Department of Energy

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February 19, 2021

Mr. Brian Begley
Federal Facility Agreement Manager
Division of Waste Management
Kentucky Department for Environmental Protection
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601

PPPO-02-10009609-21

Mr. Victor Weeks
Federal Facility Agreement Manager
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street
Atlanta, Georgia 30303

Dear Mr. Begley and Mr. Weeks:

TRANSMITTAL OF THE SITE EVALUATION REPORT FOR THE C-744 MATERIAL HANDLING BUILDING AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2457&D1

In accordance with Appendix 4 of the approved Site Management Plan of the Paducah Federal Facility Agreement (FFA), the U.S. Department of Energy (DOE) is submitting the D1 *Site Evaluation Report for the C-744 Material Handling Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-2457&D1 (SE), to the U.S. Environmental Protection Agency (EPA) and the Kentucky Department for Environmental Protection (KDEP) for review and comment. A joint policy issued under the DOE and EPA memorandum, dated May 22, 1995, *Policy on Decommissioning Department of Energy Facilities Under CERCLA*, establishes a framework for conducting the decommissioning of DOE facilities and also provides guidance on the use of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response authority to decommission DOE facilities. This policy states that DOE is required to conduct a removal site evaluation, in accordance with the National Contingency Plan and interagency agreements (i.e., FFA) to assess site conditions and determine whether a release, or substantial threat of release, exists at the facility. DOE, EPA, and KDEP have agreed to conduct decontamination and decommissioning activities for facilities that pose an environmental release threat at the Paducah Site under the existing FFA. Section IX, *Site Evaluation(s)*, of the FFA requires DOE to conduct integrated site evaluations that consist of the removal site evaluation, remedial site evaluation, and solid waste management unit (SWMU) assessment reports. These integrated site evaluations are to be documented in an SE report.

No information warranting the designation of the C-744 facility, or portions thereof, as a SWMU or area of concern was identified. As a result, the enclosed SE recommends that CERCLA

action for the facility is not necessary for demolition of the C-744 facility aboveground structure. Upon approval, the *Detailed Facility D&D OU Facilities List* in Appendix 4 will be updated to indicate that the facility requires no further action.

In accordance with Section XX of the FFA, EPA and KDEP have a 30-day review period to provide comments and/or approval of the document.

If you have any questions or require additional information, please contact me at (270) 441-6862.

Sincerely,

Tracey L. Duncan

Digitally signed by Tracey L. Duncan
Date: 2021.02.19 07:32:45 -06'00'

Tracey Duncan
Federal Facility Agreement Manager
Portsmouth/Paducah Project Office

Enclosures:
1. Certification Page
2. *Site Evaluation Report for the C-744 Material Handling Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-2457&D1

Administrative Record File—DDARC

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CERTIFICATION

Document Identification: ***Site Evaluation Report for the C-744 Material Handling Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,*** **DOE/LX/07-2457&D1**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Four Rivers Nuclear Partnership, LLC

MYRNA REDFIELD (Affiliate) Digitally signed by MYRNA REDFIELD (Affiliate) Date: 2021.02.18 15:41:21 -06'00'

Myrna E. Redfield, Program Manager
Four Rivers Nuclear Partnership, LLC

2/18/2021
Date Signed

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

U.S. Department of Energy

Jennifer R. Woodard Digitally signed by Jennifer R. Woodard Date: 2021.02.18 15:53:46 -06'00'

Jennifer Woodard, Paducah Site Lead
Portsmouth/Paducah Project Office
U.S. Department of Energy

Date Signed

DOE/LX/07-2457&D1
Primary Document

Site Evaluation Report for the C-744 Material Handling Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky

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DOE/LX/07-2457&D1
Primary Document

Site Evaluation Report for the C-744 Material Handling Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky

Date Issued—February 2021

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
FOUR RIVERS NUCLEAR PARTNERSHIP, LLC,
managing the
Deactivation and Remediation Project at the
Paducah Gaseous Diffusion Plant
under Contract DE-EM0004895

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ACRONYMS

ACM	asbestos-containing material
AOC	area of concern
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
NTCRA	non-time-critical removal action
OU	operable unit
RCRA	Resource Conservation and Recovery Act
RGA	Regional Gravel Aquifer
RMA	radioactive material area
SE	site evaluation
SMP	Site Management Plan
SWMU	solid waste management unit
WAG	waste area grouping

