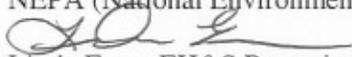




**MEMORANDUM**

**To:** NEPA (National Environmental Policy Act) File  
**From:**   
Linda Even, EH&S Reporting  
**Subject:** NEPA Activity Characterization CXA-2005-006  
**Construction and Use of Lead Storage Building**  
**Date:** September 28, 2005

This characterization is based on discussions with Suresh Chandra. The scope of work and the project drawings were also provided. An Action Information Checklist has been prepared for this action which affects about 3000 SF of already paved land and will result in moderate disturbance to the affected areas. Erosion and sediment control (E&SC) measures, if identified needed, will be in place prior to any disturbance, and the scheduled activity will be short term. Some construction scope elements follow.

- Construct a 40' by 40' storage building with one open side and height of 17'.
- Perform proper stockpiling and disposal of removed pavement and earth.
- Collect waste daily and, when containers are full, legally dispose of waste off site. Collect all recyclable waste and dispose of at designated dumpsters on-site or at an approved off site facility.

The building is used for storing lead. If the need for a 'radiation area' is determined, the landlord will address it with RadCon. It is located in a restricted area that will have minimal traffic.

**Environmental Aspects:**

- Construction
  - 1) Spills, and 2) stormwater discharge - The subcontract specifications will include all controls to mitigate potential impacts.
- Use
  - 1) Management of hazardous materials - EH&S Manual Chapters 6610, Chemical Hygiene and 6680, Lead Handling
  - 2) (Potential) activated material storage – EH&S Manual (L3 draft) Appendix EPS 60-R3.

There will be a minimal reduction in storm water runoff downstream of this project due to area compacting. No mitigation due to this minimal effect is required.

Based on the documentation provided by Facilities Management staff, and that erosion and sediment control measures will be installed if identified needed, and lead stored outside will now be kept indoors, it appears that the environmental concerns due to this project are minor and can be addressed under the following site NEPA documents:

Applicable NEPA Document	Discussion
DOE/EA-0257, Environmental Assessment (EA) for the Continuous Electron Beam Accelerator Facility, Newport News, Virginia	This EA covers the general functioning of Jefferson Lab to supports its research mission.
CEBAF-005-94, Categorical Exclusion for the Siting, Construction, and Operation of Small-Scale Support Buildings and Structures	This covers construction of small scale support structures.
(if applicable in future) TJNAF-008-96, Routine Onsite Storage of Activated Material	This covers the setup and use of areas for storing activated materials.

The provided information, along with the noted NEPA documents, serve as the basis for the Jefferson Lab determination that the subject activities fall within existing site NEPA documentation and that no further NEPA review is required.

It is understood that all conditions identified in the above NEPA documents and the general notes listed below will be followed. A list of a few key conditions follows.

**General Conditions**

- Permitted site activities will not be affected.
- There are no expected contaminated soil issues.
- Though there will be minor earth disturbance, no environmentally sensitive resources will be disturbed.

**Construction and Use Notes**

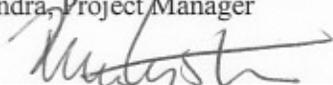
- There will be no disturbance to areas outside of the limits of construction.
- E&SC measures will be installed where identified necessary by the Lab Environmental Engineer and/or the SOTR, and maintained until the area is stabilized.
- Secondary containment will be provided for any storage of fuels or oils for construction equipment use.
- Any construction wastes generated will be temporarily stored within the limits of construction.
- The landlord will assign a building manager to authorize building protocols, including the need for special lead training.
- Any future arrangements for an activated lead storage area will be worked out with RadCon.

**Condition Citations not addressed above**

- To ensure that sensitive resources are protected, contact EH&S staff upon identification of any unusual conditions or creatures.

**Acknowledged:**

**Construction**

	9/28/05
Suresh Chandra, Project Manager	Date
	9/28/05
Keith Royston, Facilities Management Construction	Date



**NEPA BACKGROUND**  
**Proposed Action Information Checklist**

**Proposed Action Title:** Construction and Use of Lead Storage Building

**NEPA Action Managers:** Suresh Chandra

**NEPA Action Funding:** GPP Funding

**Total Estimated Cost:** \$80,000.00

**Estimated Activity Start Date:** October, 2005

**Information Compiled by:** Suresh Chandra and Linda Even

**General Information:**

Are the described actions part or parts of an ongoing EA or other NEPA activity?

