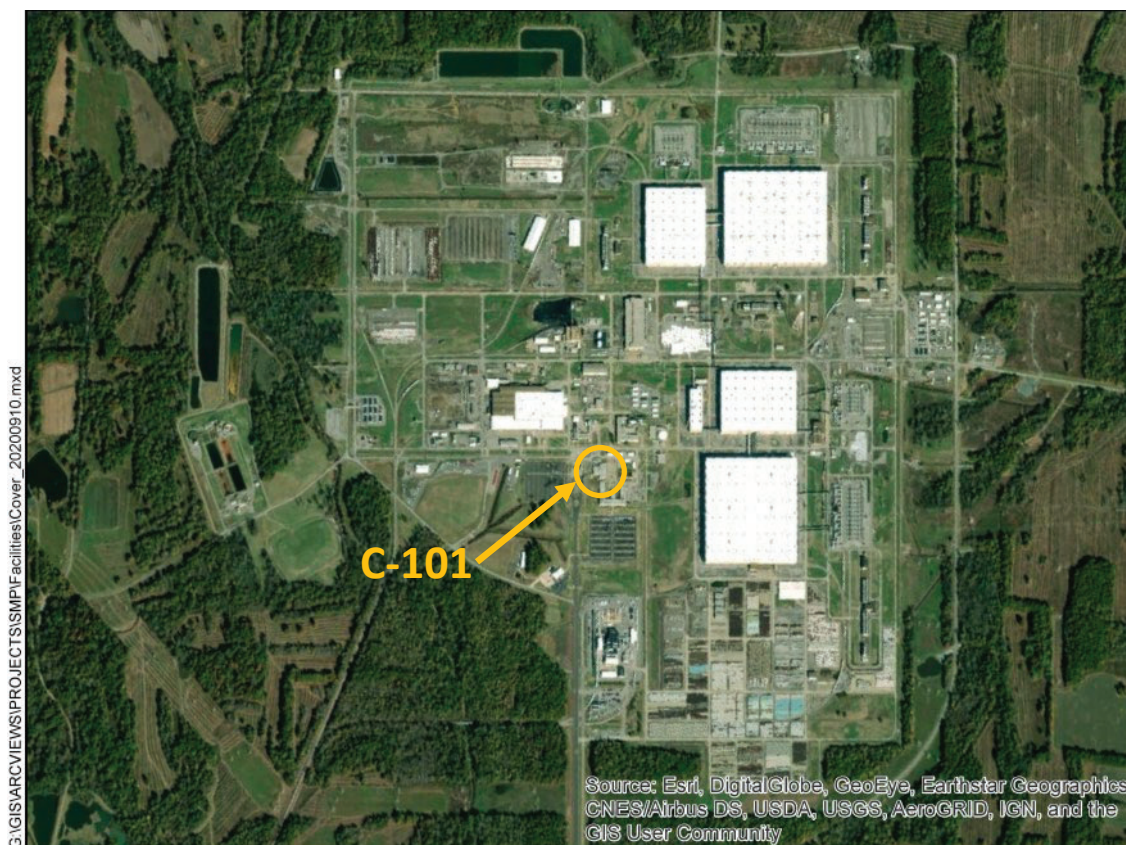


C-101 Former Cafeteria



Facility Overview Briefing

November 9, 2021

Reflects consultation with EPA and Kentucky in accordance with the Site Management Plan that occurred on November 8, 2021.