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1. FACILITY/UNIT NUMBER

C-744

2. FACILITY/UNIT NAME

Material Handling Building

3. DATE

February 18, 2021

4. REGULATORY STATUS

A joint policy issued under a U.S. Department of Energy (DOE) and U.S. Environmental Protection Agency (EPA) Memorandum dated May 22, 1995, *Policy on Decommissioning Department of Energy Facilities under CERCLA* (DOE 1995), establishes a framework for conducting decommissioning of DOE facilities and provides guidance on the use of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) response authority to decommission DOE facilities. The Policy states that DOE is required to conduct a removal site evaluation (SE) in accordance with the *National Contingency Plan* and interagency agreements [i.e., Federal Facility Agreement (FFA)] to assess site conditions and determine whether a release or substantial threat of release exists at the facility. At any facility for which DOE conducts a removal site evaluation, DOE will consult with EPA and will provide, as requested, EPA with such information necessary for EPA to review such evaluation. DOE, EPA, and the Commonwealth of Kentucky have agreed to conduct decontamination and decommissioning (D&D) activities at the Paducah Gaseous Diffusion Plant under the existing FFA. Section IX [Site Evaluation(s)] of the FFA requires that DOE conduct integrated SEs that consist of the removal site evaluation, remedial site evaluation, and solid waste management unit (SWMU) assessment reports. The integrated SEs are to be documented in a site evaluation report consistent with the format within Appendix D of the FFA (EPA 1998).

Industrial facilities that DOE has determined to pose a potential threat of release of hazardous substances to the environment are listed as part of the facility D&D Operable Unit (OU) in Appendix 4 of the Site Management Plan (SMP) (DOE 2020). The SE report shall state whether demolition of the facility should be conducted using a CERCLA Non-Time-Critical Removal Action (NTCRA) and will serve to designate any facility, or portions thereof, that are related to any identified release as a SWMU and/or area of concern (AOC).

5. LOCATION

The C-744 Material Handling Building is located in the southwestern portion of the industrialized area of the Paducah Site, northwest of the C-720 Maintenance and Storage Building. Figures 1 and 2 provide the location of C-744 within the Paducah Site.

6. APPROXIMATE DIMENSION OR CAPACITY

C-744 is a one-story, rectangular-plan building with a concrete slab floor (8-inch thickness), one-foot thick exterior concrete walls, and a roof of metal decking covered with roofing material. The approximate dimensions of the C-744 Material Handling Building are 100 ft × 64 ft, with a footprint of approximately 6,400 ft^2. Figure 3 provides a portion of Engineering Drawing E-A-12291-A showing the building floor plan. Figures 4 and 5 are photographs of the south and north exterior sides of the facility, respectively.

Additional engineering drawings are provided in the appendix to this report.

7. FUNCTION

The C-744 Material Handling Building initially functioned as a bulk storage area and was later converted into maintenance training areas, shop space, and office/break space for the surveillance and maintenance group. The south side of the building is used for an oil storage area. A portion of the shop space was used for repairing and/or fabricating chokers and slings using a hydraulic press (melted lead was used to bind wire rope for the slings at the splice, or joints).

8. BRIEF HISTORY

C-744 was constructed in 1952 and from construction to present has been utilized for various activities as described above. C-744 was leased to the United States Enrichment Corporation in the early 1990s until 2014 when the gaseous diffusion plant was deleased and returned to DOE. Since 2014, C-744 continues to be utilized as shop space and office/break space for the surveillance and maintenance group.

9. OPERATIONAL STATUS

Operating

10. DATES OPERATED

1952 to present

11. SITE/PROCESS DESCRIPTION

The C-744 Material Handling Building is currently being utilized as shop space and office/break space for the surveillance and maintenance group. Degreasers, lubricants, and oils are stored for routine maintenance activities; these materials will be removed during deactivation and will not be present during building demolition. The roof leaks in the center of the roof and water runs down the interior wall. Floor drains in the building discharge to the storm-water sewer system. Some of the storage cages in the south work area of C-744 are designated as Radioactive Material Areas (RMAs) because the equipment is required to be maintained in an RMA. Figures 6 through 9 depict some of the interior areas of C-744.

12. WASTE DESCRIPTION

The primary waste stream that would be generated during D&D of C-744 would be nonhazardous construction and/or demolition debris. This demolition debris will be comprised primarily of concrete and metal structural components, metal piping, miscellaneous equipment, insulation, and roofing. Wastes such as polychlorinated biphenyl (PCB)-containing liquids and electrical components and/or Resource Conservation Recovery Act (RCRA) mixed waste sludges or liquids, are not anticipated to be generated with exceptions noted below.

Limited infrastructure items remain in the facility (e.g., light fixtures, exit lights, alarms) that could potentially contain *de minimis* quantities of regulated items (e.g., mercury, lead, or PCBs), which will be removed to the extent practicable during deactivation. Building materials used for construction could contain lead-based paints and asbestos-containing materials (ACM). In addition, lead was used in C-744 to bind wire rope splices for the chokers/slings. Generation of any residual amounts of these materials during demolition will be properly containerized, characterized, and dispositioned in accordance with applicable regulatory requirements.

Some of the storage areas in the facility are designated as RMAs since some of the tools and equipment are required to be maintained in an RMA; however, no specific areas within the building are currently designated as radiological contamination areas.

