

Engineering Survey & Interference Report for Building 480-3D, Maintenance Field Office and Shop



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1.0 Introduction

The purpose of this survey / report is to provide guidance for the safe demolition of Building 480-3D, a 24' x 24' prefabricated structure built in the early 1950s, as well as meeting the requirements of OSHA Standard 1926.850(a).

2.0 Background

2.1 Facility Description

This document addresses Building 480-3D, Maintenance Field Office and Shop.

Building 480-3D is a 24' x 24' prefabricated structure built in the early 1950s. It is a single-story building located northwest of the 485-D Cooling Tower in the northern section of 400-D Area of the Savannah River Site (SRS).

- In the original construction the siding and roof were made of corrugated asbestos.
- The original interior walls were asbestos cement board but were replaced with drywall.
- The framing of the walls utilized steel studs. The doors were hollow metal. The windows were standard commercial, externally projected, steel sash with adjustable louvers. It was constructed with two hollow steel personnel access doors and a double, side-swinging bay door.
- The building was erected on a concrete slab and had two partitioned rooms within: a “chemical (lime) storage room” and a “chlorine cylinder room”. The building was originally used as a preparation building for treatment of cooling tower water.
- There is a north-south hall that divides the structure into two unequal parts. Each part is split into rooms of varying sizes.
- In the timeframe of 1976–1977, plans were made and executed to convert the building to office space. All equipment was removed, and domestic water service was installed for the conversion. Alterations were made to the drainage and process water supply lines within the facility.
- The original plan for the building identified multiple floor drains, hubs and clean-outs inside the building. All drains, hubs and clean-outs were plugged and grouted except one (1) hub and one (1) floor drain inside the former Lime Storage Room and one (1) clean-out and one (1) floor drain inside the former Chlorine Cylinder Tank Room.
- These exceptions remain in good condition and are still connected to the Storm Sewer drain system.
- The building is now abandoned, and the corrugated asbestos siding and roofing, as well as the interior drywall and remaining asbestos board are in the process of being removed as part of the work being performed under G-SOW-D-00009, Ref.5.4.
- Electricity was provided to the structure, but all wires were cut and/or removed during deactivation in 2013 (Reference 5.5).

2.2 Facility Condition

Based on visual inspection on October 25, 2020, the structure as defined in Reference 5.1 is in good condition, and there is no potential for an unplanned collapse of the structure either due to forces of nature and/or vibrations created by movement of heavy equipment in proximity to the building.

The proposed end-state for this facility which has no defined or anticipated future missions, is decommissioning of the above grade structure to the top of the concrete slab.

On October 29, 2019, an asbestos inspection was conducted on Building 480-3D (Q-APG-D-00010, Reference 5.3), with the results being there were numerous areas of asbestos containing materials (ACM) and presumed asbestos containing materials (PACM). All ACM and PACM shall have been abated in accordance with the statement of work for asbestos abatement, SOW-D-00009 (Reference 5.4) prior to building demolition.

- There are no potential hazards from other structures in the area.
- There are no overhead or underground powerlines proximate the building.
- Any underground lines in the general vicinity of the building are deep enough that there is no potential for damage due to heavy equipment.
- There are no fall hazards associated with Building 480-3D.

3.0 Discussion

3.1 General

All demolition work shall meet the requirements of 29CFR1926 Subpart T and SRS Manual 8Q, Procedure 104. All personnel performing demolition work shall be knowledgeable of these documents.

Other hazards not specifically identified in this engineering survey are mitigated or prevented by site programs as described in SRS Manual 1-01, MP 1.22 Integrated Safety Management System.

All other hazardous materials have already been removed or will be removed prior to demolition (References 5.4 and 5.5). All wastes generated during decommissioning shall be managed in accordance with SRS procedures. Barricades will be established in accordance with Manual 8Q, Procedure 9 prior to demolition.

3.2 Interferences

There are also no electric lines, poles & guy wires or communications lines close to or associated with this building. See also Reference 5.10 (SC-7897, Site Clearance Permit) for additional information. Prior to decommissioning 480-3D shall be confirmed isolated and disconnected from any associated utilities and rendered cold and dark (C&D) in accordance with EC&ACP guidelines and as noted in References 5.11 and 5.12.