Purpose

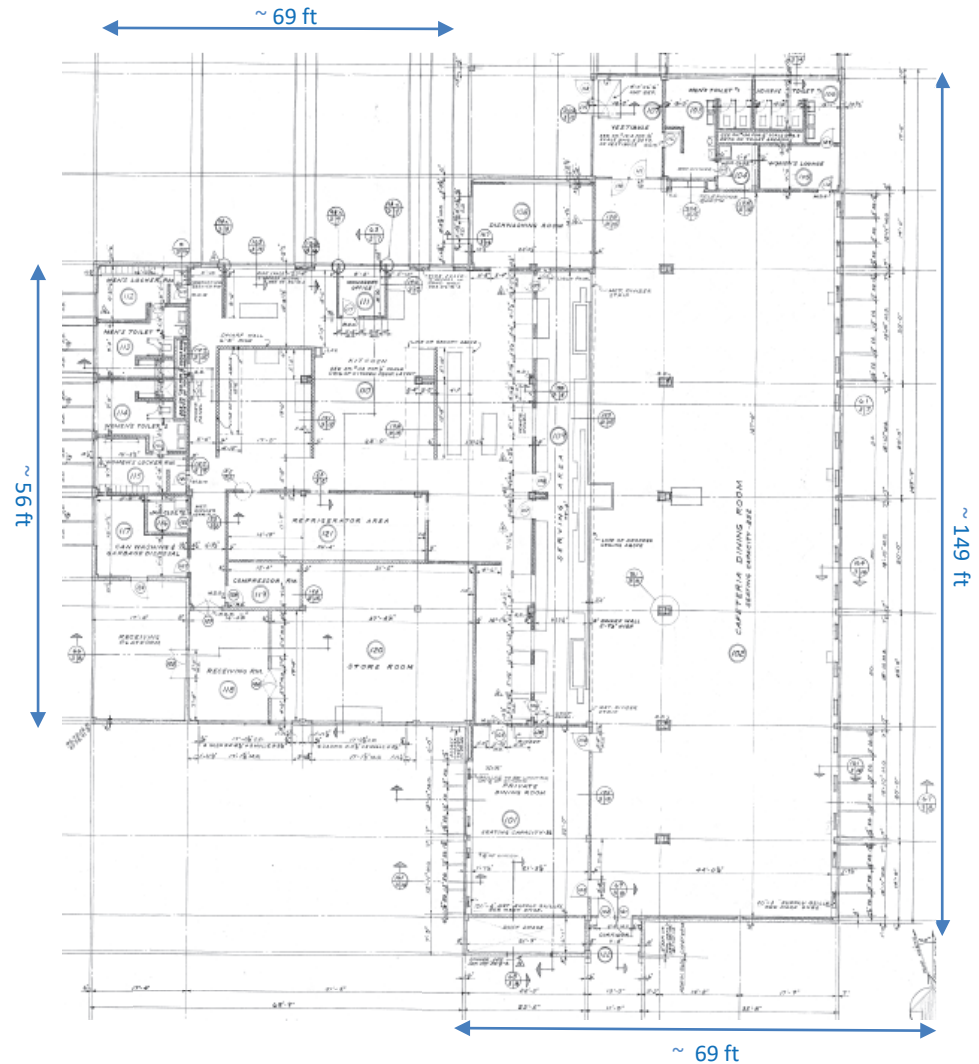
- The C-101 Former Cafeteria is a candidate for future demolition and disposal, contingent upon funding priorities.
- Listed in Appendix 6 of the Site Management Plan (SMP); requires consultation with EPA and Kentucky for CERCLA screening prior to demolition.
- This presentation is intended to serve as consultation, providing the basis for demolition and disposal of the aboveground structure outside of the FFA/CERCLA process.
- The slab/soils will remain and be subject to further CERCLA evaluation as part of a future site evaluation conducted under Appendix 4 of the SMP.



C-101 Facility Photo: 8/2021

Construction History

- C-101 is located outside the Paducah Site security fence, west of C-333. C-101 is connected by an enclosed corridor to the northwest wing of C-100.
- The facility was constructed in 1953.
- The facility is a T-shaped reinforced concrete structure with a basement.
 - ❑ The structure has multiple points of entry (pedestrian doors) and a receiving platform.
 - ❑ Roof and basement sumps are included as part of the structure design.
 - ❑ Floor drains were included as part of the structure design and a facility walkdown has confirmed that floor drains are present.
- The facility is approximately 16,956 ft².
 - ❑ 1st Floor = ~ 14,145 ft².
 - East side of 1st Floor = ~ 10,281 ft².
 - West side of 1st Floor = ~ 3,864 ft².
 - ❑ Basement = ~ 2,349 ft².
 - ❑ Rooftop Penthouse = ~ 462 ft².



First Floor Plan View: Excerpt from Engineering Drawing B2-3-A_0001_0010, dated 1953

Operational History

- C-101 was originally built and operated as a kitchen and cafeteria from its construction in 1953 to 2015.
 - ❑ Serving Area/Cafeteria Dining Room
 - ❑ Private Dining Room
 - ❑ Food prep and cooking areas including a fryer with hood
 - ❑ Store Rooms/Refrigeration Room
 - ❑ Office
 - ❑ Men's and Women's Restrooms and Lockers

- Kitchen and cafeteria cleaning products included janitorial supplies and products for cleaning food utensils.

- Kitchen and cafeteria tasks generated sanitary waste.
 - ❑ Paper products for serving food
 - ❑ Office and food wastes

- Cooking generated spent grease and oils.
 - ❑ Specific management details are unknown
 - ❑ USEC recycled spent grease and oils (dates unknown)

- On December 16, 1989, approximately 9,000 gallons of chilled water (300 ppm hexavalent chromium) spilled into the basement of C-101.
 - ❑ The total chromium content was calculated to be 22.5 lb.
 - ❑ The leak was from a chilled water coil
 - ❑ Sandbags and pipe plugs were used to contain the spill
 - ❑ Floor drains in the basement drain to a sump in the basement; water is pumped from the sump to the storm sewer system
 - ❑ Analysis revealed that no chromium above the KPDES Agreed Order limit had reached Big Bayou Creek
 - ❑ The recovered water was returned to the cooling tower basins



