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By Terri.Drake at 9:47 am, Aug 27, 2024

Department of Energy

Portsmouth/Paducah Project Office
1017 Majestic Drive, Suite 200
Lexington, Kentucky 40513
(859) 219-4000

August 26, 2024

Ms. April Webb
Interim Federal Facility Agreement Manager
Division of Waste Management
Kentucky Department for Environmental Protection
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601

PPPO-02-10028774-24

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

Dear Ms. Webb and Mr. Weeks:

TRANSMITTAL OF THE SITE EVALUATION REPORT FOR THE C-611-T BOOSTER PUMP STATION PLANT WATER AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2464&D2/R1, AND SITE EVALUATION REPORT FOR THE C-611-P BUILDING—PUMP HOUSE AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2463&D2/R1

References:

1. Email from S. Smiley to V. Weeks, L. Garner, and A. Webb, "KDEP RE: Potential Upcoming Demo at PGDP," dated May 24, 2024
2. Email from V. Weeks to L. Garner and A. Webb, "EPA RE: Potential Upcoming Demo at PGDP," dated May 24, 2024
3. Email from L. Garner to V. Weeks and A. Webb, "Potential Upcoming Demo at PGDP," dated May 23, 2024

Enclosed for your approval is the certified *Site Evaluation Report for the C-611-T Booster Pump Station Plant Water at the Paducah Gaseous Diffusion Plant, Paducah Kentucky*, DOE/LX/07-2464&D2/R1, and certified *Site Evaluation Report for the C-611-P Building—Pump House at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2463&D2/R1.

Both of these site evaluation reports were revised to address additional information that was discovered indicating that chromated water likely did pass through the C-611-T and C-611-P facilities.

If you have any questions or require additional information, please contact me at (270) 217-2029.

Sincerely,

APRIL LADD

Digitally signed by APRIL LADD
Date: 2024.08.26 18:31:45 -05'00'

April Ladd
Federal Facility Agreement Manager
Portsmouth/Paducah Project Office

Enclosures:
1. Certification Page for C-611-T
2. *Site Evaluation Report for the C-611-T Booster Pump Station Plant Water at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2464&D2/R1
3. *Site Evaluation Report for the C-611-T Booster Pump Station Plant Water at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2464&D2/R1–REDLINE
4. Certification Page for C-611-P
5. *Site Evaluation Report for the C-611-P Building—Pump House at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2463&D2/R1
6. *Site Evaluation Report for the C-611-P Building—Pump House at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2463&D2/R1–REDLINE

Administrative Record File—ARF-ARR

cc w/enclosures:
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CERTIFICATION

Document Identification: ***Site Evaluation Report for the C-611-P Building—Pump House at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2463&D2/R1**

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: 2024.08.14 15:27:41 -05'00'

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

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

APRIL LADD
Digitally signed by APRIL LADD
Date: 2024.08.26 18:33:26 -05'00'

April Ladd, Paducah Site Lead/Date Signed
Portsmouth/Paducah Project Office
U.S. Department of Energy

DOE/LX/07-2463&D2/R1
Primary Document

Site Evaluation Report for the the C-611-P Building—Pump House at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky

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DOE/LX/07-2463&D2/R1
Primary Document

Site Evaluation Report for the the C-611-P Building—Pump House at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky

Date Issued—August 2024

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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CONTENTS

FIGURES

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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
RCW	recirculating cooling water
SE	site evaluation
SMP	site management plan
SWMU	solid waste management unit

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1. FACILITY/UNIT NUMBER

C-611-P

2. FACILITY/UNIT NAME

Building—Pump House

3. DATE OF ORIGINAL SITE EVALUATION REPORT

August 26, 2021

4. DATE OF SITE EVALUATION REPORT REVISIONS

August 13, 2024

5. 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 SE, 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 DOE to conduct integrated SEs that consist of removal SEs, remedial SEs, and solid waste management unit (SWMU) assessment reports. The integrated SEs are to be documented in an SE report consistent with the format in 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 2023). 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).

Based on the historical information associated with past operations at the C-611-P Building—Pump House (C-611-P), there is no evidence of a release, or threat of any release, to the environment from the building, and C-611-P is not believed to pose a risk to human health or the environment. As a result, a CERCLA NTCRA action is not warranted for demolition of the C-611-P facility structure. Additionally, there is no historical information warranting the designation of C-611-P, or portions thereof, as a SWMU or AOC; therefore, a Resource Conservation and Recovery Act (RCRA) facility investigation is not recommended as necessary for C-611-P. As a result, the removal of the structure will be conducted outside of CERCLA.

6. LOCATION

C-611-P is located in the west-central portion of the industrialized area of the Paducah Site and is south of and adjacent to the C-600 Steam Plant. Figures 1 and 2 provide the location of C-611-P within the Paducah Site.

7. APPROXIMATE DIMENSION OR CAPACITY

C-611-P is a one-story, rectangular plan building constructed of structural steel and corrugated siding (i.e., transite), with a concrete slab floor (6-inch thickness) and a roof of metal decking covered with roofing material. The approximate dimensions of C-611-P are 26.5 ft × 34 ft, with a footprint of approximately 901 ft^2. Figure 3 provides a portion of Engineering Drawing C-12-1-A that shows the building floor plan. Note that a third pump foundation, located north of the two foundations indicated, is not shown in this figure. Figures 4 and 5 are photographs of the east and west exterior sides of the facility, respectively.

