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September 1, 2023

Submitted via electronic mail

Ms. Ann Bekta
Wisconsin Department of Natural Resources
2514 Morse Street
Janesville, WI 53545

Subject: **Plan of Operations Modification Request – Addendum #2**
Initial Permitting of CCR Landfill
Wisconsin Power and Light Company
Dry Ash Disposal Facility (WDNR License #3025)
Columbia Energy Center
Portage, WI

Dear Ms. Bekta,

On behalf of Wisconsin Power and Light Company (WPL), Alliant Energy is submitting this Addendum #2 to the Plan of Operations Modification intended to meet the requirements of NR 514.045 for Initial Permitting of a CCR Landfill. The additional information is in response to the Department's March 8, 2023 letter requesting more information in order to determine that the Plan of Operation is complete for the Dry Ash Disposal Facility located at the Columbia Energy Center (#3025).

Thank you very much for your consideration of this initial submittal. If you have any questions or comments regarding this information, please call me at (608) 458-3853.

Regards,

Jeff Maxted
Manager – Environmental Services
Alliant Energy

CC: Tyler Sullivan – Wisconsin DNR
Eric Sandvig, Director of Operations – Columbia Energy Center
Brian Clepper, Lead GENCO Environmental Specialist – Columbia Energy Center
Phil Gearing, Eric Nelson – SCS Engineers

September 1, 2023
File No. 25222260.00

Ms. Ann Bekta
Wisconsin Department of Natural Resources
2514 Morse Lane
Janesville, WI 53545

Subject: Addendum No. 2 to Plan of Operation Modification Request WDNR CCR Code Update
Dry Ash Disposal Facility, License #3025
Columbia Energy Center
Town of Pacific, Columbia County, Wisconsin

Dear Ms. Bekta:

On behalf of Wisconsin Power and Light Company (WPL), SCS Engineers (SCS) prepared this Addendum No. 2 to the Plan Modification Request/ Wisconsin Department of Natural Resources (WDNR) Coal Combustion Residuals (CCR) Code Update for the Dry Ash Disposal Facility, License No. 3025, at the Columbia Energy Center. The original Plan Modification Request/WDNR CCR Code Update was submitted on December 12, 2022, and Addendum No. 1 was submitted on February 1, 2023.

This addendum covers additional information for the WDNR CCR Code Update dated December 2022 to demonstrate compliance with NR 514.045 including the following:

- Federal jurisdictional status of wetlands 1 and 2.
- Measures taken to prevent take of lizards.
- Additional Stormwater Management items including the facility's Wisconsin Pollutant Discharge Elimination System (WPDES) permit, storm water runoff calculations originally provided in the May 25, 2022, plan modification request/plan of operation update, and the landfill's most recent Tier 2 industrial stormwater pollution prevention plan (SWPPP).
- Revised final cover design and related items.
- Appendix C1 closure topography.
- Groundwater monitoring system demonstration.
- Updated sampling plan.
- Revised closure schedule.
- Revised long-term care plan.
- Plan for the care and maintenance of the leachate collection system tanks and pumps.
- Phase 2 Module 12 and Module 13 liner design and associated final cover.
- Leachate/Surface Water Pond abandonment.
- Phase 1, Modules 5 and 6 Final Cover Permanent Haul Road.
- Specific monitoring well preventive action limits (PALs) for hardness and alkalinity.

WPL's response to the WDNR's incompleteness letter on these topics is provided in the enclosed report.

If you have any questions regarding this addendum, please contact Jeff Maxted with Alliant Energy at (608) 458-3853.

Sincerely,

Mark R. Huber, PE
Design Director
SCS Engineers

Phil Gearing, PE
Senior Project Manager
SCS Engineers

MJT/AJR/PEG/MRH

cc: Tyler Sullivan, WDNR
Jeff Maxted, Alliant Energy
Matt Bizjack, Alliant Energy
Brian Clepper, WPL

Encl. Addendum No. 2

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Plan of Operation Modification Request
WDNR CCR Code Update
Addendum No. 2

Columbia Dry Ash Disposal Facility
Pardeeville, Wisconsin

Prepared for:

Wisconsin Power and Light Company
Columbia Energy Center
W8375 Murray Road
Pardeeville, Wisconsin 53954

SCS ENGINEERS

25222260.00 | September 1, 2023

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Madison, WI 53718-6751
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CERTIFICATIONS

"I, Phillip E. Gearing, hereby certify that I am a licensed professional engineer in the State of Wisconsin in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538, Wis. Adm. Code."

_____, Senior Project Manager E-45115
Signature, title and P.E. number

September 1, 2023
Date

"I, Thomas J. Karwoski, hereby certify that I am a licensed professional geologist in the State of Wisconsin in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code; that the preparation of this document has not involved any unprofessional conduct as detailed in ch. GHSS 5, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538, Wis. Adm. Code."

_____, Senior Hydrogeologist
Signature, title

September 1, 2023
Date

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1.0 INTRODUCTION

On behalf of Wisconsin Power and Light Company (WPL), SCS Engineers (SCS) prepared this Plan of Operation Modification (Plan Mod) Request – Addendum No. 2 for the Columbia Dry Ash Disposal (COL) Facility. This Addendum addresses additional information for the Wisconsin Department of Natural Resources (WDNR) Coal Combustion Residuals (CCR) Code Update dated December 2022 to demonstrate compliance with NR 514.045. WPL's response to the WDNR's incompleteness letter, dated March 8, 2023, is provided in this addendum. The incompleteness letter is provided in **Appendix A**.

A summary checklist of applicable regulatory requirements of NR 504.045 conditions is presented as **Table 1**.

A summary of all applicable conditions of WDNR issued approvals or orders that are active and subject to compliance at the time of this Plan Mod has been prepared in accordance with NR 514.07(6m). The summary is presented in **Appendix B, Table B-1**.

2.0 FEDERAL JURISDICTIONAL STATUS OF WETLANDS 1 AND 2

*"1. **S. NR 504.04(4)(a), Wis. Adm. Code:** Provide a discussion and any correspondence or permits issued from the U.S. Army Corps of Engineers (ACOE) on the federal jurisdictional status of Wetlands 1 and 2. A letter from the department regarding the state jurisdictional status of Wetlands 1 and 2 is included in Appendix A1 of the December 14, 2022, Plan of Operation Modification, however, no discussion or correspondence from the U.S. ACOE on the federal jurisdictional status is provided."*

Phase 2, Modules 10 and 11 are not located in wetlands. No federally or state-mapped wetlands are present within the Phase 2, Module 10 and 11 area, and the area is not adjacent to Waters of the United States, which are referenced in 40 CFR 232.2 and defined in 40 CFR 120.2, based on a wetland delineation of undeveloped areas within the Ash Disposal Facility (ADF) conducted in 2017. In addition, no mapped wetland indicator soils were present in the Phase 2, Module 10 and 11 area. The wetland delineation conducted in 2017 identified one area ("Wetland 1") within the Phase 2, Module 10 and 11 area that met Wisconsin wetland criteria. However, "Wetland 1" is not located adjacent to jurisdictional waters defined in 40 CFR 120.2 and was exempted from state wetland regulations as artificial by the WDNR.

Wetland 2 is also non jurisdictional because it is a lined leachate contact water pond. Historically, the areas of Wetland 1 and 2 were farm fields before plant activity.

3.0 MEASURES TAKEN TO PREVENT TAKE OF LIZARDS

*"2. **S. NR 504.04(4)(b), Wis. Adm. Code:** Clarify/specify what measures were taken to prevent the take of the lizard. Also clarify/specify if continued operation of the landfill may result in a take of the lizard and what measures will be taken to prevent the take of the lizard."*

For previous grubbing operations, trees and brush were cut above ground level during frozen conditions and stumps were removed post May 1st. Vegetation was kept under 6-inches throughout the growing season or until construction activities were complete. These avoidance measures will be

utilized throughout the remainder of onsite landfill construction activities to minimize the potential for take of the lizard.

4.0 ADDITIONAL STORMWATER MANAGEMENT ITEMS

*"3. **S. NR 504.04(4)(c), Wis. Adm. Code:** Provide a copy of the facility's Wisconsin Pollutant Discharge Elimination System (WPDES) permit, as well as the storm water runoff calculations originally provided in the May 25, 2022, plan modification request/plan of operation update. Provide a copy of the landfill's most recent Tier 2 industrial stormwater pollution prevention plan (SWPPP)."*

The facility's current WPDES permit is included in **Appendix C.1**.

The storm water runoff calculations originally provided in the May 25, 2022 plan modification request/plan of operation update, were provided in the Plan Modification, Addendum No. 1 dated February 1, 2023 as Appendix B1.4.

The facility's current Tier 2 SWPPP is included in **Appendix C.2**.

5.0 REVISED FINAL COVER DESIGN AND RELATED ITEMS

*"4. **S. NR 504.07(4), Wis. Adm. Code:** Provide a revised final cover design that includes a clay capping layer or a soil barrier layer with a geocomposite clay layer (GCL). The current GCL final cover design does not include a soil barrier layer and therefore, does not meet the code requirements. Provide revisions to the design/construction items that would be affected by the addition of a clay capping layer or a GCL with a two-foot soil barrier layer, including the following:*

A final cover system (see **Detail 4**, **Plan Sheet 24**) is proposed for the future remaining areas of final cover north of Module 1. The cover consists of the following components, from bottom to top:

- 3-inch-thick grading layer
- 12-inch-thick capillary break/barrier soil
- 12-inch-thick clay barrier soil
- GCL
- 40-mil polyethylene geomembrane
- Geocomposite drainage layer
- 30-inch-thick rooting zone layer
- 6-inch-thick topsoil layer

The geocomposite drainage layer properties are specified in the Construction Quality Assurance/Quality Control Plan (CQA/QCP) (**Appendix D**). Unit gradient calculations are included in **Appendix E.1** to confirm that water infiltrating the final cover will be contained within the drainage layers (sand or geocomposite) and will not result in unstable final cover slope conditions. **Appendix E.1** includes a calculation for the internal shear strength requirement for the GCL within the final cover.

The proposed final cover system within a small portion of Module 1 and 2 (see **Plan Sheets 7** and **12** and **Detail 3**, **Plan Sheet 24**) will have a sand drainage layer instead of the geocomposite drainage with the following components from, bottom to top:

- 3-inch-thick grading layer
- 12-inch-thick capillary break/barrier soil
- 12-inch-thick clay barrier soil
- GCL
- 40-mil polyethylene geomembrane
- 12-inch-thick drainage layer (sand)
- 18-inch-thick rooting zone layer
- 6-inch-thick topsoil layer

The sand drainage layer will be used when new final cover is installed above existing final cover with a sand drainage layer to avoid having a geocomposite drainage layer draining into a sand layer with a potential different hydraulic conductivity.

5.1 CLAY BORROW SOURCE

> *"a. S. NR 504.075, Wis. Adm. Code: Provide remaining clay available at the New Haven clay borrow source, propose a new clay borrow or soil barrier layer borrow source for material needed for the revised final cover design."*

A Plan Modification Addendum dated November 2, 2015, included Clay Borrow Site documentation. This plan modification addendum provides applicable revisions for the clay borrow site documentation. This documentation along with the clay volume calculation in **Appendix E.2** demonstrate that Area 3 of the clay borrow site and the existing clay stockpile at the Columbia Dry Ash Disposal site will provide enough clay to construct the Modules 12 and 13 composite liner systems (requiring 2-foot-thick clay liners) as well as the final cover (requiring 1 foot thick clay barrier soil). No other changes to the November 2015 Plan Modification Addendum are requested with this addendum.

5.1.1 Water Levels

Groundwater monitoring well nests were installed at the clay borrow site before the first phase of clay excavation in 2016. The well nests are used to evaluate groundwater uplift forces on the proposed excavation bottoms. Water levels were collected at the site before the clay borrow excavation activities for Modules 5 and 6 liner construction, and again in 2023. Water level measurements recorded at the clay borrow site to date are provided as **Table 1** in **Appendix E.2**. Comparison of the measured groundwater elevations to previously completed uplift evaluations, were acceptable.

5.1.2 Clay Quantity

Clay volume calculations are contained in **Appendix E.2**. The estimated remaining clay volume at the New Haven clay borrow area is approximately 99,181 cubic yards. This volume assumes that the bottom elevation for the excavations in Area 3 is limited to 819 feet above mean sea level (amsl) based on future uplift analyses as discussed in the November 2015 Plan Modification Addendum. This volume was calculated using AutoCAD Civil 3D. The estimated clay volume remaining in the stockpile at the COL facility is approximately 14,100 cubic yards, based on an AutoCAD Civil 3D volume calculation. The total clay volume available including the clay borrow area and onsite stockpile is approximately 113,300 cubic yards.

The extents of clay placement for construction of the liner of Modules 12 and 13 and remaining final cover at the COL facility is proposed as shown in **Appendix E.2**. The estimated volume of clay

required to build the remaining phases of landfill liner (Modules 12 and 13) and remaining final cover at the COL facility is approximately 97,000 cubic yards. This volume includes a contingency for clay shrinkage of 20 percent. The clay required is less than the 115,181 cubic yards of available clay in the on-site stockpile and in Area 3 of the clay borrow area.

5.1.3 Clay Borrow Site Restoration

A copy of the Reclamation Plan approved by Adams County was provided as Appendix H in the 2015 Plan Modification Addendum. WPL will consult with Adams County after approval of this Plan Modification to discuss possible revisions to the Reclamation Plan and restoration grades.

5.2 FINAL COVER DESIGN TOPOGRAPHY

> *"b. S. NR 514.06, Wis. Adm. Code: Provide the information in this section that will change due to the revised final cover design such as a revised final topography plan sheet and revised closure costs."*

A revised final topography plan sheets are provided on **Plan Sheet 7** and **Plan Sheet 12**. Revised closure costs are provided in **Appendix E.3**.

5.3 CONSTRUCTION QUALITY CONTROL AND ASSURANCE (CQA) PLAN

> *"c. SS. NR 514.07(1)(i) and (j), Wis. Adm. Code: Provide updated construction quality control and assurance plans which reflect the revised final cover design."*

An updated CQA plan which reflects the revised final cover design, including barrier layer requirements, is provided in **Appendix D**.

5.4 REVISED CLOSURE PLAN

> *"d. S. NR 514. 07(10)(1)(c)2, Wis. Adm. Code: Provide a revised closure plan that includes a description of the methods and procedures to be used to install the revised final cover."*

An updated closure plan which describes the methods and procedures to be used to install the revised final cover is provided in **Appendix F**.

6.0 APPENDIX C1 CLOSURE TOPOGRAPHY

> *"5. **SS. NR 514.045(1)(a) and NR 500.05(6)(h), Wis. Adm. Code:** Provide a plan sheet that depicts the closure topography. The plan sheet included in the closure plan in Appendix C1 of the December 14, 2022, Plan of Operation Modification does not depict the closure topography of Modules 10 and 11."*

The December 14, 2022 Plan of Operation modification Closure Plan (Appendix C1), was updated and a revised Closure Plan, including the closure topography of Modules 10 and 11, was provided in the Plan Modification, Addendum No. 1 dated February 1, 2023, as Appendix C3. The Closure Plan has been updated to include items addressed in this Plan Mod Addendum and is included in **Appendix F**. **Plan Sheet 7** shows the final cover topography if Module 13 is not constructed and Plan **Sheet 12** shows the final cover topography if Module 13 is constructed.

7.0 GROUNDWATER MONITORING SYSTEM DEMONSTRATION

Groundwater monitoring and reporting at the COL facility is currently performed to comply with the requirements of both the approved Plan of Operations for the site and the Federal CCR Rule (40 CFR 257.90-98). Groundwater monitoring and reporting under the Wisconsin CCR regulations is expected to replace monitoring and reporting requirements under the federal CCR Rule following United States Environmental Protection Agency (U.S. EPA) approval of Wisconsin's CCR regulations. Groundwater monitoring and reporting under the approved site monitoring program (non-CCR well monitoring), which predated both the Federal CCR Rule and NR 514.045, will continue.

The CCR groundwater monitoring system includes the monitoring wells included in the attached CCR Groundwater Monitoring System Plan (**Appendix G**).

Sections 7.1 and **8.0** below relate only to the CCR wells. A separate monitoring system, including non-CCR wells and other monitoring points, exists at the site and will continue to be monitored. This non-CCR monitoring system predates NR 514.045. The non-CCR monitoring system is summarized in Table 2 of **Appendix H**. Requested changes to the non-CCR monitoring system, intended to reduce overlap and streamline groundwater monitoring and reporting of both the CCR monitoring system and the non-CCR monitoring system, are summarized in **Section 9.0** and in Table 2 of **Appendix H**.

> *"6. **S. NR 514.045(1)(h), Wis. Adm. Code:** Provide the groundwater monitoring system demonstration."*

Specific requirements of NR 507.15(3), with responses, are listed below.

7.1 CCR GROUNDWATER MONITORING REQUIREMENTS UNDER NR 507.15 (3)

NR 507.15 (3)

> *"CCR LANDFILLS. In addition to the detection groundwater monitoring system required under s. NR 507.19, the owner or operator of a CCR landfill that accepts CCR on or after October 19, 2015, shall also submit a plan establishing a separate CCR groundwater monitoring system for the purpose of monitoring groundwater quality in the uppermost aquifer in accordance with this chapter. The plan shall be submitted with the plan of operation modification for initial permitting in accordance with s. NR 514.045 or in the feasibility report under ch. NR 512."*

The CCR Groundwater Monitoring System Plan is included as **Appendix G**.

7.1.1 Groundwater Monitoring Plan Requirements Under NR 507.15(3)(a) through (e)

The CCR Groundwater Monitoring System Plan, including the requirements of and responses to NR 507.15(3)(a) through (e), is included as **Appendix G**.

7.1.2 Compliance With NR 507.15(3)(f)

NR 507.15 (3)(f)

> *"A sampling plan that includes the CCR groundwater monitoring system shall be submitted to the department in accordance with s. NR 507.16 and the requirements under s. NR 140.16. The*

sampling plan shall include consistent sampling and analysis procedures that are designed to ensure the production of monitoring results that provide an accurate representation of groundwater quality in the uppermost aquifer at the upgradient and downgradient CCR wells and that provide a characterization of leachate quality generated by the CCR landfill. The sampling plan shall be implemented as approved in writing by the department."

A sampling plan that includes the CCR groundwater monitoring system is included as **Appendix H.** The sampling plan also includes monitoring at non-CCR wells and other monitoring points. Requested changes to the non-CCR monitoring program are included in **Section 9.0**.

7.1.3 Compliance With NR 507.15 (3)(g)

NR 507.15 (3)(g)

"The sampling plan shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure all required monitoring parameters under ch. NR 507, Appendix I in groundwater samples. The CCR landfill owner or operator shall obtain and analyze samples in accordance with the approved sampling plan under par. (f) and the requirements under s. NR 507.17."

Sampling and analytical methods are described in the sampling plan (**Appendix H**).

7.1.4 Compliance With NR 507.15 (3)(h)

NR 507.15 (3)(h)

"In addition to the field measurements required under s. NR 507.17 (1), the groundwater elevations shall be measured in each CCR well immediately prior to purging, each time groundwater is sampled. The owner or operator of the CCR landfill shall determine the rate and direction of groundwater flow each time groundwater is sampled and report the result to the department in accordance with s. NR 507.26. Groundwater elevations in wells that monitor the same CCR landfill shall be measured within a timeframe short enough to avoid temporal variations in groundwater flow that could preclude accurate determination of groundwater flow rate and direction."

Measurement of groundwater elevations is included in the sampling procedures described in the sampling plan (**Appendix H**).

Groundwater elevation data will be reported to the department semiannually in accordance with NR 507.26. The rate and direction of groundwater flow will be determined for each semiannual sampling event.

We request clarification from the Department regarding the preferred format for electronic submittal of groundwater flow rate and direction as required by NR 507.26(3)(a).

7.1.5 Compliance With NR 507.15 (3)(i)

NR 507.15 (3)(i)

> *"The owner or operator of the CCR landfill shall establish baseline groundwater quality in accordance with s. NR 507.18 for each CCR well and for each of the constituents required under ch. NR 507 Appendix I, Table 1A and in accordance with the approved sampling plan."*

Baseline groundwater quality will be established for each CCR well in accordance with NR 507.18 and for each constituent required under NR 507 Appendix I, Table 1A.

An additional sampling round is needed to calculate preventive action limits (PALs) for lithium at MW-302, and alkalinity and hardness at MW-310 due to exclusion of outliers. Baseline sampling of CCR wells associated with Modules 10 and 11 is ongoing. Baseline sampling of CCR wells associated with Modules 12 and/or 13 will be completed following installation of the wells. PALs and, if applicable, Alternative Concentration Limits (ACLs) for these wells will be submitted to the department following the completion of baseline sampling.

Baseline groundwater quality calculations for CCR wells associated with Modules 1 through 6 were calculated in accordance with NR 507.27 and WDNR's guidance for calculating PALs and ACLs (PUB-WA-1105). Table 2 summarizes proposed PALs for the CCR wells associated with Modules 1 through 6. PAL calculations are included in Appendix I. Monitoring data are available for some wells and parameters from as early as the 1980s, before the construction of the ADF. Where appropriate, these historical data were incorporated into PAL and ACL calculations. Historical data are shown in Appendix J but excluded from calculations for wells and parameters where recent concentrations are substantially less than historic concentrations.

Concentrations of some constituents appear to reflect impacts not related to the ADF, including road salt application, agricultural activities, and historical ash management activities at the site. Nitrite + nitrate concentrations appear to be associated with agricultural land use. Nitrate concentrations in groundwater in Columbia County are variable, and PAL or Enforcement Standards (ES) exceedances in supply wells are fairly common. Lines of evidence indicating that elevated boron, chloride, and sulfate concentrations at MW-33AR, MW-34A, MW-302, MW-309, and/or MW-310 are due to an alternative source other than the ADF have been presented in Alternate Source Demonstrations under the Federal CCR Rule. These lines of evidence include:

- Elevated levels of boron, chloride, and sulfate were present in the area west of the landfill, where MW-33AR, MW-34A, and MW-302 are located, before the landfill was constructed. Groundwater monitoring performed in 1977 and 1978 as part of the Feasibility Study for the landfill permitting showed that wells located along the west side of the future landfill footprint had elevated results for sulfate, chloride, and specific conductance. The 1978 Feasibility Study for the ADF discusses the influence of the ash pond effluent ditch on groundwater west of the proposed site. The former ash pond effluent ditch carried effluent from the ash ponds located north of the plant, and flowed south between the west side of the current landfill and the substation.

- Monitoring performed under the existing state program documents that the concentrations of boron, chloride, and sulfate were elevated before CCR disposal in the landfill began and have decreased since the landfill has been in operation. Routine groundwater monitoring for the COL ADF began after the Plan of Operation was approved and prior to initial CCR disposal. The earliest data available from the WDNR Groundwater

Environmental Monitoring System (GEMS) database is from September 1984. Initial placement of CCR in test plots in Module 1 of the ADF was approved in October 1984, and CCR disposal began sometime after that. Therefore, the initial groundwater monitoring results in the GEMS database represent pre-disposal conditions for the landfill. Historical data from GEMS are included in the graphs in **Appendix I** for reference, but were not used to calculate ACLs.

- Groundwater flow directions have changed through time due to changes in water management at the plant, so that groundwater impacted by the effluent ditch formerly flowed to the east, under the landfill, and is now flowing west and/or north.

- The variations in chloride results for well MW-33AR since detection monitoring under the CCR Rule was initiated have not correlated with boron concentrations, as would be expected for a CCR leachate source; therefore, an alternative source is more likely.

- MW-309 and MW-310 are located adjacent to the plant entrance road, where elevated chloride concentrations due to road salt impacts are likely.

Table 3 summarizes wells and parameters with PAL exceedances, and **Table 4** summarizes calculated ACLs for wells and parameters with confirmed PAL exceedances. ACL calculations are included in **Appendix I**. Exemptions in accordance with NR 507.29 and NR 140.28 are requested for the following wells and parameters associated with Modules 1 through 6:

- Beryllium at MW-310
- Boron at MW-33AR, MW-34A, and MW-302
- Chloride at MW-33AR, MW-309, and MW-310
- Manganese at MW-301
- Nitrite + Nitrate as N at MW-33AR, MW-34A, and MW-301
- Sulfate at MW-33AR and MW-34A
- Thallium at MW-309 and MW-310

For the public health parameters other than nitrate, the requested exemptions are justified under NR 140.28(3)(b) and (4)(b) because:

- The proposed facility is designed to achieve the lowest possible concentrations that are technically and economically feasible for the substances with exemptions requested.
- For any parameters with baseline concentrations above the PAL but below the ES, the proposed facility will not cause the concentration of the substance to exceed the ES at a point of standards application.
- For any parameters with baseline concentrations above the ES:
  - The existing or anticipated increase in the concentration of the substance will not cause an increased threat to public health or welfare, and
  - The proposed facility will not cause an incremental increase in the concentration of the substance that exceeds the PAL.

For the public welfare parameters and nitrate, the requested exemptions are justified under NR 140.28(3)(a) and (4)(a) because:

- The proposed facility is designed to achieve the lowest possible concentrations that are technically and economically feasible for the substances with exemptions requested.

- The existing or anticipated increase in the concentration of the substance due to the proposed facility does not present a threat to public health or welfare.

For purposes of this evaluation, the proposed facility is the Columbia ADF. The design of the existing Columbia ADF Modules 1 through 6 and 10 and 11, and proposed Modules 12 and 13, are part of the justification for the requested exemptions. The design features of the proposed and existing facility that justify the NR 140 exemptions include the liner system, leachate collection system, cover system, and the associated monitoring systems.

7.1.6 Compliance With NR 507.15 (3)(j)

NR 507.15 (3)(j)

> *"The owner or operator of the CCR landfill shall measure total recoverable metals concentrations when measuring groundwater quality for each CCR well. Measurement of total recoverable metals includes both the particulate fraction and dissolved fraction of metals in natural waters. To ensure this, groundwater samples from CCR wells may not be field filtered prior to analysis."*

Sampling methods, including collection of unfiltered samples at CCR monitoring wells, are described in the sampling plan (Appendix H).

7.1.7 Compliance With NR 507.15 (3)(k)

NR 507.15 (3)(k)

> *"The owner or operator of the CCR landfill shall notify the department in writing within 60 days of completing sampling and analysis at any CCR well when a groundwater standard at the point of standards application has been attained or exceeded in accordance with s. NR 507.30."*

The department will be notified in writing if a groundwater standard at a point of standards application has been attained or exceeded.

NR 500.03(204) defines "sampling period" as the month in which a sample is collected. NR 507.15(3)(k) requires a notification to the department within 60 days of "completing sampling and analysis." For the purpose of establishing reporting deadlines under the Federal CCR Rule, WPL considers analysis to be complete when all laboratory quality assurance and quality control is complete and the analytical report is issued.

It is unclear whether this requirement requires a notification within 60 days of the end of the sampling period (in accordance with NR 507.30) or within 60 days of completing sampling and analysis (as stated in NR 507.15(3)(k)). WPL requests clarification from the Department regarding the correct deadline for notification when a groundwater standard at the point of standards application has been attained or exceeded, noting that due to the time required for laboratory analysis, quality assurance, and quality control, analytical reports are often issued after the end of a sampling period.

7.1.8 Compliance With NR 507.15 (3)(L)

NR 507.15 (3)(L)

"The owner or operator of a CCR landfill shall conduct detection groundwater monitoring at all CCR wells consistent with the requirements of this section and s. NR 507.19. Detection groundwater monitoring shall include groundwater monitoring for all constituents appropriate for CCR wells as listed under ch. NR 507 Appendix I, Table 1A and additional parameters if approved by the department in writing and in accordance with all of the following:

1. *The minimum monitoring frequency for the constituents approved by the department as part of the detection groundwater monitoring shall be semi-annual during the active life of the CCR landfill and the post-closure period. For existing and new CCR landfills and all lateral expansions of CCR landfills, baseline groundwater quality shall be established at each CCR monitoring well in accordance with s. NR 507.18. This includes the collection of a minimum of 8 independent groundwater quality samples for each CCR well, each of which shall be analyzed for all constituents appropriate for CCR landfills as listed under ch. NR 507 Appendix I, Tables 1A and 3 and any additional parameters approved by the department in writing.*

The sampling plan is included as **Appendix H.** Detection monitoring will be performed at CCR wells on a semiannual basis. Baseline groundwater quality shall be established at each CCR monitoring well in accordance with NR 507.18. Baseline sampling included additional sampling events at existing wells for constituents listed in NR 507 Appendix I, Tables 1A and 3, such as manganese, that were not collected to meet background sampling requirements of the Federal CCR Rule (see 40 CFR 257.97(b)) because the parameters are not included Appendix III or IV to 40 CFR Part 257. Baseline groundwater quality calculations are summarized in **Tables 2** and **4**, and discussed above in Section 7.1.5. Baseline sampling at monitoring wells MW-313, MW-314, and MW-315, downgradient of Modules 10 and 11, is ongoing.

2. *The number and methodology of groundwater quality samples collected and analyzed for each CCR well during subsequent semiannual sampling events shall be consistent with the approved sampling plan under s. NR 507.16, and shall account for any unique characteristics of the site. The CCR landfill owner or operator shall inform the department in accordance with s. NR 507.26 of any CCR well that purges dry, is damaged or obstructed, or in any way is rendered such that a sample was unable to be collected from the well during a scheduled sampling event and shall propose remedial actions to correct the problem prior to the next sampling event.*

The sampling plan is included as **Appendix H.** Notifications in accordance with NR 507.26 shall be made when the sampling event data are submitted.

3. *The owner or operator of the CCR landfill shall notify the department and respond in accordance with s. NR 507.30 when a groundwater standard at the point of standards application has been attained or exceeded at any CCR well. This response includes the establishment of an assessment monitoring program meeting the requirements under s. NR 508.06, unless the exceedance is determined by the department to be from a source other than the CCR landfill, or that the groundwater standard exceedance resulted from error in sampling, analysis, or natural variation in background groundwater quality in accordance with s. NR 508.06 (2) (f) 2.*

Notifications and response in accordance with NR 570.30 shall be made when required. WPL requests clarification on the deadline for providing required notifications.

4. *For the purposes of determining the point of standards application for a groundwater quality exceedance at a CCR well, the horizontal distance for the design management zone under s. NR 140.22 (3) (a) for a CCR landfill is 0 feet from the waste boundary and may not be expanded by the department under s. NR 140.22 (3) (b). The waste boundary shall include the horizontal space taken up by any liner, dike, or other barrier designed to contain CCR waste."*

WPL acknowledges that the point of standards application for a groundwater monitoring exceedance at a CCR well is 0 feet from the waste boundary, which is consistent with the Federal CCR Rule. Compliance monitoring wells will be located as close as practicable to the waste boundary. Factors that may require siting wells further from the waste boundary include overhead or buried utility lines, slopes, landfill haul roads or access roads, storm water management features, rail lines and rights-of-way, and other site features.

7.1.9 Compliance With NR 507.15 (3)(m)

NR 507.15 (3)(m)

"The owner or operator of a CCR landfill shall prepare an annual groundwater monitoring and corrective action report for submittal to the department. The annual groundwater monitoring and corrective action report shall be placed in the written operating record and posted on a publicly accessible internet site under s. NR 506.17 (2) and (3) no later than January 31 of the year following the calendar year a groundwater monitoring system has been approved by the department, and annually thereafter. For the preceding calendar year, the annual report shall document the status of the groundwater monitoring and any corrective action implemented at the CCR landfill, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. At a minimum, the annual groundwater monitoring and corrective action report shall contain all of the following information, to the extent available:

1. *A map, aerial image, or diagram showing the CCR landfill and all upgradient and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring for the CCR landfill.*

2. *Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.*

3. *In addition to all the monitoring data obtained under par. (L), a summary including the number of groundwater samples that were collected for analysis for each upgradient and downgradient well, the dates the samples were collected, and whether the sample was required by detection monitoring or assessment monitoring.*

4. *A narrative discussion of any transition between monitoring including the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying any constituents detected above ch. NR 140 standards.*

5. *A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action for the CCR landfill. At a minimum, the summary shall include all of the following:*

a. At the start of the current annual reporting period, whether the CCR landfill was operating under detection monitoring or assessment monitoring.

b. At the end of the current annual reporting period, whether the CCR landfill was operating under detection monitoring or assessment monitoring.

c. If it was determined by the owner or operator that there was a groundwater quality exceedance under ch. NR 140 for one or more constituents listed under ch. NR 507 Appendix I for CCR wells, a listing of those constituents, the names of the monitoring wells associated with the exceedances, and the date when the assessment monitoring was initiated for the CCR landfill.

d. If corrective action measures were required, the date when the assessment of corrective measures was initiated for the CCR landfill, the date when the public informational hearing under s. NR 508.06 (3) (e) was held for the discussion of the results of the remedial action options report, and the date when the assessment of corrective measures was completed.

e. If a remedy was required under ch. NR 508 during the annual reporting period, the date of remedy selection, and whether remedial activities were initiated or are ongoing during the annual reporting period."

Annual groundwater monitoring and corrective action reports will be submitted in accordance with the above criteria for monitoring wells included in the CCR well monitoring program.

Biennial groundwater monitoring reports under the pre-existing environmental monitoring program (Table 2 of **Appendix H**) are currently submitted in January of odd-numbered years. The most recent report was submitted on January 31, 2023. With the approval of the Department, future reports for the non-CCR well monitoring program will be submitted annually, to coincide with the annual reporting under 507.15 (3)(m).

8.0 UPDATED SAMPLING PLAN

*"7. **S. NR 514.045(1)(i), Wis. Adm. Code:** Provide an updated sampling plan."*

8.1 UPDATED SAMPLING PLAN UNDER NR 514.045 (1)(g)

NR 514.045 (1)(i)

"An updated sampling plan that addresses the requirements under s. NR 507.15 (3)."

The sampling plan is included as **Appendix H.**

8.1.1 Sampling Plan Requirements Under NR 507.15 (3)

The sampling plan is included as **Appendix H.** Specific requirements under NR 507.15(3) are discussed above in **Section 7.1**.

9.0 SAMPLING PLAN REVISIONS FOR NON-CCR WELLS

A revised sampling table for Non-CCR wells and other monitoring points is included as Table 2 in **Appendix H**.

9.1 NON-CCR MONITORING NETWORK SAMPLING PLAN REVISIONS

Requested revisions to the existing monitoring plan are summarized below. Graphs showing historical data for parameters proposed for removal from the sampling plan are included as **Appendix J**:

9.1.1 Monitoring Point Updates

The following changes to the list of monitoring points included in the non-CCR monitoring program are requested:

- Re-characterization of monitoring wells MW-33AR, MW-34A, and MW-84A as CCR monitoring wells that will be sampled under the requirements of NR 507.15(3).
- Removal of monitoring wells MW-91A and MW-91B from the monitoring program. These wells are located within the Dry ADF limits.
- Re-characterization of LP-1 as a sampling point will be used to monitor leachate quality under the requirements of NR 507.15(3)(f).

9.1.2 Parameter List Updates

The following revisions to the sampling parameter list for non-CCR monitoring points are requested. These requests represent a reduction in the parameter list to include only those parameters listed in Tables 2 and 5 of NR 507, Appendix I for landfills accepting fly ash and bottom ash, plus select metals. These requested revisions would remove most parameters that are not required under detection monitoring, with the understanding that some parameters may be required in the future if an assessment monitoring program is initiated at the site.

Graphs of historical data referenced below are included in **Appendix J**.

- Removal of chloride from the parameter list for non-CCR monitoring wells.
  - Chloride has been included in semiannual sampling events at the site since 2015, and prior to that was included in sampling events in the 1980s.
  - NR 140 PAL exceedances for chloride have been detected in some site wells since chloride was added back into the sampling program; however, these have consistently been attributed to road salt application and not to the ADF.
  - Chloride will remain on the parameter list for supply wells HC-1, HC-2, and HC-3. Chloride concentrations at these wells have increased in recent years and have exceeded the NR 140 public welfare PAL (125 milligrams per liter [mg/L]) at HC-1 during most monitoring events since 2020.

- Removal of Nitrite + Nitrate as Nitrogen (nitrite + nitrate – N) from the parameter list for non-CCR monitoring wells.
  - Nitrite + nitrate – N has been included in monitoring events since 2015.
  - Concentrations at some site monitoring wells typically exceed the NR 140 PAL; however, these concentrations appear to be associated with agricultural land use. Nitrate concentrations in groundwater in Columbia County are variable, and PAL or Enforcement Standards (ES) exceedances in supply wells are fairly common.
  - Nitrite + nitrate – N will remain on the parameter list for supply wells HC-1, HC-2, and HC-3. Concentrations at HC-3 are typically slightly above the PAL.
- Removal of aluminum from the parameter list for non-CCR monitoring wells.
  - Aluminum has been included in monitoring events since 2015.
  - Concentrations exceeded the NR 140 PAL in several site wells during the October 2019 sampling event. This single event with elevated concentrations is anomalous, may be due to laboratory error, and does not appear to reflect actual groundwater quality at the site.
  - Aluminum results at site monitoring wells are typically non-detect.
  - Aside from anomalous results in October 2019, aluminum results at MW-37A and MW-84A have exceeded the PAL during single events. These exceedances were not confirmed in subsequent samples and do not appear to be associated with the ADF.
- Removal of barium from the parameter list for non-CCR monitoring wells.
  - Barium has been included in sampling events since 1996.
  - No PAL exceedance for barium has been detected in a site monitoring well.
- Removal of cadmium from the parameter list for non-CCR monitoring wells.
  - Cadmium has been included in the monitoring program since 2011.
  - No confirmed NR 140 PAL exceedances have been detected in site groundwater monitoring wells since this parameter was added to the monitoring program.
- Removal of chromium from the parameter list for non-CCR monitoring wells.
  - Chromium has been included in sampling events at the site since 1996.
  - No confirmed NR 140 PAL exceedances have been detected at site monitoring wells, with the exception of MW-91A/MW-91AR, located within the permitted landfill limits.
  - Concentrations at supply well HC-2 exceeded the PAL in the early 1990s, but have not exceeded the PAL since 1996 and the concentration trend is downward or stable.

- Removal of mercury from the parameter list for non-CCR monitoring wells.
  - Mercury has been included in the monitoring program since 2011, and no NR 140 PAL exceedance has been detected at any site monitoring well.
- Removal of selenium from the parameter list for non-CCR monitoring wells.
  - Selenium has been included in the monitoring program since 2011.
  - No confirmed PAL exceedance has been detected, with the exception of monitoring well MW-91AR and MW-91B, located within the permitted landfill limits. Selenium concentration trends at these wells have decreased and stabilized below the PAL.

9.2 NON-CCR REPORTING SCHEDULE REVISION

A revision of the reporting schedule for the non-CCR monitoring program, from biennial reports submitted January 31st of odd-numbered years to annual reports coinciding with the reporting schedule in NR 507.15 (3)(m) is requested. This change is intended to support a holistic approach to groundwater data reporting and Departmental review for the ADF.

9.3 PAL AND ACL CALCULATIONS

Well-specific PALs and ACLs have not previously been calculated for the site. Applicable PALs and ACLs will be calculated and submitted for departmental review with the CCR monitoring well baseline calculations. Baseline groundwater quality calculations have been calculated in accordance with NR 507.27 and WDNR's guidance for calculating PALs and ACLs (PUB-WA-1105). Table 5 summarizes proposed PALs for the non-CCR monitoring wells. PAL calculations are included in Appendix I.

A summary of NR 140 standards exceedances at monitoring wells included in the monitoring plan (Table 2 of Appendix H) is presented in Table 6, and proposed ACLs are summarized in Table 7. PAL and ACL calculations are included in Appendix I.

Monitoring data are available for some wells and parameters from as early as the 1980s, before the construction of the ADF. Where appropriate, these historical data were incorporated into PAL and ACL calculations. Historical data are shown in Appendix I but excluded from calculations for wells and parameters where recent concentrations are substantially less than historic concentrations. Concentrations of some constituents appear to reflect impacts not related to the ADF, including road salt application, agricultural activities, and historical ash management activities at the site.

Table 7 summarizes exemption requests for wells and parameters with confirmed PAL exceedances. Exemptions in accordance with NR 507.29 and NR 140.28 are requested for the following parameters at non-CCR monitoring wells:

- Arsenic: MW-86, MW-92A, and MW-92B
- Boron: MW-33BR and MW-34B
- Chloride : MW-37A and MW-86
- Molybdenum: MW-33BR
- Nitrite + Nitrate as N: MW-33BR, MW-34B, MW-83, and MW-92A
- Sulfate: MW-33BR

For the public health parameters other than nitrate, the requested exemptions are justified under NR 140.28(3)(b) and (4)(b) because:

- The proposed facility is designed to achieve the lowest possible concentrations that are technically and economically feasible for the substances with exemptions requested.
- For any parameters with baseline concentrations above the PAL but below the ES, the proposed facility will not cause the concentration of the substance to exceed the ES at a point of standards application.
- For any parameters with baseline concentrations above the ES,
  - The existing or anticipated increase in the concentration of the substance will not cause an increased threat to public health or welfare; and
  - The proposed facility will not cause an incremental increase in the concentration of the substance that exceeds the PAL.

For the public welfare parameters and nitrate, the requested exemptions are justified under NR 140.28(3)(a) and (4)(a) because:

- The proposed facility is designed to achieve the lowest possible concentrations that are technically and economically feasible for the substances with exemptions requested.
- The existing or anticipated increase in the concentration of the substance due to the proposed facility does not present a threat to public health or welfare.

For purposes of this evaluation, the proposed facility is the Columbia ADF. The design of the existing Columbia ADF Modules 1 through 6 and 10 and 11, and proposed Modules 12 and 13, are part of the justification for the requested exemptions. The design features of the proposed and existing facility that justify the NR 140 exemptions include the liner system, leachate collection system, cover system, and the associated monitoring systems.

10.0 REVISED CLOSURE SCHEDULE

*"8. **S. NR 514. 07(10)(1)(c)6, Wis. Adm. Code:** Provide a closure schedule that provides sufficient information to describe the sequential steps that will be taken to close the CCR landfill, including installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR landfill closure."*

An updated closure plan which details the sequential steps for the installation of the final cover system and estimated timeframes to complete each step is provided in **Appendix F**.

11.0 REVISED LONG-TERM CARE PLAN

*"9. **S. NR 514.07(10)(1)(d)1.d, Wis. Adm. Code:** Provide a revised long-term care plan that addresses monitoring in accordance with the sampling plan.*

*10. **S. NR 514. 07(10)(1)(e), Wis. Adm. Code:** Provide a revised long-term care plan that includes leachate collection line video camera inspections per s. NR 506.07(5)(e), Wis. Adm. Code."*

A revised long-term care plan that addresses monitoring in accordance with the sampling plan and includes leachate collection line video camera inspections is provided in **Appendix K**.

12.0 PLAN FOR THE CARE AND MAINTENANCE OF THE LEACHATE COLLECTION SYSTEM TANKS AND PUMPS

*"11. **Condition 6 of the department's July 28, 2022, plan of operation approval modification:** Provide an operation plan that addresses the care and maintenance of the tanks, and pumps as well as the means to monitor the tank and manholes secondary containment systems."*

Care and maintenance of the future leachate tanks and pumps will be performed per the equipment manufacturer's recommendations. After installation, recommendations will be provided for specific maintenance activities. Secondary containment systems for tanks and the Module 1 and 2 Sumps will be monitored for leaks during routine inspections. Piping infrastructure will be pressure tested before placed into use. Cathodic protection for the leachate underground storage tank will be inspected during the life of the components.

13.0 MODULE 12 LINER DESIGN, OR PROPOSAL FOR THE REMOVAL OF THE MODULE 11 LINER RUNOUT

*"12. **Condition 8 of the department's July 28, 2022, plan of operation approval modification:** Provide the design for the construction of Module 12 liner or a proposal for removal of the liner runout from Module 11 and timing of construction of the north berm for Module 11."*

On June 23, 2022, WPL announced that the Columbia Energy Center will retire no later than June 1, 2026. The extended plant life may require additional CCR disposal space. To prepare the Dry ADF for potential future expansion into Modules 12 and 13, the north side of the Module 11 includes a liner tie-in berm as shown on **Detail 1** on **Plan Sheet 19**.

To provide operational flexibility, WPL is proposing three scenarios for permitting:

1. Closure of the ADF, Modules 1 through 6 and Module 10 and 11 (**Section 0**).
2. Develop Module 12. Closure of the ADF, Modules 1 through 6 and Module 10 through 12 (**Section 15.0**).
3. Develop Modules 12 and 13. Closure of the ADF, Modules 1 through 6 and 10 through 13. (**Section 0**).

The decision to construct Module 12 or Module 13 will be based on CCR filling volumes and densities during ongoing plant operations and Primary and Secondary Ash Pond closure activities.

During the 2022 and 2023 construction seasons, Module 10 and 11 liner was constructed as shown on **Plan Sheet 2**. The north liner side slope of Module 11 and the east liner side slopes of Modules 5 and 6 will not be constructed until the need for Modules 12 and 13 has been determined.

14.0 SCENARIO 1: CLOSURE OF THE CURRENT ASH DISPOSAL FACILITY

If it is determined that additional liner modules are not needed, WPL will close the ADF without construction of Module 12 or Module 13. Modules 1 through 6, and 10 and 11 would be closed. In this scenario:

- The north liner side slope of Module 11 will be extended to the proposed final cover tie-in berm as shown by the blue lines on **Detail 1** on **Plan Sheet 12** in the July 18, 2022 Addendum No. 1 to the Plan Modification Request/Plan of Operation Update.

- There are no other changes to the base grades, waste limits, or final cover grades presented in the in the July 18, 2022 Addendum No. 1 to the Plan Modification Request/Plan of Operation Update.

- The final cover will be constructed as shown on **Figure 1** of the February 1, 2023 Addendum No. 1 Plan of Operation Modification Request WDNR Code Update.

14.1 CAPACITY

Total airspace of the ADF for Scenario 1 is listed below:

- **Scenario 1**: 2,596,262 cubic yards

Documentation for volume calculations completed by SCS are provided in **Appendix E.5**. The disposal capacity volume calculations were performed using the AutoCAD Civil 3D program.

15.0 SCENARIOS 2 AND 3: DEVELOPMENT OF MODULE 12 OR 12 AND 13.

Two additional scenarios are proposed beyond closing the current constructed modules.

- **Scenario 2**: Development of Module 12
- **Scenario 3**: Development of Module 12 and 13

The following sections describe each of the scenarios in detail.

15.1 ENGINEERING DESIGN MODIFICATIONS AND RATIONALE

The ADF design is currently approved under the alternative design criteria for landfills designed primarily for the disposal of high-volume industrial waste, as allowed by NR 504.10. This section addresses design changes to the ADF related to construction of Module 12 or Module 12 and 13, which will accommodate future potential filling needs. A description of each design change, a discussion of updated or current information regarding approved alternative design features that will remain a part of the ADF design, is provided in the following sections.

15.1.1 Capacity

Total airspace of the ADF for Scenarios 2 and 3 are listed below:

- **Scenario 2**: 3,207,520 cubic yards
- **Scenario 3**: 3,630,075 cubic yards

Documentation for volume calculations completed by SCS are provided in **Appendix E.5**. The disposal capacity volume calculations were performed using the AutoCAD Civil 3D program.

The ADF permitted air space is 6,045,000 cubic yards, as noted in the WDNR January 28, 2011 Plan of Operation Update approval letter. The addition of Module 12 or Module 12 and 13 does not exceed the permitted air space.

15.1.2 Subbase and Base Grades

The currently approved design for the ADF includes base grades for Phase 1, Modules 1 through 6 and Phase 2, Modules 10 and 11 only. Base grades for Module 12 or Module 12 and 13 in Phase 2 have been designed and included in this Plan Mod Request WDNR CCR Code Update Addendum No. 2. Subbase grades for Module 12 are shown on **Plan Sheet 3**, and base grades are shown on **Plan Sheet 4**. Subbase grades for Modules 12 and 13 are shown on **Plan Sheet 8**, and base grades are shown on **Plan Sheet 9.**

The subbase grades and base grades for Scenario 2 and 3 were developed to maintain at least 5 feet of separation between the bottom of the liner and the record high groundwater table (October 2018). The high-water table near the low point of the ADF liner is approximately 788.5 above mean sea level (msl). The lowest portion of the liner system is the bottom of the Module 12 leachate collection sump with a bottom of clay liner elevation of 799.0 msl and the Module 13 sump elevation of 800 msl. Exclusive of sumps and leachate line undercuts, the separation distance between the high-water table is at least 10 feet. The high-water table and liner grades are shown on the cross-sections (**Plan Sheets 14, 15,** and **16**).

Modules 5 and 6 liners were constructed in 2021 to allow a future tie-in to Phase 2 Modules 12, if constructed.

15.1.3 Composite Liner System

No changes to the currently approved composite liner system design are included in this Plan Mod Request Addendum. The approved composite liner system consists of the following from bottom to top:

- 2 feet of compacted clay
- GCL
- 60-mil High-density polyethylene (HDPE) geomembrane

15.1.3.1 Compacted Clay Liner

The 2 feet of clay was added to the liner system in 2011 with a plan modification, which was approved on September 14, 2011. Compacted clay material for ADF is sourced from a nonmetallic mining site in Adams County. The clay was approved as a borrow source in November 2015. The clay needed for construction of Modules 10 and 11 was imported to COL in 2021 and stockpiled east of

Modules 5 and 6. The clay stockpile volumes, clay borrow site volumes, and amount of clay required for Module 12 or Module 12 and Module 13 liner construction provided as calculations in **Appendix E.2**.

15.1.3.2 Geosynthetic Clay Liner

GCLs used in the construction of the liner and final cover systems at the ADF will meet the specifications of NR 504.07(4)(a)1 to 11. Specifications for the GCL are discussed in the CQA/QCP provided in **Appendix D**. Liner GCL installed in Modules 2 through 6 and Modules 10 and 11 was polymer enhanced and originally compatibility tested with SDA material before its use. GCL will continue to be polymer enhanced for Scenarios 2 and 3.

A parametric static veneer slope stability calculation and a calculation for the internal shear strength requirement for the GCL were performed to assess the composite liner system. The calculations were submitted in Appendix D3 of the May 25, 2022 Plan Modification Request – Plan of Operation Update, which was approved on July 28, 2022. The previously approved 2022 calculations are provided in **Appendix E.1** for reference.

15.1.3.3 Geomembrane Liner

A 60-mil HDPE geomembrane will be placed directly above the GCL as currently approved. The geomembrane will meet the specifications of NR 504.07(3). Construction specifications for the geomembrane are discussed in the CQA/QCP.

15.1.4 Leachate/Contact Water Management System

This section addresses the proposed methods for managing leachate and contact water during active ADF filling operations and after the ADF is closed. Contact water in this Plan Mod Addendum is defined as leachate that runs off CCR surfaces as opposed to leachate that infiltrates through the CCR to the leachate collection system. Contact water flows and volumes are estimated from storm water modeling calculations while leachate flows and volumes are calculated from leachate generation rates in NR 504.06. Both leachate and contact water are managed as leachate per NR 500 regulations.

15.1.4.1 Leachate Management During Active Filling

Under current operations leachate from Phase 1 Modules 1 and 2 is conveyed by gravity to the Leachate/Surface Water Pond. Except for Module 1, the ADF liner system includes a leachate drainage layer and perforated leachate collection piping as shown on **Detail 4**, **Plan Sheet 17**. Module 1 has a screened bottom ash drainage layer and a single perforated drain on the east end of the module. The existing leachate collection lines and Module 1 perforated drain discharge to the Leachate/Surface Water Pond. Leachate and contact water from Phase 1 Modules 3 through 6 are conveyed to Modules 10 and 11 where the leachate and contact water are pumped to the Leachate/Surface Water Pond. Leachate from Mod 3 flows through a leachate collection line into the Mod 10 leachate collection line. Leachate from Modules 4, 5, and 6 flows through collection lines to the collection line in Module 11. During pond closure activities in 2023, the pond closure contractor is pumping leachate and contact water from Modules 10 and 11 to the Leachate/Surface Water Pond with trash pumps and temporary hoses. When the pond closure construction is complete, WPL will pump leachate and contact water from the Module 10 and 11 leachate collection sumps to the Leachate/Surface Water Pond via the pumps, side slope risers, and permanent piping in Modules 10 and 11.

Interim cover and rain covers are used to limit the generation of leachate and contact water. WPL pumps leachate from the Leachate/Surface Water Pond to a scraper mounted water wagon for transport to the Plant for disposal per the WPDES permit.

If Module 12 is constructed, leachate in Module 5 and 6 will be diverted to the Module 12 via leachate collection piping. If Module 13 is constructed, leachate from Module 6 will be diverted to Module 13 with leachate from Module 5 continuing to flow to the Module 12. The leachate collection system in Module 12 or Module 13 will not be connected to the existing Phase 1 leachate collection system until WDNR approves construction of the Modules. Following WDNR approval of Module construction, the following leachate collection system modifications will be made for each of the scenarios:

Scenario 2:

- The leachate collection line in Module 5 will be connected to the leachate collection line in Module 12.
- The leachate collection header between Module 5 and Module 4 will be plugged to direct leachate from Module 5 into Module 12.
- Leachate from the Module 6 header will be diverted to Module 12.

After the modifications, leachate from Modules 4 and 11 will be conveyed by gravity to a leachate collection sump in Module 11. Leachate from Modules 5, 6, and 12 will be conveyed by gravity to a leachate collection sump in Module 12.

Scenario 3:

- The leachate collection line in Module 5 will be connected to the leachate collection line in Module 12.
- The leachate collection header between Module 5 and Module 4 will be plugged to direct leachate from Module 5 into Module 12.
- The leachate collection line in Module 6 will be connected to the leachate collection line in Module 13.
- The leachate collection header between Module 6 and Module 5 will be plugged to direct leachate from Module 6 into Module 13.

After the modifications, leachate from Modules 4 and 11 will be conveyed by gravity to a leachate collection sump in Module 11. Leachate from Modules 5 and 12 will be conveyed by gravity to a leachate collection sump in Module 12. Leachate from Modules 6 and 13 will be conveyed by gravity to a leachate collection sump in Module 13.

15.1.4.2 Leachate Management During Closed Conditions

Following final closure of the ADF, leachate will be diverted from the Leachate/Surface Water Pond to a leachate storage tank. With final cover placed over the ADF, contact water management will no longer be required. Following final cover placement, the following leachate collection system modifications will be made:

- Leachate sumps will be installed on the leachate collection lines from Modules 1 and 2 (see Plan Sheets 5 and 10).

- Leachate pumps in the Module 1 and 2 sumps will pump leachate to the leachate storage tank.
- Leachate from the Modules 10, 11, and potential 12 and 13 sumps will be pumped to the leachate storage tank.

Leachate in the storage tank will be hauled to a wastewater treatment plant, pending approval from the receiving facility.

15.1.4.3 Leachate Drainage Layer and Piping

No changes to the approved leachate collection piping materials or leachate drainage layer are proposed with this Plan Mod Addendum. Leachate collection system material specifications are provided in the current CQA/QCP (**Appendix D**). Calculations showing the leachate collection system has the hydraulic capacity to maintain less than 1 foot of head over the liner during active and closed conditions per NR 504.06(5)(a) were submitted in Appendix D3 of the May 25, 2022 Plan Modification Request – Plan of Operation Update, which was approved on July 28, 2022. The previously approved 2022 calculations are provided in **Appendix E.4** for reference.

Pipe bedding filter calculations will be updated using actual materials selected for construction prior to installation. Specifications for filter, pipe bedding, and drainage layer materials are provided in the CQA/QCP (**Appendix D**).

A pipe filter analysis was performed to confirm that the size of the leachate collection line perforations is compatible with the pipe bedding aggregate. This calculation was submitted in Appendix D2 of the May 25, 2022 Plan Modification Request – Plan of Operation Update, which was approved on July 28, 2022. The previously approved 2022 calculations are provided in **Appendix E.1** for reference. This calculation shows that the ½-inch-diameter perforations shown on **Detail 4, Plan Sheet 17** are suitable for the pipe bedding material specified for construction of the leachate collection system.

A geomembrane puncture resistance calculation was also performed to determine the required geotextile cushion specifications for the geotextile to be installed between the geomembrane and pipe bedding material in the leachate collection trenches. This calculation indicates that a minimum geotextile mass per unit area of 1,100 grams per square meter is required to protect the geomembrane beneath the leachate collection pipes from puncture (**Appendix E.1**). The required geotextile mass per unit area can be provided with a single layer of 32-oz/sy geotextile.

The current design includes cleanout access for leachate collection piping. Leachate cleanouts will be installed at the locations shown on **Plan Sheets 5** and **10**. Leachate cleanout details are provided on **Detail 6, Plan Sheet 17.**

Leachate collection line lengths will not exceed 1,200 feet. Due to the granular nature of the native soils at the site, consolidation settlement of fine-grained soils will not occur. Therefore, settlement calculations confirming that a minimum pipe slope of 0.5 percent will be maintained, were not completed previously as discussed in NR 504.06(6)(c).

The 6-inch HDPE leachate collection piping was evaluated for pipe strength using construction/operation loads and post-closure loads to confirm that the materials are acceptable for construction (**Appendix E.1**). Six-inch SDR 11 HDPE pipe will continue to be used for leachate collection/cleanout lines.

15.1.4.4 Leachate Sumps and Force Mains

Leachate collection sumps will be constructed on the eastern end of Module 12 and Module 13 (see **Plan Sheets 5** and **10**). The sumps will be constructed as shown on **Detail 1, Plan Sheet 21**. Calculations supporting sump sizing are provided in **Appendix E.4**.

The sump riser pipe will be 18-inch-diameter, SDR17 HDPE pipe. The pipe strength calculation in **Appendix E.2** confirms that the proposed pipe is suitable for the design loads over the sumps. The side slope risers will terminate in a vault as shown on **Detail 4, Plan Sheet 22**. The vault will provide access to pump discharge piping and facilitate removal of the pumps for maintenance.

The leachate pumps and discharge piping have been designed and sized for active filling conditions and final closure conditions. Initially, higher capacity pumps will be installed in the side slope risers to manage leachate and contact water while the ADF is open. Smaller pumps and discharge piping will be installed after the ADF is closed. Leachate pump and piping calculations for active filling and post closure conditions are provided in **Appendix E.4**.

Leachate and contact water is currently pumped to the Leachate/Surface Water Pond. During larger rainfall events, some contact water storage in Modules 12 and 13 will be required. During a 25-year, 24-hour storm event, the water level in Modules 12 and 13 will reach approximate elevation 796.6 ft msl. The leachate pumps in the Modules 12 and 13 will pump the water to Leachate/Surface Water Pond in approximately 114 hours (4 days and 18 hours) following a 25-year, 24-hour storm event with an open area of approximately 8.5 acres. Dual contained HDPE leachate force mains will be installed as shown on **Plan Sheets 5** and **10**. Under active filling conditions the leachate pumps will discharge to the larger diameter force main to the Leachate/Surface Water Pond. Following ADF final closure, the leachate pumps will discharge to smaller diameter piping to the Leachate Storage Tank.

As noted above, when the ADF is closed, leachate sumps will be installed to facilitate pumping leachate from Modules 1 and 2 to the Leachate Storage Tanks. Pump sizing calculations are in **Appendix E.4**.

15.1.4.5 Leachate/Surface Water Pond

Leachate and contact water from Module 1 through 6, and Modules 10 and 11 is currently discharged to the existing Leachate/Surface Water Pond located to the east of Module 2. The pond has a 30-mil PVC liner along the bottom and sides to approximate elevation 797. Water in the Leachate/Surface Water Pond is periodically pumped to a leachate hauling vehicle and discharged to the Primary Ash Pond or applied to the active fill area for dust control.

SCS evaluated the capacity of the Leachate/Surface Water Pond for two purposes:

- Verify that the pond provides at least 4 days of leachate storage capacity based on leachate generation rates described in NR 512.12(3).

- Determine the maintenance water level elevation during different phases of ADF development such that the pond can contain contact water from a 25-year, 24-hour storm event within the lined limits of the pond.

To verify that the Leachate/Surface Water Pond provides at least 4 days of leachate storage capacity, the amount of leachate generated on a daily basis was calculated based on leachate generation rates provided in NR 512.12(3). The leachate generation rate was calculated

assuming all areas of Phase 1 without final cover are open, Phase 2 Modules 10 and 11 are open, and new Module 12 is open (i.e., 6 inches per year over the active area). The leachate volume generated over 4 days is approximately 55,500 gallons, which is significantly lower than the maximum Leachate Surface Water Pond storage volume of 1,455,700 gallons.

The Leachate/Surface Water Pond capacity to manage contact water was evaluated by SCS under the proposed Primary and Secondary Ash Pond closure filling sequence in the Plan Modification Request/Plan of Operation Update dated May 2022. The evaluation showed that the Leachate/Surface Water Pond can contain contact water from 7.8 acres of open area during a 25-year, 24-hour storm event. Therefore, the filling sequence was developed to limit open area by use of interim cover and rain cover.

The pond capacity evaluation assumes that the pond will have no more than 6 inches of standing water before the storm event. During the 25-year, 24-hour storm event, the water level in the pond will reach a maximum level of 796.97 msl, which is at the top of the pond liner elevation of 796.97 msl. This approach to evaluating the storage capacity of the Leachate/Surface Water pond was previously approved by the WDNR in 2018, 2021, and 2022 as part of a rain cover plan modification approval for future module construction.

The capacity of the Leachate/Surface Water Pond was determined from the HydroCAD modeling presented in **Appendix E.4**. The modeling was developed to establish the maximum operating level in the pond required to contain the subsequent runoff within the lined limits under various rainfall events. The results of this evaluation are presented in Figures 1A and 2A within **Appendix E.4**. The modeling results indicate that the Leachate/Surface Water Pond has the capacity to accommodate runoff from the 25-year, 24-hour storm event, assuming the operating water levels in the pond presented in Figures 1A and 2A are maintained. The maximum allowable open area and contact water sump area during filling of Module 12 and 13 is 8.51 acres.

The modeling involved delineating watersheds to the pond, including those outside of the active module area that drain to the pond. The HydroCAD model was then used to generate the runoff hydrograph. Active filling areas were assumed to be impermeable. By routing the runoff from the contributing drainage areas into the pond, the HydroCAD model estimated the peak water elevation in the pond resulting from a 25-year, 24-hour storm event. The amount of freeboard available in the lined pond area was then used to determine the maximum allowable operating water level in the pond. The HydroCAD modeling simulation is included in **Appendix E.4**.

15.1.4.6 Leachate Storage Tank

Following closure of the ADF, a 15,000-gallon underground leachate storage tank will be installed east of Module 1 as shown on **Plan Sheets 5** and **10**. Details for the storage tank and associated load out facility are shown on **Details 2** and **3**, **Plan Sheet 22**.

15.1.4.7 Leachate Headwells

Leachate headwells will be installed in Module 12 and Module 13 (see **Plan Sheet 10** and **Detail 3, Plan Sheet 17**). Based on the pipe filter calculation (**Appendix E.1**), a slot size of 0.01 inches (No. 10 or 10 slot) is acceptable for the leachate headwells.

The leachate headwell in Module 5 will be abandoned following WDNR approval of Module 12 liner construction. This headwell will no longer be accessible after filling begins in Module 12. If Module 13 is constructed, the leachate headwell in Module 6 will be abandoned.

15.1.5 Final Cover System

The proposed final cover system is discussed in **Section 5.0**. Final cover grades for each of the Scenarios 2 and 3 are shown on **Plan Sheet 7 and Plan Sheet 12**, respectively.

15.1.5.1 Slope Stability

Interim waste slopes and final grade waste slopes were evaluated in terms of global slope stability to determine the slope stability safety factors (**Appendix E.1**). Slope stability safety factors meeting the recommended minimum values were calculated based on the analyses.

15.1.5.2 Intermediate Drainpipes and Toe Drainpipes

In accordance with NR 504.07(6)(a), drainage analyses were performed to assess the design and construction requirements for the final cover. **Appendix E.1** contains the pipe flow calculations to confirm that the intermediate drain pipes and toe drain pipes are suitable to collect and discharge flow from the drainage layers. Toe drain outlet pipes will be installed at a maximum spacing of one per 200 feet of toe drain. Additional intermediate drainage pipes discharging to the intermediate swales and downslope flumes will be installed in the final cover converging flow areas. Details of the final cover drainage piping are provided on **Plan Sheets 7** and **12**. Drain sock geotextile calculations for sand drainage layer pipes will be performed as described in the CQA/QCP (**Appendix D**).

15.1.5.3 Final Cover Phasing

WPL is currently planning to install final cover over the western slopes of Modules 2 through 5 in 2024. Final cover construction over the balance of the ADF will be placed at a later date based on pending plant decommissioning planning.

15.1.6 Surface Water Management System

The currently approved surface water management system for the ADF consists of a network of diversion berms, downslope channels and flumes, perimeter ditches, culverts, and a sedimentation basin. Diversion berms located on the final cover of Modules 1 and 2 and the intermediate cover of Modules 2, 3, and 4 direct surface water runoff to the sedimentation basin located south of the ADF.

Proposed final grades for Scenario 2 are shown on **Plan Sheet 7** and Scenario 3 on **Plan Sheet 12**. The plan sheets show proposed diversion berms, downslope channels and flumes, energy dissipators, perimeter swales, and culverts that will direct surface water runoff from the final cover to the sedimentation basins. Details of the final cover and perimeter drainage features are shown on **Plan Sheets 25** and **26**.

Storm water runoff calculations in **Appendix E.6.1** show that the proposed final cover features, perimeter drainage features, and sedimentation basin can handle runoff from a 25-year, 24-hour storm event, and that they can safely pass the 100-year, 24-hour storm event.

Erosion controls that will be installed prior to ADF construction activities are shown on **Plan Sheets 7** and **12**, and erosion control details are shown on **Plan Sheet 28**.

Most of the final cover system drains to the sedimentation basin located south of the ADF. The portion of the north final cover system below the lowest diversion berms will drain to an existing infiltration area on the north side of Murray Road, designated the North Infiltration Area in the storm water calculations. Storm water calculations show that runoff from the 25-Year, 24-hour and 100-

year, 24-hour storm events will not overflow the infiltration area. The high water levels in the infiltration area are shown on **Detail 8**, **Plan Sheet 27**. No improvements to the infiltration area are needed to manage runoff from the northern portion of the final cover system.

15.1.7 Site Access

The existing ADF entrance near the northeast corner of Module 6 will be maintained and used for construction of either scenarios 2 or 3, as well as plant operations, including hauling of leachate from the Leachate/Surface Water Pond.

With the construction of potential future module liner, the access road extending around Modules 10 and 11 and around the south side of the Leachate/Surface Water Pond with remain, providing vehicle access to the Leachate/Surface Water Pond and Modules 1 and 2 (see **Plan Sheets 7** and **12**).

15.2 FILLING SEQUENCE AND OPERATIONS

15.2.1 Module 12 Filling Operations

Following WDNR Module 12 liner construction approval, an initial lift of CCR will be placed across the bottom of the module. This initial lift of waste will be 3 feet thick to protect the underlying composite liner materials from CCR placement traffic. Well graded material will be used for the initial lift placed over the leachate collection sumps to allow for good drainage. Once the initial lift has been completed, waste will be placed in lifts of 6 to 12 inches progressing across approximately the western 2/3rds of Module 12. The eastern end of Module 12 will be left open to allow for contract water management. CCR will be graded to eliminate ponding and provide positive drainage. Interior CCR surfaces should be sloped at a minimum of 1 percent.

15.2.2 Module 12 and 13 Filling Operations

Following WDNR Modules 12 and 13 liner construction approval, an initial lift of CCR will be placed across the bottom of the module. This initial lift of waste will be 3 feet thick to protect the underlying composite liner materials from CCR placement traffic. Well graded material will be used for the initial lift placed over the leachate collection sumps to allow for good drainage. Once the initial lift has been completed, waste will be placed in lifts of 6 to 12 inches progressing across approximately the western 2/3rds of Modules 12 and 13. The eastern end of Modules 12 and 13 will be left open to allow for contract water management. CCR will be graded to eliminate ponding and provide positive drainage. Interior CCR surfaces should be sloped at a minimum of 1 percent

15.2.3 Intermediate Cover

CCR will be placed to exterior and interim waste grades so that intermediate cover (2 feet) can be placed and seeded in accordance with Condition of Approval No. 13 of the October 8, 1984 Plan of Operation Addendum Approval. Intermediate cover will be placed in areas where filling will not occur for a period of 1 year or more. Prior to placement of additional waste in an area with intermediate cover, the intermediate cover will be removed.

15.3 ENVIRONMENTAL MONITORING PROGRAM

Once constructed, liquid levels at leachate head wells will continue to be monitored monthly. No other changes to the environmental monitoring program are proposed at this time. The monitoring program is summarized on **Plan Sheet 13**.

Monitoring wells MW-313, MW-314, and MW-315 are located within the proposed footprint of Module 12, and the wells extend below the proposed subbase grades. These wells will be abandoned according to the requirements of NR 141.25(2)(c) prior to construction of Module 12.

For Scenario 2, after construction of Module 12, additional wells will be installed north of Module 12 for CCR Rule purposes. They will be located within the permitted disposal area and may be used under the future state program.

For Scenario 3, after construction of Modules 12 and 13, additional wells will be installed north of Module 13 for CCR Rule purposes. They will be located within the permitted disposal area and may be used under the future state program.

15.4 FINANCIAL RESPONSIBILITY

For purposes of demonstrating financial responsibility under NR 520, premature site closure costs are estimated as "the total cost of closure for the point in time during operation of the facility when the extent and manner of its operation makes closure most expensive." For this facility, this point in time would occur when either scenario 2 or 3 is constructed and waste placement has occurred. Scenario 1 financial responsibility was submitted with the Modules 10 and 11 plan of operation modification submittal.

The closure cost estimate includes installing the final cover system, seeding and vegetating the final cover, completing construction of the surface water management system, and preparing a closure documentation report. Final cover installation includes placing the grading layer; placing the barrier layer; installing the GCL and geomembrane; installing drainage layer or geocomposite materials; constructing storm water management features; placing the soil components of the final cover; and seeding, fertilizing, and mulching the cover. The estimated premature closure cost for each of scenarios 2 and 3 are presented in **Appendix E.3**. A 10 percent contingency has been included in the cost estimate. Updated long-term care costs are provided in **Appendix E.3**.

16.0 LEACHATE/CONTACT WATER POND ABANDONMENT STRATEGY

"13. Provide a leachate/contact water pond abandonment strategy and transition to use of the leachate storage tank."

During final closure of the ADF, the Leachate/Surface Water Pond will be closed in accordance with NR 213. Pond closure will include:

- Removing accumulated sediment above the liner and placing it in the ADF.
- Removing the liner and disposing of it in the ADF or an offsite landfill.
- Backfilling the depression with onsite general fill materials and restoring the area.

17.0 PHASE 1, MODULES 5 AND 6 FINAL COVER PERMANENT HAUL ROAD

"14. Provide a design for the Phase 1, Modules 5 and 6 final cover permanent haul road."

The Phase 1, Modules 5 and 6 final cover permanent haul road has been designed as shown on **Detail 4, Plan Sheet 25.** Final grade waste slopes and access road slopes were evaluated in terms of global slope stability to determine the slope stability safety factors (**Appendix E.1**). Slope stability safety factors meeting the recommended minimum values were calculated based on the analyses. Unit gradient calculations are included in **Appendix E.1** to confirm that water infiltrating the final cover will be contained within the drainage layers (geocomposite) and will not result in unstable final cover slope conditions above the access road.

18.0 SPECIFIC MONITORING WELL PALS FOR HARDNESS AND ALKALINITY

"In addition to the above items, a sitewide preventive action limit (PAL) for specific conductance was discussed in a May 15, 1997, letter from the department (for both the active and closed landfills). Although the sitewide PAL has been accepted since then, it doesn't appear the sitewide PAL was formalized in an approval. It doesn't appear that specific monitoring well PALs for hardness and alkalinity have been proposed and subsequently approved either. The initial CCR permitting of the Dry Ash Disposal Facility is a good opportunity to address these items. The department believes that specific monitoring well PALs for specific conductance, hardness, and alkalinity should be calculated and proposed for the Dry Ash Disposal Facility's non-CCR wells, in addition to the CCR groundwater monitoring system requirements described in s. NR 514.045(1)(h), Wis. Adm. Code. Please include this item in a future addendum."

Proposed PALs for non-CCR monitoring wells are addressed in **Section 9.3**.