13. WASTE QUANTITY

Based on the waste forecast information available in the *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 2018), the waste volume associated with C-744 is approximately 3,387 yd^3. Approximately 2,061 yd^3 is categorized as low-level waste and 1,326 yd^3 is assumed to be nonhazardous solid waste.

14. SUMMARY OF ENVIRONMENTAL SAMPLING DATA

Limited sampling of environmental media has occurred near C-744. Sample location 720-015 is located within 50 ft of the C-744 facility (see Figure 10). Groundwater in the Regional Gravel Aquifer (RGA) was sampled at this location as part of the Waste Area Grouping (WAG) 27 Remedial Investigation (DOE 1999). This sample was collected in 1998. This sample location is upgradient of C-744 based on groundwater flow direction in the RGA. Due to its age, lack of other corroborating sampling points, and consistent with use of historical data for Paducah Site projects, data from the sample have not been utilized for determining representativeness of current conditions. Environmental sample results from this location do not reflect potential releases from C-744 that might have occurred during operations.

15. DESCRIPTION OF RELEASE AND MEDIA AFFECTED

Groundwater:	None Known
Surface Water:	None Known
Soil:	None Known
Ecology Affected (i.e., threatened/endangered species):	None Known
Air:	None Known

There have been no known documented spills or releases of materials reported from this facility to the environment. During a December 2020 walkdown inspection, there was no evidence of oil leaks or visible staining on the floor. By virtue of the nature of past operations within the C-744 building, and the equipment and materials contained therein, the building is not considered a potential risk to human health and the environment.

16. DOCUMENTATION OF NO RELEASE

There have been no known spills or releases of materials from the C-744 building to soil, groundwater, or surface water. The C-744 building has not been identified as a SWMU or AOC, nor does it contain any areas designated as a SWMU or AOC. No information was identified warranting the designation of the C-744 building or portions thereof as a SWMU or AOC.

17. IMPACT ON OR BY OTHER SWMU/AOC

There is no evidence that this facility impacts or is being impacted by other SWMUs and/or AOCs.

18. PRELIMINARY REMEDIATION GOAL COMPARISON

Not Applicable. Sample location 720-015 is located within 50 ft of the C-744 facility; however, this location only sampled groundwater in the RGA as part of the WAG 27 Remedial Investigation (DOE 1999). This

sample was collected in 1998. This sample location is upgradient of C-744 based on groundwater flow direction in the RGA. Due to its age, lack of other corroborating sampling points, and consistent with use of historical data for Paducah Site projects, data from the sample have not been utilized for determining representativeness of current conditions.

19. RCRA FACILITY INVESTIGATION NECESSARY

A RCRA Facility Investigation is not recommended as necessary for C-744. There is no evidence of a release, or threat of any release, to the environment from the building, and the facility is not believed to pose a risk to human health or the environment.

20. CERCLA NTCRA NECESSARY

A CERCLA NTCRA is not recommended as necessary for demolition of the facility structure. Limited infrastructure items potentially containing *de minimus* quantities of regulated items and any RCRA-regulated items remaining in the building will be removed, to the extent practicable, during deactivation. Building materials used for construction could contain lead-based paints and ACM, both of which can be verified effectively during a predemolition inspection, contained, and properly managed using standard demolition and waste management practices. Deactivation will include removal of any accessible loose items being stored, including those areas designated as RMAs, to the extent practicable prior to demolition.

A December 2020 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 structure and therefore, the demolition and disposal of the facility can be conducted outside of the FFA/CERCLA process.

All applicable laws, regulations, and DOE procedures and/or 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.

21. OU ASSIGNMENT

C-744 currently is assigned to the Facility D&D OU, Other Buildings (non-SWMUs) (SMP Appendix 4) (DOE 2020).

22. REFERENCES

DOE (U.S. Department of Energy) 1995. *Policy on Decommissioning of Department of Energy Facilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*, Joint policy from the U.S. Department of Energy and U.S. Environmental Protection Agency, May 22, 1995.

DOE 1999. *Remedial Investigation Report for Waste Area Grouping 27 at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1777/V1&D2, U.S. Department of Energy, Paducah, KY, June.

DOE 2018. *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-0244&D2/R2, U.S. Department of Energy, Paducah, KY, July.

DOE 2020. *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2021*, DOE/LX/07-2450&D1, U.S. Department of Energy, Paducah, KY, November.

EPA (U.S. Environmental Protection Agency) 1998. *Federal Facility Agreement for the Paducah Gaseous Diffusion Plant*, DOE/OR/07-1707, U.S. Environmental Protection Agency, Atlanta, GA, February.

