

PORTSMOUTH GASEOUS DIFFUSION PLANT, X-344B
MAINTENANCE STORAGE BUILDING
(Ash Storage Facility)
3930 U.S. Route 23 South
Piketon vicinity
Pike County
Ohio

HAER OH-142-O
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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240

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PORTSMOUTH GASEOUS DIFFUSION PLANT, X-344B MAINTENANCE STORAGE BUILDING (ASH STORAGE FACILITY)

HAER No. OH-142-O

Location: Portsmouth Gaseous Diffusion Plant (PORTS), 3930 U.S. Route 23 South,
Piketon vicinity, Scioto Township,
Pike County, Ohio

The X-344B Maintenance Storage Building is located at Ohio State Plane South coordinates at easting 1826447.494224 ft, northing 372456.690383045 ft and at Universal Transverse Mercator Zone 17N easting 326861.9021 m, northing 4321070.539 m. The coordinate represents the approximate center of the X-344B Maintenance Storage Building. This coordinate was obtained on June 19, 2019 by plotting its location in EnviroInsite 10.0.0.37. The accuracy of the coordinates is +/- 12 meters. The coordinate datum is North American Datum 1983.

Date of Construction: 1958

Designer/Builder: Peter Kiewit Sons' Construction Company

Previous Owner: N/A

Present Owner: The Atomic Energy Commission oversaw construction and operation of PORTS until 1974, when the Energy Research and Development Administration was established with responsibility for research and development duties from 1974-1977. In 1977, the U.S. Department of Energy was established, overseeing operations at PORTS.

Present Use: Demolished 2011

Significance: The former X-344B Maintenance Storage Building was used for cooling tower equipment modification and repair, and roads and grounds equipment storage. This facility is part of PORTS, which was a part of the U.S. Cold War nuclear weapons complex. PORTS' primary Cold War era mission was the production of highly enriched uranium by the gaseous diffusion process for defense/military purposes.

Project Information: Fluor B&W Portsmouth LLC photographed and documented the site in June of 2010. Gray & Pape, Inc., Cincinnati, Ohio, served as the primary author of the historical narrative and resource descriptions drawing from numerous historical records and reports, drawings, photographs and plans. For additional contextual information, see Portsmouth Gaseous Diffusion Plant, HAER no. OH-142. This X-344B Maintenance Storage Building HAER was completed in 2021.

Part I. Historical Information

In support of this report, there are two appendices that are provided: Appendix A and Appendix B, which consist of survey photographs and historical drawings, respectively.

Construction History of the X-344B Maintenance Storage Building:

Construction of the X-344B Maintenance Storage Building began with excavation activities in July 1953. Concrete placement began shortly after completion of excavation activities. A total of 346 cubic yards of concrete were used during construction. Subcontracted through Peter Kiewit Sons' Construction Company, The Eichleay Corporation of Pittsburgh, Pennsylvania erected 57 tons of structural steel shortly after the completion of the concrete footings and grade beams. Mechanical and electrical work proceeded concurrently with structural work. The X-344B Maintenance Storage Building was completed in April 1958. The completion date was delayed by approximately 196 days due to labor disputes, scheduling conflicts, and inclement weather. The X-344B Maintenance Storage Building was demolished in 2011.

Historical drawings of building plans are provided in Appendix B (Figures 4 through 17).

Part II. Site Information

Description of the X-344B Maintenance Storage Building:

The X-344B Maintenance Storage Building was located just north of the X-342B Fluorine Storage Building at the north end of PORTS. Measuring 50' wide by 120' long, the X-344B Maintenance and Storage Building was a utilitarian, prefabricated "Butler Building" (Appendix A, Figures 1 through 3). Resting atop a concrete slab foundation, this front-gabled building consisted of a steel frame structure clad with metal siding. There were no window openings within the X-344B Maintenance and Storage Building. The ridgeline of the steel-covered roof featured a pair of exhaust vents. Vehicular access to the interior of the building was provided by large, roll-away doors, located in each of the gabled ends of the building. With a floor space of 6,000 square feet, the interior of the building was largely open and unobstructed. One corner of the room featured a restroom facility, which was enclosed with concrete blocks.

The X-344B Maintenance Storage Building was originally known as the Ash Storage Facility. When built, it served as temporary storage space for canisters of uranium oxides and containers of ash, which came from the fluorination process in the X-344A UF₆ Sampling Facility. Throughout its history, the building served a variety of storage and maintenance needs. In 1993, maintenance operations moved to another facility on site. Currently this facility provides for sample and transfer of uranium hexafluoride (UF₆) from production cylinders to shipping cylinders.

Part III. Sources of Information

Department of Energy. *The Role of the Portsmouth Gaseous Diffusion Plant in Cold War History*. Piketon, OH: U.S. Department of Energy, 2017.

Department of Energy. *Remedial Investigation and Feasibility Report for the Process Buildings and Complex Facilities Decontamination and Decommissioning Evaluation Project at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0245&D3. Piketon, OH: U.S. Department of Energy, 2014.

Department of Energy. *Historical Narrative for the X-344B Maintenance Storage Building*, Portsmouth Gaseous Diffusion Plant Piketon, Ohio, Washington, D.C.: U.S. Department of Energy, 2011.

Department of Energy. *National Historic Preservation Act Section 110 Survey of Architectural Properties at the Portsmouth Gaseous Diffusion Plant in Scioto and Seal Townships, Piketon, Ohio*, DOE/PPPO/03-0147&D1. Piketon, OH: U.S. Department of Energy, January 2011.

Giffels & Vallet, Inc. *Gaseous Diffusion Plant at Portsmouth, Ohio, Project History and Completion Report* (Redacted). Washington, D.C.: U.S. Atomic Energy Commission, 1957.

Appendix A: Survey Photographs



Figure 1: Location and Orientation of Exterior Photographs (2 and 3)



Figure 2: South Side of the X-344B Maintenance Storage Building, June 2010, Facing Northeast



Figure 3: South Side of the X-344B Maintenance Storage Building, June 2010, Facing North

