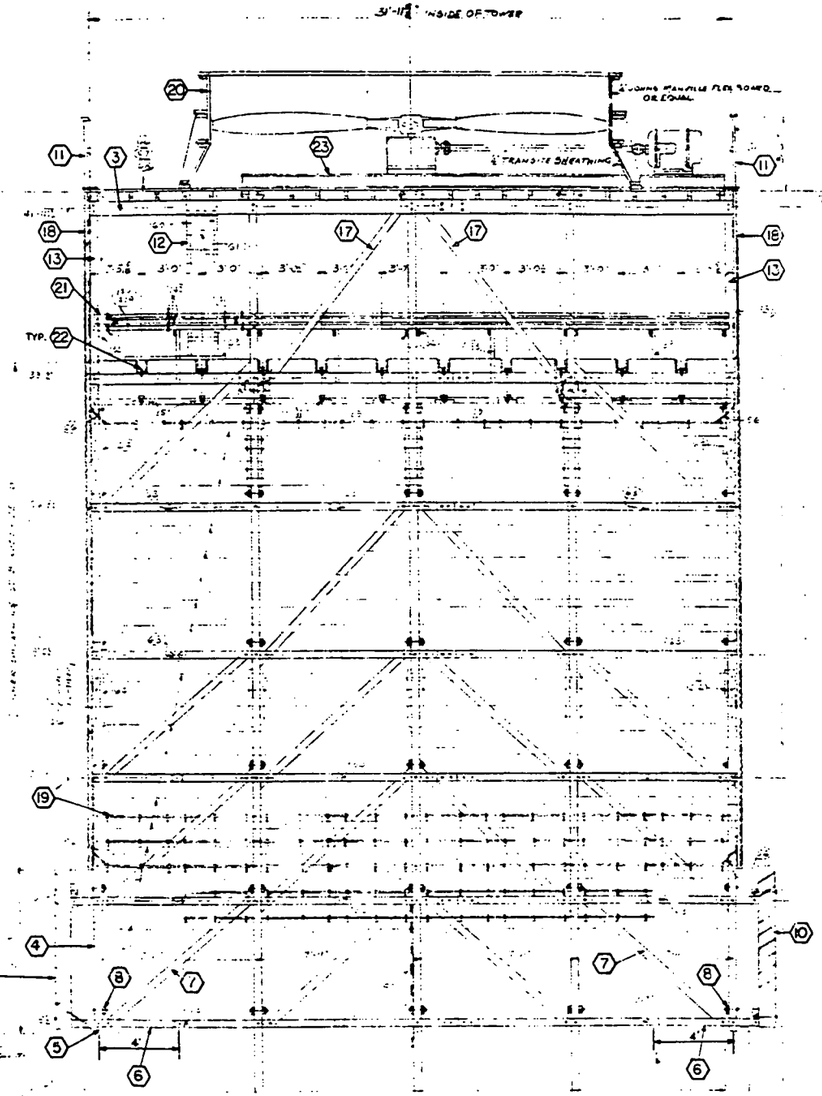
PLANT 20
REACTIVATOR TANK COVER ARRANGEMENT & DETAILS

000092

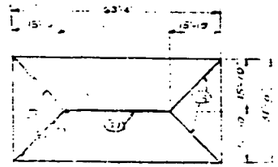
DEPARTMENT: B. M. | CP-F-54-30
DRAWN: R.E.D. 5-25-54 | CHECKED: [illegible] | APPROVED: [illegible]
TRACED
DATE: 5-25-54
SCALE: 1/4" = 1'-0"
DWG. NO. 20-4006
REV. 0



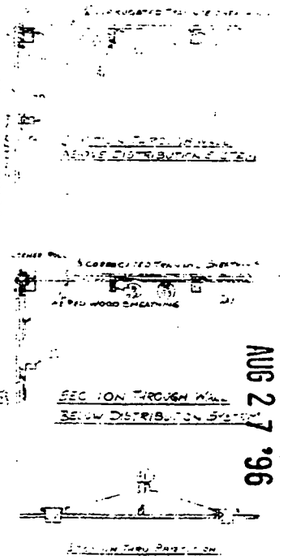
LONGITUDINAL ELEVATION



CROSS SECTIONAL ELEVATION



PLAN OF [illegible] BAFFLE



SECTION THROUGH WALL BELOW DISTRIBUTION SYSTEM

SECTION THRU PARTITION

AUG 27 '96

CERTIFIED FOR CONSTRUCTION
SIGNATURE [illegible] DATE 8-27-96

INDEX CODE				
20C	5500	A	00354	0

COOLING TOWER SECT ELEVATION
3 CELLS 30'-0" X 31'-0" X 41'-9" H.W.
30'-0" FANS 3 SPEEDS
INDUCED DRAFT

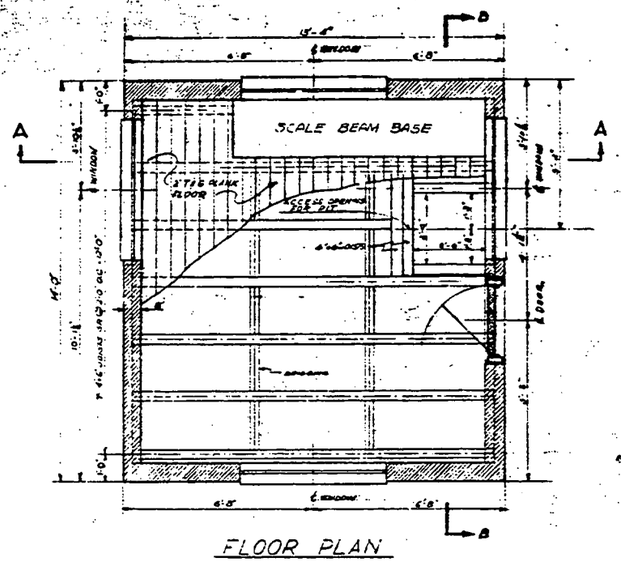
DO NOT SCALE
REDUCED DRAWING

CONTRACT NO. 7213

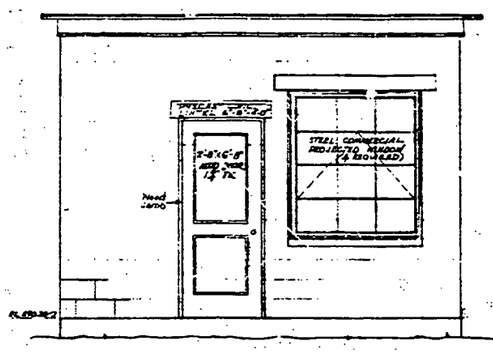
DRAWING NO. A

100093

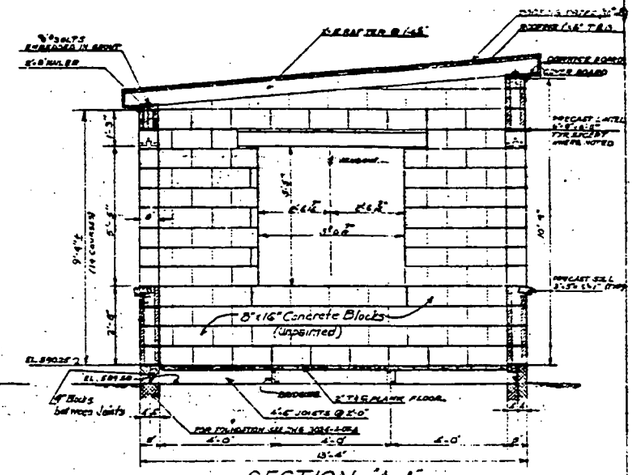
INFORMATION ONLY



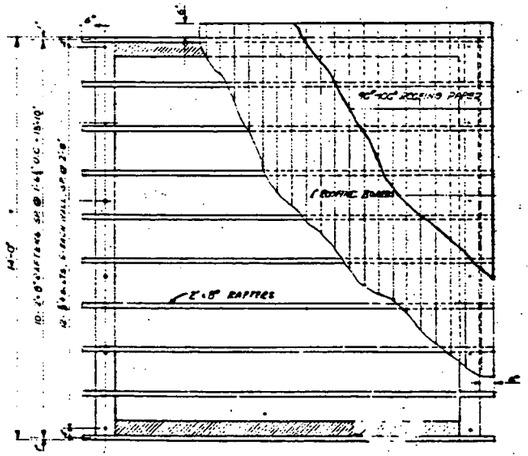
FLOOR PLAN



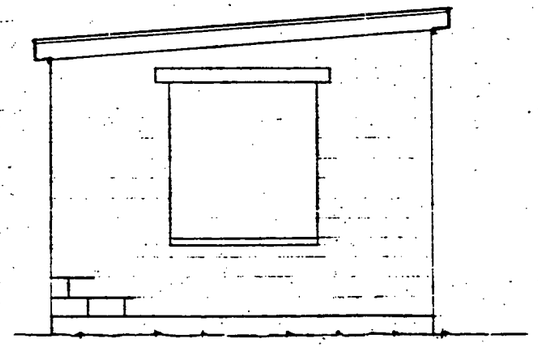
EAST ELEVATION



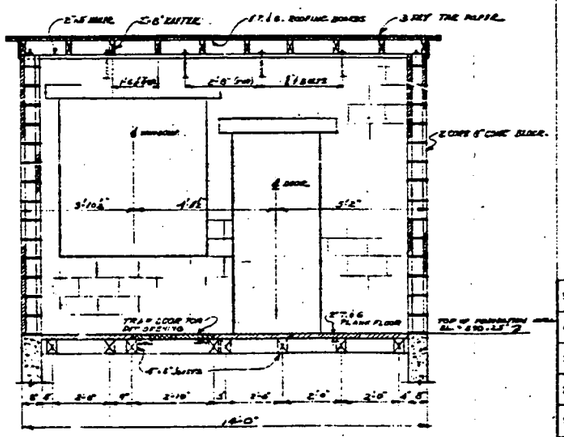
SECTION "A-A"



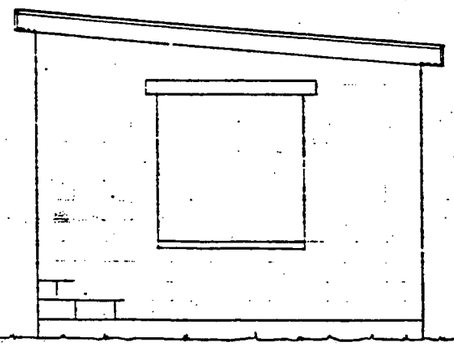
ROOF PLAN



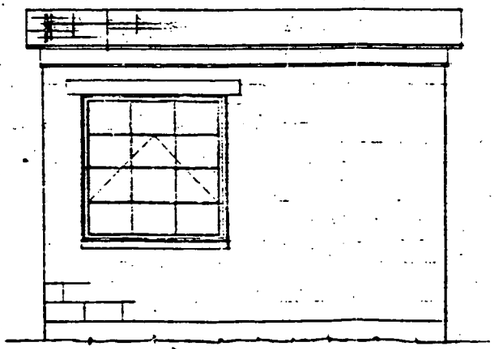
SOUTH ELEVATION



SECTION BB



NORTH ELEVATION



WEST ELEVATION

GENERAL NOTES

CONCRETE BLOCKS, CAST STONE LINTELS, SILLS, MORTAR, WORKMANSHIP
To be in accordance with specifications for Job No. 3014, approved 7/14/51, previously submitted & revised.

LUMBER
All lumber to be No. 1 common Douglas Fir or Southern Yellow Pine S4S & sized as shown on drawings. Finish sizes shall conform to yard size standard of American Lumber Standards.

DOOR
Door to be a standard wood door made to size & design as shown on drawings or approved other

STEEL SASH, FRAMES, GLAZING, HARDWARE, PAINTING.
To be in accordance with specifications for Job No. 3014, approved 7/1/51, previously submitted & revised

ELECTRIC LIGHTING, POWER WIRING, ETC.
To be detailed on a later plan

REFERENCE DRAWINGS	
TITLE	DRAWING No.
PLAN OF RAILROADS	3024-S-10-A
R.R. SCALE FOUNDATION	3024-A-10-A
RAILROAD SYSTEM PLOT PLAN	3000-AA-3-A

AUG 27 '96

INFORMATION ONLY

CADD GENERATED

SCALE FOR THIS DRAWING

INDEX CODE
248.1450.A.00005

5		
4		
3		
2		
1		
NO.	DATE	DESCRIPTION / REVISIONS / BY / APP'D

APPROVED FOR * C. BY
DATE

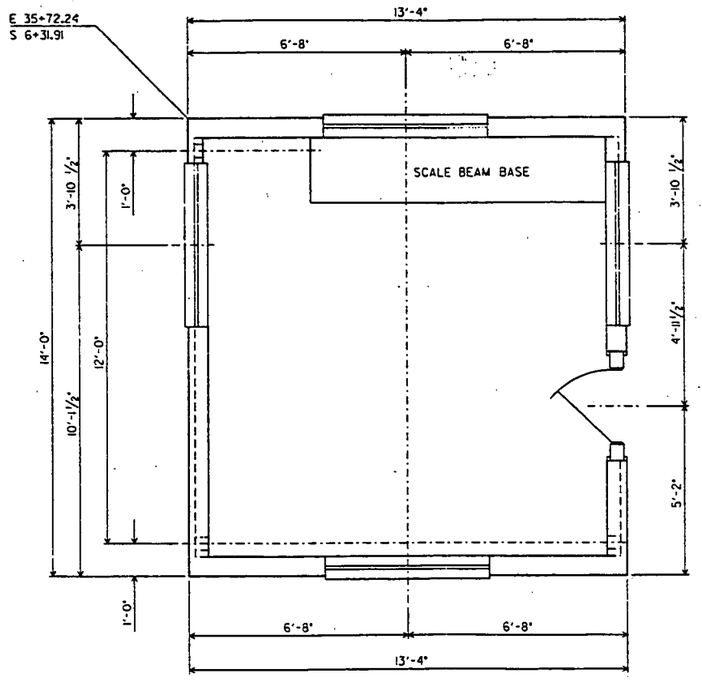
UNITED STATES ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS OFFICE

CONTRACT No. AT(30-1)-1060
FEED MATERIALS PRODUCTION CENTER
FERNALD AREA

ARCHITECTURAL
SCALE HOUSE
PLANS, ELEVATIONS & SECTIONS

DATE 10-3-51	OFFICE OF CATALYTIC CONSTRUCTION CO. 1500 WALNUT STREET PHILA. 2, PA.	APPROVED
SCALE 1/4"=1'-0"		
DESIGNED	APPROVED FOR CONSTRUCTION	
DRAWN H.E.L.	DRAWING NO. 3024-C-2001-A	REVISION NO.