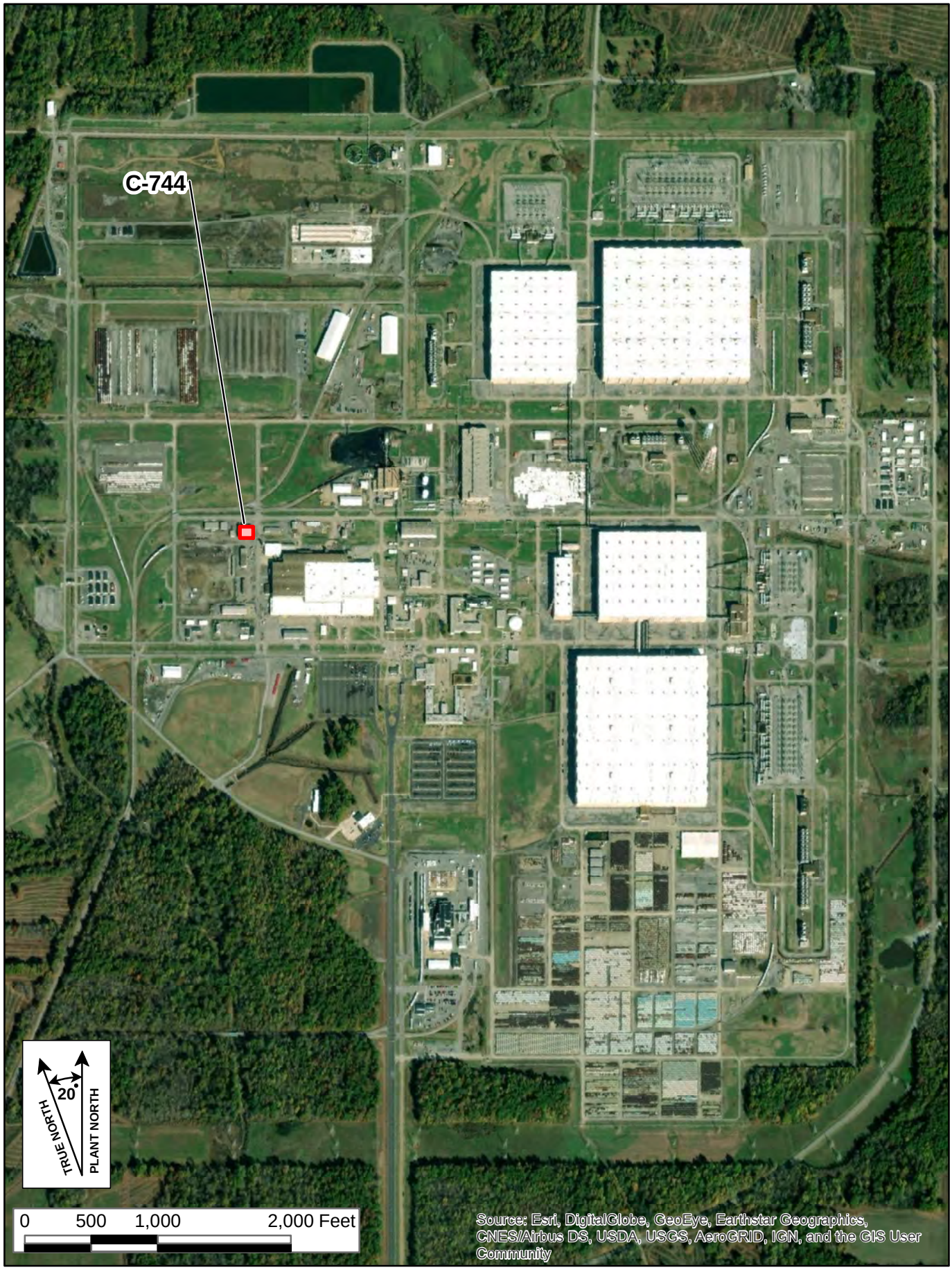

Figure 1. Aerial Photograph Showing the C-744 Material Handling Building Location