Appendix B: Historical Drawings

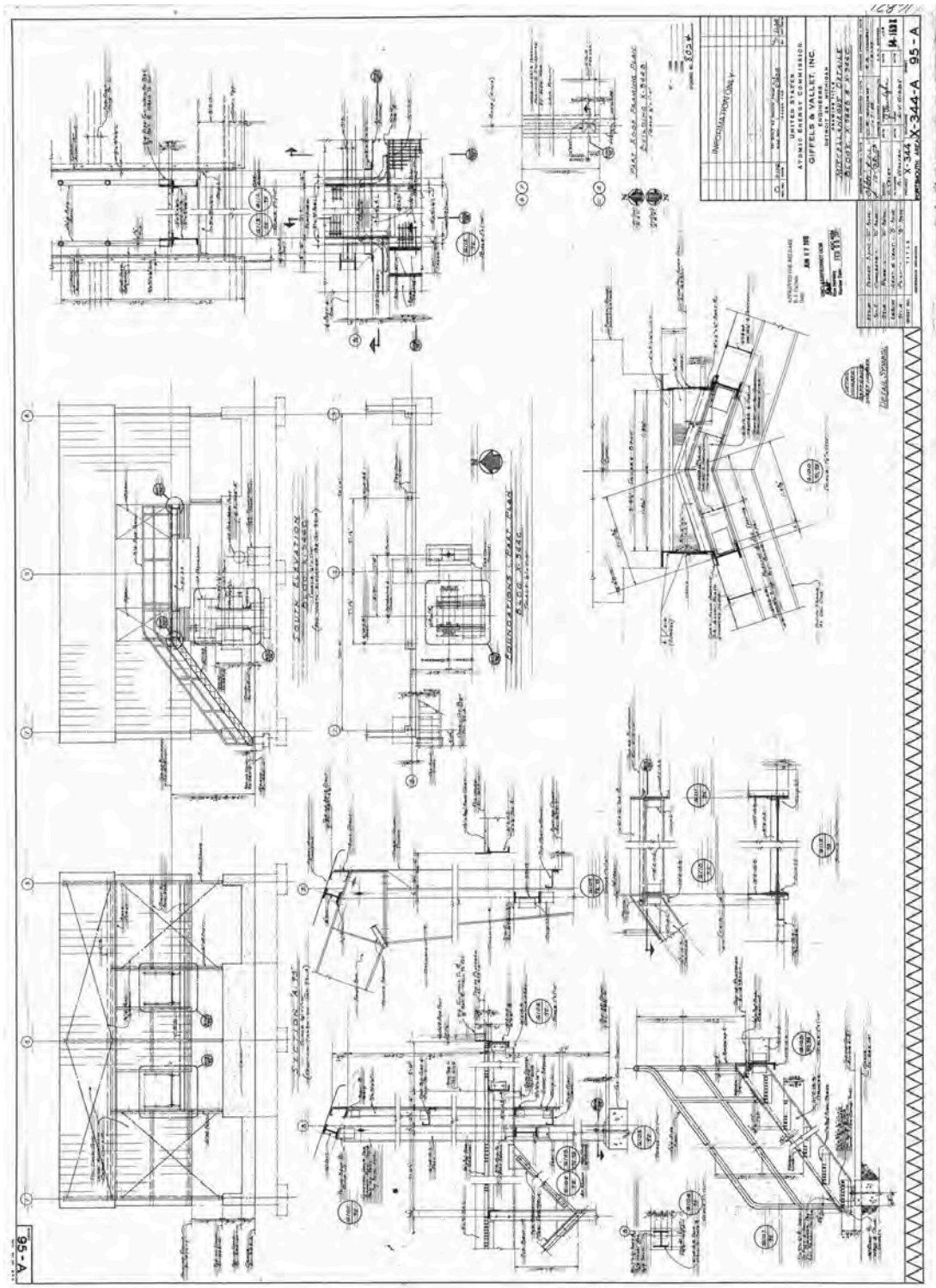


Figure 4: Miscellaneous Details

**Figure 5: Site Topography**