000094



FLOOR PLAN

INFORMATION ONLY

CAD CAM INC.

AUG 27 '96

DO NOT SCALE REDUCED DRAWING

NO.	REVISIONS	DATE	DWN. BY	APPD.	NO.	REVISIONS	DATE	DWN. BY	APPD.

248-1450-A-00005
REF. DWG. NO.

NOTE:
WMCO C.A.D.
DRAWING NOT
TO BE REVISED
MANUALLY

APPROVALS			
CHEMICAL		I.R.S. & T.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		NU. SAFETY	
ENGINEER		Q.A.	
INSTRUMENT		PRODUCTION	
MECHANICAL		FIRE & SAFETY	
		WASTE MANAGE	
CHECKED		D.O.E.	
APPROVED		SECURITY	

WESTINGHOUSE MAT'LS. CO. OF OHIO
FERNALD, OHIO
FERNALD SITE OFFICE
U.S. DEPARTMENT OF ENERGY

BUILDING 24A FIRST FLOOR
RAILROAD SCALE HOUSE
FLOOR PLAN
½" = 1'-0"

000095

24B-5500-A-00097 | 0

CAD CAM INC. FILE NAME: /USR/FSO/FLOOR/24BA00097.DGN

D

R

APPENDIX D

A

PHOTOGRAPHS

F

T

D

R

A

Page left intentionally blank.

F

T

APPENDIX D
PHOTOGRAPHS

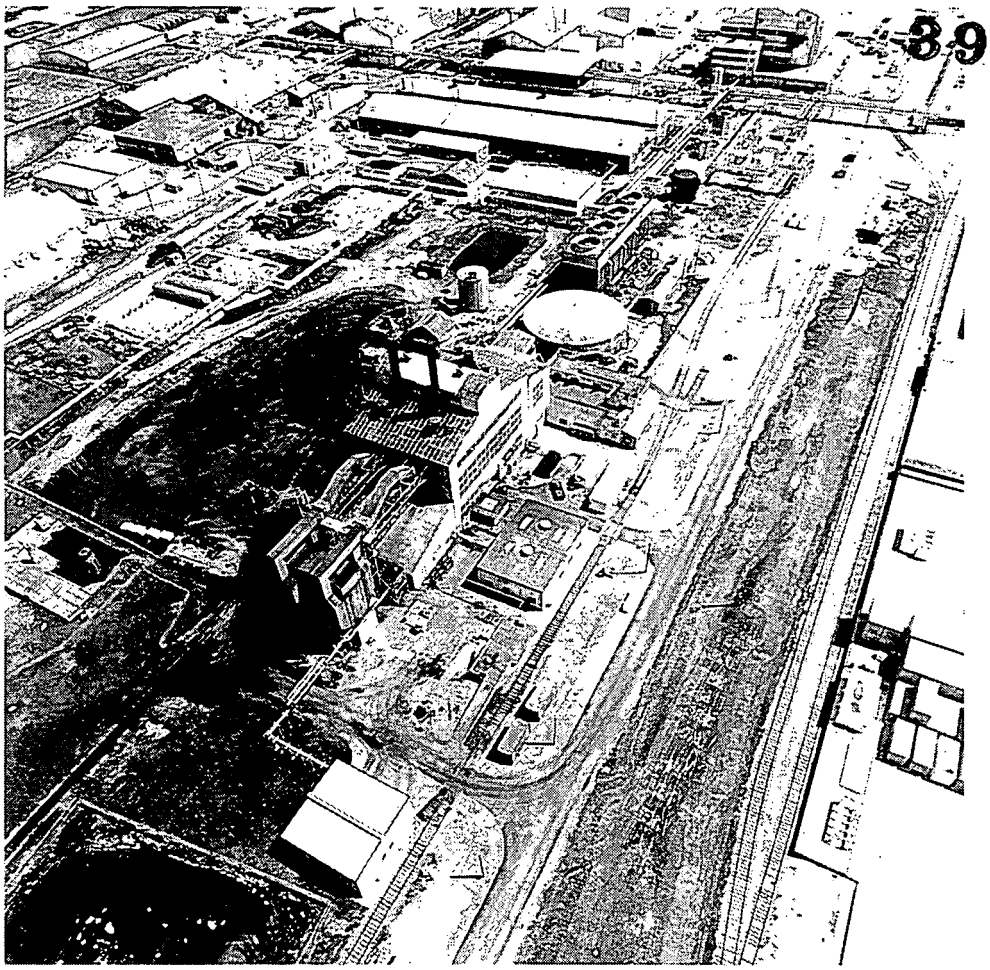


Figure D-1
Aerial view of Boiler Plant/Water Plant Complex looking from northwest
#6407-118

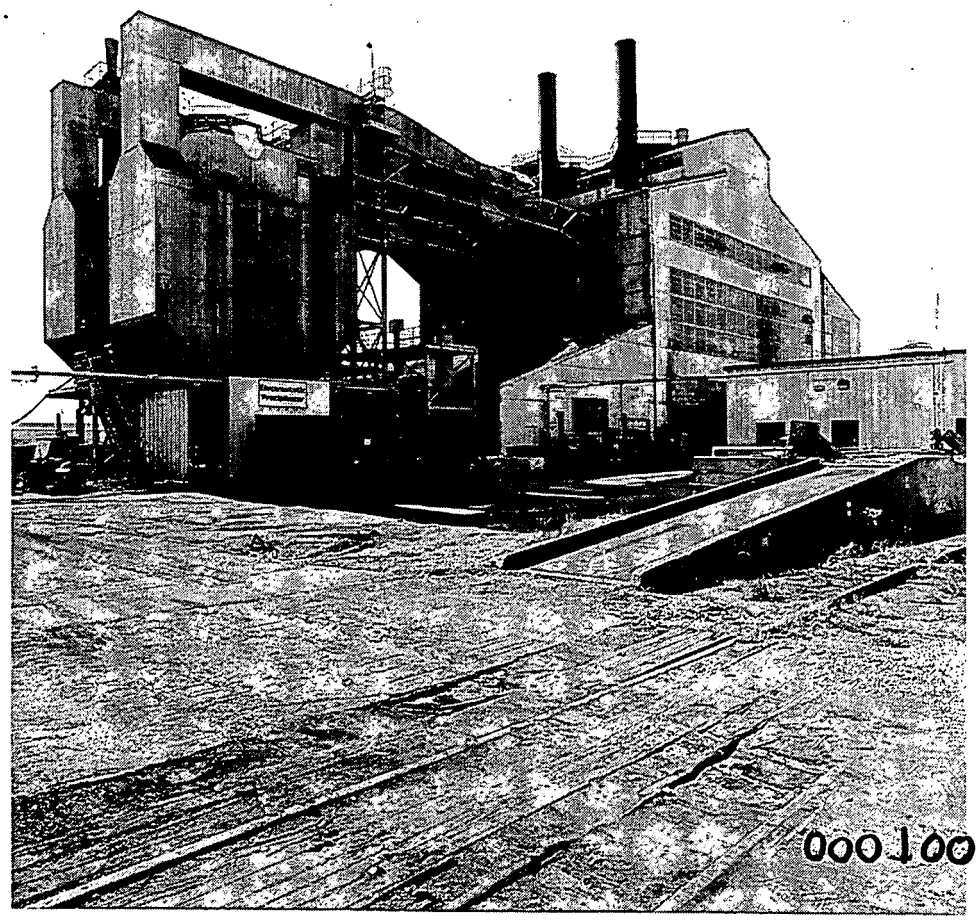


Figure D-2
Ground-level view of Electrostatic Precipatator and Wet Salt Storage looking from northwest
#6407-56

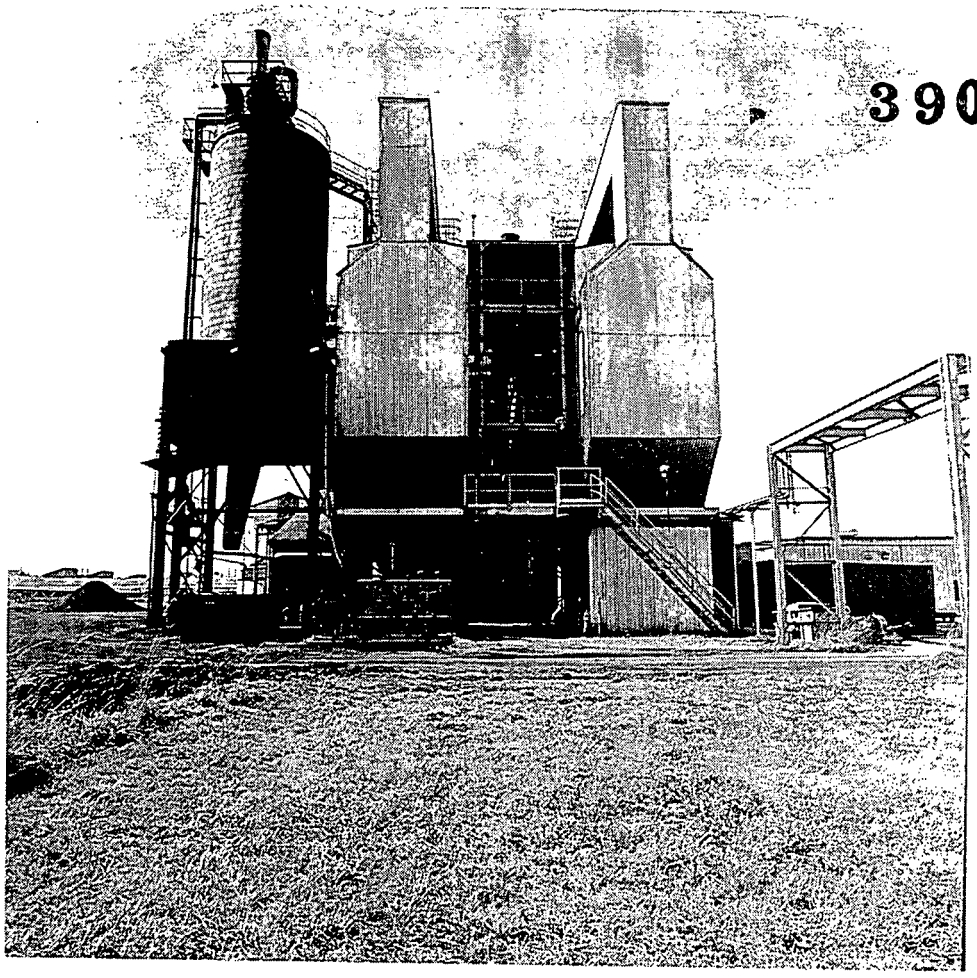


Figure D-3
Ground-level view of
Electrostatic Precipatator
and Ash silo from north
#6407-53

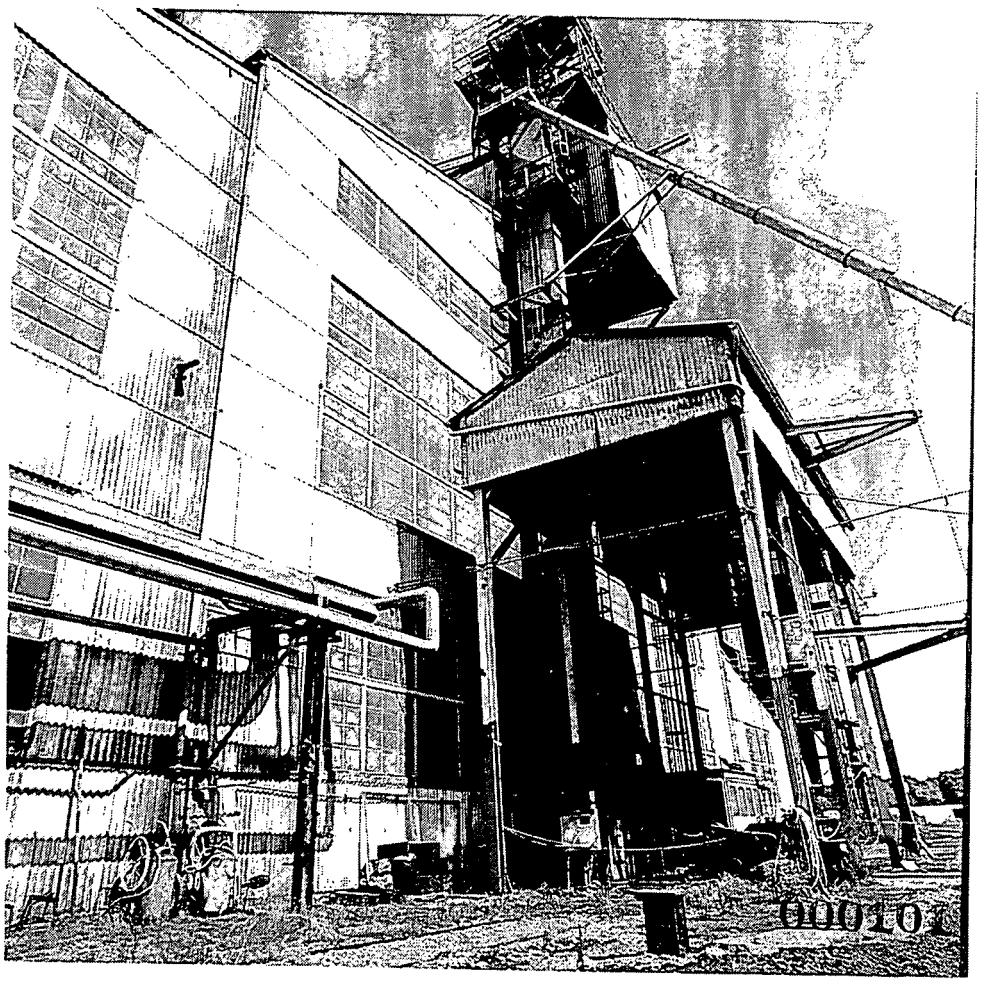


Figure D-4
Railcar shaker shed and coal
handling equipment from
south/southeast #6407-84