Appendix A, Figures 1-5, provide a general lay-out of the area, interfacing facilities/utilities within proximity and defines the demolition boundary. All underground utilities are buried deep enough that the equipment may safely operate over them (Appendix A, Figure 1 and References 5.7 and 5.8).

3.3 Hazardous Energy

There is no hazardous energy associated with Building 480-3D.

3.4 Unplanned Collapse

There is no potential for an unplanned collapse associated with the decommissioning of Building 480-3D.

4.0 Summary / Conclusions

The building structure has no future mission and the end state is decommissioning of all above grade structures (References 5.1 and 5.2). The structure can be demolished using a track hoe mounted hydraulic shear; the shear will also size reduce the material and load into skip pans. A grapppler and front-end loaders may also be used to load material into skip pans. The area will be cleaned up. The equipment operators should utilize a flag person so as not to make contact with facilities/services within close proximity of the demolition area. This method of demolishing the structure with the hydraulic shear will ensure that most of the rubble lands inside the building footprint.

This engineering survey was performed to determine the condition of the structure prior to demolition. The results of the survey are that the structure is sound and conventional demolition may proceed.

5.0 References

- 5.1 G-FDE-D-00044, Rev. 0, April 28, 2020, "Facility Decommissioning Evaluation Building 480-3D, Maintenance Field Office and Shop"
- 5.2 V-PMP-D-00016, Rev. 1, dated 11/02/2020, "Decommissioning End Points Document Building 480-3D, Maintenance Field Office and Shop"
- 5.3 Q-APG-D-00010, Rev. 0, dated November 11, 2019, "Baseline Asbestos Inspection Report of 480-3D"
- 5.4 G-SOW-D-00009, Rev. 0, dated 4/7/2020, "Statement of Work for the Abatement of Asbestos Containing Material in D-Area Buildings 480-3D, 482-2D, 484-4D, 485-5D and 707-4D"
- 5.5 V-PCOR-D-00042, Rev. 0, dated 7/1/2014, "Deactivation Project Final Report Building 484-D Powerhouse and Ancillary Buildings"
- 5.6 W138795, Rev. 8, dated 12/16/52, "Chemical Bldg. 480-3D for Cooling Tower"
- 5.7 W137745, Rev. 44, dated 7/15/77, "Cooling Tower Chemical Bldg. 480-3D Piping & Arrangement Plans & Sections"
- 5.8 S5-4-615, Rev. 0, dated 3-23-76, "Office Addition Piping"
- 5.9 S5-4-610, Rev. 0, dated 3-23-76, "Office Addition Plan and Details"
- 5.10 SC-7897, dated 8/10/2020, "Site Clearance Permit to Demolish and Remove 480-3D Maintenance Field Office West of 484-4D."
- 5.11 E-SDD-D-00001, Rev. 0, dated June 22, 2020, "Verification of Hazardous Energy Isolations for Building 484-D Powerhouse and Ancillary Buildings"
- 5.12 E-SDD-D-00002, Rev. 0 (to be issued week of 8/24/2020), "Cold and Dark Letter for Building 484-D Powerhouse and Ancillary Buildings"