Tables

Table 1.
Coal Combustion Residual (CCR) Landfill Plan of Operation Modification for Initial Permitting Checklist
Section NR 514.045, Wis. Adm. Code
Wisconsin Power and Light Company - Columbia Dry Ash and Ash Pond Disposal Facilities / SCS Engineers Project #25222260.00

REGULATORY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
NR 514.045(1)(a) Does the submittal meet the requirements under s. NR 500.05, including the certifications required under s. NR 500.05(4)?					
NR 500.05 GENERAL SUBMITTAL REQUIREMENTS.					
(1) Has payment of the review fee of $30,500 been received? Note: The department sends an invoice to the facility contact upon receipt of the submittal. Payment is due within 30 days of receipt of the invoice.					
(2) Has a cover letter detailing the desired action been submitted?				Addendum 1 and 2, Cover Letter	
(3) Have the appropriate number of written and electronic copies been submitted to the department?				N/A	
(4) Are the report and plan sheets submitted under the seals and certifications of a licensed professional engineer and professional geologist?					
(5) Technical Procedures:					
Were all test procedures specified in the report?				N/A	
Were all technical procedures used to investigate the facility current standard procedures?				N/A	
Were explanations and reasons given for deviations from any current standard method?				N/A	
(6) Do all maps, plan sheets, drawings, isometrics, cross-sections, figures, photographs and tables meet the following requirements?					
(a) No larger than 32 inches by 44 inches and no smaller than 8 ½ inches x 11 inches. Note: Section NR 514.045, Wis. Adm. Code requires engineering plans be drawn on standard 24 inch by 36-inch plan sheets.					
(b) Appropriate scale to show all required detail in sufficient clarity.					
(c) ___numbered ___legends for all symbols ___referenced in the narrative ___horizontal & vertical scales ___titled ___drafting and origination dates					
(d) Use uniform scales.				Addendum 1, Figures 1 - 8; Addendum 2, Plan Set	
(e) Contain a north arrow.					
(f) Use mean sea level as the basis for all elevations.					
(g) Contain a survey grid based on monuments established in the field and which utilize a coordinate system and datum, such as state plane coordinates, Universal Transverse Mercator (UTM), or Wisconsin Transverse Mercator.					
(h) Show original topography and a grid system shown on the plan sheets that show construction, operation, and closure topography.					
(i) Any cross-sections: ___Show survey grid locations, ___Reference major plan sheets, ___Include a reduced diagram of plan view showing cross-section location.				N/A	
(7) A table of contents listing all sections of the submittal.				Report Table of Contents	
(8) An appendix listing the following: ___names of all references ___all raw data ___testing and sampling procedures ___calculations				Report Appendicies	
NR 514.045(1)(b) Does the submittal include a demonstration that all phases of the CCR landfill meet the performance criteria under s. NR 504.04(4)(a), (b), and (c)?					
NR 504.04(4) PERFORMANCE STANDARDS. Will the proposed landfill cause the following:					
(a) A significant adverse impact on wetlands? ___yes ___no Has a practicable alternatives analysis and a wetland functional values analysis been completed in accordance with ch. NR 103, if a wetland will be affected by the proposed landfill or any noncommercial soil borrow source activity? Note: See DNR wetland regulation website (https://dnr.wisconsin.gov/topic/Wetlands/permits) to help determine if a wetland permit may be needed per s. 281.36, Stats.				Addendum 1, Report Section 2.1.1 Addendum 2, Report Section 2.0	
(b) A take of an endangered or threatened species in accordance with s. 29.604, Stats? ___yes ___no				Addendum 1, Report Section 2.1.2 Addendum 2, Report Section 3.0	
(c) A detrimental effect on any surface water? ___yes ___no Note: Exemptions are not granted.				Addendum 1, Report Section 2.1.3	
For new CCR landfills or a lateral expansion of a CCR landfill, if the landfill failed to make the demonstration showing compliance with the criteria above, has the landfill ceased placing CCR in the CCR landfill per NR 514.045(5)(b)?				N/A	
NR 514.045(1)(c) Does the submittal include a demonstration that all phases of the CCR landfill meet the locational criteria under s. NR 504.04(3)(g), (h), and (i)?					
NR 504.04(3) LOCATIONAL CRITERIA. Are the proposed limits of filling within:					
(g) 200 feet of a fault that has had displacement in Holocene time? ___yes ___no ___If yes, was an exemption requested?				Addendum 1, Report Section 2.2.1	

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REGULATORY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
(h) Seismic impact zones? ___yes ___no ___If yes, was an exemption requested?				Addendum 1, Report Section 2.2.2	
(i) Unstable areas? ___yes ___no ___If yes, was an exemption requested?				Addendum 1, Report Section 2.2.3	
For new CCR landfills or a lateral expansion of a CCR landfill, if the landfill failed to make the demonstration showing compliance with the criteria above, has the landfill ceased placing CCR in the CCR landfill per NR 514.045(5)(b)?				N/A	
NR 514.045(1)(c) (continued) Does the demonstration for unstable areas address all of the following factors, at a minimum, when determining whether an area is unstable:					
1. On-site or local soil conditions that may result in significant differential settling.				Addendum 1, Report Section 2.2.4	
2. On-site or local geologic or geomorphologic features.				Addendum 1, Report Section 2.2.5	
3. On-site or local human-made features or events both surface and subsurface.				Addendum 1, Report Section 2.2.6	
For existing CCR landfills that do not comply with the location criteria for unstable areas specified above, has the owner or operator, within 6 months of the determination, done the following per NR 514.045(5)(a): ___ceased placing CCR and non-CCR waste streams into the CCR landfill ___closed the CCR landfill in accordance with the requirements under s. NR 506.083 Note: This timeframe does not apply if the owner or operator complies with the alternative closure procedures under s. NR 506.083 (7).				N/A	
NR 514.045(1)(d) Does the submittal include a demonstration that the facility or practices near floodplains will not cause the following effects:					
___Restrict the flow of the regional flood ___Reduce the temporary water storage capacity of the floodplain ___Result in washout of solid waste so as to pose a hazard to human life, wildlife, or land or water resources. Note: NR 504.04(3)(c) also requires no person may establish, construct, operate, maintain, or permit the use of property for a landfill where the limits of filling are or would be within a floodplain.				Addendum 1, Report Section 2.3.1	
For new CCR landfills or a lateral expansion of a CCR landfill, if the landfill failed to make the demonstration showing compliance with the criteria above, has the landfill ceased placing CCR in the CCR landfill per NR 514.045 (5)(b)?				N/A	
NR 514.045(1)(e) Does the submittal include a demonstration that the facility or practices will not result in the destruction or adverse modifications of the critical habitat of endangered or threatened species as identified in s. NR 27.03(1)?				Addendum 1, Report Section 2.4.1 Addendum 2, Report Section 3.0	
For new CCR landfills or a lateral expansion of a CCR landfill, if the landfill failed to make the demonstration showing compliance with the criteria above, has the landfill ceased placing CCR in the CCR landfill per NR 514.045 (5)(b)?				N/A	
NR 514.045(1)(f) Does the submittal include a demonstration that the CCR landfill design meets requirements under s. NR 504.12 or an alternate design under s. NR 504.10? Does the demonstration include a design report, engineering drawings, and calculations? Note: Complete NR 504.12 and if applicable NR 504.10 (for an alternate design) of the NR 504 Design and Construction Criteria Completeness Checklist.				Addendum 1, Report Section 3.0 Addendum 2, Report Section 15.0	
For new CCR landfills or a lateral expansion of a CCR landfill, if the landfill failed to make the demonstration showing compliance with NR 504.12 and NR 504.10 (for an alternate design), has the landfill ceased placing CCR in the CCR landfill per NR 514.045(5)(b)?				N/A	
NR 514.045(1)(g) Does the submittal include all of the plans required under s. NR 514.07(10)?					
NR 514.07(10) PLAN OF OPERATION. Does the submittal include all of the following:					
(a) A CCR fugitive dust control plan in accordance with all of the following:					
1. The plan shall identify and describe the CCR fugitive dust control measures the owner will use to minimize CCR from becoming airborne at the facility. The owner shall select and include in the CCR fugitive dust control plan the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation. See s. NR 514.07 (10)(a)1. for control measure examples.				Addendum 1, Appendix C1, Measures for Controlling Fugitive Dust	
2. The plan shall include procedures to wet CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, wetting of CCR may be accomplished with an appropriate chemical dust suppression agent.				Addendum 1, Appendix C1, Procedure for Conditioning CCR Prior to Placement	
3. The plan shall include a description of the procedures the owner will follow to periodically assess the effectiveness of the control plan. At a minimum, the assessment shall include a visual inspection at least every 7 days, unless the CCR landfill is inactive, and all areas are covered by intermediate or final cover.				Addendum 1, Appendix C1, Visual Inspections	
4. The plan shall be modified in accordance with s. NR 514.04 (6) whenever there is a change in conditions that may substantially affect the plan of operation.				Addendum 1, Appendix C1, Procedure for Periodic Review of CCR Fugitive Dust Control Plan	
5. The plan shall address the preparation of an annual fugitive dust control report in accordance with s. NR 506.20 (3)(a).				Addendum 1, Appendix C1, Procedure for Periodic Review of CCR Fugitive Dust Control Plan	
(b) A run-on and run-off control system plan that includes all of the following:					

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REGULATORY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
1. A run-on and run-off control system designed in accordance with the requirements under s. NR 504.12 (2).				Addendum 1, Appendix C2, Section 2.0	
2. Plan sheets depicting the location of run-on and run-off control features, detail drawings, and supporting engineering calculations.				Addendum 1, Appendix C2, Figures and Appendix A	
3. Construction procedures and a schedule for construction.				Addendum 1, Appendix C2, Section 2.3	
4. Modification every 5 years from the date of the most recent plan approval or whenever there is a change in conditions that may substantially affect the written plan in effect. The modification shall be requested by the owner in accordance with s. NR 514.04 (6) prior to the 5-year deadline.				Addendum 1, Appendix C2, Section 4.0	
(c) A written closure plan in accordance with all requirements under NR 514.06 (10) and all of the following:					
1. A narrative description of how the CCR landfill will be closed, including a description of the steps necessary to close the CCR unit at any point during the active life of the CCR unit, consistent with recognized and generally accepted good engineering practices.				Addendum 2, Appendix F, Section 2.0	
2. A description of the final cover system, designed in accordance with s. NR 504.07, and the methods and procedures to be used to install the final cover. Note: Complete NR 504.07 of the NR 504 Design and Construction Criteria Completeness Checklist.				Addendum 2, Appendix F, Section 3.0	
3. A demonstration, including a narrative discussion, of how final closure will meet the performance standards under s. NR 506.083 (6).				Addendum 2, Appendix F, Section 3.0	
4. An estimate of the maximum volume in cubic yards of CCR that will be disposed on-site over the active life of the CCR landfill.				Addendum 2, Appendix F, Section 4.0	
5. An estimate of the largest area of the CCR landfill that will require a final cover at any time during the CCR landfill's active life.				Addendum 2, Appendix F, Section 5.0	
6. A schedule for completion of all closure activities, including an estimate of the year in which all closure activities for the CCR landfill will be completed.				Addendum 2, Appendix F, Section 6.0 and 7.0	
7. The plan shall be modified in accordance with s. NR 514.04 (6) whenever there is a change in conditions that may substantially affect the written closure plan or unanticipated events necessitate a revision of the written closure plan.				Addendum 2, Appendix F, Section 9.0	
8. If closure of the CCR landfill will be accomplished through removal of CCR from the CCR landfill, the closure plan shall be modified and approved by the department prior to implementation in accordance with s. NR 514.04 (6).				N/A	
(d) A written long-term care plan that addresses all of the following:					
1. A description of the monitoring and maintenance activities and the frequency at which those activities will be performed. The activities shall include, at a minimum, all of the following: ___Long-term care activities specified under s. NR 514.06 (11). ___Maintaining the integrity and effectiveness of the final cover system, including making repairs as necessary. ___Maintaining the effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements under s. NR 504.12 (3) (a). ___Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with ch. NR 507 and the sampling plan approval.				Addendum 2, Appendix K, Section 2.0	
2. The name, address, telephone number, and email address of the person or office to contact about the facility during long-term care.				Addendum 2, Appendix K, Section 3.0	
3. A description of the planned uses of the property during long-term care. Post- closure uses may not disturb the integrity of the final cover, liner, or other component of the landfill, or function of the monitoring systems unless approved in writing by the department. A written request for approval as part of the plan of operation submittal or a modification shall include a demonstration that disturbance of any part of the CCR landfill will not increase the potential threat to human health or the environment.				Addendum 2, Appendix K, Section 4.0	
NR 514.045(1) (h) Does the submittal include a demonstration that the CCR groundwater monitoring system complies with the requirements under s. NR 507.15(3), including documentation of the design, installation, and development of any CCR wells?					
NR 507.15(3) CCR LANDFILLS. In addition to the detection groundwater monitoring system required under s. NR 507.19, the CCR landfill owner shall submit a plan establishing a separate CCR groundwater monitoring system for the purpose of monitoring groundwater quality in the uppermost aquifer. The plan shall be submitted with the plan of operation modification for initial permitting in accordance with s. NR 514.045 or in the feasibility report under ch. NR 512. The plan shall include all of the following:				Addendum 2, Report Section 7.0	
(a) Does the monitoring system consist of a sufficient number of CCR monitoring wells, installed at appropriate locations and depths?				Addendum 2, Report Section 7.1.1	
Are the CCR wells adequate to yield groundwater samples from the uppermost aquifer that accurately represent upgradient groundwater quality that has not been affected by leakage from CCR landfill and downgradient groundwater quality passing the waste boundary of the CCR landfill?				Addendum 2, Report Section 7.1.1	
Are the downgradient monitoring wells installed to ensure detection of groundwater contamination in the uppermost aquifer, including all known or suspected contaminant pathways?				Addendum 2, Report Section 7.1.1	
(b) Has the number, spacing, and depths of monitoring wells that are part of the CCR groundwater monitoring system plan based upon site-specific technical information that includes the following? ___Aquifer thickness ___Groundwater flow rate ___Groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow				Addendum 2, Report Section 7.1.1	

Table 1.
Coal Combustion Residual (CCR) Landfill Plan of Operation Modification for Initial Permitting Checklist
Section NR 514.045, Wis. Adm. Code
Wisconsin Power and Light Company - Columbia Dry Ash and Ash Pond Disposal Facilities / SCS Engineers Project #25222260.00

REGULATORY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
Does the monitoring system consider the saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities?				Addendum 2, Report Section 7.1.1	
(c) Does the monitoring system plan include the minimum number of monitoring wells necessary to meet performance standards specified under (a) based on the site- specific information specified under (b).?				Addendum 2, Report Section 7.1.1	
1. Does the groundwater monitoring system plan contain a minimum of one upgradient and 3 downgradient monitoring wells to be designated as CCR wells?				Addendum 2, Report Section 7.1.1	
2. Does the groundwater monitoring system contain additional monitoring wells as necessary to accurately represent the background groundwater quality in the uppermost aquifer that has not been affected by leakage from the CCR landfill and the quality of groundwater passing the waste boundary of the CCR landfill?				Addendum 2, Report Section 7.1.1	
(d) Have the monitoring wells been designed and installed in accordance with NR 507.06 and regularly inspected in accordance with NR 507.13?				Addendum 2, Report Section 7.1.1	
(e) Has the documentation of the design, installation, development, and decommissioning of all wells and measurement/sampling devices been performed in accordance with NR 507.14 and NR 141, where applicable? This includes submission of all required forms to the department in the timeframes specified.				Addendum 2, Report Section 7.1.1	
NR 514.045 (i) Does the submittal include an updated sampling plan that addresses the requirements under s. NR 507.15(3)?					
NR 507.15(3) CCR LANDFILLS. Does the sampling plan address all of the following:					
(f) A sampling plan, which includes the CCR groundwater monitoring system, in accordance with s. NR 507.16 and the requirements under s. NR 140.16. Note: Complete NR 507.16(1) below.				Addendum 2, Report Section 7.1.2	
Does the sampling plan include consistent sampling and analysis procedures designed to ensure the production of monitoring results that provide an accurate representation of groundwater results that provide an accurate representation of groundwater quality in the uppermost aquifer at the upgradient and downgradient CCR wells and that provide a characterization of leachate quality generated by the CCR landfill?				Addendum 2, Report Section 7.1.2	
(g) Does the sampling plan include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure all required monitoring parameters under ch. NR 507, Appendix I in groundwater samples?				Addendum 2, Report Section 7.1.3	
Does the sampling plan specify the CCR landfill owner or operator obtain and analyze samples in accordance with the sampling plan and the requirements under s. NR 507.17?				Addendum 2, Report Section 7.1.3	
(h) In addition to the field measurements required under s. NR 507.17(1), does the plan include measurement of the groundwater elevations in each CCR well immediately prior to purging, each time groundwater is sampled.				Addendum 2, Report Section 7.1.4	
Does the plan include determination of the rate and direction of groundwater flow each time groundwater is sampled and reporting the result to the department in accordance with s. NR 507.26?				Addendum 2, Report Section 7.1.4	
Does the plan include that groundwater elevations in wells that monitor the same CCR landfill be measured within a timeframe short enough to avoid temporal variations in groundwater flow that could preclude accurate determination of groundwater flow rate and direction?				Addendum 2, Report Section 7.1.4	
(i) Has the owner/operator established baseline groundwater quality levels for each CCR monitoring well in accordance with NR 507.18 for each CCR well and for each of the constituents required under ch. NR 507 Appendix I, Table 1A and the sampling plan?				Addendum 2, Report Section 7.1.5	
(j) Has the owner/operator measured the total recoverable metal concentrations when measuring groundwater quality for each CCR monitoring well?				Addendum 2, Report Section 7.1.6	
Does measurement of total recoverable metals include both the particulate fraction and dissolved fraction of metals in natural waters? To ensure this, groundwater samples from CCR wells may not be field filtered prior to analysis.				Addendum 2, Report Section 7.1.6	
(k) Does the plan specify the owner/operator notify the department in writing within 60 days of completing sampling and analysis at any CCR well when a groundwater standard at the point of standards application has been attained or exceeded in accordance with s. NR 507.30?				Addendum 2, Report Section 7.1.7	
(L) Does the plan specify the owner/operator conduct detection groundwater monitoring at all CCR monitoring wells in accordance with NR 507.19 and all of the following?				Addendum 2, Report Section 7.1.8	
Does detection groundwater monitoring include groundwater monitoring for all constituents appropriate for CCR wells as listed under ch. NR 507 Appendix I, Table 1A and additional parameters as required by the department.				Addendum 2, Report Section 7.1.8	
1. Is the minimum monitoring frequency semi-annual for detection groundwater monitoring?				Addendum 2, Report Section 7.1.8	
Has baseline groundwater quality been established at each CCR monitoring well in accordance with s. NR 507.18? This includes collection of a minimum of 8 independent groundwater quality samples for each CCR well, analyzed for constituents' approval for CCR landfills as listed under ch. NR 507 Appendix I, Tables 1A and 3 and additional parameters as required by the department.				Addendum 2, Report Section 7.1.8	
2. Does the plan specify the number and methodology of groundwater quality samples be collected and analyzed for each CCR well during subsequent sampling events consistent with the approved sampling plan?				Addendum 2, Report Section 7.1.8	
Does the plan specify the CCR landfill owner or operator inform the department in accordance with s. NR 507.26 of any CCR well that purges dry, is damaged or obstructed, or in any way is rendered such that a sample was unable to be collected from the well during a scheduled sampling event and does the plan specify the owner or operator propose remedial actions to correct the problem prior to the next sampling event?				Addendum 2, Report Section 7.1.8	
3. Does the plan specify the owner or operator of the CCR landfill notify the department and respond in accordance with s. NR 507.30 when a groundwater standard at the point of standards application has been attained or exceeded at any CCR well? This includes the establishment of an assessment monitoring program meeting the requirements under s. NR 508.06, unless the exceedance is determined by the department to be from a source other than the CCR landfill, or that the groundwater standard exceedance resulted from error in sampling, analysis, or natural variation in background groundwater quality in accordance with s. NR 508.06(2)(f)2.				Addendum 2, Report Section 7.1.8	

Table 1.
Coal Combustion Residual (CCR) Landfill Plan of Operation Modification for Initial Permitting Checklist
Section NR 514.045, Wis. Adm. Code
Wisconsin Power and Light Company - Columbia Dry Ash and Ash Pond Disposal Facilities / SCS Engineers Project #25222260.00

REGULATORY REQUIREMENTS	COMPLETE?			LOCATION	COMMENTS
	Y	N	NA		
4. Does the plan specify the point of standards application for a groundwater quality exceedance at a CCR well, the horizontal distance for the design management zone under s. NR 140.22(3)(a) for a CCR landfill is 0 feet from the waste boundary and may not be expanded by the department under s. NR 140.22(3)(b)? The waste boundary includes the horizontal space taken up by any liner, dike or other barrier designed to contain CCR waste.				Addendum 2, Report Section 7.1.8	
(m) Does the plan specify the owner or operator of the CCR landfill prepare an annual groundwater monitoring and corrective action report for submittal to the department, placement in the written operating record and position g on the publicly accessible internet site under s. NR 506.17(2) and (3) no later than January 31 of the year following the calendar year a groundwater monitoring system has been approved by the department, and annually thereafter?				Addendum 2, Report Section 7.1.9	
Does the plan specify that the annual report document the status of the groundwater monitoring and any corrective action implemented at the CCR landfill, summarize key activities completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year?				Addendum 2, Report Section 7.1.9	
Does the plan specify the annual groundwater monitoring and corrective action report contain, at a minimum the information included in ss. NR 507.15(3)(m) 1. – 5.				Addendum 2, Report Section 7.1.9	
NR 507.16(1) SAMPLING PLAN. Does the sampling plan include the following information:					
(a) An 8 1/2 by 11 inch site map showing locations of all sample points and devices. An 11 by 17 inch site map may be included if clarity is compromised using the 8 1/2 by 11 inch size. Different symbols shall be used to differentiate types of monitoring devices such as groundwater monitoring wells, collection lysimeters and gas monitoring wells. Each sample point shall be labeled.				Addendum 2, Appendix H	
(b) A sample schedule, including all of the following: ___1. The months that each sample point is to be sampled. ___2. The sampling period, as designated by the department. ___3. The list of parameters that are to be analyzed for in the sample from each monitoring device during each month that sampling occurs.				Addendum 2, Appendix H	
(c) Procedures for field measurements, including all of the following: ___1. The order in which wells should be sampled if the groundwater has been impacted by regulated or other activities. ___2. The procedures and type of equipment used to measure water level elevations. ___3. The procedures and type of equipment used to measure temperature, pH, conductivity and procedures to determine turbidity, odor and color.				Addendum 2, Appendix H	
(d) Procedures for purging wells, including all of the following: ___1. Procedures to purge wells prior to collecting samples. ___2. Procedures for determining the volume of water to be removed from each well. ___3. The type of equipment used to purge wells. ___4. The rate of flow while purging, when applicable. ___5. Procedures to clean purging equipment between wells. ___6. The amount of time required between purging and sampling.				Addendum 2, Appendix H	
(e) Procedures for obtaining samples from wells, including all of the following: ___1. Procedures and type of equipment used to retrieve samples. ___2. Volume of sample required for analysis. ___3. Procedures and type of equipment to filter samples, including when to filter and when not to filter samples, if applicable. ___4. The rate of flow when sampling, when applicable. ___5. Procedures and type of equipment to physically and chemically preserve samples. ___6. Procedures to clean sampling equipment following sampling of one well and prior to sampling the next well.				Addendum 2, Appendix H	
(f) Procedures for establishing field quality assurance and quality control, including all of the following: ___1. Field blank, duplicate sample and trip blank procedures. ___2. The frequency at which the field blanks, duplicate samples and trip blanks will be collected or processed.				Addendum 2, Appendix H	
(g) Special procedures to sample water supply wells.				Addendum 2, Appendix H	
(h) Special procedures to sample leachate headwells and other devices.				Addendum 2, Appendix H	
(i) Chain of custody procedures, including persons responsible for sampling and methods for transporting samples to the laboratory.				Addendum 2, Appendix H	

Table 2. Proposed Preventive Action Limits for Indicator Parameters, CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility / SCS Engineers Project #25222260.00

Well Name	License #3018 DNR ID #	Alkalinity, Total (mg/L as CaCO3) (00410)	Calcium, Total (mg/L) (00916)	Hardness, Total (mg/L as CaCO3) (00900)	Lithium, Total (µg/L) (01132)	Total Dissolved Solids (mg/L) (00360)	Field Specific Conductance (umhos/cm at 25C) (00094)	Field pH, Lower and Upper PALs (Standard Units) (00400)
MW-33AR	063	310	150	390	3.0	850	1,400	6.6 / 8.7
MW-34A	020	310	91	410	1.0	540	820	6.6 / 8.7
MW-84A	038	460	100	490	1.0	550	830	6.3 / 8.4
MW-301	100	690	160	720	1.3	650	1,200	5.8 / 7.9
MW-302	102	420	120	450	NC	610	900	6.3 / 8.4
MW-309	104	490	180	1,200	1.7	2,100	4,300	6.5 / 8.6
MW-310	106	NC	80	NC	1.7	990	2,000	6.7 / 8.8
MW-311	108	380	90	400	1.1	510	740	6.6 / 8.7

Abbreviations:
mg/L = milligrams per liter
µg/L = micrograms per liter
CaCO3 = calcium carbonate
PALs = preventive action limits
umhos/cm = micromhos per centimeter
NC = Eight results not available due to removal of outlier(s). PALs will be submitted at a later date, when eight results are available.

Created by: MDB Date: 8/9/2023
Revised by: MDB Date: 8/9/2023
Checked by: AJR Date: 8/14/2023

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[Tables X-X_PAL and ACL summaries.xls]Table 7_Non CCR ACLs

Table 3.
Groundwater Results Exceeding NR 140 Standards - CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, Modules 1-3 and 4-6

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Antimony, Total (µg/L)	1.2	6	No Exceedances			
Arsenic, Total (µg/L	1	10	MW-310	6/23/2018	1.2	PAL
			MW-33AR	10/13/2016	1.2	PAL
Barium, Total (mg/L)	0.4	2	No Exceedances			
Beryllium, Total (µg/L	0.4	4	MW-310	4/23/2018	0.72 J	*
				6/23/2018	0.59 J	*
			MW-84A	4/14/2021	0.47	PAL
Boron, Total (µg/L)	200	1000	MW-302	4/11/2017	322	PAL
				6/6/2017	671	PAL
				8/8/2017	833	PAL
				10/24/2017	691	PAL
				4/24/2018	1950	ES
				9/21/2018	203	PAL
				10/22/2018	296	PAL
				4/2/2019	254	PAL
				10/9/2019	246	PAL
				5/29/2020	611	PAL
				10/8/2020	648	PAL
				4/13/2021	521	PAL
				10/14/2021	495	PAL
				4/12/2022	389	PAL
				10/27/2022	374	PAL
				4/27/2023	541	PAL
			MW-33AR	12/21/2015	954	PAL
				4/5/2016	813	PAL
				7/7/2016	794	PAL
				10/13/2016	827	PAL
				12/29/2016	812	PAL
				1/25/2017	763	PAL
				4/11/2017	760	PAL
				6/6/2017	692	PAL
				8/7/2017	697	PAL
				10/24/2017	678	PAL
				4/24/2018	601	PAL
				9/21/2018	683	PAL
				10/22/2018	682	PAL
				4/2/2019	568	PAL
				10/8/2019	548	PAL
				5/28/2020	566	PAL
				10/8/2020	569	PAL
				4/13/2021	473	PAL
				10/12/2021	564	PAL
				4/12/2022	558	PAL
				10/27/2022	586	PAL
				4/27/2023	532	PAL
			MW-34A	12/21/2015	230	PAL
				12/21/2015	205	PAL
				4/5/2016	220	PAL
				7/7/2016	216	PAL
				10/13/2016	212	PAL

Table 3.
Groundwater Results Exceeding NR 140 Standards - CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, Modules 1-3 and 4-6

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Boron, Total (µg/L), continued	200	1,000	MW-34A, continued	12/29/2016	224	PAL
				1/25/2017	214	PAL
				4/11/2017	214	PAL
				6/6/2017	201	PAL
				8/7/2017	205	PAL
				10/24/2017	208	PAL
				4/24/2018	209	PAL
				9/21/2018	241	PAL
				10/22/2018	233	PAL
				4/2/2019	204	PAL
				10/8/2019	207	PAL
				5/28/2020	210	PAL
				10/8/2020	213	PAL
				4/13/2021	203	PAL
				10/12/2021	212	PAL
				4/12/2022	237	PAL
				10/27/2022	264	PAL
				4/26/2023	220	PAL
Cadmium, Total (µg/L)	0.5	5	MW-309	6/23/2018	0.58 J	*
			MW-310	6/23/2018	0.78 J	*
			MW-33AR	10/13/2016	0.66 J	*
			MW-34A	10/13/2016	0.51 J	*
			MW-84A	4/14/2021	0.53 J	*
Chloride, Total (mg/L)	125	250	MW-309	2/21/2018	147	PAL
				3/23/2018	157	PAL
				4/23/2018	157	PAL
				5/24/2018	141	PAL
				6/23/2018	203	PAL
				7/23/2018	557	ES
				8/22/2018	811	ES
				9/21/2018	329	ES
				4/2/2019	145	PAL
				5/29/2020	350	ES
				10/8/2020	575	ES
				4/13/2021	390	ES
				10/14/2021	519	ES
				4/12/2022	319	ES
				10/26/2022	796	ES
				4/26/2023	372	ES
			MW-310	8/22/2018	139	PAL
				9/21/2018	152	PAL
				10/8/2019	190	PAL
				5/29/2020	128	PAL
				10/8/2020	310	ES
				12/11/2020	227	PAL
				4/13/2021	227	PAL
				6/11/2021	220	PAL
				10/26/2022	323	ES
				11/30/2022	215	PAL
				4/26/2023	128	PAL

Table 3.
Groundwater Results Exceeding NR 140 Standards - CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, Modules 1-3 and 4-6

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Chloride, Total (mg/L), continued	125	250	MW-33AR	4/24/2018	188	PAL
				4/2/2019	229	PAL
				10/8/2019	153	PAL
Chromium, Total (µg/L)	10	100	No Exceedances			
Cobalt, Total (µg/L)	8	40	No Exceedances			
Copper, Total (µg/L)	130	1,300	No Exceedances			
Fluoride, Total (mg/L)	0.8	4	No Exceedances			
Lead, Total (µg/L)	1.5	15	MW-301	4/13/2022	3.1	PAL
Manganese, Total (µg/L)	25	50	MW-301	10/27/2022	280	ES
				12/2/2022	47.2	PAL
				1/12/2023	28.1	PAL
				2/21/2023	28	PAL
			MW-302	1/13/2023	28.4	PAL
			MW-311	2/21/2023	85.2	ES
Mercury, Total (µg/L)	0.2	2	No Exceedances			
Molybdenum, Total (µg/L)	8	40	MW-302	12/22/2015	8.9	PAL
				4/5/2016	8.0	PAL
Nitrogen (NO2 + NO3), Total (mg/L)	2	10	MW-301	3/28/2023	2.1	PAL
				4/27/2023	2.4	PAL
			MW-311	4/26/2023	2.1	PAL
			MW-33AR	04/14/2015	2.8	PAL
				10/07/2015	3.8	PAL
				04/05/2016	3.6	PAL
				10/13/2016	2.8	PAL
				04/11/2017	2.5	PAL
			MW-34A	04/14/2015	6.2	PAL
				10/07/2015	8.6	PAL
				04/05/2016	11.2	ES
				10/13/2016	9.8	PAL
				04/11/2017	11.0	ES
				04/24/2018	7.7	PAL
				10/12/2021	2.9	PAL
				04/12/2022	3.5	PAL
				10/27/2022	4.7	PAL
				10/27/2022, dup	4.8	PAL
				12/2/2022	4.7	PAL
				1/13/2023	4.4	PAL
				2/21/2023	4.8	PAL
				3/27/2023	4.6	PAL
				4/26/2023	4.5	PAL
				4/26/2023, dup	4.6	PAL
				5/31/2023	4.7	PAL
				6/30/2023	4.4	PAL
Selenium, Total (µg/L)	10	50	No Exceedances			
Silver, Total (µg/L)	10	50	No Exceedances			

Table 3.
Groundwater Results Exceeding NR 140 Standards - CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, Modules 1-3 and 4-6

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Sulfate, Total (mg/L)	125	250	MW-309	4/26/2023	143	PAL
				6/29/2023	147	PAL
			MW-33AR	12/29/2016	132	PAL
				1/25/2017	133	PAL
				4/11/2017	139	PAL
				6/6/2017	151	PAL
				8/7/2017	164	PAL
				10/24/2017	175	PAL
				4/24/2018	163	PAL
				4/2/2019	201	PAL
				10/8/2019	182	PAL
				4/12/2022	155	PAL
				10/27/2022	153	PAL
			MW-34A	4/24/2018	144	PAL
				9/21/2018	141	PAL
				4/12/2022	146	PAL
				10/27/2022	169	PAL
Thallium, Total (µg/L)	0.4	2	MW-301	12/29/2016	0.48 J	*
				4/2/2019	0.48 J	*
			MW-309	4/23/2018	0.83 J	*
				6/23/2018	0.57 J	*
				7/23/2018	0.42 J	*
			MW-310	4/23/2018	0.73 J	*
				6/23/2018	0.9 J	*
				7/23/2018	0.44 J	*
			MW-33AR	10/13/2016	0.76 J	*
			MW-34A	10/13/2016	0.68 J	*
			MW-84A	4/14/2021	0.66 J	*
Zinc, Total (µg/L)	2,500	5,000	No Exceedances			

Notes:

PAL = NR 140 Preventive Action Limit µg/L = micrograms per liter dup = Duplicate Sample
ES = NR 140 Enforcement Standard mg/L = milligrams per liter

*: Numeric result is over PAL, but result is below method detection limit (J flag) and thus is not considered a PAL exceedance.

Prepared by: MDB, 8/4/2023
Checked by: NLB 8/8/2023

Table 4. Proposed Alternative Concentration Limits for Public Health and Welfare Parameters, CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility / SCS Engineers Project #25222260.00

Well	License # 03025 DNR ID #	Beryllium, Total	Boron, Total	Chloride, Total	Manganese, Total	Nitrite + Nitrate as Nitrogen, Total	Sulfate, Total	Thallium, Total
		PAL = 0.4 ES = 4 µg/L	PAL = 0.2 ES = 1 mg/L	PAL = 125 ES = 250 (mg/L)	PAL = 25 ES = 50 (µg/L)	PAL = 2 ES = 10 (mg/L)	PAL = 125 ES = 250 (mg/L)	PAL = 0.4 ES = 2 (µg/L)
MW-33AR	063	--	0.92	180	--	3.4	200	--
MW-34A	020	--	0.25	--	--	12	160	--
MW-84A	038	--	--	--	--	--	--	--
MW-301	100	--	--	--	48	2.7	--	--
MW-302	102	--	1.3	--	--	--	--	--
MW-309	104	--	--	820	--	--	--	0.89
MW-310	106	0.78	--	330	--	--	--	1.3
MW-311	108	--	--	--	--	--	--	--

Abbreviations:
PAL = NR 140 preventive action limit
ES = NR 140 enforcement standard
ACLs = Alternative concentration limits
mg/L = milligrams per liter
µg/L = micrograms per liter

Created by: MDB Date: 8/9/2023
Revised by: MDB Date: 8/9/2023
Checked by: AJR Date: 8/14/2023

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[Tables X-X_PAL and ACL summaries.xls]Table 2_CCR PALs

Table 5. Proposed Preventive Action Limits for Indicator Parameters, Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility / SCS Engineers Project #25222260.00

Well Name	License #03025 DNR ID #	Alkalinity, Total Filtered (mg/L as CaCO3) (39036)	Field Specific Conductance (umhos/cm at 25C) (00094)	Hardness, Total Filtered (mg/L as CaCO3) (22413)
MW-33BR	065	340	1,000	350
MW-34B	021	290	900	330
MW-37A	022	420	1,800	590
MW-83	059	260	700	260
MW-84B	039	440	800	440
MW-86	041	510	2,600	650
MW-92A	055	530	1,100	560
MW-92B	057	590	970	610

Abbreviations:
mg/L = milligrams per liter
PALs = preventive action limits
CaCO3 = calcium carbonate
umhos/cm = micromhos per centimeter

Created by: MDB Date: 8/9/2023
Revised by: MDB Date: 8/9/2023
Checked by: AJR Date: 8/14/2023

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[Tables X-X_PAL and ACL summaries.xls]Table 4_CCR ACLs

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Aluminum, Dissolved (µg/L)	40	200	MW-37A	10/9/2019	43.6 J	*
				4/13/2022	55.6 J	*
			MW-84B	10/9/2019	43.3 J	*
			MW-86	10/9/2019	51	PAL
			MW-92A	10/9/2019	42.4 J	*
			MW-92B	10/9/2019	61.3	PAL
			MW-93A^	4/24/2023	41.7 J	*
Arsenic, Dissolved (µg/L)	1	10	MW-34B	10/25/2022	1.5	PAL
			MW-86	10/25/2002	1.0	PAL
				10/27/2009	1.3	PAL
			MW-92A	10/25/2002	1.0	PAL
				10/27/2009	1.5	PAL
			MW-92B	10/16/1996	1.4	PAL
				4/8/1997	2.2	PAL
				4/14/1998	2.5	PAL
				10/27/1998	2.4 J	*
				4/16/1999	2.4 J	*
				10/4/2000	2.2 J	*
				10/30/2001	1.9 J	*
				4/25/2002	2.5	PAL
				10/25/2002	2.8	PAL
				10/29/2003	2.7 J	*
				4/27/2004	2.7	PAL
				10/12/2004	2.8	PAL
				4/14/2005	2	PAL
				10/26/2005	1.6	PAL
				4/13/2006	2.2	PAL
				10/12/2006	1.8	PAL
				4/10/2007	2.3	PAL
				10/30/2007	2.2	PAL
				4/17/2008	1.6	PAL
				10/10/2008	1.7	PAL
				4/22/2009	2.5	PAL
				10/27/2009	2.6	PAL
				4/14/2010	2.2	PAL
				10/20/2010	1.9 J	*
				4/6/2011	2.8	PAL
				10/21/2011	2.8	PAL
				4/4/2012	2.5	PAL
				10/3/2012	2.6	PAL
				4/18/2013	2.6	PAL
				10/14/2013	1.7	PAL
				4/17/2014	2.1	PAL
				10/2/2014	2.3	PAL
				4/13/2015	2.4	PAL
				10/8/2015	2.1	PAL
				4/8/2016	2.1	PAL
				10/13/2016	2.2	PAL
				10/5/2017	2.3	PAL
				10/25/2018	2.3	PAL

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Arsenic, Dissolved (µg/L), continued	1	10	MW-92B, continued	4/3/2019	2.1	PAL
				10/9/2019	1.9	PAL
				5/29/2020	2.6	PAL
				10/9/2020	2.1	PAL
				4/15/2021	2.3	PAL
				10/14/2021	2.2	PAL
				4/13/2022	2.2	PAL
				10/25/2022	1.4	PAL
				4/24/2023	2.2	PAL
			MW-33BR	10/12/2004	1.4	PAL
				10/26/2005	1.1 J	*
				4/13/2006	1.0 J	*
				4/14/2010	1.8 J	*
Barium, Dissolved (µg/L)	400	2,000	No Exceedances			
Boron, Dissolved (mg/L)	0.2	1	MW-33BR	4/29/2003	0.59	PAL
				10/30/2003	0.66	PAL
				4/27/2004	0.63	PAL
				10/12/2004	0.6	PAL
				4/15/2005	0.58	PAL
				10/26/2005	0.6	PAL
				4/13/2006	0.56	PAL
				10/12/2006	0.55	PAL
				4/11/2007	0.48	PAL
				10/31/2007	0.53	PAL
				4/17/2008	0.529	PAL
				10/10/2008	0.517	PAL
				4/21/2009	0.549	PAL
				10/27/2009	0.555	PAL
				4/14/2010	0.54 J	PAL
				10/20/2010	0.62	PAL
				4/6/2011	0.56	PAL
				10/20/2011	0.53	PAL
				4/4/2012	0.48	PAL
				10/4/2012	0.51	PAL
				4/17/2013	0.561	PAL
				10/14/2013	0.495	PAL
				4/16/2014	0.507	PAL
				10/2/2014	0.524	PAL
				4/13/2015	0.498	PAL
				10/7/2015	0.495	PAL
				4/7/2016	0.457	PAL
				10/13/2016	0.454	PAL
				4/11/2017	0.401	PAL
				10/4/2017	0.385	PAL
				4/24/2018	0.375	PAL
				10/22/2018	0.348	PAL
				4/2/2019	0.324	PAL
				10/8/2019	0.325	PAL
				5/29/2020	0.267	PAL
				10/8/2020	0.235	PAL

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Boron, Dissolved (mg/L), continued	0.2	1	MW-33BR, continued	4/14/2021	0.311	PAL
				10/12/2021	0.355	PAL
				4/13/2022	0.3	PAL
				10/25/2022	0.284	PAL
				4/26/2023	0.474	PAL
			MW-34B	12/17/1984	2.21	ES
				3/7/1985	1.56	ES
				6/14/1985	2	ES
				9/18/1985	2.06	ES
				12/12/1985	1.62	ES
				3/21/1986	2.72	ES
				6/20/1986	2.3	ES
				9/18/1986	2.18	ES
				3/20/1987	0.92	PAL
				6/5/1987	1.84	ES
				9/9/1987	1.59	ES
				12/9/1987	0.92	PAL
				3/10/1988	0.95	PAL
				9/9/1988	1.76	ES
				12/7/1988	0.83	PAL
				6/16/1989	0.25	PAL
				3/29/1990	0.4	PAL
				6/14/1990	0.6	PAL
				9/5/1990	0.6	PAL
				12/10/1990	0.6	PAL
				3/5/1991	0.7	PAL
				6/3/1991	0.5	PAL
				9/6/1991	0.57	PAL
				12/4/1991	0.46	PAL
				3/3/1992	0.45	PAL
				6/2/1992	0.55	PAL
				9/1/1992	0.3	PAL
				12/2/1992	0.24	PAL
				3/10/1993	0.47	PAL
				6/2/1993	0.51	PAL
				9/14/1993	0.42	PAL
				12/7/1993	0.44	PAL
				9/13/1994	0.37	PAL
				12/6/1994	0.34	PAL
				3/7/1995	0.59	PAL
				6/6/1995	0.45	PAL
				9/6/1995	0.37	PAL
				4/30/1996	0.61	PAL
				10/16/1996	0.27	PAL
				4/8/1997	0.69	PAL
				10/20/1997	0.39	PAL
				4/14/1998	0.72	PAL
				10/27/1998	0.52	PAL
				4/16/1999	0.55	PAL
				10/21/1999	0.61	PAL

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Boron, Dissolved (mg/L), continued	0.2	1	MW-34B, continued	4/20/2000	0.4	PAL
				10/4/2000	0.52	PAL
				4/3/2001	0.62	PAL
				10/30/2001	0.46	PAL
				4/25/2002	0.43	PAL
				10/24/2002	0.35	PAL
				4/29/2003	0.33	PAL
				10/29/2003	0.5	PAL
				4/27/2004	0.4	PAL
				10/12/2004	0.33	PAL
				4/15/2005	0.24	PAL
				10/26/2005	1	ES
				4/13/2006	1	ES
				10/12/2006	0.75	PAL
				4/11/2007	0.82	PAL
				10/31/2007	0.5	PAL
				4/17/2008	0.278	PAL
				10/10/2008	0.404	PAL
				4/21/2009	0.291	PAL
				10/27/2009	0.307	PAL
				10/20/2010	0.38	PAL
				4/6/2011	0.23	PAL
				4/7/2016	0.209	PAL
				10/13/2016	0.224	PAL
				4/11/2017	0.254	PAL
				10/4/2017	0.44	PAL
				10/22/2018	0.222	PAL
				10/8/2019	0.444	PAL
				5/29/2020	0.507	PAL
				10/8/2020	0.349	PAL
				4/14/2021	0.216	PAL
			MW-37A	9/7/1984	0.22	PAL
			MW-84B	9/7/1984	0.25	PAL
				6/7/1988	0.42	PAL
				12/7/1988	0.23	PAL
				12/6/1994	0.69	PAL
			MW-86	9/7/1984	0.24	PAL
				3/21/1986	0.23	PAL
				12/7/1988	0.26	PAL
			MW-83	4/8/1997	0.3	PAL
				10/20/1997	0.79	PAL
				4/14/1998	0.29	PAL
				10/27/1998	0.64	PAL
				4/16/1999	0.33	PAL
				10/21/1999	0.9	PAL
				4/20/2000	0.43	PAL
				10/4/2000	1	ES
				4/3/2001	0.21	PAL
				10/30/2001	0.61	PAL
				4/25/2002	0.24	PAL

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Boron, Dissolved (mg/L), continued	0.2	1	MW-83, continued	10/24/2002	0.53	PAL
				4/29/2003	0.24	PAL
				10/30/2003	0.61	PAL
				4/27/2004	0.39	PAL
				10/12/2004	0.21	PAL
				4/15/2005	0.31	PAL
Cadmium, Dissolved (µg/L)	0.5	5	MW-34B	4/11/2017	0.55 J	*
				10/25/2022	0.74 J	*
Chloride, Dissolved (mg/L) (2015-present) Chloride, Total or Dissolved (mg/L) (1984 - 1987)	125	250	MW-34B	12/17/1984	523	ES
				3/7/1985	275	ES
				6/14/1985	192	PAL
				9/18/1985	226	PAL
				12/12/1985	444	ES
				3/21/1986	426	ES
				6/20/1986	372	ES
				6/5/1987	208	PAL
Chloride, Dissolved (mg/L) (2015-present) Chloride, Total or Dissolved (mg/L) (1984 - 1987) continued	125	250	MW-37A	9/7/1984	255	ES
				12/17/1984	253	ES
				3/7/1985	286	ES
				6/14/1985	319	ES
				10/8/2015	226	PAL
				10/5/2017	142	PAL
				10/23/2018	279	ES
				4/3/2019	144	PAL
				5/29/2020	149	PAL
				10/8/2020	233	PAL
			MW-84B	9/7/1984	261	ES
				12/17/1984	257	ES
				3/7/1985	269	ES
				6/14/1985	258	ES
				9/18/1985	239	PAL
				12/12/1985	284	ES
				3/21/1986	261	ES
				6/20/1986	290	ES
			MW-86	9/7/1984	489	ES
				12/17/1984	547	ES
				3/7/1985	577	ES
				6/14/1985	556	ES
				9/18/1985	560	ES
				12/12/1985	504	ES
				3/21/1986	493	ES
				6/20/1986	509	ES
				4/14/2015	176	PAL
				10/8/2015	153	PAL
				4/7/2016	218	PAL
				10/13/2016	334	ES
				4/11/2017	225	PAL
				10/5/2017	389	ES
				4/25/2018	277	ES
				10/24/2018	282	ES

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Chloride Dissolved (mg/L), continued	125	250	MW-86, continued	4/3/2019	428	ES
				10/9/2019	322	ES
				5/29/2020	304	ES
				10/9/2020	342	ES
				4/15/2021	284	ES
				10/14/2021	407	ES
				4/13/2022	484	ES
				10/25/2022	470	ES
				4/24/2023	323	ES
Chromium, Dissolved (µg/L)	10	100	No Exceedances			
Manganese, Dissolved (µg/L)	25	50	MW-93A^	4/13/2022	277	ES
				10/26/2022	64.1	ES
Mercury, Dissolved (µg/L)	0.2	2	No Exceedances			
Molybdenum, Dissolved (µg/L)	8	40	MW-92A	10/21/2011	8.2	PAL
			MW-33BR	4/6/2011	13	PAL
				10/20/2011	14	PAL
				4/4/2012	11	PAL
				10/4/2012	12	PAL
				4/17/2013	15.3	PAL
				10/14/2013	9.6	PAL
				4/16/2014	9.8	PAL
				10/2/2014	9.5	PAL
				4/13/2015	10.1	PAL
				4/7/2016	8.5	PAL
Nitrogen (NO2 + NO3) (mg/L)	2	10	MW34B	4/13/2015	4.8	PAL
				10/7/2015	4.7	PAL
				4/7/2016	5.6	PAL
				10/13/2016	9.2	PAL
				4/11/2017	5.1	PAL
				10/4/2017	5.9	PAL
				4/24/2018	2.6	PAL
				10/22/2018	6.3	PAL
				4/2/2019	7.6	PAL
				10/8/2019	8.1	PAL
				5/29/2020	7.3	PAL
				10/8/2020	7.4	PAL
				4/14/2021	10.0	ES
				10/12/2021	18.0	ES
				4/13/2022	4.3	PAL
				10/25/2022	4.7	PAL
				4/26/2023	4.7	PAL
			MW-92A	4/13/2015	4.6	PAL
				10/8/2015	2.6	PAL
				4/8/2016	2.7	PAL
				5/29/2020	2.6	PAL
				10/9/2020	4.1	PAL
				4/15/2021	3.5	PAL
				10/14/2021	7.3	PAL
				4/13/2022	9.1	PAL
				10/25/2022	3.4	PAL

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Nitrogen (NO2 + NO3) (mg/L), continued	2	10	MW-83	10/13/2016	2.1	PAL
				10/9/2019	2.0	PAL
				4/27/2023	3.1	PAL
			MW-33BR	4/13/2015	6.0	PAL
				10/7/2015	6.1	PAL
				4/7/2016	6.0	PAL
				10/13/2016	6.1	PAL
				4/11/2017	4.6	PAL
				10/4/2017	5.2	PAL
				4/24/2018	5.1	PAL
				10/22/2018	4.5	PAL
				4/2/2019	4.8	PAL
				10/8/2019	5.1	PAL
				5/29/2020	5.6	PAL
				10/8/2020	7.0	PAL
				4/14/2021	6.6	PAL
				10/12/2021	5.7	PAL
				4/13/2022	4.7	PAL
				10/25/2022	4.7	PAL
				4/26/2023	3.7	PAL
Selenium, Dissolved (µg/L)	10	50	MW-92B	4/6/2011	12	PAL
Sulfate, Dissolved (mg/L)	125	250	MW-33BR	4/29/2003	180	PAL
				10/30/2003	210	PAL
				4/27/2004	210	PAL
				10/12/2004	210	PAL
				4/15/2005	200	PAL
				10/26/2005	190	PAL
				4/13/2006	180	PAL
				10/12/2006	180	PAL
				4/11/2007	170	PAL
				10/31/2007	180	PAL
				4/17/2008	193	PAL
				10/10/2008	164	PAL
				4/21/2009	167	PAL
				10/27/2009	152	PAL
				4/14/2010	160	PAL
				10/20/2010	160	PAL
				4/6/2011	150	PAL
				10/20/2011	140	PAL
				4/4/2012	140	PAL
				10/4/2012	140	PAL
			MW-34B	3/7/1985	181	PAL
				6/14/1985	195	PAL
				12/12/1985	285	ES
				3/21/1986	329	ES
				6/20/1986	211	PAL
				9/18/1986	199	PAL
				3/20/1987	247	PAL
				6/5/1987	244	PAL

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Sulfate, Dissolved (mg/L), continued	125	250	MW-34B, continued	9/9/1987	138	PAL
				12/9/1987	229	PAL
				3/10/1988	221	PAL
				6/7/1988	220	PAL
				9/9/1988	262	ES
				12/7/1988	327	ES
				3/21/1989	245	PAL
				3/22/1989	245	PAL
				6/16/1989	180	PAL
				9/6/1989	170	PAL
				12/5/1989	175	PAL
				3/29/1990	200	PAL
				6/14/1990	300	ES
				9/5/1990	240	PAL
				12/10/1990	220	PAL
				3/5/1991	240	PAL
				6/3/1991	180	PAL
				9/6/1991	190	PAL
				12/4/1991	170	PAL
				3/3/1992	240	PAL
				6/2/1992	160	PAL
				9/1/1992	160	PAL
				12/2/1992	130	PAL
				3/10/1993	140	PAL
				6/2/1993	140	PAL
				9/14/1993	140	PAL
				12/7/1993	140	PAL
				3/7/1995	160	PAL
				6/6/1995	170	PAL
				9/6/1995	190	PAL
				4/30/1996	180	PAL
				4/8/1997	150	PAL
				10/20/1997	140	PAL
				4/14/1998	230	PAL
				10/27/1998	200	PAL
				4/16/1999	180	PAL
				10/21/1999	150	PAL
				4/20/2000	150	PAL
				10/4/2000	170	PAL
				4/3/2001	200	PAL
				10/30/2001	180	PAL
				4/25/2002	180	PAL
				10/24/2002	210	PAL
				4/29/2003	150	PAL
				10/29/2003	170	PAL
				4/15/2005	180	PAL
				10/26/2005	280	ES
				10/12/2006	170	PAL

Table 6.
Groundwater Results Exceeding NR 140 Standards - Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility, License #03025

Parameter	PAL	ES	Well	Sample Date	Result	Exceedance Type
Sulfate, Dissolved (mg/L), continued	125	250	MW-86	3/15/1994	150	PAL
				4/16/1999	140	PAL
			MW-83	4/8/1997	150	PAL
				10/20/1997	200	PAL
				10/27/1998	200	PAL
				4/16/1999	130	PAL
				10/21/1999	240	PAL
				4/20/2000	170	PAL
				10/4/2000	230	PAL
				4/3/2001	200	PAL
				10/30/2001	270	ES
				10/24/2002	210	PAL
				10/30/2003	140	PAL

Notes:

PAL = Preventive Action Limit µg/L = micrograms per liter dup = Duplicate Sample
ES = Enforcement Standard mg/L = milligrams per liter

*: Numeric result is over PAL, but result is below method detection limit (J flag) and thus is not considered a PAL exceedance.

^: MW-93A was installed in 2022, and baseline sampling is ongoing.

Prepared by: MDB, 8/8/2023
Checked by: RM 8/9/2023

Table 7. Proposed Alternative Concentration Limits for Public Health and Welfare Parameters, Non-CCR Monitoring Wells
Columbia Energy Center Ash Disposal Facility / SCS Engineers Project #25222260.00

Well	License # 03025 DNR ID #	Arsenic	Boron	Chloride	Molybdenum	Nitrite + Nitrate - Nitrogen	Sulfate
		PAL = 1 ES = 10 (µg/L)	PAL = 0.2 ES = 1 (mg/L)	PAL = 125 ES = 250 (mg/L)	PAL = 8 ES = 40 (µg/L)	PAL = 2 ES = 10 (mg/L)	PAL = 125 ES = 250 (mg/L)
MW-33BR	065	--	0.70	--	15	7.2	250
MW-34B	021	--	0.78	--	--	15	--
MW-37A	022	--	--	280	--	--	--
MW-83	059	--	--	--	--	3.3	--
MW-84B	039	--	--	--	--	--	--
MW-86	041	1.2	--	630	--	--	--
MW-92A	055	1.2	--	--	--	7.7	--
MW-92B	057	3.3	--	--	--	--	--

Abbreviations:
PAL = NR 140 preventive action limit
ES = NR 140 enforcement standard
ACLs = Alternative concentration limits
µg/L = micrograms per liter
mg/L = milligrams per liter

Created by: MDB Date: 8/9/2023
Revised by: MDB Date: 8/9/2023
Checked by: AJR Date: 8/14/2023

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[Tables X-X_PAL and ACL

Figures


540,500 N
541,000 N
541,500 N
542,000 N
542,500 N
543,000 N
543,500 N
2,123,500 E
2,124,000 E
2,124,500 E
2,125,000 E
COAL PILE
WPDES POND
SOUTH SEDIMENTATION BASIN
C. M. ST. P. & P. RR.
EXISTING FINAL COVER
ESTIMATED INTERMEDIATE COVER
ACTIVE AREA
(ESTIMATED OPEN AREA 6.6 ACRES)
MODULE 12 LINER
(ESTIMATED 0.6 ACRES)
LEACHATE/ SURFACE WATER POND
MURRAY ROAD
MW-311
MW-83
SG-4
MW-33B
MW-33AR
MW-34A
MW-34B
MW-88B
MW-88A
MW-85
MW-85B
MW-302
MW-5R
MW-310
MW-309
MW-92B
MW-92A
MW-91AR
MW-91B
LP-1
MW-37B
MW-37A
MW-301
MW-312
MW-93B
MW-93A
MW-84A
MW-84B
MW-86
MW-17
LEGEND
DRY ASH DISPOSAL FACILITY LIMITS
LIMITS OF WASTE
FINAL COVER LIMITS
PAVED ROAD
UNPAVED ROAD
VEGETATION
FENCE
EXISTING GRADE (10' INTERVAL)
EXISTING GRADE (2' INTERVAL)
SWALE
EDGE OF WATER
WETLAND
PROPOSED GRADE (10' INTERVAL)
PROPOSED GRADE (2' INTERVAL)
PROPOSED PERIMETER ROAD
PROPOSED SWALE
PROPOSED CULVERT
EXISTING FINAL COVER
ESTIMATED INTERMEDIATE COVER
ACTIVE FILLING AREA
UNFILLED MODULE 12 LINER AREA FOR CONTACT WATER PUMPING
NOTES:
1. PROPOSED GRADES ARE CONCEPTUAL. ACTUAL GRADES WILL BE BASED ON PLANT OPERATIONS.
100 0 100
SCALE: 1" = 100'
N

PROJECT NO.	25222260.01
DRAWN:	07/24/2023
REVISED:	08/15/2023
DRAWN BY:	KP
CHECKED BY:	RR/MRH
APPROVED BY:	MRH 08/30/2023

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

Wisconsin Power and Light Company

CLIENT

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

FILL SEQUENCE – MODULE 12

FIGURE
1


540,500 N
541,000 N
541,500 N
542,000 N
542,500 N
543,000 N
543,500 N
2,123,500 E
2,124,000 E
2,124,500 E
2,125,000 E
COAL PILE
WPDES POND
SOUTH SEDIMENTATION BASIN
C. M. ST. P. & P. RR.
MURRAY ROAD
EXISTING FINAL COVER
ESTIMATED INTERMEDIATE COVER
ACTIVE AREA
(ESTIMATED OPEN AREA 7.8 ACRES)
MODULE 13 LINER
(ESTIMATED 0.7 ACRES)
LEACHATE/ SURFACE WATER POND
MW-311
MW-83
SG-4
MW-33AR
MW-33B
MW-34A
MW-34B
MW-88B
MW-88A
MW-85
MW-85B
MW-302
MW-5R
MW-310
MW-309
MW-92B
MW-92A
LS
MW-91AR
MW-91B
LP-1
MW-37B
MW-37A
MW-301
MW-312
MW-93B
MW-93A
MW-84A
MW-84B
MW-86
MW-17
LEGEND
DRY ASH DISPOSAL FACILITY LIMITS
LIMITS OF WASTE
FINAL COVER LIMITS
PAVED ROAD
UNPAVED ROAD
VEGETATION
FENCE
EXISTING GRADE (10' INTERVAL)
EXISTING GRADE (2' INTERVAL)
SWALE
EDGE OF WATER
WETLAND
PROPOSED GRADE (10' INTERVAL)
PROPOSED GRADE (2' INTERVAL)
PROPOSED PERIMETER ROAD
PROPOSED SWALE
PROPOSED CULVERT
EXISTING FINAL COVER
ESTIMATED INTERMEDIATE COVER
ACTIVE FILLING AREA
UNFILLED MODULE 13 LINER AREA FOR CONTACT WATER PUMPING
NOTES:
1. PROPOSED GRADES ARE CONCEPTUAL. ACTUAL GRADES WILL BE BASED ON PLANT OPERATIONS.
100 0 100
SCALE: 1" = 100'
N
DRAWN BY: KP
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WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954
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CLIENT
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PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN
SITE
FILL SEQUENCE – MODULE 12 AND 13
FIGURE
2

Plan Sheets

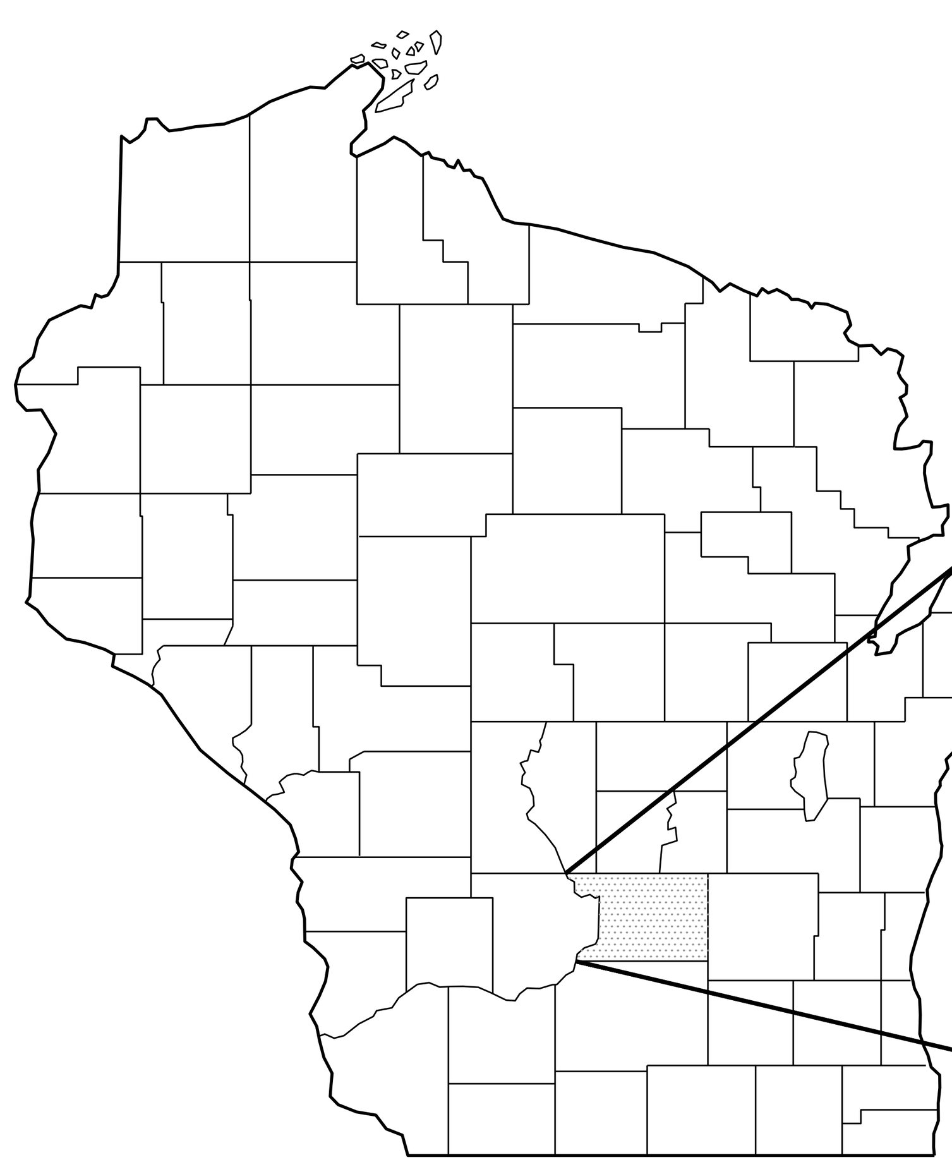
PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER

COLUMBIA DRY ASH DISPOSAL FACILITY
LICENSE NO. 03025
TOWN OF PACIFIC
COLUMBIA COUNTY, WISCONSIN

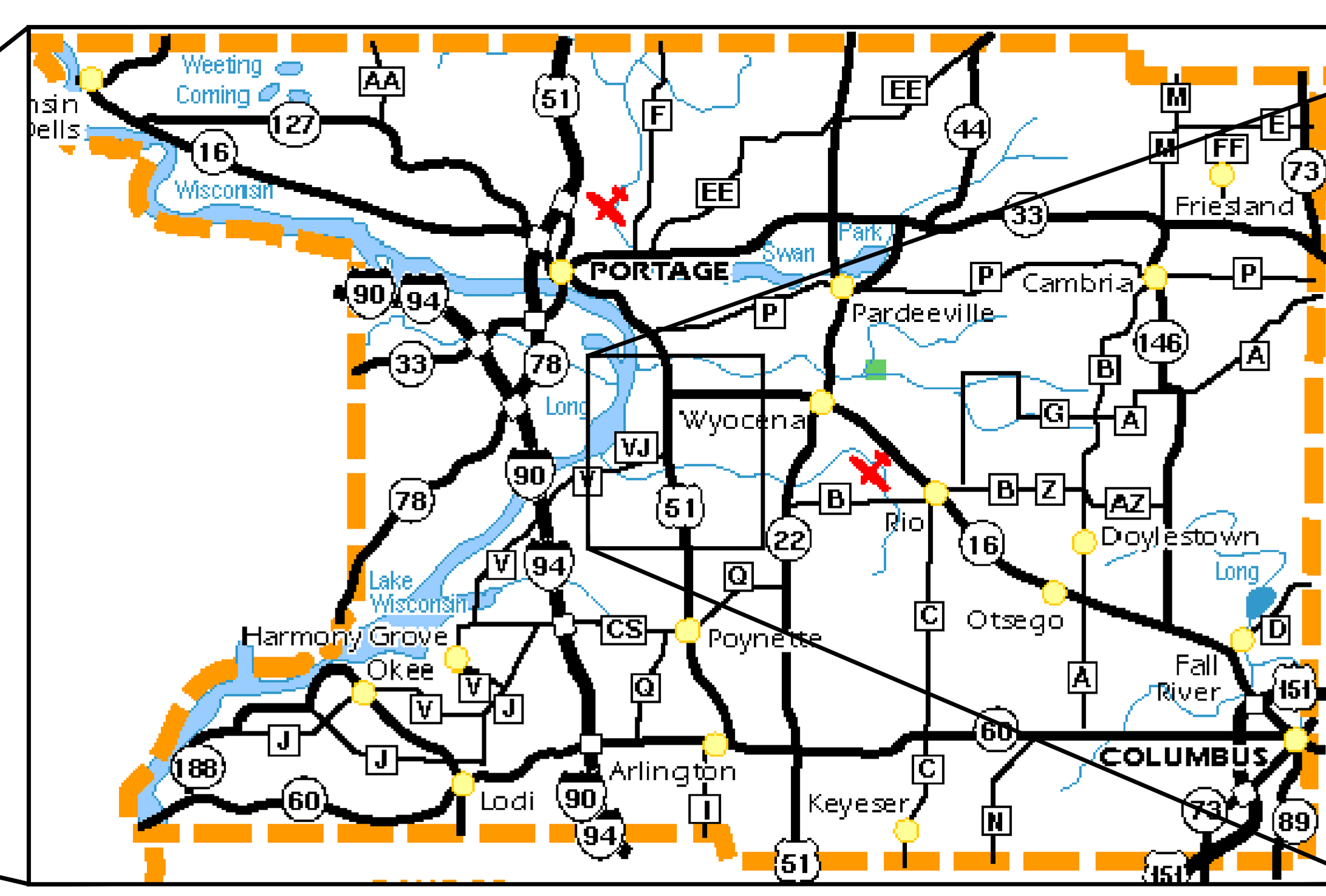
PREPARED FOR: WISCONSIN POWER AND LIGHT COMPANY
COLUMBIA ENERGY CENTER

PREPARED BY: SCS ENGINEERS
MADISON, WISCONSIN

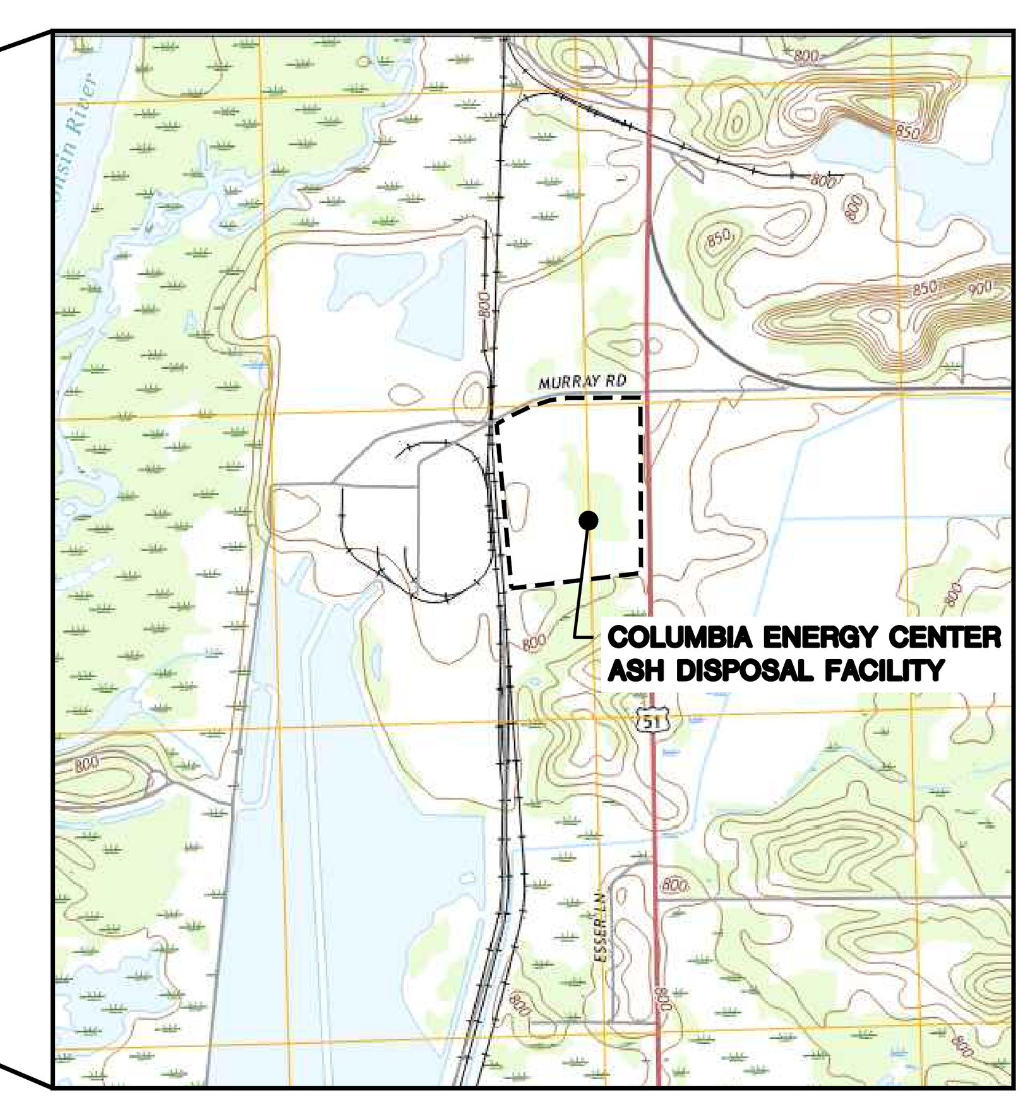
DATE: AUGUST 2023



WISCONSIN



COLUMBIA COUNTY



SITE
LOCATOR MAP
APPROXIMATE SCALE: 1"=2,000'

INDEX

PROJECT NO.	25222260.01	DRAWN BY:	KP
DRAWN:	07/20/2023	CHECKED BY:	RR\MRH
REVISED:	08/25/2023	APPROVED BY:	MRH 08/31/2023

CLIENT: Wisconsin Power and Light Company — WISCONSIN POWER AND LIGHT, COLUMBIA ENERGY CENTER, W8375 MURRAY ROAD, PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS, 2830 DAIRY DRIVE MADISON, WI 53718-6751, PHONE: (608) 224-2830

SITE: PLAN OF OPERATION UPDATE, COLUMBIA ENERGY CENTER, COLUMBIA DRY ASH DISPOSAL FACILITY, TOWN OF PACIFIC, WISCONSIN

TITLE SHEET

SHEET 1 OF 28

LEGEND

- DRY ASH DISPOSAL FACILITY LIMITS
- LIMITS OF WASTE
- LINER PHASE/MODULE LIMIT
- FINAL COVER LIMITS
- APPROXIMATE EXISTING INTERMEDIATE COVER LIMITS/AREA
- LIMITS OF 2' THICK CLAY LINER
- PAVED ROAD
- UNPAVED ROAD
- RAILROAD TRACKS
- VEGETATION
- FENCE
- OVERHEAD UTILITY
- EXISTING GRADE (10' INTERVAL)
- EXISTING GRADE (2' INTERVAL)
- SWALE
- EDGE OF WATER
- WETLAND
- CULVERT
- TRANSMISSION TOWER
- UTILITY POLE
- MONITORING WELL
- PIEZOMETER
- WATER SUPPLY WELL
- STAFF GAUGE
- SURFACE WATER SAMPLE LOCATION
- LEACHATE HEADWELL
- LEACHATE RISER/CLEANOUT
- LYSIMETER MANHOLE
- ABANDONED MONITORING WELL
- ABANDONED PIEZOMETER
- ABANDONED TEMPORARY WATER TABLE WELL
- BENCHMARK

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEYS BY SCS ENGINEERS IN MAY 2019, DECEMBER 2020, NOVEMBER 2021, AND DECEMBER 2021, AND BY DRONE SURVEYS BY AMES IN NOVEMBER 2022, JANUARY 2023, AND JUNE 2023.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AUGUST 2012, AND JANUARY 2016, AND BY SCS ENGINEERS IN MAY 2019.
3. WETLANDS OUTSIDE FACILITY LIMITS ARE FROM THE MAY 19, 2015 ASSURED WETLAND DELINEATION PERFORMED BY STANTEC. WETLANDS INSIDE FACILITY LIMITS ARE FROM THE OCTOBER 18, 2017 ASSURED WETLAND DELINEATION PERFORMED BY MACH IV.
4. UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL UTILITIES ARE SHOWN.
5. LIMITS OF INTERMEDIATE FINAL COVER ARE A PROJECTION OF WHAT WILL BE COVERED BY THE POND CLOSURE CONTRACTOR AT THE COMPLETION OF THE POND CLOSURE PROJECT.

SURVEY CONTROL TABLE

BM	NORTHING	EASTING	ELEVATION
5	545,255.97	2,123,490.03	804.65
6	543,461.54	2,123,405.36	834.12
200	543,198.15	2,122,700.71	807.33
201	545,080.64	2,121,666.84	803.68
202	541,479.47	2,123,890.79	803.46
301	541,814.021	2,125,202.881	819.014
302	543,282.51	2,125,161.48	837.643

100 0 100

SCALE: 1" = 100'

N

I:\25222260.00\Drawings\Existing Conditions.dwg, 8/31/2023 1:47:06 PM

DRAWN BY:	KP
CHECKED BY:	RR\MRH
APPROVED BY:	MRH 08/31/2023
PROJECT NO.	25222260.01
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REVISED:	08/31/2023

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

Wisconsin Power and Light Company

CLIENT

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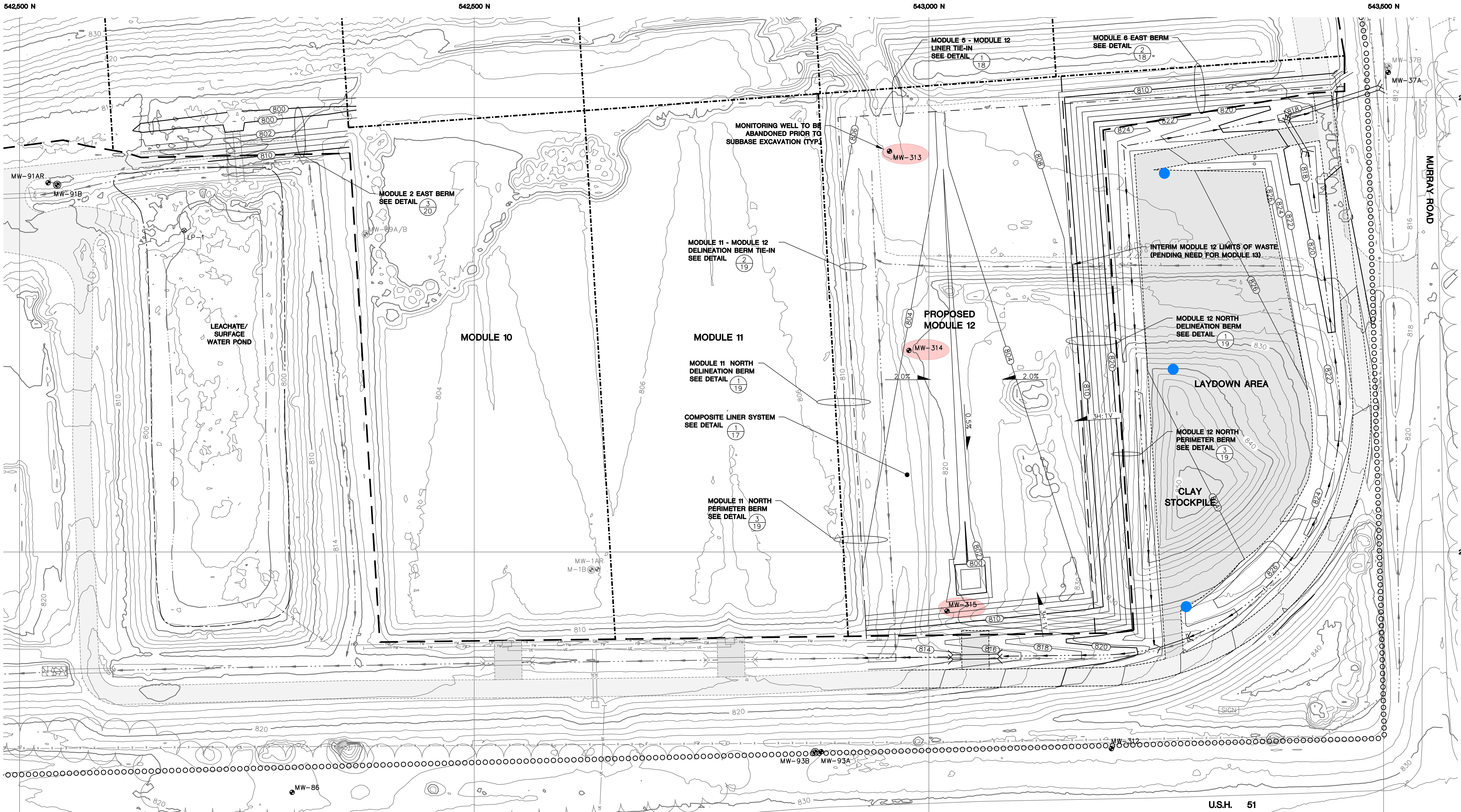
ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

EXISTING CONDITIONS

SHEET
2 of 28



LEGEND

Symbol	Description	Symbol	Description
·OOOOOOOOO·	DRY ASH DISPOSAL FACILITY LIMITS		SWALE
	LIMITS OF WASTE		EDGE OF WATER
	LINER PHASE/MODULE LIMIT		WETLAND
	LIMITS OF CONSTRUCTED 2' THICK CLAY LINER	800	PROPOSED GRADE (10' INTERVAL)
	PAVED ROAD	802	PROPOSED GRADE (2' INTERVAL)
	UNPAVED ROAD		PROPOSED PERIMETER ROAD
	VEGETATION		PROPOSED SWALE
—x—x—x—	FENCE		PROPOSED CULVERT
810	EXISTING GRADE (10' INTERVAL)	2.0%	PROPOSED SLOPE AND DIRECTION
	EXISTING GRADE (2' INTERVAL)	●	PROPOSED MODULE 12 MONITORING WELL

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN MODULE 12 REPRESENT BOTTOM OF 2' THICK CLAY LINER (SUBBASE GRADE).
3. EROSION CONTROL SILT FENCE/FILTER SOCK INSTALLED AROUND THE PERIMETER OF DISTURBANCE AREAS AND STOCKPILES.

50 0 50

SCALE: 1" = 50'

N

PROJECT NO.	25222260.01	DRAWN BY:	KP
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WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

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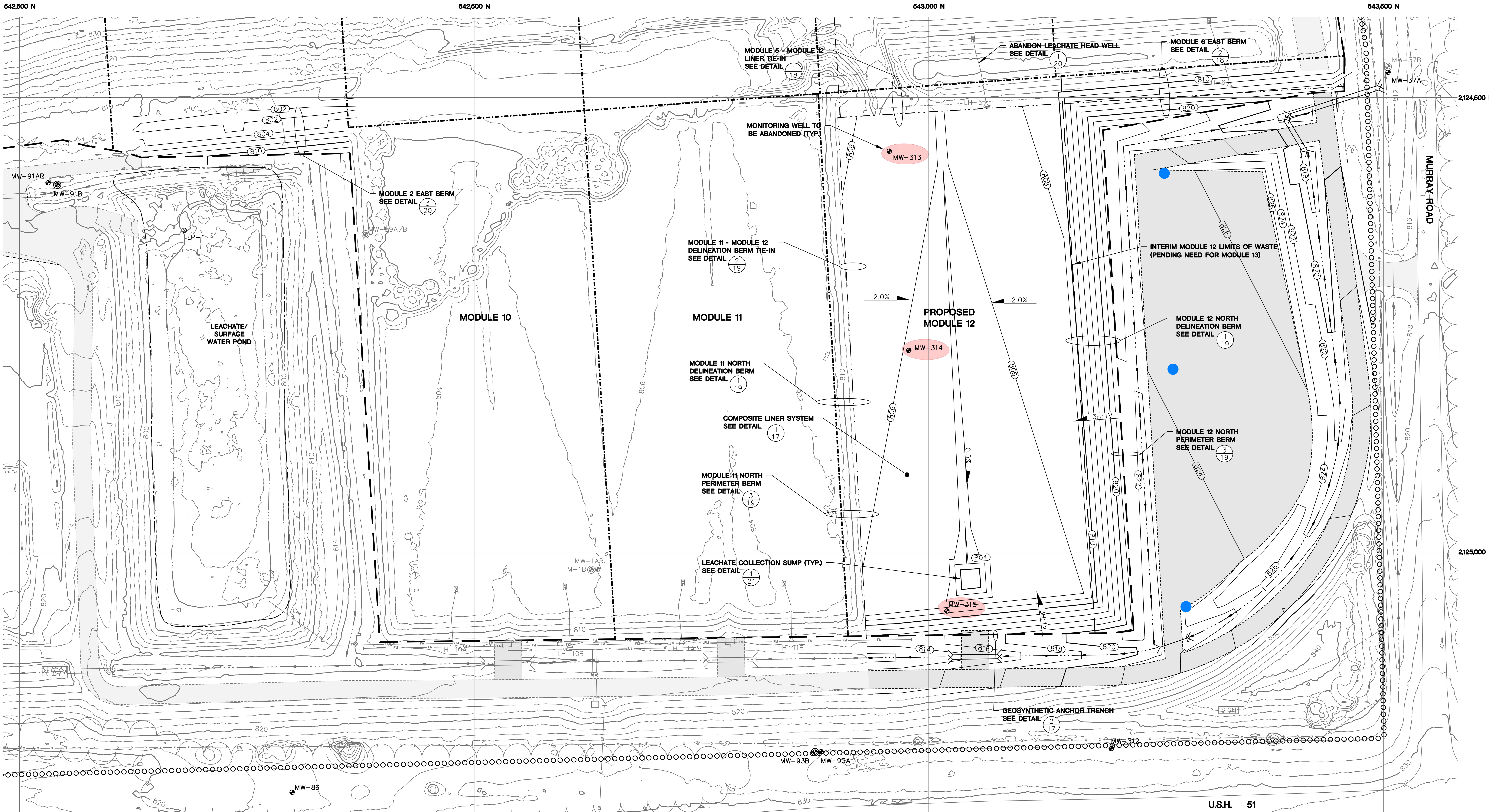
ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

SUBBASE GRADES (MODULE 12)

SHEET
3 of 28



LEGEND

Symbol	Description	Symbol	Description
○○○○○○○○○	DRY ASH DISPOSAL FACILITY LIMITS		SWALE
	LIMITS OF WASTE		EDGE OF WATER
	LINER PHASE/MODULE LIMIT		WETLAND
	LIMITS OF CONSTRUCTED 2' THICK CLAY LINER	800	PROPOSED GRADE (10' INTERVAL)
	PAVED ROAD	802	PROPOSED GRADE (2' INTERVAL)
	UNPAVED ROAD		PROPOSED PERIMETER ROAD
	VEGETATION		PROPOSED SWALE
—x—x—x—	FENCE		PROPOSED CULVERT
—810—	EXISTING GRADE (10' INTERVAL)	2.0%	PROPOSED SLOPE AND DIRECTION
	EXISTING GRADE (2' INTERVAL)	●	PROPOSED MODULE 12 MONITORING WELL

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN MODULE 12 REPRESENT TOP OF 2' THICK CLAY LINER (BASE GRADE).

