



**CITY WATER, LIGHT AND POWER**  
**CITY OF SPRINGFIELD, ILLINOIS**

**MISTY BUSCHER, MAYOR**  
**SCOTT M. ROGERS, CHIEF UTILITY ENGINEER**

VIA E-MAIL: [dierich.andrea@epa.gov](mailto:dierich.andrea@epa.gov)

October 30, 2026

Andrea Dierich  
EPA Project Officer  
US EPA, Region 5  
77 W Jackson Blvd  
Chicago, IL 60604

RE: FGDS Development Unit 2 Landfill  
Run-on and Run-off Control System Plan October 2026

Dear Ms. Dierich:

Provided herein is the revised Run-on and Run-off Control System Plan for the FGDS Development Unit 2 Landfill in accordance with paragraph 274 and Attachment 2 of the Consent Agreement and Final Order effective January 14, 2025 and comments received from EPA on August 17, 2026.

Should you have any questions or require additional information, please contact me at 217-757-8610 ext. 1110.

Sincerely,

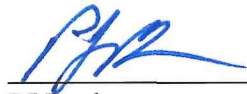
PJ Becker  
Environmental Health and Safety Manager

**Certification of City Water, Light and Power**

City of Springfield, Office of Public Utilities, d/b/a City Water, Light and Power provides the following certification as required by paragraph 300 of the Consent Agreement and Final Order effective January 14, 2025.

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 have no personal knowledge that the information submitted is other than 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:



Name:

PJ Becker

Title:

Environmental Health and Safety Manager

Date:

10/30/2026

**City Water, Light & Power  
FGDS Development Unit 2 Landfill  
Springfield, Sangamon County, Illinois**

# **Run-on and Run-off Control System Plan for FGDS Development Unit 2 Landfill**

**October 2026**



*Prepared for:*  
City Water, Light & Power  
3100 Stevenson Drive  
Springfield, Illinois 62703

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## 1. INTRODUCTION

City Water, Light and Power (CWLP) Flue Gas Desulfurization Sludge (FGDS) Development Landfill was issued Permit No. 1995-243-LFM on November 9, 1995. The active areas of Unit 2 Landfill (Unit 2) have been developed and operated pursuant to the initial permit and subsequent permit modifications. USEPA has indicated to CWLP that Unit 2 is a coal combustion residuals (CCR) landfill.

The Surface Water Drainage Plan of Unit 2 is included as part of the Landfill Permit No. 1995-243-LFM. Andrews Engineering, Inc. (AEI) prepared and submitted the Initial run-on and run-off control system plan in October 2016. AEI has completed a review of this plan for compliance with the requirements under 40 CFR Part 257.81.

*257.81(c)(4) **Frequency for revising the plan.** The owner or operator of the CCR unit must prepare periodic run-on and run-off control system plans required by paragraph (c)(1) of this section every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first subsequent plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. For purposes of this paragraph (c)(4), the owner or operator has completed a periodic run-on and run-off control system plan when the plan has been placed in the facility's operating record as required by § 257.105(g)(3).*

Unit 1 landfill, which was filled to capacity and certified closed in February 1993, is not included in this report. Since the landfill ceased receiving CCR prior to October 19, 2015, the above items are not applicable to the Unit 1 landfill as specified under 40 CFR Part 257.50(d).

AEI performed the review of available information, which included the following documents:

- Application for Significant Modification to Permit (dated September 1994 – Log No. 1995-243)
- Report of Stability Analysis (dated September 1994 – Log No. 1995-243)
- Historical Aerial Photographs (April 1995 – July 2026)
- Annual Inspection Report for Coal Combustion Residuals Landfill (January 2026)

## 2. CCR UNIT INFORMATION

The Design and Construction Plan of the Application for Significant Modification to Permit, prepared by AEI in June 1995 contains a Section covering “Surface Water Drainage” with subsections on “Off-site Run-on Diversion,” “On-Site Runoff Collection,” and “Runoff Collection Ditches and Culverts.” The “Surface Water Drainage” section text on pages 19 through 22 of the aforementioned Design and Construction Plan has been revised and attached to address the 1,000-year storm event for the approximately 3.5-acre closed landfill. The Surface Water Drainage Section of the Design and Construction Plan revision is enclosed (see Appendix A).

Stormwater run-on is addressed in the “Surface Water Drainage” section and states that run-on is prevented by the presence of perimeter berms around the site.

Stormwater run-off is addressed in the “Surface Water Drainage” section and states that stormwater run-off from the landfill is collected in perimeter ditches and will outlet to the evaporation pond to the east. Stormwater will also be pumped out of any excavated or fill area to the evaporation pond. Temporary ditches will be constructed to convey flow from completed portions of the landfill to the permanent perimeter ditches as needed.

In order to cease all CCR and Non-CCR waste streams from entering Dallman Ash Pond, a new section of double-walled leachate conveyance line from leachate manhole L303 was installed in August 2022 to route the leachate south towards the Clarification Pond. The discharge from the evaporation pond line was connected to the leachate line at the southwest corner of Unit 2. The combined flows of leachate and evaporation pond water are now conveyed directly into the Clarification Pond through the buried double-walled pipe for discharge into Sugar Creek in accordance with NPDES permit conditions.

### 3. STORMWATER RUN-ON

Unit 2 totals 34-acres in size. Of the 34-acres, only 3.5-acres has been developed into landfill space. The remaining 30.5-acres of undeveloped area has been generally graded and is vegetated.

A perimeter berm has been constructed around the entire 34-acre Unit 2 Landfill which generally prevents off-site stormwater run-on into Unit 2 from the north, south, east and west. Due to the operation of Dallman Ash Pond immediately to the west of Unit 2, there is potential for stormwater run-on from the west into Unit 2. Any run-on from the west is handled in the same manner as on-site stormwater run-on.

On-site stormwater run-on into the undeveloped/undisturbed area of Unit 2 generally flows into low lying areas along the northeastern and southeastern portion of Unit 2 where it is contained by the presence of the perimeter berm to the north, south, east and west.

The 3.5-acre active area has constructed berms to the north, south, east and west. Within the active 3.5-acre area of Unit 2, perimeter ditches constructed along the south, east and north berms divert on-site storm water run-on into leachate collection manhole L303 for ultimate discharge into the Clarification Pond via a double walled leachate conveyance line that was installed in August 2022. Any storm water run-on from the east of the center line of the road separating Dallman Ash Pond and Unit 2 Landfill sheet flows into the waste boundary and is eventually handled as leachate through the active leachate collection system.

A float activated electric pump was sized and selected based on known pump curve demand and is placed in the bottom of the leachate collection manhole L303. Float levels on the electric pump keep the manhole drained below the level of the inlets of the eastern berm ditch to prevent backup and overtopping of the constructed berm.

The CWLP Wastewater Operator checks the level of the leachate collection manhole and east ditch on a daily basis, Monday through Friday, as part of their rounds. Any operational deficiencies are immediately addressed by CWLP operations and maintenance staff. CWLP

retains other similar sized float activated electric pumps in inventory that can be installed by CWLP operations and maintenance staff. CWLP also owns multiple gas powered pumps that could be used to connect to the leachate discharge line in the event of extended electrical outage.

Sheet B1-1 of the attached figures depicts existing site conditions, including current topography and stormwater control structures. Sheet B1-4 depicts expected site conditions upon closure of the 3.5-acre Unit 2.

CWLP will address stormwater run-on and amend the Run-on and Run-off Control System Plan whenever there is a change in conditions that would substantially affect the written plan in effect in accordance with 40 CFR 257.81(c)(2). Additionally, CWLP will prepare periodic Run-on and Run-off Control System Plans in accordance with 40 CFR 257.81(c)(4).

## 4. STORMWATER RUN-OFF

Stormwater run-off from the active 3.5-acre Unit 2 is diverted to the perimeter ditches constructed along the south, east and north for diversion to leachate collection manhole L303.

A float activated electric pump was sized and selected based on known pump curve demand and is placed in the bottom of the leachate collection manhole L303. Float levels on the electric pump keep the manhole drained below the level of the inlets of the eastern berm ditch to prevent backup and overtopping of the constructed berm.

The CWLP Wastewater Operator checks the level of the leachate collection manhole and east ditch on a daily basis, Monday through Friday, as part of their rounds. Any operational deficiencies are immediately addressed by CWLP operations and maintenance staff. CWLP retains other similar sized float activated electric pumps in inventory that can be installed by CWLP operations and maintenance staff. CWLP also owns multiple gas powered pumps that could be used to connect to the leachate discharge line in the event of extended electrical outage.

Stormwater run-off from the undeveloped areas of Unit 2 generally flows into low lying areas along the northeastern and southeastern portion of Unit 2. Two manholes were installed in the low lying areas near the northeastern and southeastern portions of the undeveloped area of Unit 2 to collect stormwater run-off. Float activated electric pumps were sized and selected based on known pump curve demand and are placed in the bottom of each of the northeastern and southeastern manholes for discharge into the Evaporation Pond.

Stormwater collected in the Evaporation Pond gravity drains into a manhole located at the southwest corner of the Evaporation Pond. A drainpipe is placed in the manhole at an elevation to allow drainage into the manhole and prevent overtopping of the Evaporation Pond. A float activated electric pump was sized and selected based on known pump curve demand and is placed in the bottom of the manhole. Float levels on the electric pump keep the manhole drained below the level of the inlet drain from the Evaporation Pond. From the Evaporation Pond, stormwater is pumped to the west and ties into the double-walled leachate conveyance line in a manhole at the southwest corner of Unit 2 for ultimate discharge into the Clarification Pond. To prevent back flow of leachate into the Evaporation Pond, a check valve was installed in the discharge line from the evaporation pond.

The CWLP Wastewater Operator checks the level of the Evaporation Pond on a daily basis, Monday through Friday, as part of their rounds. Any operational deficiencies are immediately addressed by CWLP operations and maintenance staff. CWLP retains other similar sized float activated electric pumps in inventory that can be installed by CWLP operations and maintenance staff in any of the three stormwater collection structures. CWLP also owns multiple gas powered pumps that could be used to connect to any of the three stormwater collection structure discharge lines in the event of extended electrical outage.