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

8. FUNCTION

C-611-P was used for the distribution of the plant water system and primarily served the recirculating cooling water (RCW) systems at C-631, C-633, C-635 and C-637, and the C-600 chiller operations. The water that passed through this system was processed in the same manner as the sanitary water process, except (1) rapid sand filtration, (2) post-chlorination, and (3) sodium hexametaphosphate (phosphate) treatment were not used. Though not confirmed, the water distributed through C-611-P might have been chromated using a corrosion inhibitor that was pumped into the 36-inch plant water line at the C-611 Water Treatment Plant as noted in a 1960s training manual (UCNC 1962).

C-611-P is adjacent and connected to the C-600 Steam Plant and is on the northern loop of the plant water system, with the booster pumps located aboveground inside the building. During uranium enrichment operations, these pumps were used to boost pressure on the water system and flows were controlled based on temperatures and other operating conditions. The facility is currently in standby mode, and miscellaneous equipment (e.g., hoses, chairs, empty buckets, cables, rods, tools, refrigerator, refrigerant gas cylinders, ladders) is currently stored in open areas of the facility.

9. BRIEF HISTORY

C-611-P was constructed in 1953 and was utilized (as described above) from its construction until the cessation of uranium enrichment operations in 2013. C-611-P 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 cessation of uranium enrichment operations, C-611-P has been in standby mode.

10. OPERATIONAL STATUS

Standby

11. DATES OPERATED

1953 to 2013

12. SITE/PROCESS DESCRIPTION

C-611-P consists of three pumps and associated piping located adjacent to the C-600 Steam Plant. While in operation, C-611-P was used for plant water distribution and primarily served the RCW systems at C-631, C-633, C-635 and C-637, and the two C-600 chillers. C-611-P is on the northern loop of the plant water system, with three booster pumps located aboveground inside the building. During uranium enrichment operations, the pumps in this facility were used to boost pressure on the water system. Figures 6 through 9 provide interior views of C-611-P.

The facility is currently in standby mode, and miscellaneous equipment is currently stored in open areas of the facility.

13. WASTE DESCRIPTION

The primary waste stream generated during D&D of C-611-P would be nonhazardous demolition debris. This demolition debris will be comprised primarily of concrete and metal structural components, transite siding, metal piping, miscellaneous equipment, insulation, and roofing. Waste such as polychlorinated biphenyl (PCB)-containing liquids and electrical components and/or RCRA-mixed waste sludges or liquids are not anticipated to be generated with exceptions noted below. During the facility walkdown inspection, transite siding was identified and it was noted that the pipe insulation likely includes asbestos-containing material (ACM).

Limited infrastructure items remain in the facility (e.g., light fixtures, exit lights, alarms) that could contain *de minimis* quantities of regulated items (e.g., mercury, lead, PCBs), which will be removed to the extent practicable during deactivation. Building materials used for construction could contain lead-based paints and ACM. C-611-P, while physically connected to the C-600 Steam Plant, does not contain ventilation duct work with PCB-impregnated gaskets (EPA 2017). Generation of any residual amounts of these materials during demolition will be properly containerized, characterized, and dispositioned in accordance with applicable regulatory requirements.

14. 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-611-P is approximately 303 yd^3. Approximately 298 yd^3 is categorized as nonhazardous solid waste, with 5 yd^3 estimated to be Toxic Substances Control Act waste due to ACM.

15. SUMMARY OF ENVIRONMENTAL SAMPLING DATA

No sampling of environmental media has occurred within 50 ft of C-611-P (see Figure 10).

16. 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 March 2021 walkdown inspection, paint chips were noted on the ceiling and floor and there was some minor staining on the floor. The staining on the floor, located mainly beneath piping, pumps, and valves, was rusty in color and not indicative of a release of a petroleum product. There was no evidence of oil leaks from any of the equipment. A floor drain in the building discharges to the storm-water sewer system. By virtue of the nature of past operations within the C-611-P building, and the equipment and materials contained therein, the building is not considered a potential risk to human health and the environment.

17. DOCUMENTATION OF NO RELEASE

There have been no known spills or releases of materials from C-611-P to soil, groundwater, or surface water. C-611-P 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-611-P building or portions thereof as a SWMU or AOC.

18. 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.

19. PRELIMINARY REMEDIATION GOAL COMPARISON

Not Applicable. No sampling of environmental media has occurred near C-611-P.

20. RCRA FACILITY INVESTIGATION NECESSARY

A RCRA Facility Investigation is not recommended as necessary for C-611-P. There is no evidence of a release, or threat of any release, to the environment from the building; the facility is not believed to pose a risk to human health or the environment.

21. CERCLA NTCRA NECESSARY

A CERCLA NTCRA is not recommended as necessary for the demolition of the facility structure. Limited infrastructure items that potentially contain *de minimis* quantities of regulated items and any potentially RCRA-regulated items that remain 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 and then contained and properly managed using standard demolition and waste management practices. Deactivation will include the removal of any accessible loose items being stored, to the extent practicable, prior to demolition. Any floor drains will be delineated and isolated prior to demolition.

A March/April 2021 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, DOE procedures, and/or DOE protocols will be followed to ensure the demolition and disposal of the aboveground structure occurs in a safe and compliant manner. Additional radiological characterization through confirmation radiological surveys will be conducted, as necessary, to support demolition and waste disposition.

22. OU ASSIGNMENT

C-611-P currently is assigned to the Facility D&D OU, Sewage System and Water Treatment Ancillary Facilities (SMP Appendix 4) (DOE 2023).

23. 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.