Former Private Dining Room Converted to Conference and Training Room



Former Food Serving Waiting Line Converted to Computer Work Station Area



Former Food Prep Area Converted to Storage

Operational History

- The rooftop penthouse was used as an exhaust room for both the kitchen and toilets.
- The basement houses facility infrastructure equipment (e.g., power supply, heat exchangers, air moving fans, steam system surge tanks, utilities, etc.).
- USEC leased the facility in the early 1990s and continued to use it until USEC ceased operations in 2014.
- The facility was transitioned from USEC to DOE in 2014.
- C-101 stopped being used as a kitchen and cafeteria around 2014 and is currently used as:
 - ❑ Conference and Training Room
 - ❑ Presentation Area
 - ❑ Computer Work Station Area
 - ❑ Dosimetry Offices
 - ❑ Storage (e.g., copiers, chairs, tables, and training equipment, etc.)
 - ❑ Records Storage



Former Cafeteria
Converted to
Presentation Area

Air Moving Fan in
Basement



Former Receiving Room
Converted to Records
Storage



Current Status

- C-101 remains operational and is used for conferences, training, presentations, computer work station area, dosimetry offices, storage of records and equipment (e.g., copiers, chairs, tables, and training equipment, etc.), and miscellaneous activities.
- Walkdown inspection conducted in August 2021 and employee interviews confirmed no unusual conditions, except staining as noted below.
 - ❑ Floor drains associated with the former kitchen and restrooms (all restrooms are out of service) tie into the sanitary sewer system.
 - ❑ Floor drains in the basement drain to a sump in the basement; water is pumped from the sump to the storm sewer system.
 - ❑ Asbestos-containing materials (ACM) and lead-based paint are located throughout the facility.
 - ❑ Ventilation duct gaskets impregnated with concentrations of PCBs that exceed 500 ppm are located in the facility, but no evidence of leaking.
 - ❑ One known chromated water spill in basement that occurred in 1989.
 - ❑ Staining on basement floor.
 - ❑ Not used for radiological storage; however, facility does contain a radioactive material area (RMA) used for copier machines and boxes of plant radios waiting for rad screening before they leave the site.
 - ❑ The facility is within a Radiological Controlled Area.
 - ❑ No satellite accumulation areas (SAA) or generator staging areas (GSA).
 - ❑ No flammable storage cabinets.



Radioactive
Material
Area

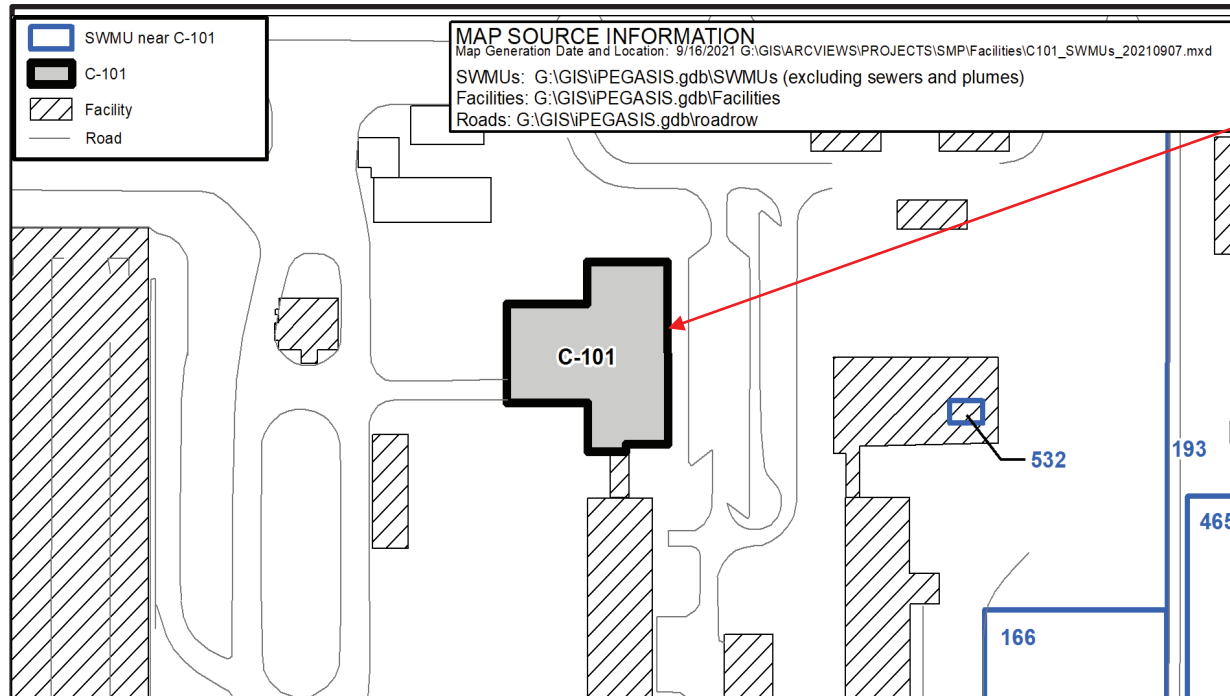


Sump Pit Near
East Wall of
Basement
Equipment
Room



Out of
Service
Restroom

Environmental Impacts (Solid Waste Management Units)



- The C-101 Former Cafeteria is not designated as a SWMU/AOC.