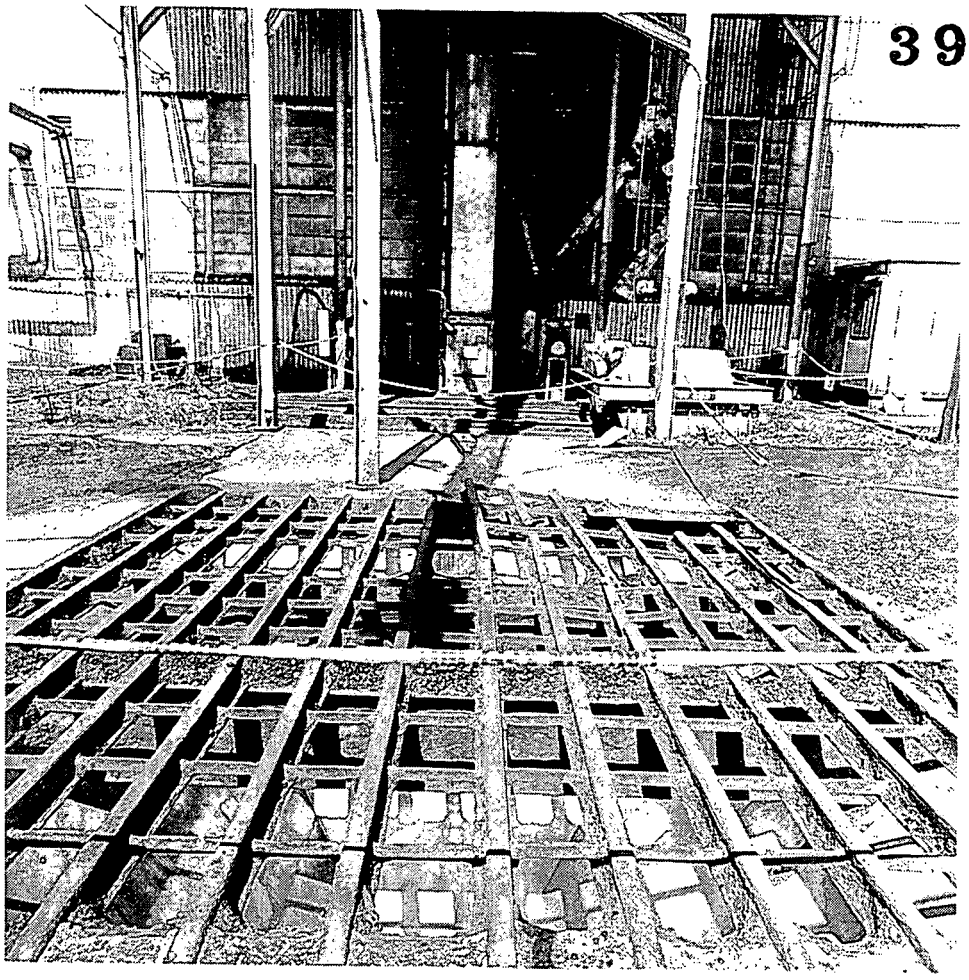


Figure D-5
Coal reclaim hopper, grate & car shaker from east
#6407-84

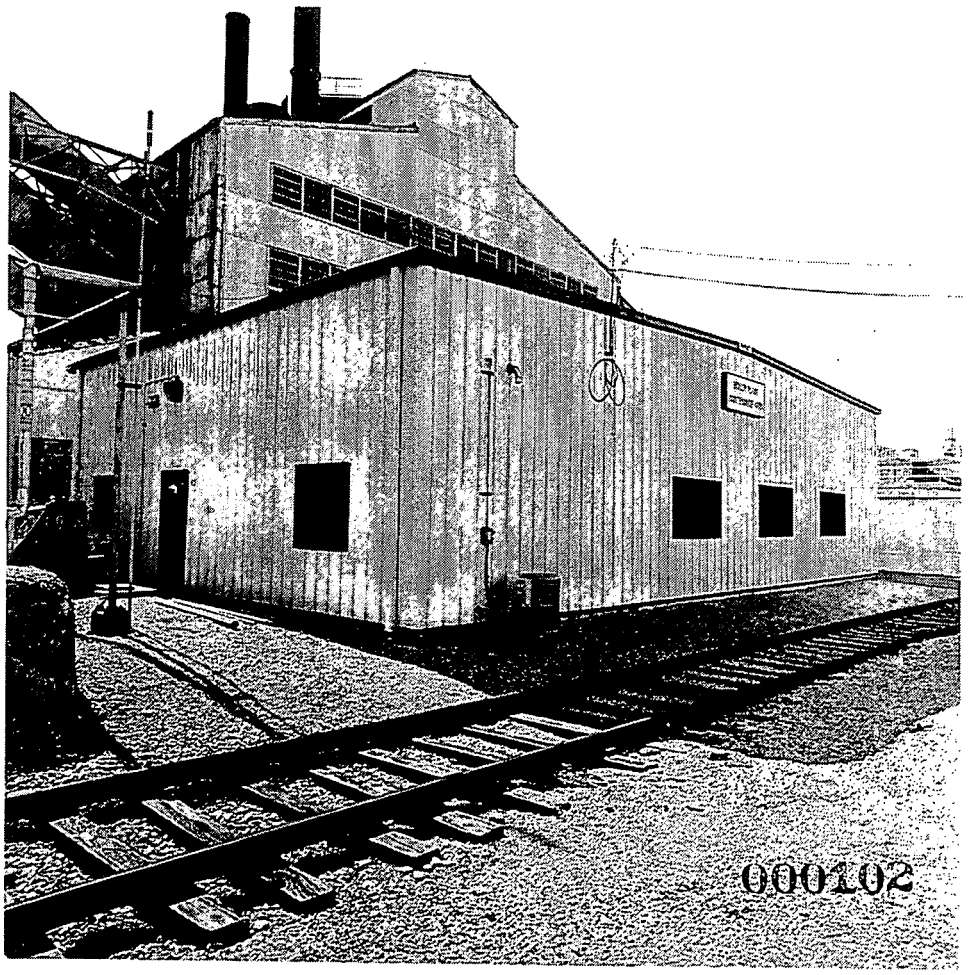


Figure D-6
Ground-level view of Boiler Plant Maintenance Building (10B) from northwest
#6407-60

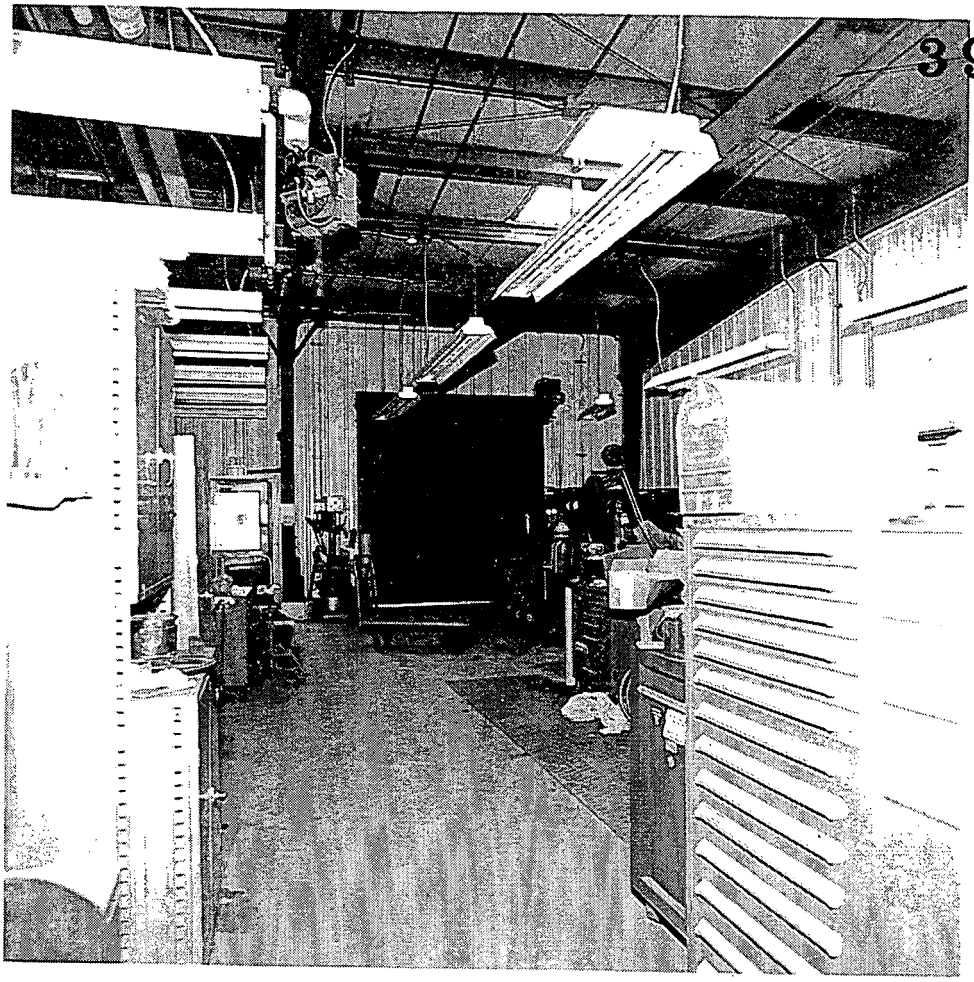


Figure D-7
Interior of Boiler Plant
Maintenance Building (10B)
from north #6407-62

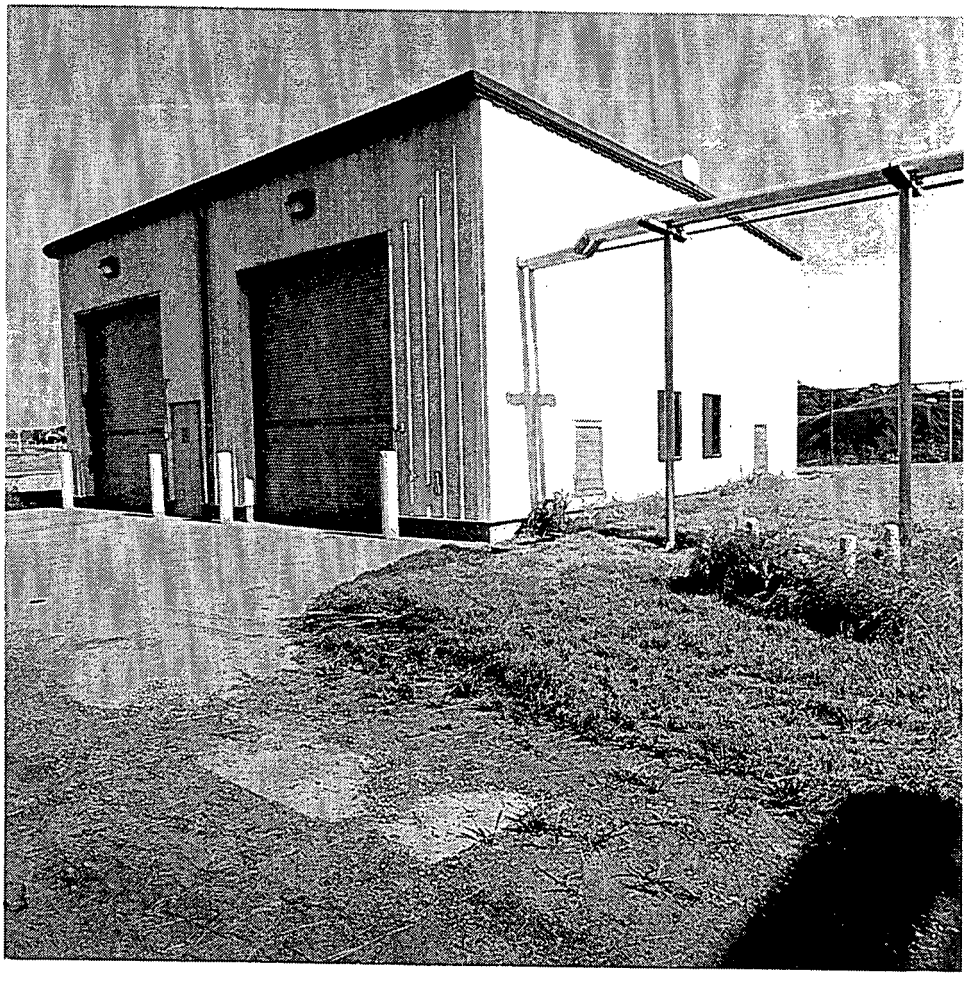


Figure D-8
Ground-level view of
Utilities Heavy Equipment
Building (10E) from
northeast #6407-54