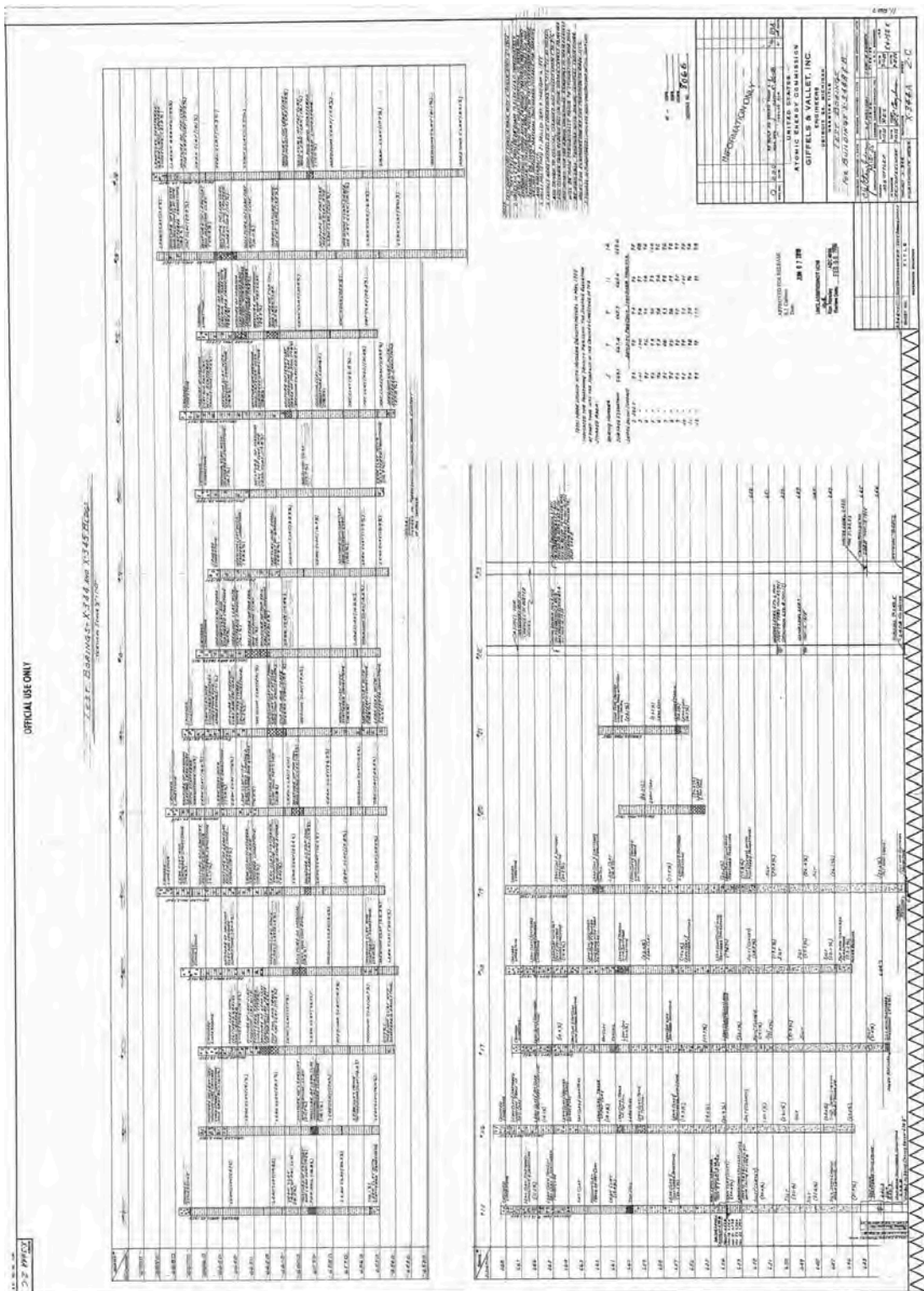


Figure 6: East Borings

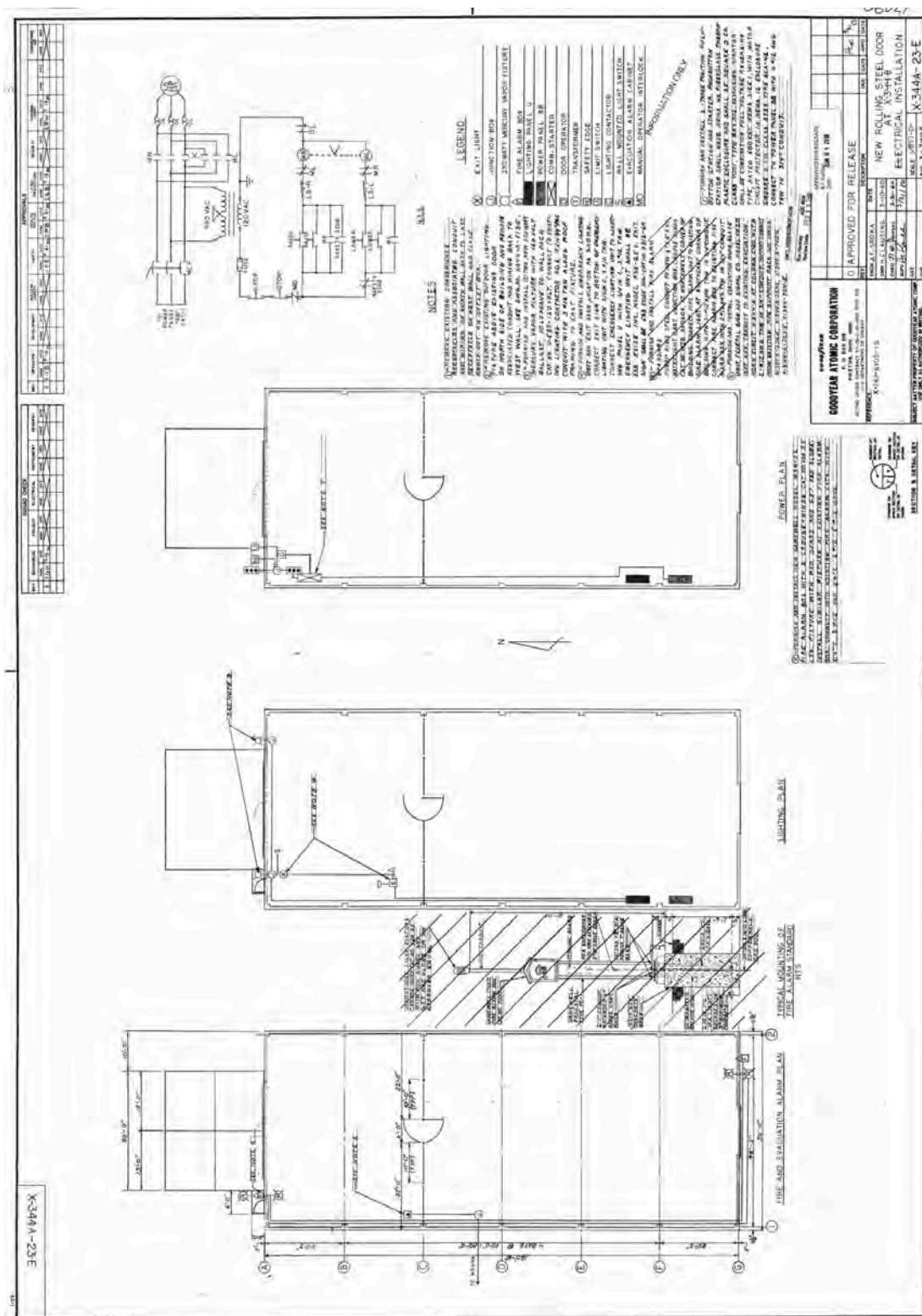
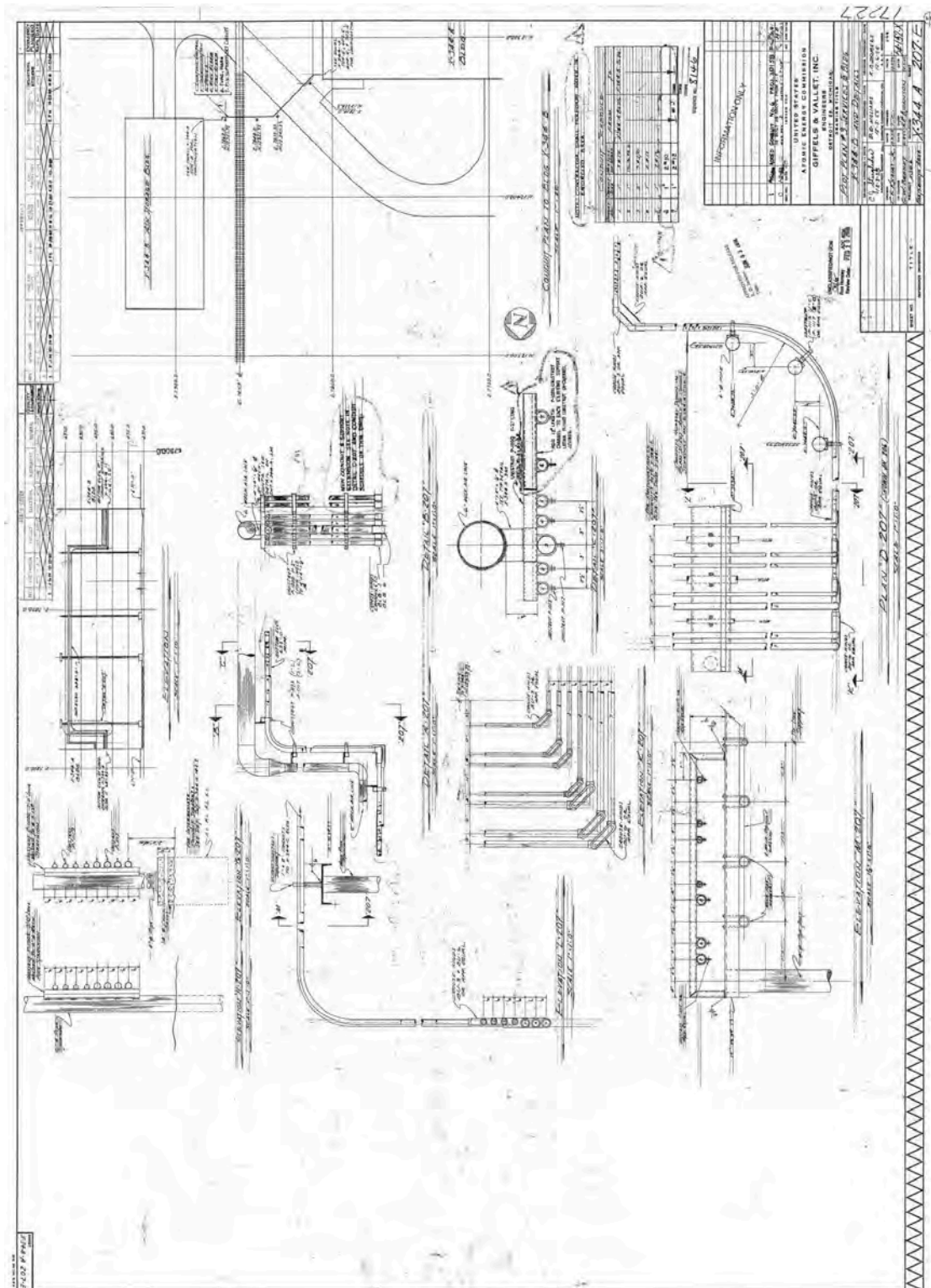