50 0 50

SCALE: 1" = 50'

N

PROJECT NO.	25222260.01	DRAWN BY:	KP
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REVISED:	08/31/2023	APPROVED BY:	MRH 08/31/2023

Wisconsin Power and Light Company

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

CLIENT

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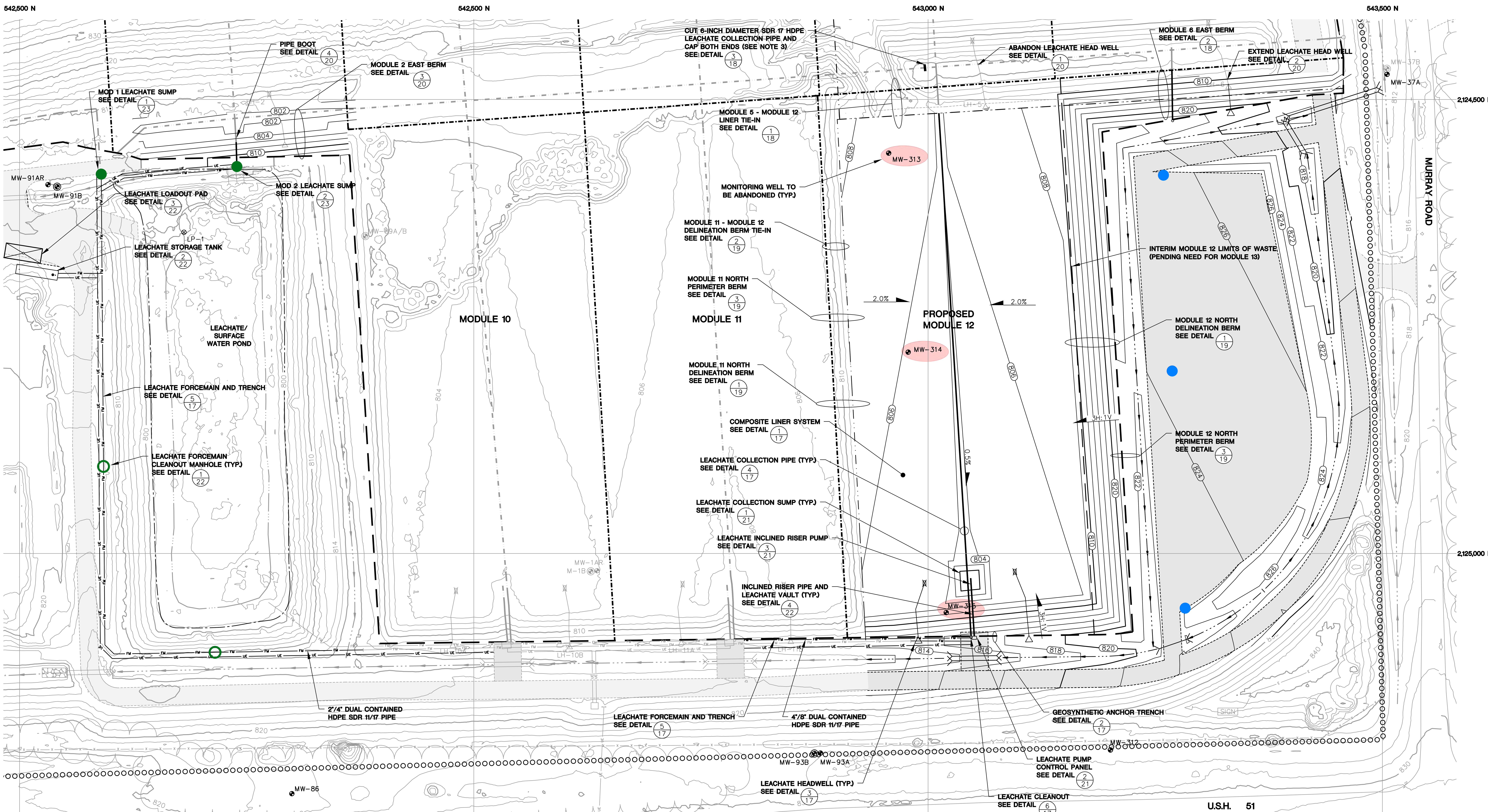
ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

BASE GRADES (MODULE 12)

SHEET 4 OF 28



542,500 N
542,500 N
543,000 N
543,500 N
2,124,500 E
2,125,000 E
PIPE BOOT SEE DETAIL 4/20
MODULE 2 EAST BERM SEE DETAIL 3/20
MOD 1 LEACHATE SUMP SEE DETAIL 1/23
CUT 6-INCH DIAMETER SDR 17 HDPE LEACHATE COLLECTION PIPE AND CAP BOTH ENDS (SEE NOTE 3) SEE DETAIL 3/18
ABANDON LEACHATE HEAD WELL SEE DETAIL 1/20
MODULE 6 EAST BERM SEE DETAIL 2/18
EXTEND LEACHATE HEAD WELL SEE DETAIL 2/20
MW-37B
MW-37A
MURRAY ROAD
MODULE 5 - MODULE 12 LINER TIE-IN SEE DETAIL 1/18
MW-313
MONITORING WELL TO BE ABANDONED (TYP.)
MW-91AR
MW-91B
LEACHATE LOADOUT PAD SEE DETAIL 3/22
MOD 2 LEACHATE SUMP SEE DETAIL 2/23
LP-1
LEACHATE STORAGE TANK SEE DETAIL 2/22
MODULE 11 - MODULE 12 DELINEATION BERM TIE-IN SEE DETAIL 2/19
INTERIM MODULE 12 LIMITS OF WASTE (PENDING NEED FOR MODULE 13)
MODULE 11 NORTH PERIMETER BERM SEE DETAIL 3/19
LEACHATE/ SURFACE WATER POND
MODULE 10
MODULE 11
PROPOSED MODULE 12
2.0%
2.0%
MODULE 12 NORTH DELINEATION BERM SEE DETAIL 1/19
MW-314
MODULE 11 NORTH DELINEATION BERM SEE DETAIL 1/19
LEACHATE FORCEMAIN AND TRENCH SEE DETAIL 5/17
COMPOSITE LINER SYSTEM SEE DETAIL 1/17
3H:1V
MODULE 12 NORTH PERIMETER BERM SEE DETAIL 3/19
LEACHATE FORCEMAIN CLEANOUT MANHOLE (TYP.) SEE DETAIL 1/22
LEACHATE COLLECTION PIPE (TYP.) SEE DETAIL 4/17
0.5%
LEACHATE COLLECTION SUMP (TYP.) SEE DETAIL 1/21
LEACHATE INCLINED RISER PUMP SEE DETAIL 3/21
MW-1AR
M-1B
INCLINED RISER PIPE AND LEACHATE VAULT (TYP.) SEE DETAIL 4/22
MW-315
LH-10B
2"/4" DUAL CONTAINED HDPE SDR 11/17 PIPE
LEACHATE FORCEMAIN AND TRENCH SEE DETAIL 5/17
4"/8" DUAL CONTAINED HDPE SDR 11/17 PIPE
GEOSYNTHETIC ANCHOR TRENCH SEE DETAIL 2/17
SIGN
MW-312
MW-93B
MW-93A
LEACHATE PUMP CONTROL PANEL SEE DETAIL 2/21
LEACHATE HEADWELL (TYP.) SEE DETAIL 3/17
MW-86
LEACHATE CLEANOUT SEE DETAIL 6/17
U.S.H. 51

LEGEND

·ooooooooo·	DRY ASH DISPOSAL FACILITY LIMITS		SWALE		PROPOSED 6" DIAMETER PERFORATED SDR 11 HDPE LEACHATE COLLECTION LINE
	LIMITS OF WASTE		EDGE OF WATER		PROPOSED 6" DIAMETER SOLID SDR 11 HDPE PIPE
	LINER PHASE/MODULE LIMIT		WETLAND	○	PROPOSED LEACHATE COLLECTION SYSTEM CLEANOUT
	LIMITS OF CONSTRUCTED 2' THICK CLAY LINER	800	PROPOSED GRADE (10' INTERVAL)	▯	PROPOSED INCLINED RISER PIPE AND LEACHATE VAULT
	PAVED ROAD	802	PROPOSED GRADE (2' INTERVAL)		PROPOSED LEACHATE MANHOLE SUMP
	UNPAVED ROAD		PROPOSED PERIMETER ROAD		PROPOSED LEACHATE FORCEMAIN CLEANOUT MANHOLE
	VEGETATION		PROPOSED SWALE	FM	PROPOSED LEACHATE FORCEMAIN
	FENCE		PROPOSED CULVERT	UE	PROPOSED UNDERGROUND ELECTRIC
810	EXISTING GRADE (10' INTERVAL)	2.0%	PROPOSED SLOPE AND DIRECTION		
	EXISTING GRADE (2' INTERVAL)		PROPOSED MODULE 12 MONITORING WELL		

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN MODULE 12 REPRESENT TOP OF 2' THICK CLAY LINER (BASE GRADE).
3. LEACHATE COLLECTION LINE CUTTING AND CAPPING TO OCCUR AFTER WDNR APPROVAL OF MODULE 12 LINER CONSTRUCTION.

50 0 50

SCALE: 1" = 50'

N

PROJECT NO.	25222260.01	DRAWN BY:	KP		
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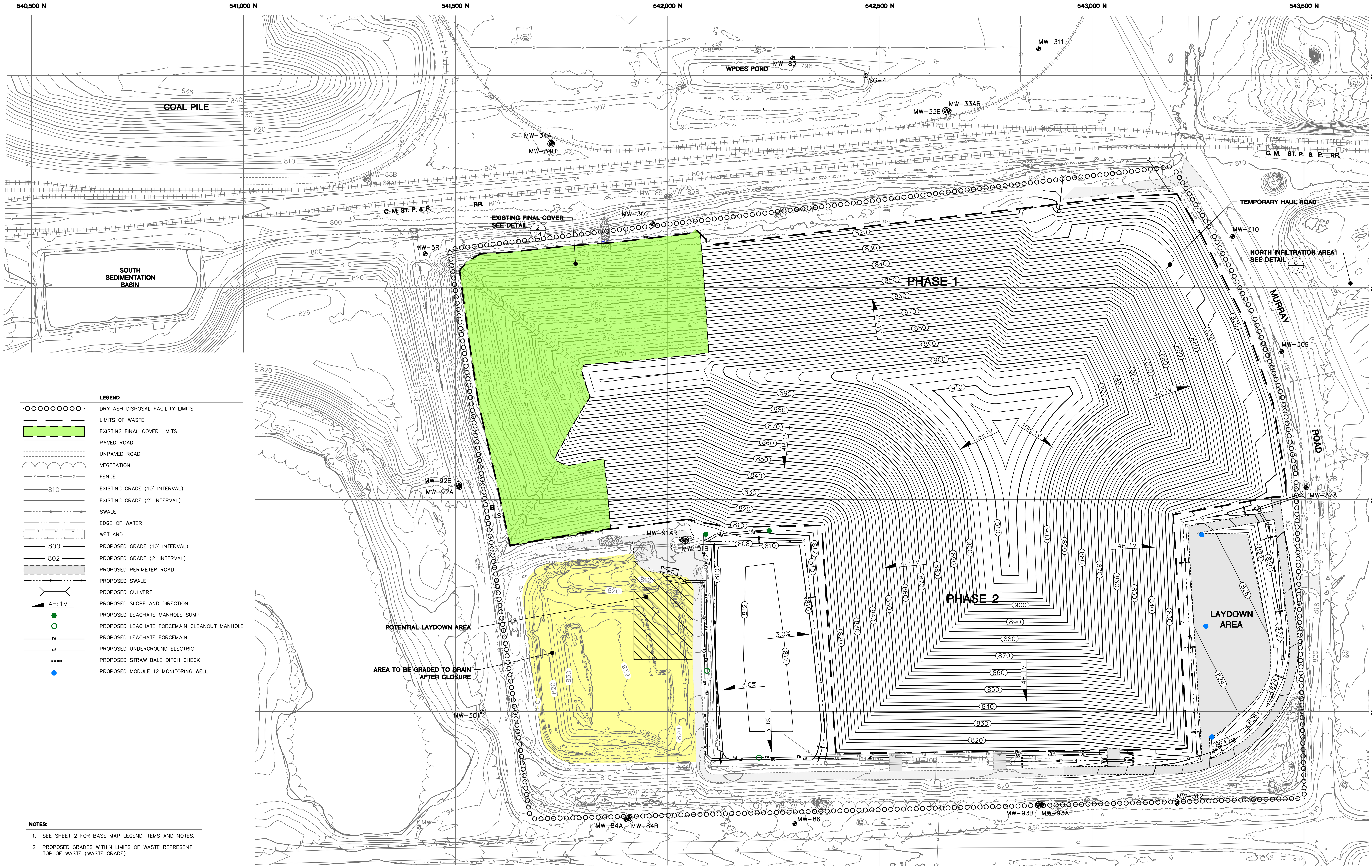
CLIENT: Wisconsin Power and Light Company
WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

SITE: PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

LEACHATE COLLECTION SYSTEM (MODULE 12)

SHEET 5 OF 28



LEGEND

- DRY ASH DISPOSAL FACILITY LIMITS
- LIMITS OF WASTE
- EXISTING FINAL COVER LIMITS
- PAVED ROAD
- UNPAVED ROAD
- VEGETATION
- FENCE
- EXISTING GRADE (10' INTERVAL)
- EXISTING GRADE (2' INTERVAL)
- SWALE
- EDGE OF WATER
- WETLAND
- PROPOSED GRADE (10' INTERVAL)
- PROPOSED GRADE (2' INTERVAL)
- PROPOSED PERIMETER ROAD
- PROPOSED SWALE
- PROPOSED CULVERT
- PROPOSED SLOPE AND DIRECTION
- PROPOSED LEACHATE MANHOLE SUMP
- PROPOSED LEACHATE FORCEMAIN CLEANOUT MANHOLE
- PROPOSED LEACHATE FORCEMAIN
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED STRAW BALE DITCH CHECK
- PROPOSED MODULE 12 MONITORING WELL

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN LIMITS OF WASTE REPRESENT TOP OF WASTE (WASTE GRADE).

SCALE: 1" = 100'

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CHECKED BY:	RR\MRH
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PROJECT NO.	25222260.01
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CLIENT: Wisconsin Power and Light Company — WISCONSIN POWER AND LIGHT, COLUMBIA ENERGY CENTER, W8375 MURRAY ROAD, PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS, 2830 DAIRY DRIVE MADISON, WI 53718-6751, PHONE: (608) 224-2830

SITE: PLAN OF OPERATION UPDATE, COLUMBIA ENERGY CENTER, COLUMBIA DRY ASH DISPOSAL FACILITY, TOWN OF PACIFIC, WISCONSIN

TOP OF WASTE GRADES (MODULE 12)

SHEET 6 of 28

LEGEND

- DRY ASH DISPOSAL FACILITY LIMITS
- LIMITS OF WASTE
- FINAL COVER LIMITS
- APPROXIMATE EXISTING INTERMEDIATE COVER LIMITS/AREA
- PAVED ROAD
- UNPAVED ROAD
- VEGETATION
- FENCE
- EXISTING GRADE (10' INTERVAL)
- EXISTING GRADE (2' INTERVAL)
- EXISTING FINAL COVER INTERMEDIATE/TOE DRAIN
- SWALE
- EDGE OF WATER
- WETLAND
- PROPOSED GRADE (10' INTERVAL)
- PROPOSED GRADE (2' INTERVAL)
- PROPOSED PERIMETER ROAD
- PROPOSED SWALE
- PROPOSED CULVERT
- PROPOSED SLOPE AND DIRECTION
- PROPOSED LEACHATE MANHOLE SUMP
- PROPOSED LEACHATE FORCEMAIN CLEANOUT MANHOLE
- PROPOSED LEACHATE FORCEMAIN
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED FINAL COVER TOE DRAIN
- PROPOSED FINAL COVER TOE DRAIN OUTLET PIPE
- PROPOSED DIVERSION BERM
- PROPOSED DOWNSLOPE FLUME
- PROPOSED ENERGY DISSIPATOR
- PROPOSED RIPRAP
- PROPOSED STRAW BALE DITCH CHECK
- PROPOSED MODULE 12 MONITORING WELL
- PROPOSED INTERMEDIATE DRAIN COLLECTION PIPE
- PROPOSED INTERMEDIATE DRAIN OUTLET PIPE
- PROPOSED 2024 FINAL COVER CONSTRUCTION

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN LIMITS OF WASTE REPRESENT TOP OF FINAL COVER (FINAL GRADE).
3. EROSION CONTROL SILT FENCE/FILTER SOCK INSTALLED AROUND THE PERIMETER OF DISTURBANCE AREAS AND STOCKPILES.

SCALE: 1" = 100'

PROJECT NO.	25222260.01
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ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

FINAL GRADES (MODULE 12)

SHEET
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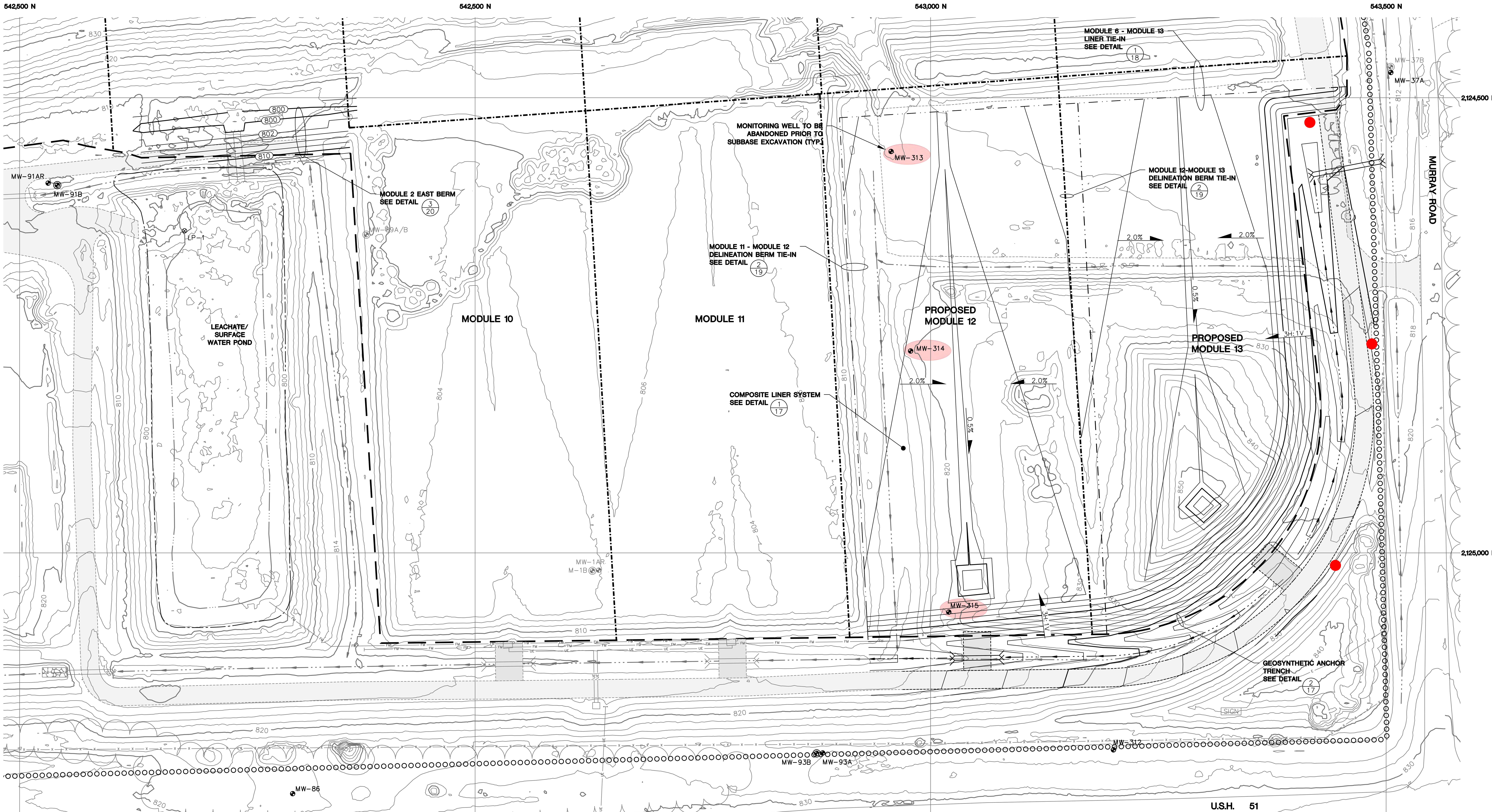

LEGEND

○○○○○○○○○	DRY ASH DISPOSAL FACILITY LIMITS
— — —	LIMITS OF WASTE
—·—·—	LINER PHASE/MODULE LIMIT
—·—·—	LIMITS OF CONSTRUCTED 2' THICK CLAY LINER
	PAVED ROAD
	UNPAVED ROAD
	VEGETATION
—x—x—	FENCE
—810—	EXISTING GRADE (10' INTERVAL)
	EXISTING GRADE (2' INTERVAL)
	SWALE
	EDGE OF WATER
	WETLAND
—800—	PROPOSED GRADE (10' INTERVAL)
802	PROPOSED GRADE (2' INTERVAL)
	PROPOSED PERIMETER ROAD
	PROPOSED SWALE
	PROPOSED CULVERT
2.0%	PROPOSED SLOPE AND DIRECTION
●	PROPOSED MODULE 13 MONITORING WELL

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN MODULES 12 AND 13 REPRESENT BOTTOM OF 2' THICK CLAY LINER (SUBBASE GRADE).
3. EROSION CONTROL SILT FENCE/FILTER SOCK INSTALLED AROUND THE PERIMETER OF DISTURBANCE AREAS AND STOCKPILES.

50 0 50

SCALE: 1" = 50'

N

DRAWN BY:	KP
CHECKED BY:	RR\MRH
APPROVED BY:	MRH 08/31/2023
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REVISED:	08/31/2023

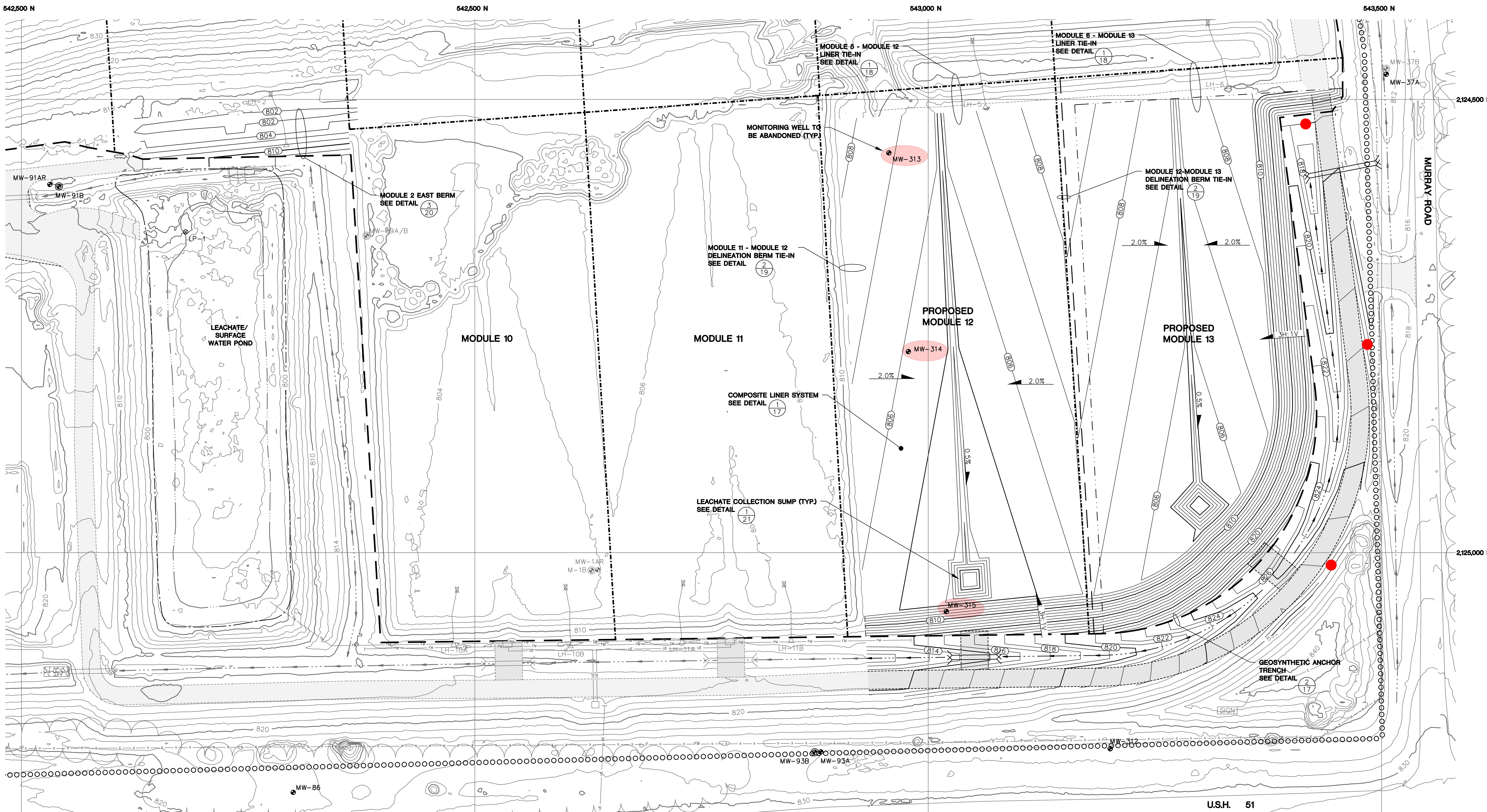
CLIENT: Wisconsin Power and Light Company
WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

SITE: PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SUBBASE GRADES (MODULES 12 AND 13)

SHEET 8 of 28



LEGEND

DRY ASH DISPOSAL FACILITY LIMITS	SWALE
LIMITS OF WASTE	EDGE OF WATER
LINER PHASE/MODULE LIMIT	WETLAND
LIMITS OF CONSTRUCTED 2' THICK CLAY LINER	800 PROPOSED GRADE (10' INTERVAL)
PAVED ROAD	802 PROPOSED GRADE (2' INTERVAL)
UNPAVED ROAD	PROPOSED PERIMETER ROAD
VEGETATION	PROPOSED SWALE
FENCE	PROPOSED CULVERT
810 EXISTING GRADE (10' INTERVAL)	2.0% PROPOSED SLOPE AND DIRECTION
EXISTING GRADE (2' INTERVAL)	PROPOSED MODULE 13 MONITORING WELL

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN MODULES 12 AND 13 REPRESENT TOP OF 2' THICK CLAY LINER (BASE GRADE).

50 0 50

SCALE: 1" = 50'

N

DRAWN BY: KP
CHECKED BY: RFY/MRH
APPROVED BY: MRH 08/31/2023

PROJECT NO. 25222260.01
DRAWN: 05/17/18
REVISED: 08/31/2023

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
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Wisconsin Power and Light Company

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ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

BASE GRADES
(MODULES 12 AND 13)

SHEET
9 of 28


542,500 N
542,500 N
543,000 N
543,500 N
2,124,500 E
2,125,000 E
PIPE BOOT
SEE DETAIL 4/20
MODULE 2 EAST BERM
SEE DETAIL 3/20
MOD 1 LEACHATE SUMP
SEE DETAIL 1/23
MOD 2 LEACHATE SUMP
SEE DETAIL 2/23
LEACHATE LOADOUT PAD
SEE DETAIL 3/22
LEACHATE STORAGE TANK
SEE DETAIL 2/22
LP-1
LEACHATE/
SURFACE
WATER POND
LEACHATE FORCEMAIN AND TRENCH
SEE DETAIL 5/17
LEACHATE FORCEMAIN
CLEANOUT MANHOLE (TYP)
SEE DETAIL 1/22
MW-91AR
MW-91B
MW-1AR
M-1B
MW-86
MODULE 10
MODULE 11
2"/4" DUAL CONTAINED
HDPE SDR 11/17 PIPE
4"/8" DUAL CONTAINED
HDPE SDR 11/17 PIPE
ABANDON LEACHATE HEAD WELL
SEE DETAIL 1/20
CUT 6-INCH DIAMETER SDR 17 HDPE
LEACHATE COLLECTION PIPE AND
CAP BOTH ENDS (SEE NOTE 3)
SEE DETAIL 3/18
MODULE 5 - MODULE 12
LINER TIE-IN
SEE DETAIL 1/18
MODULE 6 - MODULE 13
LINER TIE-IN
SEE DETAIL 1/18
ABANDON LEACHATE HEAD WELL
SEE DETAIL 1/20
MW-37B
MW-37A
MONITORING WELL TO
BE ABANDONED (TYP)
MW-313
MW-314
MW-315
MW-312
MW-93B
MW-93A
MODULE 11 - MODULE 12
DELINEATION BERM TIE-IN
SEE DETAIL 2/19
MODULE 12-MODULE 13
DELINEATION BERM TIE-IN
SEE DETAIL 2/19
PROPOSED
MODULE 12
PROPOSED
MODULE 13
MURRAY ROAD
COMPOSITE LINER SYSTEM
SEE DETAIL 1/17
LEACHATE COLLECTION PIPE (TYP)
SEE DETAIL 4/17
LEACHATE COLLECTION SUMP (TYP)
SEE DETAIL 1/21
LEACHATE INCLINED RISER PUMP (TYP)
SEE DETAIL 3/21
INCLINED RISER PIPE AND
LEACHATE VAULT (TYP)
SEE DETAIL 4/22
GEOSYNTHETIC ANCHOR
TRENCH
SEE DETAIL 2/17
LEACHATE PUMP
CONTROL PANEL (TYP)
SEE DETAIL 2/21
LEACHATE HEADWELL (TYP)
SEE DETAIL 3/17
LEACHATE CLEANOUT (TYP)
SEE DETAIL 6/17
LH-10B
LH-11B
LH-5
LH-6
2.0%
0.5%
3H:1V
SIGN
U.S.H. 51

LEGEND

·OOOOOOOOO·	DRY ASH DISPOSAL FACILITY LIMITS		SWALE		PROPOSED 6" DIAMETER PERFORATED SDR 11 HDPE LEACHATE COLLECTION LINE
	LIMITS OF WASTE		EDGE OF WATER		PROPOSED 6" DIAMETER SOLID SDR 11 HDPE PIPE
	LINER PHASE/MODULE LIMIT		WETLAND		PROPOSED LEACHATE COLLECTION SYSTEM CLEANOUT
	LIMITS OF CONSTRUCTED 2' THICK CLAY LINER	800	PROPOSED GRADE (10' INTERVAL)		PROPOSED INCLINED RISER PIPE AND LEACHATE VAULT
	PAVED ROAD	802	PROPOSED GRADE (2' INTERVAL)		PROPOSED LEACHATE FORCEMAIN CLEANOUT MANHOLE
	UNPAVED ROAD		PROPOSED PERIMETER ROAD		PROPOSED LEACHATE COLLECTION SUMP
	VEGETATION		PROPOSED SWALE	FM	PROPOSED LEACHATE FORCEMAIN
	FENCE		PROPOSED CULVERT	UE	PROPOSED UNDERGROUND ELECTRIC
810	EXISTING GRADE (10' INTERVAL)	2.0%	PROPOSED SLOPE AND DIRECTION		
	EXISTING GRADE (2' INTERVAL)		PROPOSED MODULE 13 MONITORING WELL		

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN MODULES 12 AND 13 REPRESENT TOP OF 2' THICK CLAY LINER (BASE GRADE).

50 0 50

SCALE: 1" = 50'

N

PROJECT NO.	25222260.01	DRAWN BY:	KP		
DRAWN:	03/24/2023	CHECKED BY:	RR\MRH		
REVISED:	08/31/2023	APPROVED BY:	MRH 08/31/2023		

CLIENT: Wisconsin Power and Light Company
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COLUMBIA ENERGY CENTER
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PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS
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SITE: PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

LEACHATE COLLECTION SYSTEM (MODULES 12 AND 13)


540,500 N
541,000 N
541,500 N
542,000 N
542,500 N
543,000 N
543,500 N
2,123,500 E
2,124,000 E
2,124,500 E
2,125,000 E
COAL PILE
SOUTH SEDIMENTATION BASIN
C. M. ST. P. & P. RR.
PHASE 1
PHASE 2
TEMPORARY HAUL ROAD
MURRAY ROAD
CULVERT C6
CULVERT C5
POTENTIAL LAYDOWN AREA
AREA TO BE GRADED TO DRAIN AFTER CLOSURE
MW-311
MW-83
SG-4
MW-33AR
MW-33B
MW-34A
MW-34B
MW-88B
MW-88A
MW-85
MW-85B
MW-302
MW-5R
LS-1
MW-310
MW-309
MW-37B
MW-37A
MW-92B
MW-92A
LS-3R
MW-91AR
MW-91B
MW-301
MW-312
MW-93B
MW-93A
MW-86
MW-84A
MW-84B
MW-17
4H:1V
10H:1V
3.0%
LEGEND
DRY ASH DISPOSAL FACILITY LIMITS
LIMITS OF WASTE
EXISTING FINAL COVER LIMITS
PAVED ROAD
UNPAVED ROAD
VEGETATION
FENCE
EXISTING GRADE (10' INTERVAL)
EXISTING GRADE (2' INTERVAL)
SWALE
EDGE OF WATER
WETLAND
PROPOSED GRADE (10' INTERVAL)
PROPOSED GRADE (2' INTERVAL)
PROPOSED PERIMETER ROAD
PROPOSED SWALE
PROPOSED CULVERT
PROPOSED SLOPE AND DIRECTION
PROPOSED LEACHATE MANHOLE SUMP
PROPOSED LEACHATE FORCEMAIN CLEANOUT MANHOLE
PROPOSED LEACHATE FORCEMAIN
PROPOSED UNDERGROUND ELECTRIC
PROPOSED STRAW BALE DITCH CHECK
PROPOSED MODULE 13 MONITORING WELL
NOTES:
1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN LIMITS OF WASTE REPRESENT TOP OF WASTE (WASTE GRADE).
100 0 100
SCALE: 1" = 100'
N

PROJECT NO.	25222260.01	DRAWN BY:	KP
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PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

TOP OF WASTE GRADES (MODULES 12 AND 13)

SHEET
11 OF 28

540,500 N
541,000 N
541,500 N
542,000 N
542,500 N
543,000 N
543,500 N
2,123,500 E
2,124,000 E
2,124,500 E
2,125,000 E
COAL PILE
SOUTH SEDIMENTATION BASIN
C. M. ST. P. & P. RR.
PHASE 1
PHASE 2
MURRAY ROAD
PROPOSED 2024 FINAL COVER CONSTRUCTION INTERMEDIATE COVER (SEE DETAIL 1/24) TO BE REMOVED PRIOR TO PLACING FINAL COVER MATERIALS
EXISTING TO PROPOSED FINAL COVER TRANSITION (PROPOSED GEOCOMPOSITE DRAINAGE LAYER) SEE DETAIL 5/24
PROPOSED FINAL COVER (GEOCOMPOSITE DRAINAGE LAYER) SEE DETAIL 4/24
EXISTING FINAL COVER SEE DETAIL 2/24
OUTLET STRUCTURE WITH ENERGY DISSIPATER (TYP.) SEE DETAIL 4/26
ROCK CHUTE (TYP.) SEE DETAIL 3/26
DOWNSLOPE FLUME (TYP.) SEE DETAIL 1/26
DOWNSLOPE FLUME INLET (TYP.) SEE DETAIL 2/26
CULVERT C8
DROP STRUCTURE SEE DETAIL 3/23
FINAL COVER DIVERSION BERM (TYP.) SEE DETAIL 3/25
ACCESS ROAD OVER FINAL COVER SEE DETAIL 4/25
NORTH INFILTRATION AREA SEE DETAIL 8/27
ACCESS ROAD INTERMEDIATE DRAIN PIPE SEE DETAIL 4/25
CULVERT C9
ACCESS ROAD OVER FINAL COVER TRANSITION AT PERIMETER BERM SEE DETAIL 5/25
PROPOSED FINAL COVER TRANSITION (SAND TO GEOCOMPOSITE DRAINAGE LAYER) SEE DETAIL 7/24
3" ADS SINGLE-WALL POLYETHYLENE PIPE WITH 3MM SLOT, TYPE D PATTERN, AND DRAIN GUARD SOCK PLACED ON TOP OF FINAL COVER GEOSYNTHETICS IN SAND DRAINAGE LAYER. ELBOW OR WYE FITTINGS AS NECESSARY. DISCHARGE TO GROUTED RIPRAP DOWNSLOPE CHANNEL.
PROPOSED FINAL COVER (SAND DRAINAGE LAYER) SEE DETAIL 3/24
EXISTING TO PROPOSED FINAL COVER TRANSITION (PROPOSED SAND DRAINAGE LAYER) SEE DETAIL 6/24
CULVERT C7
FLUME 1
FLUME 2
FLUME 6
FLUME 7
FLUME 8
FLUME 9
FLUME 10
RC 1
RC 2
RC 3
RC 4
FINAL COVER DIVERSION BERM AND INTERMEDIATE DRAIN PIPE (TYP.) SEE DETAIL 2/25
CULVERT C2
CULVERT C1
TOE DRAIN OUTLET PIPE 8' DIA. SOLID POLYETHYLENE PIPE
CULVERT C6
POTENTIAL LAYDOWN AREA
APPROXIMATE LOCATION START TOE DRAIN BEDDING ABOVE FINAL COVER GEOSYNTHETIC ANCHOR TRENCH
AREA TO BE GRADED TO DRAIN AFTER CLOSURE
CULVERT C5
CULVERT C4
CULVERT C3
CULVERT C10
PERIMETER ACCESS ROAD SEE DETAIL 5/26
PERIMETER SWALE SEE DETAIL 6/26
TYPICAL CULVERT SEE DETAILS 1/27 2/27 3/27 4/27 5/27
FINAL COVER TO LINER TIE-IN AND TOE DRAIN SEE DETAIL 1/25
FINAL COVER SLOPE BREAKS FROM 4:1 TO 2:1 SLOPES AT LIMITS OF WASTE
MW-311
MW-83
SG-4
MW-33AR
MW-33B
MW-34A
MW-34B
MW-88B
MW-88A
MW-85
MW-85B
MW-302
LS-1
MW-5R
MW-310
MW-309
MW-92B
MW-92A
LS-3R
MW-91AR
MW-91B
MW-37B
MW-37A
MW-301
MW-17
MW-84A
MW-84B
MW-86
MW-93B
MW-93A
MW-312
4H:1V
10H:1V
3.0%

LEGEND

○○○○○○○○○	DRY ASH DISPOSAL FACILITY LIMITS
— — —	LIMITS OF WASTE
(green)	FINAL COVER LIMITS
(tan)	APPROXIMATE EXISTING INTERMEDIATE COVER LIMITS/AREA
	PAVED ROAD
	UNPAVED ROAD
	VEGETATION
—x—x—	FENCE
—810—	EXISTING GRADE (10' INTERVAL)
	EXISTING GRADE (2' INTERVAL)
	EXISTING FINAL COVER INTERMEDIATE/TOE DRAIN
	SWALE
	EDGE OF WATER
	WETLAND
—800—	PROPOSED GRADE (10' INTERVAL)
—802—	PROPOSED GRADE (2' INTERVAL)
	PROPOSED PERIMETER ROAD
	PROPOSED SWALE
	PROPOSED CULVERT
4H:1V	PROPOSED SLOPE AND DIRECTION
●	PROPOSED LEACHATE MANHOLE SUMP
○	PROPOSED LEACHATE FORCEMAIN CLEANOUT MANHOLE
—FM—	PROPOSED LEACHATE FORCEMAIN
—UE—	PROPOSED UNDERGROUND ELECTRIC
	PROPOSED FINAL COVER TOE DRAIN
	PROPOSED FINAL COVER TOE DRAIN OUTLET PIPE
	PROPOSED DIVERSION BERM
	PROPOSED DOWNSLOPE FLUME
⊠	PROPOSED ENERGY DISSIPATOR
	PROPOSED RIPRAP
	PROPOSED STRAW BALE DITCH CHECK
● (red)	PROPOSED MODULE 13 MONITORING WELL
	PROPOSED INTERMEDIATE DRAIN COLLECTION PIPE
	PROPOSED INTERMEDIATE DRAIN OUTLET PIPE
(hatched)	PROPOSED 2024 FINAL COVER CONSTRUCTION

NOTES:

1. SEE SHEET 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
2. PROPOSED GRADES WITHIN LIMITS OF WASTE REPRESENT TOP OF FINAL COVER (FINAL GRADE).
3. EROSION CONTROL SILT FENCE/FILTER SOCK INSTALLED AROUND THE PERIMETER OF DISTURBANCE AREAS AND STOCKPILES.

100 0 100
SCALE: 1" = 100'
N

PROJECT NO.	25222260.01	DRAWN BY:	KP
DRAWN:	05/17/18	CHECKED BY:	RR\MRH
REVISED:	08/31/2023	APPROVED BY:	MRH 08/31/2023

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
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PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

FINAL GRADES
(MODULES 12 AND 13)

SHEET
12 OF 28

Table 1. NR 507.15(3) Groundwater Monitoring Program
CCR Monitoring Program
Wisconsin Power and Light - Columbia Ash Disposal Facility

Landfill Modules and Monitoring Points		Parameters - Detection Monitoring	Parameters - Assessment Monitoring (if required)	Frequency
Groundwater				
All Modules (Background Wells)	MW-84A	Alkalinity	Antimony	Semiannual (April/October)
	MW-301	Boron	Arsenic	
Modules 1-3	MW-302	Calcium	Barium	
	MW-33AR	Hardness	Beryllium	
	MW-34A	Chloride	Cadmium	
Modules 4-6	MW-309	Fluoride	Chromium	
	MW-310	Sulfate	Cobalt	
	MW-311	TDS	Copper	
Modules 10-11	MW-313^	Field Conductivity	Fluoride	
	MW-314^	Field pH	Lead	
	MW-315^	Field Temperature	Lithium	
		Groundwater Elevation	Manganese	
			Mercury	
			Molybdenum	
			Nitrate + Nitrite (as N)	
			Selenium	
			Silver	
			Thallium	
			Zinc	
			Radium 226 and Radium 228, combined	
Module 12 or Modules 12-13	Additional Wells as Installed			
Leachate				
All Modules*	LP-1*	BOD5		Semiannual (April/October)
		Field conductivity (at 25 deg C)		
All Modules*	Leachate Collection Tank*	Field pH		
		Alkalinity		
		Boron		
		Cadmium		
		Chloride		
		COD		
		Hardness		
		Iron		
		Lead		
		Manganese		
		Mercury		
		Selenium		
		Total suspended solids		
		Antimony		
		Beryllium		
		Cobalt		
		Fluoride		
		Lithium		
		Molybdenum		
		Radium 226 and 228, combined		
		Sulfate		
		Thallium		
		Semivolatile organic compound scan		Annual

^: MW-313, MW-314, and MW-315 will be abandoned prior to construction of Module 12.
*: At a later date, the leachate collection system will be converted to discharge all leachate to the Leachate Collection Tank.

Table 2. Non-CCR Well Groundwater Monitoring Program
Wisconsin Power and Light - Columbia Dry Ash Disposal Facility
License #3025

Monitoring Points	Parameters	Frequency
Detection Groundwater Monitoring, Non-CCR Wells		
MW-33BR MW-34B MW-37A MW-83 MW-84B MW-86 MW-92A MW-92B MW-93A	Groundwater elevation Field odor, color, and turbidity Field temperature, conductivity at 25° C, and pH Metals, dissolved (Arsenic, Boron, Molybdenum) Sulfate, dissolved Total Hardness, dissolved (mg/L as $CaCO_3$) Alkalinity, dissolved	Semiannual (April and October)
Water Supply Wells		
HC-1 HC-2 HC-3	Field odor, color, and turbidity Field temperature, conductivity at 25° C, and pH Nitrate + Nitrite as N, total Metals, total (Arsenic, Boron, Molybdenum) Sulfate, total Chloride, total Total Hardness (mg/L as $CaCO_3$) Alkalinity	Semiannual (April and October)
Lysimeters		
LS-1 LS-3R	Field odor, color, and turbidity Field temperature, conductivity at 25° C, and pH Alkalinity Metals, total (Arsenic, Boron, Molybdenum) Total Hardness (mg/L as CaCO3) Chloride, total COD Total Kjeldahl Nitrogen (TKN) Sulfate, total	Semiannual (April and October)
Leachate Head Wells		
LH-2, LH-3^, LH-4^, LH-5, LH-6, LH-10A, LH-10B^, LH-11A, LH-11B^	Leachate head	Monthly

^ LH-10A/B and LH-11A/B will replace LH-3 and LH-4 in the monitoring program.

Maintenance/Inspection Item	Comments
Site Inspection & Compliance Certification	Annual inspections and compliance certifications for 40 years
Final Cover Maintenance	
Settlement Repair	Fill/regrade lwo spots as required to maintain positive drainage
Erosion Repair	As required
Vegetation Maintenance	
Mowing	Mow annually or as required
Revegetation of Bare Areas	Place seed, fertilizer, and mulch as required
Storm Water Runoff Management System Maintenance	
Sediment Accumulation	Remove sediment as required
Erosion Repair	As required
Leachate Collection System Maintenance	
Leachate Collection Line Cleaning	Clean annually
Groundwater Monitoring Well Maintenance	Repair any damage as required

LEGEND

- DRY ASH DISPOSAL FACILITY LIMITS
- LIMITS OF WASTE
- LINER PHASE/MODULE LIMIT
- PAVED ROAD
- UNPAVED ROAD
- RAILROAD TRACKS
- VEGETATION
- FENCE
- OVERHEAD UTILITY
- 810 EXISTING GRADE (10' INTERVAL)
- EXISTING GRADE (2' INTERVAL)
- SWALE
- EDGE OF WATER
- WETLAND
- CULVERT
- TRANSMISSION TOWER
- UTILITY POLE
- MONITORING WELL
- PIEZOMETER
- WATER SUPPLY WELL
- STAFF GAUGE
- SURFACE WATER SAMPLE LOCATION
- LEACHATE HEADWELL
- LEACHATE RISER/CLEANOUT
- LYSIMETER MANHOLE
- ABANDONED MONITORING WELL
- ABANDONED PIEZOMETER
- ABANDONED TEMPORARY WATER TABLE WELL
- BENCHMARK
- PROPOSED MODULE 12 MONITORING WELL
- PROPOSED MODULE 13 MONITORING WELL

NOTES:

1. SEE SHEET 2 FOR BASE MAP NOTES.

N

200 0 200

SCALE: 1" = 200'

DRAWN BY:	KP
CHECKED BY:	RR\MRH
APPROVED BY:	MRH 08/31/2023
PROJECT NO.	25222260.01
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WISCONSIN POWER AND LIGHT
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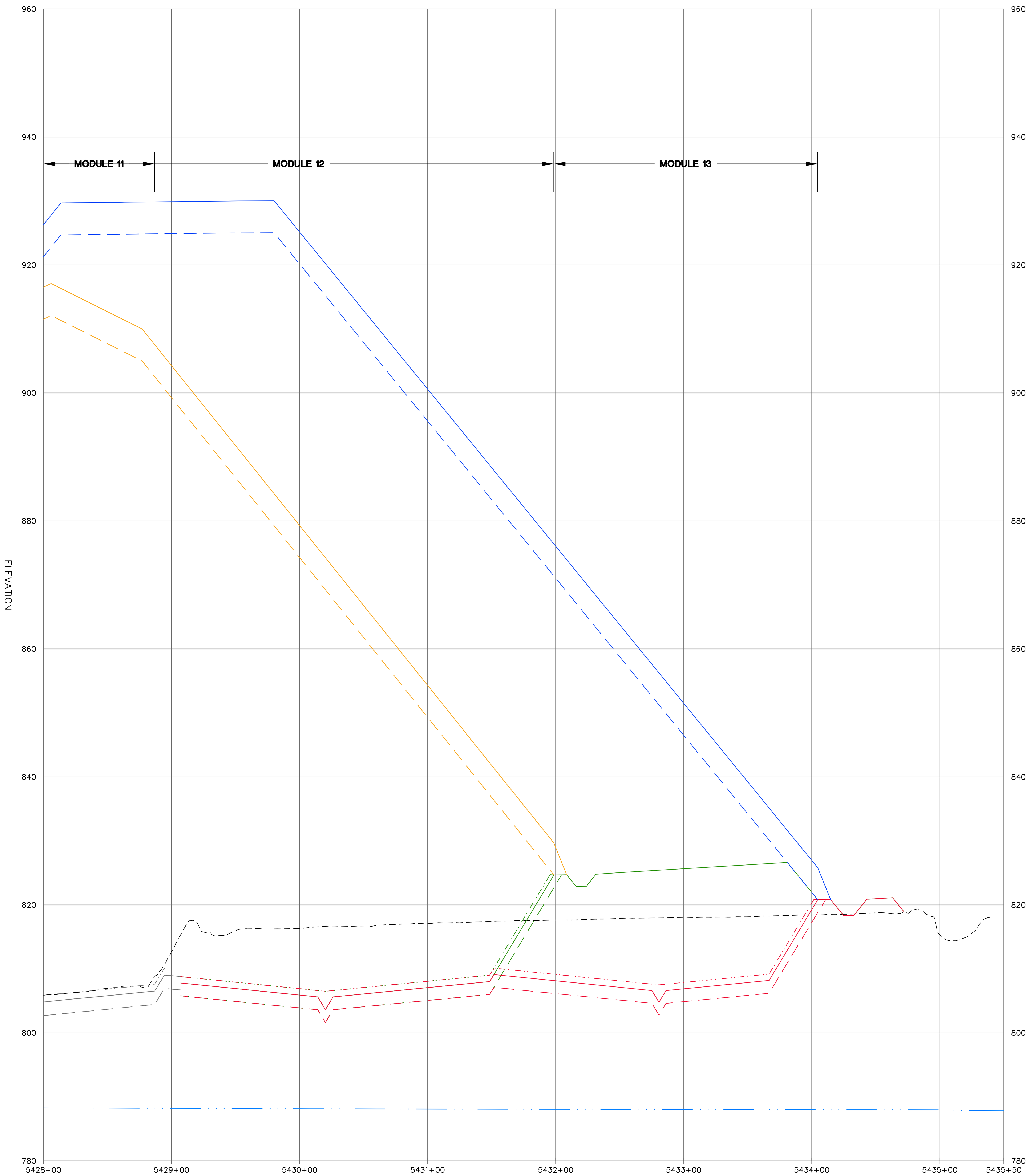
ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

SITE MONITORING AND LONG TERM CARE PLAN

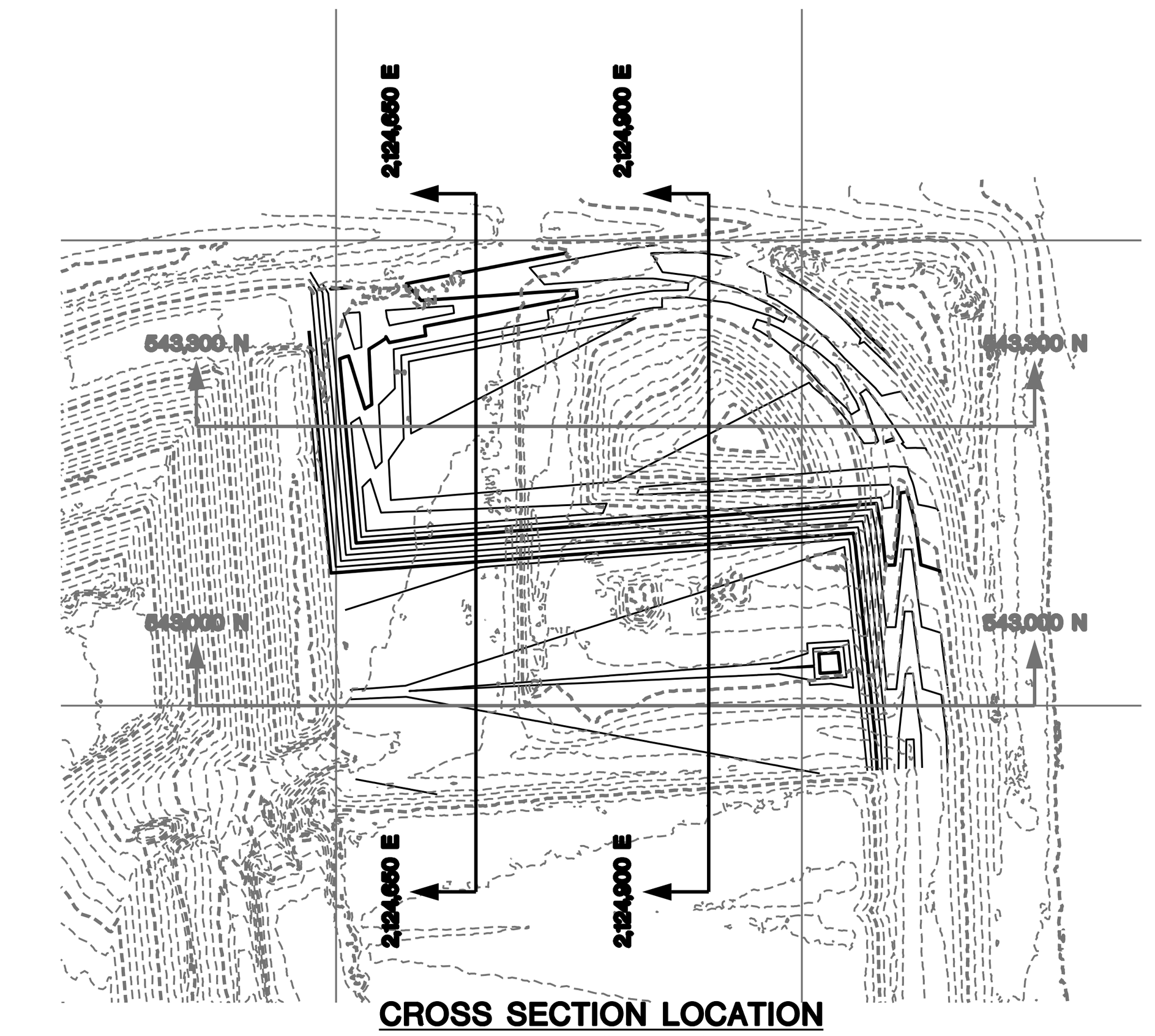
SHEET



2124650 EAST

LEGEND

— — — — (grey dashed)	EXISTING GRADE (06/06/2023)
— — — (grey long dash)	DOCUMENTED SUBBASE GRADE
——— (grey)	DOCUMENTED BASE GRADE
— · — · (grey)	DOCUMENTED DRAINAGE LAYER
— — — (green dashed)	PROPOSED MODULE 12 SUBBASE GRADE
——— (green)	PROPOSED MODULE 12 BASE GRADE
— · — · (green)	PROPOSED MODULE 12 DRAINAGE LAYER
— — — (orange dashed)	PROPOSED MODULE 12 WASTE GRADE
——— (orange)	PROPOSED MODULE 12 FINAL GRADE
— — — (red dashed)	PROPOSED MODULE 12 AND 13 SUBBASE GRADE
——— (red)	PROPOSED MODULE 12 AND 13 BASE GRADE
— · — · (red)	PROPOSED MODULE 12 AND 13 DRAINAGE LAYER
— — — (blue dashed)	PROPOSED MODULE 12 AND 13 WASTE GRADE
——— (blue)	PROPOSED MODULE 12 AND 13 FINAL GRADE
— · · — (light blue)	HIGH WATER TABLE (OCTOBER 2018)

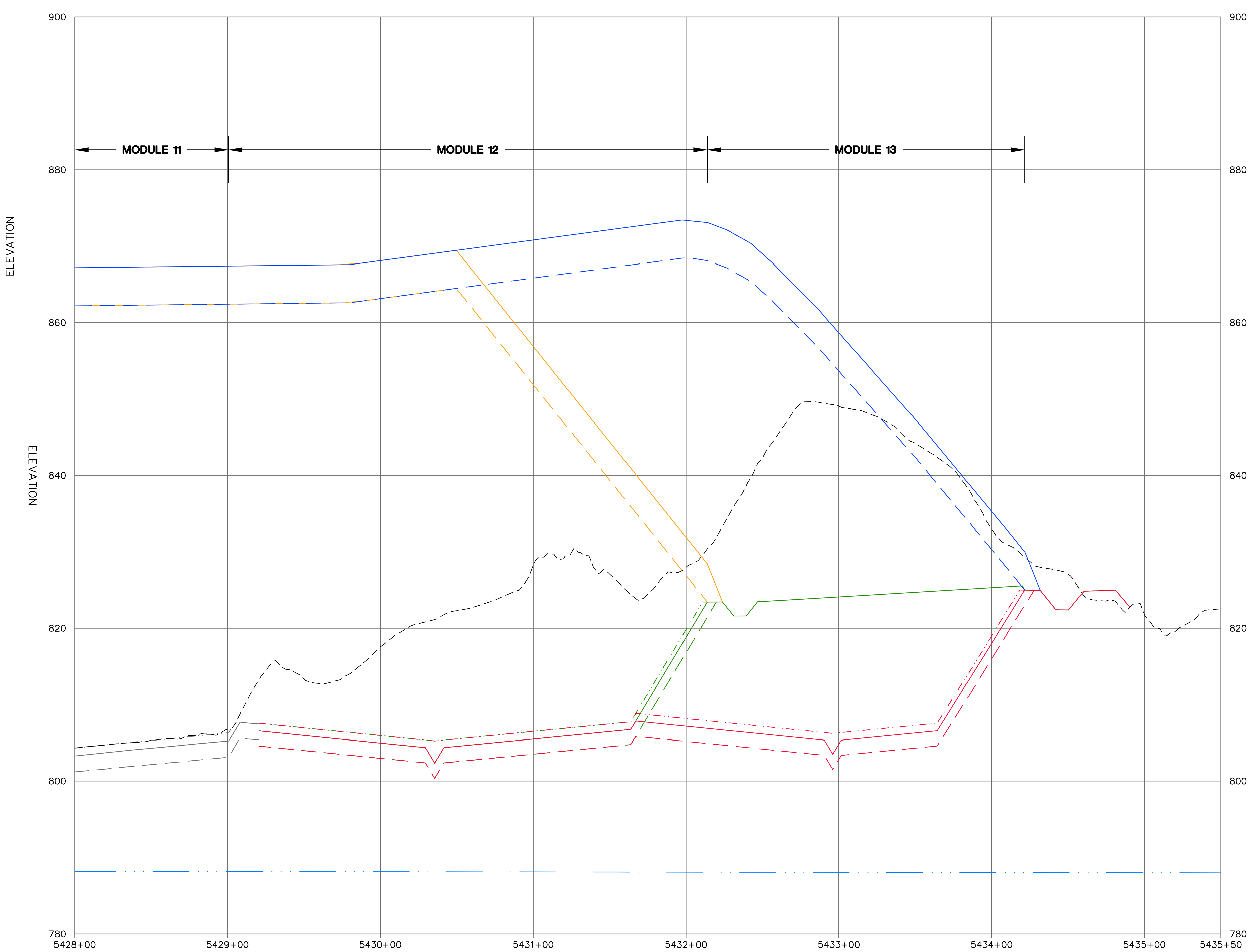


CROSS SECTION LOCATION

SCALE: 1" = 200'

0 50

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION = 5X



2124900 EAST

DRAWN BY:	KP	PROJECT NO.	25222260.01
CHECKED BY:	RR\MRH	DRAWN:	05/17/18
APPROVED BY:	MRH 08/31/2023	REVISED:	08/30/2023

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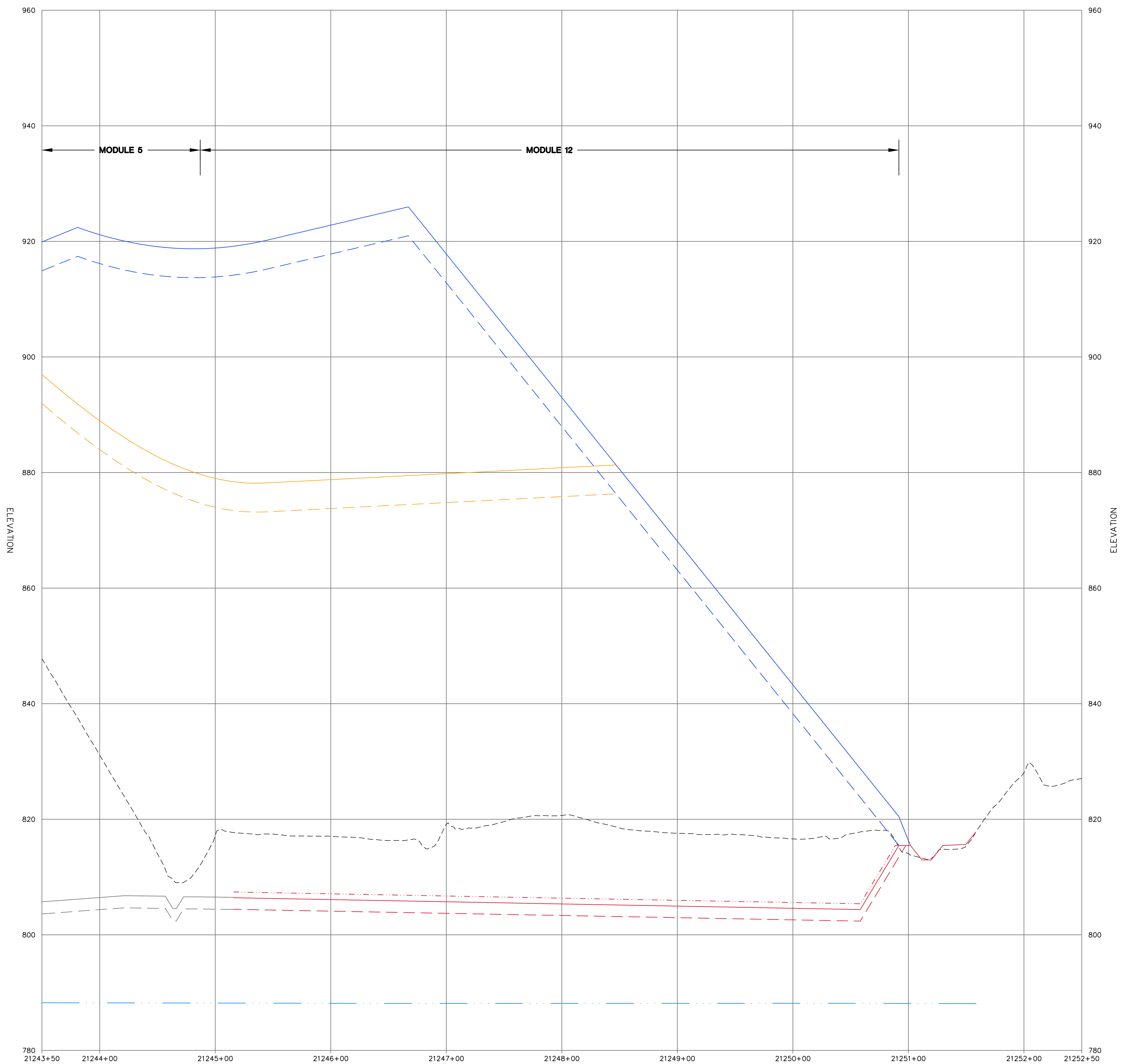
ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

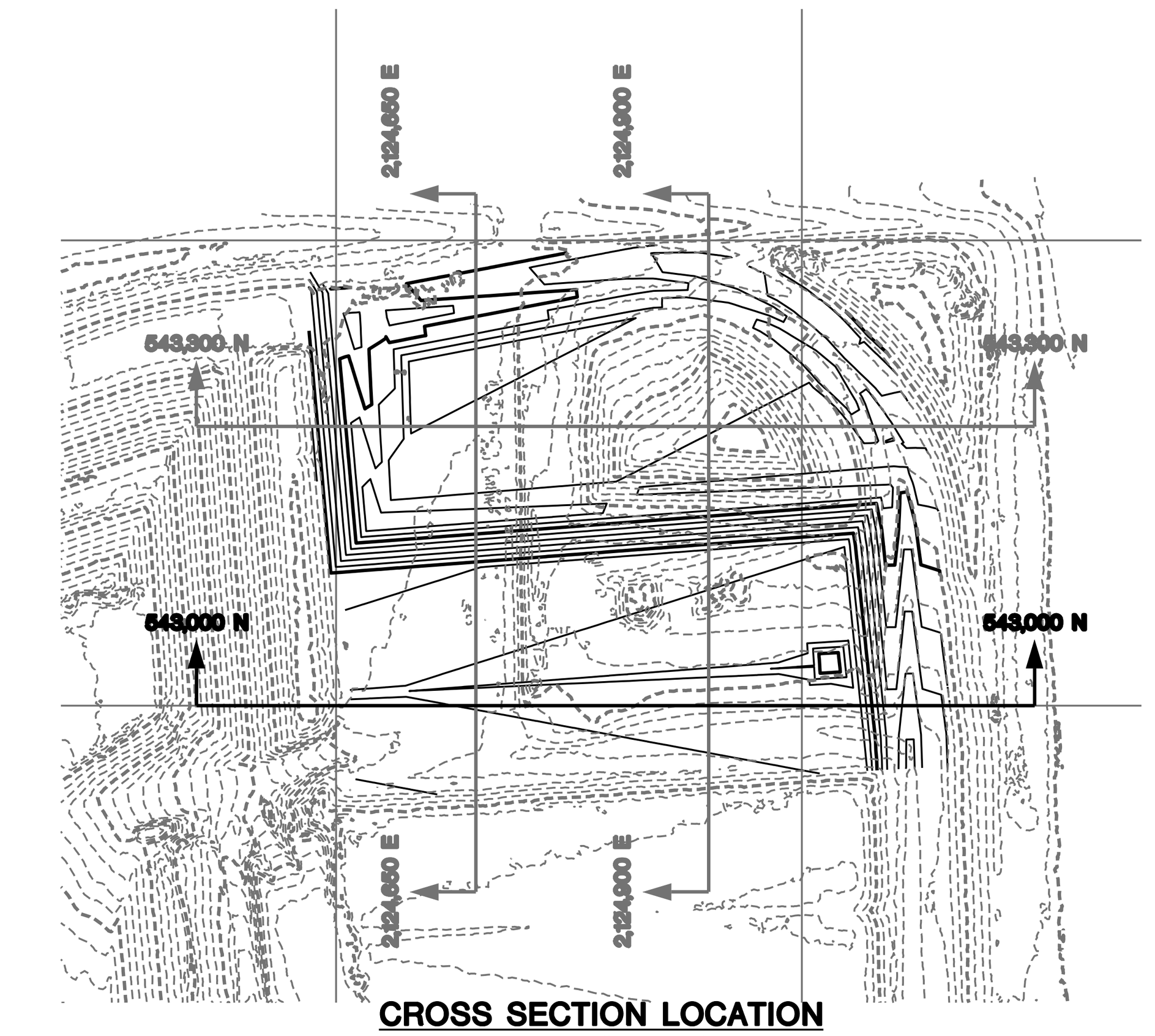
SITE

CROSS SECTIONS – 2,214,650 EAST AND 2,124,900 EAST

SHEET
14 OF 28



543000 NORTH



CROSS SECTION LOCATION
SCALE: 1" = 200'

LEGEND

- EXISTING GRADE (06/06/2023)
- DOCUMENTED SUBBASE GRADE
- DOCUMENTED BASE GRADE
- DOCUMENTED DRAINAGE LAYER
- PROPOSED MODULE 12 WASTE GRADE
- PROPOSED MODULE 12 FINAL GRADE
- PROPOSED MODULE 12 AND 13 SUBBASE GRADE
- PROPOSED MODULE 12 AND 13 BASE GRADE
- PROPOSED MODULE 12 AND 13 DRAINAGE LAYER
- PROPOSED MODULE 12 AND 13 WASTE GRADE
- PROPOSED MODULE 12 AND 13 FINAL GRADE
- HIGH WATER TABLE (OCTOBER 2018)

0 50
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION = 5X

DRAWN BY:	KP
CHECKED BY:	RR\MRH
APPROVED BY:	MRH 08/31/2023
PROJECT NO.	25222260.01
DRAWN:	05/17/18
REVISED:	08/30/2023

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

Wisconsin Power and Light Company

CLIENT

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

PLAN OF OPERATION UPDATE
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COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

CROSS SECTION – 543,000 NORTH

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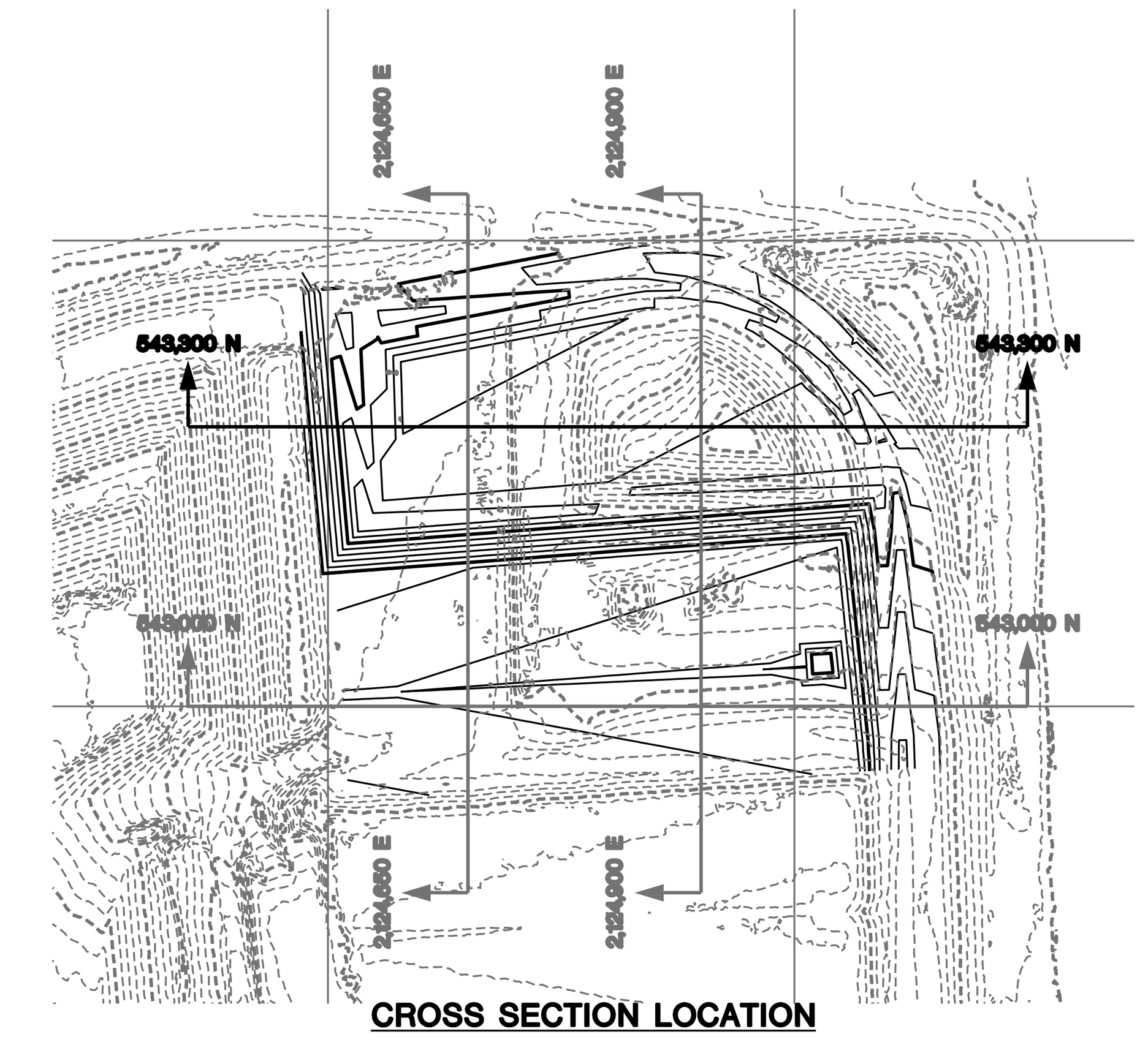
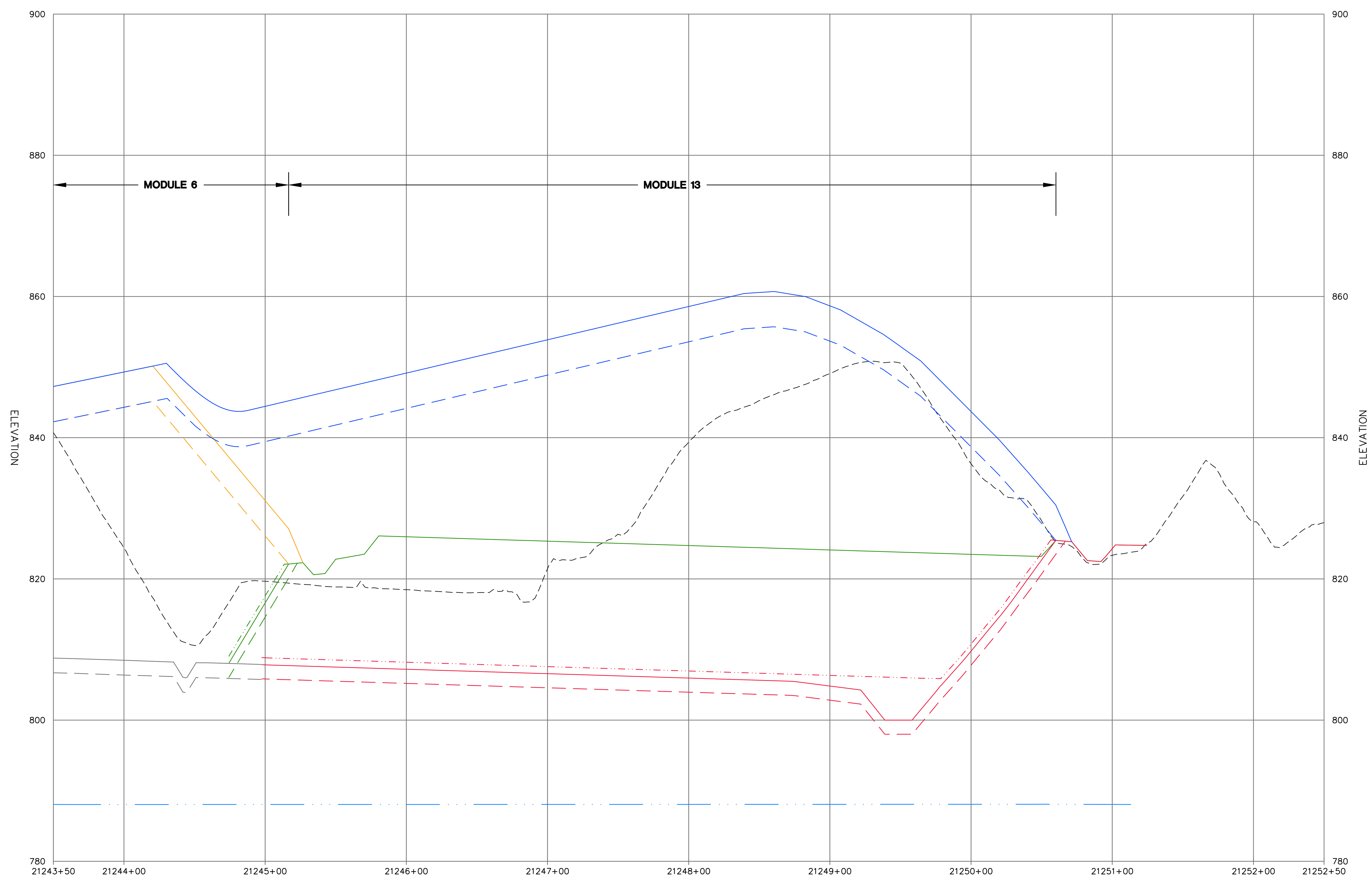


CROSS SECTION LOCATION

SCALE: 1" = 200'



543300 NORTH

LEGEND

- EXISTING GRADE (06/06/2023)
- DOCUMENTED SUBBASE GRADE
- DOCUMENTED BASE GRADE
- DOCUMENTED DRAINAGE LAYER
- PROPOSED MODULE 12 SUBBASE GRADE
- PROPOSED MODULE 12 BASE GRADE
- PROPOSED MODULE 12 DRAINAGE LAYER
- PROPOSED MODULE 12 WASTE GRADE
- PROPOSED MODULE 12 FINAL GRADE
- PROPOSED MODULE 12 AND 13 SUBBASE GRADE
- PROPOSED MODULE 12 AND 13 BASE GRADE
- PROPOSED MODULE 12 AND 13 DRAINAGE LAYER
- PROPOSED MODULE 12 AND 13 WASTE GRADE
- PROPOSED MODULE 12 AND 13 FINAL GRADE
- HIGH WATER TABLE (OCTOBER 2018)

0 50

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION = 5X

PROJECT NO.	25222260.01	DRAWN BY:	KP
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COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

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CROSS SECTION – 543,300 NORTH

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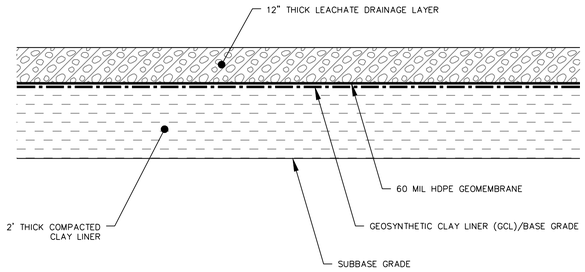
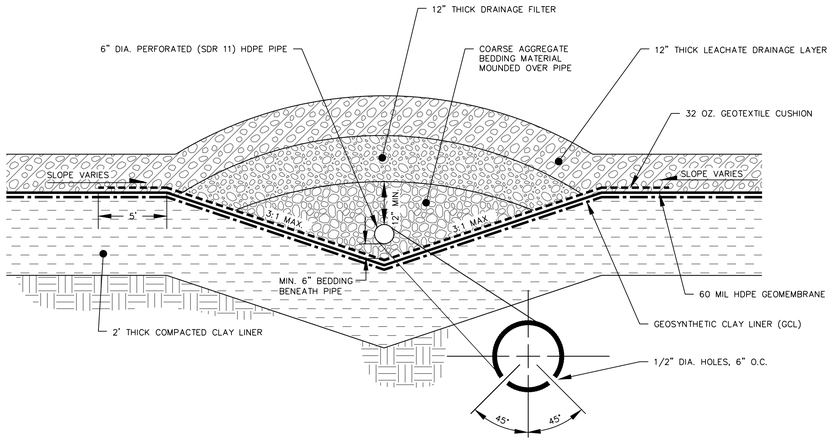
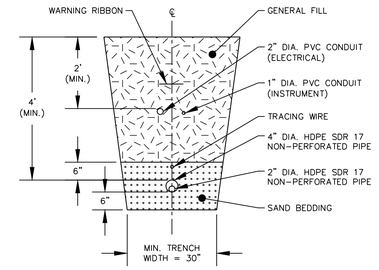


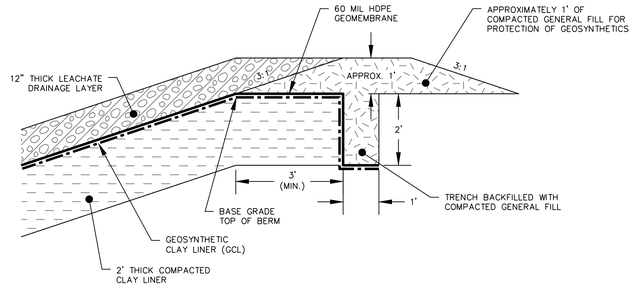
1/17 COMPOSITE LINER SYSTEM
SCALE: 1" = 2'



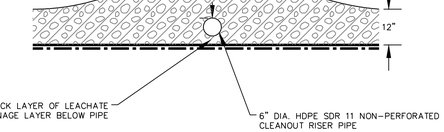
4/17 LEACHATE COLLECTION LINE (EAST-WEST)
SCALE: 1" = 5'

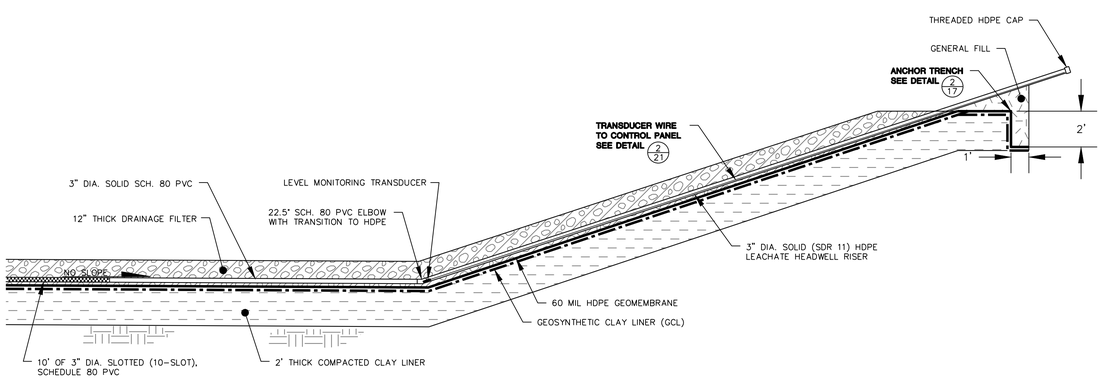


5/17 LEACHATE FORCEMAIN AND TRENCH
NOT TO SCALE

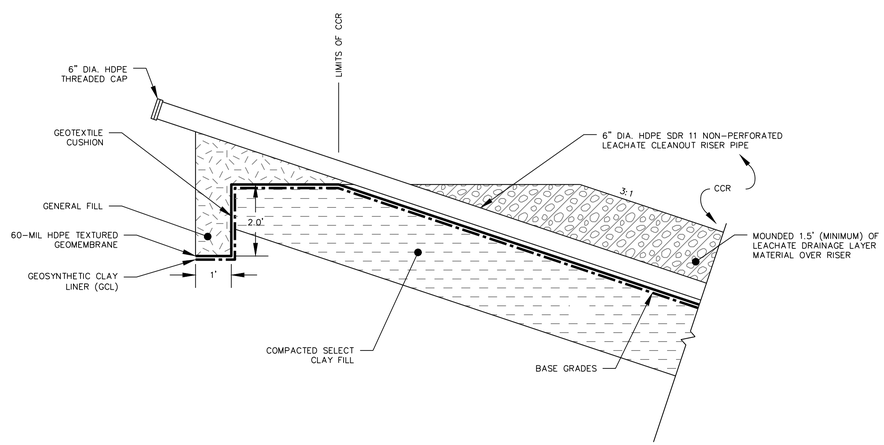


2/17 GEOSYNTHETIC ANCHOR TRENCH
SCALE: 1" = 2'





3/17 LEACHATE HEADWELL
SCALE: 1" = 4'



6/17 LEACHATE CLEANOUT
NOT TO SCALE

SCS ENGINEERS
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PHONE: (608) 224-2830

DRAWN BY: KP
CHECKED BY: RR\MRH
APPROVED BY: MRH 08/31/2023

PROJECT NO. 25222260.01
DRAWN: 05/17/18
REVISED: 08/31/2023

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

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COLUMBIA ENERGY CENTER
COLUMBIA ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

DETAILS

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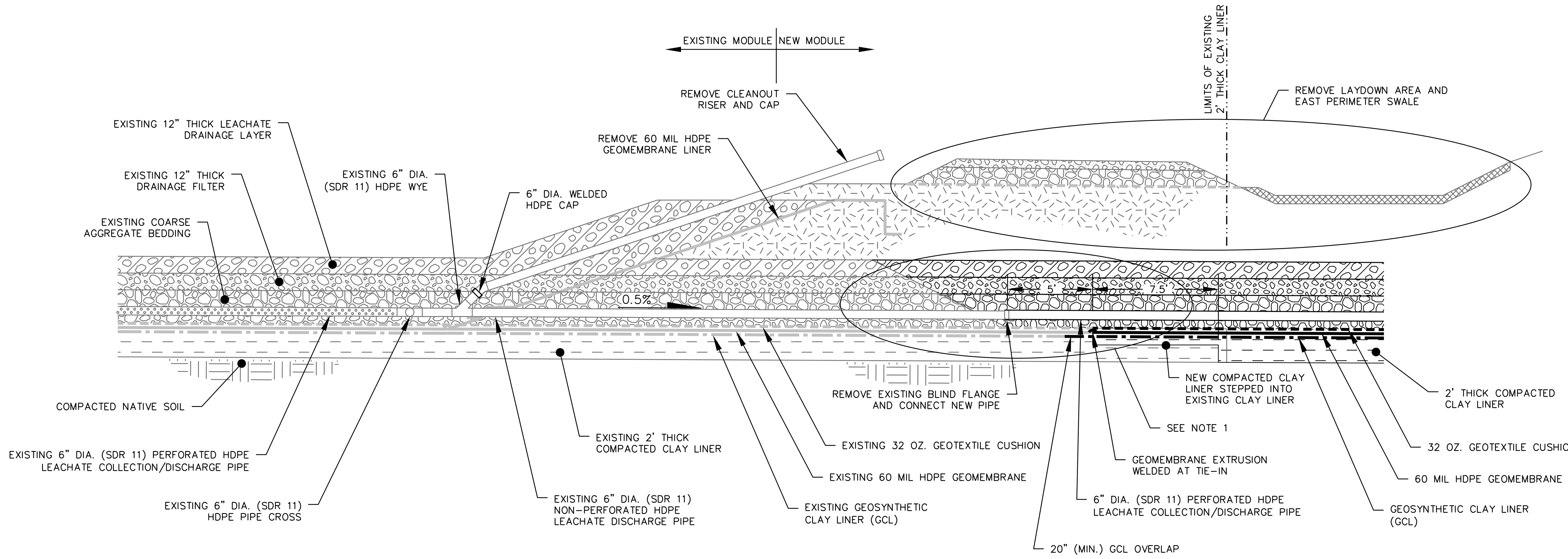
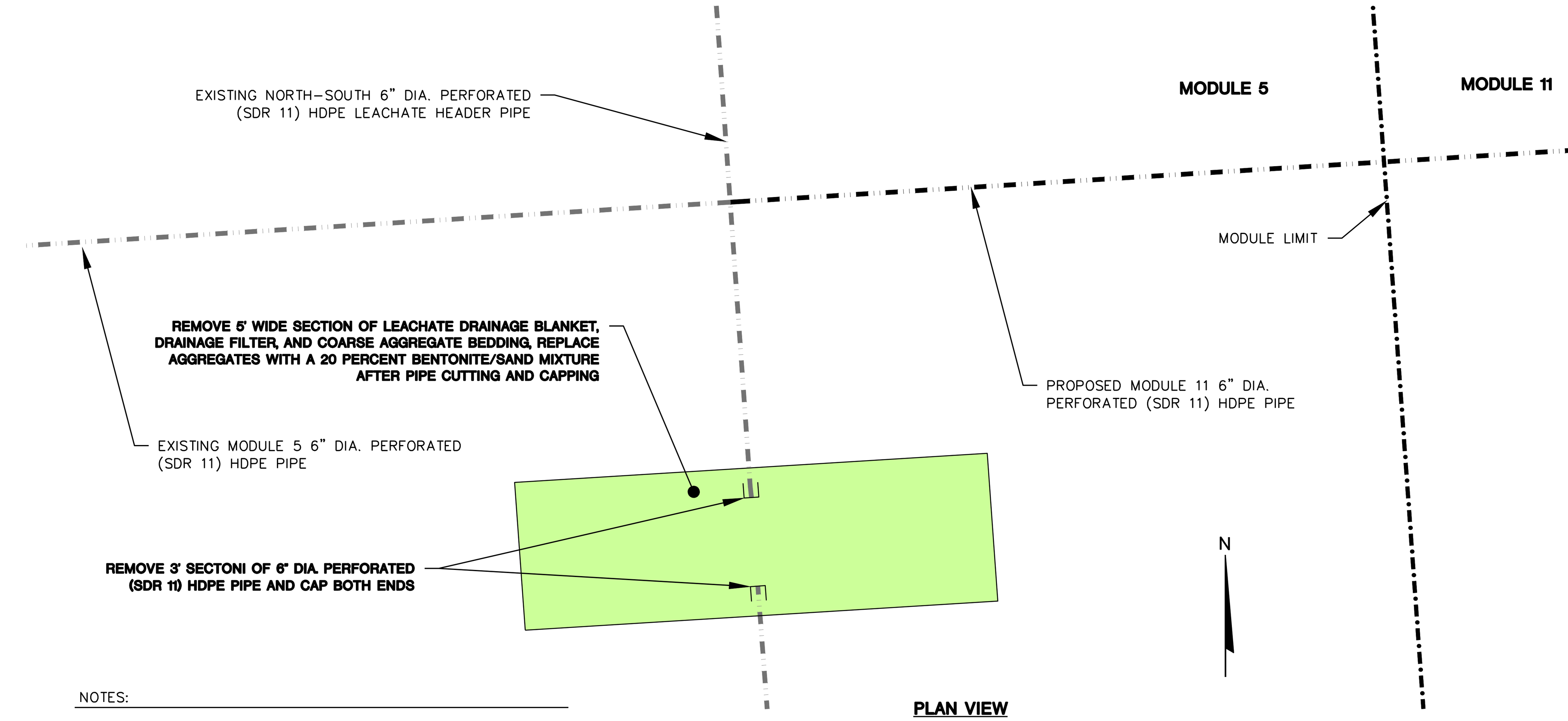


NOTES:

1. PLACEMENT OF LEACHATE DRAINAGE MATERIAL, DRAINAGE FILTER, COARSE AGGREGATE BEDDING AND PIPE CONNECTIONS TO BE MADE FOLLOWING WDNR APPROVAL OF MODULE 12 AND 13 LINER CONSTRUCTION.