SWMU No.	Facility Name	Current Status	NFA Approval By
166	C-100 Trailer Complex Soil Contamination (East Side)	Soils and Slabs OU	
193	McGraw Construction Facilities (Southside Cylinder Yards)	DUF6 Footprint Underlying Soils OU	
465	Yard Rubble Pile and Crushate Storage Area (G-Yard)	NFA	KDWM 10/13/2009
532	Photographic Solution Treatment Area in the C-102 Building	NFA	KDWM 5/21/2003

Environmental Impacts

- No information to indicate a release or threatened release of a hazardous substance that would require a CERCLA evaluation for a potential response action for demolition of the aboveground structure to protect future public health or welfare or the environment.
 - ❑ C-101 was originally constructed and operated as a kitchen and cafeteria for PGDP employees from its construction in 1953 to 2015 and has been used for conferences; training; presentations; computer work station area; dosimetry offices; storage of records and equipment (e.g., copiers, chairs, tables, and training equipment, etc.); and miscellaneous activities from 2015 to present.
 - ❑ C-101 is identified in the TSCA Compliance Agreement as potentially having impregnated PCBs in ventilation duct gaskets.
 - Confirmed not to be leaking; gaskets can be evaluated for removal during deactivation prior to demolition.
 - ❑ Building materials used for construction contain lead-based paints and ACM, both of which can be effectively verified during a pre-demolition inspection and properly managed using standard demolition and waste management practices.
 - ❑ On December 16, 1989, approximately 9,000 gallons of chilled water (300 ppm hexavalent chromium) spilled into the basement of C-101. The recovered water was returned to the cooling tower basins. Some water may have reached the storm sewer system. Analysis revealed that no chromium above the KPDES Agreed Order limit had reached Big Bayou Creek (Bayou Creek).

Conclusion and Recommendations

- Walkdown inspection of the facility, employee interviews, and other reviewed historical information did not identify any unusual conditions that would pose a potential threat of environmental release during future demolition of the aboveground structure.
 - ❑ Deactivation will include removal of any accessible loose items being stored, ventilation duct gaskets, and designated RMAs (to the extent practicable) prior to demolition.
 - ❑ Any floor drains (including the sumps) will be delineated, documented, and isolated prior to demolition.
 - ❑ An evaluation will be made to determine if any measures may be appropriate to stabilize and/or isolate the basement (or portions thereof) from the main floor prior to demolition.
- Pending ceasing of operation, deactivation, and availability of funding, proceeding with demolition and disposal of the C-101 facility (aboveground structure) outside of the FFA/CERCLA process, contingent upon the fact that no additional changes have occurred that would affect the CERCLA determination of the facility prior to demolition, is recommended.
- All applicable laws, regulations, and DOE procedures/protocols will be followed to ensure the demolition and disposal of the aboveground structure occurs in a safe, compliant manner, including conducting any additional radiological characterization through confirmation radiological surveys (as necessary) to support demolition and waste disposition. ⁹

Conclusion and Recommendations

- As part of the demolition of the aboveground structure, the appropriate best management practices (BMPs) will be evaluated and implemented (as needed) to prevent/minimize the pooling and/or migration of storm water that may come into contact with any contamination that may exist on the pad/subsurface structure(s). For example, the following BMPs will be implemented as necessary:
 - ❑ Radiological surveying will occur following demolition.
 - ❑ Decontamination and/or application of fixatives and/or barriers to contaminated surfaces above regulatory posting limits.
 - ❑ Isolation measures and other types of barriers to minimize and/or control runoff/pooling of contaminated storm water [e.g., seal inlets to drains/sumps/subsurface structure(s)].

