

PORTSMOUTH GASEOUS DIFFUSION PLANT, X-108B SECURITY
PORTAL
(North Portal)
3930 U.S. Route 23 South
Pike County vicinity
Pike County
Ohio

HAER OH-142-K
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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

HISTORIC AMERICAN ENGINEERING RECORD

PORTSMOUTH GASEOUS DIFFUSION PLANT, X-108B SECURITY PORTAL (NORTH PORTAL)

HAER No. OH-142-K

- Location: Portsmouth Gaseous Diffusion Plant (PORTS), 3930 U.S. Route 23 South, Piketon vicinity, Scioto Township, Pike County, Ohio
- The X-108B Security Portal is located at Ohio State Plane South coordinates at easting 1827850.976002 ft, northing 368999.147765966 ft and at Universal Transverse Mercator Zone 17N easting 327272.3027 m, northing 4320009.774 m. The coordinate represents the approximate center of the X-108B Security Portal. This coordinate was obtained on June 20, 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: 1955
- 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: Security check post
- Significance: The X-108B Security Portal is one of three remaining original portals that facilitate pedestrian access to controlled areas of PORTS. PORTS 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 the site on August 5, 2011. 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-108B Security Portal HAER was completed in 2021.

Part I. Historical Information

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

Construction History of the X-108B Security Portal:

Possibly due to its minimal design, few details exist regarding the construction history of the X-108B Security Portal. Available plans indicate that A.M. Kinney, Inc., of Cincinnati, Ohio, served as consulting engineers for the building. Primary contractor, Peter Kiewit Sons' Construction Company approved the plans for the X-108B Security Portal in May 1954. Peter Kiewit Sons' Construction Company's own forces handled all construction activities for the portal (Appendix B, Figure 4). They initiated excavation on July 20, 1954. One week later, the contractor began pouring the concrete foundation. They completed all concrete work by October 11, 1954. By March 7, 1955, the portal was ready for use.

Historical drawings of building plans are included in Appendix C (Figures 5-8).

Part II. Site Information

Description of the X-108B Security Portal:

The X-108B Security Portal (also known as North Portal) is located just south of the southeast corner of the X-720 Maintenance and Stores Building. It is one of three portals that facilitate pedestrian access to controlled areas of PORTS. The X-108B Security Portal provides access to the north end of the site. In addition to pedestrian access, the X-108B Security Portal also features guard booths, benches for workers awaiting buses, and bicycle storage.

Measuring approximately 37' by 127' (approximately 4,700 square feet), the X-108B Security Portal consists of a nominally, flat roof supported by a series of steel pipe posts, steel beams, and cinderblock walls (Appendix A, Figures 1-3). The roof pitches slightly toward the center of the building. This building is largely wide open with the flat roof functioning as a wide overhang. A cinderblock wall divides the center of the south end of the shelter. Benches line each side of the cinderblock divider. A series of bicycle racks are located on the west side of the south end of the building.

The north half of the X-108B Security Portal features three guard booths. The booths served as badge exchange stations for workers. Workers were required to wear calibrated thermoluminescent dosimeter badges with identification when at PORTS. These badges were used for security purposes and to monitor worker exposure to radiation. As workers exited PORTS at the end of their shift, they dropped their security badges through slots located in the sides of the security guard booths. A guard reissued the badges upon return to work.

Also built of cinderblock, each booth includes a pair of steel sash, double-hung windows. The windows are an unusual, 2/2 design, with the panes of each window located one above the other. Access to the guard booths is facilitated by a single doorway for each, individual booth.

A chain link fence, topped by barbed wire, separates the main parking lot from the facility. Workers entering controlled areas of PORTS were required to pass through one of three rotary gate and turnstiles. These entrance portals are located between the guard shelters in the north end of the X-108B Security Portal.