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 2023. *Site Management Plan Paducah Gaseous Diffusion Plant Paducah, Kentucky Annual Revision—FY 2024*, DOE/LX/07-2495&D1, U.S. Department of Energy, Paducah, KY, December.

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.

EPA 2017. *Modification to the February 20, 1992 Compliance Agreement Between the United States Department of Energy and the United States Environmental Protection Agency Washington D.C. Toxic Substance Control Act In RE: Department of Energy Facilities: Paducah, Kentucky Portsmouth, Ohio,* U.S. Environmental Protection Agency, Washington, DC, May 30, 2017.

UCNC (Union Carbide Nuclear Corporation) 1962. *Operations Division Training Manual Volume III: Utilities Operations*, KYD-1482, Union Carbide Corporation, Paducah Plant, Paducah, KY, July 11.

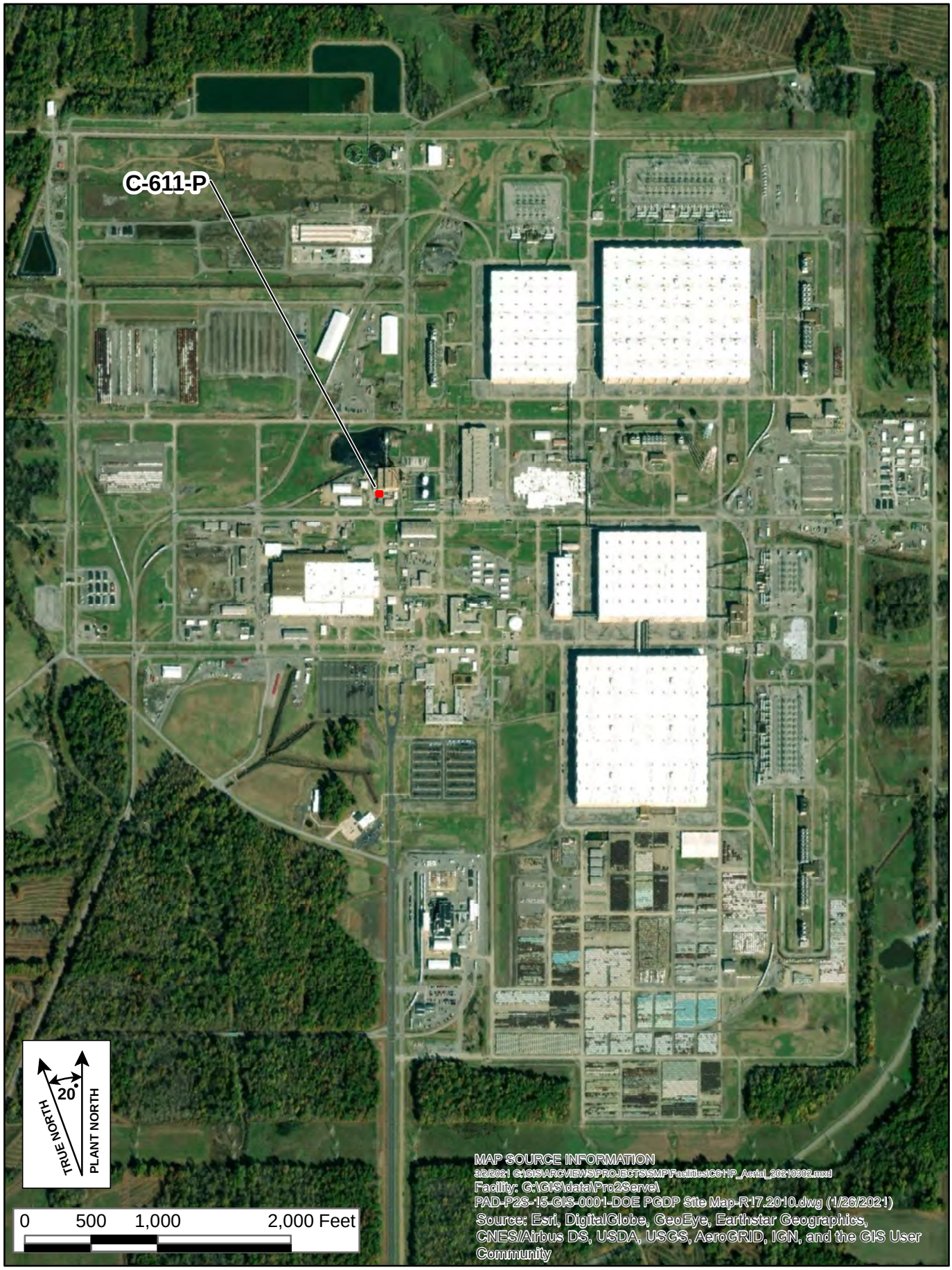

Figure 1. Aerial Photograph Showing the C-611-P Building—Pump House Location

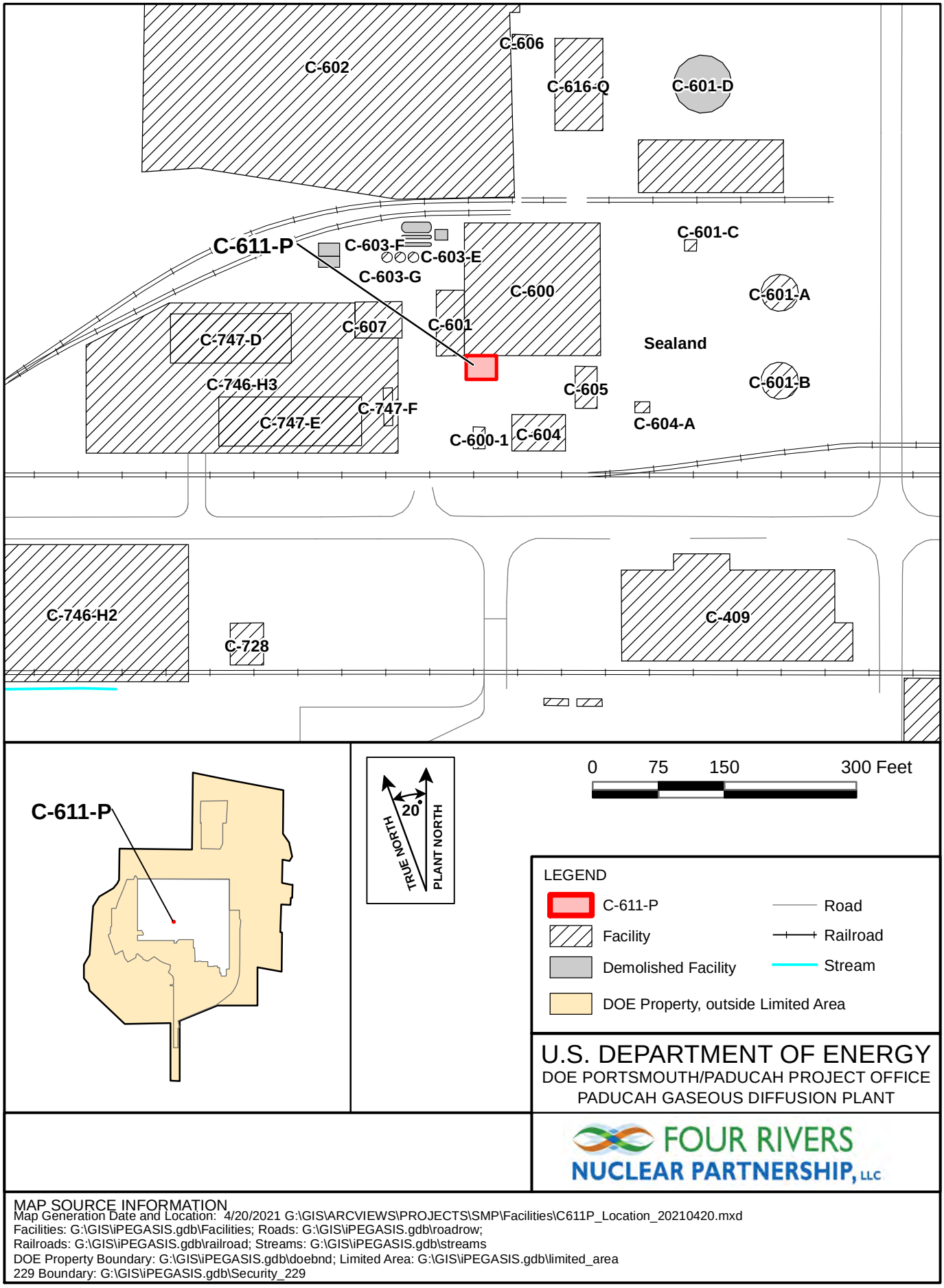

Figure 2. Map Showing the C-611-P Building—Pump House Location

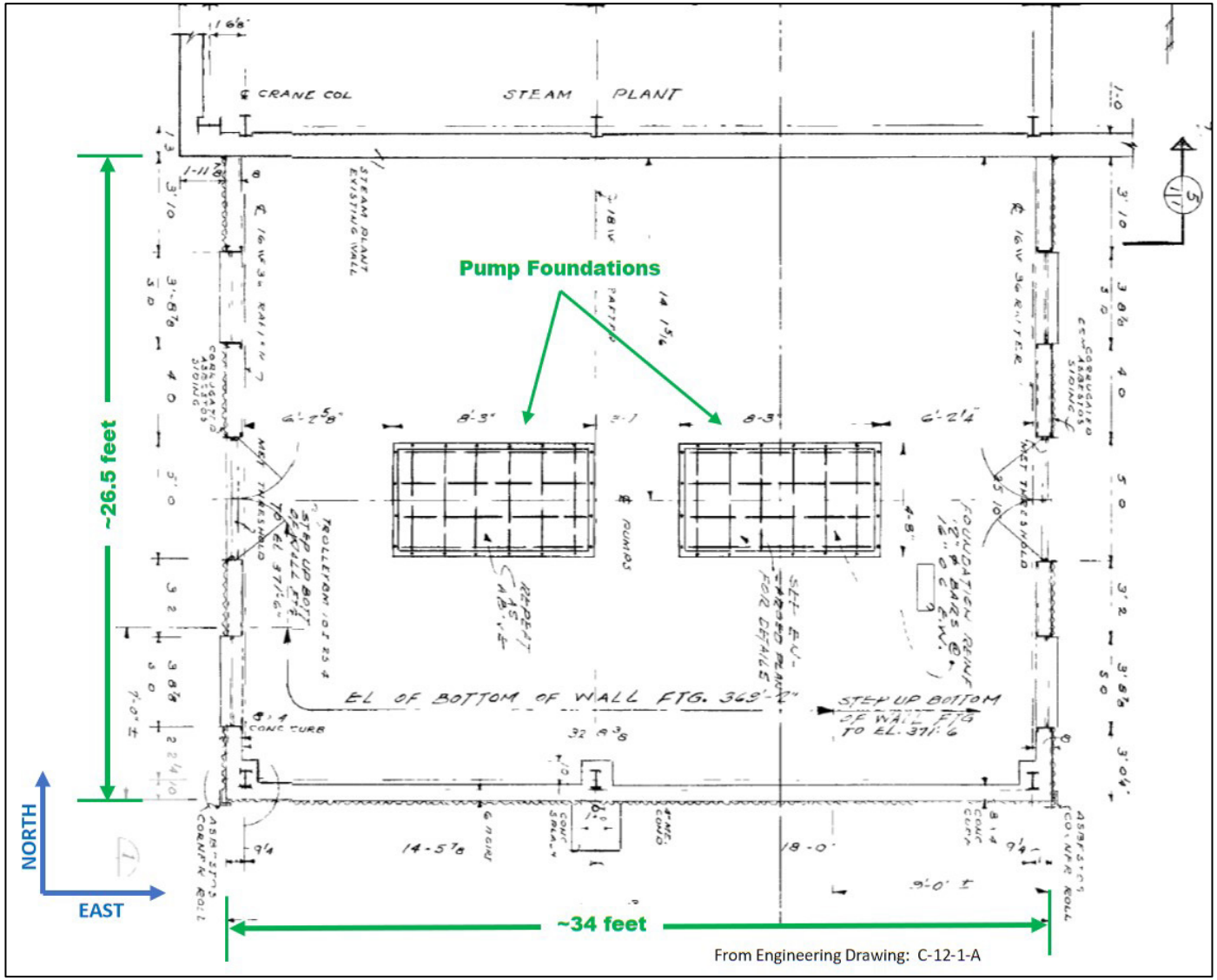

Figure 3. Floor Plan for C-611-P

Figure 4. Exterior View of the East Side of C-611-P (Looking West)

Figure 5. Exterior View of the West Side of C-611-P (Looking East)

Figure 6. Interior View of C-611-P Showing the No. 1 Booster Pump and Motor

Figure 7. Interior View of C-611-P Looking Northeast Showing the No. 2 Booster Pump and Piping