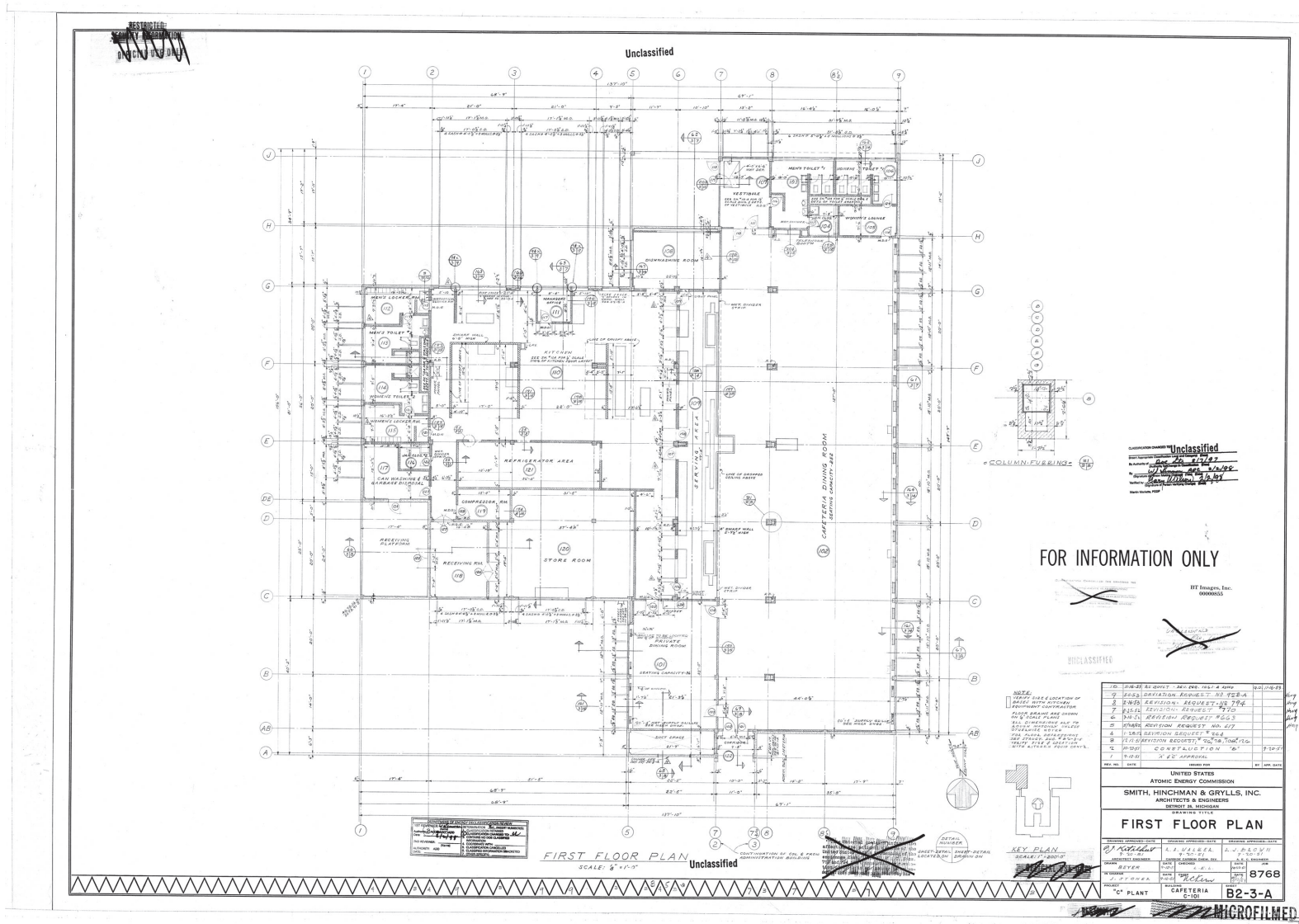
- Based on the spill of approximately 9,000 gallons of chilled water into the C-101 basement, it is recommended that the underlying slab and soils undergo further CERCLA evaluation as part of a future site evaluation conducted under Appendix 4 of the SMP.
 - ❑ Consideration will be given to coordinate the timing of the future C-101 site evaluation to occur prior to removal of the C-101 aboveground structure. The development of a schedule for future site evaluations, including C-101, will be addressed as part of the fiscal year 2022 or 2023 SMP scoping.

- Removal of the C-101 facility will be documented in the appropriate annual SMP revision.

