Daniel Brown

From: depgreenporthelpdesk@state.pa.us
Sent: Thursday, June 20, 2024 12:27 PM
To: Daniel Brown
Subject: [EXTERNAL]Notice of Application Received

Submission Details

Details have been submitted successfully. Please review and print the Transaction Receipt for your records.

Reference :	**240915**
Form Name :	Municipal Waste Landfill Annual Operation Report
Submitter Name :	Daniel Brown
Submitter Organization :	LCSWMA
Submitter Email :	dbrown@lcswma.org
Phone Number :	(717) 553-5864
Submitted To :	Southcentral Regional Office
Date Submitted :	06/20/2024

Transaction Details

Your Reference Submission Id: **240915**

PA WASTE TRANS SAFETY PG
400 MARKET ST 14TH FLR
HARRISBURG, PA 17268
USA
https://www.pa.gov

TYPE: Purchase

ACCT: Visa $ 2,800.00 USD

Cardholder Name : Daniel Brown
Card Number : ############8173
Date/Time : 20 Jun 24 12:27:17
Reference # : 001 761613 T
Authror. # : 110272

Trans. Ref. : 240915

Approved - Thank You 100

Please retain this copy for your records.

Cardholder will pay above amount to
card issuer pursuant to cardholder
agreement.

Rethink. Recover. Renew.

LCSWMA

1299 HARRISBURG PIKE | LANCASTER, PA 17603
PHONE: 717-397-9968 | FAX: 717-397-9973
www.lcswma.org

June 20, 2024

Ms. Carrie Fleming, Program Manager
Pennsylvania Department of Environmental Protection
Bureau of Waste Management
Southcentral Region Office
909 Elmerton Avenue
Harrisburg, PA 17110-8200

RE: **Annual Operation Report for 2023**
Frey Farm Landfill, Permit No. 101389

Dear Ms. Fleming:

In accordance with the Municipal Waste Management Regulations (Section 273.313) enclosed herein is the Annual Operation Report relating to the above referenced facility.

If you have any questions or concerns, please do not hesitate to contact me.

Respectfully submitted,

Daniel A. Brown

Environmental Compliance Manager

Enclosures

cc: LCSWMA: Environmental, M. Devaney, A. Rice

Bureau of Radiation Protection (page 5, "Summary of Detected Radioactive Materials," only)
P.O. Box 8469
Harrisburg, PA 17105-8469

Office of Energy & Technology Deployment (page 6, Landfill Gas Generation, Recovery, and Beneficial Use Data," only)
Division of Energy Policy & Technology Deployment
P.O. Box 8772, 15th Floor
Harrisburg, PA 17105-8772

2023

PA DEP ANNUAL OPERATION REPORT

for the

FREY FARM LANDFILL

Site Address: 3049 River Road
Conestoga, PA 17516

BWM Permit No. 101389

Submitted by:

Lancaster County Solid Waste Management Authority

1299 Harrisburg Pike

Lancaster, Pennsylvania 17603

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MUNICIPAL WASTE LANDFILL ANNUAL OPERATION REPORT FORM INSTRUCTIONS

1. This report is due on or before June 30 each year, covering the period January 1 to December 31 of the preceding year.
2. Send one (1) copy of the report with a check for the administrative fee of $2,800 made payable to the "Commonwealth of Pennsylvania," attention Solid Waste Manager in the respective Regional Office listed below.
3. Send one (1) copy of the completed Report Form to:

   Bureau of Waste Management
   Director's Office and Program Development
   P.O. Box 69170
   Harrisburg, PA 17106-9170

4. Send one (1) copy of page 5 "Summary of Detected Radioactive Materials" to:

   Bureau of Radiation Protection
   P.O. Box 8469
   Harrisburg, PA 17105-8469

5. Send one (1) copy of page 6 "Landfill Gas Generation, Recovery, and Beneficial Use Data" to:

   Energy Programs Office
   P.O. Box 8772, 15th Floor
   Harrisburg, PA 17105-8772

6. The report forms may be reproduced without modification of content.
7. All report drawings should be signed and sealed by a Pennsylvania Professional Engineer.

REGIONAL OFFICES
(and counties served)

DEP Southeast Region
2 East Main Street
Norristown, PA 19401-4915
Phone: (484) 250-5960
Bucks - Chester - Delaware - Montgomery - Philadelphia

DEP Northcentral Region
208 W. Third Street, Suite 101
Williamsport, PA 17701-6448
Phone: (570) 327-3653
Bradford - Cameron - Centre - Clearfield - Clinton - Columbia - Lycoming - Montour - Northumberland - Potter - Snyder - Sullivan - Tioga - Union

DEP Northeast Region
2 Public Square
Wilkes-Barre, PA 18711-0790
Phone: (570) 826-2516
Carbon - Lackawanna - Lehigh - Luzerne - Monroe - Northampton - Pike - Schuylkill - Susquehanna - Wayne - Wyoming

DEP Southwest Region
400 Waterfront Drive
Pittsburgh, PA 15222-4745
Phone: (412) 442-4000
Allegheny - Beaver - Cambria - Fayette - Greene - Somerset - Washington - Westmoreland

DEP Southcentral Region
909 Elmerton Avenue
Harrisburg, PA 17110-8200
Phone: (717) 705-4706
Adams - Bedford - Berks - Blair - Cumberland - Dauphin - Franklin - Fulton - Huntingdon - Juniata - Lancaster - Lebanon - Mifflin - Perry - York

DEP Northwest Region
230 Chestnut Street
Meadville, PA 16335-3481
Phone: (814) 332-6848
Armstrong - Butler - Clarion - Crawford - Elk - Erie - Forest - Indiana - Jefferson - Lawrence - McKean – Mercer - Venango - Warren

DEFINITIONS:

Municipal Waste - garbage, refuse, industrial lunchroom or office waste and other wastes from the operation of residential, municipal, commercial, or institutional establishments and from community activities.

Residual Waste - wastes and sludges resulting from industrial, mining, or agricultural operations and wastewater treatment facilities, water supply treatment facilities, or air pollution control facilities, and which does not qualify as a hazardous waste under Pennsylvania law.

Special Handling Wastes - sewage sludge, infectious waste, chemotherapeutic waste, construction/demolition waste, ash, and asbestos. Disposal of infectious and chemotherapeutic waste at a municipal waste landfill requires compliance with 25 PA Code Chapter 273, Subchapters D and E.

2500-FM-BWM0167 1/2015
25 Pa. Code §273.313
Form

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Date Prepared: 05/13/2024

MUNICIPAL WASTE LANDFILL ANNUAL OPERATION REPORT FORM

Permit Number: 101389

Instructions: This report is to be completed based on the preceding calendar year. Responses regarding volumes remaining should be based on availability on January 1 of the following year (ex: capacity used would be from January 1, 2001 through December 31, 2001 and remaining capacity would be as of January 1, 2002).

Facility Name: LCSWMA Frey Farm Landfill I.D. No.: Site ID # 450744

For the report period 2023 (January 1 to December 31)
(enter year)

A. FACILITY CAPACITY INFORMATION

1. Permitted Airspace*:	17,037,197	CY
2. Total Airspace Used*:	11,825,859	CY
3. Airspace Used this Report Period*:	370,337	CY
4. Total Airspace Remaining*:	5,211,338	CY
5. Waste Accepted in this Report Period:	433,605	Tons
6. Waste Accepted in Previous Years:	10,698,010	Tons
7. Total Waste Accepted:	11,131,615	Tons

8. Current Conversion Factor:
Current Conversion Factor = *Waste Accepted in this Report Period /Airspace Used this Report Period*
= 1.17 Tons/CY

9. Total Capacity Remaining:
Total Capacity Remaining = *Current Conversion Factor x Total Airspace Remaining*
= 6,097,265 Tons

10. Operating Days This Report Period:	305	Days
11. Average Daily Volume of Waste Accepted**:	1,421.7	Tons

12. Estimated Remaining Life:
Estimated Remaining Life = *Total Capacity Remaining/Avg. Volume of Waste Accepted/#Operating Days*
= 14.1 Years

*All airspace capacity calculations should be based upon actual field survey or aerial mapping.

**Avg. volume of waste accepted = *Waste Accepted in this Report Period/# Operating Days*

B. PERMIT AND OPERATION STATUS

1. Have there been any changes to your compliance information?

☐ NO. If "NO," complete a copy of Form C1 "Compliance History Certification" (2540-PM-BWM0351) and attach it to this report.

☒ YES. If "YES," complete a copy of Form HW-C, "Compliance History" (2540-FM-BWM0058) and attach it to this report.

2. Have there been any changes to your Contractual Consent of Landowner (Form E) or your Compliance History Certification (Form C1)?

   ☒ NO.

   ☐ YES. If "YES," submit a revised copy of Form E, "Contractual Consent of Landowner" (2540-PM-BWM0353). Changes involving land ownership may require the submittal of Part B2 and B3 of Form C1 concerning surface or subsurface land ownership.

3. Operation Update

		This Report Period:		Site Total:	
a.	Acreage used for disposal	14.6	acres	99.3	acres
b.	Acreage seeded	6.3	acres	35.8	acres
c.	Acreage vegetated	6.3	acres	35.8	acres
d.	Acreage permanently vegetated	0	acres	40.6	acres

   e. Attach a narrative description of the progress in implementing the closure plan.

4. Monitoring Plan Evaluation

   Develop and attach an evaluation of the groundwater monitoring plan required under Section 273.282 (relating to number, location and depth of monitoring points). The evaluation should determine if revisions to the groundwater monitoring plan are required due to changes in groundwater elevation, hydrogeologic conditions or other reasons. If this evaluation determines that changes in the approved groundwater monitoring plan are necessary, the operator shall immediately notify the Department and submit an application for permit modification.

   ☐ Revisions are required. Report is attached.

   ☒ Revisions are not required. Report is attached.

5. Radioactive Monitoring

   Attach a summary of detected radioactive materials using the attached form:

   Note to Operator: Forward a copy of the above attachment to:

   Bureau of Radiation Protection,
   P.O. Box 8469,
   Harrisburg, PA 17105-8469

6. Landfill Gas Generation, Recovery, and Beneficial Use Data

   Attach summary of landfill gas generation, recovery, and beneficial use using the attached form:

   Note to Operator: Forward a copy of the above attachment to:

   Office of Energy and Technology Deployment
   Division of Energy Policy & Technology Deployment
   P.O. Box 8772, 15th Floor
   Harrisburg, PA 17105-8772

7. Landfill Benefits Monitoring

   Attach a summary of the landfill benefits for this reporting period with supporting documentation using the attached form. The summary shall identify the approved benefit, the magnitude of the benefit and whether the claimed benefit was realized as anticipated. In the event that a benefit is less than the landfill had anticipated, include an explanation and any proposed corrective action to fulfill the claimed benefit.

C. FINANCIAL ASSURANCE

1. Attach a written update of the total bond liability for the facility in accordance with Section 271.331 (relating to bond and trust amount determination). Bonding worksheets can be found at www.depweb.state.pa.us. If additional bond is determined to be necessary, it shall be submitted to the Department within 90 days after the annual report is due.

   ☒ Additional bond is not required. Attach copy of completed bond calculation worksheets (not bond documents).

   ☐ Additional bond will be submitted. Attach copy of completed bond calculation worksheets (not bond documents).

2. Attach documentation of current certificate of insurance as specified in § 271.374(a) (relating to proof of insurance coverage), proving continuous coverage for public liability insurance as required by § 271.371 (relating to insurance requirement).

D. TOPOGRAPHIC MAP UPDATE

Attach a topographic map of the same scale, contour interval and grid system as the original site plans showing:

1. Contours at the beginning and the end of the report period.
2. The completed areas of the site at final elevation and the areas partially filled, but not active during the report period.
3. Areas that have final cover in place, indicating those areas where final cover was placed during the report period.

E. DRAWINGS

Attach the following:

1. An isopach drawing which clearly identifies the existing elevations as well as the final permitted elevations. These can be shown with (a) different color contour lines or (b) with contours for the existing elevations and the overfill/underfill delineated using a numerical grid.
2. A cross-sectional grid with a 50 foot horizontal interval should be submitted for areas that received waste in the past year. The same cross sections approved in the permit application should be included in the grid, if possible. Each of these cross sections should show the current grades, the grades at the beginning of the report period, the original grades, and the permitted grades. Any areas of overfill should be clearly identified on each cross section, including overfill volumes.
3. The actual field survey or aerial mapping and the calculation used to determine the airspace figures.

2500-FM-BWM0167 1/2015
25 Pa. Code §273.313
Certification

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

CERTIFICATION OF REGISTERED PROFESSIONAL ENGINEER

This is to certify that the Topographic Map and Drawing Updates accurately represent the status of the facility and does not, to the best of my knowledge, withhold information that is pertinent to a determination of compliance with the requirements of the Department. I am aware that there are significant penalties for submitting false information.

Name Daniel N. Fellon, P.E. (Please Print)

Signature _____

Date 6/18/2024

Address 1129 W Governor Road; PO Box 797

Hershey, PA 17033

Telephone (717) 533-8600

Seal of Pa. Licensed Registered Professional Engineer

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DANIEL NICHOLAS FELLON ENGINEER No. PE076873

F. ALL REQUIRED ANALYSES WERE RECEIVED DURING THE YEAR as provided in Section 287.54.

☒ Yes ☐ No

G. PERMIT ADMINISTRATION FEE

Please submit a check payable to the "Commonwealth of Pennsylvania." Attach the check to one of the copies being sent to the Regional Office.

☒ $2,800.00

Name of Permittee: Lancaster County Solid Waste Management Authority

Facility Name: LCSWMA Frey Farm Landfill

City: Lancaster State: PA Zip: 17603 Phone No.: (717) 397-9968

TAX I.D.: 23-6006036 or SS# ___ - ___ - ___

Officer Certification

This is to certify that I have personally examined this report and am familiar with the information submitted in it and all attached documents. I am aware of the Department of Environmental Protection requirements for this report and this facility. To the best of my knowledge, information and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name of Officer Robert B. Zorbaugh (Please Print)

Signature _____

Title Chief Executive Officer

Date 6/20/2024

Telephone (717) 397-9968

IDENTIFY ALL ATTACHMENTS BY PERMIT NUMBER AND DATE PREPARED.

2500-FM-BWM0167 1/2015
25 Pa. Code §273.313
Certification

Date Prepared

05/14/2024

SUMMARY OF DETECTED RADIOACTIVE MATERIALS

Permit Number

101389

Date	Isotope Detected (e.g. I-131, Ra-226, etc.)	Maximum Dose Rate On Truck* (microR/hr)	Maximum Dose Rate On Item** if measured (microR/hr)	Description of Waste (tenorm, medical, norm, etc.)	Disposition (Disposed on-site rejected-DOT exemption number, etc.)
7/19/2023	I-131	150 uR/hr		Medical	Disposed
7/21/2023	Tech-99m	33 uR/hr		Medical	Disposed
7/27/2023	Rad-226	1.63 mR/hr		TENORM	Disposed
8/28/2023	I-131	30.8 uR/hr		Medical	Disposed
8/30/2023	I-131	20.6 uR/hr		Medical	Disposed
8/31/2023	I-131	20.6 uR/hr		Medical	Disposed
9/20/2023	Th-232	86.9 uR/hr		TENORM	Disposed
9/29/2023	I-131	32 uR/hr		Medical	Disposed
12/27/2023	I-131	34.7 uR/hr		Medical	Disposed
12/28/2023	I-131	29.3 uR/hr		Medical	Disposed
12/28/2023	I-131	33.2 uR/hr		Medical	Disposed
12/29/2023	I-131	27.7 uR/hr		Medical	Disposed

* Surface (2") dose rate on truck
** One foot dose rate on item

Note: Use additional sheets as necessary.
Number of pages included:

2500-FM-BWM0167 Rev. 12/2010
25 Pa. Code §273.313
Attachment

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

LANDFILL GAS COLLECTION AND BENEFICIAL USE DATA

GENERAL INFORMATION

Landfill Name: LCSWMA Frey Farm Landfill
Year Opened: 1989
Permit #: 101389
Owner: Lancaster County Solid Waste Management Authority
Year Closed (anticipated): N/A
Primary Contact: Daniel A. Brown
Title: Environmental Compliance Manager
E-Mail: dbrown@lcswma.org
Website: www.lcswma.org
Site Address: 3049 River Road
City: Conestoga
State: PA
Zip: 17516
County: Lancaster
Municipality: Manor Township
Mailing Address (if different): 1299 Harrisburg Pike, Lancaster, PA 17603
Site Longitude (decimal format): 39.953783402
Site Latitude (decimal format): -76.450426788
Waste In Place (tons): 11,131,615
Max. Capacity (tons): 17,548,313
Annual Acceptance Rate (actual tons): 433,605 (2023 actual)
Potential For Expansion? ☐ Yes ☒ No
Landfill Alternative Names (if applicable): N/A

LANDFILL GAS GENERATION & DISPOSITION

Gas Collection Rate (MMscfy): 353.57 =
Avg. Gas Volume Beneficially Used (MMscfy): 353.07 + Avg. Gas Volume Flared (MMscfy): 0.49
Number of Flares: 2
Number of Gas Wells: 46
Avg. Methane Content (percent): 50.8

LANDFILL GAS BENEFICIAL USE PROJECTS

PROJECT 1

Project Status: ☐ Planned/Developing ☒ Active ☐ Closed
Project Developer: NextEra
Project Started Operating (year): 2006
Anticipated Length of Project Operation (years): 20
Project Type: ☐ Direct Thermal ☐ High-Btu ☒ Electric Generation
Electric Generation Capacity (MW): 3.2MW
Annual Electric Energy Generated (kWh): 16,379,480
Gas Volume Used (MMscfy): 353.07
Annual Heat Content (MMBtu/yr.) 181,527
Gas Use Location: Onsite: Yes
Offsite: No
Pipeline Miles: N/A
Offsite Name: N/A
Offsite Location: N/A

PROJECT 2

Project Status: ☐ Planned/Developing ☐ Active ☐ Closed
Project Developer: _____
Project Started Operating (year): _____
Anticipated Length of Project Operation (years): _____
Project Type: ☐ Direct Thermal ☐ High-Btu ☐ Electric Generation
Electric Generation Capacity (MW): _____
Annual Electric Energy Generated (kWh): _____
Gas Volume Used (MMscfy): _____
Annual Heat Content (MMBtu/yr.): _____
Gas Use Location: Onsite: _____
Offsite: _____
Pipeline Miles: _____
Offsite Name: _____
Offsite Location: _____

(Additional projects may be added to back of page using the above format)

Date Prepared		Permit Number
05/13/2024	**APPROVED BENEFITS IN THE DEP HARMS/BENEFITS ANALYSIS WRITTEN REVIEW**	101389

For each approved benefit identified in the DEP Harms/Benefits Analysis Review, please answer and address the following statements. A copy of this page should be provided for all approved benefits.

1. Has the approved benefit been provided?

   See attached narrative.

2. If the answer to question #1 is yes, please explain how the benefit has been provided.

3. If the answer to question #1 is no, please explain why the benefit was not provided.

4. If the answer to question #1 is no, please describe the proposed action that will ensure the approved benefit will be provided.

Use additional sheet(s) to explain if necessary.

2023 Annual Operations Report

Summary of Benefits

1.0 INTRODUCTION

This document presents an update to the detailed evaluation and balancing of the harms and benefits of the Frey Farm Vertical Expansion (FFVE) at the Frey Farm Landfill (FFLF), which is owned and operated by the Lancaster County Solid Waste Management Authority (LCSWMA). This evaluation has been prepared in connection with the Form D Environmental Assessment Process and as required by the PADEP Permit dated July 26, 2017, Condition #4, providing a description of mitigation measures initiated and/or completed and all benefits provided to date.

2.0 BENEFITS

2.1 Local Fees

Manor Township Host Fee

Over the proposed 10-year operating life of the proposed FFVE, this host fee would amount to at least $1,020,000 per year, or a total of $12,331,164.

The Host Benefit fees paid in 2023 were $1,220,664.40.

2.2 Growing Greener Fee

For each ton of waste disposed by LCSWMA at the proposed FFVE, LCSWMA will pay $4.00 to the Commonwealth for landfill disposal fees in support of the Commonwealth's Growing Greener program. Based upon the projected waste receipts over the life of the FFVE (1,800 tpd to 2,500 tpd over a 280-day operating year), this economic benefit, assuming that there is no fee escalation over time, will amount to approximately $2,016,000 to $2,800,000 per year over the proposed operating life of the FFVE. Growing Greener Fee payments would total $20,160,000 to $28,000,000 over the 10-year life of the disposal area.

The Growing Greener fees paid in 2023 were $963,504.00.

2.3 Recycling Fee

For each ton of waste disposed by LCSWMA at the proposed FFVE, LCSWMA will pay $2.00 to the Commonwealth as required by 25 PA Code § 273.315 (c) for recycling (Act 101) fees. Based upon the projected waste receipts over the life of the FFVE (1,800 tpd to 2,500 tpd over a 280-day operating year), this economic benefit, assuming that there is no fee escalation over time, will amount to approximately $1,008,000 to $1,400,000 per year over the proposed operating life of the FFVE. Recycling fee payments would total $10,080,000 to $14,000,000 over the 10-year life of the disposal area.

The recycling fees paid in 2023 were $476,934.48.

2.4 Environmental Stewardship Fee

For each ton of waste disposed by LCSWMA at the proposed FFVE, LCSWMA will pay $0.25 to the Commonwealth as required by 25 PA Code § 273.316 (c) for environmental stewardship fees. Based upon the projected waste receipts over the life of the FFVE (1,800 tpd to 2,500 tpd over a 280-day operating year), this economic benefit, assuming that there is no fee escalation over time, will amount to approximately $126,000 to $175,000 per year over the proposed operating life of the FFVE. Environmental Stewardship Fee payments would total $1,260,000 to $1,750,000 over the 10-year life of the disposal area.

The Environmental Stewardship fees paid 2023 were $108,407.59.

2.5 Operating Costs, Purchases of Goods/Services

Over the proposed 10-year operating life of the proposed FFVE facility, LCSWMA would incur significant operating costs each year. These costs would be related to: equipment purchases; site and equipment maintenance; utility costs; and other operating costs. Additional costs will continue to include (but not limited to): surveying, health and safety provisions, mobilization/demobilization, stormwater management system modifications/upgrades, groundwater monitoring well decommissioning, utility and infrastructure modifications, existing LFG system modifications, new maintenance building installation, truck wash relocation, access road and channel construction, FFLF cap and soil cover removal, MSE berm construction, construction of approximately 9 acres of new liner system and the construction of the proposed leachate collection/detection system clearing and grubbing, excavation, soil processing, and soil stockpiling, installation of approximately 48.4 acres of new final cover and cap system, and based on the necessary upgrades and additions necessary for the existing site LFGCCS, engineering and construction quality assurance (CQA), etc.

Overall, these expenditures would be projected to amount to approximately $49,000,000 over the 10-year facility life of the FFVE.

LCSWMA continues to make equipment purchases, perform site maintenance, pay utilities, etc. as part of normal operations. Additionally, LCSWMA continues to employ local contractors and suppliers to complete capital improvements for the facility. Therefore, this benefit has been realized during the reporting period.

2.6 Wages and Benefits

Over the 10-year operating life for the proposed FFVE, the total value of this benefit will be [at least] approximately $9,881,240 (Note: This amount does not take into account cost of living and performance-based raises that are highly likely to occur. This amount also does not include professional and management-level staff whose jobs are [indirectly] partially or fully sustained due to the need for compliance, planning, engineering, and surveying tasks to be completed in support of the FFLF/FFVE).

LCSWMA has paid annual wages and benefits to its 11 full-time employees at the FFLF during 2023; therefore, this benefit has been satisfied during the reporting year.

2.7 Wage Tax Payments

During the projected 10-year operating life of the proposed FFVE, based on the estimated aggregate wages paid to facility employees and assuming an average total federal, state and local wage tax burden of 20 percent, the employees of the facility will pay, through the life of the FFVE, roughly $197,625 per year to total $1,976,250 over the facility's 10- year life. The annual wages paid to LCSWMA employees will not decrease with the proposed FFVE project and, in fact, are projected to increase, due to adding personnel and standard yearly wages increases.

The above-described taxes will be apportioned to various government agencies and will ultimately result in substantial public benefits. Locally, assuming a 1 percent local wage tax, aggregate local wage taxes paid by employees of the facilities will be approximately $9,880 per year to total $98,800 over the expected 10-year operating life of the facility.

Assuming that employees at the proposed facility will pay a 3.1 percent state tax to the Commonwealth of Pennsylvania, aggregate wage taxes paid by employees of the facilities will be approximately $30,630 per year to total $306,300 over the expected 10-year operating life of the facility.

LCSWMA's 11 full-time employees at the FFLF were subject to wage taxes during 2023; therefore, this benefit has been satisfied during the reporting year.

2.8 Community Benefits

Free Residential Municipal Solid Waste Disposal

As documented in the *Amendment to April 2002 Agreement,* LCSWMA continues to provide for the collection of residential municipal solid waste from residences located on River Road/Route 441 from Washington Borough Park to Safe Harbor Park, Chestnut Grove Road, Oak Road, and Observation Site Road two (2) times per year. There are approximately 174 residences that receive this benefit and was performed on May 13, 2023 and October 14, 2023.

Free Yard Waste Disposal

LCSWMA offers free waste disposal to Manor Township residents for yard waste.

Free Waste Disposal for Cleanup Crews

LCSWMA also waives tipping fees for the disposal of litter picked up by cleanup crews.

Recycling Center

LCSWMA continues to provide a local public drop-off center for recyclables and composting for the convenience of local residents with the approval of the FFVE.

Community Tours/Educational Programs

LCSWMA continues sponsorship of community information and educational services such as: (i) environmental education through site tours; and (ii) on-site presentations for residents. Community educational outreach were conducted during 2023 and LCSWMA continues to offer a virtual web tour of the FFLF which is accessible for the public and community members to view at their convenience.

Attachment 1

References to the MUNICIPAL WASTE LANDFILL ANNUAL OPERATION REPORT

1. Reference Item B.1. *Form HW-C "Compliance History"*

See Attachment 2

2. Reference Item B.3. *Narrative Description of Progress in Implementing Closure Plan*

In 2023, capped areas were reduced due to removing cap in our active expansion cell. Revegetative efforts continued on all areas having intermediate cover as needed. The total area of final capping acreage is 40.6 acres.

3. Reference Item B.4. *Groundwater Monitoring Plan Evaluation*

The groundwater monitoring plan (GWMP) was approved by the Department in October 1990. Prior to and since that date, the appropriate GWMP locations have been sampled quarterly and the results have been reported to the Department in accordance with Department regulations.

As indicated in on-going quarterly submissions to the Department, no changes in groundwater elevations or other hydrogeologic conditions at the Frey Farm Landfill have occurred which would require any revisions to the GWMP. LCSWMA has and will continue to monitor, report, and evaluate hydrogeologic conditions in accordance with the approved GWMP.

4. Reference Item B.5. *Radioactivity Monitoring*
See Page 5 of the Annual Operation Report

5. Reference Item B.6. *Landfill Gas Generation, Recovery, and Beneficial Use Data*
See Page 6 of the Annual Operation Report

6. Reference Item B.7. *Landfill Benefits Monitoring*
See attached Narrative

7. Reference Items C.1. *Financial Assurance Bonding Information*
See Attachment 3

8. Reference Items C.2. *Financial Assurance Insurance Certificates*
See Attachment 4

9. Reference Items D. and E. *Topographic Maps and Drawings*
See Attachment 5

Attachment 2

FORM HW-C

COMPLIANCE HISTORY

including Attachments “A”, “B”, “C” and “D”

2540-FM-BWM0058 Rev. 1/2015

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

FORM HW-C
COMPLIANCE HISTORY

Fully and accurately provide the following information, as specified. Attach additional sheets as necessary.

Type of Form HW-C Submittal (check all that apply):

☐ **Original Filing** ☒ **Amended Filing** **Date of Last Filing** 12/07/2023

Type of Permit or License Submittal:

☐ **New Application** ☐ **Renewal** ☒ **Annual Update** ☐ **Other** _____
(specify)

A. General Applicant Information:

1. NAME OF PERMIT OR LICENSE APPLICANT/PERMITTEE/LICENSEE ("applicant") (non-corporations attach documentation of legal name):

Lancaster County Solid Waste Management Authority

ADDRESS: 1299 Harrisburg Pike

Lancaster, PA 17603

TELEPHONE NUMBER: (717) 397-9968

TAXPAYER ID#: 23-6006036

PERMIT, LICENSE OR APPLICATION ID#: 101389

2. Identify the form of management under which the applicant conducts its business (check appropriate box) and describe the type(s) of business activities performed:

☐ Individual
☐ Municipality
☐ Proprietorship
☐ Public Corporation
☐ Private Corporation
☐ Syndicate
☒ Municipal Authority
☐ Fictitious Name
☐ Partnership
☐ Limited Partnership
☐ Government Agency
☐ Joint Venture
☐ Association
☐ Other Type of Business _____
(specify)

3. Type of permit, license or application (check all that apply):

☐ Hazardous Waste Permit
☐ Hazardous Waste Transporter License
☒ Municipal Waste Permit
☐ Regulated Medical, Chemotherapeutic Waste Transporter License
☐ Residual Waste Permit
☐ Other _____
(specify)

FORM HW-C

B. General Information Regarding "Related Parties"

1. **Applicants which are a corporation or a division of a corporation,** provide the following information:

   a. The principal shareholders or stockholders who own, hold, or control stock of five percent (5%) or more of a publicly held corporation or ten percent (10%) or more of a privately held corporation.

   b. State the names, principal places of business and taxpayer ID numbers of all domestic and foreign parent corporations (including ultimate parent corporations), and all domestic and foreign subsidiary corporations of the applicant, as well as the subsidiary corporations of the ultimate parent corporation. Include unincorporated divisions and private corporations. A diagram of corporate structure may be provided to illustrate corporate relationships.

   c. List all principals of the corporation that have also been principals of other corporations which have committed any violation of the Environmental Protection Acts. (See Instructions, Items 2 and 6.)

2. Provide the names and addresses of all principals, corporate officers, general and limited partners, directors, other persons performing a function similar to a director, and other persons or related parties of the applicant (see Instructions, Items 4 and 5). The relationship to the applicant must be clearly described.

3. Provide the names and addresses, or IRS tax identification numbers[1] and affiliation of other persons or related parties having or exercising control over any aspect of the proposed facility or activity that is regulated by the Department, including but not limited to, associates, agents, contractors, subcontractors, and property owners.

4. Provide the names and addresses of all owners of record of surface and subsurface areas within and contiguous to the proposed permit area. (Not applicable to transporter license applicants.)

5. Provide the names and addresses of all holders of record to a leasehold interest of surface and subsurface areas within and contiguous to the proposed permit area.

6. If the applicant, or other related party to the applicant, has a beneficial interest in, or otherwise manages or controls any other person, municipality or other related party (as described in Sections A and B) engaged in the business of solid waste collection, transportation, storage, processing, treatment, or disposal, provide the following information:

   a. The name, address and tax identification number or employer identification number of the corporation, other person, municipality, or other entity, in which the applicant or other related party has a beneficial interest, manages, or controls as described above.