Figure D-9
Interior of Utilities Heavy Equipment (10E) from northeast #6407-59

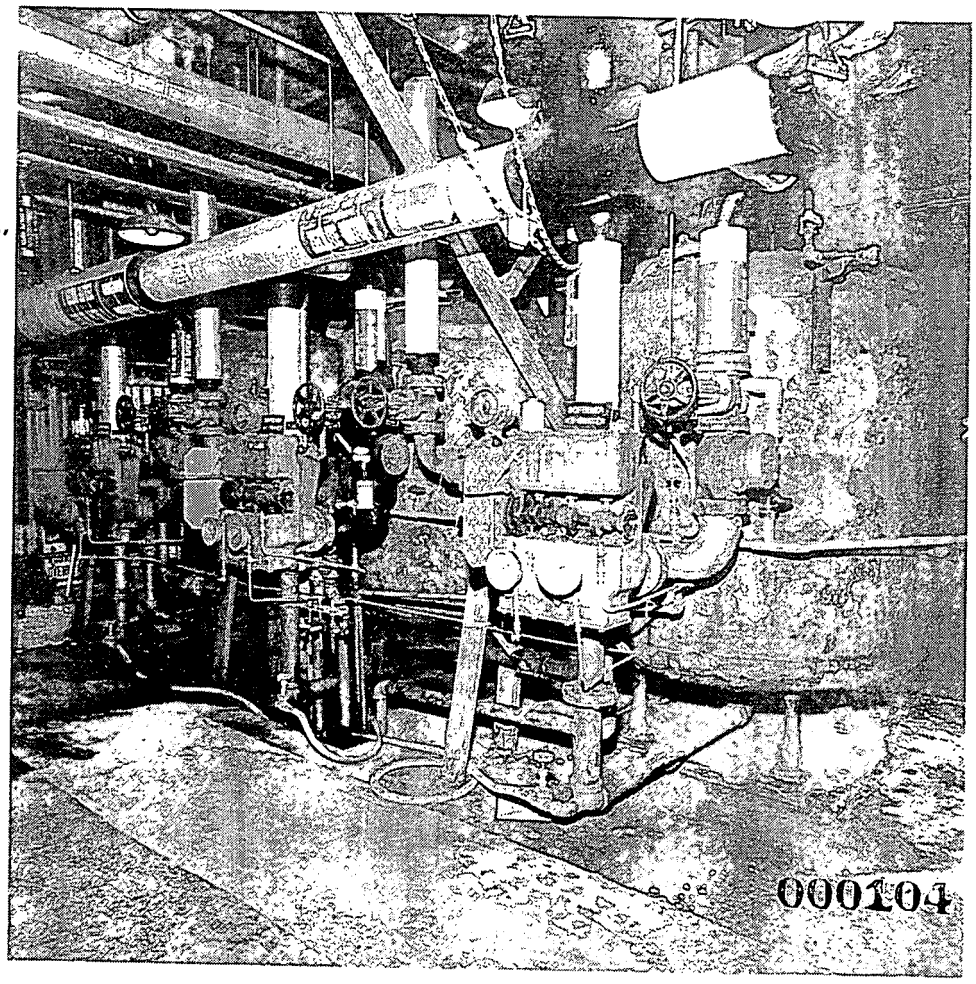


Figure D-10
South end of Building 10A, Zeolite water softening equipment from southeast (elev.587-0") #6407-42

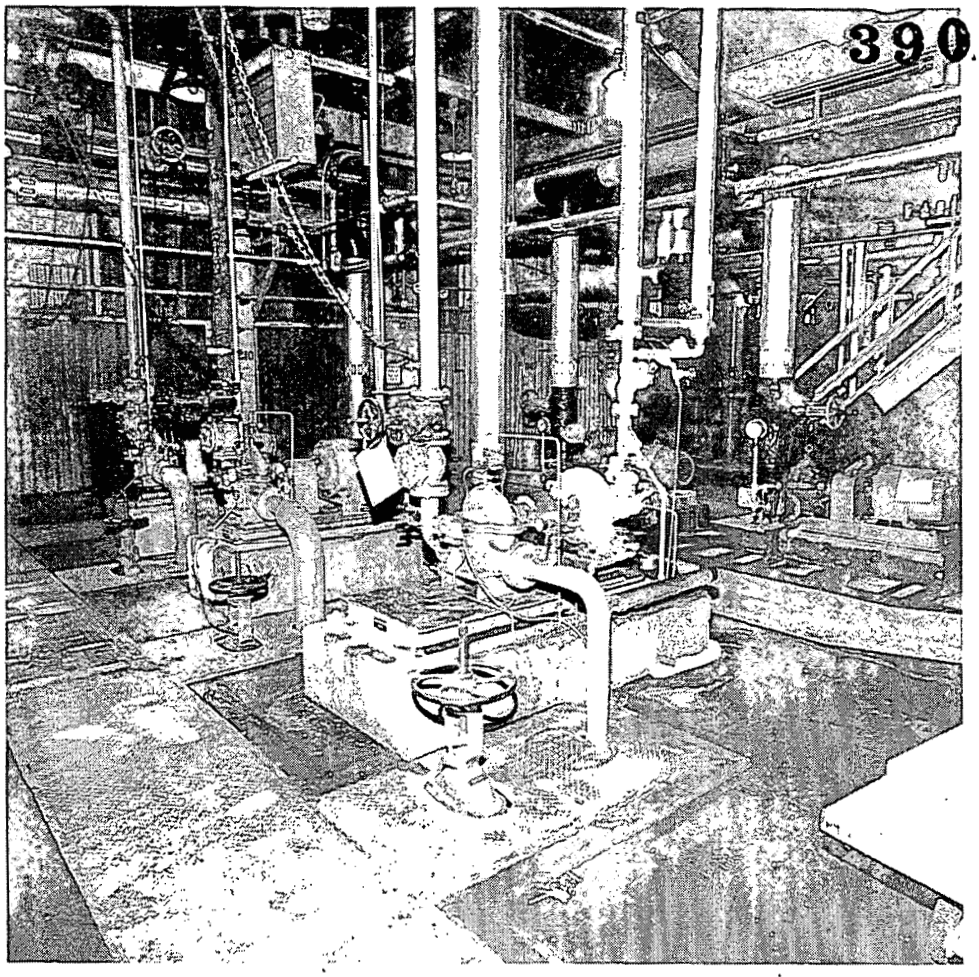


Figure D-11
South end of building 10A, condensate and treated water pumps and piping from northeast (elev. 587-0") #6407-41

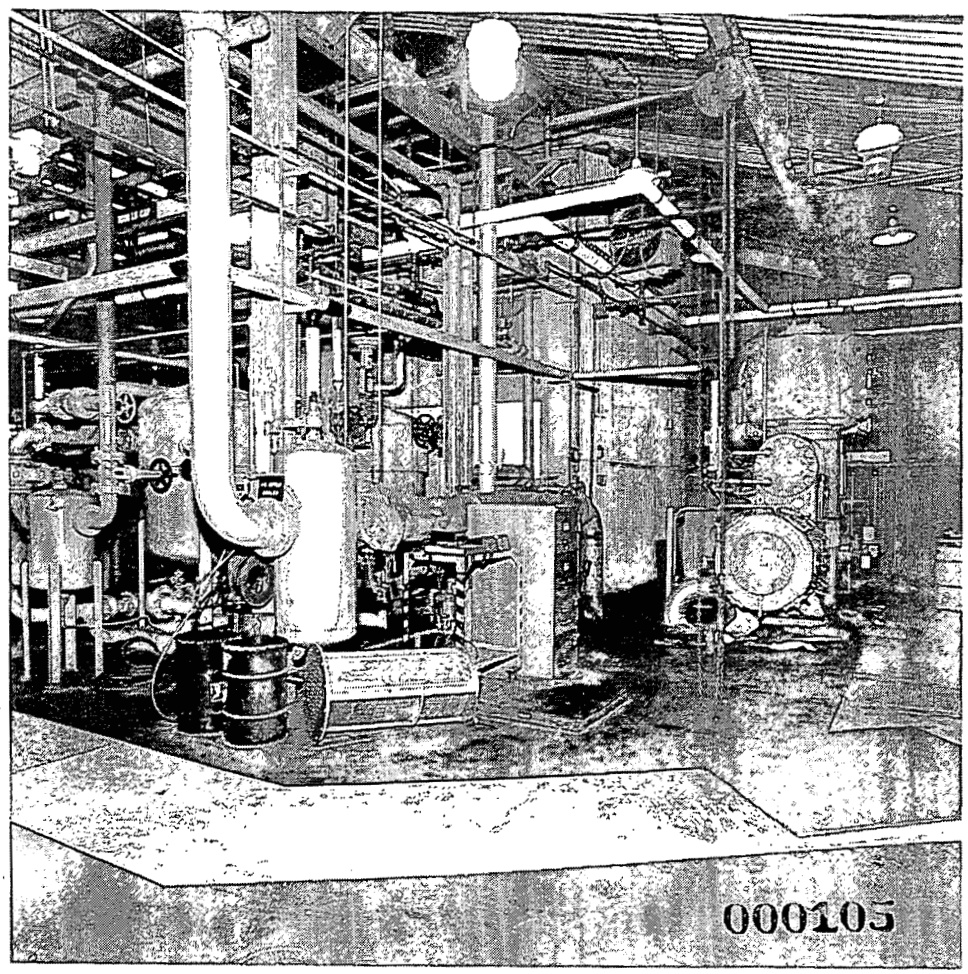


Figure D-12
North end of Building 10A, air compressor No. 5 and air drying equipment from northeast #6407-45

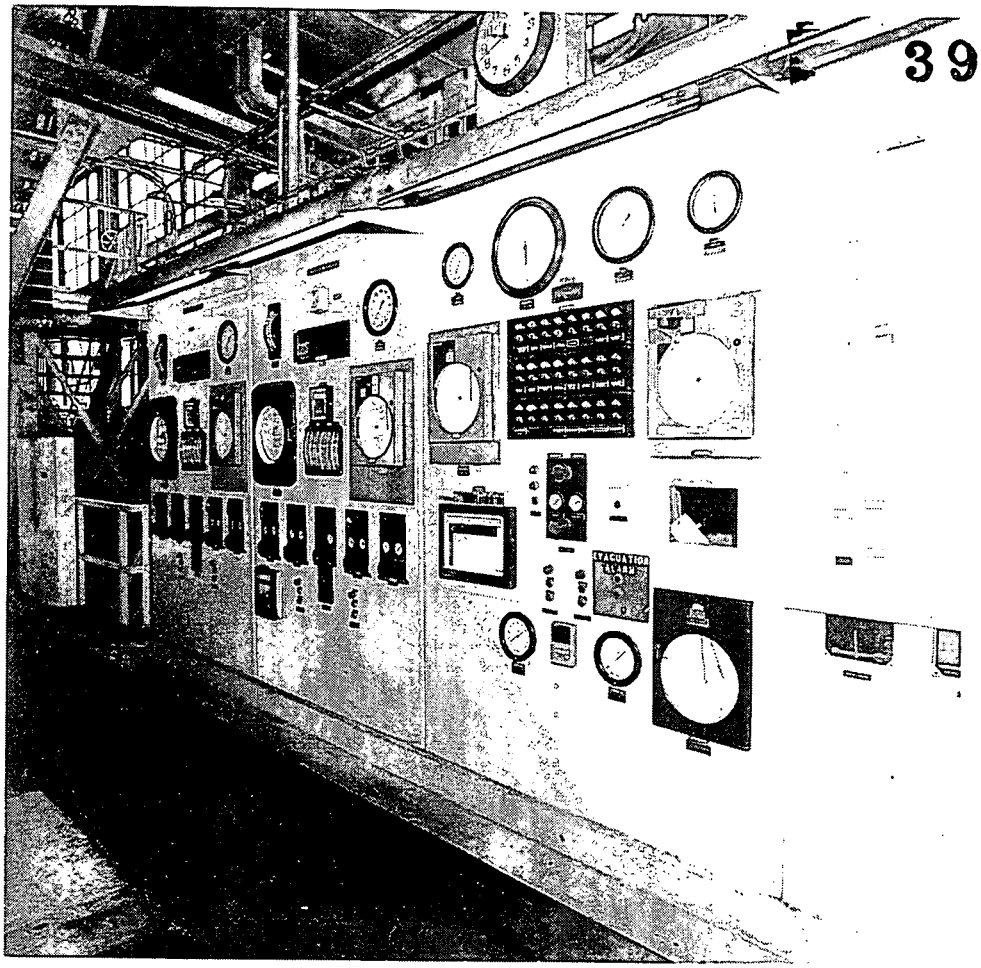


Figure D-13
East side of building 10A, Boiler Control Panel from southwest (elev. 587-0") #6407-37

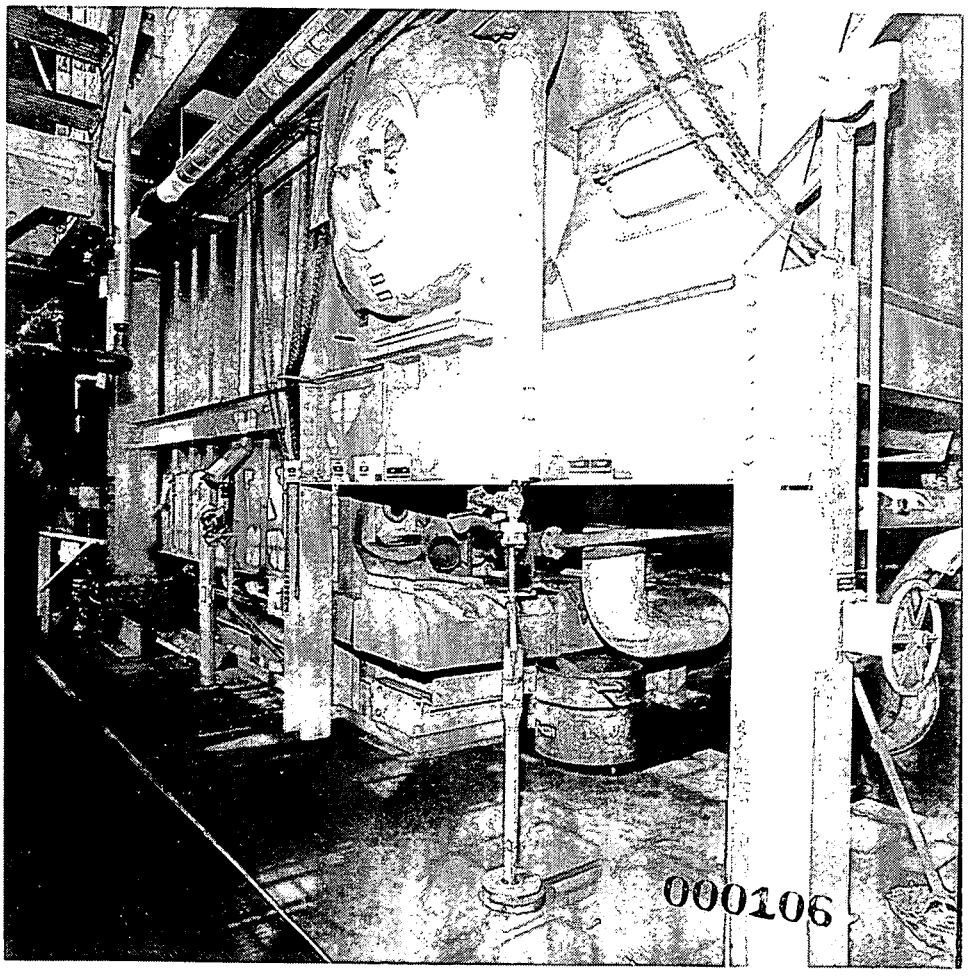


Figure D-14
East side of Building 10A, boiler No. 1 and support steel from northeast (elev. 587-0") #6407-33