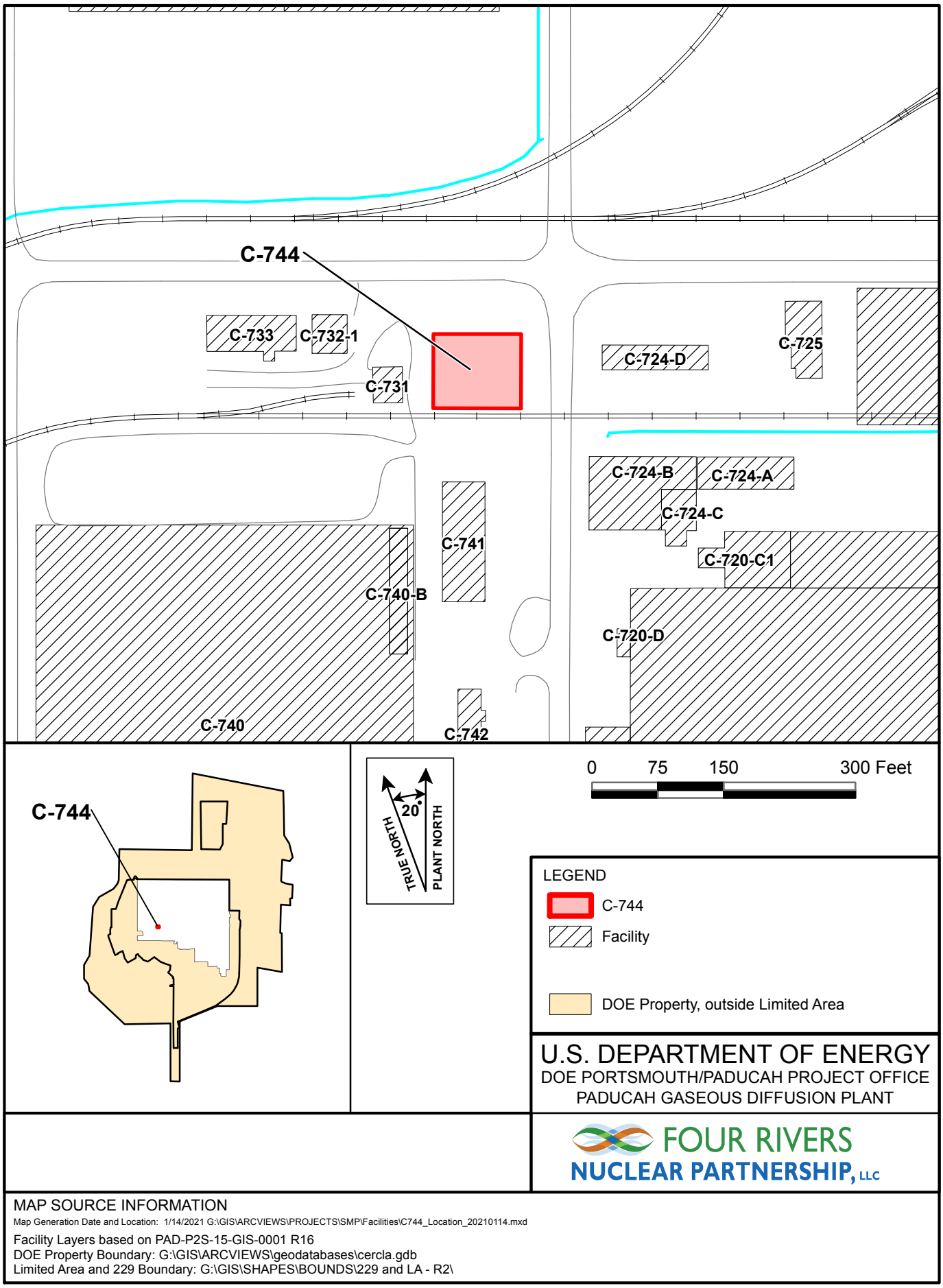

Figure 2. Map Showing C-744 Material Handling Building Location

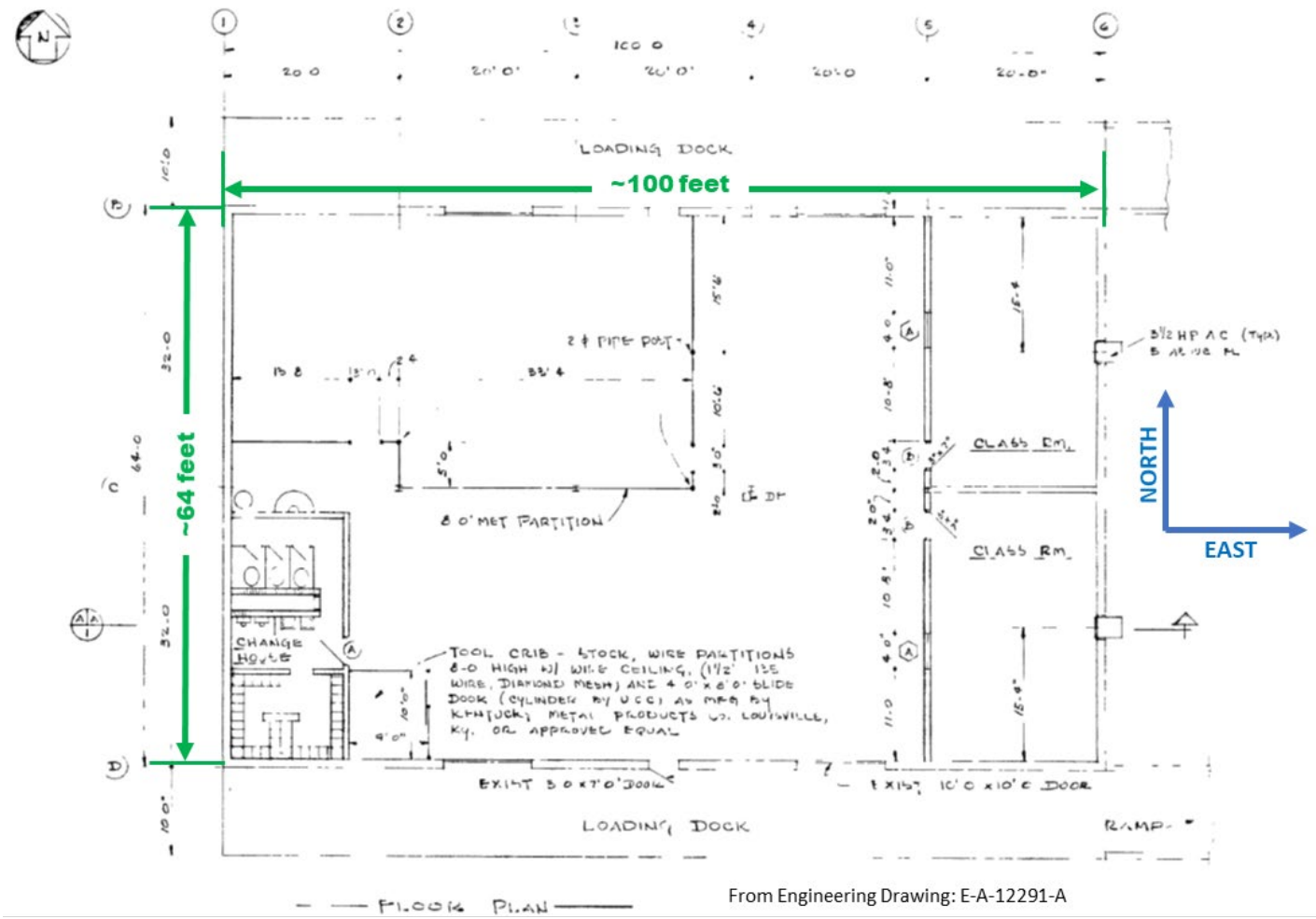

Figure 3. Floor Plan for C-744

Figure 4. Exterior View of the South Side of C-744 (Looking North)

Figure 5. Exterior View of the North Side of C-744 (Looking South)

Figure 6. Interior View of the C-744 Material Handling Building (North Aisleway)

Figure 7. Storage Cage in the Northwest Corner Interior of C-744

Figure 8. Hydraulic Press and Miscellaneous Equipment in the North Work Area of C-744