      NOT APPLICABLE

   b. The nature of the relationship or participation with the corporation, other person, municipality, or other related party.

      NOT APPLICABLE

[1] Failure to provide all applicable numbers may delay processing of the application.

FORM HW-C

C. Specific information Regarding the Applicant and Its Related Parties

1. List the name and location of all of the **applicant's** and **related party's places of business and terminals** where municipal, residual and/or hazardous waste activities are conducted. Such activities include, but are not limited to generation, processing, collection, transportation and storage, treatment or disposal of solid waste, except that locations that generate only municipal waste need not be listed.

   a. Frey Farm Landfill, 3049 River Road, Conestoga, PA 17516
   b. Frey Farm Landfill Treatment Plant, 3049 River Road, Conestoga, PA 17516
   c. Lancaster County Resource Recovery Facility, 1911 River Road, Bainbridge, PA 17502
   d. LCSWMA Transfer Station, 1299 Harrisburg Pike, Lancaster, PA 17604
   e. Household Hazardous Waste Facility, 1299 Harrisburg Pike, Lancaster, PA 17604
   f. Susquehanna Resource Management Complex, 1670 South 19th Street, Harrisburg, PA 17104
   g. Susquehanna Resource Management Complex Ash Landfill, 1670 South 19th Street, Harrisburg, PA 17104

2. List all **permits or licenses issued** by the Department or any other state or federal agency under the Environmental Protection Acts to the applicant or any other persons or related parties identified in Sections A or B, that are currently in effect or have been in effect at any time in the ten years previous to the date on which this form is notarized. This list is to include the type of permit or license, permit or license number, location, address, issuance date and expiration date.

   See Attachment "C"

3. List all **permit or license denials** issued by the Department or any other state or federal agency under the Environmental Protection Acts to the applicant or any other person or related party identified in Section A or B, within ten years previous to the date on which this form is notarized. Include the type of permit or license, permit or license number, location, denial date and reason for denial.

   NONE

4. List all persons or related parties identified in Sections A or B which have filed for or been discharged from **bankruptcy** within 10 years previous to the date on which this form is notarized. Specify the circumstances of bankruptcy including those for which the debtor sought to abandon property or to be discharged from any environmental liability subject to the Environmental Protection Acts. Include the name of the bankruptcy court, docket number and description and location of any property involved.

   NONE

D. Compliance Background:

(Note: Copies of specific documents must be made available to the Department upon its request)

FORM HW-C

Compliance History:

List all **"Enforcement Actions"** issued by the Department or any other state or federal or county agency to the applicant or those persons or related parties identified anywhere in response to Sections A, B or C using the following format grouped by state and location in chronological order.

Date	Location	Permit/ License/ EPA ID #	Issuing Agency	Type of Action	Nature of Violation	Disposition	Dollar Amount of Penalty

Enforcement actions include but are not limited to:

All **notices of violation (NOVs),** issued by any regulatory agency to the applicant or those persons or related parties identified anywhere in Sections A, B or C concerning the Environmental Protection Acts, or any other environmental statute, regulation or ordinance.

All **administrative orders, civil penalties, permit or license suspensions/revocations, bond forfeiture actions,** and **civil penalty** actions adjudicated by any judicial body against the applicant or those persons or related parties identified anywhere in Sections A, B or C concerning the Environmental Protection Acts, or a regulation or order or a condition of a permit or license.

All **consent orders, consent adjudications, consent decrees or monetary settlements (settlement agreements, letter agreements, settlement letters or consent assessments)** between the applicant or those persons or related parties identified anywhere in Sections A, B or C and any state, federal or county agency regarding the Environmental Protection Acts, or any other environmental statute, regulations or ordinance.

All **court proceedings** in which those persons or related parties identified anywhere in Sections A, B or C have been involved in relation to the Environmental Protection Acts.

All **summary, misdemeanor, or felony convictions,** or **pleas of guilty or no contest** that have been obtained against the applicant or those persons or related parties identified anywhere in Sections A, B or C, pursuant to the Environmental Protection Acts, or for any acts involving the generation, storage, treatment, transportation, processing, or disposal of municipal, residual or hazardous waste.

For all persons and municipalities identified in Section A, B or C, indicate all violations committed and any subsequent enforcement actions taken regarding the facility or activity not previously listed in this section, concerning the Environmental Protection Acts.

State the reasons for suspension, revocation, or denial of any permit/permit application or license/license application filed by the applicant or any related party concerning the Environmental Protection Acts. Provide the date, location and nature of the violations, type of action, issuing agency, dollar amount of any monetary penalty associated with the action and permit, license, EPA ID# or other identifying number if applicable.

FORM HW-C

I hereby certify that I have the authority to respond to the above questions on behalf of the applicant, and that the information provided herein is true and correct to the best of my knowledge, information and belief.

(Signature)

Name: Robert B. Zorbaugh
(Print or Type Name)

Title: Chief Executive Officer
(Print or Type Title)

Commonwealth of Pennsylvania - Notary Seal
TERESA MARIA BARNETT - Notary Public
Lancaster County
My Commission Expires July 29, 2027
Commission Number 1353948

Sworn to and subscribed before me this
20th day of June,
2024.

Notary Public

(Signature)

Name: Daniel A. Brown
(Print or Type Name)

Title: Environmental Compliance Manager
(Print or Type Title)

Commonwealth of Pennsylvania - Notary Seal
TERESA MARIA BARNETT - Notary Public
Lancaster County
My Commission Expires July 29, 2027
Commission Number 1353948

Sworn to and subscribed before me this
20th day of June,
2024.

Notary Public

Attach copy
of Articles of Incorporation

(For Corporations, see the Instructions, Item 9, regarding signatures and submission of Articles of Incorporation.)

LCSWMA
1299 HARRISBURG PIKE | LANCASTER, PA 17603
PHONE: 717-397-9968 | FAX: 717-397-9973
www.lcswma.org

LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
JANUARY 2024

BOARD OF DIRECTORS	ADDRESS	PHONE/FAX	
George Rettew (Spouse: Jackie) Chair – Term Exp. 12/31/26 Year *Appointed: 2017* Email: grettew68@comcast.net	1078 Olde Forge Crossing Lancaster, PA 17601	Cell:	717-940-6252
John Blowers (Spouse: Lisa) Vice Chair– Term Expires 12/31/25 *Year Appointed: 2021* Email: jblowers1@gmail.com	102 Strasburg Pike Lancaster, PA 17602	Cell:	717-475-0921
J. Scott Ulrich (Spouse: Louise) Secretary - Term Exp. 12/31/27 *Year Appointed: 2011* Email: jscottulrich@gmail.com	1410 Picket Drive Lancaster, PA 17601	Cell:	717-575-6598
Daniel J. Becker (Spouse: Marnie) Treasurer – Term Exp. 12/31/26 Year Appointed: 2023 Email: db@beckereng.net	135 Brunners Grove Road Reinholds, PA 17569	Cell:	717-278-8432
Michael W. Brubaker (Spouse: Cindy) Member – Term Exp. 12/31/24 *Year Appointed: 2015* Email: mwbrubaker@gmail.com	40 South Broad Street Lititz, PA 17543	Work/Cell:	717-945-9139
Joseph R. Deerin Member – Term Exp. 12/31/24 *Year Appointed: 2012* Email: jrdeerin@deerincompanies.com	1414 Valley Road Lancaster, PA 17603	Work: Cell: Home:	717-735-5545 717-314-2260 717-392-8237
Steve Dzurik (Spouse: Kristin) Member – Term Exp. 12/31/26 *Year Appointed: 2012* Email: steve_dzurik@ajg.com	484 Lancer Drive Columbia, PA 17512	Home: Work: Cell: Fax:	717-285-3863 443-798-7476 717-682-8227 443-798-7290
Karen M. Weibel Member – Term Exp. 12/31/28 *Year Appointed: 2009* Email: kweibel@ptd.net	202 North Cedar Street P.O. Box 112 Lititz, PA 17543	Home: Cell: Fax:	717-626-5028 717-314-4628 717-626-9142
Jacquelin Eby (Spouse: Menno [Travis] Eby) Member – Term Exp. 12/31/28 *Year Appointed: 2024* Email: jeby@versatekllc.com	610 Millcross Road Lancaster, PA 17601	Cell:	717-587-4107

LCSWMA Executive Team	**1299 Harrisburg Pike Lancaster, PA 17603**	**Phone: 397-9968 Fax: 397-9973**
Robert B. Zorbaugh (Spouse: Stacy) Chief Executive Officer Email: bzorbaugh@lcswma.org	1832 Fritz Lane Lancaster, PA 17602	Office: 717-735-0162 Cells: 717-666-8014 717-669-2526
Daniel G. Youngs (Spouse: Crystal) Chief Financial Officer Email: dyoungs@lcswma.org	826 S. 14th Avenue Lebanon, PA 17042	Office: 717-735-0164 Cell: 717-644-5099
Michelle Marsh Chief Business and Compliance Officer Email: mmarsh@lcswma.org	157 W. Market Street Marietta, PA 17547	Office: 717-735-0178 Cell: 717-572-3188
Alex Henderson (Spouse: Molly) General Counsel Email: ahenderson@lcswma.org	2051 Rice Road Lancaster, PA 17603	Office: 717-735-0175 Cell: 717-475-9177
Richard Bennett (Spouse: Elizabeth) Director of Finance Email: rbennett@lcswma.org	14 Lakeland Court Lititz, PA 17543	Office: 717-735-0188 Cell: 717-519-7333

Attachment "B"
Reference FORM HW-C Item B.4.

FREY FARM LANDFILL
CONTIGUOUS LANDOWNERS

Aaron C. Frey
3106 River Road
Conestoga, PA 17516

Ann M. Kirchner
3100 River Road
Conestoga, PA 17516

Anthony L. Wenger
3126 River Road
Conestoga, PA 17516

Brian J. Sensenich
3076 River Road
Conestoga, PA 17516

Craig A. Frey
3232 Anchor Road
Washington Boro, PA 17582

John G. Miller
3052 River Road
Conestoga, PA 17516

Hans E. Weber
3088 River Road
Conestoga, PA 17516

Manor Township
950 West Fairway Drive
Lancaster, PA 17603

You Scream LLC;
C/O – Turkey Hill – Stacy Stricker
2601 River Road
Conestoga, PA 17516

ATTACHMENT C

Reference Form HW-C; Section C.2

LCSWMA Permit List

LCSWMA Permits; DEP Client #4660

Lancaster County Waste Plan **Issued: 10/06/2014** **Expires: 10/06/2034**

Resource Recovery Facility:

1911 River Road, Bainbridge, PA 17502

DEP site ID #241770; facility ID #255039 (Covanta Client ID# 2839)

Bureau	Number	Regarding	Start	End
BLRWM	400592	Municipal Waste	01/07/2019	3/30/2029
BWQM	36-62776	AST/UST	Annual	
	3688402	Water Storage Ponds	2/22/1989	No Expiration
BSWC	3688802	Earth Disturbance	2/22/1989	No Expiration
BCEC	3688532	Drinking Water	11/5/1991	No Expiration
BAQC	36-05013	Title V	02/01/2022	1/31/2027
SRBC	20180908	Groundwater Usage	9/8/2018	9/30/2033

Notes: (1) The Facility holds EPA ID #0000103713

Susquehanna Resource Management Complex:

1670 S. 19th Street, Harrisburg, PA 17104

DEP site ID#450856; facility ID# 481371 (RRF)/ # 478223 (LF)

Bureau	Number	Regarding	Start	End
BLRWM	100758	Municipal Waste (SRMC)	11/28/2022	11/29/2032
BLRWM	100759	Municipal Waste (Ash Landfill A)	Closed	
BLRWM	100992	Municipal Waste (Ash Landfill B)	7/11/2018	6/1/2028
BWQM	PAG033886	Stormwater NPDES – PAG-03	12/01/2023	03/23/2028
BAQC	22-05007	Title V	03/01/2023	02/29/2028
CRW	122022-9	Industrial User	12/21/22	12/20/2027
SRBC	20140906	Groundwater Usage	10/1/2014	9/30/2029

Transfer Station:

1299 Harrisburg Pike, Lancaster, PA 17603

DEP site ID #577359/556046; facility ID 596402

Notes: (1) HHW Facility holds EPA ID # PAD987284932

Bureau	Number	Regarding	Start	End
BLRWM	100009	Municipal Waste	12/14/2023	4/12/2034
BWQM	PAG033794	Stormwater NPDES – PAG-03	12/1/2023	3/23/2028
	36-17038	AST/UST	Annual	

ATTACHMENT C

Reference Form HW-C; Section C.2

LCSWMA Permit List

Frey Farm Landfill:

3049 River Road, Conestoga, PA 17516

DEP site ID #450744; facility ID #477357; client ID #4703/#4660

Bureau	Number	Regarding	Start	End
BLRWM	101389	Municipal Waste	09/29/2020	5/26/2031
BWQM	PAG033960	Stormwater NPDES – PAG-03	12/1/2023	3/23/2028
BAQC	36-05081	Title V (BAQC facility id #522092)	1/1/2022	12/31/2026
LASA	377	Leachate Discharge	3/27/2021	3/26/2026
SRBC	20220907	Groundwater Usage	09/15/2022	12/5/2031
PA Dept. of Ag	RP00010K	Dead Animal Disposal License	01/01/2024	12/31/2024
BAQ	GP3-36-0581B & GP-9-36-05081B	Portable Nonmetallic Mineral Processing Plant and Diesel or No. 2 Fuel-Fired IC Engine	5/14/2021	5/31/2026

Creswell Landfill:

3049 River Road, Conestoga, PA 17516

DEP site ID #248683

Bureau	Number	Regarding	Start	End
BLRWM	100008	Municipal Waste	Closed	
BWQM	PA0043486	CWLTP NPDES	2/1/2022	01/31/2027
BAQC	36-05081	Title V	1/1/2022	12/31/2026
SRBC	GP-01-20220901	General Permit GP-01 Groundwater Remediation Projects	09/15/2022	12/31/2050

INASHCO Metals Recovery Facility:

Bureau	Number	Regarding	Start	End
BWQM	NOEXSC302	Stormwater NPDES – PAG-03 Non-Exposure Certification	12/01/2022	11/30/2027

Frey Farm Liquid Treatment Plant:

DEP site ID #497686

Bureau	Number	Regarding	Start	End
BLRWM	301317	Residual Waste (Expired)	6/10/1998	6/9/2008

ATTACHMENT C

Reference Form HW-C; Item C.2.

LCSWMA Permit List

Miscellaneous LCSWMA Permit Information:

1) LCSWMA Federal I.D.# (tax #): 23-6006036
2) LCSWMA Dunn and Bradstreet #: 06-709-5828
3) LCSWMA Unique Entity Identifier (UEI): MY4MWC6GTLL9
4) SIC; 4953 Refuse Systems (solid waste landfills, combustors)
5) NAICS;
   a) 562212 (Waste Treatment and Disposal; Solid Waste Landfills); LF
   b) 562998 (All Other Miscellaneous Waste Management Services); TS
   c) 562213 (Waste Treatment and Disposal; Solid Waste Combustors); RRF
6) Other DEP-recognized sites owned by LCSWMA include:
   a) CFI; site ID #577301
   b) Lancaster Malleable LF; site ID #248940
7) Other miscellaneous permit information:
   a) SRMC Covanta Stormwater NPDES Permit #PAS503501
   b) Spotted Lanternfly Permit PA-20190508569 Permit Issued 5/20/19
   c) Waste Tire Transporter Authorization License; Issued 1/4/2023; Expires 1/31/2025
   d) US DOT Number 468748

ATTACHMENT "D"
Reference FORM HW-C Item D.
Compliance History / Enforcement Actions

DATE	LCSWMA Facility	PERMIT/ LICENSE/ EPA ID#	ISSUING AGENCY	TYPE OF ACTION	NATURE OF VIOLATION	DISPOSITION	DOLLAR AMOUNT OF PENALTY
2/20/2014	Susquehanna Resource Management Complex	100758	PA DEP/BWM	Non-Compliance	Surface water discharge	Comply/Closed	N/A
2/20/2014	Susquehanna Resource Management Complex	100758	PA DEP/BWM	Non-Compliance	Ash handling violation	Comply/Closed	N/A
3/18/2014	Susquehanna Resource Management Complex Ash Landfill	100992	PA DEP/BWM	NOV	Leachate overflow	Comply/Closed	N/A
5/4/2014	Susquehanna Resource Management Complex Ash Landfill	100992	PA DEP/BWM	NOV	Leachate overflow	Comply/Closed	N/A
01/28/2016	Susquehanna Resource Management Complex	100758	PA DEP/BAQC	CACP	Emission Limits Violations; 1st Qtr 2014 – 1st Qtr 2015	Civil Penalty Paid	$5,400
04/05/2018	Resource Recovery Facility	400592	PA DEP / BAQC	CACP	3rd Qtr 2010 – 1st Qtr 2017 Emission Exceedances	Civil Penalty Paid	$42,196.23
05/01/2019	Creswell Landfill	PA0043486	PA DEP/ BCW	NOV	Discharge Limits Exceeded	Comply/Closed	N/A
12/30/2019	Susquehanna Resource Management Complex	100758	PA DEP / BAQC	CACP	Emission Limits Violations: 2nd Qtr 2015 – 1st Qtr 2017	Civil Penalty Paid	$42,129.65
01/13/2020	Frey Farm Landfill	377	LASA	NOV	Discharge Limit Exceeded	Comply/Closed	N/A
06/23/2021	Resource Recovery Facility	400592	PA DEP / BAQC	CACP	2nd Qtr 2017 – 1st Qtr 2019 Emission Exceedances	Civil Penalty Paid	$8,700
11/12/2021	Resource Recovery Facility	400592	PA DEP / BAQC	CACP	2nd Qtr 2019 – 4th Qtr 2020	Civil Penalty Paid	$2,050
11/16/2021	Resource Recovery Facility	PWS# 7360978	PA DEP / BSDW	NOV	Failure to Monitor – DRR – Week of 8/29/2021-9/4/2021	Comply/ Closed	N/A

ATTACHMENT "D"
Reference FORM HW-C Item D.
Compliance History / Enforcement Actions

DATE	LCSWMA Facility	PERMIT/ LICENSE/ EPA ID#	ISSUING AGENCY	TYPE OF ACTION	NATURE OF VIOLATION	DISPOSITION	DOLLAR AMOUNT OF PENALTY
02/18/2022	Susquehanna Resource Management Complex	100758	PA DEP / BAQC	CACP	2nd Qtr 2017 – 1st Qtr 2019 Emission Exceedances	Civil Penalty Paid	$35,097
05/03/2024	Resource Recovery Facility	400592	PA DEP / BAQC	CACP	2nd Qtr 2021 – 4th Qtr 2022 Emission Exceedances	Civil Penalty Paid	$4,740

Attachment 3

BONDING INFORMATION

2023 Annual Operations Report
LCSWMA Frey Farm Landfill – Bonding Information

Currently, the LCSWMA Frey Farm Landfill has an approved Closure/Post-Closure Bond in the amount $16,570,612. In accordance with Department requirements, an annual review of the line items and supporting information was completed for calendar year 2023. In summary:

Frey Farm Landfill Bond Comparison		
	2022	2023
Decontaminating the Facility	$ 12,170	$ 12,170
Capping/closure	$ 8,207,601	$ 8,207,601
Groundwater Monitoring	$ 1,345,587	$ 1,345,587
Surface Water Monitoring	$ 82,246	$ 82,246
Private Water Supply Monitoring	$ 545,910	$ 545,910
Gas Monitoring	$ 31,160	$ 31,160
Gas Collection/Maintenance	$ 1,482,605	$ 1,482,605
Other Monitoring	$ 241,449	$ 241,449
Leachate Management	$ 502,534	$ 502,534
Borrow Area Closure	$ 15,431	$ 15,431
Maintenance Costs	$ 843,035	$ 843,035
Admin; inflator, contingency	$ 3,260,883	$ 2,994,689
Total	**$16,570,612**	**$16,304,417**

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet A - Decontaminating the Facility
Supporting Calculations & Assumptions

	Date Prepared:		**5/3/2023**	
A-1	Maximum volume of waste to be moved or disposed as part of closure (tons)	$	400	tons
A-2	Estimated volume of contaminated soils or materials	$	-	
	It is assumed that there are no contaminated soils or materials on site from prior accidents, spills or prior remediation.			
A-3	Total volume of waste (A1 + A2)	$	400	tons
A-4	Unit cost to dispose off-site	$	12.25	/ton
	400 tons / 50 tons/hr = 8 hr *8 hr x*			
	$150.00/hr (per each operator/equip.) x 2 operator/equip.= $2400.00			
	$2400.00 / 400 tons = $6.00/ton			
	$6.00/ton + $6.25/ton (PADEP Disposal Fees) = $12.25/ton			
A-5	Total cost to dispose of waste (A3 x A4)	$	4,900.00	
A-6	Est. volume of contaminated liquid generated during decontamination (Gallons)		50,000	gal
A-7	Unit cost to treat/dispose of contaminated liquids, including transportation	$	0.019	
A-8	Total cost to dispose of contaminated liquids (A6 x A7))	$	950.38	
A-9	Estimated volume of fill material		500	cy
A-10	Unit cost of acquiring, transporting, placing and stabilizing (i.e.revgetating) fill material (include costs for off-site purchase if soil not available on-site)	$	5.64	/cy
	Excavation - RS Means 312316420305, Lancaster PA, 2023 Quarter 1, plus 15% for loading trucks. Total O&P.	$	1.70	/cy
	Hauling - RS Means 312323203014, Lancaster PA, 2023 Quarter 1. Total O&P.	$	2.97	/cy
	Grading - RS Means 312216103310, Lancaster PA, 2023 Quarter 1. Total O&P.	$	0.35	/cy
	RS Means 329219130100, Lancaster PA, 2023 Quarter 1. Total O&P. Assumes 1 yard thickness	$	0.62	/cy
A-11	Total cost to fill (A9 x A10)	$	2,820	
Equipment Decontamination Costs				
A-12	Equipment decontamination cost (A6b)	$	3,500	LS
	RS Means 050110516220, Lancaster PA, 2023 Quarter 1. Metal Steam Cleaning. Assumes 5 days and 2,000 square feet. Total O&P.	$	0.35	
	Bonding Worksheet A - Decontaminating the Facility	**$**	**12,170**	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet B - Cap and Final Cover Placement
Supporting Calculations & Assumptions

Date Prepared: 1/27/2023

B-1	Volume of fill required for area not at final/intermediate grade, but would require filling prior to capping.		2,000	cy
B-2	Maximum area to be capped and covered (this should include all areas at final grade and not capped, intermediate grades and areas to be filled to get to intermediate grades then capped).		58.71	acres
B-3	Closure design, surveying and development of construction drawings (use $750.00*acre of B2).	$	44,033	
a	Construction and maintenance of access roads (Lump sum)	$	30,000	LS
	Access roads are constructed and maintained as needed throughout the operating life of the facility. In an event of premature closure no additional roads will be required or constructed. Refer to Worksheet K for maintenance costs.			
Material Volumes/Areas				
B-4	Earthen Materials			
a	Structural Fill		0	cy
	Structural fill thickness.		N/A	ft
b	Intermediate Cover *(B2 x 50% x 43,560 x Thickness/27)*		23,680	cy
	Assume that 6" of existing intermediate cover will have to be stripped from the vegetated areas (i.e. uncapped areas) and stockpiled and then replaced with 6" of clean intermediate cover soils. Also assume that only 50% of the area will need stripping.		0.50	ft
c	Clay Cap Material *(B2 x 43,560 x Thickness/27)*		0	cy
	Clay Cap Material Thickness			ft
d	Final Cover Soil *(B2 x 43,560 x Thickness/27)*		189,438	cy
	Final Cover Soil Thickness		2	ft
e	Sand/Stone *(B2 x 43,560 x Thickness/27)* - not needed due to using geosynthetics		0	cy
	Max. Part. Size 1/4"			ft
	Sand/Stone Thickness			
f	Other (Top Soil) *(B2 x 43,560 x Thickness/27)*		0	cy
	Top Soil Thickness		0.00	ft
B-5	Synthetic Materials			
a	Geotextile (sq. ft.) = acres in (B2) x 43,560 ft^2 /acre x 1.05		2,685,278	ft^2
	Allows 5% extra material; for 3D "need" vs. 2D "survey"			
b	FML (sq. ft.) = acres in (B2) x 43,560 ft^2 /acre x 1.05		2,685,278	ft^2
	Allows 5% extra material; for 3D "need" vs. 2D "survey"			
c	Drainage Layer (sq. ft.) = acres in (B2) x 43,560 ft2 /acre x 1.05		2,685,278	ft^2
	Allows 5% extra material; for 3D "need" vs. 2D "survey"			
d	Other (sq. ft.) = acres in (B2) x 43,560 ft^2 /acre		0	ft^2
B-6	Cap Penetrations: Estimate the number of cap penetrations that will need to be installed for closure of the facility including, but not limited to gas extraction wells, cleanouts, valve pits, etc.		59	
	Assume one per acre for areas to be capped (typical well density).			

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet B - Cap and Final Cover Placement
Supporting Calculations & Assumptions

Date Prepared: 1/27/2023

Material Unit Costs				
B-7	Unit cost to place or regrade material to reach final grades (this may include additional waste placement to reach grade)		4.79	/cy
	Excavation - RS Means 312316420305, Lancaster PA, 2023 Quarter 1, plus 15% for loading trucks. Total O&P.	$	1.70	/cy
	Hauling - RS Means 312323203014, Lancaster PA, 2023 Quarter 1. Total O&P.	$	2.97	/cy
	Grading - RS Means 312216103310, Landcaster PA, 2023 Quarter 1. Assumes 1-ft thickness. Total O&P.	$	0.12	/cy
B-8	Earthen Materials			
a	Structural Fill - Unit Cost to place	$	-	/cy
b	Intermediate Cover - Unit Cost to place	$	4.79	/cy
	Excavation - RS Means 312316420305, Lancaster PA, 2023 Quarter 1, plus 15% for loading trucks. Total O&P.	$	1.70	/cy
	Hauling - RS Means 312323200014, Lancaster PA, 2023 Quarter 1. Total O&P.	$	2.97	/cy
	Grading - RS Means 312216103310, Lancaster PA, 2023 Quarter 1. Adjusted for 1-foot thickness. Total O&P.	$	0.12	/cy
c	Clay Cap Material - Unit Cost to place	$	-	cy
d	Final Cover Soil - Unit Cost to place	$	4.90	/cy
	Excavation - RS Means 312316420305, Lancaster PA, 2023 Quarter 1, plus 15% for loading trucks. Total O&P.	$	1.70	/cy
	Hauling - RS Means 312323200014, Lancaster PA, 2023 Quarter 1. Total O&P.	$	2.97	/cy
	Grading - RS Means 312216103310, Landcaster PA, 2023 Quarter 1. Adjusted for 2-foot thickness. Total O&P.	$	0.23	/cy
e	Sand/Stone - Unit Cost to place	$	-	cy
f	Other (Top Soil)	$	-	cy
B-9	Synthetic Materials			
a	Geotextile - Unit cost to place		0.410	ft^2
	Based on multiple, similar facility construction pricing in PA & 2020 FFLF project inflated to 2023			
b	FML - Unit cost to place		0.900	ft^2
	Based on multiple, similar facility construction pricing in PA & 2020 FFLF project inflated to 2023			
c	Drainage Layer - Unit cost to place		0.983	ft^2
	Based on multiple, similar facility construction pricing in PA & 2020 FFLF project inflated to 2023			
d	Other - Unit cost to place	$	-	ft^2
B-10	Cap Penetration Unit Cost to fabricate and install each cap penetration	$	350.00	/each
	Based on multiple, similar facility construction pricing in PA			
B-11	Unit cost to construct Erosion & Sedimentation Structures (i.e. channels, letdowns, etc.)	$	7,500	/acre
	Based on multiple, similar facility construction pricing in PA			
B-12	Revegetation Cost - Unit cost to revegetate	$	1,239	/acre
	Seeding rate used:		-	lbs/acre
	Lime rate used:		-	tons/acre
	Fertilizer rate used:		-	tons/acre

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet B - Cap and Final Cover Placement
Supporting Calculations & Assumptions

Date Prepared: 1/27/2023

	Mulch rate used:		-	tons/acre
	RS Means 329219130020, Lancaster PA, 2023 Quarter 1. Total O&P.		1,238.6	
B-13	Cost Summary			
a	Fill required to bring area to final/intermediate grade (B1 x B7)	$	9,573	
b	Construction Drawings (B3)	$	44,033	
c	Construction Roads (B3a)	$	30,000	
d	Structural Fill (B4a x B8a)	$	-	
e	Intermediate Cover (B4b x B8b)	$	113,347	
f	Smoothing Layer Material (B4c x B8c)	$	-	
g	Final Cover (B4d x B8d)	$	928,876	
h	Sand/Stone (B4e x B8e)	$	-	
i	Other (B4f x B8f)	$	-	
j	Geotextile (B5a x B9a)	$	1,100,964	
k	FML (B5b x B9b)	$	2,416,750	
l	Drainage Layer (B5c x B9c)	$	2,639,628	
m	Other (B5d x B9d)	$	-	
n	Penetrations (B6 x B10)	$	20,549	
o	E & S Structures (B2 x B11)	$	440,325	
p	Revegetation (B2 x B12)	$	72,719	
	Subtotal	**$**	**7,816,763**	
	CQA costs (use 5% of subtotal)	$	390,838	
	Bonding Worksheet B - Cap and Final Cover Placement	**$**	**8,207,601**	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet C - Groundwater Monitoring System

Supporting Calculations & Assumptions

Date Prepared:

C-1	Number of wells in the approved monitoring plan		19	
a	Shallowest well depth		28	ft
b	Deepest well depth		299	ft
c	Average well depth		106.4	ft
d	Number with dedicated pumps		19	
C-2	Unit cost to upgrade an existing well with a dedicated pump	$	1,386.21	/well
	RS Means 331113101510, Lancaster PA, 2023 Quarter 1. Total O&P.			
C-3	Unit cost to install a well (assume average well depth, and include drilling, installation, developing and pump installation)	$	7,591.09	/well
	Public water supply wells, wells domestic water, drilled, 4" to 6" diameter (2023 RSMeans 331113100100, Total O&P).	$	35.50	/ft
	Well casing, 2023 RSMeans, Lancaster PA, 331113108254, Total O&P.	$	20.38	/ft
	Cost to develop well, 2023 RSMeans 331113108500, Lancaster PA, Total O&P. Assumes 2 hours ($822.73/hr)	$	1,645.46	/well
C-4	Number of wells to be installed (wells in the approved plan that haven't been installed)		0	
C-5	Number of wells to be replaced over the life of the monitoring period (use 10% of line 1 and round up)		2	
C-6	Number of pumps to be replaced/repaired (use 25% of line 1 over the monitoring period)		5	
C-7	Unit cost to purge and sample a well (assume average well depth, and include methane monitoring, record keeping and shipping)	$	173.89	/well
	Per Laboratory Rates for 2022. Inflated to 2023 dollars using 7%.			
C-8	Unit cost to analyze sample(s)			
a	Quarterly (25 PA Code 273.284, 277.284 or 288.254)	$	337.05	/well
	Per Laboratory Rates for 2022. Inflated to 2023 dollars using 7%.			
b	Annually (25 PA Code 273.284, 277.284, or 288.254)	$	385.20	/well
	Per Laboratory Rates for 2022. Inflated to 2023 dollars using 7%.			
C-9	Unit cost to analyze data (includes review of lab QA/QC data, database input, form completion, statistical analysis and data review).	$	39.24	/well
	Per 2022 rates. Inflated to 2023 dollars using 7%.			
C-10	Cost to purge, sample and analyze - quarterly	$	550.18	/well
	C7 + C8a + C9			
C-11	Cost to purge, sample and analyze - annually	$	598.33	/well
	C7 + C8b + C9			
C-12	Number of years of sampling (30 + time to close)		31	years
C-13	Cost Summary - Groundwater Monitoring System			
a	System upgrade	$	-	
	(C1 -C1d) x C2			

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet C - Groundwater Monitoring System

Supporting Calculations & Assumptions

Date Prepared:

b	Wells to be installed	$	-
	C3 x C4		
c	Wells to be replaced	$	14,423
	C3 x C5		
d	Pumps to be replaced	$	6,584
	C2 x C6		
e	Cost of quarterly monitoring	$	972,165
	C1 x 3 x C10 x C12		
f	Cost of annual monitoring	$	352,415
	C1 x C11 x C12		
	Subtotal	**$**	**1,345,587**
	Adjustment for resampling, assessments, etc.		
a	Use 0% of subtotal if no assessment in last 2 years.		
	Enter 1 for yes, and 0 for no below:		
	0	$	-
b	*Use 5% of subtotal if assessment in last 2 years.*		
	Enter 1 for yes, and 0 for no below:		
	0	$	-
c	Use 10 % if currently in assessment, abatement or increase monitoring (MW-15A Increased Monitoring)		
	Enter 1 for yes, and 0 for no below:		
	0	$	-
	Bonding Worksheet C - Groundwater Monitoring System	**$**	**1,345,587**

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet D - Surface Water Monitoring System
Supporting Calculations & Assumptions

Date Prepared:

Solid Waste Surface Water Sampling				
D-1	Number of surface points monitored for Solid Waste Permit		0	
D-2	Unit cost to sample a surface point (recordkeeping and shipping)	$	115.93	/point
	Estimated at 2/3 cost to purge/sample			
D-3	Unit cost to analyze sample(s)			
a	Quarterly (25 PA Code 273.284 or 288.254)	$	337.05	/point
	Per Laboratory Rates for 2022. Inflated to 2023 dollars using 7%.			
b	Annually (25 PA Code 273.284 or 288.254)	$	385.20	/point
	Per Laboratory Rates for 2022. Inflated to 2023 dollars using 7%.			
D-4	Unit cost to analyze data (includes review of lab QA/QC data, database input, form completion, and data review)	$	57.96	/point
D-5	Cost to sample and analyze - quarterly	$	511	/point
	(D2+D3a+D4)			
D-6	Cost to sample and analyze - annually	$	559	/point
	(D2+D3b+D4) Included in D-5			
D-7	*Number of years of sampling (30 + time to close)*		31	years
NPDES Surface Discharge Sampling				
D-8	Number of NPDES outfalls monitored		2	
D-9	Monitoring frequency (i.e. monthly, quarterly, etc.)		2	/year
D-10	Number of samples to be taken per point/year		2	
D-11	Unit cost to sample a surface point (record keeping & shipping)	$	115.93	/point
D-12	Unit cost to analyze sample(s) (including data review and completing DMR)	$	487	/point
D-13	Number of years of sampling (30 + time to close)		31	/years
D-14	Cost Summary - Surface Water Monitoring			
a	Cost of Quarterly Surface Water Monitoring	$	-	
	D1 x 4 x D5 x D7			
b	Cost of Annual Surface Water Monitoring	$	-	
	D1 x D6 x D7			
	Included in D-14a			
c	Cost of NPDES Monitoring	$	74,769	
	D8 x D10 x (D11 x D12) x D13			
d	NPDES renewals over post-closure period (includes application development, fees, etc.) Use 10% of D14c.	$	7,477	
	Subtotal	**$**	**82,246**	
	Adjustment for resampling, assessments, etc.			
a	Use 0% of subtotal if no assessment in last 2 years.			