Yes  No

Explain: Actions are covered in the 1987 EA.

Are any extraordinary circumstances related to these actions?

Yes  No

Explain: Lead storage buildings require extra attention to concerns involving toxic material containment and the need for proper load distribution when storing such materials.

Are actions connected to other actions with potentially significant impacts?

Yes No

Explain:

**Location for the Proposed Action:**

The new structure will be located on the paved area to the west of Hall C and east of Building 95, the Hall C beam dump cooling building.

**DESCRIPTION OF THE PROPOSED ACTION**

*Provide a narrative description of the physical activities involved in setting up and/or performing the proposed activities. Include construction and operations and primary equipment to be used. Address timeframes.*

*Describe the magnitude of the activity.*

*Provide as much quantitative information as possible relevant to the overall impact of the project on the environment.*

The proposed action is the construction of a small building for lead storage. The building is 40'x 40' with one side open. The building height is about 17'.

It will be constructed in an asphalt-paved area. This site is located on the DOE to the west of Hall C. An existing paved access road will serve for construction and future building use.

A total of ~3000 SF of area will be disturbed. If identified needed, sediment control measures will be placed near the perimeter of the affected area. Excavated asphalt and earth will be removed from the site.

The project site drains to Brick Kiln Creek. There will be a minimal reduction in storm water runoff downstream of this project due to area compacting. No mitigation due to this minimal effect is required.

Construction is expected to be accomplished in the October to December, 2005 time frame.

#### Activities

1. Installation of Erosion and Control measures as necessary.
2. Removal of asphalt
3. Excavation of foundations
4. Concrete work
5. Erection of building
6. Removal of all debris to off site location
7. Jefferson Lab use of building for storing lead

#### JUSTIFICATION AND NEED FOR THE PROPOSED ACTION/PROJECT

**What problem is this action intended to solve, and how will this action solve it?**

*What alternative solutions to this particular problem exist? Are there different technologies or techniques that could also solve the problem? If so, why were they rejected?*

*Were alternative sites for this project considered? If so, why were they rejected?*

*What would be the consequence(s) of taking NO ACTION toward the problem?*

This is a long overdue action. The storing of lead in outside storage areas has not been an ideal solution. The storage shed is required to protect lead from the elements and the environment from potential contamination.

#### DESCRIPTION OF THE AFFECTED ENVIRONMENT AND SAFETY AND HEALTH ISSUES

**Would any part of this activity involve work outside existing buildings?**

*If YES, provide a general description of the affected area and the geographic location. Indicate the entire extent of the project on the appropriate map.*

*Has the affected area ever been used as a chemical dispensing area, waste or product storage area, or been the site of any chemical spills? If so, describe.*

*Consider below ground effects, surface effects, and above ground effects.*

A total of about 3000 SF of land will be disturbed for this project. It is an 'industrial' asphalt paved site. The area is used for lead and equipment storage and is in a restricted area that will have minimal traffic. There is adjacent paved space to use as a temporary stockpile area. There

will be no immediate drainage improvements in local storm channels needed to address this new structure.

As the area is already disturbed, there are no special concerns or environmental effects due to this project. In general, removing the lead from this outdoor storage yard to the building will have a net positive effect on the local environment.

There are no specific effects on personnel or public health and safety from this construction. Again, moving lead into a controlled space will minimize the chances of any personnel or public safety issue.

Future use of the building will most likely be managed by the Physics Division. The landlord will develop building protocols that address the use of the building for its intended purpose: lead storage.

### **POTENTIAL ENVIRONMENTAL EFFECTS CHECKLIST**

*[Consider all activities that will be part of or necessary in support of this project. Include any work to be performed by subcontractors.]*

#### **1. ACTIVITY: The primary and related activities for this project would be:**

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Indoor Bench-Scale Research	
	X		Indoor Pilot-Scale Research	
	X		Outdoor Research	
	X		Technology Development	
	X		Technology Demonstration	
	X		Chemical/Physical Analysis	
	X		Maintenance / Modification	
	X		Fabrication	Fabricated building is being purchased.
	X		Production	
X			Routine Operation	Lead will be moved in and out of the building by qualified staff.
	X		Non-routine Operation	
	X		Renovation Indoors	
X			New Construction	
X			Transportation On-site	Construction subcontractor and shifting the lead to indoor upon building completion.
X			Transportation Off site	Construction subcontractor activity.
	X		Clearing / Removal of Vegetation	
	X		Other	