Figure 8. Electrical Switchgear for the Booster Pump Motors

Figure 9. Piping and Valving Near the North Wall of the Building

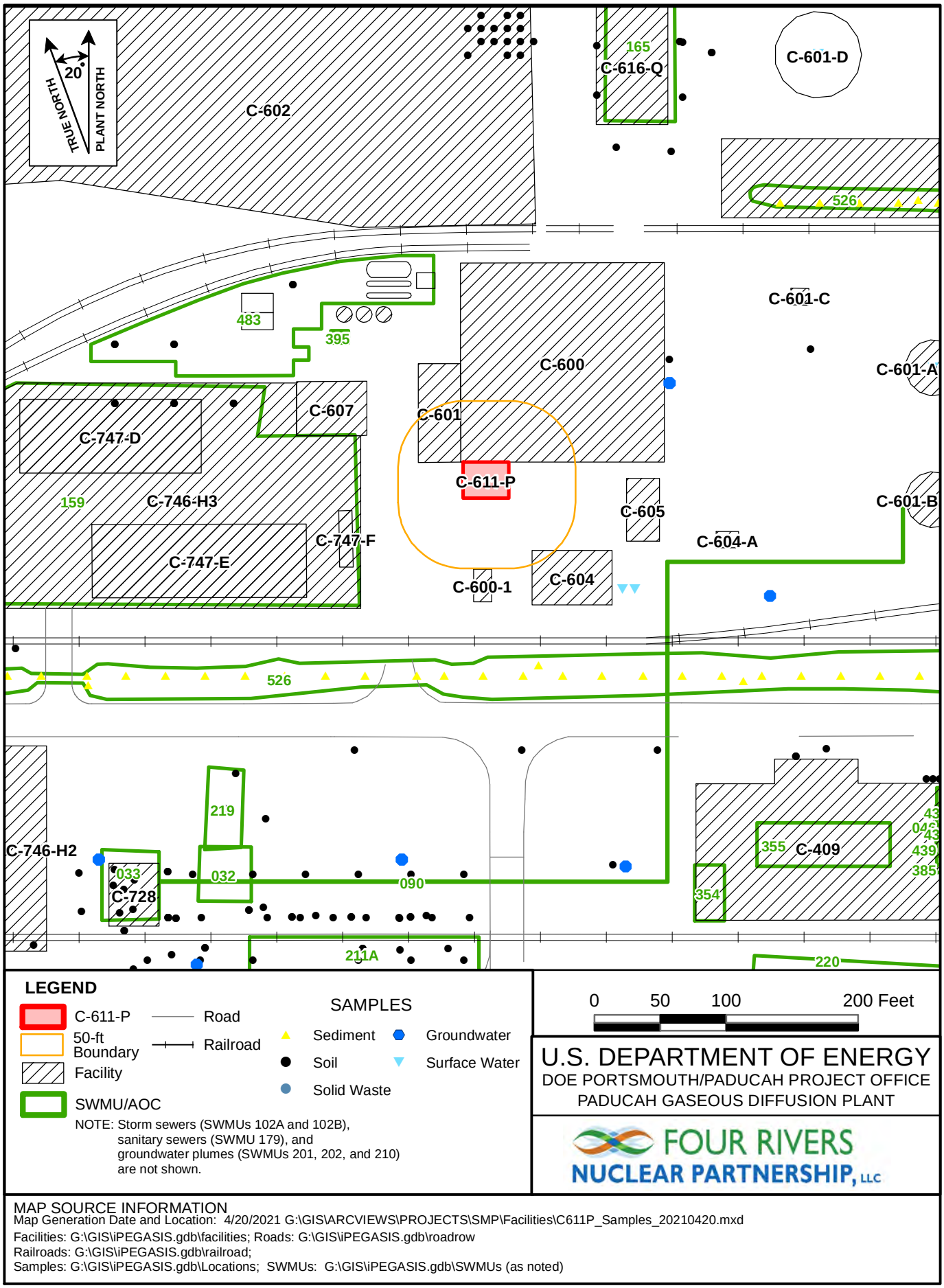