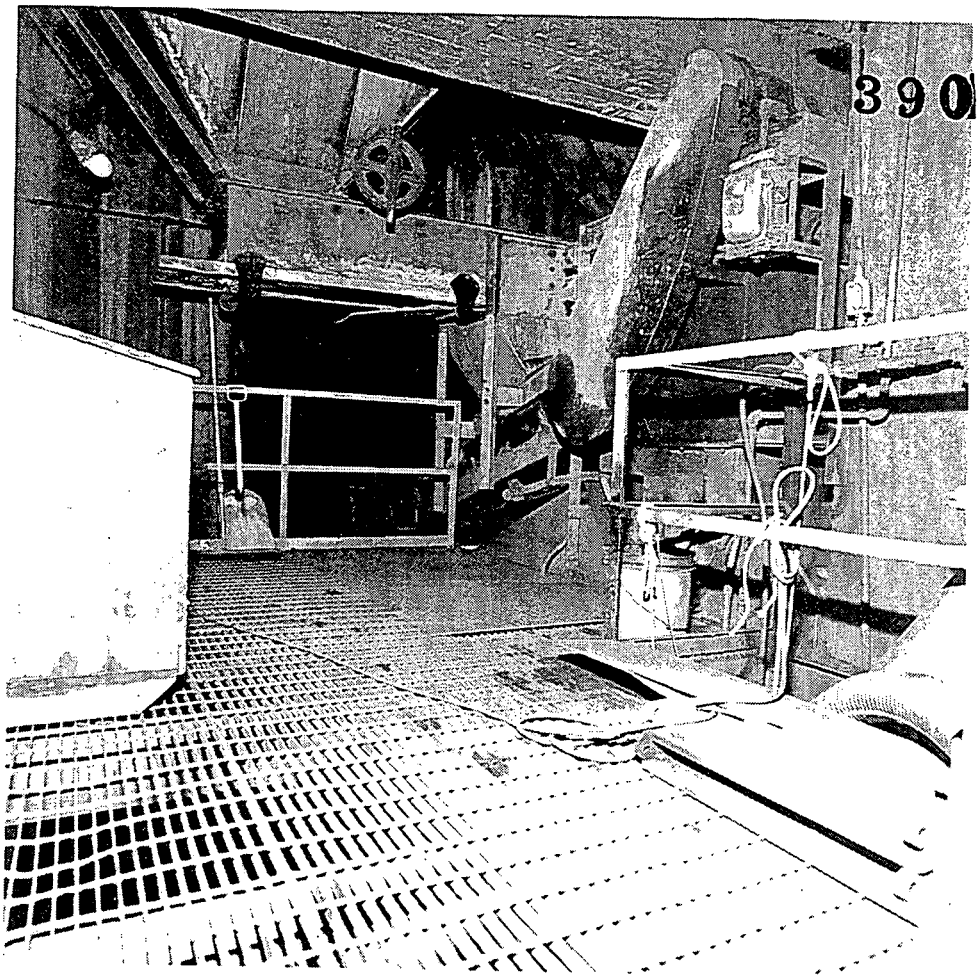


Figure D-15
East side of Building 10A, bottom of Reclaim Coal Bunkers and associated coal handing equipment from west (elev. 572-0")
#6407-47

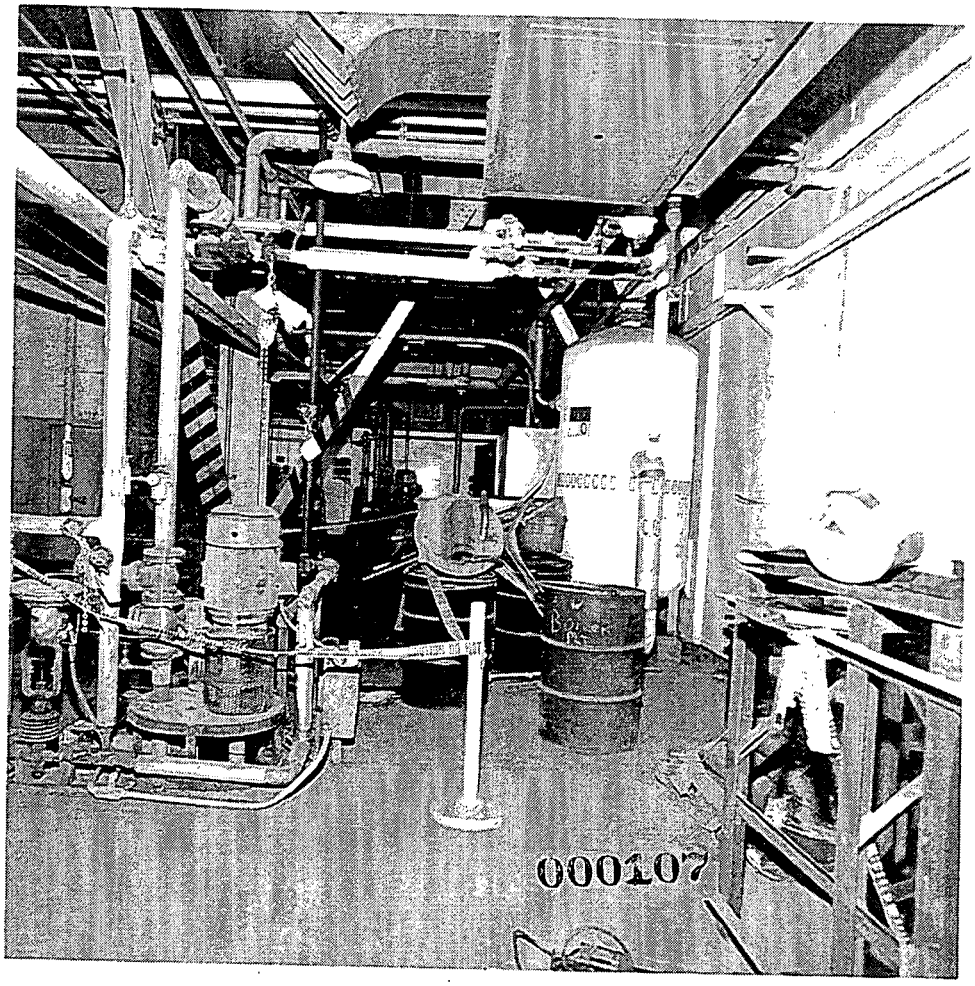


Figure D-16
West side of Building 10A, Basement Sumps and Blowdown Flash Tank from north (elev. 572-0")
#6407-49

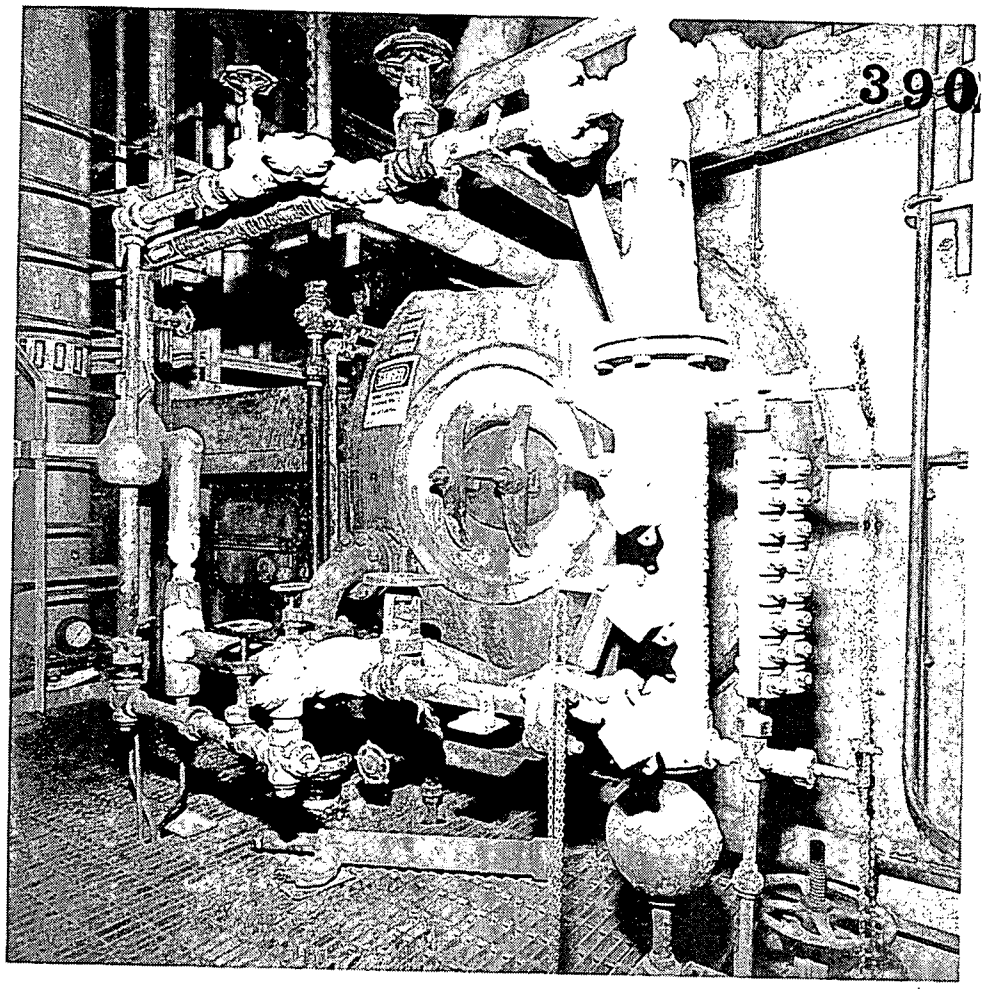


Figure D-17
Building 10A, Boiler No. 4
Steam Drum and Piping from
northeast (elev. 617-6")
#6407-18

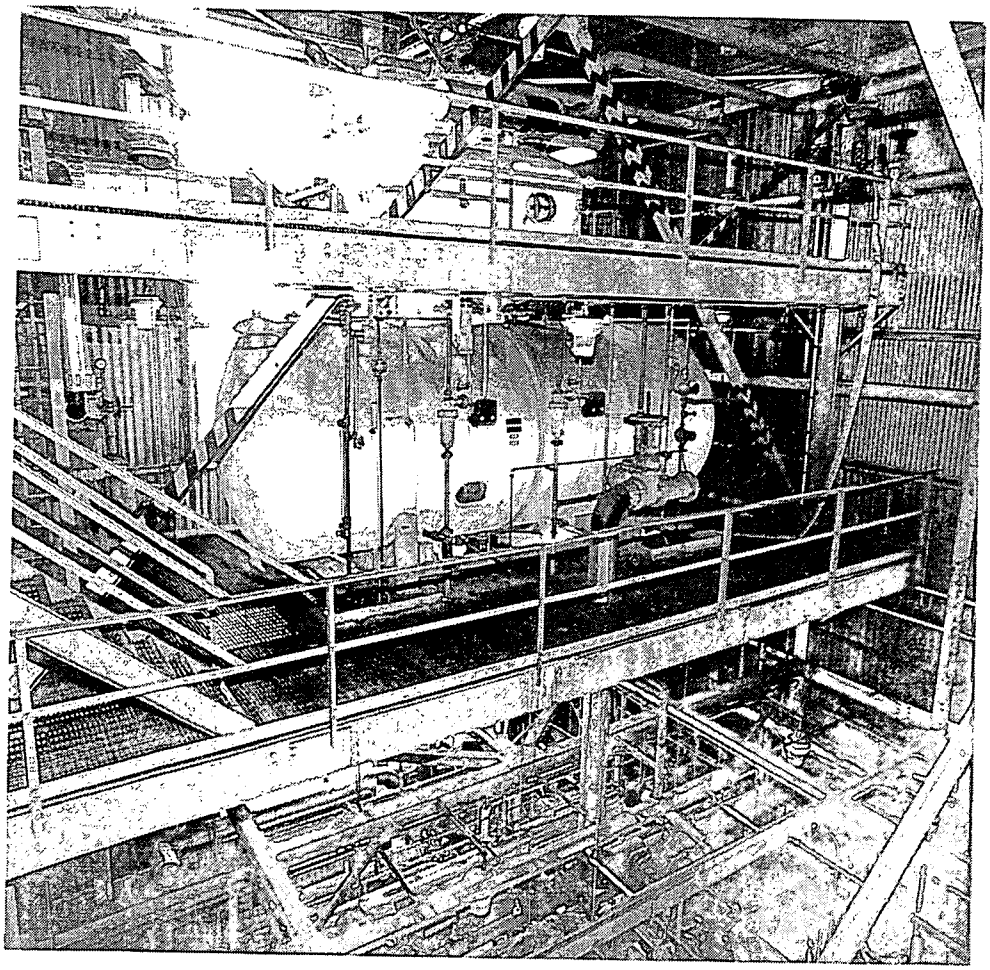


Figure D-18
South side of Building 10A,
Deareator Heater and
equipment from northeast
(elev. 608-6" and 620-0")
#6407-13