Figure 7: Rolling Steel Door Electrical Installation



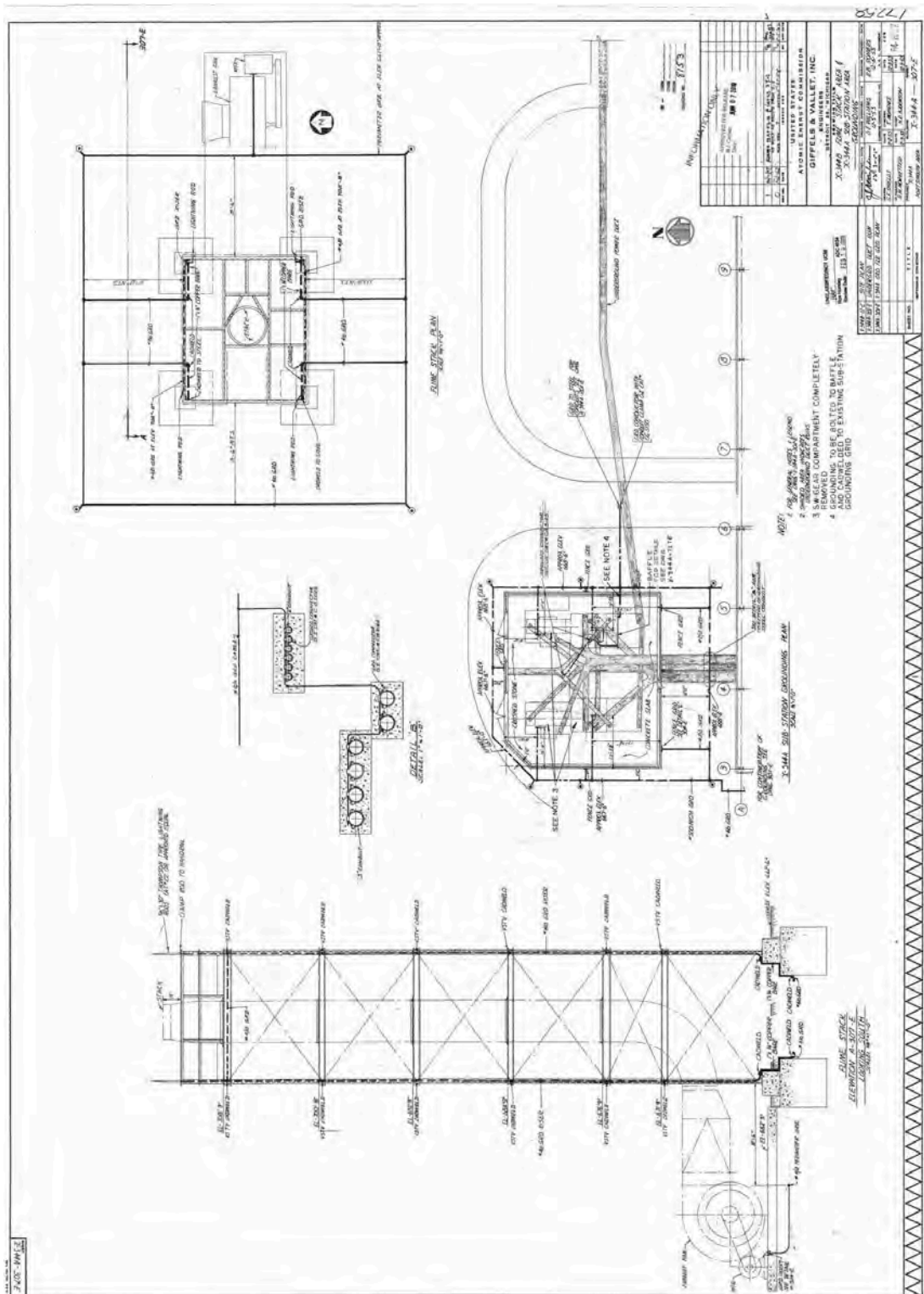


Figure 9: Fume Stack Area and Sub-Station Area