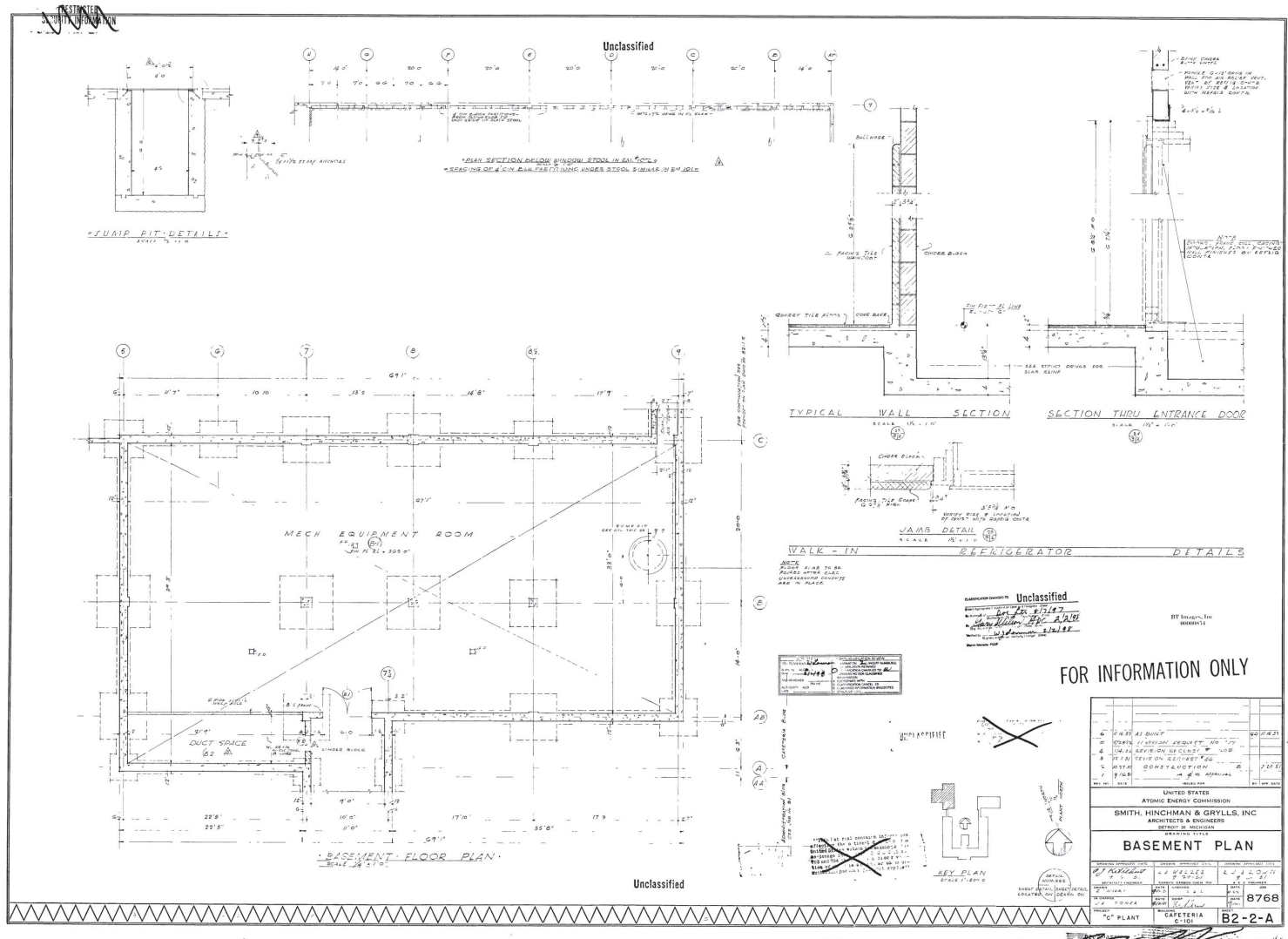
C-101 Former Cafeteria

BACKUP INFORMATION

C-101 Engineering Drawings

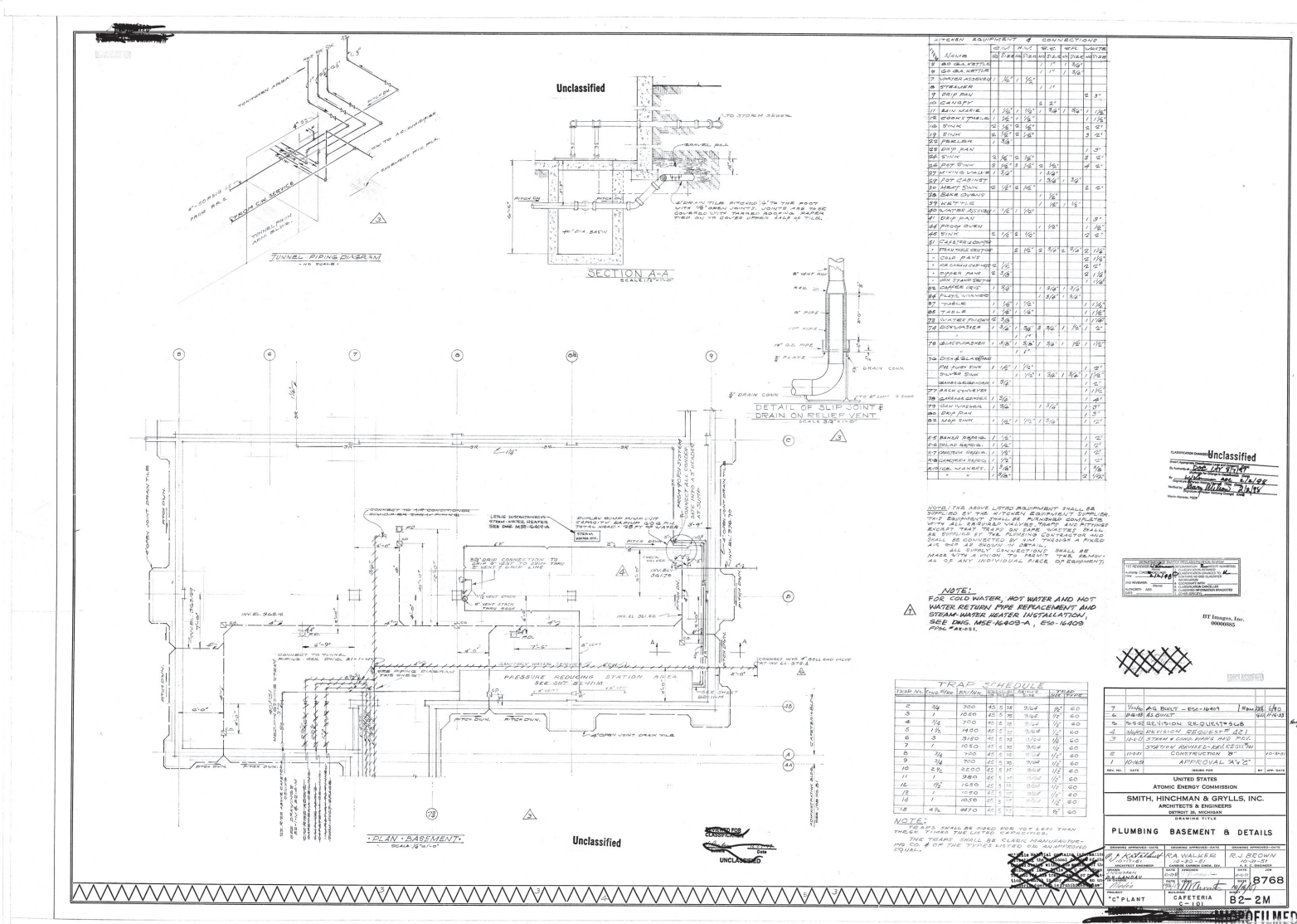


C-101 Engineering Drawings



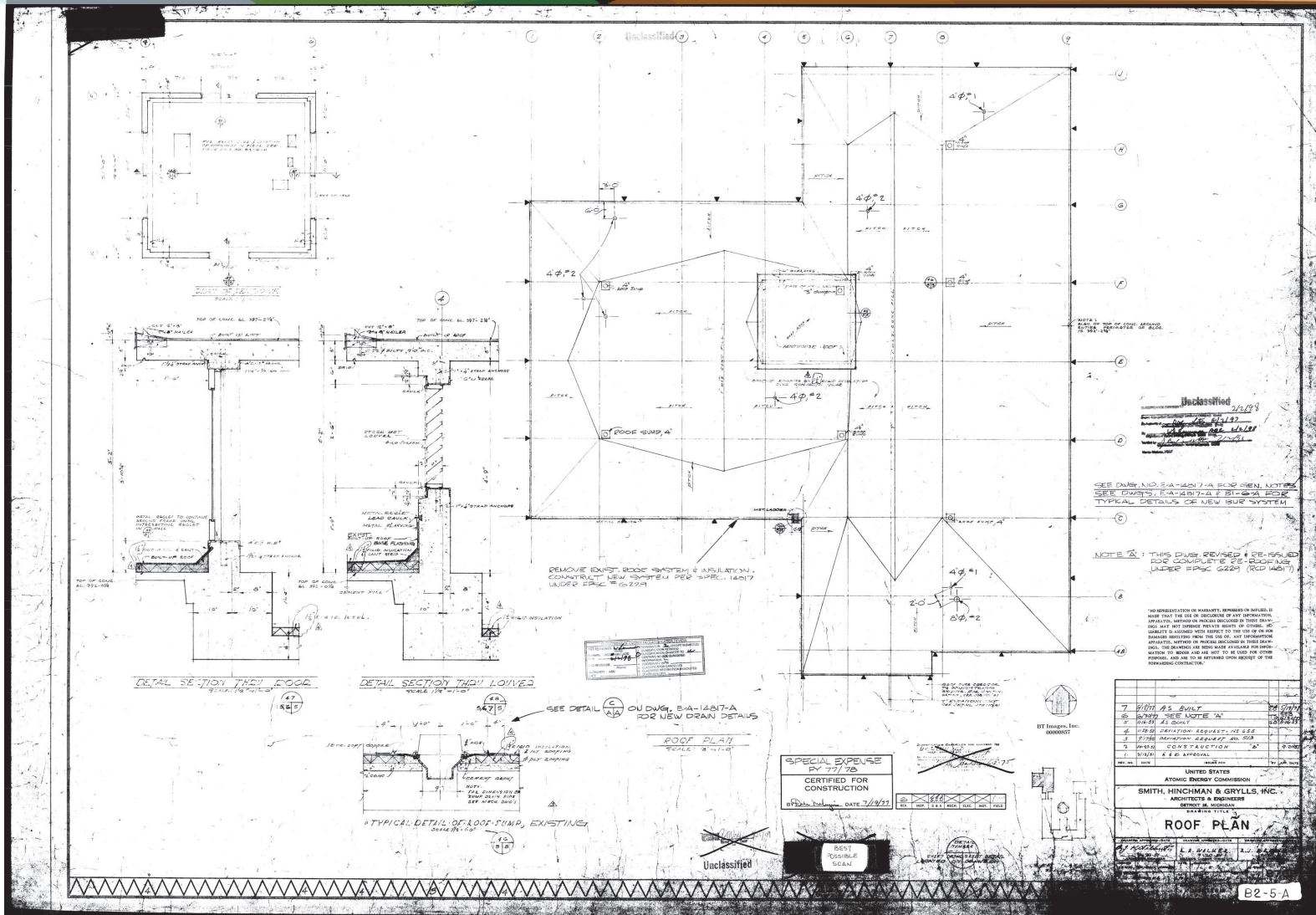
B2-2-A_0001_0006, dated 1953

C-101 Engineering Drawings



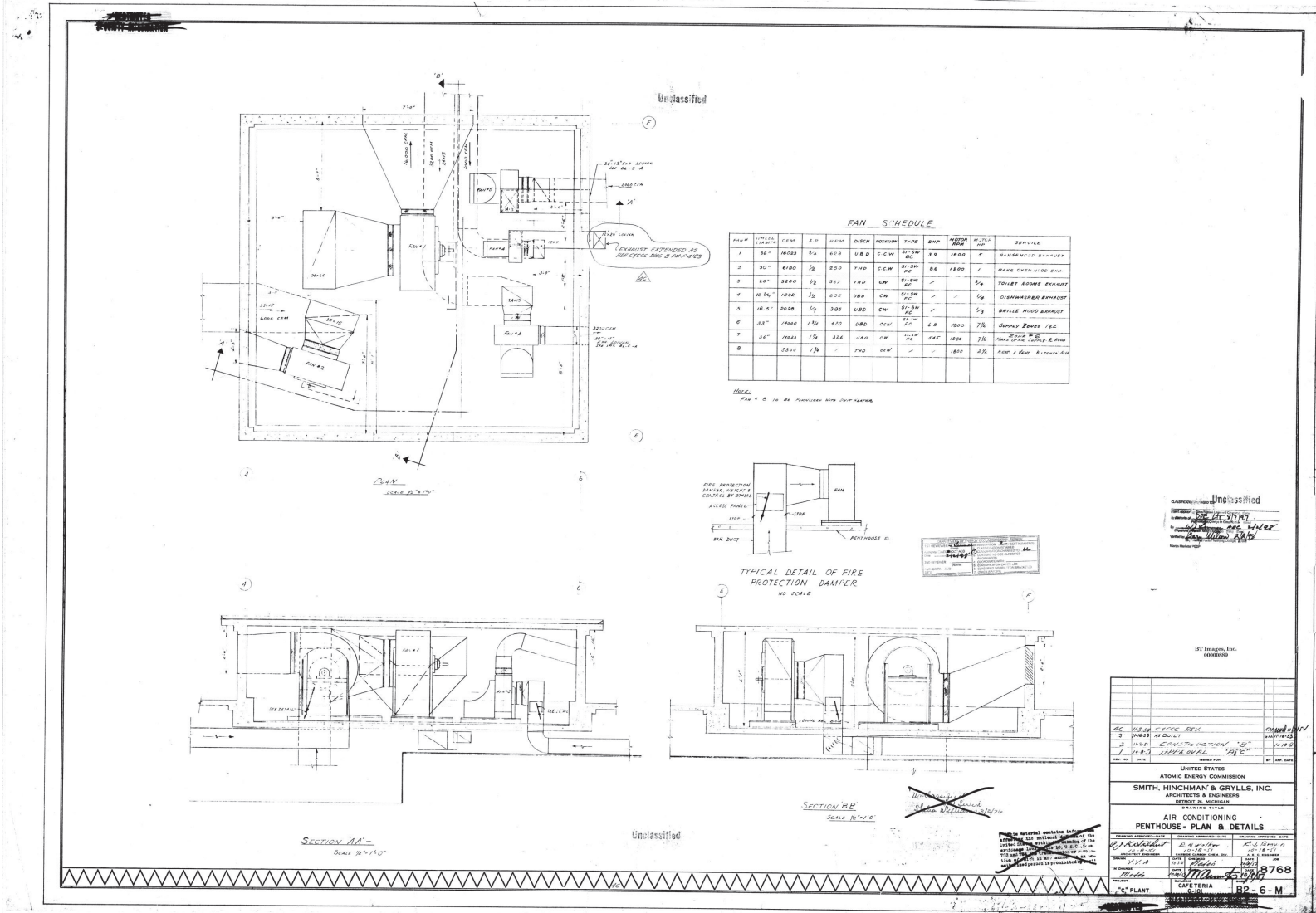
B2-2-M_0001_0007, dated 1990

C-101 Engineering Drawings



B2-5-A_0001_0007, dated 1978

C-101 Engineering Drawings



B2-6-M_0001_0004, dated 1954

C-101 Sources

- Engineering Drawings:
 - Provided in presentation
- Databases:
 - USEC's BPS
 - Issues Management System
 - Regulatory Compliance Archive Spill Log (pre-2018)
 - PCB Database (1989 – 2021)
 - Active GSAs and SAAs Master List
- Employee Interviews:
 - Facility Manager (8 years plant expertise)
 - Compliance Subject Matter Expert (45 years plant expertise)
- Documents:
 - Paducah Gaseous Diffusion Plant Site Environmental Report for 1989, ES/ESH-13/V3, October 1990
 - Report for Environmental Audit Supporting Transition of the Gaseous Diffusion Plants to the United States Enrichment Corporation, DOE/OR/1087&V5, June 1993
 - Paducah Gaseous Diffusion Plant Sitewide Strategy Facility Background Information, FPDP-RPT-0021, May 2016
 - Final TSCA FFCA Modification May 30, 2017