#### **2. Industrial Safety: Would activities (during construction or during operations) involve any of the following:**

Yes  No  Uncertain

Explain:

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Excavation/Trenching/ Clearing [indicate total area affected]	Remove asphalt and dig foundations
	X		Utilities Lockout/ Tagout	
X			Crane Operations	For erection
	X		Welding / Cutting	
	X		Confined Space Entry	
	X		Blocking of Roads	
X			Use of Scaffolds	
X			Use of Fall Protection	For erection
	X		Use of Explosives	
	X		Use of Corrosives	
	X		Use of Incompatible Chemicals	
X			Use of Compressed Gas Cylinders	
	X		High Operating Pressures	
	X		X-Rays	
	X		Radiation Protection	
X			Other	Later building use – moving the lead into the building

3. INDUSTRIAL HYGIENE PROTECTION:

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		High Noise Level	
	X		Extreme Temperature	
	X		Non-ionizing Radiation	
	X		Ionizing Radiation [refer to #10]	
	X		Ergonomic Situations	
X			Respirator or Other Air Purifying Device	Moving lead and working in building after lead present
	X		Anti-contamination Protective Clothes	
	X		Confined Space	
	X		Sanitation	
	X		Other	

**4. RESPIRATORY PROTECTION:**

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Abrasive Blasting	
	X		Acid or Alkali Cleaning of Metals	
	X		Degreasing	
	X		Decontamination	
	X		Use of Coolant and Cutting Fluids	
X			Welding, Cutting, or Brazing	For erection
X			Grinding, Polishing, or Buffing	For erection, does not involve lead
	X		Metal Thermal Spraying	
X			Painting	Building structure
	X		Electroplating	
	X		Heat Treatment of Metal Alloys	
	X		Boiler Deslagging	
	X		Furnaces	
	X		Hoods	
X			Respirator or Other Air Purifying Devices	As noted in #3 above when working with lead
	X		Other, including work with radioactive materials	

**5. MATERIALS: Would any of the following be encountered (E), handled (H), stored (S), or used (U) or disposed (D) during any phase of the project?**

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Fissionable Materials	
	X		Radioactive Materials	
X			Hazardous Materials	Lead, with building usage
	X		Mixed Materials (Haz & Rad)	
X			Toxic Materials	See above
	X		PCBs	
X			Oils	Construction - Subcontractor equipment, including sawcutting tools Operations - none
	X		Asbestos	

	X		Fibrous Insulation	
	X		Organic Chemicals	
	X		Heavy Metals	
	X		Compressed Gases	
	X		Pesticides / Herbicides	
X			Petroleum	Excavator and crane use during construction
	X		Other	

**6. EQUIPMENT:** Would any of the following types of oil-containing equipment be used during any phase of the project?

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Transformers	
	X		Capacitors	
	X		Hydraulic Presses	
	X		Other Hydraulic Equipment	
	X		Large Light Ballasts	
	X		Vacuum Pumps	
	X		Other	

**7. LIQUID WASTES:** Would the project involve disposal or discharge of liquid wastes into any collection and/or treatment systems? What and how much?

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Sanitary Wastewater	
	X		Low-Level Rad Waste	
	X		Process Waste	
	X		Other Liquid Waste, e.g. sump discharges	
	X		Discharge to Soil	
	X		Storm Sewer / Surface Water	
	X		Other	

**8. SINKS/DRAINS:** Would any of the following be present in the project area? What and how much?

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Sinks	
	X		Sumps	

	X		Floor Drains	
	X		Fume Hood Drains	
	X		Storm Drains	
	X		Other	

9. **SOLID WASTES:** Would solid wastes be generated (G), stored (S), or disposed (D) of as a result of this project? What, how much, and characteristics, if known?

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Asbestos	
	X		Radioactive	
	X		RCRA Hazardous	
	X		Mixed	
	X		Non-hazardous	
	X		Radioactively Contaminated Wipes	
	X		Contaminated Wipes	
	X		Biohazard Wastes	
	X		Oily Wastes	
X			Other	Construction debris, nothing harmful

10. **AIRBORNE EMISSIONS:** Would the project generate airborne emissions?