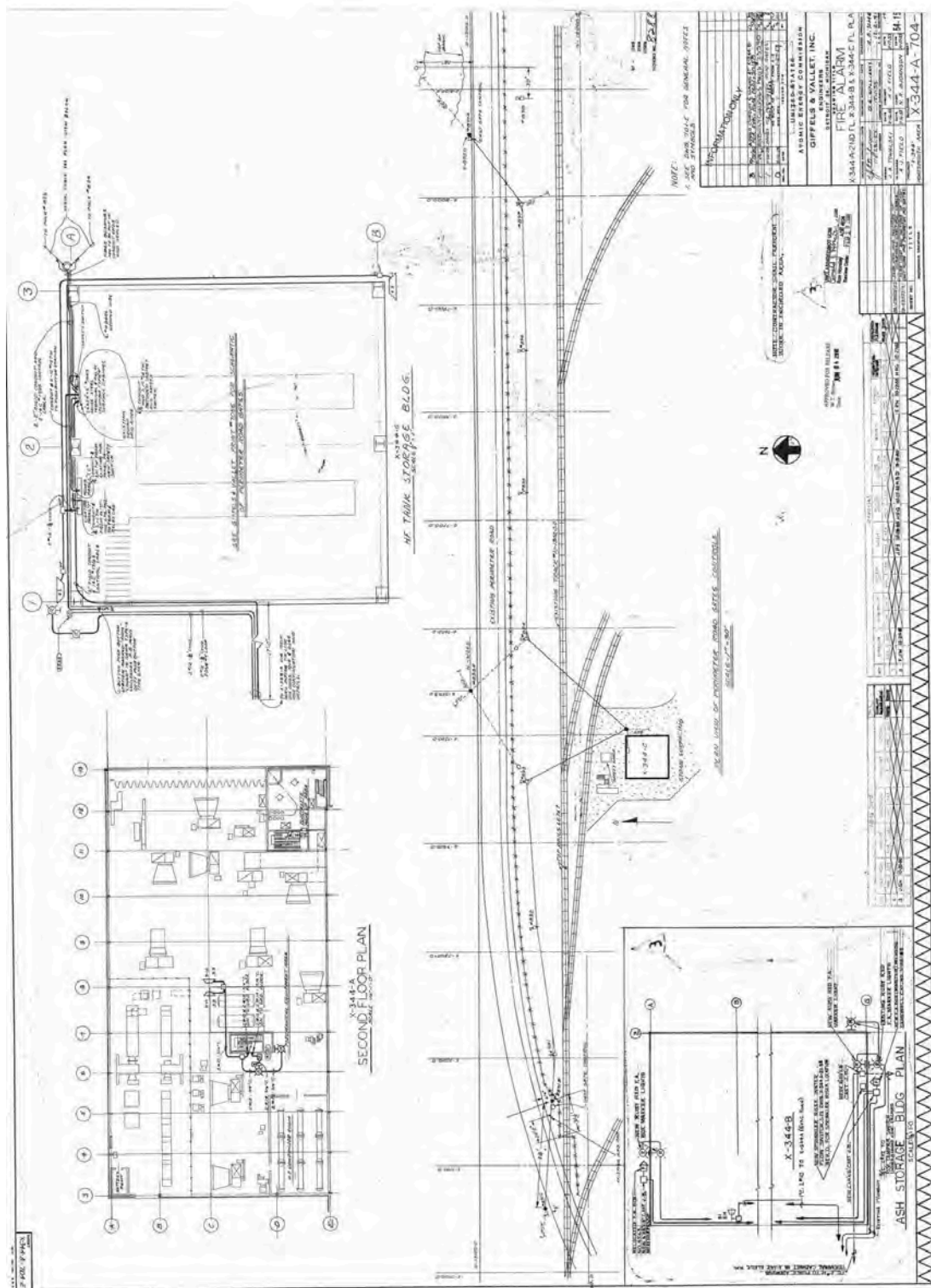


Figure 10: Fire Alarm

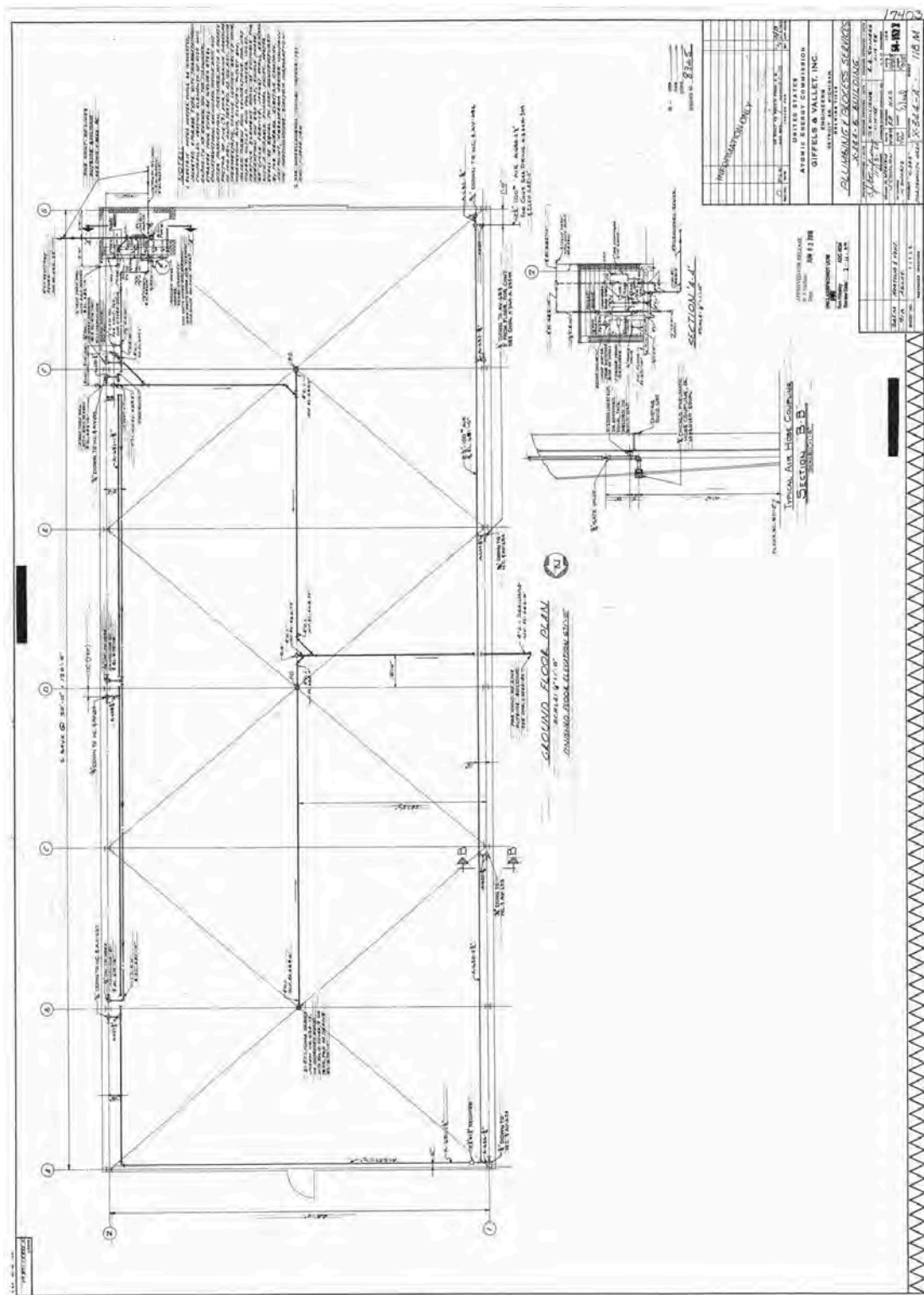


Figure 11: Plumbing and Process Services