MODULE 5-6 - MODULE 12-13 LINER TIE-IN (1/18)

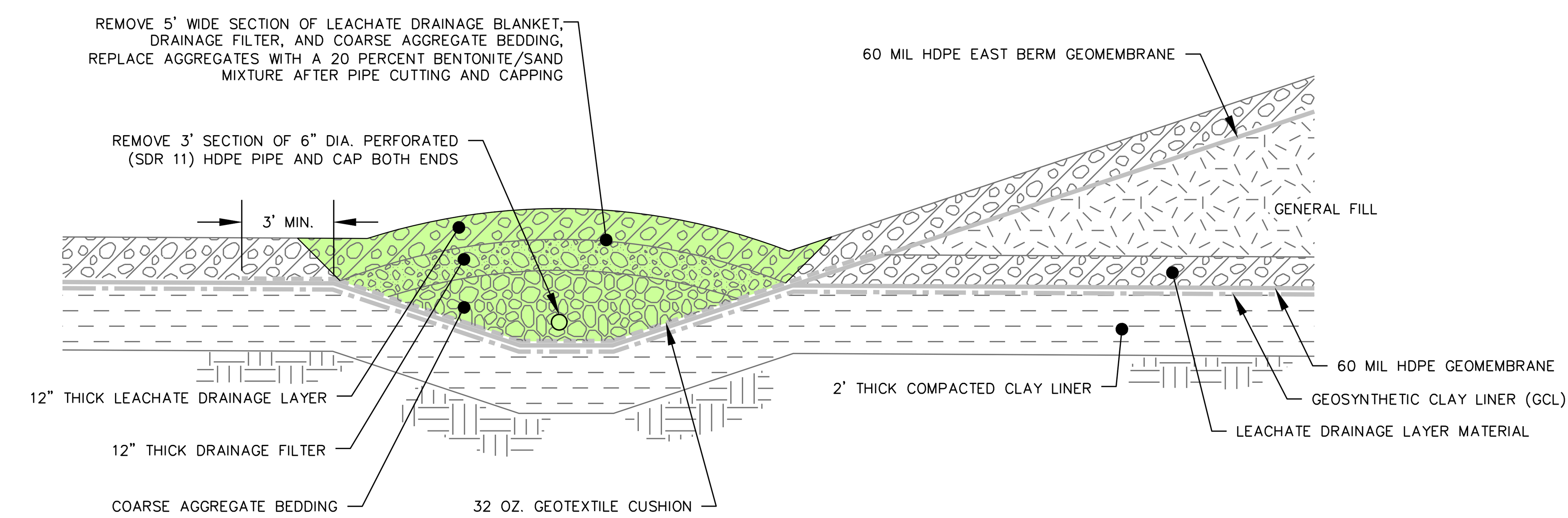
SCALE: 1" = 5'



NOTES:

1. TRENCH PLUG SHOWN IS IN MODULE 5. MODULE 6 TRENCH PLUG WILL BE SIMILAR, IF MODULE 13 IS CONSTRUCTED.

PLAN VIEW



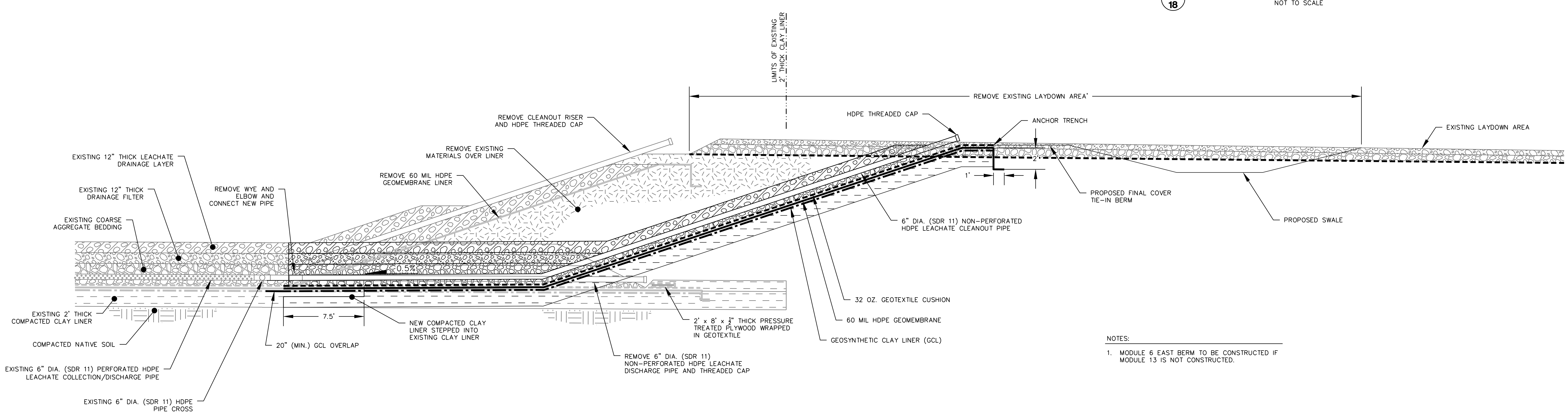
NOTES:

1. SEE DETAIL (1/18) FOR ADDITIONAL MODULE 5 AND 6 EAST BERM MODIFICATIONS AND TIE-IN TO MODULES 12 AND 13 LINERS.

SECTION VIEW

LEACHATE HEADER TRENCH PLUG (3/18)

NOT TO SCALE



NOTES:

1. MODULE 6 EAST BERM TO BE CONSTRUCTED IF MODULE 13 IS NOT CONSTRUCTED.

MODULE 6 EAST BERM (2/18)

SCALE: 1" = 5'

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TOWN OF PACIFIC, WISCONSIN

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DETAILS

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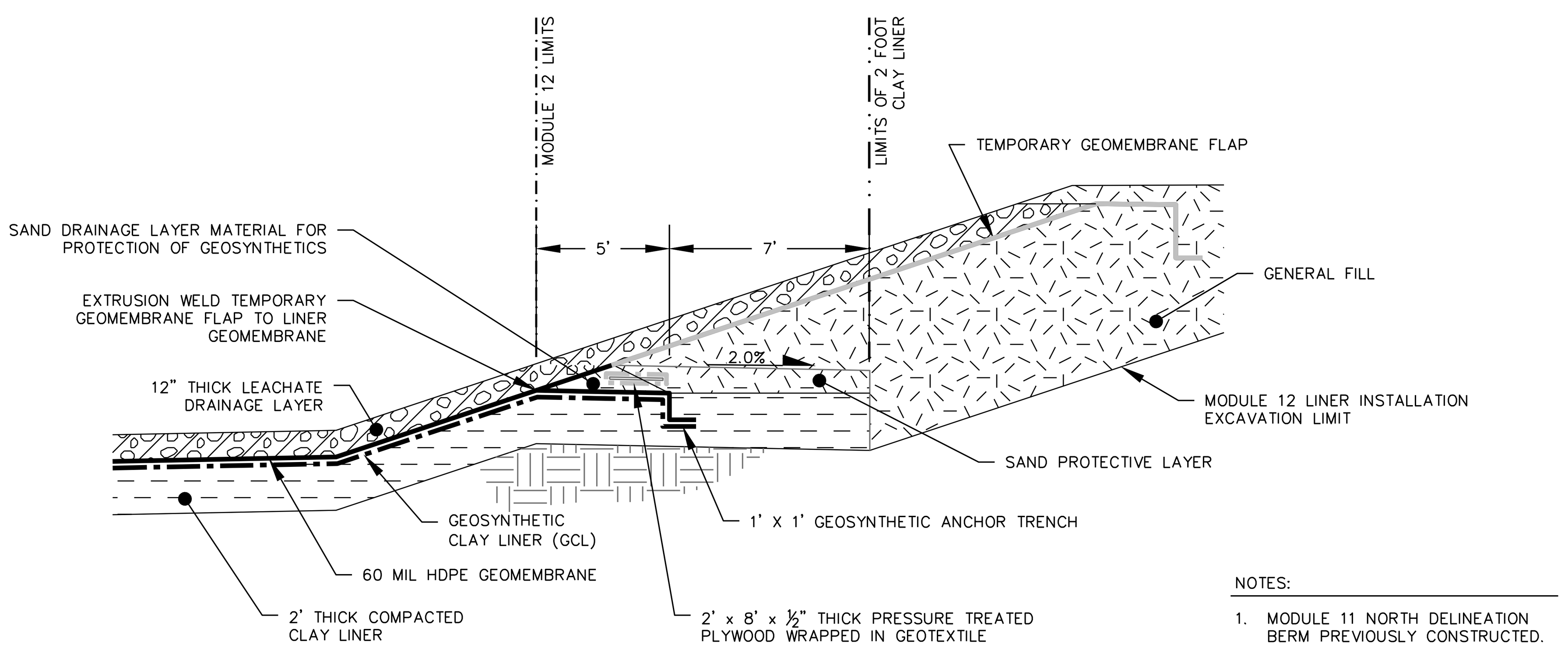
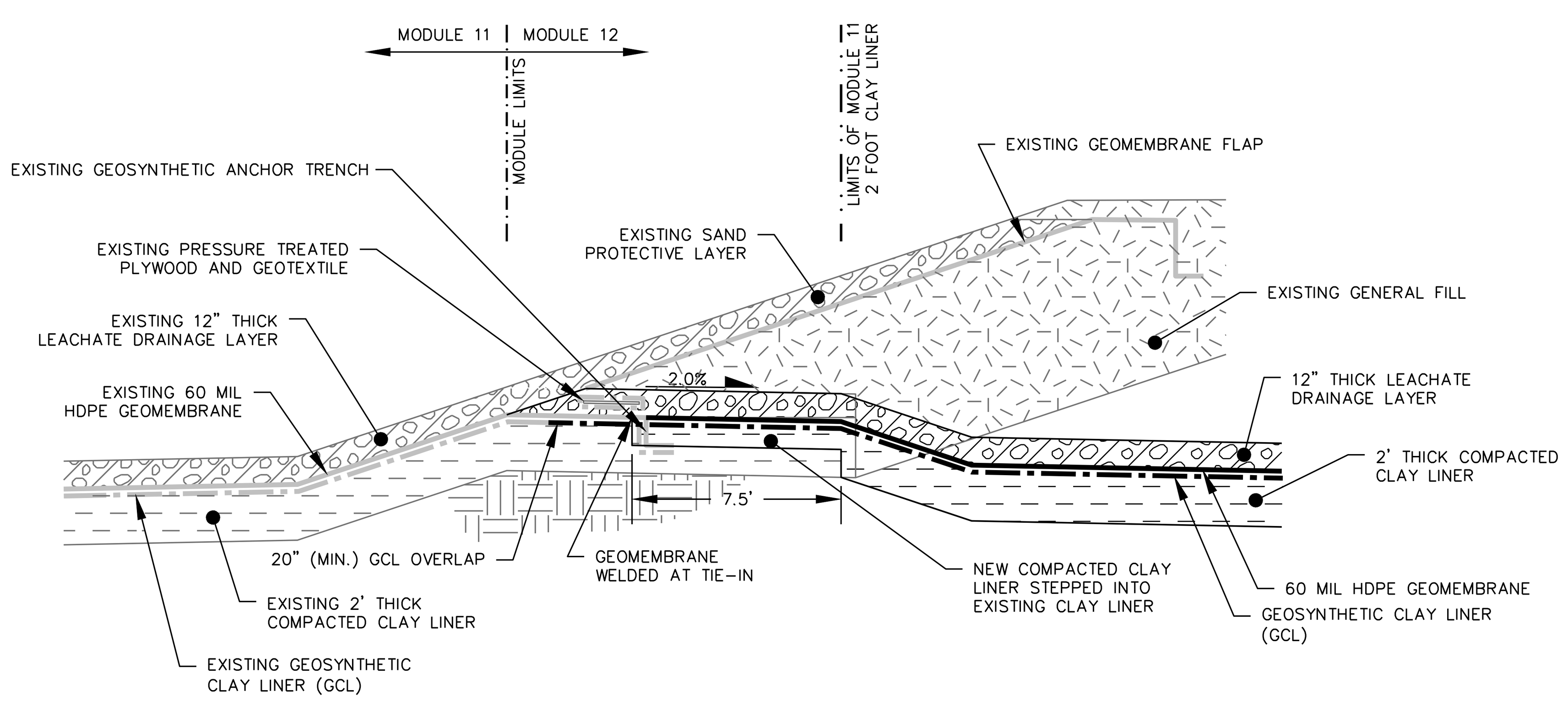


NOTES:

1. MODULE 11 NORTH DELINEATION BERM PREVIOUSLY CONSTRUCTED.

MODULES 11 AND 12 NORTH DELINEATION BERM

1/19 SCALE: 1" = 5'

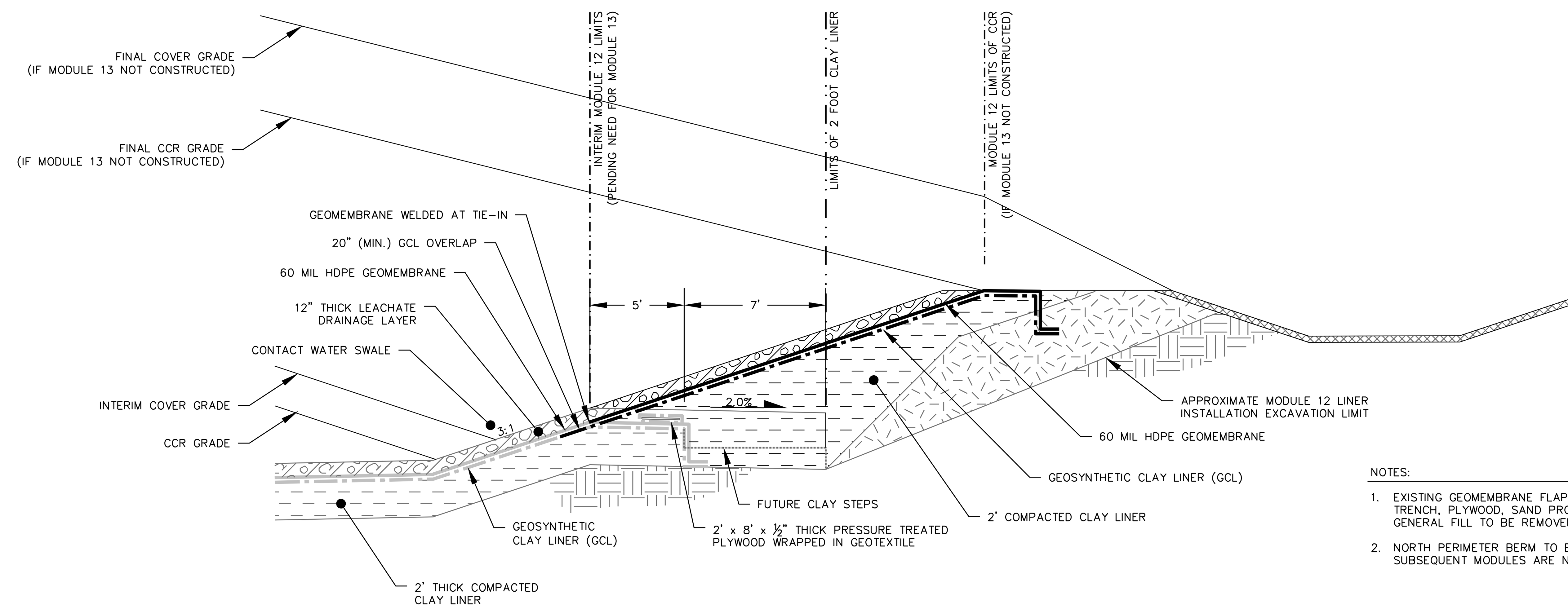


NOTES:

1. DELINEATION BERM TIE-IN TO BE CONSTRUCTED IF SUBSEQUENT MODULES ARE CONSTRUCTED.
2. EXISTING GEOMEMBRANE FLAP, GEOSYNTHETICS ANCHOR TRENCH, PLYWOOD, SAND PROTECTIVE LAYER, AND GENERAL FILL TO BE REMOVED PRIOR TO LINER TIE-IN.

MODULE 11-MODULE 12 AND MODULE 12-MODULE 13 DELINEATION BERM TIE-IN

2/19 SCALE: 1" = 5'



NOTES:

1. EXISTING GEOMEMBRANE FLAP, GEOSYNTHETICS ANCHOR TRENCH, PLYWOOD, SAND PROTECTIVE LAYER, AND GENERAL FILL TO BE REMOVED PRIOR TO LINER TIE-IN.
2. NORTH PERIMETER BERM TO BE CONSTRUCTED IF SUBSEQUENT MODULES ARE NOT CONSTRUCTED.

MODULES 11 AND 12 NORTH PERIMETER BERM

3/19 SCALE: 1" = 5'

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APPROVED BY: MRH 08/31/2023

PROJECT NO. 25222260.01
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SITE

DETAILS

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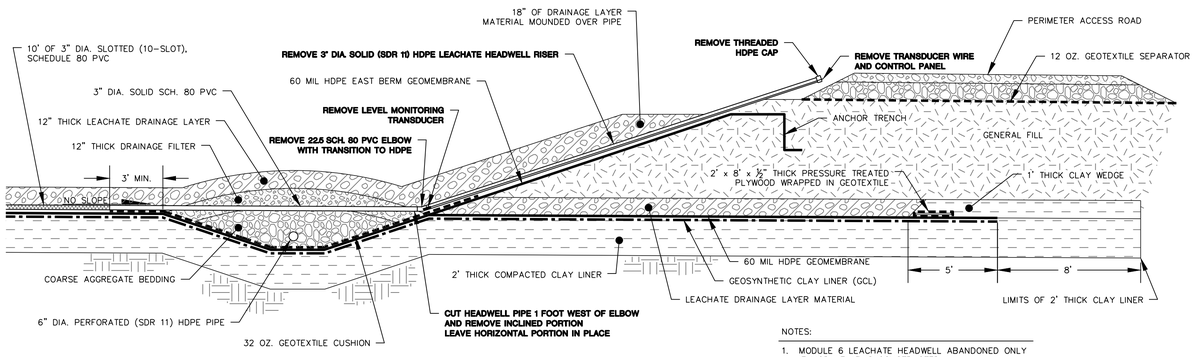
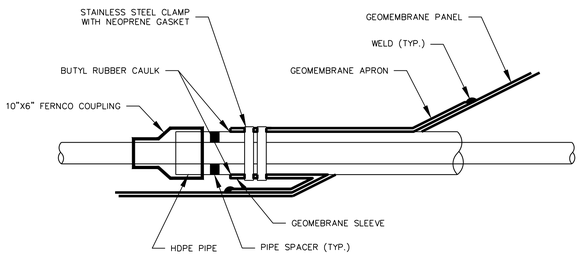


NOTES:

1. MODULE 6 LEACHATE HEADWELL ABANDONED ONLY IF MODULE 13 IS CONSTRUCTED.

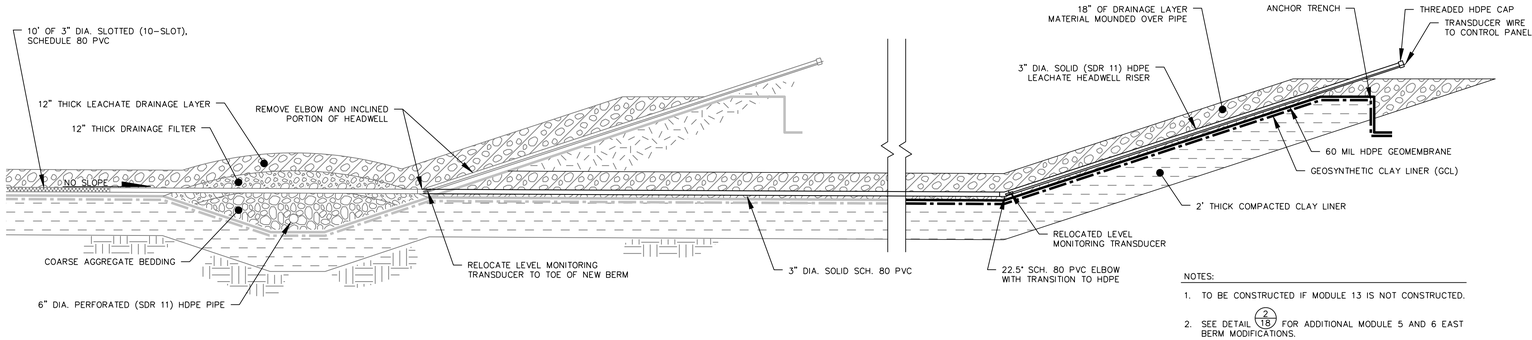
MODULE 5 AND 6 LEACHATE HEADWELL ABANDONMENT

1/20 — SCALE: 1" = 4'



HDPE PIPE BOOT

4/20 — NOT TO SCALE

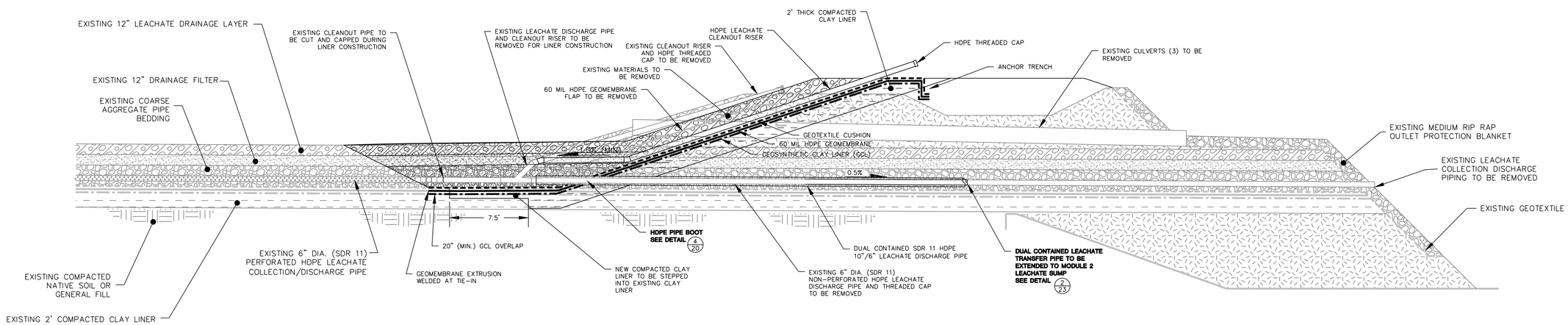


NOTES:

1. TO BE CONSTRUCTED IF MODULE 13 IS NOT CONSTRUCTED.
2. SEE DETAIL 2/18 FOR ADDITIONAL MODULE 5 AND 6 EAST BERM MODIFICATIONS.

MODULE 6 LEACHATE HEADWELL EXTENSION

2/20 — SCALE: 1" = 4'



MODULE 2 EAST BERM

3/20 — SCALE: 1" = 5'

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2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

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TOWN OF PACIFIC, WISCONSIN

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Wisconsin Power and Light Company
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WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
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PROJECT NO.	25222260.01	DRAWN BY:	KP
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REVISED:	08/31/2023	APPROVED BY:	MRH 08/31/2023

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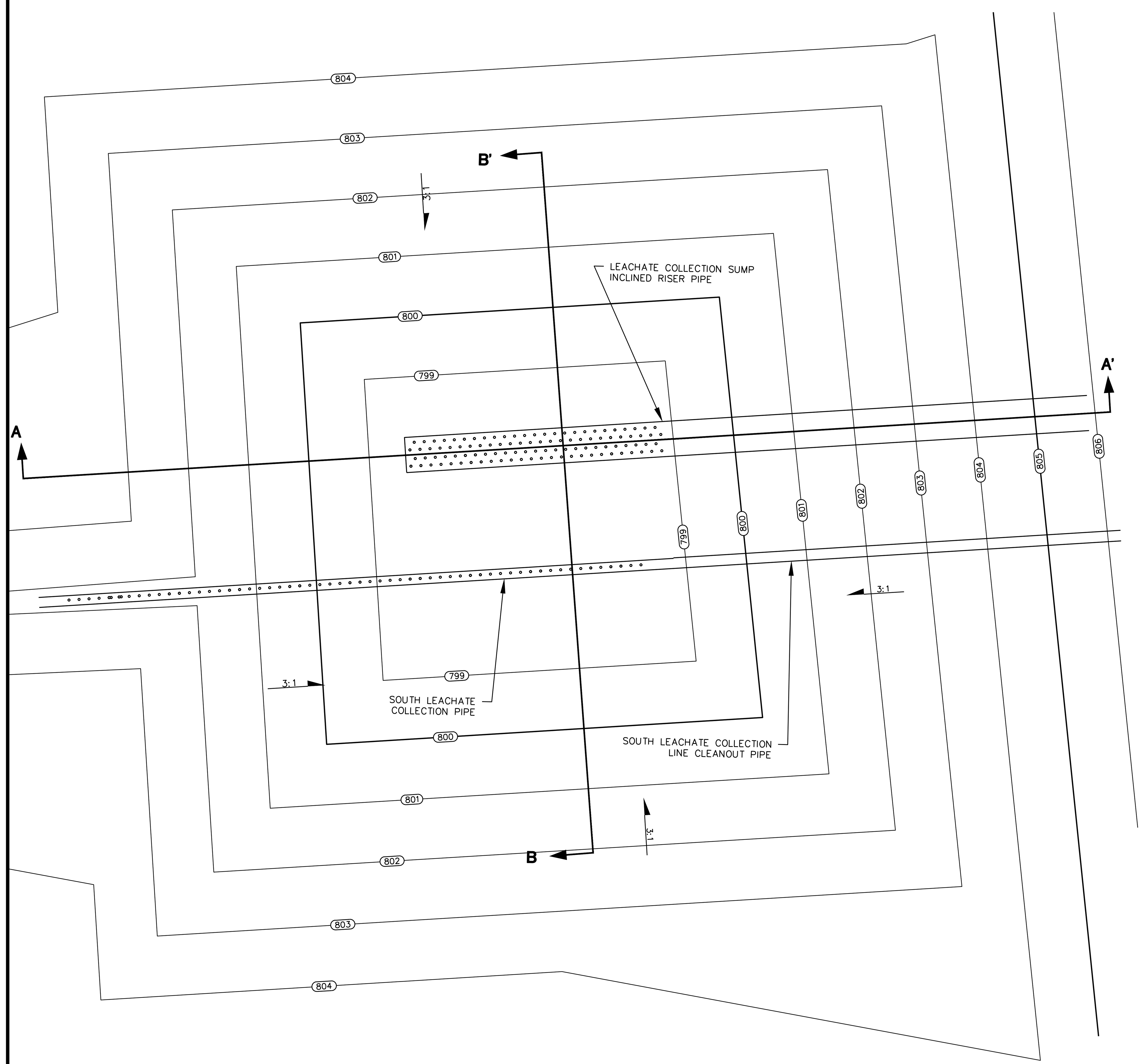
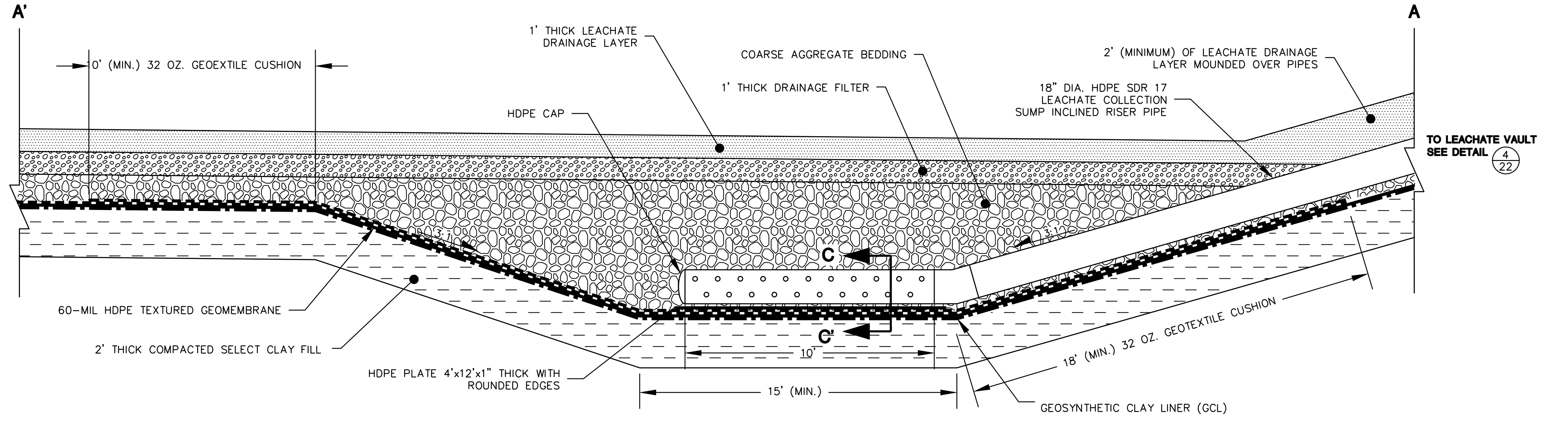
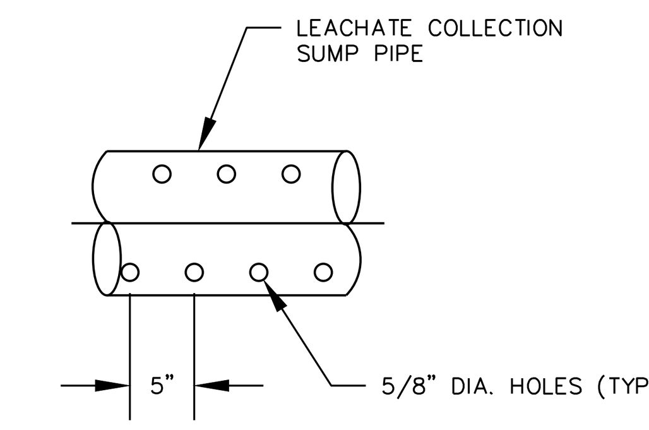
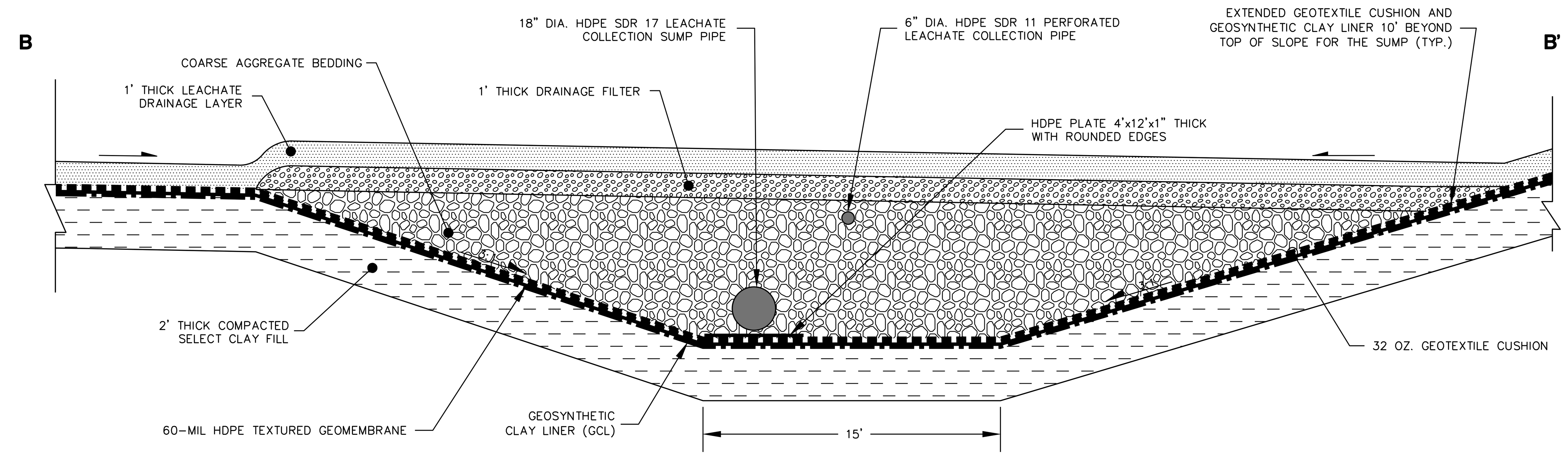




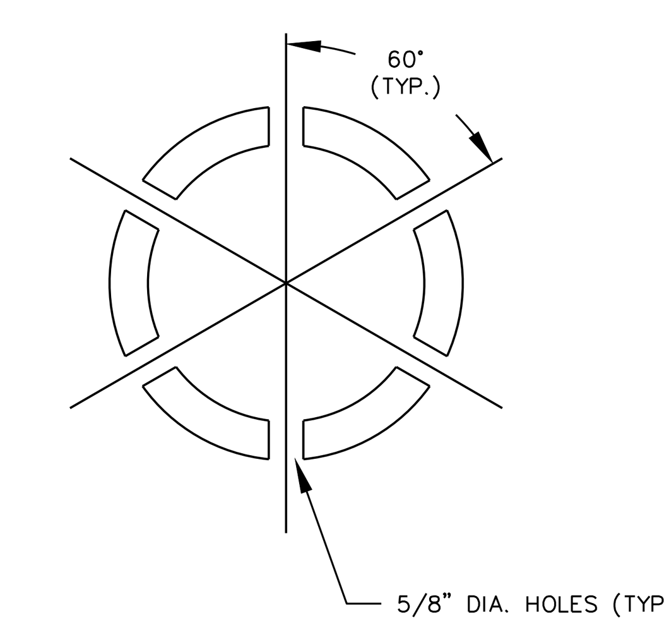
SECTION A-A'
(NOT TO SCALE)



LEACHATE COLLECTION SUMP PERFORATION
(NOT TO SCALE)



SECTION B-B'
(NOT TO SCALE)

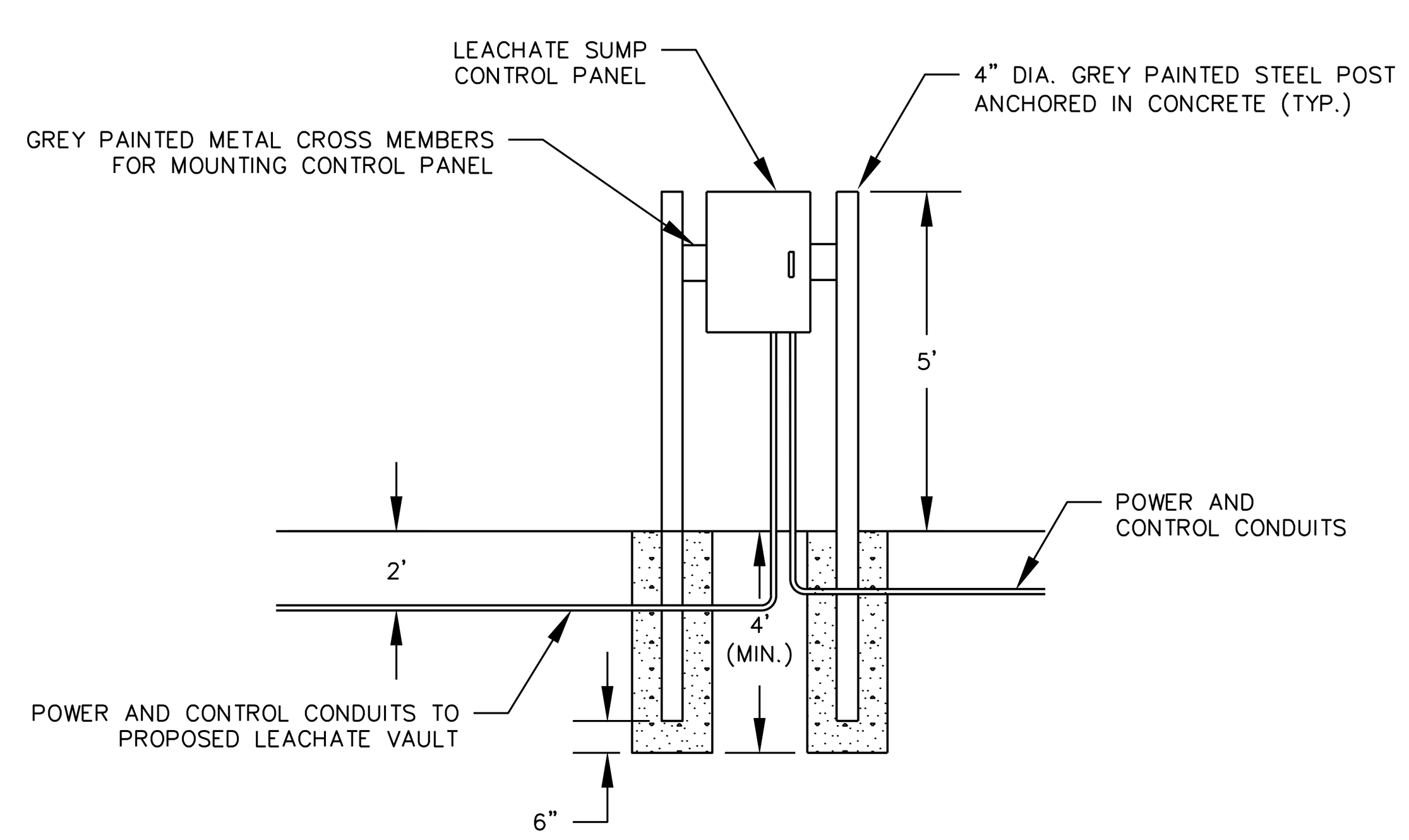


SECTION C-C'
(NOT TO SCALE)

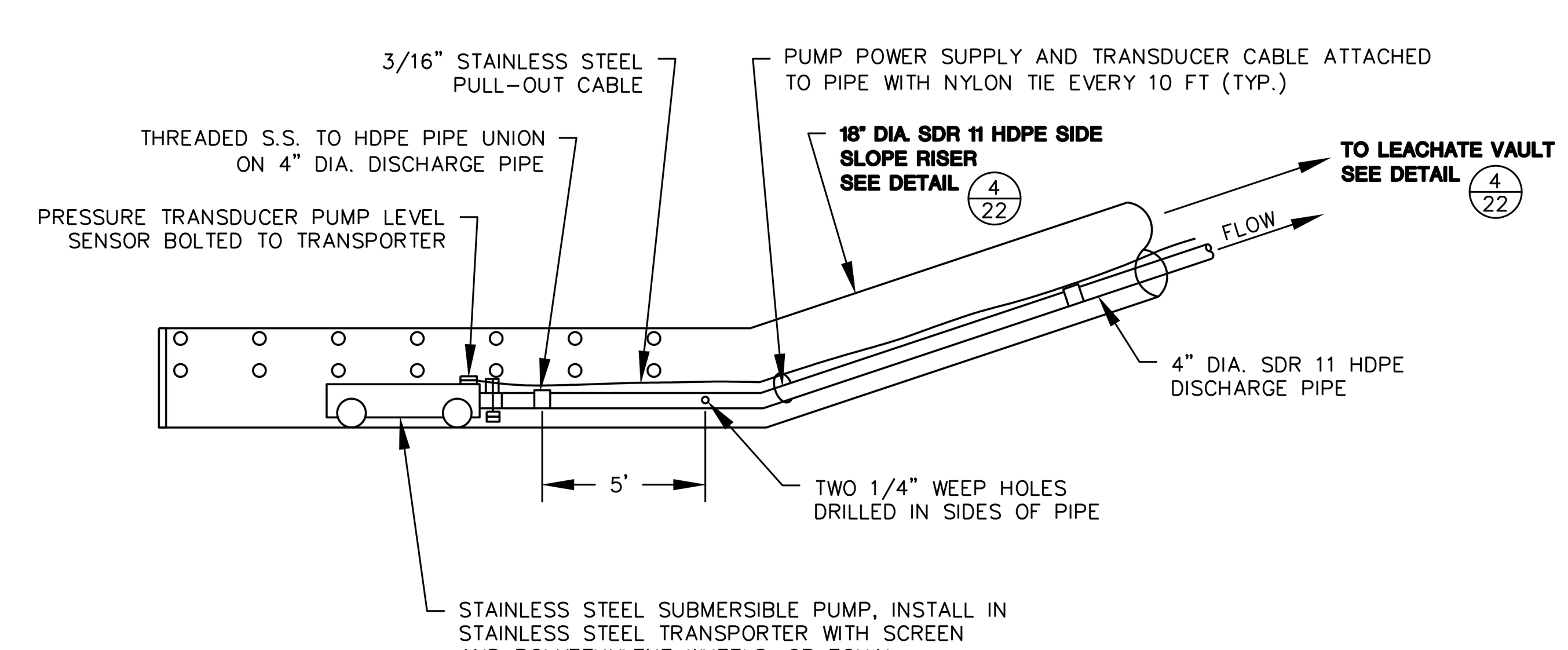
NOTES:

1. DETAIL IS OF THE MODULE 12 SUMP, THE MODULE 13 SUMP IS SIMILAR.
2. ALL 90° ELBOWS ON LEACHATE PIPING CONSIST OF LONG SWEEP ELBOWS OR TWO 45° ELBOWS.

1/21 LEACHATE COLLECTION SUMP
NOT TO SCALE



2/21 LEACHATE PUMP CONTROL PANEL
NOT TO SCALE



3/21 LEACHATE INCLINED RISER PUMP
NOT TO SCALE

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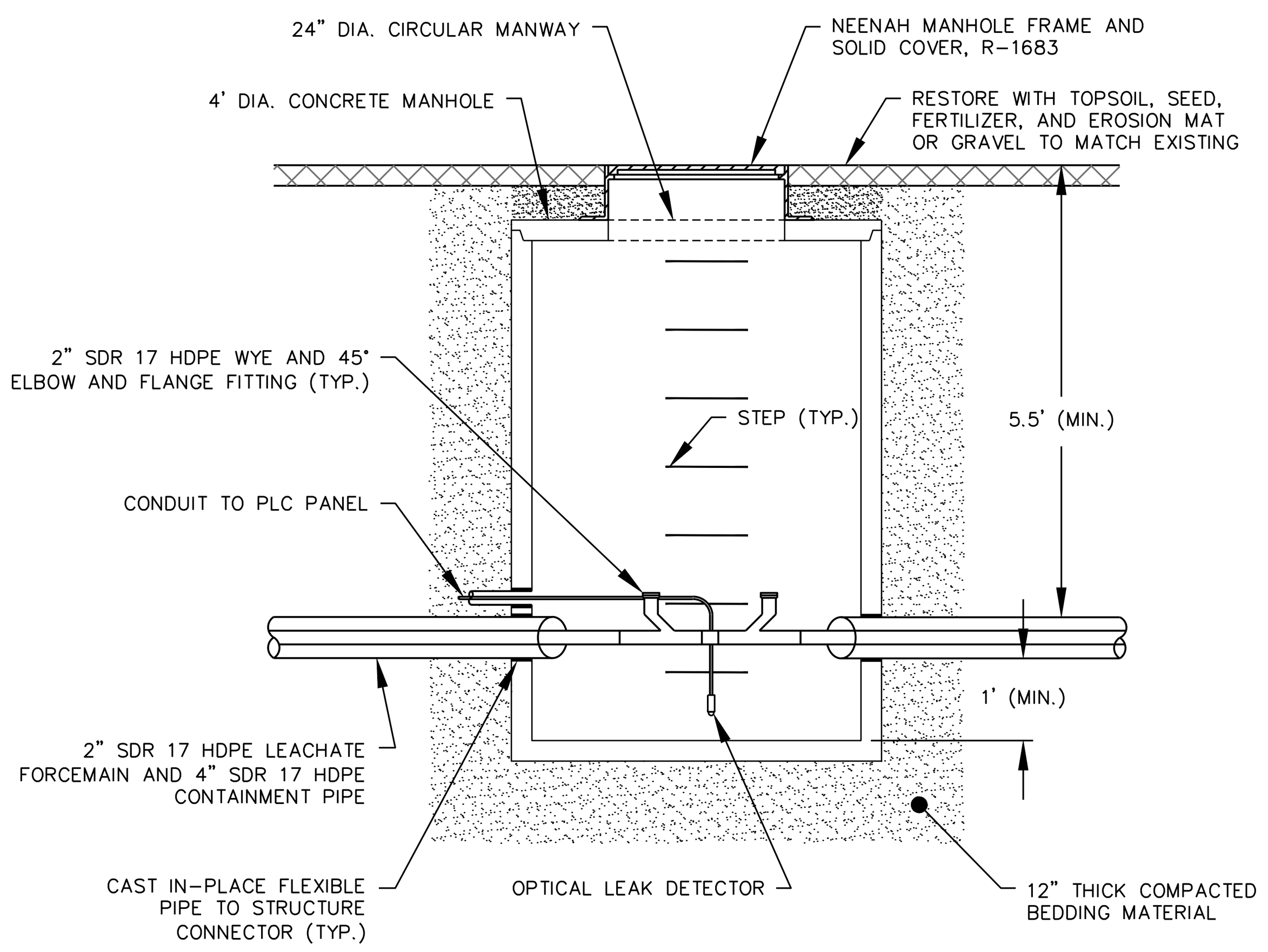
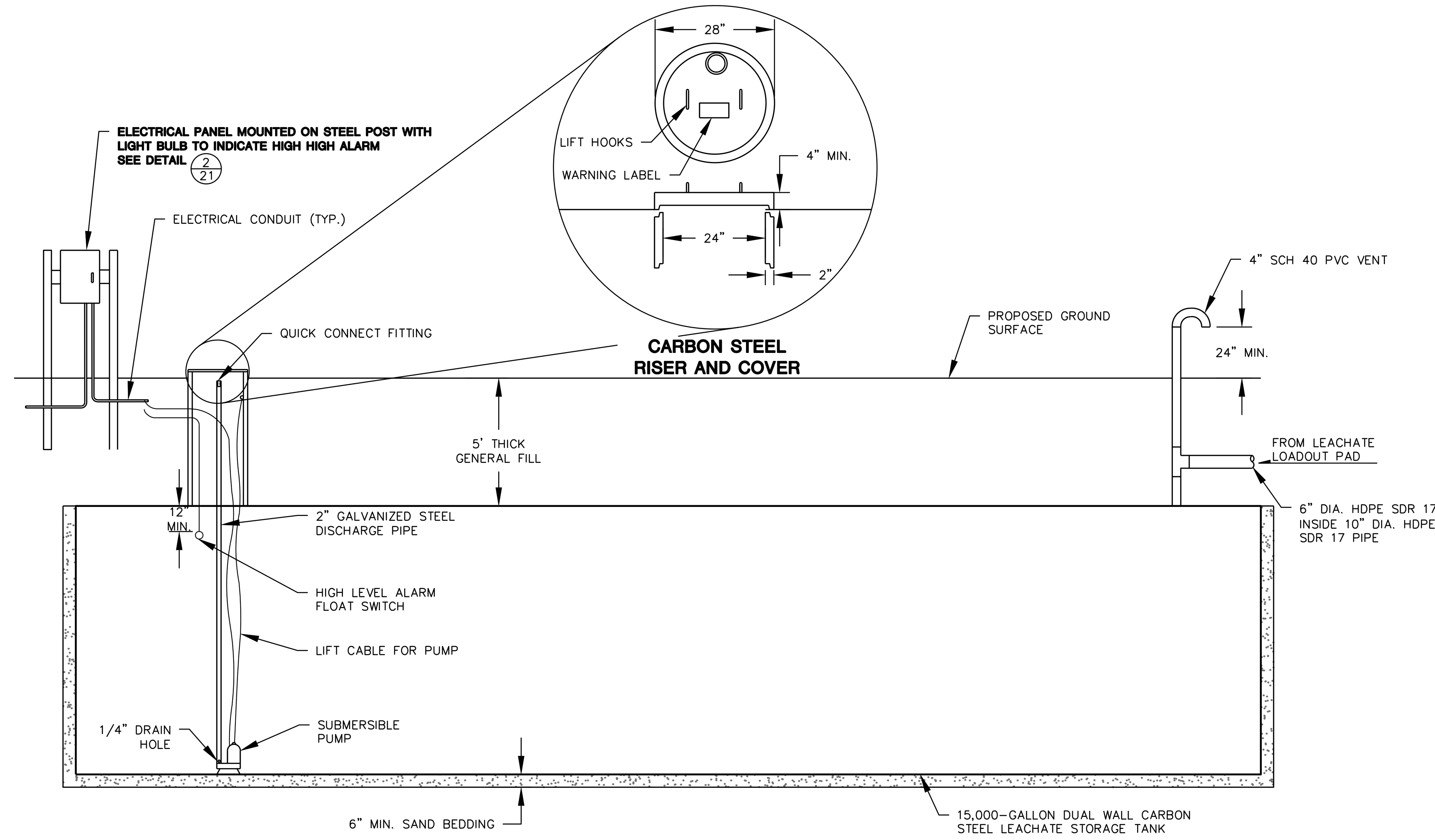


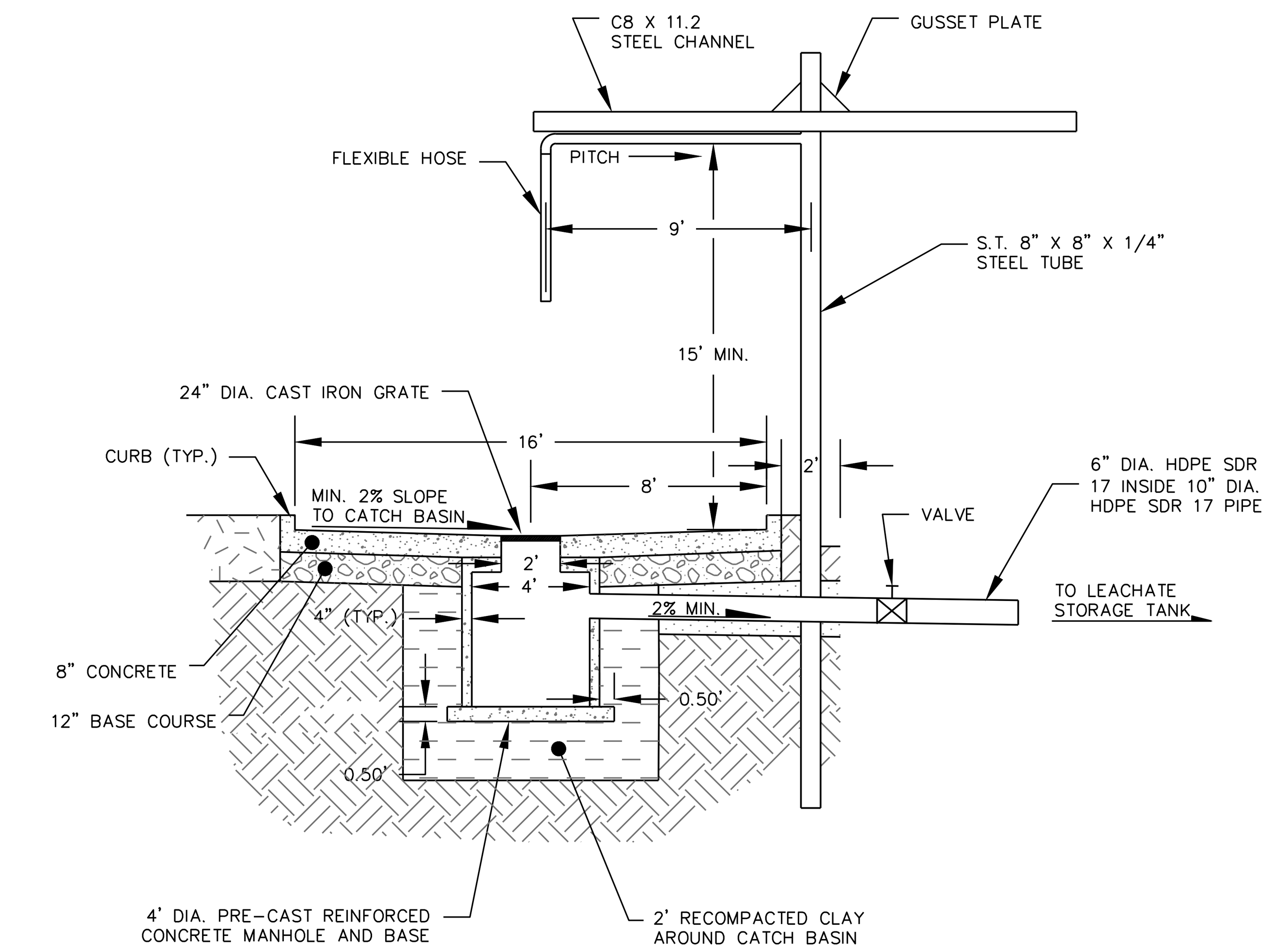
LEACHATE FORCEMAIN CLEANOUT MANHOLE
1/22
NOT TO SCALE



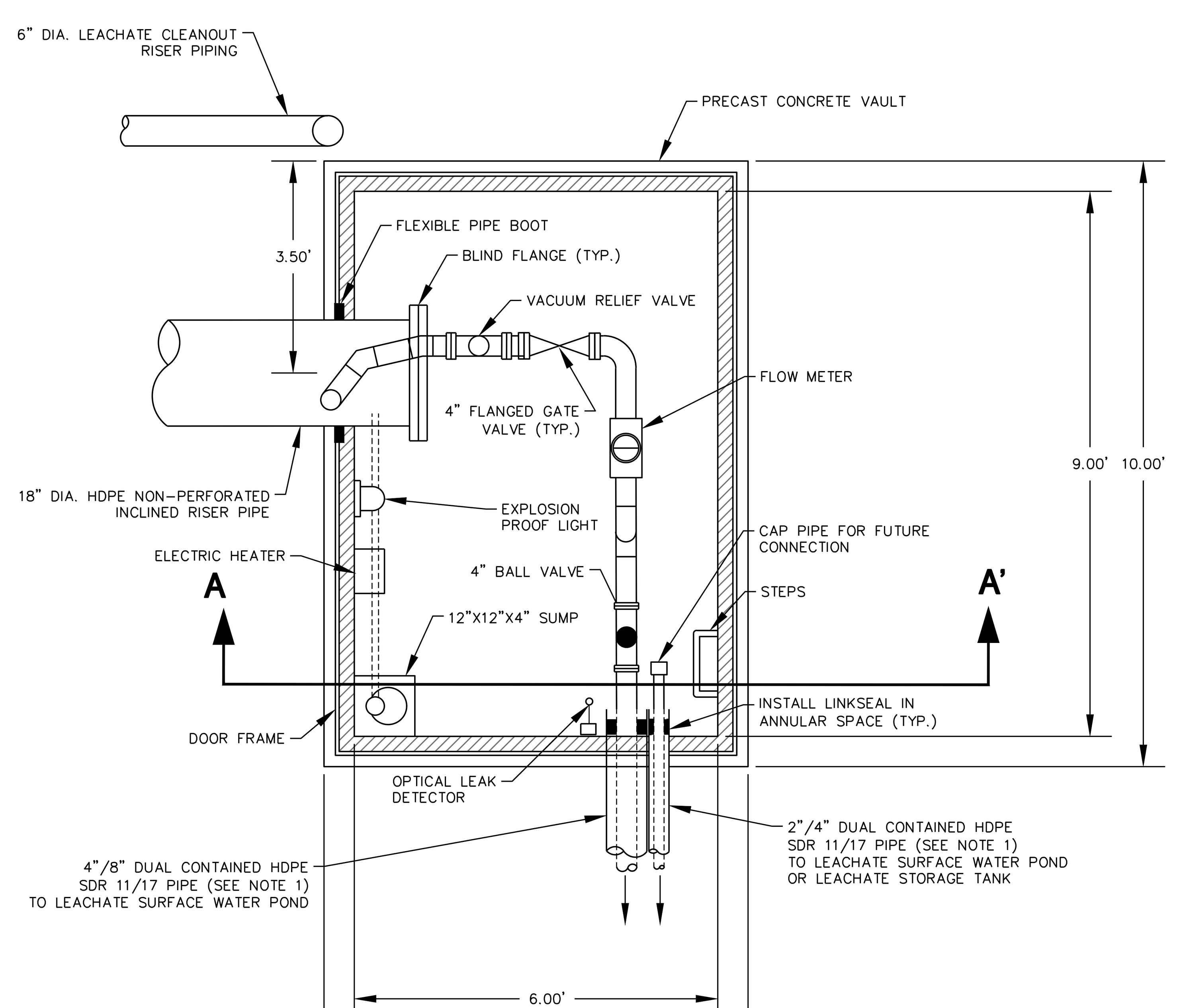
NOTES:

1. LEACHATE STORAGE TANK AND LOADOUT PAD TO BE INSTALL DURING FINAL DRY ASH DISPOSAL FACILITY (ADF) CLOSURE. LEACHATE WILL CONTINUE TO BE CONVEYED TO THE LEACHATE/SURFACE WATER POND UNTIL THE ADF IS CLOSED.

LEACHATE STORAGE TANK
2/22
NOT TO SCALE



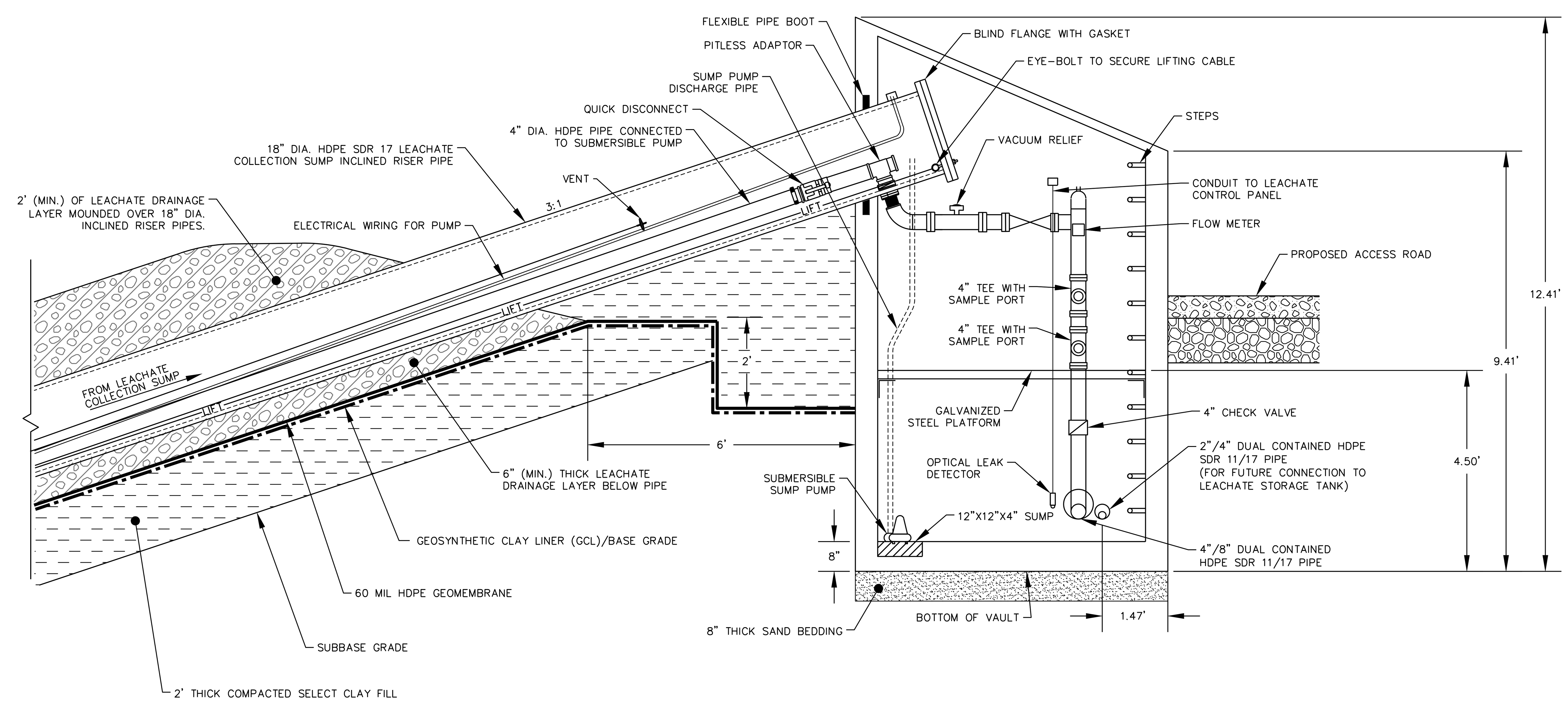
LEACHATE LOADOUT PAD
3/22
NOT TO SCALE



PLAN VIEW
(SCALE: 1" = 2')

NOTES:

1. INITIALLY LEACHATE SUMP DISCHARGE PIPING WILL BE CONNECTED TO THE 4"/8" DUAL CONTAINED FORCE MAIN TO THE LEACHATE/SURFACE WATER POND. AFTER THE ADF IS CLOSED, THE DISCHARGE PIPING WIL BE CONNECTED TO THE 2"/4" DUAL CONTAINED FORCE MAIN TO THE LEACHATE STORAGE TANK.



SECTION A-A'
(SCALE: 1" = 2')

INCLINED RISER PIPE AND LEACHATE VAULT
4/22
NOT TO SCALE

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PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS
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PHONE: (608) 224-2830

SITE:
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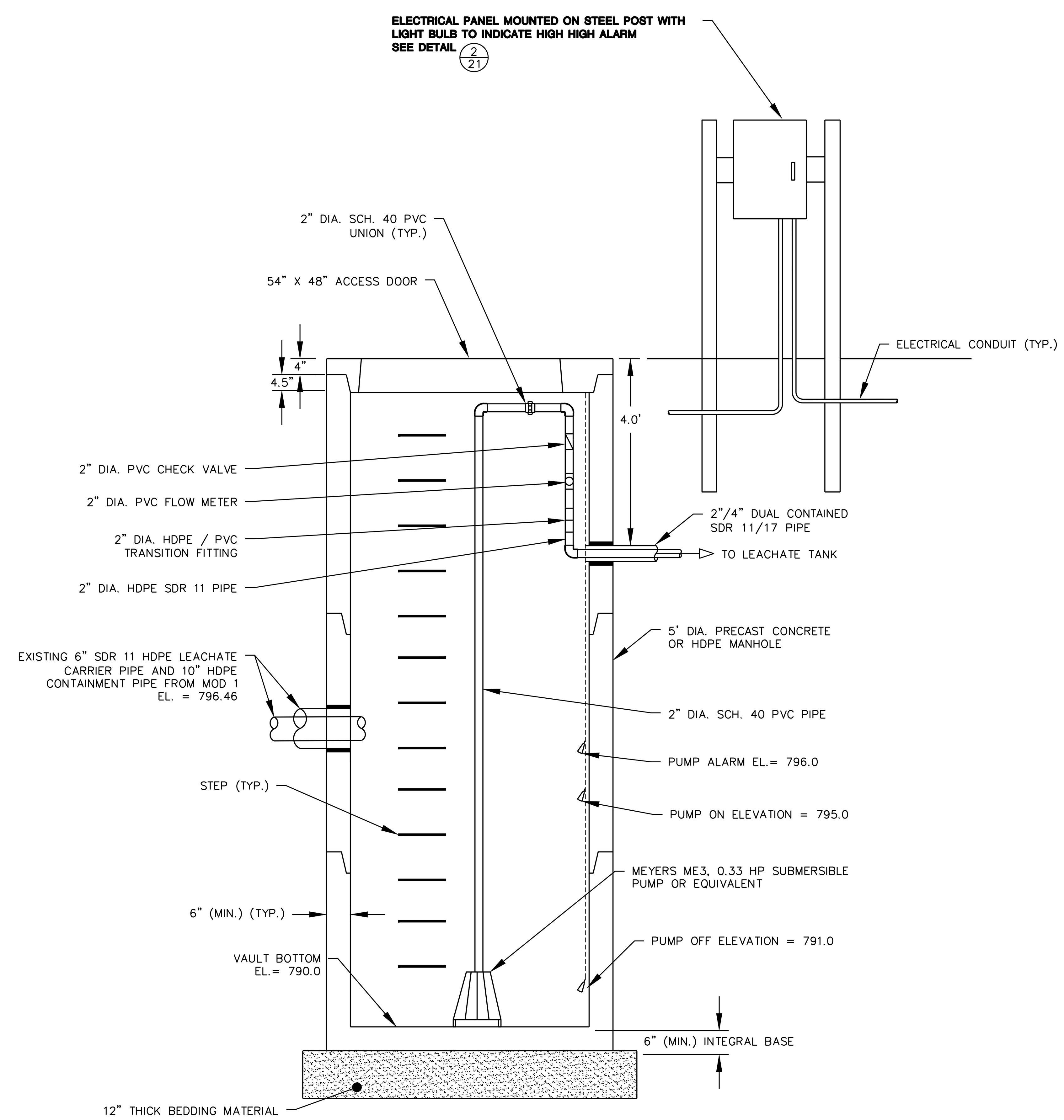
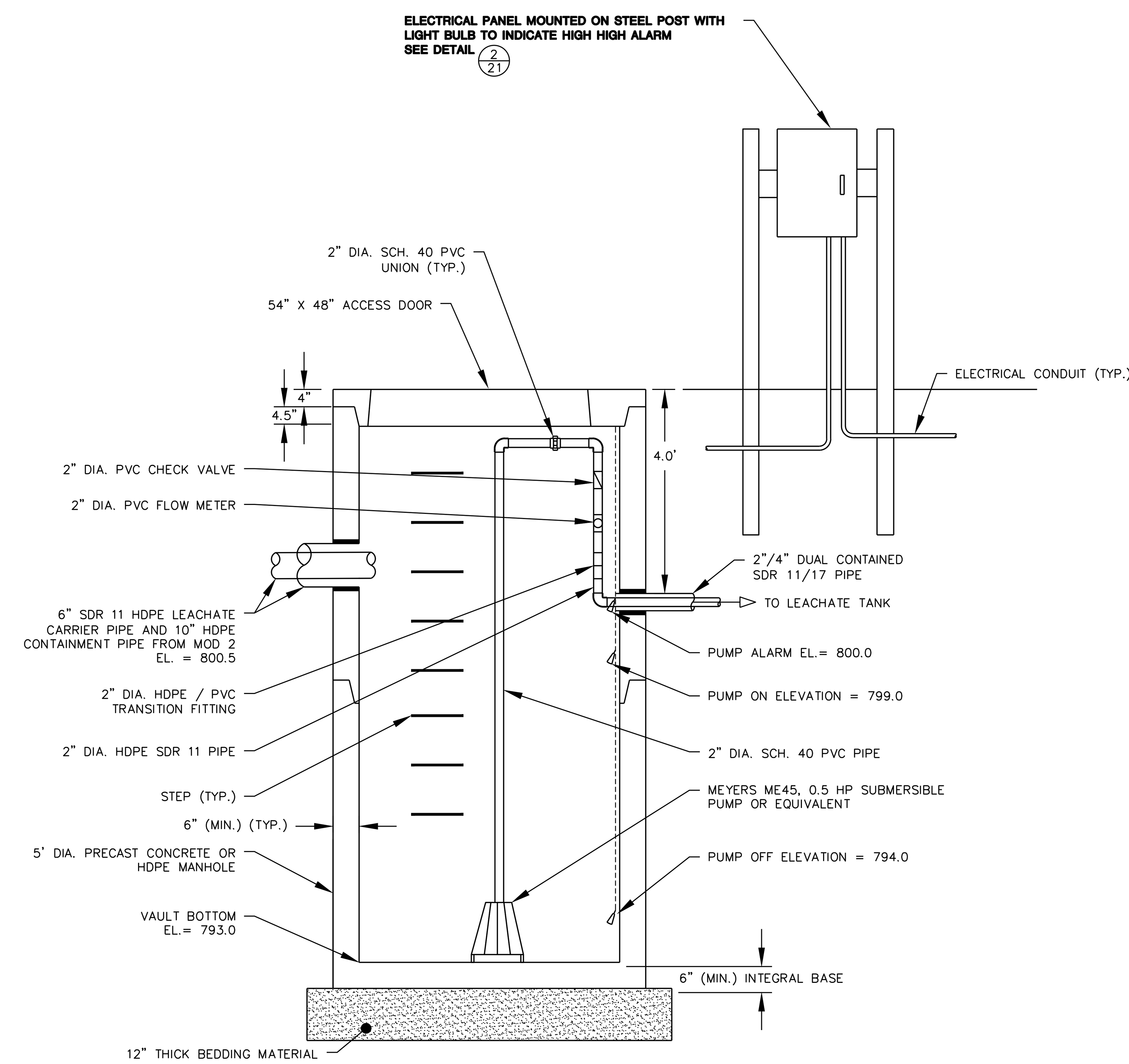


NOTES:

1. MOD 1 LEACHATE SUMP TO BE INSTALL DURING FINAL DRY ASH DISPOSAL FACILITY (ADF) CLOSURE. LEACHATE WILL CONTINUE TO BE CONVEYED TO THE LEACHATE/SURFACE WATER POND UNTIL THE ADF IS CLOSED.

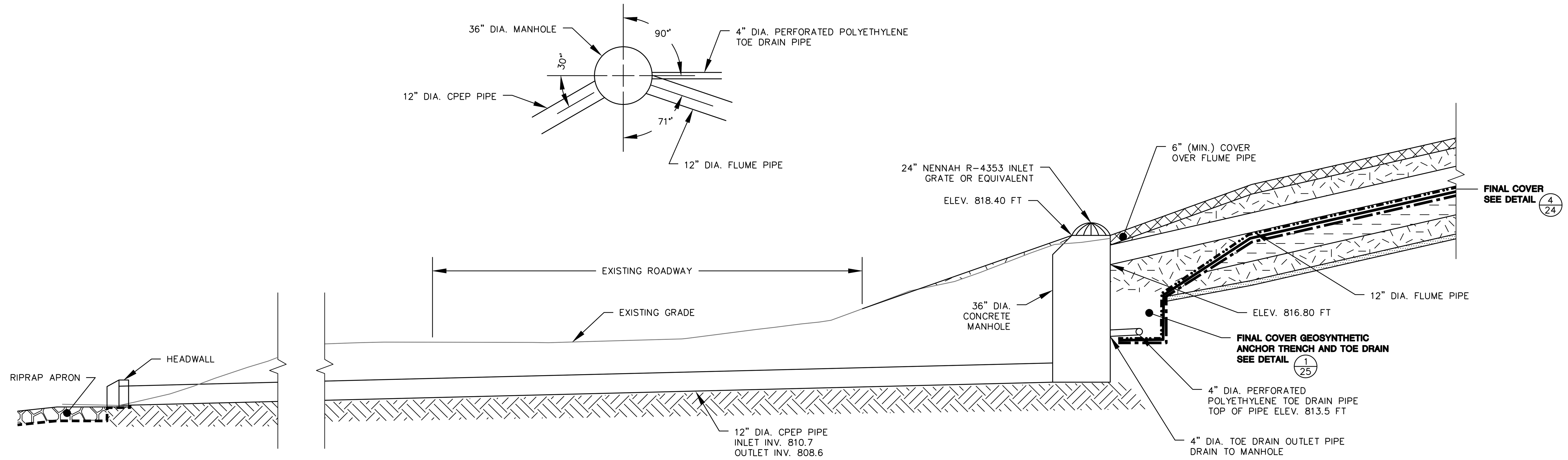
1/23 **MOD 1 LEACHATE SUMP**
NOT TO SCALE



NOTES:

1. MOD 2 LEACHATE SUMP TO BE INSTALL DURING FINAL DRY ASH DISPOSAL FACILITY (ADF) CLOSURE. LEACHATE WILL CONTINUE TO BE CONVEYED TO THE LEACHATE/SURFACE WATER POND UNTIL THE ADF IS CLOSED.