Appendix A – General Layout and Interfacing Facilities

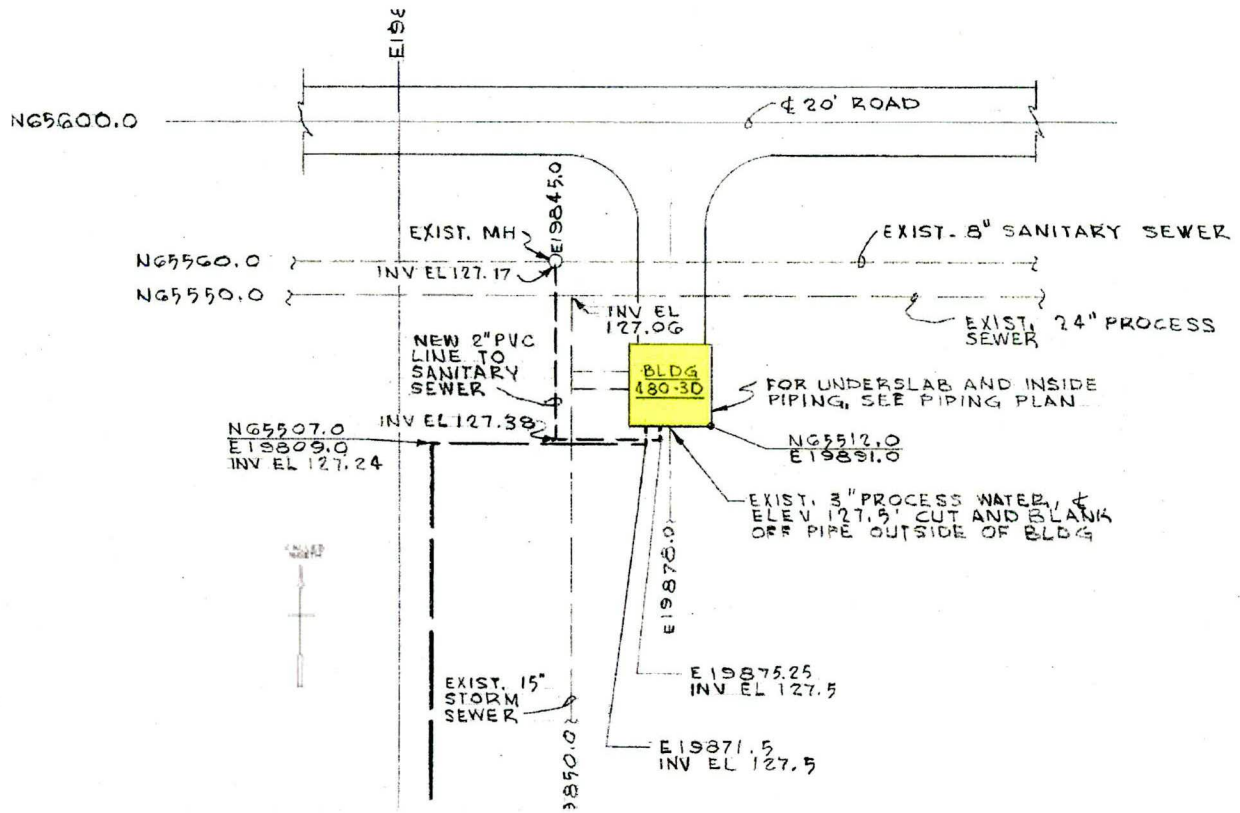


Figure 1: Excerpt from S5-4-615 (Reference 5.8), Rev. 0, dated 3/23/76

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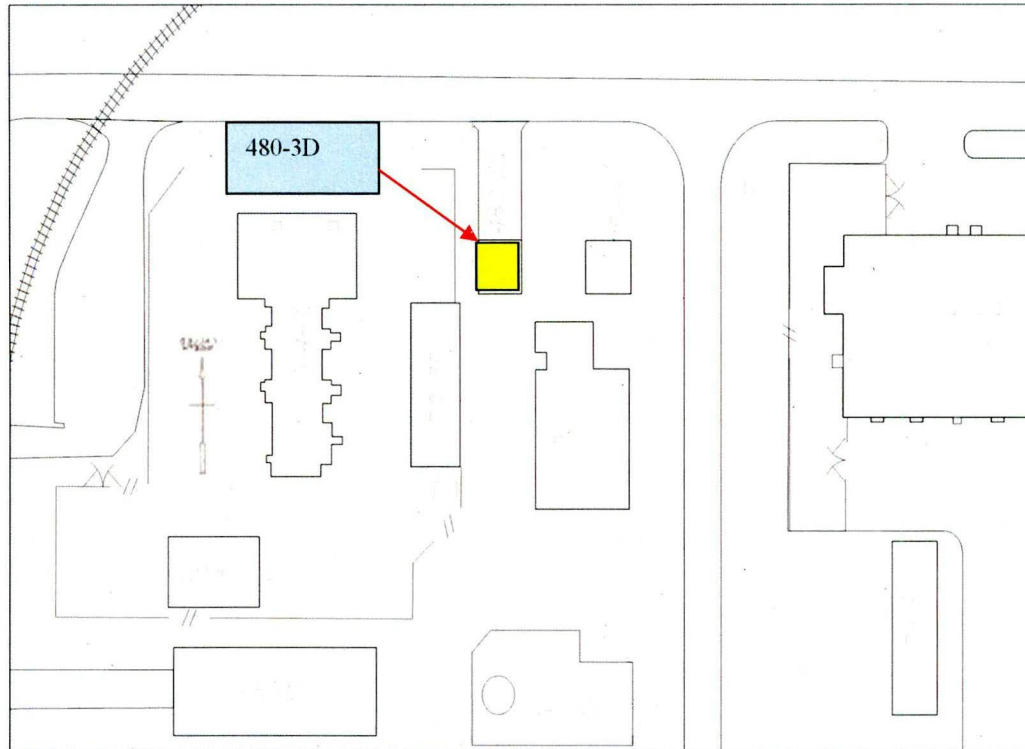