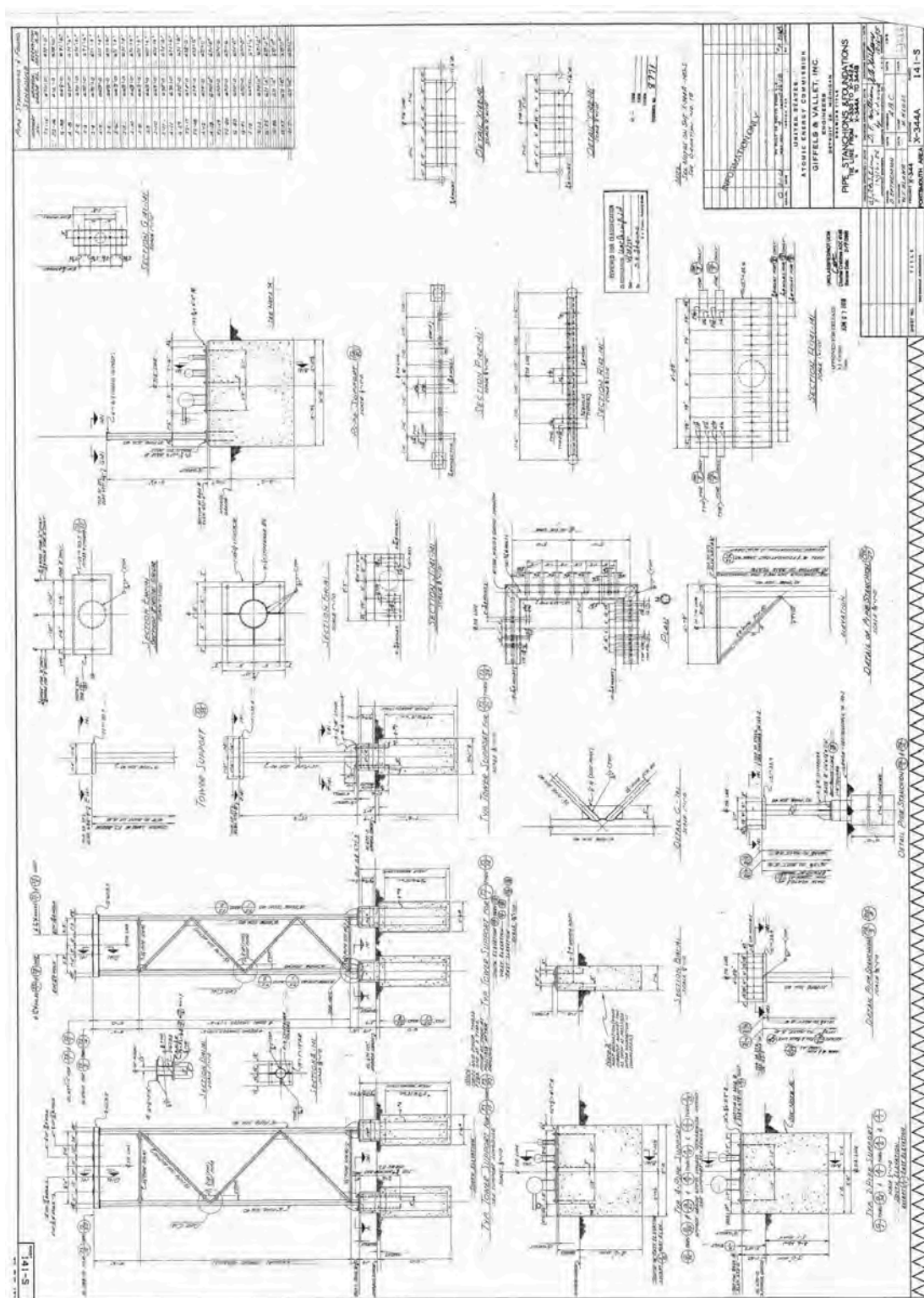


Figure 12: Pipe Stanchions and Foundations

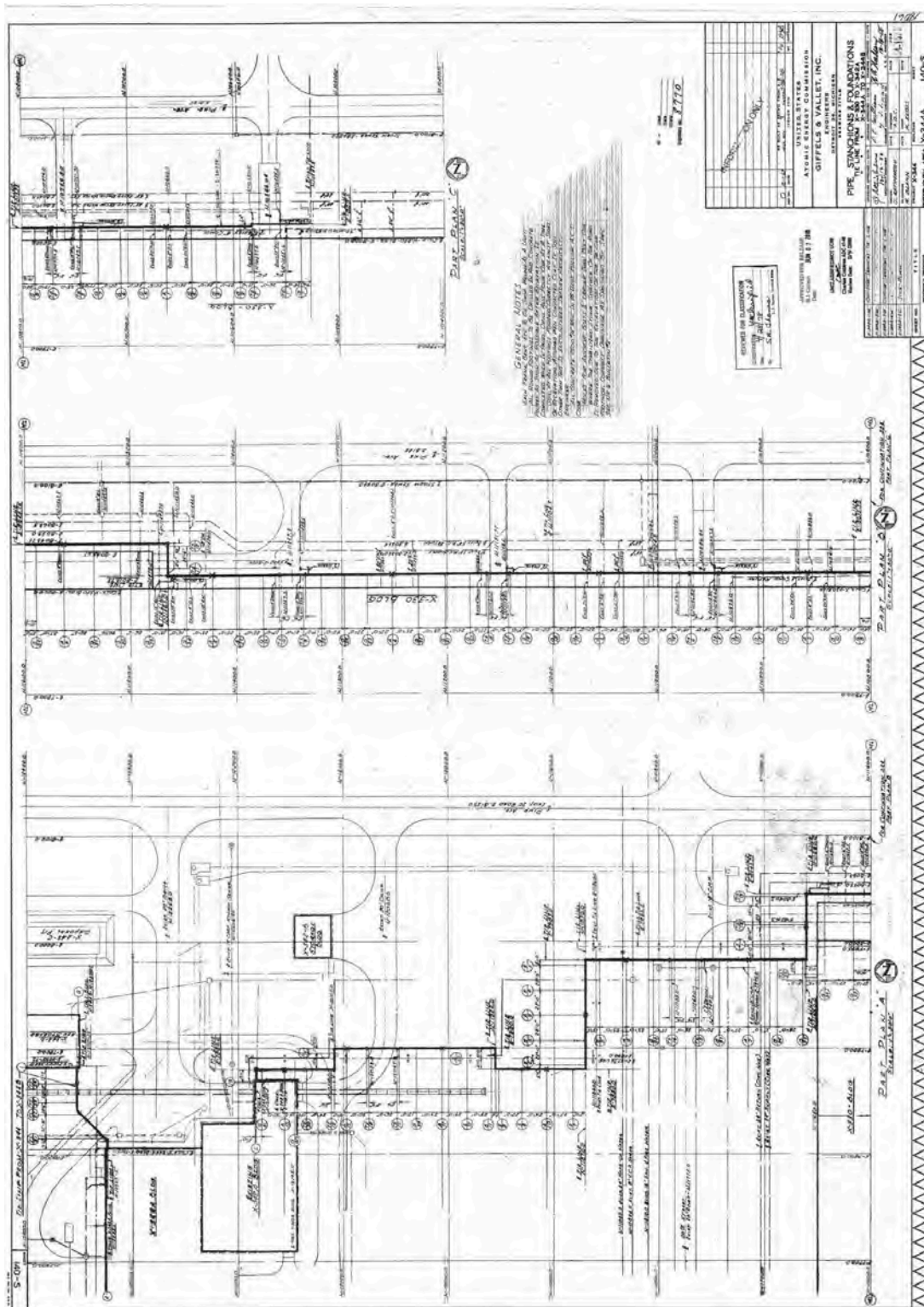


Figure 13: Pipe Stanchions and Foundations