2/23 **MOD 2 LEACHATE SUMP**
NOT TO SCALE



3/23 **DROP STRUCTURE**
NOT TO SCALE

PROJECT NO.	25222260.01
DRAWN:	05/17/18
REVISED:	08/31/2023
DRAWN BY:	KP
CHECKED BY:	RR\MRH
APPROVED BY:	MRH 08/31/2023

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

Wisconsin Power and Light Company

CLIENT

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

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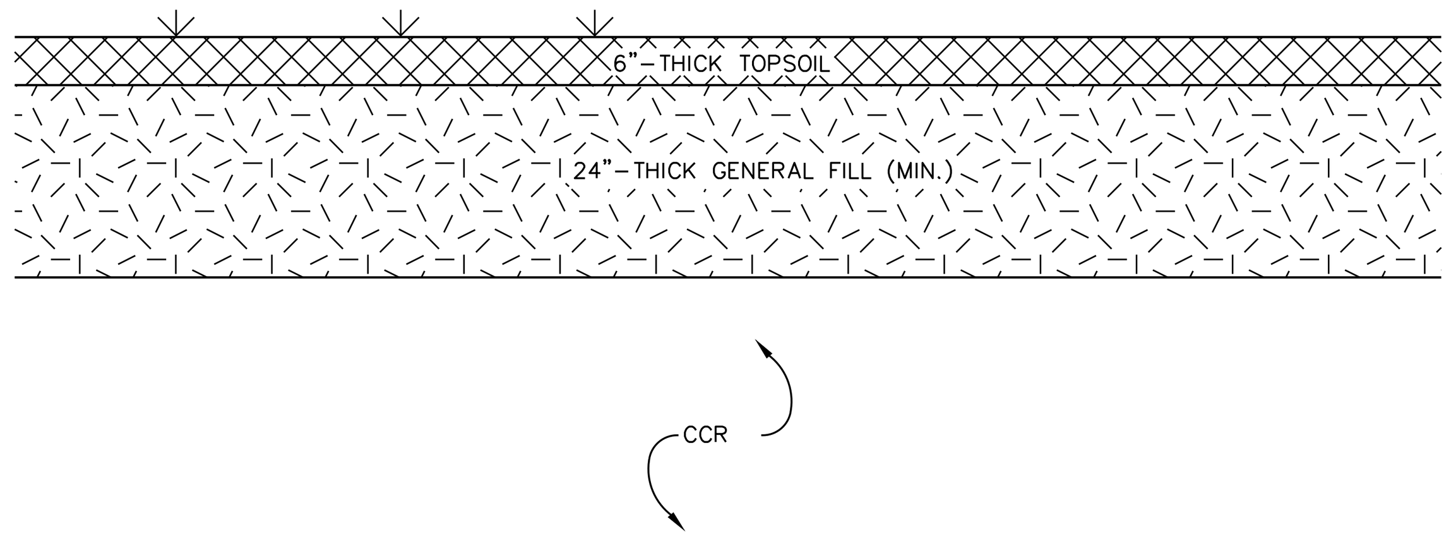
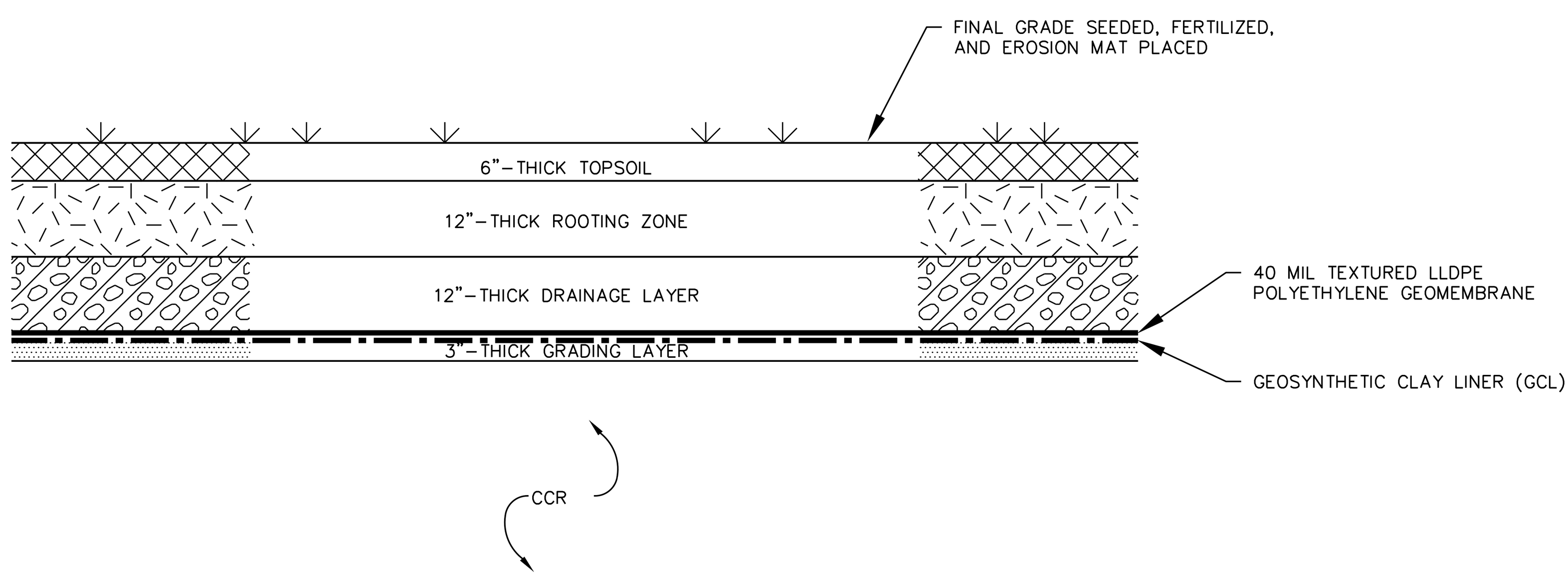
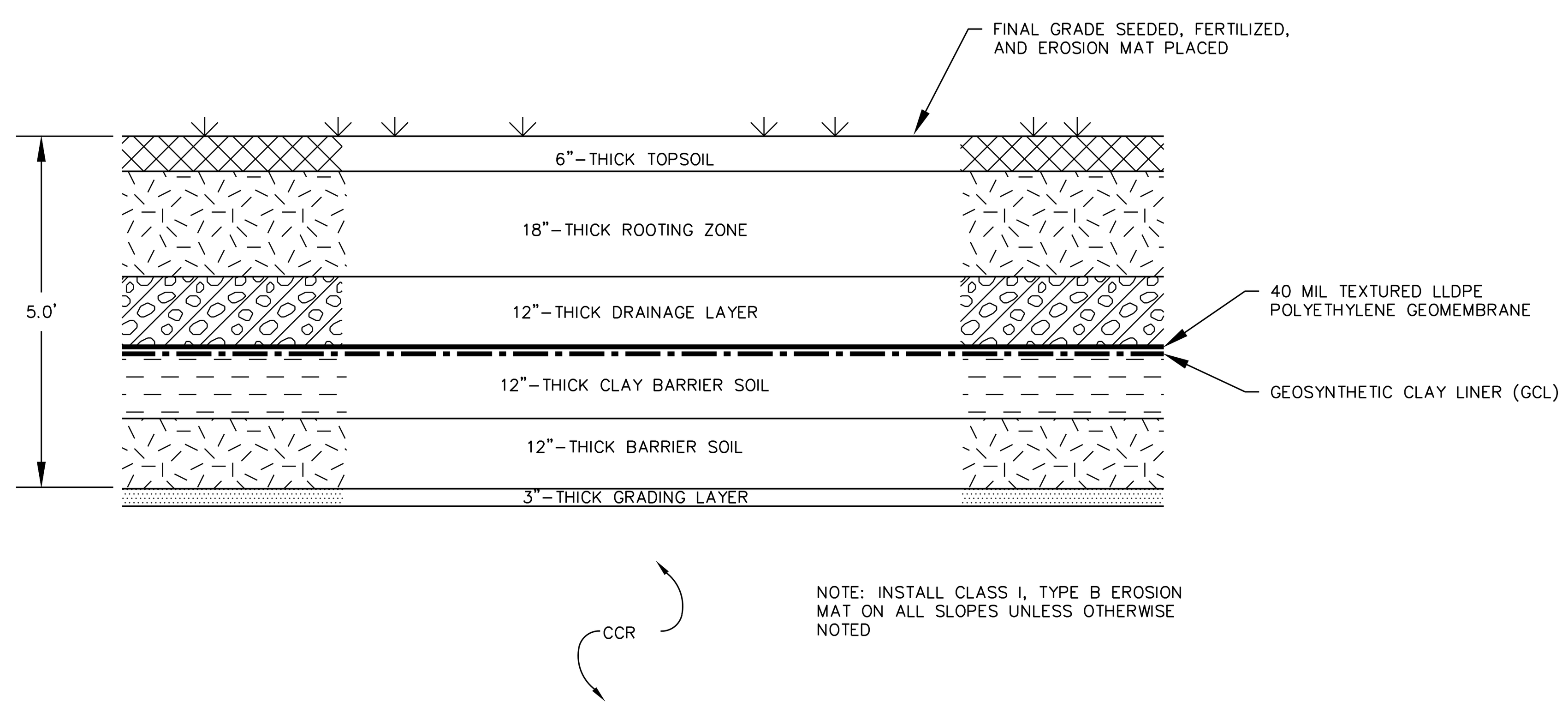


1/24 INTERMEDIATE COVER
SCALE: 1" = 2'

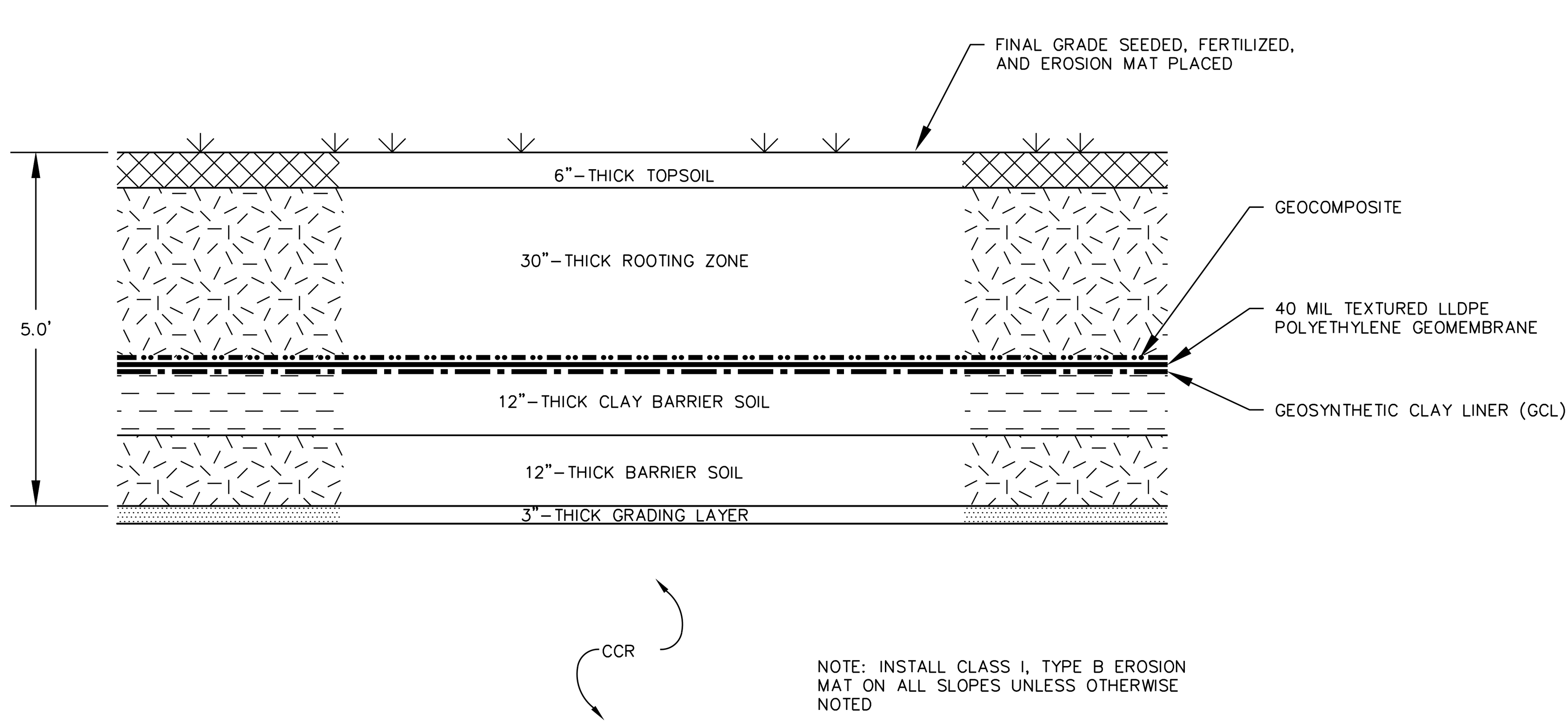


2/24 EXISTING FINAL COVER
SCALE: 1" = 2'



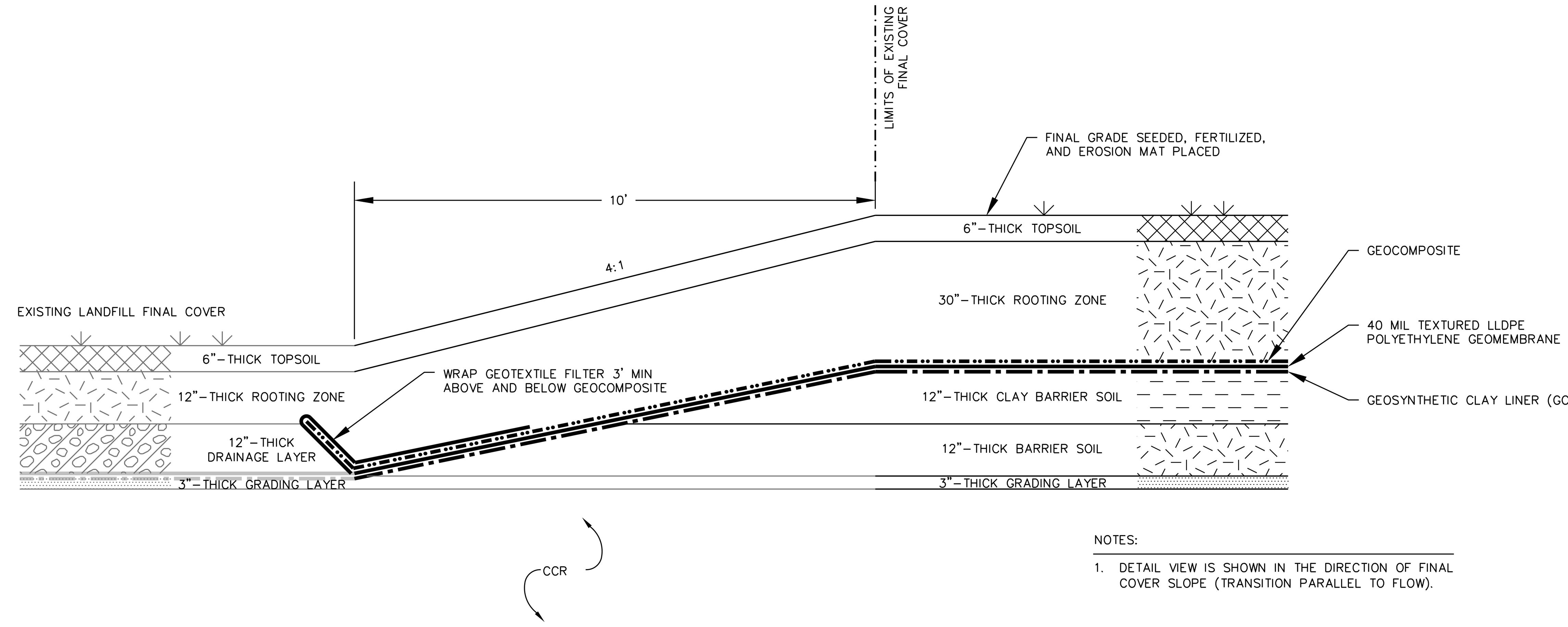
NOTE: INSTALL CLASS I, TYPE B EROSION MAT ON ALL SLOPES UNLESS OTHERWISE NOTED

3/24 PROPOSED FINAL COVER (SAND DRAINAGE LAYER)
SCALE: 1" = 2'



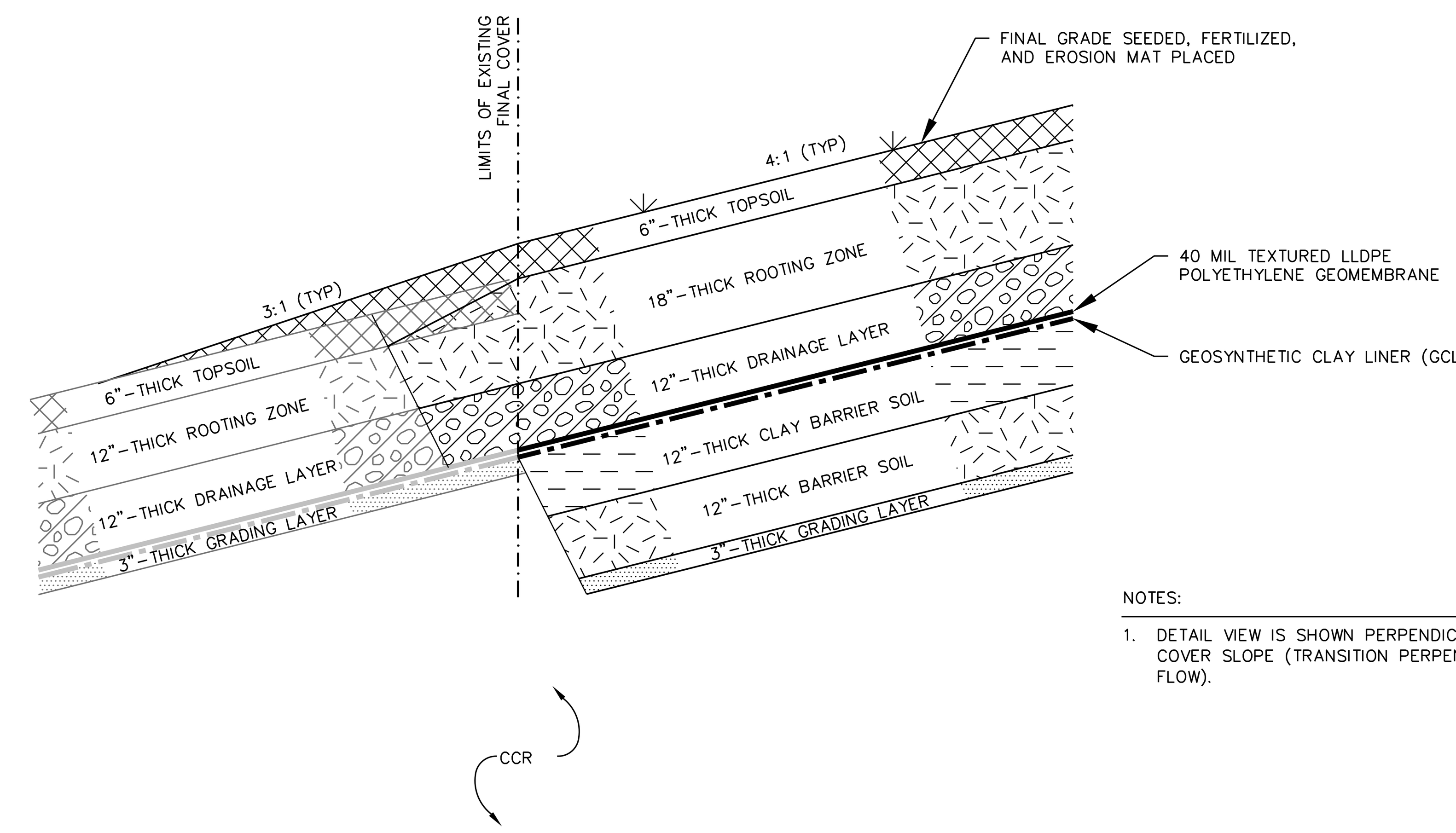
NOTE: INSTALL CLASS I, TYPE B EROSION MAT ON ALL SLOPES UNLESS OTHERWISE NOTED

4/24 PROPOSED FINAL COVER (GEOCOMPOSITE DRAINAGE LAYER)
SCALE: 1" = 2'



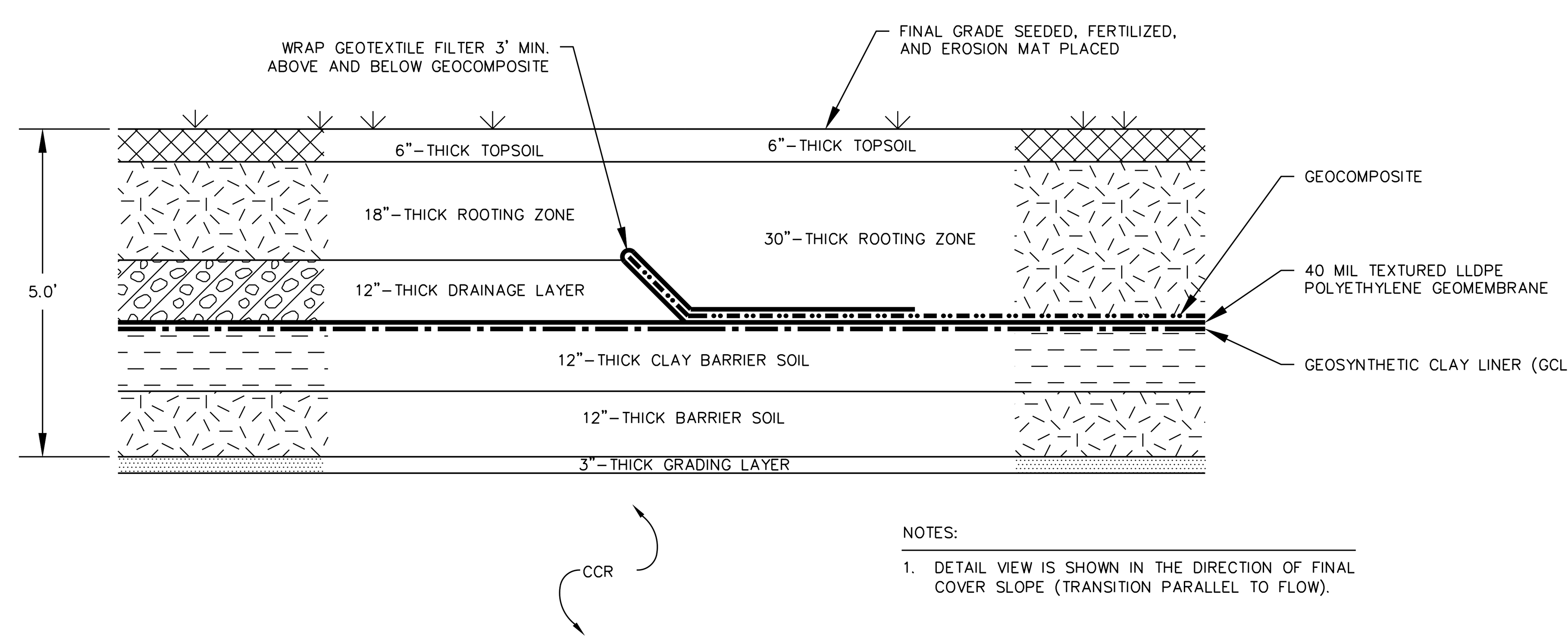
NOTES:
1. DETAIL VIEW IS SHOWN IN THE DIRECTION OF FINAL COVER SLOPE (TRANSITION PARALLEL TO FLOW).

5/24 EXISTING TO PROPOSED FINAL COVER TRANSITION (PROPOSED GEOCOMPOSITE DRAINAGE LAYER)
SCALE: 1" = 2'



NOTES:
1. DETAIL VIEW IS SHOWN PERPENDICULAR TO FINAL COVER SLOPE (TRANSITION PERPENDICULAR TO FLOW).

6/24 EXISTING TO PROPOSED FINAL COVER TRANSITION (PROPOSED SAND DRAINAGE LAYER)
SCALE: 1" = 2'



NOTES:
1. DETAIL VIEW IS SHOWN IN THE DIRECTION OF FINAL COVER SLOPE (TRANSITION PARALLEL TO FLOW).

7/24 PROPOSED FINAL COVER TRANSITION (SAND TO GEOCOMPOSITE DRAINAGE LAYER)
SCALE: 1" = 2'

PROJECT NO. 25222260.01 | DRAWN BY: KP
DRAWN: 05/17/18 | CHECKED BY: RRY/MRH
REVISED: 08/31/2023 | APPROVED BY: MRH 08/31/2023

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

Wisconsin Power and Light Company

CLIENT

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

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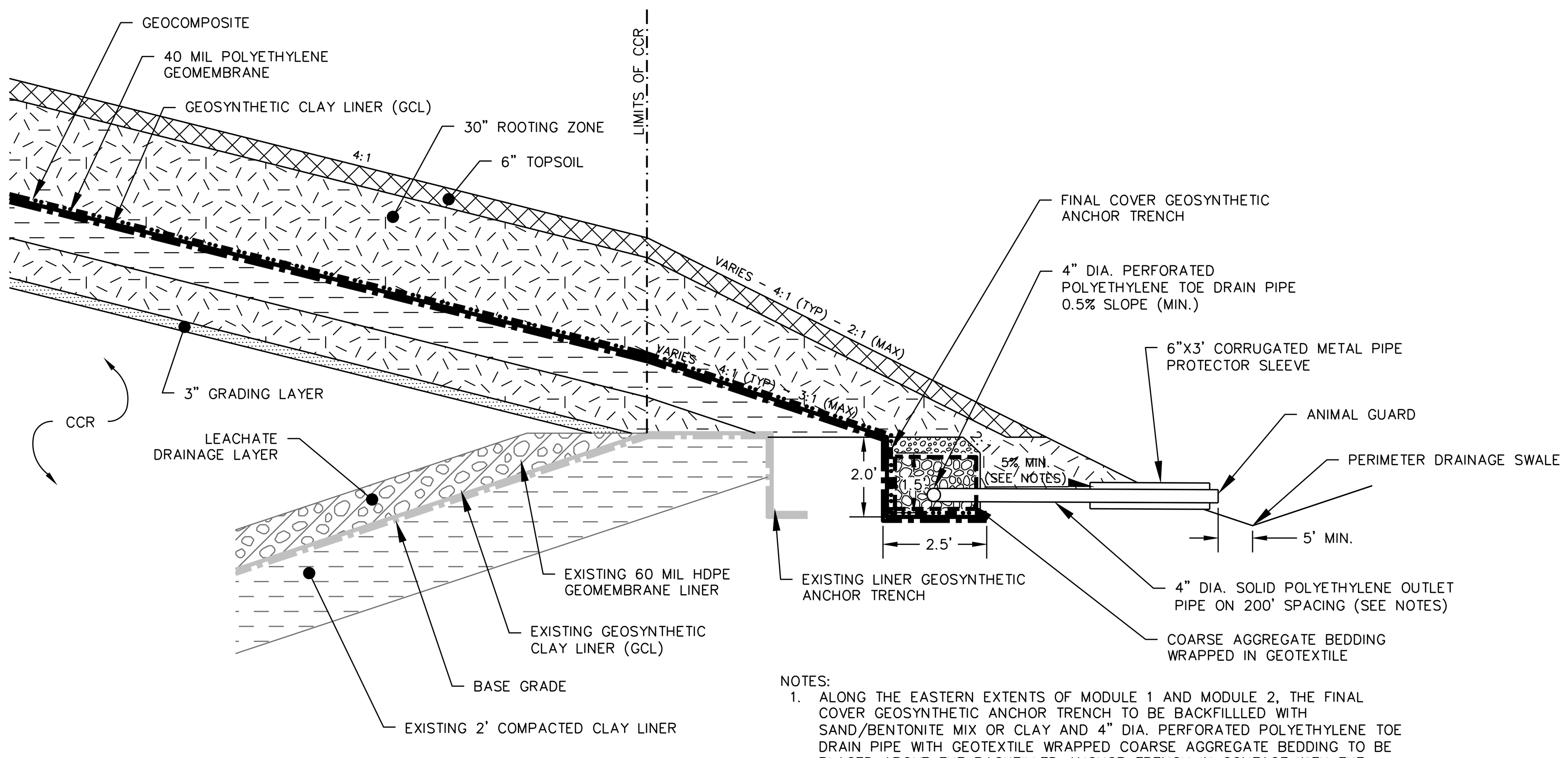
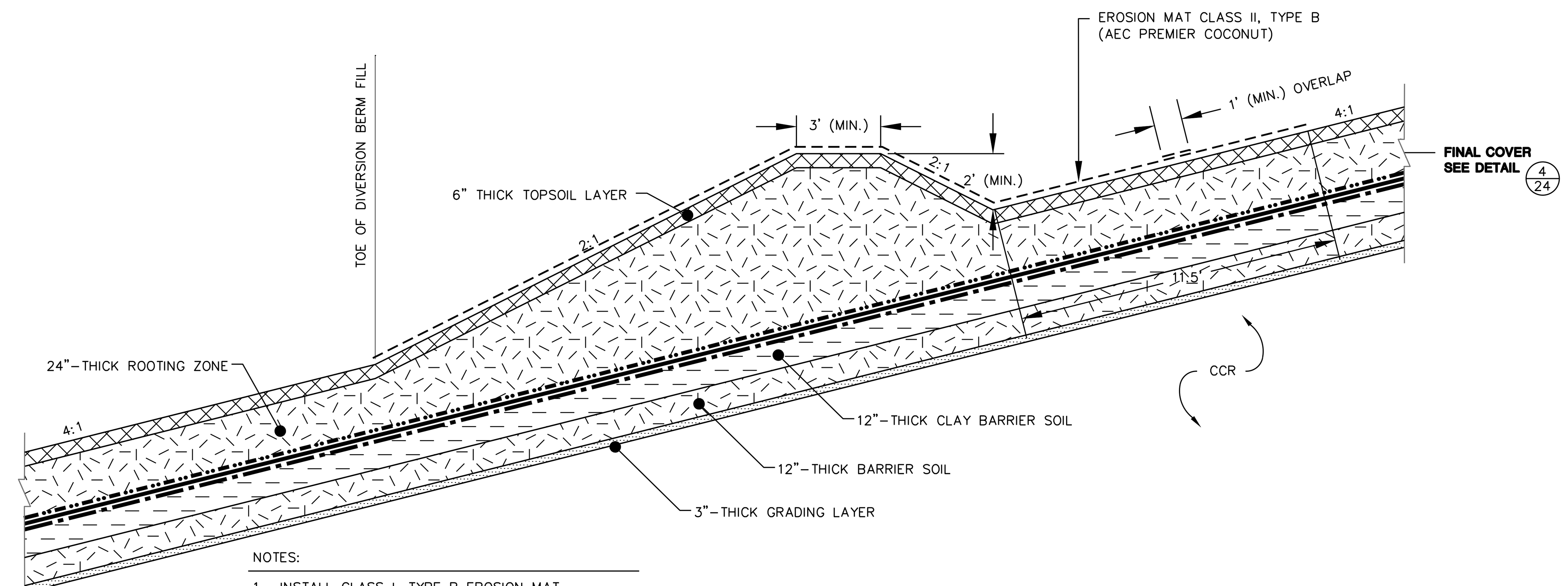


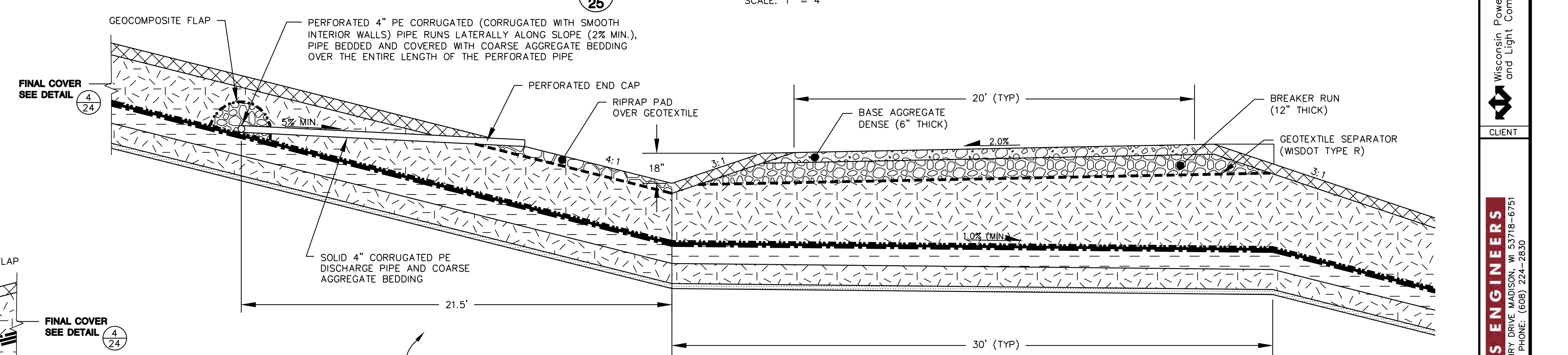
NOTES:
1. ALONG THE EASTERN EXTENTS OF MODULE 1 AND MODULE 2, THE FINAL COVER GEOSYNTHETIC ANCHOR TRENCH TO BE BACKFILLLED WITH SAND/BENTONITE MIX OR CLAY AND 4" DIA. PERFORATED POLYETHYLENE TOE DRAIN PIPE WITH GEOTEXTILE WRAPPED COARSE AGGREGATE BEDDING TO BE PLACED ABOVE THE BACKFILLED ANCHOR TRENCH IN CONTACT WITH THE GEOCOMPOSITE TO MAINTAIN MINIMUM SLOPES. SEE PLAN VIEW.
2. THE OUTLET PIPE ALONG THE EASTERN EXTENTS OF MODULE 1 IS SPACED GREATER THAN 200 FT AND HAS A SLOPE OF 0.25%. THE OUTLET PIPE AT THIS LOCATION IS TO BE 8" DIA. SOLID POLYETHYLENE PIPE. SEE PLAN VIEW.

FINAL COVER TO LINER TIE-IN AND TOE DRAIN (1/25)
SCALE: 1" = 3'

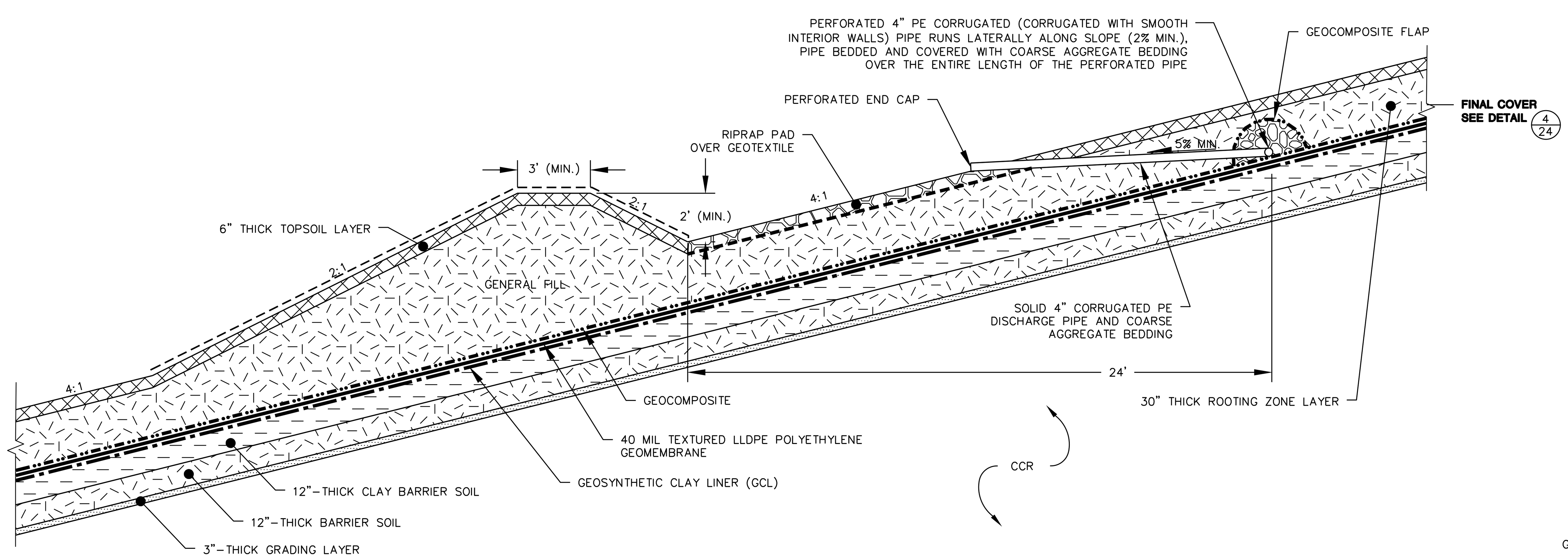


NOTES:
1. INSTALL CLASS I, TYPE B EROSION MAT (EROSIONTECH, ETRS-2) ON ALL SLOPES STEEPER THAN 4:1 UNLESS OTHERWISE NOTED.

FINAL COVER DIVERSION BERM (3/25)
SCALE: 1" = 4'

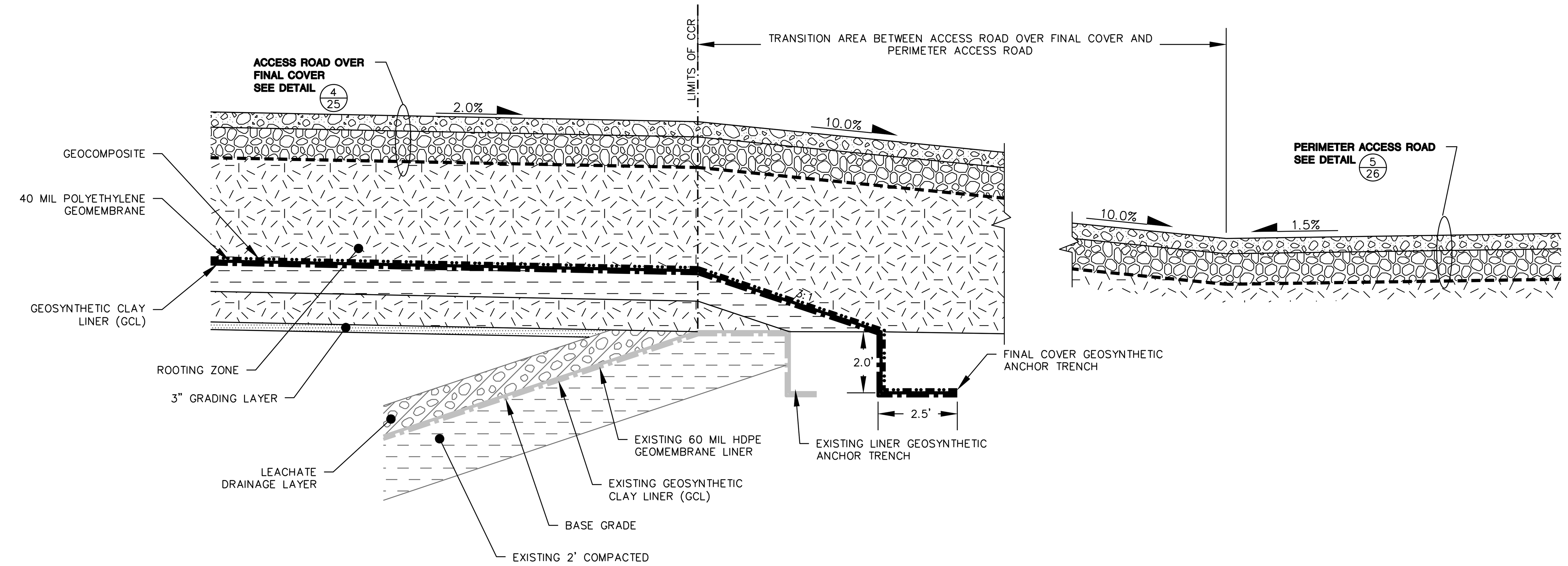


ACCESS ROAD OVER FINAL COVER (4/25)
SCALE: 1" = 4'



NOTES:
1. INSTALL CLASS I, TYPE B EROSION MAT (EROSIONTECH, ETRS-2) ON ALL SLOPES STEEPER THAN 4:1 UNLESS OTHERWISE NOTED.

FINAL COVER DIVERSION BERM AND INTERMEDIATE DRAIN PIPE (2/25)
SCALE: 1" = 4'



ACCESS ROAD OVER FINAL COVER TRANSITION AT PERIMETER BERM (5/25)
SCALE: 1" = 3'

PROJECT NO.	25222260.01
DRAWN:	05/17/18
REVISED:	08/31/2023
DRAWN BY:	KP
CHECKED BY:	RR\MRH
APPROVED BY:	MRH 08/31/2023

CLIENT: Wisconsin Power and Light Company — WISCONSIN POWER AND LIGHT, COLUMBIA ENERGY CENTER, W8375 MURRAY ROAD, PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS — 2830 DAIRY DRIVE MADISON, WI 53718-6751, PHONE: (608) 224-2830

SITE: PLAN OF OPERATION UPDATE, COLUMBIA ENERGY CENTER, COLUMBIA DRY ASH DISPOSAL FACILITY, TOWN OF PACIFIC, WISCONSIN

DETAILS

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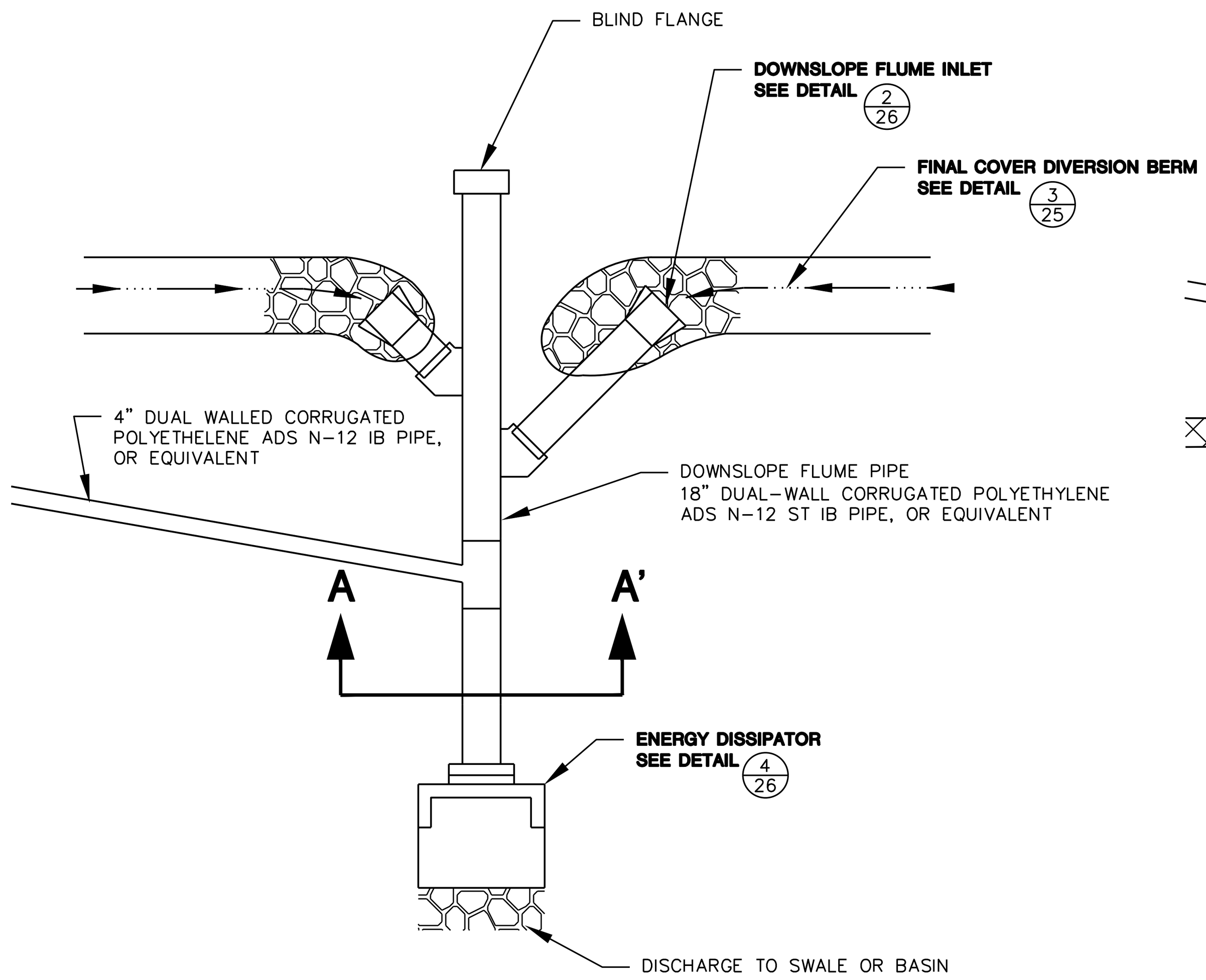
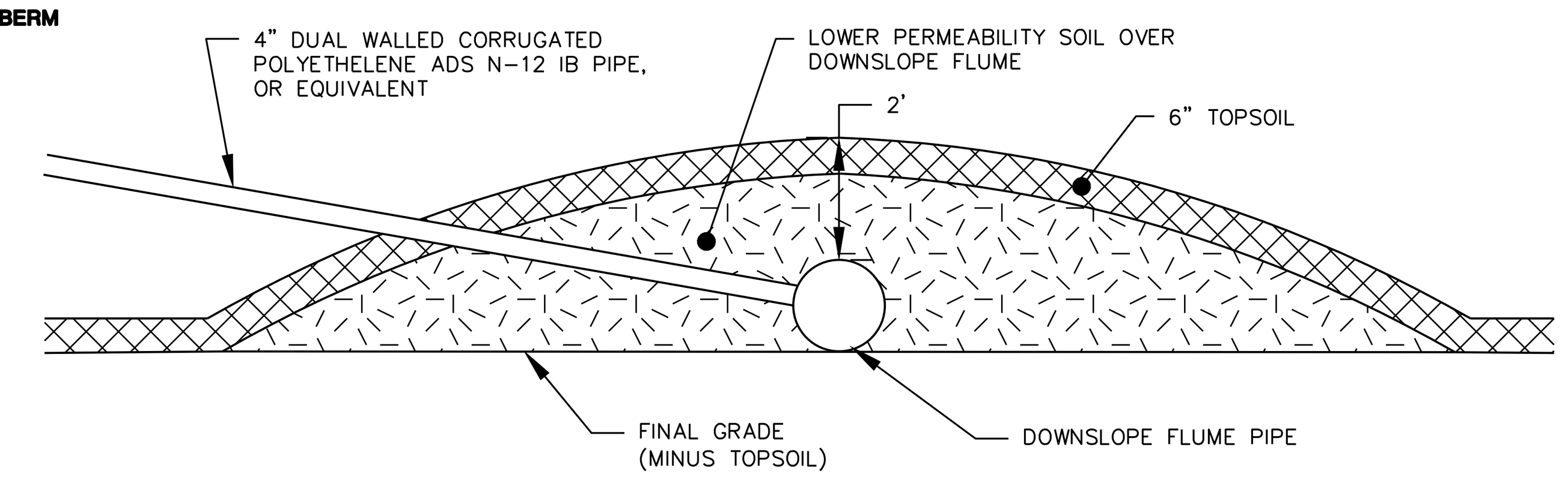
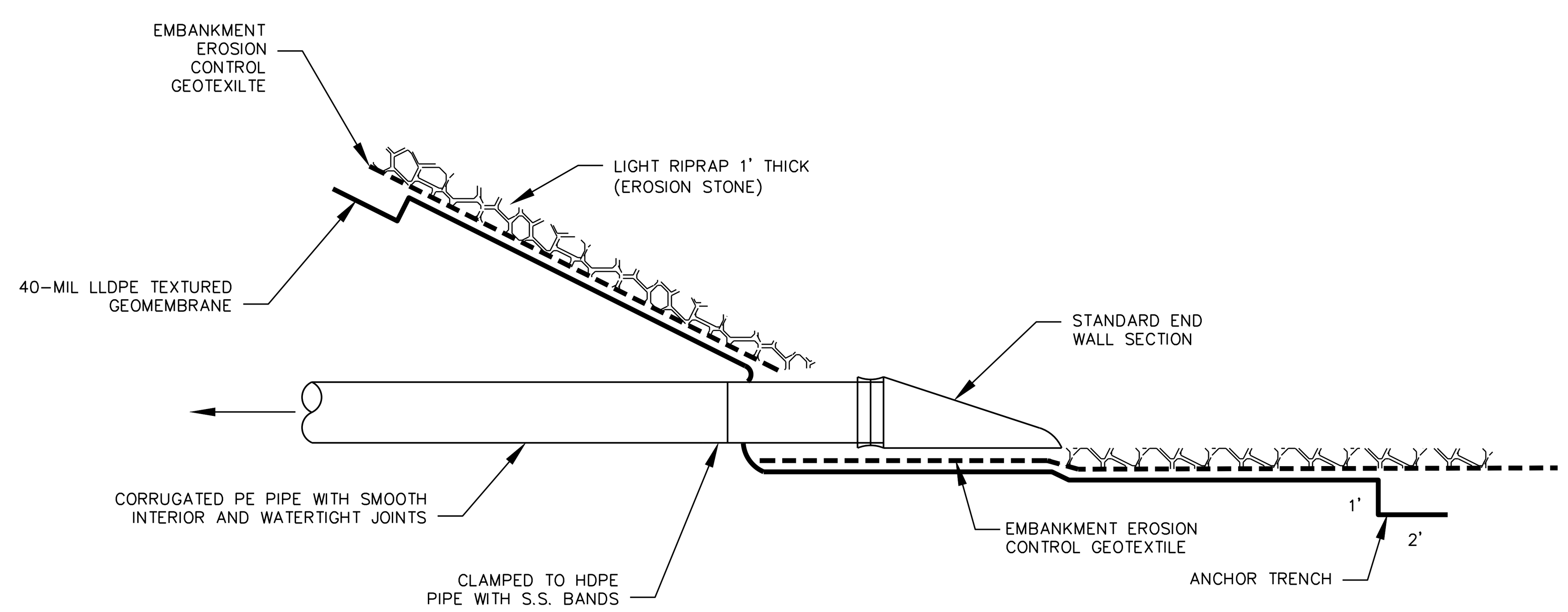


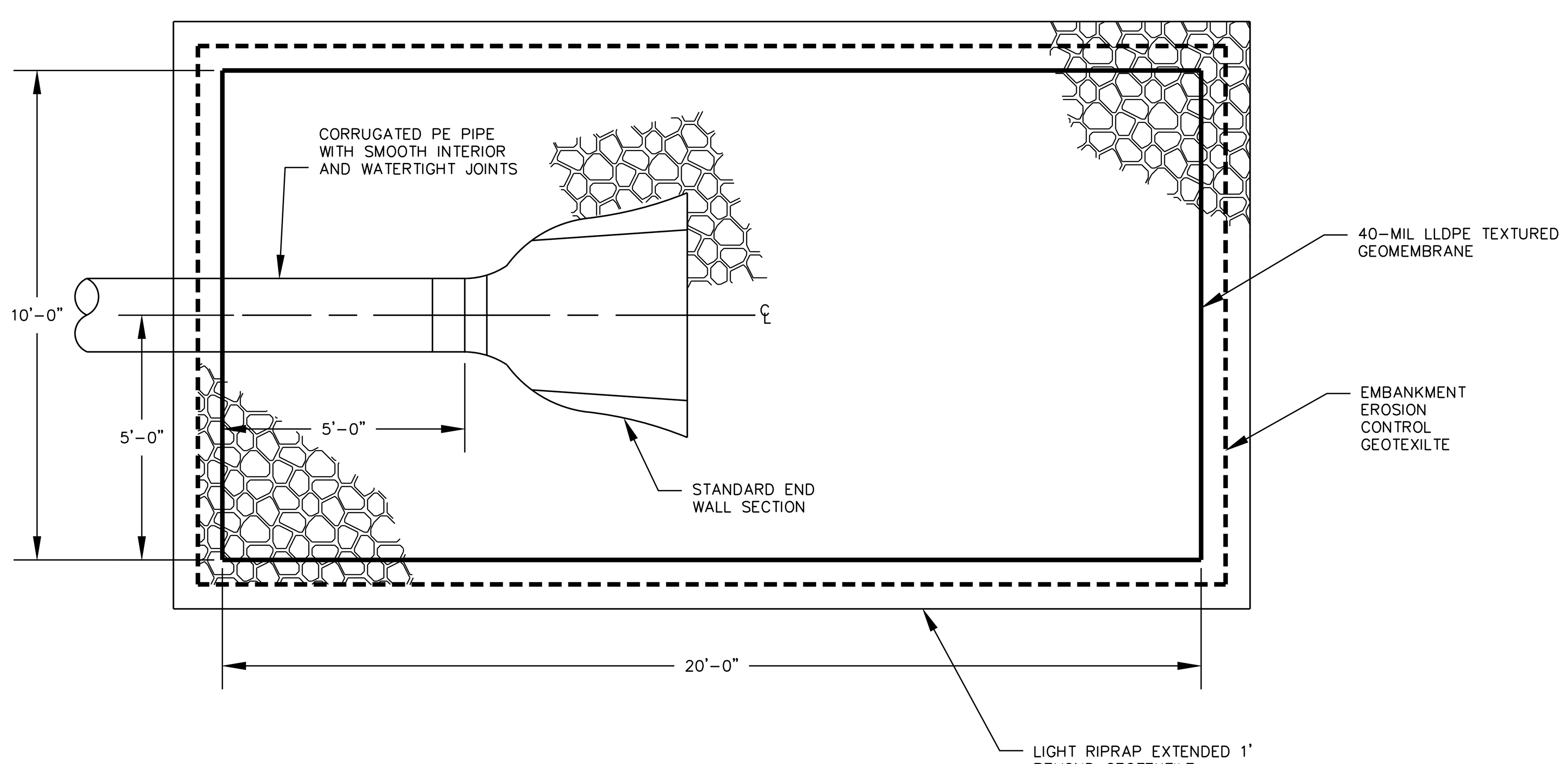
1/26 **DOWNSLOPE FLUME**
NOT TO SCALE



SECTION A-A'

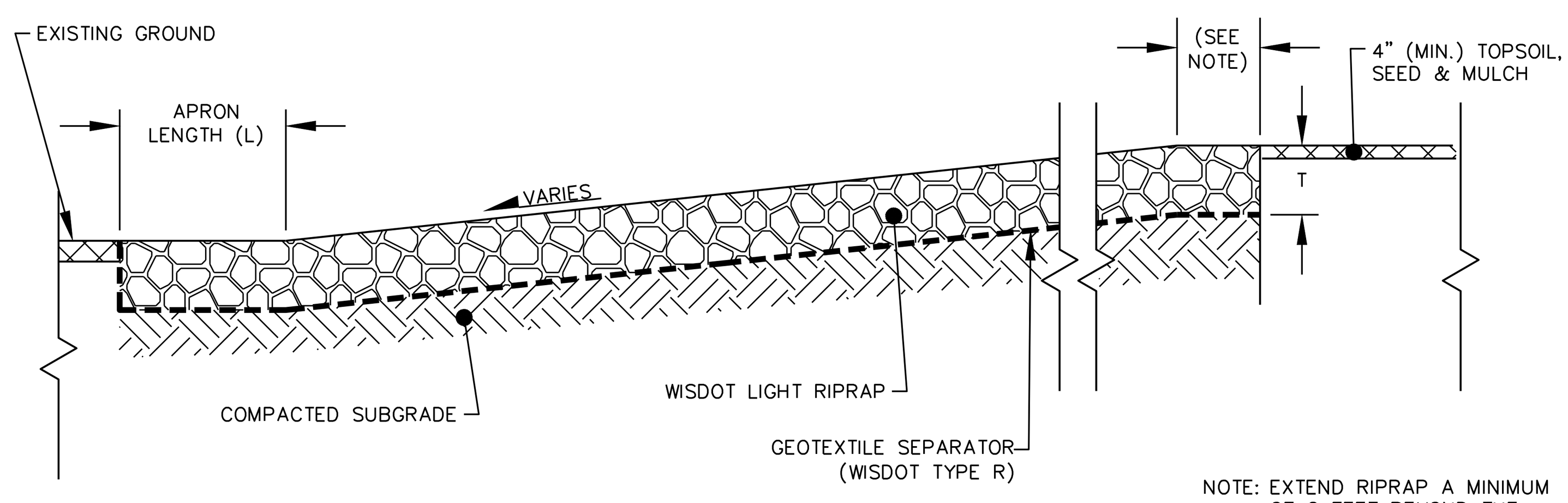


INLET SECTION



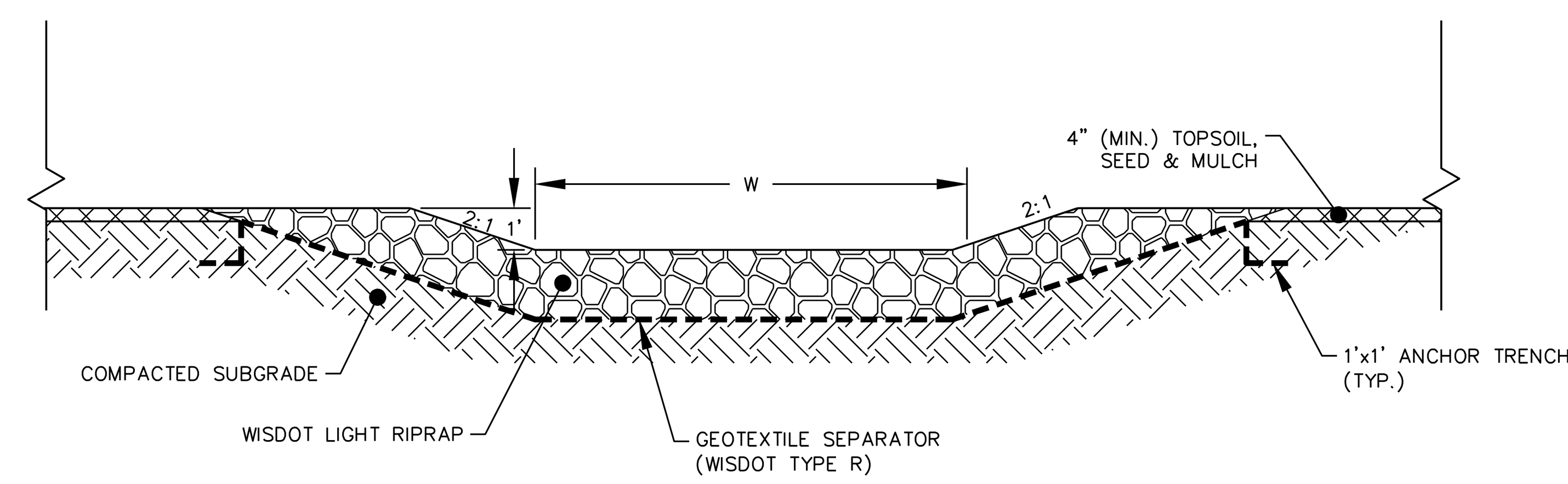
PLAN

2/26 **DOWNSLOPE FLUME INLET**
NOT TO SCALE



NOTE: EXTEND RIPRAP A MINIMUM OF 2 FEET BEYOND THE TOP OF THE SLOPE.

PROFILE VIEW

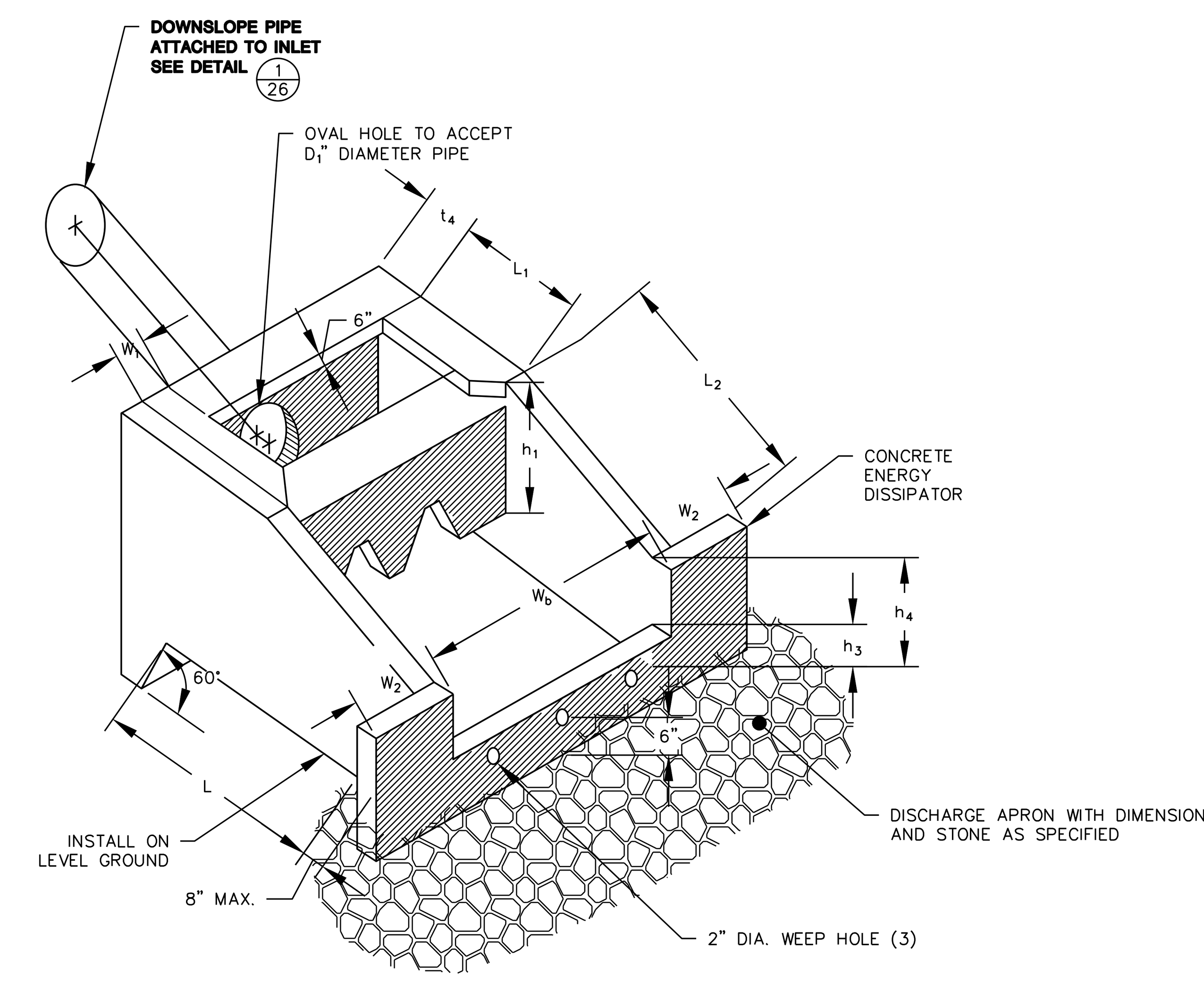


SECTION VIEW

MODULE 12 DESIGN			
ROCK CHUTE	W (FT)	T (IN)	APRON LENGTH, L (FT)
RC1	8	4	2
RC2	6	12	7
RC3	6	8	5
RC4	6	9	6

MODULE 12+13 DESIGN			
ROCK CHUTE	W (FT)	T (IN)	APRON LENGTH, L (FT)
RC1	8	4	2
RC2	6	12	7
RC3	6	8	5
RC4	6	9	6

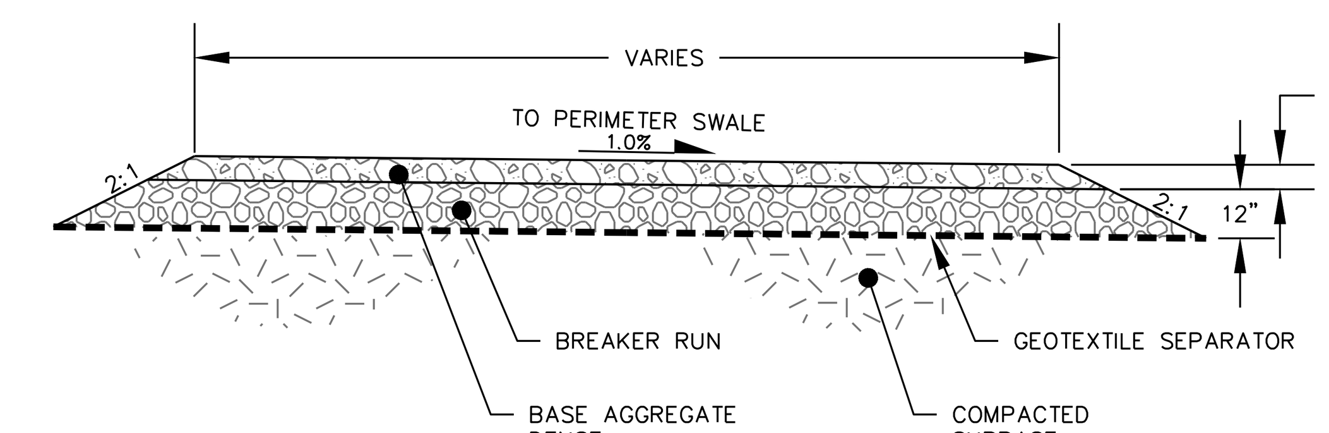
3/26 **ROCK CHUTE**
NOT TO SCALE



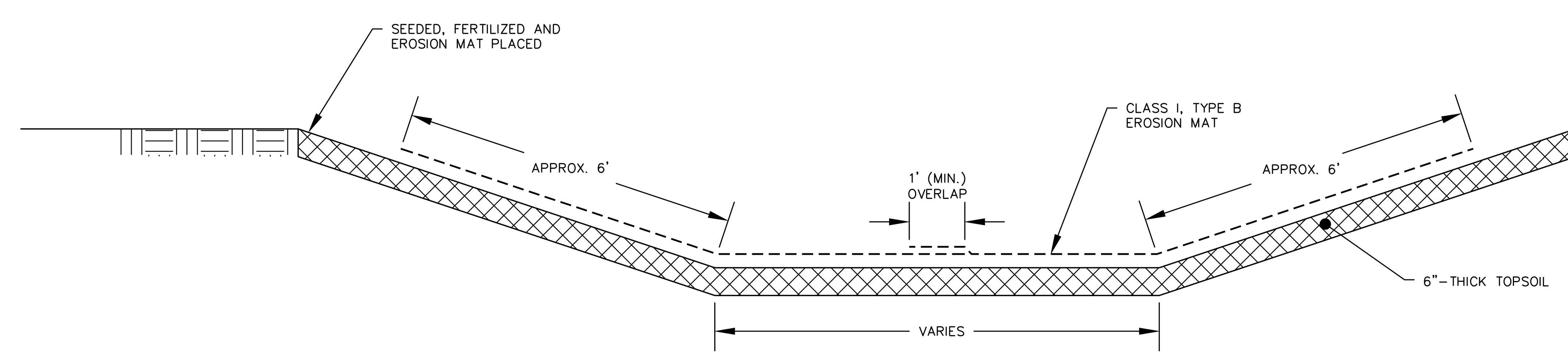
MODULE 12 DESIGN																
FLUME	D1 (IN)	WB	h1	h3	h4	L	L1	L2	W1	W2	t4	CHUTE WIDTH (FT)	APRON WIDTH (FT)	APRON LENGTH (FT)	THICKNESS (IN)	STONE TYPE
FLUME 1	18	6	4.58	1	2.5	8	3.42	4.58	0.5	1.67	0.5	6	6	10	12	SELECT CRUSHED MATERIAL, TYPE R
FLUME 2																
FLUME 6																
FLUME 7																
FLUME 8																
FLUME 9																

MODULE 12+13 DESIGN																
FLUME	D1 (IN)	WB	h1	h3	h4	L	L1	L2	W1	W2	t4	CHUTE WIDTH (FT)	APRON WIDTH (FT)	APRON LENGTH (FT)	THICKNESS (IN)	STONE TYPE
FLUME 1	18	6	4.58	1	2.5	8	3.42	4.58	0.5	1.67	0.5	6	6	10	12	SELECT CRUSHED MATERIAL, TYPE R
FLUME 2																
FLUME 6																
FLUME 7																
FLUME 9																

4/26 **OUTLET STRUCTURE WITH ENERGY DISSIPATOR**
NOT TO SCALE



5/26 **PERIMETER ACCESS ROAD**
NOT TO SCALE



6/26 **PERIMETER SWALE**
NOT TO SCALE

PROJECT NO. 25222260.01	DRAWN BY: KP
DRAWN: 05/17/18	CHECKED BY: RR\MRH
REVISED: 08/31/2023	APPROVED BY: MRH 08/31/2023

CLIENT: Wisconsin Power and Light Company
WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

SITE:
PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

DETAILS

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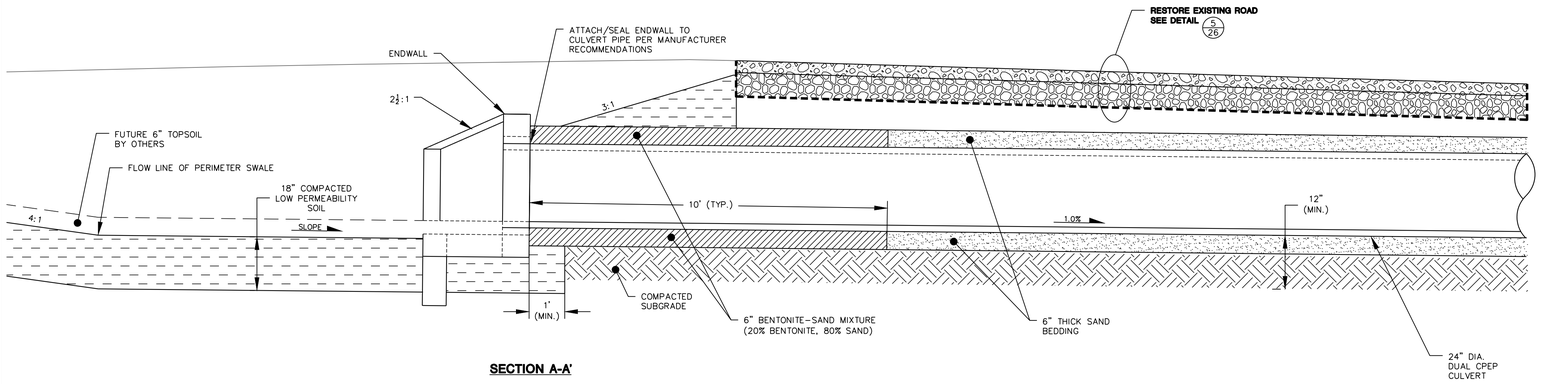
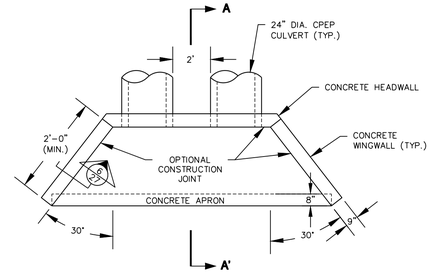


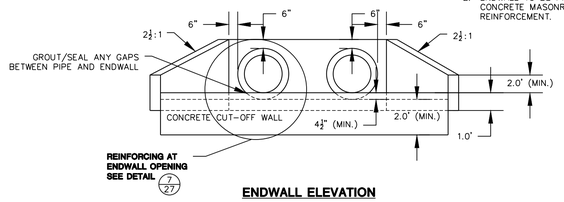
SECTION A-A'

1/27 CULVERT INLET
SCALE: 1" = 2'



ENDWALL PLAN VIEW

NOTES:
1. MATCH FILL SLOPES TO CONFORM TO WINGWALLS.
2. ENDWALL TO BE PRECAST CONCRETE OR CONCRETE MASONRY WITH STEEL REINFORCEMENT.



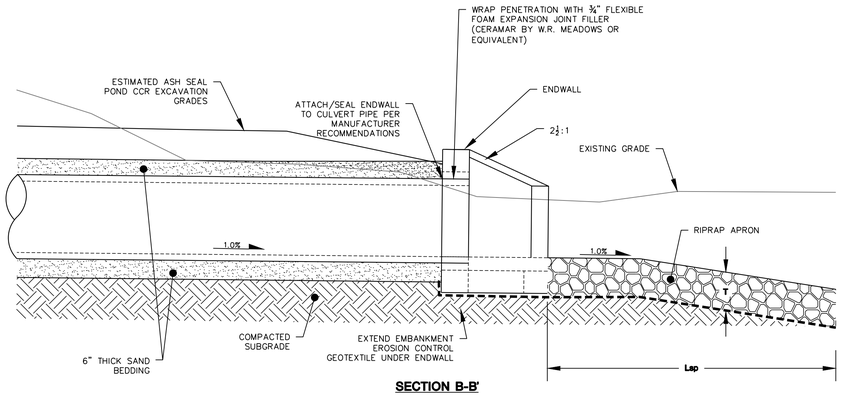
ENDWALL ELEVATION

2/27 CULVERT INLET ENDWALL
NOT TO SCALE

MODULE 12 DESIGN				
CULVERT	NUMBER OF BARRELS	DIAMETER (IN)	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)
C1	1	24	815.70	814.55
C2a	2	18	817.60	814.00
C2b	2	12	818.00	817.60
C3	2	30	811.17	810.90
C4	2	30	809.86	809.60
C5	2	30	807.57	807.15
C6	2	24	805.40	804.76
C7	2	42	796.64	796.34
C8	1	12	810.70	808.60
C9	1	12	822.00	821.79
C10	1	24	807.54	806.81
C11	2	30	817.68	817.40

MODULE 12 DESIGN				
RIPRAP APRON	T (in)	L_{sp} (ft)	W_{sp} (ft)	WisDOT RIPRAP CLASSIFICATION/ GEOTEXTILE SEPARATOR
CULVERT 2A	6	17	SEE NOTE 1	SELECT CRUSHED MATERIAL, TYPE R
CULVERT 2B	6	11	SEE NOTE 1	SELECT CRUSHED MATERIAL, TYPE R
CULVERT 3	20	26	SEE NOTE 1	LIGHT RIPRAP, TYPE R
CULVERT 4	20	27	SEE NOTE 1	LIGHT RIPRAP, TYPE R
CULVERT 5	20	28	SEE NOTE 1	LIGHT RIPRAP, TYPE R
CULVERT 6	20	25	SEE NOTE 1	LIGHT RIPRAP, TYPE R
CULVERT 8	6	10	SEE NOTE 1	SELECT CRUSHED MATERIAL, TYPE R
CULVERT 9	6	8	SEE NOTE 1	SELECT CRUSHED MATERIAL, TYPE R
CULVERT 11	20	26	SEE NOTE 1	LIGHT RIPRAP, TYPE R

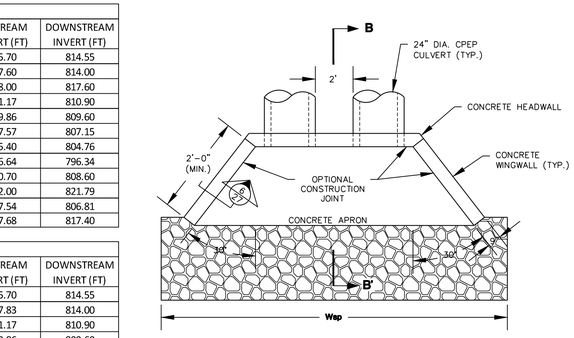
NOTES:
1. FOR DISCHARGES TO CHANNELS, PLACE RIPRAP ALONG CHANNEL BOTTOM AND UP SIDE OF CHANNEL



SECTION B-B'

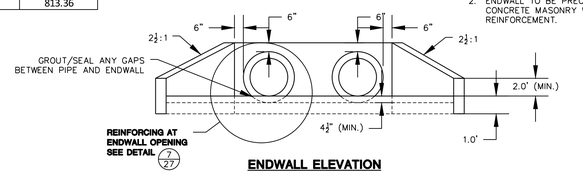
3/27 CULVERT OUTLET
SCALE: 1" = 2'

MODULE 12+13 DESIGN				
CULVERT	NUMBER OF BARRELS	DIAMETER (IN)	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)
C1	1	24	815.70	814.55
C2	2	24	817.83	814.00
C3	2	30	811.17	810.90
C4	2	30	809.86	809.60
C5	2	30	807.57	807.15
C6	2	24	805.40	804.76
C7	2	42	796.64	796.34
C8	1	12	810.70	808.60
C9	1	24	807.54	806.81
C10	2	24	814.96	813.36



ENDWALL PLAN VIEW

NOTES:
1. MATCH FILL SLOPES TO CONFORM TO WINGWALLS.
2. ENDWALL TO BE PRECAST CONCRETE OR CONCRETE MASONRY WITH STEEL REINFORCEMENT.

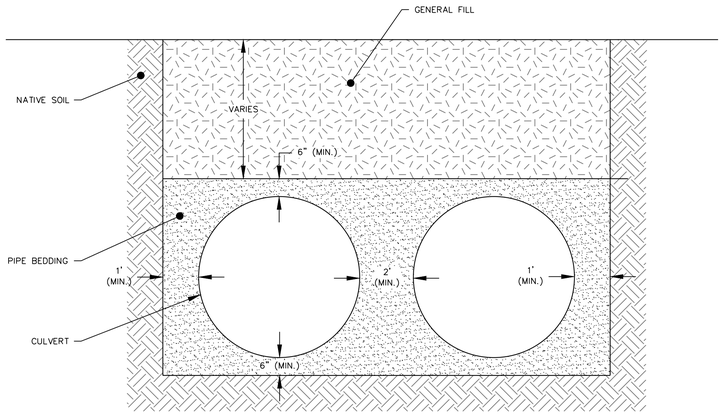


ENDWALL ELEVATION

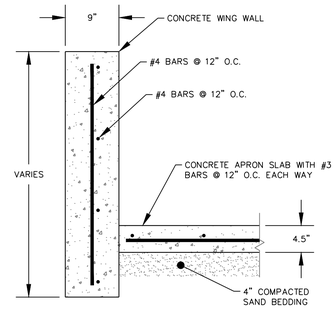
4/27 CULVERT OUTLET ENDWALL
NOT TO SCALE

MODULE 12+13 DESIGN				
RIPRAP APRON	T (in)	L_{sp} (ft)	W_{sp} (ft)	WisDOT RIPRAP CLASSIFICATION/ GEOTEXTILE SEPARATOR
CULVERT 2	6	19	SEE NOTE 1	SELECT CRUSHED MATERIAL, TYPE R
CULVERT 3	20	26	SEE NOTE 1	LIGHT RIPRAP, TYPE R
CULVERT 4	20	27	SEE NOTE 1	LIGHT RIPRAP, TYPE R
CULVERT 5	20	28	SEE NOTE 1	LIGHT RIPRAP, TYPE R
CULVERT 8	6	10	SEE NOTE 1	SELECT CRUSHED MATERIAL, TYPE R
CULVERT 10	6	18	SEE NOTE 1	SELECT CRUSHED MATERIAL, TYPE R

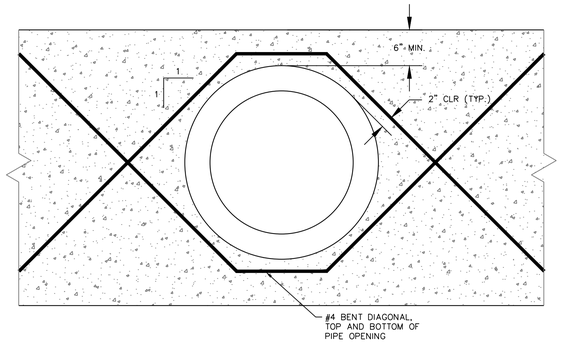
NOTES:
1. FOR DISCHARGES TO CHANNELS, PLACE RIPRAP ALONG CHANNEL BOTTOM AND UP SIDE OF CHANNEL



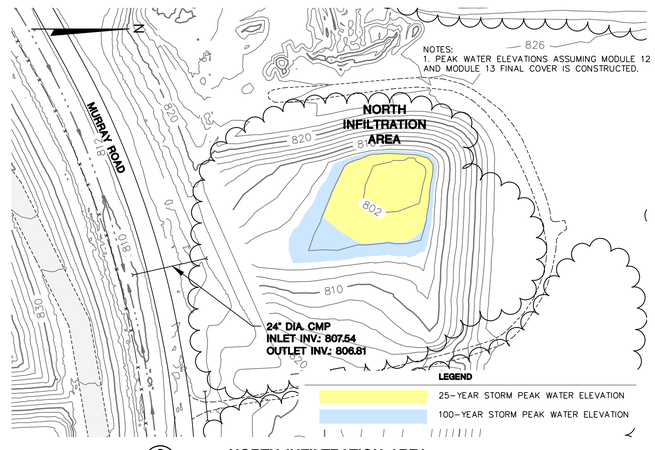
5/27 CULVERT TRENCH
NOT TO SCALE



6/27 REINFORCEMENT AT APRON ENDWALL
SCALE: 1" = 1'



7/27 REINFORCEMENT AT ENDWALL OPENING
SCALE: 1" = 1'



NOTES:
1. PEAK WATER ELEVATIONS ASSUMING MODULE 12 AND MODULE 13 FINAL COVER IS CONSTRUCTED.