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet D - Surface Water Monitoring System
Supporting Calculations & Assumptions

Date Prepared:

	Enter 1 for yes, and 0 for no below:		
		0	$ -
b	*Use 5% of subtotal if assessment in last 2 years.*		
	Enter 1 for yes, and 0 for no below:		
		0	$ -
c	Use 10 % if currently in assessment, abatement or increase monitoring (MW-15A Increased Monitoring)		
	Enter 1 for yes, and 0 for no below:		
		0	$ -
	Bonding Worksheet D - Surface Water Monitoring System	**$**	**82,246**

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet E - Private Water Supply Monitoring

Supporting Calculations & Assumptions

	Date Prepared:			
E-1	Number of private water supplies monitored.		10	
E-2	Unit cost to sample a well (include methane monitoring, record keeping and shipping)	$	80.25	/well
	Labor Costs (includes travel and sampling for all supplies under E1 above)	$	552.50	
	Vehicle and equipment costs	$	250.00	
E-3	Unit cost to analyze sample(s) quarterly (Act 101 Section 1103)	$	285.00	/well
E-4	Unit cost to analyze data (includes review of lab QA/QC data, database input, form completion, and data review)	$	75.00	/well
	Labor Rate for data review	$	150.00	
	Hours per for review of each form		0.5	
E-5	Total cost for quarterly sampling (E2 +E3+E4)	$	440.25	/well
E-6	Number of years of sampling (30 + time to close)		31	/years
E-7	Cost Summary - Private Water Supply Monitoring			
a	Cost of quarterly monitoring	$	545,910	
	(E5 x 4 x E6) x E1			
	Bonding Worksheet E - Private Water Supply Monitoring	**$**	**545,910**	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet F - Gas Monitoring System

Supporting Calculations & Assumptions

Date Prepared:

F-1	Number of probes in the approved monitoring plan.		8	
a	Shallowest probe depth		14	ft.
b	Deepest probe depth		41	ft.
c	Average probe depth		18.875	ft.
d	Number of probes installed		8	
F-2	Unit cost to install a probe (including drilling and installation)	$	4,500.00	/probe
F-3	Number of probes to be installed (probes in the approved plan that haven't been installed)		0	
F-4	Number of probes to be replaced over the life of the monitoring period (use 5% of F1 and round up)		1	
F-5	Unit cost to monitor a probe (include record keeping)	$	26.88	/probe
	Hourly rate for employee performing monitoring	$	65.00	
	Number of locations that can be checked per hour		8	
	Hourly rate for employee reviewing monitoring result	$	150.00	
	Number of results that can be reviewed per hour		8	
F-6	Number of probe and structure monitoring events per year		4	/year
F-7	Number of years of monitoring (30 + time to close)		31	/years
F-8	Cost Summary - Gas Monitoring System			
a	System Completion	$	-	
	F3 x F2			
b	Probe replacement	$	4,500	
	F2 x F4			
c	Probe monitoring	$	26,660	
	F1 x F5 x F6 x F7			
	Subtotal	**$**	**31,160**	
	Adjustment for resampling, assessments, etc.			
a	Use 0% of subtotal if no assessment in last 2 years.			
	Enter 1 for yes, and 0 for no below:			
	0	$	-	
b	*Use 5% of subtotal if assessment in last 2 years.*			
	Enter 1 for yes, and 0 for no below:			
	0	$	-	
c	Use 10 % if currently in assessment, abatement or increase monitoring (MW-15A Increased Monitoring)			
	Enter 1 for yes, and 0 for no below:			
	0	$	-	
	Bonding Worksheet F - Gas Monitoring System	**$**	**31,160**	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet G - Gas Collection System

Supporting Calculations & Assumptions

Date Prepared:

G-1	Number of wells in the approved monitoring plan	~	46	
a	Shallowest well depth		32	ft
b	Deepest Well		239.8	ft
c	Average well depth		122.2	ft
d	Number of wells installed		0	
e	Number of pumping wells		0	
G-2	Cost for flare or other control device installation		$ -	
	All necessary flares are installed.			
G-3	Unit cost to install a well (including drilling, installation and connection to active system)		$ 7,083	/well
	Well Installation Cost			
	(Based on 2023 onsite proposal from engaged FFLF Contractor)			
G-4	Unit cost to install a gas well requiring liquid removal (including drilling, installation and connection to active system)		$ -	/well
G-5	Number of wells to be installed (wells in the approved plan that haven't been installed)		28	
G-6	Number of gas wells requiring liquid removal to be installed		0	
G-7	Estimate the length of collection piping to be installed		3,467	ft
G-8	Unit cost to install collection piping (include excavation, pipe bedding, pipe, backfilling, regrading, revegetating, surveying, and QA/QC)		$ 17.54	/ft
	Piping - RS Means 221113780086, Lancaster PA, 2023 Quarter 1. Total O&P		$ 7.25	/cy
	Trenching - RS Means 312316130050, Lancaster PA, 2023 Quarter 1. Total O&P		$ 10.29	/cy
G-9	Number of wells to be replaced/repaired over the life of the monitoring period (use 10% of G-1 and round up)		5	
G-10	Unit cost to monitor well and balance system monthly (include monitoring of methane, oxygen, carbon dioxide or nitrogen, temperature, pressure, and NSPS record keeping)		$ 56.71	/well
	Monitoring Time		8	min/well
	8 minutes/well x number of wells in G-1		6	hrs/event
	NSPS Follow-up Monitoring		24	hr/month
	NSPS Recordkeeping		10	hr/month
	Total Monthly Gas Monitoring Time		40	hr/month
	Gas Technician Rate		$ 65.00	/hr
			$ 2,608.67	/month
G-11	Unit cost to conduct surface monitoring (NSPS)		$ 4,680.00	/event
	Initial SEM Event		48	hrs/event
	Perimeter and Building		12	hrs/quarter
	Follow-up Monitoring		12	hrs/quarter
	Total Monitoring Time		72	
	Technician Rate		$ 65.00	/hr
G-12	Control System Information		N/A	
a	Number and size of blowers			

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet G - Gas Collection System

Supporting Calculations & Assumptions

Date Prepared:

b	Flare Dimensions			
c	Current flow rate			
d	Other features			
G-13	Cost of electricity to run system	$	-	/year
G-14	Cost to maintain system (including daily check, weekly charts, maintenance, etc.)	$	-	/year
G-15	Cost of annual blower maintenance (including greasing, bearing check and alignment)	$	-	/year
G-16	Cost of stack testing (once per five years)	$	-	/event
G-17	Estimate the volume of condensate generated per year			gallons
G-18	Cost of condensate management (including pumping, testing and treatment/disposal)	$	-	/year
	See Line 17 above.			
G-19	Number of years to run system (30 + time to close)		31	/years
G-20	Cost Summary - Gas Collection System			
	System Installation			
a	Additional well installation (G5 x G3)	$	198,333	
b	Additional pumping well installation (G4 x G6)	$	-	
c	Cost of collection piping (G7 x G8)	$	60,811	
d	Well replacement (G3 x G9)	$	35,417	
e	Enclosed ground flare system (G2)	$	-	
	System Installation Subtotal	**$**	**294,561**	
f	Cost of monitoring/balancing (G1 x 12 x G10 x G19)	$	970,424	
g	Cost of surface monitoring (G11 x 1.5 x G19)	$	217,620	
h	Electric Cost (G13 x G19)	$	-	
i	System maintenance cost (G14 x G19)	$	-	
j	Blower maintenance cost (G15 x G19)	$	-	
k	Stack testing cost (G16 x (G19/5))	$	-	
l	Condensate management cost (G18 x G19)	$	-	
	System monitoring and maintenance subtotal	**$**	**1,188,044**	
	Adjustment for miscellaneous maintenance items (including knockout pot maintenance, thermocouple replacement, flame detector replacement, flame arrestor maintenance, flare maintenance, enrichment/startup gas replacement, pneumatic valve maintenance, sump maintenance, panel board maintenance, etc.)			
	Enter age of flare system			
	a. Use 0% of subtotal if system < 2 yrs old			
	b. Use 5% of subtotal if system > 2 yrs old, but < 5 yrs old			
	C. Use 10% of subtotal if system > 5 yrs old		0%	
	Miscellaneous maintenance subtotal	**$**	**-**	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet G - Gas Collection System

Supporting Calculations & Assumptions

Date Prepared:	
Bonding Worksheet G - Gas Collection System	**$ 1,482,605**

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet H - Other Monitoring and Reporting
Supporting Calculations & Assumptions

Date Prepared:

Please list the annual costs to maintain the following permits/registrations that apply. Additional space is provided for items applicable to your facility, but not listed.

H-1	Title V or other air permit (include the annual permit fee, cost to complete emission inventory and emission fees)	$	-	/year
H-2	NSPS Annual Report preparation cost	$	-	/year
H-3	Local permit or Host Agreement requirements	$	2,080	/year
	Assumes 1 year only; then ash fill "closed"			
H-4	UST/AST registration	$	-	/year
H-5	Other - Annual Report-BLRWM	$	4,935	/year
	Assumes 1 year only; then ash fill "closed"			
H-6	Other - AIMS Report	$	2,655	/year
H-7	Other - Semi-annual Compliance Certification	$	1,400	/year
H-8	Other - Quarterly LASA Report	$	3,284	/year
H-9	Other - SRBC	$	2,260	/year
	Assumes 1 year only; then ash fill "closed"			
	Other - Act 220	$	675	/year
	Assumes 1 year only; then ash fill "closed"			
	Other - eGGRT	$	3,990	/year
	Assumes 1 year only; then ash fill "closed"			
	Subtotal	$	21,279	
H-10	Number of years of monitoring/maintenance (30 + time to close)		31	years
	Bonding Worksheet H - Other Monitoring and Reporting	**$**	**241,449**	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet I - Leachate Management
Supporting Calculations & Assumptions

	Date Prepared:	**5/26/2023**	
I-1	Number of years of leachate management (30 years + closure period)	31	years
I-2	Annual leachate volume generated	1,677,901	gal/year
	According to Form 25, Attachment 25-1 Section 3.1.2- Predicted Leachate Flows details the worst case scenario for the maximum amount area to be capped in the event of premature closure, which is used in Worksheet B. However, the worst case leachate generation rate according to Form 25, Attachment 25-1 occurs during the fifth year of operation (12,669,468 gallons/year).		gal/day
	or		
	In an event of premature closure during Incremental Closure Conditions (worst case scenario), it is assumed that the leachate generation rate during closure year will remain equal to the HELP Model Estimate. It is also assumed that the leachate generation rate for the 30-year post-closure period will decline an order of magnitude every five years.	12,669,468	gal/year
	The leachate decline rate is calculated as follows:		
	Closure Year	12,669,468	gal/year
	Year 1	10,769,048	gal/year
	Year 2	8,868,628	gal/year
	Year 3	6,968,207	gal/year
	Year 4	5,067,787	gal/year
	Year 5	3,167,367	gal/year
	Year 6	1,266,947	gal/year
	Year 7	1,038,896	gal/year
	Year 8	810,846	gal/year
	Year 9	582,796	gal/year
	Year 10	354,745	gal/year
	Year 11	126,695	gal/year
	Year 12	103,890	gal/year
	Year 13	81,085	gal/year
	Year 14	58,280	gal/year
	Year 15	35,475	gal/year
	Year 16	12,669	gal/year
	Year 17	10,389	gal/year
	Year 18	8,108	gal/year
	Year 19	5,828	gal/year
	Year 20	3,547	gal/year
	Year 21	1,267	gal/year
	Year 22	1,039	gal/year
	Year 23	811	gal/year
	Year 24	583	gal/year
	Year 25	355	gal/year
	Year 26	127	gal/year
	Year 27	38	gal/year
	Year 28	0	gal/year
	Year 29	0	gal/year
	Year 30	0	gal/year
I-3	Annual cost to manage leachate volume (include pump and pipe maintenance, electricity and monitoring)	$ 2,700.00	
	Discharge to POTW		
I-4	Unit cost to discharge to a POTW	$ 0.0064	/gal
	On-site Treatment (including pretreatment)		
I-5	Unit cost for treatment of leachate (include equipment maintenance, electricity, personnel, chemicals, sludge disposal, etc.)		/gal

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet I - Leachate Management

Supporting Calculations & Assumptions

	Date Prepared:		**5/26/2023**	
I-6	Annual cost to maintain NPDES permit (include sampling, analysis, report preparation, and factor in five year renewal application preparation and fees)	$	-	/year
	Interim Trucking of Leachate			
I-7	Unit cost to transport and dispose of leachate	$	-	/gal
	Not applicable.			
I-8	NPDES Permit (cost to prepare application, fees and sampling/analysis)	$	-	/year
I-9	Cost to construct on-site treatment or pretreatment system or connection to POTW	$	-	
I-10	Unit cost for treatment of leachate (include equipment, maintenance, electricity, personnel, chemicals, etc.)	$	-	/gal
I-11	Annual cost to maintain NPDES permit (include sampling, analysis, report preparation, and factor in five year renewal application preparation and fees)	$	-	
I-12	**Cost Summary**			
a.	Cost to manage/convey leachate (I1 x I3)	$	83,700	
	If discharge to POTW			
b	Discharge to POTW cost (I1 x I2 x I4)	$	335,079	
	If have on-site treatment			
c	Treatment cost (I1 x I2 x I5)	$	-	
d	NPDES maintenance cost (I1 x I6)	$	-	
	If you currently truck leachate			
e	Cost of trucking leachate for three years (I2 x 3 x I7)	$	-	
f	NPDES permit (I8)	$	-	
g	Cost to construct onsite treatment system or connection to POTW (I9)	$	-	
h	Treatment cost ((I1 -3) x I2 x I10)	$	-	
i	NPDES maintenance cost ((I1 -3) x I11)	$	-	
	If you currently store leachate in impoundments			
j	Size of pond(s)		0.0	acres
k	Volume of material to be removed (including liner system and minimum of 12" of soil)		0	cy
l	Unit cost to dispose of materials	$	-	$/cy
m	Cost to dispose of materials (I12k x I12l)	$	-	
	The material will be disposed within the landfill prior to closure, no off-site disposal required.			
n	Volume of structural backfill		0	cy
o	Cost for backfill (I12n x Worksheet B, B8a)	$	-	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet I - Leachate Management

Supporting Calculations & Assumptions

	Date Prepared:	**5/26/2023**
p	Revegetation cost (I12j x Worksheet B, B12)	$ -
	Subtotal	**$ 418,779**
	Adjustment for maintenance, equipment replacement and contingencies, etc. Please note that these are cumulative and you must add all of the percentages that apply to arrive at the final adjustment percentage. The minimum is 10%.	
a	Add 10% of subtotal if pumps are used to convey leachate.	$ 41,878
b	Add 5% of subtotal if flow volume to POTW is restricted.	
c	Add 10% of subtotal if leachate is stored in ponds.	
d	Add 10% of subtotal if onsite treatment.	
e	Add 15% if trucking leachate.	
f	Add 10% if current leachate generation exceeds 5MG/year.	$ 41,878
	Final Adjustment Factor	20%
g	Adjustment (subtotal x factor)	$ 83,756
	Bonding Worksheet I - Leachate Management	**$ 502,534**

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet J - Borrow Area Closure

Supporting Calculations & Assumptions

	Date Prepared:			
	How do I start? Select a likely "worst case" scenario where you would have a maximum amount of the borrow area open and in need of closure. Provide a description of the scenario with references to site development stages.		0	
J-1	Size of borrow area		5	acres
	Soil Borrow Project Closed in 2012, Form 37 Approval Received			
J-2	Volume of material required for regrading		8,067	cy
J-3	Unit cost to regrade (provide equipment and rates)	$	0.35	/cy
	Grading - RS Means 312216103310, Landcaster PA, 2023 Quarter 1. Assumes 1 yard thickness. Total O&P.	$	0.35	
J-4	Earthen Materials			
a	Structural Fill		0	cy
b	Unit cost to place (including cost of material, excavation, transportation, processing, and placement)			cy
c	Topsoil			cy
d	Unit cost to place (including cost of material, excavation, transportation, processing, and placement)	$	-	cy
J-5	Revegetation Cost (Unit cost to revegetate) - *From B12*	$	1,239	/acre
	Seeding rate used:			lbs/acre
	Lime rate used:			tons/acre
	Fertilizer rate used:			tons/acre
	Mulch rate used:			tons/acre
J-6	E & S Controls	$	1,136	/acre
J-7	Bond Maintenance Cost (required if off-site borrow area)	$	-	LS
J-8	Other costs (provide detail)	$	-	
J-9	Cost Summary			
a	Fill/Regrading (J2 x J3)	$	2,823	
b	Structural Fill (J4a x J4b)	$	-	
c	Topsoil (J4c x J4d)	$	-	
d	Revegetation (J1 x J5)	$	6,193	
e	E & S Controls (J1 x J6)	$	5,680	
f	Bond Maintenance (J7)	$	-	
g	Other (J8)	$	-	
	Subtotal	**$**	**14,697**	
	CQA/Project Management Costs (Use 5% of subtotal)	$	735	
	Bonding Worksheet J - Borrow Area Closure	**$**	**15,431**	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet K - Facility Maintenance Costs

Supporting Calculations & Assumptions

Date Prepared:

K-1	Size of facility		175	acres
K-2	Size of waste placement footprint		58.71	acres
K-3	Size of borrow areas on site		5	acres
K-4	Size of leachate ponds on site		0.0	acres
	Refer to Worksheet I, Item 12j			
K-5	Size of sedimentation ponds on site		3.9	acres
K-6	Length of stormwater conveyance ditches		8,500	LF
K-7	Number of years of site management (30 years+ closure period)		31	years
K-8	Annual Cost to repair cap and final cover			
a	Acres (use 1% of K2)		0.5871	acres
b	Unit cost to repair final cover	$	1,582	/acre
	Based on Worksheet B, B13g, assume that only 90% of final cover soil will be reused: (B13g/B2)x10%			
c	Unit cost to repair cap	$	8,202	/acre
	Unit cost from Worksheet B *Unit Cost = (Lines B9b + Line B9c) * 43,560 sf/acre* *Assume that 90% of geosynthetics will be reused.*			
d	Unit cost to repair vegetation	$	1,239	/acre
	Unit Cost from Worksheet B Line B12			
e	Total Unit Cost (K8b + K8c + K8d)	$	11,023	/acre
K-9	Annual Cost to repair and maintain E & S facilities			
a	Length of stormwater conveyance ditches (use 3% of K6)		255	ft
b	Sedimentation pond repair volume (use 20% of K5)		0.78	acres
c	Unit cost to repair channels	$	5.17	/LF
	Excavation - RS Means 312316420305, Lancaster PA, 2023 Quarter 1, plus 15% for loading trucks. Total O&P.	$	1.70	
	Hauling - RS Means 312323200014, Lancaster PA, 2023 Quarter 1. Total O&P.	$	3.47	
d	Unit cost to repair ponds	$	3,780	/acre
	Assumes 6-inches of regrading and revegetation cost per worksheet B			
e	Total annual cost (K9a x K9c) + (K9b x K9d)	$	4,266	/year
K-10	Annual Cost to repair and maintain leachate ponds			
a	N/A		0.00	acre
b	N/A	$	-	/acre
K-11	Annual cost to repair and maintain leachate tanks			
a	Number and size of tanks (enter the total tank capacity in gallons) (2 tanks, 1 MG capacity each).		2,000,000	
b	Annual unit cost to maintain tanks	$	0.0005	LS

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet K - Facility Maintenance Costs

Supporting Calculations & Assumptions

Date Prepared:

K-12	Annual cost to repair fences and gates (attach details)	$	3,000.00	LS
	Lump Sum Estimate			
K-13	Annual cost to maintain site roads			
a	Length of site roads		10,500	LF
b	Annual length of site roads to be repaired (2% of K13a)		210	ft
c	Unit cost to repair roads	$	42.43	/LF
	Base Course. RS Means 321123230050, Lancaster PA, Quarter 1 2023. Total O&P. Assumes 1' thick and 22' wide.	$	4.07	/LF
	Asphalt. RS Means 321126130570, Lancaster PA, Quarter 1 2023. Total O&P. Assumes 10" thick and 22' wide.	$	38.36	
K-14	Cost Summary - Facility Maintenance			
a	Cost to repair cap/cover (K7 x K8a x K8e)	$	200,621.53	
b	Cost to repair E & S facilities (K7 x K9e)	$	132,259.82	
c	Cost to maintain leachate ponds (K7 x K10a x K10b)	$	-	
d	Cost to maintain leachate tanks (K7 x K11a x K11b)	$	31,000.00	
e	Cost to repair fences and gates (K7 x K12)	$	93,000.00	
f	Cost to maintain site roads (K7 x K13b x K13c)	$	276,192.78	
	Subtotal	**$**	**733,074.12**	
	1. Please refer to the instructions. This should reflect unit costs to bring in a contractor to complete the work and should include mobilization, equipment cost, operator costs, material costs and clean-up and inspection costs. Costs not incurred annually should be determined and divided among the years between events. The costs should also include replacements of pumps and meters, electricity used (pumps, heat tracing, etc.) valve replacement and sludge disposal.			
	2. This should include access to all maintenance and monitoring areas including but not limited to the disposal area, ponds, leachate conveyance system, tanks, discharge locations, gas extraction, system wells, gas probes, groundwater monitoring system and surface water monitoring points.			
	Adjustment for maintenance, equipment replacement and contingencies, etc. Please note that these are cumulative and you must add all of the percentages that apply to arrive at the final adjustment percentage. The minimum adjustment is 10%.			
a	Add 5% of subtotal if final slopes or benches have been modified from		0%	
	what is specified in 25 PA Code 273.234(f)			
	Are final slopes or benches greater than that specified? Enter 1 for yes and			
	0 for no below.			
	0			
b	Add 5% of subtotal if more than 30% of stormwater channels are		0%	
	unlined			
	Are more than 30% of stormwater channels unlined? Enter 1 for yes and			
	0 for no.			
	0			
c	Add 5% of subtotal if the length of site access roads exceeds 5 miles		0%	
	Is the length of site access roads greater than 5 miles? Enter 1 for yes and			
	0 for no.			
	0			
d	Add 10% for mowing		0%	
	Final Adjustment Factor		15%	
e	Adjustment (subtotal x adjustment factor)	$	109,961.12	
	Bonding Worksheet K - Facility Maintenance Costs	**$**	**843,035.24**	

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet L - Summary Cost Worksheet
Supporting Calculations & Assumptions

Date Prepared:

Cost Summary - Landfills			
L-1	Decontaminating the facility	$	12,170
L-2	Capping/Closure	$	8,207,601
L-3	Groundwater Monitoring System	$	1,345,587
L-4	Surface Water Monitoring	$	82,246
L-5	Private Water Supply Monitoring	$	545,910
L-6	Gas Monitoring	$	31,160
L-7	Gas Collection and Maintenance	$	1,482,605
L-8	Other Monitoring	$	241,449
L-9	Leachate Management	$	502,534
L-10	Borrow Area Closure	$	15,431
L-11	Facility Maintenance Costs	$	843,035
L-12	Other Costs		
L-13	Other Costs		
	Subtotal	**$**	**13,309,728**
Inflation			
L-14	Inflation rate (projected inflation for the next three years based on the inflation for the prior three years).		5.00%
L-15	Inflation cost for facility (subtotal x L14)	$	665,486
Contingency and administrative fees			
L-16	Administrative fees (5%) (subtotal x 0.05)	$	665,486
L-17	Project Management (5%) (subtotal x 0.05)	$	665,486
L-18	Contingency fee amount (subtotal x rate of contingency fee from Table ´ *Contingency fee percentage from Table 1*	$	998,230
	Bonding Worksheet L - Summary Cost Worksheet	**$**	**16,304,417**

BONDING CALCULATIONS

LCSWMA: FFLF-2022 AOR

Bonding Worksheet L - Summary Cost Worksheet
Supporting Calculations & Assumptions

Date Prepared:

Table 1

Bond	Contingency Fee
Cost < $5 million	12.50%
$5 million < Cost < $10 million	10.00%
$10 million < Cost < $20 million	7.50%
Cost > $20 million	5.00%

Attachment 4

CERTIFICATES OF INSURANCE

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
03/07/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

Holder Identifier :

PRODUCER	CONTACT NAME:	
Aon Risk Services Central, Inc. Chicago IL Office 200 East Randolph Chicago IL 60601 USA	PHONE (A/C. No. Ext): (866) 283-7122	FAX (A/C. No.): (800) 363-0105
	E-MAIL ADDRESS:	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Lancaster County Solid Waste Management Authority 1299 Harrisburg Ave. Lancaster PA 176032515 USA	INSURER A: Zurich American Ins Co	16535
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** 570104239833 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:			GL0437324516	04/01/2024	04/01/2025	EACH OCCURRENCE	$2,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$500,000
							MED EXP (Any one person)	$10,000
							PERSONAL & ADV INJURY	$2,000,000
							GENERAL AGGREGATE	$4,000,000
							PRODUCTS - COMP/OP AGG	$4,000,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			BAP 4373246-16	04/01/2024	04/01/2025	COMBINED SINGLE LIMIT (Ea accident)	$2,000,000
							BODILY INJURY (Per person)	
							BODILY INJURY (Per accident)	
							PROPERTY DAMAGE (Per accident)	
	UMBRELLA LIAB OCCUR **EXCESS LIAB** CLAIMS-MADE DED RETENTION						EACH OCCURRENCE	
							AGGREGATE	
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WC437324416	04/01/2024	04/01/2025	X PER STATUTE OTH-ER	
							E.L. EACH ACCIDENT	$1,000,000
							E.L. DISEASE-EA EMPLOYEE	$1,000,000
							E.L. DISEASE-POLICY LIMIT	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Creswell Landfill Permit #100008, Manor Township, Lancaster County, PA, Frey Farm Landfill Permit #101389, Manor Township, Lancaster County, PA, Transfer Station Permit #10009, Manheim Township, Lancaster County, PA, Resource Recovery Facility, Permit #400592, Conoy Township, Lancaster County, PA, Frey Farm Landfill Treatment Plant, Permit #301317, Manor Township, Lancaster County, PA, SRMC City of Harrisburg Permit #100758, SRMC Ash Landfill A City of Harrisburg Permit #100759, SRMC Ash Landfill B City of Harrisburg/Dauphin County Permit #100992. Certificate Holder is included as Additional Insured in accordance with the policy provisions of the general liability policy.

Certificate No : 570104239833

CERTIFICATE HOLDER

PA Dept of Environmental Protection
Bureau of Waste Management
PO Box 8471, 14th Floor
Rachel Carson State Office Building
Harrisburg PA 17105-8471 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Central, Inc.