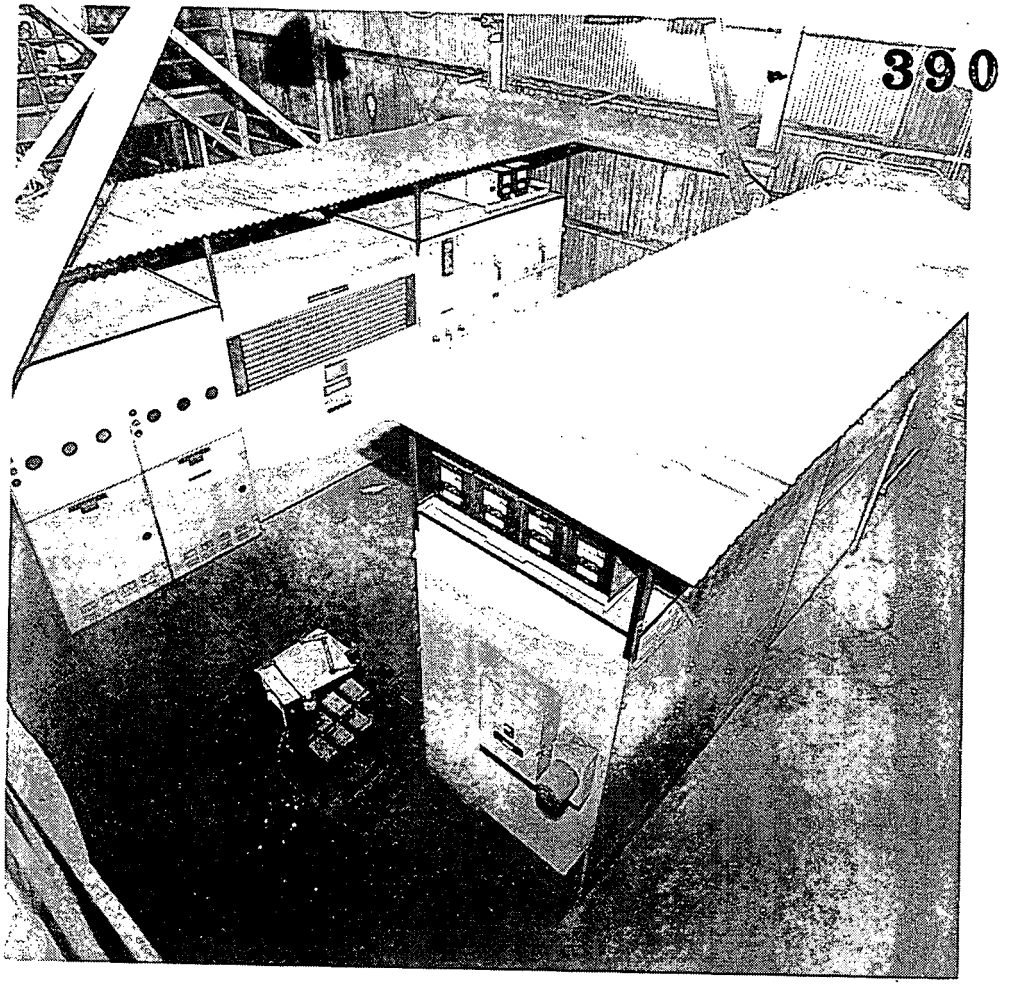


Figure D-19
West side of Building 10A, substations N7-1 and N7-2 from northwest (elev. 602-0") #6407-11

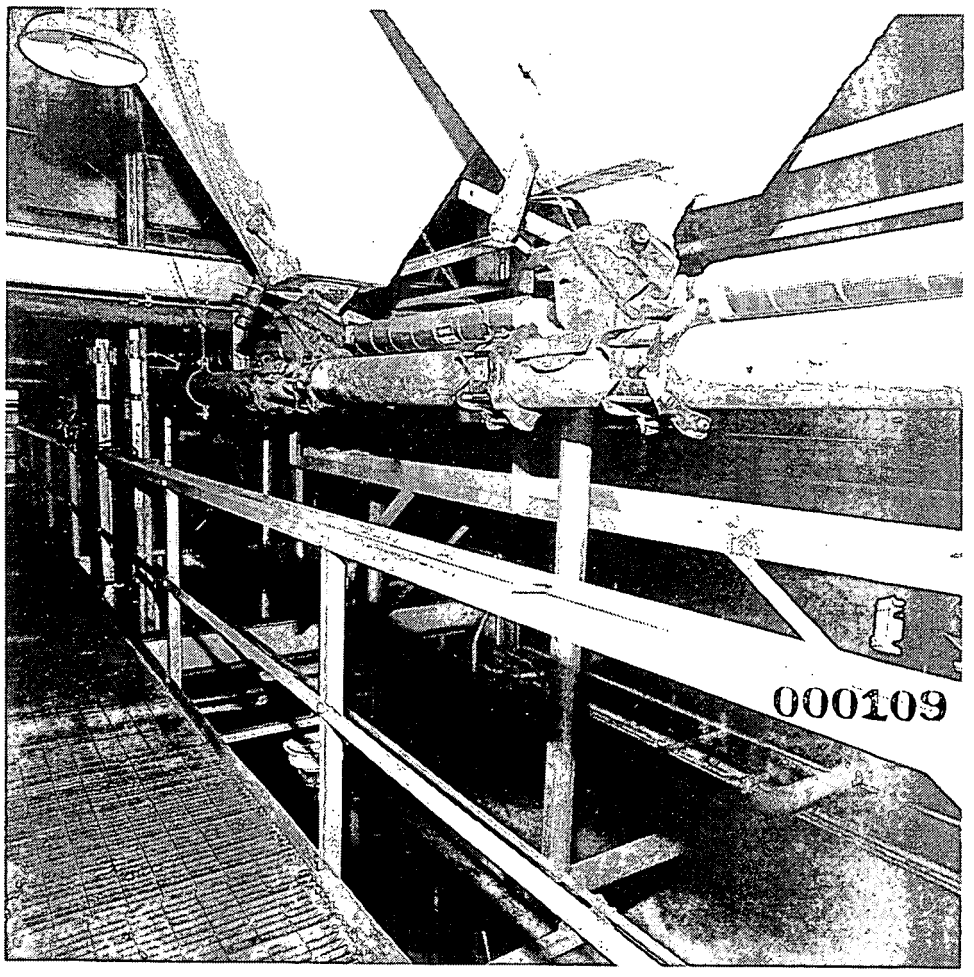


Figure D-20
East side of Building 10A, boiler No. 1 mechanical dust collector hoppers and vacuum piping from southeast (elev. 602-0") #6407-31

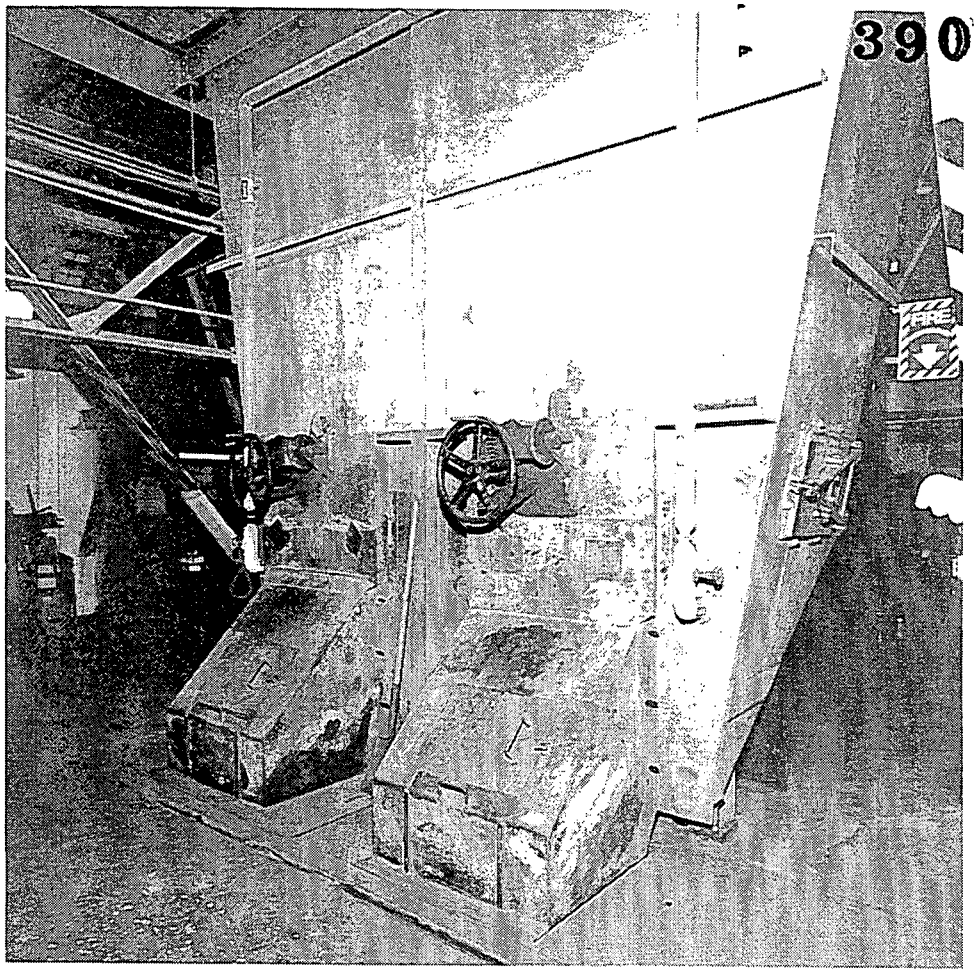


Figure D-21
Building 10A, boiler No. 3
Ash hopper from southeast
(elev. 572-0") #6407-48

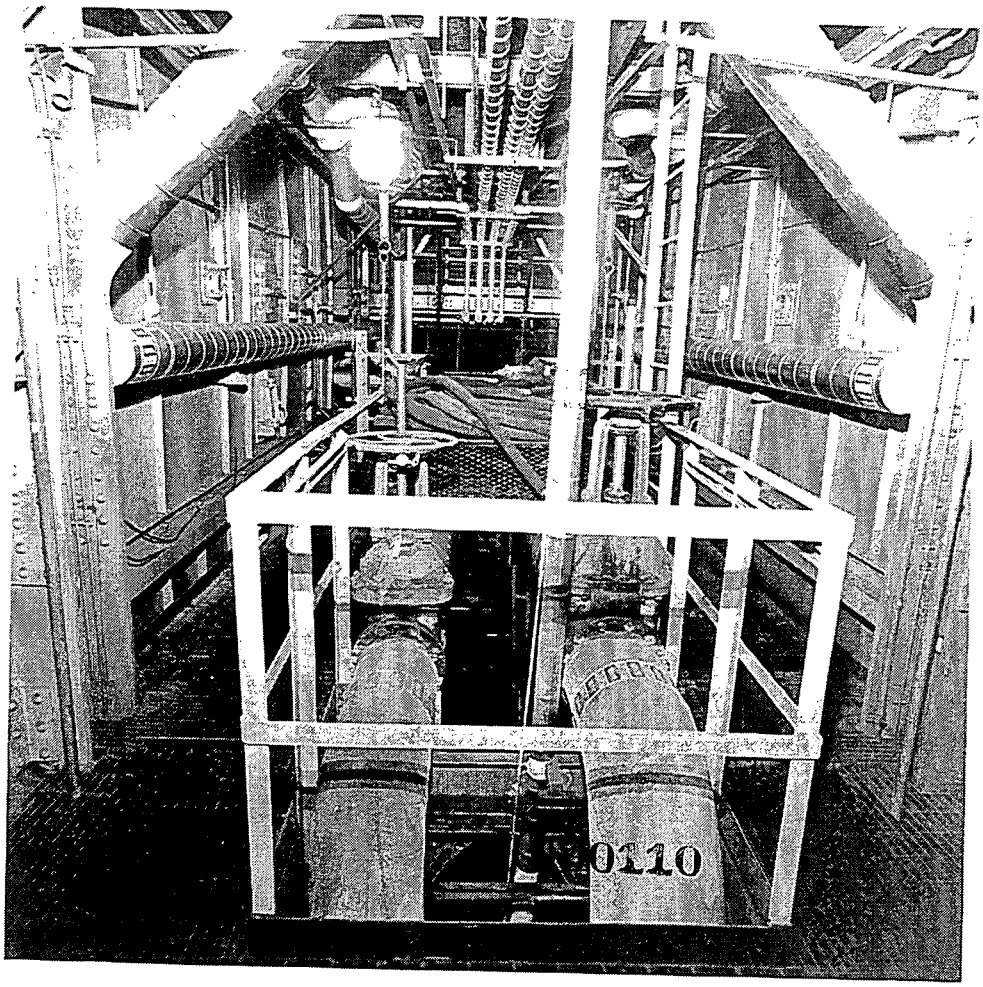
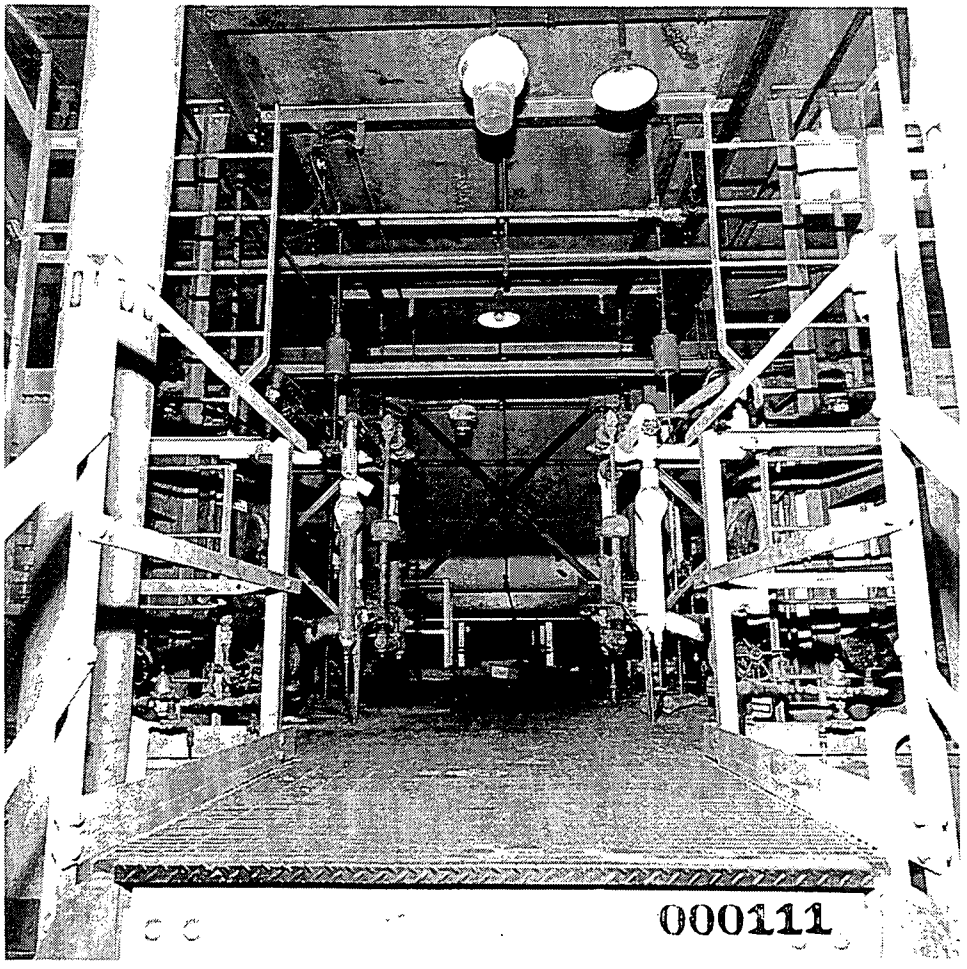