8/27 NORTH INFILTRATION AREA
SCALE: 1" = 100'

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

DRAWN BY: KP
CHECKED BY: RR\MRH
APPROVED BY: MRH 08/31/2023
PROJECT NO. 25222260.01
DRAWN: 05/17/18
REVISED: 08/31/2023

Wisconsin Power and Light Company
CLIENT

WISCONSIN POWER AND LIGHT COLUMBIA ENERGY CENTER W8375 MURRAY ROAD PARDEEVILLE, WISCONSIN 53954

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA COUNTY COAL ASH FACILITY
TOWN OF PACIFIC, WISCONSIN

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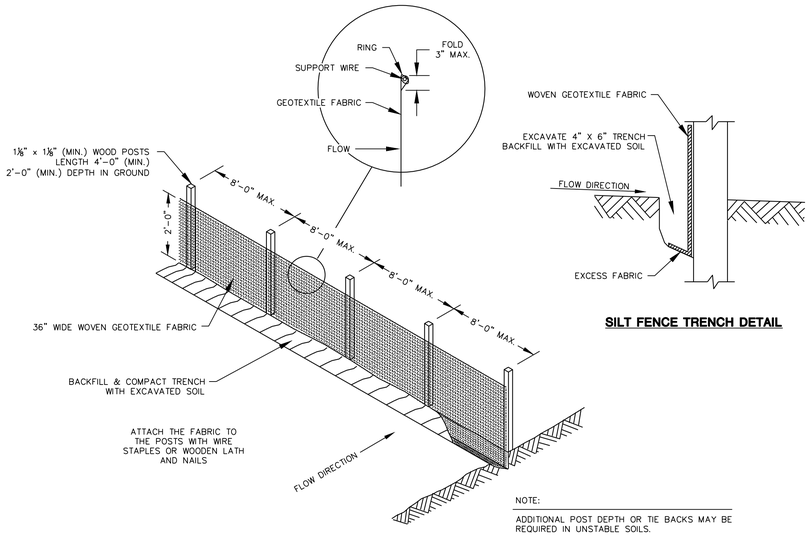
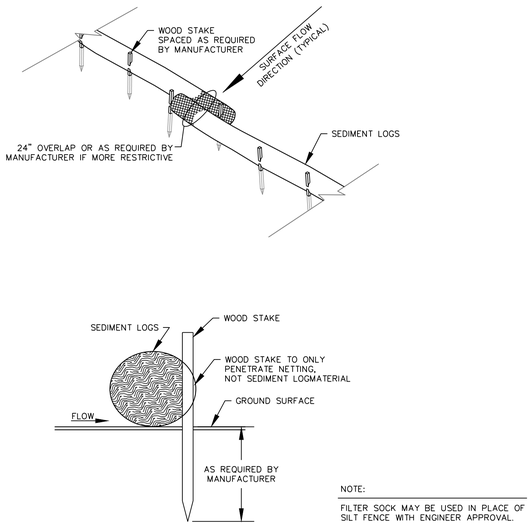
ENGINEER

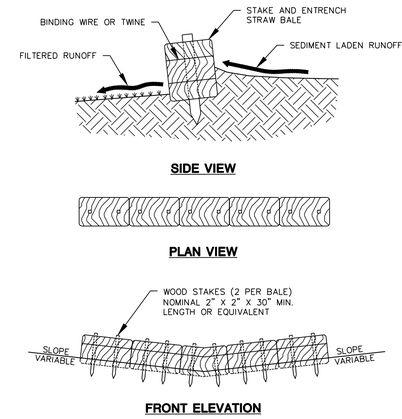


SILT FENCE TRENCH DETAIL

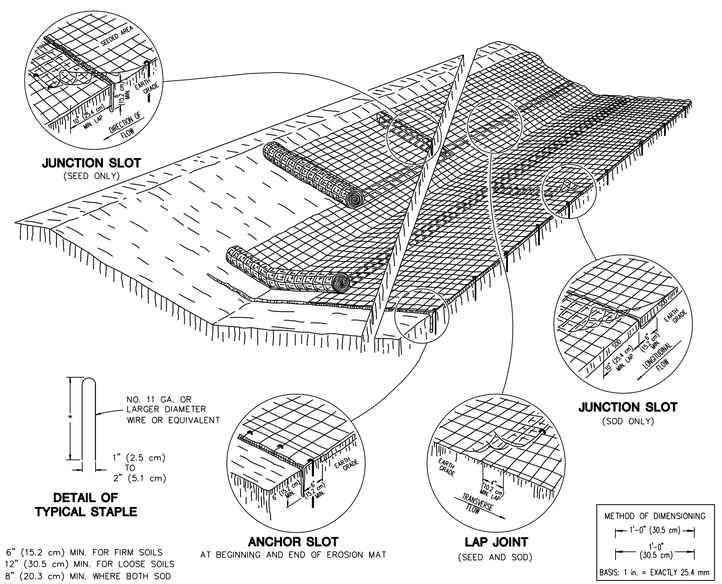
1/28 SILT FENCE
NOT TO SCALE



2/28 FILTER SOCK
NOT TO SCALE



3/28 STRAW BALE DITCH CHECK
NOT TO SCALE



EROSION MAT NOTES:

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFIRM TO THE PERTINENT REQUIREMENTS OF THE SPECIFICATIONS

VARIATIONS IN THE DIMENSIONS OR MATERIALS SHOWN HEREON SHALL BE PERTINENT IF THEY PROVIDE EQUIVALENT PROTECTION AND MATERIAL STRENGTH AND IF PRIOR APPROVAL OF THE ENGINEER IS OBTAINED

LAP JOINTS SHALL NOT BE PLACED IN THE BOTTOM OF V-SHAPED SWALEES.

JUNCTION SLOTS ON ADJACENT STRIPS OF MATTING SHALL BE STAGGERED A MINIMUM OF 4 FEET (1.219 m) APART.

EDGES OF THE EROSION MAT SHALL BE IMPRESSED IN THE SOIL.

EROSION MAT SHALL BE INSTALL OVER SEEDING AND FERTILIZER.

JUNCTION OR ANCHOR SLOTS SHALL BE AT MAXIMUM INTERVALS OF 100 FEET (30.48 m) ON GRADES UP TO AND INCLUDING 3 PERCENT, AND 50 FEET (15.24 m) ON GRADES EXCEEDING 3 PERCENT.

4/28 CHANNEL EROSION MAT
NOT TO SCALE

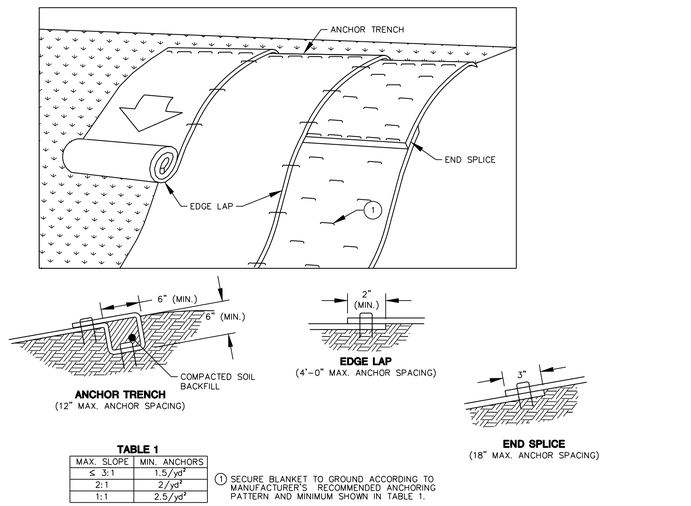


TABLE 1

MAX. SLOPE	MIN. ANCHORS
≤ 3:1	1.5/yd²
2:1	2/yd²
1:1	2.5/yd²

① SECURE BLANKET TO GROUND ACCORDING TO MANUFACTURER'S RECOMMENDED ANCHORING PATTERN AND MINIMUM SHOWN IN TABLE 1.

5/28 NON-CHANNEL EROSION MAT
NOT TO SCALE

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

PLAN OF OPERATION UPDATE
COLUMBIA ENERGY CENTER
COLUMBIA ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

DETAILS

SHEET
28 of 28

DRAWN BY:	KP	
CHECKED BY:	RR\MRH	
APPROVED BY:	MRH	08/31/2023
PROJECT NO.	25222260.01	
DRAWN:	05/17/18	
REVISED:	08/31/2023	

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

Wisconsin Power and Light Company

CLIENT

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Appendix A

Correspondence

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg WI 53711-5397

Tony Evers, Governor
Adam N. Payne, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

March 8, 2023

File Ref: FID 111049180
Columbia County
SW Correspondence

Mr. Jeff Maxted
Alliant Energy Corporation
4902 North Biltmore Lane
Madison, WI 53718-2148

Subject: Incompleteness Determination for the Plan of Operation Approval Modification for Initial Permitting of Coal Combustion Residuals (CCR) Landfill for the Wisconsin Power and Light Company Dry Ash Disposal Facility, License #3025

Dear Mr. Maxted:

The Department of Natural Resources (department) has reviewed for completeness the plan of operation modification ("the plan") for initial permitting of a CCR Landfill submitted on behalf of Wisconsin Power and Light Company by Alliant Energy Corporation entitled: "Plan of Operation Modification Request Initial Permitting of CCR Landfill, Wisconsin Power and Light Company, Dry Ash Disposal Facility (WDNR License #3025), Columbia Energy Center, Portage, WI" dated December 14, 2022 and received by the department on December 14, 2022, and an addendum entitled "Plan of Operations Modification Request – Addendum #1, Initial Permitting of CCR Landfill, Wisconsin Power and Light Company, Dry Ash Disposal Facility (WDNR License #3025), Columbia Energy Center, Portage, WI" dated February 1, 2023 and received by the department on February 1, 2023.

The department has determined the plan is not complete since the minimum requirements of chs. NR 500 to 520, Wis. Adm. Code, have not been met in accordance with s. NR 514.045, Wis. Adm. Code. The department understands the complexity of the new CCR rules and its implementation and will be available to discuss the following items while you work to prepare the addenda to your initial submittal.

The following information must be provided in order for the department to issue a determination that the plan is complete:

1. **S. NR 504.04(4)(a), Wis. Adm. Code:** Provide a discussion and any correspondence or permits issued from the U.S. Army Corps of Engineers (ACOE) on the federal jurisdictional status of Wetlands 1 and 2. A letter from the department regarding the state jurisdictional status of Wetlands 1 and 2 is included in Appendix A1 of the December 14, 2022, Plan of Operation Modification, however, no discussion or correspondence from the U.S. ACOE on the federal jurisdictional status is provided.

2. **S. NR 504.04(4)(b), Wis. Adm. Code:** Clarify/specify what measures were taken to prevent the take of the slender glass lizard (Ophisaurus attenuatus). Also clarify/specify if continued operation of the landfill may result in a take of the slender glass lizard and what measures will be taken to prevent the take of the slender glass lizard.

3. **S. NR 504.04(4)(c), Wis. Adm. Code:** Provide a copy of the facility's Wisconsin Pollutant Discharge Elimination System (WPDES) permit, as well as the storm water runoff calculations originally provided in

the May 25, 2022, plan modification request/plan of operation update. Provide a copy of the landfill's most recent Tier 2 industrial stormwater pollution prevention plan (SWPPP).

4. **S. NR 504.07(4), Wis. Adm. Code:** Provide a revised final cover design that includes a clay capping layer or a soil barrier layer with a geocomposite clay layer (GCL). The current GCL final cover design does not include a soil barrier layer and therefore, does not meet the code requirements. Provide revisions to the design/construction items that would be affected by the addition of a clay capping layer or a GCL with a two-foot soil barrier layer, including the following:

    a. S. NR 504.075, Wis. Adm. Code: Provide remaining clay available at the New Haven clay borrow source, propose a new clay borrow or soil barrier layer borrow source for material needed for the revised final cover design.

    b. S. NR 514.06, Wis. Adm. Code: Provide the information in this section that will change due to the revised final cover design such as a revised final topography plan sheet and revised closure costs.

    c. SS. NR 514.07(1)(i) and (j), Wis. Adm. Code: Provide updated construction quality control and assurance plans which reflect the revised final cover design.

    d. S. NR 514. 07(10)(1)(c)2, Wis. Adm. Code: Provide a revised closure plan that includes a description of the methods and procedures to be used to install the revised final cover.

5. **SS. NR 514.045(1)(a) and NR 500.05(6)(h), Wis. Adm. Code:** Provide a plan sheet that depicts the closure topography. The plan sheet included in the closure plan in Appendix C1 of the December 14, 2022, Plan of Operation Modification does not depict the closure topography of Modules 10 and 11.

6. **S. NR 514.045(1)(h), Wis. Adm. Code:** Provide the groundwater monitoring system demonstration.

7. **S. NR 514.045(1)(i), Wis. Adm. Code:** Provide an updated sampling plan.

8. **S. NR 514. 07(10)(1)(c)6, Wis. Adm. Code:** Provide a closure schedule that provides sufficient information to describe the sequential steps that will be taken to close the CCR landfill, including installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR landfill closure.

9. **S. NR 514.07(10)(1)(d)1.d, Wis. Adm. Code**: Provide a revised long-term care plan that addresses monitoring in accordance with the sampling plan.

10. **S. NR 514. 07(10)(1)(e), Wis. Adm. Code:** Provide a revised long-term care plan that includes leachate collection line video camera inspections per s. NR 506.07(5)(e), Wis. Adm. Code.

11. **Condition 6 of the department's July 28, 2022, plan of operation approval modification:** Provide an operation plan that addresses the care and maintenance of the tanks, and pumps as well as the means to monitor the tank and manholes secondary containment systems.

12. **Condition 8 of the department's July 28, 2022, plan of operation approval modification:** Provide the design for the construction of Module 12 liner or a proposal for removal of the liner runout from Module 11 and timing of construction of the north berm for Module 11.

13. Provide a leachate/contact water pond abandonment strategy and transition to use of the leachate storage tank.

14. Provide a design for the Phase 1, Modules 5 and 6 final cover permanent haul road.

In addition to the above items, a sitewide preventive action limit (PAL) for specific conductance was discussed in a May 15, 1997, letter from the department (for both the active and closed landfills). Although the sitewide PAL has been accepted since then, it doesn't appear the sitewide PAL was formalized in an approval. It doesn't appear that specific monitoring well PALs for hardness and alkalinity have been proposed and subsequently approved either. The initial CCR permitting of the Dry Ash Disposal Facility is a good opportunity to address these items. The department believes that specific monitoring well PALs for specific conductance, hardness, and alkalinity should be calculated and proposed for the Dry Ash Disposal Facility's non-CCR wells, in addition to the CCR groundwater monitoring system requirements described in s. NR 514.045(1)(h), Wis. Adm. Code. Please include this item in a future addendum.

This incompleteness determination is not a denial of your proposal, but merely indicates that additional information is needed to continue the department's review. Submittal of this information does not ensure approval, nor does it preclude the department from requiring additional information if continued review indicates it is needed

If you have questions regarding this approval, please contact Ann Bekta at 608-287-4492 or ann.bekta@wisconsin.gov or Tyler Sullivan at 608-516-3962 or tyler.sullivan@wisconsin.gov.

Sincerely,

Bridget Kelly
Waste and Materials Management Program Supervisor
South Central Region

cc: Eric Sandvig – EricSandvig@alliantenergy.com
Brian Clepper - BrianClepper@alliantenergy.com
Mark Huber - mhuber@scsengineers.com
Mark Aquino – DNR (e-copy)
Joe Lourigan – DNR/WA (e-copy)
Tyler Sullivan - DNR/WA (e-copy)
Ann Bekta – DNR/WA (e-copy)
Malena Grimm - DNR/WA (e-copy)

Appendix B

Approval Conditions Summary

Table B
Approval Condition Status Summary Table
Columbia Energy Center Ash Disposal Facility

Condition No.	Description	Status	Comments
September 30, 1980 Feasibility Approval			
1	Approval for disposal of fly ash and bottom ash; does not apply to fly ash and scrubber sludge	Superseded	
2	Submit final engineering plans for no more than a 10-year operation period	Superseded (10/8/84; C3)	
3	Abandon private and commercial wells within 1,200 feet of modules prior to disposal in that module	Active	
4	Submit groundwater monitoring plan	Superseded by subsequent plan mods	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
5	Requires design adjustments as necessary to maintain maximum site life of 31 years	Superseded	
6	Where filling will not occur for 6 months or more must have 2-foot intermediate soil cover; for 1 year or more, intermediate cover must be seeded	Superseded (10/8/84; C13)	
7	Contaminated water must be utilized as part of disposal operation or circulated through a treatment process prior to discharge	Comparable code	
8	Control dust	Comparable code	
9	Addresses stockpiling locations	Inactive	
10	Address requirements in NR 180.13 in POO	Comparable code	Addressed in 2010 POO Update
11	Operation of the site	Comparable code	
12	Final cover to include 6 inches of topsoil	Comparable code	
13	Protect wetland areas to the south	Comparable code	
June 30, 1983 Plan of Operation Approval			
1	Site development in accordance with POO	Superseded (1/11/91, Cond. A)	
2	Approval limited to disposal of solid waste in Phase I, Module 1	Alternative proposed	
3	Establish ash handling procedures	Superseded (10/8/84; Cond. 8)	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
June 30, 1983 Plan of Operation Approval (continued)			
4	Maintain facility in compliance with Feasibility approval and no significant impact on environment	Active	
5	Requires ash handling and evaluation plan be submitted before start-up	Superseded	
6	Initial site construction	Inactive	
7	Construct sedimentation basin in accordance with plans	Inactive	Existing basin construction has been approved; new basin construction will be in accordance with 2010 POO Update
8	Backfilling requirements for areas receiving waste	Comparable code	
9	Abandon wells within 1,200 feet of disposal operations	Comparable code	
10	Prior to each phase being licensed, inspection by WDNR and proof of financial responsibility required	Comparable code	
11	Contaminated water must be utilized as part of disposal operation or circulated through a treatment process prior to discharge	Superseded (10/8/84; Cond. 11)	
12	Do not fill in areas where ice has formed; remove ice from active disposal area	Superseded (10/8/84; Cond. 12)	
13	Confine active area to smallest practical area	Superseded (10/8/84; Cond. 13)	
14	Slope and seed all bare soil areas not part of daily operations	Active	
15	Addressed locations of new monitoring wells to be installed	Inactive	
16	Addressed lysimeter locations and design	Inactive	
17	Addressed groundwater monitoring program	Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
18	If 0.95 level of significant difference in water quality is found, notify WDNR in writing within 5 days of evaluation and retest within 10 days	Superseded (10/8/84; Cond. 16)	
19	Inform WDNR within 5 days of resampling and undertake investigative action if significant difference confirmed	Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod

Table B-1 (cont.)

Condition No.	Description	Status	Comments
June 30, 1983 Plan of Operation Approval (continued)			
20	Addressed groundwater table monitoring requirements	Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
21	Close facility in accordance with POO approval, addendums, ch. NR 180.13(12)	Superseded/ Comparable code	Closure in accordance with 2010 POO Update
22	As reach final grades, place 3 feet sandy soils and 6 inches topsoil on side slopes	Alternative proposed	
23	Get WDNR approval for off-site topsoil sources	Inactive	
24	Module 1 final cover slopes: 2% top, 4H:1V sideslopes	Comparable code	
25	Requires long-term care	Comparable code	
26	Addressed long-term care requirements	Comparable code	
27	Addressed minimum proof of net worth	Comparable code	
October 8, 1984 Plan of Operation Addendum Approval			
1	Confirmed Condition 1 of POO Approval unless sufficient testing performed	Superseded (1/11/91, Cond. a)	
2	Assigned Carl Diehls as person responsible for daily operation	Inactive	
3	Update POO every 10 years to reflect current solid waste disposal requirements and practices	Active	
4	Establishes stabilized ash permeability criteria	Inactive	
5	Department reserves right to revoke feasibility approval and conditions of approval	Comparable code	
6	Addresses pilot program for field densities	Inactive	
7	Addressed intentional omission of letter from POO approval	Inactive	
8	Modified timeframe for condition 3 of POO Approval	Inactive	
9	Modified condition 8 of POO Approval from requiring 95% to 90% Modified proctor	Comparable code	
10	Clarifies condition 9 of POO Approval	Comparable code	
11	Leachate must be treated. Denied 1000umhos/cm max conductivity for releasing leachate to environment.	Comparable code	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
October 8, 1984 Plan of Operation Addendum Approval (continued)			
12	Snow and ice must be removed before placing ash for structural reasons	Active	
13	Smallest active area possible. 2' of cover if inactive for +1yr, seeded as soon as possible, remove before use	Active	
14	Well/Lysimeter location corrections. Leak test modified.	Inactive	
15	Annual metal tests dropped except wells HC1, HC2, HC3. Maintains quarterly sampling of 8 indicator parameters.	Inactive/ Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
16	0.95 level of significance changed to 0.01	Inactive	
17	Moisture content test plots to be separate, not contiguous (5' separation)	Inactive	
18	All test plots finished by October 1984	Inactive	
19	Two extra test plots in winter by WPL to compare winter operations	Inactive	
20	Field permeability tests req'd, 3/test plot	Inactive	
21	Lysimeter req'd under 6 original test plots and design suggestions	Inactive	
22	Leachate testing req'd for lysimeters	Inactive	
23	Undisturbed samples needed for permeability tests	Inactive	
24	Placement report to evaluate handling procedures, QC, test data, and suitability to be reported	Inactive	
25	Department and Inspection req'd	Inactive	
February 26, 1985 Construction Documentation & Plan Modification Approval			
1	Site construction documentation changes are approved by WDNR	Inactive	
2	Access road relocation approved	Inactive	
3	Phase 1 area reduction approved (west)	Inactive	
4	Sedimentation basin drainage re-routing approved, no erosion	Inactive	
5	Module 1 drainage field corrected, reported for licensing	Inactive	
6	Abandoned wells MW-1, MW-3A, and MW-3B to be documented	Inactive	
7	Lysimeter location correction	Inactive	
8	GW Monitoring well location & intent (#25)	Inactive	
9	Three background water samples req'd on lysimeters before licensing	Inactive	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
February 26, 1985 Construction Documentation & Plan Modification Approval (continued)			
10	Monitor water quality on well-by-well basis over time	Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
11	Background samples also report water quality parameters (color, odor, turbidity, precision, accuracy)	Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
12	Report any reason for not completing four replicate samples/year	Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
13	C20 not modified until proposed alternatives for MWs are submitted	Inactive	
14	MW Prefixes, C20 modification. Water levels must be determined for 2nd quarter, missing or lost can be substituted with nearby wells, MW-62 to be replaced.	Inactive	
15	Include MW37A, MW37B, MW81 in water table monitoring program	Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
16	All wells included in licensing to be found and protected. Abandoned wells reported correctly.	Inactive	
17	Well information form to be completed for all existing wells and map of all monitoring points be submitted by 6/1/88	Inactive	
18	Certified property deed 11/24/1984 accepted.	Inactive	
February 19, 1987 POO Conditional Approval			
1	GWM results reported to DNR, NR 140	Superseded	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
July 10, 1987 Plan Modification Approval			
-	Reduced ash/earthwork quantities for Module 5 of Phase 1	Superseded	New phasing plan in 2000 POU

Table B-1 (cont.)

Condition No.	Description	Status	Comments
December 21, 1988 Plan Modification Approval			
1	Module 3 approved, 2, 4-16 still needed	Superseded by new phasing plan	
2	Module 3 documented with NR 516	Comparable code	
3	No ash into Module 3 until approved by DNR	Comparable code	
4	MW-82 nest relocated. New nest will have: water table observation, piezometer.	Inactive	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
5	2 new GWM locations & piezometer @ MW-85	Inactive	Monitoring currently performed in accordance with 3/11/96 Plan Mod and 1/19/00 Plan Mod
6	Background water quality defined at new and relocated wells by NR 508.14	Inactive	
7	Abandon wells MW25, MW82A, MW82B. Grout boreholes	Inactive	
8	Replacement, additional, and abandoned well construction complete by 12/30/1989.	Inactive	
9	All well work per NR 508. Report submitted to DNR by 2/15/1989.	Inactive	
July 13, 1990 Construction Documentation Approval			
-	South portion, Phase 1, Module 3 approved	Inactive	
January 11, 1991 Plan Modification Approval			
(a)	Test Burn coal information to be submitted 60 days prior to disposal	Active	
(b)	Test Burn ash cannot be placed in initial 2' base layer	Active	
(c)	Long-term disposal of similar ash possible given DNR approval	Active	
(d)	Test burn ash to be approved before disposal in normal ash landfill	Active	
August 16, 1994 Plan Modification Approval			
1	Preconstruction report to DNR 2 weeks prior to construction activities	Comparable code	
2	Inform DNR engineer 1 week prior to construction events	Superseded	
3	Ash on geomembrane placement procedure	Inactive	
4	Double layer of bentonite blanket around culvert piping where exits lined area	Inactive	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
August 16, 1994 Plan Modification Approval (continued)			
5	Bentonite mat and geomembrane in open channel to lined pond	Inactive	
6	Geomembrane test requirements	Comparable code	
7	Geomembrane welding test requirements	Comparable code	
8	Document all seams/connections/tests	Comparable code	
9	QA personnel requirements	Comparable code	
10	Construction Documents submitted to DNR within 90 days of completion of Module 1	Inactive	
March 11, 1996 Plan Modification Approval			
1	Within 120 days, install wells, staff gauges, and piezometers in Module 1	Inactive	
2	GW monitoring modifications	Active	Monitoring currently performed in accordance with 3/11/96,1/19/00, and 1/28/11 Plan Mods
3	GW monitoring modifications: schedule, quality points, parameters, water level points (Ash Landfill)	Active	Monitoring currently performed in accordance with 3/11/96,1/19/00, and 1/28/11 Plan Mods
4	WPL to submit results w/in 60 days of sampling	Superseded by 1/28/11 Plan Mod	
5	Inactive/abandoned wells reported by June 1996	Inactive	
6	GWM summary received Jan 31st each year	Superseded by 1/28/11 Plan Mod	
7	Preventive action limits from WPL to be proposed, and alternatives requested	Comparable Code	
8	Plan modification required before additional module or phase construction	Inactive	2010 Plan of Operation Update includes proposed design
March 29, 1996 Construction Documentation Approval			
-	Culvert in NE corner, semiannual inspection	Inactive	
January 19, 2000 Expedited Plan Modification			
-	Dissolved iron no longer required parameter. Reporting/submittal changes.	Active	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
November 2, 2000 Plan of Operation Update Approval			
1	POU submitted every 10 yrs.	Inactive	
March 29, 2010 Final Cover Construction Documentation Approval			
	Approved construction documentation for 3.1 acres of final cover construction	Inactive	
January 28, 2011 Plan of Operation Update Approval			
	Approved the POU and proposed modifications in the November 12, 2010 POU and December 23, 2010 Addendum No. 1 to the 2010 POU	Active	
1	This approval is limited to a 10-year period beginning on the date of this approval.	Active	
2	A minimum geotextile mass per unit areas of 1,100 grams per square meter (from calculations provide in the report) shall be used to protect the geomembrane beneath the leachate collection pipes from puncture.	Active	
3	The drainage blanket material shall have a minimum hydraulic conductivity of 1 x 10^{-2} cm/sec greater per NR 504.06(5)(tm), Wis. Adm. Code.	Active	
4	The geosynthetic clay liner component of the composite liner shall meet the requirements of NR 504.06(7), Wis. Adm. Code.	Active	
5	The geomembrane component of the composite liner shall have a nominal geomembrane thickness of 60 mils per NR 504.06(3)(a), Wis. Adm. Code.	Active	
6	The constructed liner geomembrane shall be subjected to leak location testing conducted in accordance with NR 516.07(2)(d), Wis. Adm. Code.	Active	
7	The leachate collection lines shall be cleaned per NR 506.07(5)(c), Wis. Adm. Code.	Active	
8	The Department's environmental engineer assigned to the site shall be informed a minimum of one week prior to each of the construction events listed below, in order to allow a Department representative to observe the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the	Superseded by 7/28/23 Plan Mod	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
	time the construction documentation review fee is submitted to the Department. Liner a. Placement of the geosynthetic clay liner (GCL). b. Placement of the geomembrane over the GCL. c. Installation of the leachate collection pipe and pipe boots. d. Placement of drainage blanket material over the geomembrane. Final Cover e. Placement and compaction of the grading layer below the GCL. f. Placement of the GCL. g. Placement of the geomembrane over the GCL. h. Placement of the drainage layer and drain pipe over the geomembrane This condition supersedes Condition 2 of the Department's August 16, 1994 approval.		
9	Prior to acceptance of FGD wastes (SDA ash) WPL shall characterize the waste streams and submit the results to the Department for approval to dispose of this material at the site. The waste characterization shall include, at a minimum, the requirements of NR 506.09, Wis. Adm. Code, the ASTM water leach test or other appropriate leach test, and total elemental analysis (metals). The submittal shall also include a discussion of waste handling and disposal procedures for the material. The results of the characterization may require changes to the landfill liner system, final cover system, leachate disposal, landfill operations and/or environmental monitoring.	Active	
10	Fly ash generated at the Nelson Dewey plant in Cassville is approved for disposed at this facility. If the waste stream generated by the Nelson Dewey facility changes, prior to acceptance WPL shall characterize	Active	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
	the waste stream and submit the results to the Department for approval to dispose of this material at the site. The waste characterization shall include, at a minimum, the requirements of NR 506.08, Wis. Adm. Code, the ASTM water leach test or other appropriate leach test, and total elemental analysis (metals). The results of the characterization may require changes to the landfill liner system, final cover system, leachate disposal, landfill operations and/or environmental monitoring.		
11	Environmental monitoring during both the active and the post-closure perpetual-care periods shall be performed in accordance with the tables in the attached project summary. WPL shall document and submit all results of the environmental monitoring covered in this approval to the Waste and Materials Management Program in accordance with s. NR 507.26, Wis. Adm. Code. This monitoring program supersedes the monitoring programs described in previous approvals.	Active	
12	Revised proof of financial responsibility for closure and long term care shall be provided to the Department by April 1, 2011, in accordance with ch. NR 520, Wis. Adm. Code. The proof of financial responsibility shall be established based upon the approved costs contained in the attached tables.	Inactive	Completed
May 2, 2011, WDNR Clay Liner Recommendation			
	The Department recommends that WPL place 2 feet of clay below the GCL and follow the clay specifications contained in NR 504.06(2)(a), Wis. Adm. Code. The clay borrow source should be investigated as specified in NR 504.075 (5), Wis. Adm. Code.	Active	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
September 14, 2011 Plan of Operation Modification Approval			
	Approved addition of 2 feet of clay to the approved composite liner system and two commercial clay borrow sites	Active	
1	A geologist, geological engineer or soils technician shall be at the clay borrow sources at all times that clay is to be excavated from the sources to identify the liner quality clay.	Active	
2	The clay liner shall be constructed and documented in accordance with NR 516, Wis. Adm. Code.	Active	
3	The Department's environmental engineer assigned to the site shall be informed a minimum of one week prior to each of the construction events listed below, in order to allow a Department representative to observe the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation review fee is submitted to the Department. a. Clay placement	Superseded by 7/28/23 Plan Mod	
February 13, 2012 Liner Construction Documentation Approval			
	Phase 1, Module 2 Construction Documentation approval	Inactive	
1	WPL shall evaluate the leachate/surface water pond capacity prior to Phase 1, Module 3 liner construction to determine if changes are necessary in landfill operations to accommodate the lower pond liner elevation. This evaluation shall be submitted to the Department a minimum of 60 days prior to beginning Phase 1, Module 3 construction.	Inactive	Completed

Table B-1 (cont.)

Condition No.	Description	Status	Comments
December 16, 2014 Plan of Operation Approval Modification			
	Acceptance of Spray Dryer Absorber (SDA) in Module 2/Composite Lined Areas	Active	
1	The SDA waste disposal shall be limited to the areas of the landfill that have a composite liner system as approved in the Department's September 14, 2011 plan of operation approval modification and January 28, 2011 plan of operation approval.	Active	
2	WPL shall submit a report to the Department within 180 days of the date of this approval that includes: how the moisture content limits the range of compaction; what compaction methods work; and what test methods will be used to determine that the target densities have been achieved. The report shall also address the effects of seasonal conditions on densities.	Active	
3	Environmental monitoring during both the active and the post-closure perpetual-care periods shall be performed in accordance with the attached tables. WPL shall document and submit all results of the environmental monitoring covered in this approval to the Waste and Materials Management Program in accordance with s. NR 507.26, Wis. Adm. Code. This condition supersedes condition 11 of the Department's January 28, 2011 approval.	Superseded by 7/28/23 Plan Mod	
February 20, 2015 Expedited Plan Modification for SDA Byproduct			
	Acceptance of SDA material in Module 1 – rescinds Condition 1 of Department's December 14, 2014 plan of operation approval modification.	Active	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
November 13, 2015 Plan of Operation Approval			
	New Haven Clay Borrow Source Approved	Active	
1	At all times during clay excavation, a 25-foot setback shall be maintained between the clay borrow area disturbance and the boundary of the delineated wetlands except in the area of the access road.	Active	
2	Any accumulated sediment shall be removed from the silt fences and any repairs necessary to the silt fencing shall be made as soon as practicable after each rain event.	Active	
3	A geologist, geological engineer or soils technician shall be at the clay borrow sources at all times that clay is to be excavated from the sources to identify the liner quality clay.	Active	
4	Alliant Energy shall notify the Department's waste management engineer assigned to this site a minimum of 1 week prior to beginning each of the construction events listed below for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation review fee is submitted to the Department. a. Clay excavation activities at the borrow source for Phase 1.	Active	
July 1, 2016 Plan of Operation Approval Modification			
	Rain Cover System	Active	
1	WPL shall evaluate the leachate/surface water pond capacity prior to Phase 1, Module 4 liner construction to determine if changes are necessary in landfill operations or design to accommodate the additional leachate to be generated by Phase 1, Module 4. The evaluation and proposed operational/design modifications shall be submitted to the Department a	Inactive	Completed

Table B-1 (cont.)

Condition No.	Description	Status	Comments
	minimum of 90 days prior to beginning Phase 1, Module 4 construction.		
August 22, 2016 Phase 1, Module 3 Liner Construction Documentation Approval			
	Approved construction of Phase 1, Module 3 Liner	Inactive	
January 25, 2017 2016 Final Cover Construction Documentation Approval			
	Approved construction of 2.8 acres of final cover in Phase 1, Module 1 and 2	Inactive	
June 6, 2018 Rain Cover System, Plan of Operation Approval Modification			
1	For future modules, the preconstruction report shall contain the storm water calculations performed to determine if a rain cover is needed or not.	Active	
2	If a rain cover is required in a module, the preconstruction report shall contain the rain cover product identification, material properties, and installation recommendations from the manufacturer.	Active	
3	If a rain cover is required in a module, the installed limits of the rain cover shall be surveyed and provided along with photographic documentation of the installation in the construction documentation report for each module, or as an addendum to the construction documentation report.	Active	
July 13, 2018, New Haven Clay Borrow Monitoring Well Abandonment Exemption			
--	Approved use of bentonite chips for abandonment of MW-26P	Inactive	
September 14, 2018 Phase 1, Module 4 Liner Construction Documentation Approval			
	Approved construction documentation for approx. 4.2 acres of liner of Module 4, also included installation of three CCR groundwater monitoring wells, restoration of Phase 1 excavation at New Haven clay borrow source per the nonmetallic mining reclamation permit from Adams County, abandonment of MW-26 and MW-26P	Inactive	
1	A report shall be submitted to the department within 10 days of completion of the removal of the Phase 1, Module 3/Module 4 berm geomembrane and the connection of the north/south leachate collection pipe. The work shall be completed prior to any waste placement in Phase 1, Module 4.	Inactive	Completed

Table B-1 (cont.)

Condition No.	Description	Status	Comments
March 13, 2020 No Objection to the Expedited Plan Modification, 10-Year Plan of Operation Update Extension			
	The expedited plan modification was requested under s. NR 514.09(1)(a)10, Wis. Adm. Code, regarding a 1-year extension to Condition 1 of the department's January 28, 2011 plan of operation approval modification. The extension would provide WPL with additional time to consider operational and regulatory changes that are anticipated in 2020. WPL will continue to operate the landfill in accordance with all other conditions of the January 28, 2011 approval, as amended and updated by subsequent approvals from the department.	Superseded	
March 19, 2021 No Objection to the Expedited Plan Modification, Disposal of Filter Bags and Plan of Operation Update Extension			
	Approval to dispose Pulse Jet Fabric Filter (PJFF) bags in the landfill during an upcoming maintenance outage at the plant. The PJFF bags are used to capture particulate matter (scrubber byproduct solids) within the Air Quality Control System (AQCS) baghouse. Landfill operators will create a disposal area within the center of the module and will landfill the waste in consolidated area to prevent future leachate migration and stability concerns. Operators would spray water during transfer of the waste into the disposal area, as needed, to minimize fugitive dust.	Active	
	Extension would be in addition to the 1-year extension previously approved by the department on March 13, 2020. WPL will continue to operate the landfill in accordance with all other conditions of the January 28, 2011 approval, as amended and updated by subsequent approvals from the department.	Active	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
November 30, 2021 Conditional Plan of Operation Approval Modification for Updated Closure and Long-Term Care Costs			
	Approval of the requested modification to the plan of operation for updated closure and long-term care costs		
1	Revised proof of financial responsibility for closure and long-term care shall be established in accordance with ch. NR 520, Wis. Adm. Code, within 120 days of the date of this approval. The proof of financial responsibility shall be established based upon the approved closure and long-term care cost estimates included in the attached Tables 1 and 2.	Active	
2	Revised closure and long-term care costs shall be included in the 10-year plan of operation update which is due by January 28, 2024. The costs shall reflect changes to leachate collection and management due to the closure of the primary ash pond where the leachate is currently managed.	Active	
December 10, 2021 Phase 1, Modules 5 and 6 Liner Construction Documentation Approval			
	Approved construction of Phase 1, Modules 5 and 6 Liner	Inactive	
July 28, 2022 Conditional Plan of Operation Approval Modification for the 10-year Update			
1	All leachate pumps and flow recording devices shall be maintained to ensure that leachate is pumped out of the landfill as required and the reported flows are accurate.	Active	
2	In case of leachate extraction pump malfunction, the pump shall be repaired or replaced in a timely manner to allow for gravity drainage of leachate in accordance with s. NR 506.07(5), Wis. Adm. Code.	Active	
3	WPL shall submit abandonment documentation for the leachate head wells in Modules 3 and 4 (LH-3 and LH-4); documentation is due to the department within 90 days of being abandoned.	Completed	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
July 28, 2022 Conditional Plan of Operation Approval Modification for the 10-year Update (continued)			
4	WPL shall install two leachate headwells per module for Modules 10 and 11 per NR 504.09(2)(i), Wis. Adm. Code.	Completed	
5	WPL shall submit leachate tank manufacture installation instruction and pump performance criteria per NR 514.07(13), Wis. Adm. Code prior to tank installation.	Active	
6	WPL shall submit an operational plan which addresses the care and maintenance of the tanks and pumps, by February 1, 2023. The plan shall also address the means to monitor the tank and manholes secondary containment systems.	Active	
7	WPL shall submit construction documentation for the installation of leachate manholes, leachate forcemain and leachate storage tank, per s. NR 516.04, Wis. Adm. Code.	Active	
8	WPL shall submit the design for the construction of Module 12 liner or submit a proposal for removal of the liner runout from Module 11 and timing of construction of the north berm for Module 11, by February 1, 2023.	Active	
9	The Department's waste management engineer assigned to this site shall be notified a minimum of one week prior to beginning each of the construction events listed below for the purpose of allowing the department to inspect the work. A fee shall be paid to the department for each required inspection in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation review fee is submitted to the department. Liner Construction Events a. Sub-base grade excavation and storm water controls b. Clay placement	Active	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
	c. Geocomposite clay liner/geomembrane deployment d. Sump construction/side slope riser placement e. Drainage blanket placement/leachate line installation f. Leak location survey and/or repairs Final Cover Construction Events g. Geosynthetic clay liner installation h. Geomembrane cap installation/seaming i. Drainage layer installation (sand or geocomposite) j. Rooting zone and topsoil placement Other Construction Events k. Leachate forcemain/Modules 2 and 3 manholes l. Leachate storage tanks and secondary containment structures This condition supersedes condition 8 of the department's January 28, 2011, approval and condition 3 of the department's September 14, 2011, approval.		
10	Environmental monitoring shall be performed in accordance with the attached Table 1. WPL shall document and submit all results of the environmental monitoring covered in this approval in accordance with s. NR 507.26, Wis. Adm. Code. This condition supersedes condition 3 of the department's December 16, 2014, approval.	Active	
11	Proof of financial responsibility for closure and long-term care shall be adjusted in accordance with ch. NR 520, Wis. Adm. Code, within 60 days of the date of this approval. The proof of financial responsibility shall be established based upon the approved closure and long-term care cost estimates included in the attached Tables 2 and 3.	Active	

Table B-1 (cont.)

Condition No.	Description	Status	Comments
May 30, 2023 Phase 2, Modules 10 and 11 Liner Construction Documentation Approval			
1	Within 30 days of completion, a letter documenting the installation of the following items shall be submitted to the department for concurrence: a. Installation of an electrical transformer and underground utility east of Module 10 to power the leachate collection pumps. b. Installation of the leachate collection pump system, including force main piping, vaults, and electrical components. c. Installation of telemetry and transducers to leachate headwells in Phase 2, Modules 10 and 11.	Active	

Appendix C

Stormwater Management Items

C.1 Facility's Current WPDES Permit

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM
WPDES Permit No. WI-S067831-6

In compliance with the provisions of ch. 283, Wis. Stats., and chs. NR 151 and 216, Wis. Adm. Code, a landowner of a construction site engaging in land disturbing construction activities including clearing, grading and/or excavating, but excluding storm water discharges within Indian Country, that discharges

STORM WATER ASSOCIATED WITH LAND DISTURBING CONSTRUCTION ACTIVITY

is authorized to discharge storm water to waters of the state provided that the discharge is in accordance with the conditions set forth in this permit.

Unless notified in writing by the Department of Natural Resources (department) to the contrary, the effective date of coverage under this permit is 14 working days after an applicant's complete Notice of Intent has been received by the department.

Permit coverage continues until submittal of a Notice of Termination for a project and terminates upon written confirmation by the department. The maximum period of permit coverage for any project is limited to 3 years per Notice of Intent. Therefore, after 3 years of initial permit coverage, the permittee is no longer authorized to discharge under this permit unless another Notice of Intent for the original project including the application fee is submitted to retain coverage under this permit or a reissued version of this permit.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____ September 30, 2021
Brian Weigel, Director Date
Bureau of Watershed Management

PERMIT EFFECTIVE DATE: October 1, 2021 **EXPIRATION DATE:** September 30, 2026

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1. APPLICABILITY CRITERIA

1.1 Eligibility

1.1.1 Subject to the provisions of sections 1.1.3, 1.1.4 and 1.2.1 through 1.2.6:

1.1.1.1 Under the applicability criteria in s. NR 216.42, Wis. Adm. Code, this general Wisconsin Pollutant Discharge Elimination System (WPDES) permit is applicable to all new and existing storm water discharges from land disturbing construction activity occurring after the effective date of this permit until permit coverage is terminated in accordance with section 2.7 or automatically terminates under section 2.8. Construction activities eligible for coverage by this permit are those that involve land disturbing construction activity affecting or anticipated to affect one acre or more of land.

1.1.1.2 The department may require the landowner of any storm water discharge associated with land disturbing construction activity to apply for and obtain a storm water discharge permit if the storm water discharge is contributing to the violation of a water quality standard or contributing significant pollution to waters of the state.

1.1.2 This permit also authorizes pit and trench dewatering discharges at a construction site covered under this permit subject to the following conditions:

1.1.2.1 Dewatering is from a trench or pit not meeting the definition of a well as defined under s. 281.34(1)(h), Wis. Stats., and regulated under ch. NR 812, Wis. Adm. Code.

1.1.2.2 Dewatering discharge is treated in accordance with the department's sediment control dewatering technical standard 1061 or equivalent methodology.

1.1.2.3 Dewatering is not from an area subject to remedial action operations or from an area containing contamination that would be subject to remedial action operations.

Note[1]: Examples of some dewatering activities that may be regulated by this permit include dewatering of construction pits, sewer extension construction, pipe trenches, and other similar operations. The department's sediment control dewatering technical standard 1061 is available at: https://dnr.wi.gov/topic/stormwater/standards/const_standards.html.

Note[2]: Dewatering well systems with a combined pumping capacity of 70 gallons per minute or more may require temporary high capacity dewatering well approval. Dewatering well systems must meet the requirements of ch. NR 812, Wis. Adm. Code.

Note[3]: Discharges from dewatering well systems may require coverage under a wastewater general permit for dewatering operations. The wastewater permit for dewatering operations is available at: https://dnr.wisconsin.gov/sites/default/files/topic/Wastewater/WI0049344permit.pdf.

Note[4]: Dewatering discharges at construction sites or properties where there is environmental pollution and/or a discharge of a hazardous substance subject to regulation under chs. 289 or 292, Wis. Stats, may require additional approvals and be subject to the Contaminated Groundwater from Remedial Action Operations General Permit (WI-0046566-07-0). Chapter 292, Wis. Stats., defines "remedial action."

1.1.3 This permit authorizes storm water discharges from land disturbing construction activities

that may become mixed with other storm water discharges. Subject to compliance with the terms and conditions of this permit, storm water discharges from temporary support activities such as portable concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas are authorized under this permit provided that the support activity is directly related to and part of the construction site covered under this permit. The erosion control plan required under section 3.1 of this permit shall include provisions to prevent and control the discharge of pollutants to waters of the state from any temporary support activity. This permit does not authorize a support activity that is a commercial operation serving multiple unrelated construction sites or that operates beyond the completion of the permitted construction site associated with the support activity. Other storm water or wastewater discharges that require coverage under another general or individual WPDES permit are not authorized under this permit such as wastewater discharges from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials; fuels, oils and other pollutants used in vehicle operation and maintenance; and soaps or solvents used in vehicle and/or equipment washing.

1.1.4 Storm water discharges associated with industrial activity that are subject to an industrial storm water WPDES permit or which are issued an individual WPDES construction site storm water discharge permit are not authorized by this permit.

Note: For example, non-metallic mining is an industrial activity that includes land disturbance as a normal part of its operation and such land disturbance is regulated under an industrial stormwater permit for that activity. If an industrial facility underwent construction or expanded its operations and land disturbance is not a normal part of its operations, then coverage under this permit would be applicable.

1.1.5 This general permit does not apply to construction sites otherwise eligible for this permit where the department determines, pursuant to s. NR 216.51(5), Wis. Adm. Code, that coverage under an individual WPDES storm water discharge permit is more appropriate. The department may require individual permit coverage for storm water discharge from a construction site otherwise eligible for coverage under this permit if any of the following occur:

1.1.5.1 The storm water discharge from a construction site is determined to be a significant source of pollution and more appropriately regulated by an individual WPDES storm water discharge permit.

1.1.5.2 The storm water discharge from a construction site is not in compliance with the terms and conditions of this general permit or subch. III of ch. NR 216, Wis. Adm. Code.

1.1.5.3 A change occurs in the availability of demonstrated technology or best management practices (BMPs) for the control or abatement of pollutants from the storm water discharge.

1.1.5.4 Effluent limitations or standards are promulgated for a storm water discharge from the construction site different from the conditions contained in ch. 216, Wis. Adm. Code.

1.2 Exclusions

The following are not eligible for coverage under this permit:

1.2.1 Storm water discharges within Indian Country.

Note: Indian County is defined under 18 USC §1151 and includes all lands within the exterior boundaries of federally recognized Indian reservations and on lands held in federal trust status. Facilities that are located within Indian Country should contact the United States Environmental Protection Agency (USEPA) to apply for permit coverage. Dischargers that previously held permit coverage under previous versions of this permit are no longer eligible for coverage under this permit and must contact USEPA to apply.

USEPA's website contains information on the Construction General Permit: https://www.epa.gov/npdes/stormwater-discharges-construction-activities. Proposed discharges within Indian country who are seeking coverage under the NPDES construction permit should verify eligibility for coverage under the general permit. Discharges not eligible may require individual permits from USEPA.

1.2.2 Land disturbing construction activity and associated storm water discharges that affect wetlands, unless the department determines that the land disturbing construction activity and associated storm water discharges comply with the wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code. A landowner applying for permit coverage under section 2.1 shall provide information to the department with the application documenting whether wetlands are present in the project area and how the presence or absence of wetlands was determined. The storm water management plan in section 3.4.3 shall include the technical basis for the chosen BMPs and describe how the chosen practices do not cause adverse impacts to receiving water quality.

Note: The department's wetland screening and delineation procedures are available at: https://dnr.wi.gov/topic/stormwater/construction/.

1.2.3 Land disturbing construction activity and associated storm water discharges that affect endangered and threatened resources, unless the department determines that the land disturbing construction activity and associated storm water discharges comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

1.2.4 Land disturbing construction activity and associated storm water discharges that affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the department determines that the land disturbing construction activity and associated storm water discharges will not have an adverse effect on any historic property pursuant to s. 44.40(3), Wis. Stats.

1.2.5 Storm water discharges that the department, prior to authorization of coverage under this permit, determines will cause or have reasonable potential to cause or contribute to an excursion above any applicable water quality standard. Where such determinations have been made prior to authorization, the department may notify the applicant that an individual permit application is necessary.

1.2.6 Storm water discharges from transportation activity carried out under the direction and supervision of the Wisconsin Department of Transportation.

Note: "Transportation activity" has the meaning given in s. 30.2022(1g), Wis. Stats. Section 283.33(4m)(b)1., Wis. Stats., directs the Department of Natural Resources to issue a distinct general permit that authorizes the Department of Transportation to discharge storm water from

the site of a transportation activity.

1.3 Authorization

1.3.1 A landowner planning a land disturbing construction activity of one acre or more shall submit a completed Notice of Intent (NOI) to the department in accordance with the requirements of section 2.1 of this permit to be authorized to discharge storm water under this permit.

1.3.2 Only a landowner or person who becomes a qualified landowner, and who submits an NOI in compliance with section 2 of this permit is authorized to discharge storm water from a land disturbing construction activity of one acre or more under the terms and conditions of this permit.

1.4 More than One General Permit Can Apply

This permit may be issued to existing holders of general or individual WPDES permits, resulting in multiple WPDES permits for some sites. Facilities having other permits which do not regulate storm water discharges from land disturbing construction activities shall be subject to this permit when construction activities will disturb one acre or more of land at the site. However, storm water discharges from land disturbing construction activity associated with the normal operation of an industrial facility do not require coverage under this permit when it is regulated under an industrial storm water permit pursuant to subch. II of NR 216, Wis. Adm. Code.

1.5 Transfers

A permittee who does not intend to control the permitted activities on the site may transfer authorization under this permit to the person who will control the permitted activities. The transfer shall occur upon written notification, signed by both the current permittee and the proposed permittee and sent via certified or registered mail to the department. Unless the department notifies the permittee to the contrary, the department will recognize this permit coverage transfer upon receipt of written notification. The department may require additional information to be filed prior to granting the transfer of permit coverage. The department may, if appropriate, require an application for an individual WPDES storm water discharge permit.

Note: Transfer of permit coverage may not occur where the original landowner still owns a portion of the construction site that requires permit coverage. Where multiple landowners are required to have construction site permit coverage, each must file an NOI with the department. Multiple landowners may utilize the same erosion control and storm water management plans if the plans address the specific needs of the construction site that they own.

Note: The Transfer of Coverage form (Form 3400-222) is available on the department's website at: https://dnr.wisconsin.gov/topic/Stormwater/construction/forms.html.

1.6 Authorized Local Program

Section NR 216.415, Wis. Adm. Code, establishes the requirements for a municipal authorized local program. The landowner of a construction site regulated by an authorized local program shall comply with this section 1.6.

Note: Currently, Waukesha County is the only municipality with an authorized local program conditionally-approved by the department. The department will not approve any other municipal authorized local program until revisions to the applicable sections of ch. NR 216, Wis. Adm. Code, are promulgated.

1.6.1 Unless otherwise directed by the department, a landowner regulated by an authorized local program shall comply with the ordinances established by the authorized local program and reviewed by the department as part of the establishment and management of the authorized local program. For Waukesha County, the ordinances are contained in Chapter 14, article VIII of the County Code of Ordinances (available at: https://www.waukeshacounty.gov/globalassets/parks--land-use/land-conservation/stormwater/final-2005-storm-water-ordinance---waukesha-co-web-version.pdf).

1.6.2 Notwithstanding the establishment of an authorized local program, a landowner regulated by an authorized local program who has submitted a permit application in accordance with section 1.6.3 shall comply with this permit. The department may enforce against the landowner of a construction site for a violation of this permit.

1.6.3 A landowner regulated by an authorized local program shall comply with the application requirements established by the authorized local program under s. NR 216.415(6), Wis. Adm. Code.

1.6.4 If an authorized local program is terminated pursuant to s. NR 216.415(10), Wis. Adm. Code, the department will notify an affected landowner in writing with instructions on how to remain in compliance with this permit.

2. NOTICE OF INTENT, NOTICE OF TERMINATION, AND MINIMUM CONTROL REQUIREMENTS

2.1 Application Procedures

2.1.1 Except as provided in section 1.6.3, a person required to obtain coverage under this permit (applicant) for storm water discharge from a construction site shall submit a completed NOI to the department in accordance with the requirements of subch. III of ch. NR 216, Wis. Adm. Code. At a minimum, the applicant shall submit the completed NOI to the department in accordance with the requirements of this section, at least 14 working days prior to beginning any land disturbing construction activities. The department may confer permit coverage within the 14 working days or may withhold permit coverage beyond 14 working days to request additional information or to review project compliance with erosion control, storm water management, wetland protection, endangered and threatened resources, or historic property requirements. In either case, the department will notify the applicant in writing. The applicant shall submit the NOI electronically through the department's construction site electronic application process. The Notice of Intent requires applicants to provide information on the applicant, facility location, and applicable information pursuant to ss. NR 216.46 and NR 216.47 Wis. Adm. Code.

Note: The department's construction site electronic application process webpage is available at: http://dnr.wi.gov/topic/Stormwater/construction/forms.html. For applicants with no computer capability, the department may accept a paper version of the NOI application on a case-by-case basis. The paper application must be obtained directly by contacting the department at 888-936-7463 or by writing to the Wisconsin DNR, Storm Water Program – WT/3, Box 7921, Madison, Wisconsin 53707-7921. Submittal of the paper application must be accompanied by a letter from the department approving its use.

2.1.2 The applicant shall submit erosion control and storm water management plans as described in Section 3 of this permit to the department as required by s. NR 216.44(2), Wis. Adm. Code, with the NOI.

2.1.3 The applicant shall submit the application fee to the department in accordance with s. NR 216.43(2), Wis. Adm. Code.

2.1.4 The NOI form shall be signed in accordance with s. NR 216.43(3), Wis. Adm. Code.

2.2 Permit Certificate

The permittee shall post the permit certificate (DNR Publication # WT-813 rev. 10/11) in a conspicuous place on the construction site. The department will provide the permit certificate to the permittee with the letter of permit coverage.

Note: The requirement to post the permit certificate in a conspicuous place on the construction site is intended to provide the public an easily accessible and viewable document with contact information for the construction site. The department recommends posting the certificate near each main entrance to the construction site in a location where it is legible from a public right-of-way. Permittees should consider providing sufficient weather protection to avoid the certificate from becoming unreadable.

2.3 Failure to Notify

Persons who fail to notify the department of their intent to be covered under this permit and who discharge storm water to waters of the state associated with land disturbing construction activities of one acre or more, are in violation of ch. 283, Wis. Stats., ch. NR 216, Wis. Adm. Code. Failure to

obtain permit coverage may result in forfeitures of up to $10,000 per day, pursuant to s. 283.91(2), Wis. Stats.

2.4 Incomplete Notice of Intent

Within 14 working days after the date the department receives the NOI, the department may require an applicant to submit data necessary to complete any deficient NOI or may require the applicant to submit a complete new NOI when the deficiencies are extensive or the appropriate application process has not been used.

2.5 Date Coverage Effective

Unless notified by the department to the contrary, applicants who submit a complete NOI in accordance with the provisions of subch. III of ch. NR 216, Wis. Adm. Code, are authorized to discharge storm water from land disturbing construction sites under the terms and conditions of this permit 14 working days after the date the department receives the NOI. The department may deny coverage under this permit and require submittal of an application for an individual WPDES permit based on a review of the completed NOI or other information.

2.6 Use of Information

All information contained in the NOI other than that specified as confidential by the department shall be available to the public. Confidential treatment will be considered only for information identified in documents submitted by the applicant separate from non-confidential information which meets the requirements of s. 283.55(2)(c), Wis. Stats., and for which written application for confidentiality has been made pursuant to s. NR 2.19, Wis. Adm. Code.

2.7 Notice of Termination

Permittees shall submit a Notice of Termination (NOT) to the department within 45 days after a construction site has undergone final stabilization, temporary sediment control practices have been removed and all land disturbing construction activities that required coverage under this permit have ceased. The NOT shall be submitted consistent with all of the following:

2.7.1 The permittee shall submit the NOT on the electronic form available from the department.

Note: Electronic forms are available at https://dnr.wisconsin.gov/topic/Stormwater/construction/forms.html. For applicants with no computer capability, the department may accept a paper version of the NOT on a case-by-case basis. The paper form must be obtained directly by contacting the department at 888-936-7463 or by writing to the Wisconsin DNR, Storm Water Program – WT/3, Box 7921, Madison, Wisconsin 53707-7921. Submittal of the paper form must be accompanied by a letter from the department approving its use.

2.7.2 The Permittee shall sign the NOT form in accordance with s. NR 216.43(3), Wis. Adm. Code.

2.7.3 The department shall use the information submitted with the NOT as basis for confirming or denying termination of coverage.

2.7.4 The department shall provide written confirmation of permit coverage termination to the permittee. Termination of coverage shall not be effective until the department provides confirmation to the permittee.

2.8 Permit Coverage Renewal and Automatic Termination

The maximum period of permit coverage for any project is limited to three years per NOI. After three years of initial permit coverage, the permittee is no longer authorized to discharge under this permit unless renewal of coverage is granted by the department. A permittee may request renewal of coverage under this permit or a reissued version of this permit by submitting an electronic form to the department and paying the application fee for the total area of project disturbance. Reapplication for coverage must occur prior to the end of the three-year period. Unless a permittee renews permit coverage, the department may automatically terminate the initial permit coverage after three years. The permittee is responsible for determining whether a renewal of permit coverage is necessary.

2.9 Minimum Control Requirements

The permittee shall design, install, and maintain BMPs to meet the applicable performance standard in either s. NR 151.11, Wis. Adm. Code, for construction sites that are not transportation facilities or s. NR 151.23, Wis. Adm. Code, for transportation facility construction sites.

2.9.1 Evaluation and implementation of BMPs

The permittee shall utilize the following BMPs:

2.9.1.1 Limiting the size and duration of exposed soil areas subject to erosion via staging of land disturbance. This includes temporary stabilization of areas that will not be subject to further land disturbance during winter months.

2.9.1.2 Develop a spill prevention and response plan.

2.9.1.3 Encourage infiltration through maintaining natural buffers around surface waters and directing storm water to vegetated areas.

2.9.1.4 Utilizing BMPs for which the department has developed technical standards or equivalent methodology.

Note**:** The storm water technical standards are available on the department's internet site at: https://dnr.wi.gov/topic/stormwater/standards/.

2.9.2 BMP Design

The permittee shall consider all of the following factors when designing BMPs:

2.9.2.1 The expected amount, frequency, intensity, and duration of precipitation.

2.9.2.2 The nature of storm water runoff and run-on at the site. Factors such as expected flow from impervious surfaces, slopes, and site drainage features shall be considered. Best Management Practices shall be designed to meet the applicable requirements for erosion and sediment control and post- construction storm water management.

2.9.2.3 The soil type and range of soil particle sizes expected to be present on the site.

2.9.2.4 Both existing and proposed topography.

Note**:** Clearing, grubbing, and topsoil stripping are types of land disturbance that usually occur before mass grading. Therefore, temporary controls are needed for features that are present in existing topography that may not be present in proposed topography.

2.9.2.5 The proposed construction schedule, if known.

2.9.2.6 Good engineering design practices, including use of applicable technical standards or their or equivalent methodology.

2.9.3 Installation of BMPs

The permittee shall install the following by the time each phase of construction activities has begun:

2.9.3.1 Before land disturbing construction activities in any portion of the site begins, install and direct water to any erosion or sediment controls that prevent or treat discharges from the initial site clearing, grading, excavating, and other land disturbing construction activities.

Note: The requirement to install BMPs prior to each phase of construction activities for the site does not apply to the land disturbance associated with the actual installation of these BMPs. The permittee shall take all reasonable actions to minimize the discharges of pollutants during the installation of storm water BMPs.

2.9.3.2 Following the installation of these initial controls, install and direct water to all BMPs needed to control discharges prior to subsequent land disturbing activities.

2.9.4 Maintenance of BMPs

The permittee shall ensure that all BMPs are maintained and remain effective operating condition during permit coverage and are protected from activities that would reduce their effectiveness. The permittee shall**:**

2.9.4.1 Follow any specific maintenance requirements for the BMPs used to comply with this permit.

2.9.4.2 Initiate any needed maintenance work so that it is completed by the close of the next business day. The permittee shall repair or replace storm water BMPs as necessary within 24 hours of an inspection performed in accordance with section 4.5 of this permit or after notification by the department that repair or replacement is needed.

Note: A permittee's operator may assist a permittee to comply with these provisions where the operator has a contract or other agreement with the permittee to meet these requirements.

2.9.5 Corrective Actions

If a selected BMP is ineffective in meeting the requirements of this permit, the permittee shall comply with the corrective action requirements in section 3.3.

2.9.6 Compliance with Runoff Management Performance Standards

The permittee shall comply with the construction site performance standards in s. NR 151.11(6m), (7) and (8), Wis. Adm. Code, for construction sites that are not transportation facilities or s. NR 151.23(4m),(5) and (6), Wis. Adm. Code, for transportation facility construction sites. The BMPs installed to meet the performance standards shall be maintained to meet the control and/or treatment capability of the practice. In accordance with section 3.2.6 of this permit, the permittee shall ensure that any permanent structures installed to meet a post- construction performance standard in ss. NR 151.121 to 151.128, Wis. Adm. Code, or ss. NR 151.241 to 151.248, Wis. Adm. Code, are maintained to meet the treatment capability as designed.

2.9.7 Unauthorized Discharges

This permit authorizes storm water discharges from land disturbing construction activities that may become mixed with other storm water discharges. Other storm water or wastewater discharges that require coverage under another general or individual WPDES permit are not authorized under this permit such as wastewater discharges from washout and cleanout of concrete, paint, form release oils, curing compounds and other construction materials; fuels, oils and other pollutants used in vehicle operation and maintenance; and soaps or solvents used in vehicle and/or equipment washing.

3. EROSION CONTROL AND STORM WATER MANAGEMENT PLANS

3.1 Erosion Control Plan Requirements

The landowner or applicant shall develop a site-specific construction site erosion control plan for each construction site regulated under subch. III of ch. NR 216, Wis. Adm. Code. The erosion control plan shall include all of the following:

3.1.1 Description of the construction site and the nature of the land disturbing construction activity, including representation of the limits of land disturbance on a USGS 7.5-minute series topographical map or equivalent.

Note: The map requirement can be met for applicants using the department's electronic permit submittal process that includes an outline of the disturbed area on the surface water data viewer, or submits a shape file with the outline as required in the application process.

3.1.2 Description of the intended timing and sequence of major land disturbing construction activities for major portions of the construction site, such as grubbing, excavating, or grading.

Note: The department encourages inclusion of a staging map, dividing sites into smaller areas with proposed dates for start of land disturbance in each area, start of temporary stabilization, and final stabilization for each area on the map. This staging map is strongly encouraged for all projects expected to have more than 50 acres of land disturbance or land disturbance extending more than 24 months from initial disturbance to final stabilization.

3.1.3 Estimates of the total area of the construction site and the total area that is expected to be disturbed by construction activities.

3.1.4 Available data describing the surface soil as well as subsoils.

3.1.5 Name of immediate named receiving water from the USGS 7.5-minute series topographic maps or department surface water data viewer, and whether the receiving water is an outstanding resource water (ORW), exceptional resource water (ERW), or an impaired water. See Section 4.2 to 4.4 for additional requirements related to designated surface waters.

Note: ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code, respectively. Also, a list of ORWs and ERWs may be found on the department's internet site at: https://dnr.wi.gov/topic/surfacewater/orwerw.html.

3.1.6 Description of BMPs and actions that together meet the applicable performance standard in either s. NR 151.11, Wis. Adm. Code, for construction sites that are not transportation facilities or s. NR 151.23, Wis. Adm. Code, for transportation facility construction sites. If BMPs cannot be designed and implemented to meet the sediment reduction performance standard, the construction site erosion control plan shall include a written and site-specific explanation of why the performance standard is not attainable.

Note: Department-approved erosion and sediment control technical standards can be obtained through the department's storm water internet site at: https://dnr.wi.gov/topic/stormwater/standards/const_standards.html.

3.1.7 The construction site erosion control plan shall include a description of appropriate erosion and sediment control BMPs that will be installed and maintained at the construction site to prevent or reduce pollutants from reaching waters of the state. The construction site erosion control plan shall clearly describe the appropriate erosion and sediment control BMPs for each major land disturbing construction activity and the timing during the period of land disturbing construction activity that the erosion and sediment control BMPs will be implemented. Erosion and sediment control BMPs shall be implemented in accordance with either s. NR 151.11(8), Wis. Adm. Code, for construction sites that are not transportation facilities or s. NR 151.23(6), Wis. Adm. Code, for transportation facility construction sites. The description of erosion and sediment control BMPs shall include the following minimum requirements:

3.1.7.1 Description of interim and permanent stabilization practices, including a schedule for implementing the practices. The construction site erosion control plan shall ensure that existing vegetation is preserved where feasible and that disturbed portions of the construction site are stabilized as soon as practicable.

3.1.7.2 Description of any structural practices to divert flow away from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from the construction site.

3.1.7.3 Management of overland flow at all areas of the construction site, unless otherwise controlled by outfall controls.

3.1.7.4 Trapping of sediment in channelized flow.

3.1.7.5 Staging land disturbing construction activities to limit exposed soil areas subject to erosion.

3.1.7.6 Protection of downslope drainage inlets where they occur.

3.1.7.7 Prevent tracking of sediment from the construction site onto roads and other paved surfaces.

3.1.7.8 Prevent the discharge of sediment as part of site de-watering.

3.1.7.9 Protect separate storm drain inlet structures from receiving sediment.

3.1.7.10 Clean up of off-site sediment deposits.

3.1.7.11 Stabilization of drainage ways.

3.1.7.12 Prevent the discharge of sediment eroding from soil stockpiles existing for more than 7 days.

3.1.7.13 Prevent the transport by runoff into waters of the state of untreated wash water from vehicle and wheel washing.

3.1.7.14 Installation of permanent stabilization practices as soon as possible after final grading.

3.1.7.15 Description of erosion and sediment control practices put in place for the winter to prevent soil from leaving the construction site during periods of winter and spring thaw and rains.

3.1.7.16 Description of the expected level of sediment control on the construction site that achieves compliance with s. NR 151.11 or 151.23, Wis. Adm. Code, where applicable. The construction site erosion control plan shall document compliance with the 5 tons per acre per year sediment performance standard using the procedures provided by the department to estimate soil loss and sediment discharge from sheet and rill erosion and measures to limit sediment discharge from concentrated flows and steep slopes. This requirement is in addition to providing the minimum control measures in subsections of 3.1.7 of this permit and is not intended to result in reduction of erosion and sediment control measures.

Note: The department developed the Construction Site Soil Loss and Sediment Discharge Calculation Guidance, dated September 2017. This guidance document establishes a procedure to document compliance with the 5 tons per acre per year sediment performance standard for construction sites. The guidance is available on the department's internet site at: https://dnr.wi.gov/topic/stormwater/publications.html.

3.1.7.17 Use and storage of chemicals, cement and other compounds and materials used on the construction site shall be managed during the construction period to prevent their transport by runoff into waters of the state.

3.1.7.18 Minimization of dust to the maximum extent practicable.

3.1.7.19 Minimization of soil compaction and preservation of topsoil.

3.1.7.20 Minimization of land disturbing construction activity on slopes of 20% or more.

3.1.7.21 Spill prevention and response procedures.

3.1.7.22 Additional items necessary to address site-specific conditions.

3.2 Erosion Control Map The construction site erosion control plan shall include a site map with the following items:

3.2.1 Existing topography and drainage patterns, roads and surface waters.

Note: Contour maps at 1- or 2-foot intervals are preferred. Many counties have topographic information available in geographic information system format.

3.2.2 Boundaries of the construction site.

3.2.3 Drainage patterns and approximate slopes anticipated after major grading activities.

Note: Proposed contour maps at 1- or 2-foot intervals are preferred.

3.2.4 Areas of soil disturbance.

3.2.5 Location of erosion and sediment control BMPs identified in the construction site erosion control plan.

3.2.6 Location of areas where stabilization practices will be employed.

3.2.7 Areas that will be vegetated following land disturbing construction activities.

3.2.8 Area and location of wetland acreage on the construction site and locations where storm water is discharged to a surface water or wetland within one-quarter mile downstream of the construction site.

3.2.9 Areas that will be used for infiltration of post-construction storm water runoff.

3.2.10 A method of referencing locations within the site, such as an alphanumeric or equivalent coordinate system for the entire construction site.

3.2.11 Additional items necessary to depict site-specific conditions.

Note: The department encourages inclusion of notes communicating erosion and sediment control requirements to those working on the construction site. The department has a list of recommended notes at: https://dnr.wi.gov/topic/stormwater/documents/WTErosionControlNotes.pdf.

3.3 Erosion and Sediment Control Plan Implementation Requirements

The permittee or the permittee's representative shall implement and maintain, as required by this permit and subch. III of NR 216, Wis. Adm. Code, all BMPs specified in the construction site erosion control plan from the start of land disturbing construction activities until final stabilization of the construction site. Implementation shall include all of the following:

3.3.1 Sediment control BMPs shall be constructed and placed in operation prior to runoff entering waters of the state.

Note: While regional treatment facilities are appropriate for control of post-construction pollutants they should not be used for construction site sediment removal.

3.3.2 No solid materials, including building materials, may be discharged in violation of chs. 30 and 31, Wis. Stats., or 33 USC 1344 or a U.S. Army Corps of Engineers Section 404 permit issued under 33 USC 1344.

3.3.3 Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive flow from the structure to a watercourse so that the natural physical and biological characteristics and functions of the watercourse are maintained and protected.

3.3.4 Sediment basins and traps used for sediment removal shall be constructed and operated in accordance with good engineering practices and design standards.

Note: The department maintains technical standards for sediment basin and traps: https://dnr.wisconsin.gov/topic/Stormwater/standards/const_standards.html.

3.3.5 All maintenance shall be done in accordance with technical standards developed pursuant to subch. V of ch. NR 151, Wis. Adm. Code, and the erosion control plan. Where measures are not in accordance with the technical standards, a description of the procedures used to maintain effective operating conditions of vegetation, erosion and sediment control BMPs and other protective measures shall be identified in the erosion control plan.

Note**:** The storm water technical standards are available on the department's internet site at: https://dnr.wi.gov/topic/stormwater/standards/const_standards.html.

3.4 Storm Water Management Plan Requirements

3.4.1 A storm water management plan shall be developed to address pollution caused by storm water discharges from the site after construction is completed, including rooftops, parking lots, roadways and maintained landscaped or grassy areas. A storm water management plan shall be developed prior to submitting a NOI to the department.

Note: The requirements of sections 4.2 to 4.4 of this permit apply to erosion control and storm water management plans for all construction sites regulated under this permit.

3.4.2 The storm water management plan shall meet the applicable performance standards in ch. NR 151, Wis. Adm. Code, as follows:

3.4.2.1 For construction sites that are not transportation facilities, meet the applicable performance standards in ss. NR 151.121 through NR 151.128, Wis. Adm. Code.

3.4.2.2 For transportation facility construction sites, meet the applicable performance standards in ss. NR 151.241 through NR 151.249, Wis. Adm. Code.

3.4.3 The storm water management plan shall include a description of the BMPs that will be installed during the construction process to control total suspended solids and peak flow, enhance infiltration, maintain or restore protective areas and reduce petroleum in runoff that will occur after construction has been completed. The storm water management plan shall include an explanation of the technical basis used to select the BMPs

Note: Storm water management post-construction technical standards developed per Subch. V NR 151, Wis. Adm. Code, can be obtained at: https://dnr.wisconsin.gov/topic/Stormwater/standards/postconst_standards.html. For final stabilization after construction is completed the establishment of a perennial vegetative cover the procedures for permanent seeding in accordance with the department's seeding technical standard 1059 or equivalent methodology shall be followed.

3.4.4 When permanent infiltration systems are used, appropriate on-site testing shall be conducted to determine if seasonal high groundwater elevation or top of bedrock is within 5 feet of the bottom of the proposed infiltration system.

3.4.5 Storm water BMPs shall be adequately separated from wells to prevent contamination of drinking water, and the following minimum separation distances shall be met:

3.4.5.1 Storm water infiltration systems and ponds shall be located at least 400 feet from a well serving a community water system unless the department concurs that a lesser separation distance would provide adequate protection of a well from contamination.

3.4.5.2 Storm water BMPs shall be located with a minimum separation distance from any well serving a non-community or private water system as listed within s. NR 812.08, Wis. Adm. Code.

Note: Chapter NR 815, Wis. Adm. Code, regulates injection wells including storm water injection wells. Construction or use of a well to dispose of storm water directly into groundwater is prohibited under s. NR 815.11(5), Wis. Adm. Code.

3.4.6 For any permanent structures, provisions shall be made for long-term maintenance with the municipality or other responsible party. For an NOI submitted to the department, a copy of the signed long-term maintenance agreement shall be submitted to the department with the NOI unless the department agrees that it may be submitted by an alternative date prior to termination of permit coverage. The department may withhold permit coverage until the long-term maintenance agreement is submitted to the department.

Note: The long-term maintenance agreement is an important requirement and the department wants to ensure that appropriate steps are being taken to secure the agreement. The department encourages the landowner to obtain a municipal agreement for long-term maintenance of regional treatment structures. Long-term storm water BMPs should be maintained after permit termination in accordance with the maintenance agreement and NR 216.005, Wis. Adm. Code.

3.5 Amendments

3.5.1 The permittee shall amend the erosion control and/or storm water management plans if any of the following occurs:

3.5.1.1 There is a change in design, construction, operation or maintenance at the construction site, which has the reasonable potential for the discharge of pollutants and has not otherwise been addressed in the erosion control and storm water management plans.

3.5.1.2 There is a change in the sequence, schedule, or phasing of construction at the construction site which has a reasonable potential to cause an exceedance of the 5 tons per acre per year sediment performance standard.

3.5.1.3 The actions required by the erosion control and storm water management plans fail to reduce the impacts of pollutants carried by construction site storm water runoff.

3.5.2 For construction sites for which there has been earlier department review of the erosion control and storm water management plans, if the permittee identifies changes needed in either plan, the permittee shall notify the department regional storm water contact at least 5 working days prior to making the changes in the plan.

Note: Land disturbance outside the limits depicted in plans submitted to the department, an increase in proposed impervious area, or changes to the design of post-construction site treatment practices typically require changes to the erosion control or storm water management plans. The department may require a permittee to file a new notice of intent if the amended site requires resource screening of additional area, the amended site no longer meets an exemption from post-construction performance standards under ss. NR 151.121 to 151.125, Wis. Adm. Code, the plans do not meet one or more requirements of sub. III of NR 216, Wis. Adm. Code, or the conditions of a permit issued pursuant to this subchapter.

3.5.3 The department may, upon request of a permittee or upon finding of just cause, modify the compliance and reporting schedules or any requirement of a storm water discharge permit.

4. WATER QUALITY STANDARDS, MONITORING, AND RECORDS

4.1 Water Quality Standards

This permit specifies the conditions under which storm water may be discharged to waters of the state for the purpose of achieving water quality standards contained in chs. NR 102 through 105, NR 140, and NR 207, Wis. Adm. Code. For the term of this permit, compliance with water quality standards will be addressed by adherence to general narrative-type storm water discharge limitations, compliance with the applicable performance standards of subch. III or IV of ch. NR 151, Wis. Adm. Code, and implementation of the erosion control and storm water management plans and BMPs. A permittee with a construction site covered under this permit shall select, install, implement and maintain BMPs as necessary to meet applicable water quality standards. Unless notified by the department in writing to the contrary, compliance with the applicable performance standards of subch. III or IV of ch. NR 151, Wis. Adm. Code, shall be deemed as stringent as necessary to ensure that storm water discharges covered by this permit do not cause or contribute to an excursion above any applicable water quality standard.

4.2 Outstanding and Exceptional Resource Waters

4.2.1 Before beginning land-disturbing construction activity, the permittee shall determine whether any part of its construction or post-construction site storm water will discharge to an outstanding resource water (ORW) or exceptional resource water (ERW). ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code, respectively.

Note: The department recommends that an applicant for permit coverage check for ORWs and ERWs during project planning prior to submitting an NOI. A list of ORWs and ERWs may be found on the department's internet site at: https://dnr.wi.gov/topic/surfacewater/orwerw.html.

4.2.2 The permittee may not establish a new storm water discharge of pollutants directly to an ORW or an ERW unless the discharge of pollutants is equal to or less than existing levels of pollutants immediately upstream of the discharge site. The erosion control and storm water management plans required under section 3 of this permit shall include BMPs designed to meet this requirement for a new storm water discharge.

4.2.2.1 "New storm water discharge" means a storm water discharge that would first occur after the permittee's start date of coverage under this permit to a surface water to which the construction site or post-construction site did not previously discharge storm water.

4.2.3 The permittee's erosion control and storm water management plans required under this permit shall be designed to prevent the discharge of sediment and other pollutants to any ORW or ERW in excess of the background level within the water body. Unless notified by the department in writing to the contrary, compliance with the applicable performance standards of subch. III or IV of ch. NR 151, Wis. Adm. Code, shall be deemed in compliance with the requirements of this section. If the department has sufficient site-specific data to determine that the permittee's construction or post-construction site storm water will discharge a pollutant in excess of the background level within an ORW or ERW, then the department shall notify the permittee in writing that the permittee shall include a written section in the erosion control and storm water management plans that discusses and identifies the management practices and control measures the permittee will implement to prevent the discharge of any pollutant in excess of the background level within the water body. This section of the permittee's plans shall specifically identify control measures and practices that will collectively be used to prevent the discharge of a pollutant in excess of the background level within the water body.