Attachment 5

TOPOGRAPHIC MAPS AND DRAWINGS

1. ***Topographic Map Update***
   Enclosed are Drawings titled: "2022 Topographic Survey" and "2023 Topographic Survey", which displays the topography of the landfill at the beginning and end of calendar year 2022 and 2023.

2. ***Isopach Drawing***
   Enclosed is Drawing titled: "Isopach", which indicates the cut or fill to reach final permitted elevation of the landfill on a 50' grid.

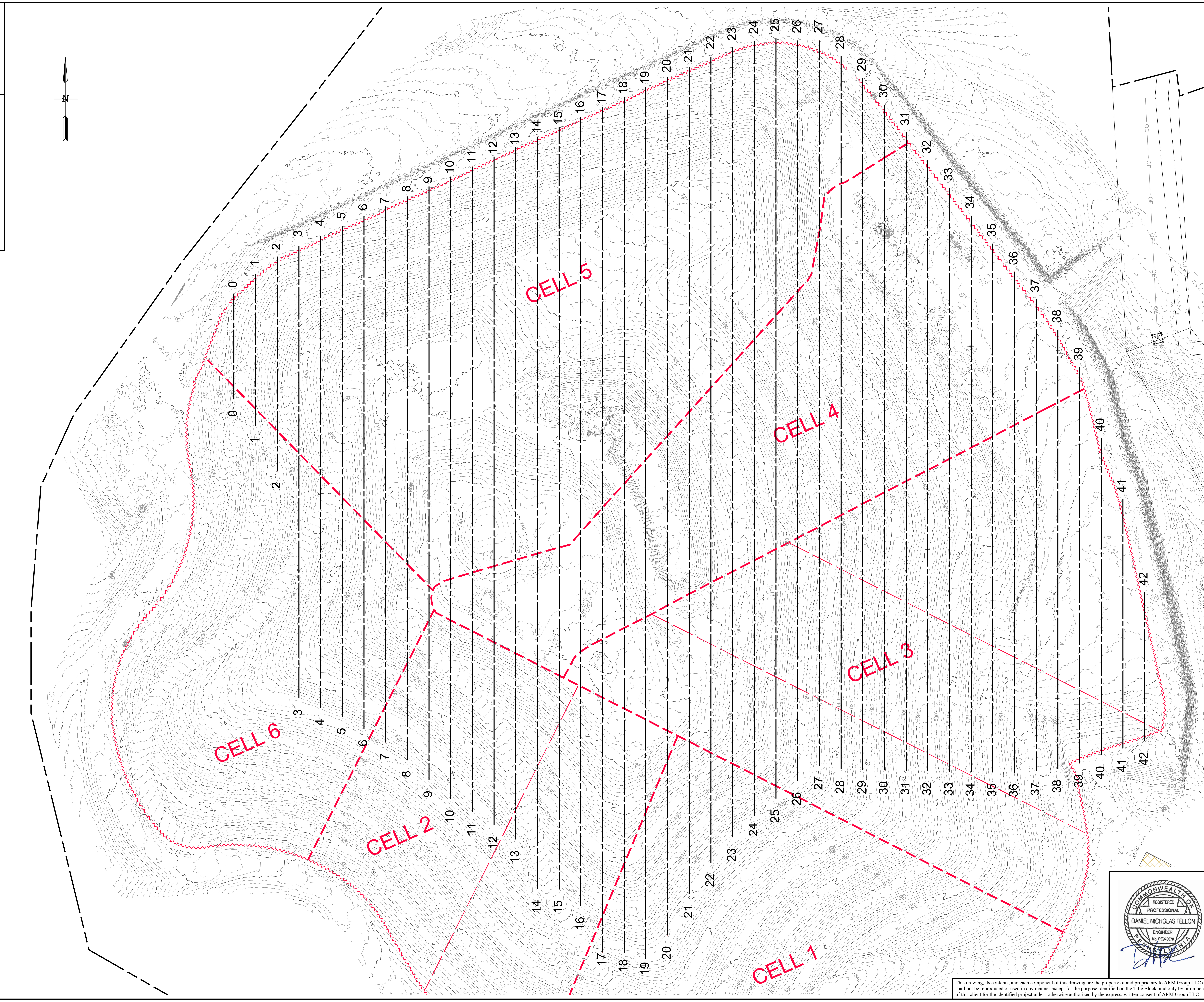
3. ***Cross Sections***
   Enclosed is Drawing titled: "Cross Sections" (four sheets), which show top of protective cover, grades at the beginning and end of the report period, and permitted final cover grades at 50 foot intervals across areas of the landfill that were active during calendar year 2023.

NOTES:

1. EXISTING TOPOGRAPHY HAS BEEN CREATED FROM A DRONE AERIAL SURVEY PROVIDED BY DAVID MILLER/ASSOCIATES, INC., FLIGHT DATED: 12/28/2022.
2. THIS SHEET WAS ORIGINALLY PRODUCED AS A COLOR DRAWING. NON-COLOR REPRODUCTIONS DO NOT SUFFICIENTLY DIFFERENTIATE AMONG FEATURES DEPICTED ON THIS DRAWING.

LEGEND

1000	EXISTING GROUND SURFACE ELEVATION CONTOURS (FT.)
	EXISTING PROPERTY BOUNDARY
	EXISTING LANDFILL CELL BOUNDARY
	EXISTING BUILDING / STRUCTURE
OE OE	EXISTING OVERHEAD ELECTRIC
	EXISTING PPL TOWER
	EXISTING PPL EASEMENT
	EXISTING ANCHOR TRENCH
12	LANDFILL CROSS-SECTION



ARM Group LLC
Engineers and Scientists
www.armgroup.net

No.	Revision	Date	By

designed	ARM
checked	DNF
drawn	FDV
scale	1" = 100'
date	06/05/2024
project no.	24011239
graphic scale	0 100 200 300 SCALE IN FEET

drawing title
2022 TOPOGRAPHIC SURVEY
2023 ANNUAL OPERATIONS REPORT

project title
LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
MANOR TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA

Sheet 1

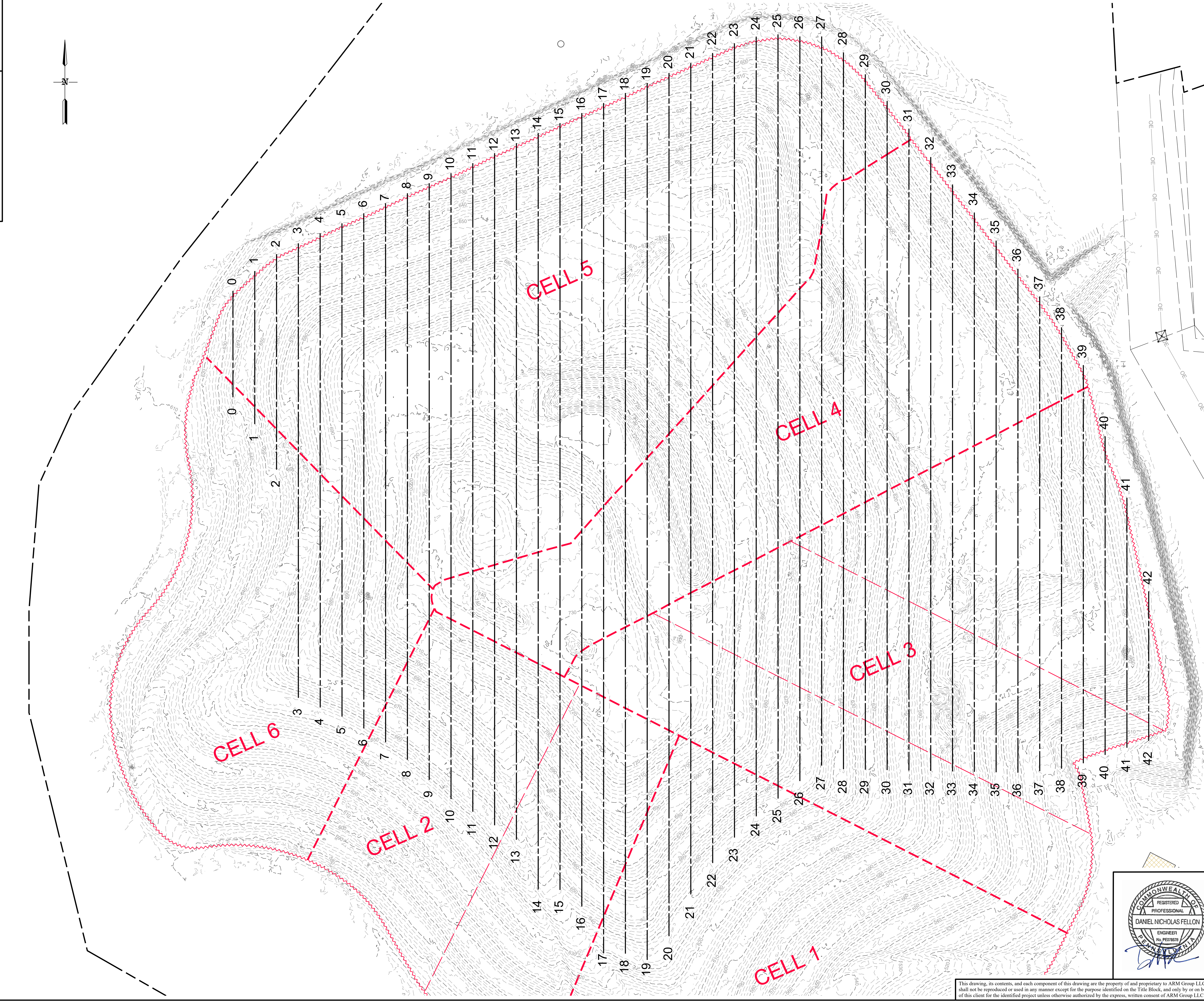
P:\LCSWMA\24011239 FFLF 2023 AOR\Drwg\Production_AOR-Drawing Set\24011239-Sh01_2022 Topographic Survey.dwg Plotted: June 7, 2024

NOTES:

1. EXISTING TOPOGRAPHY HAS BEEN CREATED FROM AN DRONE AERIAL SURVEY PROVIDED BY DAVID MILLER/ASSOCIATES, INC., FLIGHT DATED: 01/03/2024.
2. THIS SHEET WAS ORIGINALLY PRODUCED AS A COLOR DRAWING. NON-COLOR REPRODUCTIONS DO NOT SUFFICIENTLY DIFFERENTIATE AMONG FEATURES DEPICTED ON THIS DRAWING.

LEGEND

Symbol	Description
— — 1000 — —	EXISTING GROUND SURFACE ELEVATION CONTOURS (FT.)
	EXISTING PROPERTY BOUNDARY
	EXISTING LANDFILL CELL BOUNDARY
	EXISTING BUILDING / STRUCTURE
— OE — OE —	EXISTING OVERHEAD ELECTRIC
	EXISTING PPL TOWER
	EXISTING PPL EASEMENT
	EXISTING ANCHOR TRENCH
12	LANDFILL CROSS-SECTION



COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DANIEL NICHOLAS FELLON
ENGINEER
No. PE078678

ARM Group LLC
Engineers and Scientists
www.armgroup.net

No.	Revision	Date	By

drawing title: 2023 TOPOGRAPHIC SURVEY
2023 ANNUAL OPERATIONS REPORT

project title: LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
MANOR TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA

designed	ARM	scale	1" = 100'
checked	DNF	date	06/05/2024
drawn	FDV	project no.	24011239

graphic scale: 0 100 200 300 SCALE IN FEET

Sheet 2

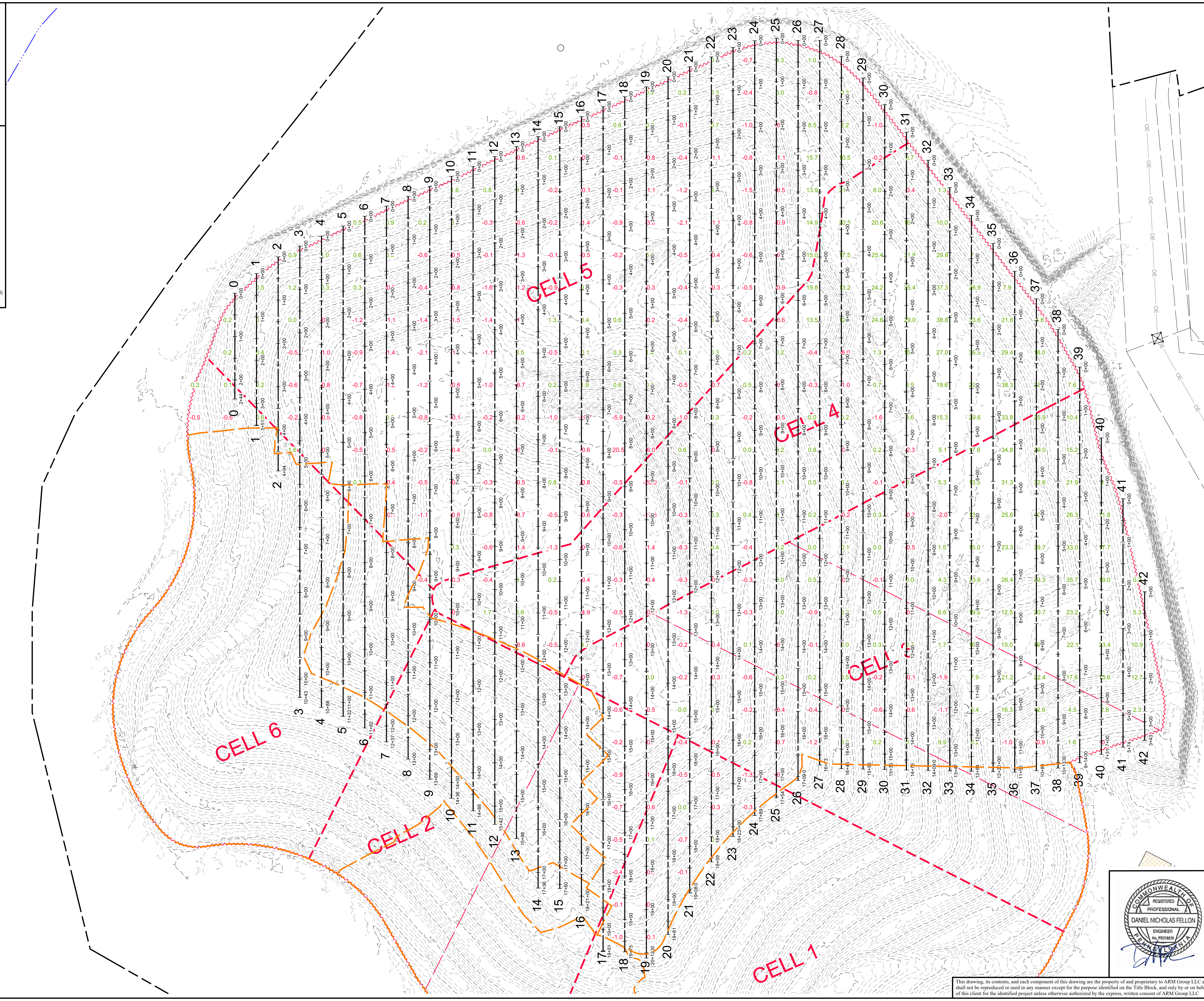
P:\LCSWMA\24011239 FFLF 2023 AOR\Drwg\Production_AOR-Drawing Set\24011239-Sh02_2023 Topographic Survey.dwg Plotted: June 7, 2024

NOTES:

1. EXISTING TOPOGRAPHY HAS BEEN CREATED FROM AN AERIAL SURVEY PROVIDED BY DAVID MILLER/ASSOCIATES, INC., FLIGHT DATED: 01/03/2024.
2. GRID OF TICKS ISOPACH REPRESENTS THE DIFFERENCE IN ELEVATIONS BETWEEN THE BASE CONDITION: 12/28/2022 DRONE AERIAL SURVEY PROVIDED BY: DAVID MILLER/ASSOCIATES, INC. AND THE COMPARATIVE CONDITION: 01/03/2024 DRONE AERIAL SURVEY PROVIDED BY DAVID MILLER/ASSOCIATES, INC.
3. THIS SHEET WAS ORIGINALLY PRODUCED AS A COLOR DRAWING. NON-COLOR REPRODUCTIONS DO NOT SUFFICIENTLY DIFFERENTIATE AMONG FEATURES DEPICTED ON THIS DRAWING.

LEGEND

Symbol	Description
1000	EXISTING GROUND SURFACE ELEVATION CONTOURS (FT.)
	EXISTING PROPERTY BOUNDARY
	EXISTING LANDFILL CELL BOUNDARY
	EXISTING BUILDING / STRUCTURE
OE	EXISTING OVERHEAD ELECTRIC
	EXISTING PPL TOWER
	EXISTING PPL EASEMENT
	EXISTING ANCHOR TRENCH
12	LANDFILL CROSS-SECTION
	EXISTING CAPPED AREAS
15.3	DEPTH OF FEET OF FILL BETWEEN THE PREVIOUS EXISTING GROUND SURVEY (BASE CONDITION) AND THE CURRENT EXISTING GROUND SURVEY (COMPARATIVE CONDITION) (SEE NOTE 2)



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designed	ARM	scale	1" = 100'
checked	DNF	date	06/05/2024
drawn	FDV	project no.	24011239

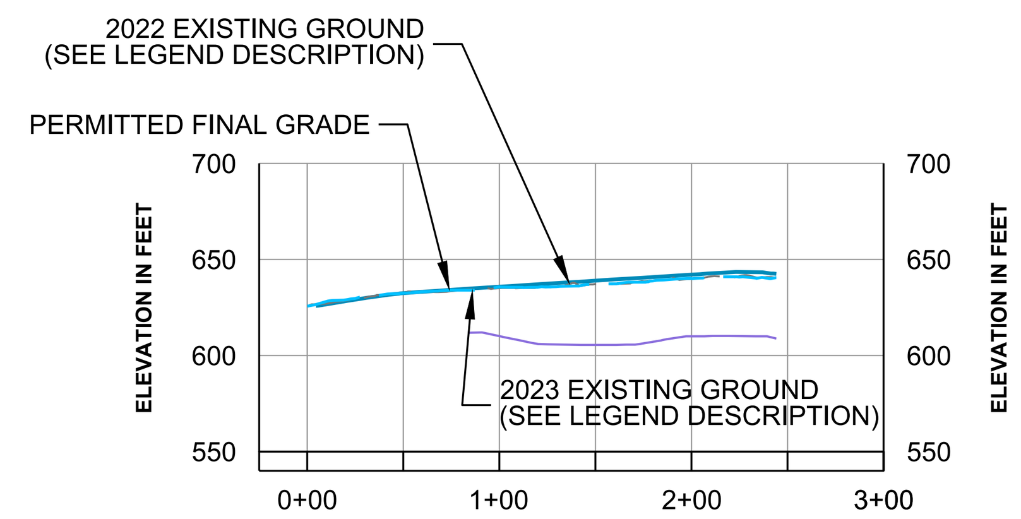
graphic scale: 0 100 200 300 SCALE IN FEET

drawing title: ISOPACH
2023 ANNUAL OPERATIONS REPORT

project title: LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
MANOR TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA

Sheet 3

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DANIEL NICHOLAS FELLON ENGINEER No. PE078578



Cross Section 0
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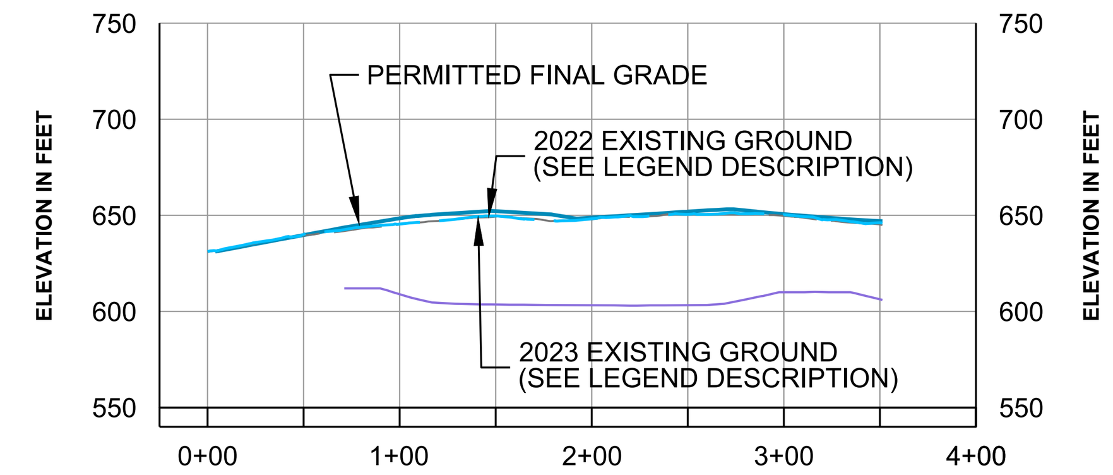
VERTICAL SCALE: 1"=100'



Cross Section 1
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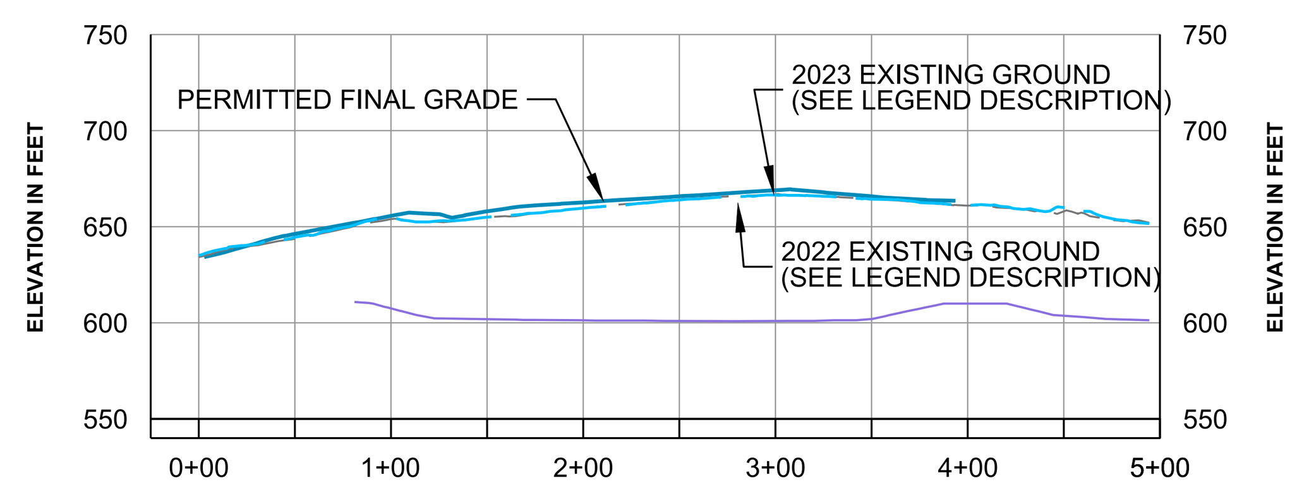
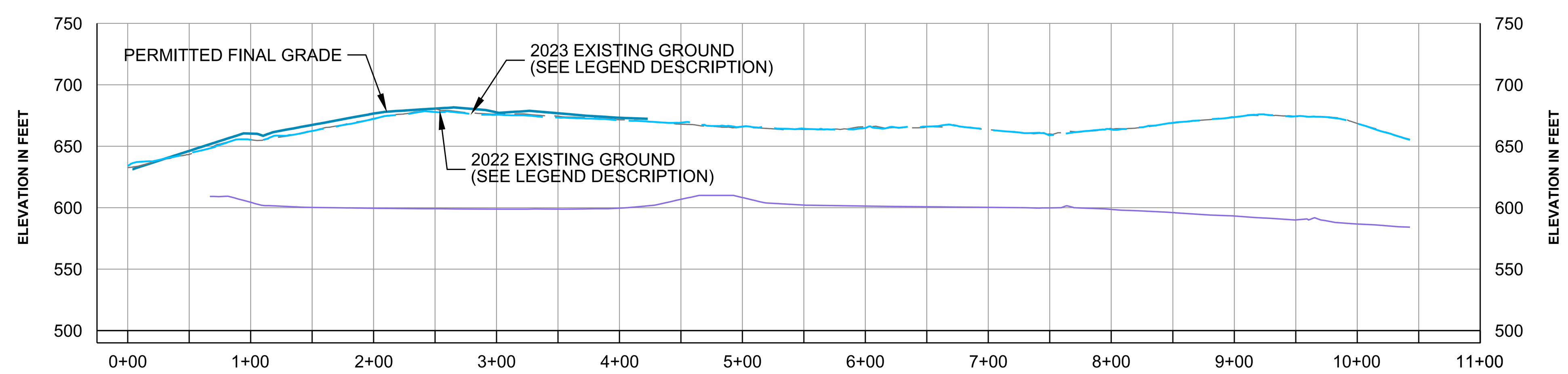
VERTICAL SCALE: 1"=100'



Cross Section 2
HORIZONTAL SCALE: 1"=100'
VERTICAL SCALE: 1"=100'

LEGEND

- 2022 AERIAL SURVEY GRADE FLIGHT DATED: 12/28/2022
- 2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024
- PERMITTED FINAL GRADE
- EXISTING LINED SUBGRADE



Cross Section 3
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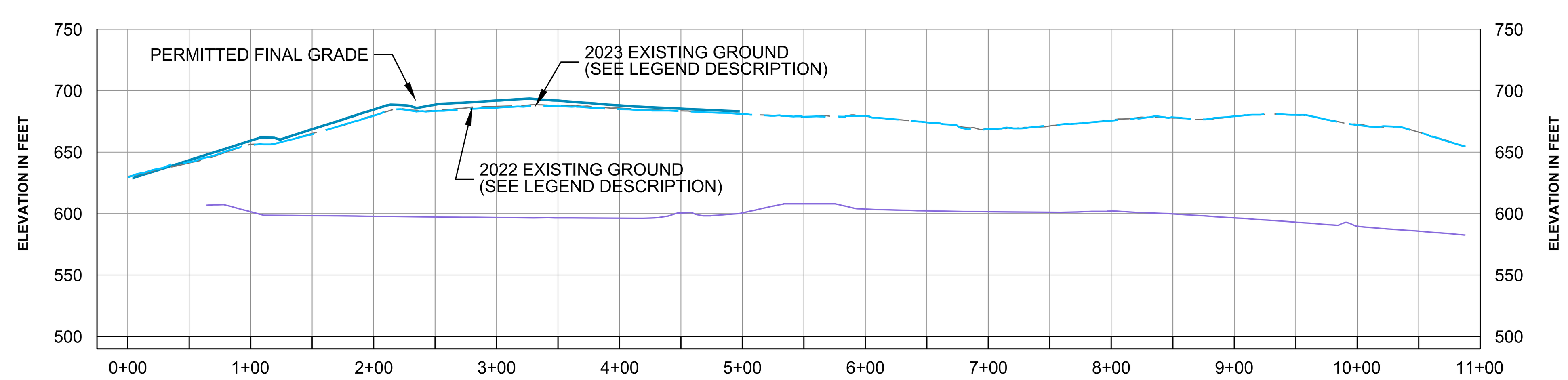
VERTICAL SCALE: 1"=100'



Cross Section 4
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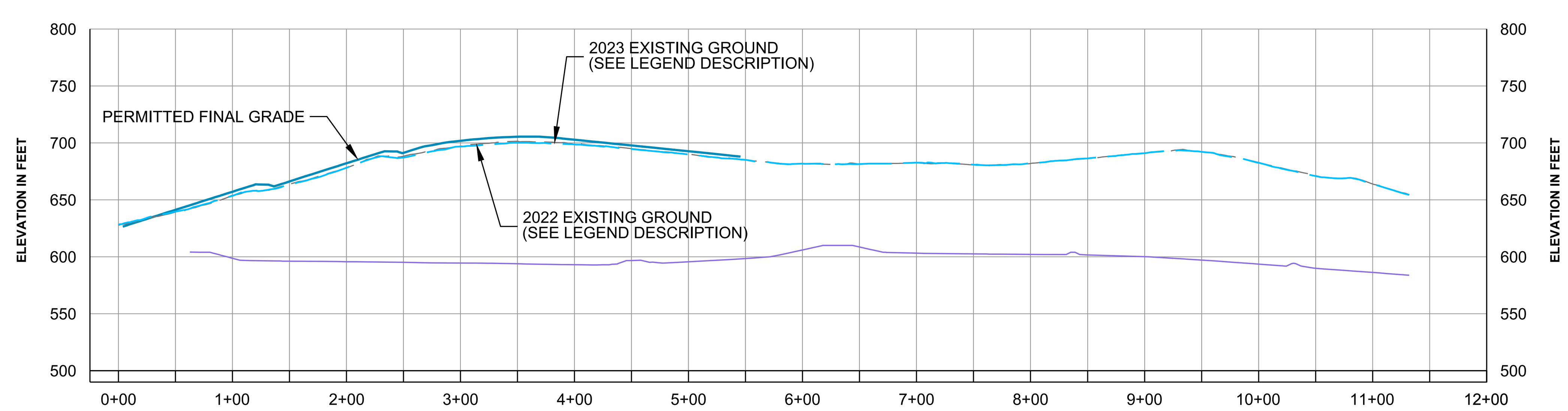
VERTICAL SCALE: 1"=100'



Cross Section 5
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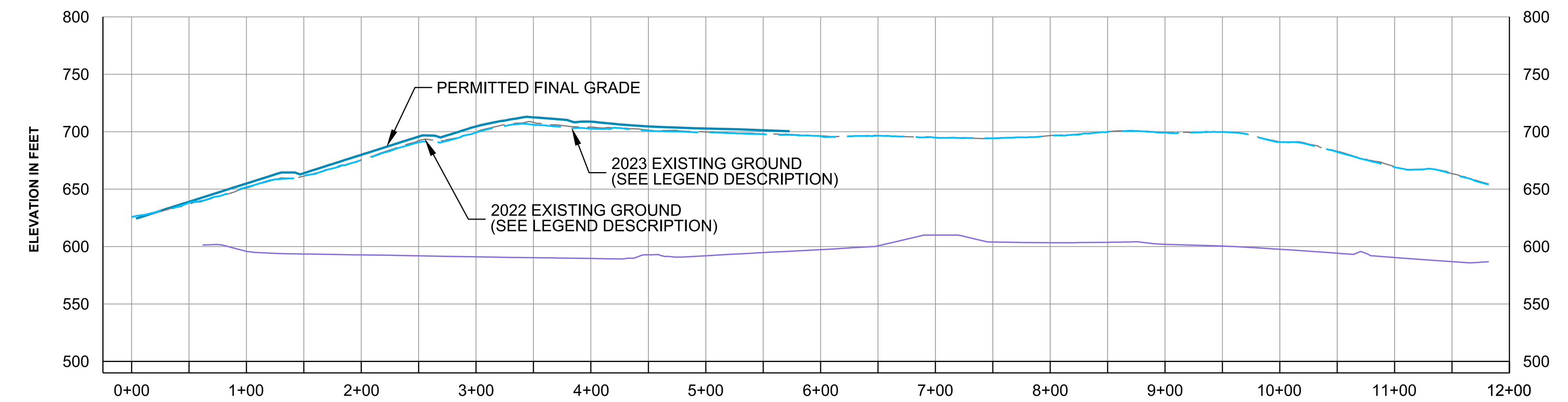
VERTICAL SCALE: 1"=100'