Figure D-22
Building 10A, boilers No. 2
and 4 and associated piping
from north (elev. 656-6")
#6407-28

Figure D-23
West side of Building 10A, tripper car and conveyor equipment from north (elev. 656-6") #6407-1

Figure D-24
South end of Building 10A, steam drum piping for boilers No. 2 and 4 from south
(elev. 617-6") #6407-16



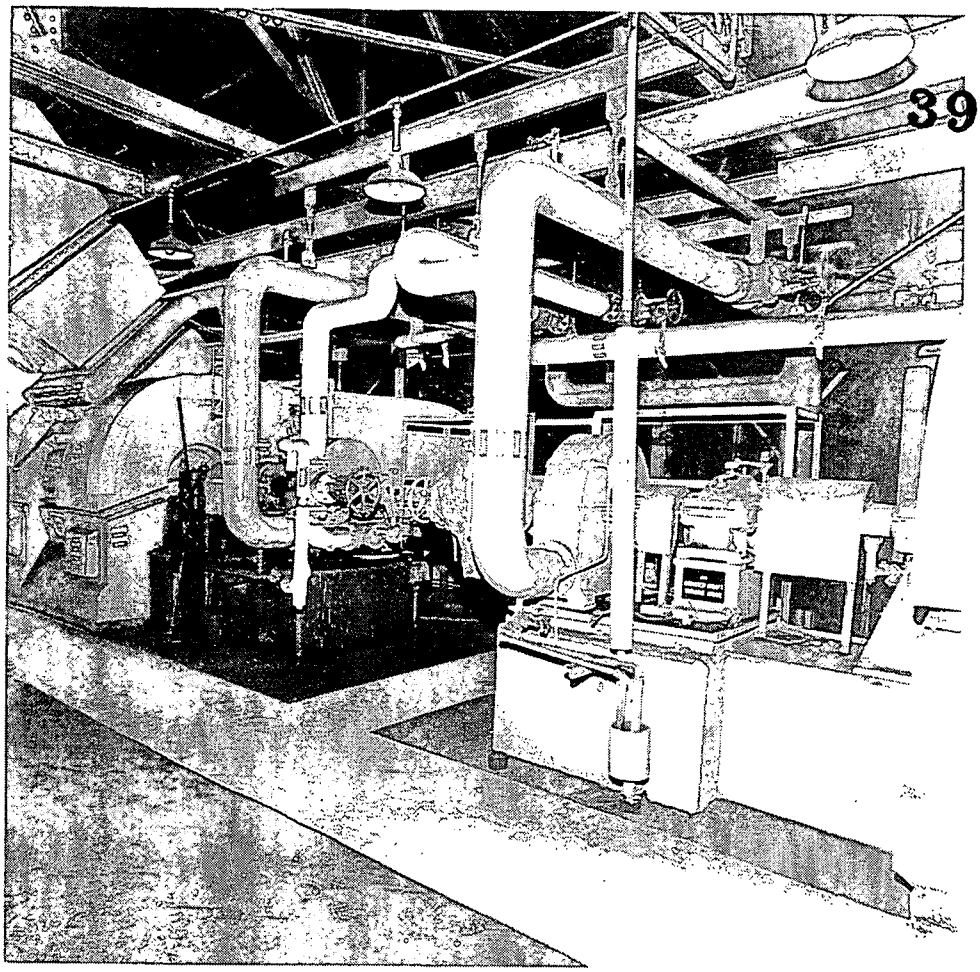


Figure D-25
West side of Building 10A No. 2 I.D. fan and Nos. 2 and 4 I.D. fan drives from northwest (elev. 630-0") #6407-10

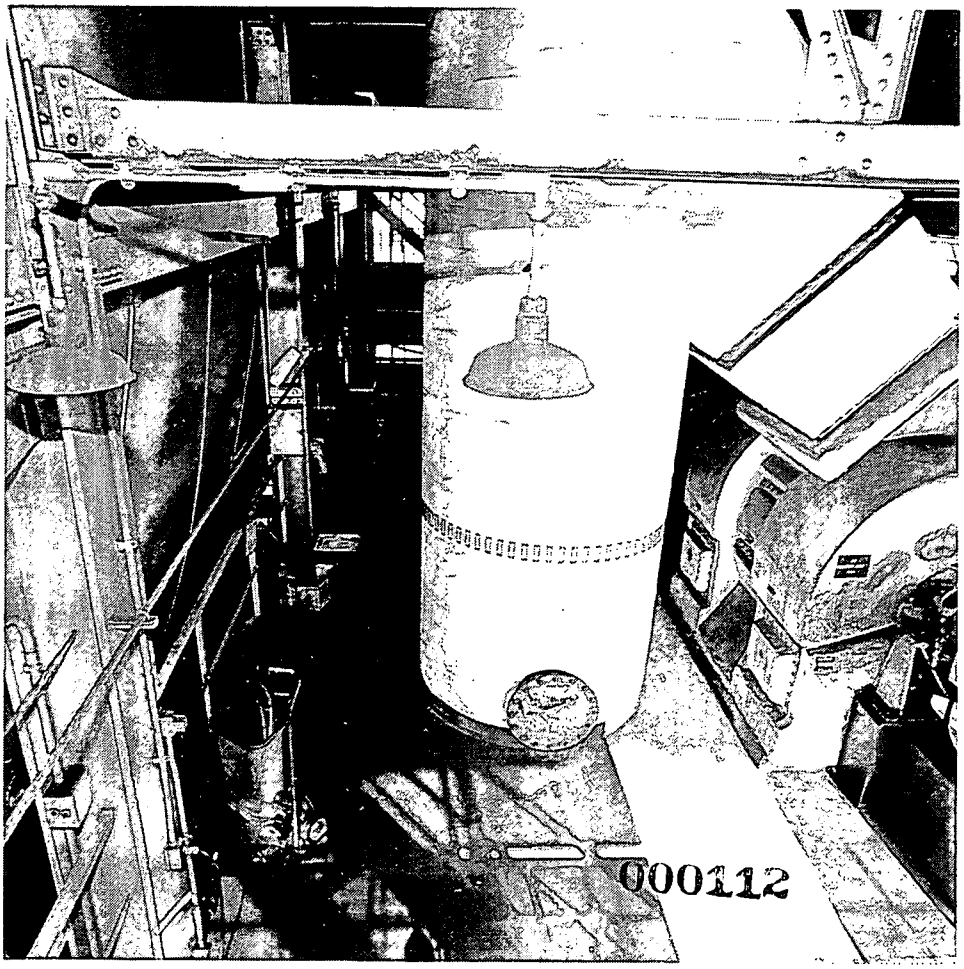


Figure D-26
East side of Building 10A, No. 1 I.D. fan and stack from northeast (elev. 630-0") #6407-4

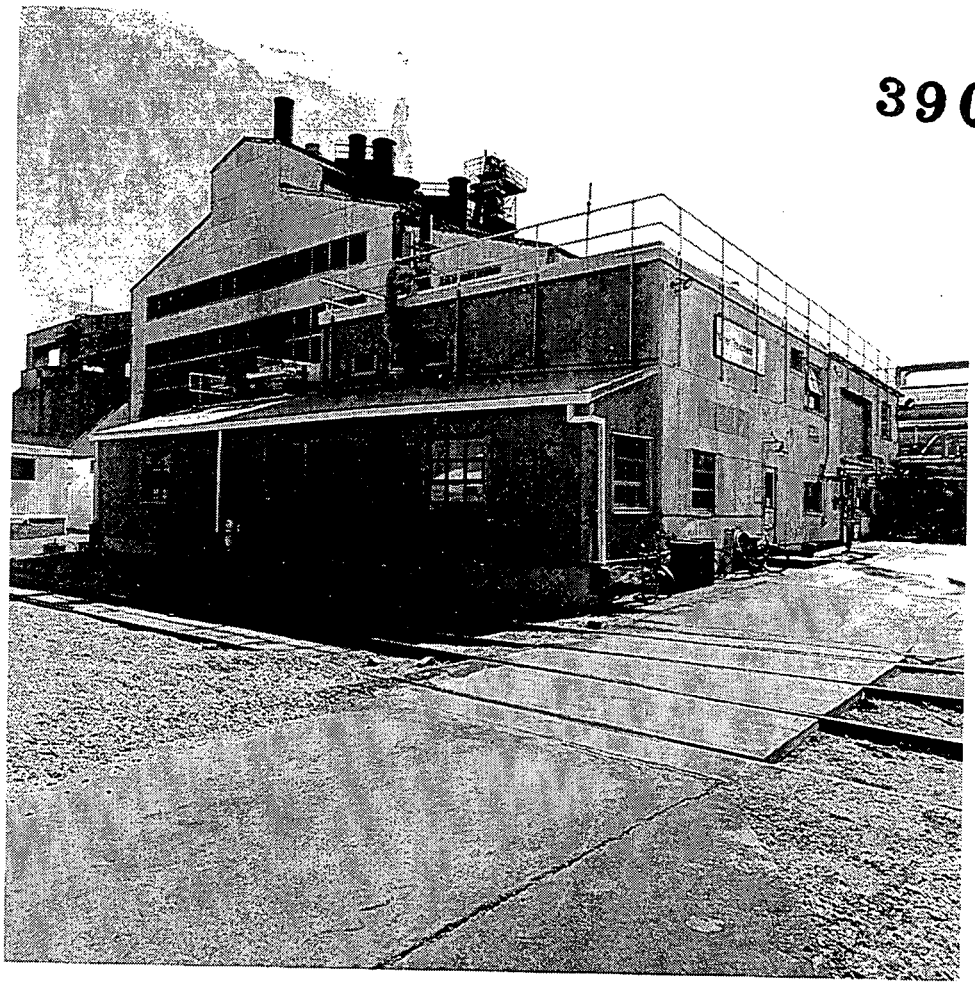


Figure D-27
Ground-level view of Water Plant (20B) from southwest #6407-65

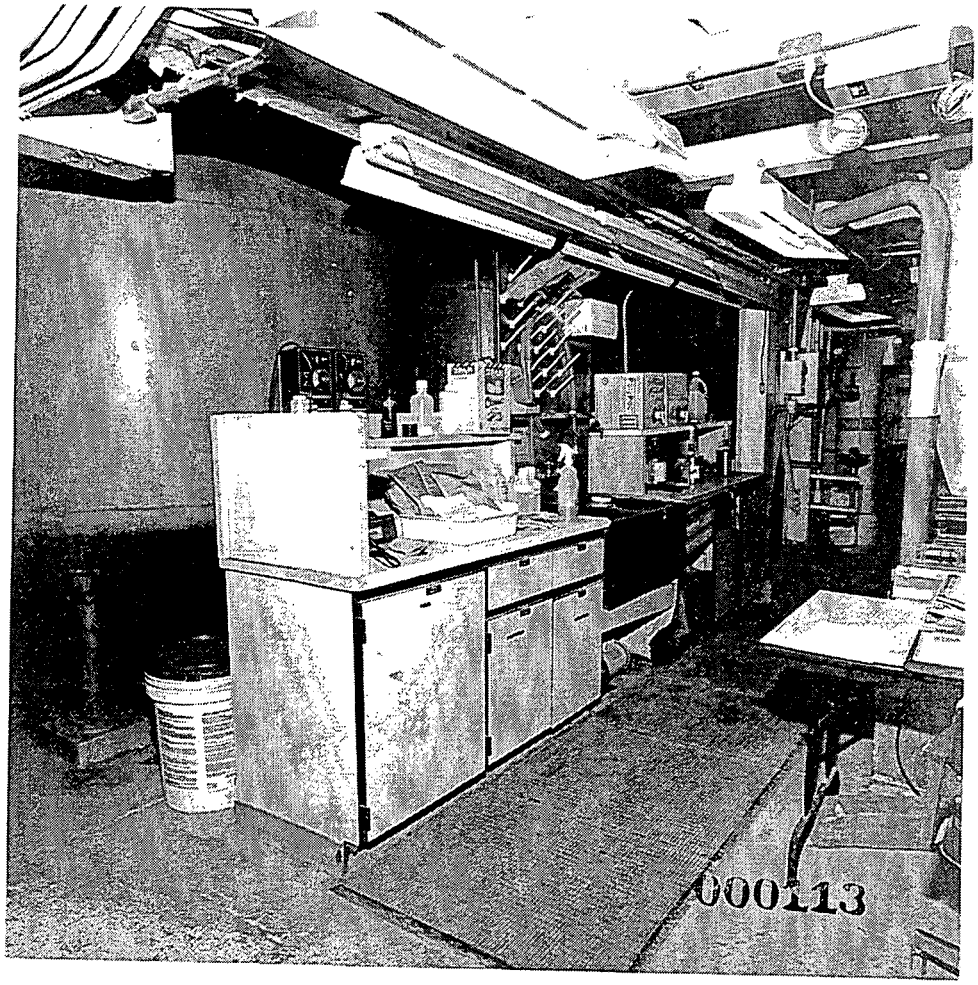


Figure D-28
Interior southwest corner of Building 20B from southwest #6407-75

Figure D-29
Interior west side of Building 20B, water treatment equipment and piping from west #6407-76