Figure 9. Break Room in South Work Area of C-744

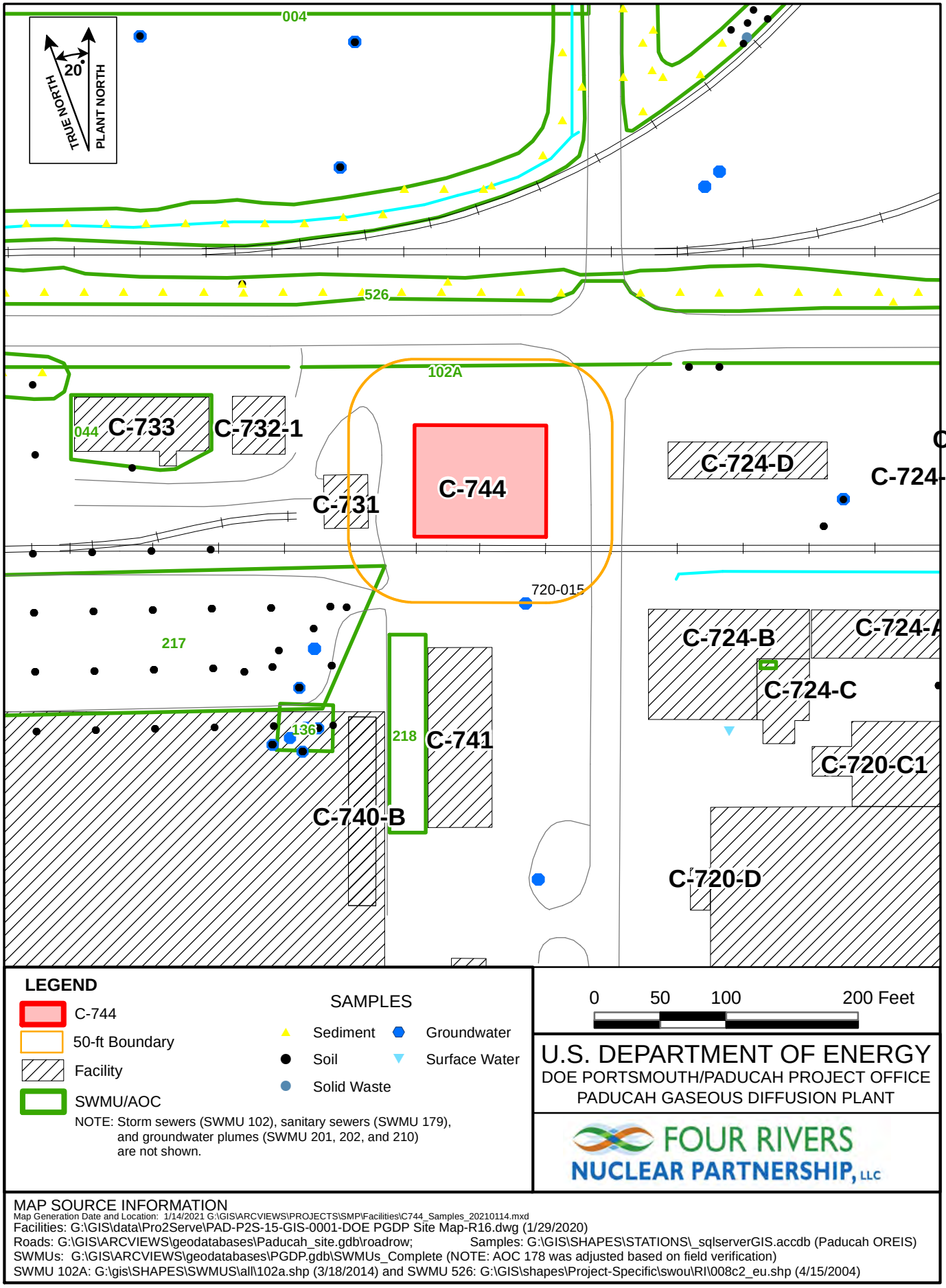

Figure 10. SWMU and Sample Locations near C-744

APPENDIX

ENGINEERING DRAWINGS

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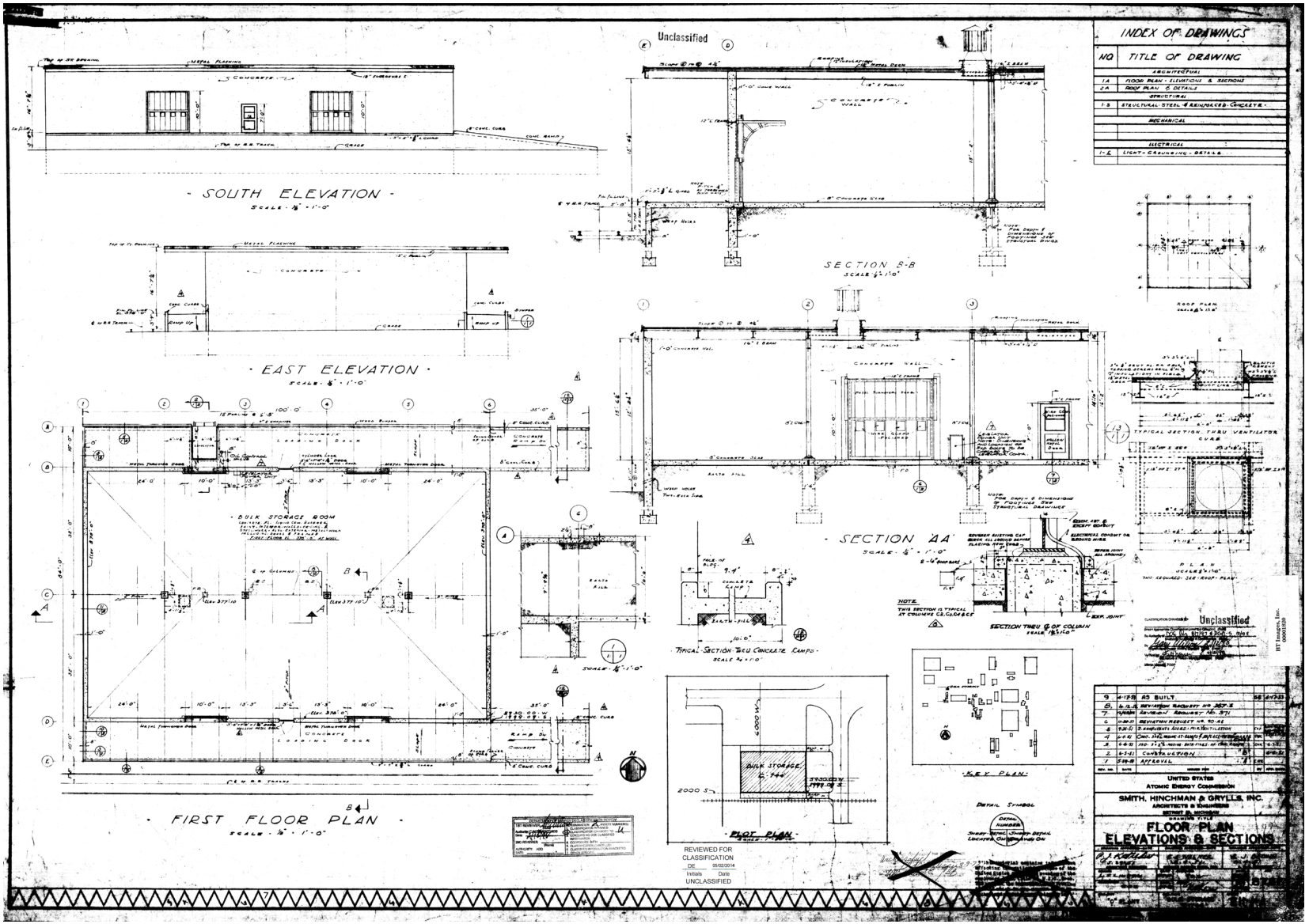