Figure 10. SWMU and Sample Locations near C-611-P

APPENDIX

ENGINEERING DRAWINGS

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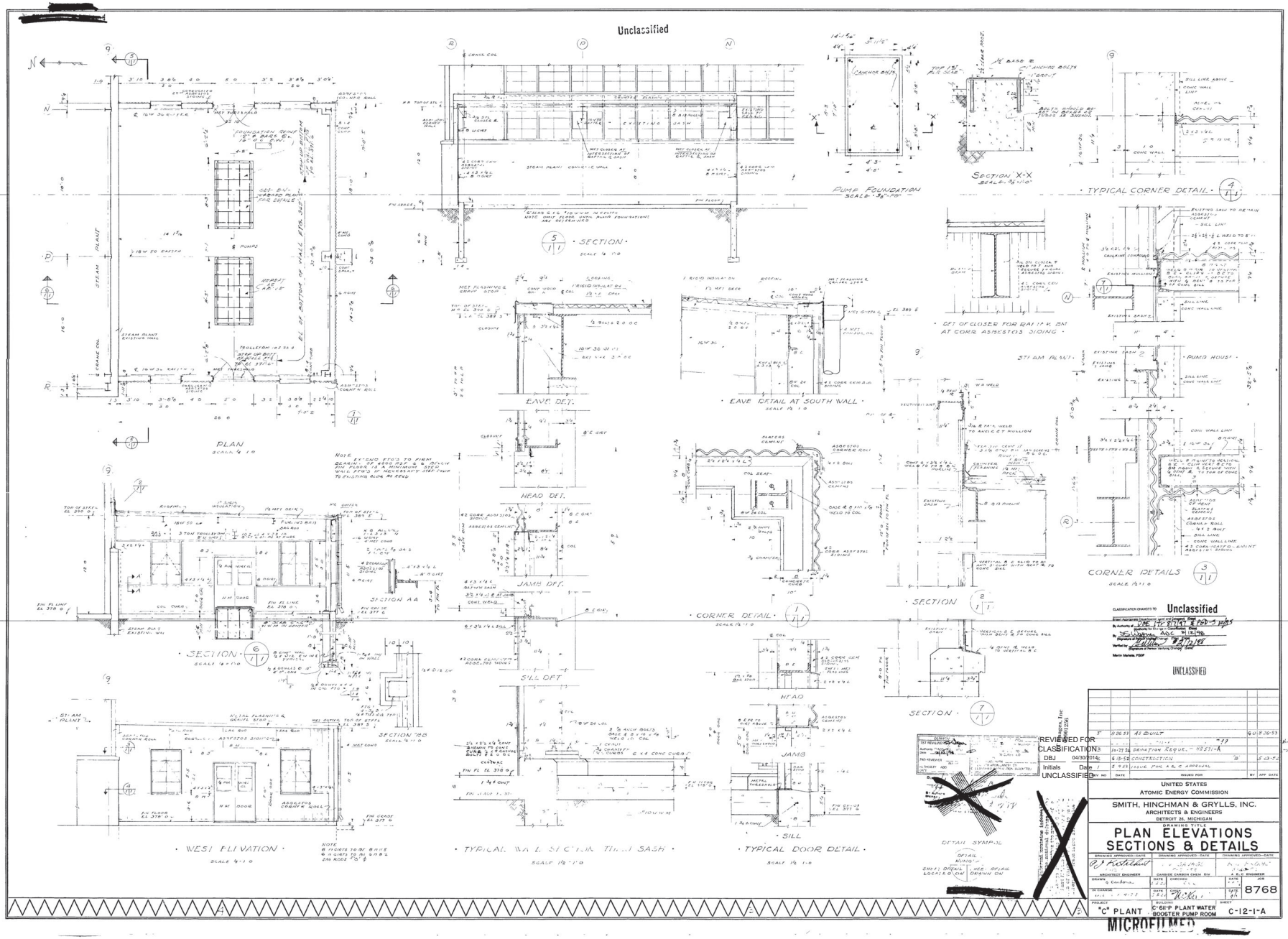