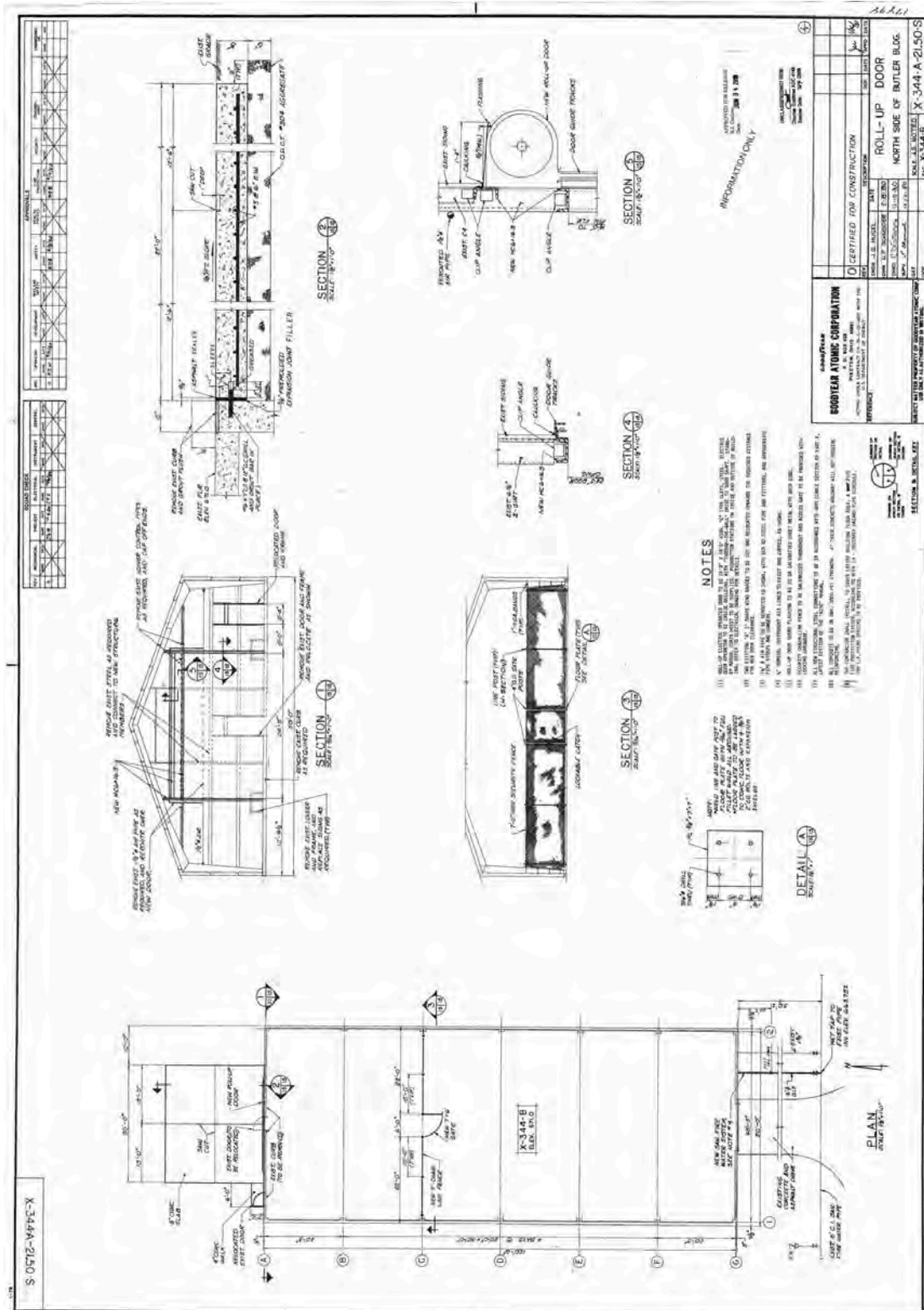


Figure 14: Roll-Up Door

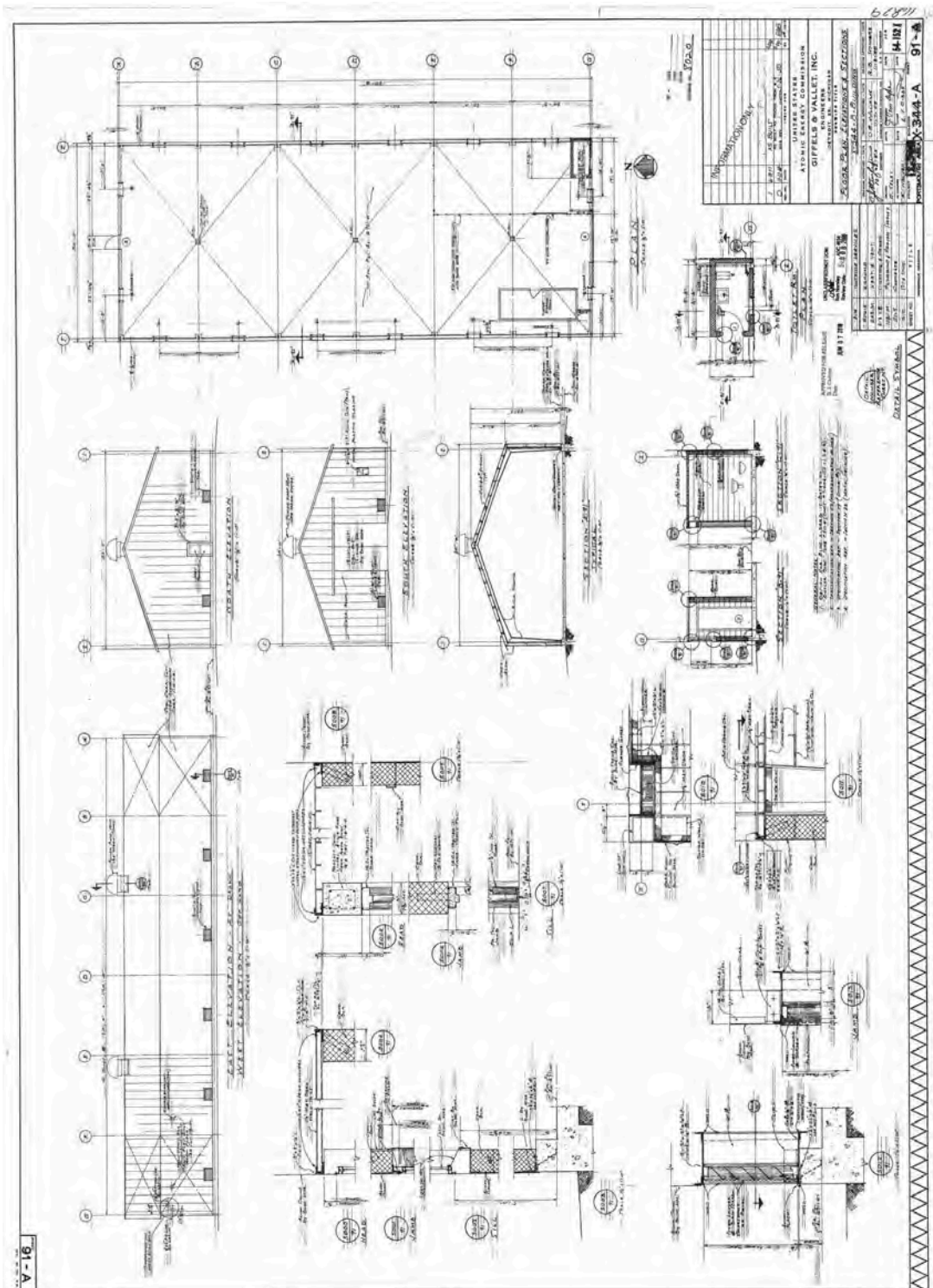


Figure 15: Floor Plans, Elevations, and Sections