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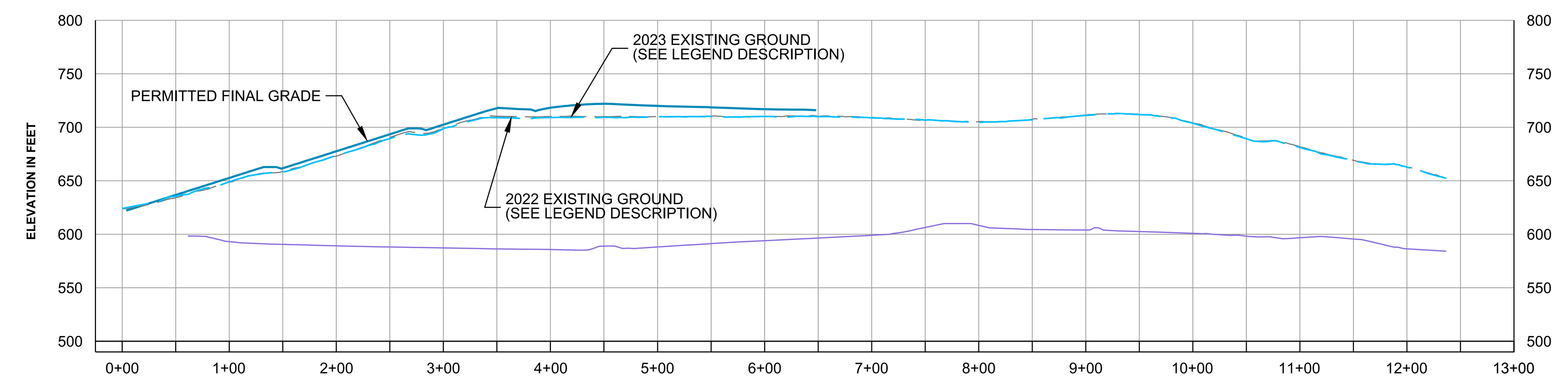

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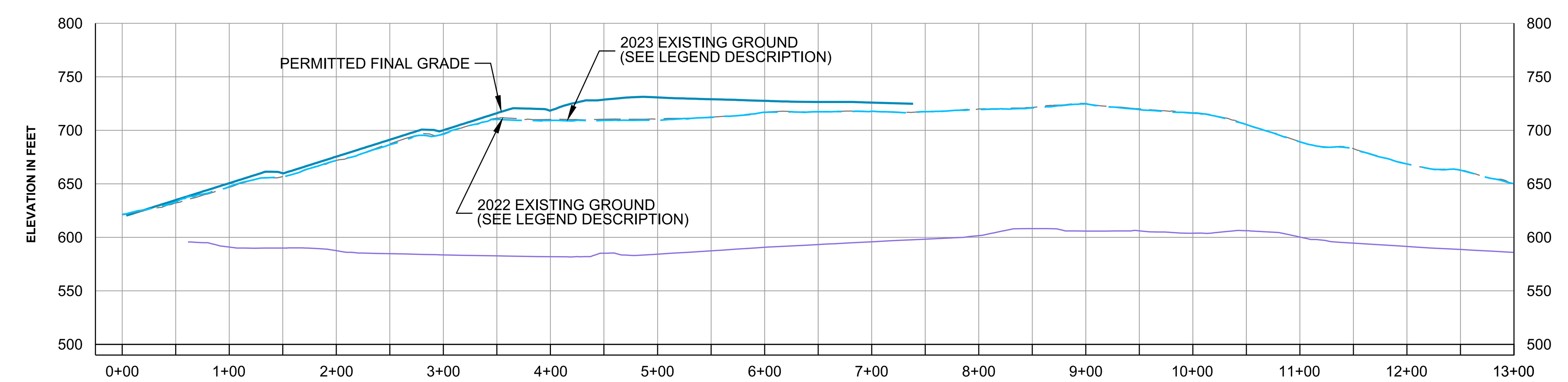

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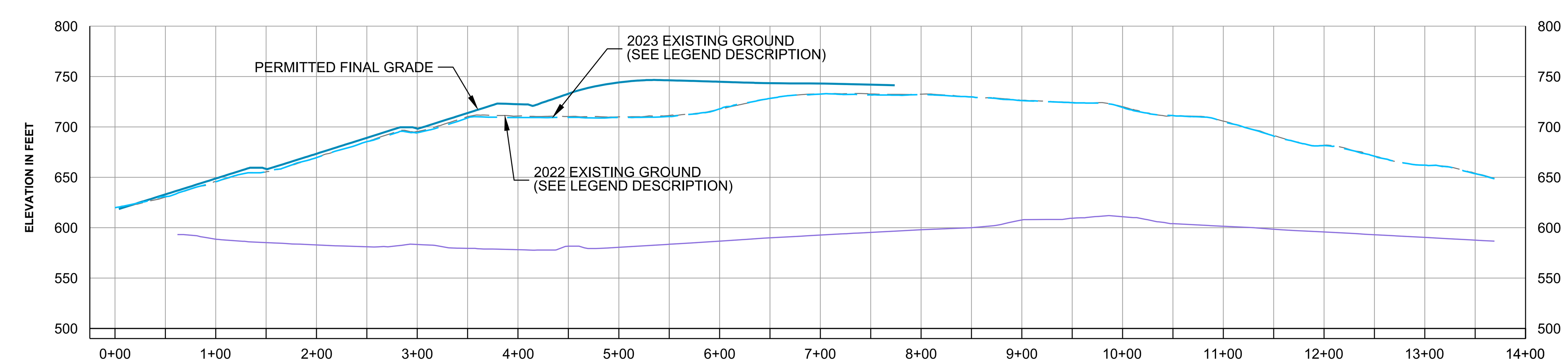

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VERTICAL SCALE: 1"=100'

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REGISTERED PROFESSIONAL
DANIEL NICHOLAS FELLON
ENGINEER

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date	06/05/2024
project no.	24011239
designed	ARM
checked	DNF
drawn	FDV

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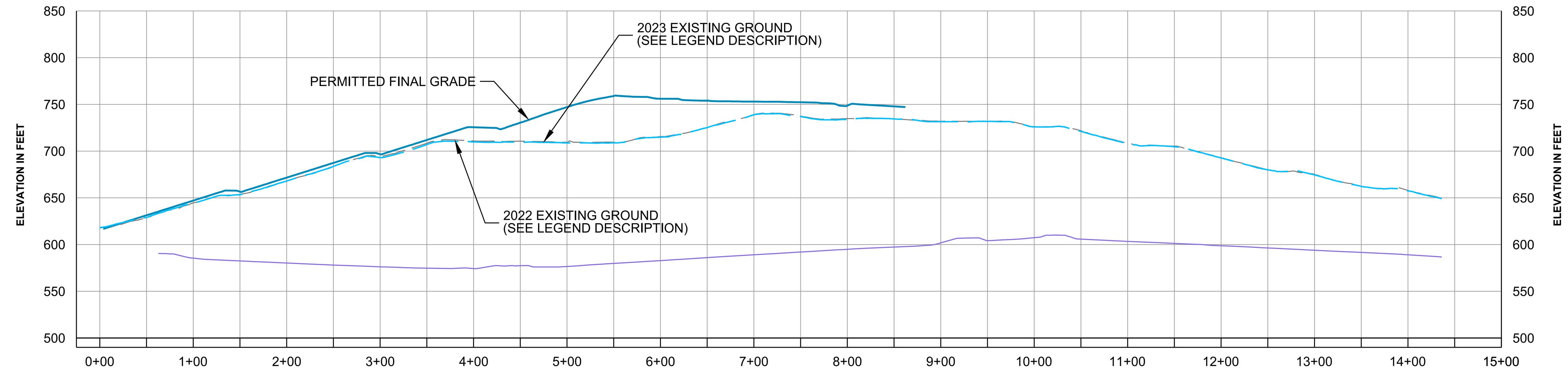
2023 ANNUAL OPERATIONS REPORT

project title: LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
MANOR TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA

Sheet 4



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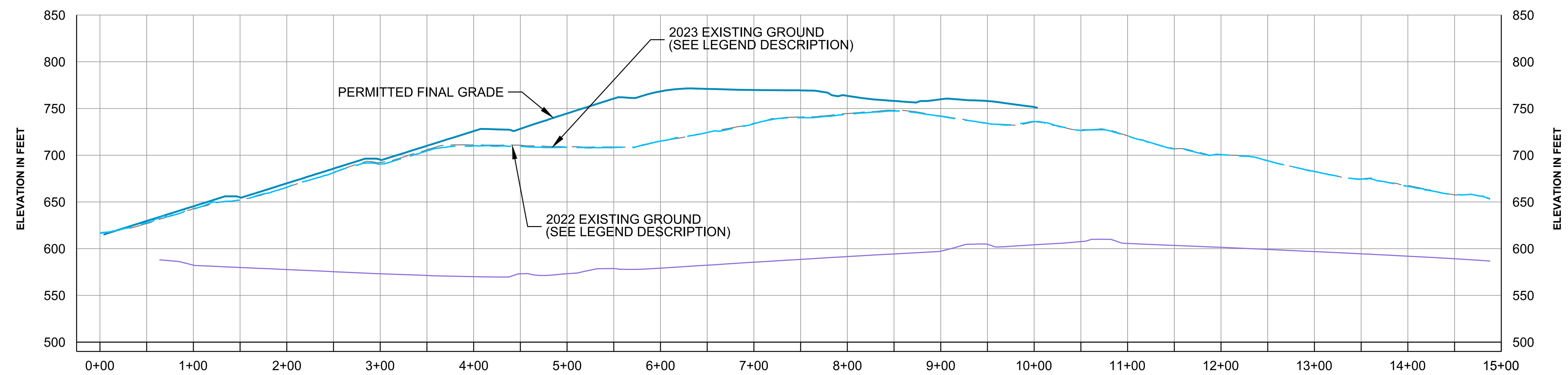

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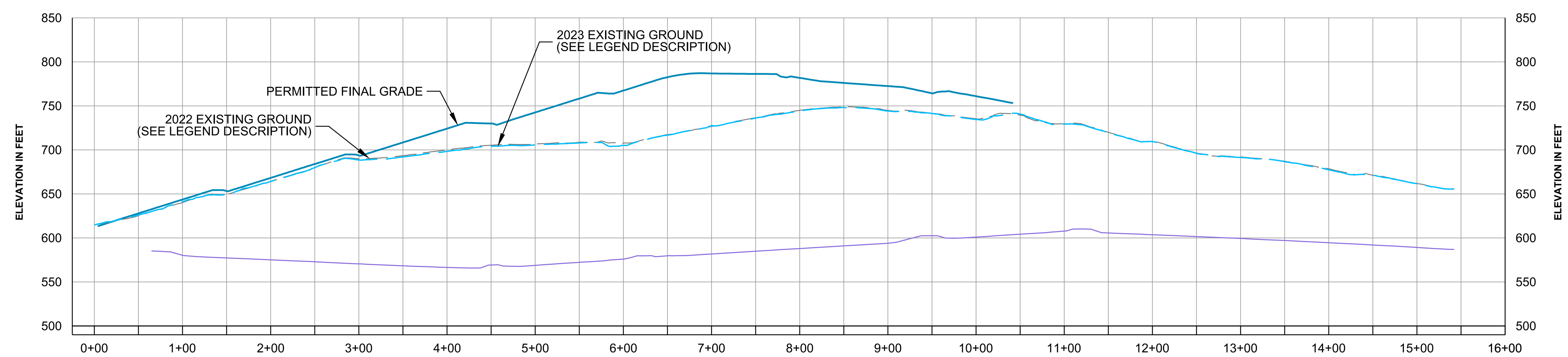

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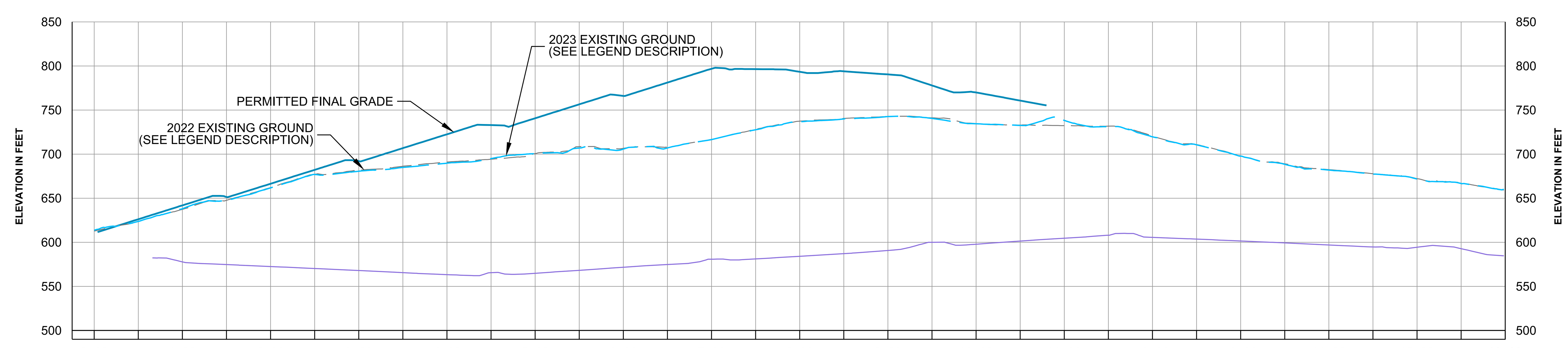

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LEGEND

- 2022 AERIAL SURVEY GRADE FLIGHT DATED: 12/28/2022
- 2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024
- PERMITTED FINAL GRADE
- EXISTING LINED SUBGRADE

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2023 ANNUAL OPERATIONS REPORT

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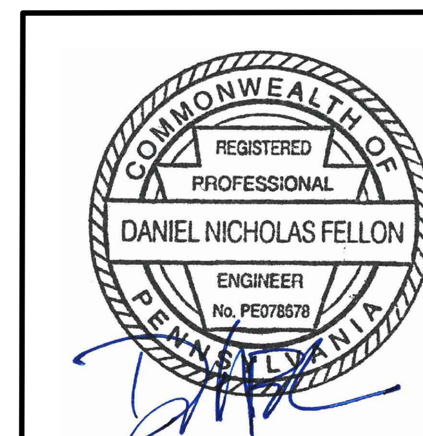

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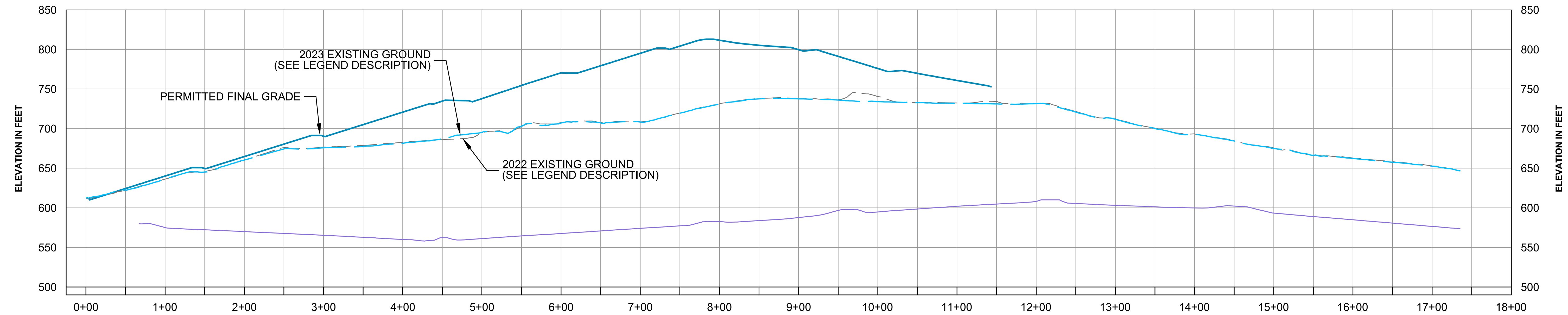

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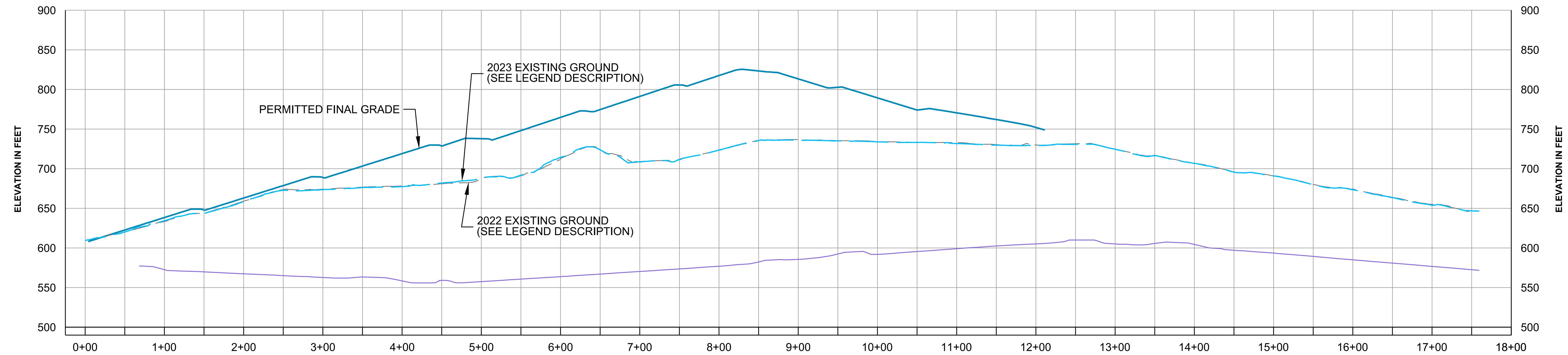

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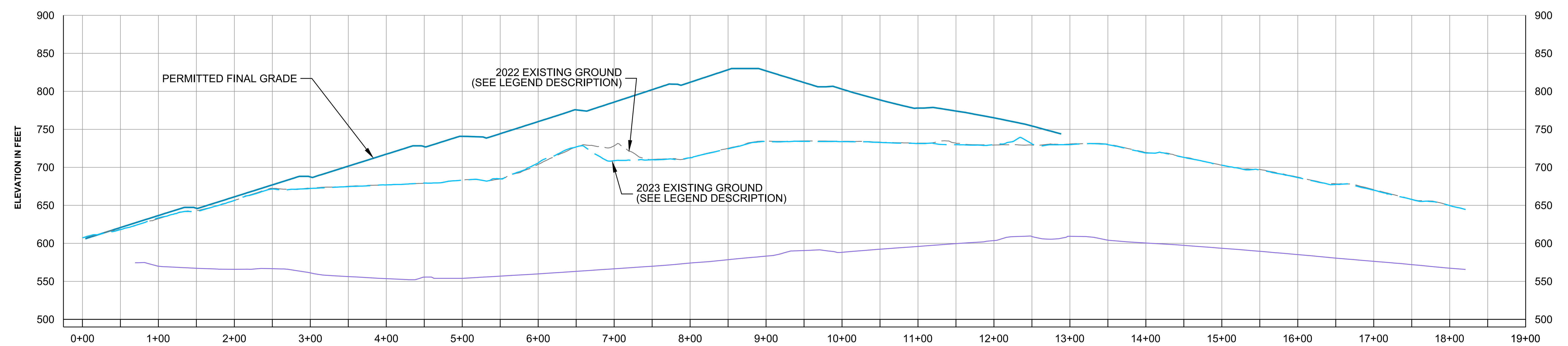

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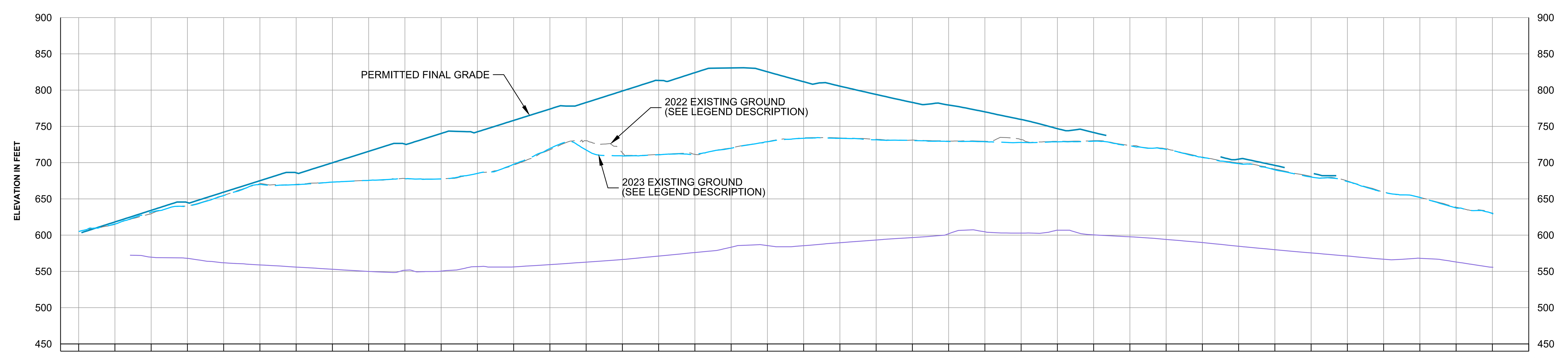

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LEGEND

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2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024
PERMITTED FINAL GRADE
EXISTING LINED SUBGRADE

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drawn FDV
graphic scale

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CROSS SECTIONS (SHEET 3 OF 9)
2023 ANNUAL OPERATIONS REPORT

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LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
MANOR TOWNSHIP
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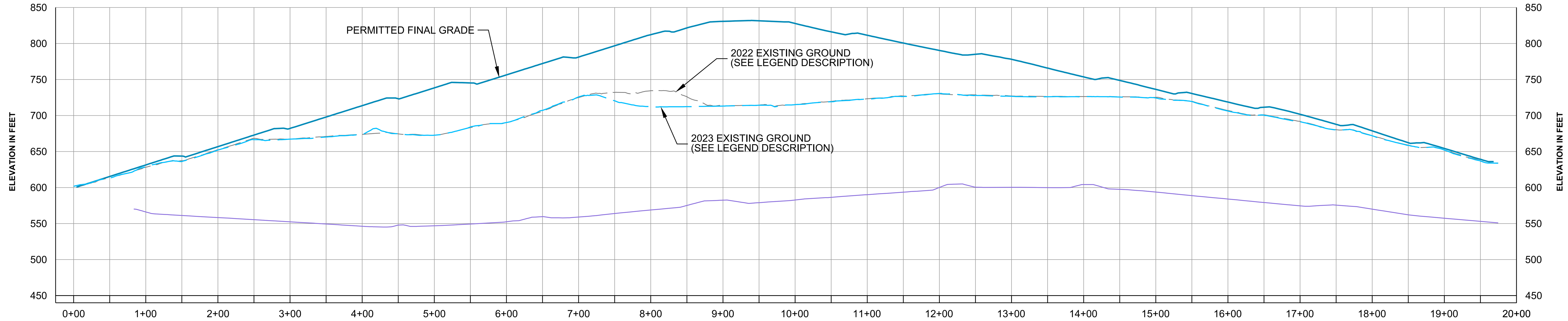
REGISTERED PROFESSIONAL
DANIEL NICHOLAS FELLON
ENGINEER
No. PE078578

Sheet 6



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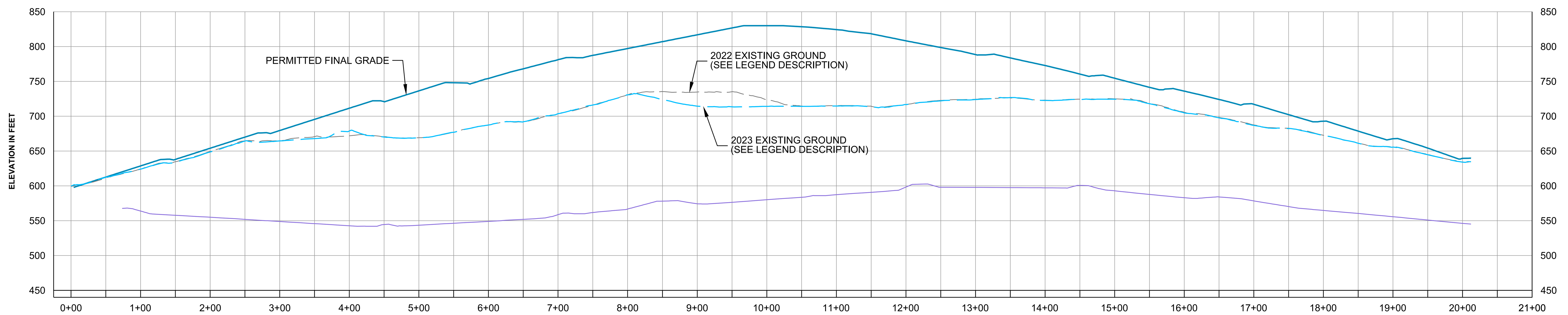

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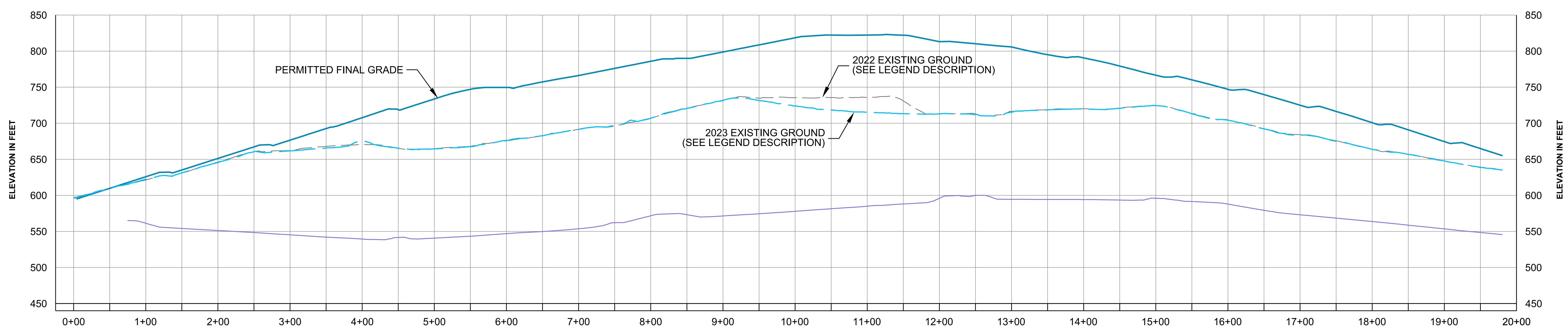

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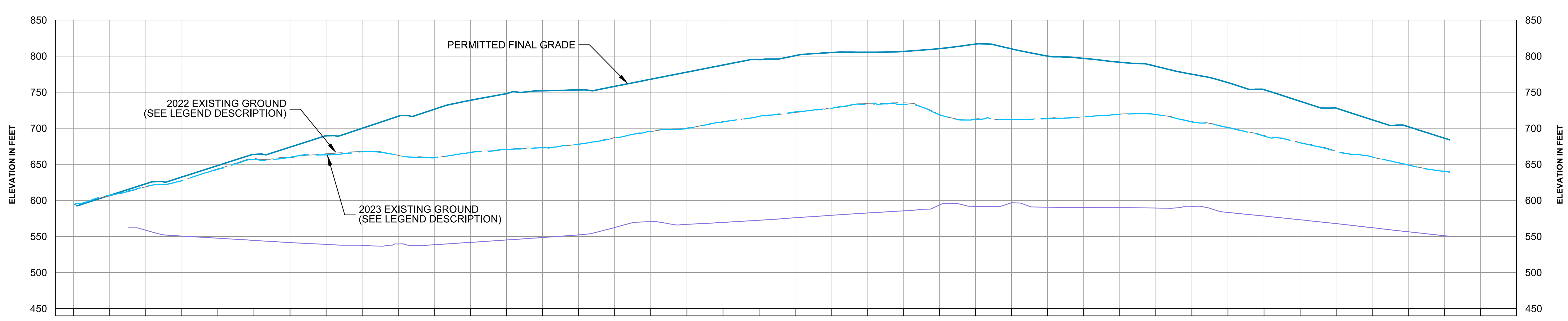

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LEGEND

2022 AERIAL SURVEY GRADE FLIGHT DATED: 12/28/2022

2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024

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EXISTING LINED SUBGRADE

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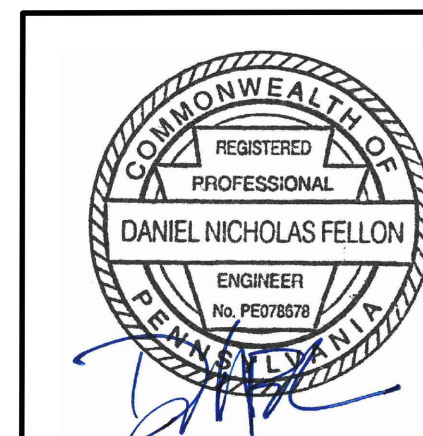
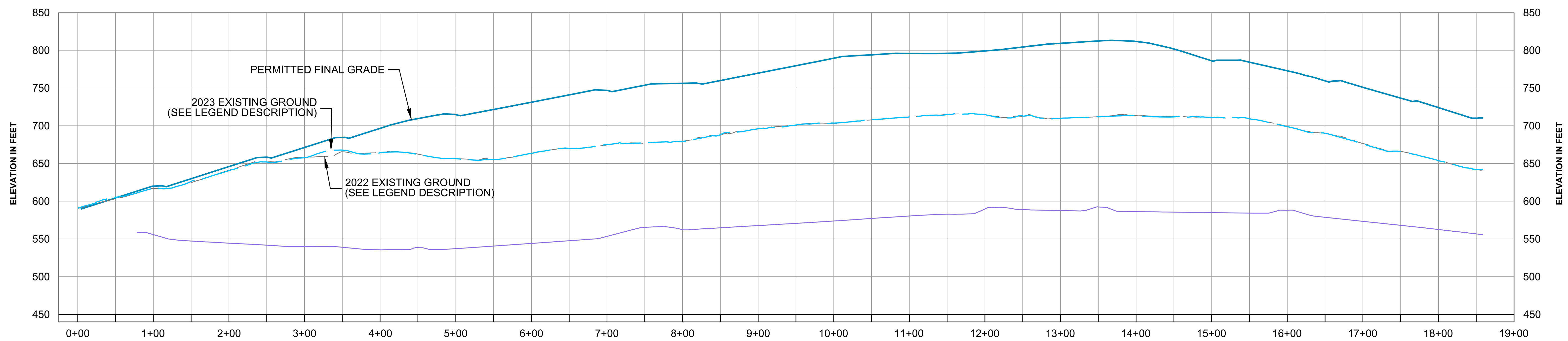
CROSS SECTIONS (SHEET 4 OF 9)
2023 ANNUAL OPERATIONS REPORT

LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
MANOR TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA

Sheet 7





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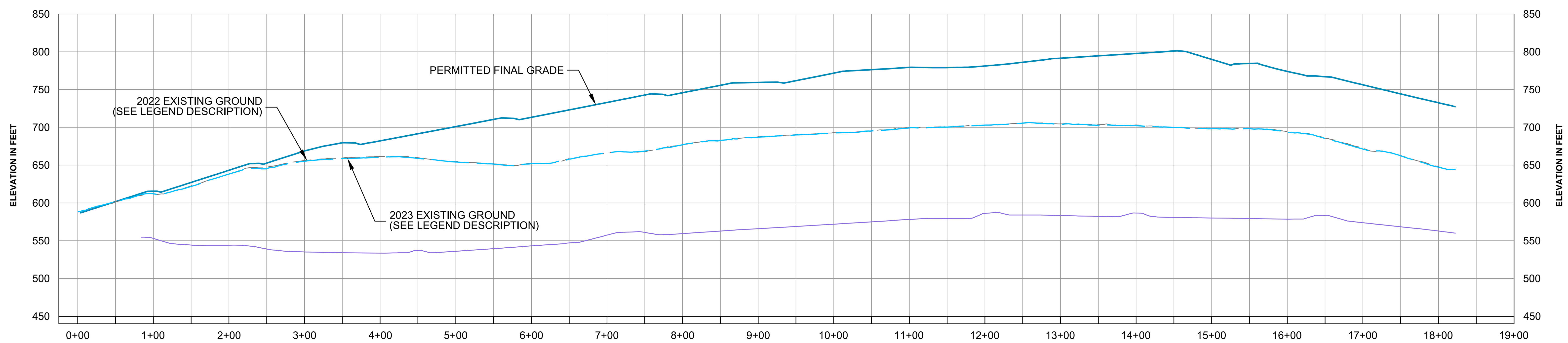

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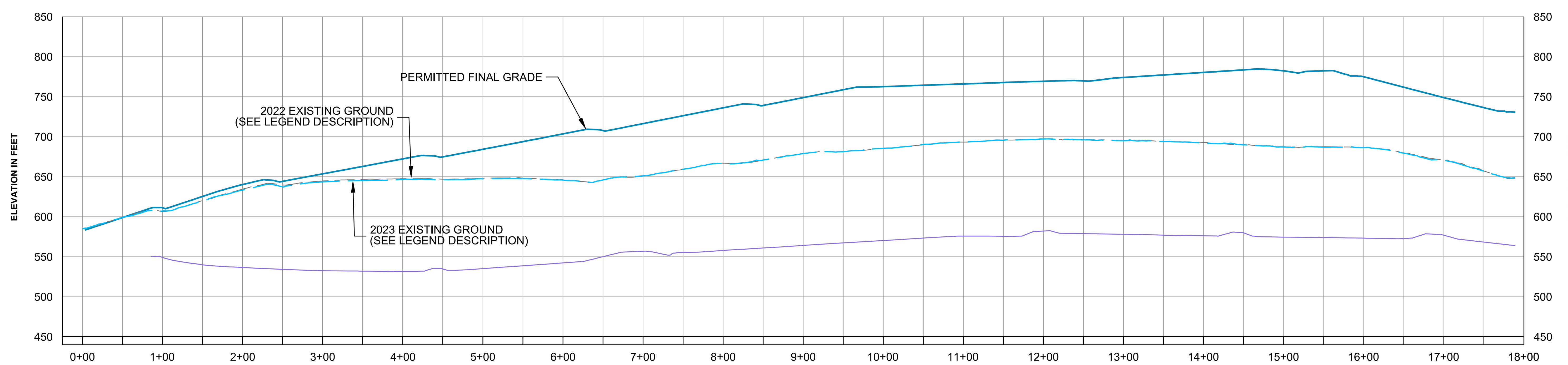

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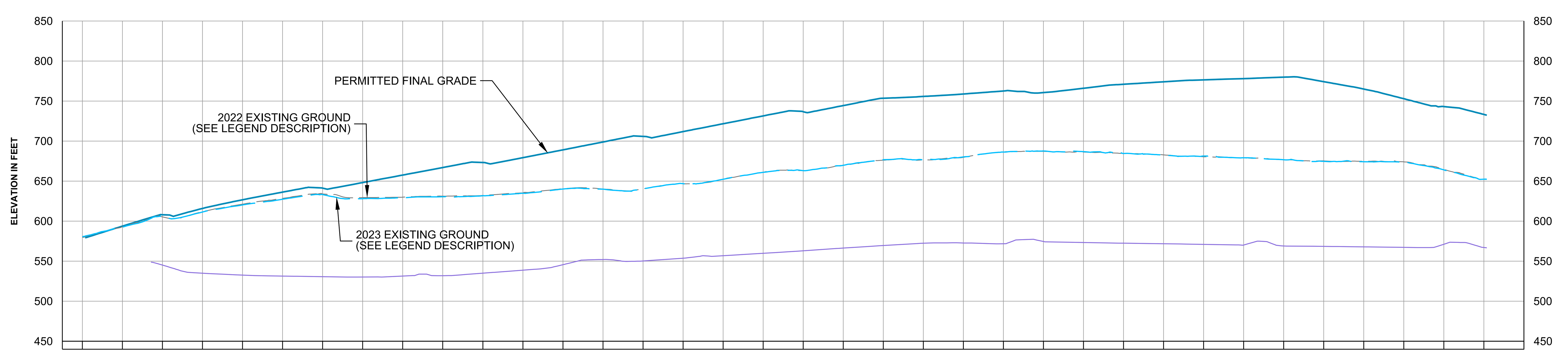

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LEGEND

- 2022 AERIAL SURVEY GRADE FLIGHT DATED: 12/28/2022
- 2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024
- PERMITTED FINAL GRADE
- EXISTING LINED SUBGRADE

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CROSS SECTIONS (SHEET 5 OF 9)
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LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
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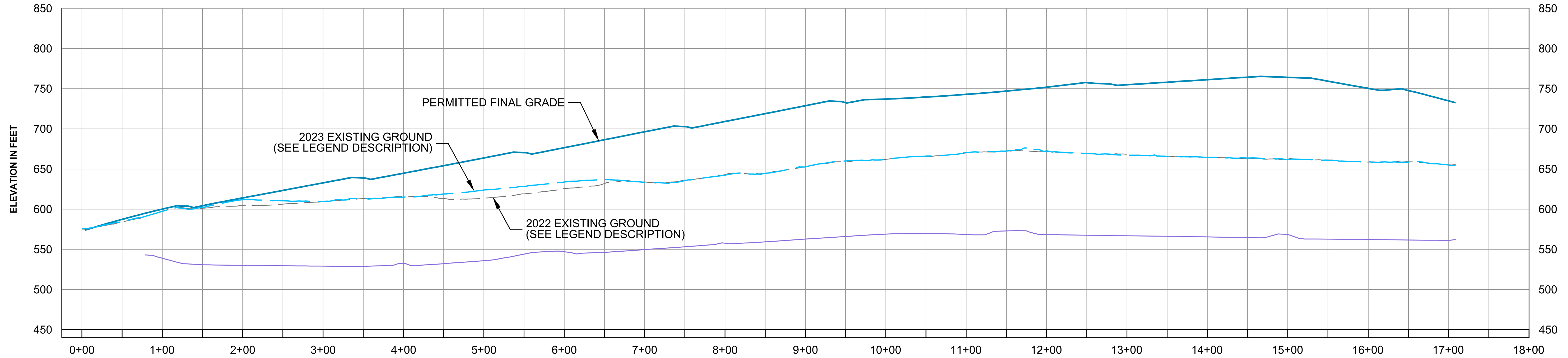
REGISTERED PROFESSIONAL
DANIEL NICHOLAS FELLON
ENGINEER
No. PE078878

Sheet 8



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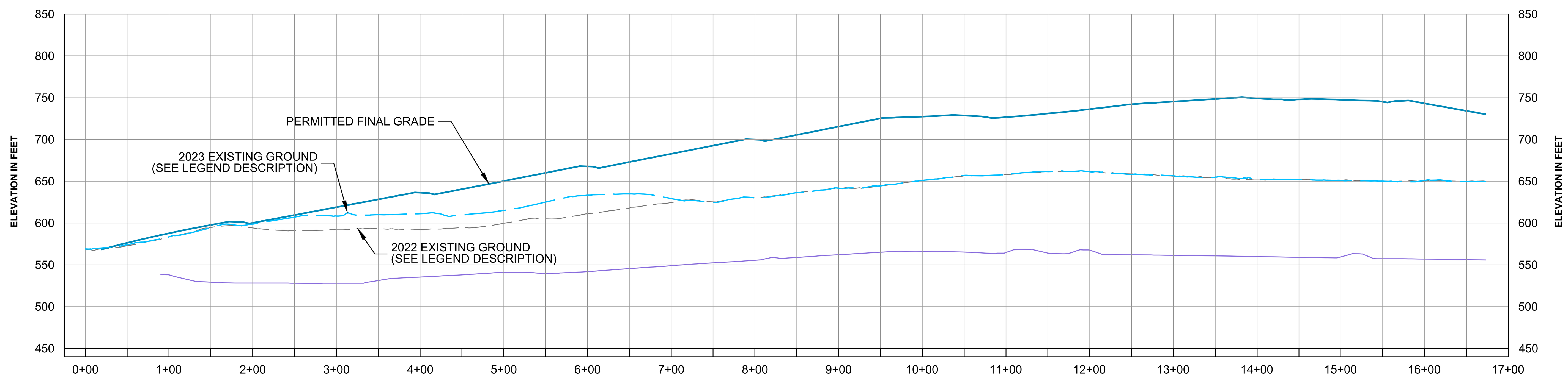

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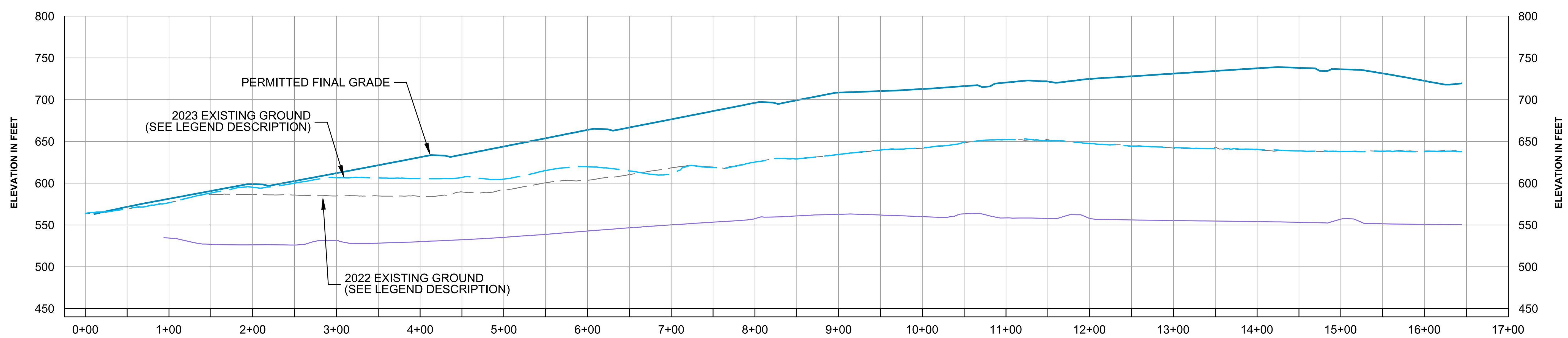

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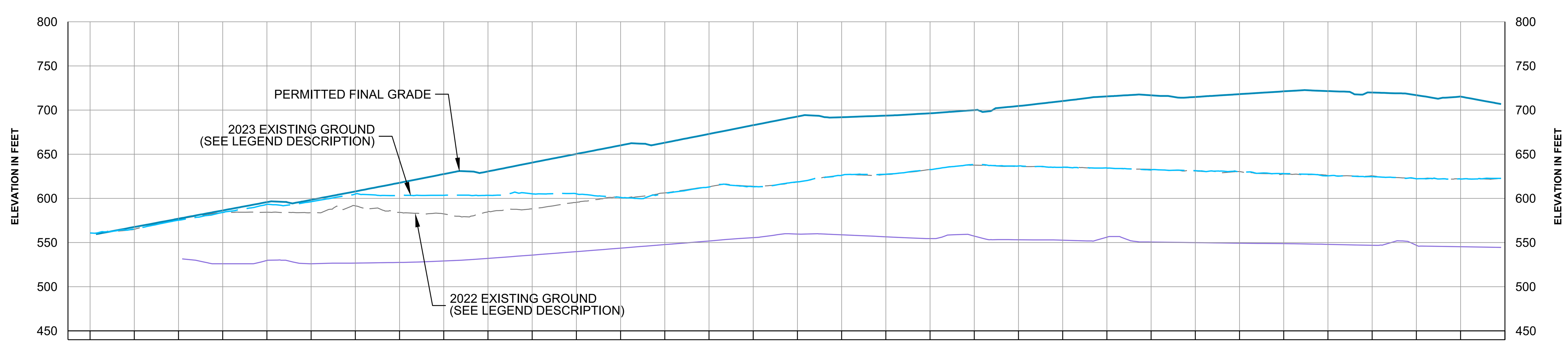

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- 2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024
- PERMITTED FINAL GRADE
- EXISTING LINED SUBGRADE

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ENGINEER
No. PE078678

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drawn	FDV

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2023 ANNUAL OPERATIONS REPORT

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MANOR TOWNSHIP
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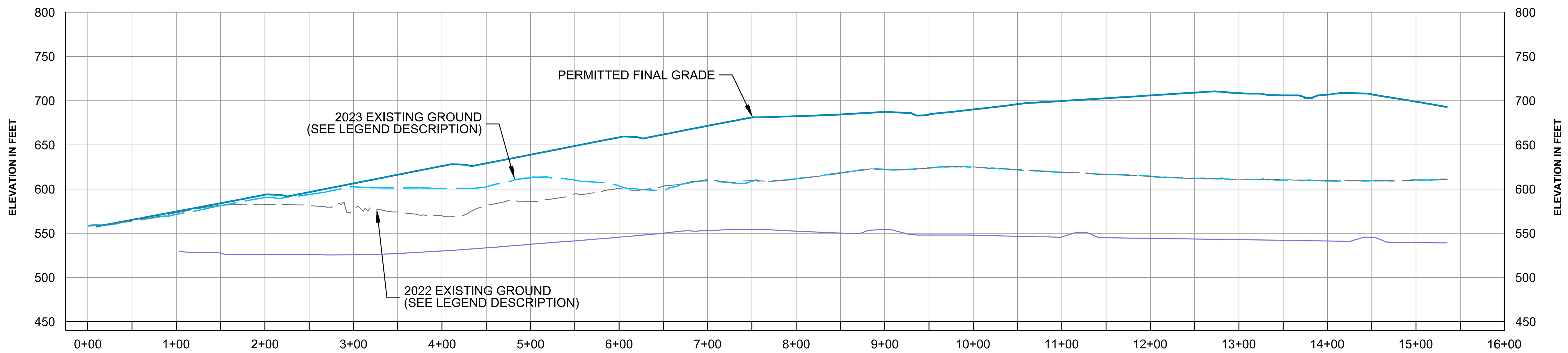
Sheet 9



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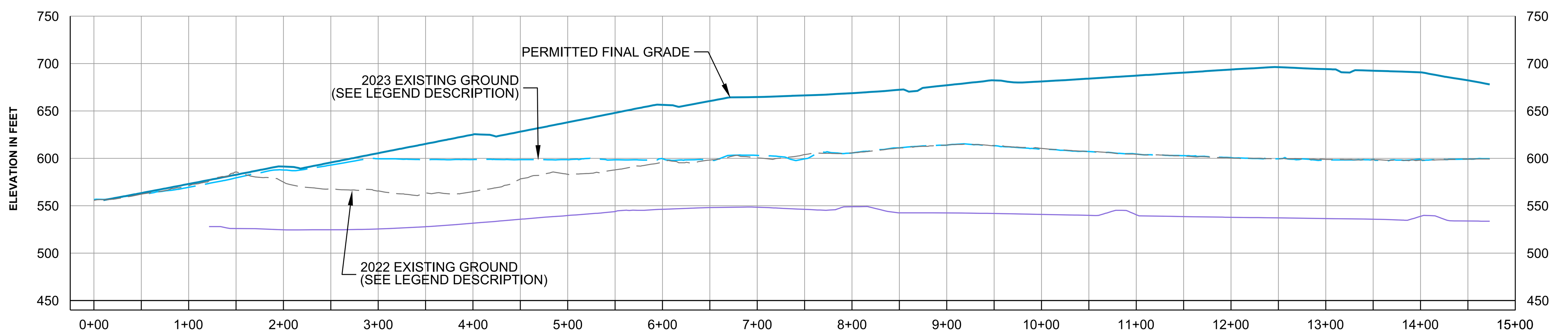

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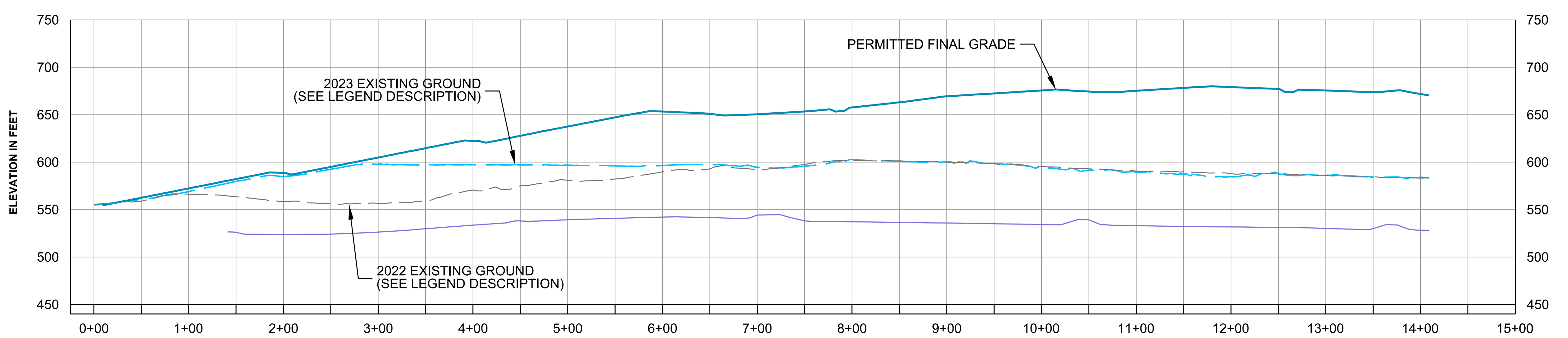

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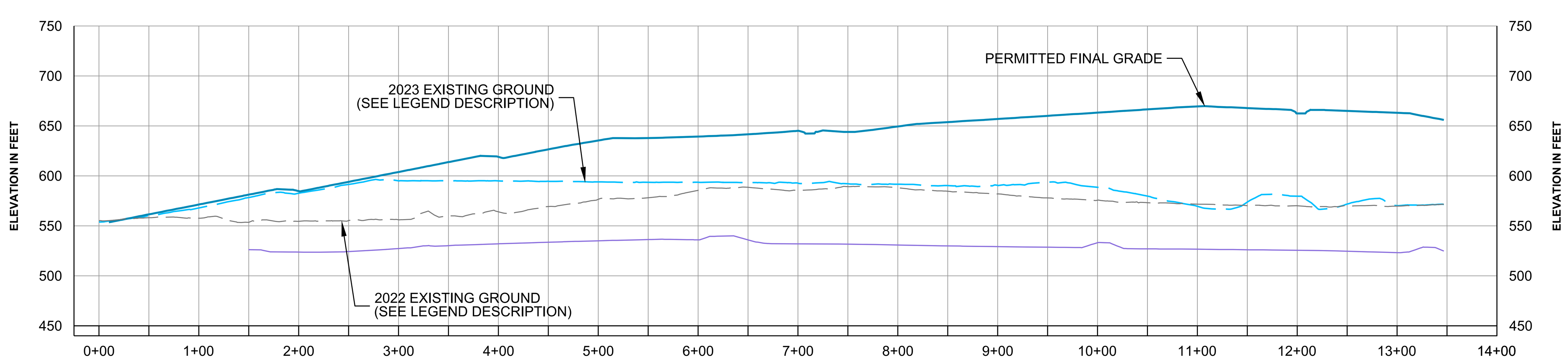

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- 2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024
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- EXISTING LINED SUBGRADE

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drawn: FDV

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MANOR TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA

Sheet 10

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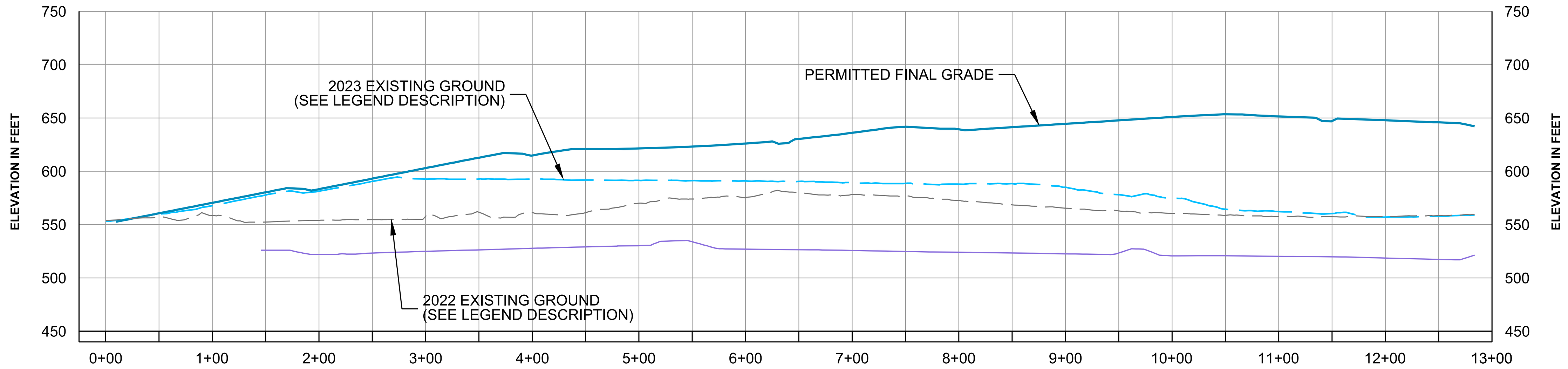

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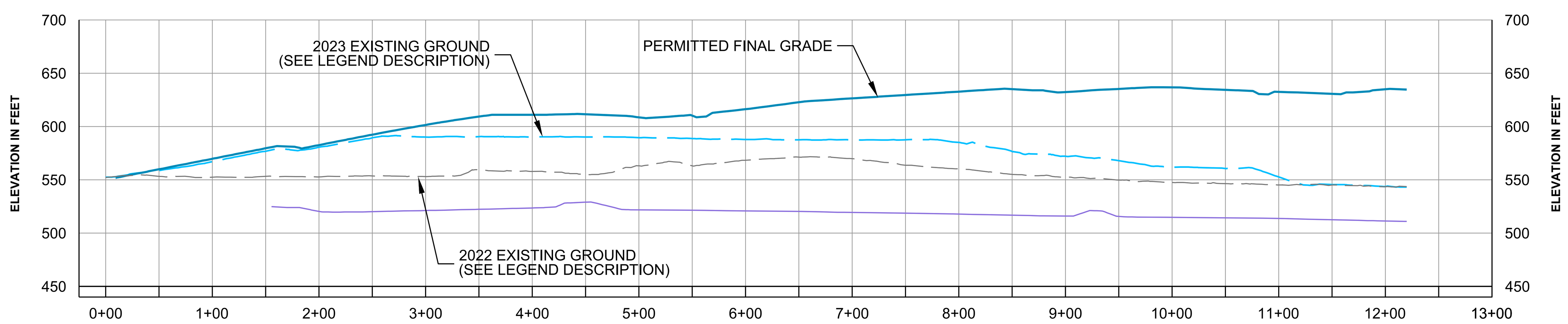

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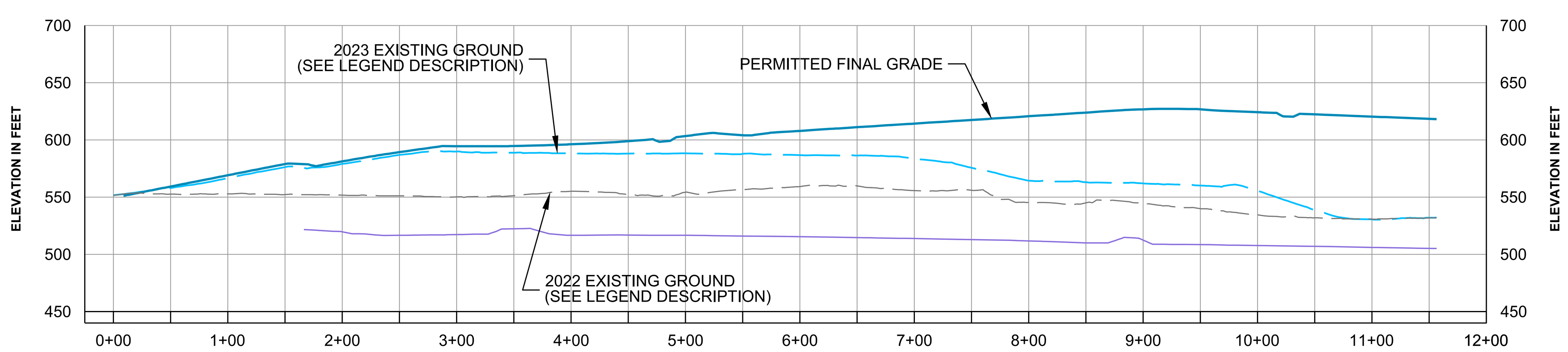

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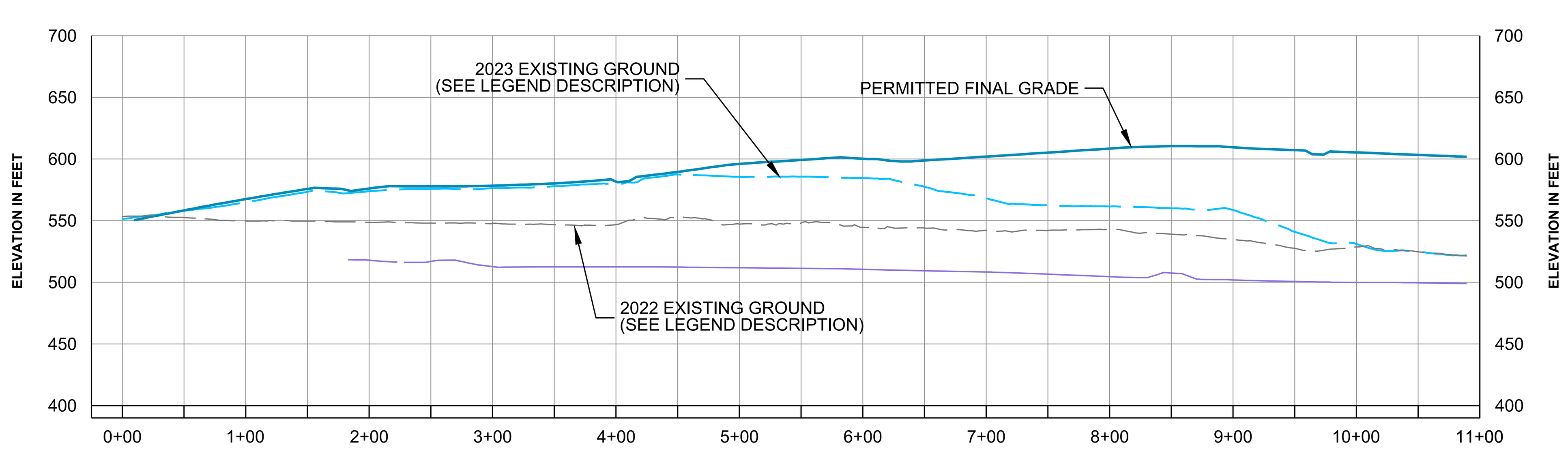

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LEGEND

- 2022 AERIAL SURVEY GRADE FLIGHT DATED: 12/28/2022
- 2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024
- PERMITTED FINAL GRADE
- EXISTING LINED SUBGRADE

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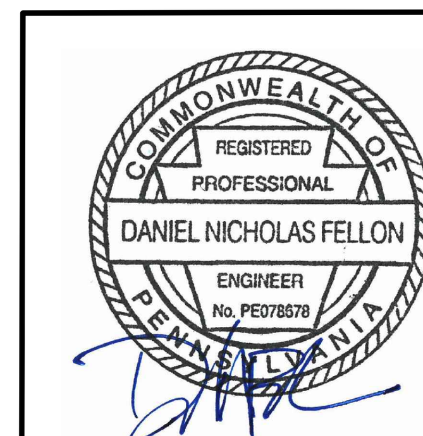

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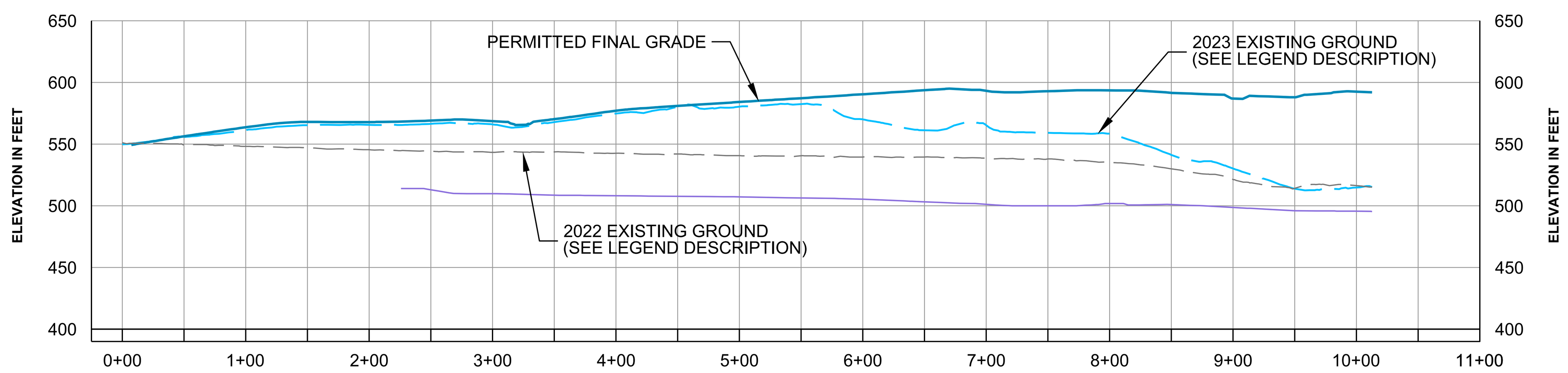