Provided in Appendix B is a revised Stormwater Run-Off Control Plan, which was previously included as Attachment 20 in the Application for Significant Modification to Permit. The revised Stormwater Run-Off Control Plan includes engineering calculations discussed in the Design and Construction Plan. Also included in the revised Stormwater Runoff Control Plan is an "newly graded landfill," which discusses the design and use of temporary drainage structures to manage stormwater run-off prior to the placement of the final cover, and contains the pertinent design calculations.

## 5. STATEMENT

This Run-on and Run-off Control System Plan for Coal Combustion Residuals Unit 2 Landfill was completed for CWLP by Andrews Engineering, Inc. in accordance with the requirements under 40 CFR Part 257.81.

Signature: Karl W. Finke

Illinois P.E. No.: 062.068571

Date: 10/30/26

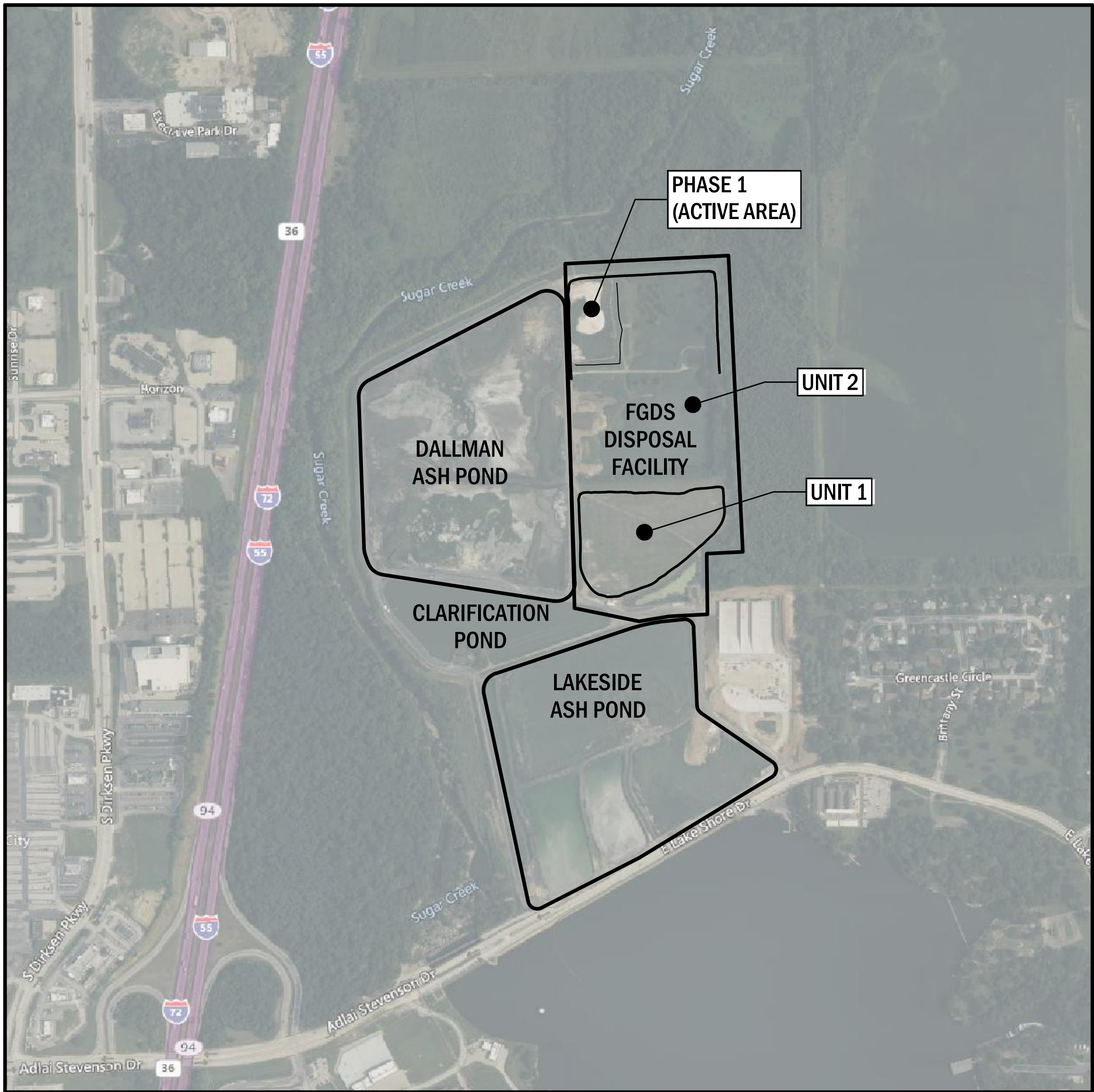


License Expiration: 11/30/27

## FIGURES

# CITY WATER, LIGHT, AND POWER FGDS DISPOSAL FACILITY CLOSURE PLANS

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS  
JULY 2025



| INDEX OF SHEETS |                          |
|-----------------|--------------------------|
| NO.             | TITLE                    |
| B1-0            | TITLE SHEET              |
| B1-1            | EXISTING SITE CONDITIONS |
| B1-2            | SITE DEVELOPMENT PLAN    |
| B1-3            | SITE PLAN MAP            |
| B1-4            | FINAL SITE CONDITIONS    |
| B1-5            | CROSS SECTION @ E 2,115  |
| B1-6            | CROSS SECTION @ N 5,500  |
| B1-7            | CROSS SECTION @ N 5,298  |
| B1-8            | DETAILS                  |

PREPARED FOR:



CITY WATER, LIGHT, AND POWER  
3100 STEVENSON DRIVE  
SPRINGFIELD, ILLINOIS 62702

PREPARED BY:

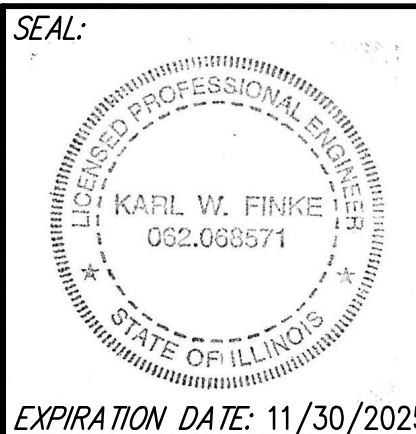


VICINITY MAP  
NOT TO SCALE

I HEREBY AFFIRM THAT ALL INFORMATION CONTAINED ON THESE  
DRAWINGS ARE TRUE AND ACCURATE TO THE BEST OF MY  
KNOWLEDGE AND BELIEF.

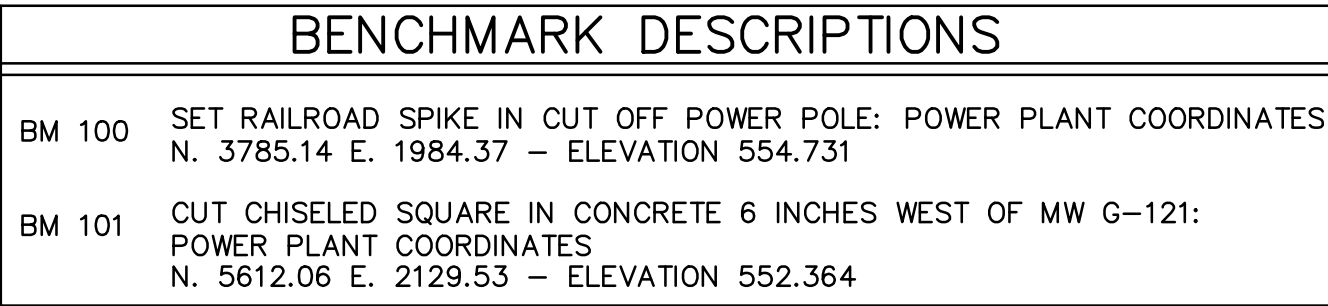
*Karl W. Finke*  
KARL W. FINKE, P.E.  
ILLINOIS LICENSE NO. 062.068571

7/10/25  
DATE



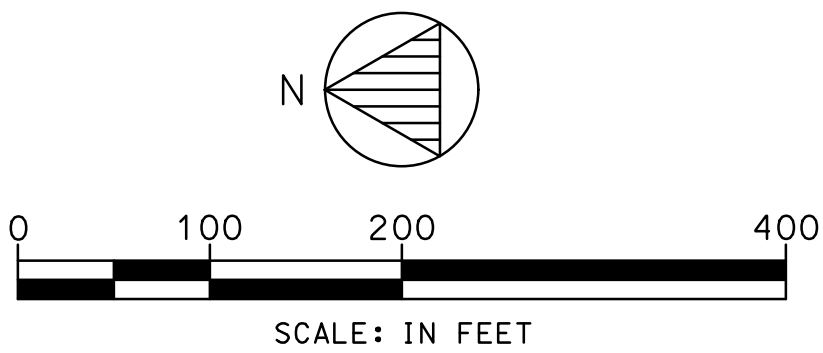
DATE: JULY 2025  
PROJECT ID:  
230339/0030  
SHEET NUMBER:  
B1-0





| UNIT 2 MONITORING WELL LEGEND |                    |                         |
|-------------------------------|--------------------|-------------------------|
| WELL<br>I.D.                  | SCREEN<br>MATERIAL | GRADIENT<br>DESCRIPTION |
| G-113                         | PVC                | UP                      |
| G-120                         | PVC                | UP                      |
| G-121                         | PVC                | DOWN                    |
| G-122                         | PVC                | DOWN                    |
| AW-1                          | PVC                | UP                      |
| AW-2                          | PVC                | DOWN                    |
| RW-3                          | PVC                | DOWN                    |
| G-104                         | PVC                | DOWN                    |
| R-103                         | PVC                | DOWN                    |
| G-106                         | PVC                | DOWN                    |
| R-09S                         | PVC                | DOWN                    |