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. *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 (A-2 through A-3)



Figure 2: North Side of the X-108B Security Portal, August 5, 2011, Facing Southwest



Figure 3: South Side of the X-108B Security Portal, August 5, 2011, Facing Northeast

Appendix B: Historical Photographs



Figure 4: Looking Northeast at X-108B Security Portal Construction, 1955

Appendix C: Historical Drawings

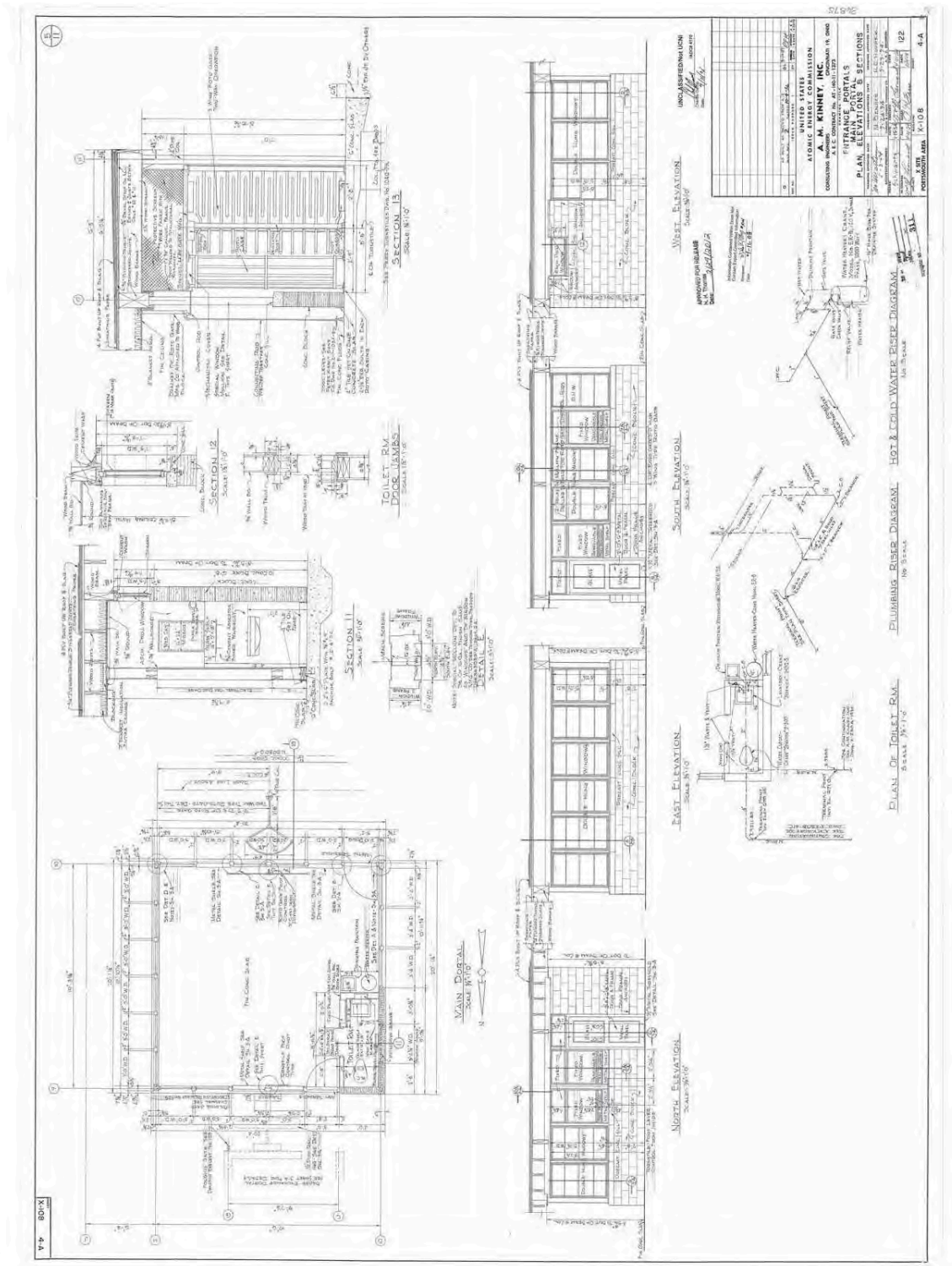


Figure 5: Plan, Elevations, and Sections

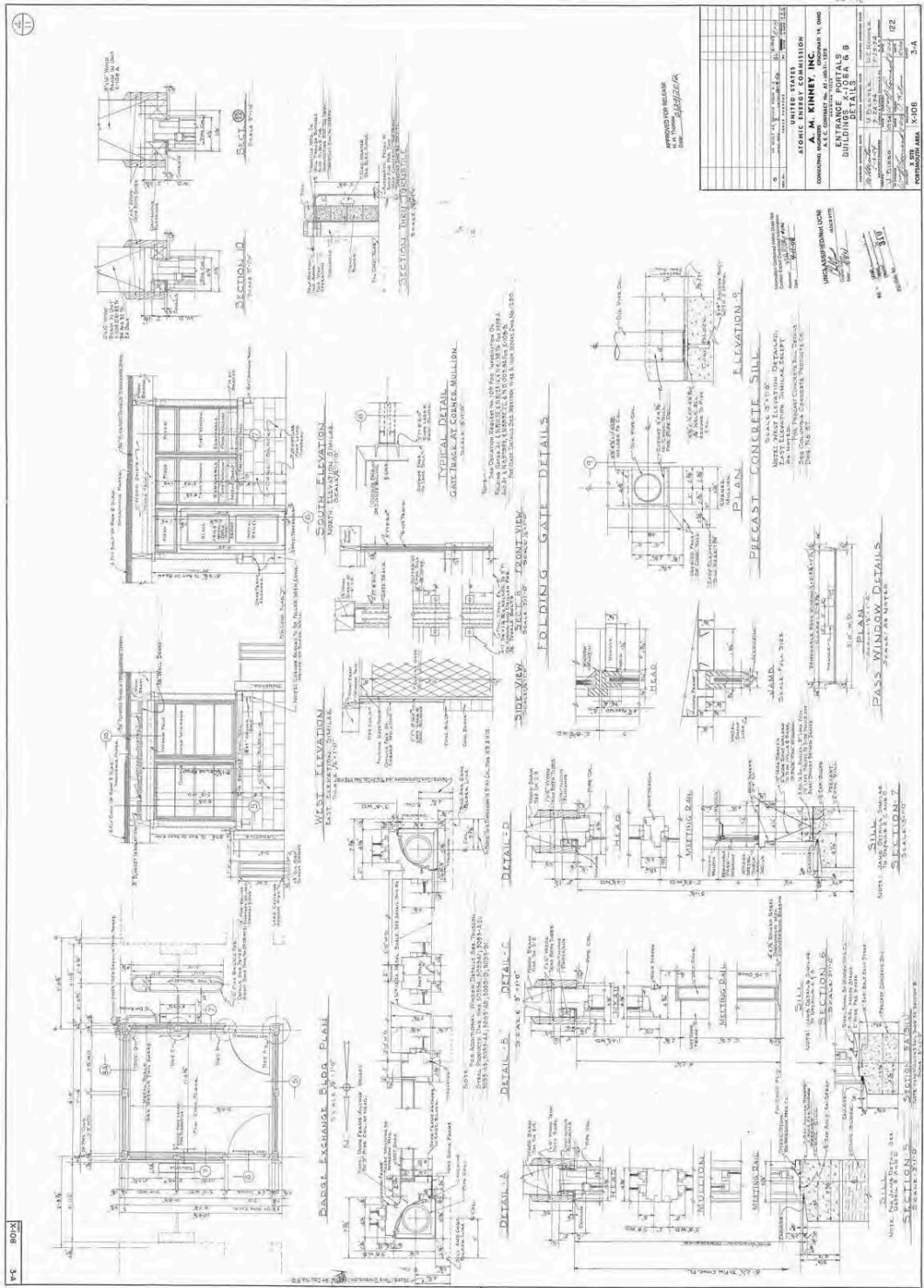


Figure 6: Details

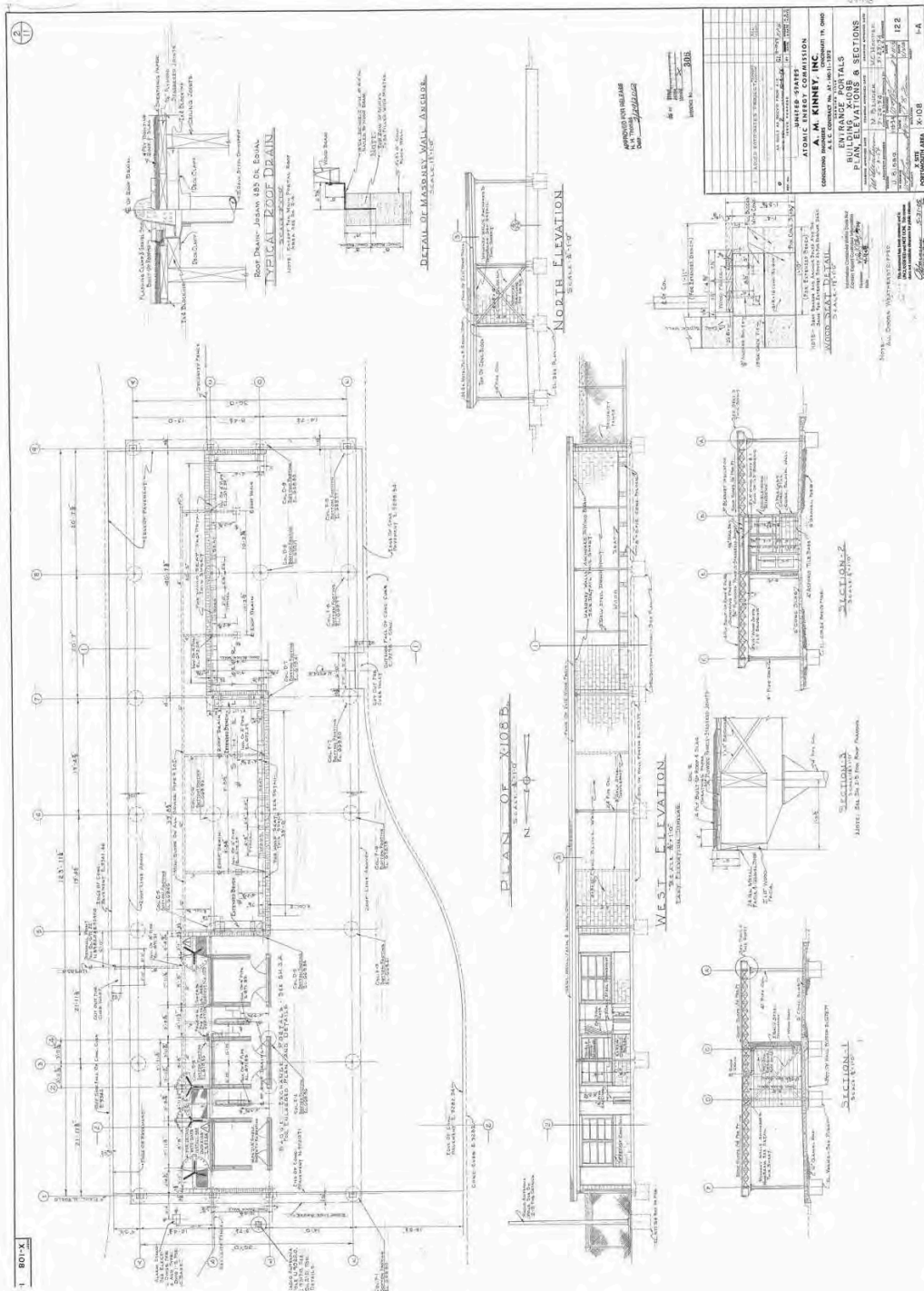


Figure 8: Plan, Elevations, and Sections