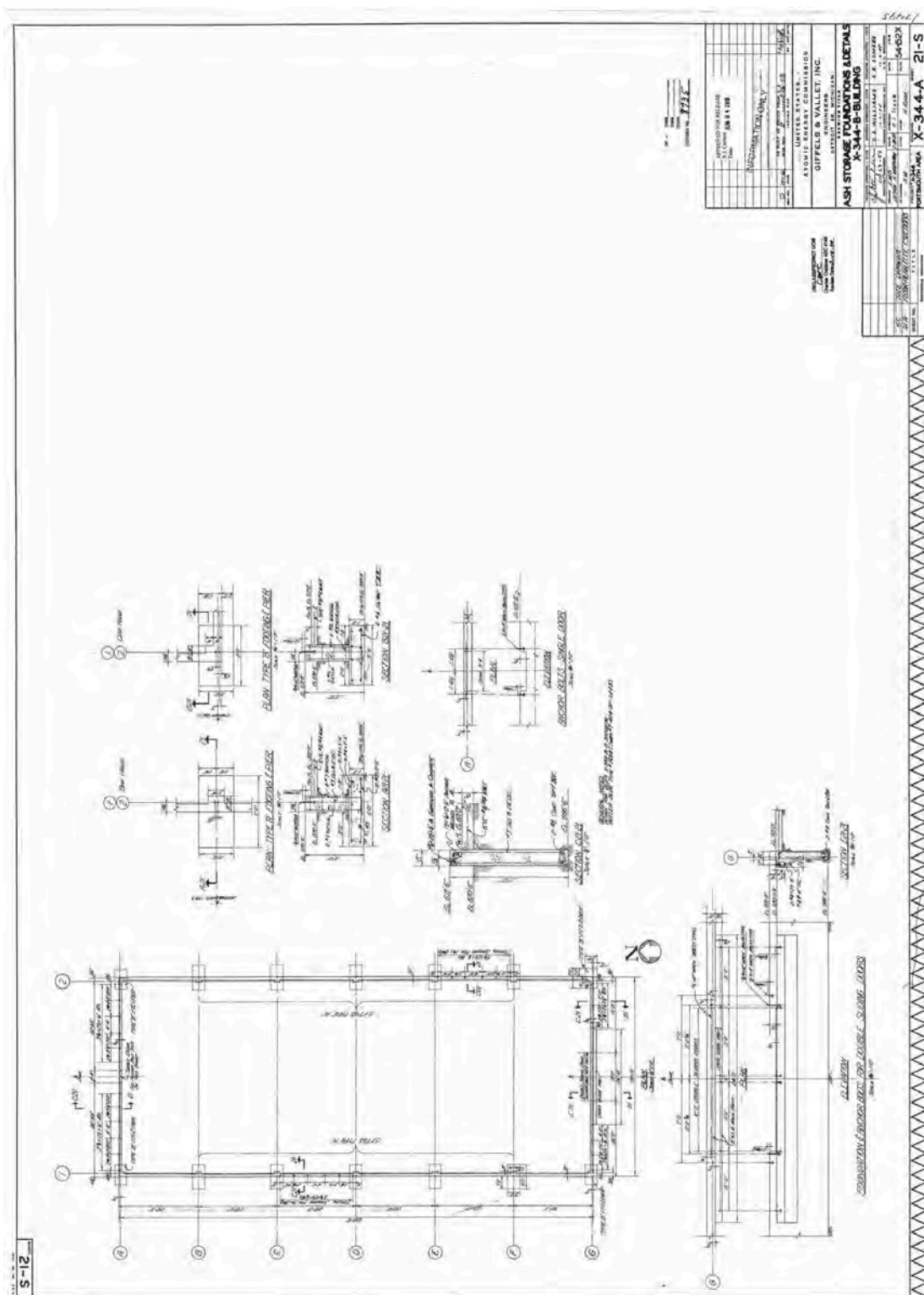


Figure 16: Foundation Details

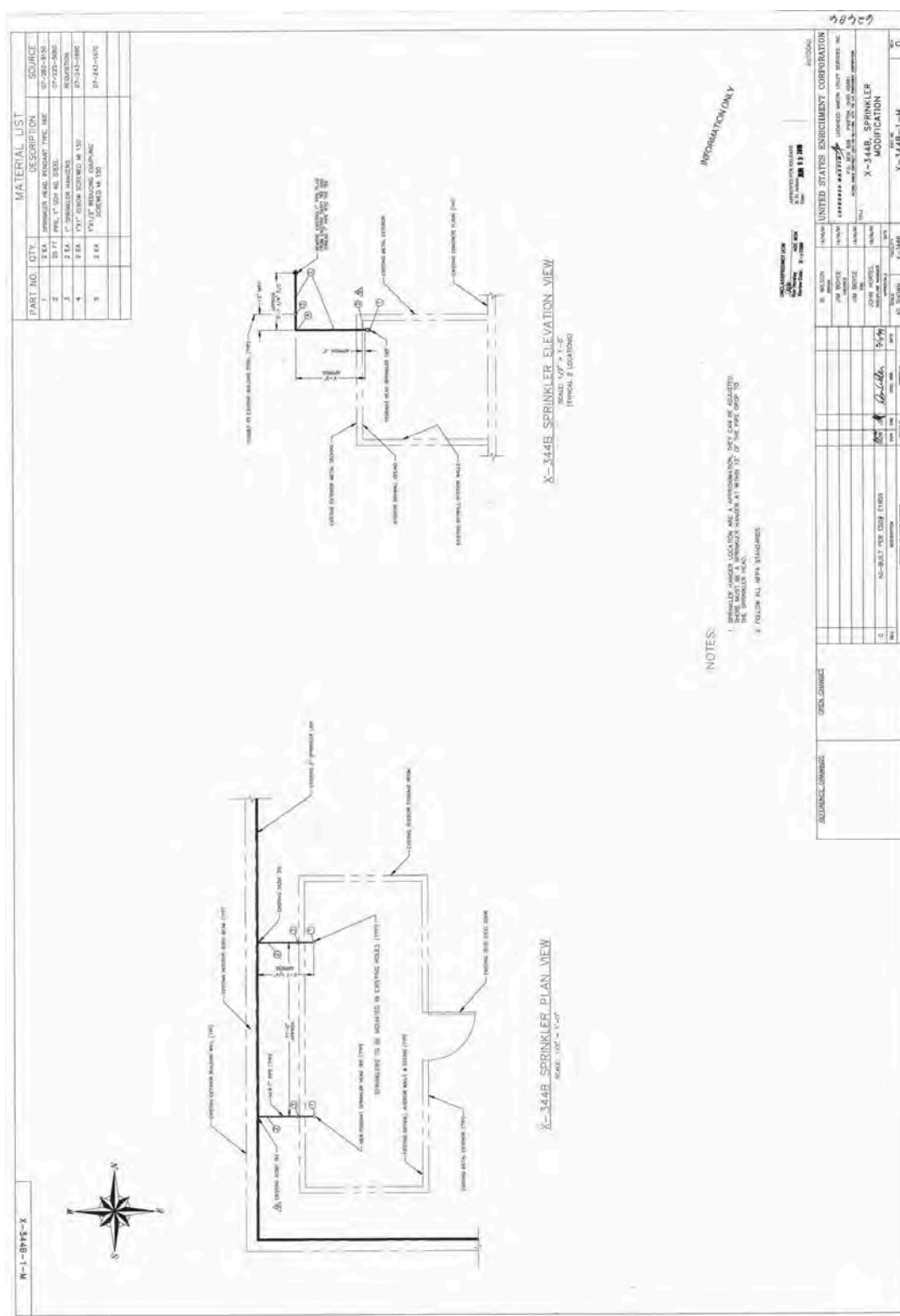


Figure 17: Sprinkler Modification