- NOTES:
1. THE CONTOURS SHOWN FOR THE SURROUNDING AREA OF THE LANDFILL WERE GENERATED FROM LIDAR DATA PROVIDED BY HANSON PROFESSIONAL SERVICES, INC. DATED MAY 2023 MERGED WITH TOPOGRAPHIC SURVEY PERFORMED BY ANDREWS ENGINEERING, INC. DATED MARCH 11, 2024.
  2. THE PROPERTY LINE LOCATION WAS SUPPLIED BY CWLP, BASED UPON SUBSEQUENT FIELD SURVEYING AND THE ORIGINAL LEGAL DESCRIPTION PREPARED BY MOSS, JOHNSON, SANDOVAL AND ASSOC. LTD.
  3. FOR CLARITY NOT ALL SITE FEATURES ARE SHOWN.
  4. MONITORING WELL(S) OR PIEZOMETER(S) PLUGGING SHALL BE IN ACCORDANCE WITH THE REGULATIONS, REQUIREMENTS AND/OR GUIDELINES OF THE IEPA AND/OR ILLINOIS DEPARTMENT OF PUBLIC HEALTH.
  5. DURING THE OPERATION OF THE FACILITY, THE OPERATOR SHALL COMPLY WITH THE SAFETY STANDARDS PURSUANT TO THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, INCLUDING ALL SUBSEQUENT AMENDMENTS.
  6. WHERE THE FOUNDATION UNDERDRAIN SYSTEM DISCHARGES INTO A FORCE MAIN, THE UNDERDRAIN PIPING SHALL BE EQUIPPED WITH AN APPROPRIATE CHECK VALVE TO PREVENT BACKFLOW.
  7. UNIT 1 AND UNIT 2 WERE RECOGNIZED AS TWO INDEPENDENT WASTE DISPOSAL ENTITIES BY SUPPLEMENTAL PERMIT NO. 1993-486-SP DATED JANUARY 7, 1994.
  8. ACCESS TO THE FACILITY WILL BE CONTROLLED BY THE EXISTING TOPOGRAPHY, LOCKABLE GATES AND FENCING, LOCATED ALONG EAST LAKE SHORE DRIVE, ADJACENT TO THE FACILITY.
  9. THE DESIGN SHOWN ON THE DRAWINGS ARE MEANT TO INDICATE A GENERAL DESIGN CONCEPT FOR THE FACILITY. ADJUSTMENTS MAY BE MADE IN THE FIELD BY THE CQAO FOR CONDITIONS ENCOUNTERED. AS APPROPRIATE, ANY ADJUSTMENTS SHALL BE REFLECTED ON THE RECORD DRAWINGS TO BE SUBMITTED TO THE AGENCY FOR OPERATING AUTHORIZATION IN NEWLY DEVELOPED AREAS.
  10. WHERE POROUS MATERIALS ARE USED FOR FOUNDATION REPAIR THEY SHALL BE CONNECTED TO THE FOUNDATION UNDERDRAIN SYSTEM, WHERE PRACTICAL, TO FACILITATE ADDITIONAL SUBGRADE DRAINAGE.
  11. CWLP OWNS THE SURROUNDING PROPERTY AROUND THE LANDFILL EXCEPT TO THE EAST.

[illegible]

**ANDREWS ENGINEERING**  
 3300 GINGER CREEK DRIVE  
 SPRINGFIELD, ILLINOIS 62711-7233  
 PH (217) 787-2334 WWW.ANDREWS-ENG.COM  
 PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, OR  
 DESIGNED BY: DWM DRAWN BY: MPN  
 APPROVED BY: KWF

## SITE DEVELOPMENT PLAN

PLANS PREPARED FOR  
CITY WATER, LIGHT, AND POWER  
FGDS DISPOSAL FACILITY  
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

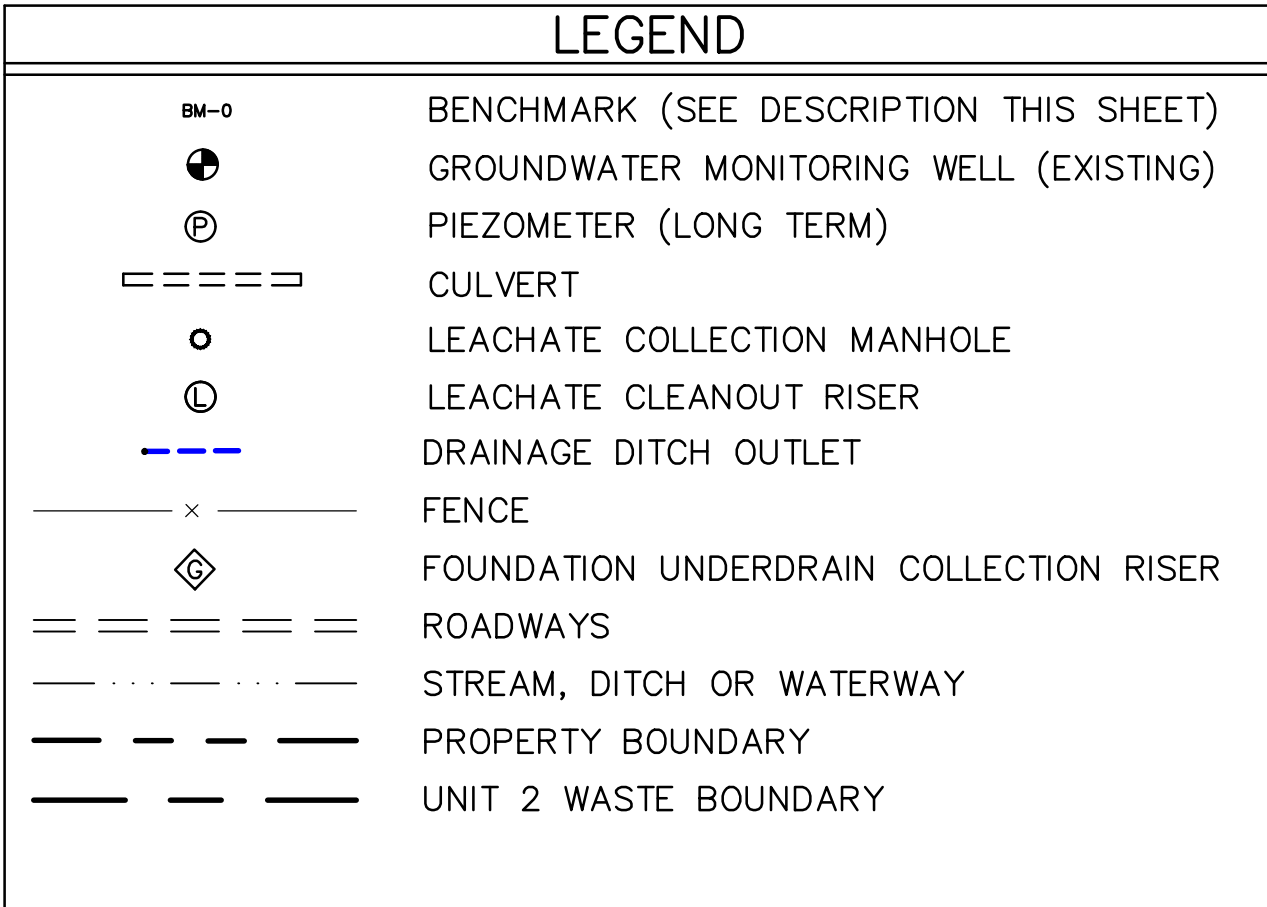
DATE: JULY 2025

PROJECT ID:  
230339/0030

*SHEET NUMBER:*

**B1-2**

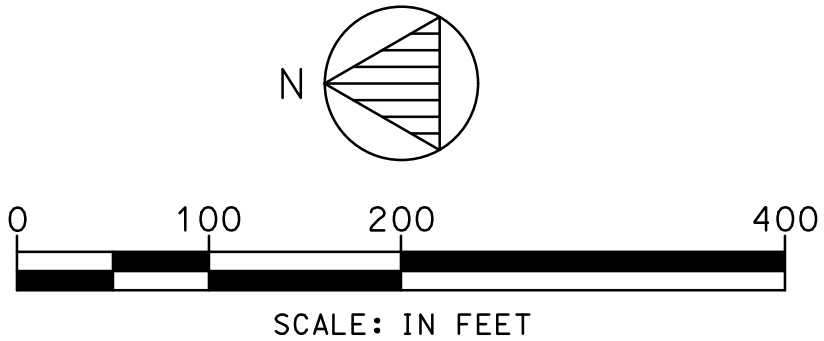




| BENCHMARK DESCRIPTIONS |                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| BM 100                 | SET RAILROAD SPIKE IN CUT OFF POWER POLE: POWER PLANT COORDINATES<br>N. 3785.14 E. 1984.37 - ELEVATION 554.731                     |
| BM 101                 | CUT CHISELED SQUARE IN CONCRETE 6 INCHES WEST OF MW G-121:<br>POWER PLANT COORDINATES<br>N. 5612.06 E. 2129.53 - ELEVATION 552.364 |

| UNIT 1 MONITORING WELL LEGEND |                    |                         |
|-------------------------------|--------------------|-------------------------|
| PHASED – 95–469               |                    |                         |
| WELL<br>I.D.                  | SCREEN<br>MATERIAL | GRADIENT<br>DESCRIPTION |
| R-101                         | PVC                | UP                      |
| G-110                         | S.S.               | UP                      |
| R-111                         | S.S.               | UP                      |
| G-112                         | S.S.               | UP                      |

| UNIT 2 MONITORING WELL LEGEND |                    |                         |
|-------------------------------|--------------------|-------------------------|
| WELL<br>I.D.                  | SCREEN<br>MATERIAL | GRADIENT<br>DESCRIPTION |
| G-113                         | PVC                | UP                      |
| G-120                         | PVC                | UP                      |
| G-121                         | PVC                | DOWN                    |
| G-122                         | PVC                | DOWN                    |
| AW-1                          | PVC                | UP                      |
| AW-2                          | PVC                | DOWN                    |
| RW-3                          | PVC                | DOWN                    |
| P-07D                         | PVC                | DOWN                    |