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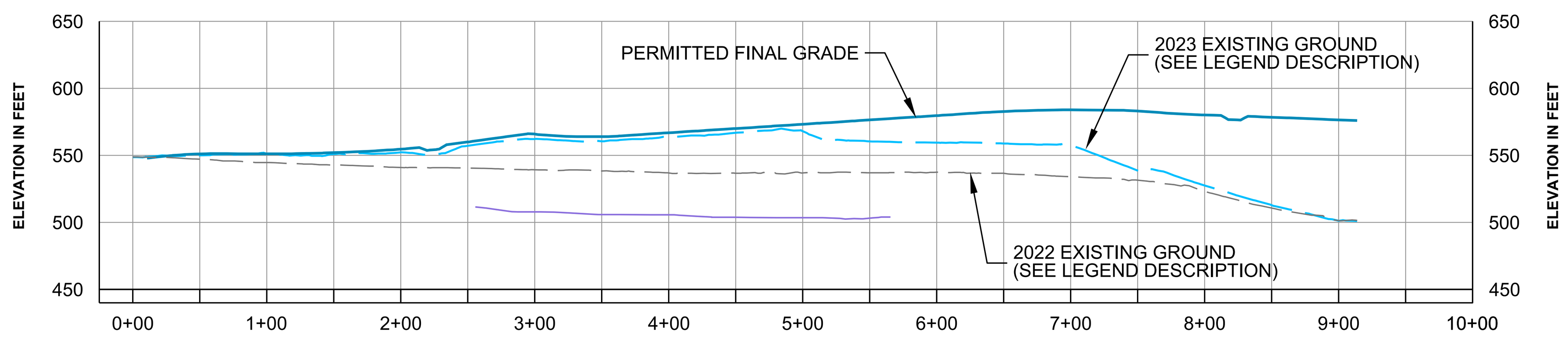

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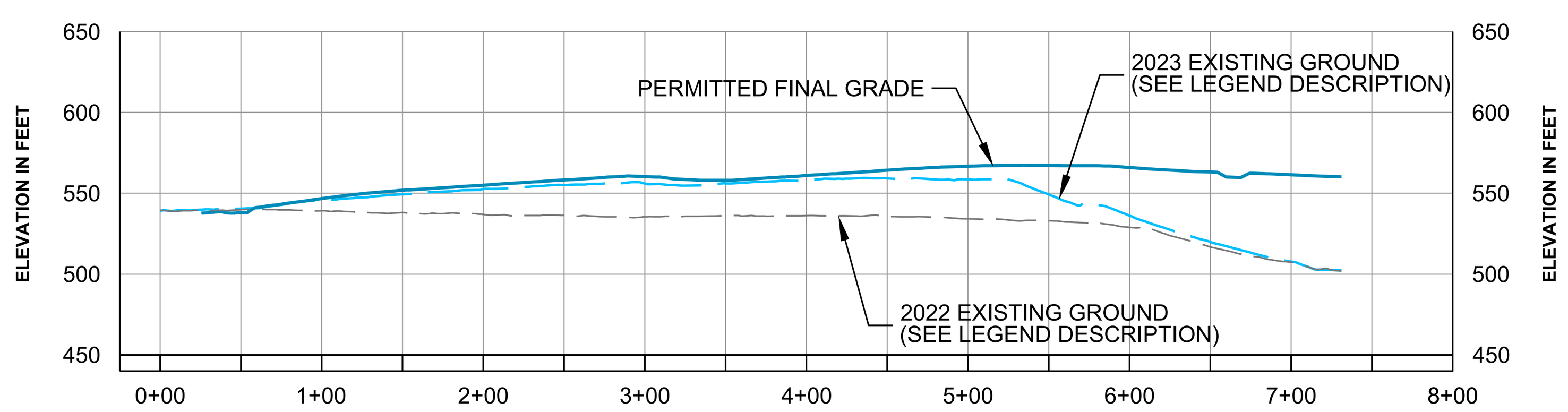

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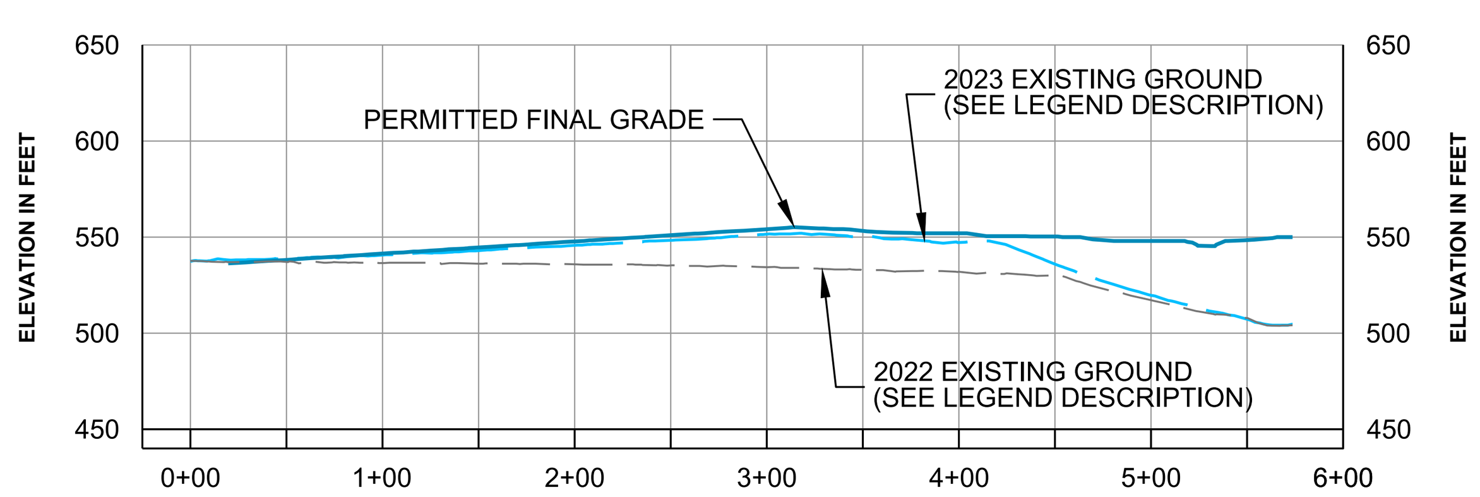

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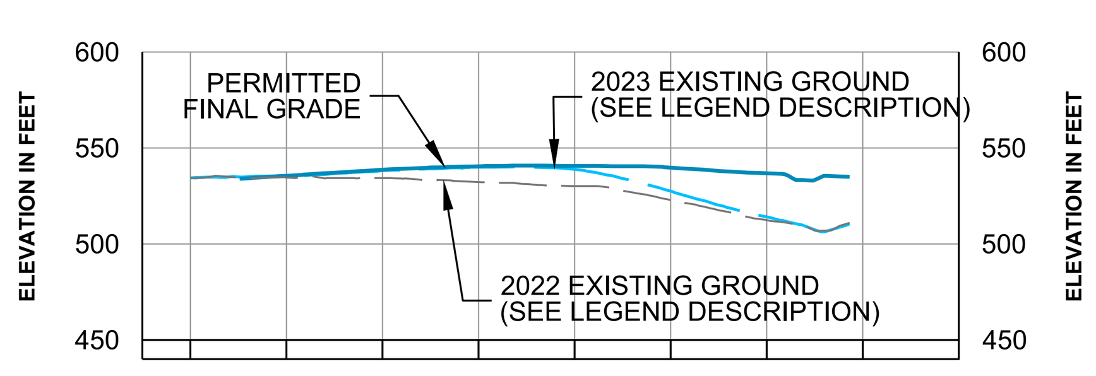

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LEGEND

- 2022 AERIAL SURVEY GRADE FLIGHT DATED: 12/28/2022
- 2023 AERIAL SURVEY GRADE FLIGHT DATED: 01/03/2024
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- EXISTING LINED SUBGRADE

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CROSS SECTIONS (SHEET 9 OF 9)
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LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY
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DANIEL NICHOLAS FELLON
ENGINEER
No. PE078578

Sheet 12

Attachment 6

Annual MSE Berm Inspection Report

2023 ANNUAL MSE BERM REPORT

FREY FARM LANDFILL

Prepared for:

Lancaster County Solid Waste Management Authority
1299 Harrisburg Pike
Lancaster, PA 17603

Prepared By:

ARM Group LLC
1129 West Governor Road
P.O. Box 797
Hershey, PA 17033-0797

May 2024

ARM Project 23011485

Respectfully submitted:

ARM Group LLC

Benjamin S. Allen, P.E.
Director of Engineering

INTRODUCTION

On July 26, 2017 the Pennsylvania Department of Environmental Protection (PADEP) issued an approval of the Lancaster County Solid Waste Management Authority's (LCSWMA's) Major Permit Modification for the Vertical Expansion of the Frey Farm Landfill (i.e., the FFVE). As part of the approved FFVE, a mechanically stabilized earth (MSE) berm is to be constructed around the northern, eastern, and southern perimeter of the existing Frey Farm Landfill (FFLF). Per the PADEP Permit, Permit Condition 5 requires an annual inspection report of the MSE berm to be completed by a Pennsylvania-licensed Professional Engineer and submitted with the Annual Operations Report. This report satisfies Permit Condition 5.

In addition to Permit Condition 5, the FFLF Operation Plan (i.e., Form 14) outlines the inspection and monitoring requirements for the MSE berm. The inspection and monitoring requirements include the following items:

- Annual inspection by a Professional Engineer meeting the minimum experience requirements;
- Completion of the approved MSE Berm Inspection Form;
- Photographic documentation of the annual inspection; and
- Evaluation of survey control point data to determine displacement.

The report included herein satisfies all of the inspection and monitoring requirements outlined within the PADEP Permit and the FFLF Operations Plan.

LCSWMA constructed the FFVE Stage 1 MSE berm in 2017-2018 and FFVE Stage 2 MSE berm in 2022. The FFVE Stage 1 MSE berm consisted of 2,188 linear feet of MSE berm, primarily located along the northern perimeter of the existing FFLF. The FFVE Stage 2 MSE berm consisted of 1,625 linear feet of MSE berm and 200 linear feet access ramp that was part MSE berm on one side, part earthen berm on other side. During the stages of construction, the maximum height of the berm (at the face of the berm) was approximately 73 feet. The information included herein is related to the FFVE Stage 1 & 2 MSE berms.

INSPECTION

On November 7, 2023, Benjamin S. Allen, P.E. of ARM Group LLC (ARM) completed the annual inspection of the FFVE Stage 1 & 2 MSE berms. Mr. Allen is a Professional Engineer licensed in the Commonwealth of Pennsylvania who specializes in geotechnical engineering and the design and construction of MSE berms. Mr. Allen has over 13 years of experience in the field of geotechnical engineering and with MSE berms. Additionally, Mr. Allen was one of the Engineers-of-Record for the FFVE Major Permit Modification that was submitted to and approved by PADEP.

During the inspection, Mr. Allen walked along the top of the MSE berm and along the toe of the MSE berm to evaluate the performance of the berm and determine if maintenance is required. In particular, the inspection assessed/evaluated the following items:

- Stormwater management controls
- Erosion
- Vegetation
- Biaxial geogrid
- MSE Berm penetrations (posts)
- Road surface
- Safety fence and guiderail

In addition to assessing/evaluating the items listed above, the inspection also looked for the presence of the following items, which could require remedial action if discovered:

- Tension cracks
- Toe heaving
- Bulging/sagging
- Animal damage
- Vandalism

While conducting the inspection, the MSE Berm Inspection Form was completed and photographs were taken. The completed form is included in Attachment A. A photo log documenting the condition of the MSE berm at the time of the inspection is included in Attachment B. Overall, the FFVE Stage 1 & 2 MSE berms are in good condition. The vegetation on the face of the berms was dormant during the time of the inspection; however, the vegetation appears to provide adequate shading for the biaxial geogrid. The biaxial geogrid appears to be intact with no damage or degradation. No signs of instability or any items requiring remedial action were observed during the inspection.

MONITORING DATA

Several survey monitoring points have been installed along the FFVE Stage 1 and 2 MSE berms. A series of survey monitoring points are generally installed every 200 feet along the length of the berm. At each location, the control monuments are typically installed at the toe of the MSE berm, the top outside edge of the MSE berm, and at the top of the berm along the stormwater channel. Additionally, at one location where the berm height exceeds 30 feet, a survey monitoring point was installed within the face of the MSE berm, between the top outside edge and toe monitoring points. In total, the FFVE Stage 1 MSE berm has 32 monitoring points and

FFVE Stage 2 MSE berm has 38 monitoring points. A plan view showing the location of the monitoring points is included in Attachment C.

The monitoring points are surveyed on an annual basis. To date, five survey events have been completed by David Miller/Associates, Inc. (DMA) for Stage 1 MSE berm and three survey events have been completed by DMA for Stage 2 MSE berm. Stage 1 initial survey was completed on May 5, 2019 and Stage 2 initial survey was completed on August 16, 2022. The survey has been conducted on an annual basis with the latest survey completed on January 8, 2024. ARM has reviewed the monitoring point surveys and has calculated the change in elevation at each point and the magnitude of total lateral displacement between the surveys.

Stage 1 MSE Berm

In general, the lateral displacement displayed by the monitoring points is generally very minimal. The average lateral displacement observed during the reporting period for Stage 1 MSE berm (i.e., between the January 24, 2023 survey and the January 8, 2024 survey) is 0.55 inches and the average total lateral displacement observed (i.e., between the May 5, 2019 and January 8, 2024 survey) is 1.13 inches. Based on the survey data, the lateral displacement observed at the monitoring points is minimal and is not indicative of any type of instability. The magnitude of total lateral displacement at each monitoring point is provided in Table 1 and the magnitude of lateral displacement between the two most recent surveys (i.e., January 24, 2023 and January 8, 2024) is provided in Table 2, below. Additionally, the plan view included in Attachment C provides vectors showing the direction of lateral displacement for any point that observed more than 0.80 inches of movement during the reporting period (i.e., see Table 2, highlighted green).

Table 1: FFVE Stage 1 Monitoring Point Displacement Summary Table
TOTAL MOVEMENT

STA	Location	Original Elevation	Elevation Change (in)	Magnitude of Plan View Movement (in)
06+02	toe	618.16	1.46	1.24
06+68	top, outside	631.70	0.55	0.91
06+68	toe	615.44	-0.01	1.73
06+90	top, inside	630.66	-0.29	0.81
08+00	toe	613.18	0.04	4.34
08+00	top, outside	627.22	-0.25	0.52
08+00	top, inside	625.94	-0.90	0.74

10+00	toe	607.21	0.00	0.82
10+00	top, outside	619.75	-0.28	0.61
10+00	top, inside	618.33	-1.16	1.02
12+00	toe	601.54	-0.12	2.67
12+00	top, outside	613.66	0.10	1.48
12+00	top, inside	612.09	-1.03	0.46
14+00	toe	593.01	-0.06	2.00
14+00	top, outside	607.05	-0.34	0.49
14+00	top, inside	605.62	-0.58	0.77
16+00	toe	584.09	-0.30	0.19
16+00	top, outside	597.17	1.36	0.69
16+00	top, inside	595.88	0.08	1.01
18+00	toe	575.21	-0.40	0.89
18+00	top, outside	587.09	-0.28	0.66
18+00	top, inside	585.68	-0.46	0.72
20+00	top, outside	573.18	-0.37	0.50
20+00	toe	563.22	-0.05	0.72
20+00	top, inside	571.63	-1.93	0.52
22+00	top, outside	559.07	-0.88	0.96
22+00	toe	546.59	-5.70	0.52
22+00	top, inside	558.19	-3.82	0.90
23+75	top, inside	553.95	-0.82	0.69
24+00	toe	524.11	-0.12	0.56
24+00	top, outside	554.68	-0.02	1.13
24+00	MSE face	539.13	-0.50	4.73
		Maximum	**1.46**	**4.73**
		Minimum	**-5.70**	**0.19**
		Average	**-0.53**	**1.13**

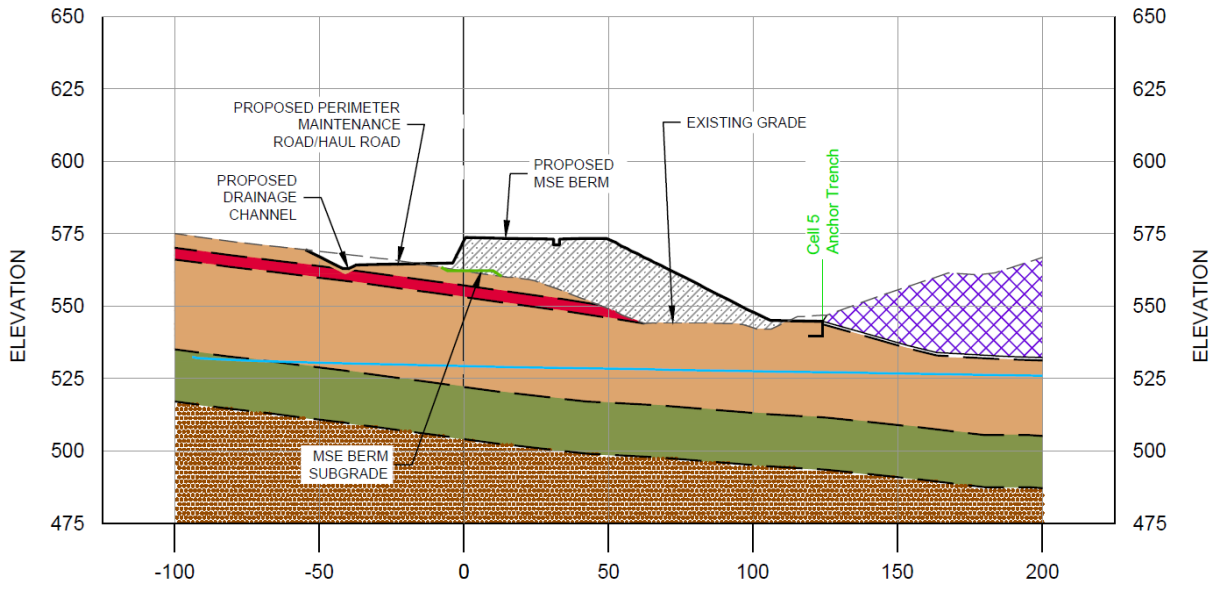
Table 2: FFVE Stage 1 Monitoring Point Displacement Summary Table
MOVEMENT DURING REPORTING PERIOD

STA	Location	Original Elevation	Elevation Change (in)	Magnitude of Plan View Movement (in)
26+00	top, inside	551.38	-0.26	0.77
26+00	MSE face	535.09	-0.37	0.26
26+00	top, outside	552.79	-0.13	0.12

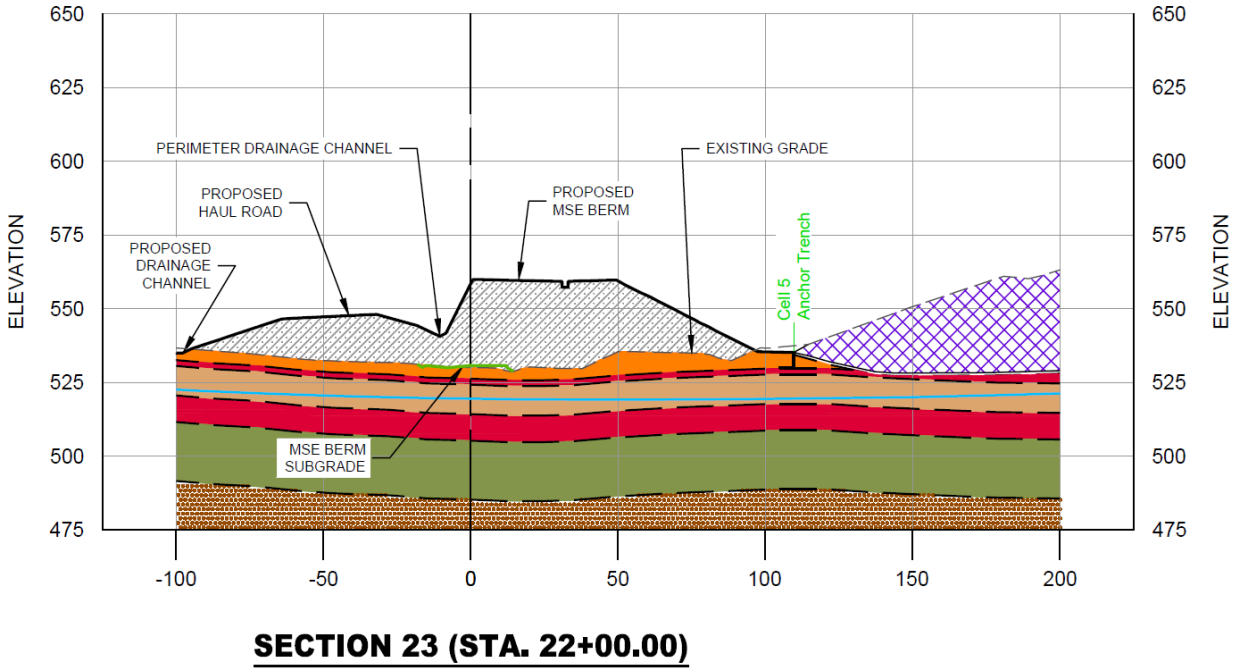
26+00	toe	516.76	-0.04	0.43
28+00	top, inside	549.34	-0.54	0.97
28+00	toe	511.03	0.06	0.11
28+00	top, outside	550.33	-0.49	0.88
28+00	MSE face	539.59	-0.97	0.52
28+00	MSE face	524.67	-0.78	0.31
30+00	top, inside	547.11	-0.48	0.88
30+00	MSE face	516.77	-0.44	0.86
30+00	MSE face	527.03	-0.60	0.85
30+00	top, outside	548.28	-0.73	0.18
30+00	toe	504.99	0.01	0.54
32+00	top, inside	537.38	-0.91	0.98
32+00	top, outside	538.97	-1.02	0.94
32+00	toe	487.95	-0.30	0.40
32+00	MSE face	503.51	-0.84	0.44
32+00	MSE face	519.39	-1.08	0.85
34+00	top, inside	534.45	-0.71	0.75
34+00	MSE face	500.67	-0.59	3.11
34+00	top, outside	535.88	-0.68	0.55
34+00	toe	486.30	-0.35	0.09
34+00	MSE face	516.67	-1.93	3.57
36+00	top, inside	532.30	-0.71	0.99
36+00	top, outside	533.61	-0.77	0.81
36+00	toe	470.96	-0.26	0.24
36+00	MSE face	490.12	-0.44	1.64
36+00	MSE face	510.66	-0.77	0.23
37+75	top, outside	528.90	-0.89	0.41
38+00	top, inside	525.00	-0.70	0.68
38+00	toe	469.20	-0.50	0.32
38+00	MSE face	488.51	0.19	1.57
38+00	MSE face	509.10	-0.59	1.35
40+00	toe	472.62	-0.43	0.01
40+00	MSE face	487.14	-0.46	0.60
40+00	MSE face	499.08	-1.19	3.32
40+75	toe	482.71	-0.55	0.49
		Maximum	**0.19**	**3.57**
		Minimum	**-1.93**	**0.01**
		Average	**-0.59**	**0.84**

Additionally, the change in elevation observed at each monitoring point is generally minimal. The average change in elevation over the life of the monitoring points was 0.53 inches of settlement. During the reporting period, the average change in elevation was 0.04 inches of settlement. To date, the observed changes in elevation are relatively minor and are not indicative of any type of instability. The total change in elevation at each monitoring point is provided in Table 1 and the elevation change during the reporting period is provided in Table 2.

It should be noted that the changes in elevation at STA 20+00 and 22+00 along the toe of the berm do show more significant settlement than the rest of the monitoring points. The settlement is likely due to the phasing and sequencing of construction. After the MSE berm was constructed, additional structural fill was placed along the face of the MSE berm in this area to construct the new landfill haul road. Therefore, the control monuments were installed within the additional structural fill, which is more prone to settlement than the MSE berm, especially at the interface of the MSE berm and structural fill, where compaction of the subsequently placed structural fill would be more difficult due to the presence of the MSE berm welded wire forms. Below are two cross-sections at STA 20+00 and 22+00 showing the bottom of the MSE berm and the structural fill placed along the outside of the MSE berm.



SECTION 21 (STA. 20+00.00)



Stage 2 MSE Berm

In general, the lateral displacement displayed by the monitoring points is very minimal. The average lateral displacement observed during the reporting period for Stage 2 MSE berm (i.e., between the January 24, 2023 survey and the January 8, 2024 survey) is 0.84 inches and the average total lateral displacement observed (i.e., between the August 16, 2022 and January 8, 2024 survey) is 1.04 inches. Based on the survey data, the lateral displacement observed at the monitoring points is minimal and is not indicative of any type of instability. The magnitude of total lateral displacement at each monitoring point is provided in Table 3 and the magnitude of lateral displacement between the two most recent surveys (i.e., January 24, 2023 and January 8, 2024) is provided in Table 4, below . Additionally, the plan view included in Attachment C provides vectors showing the direction of lateral displacement for any point that observed more than 0.80 inches of movement during the reporting period (i.e., see Table 4, highlighted green).

Table 3: FFVE Stage 2 Monitoring Point Displacement Summary Table
TOTAL MOVEMENT

STA	Location	Original Elevation	Elevation Change (in)	Magnitude of Plan View Movement (in)
26+00	top, inside	551.38	-1.18	0.88
26+00	MSE face	535.09	-0.80	0.46
26+00	top, outside	552.79	-0.48	0.70

26+00	toe*	516.76	-0.04	0.43
28+00	top, inside	549.34	-1.24	0.90
28+00	toe	511.03	0.18	0.14
28+00	top, outside	550.33	-0.92	1.38
28+00	MSE face	539.59	-1.70	0.93
28+00	MSE face	524.67	-1.34	0.65
30+00	top, inside	547.11	-1.09	0.63
30+00	MSE face	516.77	-0.85	0.92
30+00	MSE face	527.03	-0.88	0.73
30+00	top, outside	548.28	-1.40	0.10
30+00	toe	504.99	-0.35	0.61
32+00	top, inside	537.38	-1.34	1.33
32+00	top, outside	538.97	-2.10	1.54
32+00	toe	487.95	-0.53	0.54
32+00	MSE face	503.51	-2.60	1.63
32+00	MSE face	519.39	-2.26	1.43
34+00	top, inside	534.45	-1.03	0.98
34+00	MSE face	500.67	-1.27	2.12
34+00	top, outside	535.88	-1.24	1.25
34+00	toe	486.30	-0.49	0.42
34+00	MSE face	516.67	-2.04	--
36+00	top, inside	532.30	-0.78	1.05
36+00	top, outside	533.61	-1.54	1.55
36+00	toe	470.96	-0.02	0.70
36+00	MSE face	490.12	-0.10	--
36+00	MSE face	510.66	-0.26	--
37+75	top, outside	528.90	-1.78	1.24
38+00	top, inside	525.00	-1.48	0.72
38+00	toe	469.20	-0.47	0.76
38+00	MSE face	488.51	-0.43	3.41
38+00	MSE face	509.10	-1.16	1.46
40+00	toe	472.62	-0.61	0.81
40+00	MSE face	487.14	-1.22	1.99
40+00	MSE face	499.08	-1.26	--
40+75	toe	482.71	-0.73	0.98
		Maximum	**0.18**	**3.41**
		Minimum	**-2.60**	**0.10**
		Average	**-1.02**	**1.04**

* = Control Point established during the January 24, 2023 survey

Table 4: FFVE Stage 2 Monitoring Point Displacement Summary Table
MOVEMENT DURING REPORTING PERIOD

STA	Location	Original Elevation	Elevation Change (in)	Magnitude of Plan View Movement (in)
26+00	top, inside	551.38	-0.26	0.77
26+00	MSE face	535.09	-0.37	0.26
26+00	top, outside	552.79	-0.13	0.12
26+00	toe	516.76	-0.04	0.43
28+00	top, inside	549.34	-0.54	0.97
28+00	toe	511.03	0.06	0.11
28+00	top, outside	550.33	-0.49	0.88
28+00	MSE face	539.59	-0.97	0.52
28+00	MSE face	524.67	-0.78	0.31
30+00	top, inside	547.11	-0.48	0.88
30+00	MSE face	516.77	-0.44	0.86
30+00	MSE face	527.03	-0.60	0.85
30+00	top, outside	548.28	-0.73	0.18
30+00	toe	504.99	0.01	0.54
32+00	top, inside	537.38	-0.91	0.98
32+00	top, outside	538.97	-1.02	0.94
32+00	toe	487.95	-0.30	0.40
32+00	MSE face	503.51	-0.84	0.44
32+00	MSE face	519.39	-1.08	0.85
34+00	top, inside	534.45	-0.71	0.75
34+00	MSE face	500.67	-0.59	3.11
34+00	top, outside	535.88	-0.68	0.55
34+00	toe	486.30	-0.35	0.09
34+00	MSE face	516.67	-1.93	3.57
36+00	top, inside	532.30	-0.71	0.99
36+00	top, outside	533.61	-0.77	0.81
36+00	toe	470.96	-0.26	0.24
36+00	MSE face	490.12	-0.44	1.64
36+00	MSE face	510.66	-0.77	0.23
37+75	top, outside	528.90	-0.89	0.41
38+00	top, inside	525.00	-0.70	0.68
38+00	toe	469.20	-0.50	0.32

38+00	MSE face	488.51	0.19	1.57
38+00	MSE face	509.10	-0.59	1.35
40+00	toe	472.62	-0.43	0.01
40+00	MSE face	487.14	-0.46	0.60
40+00	MSE face	499.08	-1.19	3.32
40+75	toe	482.71	-0.55	0.49
		Maximum	**0.19**	**3.57**
		Minimum	**-1.93**	**0.01**
		Average	**-0.59**	**0.84**

Additionally, the change in elevation observed at each monitoring point is generally minimal. The average change in elevation over the life of the monitoring points was 1.02 inches of settlement. During the reporting period, the average change in elevation was 0.59 inches of settlement. To date, the observed changes in elevation are relatively minor and are not indicative of any type of instability. The total change in elevation at each monitoring point is provided in Table 3 and the elevation change during the reporting period is provided in Table 4.

It should be noted that monitoring points at STA 34+00, 36+00, and 40+00 located on the MSE face of the berm were obstructed by heavy vegetation during the original survey performed on August 16, 2022, resulting in unreliable survey information. The readings show abnormal lateral movement that is not representative of conditions observed during the MSE berm inspection at these stations. The data from these monitoring points has been excluded from the maximum, minimum, and average calculations in Table 3. These areas will continue to be monitored, but there is no evidence of instability in these areas.

CONCLUSIONS

After completing the annual inspection and reviewing the available monitoring point survey data on the FFVE Stage 1 & 2 MSE berms, ARM has not observed any current data or trends indicative of instability. The MSE berm appears to be in good condition and does not require any remedial or maintenance actions at this time.