Figure 2: Building 480-3D Location

Appendix A – General Layout and Interfacing Facilities



Figure 3: Photo Building 480-3D Looking South (North Side of Building)

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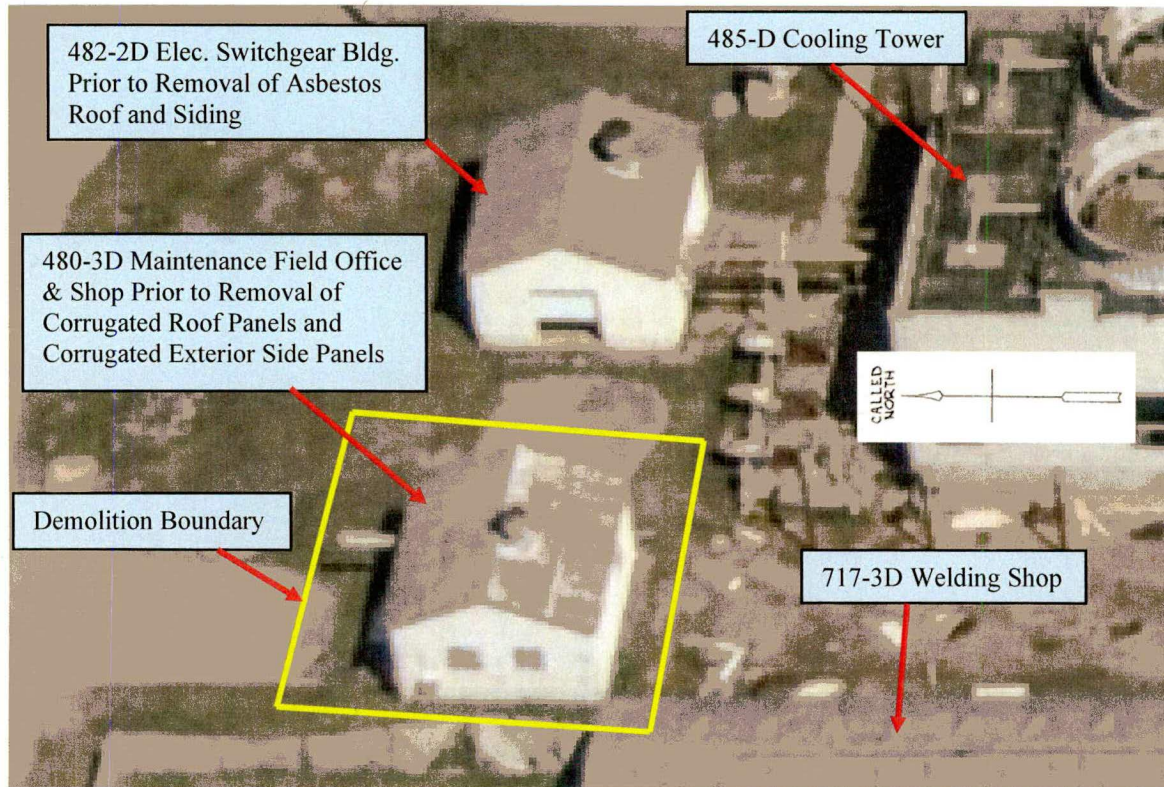


Figure 5: Aerial View of 480-3D and Surrounding Buildings/Facilities