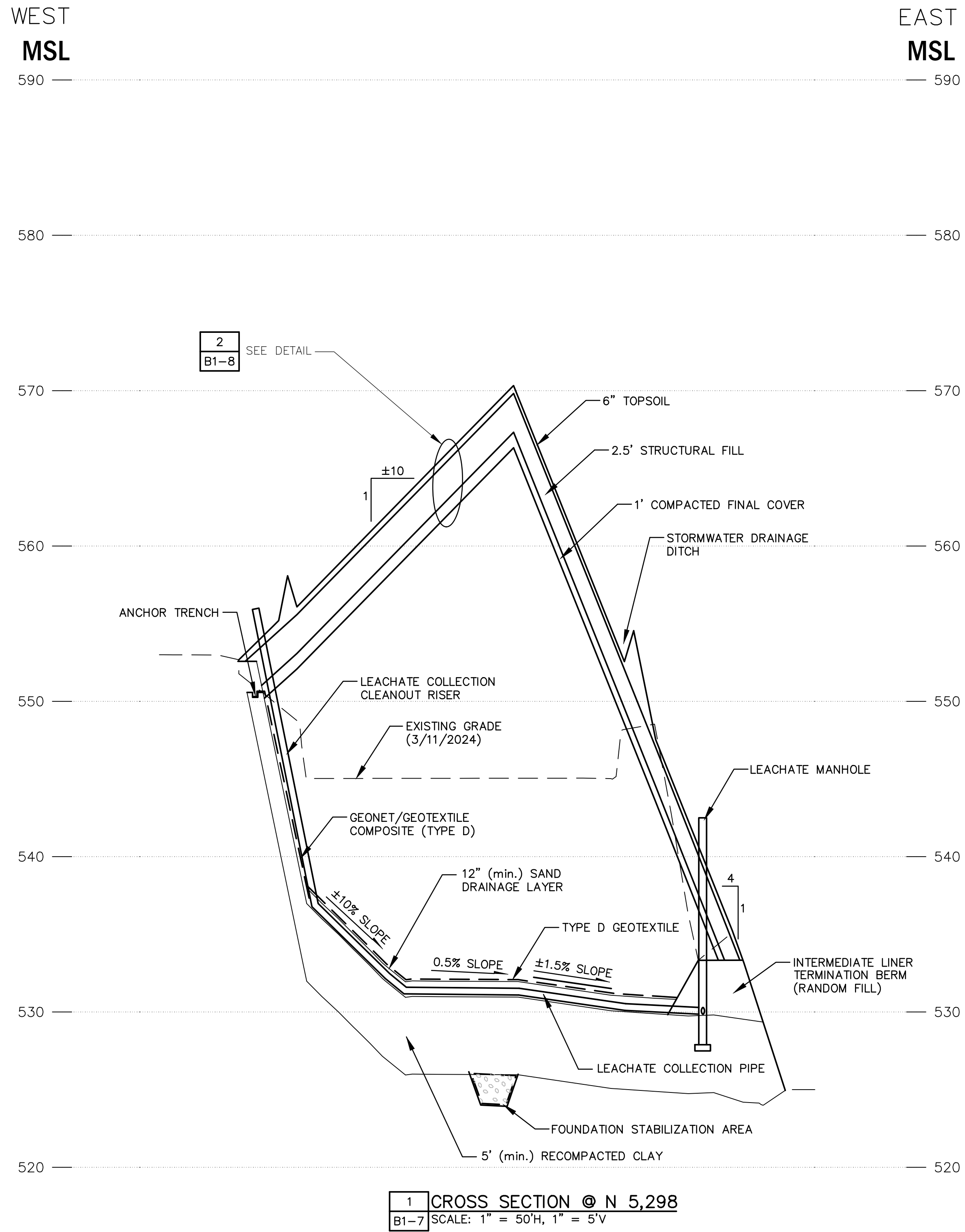
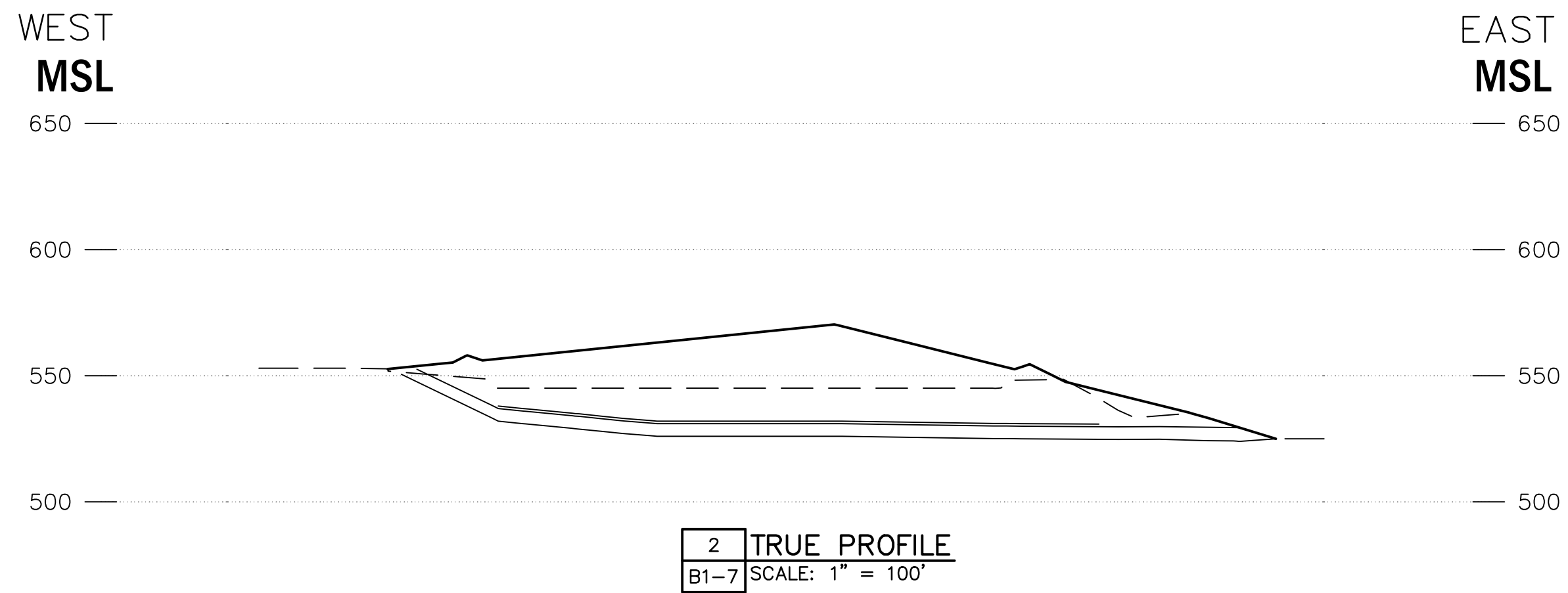
- NOTES:

  1. THE CONTOURS SHOWN FOR THE SURROUNDING AREA OF THE LANDFILL WERE GENERATED FROM LIDAR DATA PROVIDED BY HANSON PROFESSIONAL SERVICES, INC. DATED MAY 2023 MERGED WITH TOPOGRAPHIC SURVEY PERFORMED BY ANDREWS ENGINEERING, INC. DATED MARCH 11, 2024.
  2. THE PROPERTY LINE LOCATION WAS SUPPLIED BY CWLP, BASED UPON SUBSEQUENT FIELD SURVEYING AND THE ORIGINAL LEGAL DESCRIPTION PREPARED BY MOSS, JOHNSON, SANDOVAL AND ASSOC. LTD.
  3. FOR CLARITY NOT ALL SITE FEATURES ARE SHOWN.
  4. MONITORING WELL(S) OR PIEZOMETER(S) PLUGGING SHALL BE IN ACCORDANCE WITH THE REGULATIONS, REQUIREMENTS AND/OR GUIDELINES OF THE IEPA AND/OR ILLINOIS DEPARTMENT OF PUBLIC HEALTH.
  5. DURING THE OPERATION OF THE FACILITY, THE OPERATOR SHALL COMPLY WITH THE SAFETY STANDARDS PURSUANT TO THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, INCLUDING ALL SUBSEQUENT AMENDMENTS.
  6. WHERE THE FOUNDATION UNDERDRAIN SYSTEM DISCHARGES INTO A FORCE MAIN, THE UNDERDRAIN PIPING SHALL BE EQUIPPED WITH AN APPROPRIATE CHECK VALVE TO PREVENT BACKFLOW.
  7. ACCESS TO THE FACILITY WILL BE CONTROLLED BY THE EXISTING TOPOGRAPHY, LOCKABLE GATES AND FENCING, LOCATED ALONG THE EAST LAKE SHORE DRIVE, ADJACENT TO THE FACILITY.
  8. THE DESIGN SHOWN ON THE DRAWINGS ARE MEANT TO INDICATE A GENERAL DESIGN CONCEPT FOR THE FACILITY. ADJUSTMENTS MAY BE MADE IN THE FIELD BY THE CQAO FOR CONDITIONS ENCOUNTERED. AS APPROPRIATE, ANY ADJUSTMENTS SHALL BE REFLECTED ON THE RECORD DRAWINGS TO BE SUBMITTED TO THE AGENCY FOR OPERATING AUTHORIZATION IN NEWLY DEVELOPED AREAS.
  9. THE SYMBOLS FOR THE VARIOUS APPURTENANCE ARE LARGER THAN THE ITEM SHOWN.
  10. UNIT 1 AND UNIT 2 WERE RECOGNIZED AS TWO INDEPENDENT WASTE DISPOSAL ENTITIES BY SUPPLEMENTAL PERMIT NO. 1993-486-SP DATED JANUARY 7, 1994.
  11. CWLP OWNS THE SURROUNDING PROPERTY AROUND THE LANDFILL EXCEPT TO THE EAST.
  12. THE FINAL CONTOURS ARE APPLICABLE TO THE AREA UTILIZED FOR DISPOSAL. THE AREA OUTSIDE THE WASTE FOOTPRINT MAY BE UTILIZED FOR OTHER PURPOSES AS LONG AS THE INTEGRITY OF THE LANDFILL IS NOT COMPROMISED.