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Radioactive [ <i>provide dose levels to workers/public</i> ]	
	X		Hazardous or Toxic	Lead storage
	X		Mixed	
X			Other	Construction dust

11. **POLLUTION PREVENTION (P2):** Would any of the following waste minimization & P2 methods be applicable and considered for use for the proposed project?

Yes	No	Unc	ACTIVITY (Accel. & Physics Div practices)	EXPLANATION
	X		P2 Practices	
	X		Waste Volume Reduction	
	X		Waste Toxicity Reduction	
	X		Waste Segregation	

X	Equipment Reuse	
X	Materials Recycling	Only small amount of asphalt involved
X	Product/ Materials Substitution	
X	Inventory Control	
X	Energy Conservation	
X	Other	

**12. OUTDOOR STORAGE:** Would the project utilize tank, drum, bottle or other storage of any materials?

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Radioactive	
X			Hazardous or Toxic	
X			Mixed	
X			Flammable Materials	
X			Reactive Materials	
X			Corrosive Materials	
X			Explosive Materials	
X			Shelf Chemicals	
X			Old Chemicals	
X			Oil	
X			Pesticides / Herbicides	
X			Petroleum	
X			Other	Material being moved indoors at completion of building

**13. CHEMICAL OR BIOLOGICAL AGENT USE:** Will this project result in the storage and/or use of chemicals or biochemical agents in the workplace?

Yes  No  Uncertain  Not Applicable

Explain: Building to house elemental lead

Activity	Chemical & Quantity	Storage Method

**14. ACCUMULATION, TREATMENT, OR RECYCLE AREAS:** Would the project involve any of the following? Describe and quantify.

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		RCRA Satellite Areas	
	X		RCRA Central Accumulation Area	
	X		Laundry Recycle	
	X		Radioactive Material Storage	
	X		Radioactive Waste Storage	
	X		Other	

15. **BELOW GROUND STORAGE:** Would the project utilize below ground equipment or tanks for storage, control, or transport of materials?

Yes  No  Uncertain  Not Applicable

16. **RADIOLOGICAL AREAS:** Would the project be performed in any of the following radiological areas? Indicate locations, if appropriate.

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Low-Level Radiation Source Area	
	X		High Radiation Area	
	X		Regulated Area	
	X		Airborne Activity Area	
	X		Radiation Area	
	X		Very High Radiation Area	
	X		Contamination Area	
	X		Respirator Area	
X			Other	Located within the access-controlled accelerator site in the vicinity of a high radiation area.

17. **RADIATION PROTECTION CONTROLS:** Would any of the following protective or administrative controls be involved with the project? Will the project result in any exposure of workers or the public to radiation? If so, indicate dose levels.

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Radiation Work Permit	
	X		Radiation Worker Training	
	X		Respirator or Other Air Purifying Device	
	X		Anti-contamination Protective Clothes	
	X		Supplementary Dosimetry	
X			Other	Work in vicinity of high radiation building. No radiation issues in immediate vicinity of work. GERT training required to enter accelerator site.

18. RADIATION SOURCES: Would the project involve the use or storage of any radiation sources?

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		X-Ray Machine / Generator	
	X		Sealed Radioactive Material	
	X		Accelerator	
	X		Unsealed Radioactive Material	
	X		Ultraviolet Light Sources	
	X		Other	No radioactive waste would be stored

19. OPERATIONAL READINESS: Would the activity involve one or more of the following?

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Safety Review	
	X		Safety Class Items	
	X		Items under Configuration Control	
	X		Glove Boxes	
	X		Other	GERT training during construction and use. Lead worker training for building use.

20. UNCONTROLLED RELEASES: Would measures be in place to manage possible uncontrolled emissions, discharge, or spills during any phase of the project?

Yes  No  Uncertain

Explain: Construction subcontractor to provide secondary containment for fuel storage and install and maintain erosion and sediment control measures if identified needed.