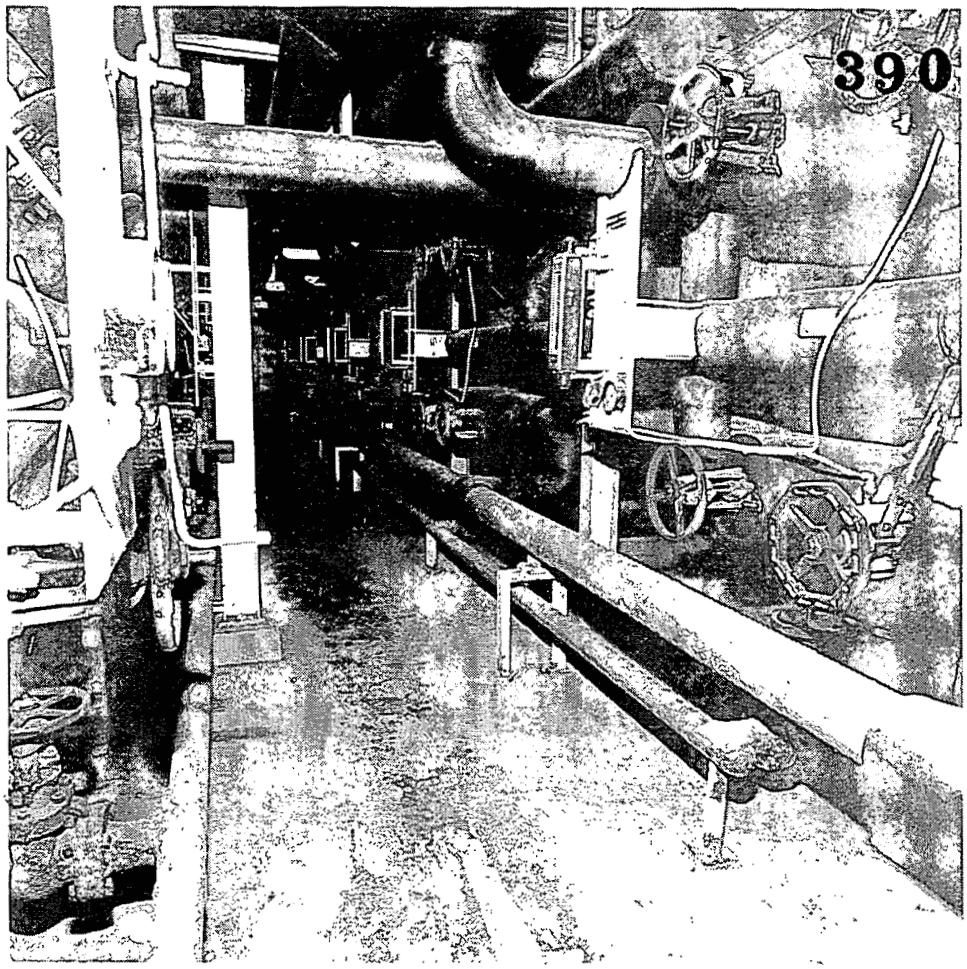
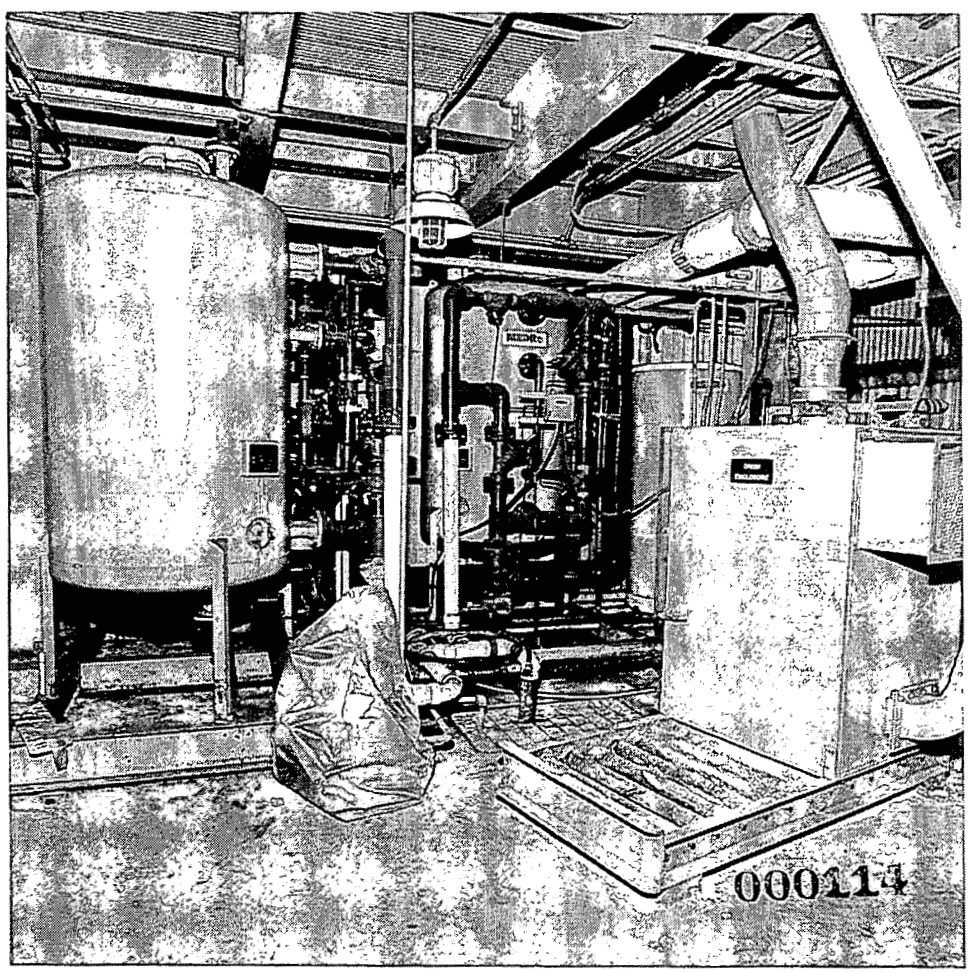


Figure D-30
Second floor Building 20B, Clearwell Building from southwest #6407-77



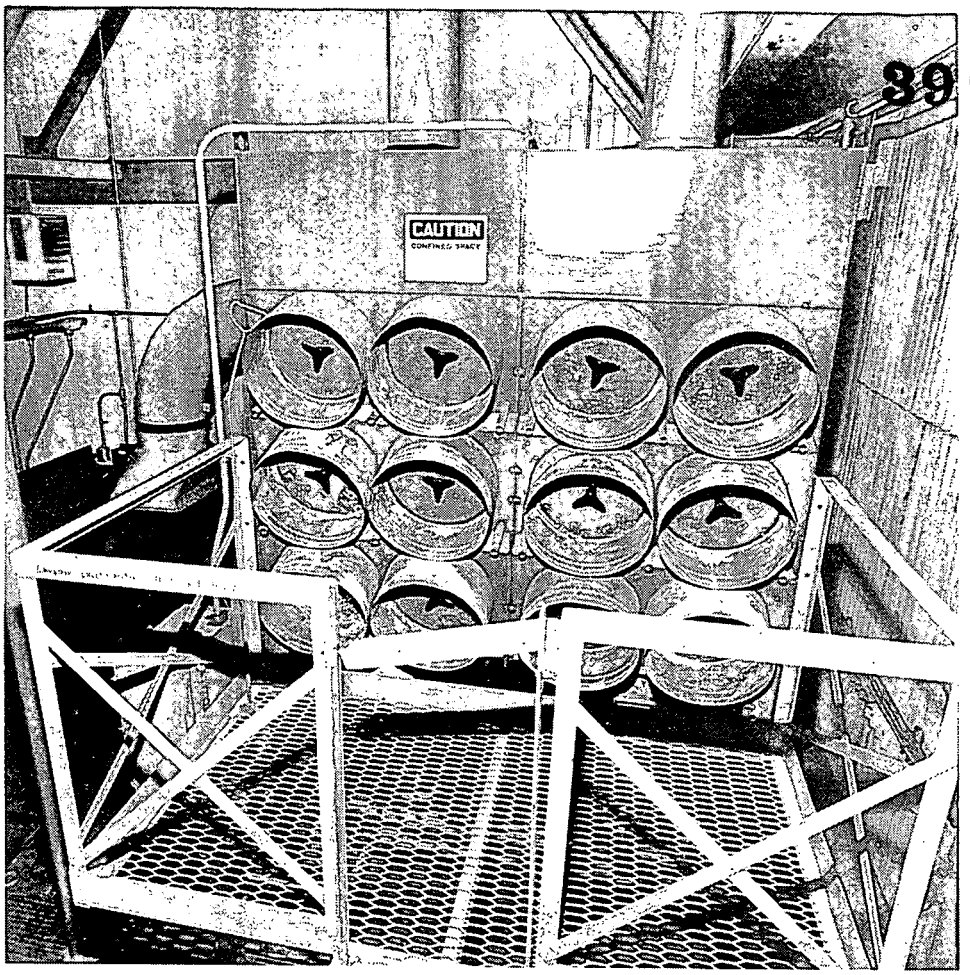


Figure D-31
Second floor Building 20B, Clearwell Building, dust collector from east
#6407-82

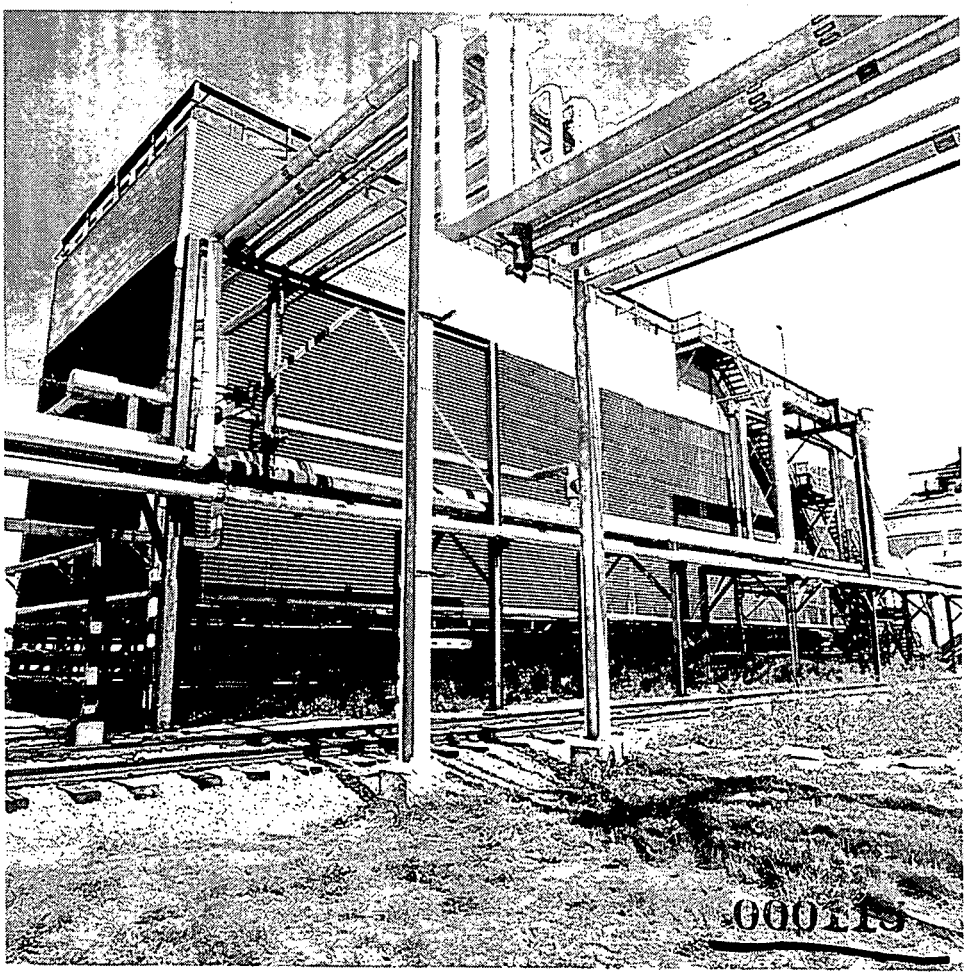


Figure D-32
Cooling Towers (20C) and pipe bridges from southeast
#6407-72