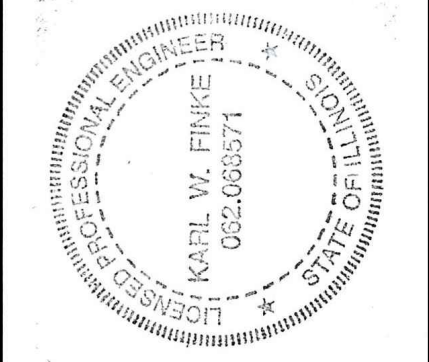




Tab: Layout1      Last Saved: July 10, 2025, by Mike Nguyen  
C:\Civil 3D Projects\Springfield CWLP\DWG\B4\B1-07.DWG



- NOTES:
1. FOR CLARITY IN DEPICTING THE FEATURES OF THE LANDFILL, THE SECTION SHOWN IN DRAWING 1 HAS BEEN DISTORTED BY A FACTOR OF 10 IN THE VERTICAL SCALE. THE TRUE PROFILE OF THE LANDFORM IS 1/10 THAT SHOWN AND IS DEPICTED IN DRAWING 2.
  2. FINAL CONTOURS ARE TAKEN THROUGH AREAS OF DIFFERENT SLOPES CAUSING THE THICKNESS OF THE FINAL COVER TO APPEAR TO VARY DUE TO THE VERTICAL EXAGGERATION. ALL LANDFILL SURFACES ARE TO BE COVERED WITH 6-INCHES TOPSOIL, 2.5- FEET OF STRUCTURAL FILL AND 1-FOOT COMPACTED FINAL COVER.
  3. DUE TO THE DRAWING SCALE, THE LEACHATE COLLECTION SYSTEM DETAIL HAS BEEN SIMPLIFIED. SEE SHEET B1-8 FOR COMPLETE DETAILS.



**ANDREWS**  
**ENGINEERING**



3300 GINGER CREEK DRIVE  
SPRINGFIELD, ILLINOIS 62711-7233  
PH (217) 787-9334 [WWW.ANDREWS-ENG.COM](http://WWW.ANDREWS-ENG.COM)

PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: KWF | DESIGNED BY: DMW | DRAWN BY: MPN

CROSS SECTION @ N 5,298

PLANS PREPARED FOR  
CITY WATER, LIGHT, AND POWER  
FGDS DISPOSAL FACILITY  
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

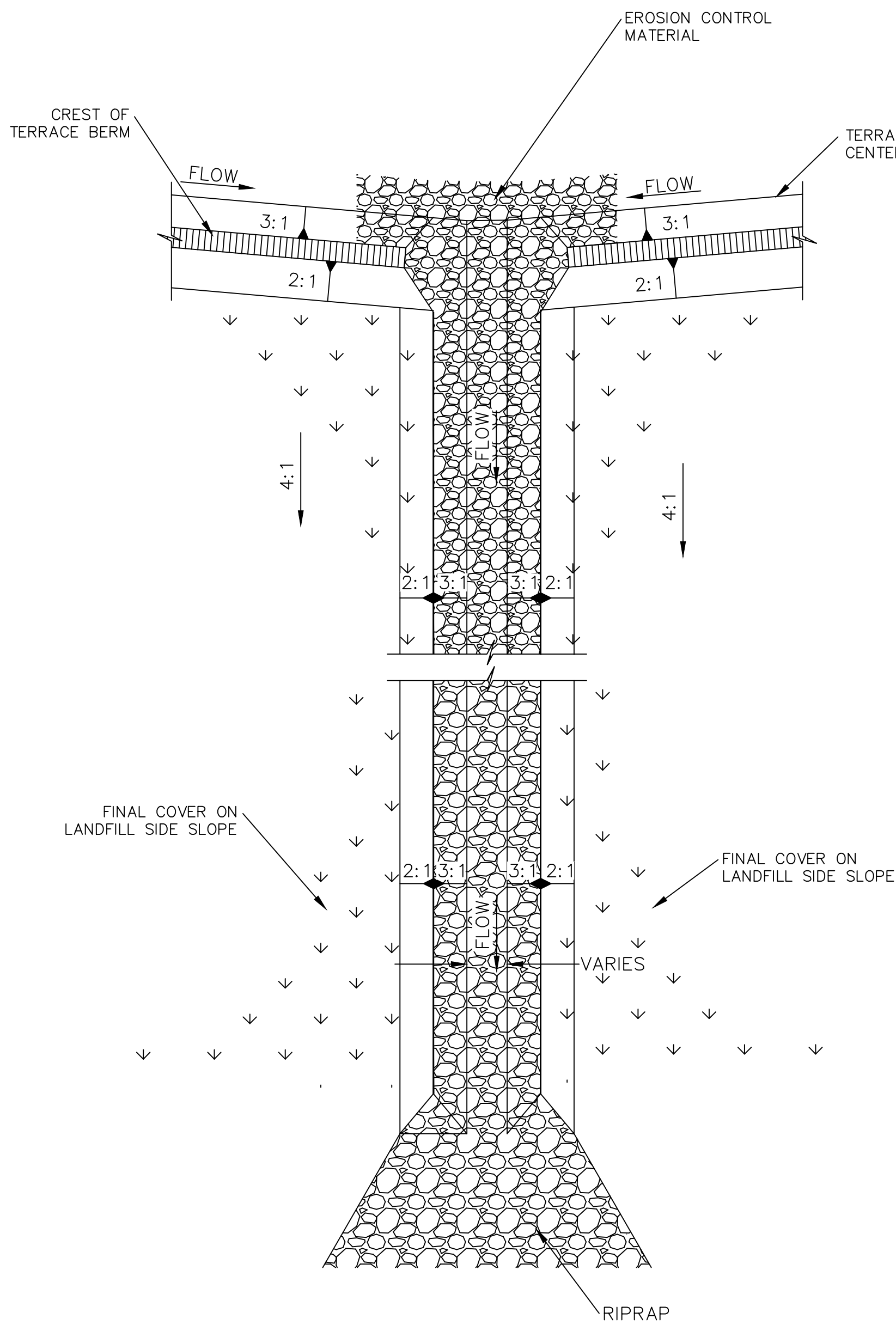
DATE: JULY 2025

PROJECT ID:  
230339/0030

SHEET NUMBER:

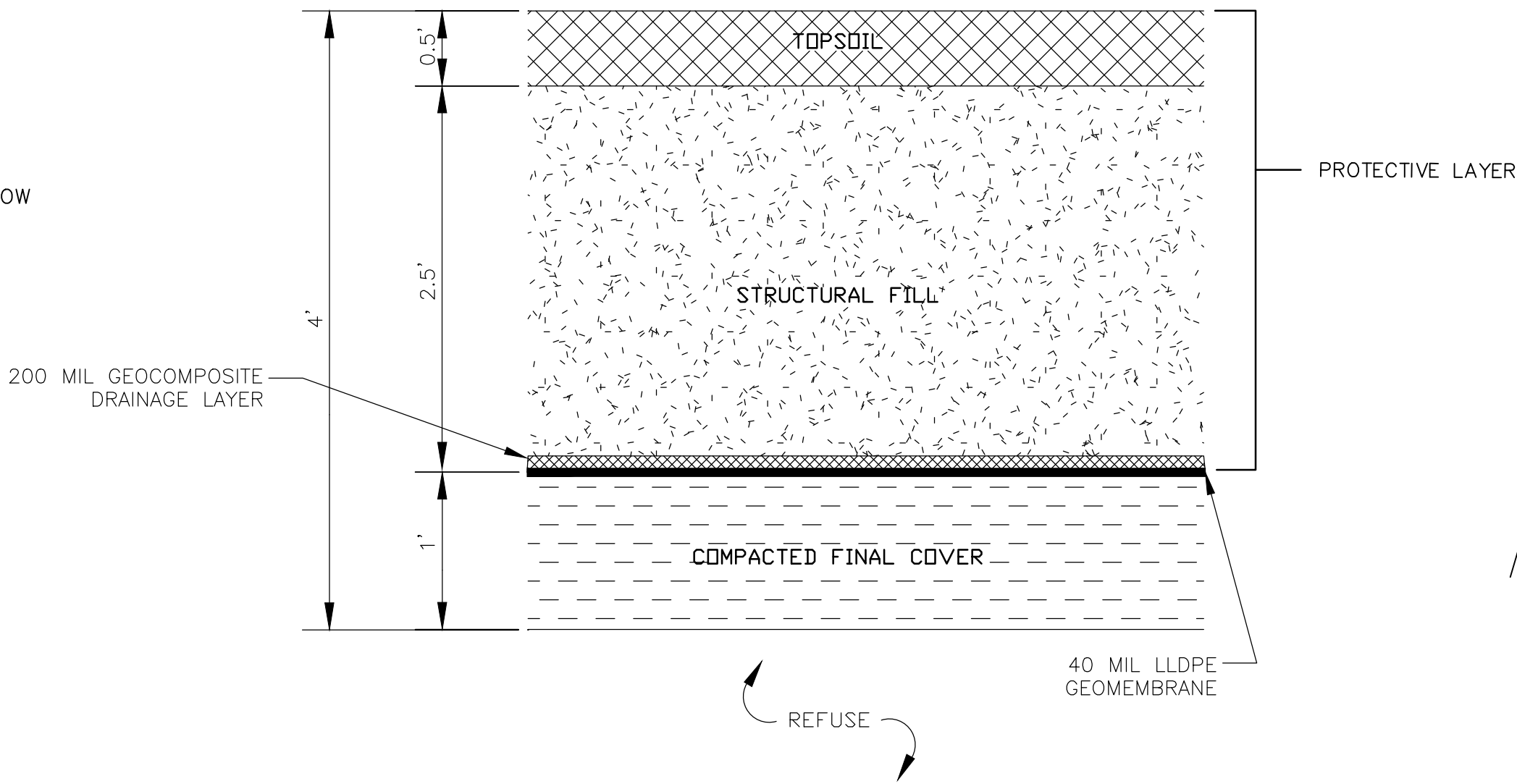
**B1-7**

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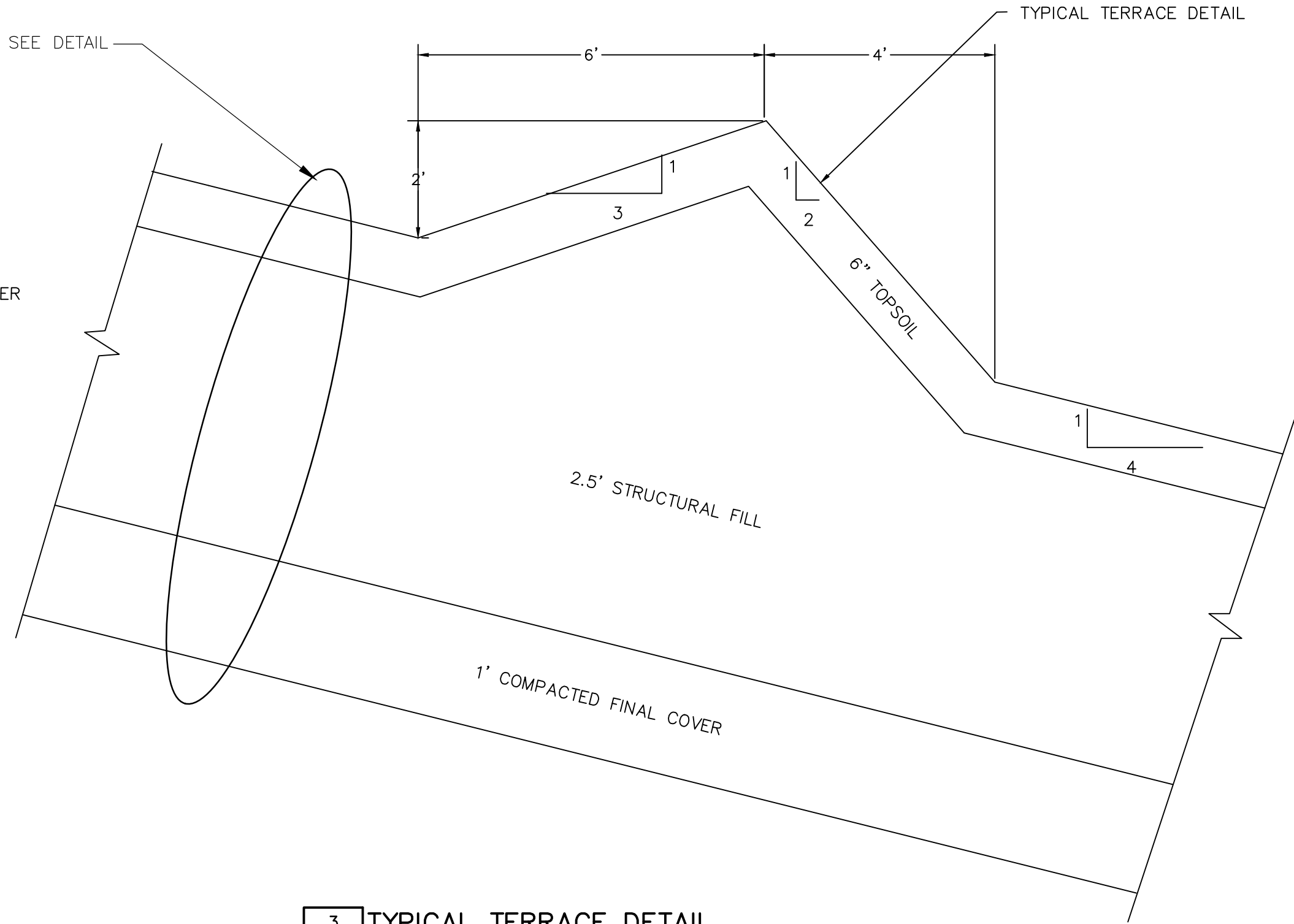


NOTE:  
CONSTRUCT DOWN SLOPE CHANNEL USING RAISED SIDEWALLS ON TOP OF FINAL COVER. SIDEWALL TO BE FILLED A MINIMUM OF 1.5' ABOVE EXISTING FINISH GRADE.

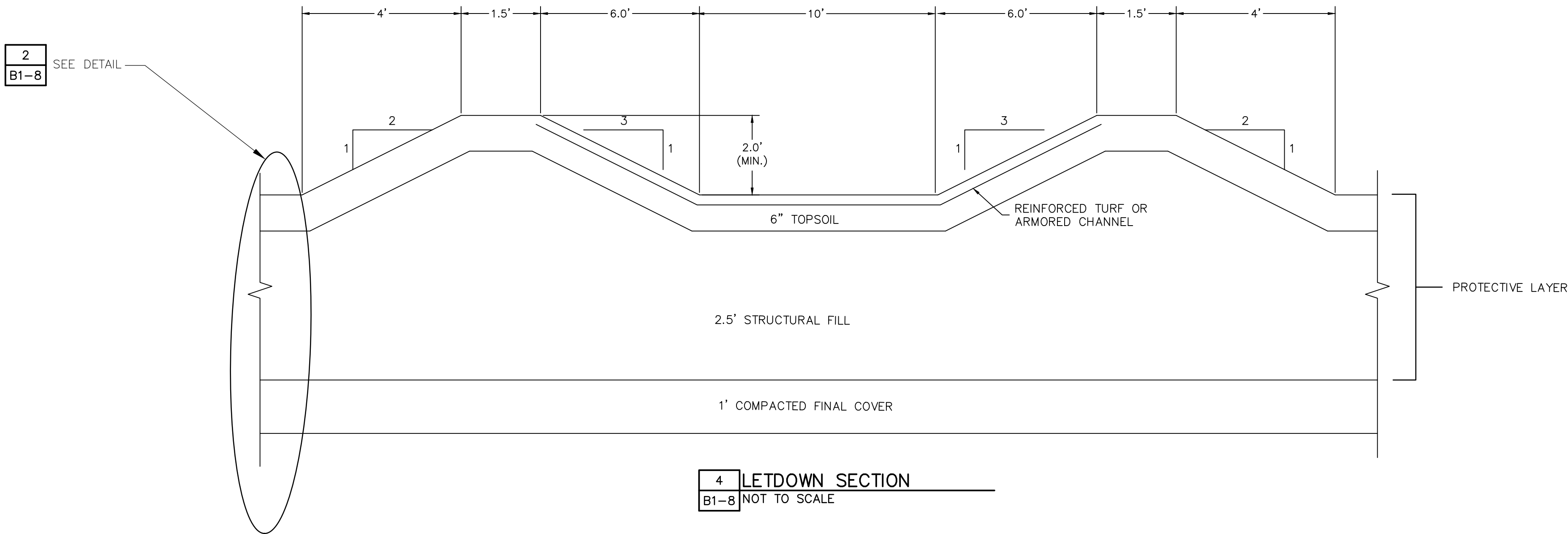
**1** TYPICAL LETDOWN DETAIL  
B1-8 NOT TO SCALE



**2** FINAL COVER SYSTEM DETAIL  
B1-8 NOT TO SCALE



**3** TYPICAL TERRACE DETAIL  
B1-8 NOT TO SCALE



**4** LETDOWN SECTION  
B1-8 NOT TO SCALE

|                                                                          |  |                                                                                                                        |                            |
|--------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------|----------------------------|
| DETAILS                                                                  |  | PLANS PREPARED FOR<br>CITY WATER, LIGHT, AND POWER<br>FGDS DISPOSAL FACILITY<br>SPRINGFIELD, SANGAMON COUNTY, ILLINOIS |                            |
| DATE:                                                                    |  | JULY 2025                                                                                                              |                            |
| PROJECT ID:                                                              |  | 230339/0030                                                                                                            |                            |
| SHEET NUMBER:                                                            |  | B1-8                                                                                                                   |                            |
| APPROVED BY: KWF                                                         |  | DESIGNED BY: DWM                                                                                                       | DRAWN BY: MPN              |
| PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MD             |  | PH (217) 787-2334                                                                                                      | WWW.ANDREWSENGINEERING.COM |
| 3300 GINGER CREEK DRIVE<br>SPRINGFIELD, ILLINOIS 62711-7233              |  | ANDREWS<br>ENGINEERING                                                                                                 |                            |
| PROFESSIONAL ENGINEER<br>KARL W. FINKE<br>002,08571<br>STATE OF ILLINOIS |  | REVISED DETAILS 2, 3 & 4<br>REVISED TITLEBLOCK, DATE, NOTES, AND DETAILS<br>MPN<br>MPN<br>VJM<br>BY                    |                            |
| REVISED DATE                                                             |  | REVISION DESCRIPTION                                                                                                   |                            |
| NO.                                                                      |  | DATE                                                                                                                   |                            |
| 1                                                                        |  | 08/1995                                                                                                                |                            |
| 2                                                                        |  | 09/2024                                                                                                                |                            |
| 3                                                                        |  | 07/2025                                                                                                                |                            |

## **APPENDIX A**

### **Design and Construction Plan**

## **SURFACE WATER DRAINAGE**

Currently, surface water from Unit 2 generally drains to the low areas on-site. The water that does not infiltrate or evaporate is pumped to the Clarification Pond southwest of the landfill.

In conjunction with the landfill, a surface water control system will be provided which will consist of a means for off-site run-on diversion, on-site run-off collection and the NPDES sampling of all discharges of run-off from disturbed areas to waters of the State. Each of these components of the surface water control system are described in greater detail below:

### **Off-site Run-on Diversion**

Most off-site run-on is prevented by the presence of perimeter berms around the entire site.

