

PORTSMOUTH GASEOUS DIFFUSION PLANT, X-744H BULK
STORAGE BUILDING
3930 U.S. Route 23 South
Piketon vicinity
Pike County
Ohio

HAER OH-142-Z
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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-744H BULK STORAGE BUILDING

HAER No. OH-142-Z

- Location: Portsmouth Gaseous Diffusion Plant (PORTS), 3930 U.S. Route 23 South, Piketon vicinity, Scioto Township, Pike County, Ohio
- The X-744H Bulk Storage Building is located at Ohio State Plane South coordinates at easting 1828380.863815 ft, northing 370192.151502801 ft and at Universal Transverse Mercator Zone 17N easting 327439.7714 m, northing 4320370.701 m. The coordinate represents the approximate center of the X-744H Bulk 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: 1953
- 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 (DOE) was established, overseeing operations at PORTS.
- Present Use: Storage
- Significance: The X-744H Bulk Storage Building was used as a fabricating shop and workshop in 1953 and 1954. The DOE converted the building into a warehouse in 1956. From 1958 through 1964, the DOE used the X-744H Bulk Storage Building for supplemental storage of cylinders containing both pure and depleted material (uranium hexafluoride). Storage cylinders were made of metal, ranging from 2.5 to 14 tons. This building 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-BWXT Portsmouth LLC photographed the site in August 2014 and in November 2017. 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-744H Bulk Storage Building HAER was completed in 2021.

Part I. Historical Information

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

Construction History of the X-744H Bulk Storage Building:

Built in 1953, the X-744H Bulk Storage Building was used for fabricating and as a workshop until 1956, when Goodyear Atomic converted the building to a warehouse. At that time, workers removed the water lines to the building and capped the drains.

Historical drawings of building plans are provided in Appendix B (Figures 5 and 6).

Part II. Site Information

Description of the X-744H Bulk Storage Building:

The X-744H Bulk Storage Building is a 58,700 square foot, single-story, steel-framed structure with corrugated metal siding and roof over a concrete pad. The X-744H Building is located slightly east of the middle of the site, roughly 250' southeast of the X-333 Process Building. It consists of two long and narrow buildings that are paired together to create one warehouse (Appendix A, Figures 1 through 4). Each of the two structures has its own arched roof. The overall building measures approximately 100' by 600'. Siding over the steel frame consists of corrugated steel. The building rests atop a concrete slab.

The X-744H Bulk Storage Building was built during the initial phases of PORTS construction and was originally used for fabricating and as a workshop. From 1958 to 1964, the X-744H Bulk Storage Building served for supplemental storage of pure uranium materials and for storage of cylinders containing small quantities of uranium hexafluoride leftover from the uranium enrichment process, as well as spare parts and pieces of equipment related to the gaseous diffusion process. The concern was that production could not slow down, and spare parts were readily available should immediate repairs need to be made. In addition, the building housed spill control equipment. It currently houses numerous crates with spare parts from the Goodyear Atomic era.

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-744H Bulk Storage Building*, Portsmouth Gaseous Diffusion Plant, Piketon, Ohio. Washington, D.C.: U.S. Department of Energy, 2011.

Department of Energy. *Engineering Evaluation/Cost Analysis for the Plant Support Buildings and Structures at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0207&D4. Piketon, OH: U.S. Department of Energy, October 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 through 4)



Figure 2: North Side of the X-744h Bulk Storage Building, August 2014, Facing Southwest



Figure 3: South Side of the X-744H Bulk Storage Building, August 2014, Facing Northeast



Figure 4: South Side of the X-744H Bulk Storage Building, November 2017, Facing Northwest