Note: Reducing or eliminating surface water discharges to an ORW or ERW by infiltrating runoff is a method to help prevent the discharge of pollutants to an ORW or ERW in excess of background levels. It is expected that post-construction storm water management practices will be designed to maintain or increase infiltration rates for the site as compared to pre-development infiltration rates for areas that discharge to any ORW or ERW. However, prohibitions, exclusions, or exemptions from infiltrating runoff may apply to runoff from potential sources of contamination or into areas that are prone to groundwater contamination as identified in s. NR 151.12(5)(c)5. and 6., Wis. Adm. Code, or s. NR 151.124(3) and (4), Wis. Adm. Code. Infiltration systems shall be designed to comply with the groundwater quality standards contained in ch. NR 140, Wis. Adm. Code.

4.2.4 Protective areas of at least 75 feet shall be maintained adjacent to any ORW and ERW as required under ss. NR 151.12 (5)(d), NR 151.125, 151.24(6), or NR 151.245, Wis. Adm. Code.

4.3 Fish and Aquatic Life Waters

4.3.1 Before beginning land-disturbing construction activity, the permittee shall determine if the site will have a storm water discharge to a fish and aquatic life water as defined in s. NR 102.13, Wis. Adm. Code.

Note: The department recommends that an applicant check for fish and aquatic life waters during project planning prior to submitting an NOI. Most receiving waters of the state are classified as a fish and aquatic life water and this classification includes all surface waters of the state except ORWs, ERWs, Great Lakes system waters and variance water identified within ss. NR 104.05 to 104.10, Wis. Adm. Code. The department may be consulted if the applicant is not certain of the classification.

4.3.2 The permittee may not establish a new storm water discharge of pollutants to a fish and aquatic life water if the discharge will result in the significant lowering of water quality of the fish and aquatic life water. Significant lowering of water quality is defined within ch. NR 207, Wis. Adm. Code. If discharges result in the significant lowering of water quality, the procedures of s. NR 207.04 (c) 1., Wis. Adm. Code may apply, and the permittee shall include this as additional information pursuant to s. NR 216.48 (3), Wis. Adm. Code. Unless notified by the department in writing to the contrary, compliance with the applicable performance standards of subch. III or IV of ch. NR 151, Wis. Adm. Code, shall be deemed in compliance with the requirements of this section. “New storm water discharge” has the meaning given in section 4.2.2.1 of this permit.

4.4 Impaired Water Bodies and Total Maximum Daily Load Requirements

4.4.1 “Pollutant(s) of concern” means a pollutant that is contributing to the impairment of a water body.

4.4.2 Before beginning land-disturbing construction activity, the permittee shall determine whether any part of its construction or post-construction site storm water will discharge to an impaired water body listed in accordance with Section 303(d)(1) of the federal Clean Water Act, 33 USC §1313(d)(1)(C), and the implementing regulation of the US Environmental Protection Agency, 40 CFR §130.7(c)(1). Impaired waters are those that are not meeting applicable water quality standards.

Note: The list of Wisconsin impaired surface water bodies may be obtained by contacting the department or by searching for keyword “impaired waters” on the department’s internet site. The department updates the list approximately every two years. The updated list is effective upon

approval by the USEPA. The current list may be found on the department's Internet site at: https://dnr.wisconsin.gov/topic/SurfaceWater/ConditionLists.html.

4.4.3 A permittee that will discharge a pollutant of concern via storm water to an impaired water body shall include a written section in the erosion control and storm water management plans that specifically identifies control measures and management practices that will collectively be used to reduce, with the goal of eliminating, the storm water discharge of pollutant(s) of concern that contribute to the impairment of the water body and explain why these control measures and management practices were chosen as opposed to other alternatives. Unless notified by the department in writing to the contrary, compliance with the applicable performance standards of subch. III or IV of ch. NR 151, Wis. Adm. Code, shall be deemed to be compliance with the requirements of this section.

4.4.4 The permittee may not establish a new storm water discharge of a pollutant of concern to an impaired water body or increase an existing discharge of a pollutant of concern to an impaired water body unless the new or increased discharge causes the receiving water to meet applicable water quality standards, or the discharge is consistent with a USEPA approved total maximum daily load (TMDL) allocation for the impaired water body. Unless notified by the department in writing to the contrary, compliance with the applicable performance standards of subch. III or IV of ch. NR 151, Wis. Adm. Code, shall be deemed to be compliance with the requirements of this section. "New storm water discharge" has the meaning given in section 4.2.2.1 of this permit.

4.4.5 Before beginning land-disturbing construction activity, the permittee shall determine whether any part of its construction or post-construction site storm water will discharge a pollutant of concern via storm water to a water body included in a State and Federal approved TMDL. If so, the permittee shall assess whether the TMDL wasteload allocation for the facility's discharge will be met through the existing erosion control and storm water management plans and compliance with the applicable performance standards of subch. III or IV of ch. NR 151, Wis. Adm. Code, or whether changes to the plans are necessary.

Note: The department recommends that an applicant for permit coverage check for approved TMDLs during project planning prior to submitting an NOI. State and Federal approved TMDLs can be identified by contacting the department, or by searching for keyword "TMDL" on the department's internet site at dnr.wi.gov. The current State and Federal approved Final TMDLs may be found on the department's internet site at: https://dnr.wisconsin.gov/topic/TMDLs.

4.4.6 After determining whether the construction or post-construction site storm water discharge is included in a USEPA approved TMDL and determining that any TMDL wasteload allocation for the construction or post-construction site's discharge is not being met, the permittee shall amend the erosion control and storm water management plans. The amended plans shall include the necessary control measures to meet the requirements of the USEPA approved TMDL wasteload allocation for the construction or post-construction site. If a specific wasteload allocation has not been assigned to the construction or post-construction site under a TMDL, compliance with the applicable performance standards of subch. III or IV of ch. NR 151, Wis. Adm. Code, and this permit shall be deemed to be compliance with the TMDL.

4.5 Inspections and Maintenance
The permittee shall:

4.5.1 Conduct the following construction site inspections:

4.5.1.1 Weekly inspections of erosion and sediment control BMPs; and

4.5.1.2 Inspections of erosion and sediment control BMPs within 24 hours after a rainfall event of 0.5 inches or greater. A "rainfall event" may be considered to be the total amount of rainfall recorded in any continuous 24-hour period.

Note: More frequent visual monitoring is recommended for activities such as dewatering and trackout.

4.5.2 Repair or replace erosion and sediment control BMPs as necessary within 24 hours of an inspection or notification indicating that repair or replacement is needed.

4.5.3 Maintain, at the construction site or via an internet site, weekly written reports of all inspections conducted by or for the permittee. If an internet site method is used, the landowner shall provide the internet address to the department prior to its use. Weekly inspection reports shall include all of the following:

4.5.3.1 The date, time and exact location of the inspection.

4.5.3.2 The name of the individual who performed the inspection.

4.5.3.3 An assessment of the condition of erosion and sediment control BMPs.

4.5.3.4 A description of any erosion and sediment control installation or maintenance performed in response to the inspection.

4.5.3.5 A description of the present phase of construction at the site and any schedule modifications that may increase sediment discharge.

Note: The department has developed an inspection report form that includes the above items and it is available through the department's storm water Internet site at: https://dnr.wisconsin.gov/topic/Stormwater/construction/forms.html.

4.5.4 Submit the information maintained in accordance with section 4.5.3 to the department upon request.

4.6 Records

4.6.1 The permittee shall retain records of all construction site inspections, copies of all reports and plans required by this permit, and records of all data used to obtain coverage under this permit. Minimum periods of retention are as follows:

4.6.1.1 If there is a secure location, such as a construction site trailer, the erosion control and storm water management plans and amendments to the erosion control and storm water management plans shall be retained at the construction site until permit coverage is terminated.

4.6.1.2 All reports required by subch. III of ch. NR 216, Wis. Adm. Code, or information submitted to obtain coverage under this permit, including the erosion control and storm water management plans, amendments, and background information used in their preparation, shall be kept by the permittee for a period of at least 3 years from the date of termination of permit coverage.

4.6.2 A landowner operating a construction site under approved municipal erosion and sediment plans, grading plans, or storm water management plans shall also submit signed copies of the NOI to the local agency approving the plans. If storm water from the construction site discharges to a municipal separate storm sewer system that is operating pursuant to a municipal storm water discharge permit issued pursuant to subch. I of ch. NR 216, Wis. Adm. Code, then a signed copy of the NOI shall also be sent to the operator of the system.

4.6.3 Upon request by the department the permittee shall provide a copy of the erosion control and storm water management plans, construction site inspections and any additional data requested, within 5 working days to the department, to the operator of the municipal storm sewer system that receives the discharge, and any municipal agency approving erosion and sediment plans, grading plans or storm water management plans. Additional information may be requested by the department for resource waters that require additional protection such as outstanding or exceptional resource waters, or other sensitive water resources.

4.7 Compliance with Other Applicable Regulations

4.7.1 The erosion control and storm water management plans shall document other applicable municipal regulatory provisions, compliance with which will also meet the requirements of this permit. Subject to the requirements for uniform statewide standards established by the department under s. 281.33(3), Wis. Stats., if these municipal provisions are more stringent than those provisions appearing in this permit issued pursuant to subch. III of ch. NR 216, Wis. Adm. Code, the erosion control and storm water management plans shall also include a description of how compliance with the municipal provisions will be achieved.

4.7.2 The erosion control and storm water management plans shall comply with applicable state plumbing regulations.

4.8 Department Actions

4.8.1 The department may notify the permittee at any time that the erosion control and storm water management plans do not meet one or more of the minimum requirements of subch. III of ch. NR 216, Wis. Adm. Code, or this permit, for reducing and preventing the discharge of pollutants. The notification shall identify those provisions that are not being met by the erosion control and storm water management plan and identify which provisions of the plan require modification in order to meet the requirements. Within the time frame identified by the department in its notification, the permittee shall make the required changes to the erosion control and storm water management plans, perform all actions required by the revised plans, and submit to the department a written certification that the requested changes have been made and implemented, and such other information the department requires. The department may revoke coverage under this permit for failure to comply with this section or it may take action under s. 283.89, Wis. Stats., or both. The landowner of a construction site where the department has revoked coverage under this permit may not discharge storm water to waters of the state from the construction site unless an individual WPDES permit for storm water discharge is issued to the landowner.

4.8.2 The department shall withdraw a construction site from coverage under this permit and issue an individual WPDES permit upon written request of the discharger. This permit authorizing storm water discharges from the construction site remains in effect until the department acts on such a request and issues a specific individual WPDES permit.

4.8.3 The department may deny coverage under this permit and require submittal of an application for an individual WPDES storm water discharge permit based on a review of the completed NOI or other relevant information. The landowner of a construction site denied or revoked coverage under this permit may not discharge storm water to waters of the state from the construction site until an individual WPDES permit for storm water discharge is issued to the landowner.

4.8.4 The department may require the landowner of any storm water discharge covered by this permit, to apply for and obtain an individual WPDES storm water discharge permit if any of the following occur:

4.8.4.1 The storm water discharge is determined to be a significant source of pollution and more appropriately regulated by an individual WPDES storm water discharge permit.

4.8.4.2 The storm water discharge is not in compliance with the terms and conditions of subch. III of ch. NR 216, Wis. Adm. Code, or of this permit.

4.8.4.3 A change occurs in the availability of demonstrated technology or BMPs for the control or abatement of pollutants from the storm water discharge.

4.8.4.4 Effluent limitations or standards are promulgated for a storm water discharge that is different than the conditions contained in subch. III of ch. NR 216, Wis. Adm. Code.

4.8.5 Any person may submit a written request to the department that it take action under section 4.8.4 above.

5. GENERAL CONDITIONS

The general conditions in s. NR 205.07(1), (3), and (5), Wis. Adm. Code, are hereby incorporated by reference into this permit, except for s. NR 205.07(1)(n) and(3)(b), Wis. Adm. Code. Under s. NR 205.08(9), Wis. Adm. Code, dischargers covered under a storm water general permit are not required to submit an application for reissuance unless directed to do so by the department under s. NR 216.22(9), Wis. Adm. Code. The requirements for spill reporting are in section 5.5 below.

Note[1]: Chapter NR 205 is available at the following website: https://docs.legis.wisconsin.gov/code/admin_code/nr/200.

Note[2]: Activities performed in wetland areas, in floodplains, or near shorelands may require permits or approvals through applicable state law, state regulations, or county or local ordinances. Additionally, state permits and/or contracts required by chs. 30, 31 and 87, Wis. Stats. and s. 281.36, Wis. Stats. (or Wisconsin Administrative Code promulgated under these laws), and federal permits may be applicable.

5.1 Continuation of the Expired General Permit As provided in s. NR 205.08(9), Wis. Adm. Code, and s. 227.51, Wis. Stats., the terms and conditions of this general permit shall continue to apply until this general permit is reissued or revoked or until an individual permit is issued for the discharge to which the general permit applied.

5.2 Liabilities under Other Laws Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the federal Clean Water Act (33 USC s. 1321), any applicable federal, state, or local law or regulation under authority preserved by Section 510 of the Clean Water Act (33 USC s. 1370).

5.3 Severability The provisions of this permit are severable, and if any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid the remainder of this permit shall not be affected thereby.

5.4 Spill Reporting The permittee shall notify the department immediately of any release or spill of a hazardous substance to the environment in accordance with s. 292.11, Wis. Stats., and ch. NR 706, Wis. Adm. Code.

Note: The 24-hour toll free spills hotline number is (800) 943-0003. Information about hazardous substance spills is available from the department's website at: https://dnr.wisconsin.gov/topic/Spills.

5.5 Submitting Records Unless otherwise specified, any reports submitted to the department in accordance with this permit shall be submitted to the appropriate department regional storm water contact or to the Wisconsin DNR, Storm Water Program – WT/3, Box 7921, Madison, WI 53707-7921.

5.6 Enforcement Any violation of s. 283.33, Wis. Stats., ch. NR 216, Wis. Adm. Code, or this permit is enforceable under s. 283.89, Wis. Stats.

5.6.1 Upon becoming aware of any permit noncompliance that may endanger public health or the environment, the permittee shall report this information by a telephone call to the Department regional storm water specialist within 24 hours. A written report describing the noncompliance shall be submitted to the Department regional storm water specialist within 5 days after the permittee became aware of the noncompliance. The Department may waive the written report on a case-by-case basis based on the oral report received within 24 hours. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps

taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

5.7 Petition to Move to Individual Permit Coverage Any person may submit a written request to the department to withdraw coverage under this general permit and to replace it with an individual storm water permit under s. NR 205.08(5), Wis. Adm. Code.

6. DEFINITIONS

Definitions for some of the terms found in this permit are as follows:

6.1 Authorized Local Program means a municipality that has received a conditional approval from the department pursuant to s. NR 216.415, Wis. Adm. Code.

6.2 Best Management Practices or BMPs means structural or non-structural measures, practices, techniques or devices employed to avoid or minimize soil, sediment or pollutants carried in runoff to waters of the state.

6.3 Construction Site means an area upon which one or more land disturbing construction activities occur that in total will disturb one acre or more of land, including areas that are part of a larger common plan of development or sale where multiple separate and distinct land disturbing construction activities may be taking place at different times on different schedules but under one plan such that the total disturbed area is one acre or more.

6.4 Department means the State of Wisconsin Department of Natural Resources.

6.5 Erosion means the process by which the land's surface is worn away by the action of wind, water, ice or gravity.

6.6 Final Stabilization means that all land disturbing construction activities at the construction site have been completed and that a uniform perennial vegetative cover has been established with a density of at least 70% of the cover for the unpaved areas and areas not covered by permanent structures or that employ equivalent permanent stabilization measures.

6.7 Infiltration means the entry and movement of precipitation or runoff into or through soil.

6.8 Infiltration System means a device or practice such as a basin, trench, rain garden or swale designed specifically to encourage infiltration, but does not include natural infiltration in pervious surfaces such as lawns, redirecting of rooftop downspouts onto lawns or minimal infiltration from practices, such as swales or road side channels designed for conveyance and pollutant removal only.

6.9 Land Disturbing Construction Activity means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover that may result in storm water runoff and lead to increased soil erosion and movement of sediment into waters of the state. Land disturbing construction activity includes, but is not limited to, clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

6.10 Landowner means any person holding fee title, an easement or other interest in property that allows the person to undertake land disturbing construction activity on the property.

6.11 Municipality means any city, town, village, county, county utility district, town sanitary district, town utility district, school district or metropolitan sewage district or any other public entity created pursuant to law and having authority to collect, treat or dispose of sewage, industrial wastes, storm water or other wastes.

6.12 Performance Standard means a narrative or measurable number specifying the minimum acceptable outcome for a facility or practice.

6.13 Permittee means a person who has applied for and received WPDES permit coverage for storm

water discharge under NR 216, Wis. Adm. Code, and this permit.

6.14 Sediment means settleable solid material that is transported by runoff, suspended within runoff or deposited by runoff away from its original location.

6.15 Stabilize means the process of making a site steadfast or firm, minimizing soil movement by the use of practices such as mulching and seeding, sodding, landscaping, paving, graveling or other appropriate measures.

6.16 Storm Water means runoff from precipitation including rain, snow, ice melt or similar water that moves on the land surface via sheet or channelized flow.

6.17 Storm Water Management Plan means a comprehensive plan designed to reduce the discharge of pollutants from storm water, after the site has undergone final stabilization, following completion of the construction activity.

6.18 Waters of the State means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, water courses, drainage systems and other surface water or groundwater, natural or artificial, public or private within the state or under its jurisdiction, except those waters which are entirely confined and retained completely upon the property of a person.

6.19 Working Day means any day except Saturday and Sunday and holidays designated in s. 230.35(4)(a), Wis. Stats.

6.20 WPDES Permit means a Wisconsin Pollutant Discharge Elimination System permit issued pursuant to ch. 283, Wis. Stats.

C.2 Facility's Current Tier 2 SWPPP

Storm Water Pollution Prevention Plan

Ash Landfill Operations for
Columbia Dry Ash Disposal Facility (License #3025)
Columbia County, Wisconsin

Prepared for:

Wisconsin Power and Light Company
Columbia Energy Center
W8375 Murray Road
Pardeeville, Wisconsin 53954

SCS ENGINEERS

25222157.00 | July 18, 2023

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

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STORM WATER POLLUTION PREVENTION PLAN
CERTIFICATION PAGE

COLUMBIA DRY ASH DISPOSAL FACILITY
COLUMBIA ENERGY CENTER
COLUMBIA COUNTY, WISCONSIN

July 2023

SCS Engineers prepared this Storm Water Pollution Prevention Plan for the Columbia Energy Center Dry Ash Disposal facility in accordance with the provisions in Chapter 283 and NR216, Wisconsin Statutes.

"I certify under penalty of law that this document and all attachments were prepared under direction or supervision in accordance with 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"

Name_____Eric Sandvig_____

Title___Director Operations WPL Generation___

Wisconsin Power and Light Co.

Signature_____

Date_____

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1.0 INTRODUCTION

1.1 SWPPP UPDATE

This Storm Water Pollution Prevention Plan (SWPPP) Update includes the following updates from the April 2022 SWPPP to reflect the construction of Phase 2, Modules 10 and 11:

- **Figure 2** (Existing Conditions)
- **Figure 3** (Drainage Areas and Outfalls) Modules 10 and 11)
- Section 1.4.2 (Phased Development Description)
- Section 1.4.3 (Site Drainage and Outfalls)
- Section 2.1 (Ash Landfill Operations)
- **Attachment H** (SWPPP Revision and Review Log Sheet)

1.2 PURPOSE AND CONTENT

This SWPPP for coal combustion residuals (CCR) landfill operations has been prepared for the Columbia Dry Ash Disposal facility (landfill) located in Section 27, T12N, R9E, Town of Pacific, Columbia County, Wisconsin. The property is used for CCR disposal for the adjacent Columbia Energy Center located at W8375 Murray Road in Pardeeville, Wisconsin. The Columbia Energy Center operates under a separate Wisconsin Pollutant Discharge Elimination System (WPDES) Tier 2 Industrial Facilities General Permit No. WI-S067857-5 (Tier 2 General Permit) and associated SWPPP, Version 2, Revision 3 dated February 2016. Wisconsin Power and Light Company (WPL) operates the Columbia Energy Center, which it co owns with Wisconsin Public Service and Madison Gas and Electric. The landfill is permitted by the Wisconsin Department of Natural Resources (WDNR) solid waste regulations (License #3025). **Figure 1** shows the site location.

This report has been prepared to meet the requirements of the Tier 2 General Permit, effective May 31, 2021. A copy of the Tier 2 General Permit is included in **Appendix A**.

The primary goal of the SWPPP is to reduce the amount of pollutants potentially contained in storm water runoff. To help accomplish this goal, this plan identifies potential sources of pollution on this site that may reasonably be expected to affect the quality of storm water discharges associated with facility activities. The plan also describes the implementation of practices that are to be used to reduce the potential for those pollutants to contaminate storm water runoff or to treat the storm water runoff prior to discharging to surface or ground waters.

This SWPPP is prepared in accordance with good engineering practices. The objectives of the SWPPP are to do the following:

- Summarize major activities conducted at the facility (**Sections 1.0** and **2.0**).
- Inventory exposed materials and summarize storm water sampling requirements for the facility (**Sections 1.0** and **2.0**).

- Identify potential source areas of storm water contamination and significant polluting materials (**Section 2.0**).
- Identify Best Management Practices (BMPs) for facility activities (**Section 3.0**).
- Identify impacts of BMPs (**Section 4.0**).
- Identify the individuals who will implement this SWPPP (**Section 1.0**).
- Provide information on required storm water inspections (**Section 6.0** and **Attachments B** and **C**).
- Summarize storm water discharge regulatory applicability and implementation schedule (**Attachment D**).
- Discuss training requirements (**Section 7.0** and **Attachment E**).
- Provide a means of recordkeeping for storm water-related documents at the facility (**Section 8.0**).
- Provide a non-storm water discharge assessment (**Attachment F**).
- Fulfill the landfill operating license and WPDES requirements (**Attachment A**).

This plan is organized consistent with information required in SWPPPs as specified in the Tier 2 General Permit and NR 216.

WPL will maintain a copy of this plan on site and make it available to the WDNR upon request.

1.3 STORM WATER POLLUTION PREVENTION TEAM

The storm water pollution prevention team is a designated group of people that are responsible for ensuring the proper development and implementation of the SWPPP. Members of the team include representatives of WPL, who are familiar with the landfill and manage its operation.

The team is responsible for defining an appropriate set of goals for the facility storm water management program. In addition, the team must be aware of any changes to the facility and implement necessary changes to the SWPPP. The table below summarizes the team member roster including each member's position, phone number, location, and responsibilities.

Table 1. Storm Water Pollution Prevention Team

SWPPP Team Position	Phone Number	Location	Responsibilities
SWPPP Coordinator: Brian Clepper, SWPPP Coordinator (Lead Generation Environmental Specialist)	Office: (608) 742-0713 Mobile: (608) 234-2770	WPL Columbia Energy Center, Pardeeville, WI	• Coordinate the development, implementation, evaluation, maintenance, and amendment of the SWPPP • Coordinate facility compliance with the specific actions identified in the SWPPP • Maintain BMPs • Conduct monitoring activities • Manage inspections and records • Prepare and submit reports (to be kept on file at the facility) • Serve as facility contact for WDNR
Back Up SWPPP Coordinator: Jeff Nelson (Ops Manager)	Office: (608) 742-0716	WPL Columbia Energy Center, Pardeeville, WI	

1.4 SITE DESCRIPTION AND DRAINAGE BASE MAP

1.4.1 Site Description

The site is located in the Section 27, Township 12 North, Range 9 East, Town of Pacific, Columbia County, Wisconsin (see **Figure 1**). The current site conditions are shown on **Figure 2**. A majority of the fly ash and bottom ash generated by the Columbia plant is sold for beneficial use. Fly ash and bottom ash that is not beneficially used is disposed of in the landfill. Columbia Energy Center's Air Quality Control System (AQCS) also produces flue gas desulfurization (FGD) waste that is placed in the landfill. The FGD waste is a mixture of dry FGD particulates (calcium salts and unused lime reagent), some fly ash, and spent carbon from mercury control systems. The Columbia dry ash disposal facility consists of approximately 62.5 acres, of which approximately 5.8 acres are closed (i.e., have final cover in place), approximately 9.7 acres are currently covered with intermediate cover, approximately 8.6 acres are covered with rain cover, approximately 8.8 acres are currently active and approximately 28 acres will be developed as future modules for ash disposal. There are two ponds related to the ash disposal facility, which are further described in **Section 1.4.3**. There are no buildings located on the ash disposal facility property. **Figure 2** shows the site layout.

1.4.2 Phased Development Description

The landfill will be developed in phases. **Figure 2** shows the current status of development of the various phases/modules of the landfill. The phased approach minimizes disturbance and erosion and reduces the amount of ash exposed to storm water. Because the site conditions change with the landfill development and closure phases, the SWPPP will be reviewed and updated as necessary on an annual basis.

Phase 1 includes the western side of the facility and includes Modules 1 through 6. Phase 2 is the eastern side of the facility and includes Modules 7 through 12. Currently Module 1 is fully covered with either final cover or intermediate cover, the majority of Module 2 and Module 3 is covered with intermediate cover, and Modules 4, 5, and 6 are partially covered with intermediate cover. The active area of the landfill includes portions of Modules 2, 3, 4, 5, and 6. Modules 10 and 11 have been constructed and will begin accepting CCR in June 2023.

Clean storm water from intermediate cover is directed away from open areas using diversion berms. New diversion berms will be constructed to form the perimeter of a storm water containment area. The berms will prevent contact water from running onto the intermediate cover; then contact water from open areas of Modules 2, 3, 4, 5, 6, 10, and 11 will be collected in the leachate/surface water pond as CCR is placed (see **Section 1.4.3**).

Until ash is placed, clean storm water collected in Module 10 and Module 11 will discharge via pumps to the proposed swales then to the south sedimentation basin. As filling begins, new diversion berms will be constructed to form the perimeter of a storm water containment area. The berms will prevent contact water from running onto the unfilled areas of the modules; then contact water from Module 10 and Module 11 will be collected in the leachate/surface water pond as ash is placed (see **Section 1.4.3**).

The remaining modules are undeveloped except for drainage features, soil stockpiles, and access roads located in portions of the permitted landfill footprint.

New modules will be developed to meet the waste capacity needs of the Columbia Energy Center. New module construction will include earthwork required to establish liner subbase grades. Earthmoving equipment, which may include excavators, dozers, front end loaders, scrapers, and haul trucks, will be used to develop liner subbase grades and construct the liner and leachate collection systems in the new modules. Similar equipment will be used to place CCR in the landfill. The modules will be filled and covered in phases as they reach capacity. Further information on the phasing, filling, and closure is presented in the approved Plan of Operation.

1.4.3 Site Drainage and Outfalls

The existing site topography is shown on **Figure 2**. The facility utilizes a series of swales, diversion berms, downslope channels, perimeter swales, and culverts that direct storm water to one of three areas, as described below:

- **Leachate/Surface Water Pond:** The pond is designed to collect storm water runoff that has been in contact with CCR. Runoff collected in the pond is pumped into a truck and hauled to the generating station to be incorporated in process/industrial wastewater. The leachate/surface water pond is pumped on an as-needed basis to maintain water levels and freeboard, as defined in the approved Plan of Operation.

- **South Sedimentation Basin:** The basin is designed to collect storm water runoff from closed landfill areas, areas with intermediate cover, access roads, and undeveloped landfill areas. Runoff collected in the basin discharges via an outfall structure to a wetland or infiltrates to groundwater.

- **Vegetated Low Area:** The area collects storm water runoff from a portion of undeveloped landfill area and a portion of intermediate cover, access roads, Murray Road, and portions of stockpiles. Runoff is collected from these areas in the Murray Road ditch and

discharges through a culvert under Murray Road to the low area on the north side of the road.

Figure 3 shows the leachate/surface water pond, south sedimentation basin, and the culvert to the vegetated low area, along with their post construction drainage areas following 2022 construction of Module 10 and Module 11. The storm water/contact water management systems have been designed in accordance with WDNR solid waste regulations, and more information on the drainage system can be found in the Plan of Operation.

The property has two storm water outfalls (Table 1) as shown on Figure 3. Outfall SW001 is the outlet of the south sedimentation basin. The outfall discharges into the south sedimentation basin which discharges to a wetland or infiltrates to groundwater. The outlet structure of the basin can handle a 25-year, 24-hour storm. The wetland ultimately discharges to an unnamed tributary to the Wisconsin River. The sedimentation basin typically has no standing water.

Outfall SW002 is the inlet side of the culvert located on the north side of the facility under Murray Road. This outfall discharges to the low area across Murray Road where runoff infiltrates to groundwater in a low area.

1.5 POTENTIAL SOURCES OF STORM WATER POLLUTION

The activities and materials that may be sources of storm water pollution include the following:

- Landfill operations
- Module construction
- Access roads
- Soil stockpiles
- Outdoor equipment storage
- Vehicle fueling

Materials handled and used at the facility that may be exposed to precipitation include bottom ash, fly ash, FGD waste solid mixture (approximate recycled fly ash and gypsum [90 percent] and pebble lime [10 percent]), soil, fuel, oil, and lubricants if equipment leaks. Section 2.0 describes the potential pollution sources in more detail.

1.6 DISCHARGE TO OUTSTANDING AND EXCEPTIONAL RESOURCE WATERS REVIEW

The site does not discharge to an outstanding resource water (ORW) or exceptional resource water (ERW). This conclusion is based on a search performed using the WDNR's Surface Water Data Viewer, an interactive, searchable online map. Supporting information is included in Attachment G.

1.7 DISCHARGE TO IMPAIRED WATERBODIES

Unless infiltrated, surface water discharges of storm water from the site ultimately discharge to an impaired waterbody listed in accordance with Section 303 (d) (1) of the Federal Clean Water Act. Annual checks of the status of the waterbody will be conducted by the SWPPP Coordinator prior to February 15th. Refer to Section 6.4.1 for more details regarding this review.

1.8 DISCHARGE TO FISH AND AQUATIC LIFE WATERS REVIEW

The storm water discharge from the south sedimentation basin does not immediately enter a fish and aquatic life waters. Water discharged via SW001 to the sedimentation basin is discharged to the groundwater or an adjacent wetland. Water discharged via SW002 and through the Murray Road culvert is discharged to a low area where it infiltrates to the groundwater. The existing outfall locations are shown on **Figure 3**. The wetland adjacent to the sedimentation basin ultimately discharges to an unnamed tributary to the Wisconsin River, which is a fish and aquatic life water. A discussion of the site outfall is presented in **Section 1.4.3**. With the storm water runoff BMPs utilized at the facility, and review of the sources area on a regular basis as outlined by this SWPPP, the site operations are not expected to result in a significant lowering of wetland quality.

1.9 MONITORING DATA

Monitoring information for the facility is kept on-site with the SWPPP records. WPL monitors storm water runoff in accordance with the Tier 2 General Permit (see **Section 6.0**).

2.0 DESCRIPTION OF POTENTIAL POLLUTION SOURCES

2.1 ASH LANDFILL OPERATIONS

The following materials are associated with the landfilling activities:

- **FGD waste:** Fly ash, gypsum, and pebble lime is hauled from the plant and disposed in the active module of the landfill.
- **Bottom Ash:** Bottom ash is hauled in from the primary ash pond area during construction of new modules to construct the leachate drainage layer. Bottom ash that is not beneficially used may be disposed in the active module.
- **Fly Ash:** Fly ash that is not beneficially used may be disposed in the active module.
- **Soil materials:** These materials are brought in, as necessary, from on-site excavation or stockpiles and from off-site borrow areas. This material is used as liner, cover, road way material, and to promote the growth of vegetation.

The landfill design includes a leachate/contact water collection system and final cover surface water management system designed to effectively collect and route storm water runoff to the appropriate locations (refer to **Section 1.4.3**). Both of these systems have been designed to meet the requirements of Chapter NR 504, Wisconsin Administrative Code. Storm water that comes in contact with waste is collected by the leachate/contact water collection system. The leachate is routed to the leachate/surface water pond via the leachate collection pipes and contact water swales. The leachate/surface water pond is currently pumped and hauled to the plant, as discussed in **Section 1.4.3**.

The final cover surface water management system collects and routes storm water runoff from the cover in a controlled manner while minimizing erosion and the off-site migration of sediment. Storm water runoff from the closed landfill, access roads, and undeveloped portions of the site is routed to the south sedimentation basin to settle out suspended solids before discharging off site. The sedimentation basin is sized to accommodate a 25-year, 24-hour storm event. A portion of Module 6

intermediate cover and a portion of future Module 13 area discharges to the north vegetated low spot.

If storm water was to come into contact with this potential pollution source area, the pollutants that may be present are leachate/contact water, FGD mixture, bottom ash, fly ash, and sediment. Because the landfill includes a leachate/contact water collection and storm water management system, the potential for impact to storm water is minimal.

2.2 ACCESS ROADS

Hauling of FGD, bottom ash, and soil is performed along access roads throughout the facility (see Figure 2). FGD is hauled to the landfill via access roads from the landfill entrance. The access roads are constructed of gravel material. The site access roads drain to the south sedimentation basin or the leachate/surface water pond via swales. The gravel roads minimize mud tracking onto paved surfaces. Facility personnel sweep paved surfaces when mud tracking occurs.

Access roads are possible sources of storm water pollution due to the high activity of vehicle traffic and the potential for equipment breakdowns. If storm water was to come into contact with this potential pollution source area, the potential pollutants include hydraulic fluids, antifreeze, leachate, FGD, bottom ash, fly ash, and sediment.

2.3 SOIL STOCKPILES

Excess soil is stockpiled on site from excavations performed during landfill and ancillary feature development or closure events. Existing stockpiles, which have been stabilized with vegetation, are shown on Figure 2. New stockpiles or disturbance of existing stockpiles may result from construction of Modules 10 and 11. If storm water was to come in contact with this potential pollution area, the potential pollutant is sediment. Runoff from the stockpiles is collected by perimeter ditches and routed to the sedimentation basin or the low area north of Murray Road.

2.4 OUTDOOR EQUIPMENT STORAGE

Outdoor equipment storage includes outdoor parking of landfill equipment and construction equipment during construction events.

Landfill equipment is parked overnight on the landfill. Construction equipment is parked in the construction area or laydown area. The pollutants that may be present include petroleum-based products. Runoff that may come into contact with any leaks or spills from the equipment would be routed to the leachate/surface water pond or through swales to the South Sedimentation Basin.

2.5 VEHICLE FUELING

Landfill equipment is fueled within the coal yard area at the adjacent generating station and within the area of active landfill operations. Contractor construction equipment may be fueled at the landfill during module construction or closure activities. For fueling occurring within the limits of waste, storm water that may come in contact with any leaks or spills from the tank would be routed to the leachate/surface water pond. The pollutants that may be present from these sources include diesel, unleaded gasoline, and hydraulic fluid.

3.0 BEST MANAGEMENT PRACTICES

Storm water pollution prevention is achieved through implementing certain procedures, practices, and preventative maintenance that will reduce or eliminate potential storm water pollution sources (identified in **Section 2.0**). These procedures and practices are defined as BMPs. This section presents the following BMPs that apply to general facility operations:

- Spill Prevention and Response
- Pollution Prevention Training

This section also presents BMPs that are specific to the following activities at the facility:

- Ash Landfilling Operations
- Site Construction Events
- Material Hauling on Access Roads
- Vehicle and Equipment Fueling
- Soil Stockpiling
- Housekeeping
- Outdoor Equipment Storage
- Sedimentation Basin

3.1 GENERAL BEST MANAGEMENT PRACTICES

3.1.1 Spill Prevention and Response

General Activity: Spill Prevention and Response	
BMP Objective: To reduce or eliminate the potential for significant material spills at the facility.	
Practice	**Implementation Schedule/Frequency**
• In the event of a spill incident of any quantity, call: **EMERGENCY COORDINATOR:** **Brian Clepper (608) 742-0713 (work)** **(608) 234-2770 (cell)** **Alternate if above is not available:** **Columbia Control Room: (608) 742-0733** **Shift Supervisor: (608) 742-0730** • **Spill Management** – Manage in accordance with the spill response flow chart provided in **Table 2 and Columbia Energy Center SPCC Plan**. • **Good Housekeeping** – Keep material storage/usage areas clean and clear of debris. Slipping or tripping while handling materials may cause spills. • **Maintaining Containers** – Maintain containers that store significant materials in good condition. Dents and/or rust are weak points on containers that could rupture and release materials. Containers in poor condition should be replaced. • **Handling Containers** – Take proper care during container handling. Containers that are moved too fast could spill material by hitting objects that could puncture container and/or tip over. • **Storing Containers** – Store containers upright with the lids securely attached. • **Dispensing Materials** – Take proper care while dispensing liquids. Use funnels when transferring liquids. Dispense liquids slowly to prevent overfilling and spillage. If available, use auto-shutoff nozzles while fueling equipment. • **Maintaining Equipment** – Maintain equipment and inspect frequently to identify potential leakage points. • **Spill Response** – Clean up incidental spills immediately with absorbent materials.	As required

Table 2. Oil Spill Notification Procedures

Agency/ Organization	Contact	Circumstances	When to Notify
State Agencies			
WDNR Spill Reporting Hotline	1-800-943-0003	1. Discharge that threatens public health, welfare or the environment, **or** 2. Discharge that produces a sheen on water and/or threatens navigable waters, **or** 3. One gallon or more of flammable liquid (e.g., gasoline) onto unpaved ground, **or** 4. Five gallons or more of combustible liquid (e.g., diesel) onto unpaved ground.	**Immediately** (verbal)
Federal Agencies			
National Response Center (NRC)	1-800-424-8802 www.nrc.uscg.mil	Discharge reaching navigable waters.	**Immediately** (verbal)
U.S. Environmental Protection Agency (U.S. EPA) Region V (hotline)	1-800-621-8431	Discharge reaching navigable waters.	**Immediately** (verbal)
U.S. EPA Region V Regional Administrator	U.S. EPA Region 5 77 W. Jackson Blvd. Chicago, IL 60604	Discharge of 1,000 gallons or more; or second discharge of 42 gallons or more over a 12-month period.	Written notification within 60 days (see **SPCC Plan**)
Local Agencies			
Fire Department	911	Discharge that poses emergency conditions, regardless of the volume discharged.	**Immediately** (verbal)
Columbia County Emergency Management	608-742-4166	Discharge that poses emergency conditions, regardless of the volume discharged.	**Immediately** (verbal)

Notes:

1. In the event of spills or other environmental incidents of any quantity, the Emergency Coordinator shall be contacted. The Emergency Coordinator shall inform Alliant Energy Environmental Services management consistent with Alliant Energy Policy ENV107.

2. In the event of an environmental site inspection by authorized representatives of federal, state, or local regulatory agencies, the Emergency Coordinator shall be contacted. Additionally, Alliant Energy Policy ENV 102 shall be followed.

3.1.2 Pollution Prevention Training

General Activity: Pollution Prevention Training		
BMP Objective: To familiarize the pollution prevention team, responsible employees, and contractors with the requirements of this SWPPP and methods for its implementation. Training is further discussed in **Section 7.0**.		
Training	**Attendees**	**Implementation Schedule/Frequency**
Storm Water Pollution Prevention Plan Training	Pollution Prevention Team and Responsible Employees	Initially/Annually

3.2 ACTIVITY SPECIFIC BEST MANAGEMENT PRACTICES

3.2.1 Ash Landfilling Operations

Facility Activity: FGD/Bottom Ash/Fly Ash Handling and Disposal	
BMP Objective: To reduce exposure of FGD/ash to precipitation/storm water runoff during landfill operations.	
Practice	**Implementation Schedule/Frequency**
• Operate the facility in accordance with the requirements of the landfill's license. • Minimize the amount of open cell area. • Route storm water that has come into contact with FGD/ash to the leachate/surface water pond. Storm water that enters the active cell must be treated as leachate and routed to the leachate/surface water pond. • Route storm water runoff that has not come in to contact with FGD/ash to the south sedimentation basin. Storm water that comes in contact with intermediate cover may be routed to the sedimentation basin. • Temporarily close active areas by installing rain flaps or placing intermediate cover and diverting runoff to the south sedimentation basin to reduce the active landfill area. • Construct diversion berms and downslope flumes along final cover slopes to minimize erosion along the final cover. • Maintain contact water levels in the contact water pond in accordance with the most recent "Leachate/Surface Water Pond Capacity Evaluation" (current version as of the date of this SWPPP update is March 2022, as presented in the 2022 POO Update).	As needed during activity

Facility Activity: FGD/Bottom Ash/Fly Ash Handling and Disposal	
BMP Objective: To reduce exposure of FGD/ash to precipitation/storm water runoff during landfill operations.	
Practice	**Implementation Schedule/Frequency**
• For areas with temporary rain cover installed: - Do not place CCR on top of rain cover. - Inspect water that collects on areas with rain cover for evidence of leachate or contact water impacts. If evidence of leachate or contact water are noted, plug the discharge to surface water and repair/address source of leachate/contact water. Discharge water to leachate pond, haul water to the primary ash pond, or use for dust control within limits of waste. - Repair damaged rain cover using a geosynthetic installer with similar qualifications to the company that originally installed it. - Remove rain cover prior to placing CCR. Rain cover may be removed in sections as waste placement progresses.	As needed during activity
- Inspect rain cover, including berms and anchoring, after significant precipitation events (greater than 0.5 inch) to ensure that leachate or contact water has not run onto the temporary rain cover.	After precipitation events ≥ 0.5 inch
- Inspect operations to ensure that storm water runoff is being properly handled (i.e., water in contact with FGD/ash is collected in the leachate/surface water pond and water not in contact with FGD/ash is routed to the sedimentation basin). - Ensure that any berms, rain cover, sedimentation basin, or other sediment removal or storm water conveyance and diversion structures are in good condition.	During each SWPPP inspection

3.2.2 Site Construction Events

Facility Activity: Construction Events at the Facility (e.g., liner or final cover construction events)	
BMP Objective: To reduce off-site discharge of sediment during construction events.	
Practice	**Implementation Schedule/Frequency**
• Minimize the amount of disturbed area. • Divert runoff around the disturbed area. • Maintain gravel access road to reduce material tracking to public streets. • Keep the construction area clear of debris. • Place silt fence or silt sock downslope of disturbed areas and prior to wetlands/waterways, prior to the start of disturbance. • Implement additional erosion control practices as applicable to the construction event. Refer to WDNR construction site erosion and sediment control standards (http://dnr.wi.gov/topic/Stormwater/standards/const_standards.html). • Develop a construction site erosion control plan as part of the detailed site construction plans. • Install, inspect, and maintain all sediment control practices in accordance with the associated WDNR Technical Standard (http://dnr.wi.gov/topic/Stormwater/standards/const_standards.html). • Implement BMPs to limit sediment discharge to no more than 5 tons/acre/year, to the maximum extent practicable, from initial grading to final stabilization. Refer to WDNR guidance document EGAD No. 3800-2017-03 (Construction Site Soil Loss and Sediment Discharge Calculation Guidance), including prescriptive compliance areas, when evaluate soil loss. • Install, inspect and maintain BMPs in accordance with WDNR Conservation Practice standards (http://dnr.wi.gov/topic/Stormwater/standards/const_standards.html). • Minimize the amount of disturbance to the extent practicable. • Divert runoff around disturbed areas. • Maintain gravel access road to reduce material tracking to public streets. Clean up sediment tracked onto public streets by the end of each working day. • Keep the construction area clear of debris. • Place silt fence or silt sock downslope of disturbed areas and prior to wetlands/waterways prior to the start of disturbance. • Locate stockpiles outside of drainage ways and divert run-on around stockpile areas using diversion swales as needed. • Commence temporary stabilization activities when land disturbing construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. [ref. NR 151.105(6)(d)]. • Vegetate stockpiles when not in use for 6 months or more. [ref NR 506.07(1)(r)].	As required during activity

Facility Activity: Construction Events at the Facility (e.g., liner or final cover construction events)	
BMP Objective: To reduce off-site discharge of sediment during construction events.	
Practice	**Implementation Schedule/Frequency**
• Install BMPs (e.g., silt fence/silt sock) around stockpiles that will be in existence for more than 7 days. [ref NR 151.11(6m)6.]. • Protect runoff channels as necessary to prevent scour and erosion that generates sediment. • Stabilize (seed, gravel, pave) areas as soon as practical upon completion of construction. • For areas of the landfill which will not contain solid waste and are to be vegetated, seed and mulch/erosion mat no later than 90 days after completion of construction or by October 15, whichever is earlier, and if construction is completed after September 15, no later than June 15 of the following year. [ref. NR 506.07(2)(c)]. • For landfill closure areas, seed, fertilize, and mulch/erosion mat within 180 days after ceasing to accept solid waste, or if solid waste termination is after September 15, by June 15 of the following year. [ref. NR 506.08(4)] • Refer to WDNR Guidance Document #3800-2016-01 (Storm Water Discharge Permit Coverage at Solid Waste Landfills) for additional background/guidance.	As required during activity
• Inspect public streets for off-site tracking of sediment. Clean material tracked on public roads. Do not flush with water.	Daily
• Inspect erosion control practices. Repair as necessary.	Weekly and within 24 hours after a precipitation event that produces 0.5 inch of rain or more during a 24-hour period.

3.2.3 Material Hauling on Access Roads

Facility Activity: FGD/Ash/Soil Hauling on Facility Access Roads	
BMP Objective: To reduce exposure of ash and soil to precipitation/storm water runoff during ash hauling.	
Practice	**Implementation Schedule/Frequency**
• Maintain gravel access road to reduce material tracking to public streets. • Keep the access roads clear of debris. • Repair any damage to access roads. • Do not overfill trucks with FGD/ash/soil. • Control dust from access roads by watering. Do not water the access roads to the extent that runoff is produced from the watering activities. • Clean material tracked on public roads.	As required during activity
• Inspect access roads for signs of damage. • Inspect access roads for signs of contamination.	During each SWPPP inspection

3.2.4 Vehicle and Equipment Fueling

Facility Activity: Equipment Fueling	
BMP Objective: To reduce exposure of fuel to precipitation/storm water runoff that may result from spills or leaks.	
Practice	**Implementation Schedule/Frequency**
• Equipment operator must be present at all times during fueling. • If drip pans are not available to collect drips, use dry cleanup methods (i.e., absorbent wipes, granular floor dry) for fueling area spills. • Replace faulty fueling equipment. • Dispose of any fuel spills or leaks properly.	As needed during activity
• Inspect fueling equipment for leaks/failures. • Inspect fueling area for evidence of spills/leaks.	During each SWPPP inspection

3.2.5 Soil Stockpiling

Facility Activity: Creating and Maintaining Soil Stockpiles	
BMP Objective: To reduce erosion of soil stockpiles during precipitation/storm water events.	
Practice	**Implementation Schedule/Frequency**
• Minimize the size and number of soil stockpiles needed by properly planning construction and excavation activities. • Locate stockpiles outside of drainage ways and divert run-on around stockpile areas using diversion swales as needed. • Vegetate stockpiles when not in use for 6 months or more. • Install BMPs (e.g., silt fence/silt sock) around stockpiles that will be in existence for more than 7 days. [ref NR 151.11(6m)6.]. • Provide additional BMPs during active excavating or placement of soil in stockpile area such as silt fence/silt sock along areas downslope of exposed area.	As needed during activity
• Inspect stockpiles for signs of erosion. • Ensure that any silt fence, silt sock, or other sediment removal or storm water diversion structures are in good condition.	During each SWPPP inspection

3.2.6 Housekeeping

Facility Activity: Housekeeping	
BMP Objective: To reduce exposure of all potentially significant polluting materials at the facility to precipitation/storm water runoff during everyday activities.	
Practice	**Implementation Schedule/Frequency**
• Ensure that waste debris is picked up on a regular basis. • Train employees in site inspection and basic cleanup procedures. • Maintain records and internal reporting procedures in the event of a release to the environment. • Clearly indicate proper disposal locations for various waste types at the facility.	As needed during activity
• Inspect disposal areas for signs that volume of disposal space is inadequate, and for cleanliness. • Inspect facility for signs that good housekeeping procedures are not being followed.	During each SWPPP inspection

3.2.7 Outdoor Equipment Storage

Facility Activity: Outdoor Storage of Equipment	
BMP Objective: To minimize potential storm water impacts from the outdoor storage of materials and equipment not covered by other items above.	
Practice	**Implementation Schedule/Frequency**
• Keep the storage areas clean of debris. • Repair or replace damaged (e.g., holes, nonfunctioning seals, etc.) containers and equipment. • Periodically wash containers and trucks in doors. • Maintain equipment and containers as described in **Section 3.1.1**.	As required during activity
• Inspect bins and equipment for signs of damage or leaks. • Inspect surrounding area for signs of contamination.	During each SWPPP inspection

3.2.8 Sedimentation Basin

Facility Activity: Storm Water Quality BMP	
BMP Objective: To remove suspended solids from storm water runoff prior to off-site discharge.	
Practice	**Implementation Schedule/Frequency**
• Remove sediment as necessary to maintain active storage volume and proper function. Manage sediment in accordance with Chapter NR 528, Wisconsin Administrative Code.	As needed
• Inspect basins for signs of erosion, contamination, breaching, clogging of outfall structure, and sediment buildup. • Remove any debris from the basin area. • Inspect area for signs of contamination.	During each SWPPP inspection
• Conduct quarterly inspections as described in **Section 6.1**. • Conduct semi-annual dry weather inspections as described in **Section 6.2**.	Quarterly/Semi-annually, as noted

4.0 SUMMARY OF POTENTIAL POLLUTANTS AFTER IMPLEMENTING BEST MANAGEMENT PRACTICES

Implementation of BMPs at the facility is designed to reduce the potential for source area storm water contamination (see **Section 3.0**), with only allowable non-storm water discharges remaining. This SWPPP identifies pollutants that are likely to contaminate storm water discharges to waters of the state following implementation of source area control BMPs.

At a minimum, all of the following pollutants will be considered for their potential to contaminate storm water:

1. Any pollutant for which an effluent limitation is contained in any WPDES permit issued to the facility by the WDNR.

2. Any pollutant contained in a categorical effluent limitation or pretreatment standard to which the facility is subject.

3. Any Section 313 water priority chemical for which the facility has reporting requirements and which has the potential for contaminating storm water.

4. Any other toxic or hazardous pollutants from present or past activity at the site that remain in contact with precipitation or storm water and which could be discharged to the waters of the state and which are not regulated by another environmental program.

Through review of the facility chemical handling and storage practices, no chemicals, including those listed above, are found likely to contaminate storm water discharges to waters of the state after implementation of the BMPs.

Sources of allowable non-storm water discharges from the facility include fire suppression water and landscape watering. If these types of activities are performed at the facility, the resulting storm water discharges will either be routed through the storm water management systems (see **Section 1.4.3**) or discharge via sheet flow off site.

5.0 COMPLIANCE WITH RUNOFF PERFORMANCE STANDARDS

The facility is not subject to the post-construction performance standards of NR 151.122 and 123, Wisconsin Administrative Code. These standards will only be applicable if an expansion to the facility is proposed.

6.0 FACILITY MONITORING PLAN AND IMPLEMENTATION SCHEDULE

Facility monitoring consists of quarterly facility inspections, non-storm water discharge inspections, and completion of WDNR Form 3400-176, the Annual Facility Site Compliance Inspection (AFSCI) report. The purpose of such monitoring and review is to evaluate storm water outfalls for the presence of non-storm water discharges, and evaluate the effectiveness of the pollution prevention activities in controlling contamination of storm water runoff. The SWPPP implementation schedule is detailed in **Attachment D**. Record-keeping requirements are addressed in **Section 8.0**.

6.1 QUARTERLY VISUAL INSPECTIONS

Coverage under a Tier 2 General Permit requires a quarterly visual inspection of the storm water runoff. The inspections will take place during daylight hours within 30 minutes, but not to exceed 60 minutes, after storm water runoff begins discharging at the outfall. These inspections will check storm water for physical properties such as odor, color, turbidity, suspended solids, foam, oil sheen, or other obvious indicators of non-storm water discharge. Information reported will include the inspection date, inspection personnel, visual quality of the storm water discharge, and probable sources of any observed non-storm water discharge. In addition, quarterly inspections serve as a visual evaluation of the facility to identify conditions that may give rise to contamination of storm water. The quarterly inspection is a way to confirm that chosen BMPs are in place and working. A Quarterly Facility SWPPP Inspection Form is included in Attachment B.

In the event a visual inspection cannot be performed due to adverse weather conditions or other monitoring waivers listed in Section 4.3.3 of the General Permit, provide documentation for the reason the visual examination could not be performed. Adverse weather conditions which may prevent visual inspections include dangerous weather conditions for personnel (i.e., local flooding, high winds, tornadoes, electrical storms, etc.) or conditions that otherwise make sample collection impractical (i.e., drought, etc.).

6.2 NON-STORM WATER DISCHARGES

Storm water outfalls will be evaluated for non-storm water contributions to the storm drainage system. Evaluations of non-storm water discharges shall take place during dry periods, and may be conducted using either visual end of pipe inspection or detailed testing including dye testing, smoke testing, or video camera observation. For end of pipe visual screening, the evaluation shall be performed at least twice per year at each outfall. Instances of dry weather flow, stains, sludge, color, odor, or other indications of a non-storm water discharge shall be recorded. For dye testing, smoke testing, or video camera observation methods, the evaluation shall be performed at least every 5 years, or a lesser period if deemed necessary by the WDNR.

Any unauthorized non-storm water discharges must be eliminated or covered under another permit. Following is a list of non-storm water discharges or flows that are not considered illicit, unless they are identified as a significant source of contamination:

- Uncontaminated pumped groundwater
- Uncontaminated groundwater infiltration
- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water
- Lawn watering
- Flows from riparian habitats and wetlands
- Fire fighting
- Street wash water

A worksheet and certification form is included in Attachment F.

6.3 ANNUAL FACILITY SITE COMPLIANCE INSPECTION

The AFSCI consists of a comprehensive facility inspection and a review of the effectiveness of the SWPPP. The inspection will be adequate to verify that the site drainage conditions and potential pollution sources identified in the SWPPP remain accurate, and that the BMPs prescribed in the SWPPP are being implemented, properly operated, and adequately maintained. In addition, the

quarterly inspections will be reviewed, the site will be inspected for evidence of pollution, and equipment will be inspected. Information reported will include the inspection date, inspection personnel, scope of the inspection, observations, assessment of BMPs, corrective actions taken, and revisions needed in the SWPPP.

WDNR Form 3400-176, the AFSCI report, will be completed when conducting this review. The report (**Attachment C**) will be completed each year and kept on file with the SWPPP. No submittal to the WDNR is required for Tier 2 facilities.

The SWPPP implementation schedule is detailed in **Attachment D**.

6.4 ANNUAL IMPAIRED WATERBODY AND TOTAL MAXIMUM DAILY LOAD REVIEW

By February 15th of each year, an annual review will be performed to determine whether the facility discharges a pollutant of concern via storm water to an impaired waterbody or a waterbody included in a state- and federally-approved total maximum daily load (TMDL). The results of these evaluations will be documented with the AFSCI (see **Section 6.3**) and in **Attachment G**. Further details on performing these reviews are presented in the following sections.

6.4.1 Impaired Waterbody Review

Impaired waters are those listed as not meeting applicable surface water quality standards, and are also referred to as 303(d) waters. In accordance with the Tier 2 General Permit, a facility covered under the permit may not create a new source of discharge or increase an existing discharge of a pollutant of concern into an impaired waterbody unless the new or increased discharge causes the receiving water to meet applicable water quality standards, or the discharge is consistent with a TMDL allocation that has been approved by the Environmental Protection Agency (EPA).

The WDNR maintains a list of impaired waterbodies on their website. The information includes the pollutant of concern for each specific waterbody. A searchable list of waterbodies considered impaired can be found on the WDNR website at: http://dnr.wi.gov/water/impairedSearch.aspx.

Attachment G includes results of the annual reviews.

Because the site ultimately discharges to an impaired waterbody, **Section 6.4.3** has been incorporated into the SWPPP to identify control measures and management practices that will collectively be used to reduce, with the goal of eliminating, the storm water discharge of pollutant(s) contributing to the impairment.

6.4.2 Total Maximum Daily Load Waterbody Review

TMDL's are developed for impaired waterbodies. TMDL is the amount of pollutant that may be discharged into a waterbody that has been deemed acceptable by the EPA. TMDL levels are dependent on the specific waterbody.

A list of waterbodies included in a TMDL can be found on the WDNR website at: http://dnr.wi.gov/water/impairedSearch.aspx?status=TMDL+Approved.

Attachment G includes results of the annual reviews.

6.4.3 Measures to Reduce Pollutants of Concern

Because the site can ultimately discharge to an impaired waterbody (see **Attachment G**), the facility controls and operations have been evaluated to determine if the known pollutants of concern (polychlorinated biphenyls [PCBs] and mercury) are present and if control measures and management practices implemented at the site reduce the discharge of these pollutants to the impaired waterbodies.

- The landfill does not have direct sources of mercury on site; however, mercury residuals can be present in the scrubber by-product, which is landfilled along with the ash. All storm water that comes in contact with the scrubber by-product is diverted to the leachate collection system and discharged into the PVC-lined Leachate/Surface Water Pond.

- The landfill does not have sources of PCBs on site.

The facility is inspected regularly in accordance with the requirements of the General Permit (see **Section 6.0**) and the facility's inspection and monitoring requirements (see **Section 3.1.1**). Site personnel will implement additional operational improvements or BMPs that may be identified during inspections to further reduce the contaminants of concern.

7.0 PERSONNEL TRAINING

Appropriate training and instruction is necessary to carry out the pollution prevention activities presented in this plan. Training shall be conducted in the areas of:

- BMPs
- Environmental Health and Safety Incidents
- Familiarity with SWPPP

Once each calendar year, a training session will be held with the SWPPP team members covering the above items. SWPPP team members will be responsible for training additional personnel as deemed necessary and documenting (signed by the SWPPP team member and the employee being trained) that this has been accomplished. All new personnel will be trained as they enter positions where they would have pollution prevention responsibilities. A training record form can be found in **Attachment E**.

8.0 RECORDKEEPING

A record of all quarterly facility inspections and AFSCI reports will be maintained. Example forms are included in **Attachments B** and **C**.

A record of training activities and personnel involved will be maintained. This record is included in **Attachment E**.

A copy of the Tier 2 General Permit is included in **Attachment A**.

Records of all monitoring information and copies of all reports required by this permit will be retained on site at the facility for a minimum of 5 years from the date of the sample, measurement, report, or application. These records will be made available to the WDNR upon request. It is recommended that

copies of the recordkeeping forms be made from the originals in this report and maintained in a central file.

9.0 PLAN REVIEW

It is the facility's responsibility to initiate changes to this plan as changes are made to the facility. The SWPPP coordinator will conduct an annual review of the SWPPP to determine if an update is needed. At a minimum, it should be updated when permits are renewed. In addition, the SWPPP will be amended and submitted to WDNR if the facility expands, experiences any operations modifications or changes to BMPs, or changes any significant material handling or storage practices that will result in significant increases in the exposure of pollutants to storm water. The amended SWPPP will have a description of the new activities that contribute to the increased pollutant loading, planned source control activities, and an estimate of the new or increased discharge of pollutants following treatment and a description of the new or increased discharge on storm water treatment facilities, if applicable. WPL must notify the WDNR in the event of any facility operational changes that could result in additional significant storm water contamination.

The SWPPP will also be amended and submitted to WDNR if WPL or the WDNR determines that the SWPPP is ineffective in controlling storm water pollutants discharged to the waters of the state.

Attachment H includes a log to track amendments and reviews to the SWPPP.

Table 1

Storm Water Outfalls

Table 1. Storm Water Outfalls
Wisconsin Power and Light Company Columbia Dry Ash Disposal Facility
Pardeeville, Wisconsin

Outfall	Area Description (See Figures 1 and 2)	Outfall Description (See Figure 3 and Note)	Status
SW01	Storm water runoff from the non-active modules at the dry ash disposal facility.	Inlet to the south sediment basin. The basin outlet structure discharging to the south into a wetland and/or water infiltrates to groundwater in the basin.	Existing outfall
SW02	Storm water runoff from undeveloped modules, intermediate cover, stockpiles, and paved access road.	Culvert inlet on the south side of Murray Road. Water infiltrates to groundwater in a low spot on the north side of Murray Road.	Existing outfall

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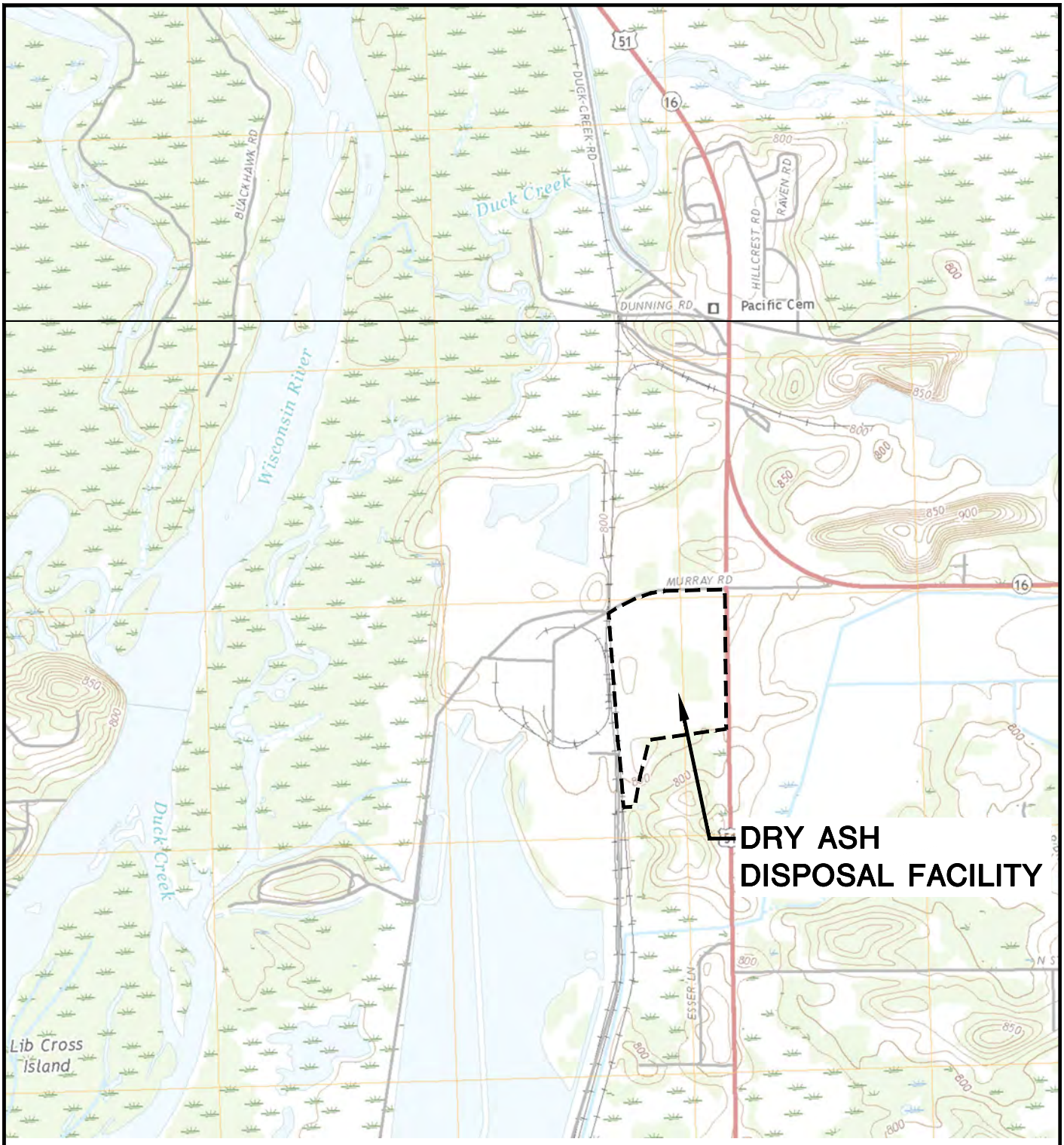
Figures



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POYNETTE QUADRANGLE
WISCONSIN–COLUMBIA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT	WISCONSIN POWER AND LIGHT COMPANY COLUMBIA ENERGY CENTER W8375 MURRAY ROAD PARDEEVILLE, WI 53954	SITE	WISCONSIN POWER AND LIGHT COLUMBIA ENERGY CENTER PARDEEVILLE, WI

SITE LOCATION MAP

PROJECT NO.	25220183.00	DRAWN BY:	RJG
DRAWN:	12/02/2019	CHECKED BY:	PG
REVISED:	02/28/2022	APPROVED BY:	EJN 04/18/2022

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

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LEGEND

- ASH DISPOSAL FACILITY LIMITS
- APPROVED LIMITS OF ASH FILL
- PHASE/MODULE LIMIT
- 810 EXISTING GRADE (10' CONTOUR)
- EXISTING GRADE (2' CONTOUR)
- PAVED ROAD
- UNPAVED ROAD
- RAILROAD TRACKS
- VEGETATION
- WETLAND
- FENCE
- SWALE
- EDGE OF WATER
- APPROXIMATE LIMITS OF EXISTING LEACHATE/SURFACE WATER POND LINER
- FINAL COVER LIMITS
- CULVERT
- TRANSMISSION TOWER
- WATER SUPPLY WELL
- STAFF GAUGE
- WATER TABLE WELL
- PIEZOMETER
- SURFACE WATER SAMPLE LOCATION
- LYSIMETER
- LEACHATE HEADWELL
- ABANDONED WATER TABLE WELL
- ABANDONED PIEZOMETER
- BENCHMARK

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND AND AMES DRONE SURVEY DATED JUNE 6, 2023.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AUGUST 2012, AND JANUARY 2016, AND BY SCS ENGINEERS IN MAY 2019.
3. WETLANDS OUTSIDE FACILITY LIMITS ARE FROM THE MAY 19, 2015 ASSURED WETLAND DELINEATION PERFORMED BY STANTEC. WETLANDS INSIDE FACILITY LIMITS ARE FROM THE OCTOBER 18, 2017 ASSURED WETLAND DELINEATION PERFORMED BY MACH IV.
4. UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL UTILITIES ARE SHOWN.

SURVEY CONTROL TABLE

BM	NORTHING	EASTING	ELEVATION
5	545,255.97	2,123,490.03	804.65
6	543,461.54	2,123,405.36	834.12
18	540,900.39	2,125,381.39	801.87
19	543,233.12	2,125,317.67	829.97

NOTE: BM5 AND BM18 ARE LOCATED OUTSIDE THE LIMITS OF THIS EXISTING CONDITIONS DRAWING.

100 0 100

SCALE: 1" = 100'

I:\25222157.00\Drawings\SWPPP\SWPPP Update FIG 2 and 3.dwg, 7/18/2023 2:58:01 PM

PROJECT NO.	25217156.00	DRAWN BY:	RJG/SB
DRAWN:	07/13/2016	CHECKED BY:	RJG/BLP
REVISED:	06/23/2023	APPROVED BY:	PEG 07/18/2023

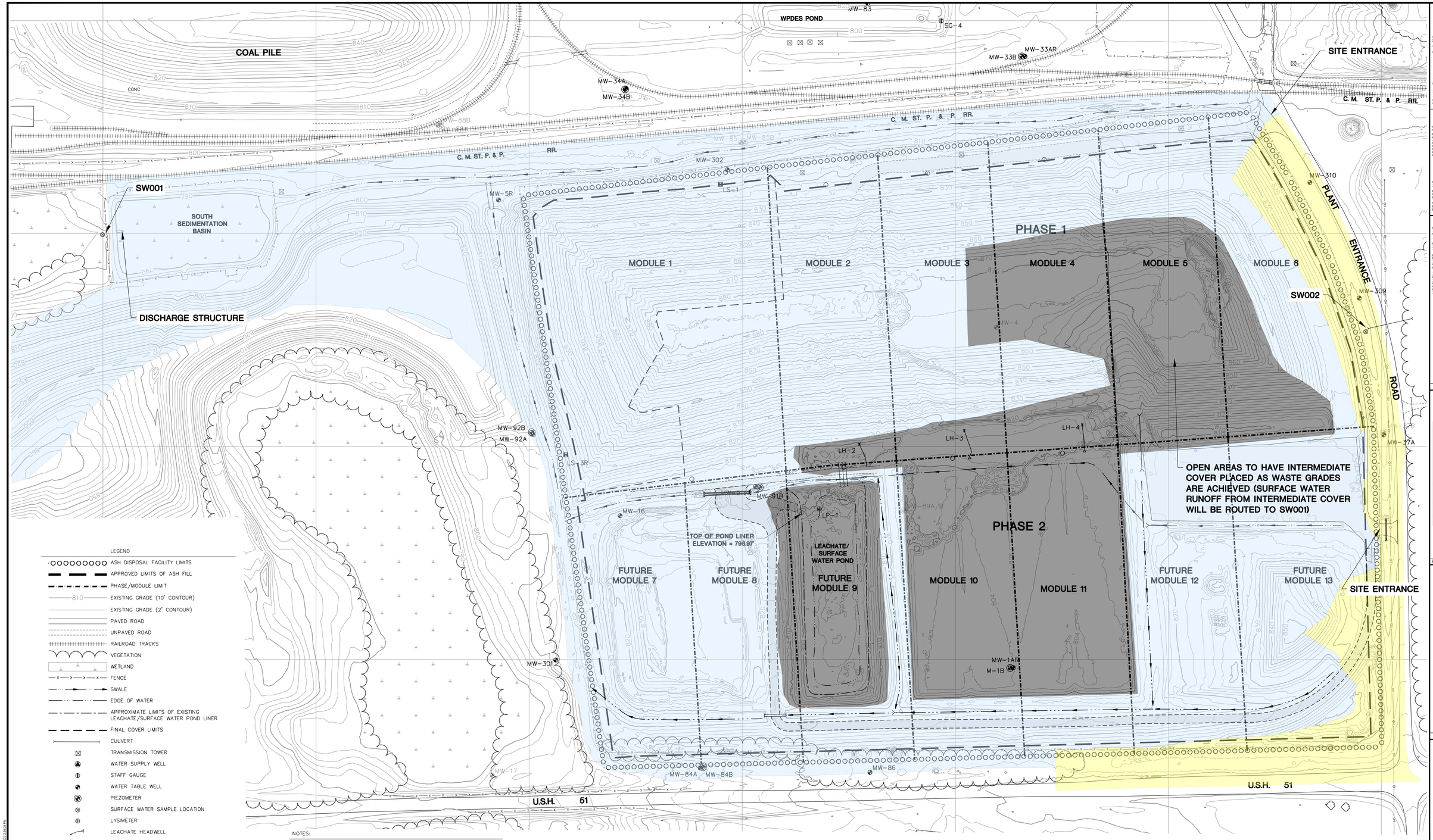
CLIENT: Wisconsin Power and Light Company
WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

SITE: STORM WATER POLLUTION PREVENTION PLAN
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

EXISTING CONDITIONS

FIGURE 2



LEGEND

- ASH DISPOSAL FACILITY LIMITS
- APPROVED LIMITS OF ASH FILL
- PHASE/MODULE LIMIT
- 810 EXISTING GRADE (10' CONTOUR)
- EXISTING GRADE (2' CONTOUR)
- PAVED ROAD
- UNPAVED ROAD
- RAILROAD TRACKS
- VEGETATION
- WETLAND
- FENCE
- SWALE
- EDGE OF WATER
- APPROXIMATE LIMITS OF EXISTING LEACHATE/SURFACE WATER POND LINER
- FINAL COVER LIMITS
- CULVERT
- TRANSMISSION TOWER
- WATER SUPPLY WELL
- STAFF GAUGE
- WATER TABLE WELL
- PIEZOMETER
- SURFACE WATER SAMPLE LOCATION
- LYSIMETER
- LEACHATE HEADWELL
- ABANDONED WATER TABLE WELL
- ABANDONED PIEZOMETER
- BENCHMARK
- ACTIVE LANDFILL DRAINAGE AREA (TO LEACHATE/SURFACE WATER POND)
- SW01 OUTFALL DRAINAGE AREA
- SW02 OUTFALL DRAINAGE AREA

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014 AND AND AMES DRONE SURVEY DATED JUNE 6, 2023.
2. COLUMBIA ASH DISPOSAL SWPPP COVERS ALL SHADED AREAS.
3. IMPERVIOUS AREA INCLUDES GRAVEL ACCESS ROADS, PORTIONS OF US HWY 51, MURRAY ROAD AND MODULE 5, 6, 10, AND 11. MODULE 5, 6, 10, AND 11 ARE CURRENTLY COVERED WITH A RAIN COVER (IMPERVIOUS LAYER) AND WATER IS DIVERTED TO SWALES THAT DISCHARGE TO SOUTH SEDIMENTATION BASIN.

N

100 0 100

SCALE: 1" = 100'

OUTFALL DRAINAGE AREAS

OUTFALL	DRAINAGE AREA (ACRES)	IMPERVIOUS AREA (ACRES)	% IMPERVIOUS	% PERVIOUS
SW01	52.8	4	7.1	92.9
SW02	6.4	1.2	19	81

PROJECT NO.	25220183.00
DRAWN:	07/13/2016
REVISED:	06/23/2023
DRAWN BY:	RJG/SB
CHECKED BY:	RJG/BLP
APPROVED BY:	PEC 07/18/2023

Wisconsin Power and Light Company
WISCONSIN POWER AND LIGHT COMPANY
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

CLIENT

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

STORM WATER POLLUTION PREVENTION PLAN
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

SITE

DRAINAGE AREAS AND OUFALLS

FIGURE 3

Attachment A

WPDES General Storm Water Permit

Wisconsin Pollutant Discharge Elimination System
Tier 2 Industrial Facilities General Permit for Storm Water Associated with Industrial Activity
Permit No. S067857-5

(Note: This update to the Tier 2 General Permit was issued on May 31, 2021, and expires on June 2, 2025.)

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM WPDES PERMIT NO. WI-S067857-5

TIER 2 INDUSTRIAL FACILITIES

In compliance with the provisions of ch. 283, Wis. Stats., and ch. NR 216, Wis. Adm. Code, any **Tier 2** facility as defined in ch. NR 216, Wis. Adm. Code, and located in the State of Wisconsin, excluding section 2.5.1, that discharges

STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITY

and meeting the applicability criteria in section 2 of this permit and that receives a letter from the Wisconsin Department of Natural Resources (Department) granting coverage under this permit, is authorized to discharge storm water to waters of the state provided that the discharge is in accordance with the conditions set forth in this permit.

This permit is issued by the Department and covers storm water discharges from the facility as of the **Start Date** of permit coverage to the permittee. For initial permit coverage, the Department will transmit a cover letter to the permittee stating that the facility is covered under this permit. Initial coverage under this permit will become effective at a facility beginning upon the **Start Date** specified by the Department in the cover letter. For an existing facility with permit coverage under a previously issued version of the Tier 2 general permit, coverage under this permit will become effective at the facility beginning upon the **Effective Date** below. For these facilities, the **Effective Date** is the **Start Date.**

State of Wisconsin Department of Natural Resources
For the Secretary

By _____ May 14, 2021
Brian Weigel, Director Date
Bureau of Watershed Management

PERMIT EFFECTIVE DATE: May 31, 2021 **PERMIT EXPIRATION DATE:** June 2, 2025

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Note: Information about the Department of Natural Resources' storm water program, this general permit, forms, and other helpful resources is available at https://dnr.wisconsin.gov/topic/Stormwater.

1. APPLICATION REQUIREMENTS

1.1 Initial Permit Coverage The owner or operator of a Tier 2 industrial facility type listed in s. NR 216.21(2)(b), Wis. Adm. Code, and not previously covered under the Tier 2 general permit shall submit a complete Notice of Intent (NOI) to the Department to apply for coverage under an industrial storm water discharge permit in accordance with the time frames in s. NR 216.22(2), Wis. Adm. Code. Within 30 calendar days of receipt of the NOI, the Department will evaluate the information submitted in the NOI to determine whether the NOI is complete, whether additional information is needed for review, whether the facility will be covered under this permit or an individual permit, or whether coverage under a permit will be denied. Based upon this evaluation, unless notified to the contrary by the Department, within 30 calendar days of receipt of the NOI, the Department will transmit a cover letter to the owner or operator indicating the **Start Date** upon which permit coverage becomes effective at the facility with instructions on where to download the permit from the Department website. In the alternative, a hard copy of the permit will be mailed to the owner or operator of the facility upon request.

Note: The NOI form (Form 3400-163), information about submitting via the Department's Water ePermitting System, and general permit are available for download from the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html. The Notice of Intent requires applicants to provide information on the applicant, facility location, applicability and operations information, storm water discharge information, and non-storm water discharge information.

1.2 Existing Permit Coverage Unless the Department makes a determination for an individual WPDES permit under section 2.5.7, a Tier 2 industrial facility type listed in s. NR 216.21(2)(b), Wis. Adm. Code, with existing Tier 2 general permit coverage prior to the **Effective Date** of this permit is automatically covered under this permit as of the **Effective Date**. For these permittees, the **Effective Date** is the permittee's **Start Date.** The Department will notify the owner or operator of the facility's continued coverage under this permit with instructions on where to download the permit from the Department website. In the alternative, a hard copy of the permit will be mailed to the owner or operator of the facility upon request.

Note: The general permit is available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

1.3 No Exposure Certification The owner or operator of a facility not currently covered under this permit that has submitted a Conditional No Exposure Certification to the Department in accordance with s. NR 216.21(3), Wis. Adm. Code, but that has been denied a No Exposure Exclusion by the Department shall apply for permit coverage in accordance with section 1.1 of this permit within 14-working days of being notified by the Department of the denial. The owner or operator of a facility that has previously been granted a No Exposure Exclusion by the Department but that has had that exclusion revoked shall apply for permit coverage in accordance with section 1.1 of this permit within 14-working days of being notified by the Department of the revocation.

1.4 Permit Coverage Transfers A permittee who will no longer control the permitted industrial facility may request that permit coverage be transferred to the person who will control the industrial facility. The transfer request shall be signed by both the permittee and the new owner or operator and sent electronically through the Department's Water ePermitting System. The Department may require additional information including an NOI to be filed prior to transferring permit coverage. Coverage is not transferred until the Department sends notification of transfer approval to the new owner or operator. The transfer request shall contain the following information:

1.4.1 The name and address of the facility.

1.4.2 The Facility Identification Number.

1.4.3 The names of the persons involved in the transfer, their signatures, and date of signatures.

1.4.4 A description of any significant changes in the operation of the facility.

1.4.5 A statement of acknowledgement by the transferee that it will be the permittee of record and is responsible for compliance with the permit.

Note: The Transfer of Coverage form (Form 3400-222) and information about submitting via the Department's Water ePermitting System are available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

1.5 Permit Coverage Terminations

If the permittee no longer claims coverage under this permit, the permittee shall submit a signed Notice of Termination (NOT) to the Department in accordance with s. NR 216.32, Wis. Adm. Code.

Note: The NOT form (Form 3400-170) and information about submitting via the Department's Water ePermitting System are available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

2. PERMIT APPLICABILITY CRITERIA

2.1 Applicability This permit applies to point sources at facilities which discharge contaminated storm water associated with industrial activity to waters of the state, either directly or via a separate storm sewer system, originating from industrial facilities belonging to:

2.1.1 Manufacturing facilities described by the following SIC codes:

SIC	Description
20--	Food & Kindred Products
21--	Tobacco Products
22--	Textile Mill Products
23--	Apparel & Other Textile Products
2434	Wood Kitchen Cabinets
25--	Furniture & Fixtures
265-	Paperboard Containers & Boxes
267-	Misc. Converted Paper Products
27--	Printing, Publishing, & Allied Industries
283-	Drugs
285-	Paints & Allied Products
30--	Rubber & Misc. Plastics Products
31--	Leather & Leather Products
323-	Products of Purchased Glass
34--	Fabricated Metal Products
35--	Industrial & Commercial Machinery & Computer Equipment
36--	Electronic & Other Electrical Equipment & Components
37--	Transportation Equipment
38--	Instruments & Related Products
39--	Misc. Manufacturing Industries
4221	Farm Product Warehousing & Storage
4222	Refrigerated Warehousing & Storage
4225	General Warehousing & Storage

Note: Facilities in SIC codes 311-, 3441 and 373- are included in s. NR 216.21(2)(a) 1. as Tier 1 facilities.