Figure A.1. Engineering Drawing C-12-1-A

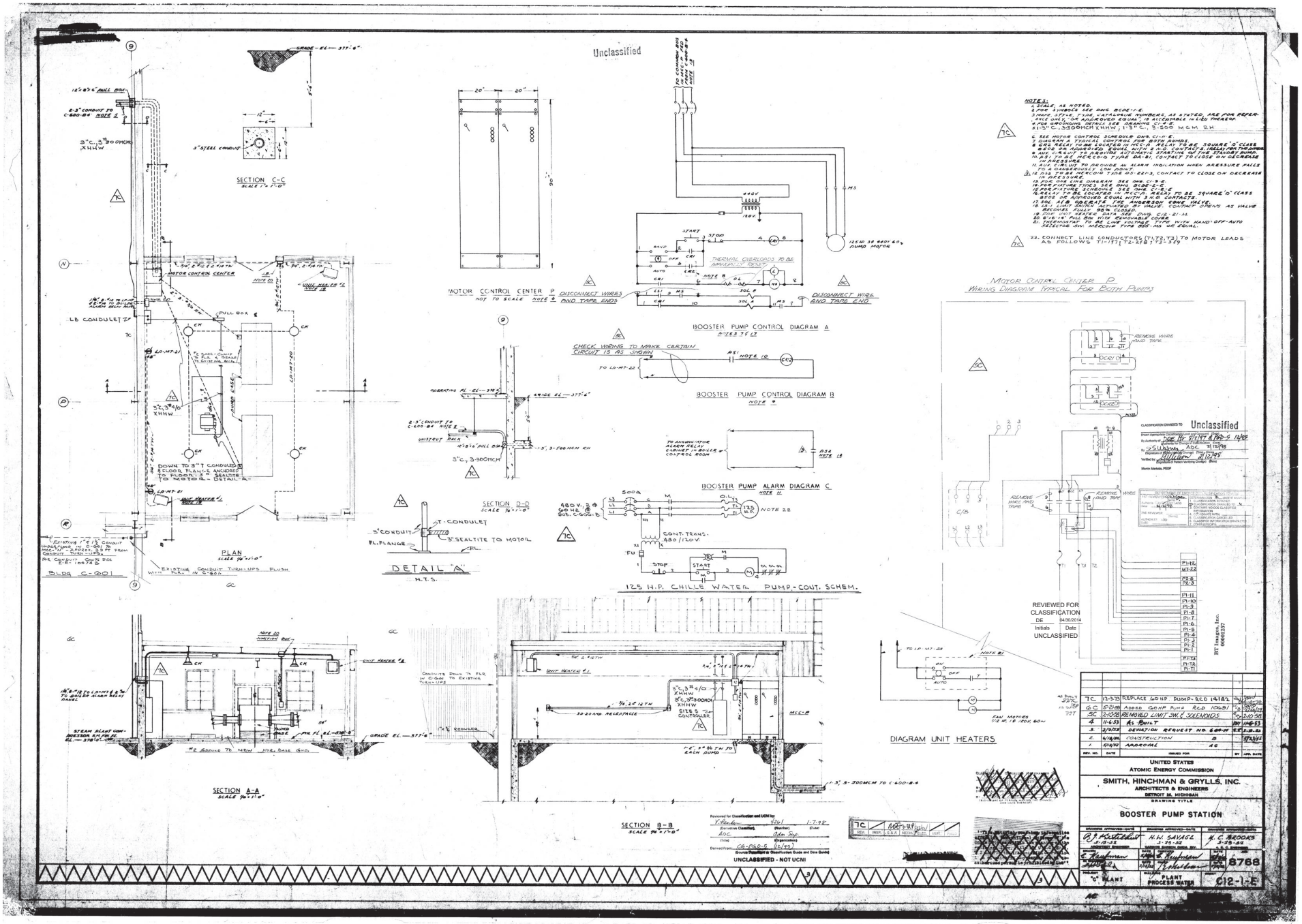


Figure A.2. Engineering Drawing C12-1-E

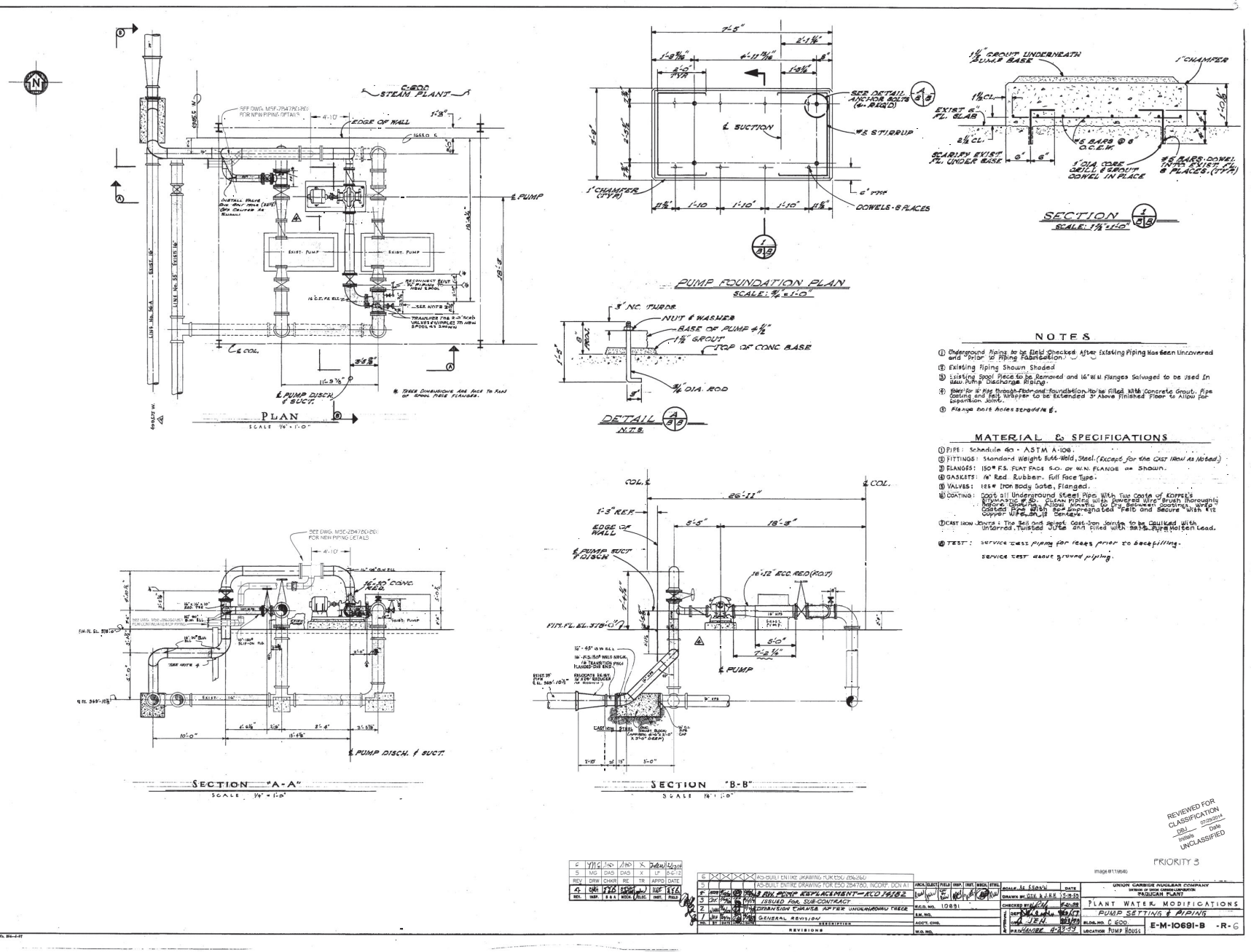