Appendix B: Historical Drawings

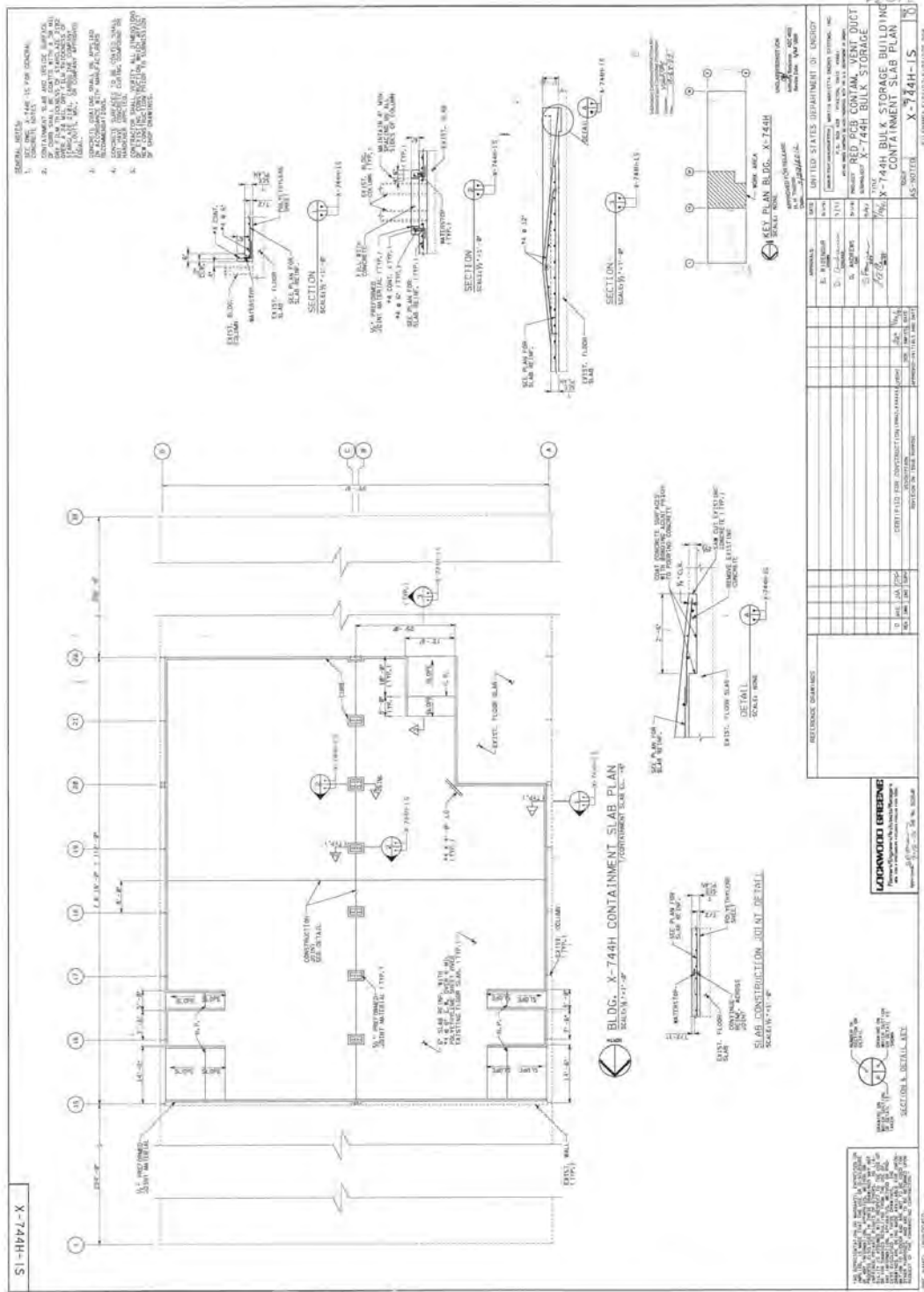


Figure 5: Containment Slab Plan

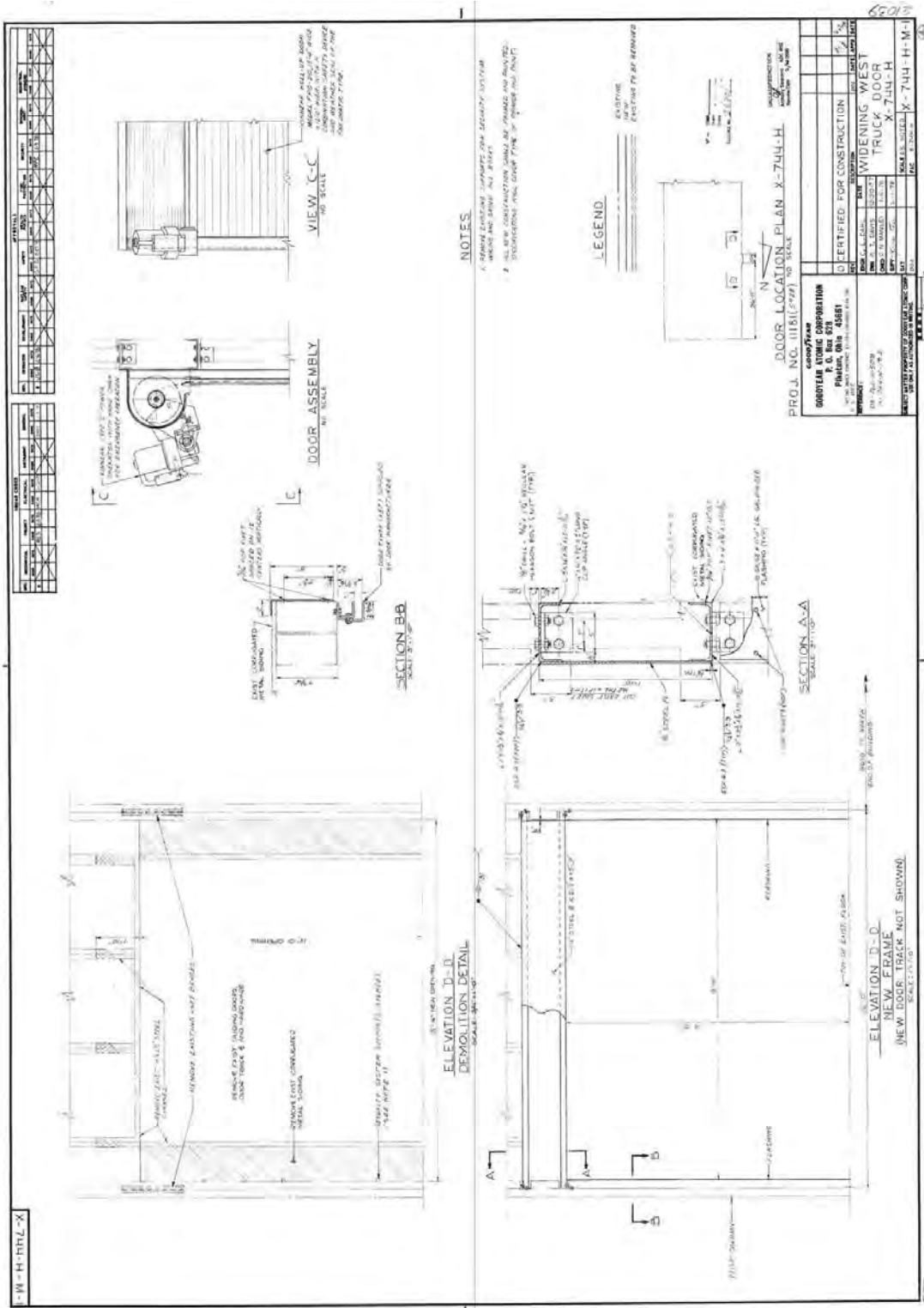


Figure 6: West Truck Door