### **On-site Run-off Collection**

Stormwater run-off from disturbed areas on and immediately adjacent to the landfill will be collected in the perimeter ditches, which exist around the landfill periphery. The perimeter ditches will outlet to the Evaporation Pond to the east. The outfall locations are shown on the accompanying set of drawings.

Stormwater will also be pumped out of any excavated or fill area to the evaporation pond. Leachate will also be disposed by discharging to the ash pond. Minor seepage of groundwater into an excavation will be pumped to the force mains as needed, and the volume of this seepage is expected to be insignificant compared to any run-off generated by a storm.

Temporary ditches will be constructed to convey flow from completed portions of the landfill to the permanent perimeter ditches as needed.

### **Run-off Collection Ditches and Culverts**

Run-off from disturbed areas on the landfill will be collected in run-off collection ditches which will be provided around the entire periphery of the unit. These ditches and any associated culverts are designed to carry the run-off without scouring or erosion from the 1,000-year, 24 hour storm when the site is active (disturbed areas present). The sizing is based upon run-off generation estimates using the rational method and assuming final grades are achieved (which tends to maximize tributary drainage area and average watershed slope). Furthermore, for active site conditions, it is generally assumed the first two acres of any tributary area is freshly-graded bare ground and the remaining acreage is poorly vegetated.

All permanent ditches are to be vegetated channels. As necessary, where ditches discharge into existing waterways, riprap, clean broken concrete, or other suitable erosion control measures shall also be employed. Based upon these lining materials and protective measures, these ditches and any receiving channel should be adequately protected from erosion and scouring.

The run-off collection ditching shall be operated as described above until at least such time that the final cover is placed and erosional stability is provided by the vegetation or other approved means over their tributary area. Design calculations for the ditches and ditch outlets are included in the Stormwater Run-off Control Plan, attached to the Run-on and Run-off Control System Plan for FGCS Development Unit 2 Landfill.

Based upon the facility's geometry around the perimeter and physical setting of the landfill, buffer zones shall be left between the sludge placed above grade and the perimeter berm/sidewall liner. This buffer zone will be needed to accommodate the placement of the final cover in the immediate area of the toe of slope of the final cover.

These perimeter buffer zones will also function as drainage swales to remove contaminated water to the landfill's advancing face, where it will be collected as leachate, thus keeping it inside the unit. Given the simplicity of the buffer zone, the temporary nature, incremental construction and the excessive hydraulic capacity of the buffer zone we are not proposing that these buffer zones/drainage swales be included in the Construction Quality Assurance Officer's responsibility. Please refer to the Development drawings and Stormwater Run-off Control Plan.

## **APPENDIX B**

### **Stormwater Run-Off Control Plan**

## Stormwater Run-off Control Plan

Stormwater calculations for the 1,000-year, 24-hour storm are provided below and in the attachments to this plan. The Unit 2 Landfill is 2.4 acres in area with a final cover utilizing a 4 to 1 slope. The designed terrace berms for routing stormwater to the letdown structure are triangular with a 4 to 1 slope on the final cover half and a 3 to 1 slope with a 2-foot effective height on the terrace side and a ditch slope of 0.007 feet per feet. The letdown structure is trapezoidal with a 10-foot bottom width with 3 to 1 slopes and a 2-foot effective height for the channel berms. The details of these stormwater conveyance structures are on Sheet Number B1-8.

The run-off curve numbers for the newly graded landfill and vegetated landfill will not change but the 24-hour rainfall and runoff quantities will change. The curve number calculations are attached. For the newly graded landfill, the runoff quantity is calculated using 8.38-inches for the 1,000-year, 24-hour storm multiplied by the curve number of 94 equals 7.88-inches of run-off. For the vegetated landfill, the curve number is 74 and equates to 6.2-inches of run-off. The time of concentration for the final cover conditions are 12.55 minutes with the calculations attached to this plan.

The rational method is used for the peak discharge from the 1,000-year storm for both conditions, the newly graded landfill and the vegetated landfill.

$$Q = CIA$$

C = Curve Number

I = Rainfall Intensity (4.2 inches/1-hour for the 1,000-year storm)

A = Drainage Area (2.4 acres)

For the newly graded landfill, the peak discharge is calculated below:

$$Q = 0.94 \times 4.2 \times 2.4$$

$$Q = 9.48 \text{ cfs}$$

For the vegetated landfill, the peak discharge is calculated below:

$$Q = 0.77 \times 4.2 \times 2.4$$

$$Q = 7.76 \text{ cfs}$$

The Manning Formula for open channel flow is used to determine if the capacity of the ditches are adequate to convey the peak discharges calculated above from the rational method.

$$Q = (K \times A \times R^{2/3} S^{1/2}) / n$$

Q = Flow Rate

A = Cross-Sectional Area of Flow

R = Hydraulic Radius

S = Slope of the Channel

n = Surface Roughness

K = Unit Dependent Constant (1.49)

The open channel flow calculation for the terrace ditches on the final cover with 1.25 feet of water in them are provided below:

$$Q = (1.49 \times 5.469 \times (0.6005)^{2/3} \times (0.007)^{1/2}) / 0.035$$

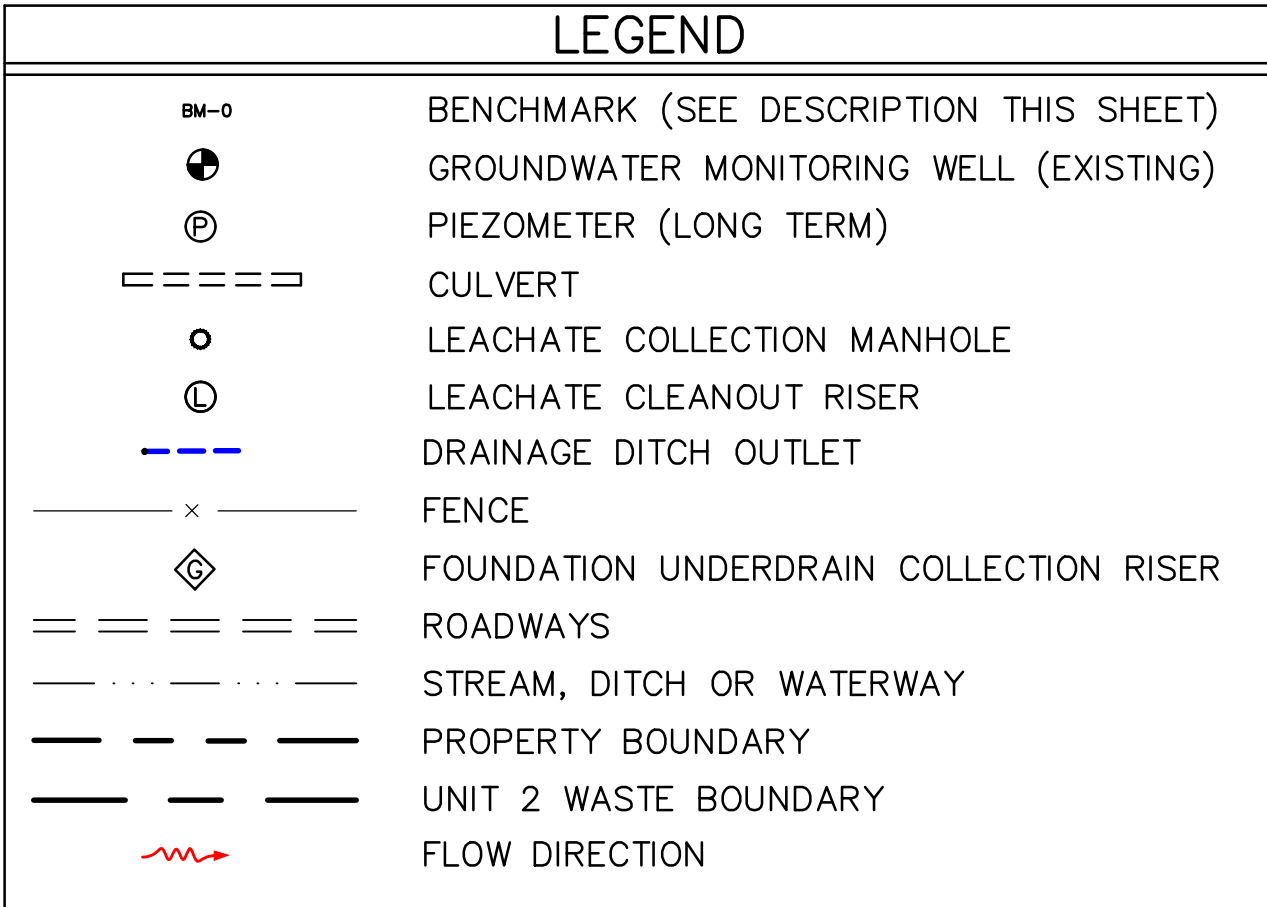
$$Q = 13.86 \text{ cubic feet per second}$$

The open channel flow calculation for the letdown structure on the east final cover with 0.1 feet of water in it is provided below:

$$Q = (1.49 \times 1.03 \times (0.0969)^{2/3} \times (0.25)^{1/2}) / 0.035$$

$$Q = 46.24 \text{ cubic feet per second}$$

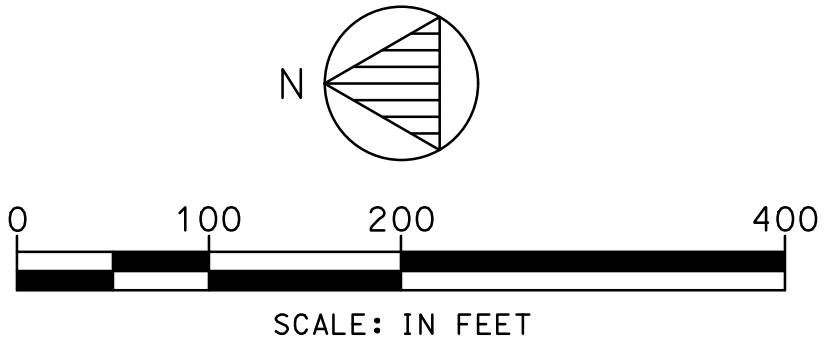
This open channel flow is adequate to convey the peak discharge for either condition, newly graded landfill or vegetated landfill and for all conveyance structures.