Figure A.1. Engineering Drawing E11-1-A

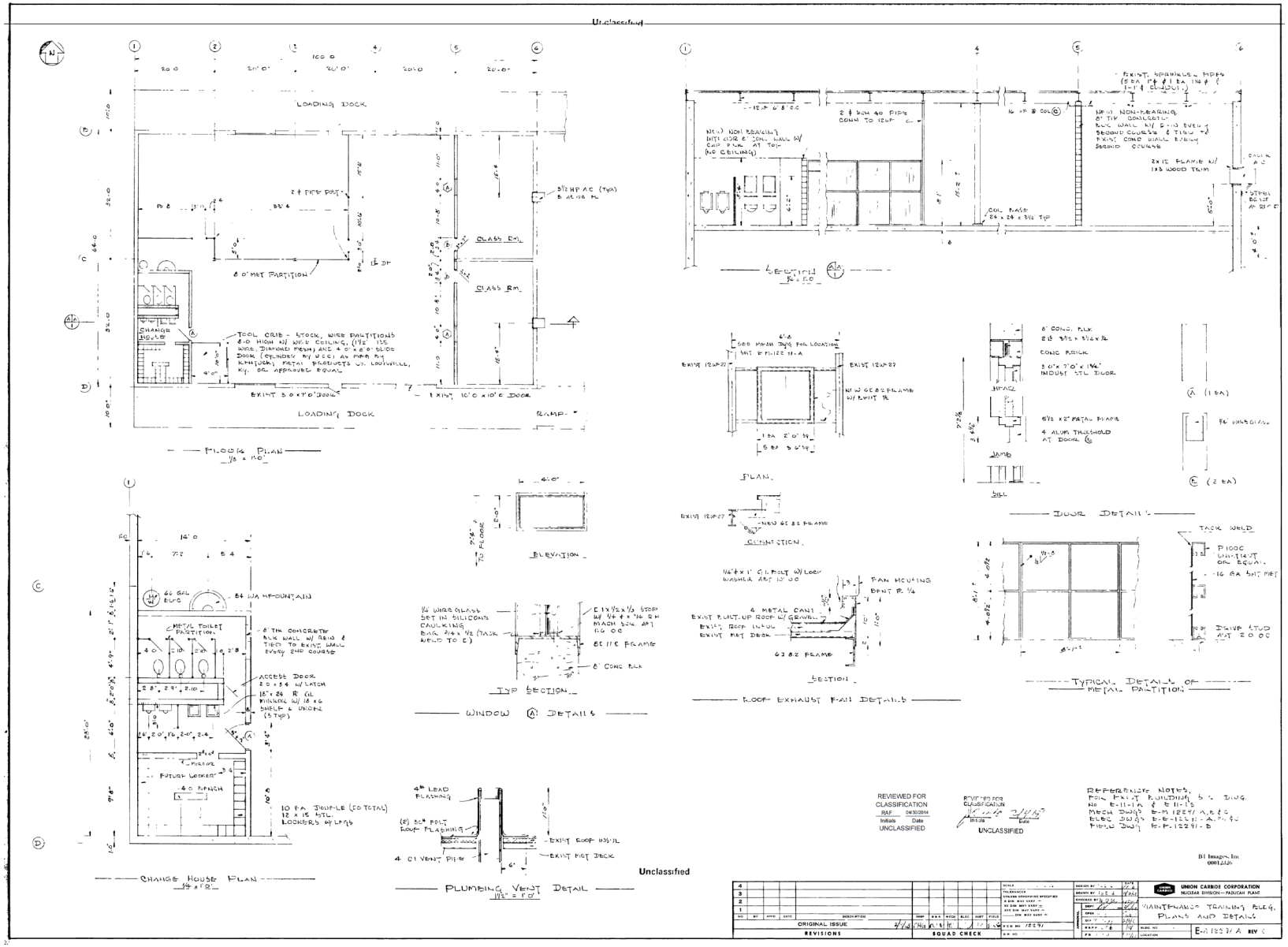

Figure A.2. Engineering Drawing E-A-12291-A