**21. EMERGENCY RESPONSE: In the event of a release, would the following be readily available in the work area?**

Yes	No	Unc	ACTIVITY	EXPLANATION
X			MSDS Information	Subcontractor's responsibility Building manager to provide for operations.
X			Spill Control and Containment Materials	Subcontractor's responsibility Building manager to provide for operations.
X			Phone Numbers	Subcontractor's responsibility Building manager to provide for operations.
X			Portable Fire Extinguishers	Subcontractor's responsibility Building manager to provide for operations.
X			Warning Signs	Subcontractor's responsibility Building manager to provide for operations.
	X		Other	

**22. PERMITTING: Would the project/activity require application for or modification of any of the following permits?**

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Excavation / Penetration	Will be issued by SOTR
	X		Burning Permit	
	X		Radiation Work Permit	
	X		Safety Work Procedure	
	X		Air Permit	
	X		Fugitive Emissions Permit	
	X		Existing VPDES Permit	Construction work in accelerator area may require agency notification
	X		Permit for Groundwater Dewatering	
	X		RCRA	
	X		Corps of Engineers	
	X		NESHAPs	
X			Stormwater Management	General requirements under VAR040079 for subcontractor to provide training to prevent pollution of storm water.
	X		Stormwater During	Not applicable.

		Construction Activities	
X		Other	

**23. GROUNDWATER PROTECTION:** Does the proposed project have any of the following existing or planned features or conditions? Will this project result in any activation of soil or groundwater?

Yes  No  Uncertain  Not Applicable

Yes	No	Unc	ACTIVITY	EXPLANATION
	X		Existing Wells or Boreholes	
	X		Existing Contaminated Groundwater	
	X		Excavations requiring Dewatering during Construction	
	X		Devices that could alter Groundwater Levels	
	X		New Monitoring Wells	
	X		New Soil Borings	
	X		Other	

**24. PLANT/ANIMAL SPECIES:** Has the project area been surveyed for plants (or habitats of plants) or animals (or habitats) listed as follows?

Yes  No  Uncertain  Not Applicable

Explain: Included with 1987 EA. Survey updated in 2000. No expected impacts to plant/animals expected with this project.

**25. AQUATIC SPECIES:** Have waters in the project area been surveyed for aquatic species listed as follows?

Yes  No  Uncertain  Not Applicable

**26. HISTORICAL/ARCHEOLOGICAL:** Has the proposed site been surveyed for objects of historical/archeological significance?

Yes  No  Uncertain  Not Applicable

Explain:

**27. FLOODPLAIN:** Would the project encroach upon or take place within a floodplain?

Yes  No  Uncertain  Not Applicable

Explain:

**28. WETLANDS: Are the following conditions present at any proposed site?**

Note: Wetlands are not limited to standing water. Areas such as low forest, sedge meadows and stream banks may qualify.

Yes  No  Uncertain  Not Applicable

Explain:

**29. SITE UTILIZATION: Would the proposed project take place in any of the following?**

Yes	No	Unc	ACTIVITY	EXPLANATION
X			Developed Site(s)	The site is paved
X			Disturbed Site(s)	The site is paved
	X		Undeveloped Site(s)	
	X		Pristine Area(s)	
	X		Other	

**30. EXCAVATION ACTIVITY: If the project will require any construction activity involving excavation or soil disturbance, estimate the:**

Area to be affected: ~3000 SF

Volume of spoils: 50 CY

Expected disposition of spoils: Subcontractor will recycle asphalt if determined economically feasible. If there is any excess soil, it will be disposed of off site.

What control measures will be used to avoid soil erosion? How far away are the nearest surface water bodies or drainage channels (including potential wetlands)?

Subcontractor will install and maintain erosion and sediment control measures, if identified needed, to keep disturbance within the construction limits.

**31. ENVIRONMENTAL ASPECTS CHECKLIST**

ASPECTS: The environmental aspects associated with this project are:

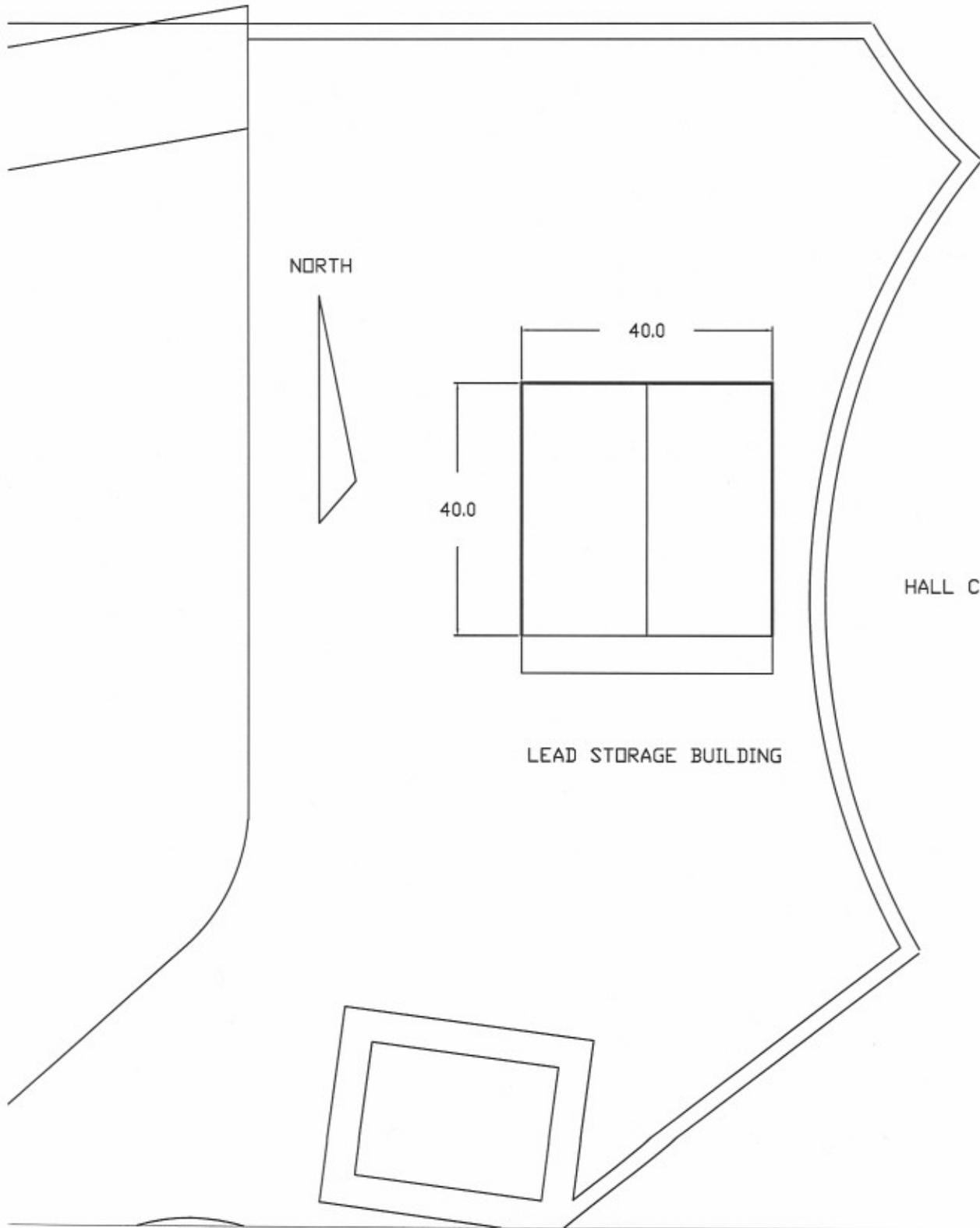
Aspect Category (air, wastewater, haz waste, solid waste, spill potential energy/nat. resources, other)	Aspect	Significant? (Y/N)	SOP number and name	Engineering Control (if needed)
<b>Construction</b>				
Spills	Oil or Oily Water spills	No	N/A	Secondary containment of oil or other liquids
Construction Wastes	Non-hazardous waste	No	N/A	Off site disposal as in specifications
<b>Operations</b>				
Hazardous material transport and storage	Lead	Yes	EH&S Manual Ch. 6680, Lead Handling	
Air Emissions	Lead	No	N/A	To be identified as needed

Provide any other project detail or explanation below:

There is no general soil disturbance as the area is paved. Excavated asphalt and the soil will be removed as it is excavated.

The project will not disturb any land that isn't within the limits of construction. The project may make temporary use of adjacent paved or gravel areas.

This has been completed by Facilities Management to the best knowledge of the construction project scope and by the Jefferson Lab Environmental Engineer for future building usage. If conditions or project scope change or changes become evident, updated information will be provided to the Jefferson Lab Environmental Engineer.



NORTH

40.0

40.0

HALL C

LEAD STORAGE BUILDING