| BENCHMARK DESCRIPTIONS |                                                                                                                              |
|------------------------|------------------------------------------------------------------------------------------------------------------------------|
| BM 100                 | SET RAILROAD SPIKE IN CUT OFF POWER POLE: POWER PLANT COORDINATES N. 3785.14 E. 1984.37 - ELEVATION 554.731                  |
| BM 101                 | CUT CHISELED SQUARE IN CONCRETE 6 INCHES WEST OF MW G-121: POWER PLANT COORDINATES N. 5612.06 E. 2129.53 - ELEVATION 552.364 |

| UNIT 1 MONITORING WELL LEGEND |                    |                         |
|-------------------------------|--------------------|-------------------------|
| PHASED – 95–469               |                    |                         |
| WELL<br>I.D.                  | SCREEN<br>MATERIAL | GRADIENT<br>DESCRIPTION |
| R-101                         | PVC                | UP                      |
| G-110                         | S.S.               | UP                      |
| R-111                         | S.S.               | UP                      |
| G-112                         | S.S.               | UP                      |

| UNIT 2 MONITORING WELL LEGEND |                    |                         |
|-------------------------------|--------------------|-------------------------|
| WELL<br>I.D.                  | SCREEN<br>MATERIAL | GRADIENT<br>DESCRIPTION |
| G-113                         | PVC                | UP                      |
| G-120                         | PVC                | UP                      |
| G-121                         | PVC                | DOWN                    |
| G-122                         | PVC                | DOWN                    |
| AW-1                          | PVC                | UP                      |
| AW-2                          | PVC                | DOWN                    |
| RW-3                          | PVC                | DOWN                    |
| P-07D                         | PVC                | DOWN                    |



- NOTES:

  1. THE CONTOURS SHOWN FOR THE SURROUNDING AREA OF THE LANDFILL WERE GENERATED FROM LIDAR DATA PROVIDED BY HANSON PROFESSIONAL SERVICES, INC. DATED MAY 2023 MERGED WITH TOPOGRAPHIC SURVEY PERFORMED BY ANDREWS ENGINEERING, INC. DATED MARCH 11, 2024.
  2. THE PROPERTY LINE LOCATION WAS SUPPLIED BY CWLP, BASED UPON SUBSEQUENT FIELD SURVEYING AND THE ORIGINAL LEGAL DESCRIPTION PREPARED BY MOSS, JOHNSON, SANDOVAL AND ASSOC. LTD.
  3. FOR CLARITY NOT ALL SITE FEATURES ARE SHOWN.
  4. MONITORING WELL(S) OR PIEZOMETER(S) PLUGGING SHALL BE IN ACCORDANCE WITH THE REGULATIONS, REQUIREMENTS AND/OR GUIDELINES OF THE IEPA AND/OR ILLINOIS DEPARTMENT OF PUBLIC HEALTH.
  5. DURING THE OPERATION OF THE FACILITY, THE OPERATOR SHALL COMPLY WITH THE SAFETY STANDARDS PURSUANT TO THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, INCLUDING ALL SUBSEQUENT AMENDMENTS.
  6. WHERE THE FOUNDATION UNDERDRAIN SYSTEM DISCHARGES INTO A FORCE MAIN, THE UNDERDRAIN PIPING SHALL BE EQUIPPED WITH AN APPROPRIATE CHECK VALVE TO PREVENT BACKFLOW.
  7. ACCESS TO THE FACILITY WILL BE CONTROLLED BY THE EXISTING TOPOGRAPHY, LOCKABLE GATES AND FENCING, LOCATED ALONG THE EAST LAKE SHORE DRIVE, ADJACENT TO THE FACILITY.
  8. THE DESIGN SHOWN ON THE DRAWINGS ARE MEANT TO INDICATE A GENERAL DESIGN CONCEPT FOR THE FACILITY. ADJUSTMENTS MAY BE MADE IN THE FIELD BY THE CQAO FOR CONDITIONS ENCOUNTERED. AS APPROPRIATE, ANY ADJUSTMENTS SHALL BE REFLECTED ON THE RECORD DRAWINGS TO BE SUBMITTED TO THE AGENCY FOR OPERATING AUTHORIZATION IN NEWLY DEVELOPED AREAS.
  9. THE SYMBOLS FOR THE VARIOUS APPURTENANCE ARE LARGER THAN THE ITEM SHOWN.
  10. UNIT 1 AND UNIT 2 WERE RECOGNIZED AS TWO INDEPENDENT WASTE DISPOSAL ENTITIES BY SUPPLEMENTAL PERMIT NO. 1993-486-SP DATED JANUARY 7, 1994.
  11. CWLP OWNS THE SURROUNDING PROPERTY AROUND THE LANDFILL EXCEPT TO THE EAST.
  12. THE FINAL CONTOURS ARE APPLICABLE TO THE AREA UTILIZED FOR DISPOSAL. THE AREA OUTSIDE THE WASTE FOOTPRINT MAY BE UTILIZED FOR OTHER PURPOSES AS LONG AS THE INTEGRITY OF THE LANDFILL IS NOT COMPROMISED.

## **APPENDIX A:**

### Curve Number Calculations

## COMPOSITE RUNOFF CURVE NUMBER (CN)

PROJECT: CWLP - Unit 2 Landfill

PERMIT NUMBER:

LOCATION: Springfield, Sangamon County

DATE: 7/2/2025

### TYPE OF AREA (SELECT WITH DROP-DOWN)

☐ DETAINED AREA

☐ MAJOR STORMWATER SYSTEM

☐ UNRESTRICTED AREA

☐ OTHER:

☒ UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

☒ PROPOSED CONDITION

☐ EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Clay Cap            | Newly Graded, No Veg.       | 94 | 2.00         | 188.00             |
| Clay Cap            | Open Space, Poor Cond.      | 89 | 0.40         | 35.60              |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

TOTALS:

2.40

223.60

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{223.60}{2.40} \rightarrow \text{Composite CN} = 93.17$$

## COMPOSITE RUNOFF CURVE NUMBER (CN)

PROJECT: CWLP - Unit 2 Landfill

PERMIT NUMBER: \_\_\_\_\_

LOCATION: Springfield, Sangamon County

DATE: 7/2/2025

### TYPE OF AREA (SELECT WITH DROP-DOWN)

☐ DETAINED AREA

☐ MAJOR STORMWATER SYSTEM

☐ UNRESTRICTED AREA

☐ OTHER: \_\_\_\_\_

☒ UPSTREAM AREA

### CONDITION (SELECT WITH DROP-DOWN)

☒ PROPOSED CONDITION

☐ EXISTING CONDITION

### RUNOFF CURVE NUMBER

| Surface Description | Hydrologic Soil Group (HSG) | CN | Area (acres) | Product (CN)(Area) |
|---------------------|-----------------------------|----|--------------|--------------------|
| Vegetative Soil     | Native Plantings            | 77 | 2.40         | 184.80             |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |
|                     |                             |    |              |                    |

TOTALS:

2.40

184.80

### COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{184.80}{2.40} \rightarrow \text{Composite CN} = 77.00$$

## **APPENDIX B:** Time of Concentration

## NRCS TIME OF CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )

PROJECT: CWLP - Unit 2 Landfill Vegetated

PERMIT NUMBER:

LOCATION: Springfield, Sangamon County

DATE: 4/16/2026

CONDITION (SELECT FROM DROP-DOWN)

☒ PROPOSED CONDITION

☐ EXISTING CONDITION

### SHEET FLOW

1. Segment ID

2. Surface description

3. Manning's roughness coefficient,  $n$

4. Flow length,  $L$  ( $\leq 100$  ft)

5. 2-year, 24-hr rainfall,  $P_2$

6. Land slope,  $s$

7. Travel time,  $T_t$   $T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5S^{0.4}}} (60)$

|             |       |  |            |
|-------------|-------|--|------------|
| Sheet       |       |  |            |
| Dense Grass |       |  |            |
| 0.24        |       |  |            |
| 100         | ft    |  |            |
| 2.93        | in    |  |            |
| 0.100       | ft/ft |  |            |
| 7.83        | +     |  | = 7.83 min |

### SHALLOW CONCENTRATED FLOW

8. Segment ID

9. Surface description (drop-down list)

10. Flow length,  $L$

11. Watercourse slope,  $s$

12. Average velocity,  $V$

13. Travel time,  $T_t$   $T_t = \frac{L}{60V}$

|              |       |  |            |
|--------------|-------|--|------------|
| Concentrated |       |  |            |
| Unpaved      |       |  |            |
| 30           | ft    |  |            |
| 0.100        | ft/ft |  |            |
| 5.10         | fps   |  |            |
| 0.10         | +     |  | = 0.10 min |

### OPEN CHANNEL FLOW

14. Segment ID

15. Cross-sectional flow area,  $A$

16. Wetted Perimeter,  $P_w$

17. Hydraulic radius,  $R$

18. Flow Length,  $L$

19. Channel slope,  $S$

20. Manning's roughness coefficient,  $n$

21. Average velocity,  $V$   $V = \frac{1.486}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$

22. Travel time,  $T_t$   $T_t = \frac{L}{60V}$

|         |                 |  |            |
|---------|-----------------|--|------------|
| Terrace |                 |  |            |
| 10.72   | ft <sup>2</sup> |  |            |
| 12.75   | ft              |  |            |
| 0.84    | ft              |  |            |
| 857     | ft              |  |            |
| 0.007   | ft/ft           |  |            |
| 0.035   |                 |  |            |
| 3.10    | fps             |  |            |
| 4.61    | +               |  | = 4.61 min |

### TIME-OF-CONCENTRATION ( $T_c$ ) OR TRAVEL TIME ( $T_t$ )

23. Time-of-Concentration,  $T_c$ , or Travel Time,  $T_t$

$$T_c, T_t = \sum T_t = 12.55 \text{ min}$$