2.1.2 Transportation facilities described by the following SIC codes that have vehicle maintenance shops, equipment cleaning operations, or airport de-icing operations. This only applies to those portions of these facilities that are either involved in vehicle maintenance including rehabilitation, mechanical repairs, painting, fueling, lubrication, and associated parking areas, or involved in cleaning operations, or de-icing operations, or that are listed as a pollution source area under s. NR 216.27(3)(e):

SIC	Description
40--	Railroad Transportation
41--	Local & Interurban Passenger Transit
42--	Trucking & Warehousing
43--	U.S. Postal Service
44--	Water Transportation

45--	Transportation by Air
5171	Petroleum Bulk Stations & Terminals

2.1.3 Facilities described by the following SIC codes, including active and inactive mining operations. This permit only applies where storm water runoff has come into contact with any overburden, raw material, intermediate product, finished product, by-product, or waste material.

SIC	Description
10--	Metal Mining
12--	Coal Mining
13--	Oil & Gas Extraction
14--	Non-metallic Minerals, except fuels

Note: An industry-specific general permit has been developed by the Department that regulates both process and storm water discharges associated non-metallic mining operations, SIC code 14--. While the Department intends to cover non-metallic mining operations under the industry-specific general permit, it may alternatively cover storm water discharges associated with non-metallic mining operations under this Tier 2 general permit. This permit does not apply to non-coal mining operations which have been released from applicable state or federal reclamation requirements after December 17, 1990; nor to coal mining operations released from the performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act authority under 30 USC 1201 et seq. and 16 USC 470 et seq. Production, processing, or treatment operations or transmission facilities associated with oil and gas extraction are included only if there has been a discharge of storm water after November 16, 1987 containing a reportable quantity of a pollutant, or if a storm water discharge contributed to a violation of a water quality standard.

2.1.4 Facilities subject to storm water effluent limitation guidelines, new or existing source performance standards, or toxic pollutant effluent standards under 33 USC 1251, 1311, 1314 (b) and (c), 1316 (b) and (c), 1317 (b) and (c), 1326 (c), except for those facilities identified in paragraph A.(1) that do not have contaminated storm water.

2.1.5 Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act under 33 USC s. 1345.

2.1.6 Hazardous waste treatment, storage, and disposal facilities, including those operating under interim status or a permit under Subtitle C of the Resource Conservation and Recovery Act (RCRA), 42 USC 6901 et seq.

2.1.7 Landfills, land application sites, and open dumps that receive or have received any industrial waste from any of the facilities identified in this section 2.1 of this permit, including those subject to regulation under subtitle D of RCRA, 42 USC 6901 et seq., or ch. 289, Wis. Stats. For purposes of this section, landfills include those landfills for construction and demolition waste disposal.

2.1.8 Steam electric power generating facilities, including coal handling sites but not including offsite transformer or electric substations.

2.1.9 Facilities described in SIC code 2951 for asphalt paving mixes and block, and facilities described in SIC codes 3271, 3272 and 3273 for cement products.

Note: In 1997, the North American Industry Classification System (NAICS) was developed as the standard for use by Federal agencies in classifying business establishments and has been adopted by Federal agencies to replace the SIC Code system. As a result, an industrial facility identified in sections 2.1.1 through 2.1.9 of this permit may have an NAICS Code assigned to it by a Federal agency, trade association, or other organization. If needed, the Department may use Federal data to convert the NAICS Code to the corresponding SIC Code for purposes of determining the applicability of this permit to the facility.

2.1.10 Facilities originally covered under a Tier 1 general permit, but subsequently covered under a Tier 2 general permit pursuant to s. NR 216.23(3), Wis. Adm. Code.

2.2 Authorized Discharges This permit authorizes storm water point source discharges to waters of the State from industrial activities identified in section 2.1 of this permit. This permit also authorizes the discharge of storm water commingled with flows contributed by process and non-process wastewater, provided those flows are regulated by other WPDES permits, if required.

2.3 Movement to Tier One Coverage In accordance with s. NR 216.23(4), Wis. Adm. Code, the Department may revoke coverage under this permit. In this case, the permittee shall reapply for Tier 1 general permit coverage.

2.4 Exclusions This permit does not apply to any of the following:

2.4.1 Diffused surface drainage or agricultural storm water discharges.

2.4.2 Non−storm water discharges.

2.4.3 Non−storm water discharges for which coverage under an individual or general WPDES permit is not required, including landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands and fire fighting.

2.4.4 Inactive, closed or capped landfills that have no potential for contamination of storm water. The Department shall make a determination of contamination potential on a case−by−case basis.

2.4.5 Remedial action discharges or discharges authorized by a WPDES permit for discharging contaminated or uncontaminated groundwater.

2.4.6 Areas located on plant lands that are segregated from the industrial activities of the plant, such as office buildings and accompanying parking lots, if the drainage from the segregated areas is not mixed with contaminated storm water drainage.

2.4.7 Storm water discharges into a municipal combined sewer system.

Note: Areas where this exclusion may apply include portions of the City of Milwaukee, the City of Superior, and the Village of Shorewood.

2.4.8 Storm water discharges from an industrial facility for which the owner or operator has submitted a Conditional No Exposure Certification to the Department in accordance with s. NR 216.21(3), Wis. Adm. Code, provided that the Department concurs with the no exposure certification and the conditions under which a No Exposure Exclusion was granted remain in effect.

2.5 Discharges Not Covered by this Permit The following are not authorized under this permit:

2.5.1 Storm water discharges within Indian Country.

Note: Indian County is defined under 18 USC §1151 and includes all lands within the exterior boundaries of federally recognized Indian reservations and on lands held in federal trust status. Facilities that currently do not have storm water discharge permit coverage and are located within Indian Country should contact the United States Environmental Protection Agency (USEPA) to apply. For existing discharges covered under a National Pollution Discharge Elimination System (NPDES) permit from USEPA, discharges will continue to be covered by a NPDES permit. Dischargers that previously held permit coverage under previous versions of this permit after September 30, 2001, are no longer eligible for coverage under this permit and must contact USEPA to apply.

USEPA's website contains information on the Multi-Sector General Permit: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities. Facilities should verify eligibility for coverage under the general permit or determine if an individual permit is needed. Information on how to apply for the Multi-Sector General Permit can be accessed here: https://epanet.zendesk.com/hc/en-us/articles/360001508168-How-to-Create-a-NOI-for-MSGP-PPT-.

2.5.2 Discharges of hazardous substances that are required to be reported under ch. NR 706, Wis. Adm. Code.

2.5.3 Storm water discharges that affect wetlands, unless the Department determines that the storm water discharges comply with the wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.

2.5.4 Storm water discharges that affect endangered and threatened resources, unless the Department determines that the storm water discharges comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

2.5.5 Storm water discharges that affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the Department determines that the storm water discharges will not have an adverse effect on any historic property pursuant to s. 44.40(3), Wis. Stats.

2.5.6 Storm water discharges from land disturbing construction activity affecting one acre or more of land that require storm water permit coverage under subch. III of NR 216, Wis. Adm. Code, for new construction, reconstruction, or expansion of an industrial facility.

Note: Storm water discharges from areas of bare soil due to the normal industrial operation of the facility are covered under this permit provided those areas are managed in accordance with section 3.3.2.8.2.

2.5.7 Facilities where the Department makes a determination, pursuant to s. 283.35(3), Wis. Stats. or

s. NR 216.25(3), Wis. Adm. Code, that a storm water discharge is more appropriately covered under an individual WPDES permit. The Department may make this determination if one or more of the following conditions are met:

2.5.7.1 The storm water discharge is potentially a significant source of pollution and more appropriately regulated by an individual WPDES storm water discharge permit.

2.5.7.2 The facility is not in compliance with the terms and condition of this permit or Subchapter II of ch. NR 216, Wis. Adm. Code.

2.5.7.3 Numeric effluent limitations or standards are promulgated for a storm water discharge covered by this permit.

2.5.7.4 Storm water discharges that are regulated by permits containing storm water effluent limitations.

2.5.8 Storm water discharges in violation of the regulation of injection wells under ch. NR 815, Wis. Adm. Code.

Note: Information about the Department's injection well program may be found at: https://dnr.wi.gov/topic/wells/uiw.html.

2.5.9 Discharges associated with activities subject to any of the federal effluent limitation guidelines listed in Table 1 below:

Table 1.

Regulated Activity	**40 CFR Part/Subpart**
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A
Runoff from asphalt emulsion facilities	Part 443, Subpart A
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, and D
Runoff from hazardous waste landfills	Part 445, Subpart A
Runoff from non-hazardous waste landfills	Part 445, Subpart B
Runoff from coal storage piles at steam electric generating facilities	Part 423
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449

Note: The federal effluent limitations guidelines are available at the following website: https://www.epa.gov/eg/industrial-effluent-guidelines. Discharges associated with activities subject to any of the federal effluent limitation guidelines listed in Table 1 require coverage under a separate WPDES general permit or individual permit. However, these industrial facilities still require coverage under this permit for discharges not subject to the federal effluent limitation guidelines listed in Table 1.

2.6 Water Quality Standards

2.6.1 This permit specifies the conditions under which storm water may be discharged to waters of the state for the purpose of achieving water quality standards contained in chs. NR 102 through 105, NR 140, and NR 207, Wis. Adm. Code. For the term of this permit, compliance with water quality standards will be addressed by adherence to general narrative-type storm water discharge limitations and implementation of a storm water pollution prevention plan.

2.6.2 This permit does not authorize storm water discharges that the Department, prior to authorization of coverage under this permit, determines will cause or have reasonable potential to cause or contribute to an excursion above any applicable water quality standard. Where such determinations have been made prior to authorization, the Department may notify the applicant that an individual permit application is necessary. However, the Department may authorize coverage under this permit where the storm water pollution prevention plan required under this permit will include appropriate controls and implementation procedures designed to bring the storm water discharge into compliance with water quality standards.

2.7 Outstanding and Exceptional Resource Waters

2.7.1 Storm water discharges from industrial facilities covered under a previously issued version of this permit shall comply with sections 2.7.2 through 2.7.5 as of the **Effective Date**. Storm water discharges from industrial facilities covered under this permit after the **Effective Date** shall comply with sections 2.7.2 through 2.7.5 as of the **Start Date** of coverage under this permit.

2.7.2 The permittee shall determine whether any part of its facility discharges storm water to an outstanding resource water (ORW) or exceptional resource water (ERW). ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code, respectively.

Note: A list of ORWs and ERWs may be found on the Department website at: https://dnr.wi.gov/topic/surfacewater/orwerw.html.

2.7.3 The permittee may not establish a new storm water discharge of pollutants directly to an ORW or an ERW unless the discharge of pollutants is equal to or less than existing levels of pollutants immediately upstream of the discharge site. The storm water pollution prevention plan required under section 3 of this permit shall include practices designed to meet this requirement for new discharges.

2.7.3.1 "New storm water discharge" or "new discharge" means a storm water discharge that would first occur after the permittee's **Start Date** of coverage under this permit to a surface water to which the facility did not previously discharge storm water, and does not include an increase in a storm water discharge to a surface water to which the facility discharged on or before coverage under this permit.

2.7.4 The permittee may increase an existing storm water discharge directly to an ERW only if the increased discharge will not cause a significant lowering of water quality and the discharge is to accommodate to important economic or social development.

2.7.5 The permittee may increase an existing storm water discharge to an ORW only if the increased discharge of pollutants is equal to or less than the background levels of the pollutant upstream of the discharge and the discharge is to accommodate to important economic or social development.

2.8 Impaired Water Bodies and Total Maximum Daily Load Requirements

2.8.1 "Pollutant(s) of concern" means a pollutant that is contributing to the impairment of a water body.

2.8.2 By February 15th of each calendar year, the permittee shall perform an annual check to determine whether its facility discharges a pollutant of concern via storm water to an impaired water body listed in accordance with Section 303 (d) (1) of the Federal Clean Water Act, 33 USC §1313 (d) (1) (C), and the implementing regulation of the U.S. Environmental Protection Agency (USEPA), 40 CFR §130.7 (c) (1). Impaired waters are those listed as not meeting applicable surface water quality standards. The results of the annual check shall be documented with the Annual Facility Site Compliance Inspection required under section 4.3.1 of this permit.

Note: The Department updates the list approximately every two years. The updated list is effective upon approval by the USEPA. The current list may be found on the Department website at: https://dnr.wi.gov/topic/impairedwaters/.

2.8.3 A permittee that discharges a pollutant of concern via storm water to an impaired water body shall, within 180 days of the annual check that determines the facility discharges to an impaired water body, include a written section in the storm water pollution prevention plan that specifically identifies source area pollution prevention controls and storm water best management practices that will collectively be used to reduce, with the goal of eliminating, the storm water discharge of pollutant(s) of concern that contribute to the impairment of the water body and explain why these controls and practices were chosen as opposed to other alternatives. Changes identified in the storm water pollution prevention plan shall be implemented with the 180-day timeframe.

Note: For a permittee that discharges a pollutant of concern via storm water to an impaired water body, amending the storm water pollution prevention plan will be required after the initial annual check and if subsequent annual checks indicate additional pollutants of concern have been added, additional water bodies have been designated as impaired, or other relevant changes to the designation have occurred.

2.8.4 The permittee may not establish a new storm water discharge of a pollutant of concern to an impaired water body or significantly increase an existing discharge of a pollutant of concern to an impaired water body unless the new or increased discharge does not contribute to the receiving water impairment, or the discharge is consistent with a State and Federal approved total maximum daily load (TMDL) allocation for the impaired water body.

2.8.4.1 "New storm water discharge" or "new discharge" has the meaning given in section 2.7.3.1 of this permit.

2.8.5 By February 15th each calendar year, the permittee shall perform an annual check to determine whether its facility discharges a pollutant of concern via storm water to a water body included in a State and Federal approved TMDL. If so, the permittee shall assess whether any TMDL wasteload allocation for the facility's discharge is being met through the existing pollution prevention controls and storm water best management practices or whether additional controls or treatment are necessary and feasible. The assessment of the feasibility of additional controls or treatment shall focus on the ability to improve

pollution prevention and treatment system effectiveness and the adequacy of implementation and maintenance of the additional controls or treatment. The results of the annual check shall be documented with the Annual Facility Site Compliance Inspection required under section 4.3.1 of this permit.

Note: The current State and Federal approved TMDLs may be found on the Department website at: https://dnr.wi.gov/topic/tmdls/.

2.8.6 Within 180 days of the annual check that determines the facility discharges to a TMDL allocated water body, a permittee that is included in a State and Federal approved TMDL shall submit to the Department a proposed implementation plan for the storm water discharge that meets the requirements of the State and Federal approved TMDL wasteload allocation for the facility. The proposed TMDL implementation plan shall specify any feasible pollution prevention and treatment improvements that could be made and specify any revisions or redesigns that could be implemented to increase the effectiveness of the permittee's storm water pollution prevention controls and treatment practices. The TMDL implementation plan shall also specify a time schedule for implementation of the improvements, revisions or redesigns necessary to meet the wasteload allocation for the facility. If a specific wasteload allocation has not been assigned to the facility under a TMDL, compliance with this permit shall be deemed to be in compliance with the TMDL.

2.9 Fish and Aquatic Life Waters

2.9.1 The permittee shall determine whether it will have a storm water discharge to a fish and aquatic life water as defined in s. NR 102.13, Wis. Adm. Code.

Note: Most receiving waters of the state are classified as a fish and aquatic life waters and this classification includes all surface waters of the state except ORWs, ERWs, Great Lakes system waters and variance water identified within ss. NR 104.05 through 104.10, Wis. Adm. Code. The Department may be consulted if the permittee is not certain of the classification.

2.9.2 The permittee may not establish a new storm water discharge of pollutants to a fish and aquatic life water if the discharge will result in the significant lowering of water quality of the fish and aquatic life water. Significant lowering of water quality is defined within ch. NR 207, Wis. Adm. Code.

2.9.2.1 "New storm water discharge" or "new discharge" has the meaning given in section 2.7.3.1 of this permit.

2.9.3 If the permittee's facility has an existing storm water discharge to a fish and aquatic life water, it may not increase the discharge of pollutants if the increased discharge would result in a significant lowering of water quality.

2.9.4 Any increased or new discharge of storm water authorized under this permit shall be to accommodate to important economic or social development.

2.10 Toxic Pollutants In accordance with s. NR 102.12 Wis. Adm. Code, a new discharge and increased discharge as defined in ch. NR 207, Wis. Adm. Code, of persistent, bioaccumulating toxic substances to the Great Lakes waters or their tributaries shall be avoided or limited to the maximum extent practicable. Any new or increased discharge of these substances is prohibited unless the permittee certifies that the new or increased discharge is necessary after utilization of best technology in process or control using waste minimization, pollution prevention, municipal pretreatment programs, material substitution or other means of commercially available technologies which have demonstrated capability for similar applications.

2.11 Minimum Source Area Control Requirements All permittees shall comply with the following minimum source area control requirements. The Storm Water Pollution Prevention Plan required under section 3 shall identify how each source area control requirement will be met. Source area controls shall be utilized to prevent storm water from becoming contaminated at the facility. Structural source area controls that are either proposed or in place at the facility shall be indicated on the facility drainage base map described in section 3.3.2.2 of this permit. The permittee shall:

2.11.1 Minimize exposure of pollutants associated with the potential sources of storm water contamination identified in section 3.3.2.4 of this permit.

2.11.2 Use good house-keeping measures such as sweeping, appropriate storage, and proper management of waste materials and dumpsters/compactors.

2.11.3 Maintain both structural and non-structural control measures, institute preventive maintenance for vehicles and equipment, and perform routine visual inspections.

2.11.4 Minimize the potential for leaks, spills, and other releases that may contaminate storm water, and institute spill prevention and response measures, including spill reporting described in section 6.5 of this permit.

2.11.5 Stabilize areas of bare soil with vegetation or through permanent land cover to control soil erosion, or when that is not possible, implement best management practices to meet the requirements of section 3.3.2.8.2 of this permit.

2.11.6 Construct and maintain salt storage facilities so that neither precipitation nor storm water runoff can come into contact with the stored salt in order to minimize pollutant discharges.

2.11.6.1 Salt storage piles shall be constructed on an impervious, curbed surface to prevent salt or brine from passing through the base and reaching waters of the state. Salt storage piles shall be enclosed by a building or structure with walls and a cover sufficient to prevent contact between precipitation and the salt and to prevent wind from eroding the salt or carrying any amount of the substance into potential contact with the waters of the state. Alternatively, for permittees that use brine and have salt storage piles on impervious curbed surfaces, install a means of diverting contaminated storm water to a brine treatment system for process use.

2.11.6.2 Any salt spillage resulting from activities such as loading or unloading, shall be immediately cleaned up to minimize contact with storm water.

2.11.7 Train and raise awareness of employees as appropriate on storm water pollution prevention, the requirements of this permit, and their specific responsibilities in implementing any of the requirements, practices, or activities of this permit or the Storm Water Pollution Prevention Plan.

2.11.8 Evaluate the facility for the presence of non-storm water discharges as specified in section 4.2. of this permit.

Note: This permit does not cover non-storm water discharges. See section 2.3.
2.11.9 Minimize dust and off-site tracking of soil, raw materials, intermediate products, final products, or waste materials.

2.11.10 If applicable, use a combination of storm water contact control or containment, drainage controls, or diversions to control SARA Title III Section 313 "Water Priority Chemicals" (42 USC s. 11023 (c)) potentially discharged through the action of storm water runoff, leaching, or wind.

2.12 Compliance with Runoff Management Performance Standards The owner or operator of a facility subject to the performance standards in s. NR 151.12 or ss. NR 151.121 to 151.128, Wis. Adm. Code, shall describe in the Storm Water Pollution Prevention Plan the best management practices necessary to maintain compliance with the applicable performance standards in s. NR 151.12 or ss. NR 151.121 to 151.128, Wis. Adm. Code, for those areas that are described in s. NR 151.12(2) or s. NR 151.121(2), Wis. Adm. Code, respectively. Best management practices installed to meet the performance standards in s. NR 151.12 or s. NR 151.121 to 151.128, Wis. Adm. Code, shall be maintained to meet the treatment capability as originally designed.

2.13 Post-Construction Performance Standards for Landfills For landfills, post-construction storm water best management practices constructed after the effective date of this permit shall be in compliance with the performance standards in ss. NR 151.122 and NR 151.123, Wis. Adm. Code.

Note: The infiltration performance standard in s. NR 151.124, Wis. Adm. Code, does not apply to landfills.

3. STORM WATER POLLUTION PREVENTION PLAN

3.1 Storm Water Pollution Prevention Plan Required In accordance with s. NR 216.27, Wis. Adm. Code, and section 3.3 of this permit, the owner or operator of a facility requiring coverage under this permit shall prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to applying for permit coverage under s. NR 216.22, Wis. Adm. Code.

3.2 Incorporation by Reference When plans are developed or activities conducted in accordance with other federal, state or local regulatory programs that meet the requirements of section 3.3.2 of this permit, the plans may be incorporated by the permittee into the SWPPP by reference.

3.3 Purpose and Content of a Storm Water Pollution Plan

3.3.1 Purpose of the Plan Any SWPPP prepared to comply with this permit shall do all of the following:

3.3.1.1 Identify sources of storm water and non-storm water contamination to the storm water drainage system.

3.3.1.2 Identify and prescribe appropriate "source area control" type best management practices designed to prevent storm water contamination from occurring.

3.3.1.3 Identify and prescribe "storm water treatment" type best management practices to reduce pollutants in contaminated storm water prior to discharge.

3.3.1.4 Prescribe actions needed either to bring non-storm water discharges under an appropriate WPDES permit or to remove these discharges from the storm drainage system.

3.3.1.5 Prescribe an implementation schedule so as to ensure that the storm water management actions prescribed in the SWPPP are carried out in a timely manner and evaluated on a regular basis.

3.3.2 Required Plan Content The SWPPP shall contain, at a minimum, the following items and provisions:

3.3.2.1 Pollution Prevention Individual The SWPPP shall identify by job title the specific individual who has primary responsibility for all aspects of SWPPP development and implementation and identify any other individuals concerned with SWPPP development or implementation, and their respective roles. The specific individual who has primary responsibility shall develop, evaluate, maintain and revise the SWPPP, and carry out the specific management actions identified in the SWPPP, including maintenance practices, monitoring activities, preparing and submitting reports, recordkeeping, and serving as facility contact for the Department.

3.3.2.2 Facility Site Description and Drainage Base Map The SWPPP shall contain a short summary of the major activities conducted at various locations throughout the facility. The SWPPP shall also include a facility drainage base map depicting all of the following:

3.3.2.2.1 How storm water drains on, through and from the facility to groundwater, surface water, or wetlands.

3.3.2.2.2 The facility property boundaries.

3.3.2.2.3 The storm drainage collection and disposal system including all surface and subsurface conveyances.

3.3.2.2.4 Any secondary containment structures.

3.3.2.2.5 The location of all outfalls that discharge channelized flow to groundwater, surface water or wetlands, including outfalls recognized as permitted outfalls under another WPDES permit, numbered for reference.

3.3.2.2.6 The drainage area boundary for each outfall.

3.3.2.2.7 The surface area in acres draining to each outfall, including the percentage that is impervious such as paved, roofed or highly compacted soil, and the percentage that is pervious such as grassy areas and woods.

3.3.2.2.8 Existing structural storm water controls.

3.3.2.2.9 The name and location of receiving waters.

3.3.2.2.10 The location of activities and materials that have the potential to contaminate storm water.

3.3.2.3 Summary of Existing Sampling Data or Observations The SWPPP shall summarize any results of available storm water sampling data or other observations that characterize the quality of storm water discharges or identifying sources of storm water contamination. Available data that characterizes the quality of storm water discharges under dry weather flow conditions shall also be included, except when such data has been or will be reported to the Department under another WPDES permit.

3.3.2.4 Potential Sources of Storm Water Contamination The SWPPP shall identify any significant pollutants or activities associated with the storm water pollution source areas identified in this permit. When possible, specific pollutants likely to be present in storm water as a result of contact with specific materials shall also be listed. The SWPPP shall identify all potential source areas of storm water contamination, including but not limited to:

3.3.2.4.1 Outdoor manufacturing areas.

3.3.2.4.2 Rooftops contaminated by industrial activity, exhaust vents, or a pollution control device.

3.3.2.4.3 Industrial plant yards.

3.3.2.4.4 Storage and maintenance areas for material handling equipment.

3.3.2.4.5 Immediate access roads and rail lines owned or operated by the permittee.

3.3.2.4.6 Material handling sites including storage, loading, unloading, transportation, or conveyance of any raw material, finished product, intermediate product and by-product or waste areas.

3.3.2.4.7 Storage areas (including tank farms) for raw materials, finished and intermediate products.

3.3.2.4.8 Disposal or application of wastewater.

3.3.2.4.9 Areas containing residual pollutants from past industrial activity.

3.3.2.4.10 Areas of significant soil erosion, including areas of bare soil.

3.3.2.4.11 Refuse sites.

3.3.2.4.12 Vehicle maintenance and cleaning areas.

3.3.2.4.13 Washing areas for equipment, vehicles, containers, or other items.

3.3.2.4.14 Shipping and receiving areas.

3.3.2.4.15 Manufacturing buildings.

3.3.2.4.16 Residual treatment, storage, and disposal sites.

3.3.2.4.17 Any other areas capable of contaminating storm water runoff.

3.3.2.5 Status of Non-Storm Water Discharges to the Storm Sewer The SWPPP shall identify all known contaminated and uncontaminated sources of non-storm water discharges to the storm sewer system or waters of the state and indicate which are covered by WPDES permits. The SWPPP shall contain the results of the non-storm water discharge monitoring required by s. NR 216.28, Wis. Adm. Code. If monitoring is not feasible due to the lack of suitable access to an appropriate monitoring location, the SWPPP shall include a statement that the monitoring could not be conducted and an explanation of the reasons why.

3.3.2.6 Source Area Control Best Management Practices The SWPPP shall rely, to the maximum extent practicable, on the use of source area control best management practices designed to prevent storm water from becoming contaminated at the facility. Source area control best management practices that are either proposed or in place at the facility shall be indicated on the facility drainage base map described in section 3.3.2.2 of this permit. The SWPPP shall provide for the use of the following source area control best management practices:

3.3.2.6.1 Activities to stabilize areas of bare soil with vegetation or through permanent land cover to control soil erosion.

3.3.2.6.2 Good house-keeping measures, preventive maintenance measures, visual inspections, spill prevention and response measures, and employee training and awareness.

3.3.2.6.3 Manage salt storage facilities so that neither precipitation nor storm water runoff can come into contact with the stored salt in order to minimize pollutant discharges. Alternatively, for permittees that use brine and have salt storage piles on impervious curbed surfaces, install and

maintain a means of diverting contaminated storm water to a brine treatment system for process use.

3.3.2.6.4 Use of a combination of storm water contact control or containment, drainage controls, or diversions to control SARA Title III Section 313 "Water Priority Chemicals" (42 USC s. 11023 (c)) potentially discharged through the action of storm water runoff, leaching, or wind.

3.3.2.7 Residual Pollutants The SWPPP shall identify pollutants that are likely to contaminate storm water discharges to waters of the state following implementation of source area control best management practices. Past sampling data collected at the facility or at sufficiently similar outfalls at other facilities may be used in making this determination. At a minimum, the following pollutants shall be considered for their potential to contaminate storm water:

3.3.2.7.1 Any pollutant for which an effluent limitation is contained in any discharge permit issued to the permittee, for this facility, by the Department.

3.3.2.7.2 Any pollutant contained in a categorical effluent limitation or pre-treatment standard to which the facility is subject.

3.3.2.7.3 Any SARA Title III Section 313 "Water Priority Chemical" (42 USC s. 11023 (c)) for which the permittee, for this facility, has reporting requirements and which has the potential for contaminating storm water.

3.3.2.7.4 Any other toxic or hazardous pollutants from present or past activity at the site that remain in contact with precipitation or storm water and which could be discharged to the waters of the state, and which are not regulated by another environmental program.

3.3.2.7.5 Any of the following parameters which might be present in significant concentrations: Oil and grease, pH, total suspended solids, 5-day biological oxygen demand, and chemical oxygen demand.

3.3.2.8 Storm Water Treatment Best Management Practices When source area control best management practices are not practicable or are inadequate to control storm water pollution, or when the Department determines source area control best management practices are inadequate to achieve a water quality standard, the SWPPP shall prescribe appropriate storm water treatment practices as needed to reduce the pollutants in contaminated storm water prior to discharge to waters of the state. Proposed or existing storm water treatment practices shall be shown on the facility drainage basin map described in section 3.3.2.2 of this permit. The SWPPP shall provide for the following types of storm water treatment practices:

3.3.2.8.1 Storm water significantly contaminated with petroleum products shall be treated for oil and grease removal by an adequately sized, designed, and functioning wastewater treatment device. Coverage under a separate individual or general permit is required for discharges of storm water from oil/water treatment devices. Under s. 281.41, Wis. Stats., prior Department approval of plans for oil and grease removal devices may be required.

3.3.2.8.2 Storm water discharges contaminated by sediment eroding from areas of bare soil that cannot be stabilized by pavement, gravel, vegetation, or other permanent land cover shall be treated by best management practices designed, installed and maintained to achieve compliance with the

construction site performance standards in s. NR 151.11(6m), Wis. Adm. Code, and in accordance with the Department's Construction Site Erosion and Sediment Control Technical Standards.

Note: The Construction Site Erosion and Sediment Control Technical Standards are available at the following Department website: https://dnr.wi.gov/topic/stormwater/standards/const_standards.html.

3.3.2.9 Facility Monitoring The SWPPP shall include provisions for complying with the monitoring requirements specified in s. NR 216.28, Wis. Adm. Code, and section 4 of this permit. The SWPPP shall include a checklist of inspections to be made during the annual facility site inspection required by s. NR 216.28(2), Wis. Adm. Code. The SWPPP shall also identify for each outfall the type of monitoring that will be conducted, such as non-storm discharge monitoring and storm water discharge quality inspections.

3.3.2.10 SWPPP Implementation Schedule The SWPPP shall include an implementation schedule for the requirements of this permit that meet the compliance timeframes set forth in this permit.

3.3.2.11 Certification and Signature The SWPPP shall be signed in accordance with s. NR 216.22(7), Wis. Adm. Code, and contain the following statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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."

3.4 Amending a SWPPP Unless an alternative timeframe is specified by the Department, the permittee shall amend and submit the SWPPP to the department within 30 days of the occurrence of any of the following circumstances:

3.4.1 When expansion, production increases, process modifications, changes in material handling or storage, or other activities are planned which will result in significant increases in the exposure of pollutants to storm water discharged either to waters of the state or to storm water treatment devices. The amendment shall contain a description of the new activities that contribute to the increased pollutant loading, planned source control activities that will be used to control pollutant loads, an estimate of the new or increased discharge of pollutants following treatment, and when appropriate, a description of the effect of the new or increased discharge on existing storm water treatment facilities.

3.4.2 The comprehensive annual facility site compliance inspection, quarterly visual inspection of storm water quality, or other information reveals that the provisions of the SWPPP are ineffective in controlling storm water pollutants discharged to waters of the state.

3.4.3 Upon written notice that the Department finds the SWPPP to be ineffective in achieving the conditions of this permit.

3.5 Storm Water Discharges to Outstanding and Exceptional Resource Waters If the permittee's industrial storm water will discharge to an outstanding resource water or exceptional resource water, the permittee shall include a written section in the SWPPP that discusses and identifies the management practices and control measures the permittee will implement to prevent the discharge of any pollutant(s) in excess of the background

level within the water body. This section of the permittee's plan shall specifically identify control measures and practices that will collectively be used to prevent the discharge of pollutants in excess of the background level within the water body.

4. MONITORING REQUIREMENTS

4.1 Purpose Monitoring includes site inspections and non-storm water discharge assessments. The purpose of monitoring is to evaluate storm water outfalls for the presence of non-storm water discharges, and to evaluate the effectiveness of the permittee's pollution prevention activities in controlling contamination of storm water discharges.

4.2 Evaluation of Non-Storm Water Discharges

4.2.1 The permittee shall evaluate all storm water outfalls for non-storm water contributions to the storm drainage system for the duration of this permit. Any monitoring shall be representative of non-storm water discharges from the facility. Evaluations shall take place during dry periods, and may include either end of pipe screening or detailed testing of the storm sewer collection system. Either of the following monitoring procedures is acceptable:

4.2.1.1 A detailed testing of the storm sewer collection system may be performed. Acceptable testing methods include dye testing, smoke testing, or video camera observation. The Department may require a re-test after 5 years or a lesser period as deemed necessary by the Department.

4.2.1.2 End of pipe screening shall consist of visual observations made at least twice per year at each outfall of the storm sewer collection system. Instances of dry weather flow, stains, sludge, color, odor, or other indications of a non-storm water discharge shall be recorded.

Note: The department recommends compiling photographic documentation of visual observations made during non-storm water discharge evaluations.

4.2.2 In addition to maintaining results on-site at the facility, results of the non-storm water evaluations shall be included in the SWPPP required in section 3.3.2.5 of this permit and the Annual Facility Site Compliance Inspection report required in section 5.2 of this permit. Information reported shall include the date of testing, test method, outfall location, testing results, and potential significant sources of non-storm water discovered through testing. Upon discovering non-storm water flows that are not covered under another WPDES permit, the permittee shall either immediately seek coverage under another permit from the Department or eliminate the non-storm water flow.

4.2.3 Any permittee unable to evaluate an outfall for non-storm water discharges shall sign a statement certifying that this requirement could not be complied with, and include a copy of the statement in the SWPPP and the Annual Facility Site Compliance Inspection report. The statement shall be submitted to the Department within 30 days after the permittee determines that it is unable to evaluate an outfall.

4.3 Evaluation of Storm Water Discharges The permittee shall evaluate storm water outfalls for storm water contributions to the storm drainage system. Any monitoring shall be representative of storm water discharges from the facility.

4.3.1 Annual Facility Site Compliance Inspection Permittees shall perform and document the results of an Annual Facility Site Compliance Inspection (AFSCI). The AFSCI shall be adequate to verify that the site drainage conditions and potential pollution sources identified in the SWPPP remain accurate, and that the best management practices prescribed in the SWPPP are being implemented, properly operated and adequately maintained. Information reported shall include the inspection date, inspection personnel, scope of the inspection, major observations, and revisions needed in the SWPPP.

The AFCSI Report Form can be accessed at the following website:
https://dnr.wi.gov/files/PDF/forms/3400/3400-176.pdf

4.3.2 Quarterly Visual Monitoring Permittees shall perform and document quarterly visual inspections of storm water discharge quality at each storm water discharge outfall. Inspections shall be conducted within the first 30 minutes of discharge or as soon thereafter as practical, but not exceeding 60 minutes. The inspections shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or other obvious indicators of storm water pollution. Information reported shall include the inspection date, inspection personnel, visual quality of the storm water discharge, and probable sources of any observed storm water contamination.

The Quarterly Visual Inspection Form can be accessed at the following website:
https://dnr.wi.gov/files/PDF/forms/3400/3400-176a.pdf

4.3.3 Monitoring Waivers The Department may waive specific monitoring requirements for the following reasons:

4.3.3.1 The permittee indicates that either an employee could not reasonably be present at the facility at the time of the snowmelt or runoff event, or that attempts to meet the monitoring requirement would endanger employee safety or well-being.

4.3.3.2 The permittee indicates that there were no snow melt or runoff events large enough to conduct a quarterly visual inspection at an outfall. A waiver is automatically granted for a quarter where the permittee sufficiently documents and retains records demonstrating that there were no snow melt or runoff events large enough to conduct a quarterly visual inspection at the facility during that quarter. Documentation and records used to qualify for an automatic waiver shall be submitted to the Department upon request.

4.3.3.3 The facility is inactive or remote facility (such as an inactive mining operation) where the permittee demonstrates that monitoring and inspection activities are impractical or unnecessary. At a minimum, the Department shall establish an alternative requirement that the permittee make site inspections by a qualified individual at least once in every 3-year period.

4.3.3.4 The permittee demonstrates to the Department's satisfaction that the sources of storm water contamination are outside of the permittee's property boundary and are not associated with the permittee's activities. The demonstration shall be presented in the SWPPP or AFSCI report and submitted to the Department for evaluation.

5. COMPLIANCE AND REPORTING REQUIREMENTS

5.1 SWPPP Compliance and Reporting Requirements

5.1.1 An owner or operator of a facility requiring coverage under this permit shall prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to applying for permit coverage under s. NR 216.22, Wis. Adm. Code, and shall submit the SWPPP summary to the Department when applying for coverage under this permit. For existing facilities that previously operated without required permit coverage and without a SWPPP as required, the owner or operator shall immediately develop a SWPPP, submit the SWPPP summary to the Department when applying for coverage under this permit, and implement the SWPPP to achieve compliance with this permit in the shortest practicable time. A facility has the option to submit their full SWPPP in lieu of the SWPPP summary when applying for coverage.

5.1.2 The SWPPP shall conform to the requirements specified in s. NR 216.27 (3), Wis. Adm. Code, and section 3.3 of this permit.

5.1.3 The SWPPP shall be kept at the facility and made available to the Department for inspection and copying upon request. If storm water discharges from the facility enter a municipal separate storm sewer system covered under a storm water permit pursuant to Subchapter I of ch. NR 216, Wis. Adm. Code, the SWPPP shall be made available to the owner or operator of the municipal separate storm sewer system for inspection and copying upon request.

5.1.4 Unless an alternate implementation schedule is specified by the Department, the SWPPP shall be implemented in accordance with the implementation schedule developed under section 3.3.2.10 of this permit.

5.1.5 The permittee shall keep the SWPPP current and amend it as necessary to correct deficiencies in the SWPPP as they are identified. The permittee shall amend the SWPPP and submit it to the Department in the event of any facility operational changes that may result in additional significant storm water contamination.

5.2 Monitoring Compliance and Reporting Requirements

5.2.1 The permittee shall conduct the first Annual Facility Site Compliance Inspection (AFSCI) within 12 months of the **Start Date** of coverage under this general permit. Subsequent AFSCIs shall be conducted and AFSCI reports prepared by the permittee by the anniversary of the **Start Date** for each year of coverage under this permit. Reports shall be written on forms available from the Department and shall contain information from the AFSCI, the quarterly visual inspection, and the non-storm water evaluation. Copies of all AFSCI reports, quarterly visual inspections and nonstorm water monitoring reports shall be maintained on site at the facility and made available to the Department for inspection and copying upon request for the duration of permit coverage.

Note: The AFSCI Report form, Quarterly Visual Inspection form, and Storm Water Chemical Analysis Report form are available on the Department website at:
https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

5.2.2 Quarterly visual inspections of storm water discharge quality shall be conducted by the permittee four times annually by the anniversary date of **Start Date** of coverage under the permit.

5.3 Discharges to Regulated Municipal Separate Storm Sewer Systems

5.3.1 Permittees regulated under this permit with storm water discharges and non-storm water discharges entering a municipal separate storm sewer system covered under a storm water permit pursuant to Subchapter I of ch. NR 216, Wis. Adm. Code, shall provide information on these discharges to the owner or operator of the municipal separate storm sewer system upon request. Information the permittee shall provide includes the area or sub-areas of the facility draining to the municipal separate storm sewer system, the nature of industrial activity and potential storm water contamination sources in the areas draining to the system, the nature and number of non-storm water discharges to the system, storm water best management practices employed at the facility and their effectiveness at pollutant removal, storm water monitoring data, and copies of the SWPPP and AFSCI reports.

5.3.2 Upon discovering a previously unknown non-storm water discharge to the municipal separate storm sewer system that is not authorized to discharge under a required WPDES permit or that is an illicit discharge as defined by s. NR 216.002(11), Wis. Adm. Code, the permittee shall immediately report the discharge to the owner or operator of the municipal separate storm sewer system.

5.3.3 The permittee shall immediately report spills or dumping of materials that enter the municipal separate storm sewer system to the owner or operator of the system.

5.3.4 In accordance with the owner or operator's established authority to control discharges to its municipal separate storm sewer system, the permittee shall assist the owner or operator of the system with detecting and eliminating illicit discharges to the system to the maximum extent practicable if the owner or operator finds that the source of an illicit discharge may originate from the permittee's facility.

6. GENERAL CONDITIONS The general conditions in s. NR 205.07(1), (3), and (5), Wis. Adm. Code, are hereby incorporated by reference into this permit, except for s. NR 205.07(1)(n) and(3)(b), Wis. Adm. Code. Under s. NR 205.08(9), Wis. Adm. Code, dischargers covered under a storm water general permit are not required to submit an application for reissuance unless directed to do so by the Department under s. NR 216.22(9), Wis. Adm. Code. The requirements for spill reporting are in section 6.5 below.

Note: Chapter NR 205 is available at the following website: https://docs.legis.wisconsin.gov/code/admin_code/nr/200.

6.1 Work near Surface Waters and Wetlands Activities performed in wetland areas, in floodplains, or near shorelands may require permits or approvals through applicable state law, state regulations, or county or local ordinances. Additionally, state permits or contracts required by chs. 30, 31 and 87, Wis. Stats. and s. 281.36, Wis. Stats. (or Wisconsin Administrative Code promulgated under these laws), and federal permits may be applicable.

6.2 Continuation of the Expired General Permit As provided in s. NR 205.08(9), Wis. Adm. Code, and s. 227.51, Wis. Stat., the terms and conditions of this general permit shall continue to apply until this general permit is reissued or revoked or until an individual permit is issued for the discharge to which the general permit applied.

6.3 Petition to Move to Individual Permit Coverage Any person may submit a written request to the department to withdraw coverage under this general permit and to replace it with an individual storm water permit under s. NR 216.25(4), Wis. Adm. Code.

6.4 Liabilities under Other Laws Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the federal Clean Water Act (33 USC s. 1321), any applicable federal, state, or local law or regulation under authority preserved by Section 510 of the Clean Water Act (33 USC s. 1370).

6.5 Severability The provisions of this permit are severable, and if any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid the remainder of this permit shall not be affected thereby.

6.6 Spill Reporting The permittee shall notify the Department immediately of any release or spill of a hazardous substance to the environment in accordance with s. 292.11, Wis. Stats., and ch. NR 706, Wis. Adm. Code.

Note: The 24-hour toll free spills hotline number is (800) 943-0003. Information about hazardous substance spills is available from the Department's website at: https://dnr.wi.gov/topic/Spills/.

6.7 Submitting Records Any forms or reports submitted to the Department of Natural Resources in accordance with this permit shall be submitted via the Department's Water ePermitting System available at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

6.8 Enforcement Any violation of s. 283.33, Wis. Stats., ch. NR 216, Wis. Adm. Code, or this permit is enforceable under s. 283.89, Wis. Stats.

6.9 Permit Fee A storm water discharge permit fee shall be paid annually for each industrial facility covered under this permit. The permittee will be billed by the Department annually in May of each year and the fee is

due by June 30 of each year in accordance with s. NR 216.30, Wis. Adm. Code. A permittee may be referred to the Wisconsin Department of Revenue for the collection of any unpaid storm water fee.

Attachment B1

Quarterly Site Inspection Form

ATTACHMENT B1
Quarterly Site Inspection Form
WPL – Columbia Dry Ash Disposal Facility

Location: Columbia Dry Ash Disposal Facility Pardeeville, WI	Inspector (print name):
Date:	Signature:
Time:	Weather at time of inspection: ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds ❑ Other: Temperature:
Have any previously unidentified discharges of pollutants occurred since the last inspection? ❑Yes ❑No If yes, describe:	
Are there any discharges occurring at the time of inspection? ❑Yes ❑No If yes, describe:	

	Yes	No	
SWPPP and Site Map: Have a copy of the SWPPP and site map with you during the inspection so that you can ensure they are current and accurate. Use it as an aide in recording the location of any issues you identify during the inspection. • Is the Site Map current and accurate? • Is the SWPPP inventory of activities, materials and products current? Any new potential pollutant sources must be added to the map and reflected in the SWPPP.			**Findings and Remedial Action Documentation:** Describe any findings below and the schedule for remedial action completion including the date initiated and date completed or expected to be completed.

ATTACHMENT B1 (CONTINUED)
Quarterly Facility SWPPP Inspection Form
WPL – Columbia Dry Ash Disposal Facility

Vehicle/Equipment Areas:	**Yes**	**No**	**NA**	**Findings and Remedial Action Documentation:**
Equipment cleaning: Is equipment washed and/or cleaned only in designated areas? • Observe washing: Is all wash water captured and properly disposed of? ***Equipment fueling:*** • Are all fueling areas free of contaminant buildup and evidence of chronic leaks/spills? • Are all chemical liquids, fluids, and petroleum products, on an impervious surface? • Does fuel storage tanks have secondary containment? • Are chemical liquids and fluids covered from precipitation?				
Construction Areas: • Are erosion control practices (e.g., silt fence) in place? • Are erosion control practices in good condition? • Are there signs of sediment entering wetlands, waterbodies or discharging off-site? • Is the construction area free of debris? • Are chemical liquids and fluids covered from precipitation? Add any additional site-specific BMPs: _____ _____ _____ _____ _____				

ATTACHMENT B1 (CONTINUED)
Quarterly Facility SWPPP Inspection Form
WPL – Columbia Dry Ash Disposal Facility

Equipment maintenance:	**Yes**	**No**	**NA**	**Findings and Remedial Action Documentation:**
• Are maintenance tools, equipment, and materials stored indoors? • Are all drums and containers of fluids stored with proper cover and containment? • Are exteriors of containers kept outside free of deposits? • Are any vehicles and/or equipment leaking fluids? Identify leaking equipment. • Is there evidence of leaks or spills since last inspection? Identify and address. • Are materials, equipment, and activities located so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas)? Add any additional site-specific BMPs: _____ _____ _____ _____				

ATTACHMENT B1 (CONTINUED)
Quarterly Facility SWPPP Inspection Form
WPL – Columbia Dry Ash Disposal Facility

Ash Landfill Operations:	**Yes**	**No**	**NA**	**Findings and Remedial Action Documentation:**
Ash Handling and Disposal Areas:				
• Are diversion and collection structures in place and directing contact water to the contact water basin and swale?				
• Are diversion structures diverting storm water that has not come into contact with waste from active landfill areas?				
• Final cover and intermediate cover in good condition? Any signs of erosion?				
Stockpiling Areas:				
• Are stockpiles being used?				
• Are stockpiles vegetated? Are there signs of erosion?				
• Is silt fence around stockpiles that are being used?				
• Other BMPs being used?				
• Are there signs of off-site discharge of sediment from the stockpiles?				
Haul Roads:				
• Roads in good condition?				
• Roads clear of debris?				
• Are leaks detected on roads?				
• Repairs needed?				
Rain Cover:				
• Are contact water levels in the contract water pond being maintained in accordance with the most recent "Leachate/Surface Water Pond Capacity Evaluation"?				
• Are areas with rain cover in place free of CCR placement above the rain cover?				
• Does water that has collected on the rain cover show evidence of leachate/contact water impacts?				
• Is there any damage to the rain cover?				
Add any additional site-specific BMPs: _____ _____ _____ _____				

ATTACHMENT B1 (CONTINUED)
Quarterly Facility SWPPP Inspection Form
WPL – Columbia Dry Ash Disposal Facility

I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION				
Good Housekeeping BMPs:	**Yes**	**No**	**NA**	**Findings and Remedial Action Documentation:**
1. Are paved surfaces free of accumulated dust/sediment and debris? • Date of last vacuum/sweep _____ • Are there areas of erosion or sediment/dust sources that discharge to storm drains?				
2. Are gravel access road surfaces in good condition? • Are there areas of erosion that need repair? • Are roads watered for dust control?				
3. Are all waste receptacles located outdoors: • In good condition? • Not leaking contaminants? • Closed when is not being accessed? • External surfaces and area free of excessive contaminant buildup?				
4. Are the following areas free of accumulated dust/sediment, debris, contaminants, and/or spills/leaks of fluids? • Material storage areas • Maintenance shop • Equipment staging areas (loaders, trailers, etc.) • Other areas of industrial activity: _____ _____ _____ _____ _____ _____ _____ _____				

ATTACHMENT B1 (CONTINUED)
Quarterly Facility SWPPP Inspection Form
WPL – Columbia Dry Ash Disposal Facility

Spill Response and Equipment: Are spill kits available, in the following locations? • Ash Handling Equipment Are contaminated absorbent materials properly disposed of?	**Yes**	**No**	**NA**	**Findings and Remedial Action Documentation:**
I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION				
Waste (non-landfill) Storage Areas: • Are waste storage containers in good condition (no holes, leaks, non-functioning seals)? • Are outdoor containers covered? • Is container full of waste and requires off-site disposal? • Is there litter/debris surrounding the storage container? • Are there signs of contamination around the storage container (e.g., stained soil)?	**Yes**	**No**	**NA**	**Findings and Remedial Action Documentation:**
Storm water BMPs and Treatment Structures: Visually inspect all storm water BMPs and treatment structures devices and outfalls shown on the Site Map. 1.Are the detention/sedimentation basin(s) functioning properly? • Erosion on the embankment? • Signs of contamination? • Outfall structure clean? • Woody vegetation growing on the embankment? • Sediment buildup? • Free of debris? • Are diversion berms, downslope flumes, energy dissipaters, perimeter ditches and culverts used to divert and direct discharges adequate and in good condition?	**Yes**	**No**	**NA**	**Findings and Remedial Action Documentation:**

ATTACHMENT B1 (CONTINUED)
Quarterly Facility SWPPP Inspection Form
WPL – Columbia Dry Ash Disposal Facility

II. CORRECTIVE ACTION AND SWPPP MODIFICATIONS DESCRIPTIONS: Additional space to describe inspection findings and corrective actions if needed. Provide brief explanation of the general location and the rationale for the additional or different BMPs.
_____ _____ _____ _____ _____ _____ _____ _____ _____ _____

Attachment B2

Quarterly Wet Weather Outfall Inspection Form

ATTACHMENT B2
Quarterly Wet Weather Outfall Inspection Form
WPL – Columbia Dry Ash Disposal Facility

This form should be kept as part of your Storm Water Pollution Prevention Plan. It does not have to be submitted to the Wisconsin Department of Natural Resources unless requested.

Quarterly visual inspections at each storm water discharge outfall should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall or as soon as practical, but no later than 60 minutes. If you find visible pollution, note the probable source and list any possible Best Management Practices that could be used to reduce or eliminate the problem.

WPL – Columbia Dry Ash Disposal Facility Pardeeville, Wisconsin	Date of Inspection: __ / __ / 20__ __
Quarter (circle): **1** (Jan-Mar) **2** (Apr-Jun) **3** (Jul-Sep) **4** (Oct-Dec)	
Time Rainfall Began: _____ : _____ am pm	
Name of Inspector (print):	
Signature:	

See **Figure 2 and 3** for outfall locations, drainage areas, and potential sources of pollution.

Outfall SW01: Inlet to South Sedimentation Basin	Time of Observation: __ : __ am pm ***(Must be within 60 minutes of time rainfall began).***
Color: ☐Clear ☐Red ☐Yellow ☐Brown ☐Other:	
Odor: ☐None ☐Musty ☐Sewage ☐Rotten Egg ☐Other:	
Clarity: ☐Clear ☐Cloudy ☐Opaque ☐Suspended Solids ☐Other:	
Floatables: ☐None ☐Foam ☐Garbage ☐Oily Sheen ☐Other:	
Deposits/Stains: ☐None ☐Oily ☐Sludge ☐Sediments ☐Other	
Comments (*include possible causes of any contamination noted and possible BMPs to control*):	

ATTACHMENT B2 (CONTINUED)
Quarterly Facility SWPPP Inspection Form
WPL – Columbia Dry Ash Disposal Facility

Outfall SW02: Inlet to Murray Road Culvert	Time of Observation: __ : __ am pm ***(Must be within 60 minutes of time rainfall began).***
Color: ☐Clear ☐Red ☐Yellow ☐Brown ☐Other:	
Odor: ☐None ☐Musty ☐Sewage ☐Rotten Egg ☐Other:	
Clarity: ☐Clear ☐Cloudy ☐Opaque ☐Suspended Solids ☐Other:	
Floatables: ☐None ☐Foam ☐Garbage ☐Oily Sheen ☐Other:	
Deposits/Stains: ☐None ☐Oily ☐Sludge ☐Sediments ☐Other	
Comments (*include possible causes of any contamination noted and possible BMPs to control*):	

Other Comments/Observations: *(Please note any additional comments/observations regarding source areas and associated BMPs described in Section 3.0 that require follow-up or improvement)*

The following outfalls could not be evaluated during this quarter due to the following reason(s):	
☐ Extended drought	Outfall(s):
☐ Dangerous Weather	Outfall(s):
☐ Extended Freeze	Outfall(s):
☐ Storms did not occur during normal business hours	Outfall(s):
☐ Other (comment below)	Outfall(s):
Other reasons outfall(s) could not be evaluated this quarter:	

Attachment C

Annual Facility Site Compliance Inspection Report

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wisconsin.gov

Annual Facility Site Compliance Inspection Report (AFSCI)

For Storm Water Discharges Associated With Industrial Activity Under Wisconsin Pollutant Discharge Elimination System (WPDES) Permit

Form 3400-176 (R 07/21)

Notice: This form is authorized by s. NR 216.29(2), Wis. Adm. Code. Submittal of a completed form to the Department is mandatory for industrial facilities covered under a Tier 1 storm water general permit. Facilities covered under a Tier 1 permit are not required to submit AFSCI reports after submittal of the second AFSCI report, unless so directed by the Department. However, these inspections and quarterly visual inspections shall still be conducted and results shall be kept on site for Department inspection. Facilities covered under a Tier 2 storm water general, industry-specific general or individual permit shall keep the results of their AFSCI and quarterly visual inspections on site for Department inspection. Failure to comply with these regulations may result in fines up to $25,000 per day pursuant to s. 283.91, Wis. Stats.

Personally identifiable information on this form may be used for other water quality program purposes.

Please type or clearly print your answers to all questions.

Section I: Facility/Site Information

Facility/Site Name (As Appears on Permit Authorization)		County	
Location Address/Description (if different from mailing address below)		State: WI	ZIP Code
○ City ○ Township ○ Village of		Facility Identification Number (FID) and/or FIN Number if known: FID	FIN

Section II: Facility/Site Contact Person

Local Contact Person	Mailing Address (if different than site location address)		
Title/Position Title	Municipality (if different than above)		
Telephone (include area code)	State: WI	ZIP Code (if different from above)	
E-mail address or Website (if applicable)		Fax (include area code)	

Section III: Certification & Signature

(Person attesting to the accuracy and completeness of Annual Facility Site Compliance Inspection Report.)

This form must be signed by an official representative of the permitted facility in accordance with s. NR 216.22(7), Wis. Adm. Code. See instructions on page 4. If this form is not signed, or is found to be incomplete, it will be returned.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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.

Signature of Authorized Representative	Telephone Number (include area code)		
Type or Print Name	Company Name		
Position Title	Mailing Address		
Date Signed (mm/mm/yyyy)	Municipality	State: WI	ZIP Code

How to Use this Form:

The first level of storm water monitoring consists of a comprehensive annual facility site compliance inspection (AFSCI) to determine if your facility is operating in compliance with your Storm Water Pollution Prevention Plan (SWPPP). You should use the results of this inspection to determine the extent to which your SWPPP needs to be updated to prevent pollution from new source areas, as well as to correct any inadequacies that the plan may have in handling existing source areas. This first level of monitoring is addressed in Section IV of this Annual Report on page 2.

The second level of storm water monitoring consists of quarterly visual observations of storm water leaving the site during runoff events caused by snow-melt or rainfall. This is a practical, low cost tool for identifying obvious contamination of storm water discharges, and can also help identify which practices are ineffective. The goal of quarterly inspections is to obtain results from a set of four inspections that are distributed as evenly as possible throughout the year and which depict runoff quality during each of the four seasons. This second level of monitoring is addressed in Section V of this Annual Report on page 3.

Section IV: Annual Facility Site Compliance Inspection

The Annual Facility Site Compliance Inspection shall be adequate to verify that: your Storm Water Pollution Prevention Plan (SWPPP) remains current; potential pollution sources at your facility are identified; the facility site map and drainage map remain accurate; and that the Best Management Practices prescribed in your SWPPP are being implemented, properly operated, and adequately maintained.

Name of Person Conducting Inspection	Inspection Date
Employer	Telephone Number

Your inspection should start with a review of your written SWPPP kept at your facility. The SWPPP should be amended if, through these inspections, you find that the provisions in your SWPPP are ineffective in controlling contaminated storm water from being discharged from your facility. Notify the department if amendments to your SWPPP have been made based on the results of this Annual Facility Site Compliance Inspection Report that address significant operational or source area changes at the facility.

1.	Has your SWPPP been updated to include current Non-Storm Water Discharge Evaluation results (examples of non-storm water discharges include contact cooling water, non-contact cooling water, other process wastewaters, or illicit discharges identified during the evaluation period)?	◯ Yes	◯ No	◯ N/A
2.	Has there been construction at your facility that affects the site map, drainage conditions, or exposed materials?	◯ Yes	◯ No	◯ N/A
3.	Has your SWPPP been amended for any changes in facility operations that could be identified as new source areas for contamination of storm water?	◯ Yes	◯ No	◯ N/A
4.	Are there any other areas capable of contaminating storm water runoff that have not been addressed in the SWPPP?	◯ Yes	◯ No	◯ N/A
5.	Are there any materials at the facility that are handled, stored, or disposed of in a manner to allow exposure to storm water that are not currently addressed in your SWPPP?	◯ Yes	◯ No	◯ N/A
6.	Are there any vehicle or equipment maintenance or material handling activities conducted outdoors that have not been addressed in your SWPPP?	◯ Yes	◯ No	◯ N/A
7.	Are outside areas kept in a neat and orderly condition?	◯ Yes	◯ No	◯ N/A
8.	Are regular housekeeping inspections conducted and observed issues addressed?	◯ Yes	◯ No	◯ N/A
9.	Are there spots, pools, puddles, or other traces/residuals of oils, grease, or other chemicals on the ground?	◯ Yes	◯ No	◯ N/A
10.	Are particulates on the ground from industrial operations or processes being controlled?	◯ Yes	◯ No	◯ N/A
11.	Are there any leaking equipment, pipes or containers or heavy oxidation/rusting on containers?	◯ Yes	◯ No	◯ N/A
12.	Do drips, spills, or leaks occur when materials are being transferred from one source to another?	◯ Yes	◯ No	◯ N/A
13.	Are drips or leaks from vehicles or equipment being controlled (i.e. compactors, forklifts, semis, hydraulic loading docks, etc.)?	◯ Yes	◯ No	◯ N/A
14.	Are cleanup procedures used for spilled solids?	◯ Yes	◯ No	◯ N/A
15.	Are absorbent materials (floor dry, kitty litter, etc.) regularly used to absorb spills?	◯ Yes	◯ No	◯ N/A
16.	Are ventilation systems and drain pipes free of discoloration, residue or corrosion?	◯ Yes	◯ No	◯ N/A
17.	Are Best Management Practices implemented to reduce or eliminate contamination of storm water from source areas at the facility?	◯ Yes	◯ No	◯ N/A
18.	Are Best Management Practices adequately maintained?	◯ Yes	◯ No	◯ N/A
19.	Are changes to your SWPPP needed to correct plan inadequacies to effectively control a discharge of contaminated storm water from your facility?	◯ Yes	◯ No	◯ N/A
20.	Are areas of soil erosion present at your facility that require amendments to the SWPPP to address?	◯ Yes	◯ No	◯ N/A
21.	Are filtration or settling treatment practices evaluated, functioning, and adequately maintained?	◯ Yes	◯ No	◯ N/A

Comments/ Questions or Concerns:

Section V: Quarterly Visual Inspection Reports

Quarterly Visual Inspections at each storm water discharge outfall on your site can be a valuable assessment tool and are required by the Tier 1, Tier 2, and Nonmetallic Mining Industrial Storm Water General Permits. These inspections should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall or soon thereafter as practical, but no later than 60 minutes. If you find visible pollution, note the probable source and list any possible Best Management Practices that will be used to reduce or eliminate the problem. Make any necessary changes to your Storm Water Pollution Prevention Plan based on the results of your Quarterly Visual Inspections. Notify the department if amendments to your SWPPP are made based on inspections and include significant operational or source area changes at the facility. If you were unable to evaluate an outfall during a specific quarter, this should be indicated along with a reason as to why this could not be done.

	Date of Inspection			
Outfall Number	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter

Briefly summarize what you found when conducting your Quarterly Visual Inspections. (Include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or any other indications of storm water pollution and the probable sources of any observed storm water contamination.)

Instructions

Section I: Facility/Site Information

Provide the name of the facility as it appears on the permit application or permit cover letter and location address. If known, provide the Facility Identification (FID) and/or FIN Number assigned by the WDNR. Facility Identification (FID) and/or FIN Number can be found by a query at the following website: https://dnr.wi.gov/topic/stormwater/data/industrial/index.asp.

Section II: Facility/Site Contact Person

Provide the local contact person information for the facility. The mailing address should be given for the facility contact person if it is different from the facility site location address information.

Section III: Certification & Signature

State Statutes provide for severe penalties for submitting false information on this AFSCI form. State regulations require this form be signed by an Authorized Representative as follows:

a. For a corporation, by a principal executive officer of at least the level of Vice President, or a duly authorized representative having overall responsibility for the operation covered by this permit.
b. For a unit of government, a principal executive officer, a ranking elected official, or other duly authorized representative.
c. For a partnership, by a general partner; for a sole proprietorship, by the proprietor.
d. For a limited liability company, by member or manager.

If the Authorized Representative has changed, please complete the following form: https://dnr.wi.gov/files/PDF/forms/3400/3400-220.pdf and mail the completed form to the appropriate mailing address below. Updated forms can also be emailed directly to programmatic staff assigned for the county where the facility is located. Storm Water staff can be found by accessing the following weblink: https://dnr.wisconsin.gov/topic/Stormwater/contacts.html

Section IV: Annual Facility Site Compliance Inspection

Provide the name of the person conducting the inspection, inspection date, name of employer, and telephone number. Check the appropriate box for each of the listed questions and provide explanations in the comment box as needed.

Notify Storm Water Staff if SWPPP amendments in section IV of the Annual Facility Site Compliance Inspections address significant operational or source areas at the facility. Staff assignments by county are found at the following weblink: https://dnr.wisconsin.gov/topic/Stormwater/contacts.html

Section V: Quarterly Visual Inspection Reports

Provide the outfall number in the table and the dates of each quarterly visual inspection. Summarize the findings of your visual inspections in the space provided below the table. Attach additional sheets or Quarterly Visual Inspections if needed. The Quarterly Visual Inspection - Field Sheet can be accessed at the following weblink: https://dnr.wisconsin.gov/topic/Stormwater/industrial/forms.html.

Notify Storm Water Staff if SWPPP amendments in section V of the Annual Facility Site Compliance Inspections address significant operational or source areas at the facility. Staff assignments by county are found at the following weblink: https://dnr.wisconsin.gov/topic/Stormwater/contacts.html

Submittal of Electronic Information or Mailing Address

The Department utilizes an online e-permitting system that allows permittees to electronically submit information. This form may be submitted electronically at the following website: https://dnr.wisconsin.gov/permits/water. If directed to do so, mail this completed form to the Wisconsin Department of Natural Resources (WDNR) office associated with the county of the facility site location as follows:

NORTHERN REGION (NOR)			
Ashland	Forest	Price	WDNR Eau Claire Service Center
Barron	Iron	Rusk	1300 W Clairemont Ave
Bayfield	Langlade	Sawyer	Eau Claire, WI 54701
Burnett	Lincoln	Taylor	(715) 839-1636
Douglas	Oneida	Vilas	
Florence	Polk	Washburn	
NORTHEAST REGION (NER)			
Brown	Manitowoc	Shawano	WDNR Northeast Regional Headquarters
Calumet	Marinette	Waupaca	2984 Shawano Avenue
Door	Marquette	Waushara	Green Bay, WI 54313-6727
Fond du Lac	Menominee	Winnebago	(920) 662-5100
Green Lake	Oconto		
Kewaunee	Outagamie		
WEST CENTRAL REGION (WCR)			
Adams	Jackson	Pierce	WDNR Eau Claire Service Center
Buffalo	Juneau	Portage	1300 W Clairemont Ave
Chippewa	La Crosse	St. Croix	Eau Claire, WI 54701
Clark	Marathon	Trempealeau	(715) 839-1636
Crawford	Monroe	Vernon	
Dunn	Pepin	Wood	
Eau Claire			
SOUTH CENTRAL REGION (SCR)			
Columbia	Green	Richland	WDNR South Central Regional Headquarters
Dane	Iowa	Rock	3911 Fish Hatchery Road
Dodge	Jefferson	Sauk	Fitchburg, WI 53711
Grant	LaFayette		(608) 275-3266
SOUTHEAST REGION (SER)			
Kenosha	Racine	Washington	WDNR SER Headquarters
Milwaukee	Sheboygan	Waukesha	940 W. St. Paul Ave.
Ozaukee	Walworth		Milwaukee, WI 53233
			(414) 477-1119

Attachment D

Regulatory Applicability and Implementation Schedule

ATTACHMENT D
Regulatory Applicability and Implementation Schedule

In response to the finalization of federal storm water regulations found in Title 40 of the Code of Federal Regulations (40 CFR) Parts 122, 123, and 124, the Wisconsin Department of Natural Resources (WDNR) developed a program to implement these storm water discharge regulations. Provisions that implement the federally mandated storm water program are contained in Chapter NR 216 of the Wisconsin Administrative Code (NR 216). These State regulations outline the Storm Water Permit Program, which is administered by the Bureau of Watershed Management, Storm Water Permits Program, of the WDNR.

The facility maintains a Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit for the Discharge of Storm Water Associated with Tier 2 Industrial Facilities No. SO67857-5 (Tier 2 General Permit). The Tier 2 General Permit is provided in Attachment A. The Tier 2 General Permit authorizes the discharge of storm water associated with industrial activity. This Storm Water Pollution Prevention Plan (SWPPP) is required as part of the Plan of Operation for the landfill.

The following table cross-references the requirements of NR 216 and the Tier 2 General Permit to the SWPPP. Note that Tier 2 facilities have no monitoring requirements (NR 216.27(3)(d) and (k)) and do not require storm water treatment practices at this time (NR 216.27(3)(j)).

Tier 2 General Permit Reference	NR 216 Citation	SWPPP Cross Reference
Complete Drainage Map	NR 216.27(3)(c)	Figures 1, 2 and 3 of this SWPPP
Complete Inventory of Significant Polluting Materials	NR 216.27(3)(f)	Sections 1.0 and 2.0
Summary of Major Activities Conducted at the Facility	NR 216.27(3)(b)	Sections 1.0 and 2.0
Describe Appropriate Best Management Practices	NR 216.27(3)(h)	Section 3.0
Evaluate Discharge Sources for Non-Storm Water Discharges	NR 216.27(3)(g)	Attachment F
Identify Potential Source Areas of Storm Water Contamination	NR 216.27(3)(e)	Sections 1.0 and 2.0
Identify Potential Areas of Storm Water Pollutants Following the Implementation of BMPs	NR 216.27(3)(l) & (j)	Section 4.0
Develop an Implementation Schedule for the SWPPP	NR 216.27(3)(l)	Section 6.0 and Attachment D
Identify Personnel Responsible for Implementing the SWPPP	NR 216.27(3)(a)	Section 7.0
Signature of Principal Executive Officer as in NR 216.26(7)	NR 216.27(3)(m)	Page iii
Provide Information on Required Storm Water Inspections		Section 6.0 and Attachments B and C

ATTACHMENT D
SWPPP Implementation Schedule

Item	Quarter			
	1	2	3	4
Annual Facility Site Compliance Inspection (AFSCI)	✓[1]			
Quarterly Visual Monitoring Inspections[2]	✓	✓	✓	✓
Non-storm Water Discharge Inspections[3]				
Annual Review for Discharge Water Body Status (Impaired Water Body and TMDL)[4]	✓			

Notes:

1. AFSCI must be prepared by the anniversary of the Start Date of coverage. AFSCI reports must be kept on file at the facility. No WDNR submission is required.
2. Inspections are to be performed within the first 30 minutes of discharge or as soon thereafter as practical, but not to exceed 60 minutes.
3. Non-storm water discharge inspections must take place during dry weather periods. If non-storm water discharge evaluation consists of end of pipe screening, perform at least twice per year at each outfall. If the evaluation consists of dye testing, smoke testing, or video camera observation, perform at least every 5 years, or a lesser period if deemed necessary by WDNR.
4. By February 15th of each calendar year, perform a review to determine whether the facility discharges a pollutant of concern to an impaired water body or water body included in a state and federally-approved TMDL. See **Section 6.4** of SWPPP for further information.

Attachment E

SWPPP Training Record

ATTACHMENT E
SWPPP Training Record

Date of Training	Name of Trainee (Please Print)	Type of Training		Signature of Trainee	Signature of Trainer
		Initial	Refresher		

Attachment F

SWPPP Non-Storm Water Discharge Certification

ATTACHMENT F
SWPPP Non-Storm Water Discharge Assessment and Certification

Evaluations of non-storm water discharges shall take place during dry periods of weather at each outfall. Complete one page for each outfall.

Include results of evaluations in the Annual Facility Site Compliance Inspection (AFSCI) Report as required in Section 4.2 of the General Permit.

If Wisconsin Power and Light personnel are unable to evaluate an outfall for non-storm water discharges, check the box for the corresponding outfall and sign the statement certifying that this requirement could not be complied with. Include a copy of the statement in the SWPPP and the AFSCI report. The statement shall be submitted to the Wisconsin Department of Natural Resources within 30 days after Wisconsin Power and Light determines that it is unable to evaluate an outfall.

Method of Evaluation Used (Check one):

☐ Option 1 Detailed Testing of Storm Sewer Collection System (dye testing, smoke testing, or video camera observation) – If Option 1 is used, sign and date in the section below and attach testing documentation.

☒ Option 2 Visual End-of-Pipe Screening of Each Storm Water Outfall Performed Twice Per Year - If Option 2 is used, complete all sections of this form.

Columbia Dry Ash Disposal Facility Columbia Energy Center W8375 Murray Road, Pardeeville, WI 53954«Fac_ZIP_Code»	Date of Evaluation: ____ / ____ / 20___ ___
Name of Inspector (print):	
Signature:	

If there are indications of non-storm water discharge for any outfall, notify the SWPPP Coordinator. The SWPPP Coordinator will evaluate the source and determine whether it is exempt from WPDES permitting under Section 2.4.3 of the General Permit, or covered under another permit. If not exempt or covered under another permit, the non-storm water discharge must be eliminated or coverage under another permit must be obtained. See Figure 2 for outfall locations.

Outfall SW001			Time of Evaluation: ___ : ___ am pm
Check if any of the following indications of a non-storm water discharge are present:			
Dry weather flow?	☐ No	☐ Yes - Describe:	
Staining present?	☐ No	☐ Yes - Describe:	
Sludge present?	☐ No	☐ Yes - Describe:	
Color?	☐ No	☐ Yes - Describe:	
Odor?	☐ No	☐ Yes - Describe:	
Other indications of non-storm water discharge? ☐ No ☐ Yes - Explain below:			
☐ This outfall could not be evaluated for non-storm water discharges; this requirement could not be complied with. Reason: Signature:_____			

ATTACHMENT F (CONTINUED)
SWPPP Non-Storm Water Discharge Assessment and Certification

Outfall SW002	Time of Evaluation: ___ : ___ am pm
Check if any of the following indications of a non-storm water discharge are present:	
Dry weather flow? ☐ No	☐ Yes - Describe:
Staining present? ☐ No	☐ Yes - Describe:
Sludge present? ☐ No	☐ Yes - Describe:
Color? ☐ No	☐ Yes - Describe:
Odor? ☐ No	☐ Yes - Describe:
Other indications of non-storm water discharge? ☐ No ☐ Yes - Explain below:	
☐ This outfall could not be evaluated for non-storm water discharges; this requirement could not be complied with. Reason: Signature:_____	

Attachment G

Receiving Water Classification Review Information

ATTACHMENT G
Receiving Water Classification Review Information

Category	Instructions for Reviewing Classification (See Note)
Exceptional Resource Water (ERW) and Outstanding Resource Water (ORW) Review Results & Impaired Waters and TMDL Review	WDNR website • http://dnr.wi.gov/water • Click "Impaired Waters" Enter "1179900" into the "Enter Water Name or WBIC" entry and hit the "Search" button. • Click on the Official Name "Wisconsin River" link that goes with Start Mile 90.6 and End Mile 115.81. Note any impairments listed in the top section of this page. Note any TMDLs listed. • Click on "View Water Details." • Look in the Overview tab and note if Mill Creek is listed as Outstanding or Exceptional Resource Water.

Note: WDNR webpage addresses and links can change. If problems arise with the search directions listed above, contact SCS at (608) 224-2830.

ATTACHMENT G (CONTINUED)
Receiving Water Classification Review Information

Annual Receiving Waters Review Record
(To be performed by February 15th of each year)

Date of Review	Person Performing Review (Print Name)	Receiving Water(s) Classified As Any of the Following?				Comments
		ORW? (If Y, see Section 1.5 of SWPPP)	ERW? (If Y, see Section 1.5 of SWPPP)	Impaired? (If Y, see Section 6.4.1 of SWPPP)	Approved TMDL? (If Y, see Section 6.4.2 of SWPPP)	
2/15/22	Rick Guenther, SCS Engineers	N	N	Y	N	Unnamed tributary of the Wisconsin River is not listed as an impaired water body. Wisconsin River is listed as an impaired water body for PCBs and mercury.
5/30/23	Rick Guenther, SCS Engineers	N	N	Y	Y (for Duck Creek)	No change other than including Duck Creek as an impaired water body for total phosphorus
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	
		Y / N	Y / N	Y / N	Y / N	

Attachment H

SWPPP Revision & Review Log Sheet

ATTACHMENT H
COLUMBIA DRY ASH DISPOSAL FACILITY
WPL – COLUMBIA ENERGY CENTER
SWPPP Revision & Review Log Sheet

Date of Revision	Completed By	Comments
October 2016	Rick Guenther, PE (*SCS Engineers*)	Creation of the SWPPP
August 2018	Betsy Powers, PE *(SCS Engineers)*	Update to incorporate Module 4 construction
April 2021	Rick Guenther, PE (*SCS Engineers*)	Update to include staff changes, existing conditions and proposed construction of Mod 5/6
March 2022	Rick Guenther, PE (SCS Engineers)	Update to existing conditions and proposed construction of Mods 10 and 11
June 2023	Rick Guenther, PE (SCS Engineers)	Update to existing conditions with construction of Mods 10 and 11

This log sheet documents all annual reviews and revisions made to the plan.

Appendix D

Construction Quality Assurance/Quality Control Plan

Construction Quality Assurance / Quality Control Plan

Primary/Secondary Ash Pond Closure and Dry Ash Disposal Facility
Wisconsin Power and Light Company
Columbia Energy Center

Prepared for:

Wisconsin Power and Light Company
Columbia Energy Center
W8375 Murray Road
Pardeeville, Wisconsin 53954

SCS ENGINEERS

25222260.00 | Updated August 2023

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of this Construction Quality Assurance (CQA) Plan is to address the quality assurance during the Primary and Secondary Ash Pond closure construction, and the Dry Ash Disposal Facility liner and final cover systems construction at the Wisconsin Power and Light Company – Columbia Energy Center. The Plan addresses the earthen materials (fly ash, bottom ash, sand, aggregate, general soil, select clay fill, barrier layer soil, and topsoil), synthetic materials (geotextile, geomembrane, geosynthetic clay liner [GCL], geocomposite, and rain cover), and piping.

This CQA Plan provides procedures for the construction, testing, and documentation of Work components in adherence to their design and regulatory requirements.

The scope of this CQA Plan includes general CQA requirements concerning roles, responsibilities, and qualifications of the parties involved; the preconstruction meeting; the geosynthetic preconstruction report, general inspection, and documentation procedures; and the documentation report. This CQA Plan establishes requirements for the construction procedures and observation, field and laboratory testing frequency and methods, and acceptance for each component of the pond closures, and Dry Ash Disposal Facility liner and final cover systems. Geosynthetic testing and acceptance standards are based on the Geosynthetic Research Institute (GRI) Test Methods GM 13 and GM 17, and on currently accepted industry standards and practice.

This plan is intended to serve as a guide and can be modified to reflect current industry standards with regard to laboratory testing methods, testing procedures, testing requirements, and applicable regulations. Any changes from this plan will be discussed in the geosynthetics preconstruction report and/or the documentation report as required.

The following sources were used in developing this plan:

- Geosynthetic Research Institute, GRI Standard GCL 3, “Test Methods, Required Properties, and Testing Frequencies of Geosynthetic Clay Liners (GCLs),” revision 5, November 21, 2019.
- Geosynthetic Research Institute, GRI Standard GT12(a), “Test Methods and Properties for Nonwoven Geotextiles Used as Protection (or Cushioning) Materials,” revision 2, March 3, 2016.
- Geosynthetic Research Institute, GRI Standard GM 13, “Standard Specification for Test Methods, Test Properties, and Testing Frequency for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes,” revision 16, March 17, 2021.
- Geosynthetic Research Institute, GRI Standard GM 17, “Standard Specification for Test Methods, Test Properties, and Testing Frequency for Linear Low Density Polyethylene (LLDPE) Smooth and Textured Geomembranes,” revision 14, March 17, 2021.
- Geosynthetic Research Institute, GRI Standard GM 19a, “Seam Strength and Related Properties of Thermally Bonded Homogeneous Polyolefin Geomembranes/Barriers,” revision 10, March 18, 2021.

- Geosynthetic Research Institute, GRI Standard GM22, "Test Methods, Required Properties and Testing Frequencies for Scrim Reinforced Polyethylene Barriers Used in Exposed Temporary Applications," revision 4, February 18, 2016.

- Geosynthetic Research Institute, GRI Test Method GM 6, "Standard Practice for Pressurized Air Channel Test for Dual Seamed Geomembranes," revised 1994.

- American Society for Testing and Materials (ASTM), Annual Book of ASTM Standards, most recent version.

- Environmental Protection Agency (EPA) Technical Guidance Document EPA/530-SW-86-031 titled "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities."

- EPA Technical Guidance Document EPA/530-SW-86-007, titled "Design, Construction, and Evaluation of Clay Liners for Hazardous Waste Facilities."

- NR 500, Wisconsin Administrative Code.

- Code of Federal Regulations, Title 40, Part 257 [40 CFR 257], Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.

- Wisconsin Department of Transportation, Standard Specifications for Highway and Bridge Construction.

1.2 QUALITY ASSURANCE AND QUALITY CONTROL

Quality assurance and quality control are defined as follows:

- **Quality assurance** – A planned and systematic pattern of all means and actions designed to provide adequate confidence that material or services meet contractual and regulatory requirements. This is typically performed to ensure that delivered materials or services are of desired quality.

- **Quality control** – Those actions that provide a means to measure and regulate the characteristics of a material or service to meet contractual and regulatory requirements. This typically is performed by or for the provider of the materials or services as a control mechanism on the quality of the provider's efforts.

In the context of this CQA Plan, the terms are further defined as follows:

- **Quality assurance** refers to the means and actions employed by the CQA Officer to ensure conformity of the systems' installation with the CQA Plan, the construction specifications, and the construction plans.

- **Quality control** refers to those actions taken by the manufacturer, fabricator, or construction/installer to provide materials and workmanship that meet the requirements of the CQA Plan, the construction plans, and the construction specifications. Some testing efforts required by this CQA Plan may serve as both quality control and quality assurance measures.