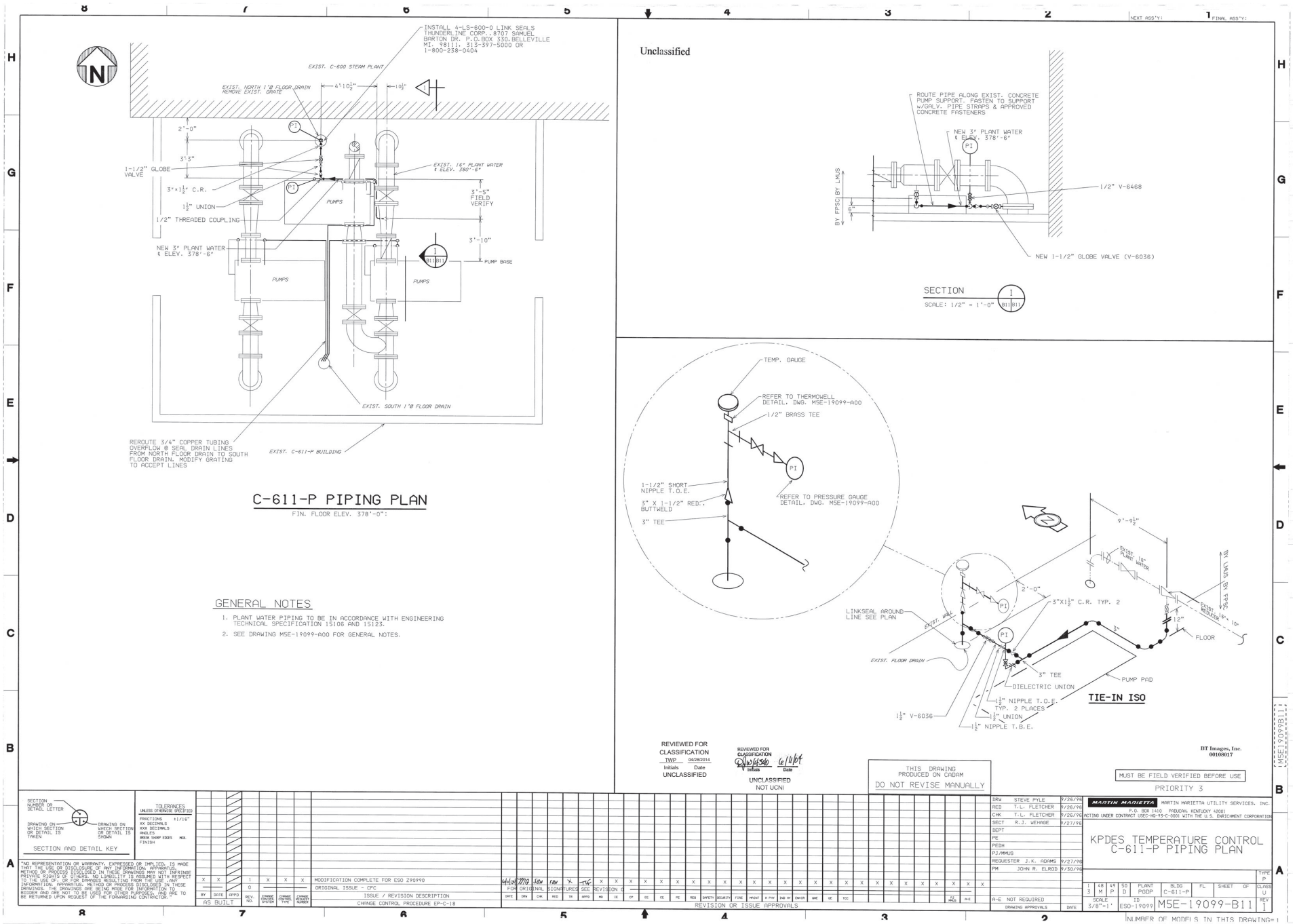


Figure A.3. Engineering Drawing E-M-10691-B



A-6

Figure A.4. Engineering Drawing M5E-19099-B11