ATTACHMENT A

MSE Berm Inspection Form

ARM Group LLC

Engineers and Scientists

P.O. Box 797, 1129 West Governor Road, Hershey, PA 17033-0797
Phone (717) 533-8600 Fax (717) 533-8605 www.armgroup.net

MSE Berm Inspection Form

Site Location: *Frey Farm Landfill* Inspector: *Benjamin S. Allen, P.E.*
Berm Segment: *FFVE Stage 1 &2* Inspection Date: *11/7/2023*

Stormwater Management Evaluation

1. Is stormwater overtopping the face of the MSE berm?
   ☐ YES ☒ NO
   If YES, immediately notify the Engineer-of-Record.

2. Are all inlets and/or drains unclogged and functioning properly?
   ☒ YES ☐ NO
   If NO, immediately notify Maintenance for immediate corrective action.
   Please note which inlets and/or drains are not functioning properly:
   Major silt built-up at Drop Inlet IC-1, retained by the silt fence. Silt needs to be removed and Drop Inlet needs to be protected.

3. Evaluate the condition of stormwater channels on top of the MSE berm.
   a) Is there damage to the channel lining?
   ☐ YES ☒ NO

   b) Can water enter into either the reinforced or unreinforced zone of the MSE berm?
   ☐ YES ☒ NO

   c) Is there deposition of material along the length of the channels or changes in the channel profile due to erosion, subsoil migration, and depositional features?
   ☐ YES ☒ NO

   d) Is there evidence of degraded or dysfunctional stormwater channels?
   ☐ YES ☒ NO
   If YES, immediately notify the Engineer-of-Record.

If any questions under Part 3 of this section were answered with YES, please describe the deficiencies and note the location of the deficiencies: *Stage 1 and 2 Channel is in good shape overall, Stage 2 channel still requires some repairs from stage 2 construction. Minor silt in concrete channel down gradient of drop inlet IC-1.*

Erosion Assessment

1. Is there evidence of erosion on the exterior or interim (if applicable) face of the MSE berm?
   ☐ YES ☒ NO
   If YES, immediately notify the Engineer-of-Record.
   Please identify the areas where erosion appears to be occurring:

2. Is there excessive erosion at pipe or utility penetrations?
   ☐ YES ☒ NO
   If YES, notify the Engineer-of-Record.
   Please identify the areas where erosion appears to be occurring:

3. Is there evidence of soil migration and/or deposition at the toe or on the horizontal shelves of the MSE berm?
   ☐ YES ☒ NO
   If YES, notify the Engineer-of-Record.
   Please identify the areas of soil migration and/or deposition:

Vegetation Inspection

1. Is vegetation on the face of the MSE berm lacking after two (2) growing seasons?
   ☐ YES ☒ NO
   If YES, notify the Engineer-of-Record.
   Locations/ *Vegetation along Stage 1 and Stage 2 berm looks good. Evidence of rodents going up and down the berm face as well as rodent holes discovered near the MSE berm ramp at stage 1.*

2. Has any of the vegetation grown to a size that poses a threat to collapse under wind, ice, or snow loading or does any vegetation exhibit woody bark or complex root systems?

[X] YES [ ] NO

If YES, notify Maintenance for removal.

Small trees at start of Stage 1 berm. Significantly more woody growth at Stage 2 berm.

3. On portions of the MSE berm facing comprised of aggregate (if applicable):

Is the biaxial geogrid facing wrap intact and retaining the aggregate?

a) [ ] YES [ ] NO

If NO, please note the locations: *Not applicable.*

b) Are the geogrid apertures distorted or otherwise incompatible with the size of the retained aggregate?

[ ] YES [ ] NO

If YES, please note the locations: *Not applicable.*

c) Are there sizeable void spaces behind the geogrid or signs of aggregate loss?

[ ] YES [ ] NO

If YES, please note the locations: *Not applicable.*

If NO to question 3a or YES to questions 3b or 3c under Part 3 of this section, notify the Engineer-of-Record.

Tension Crack Evaluation

1. Is there any evidence of tension cracks along the top of the berm?

[ ] YES [X] NO

If YES, immediately notify the Engineer-of-Record.

2. Are there tension cracks within the paved access road on top of the MSE berm?

[ ] YES [X] NO

If YES, immediately notify the Engineer-of-Record.

Please note the location of any evidence of tension cracks:

Toe Heaving Inspection

1. Is there any evidence of toe heaving?

☐ YES ☒ NO

If YES, immediately notify the Engineer-of-Record.

Please note the location of any evidence of toe heaving:

Not applicable.

Geogrid Assessment

1. To the extent possible, evaluate the condition of the biaxial geogrid at the face of the MSE berm.

The biaxial geogrid is intact and in good condition. Vegetation is providing adequate shading to prevent UV degradation of the biaxial geogrid.

2. Note the location of any severe degradation or extensive damage to the biaxial geogrid.

Two possible animal holes through the biaxial geogrid, should be repaired.

Bulging/Sagging Evaluation

1. Is there evidence of excessive bulging or sagging (i.e., greater than 2 inches) at any point along the outer face of the MSE berm?

☐ YES ☒ NO

If YES, immediately notify the Engineer-of-Record.

Please note the location of any excessive bulging or sagging:
Not applicable.

Top Surface Penetration Inspection

1. Is there evidence of gaps opening around penetrations (e.g., guiderail posts, fence posts, etc.) or tilting or settlement of such features?

   [ ] YES [X] NO

   If YES, notify the Engineer-of-Record.

   Please note the locations:

Road Surface Inspection

1. Is there any deterioration of the road surface at the top of the MSE berm (i.e., cracking, erosion, settlement, undulations, exposure of geogrid, etc.)?

   [ ] YES [X] NO

   If YES, notify the Engineer-of-Record.

   Please note the locations: *Crack ~45 feet, corner of stage 1 berm at edge of pavement, between edge of wearing course and guiderail. Small crack ~3 feet ~100 feet upgradient of the start of the Stage 1 corner, between edge of wearing course and guiderail. Damage to pavement at start of stage 1 berm, likely from construction equipment.*

Guide Rail and Safety Fence Assessment

1. Are the guide rail and safety fence intact, undamaged, fully functional, and continuous throughout the originally installed length?

   [X] YES [ ] NO

   If NO, notify Maintenance for repair.

   Please note the locations:

Note: Any obvious changes to the profile of the horizontal components of the fencing or guide railing shall be reported to the Engineer-of-Record.

Animal Damage and Vandalism

1. Is there evidence of animal damage such as burrowing or other forms of animal damage (e.g. rodent) holes within the MSE berm backfill or at the toe of the berm)?
   [X] YES [ ] NO

2. Is there any form of damage due to vandalism?
   [ ] YES [X] NO

Any damage should be reported to Maintenance and the Engineer-of-Record.

Additional Notes/Comments

Overall, the FFVE Stage 1 and 2 MSE berms are in good condition. No evidence of instability has been observed to date. The vegetation at the face of the berm is adequate and the biaxial geogrid is intact and properly shaded.

ARM noticed minor pavement cracking at corner of Stage 1 and 100 feet upgradient.
ARM noticed two possible animal holes that have damaged the biaxial geogrid and are in need of repair
Stage 2 has significantly more woody vegetation that should be monitored and trimmed if growth diameters become too large.

ARM noticed silt built up in the perimeter concrete stormwater channel and Drop Inlet IC-1 and recommends the silt is cleaned out and IC-1 Drop Inlet is protected from future silt built up.

ATTACHMENT B

Photo Log

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

PHOTO 5

PHOTO 6

PHOTO 7

PHOTO 8

PHOTO 9

PHOTO 10

PHOTO 11

PHOTO 12

PHOTO 13

PHOTO 14

PHOTO 15

PHOTO 16

PHOTO 17

PHOTO 18

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PHOTO 33

PHOTO 34

PHOTO 35

PHOTO 36

PHOTO 37

PHOTO 38

PHOTO 39

PHOTO 40

PHOTO 41

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PHOTO 49

PHOTO 50

PHOTO 51

PHOTO 52

PHOTO 53

PHOTO 54

PHOTO 55

PHOTO 56

PHOTO 57

PHOTO 58

PHOTO 59

ATTACHMENT C

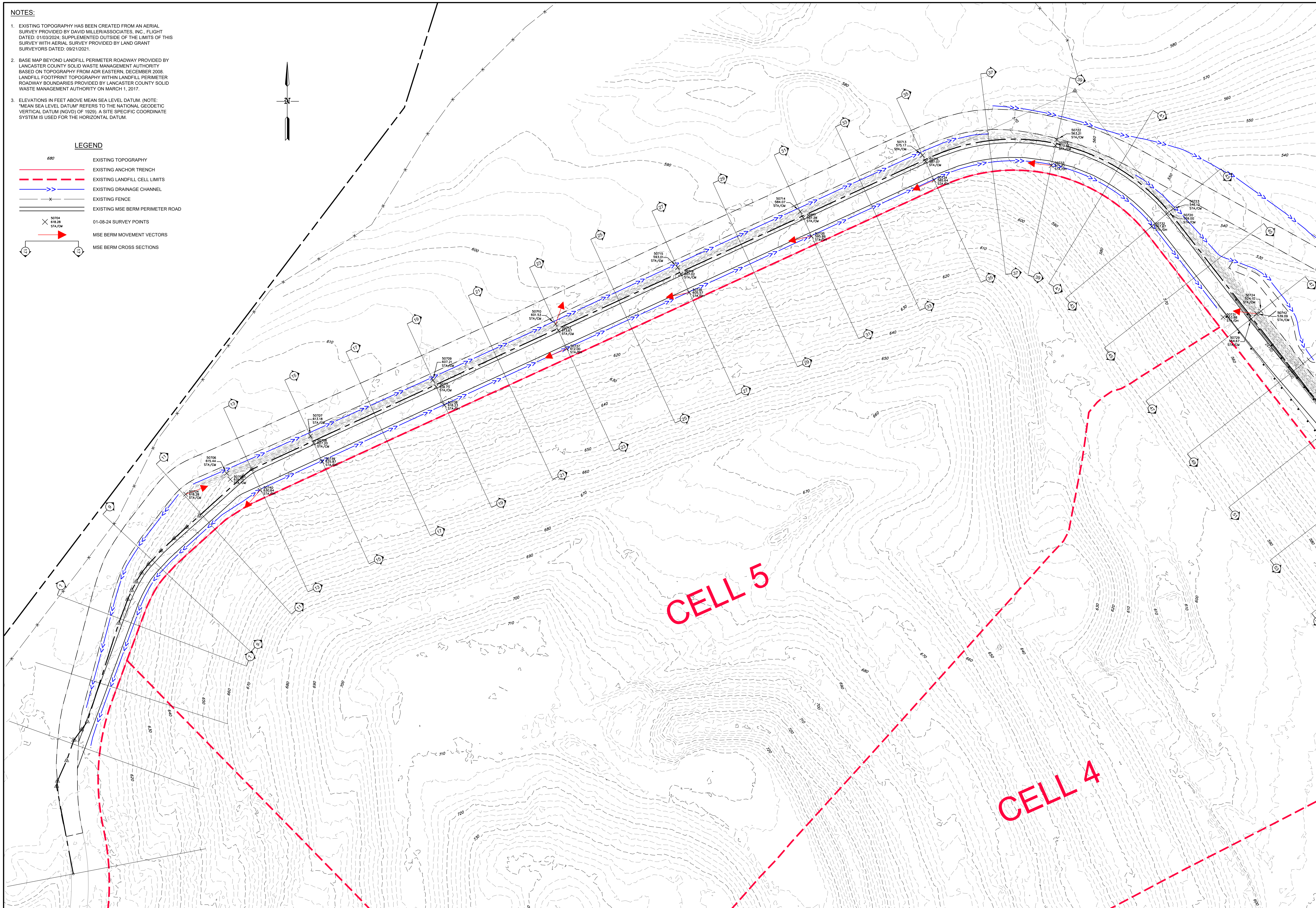
MSE Berm Control Points

NOTES:

1. EXISTING TOPOGRAPHY HAS BEEN CREATED FROM AN AERIAL SURVEY PROVIDED BY DAVID MILLER/ASSOCIATES, INC., FLIGHT DATED: 01/03/2024; SUPPLEMENTED OUTSIDE OF THE LIMITS OF THIS SURVEY WITH AERIAL SURVEY PROVIDED BY LAND GRANT SURVEYORS DATED: 09/21/2021.
2. BASE MAP BEYOND LANDFILL PERIMETER ROADWAY PROVIDED BY LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY BASED ON TOPOGRAPHY FROM ADR EASTERN, DECEMBER 2008. LANDFILL FOOTPRINT TOPOGRAPHY WITHIN LANDFILL PERIMETER ROADWAY BOUNDARIES PROVIDED BY LANCASTER COUNTY SOLID WASTE MANAGEMENT AUTHORITY ON MARCH 1, 2017.
3. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL DATUM. (NOTE: "MEAN SEA LEVEL DATUM" REFERS TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929). A SITE SPECIFIC COORDINATE SYSTEM IS USED FOR THE HORIZONTAL DATUM.

LEGEND

680	EXISTING TOPOGRAPHY
	EXISTING ANCHOR TRENCH
	EXISTING LANDFILL CELL LIMITS
	EXISTING DRAINAGE CHANNEL
	EXISTING FENCE
	EXISTING MSE BERM PERIMETER ROAD
50704 618.26 STA/CM	01-08-24 SURVEY POINTS
	MSE BERM MOVEMENT VECTORS
17 — 17	MSE BERM CROSS SECTIONS



ARM Group LLC
Engineers and Scientists
www.armgroup.net

No.	Revision	Date	By

designed	DG
checked	BSA
drawn	FDV
scale	1" = 60'
date	MAY 2024
project no.	23011485

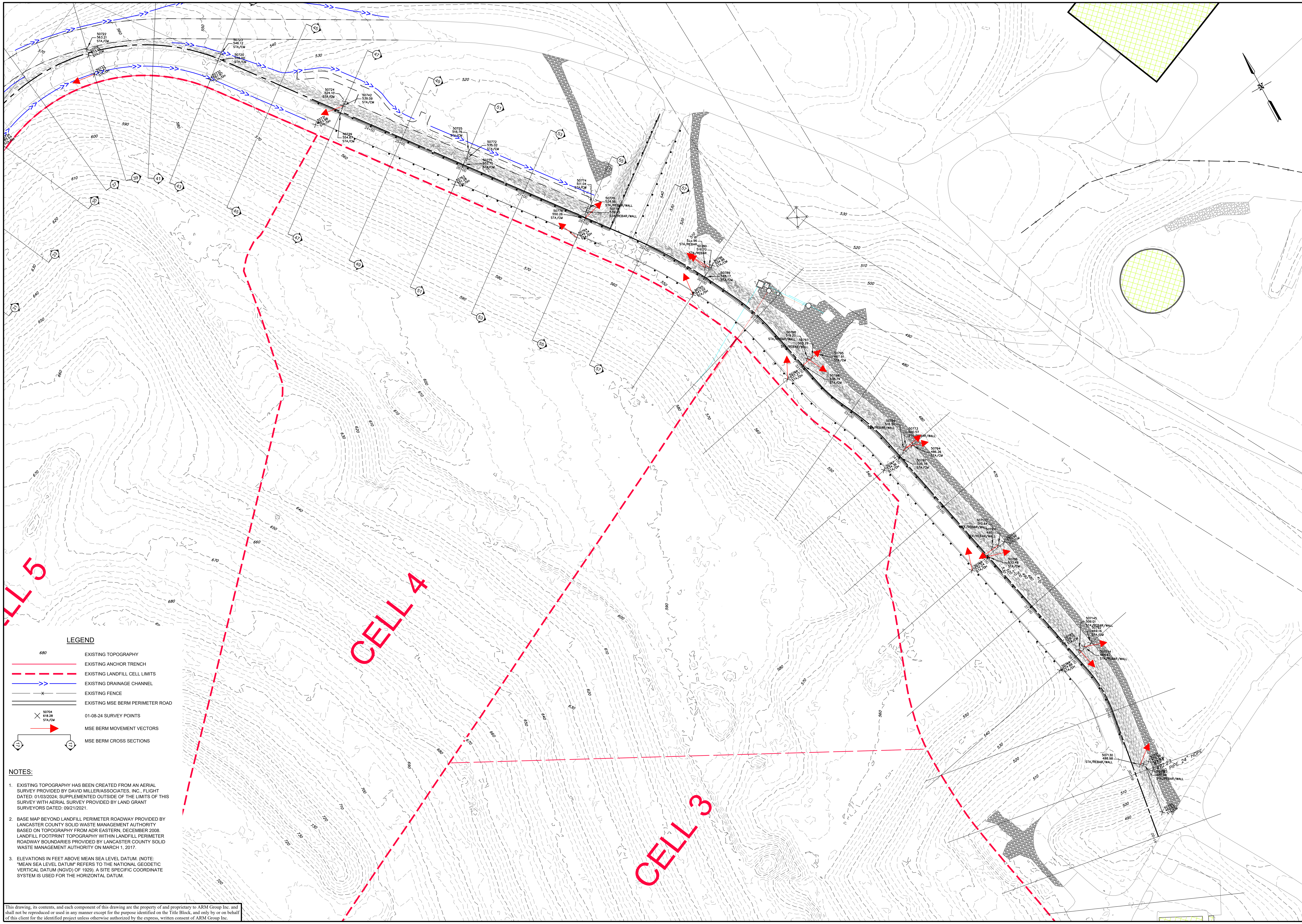
graphic scale: 0 60 120 180 SCALE IN FEET

drawing title: **MSE BERM MONITORING POINTS**
2023 ANNUAL MSE BERM REPORT

project title: VERTICAL EXPANSION
FREY FARM LANDFILL

MANOR TOWNSHIP
LANCASTER COUNTY, PA

Sheet **1**



LEGEND

680	EXISTING TOPOGRAPHY
	EXISTING ANCHOR TRENCH
	EXISTING LANDFILL CELL LIMITS
	EXISTING DRAINAGE CHANNEL
	EXISTING FENCE
	EXISTING MSE BERM PERIMETER ROAD
50704 618.28 STA/CM	01-08-24 SURVEY POINTS
	MSE BERM MOVEMENT VECTORS
	MSE BERM CROSS SECTIONS

NOTES:

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No.	Revision	Date	By

designed	DG
checked	BSA
drawn	FDV
scale	1" = 60'
date	MAY 2024
project no.	23011485

graphic scale: 0 60 120 180 SCALE IN FEET

drawing title: MSE BERM MONITORING POINTS 2023 ANNUAL MSE BERM REPORT

project title: VERTICAL EXPANSION FREY FARM LANDFILL
MANOR TOWNSHIP LANCASTER COUNTY, PA

Sheet 2

Attachment 7

Visual Landscape Synthesis Plan Annual Report

May 31, 2023

Frey Farm Landfill

Stage 1 Visual Landscape Synthesis Plan

Annual Status Update

Manor Township Lancaster County, Pennsylvania

Introduction

The Frey Farm Landfill (FFLF) is a Municipal Solid Waste (MSW) disposal facility operated by Lancaster County Solid Waste Management Authority (LCSWMA), located along River Road in Manor Township, Lancaster County, Pennsylvania.

Construction of the Frey Farm Landfill (FFLF) Visual Landscape Synthesis Plan (VLSP) Stage 1 began in 2019 and consisted of planting a combination of 158 native-species trees and shrubs, and natural succession seed mix over approximately 30.2 acres of final cap. Stage 1 was the only stage completed in 2019. Since that time an additional planting area has nearly been completed. Approximately 94% of the planned Stage 2 area has been completed through the end of 2023.

Map exhibits have been included for reference.

The VLSP is designed to achieve the following core objectives:

1. Achieve an enhanced and more natural appearance that blends into the surrounding landscape, over time, of the Frey Farm Landfill (FFLF) from neighboring viewpoints by mitigating potential visual impacts associated with the FFVE and improving the long- term appearance of the FFLF when compared to the mowed vegetative cover that is traditionally used post-closure at landfills;

2. Achieve a sustainable vegetative ecosystem for the long-term success that also reduces the need for traditional maintenance activities to support vegetation (fertilization, lime application, mowing, etc.); and

3. Minimize interference from landscaping with ongoing landfilling operations, and promote the continued safe operation of the FFLF in compliance with PADEP regulations.

Summary of 2023 Implementation Activities

Initial implementation efforts began in the fall of 2019 and continued through 2020 - 2022. During the Fall of 2021 384 pieces of plant material were planted in "Stage 2" planting zone (an area covering approximately 11.8 acres) 94% of

"Stage 2" planting area remains completed at the end of 2023. There is a small portion of the landfill, approximately 0.53 acres (within Stage 2) that was not complete with final slopes. This zone will be planted in the future as landfill sequencing is completed and this 0.53 acres is available and prepped for planting. An additional 26 pieces of plant material will be planted within this 0.53 acre zone when possible.

2023 Maintenance

2023 efforts were once again mainly related to weed suppression around maturing plant material and monitoring deer guard protection. Deer damage and browse continues to be a challenge. No fertilizers or irrigation efforts were used in 2023.

Monitoring

LCSWMA is continuing a bi-weekly monitoring of Stage 1 and Stage 2 (see attached monitoring reports). LCSWMA will continue its practice to conduct inspections of the plantings after significant weather events such as large storms where wind gusts above 50 mph may have occurred. Action items will be taken on an as needed basis following the discovery or observation of a potential issue. LCSWMA will continue onsite observations of the soil and plants along with past photographic records will continue to be used to monitor this aspect of the study.

As a population the Stage 1 and Stage 2 plantings came under pressure due to a prolonged dry spell in May, June and July. There are several trees that are exhibiting signs of stress or have possibly gone into early dormancy. This will be monitored in 2024 and beyond and some replacement plant material may once again be necessary.

Proposed Modifications or Revisions to the Plan

Currently there are no plans to modify any portion of the plan. Overall the first stage is meeting performance expectations. Some plant material in Stage 1 was replaced in the Fall of 2021. Mainly this was plant material that had sustained mortal deer damage back in 2019 and had not thrived. This damage had mainly occurred before the more robust deer guards were used.

Approximately 94% of Stage 2 was planted in the Fall of 2021. There are no plans to modify or revise any section Stage 2.

The natural succession area continues to perform well and continues to “soften” the engineered appearance of the landfill (benching). The visual softening and textural diversity observed in 2020, 2021, 2022 and 2023 seems to be increasing over time. The result is a more natural appearance to the landfill slopes that

blends into the surrounding landscape. No additional modifications or revisions are planned for this zone. Lastly, the transition between the succession area and Stage 1 and Stage 2 has been visually softened and no perceived line or abrupt visual interruption is now evident. The planted grasses within Stage 1 and Stage 2 have matured to the point where visual blending between zones has occurred.

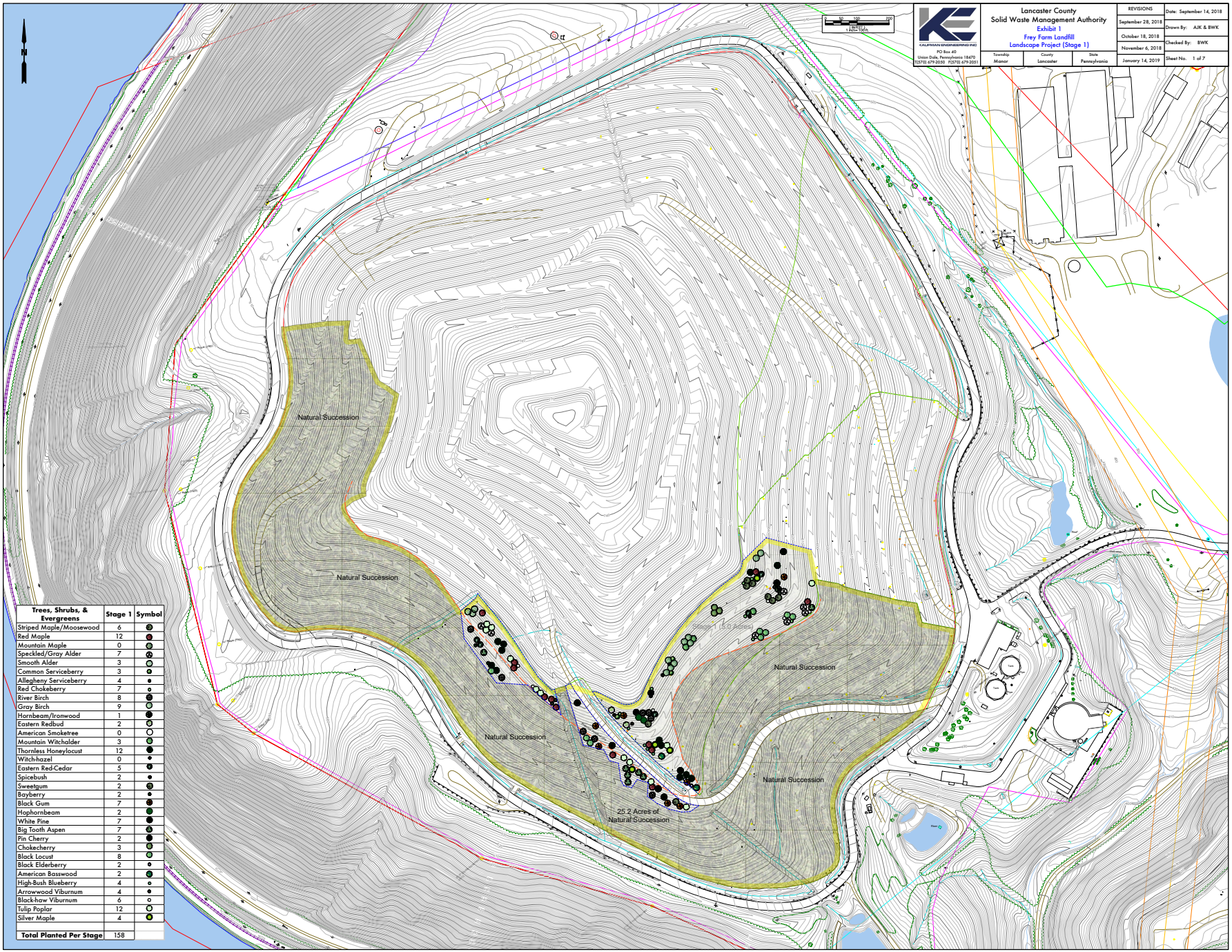
Planned 2024 Activities

Monitoring will be performed bi-weekly or as needed by (FFLF) staff and seasonally by Kaufman Engineering, Inc.

2024 will likely not have any large scale tree or shrub planting. Additional portions of the landfill will need completed before additional tree and shrub implementation can occur. The 0.53 acre zone referenced earlier in the report will now likely be planned no sooner than 2025. If there are replacement trees recommended in 2024 (TBD during 2024) we will provide additional specificity.

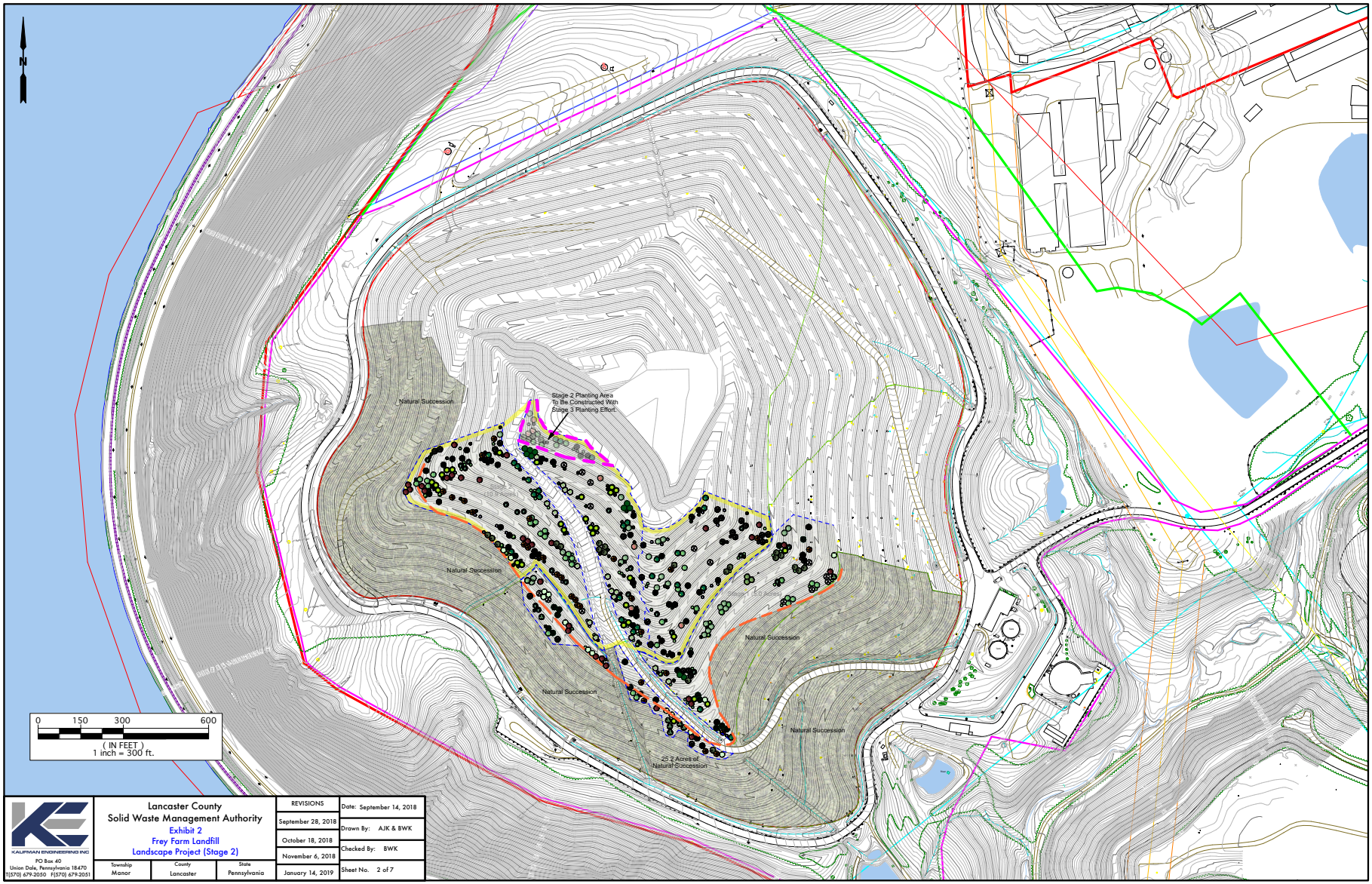
Other Meetings / Notes:
A Spring Inspection and walk through was completed on 5/16/2023 by Kaufman Engineering, Inc.
Attendees:
Michelle Marsh, LCSWMA
Jeff Musser, LCSWMA
Ashley Gichuki, LCSWMA
Mary Glazier and Penn Glazier
Brian Kaufman of Kaufman Engineering, Inc.

A Fall inspection and walk through was completed on 11/2/2023 by Kaufman Engineering, Inc.
Attendees:
Michelle Marsh, LCSWMA
Jeff Musser, LCSWMA
Ashley Gichuki and Penn Glazier, LCSWMA
Brian Kaufman of Kaufman Engineering, Inc.

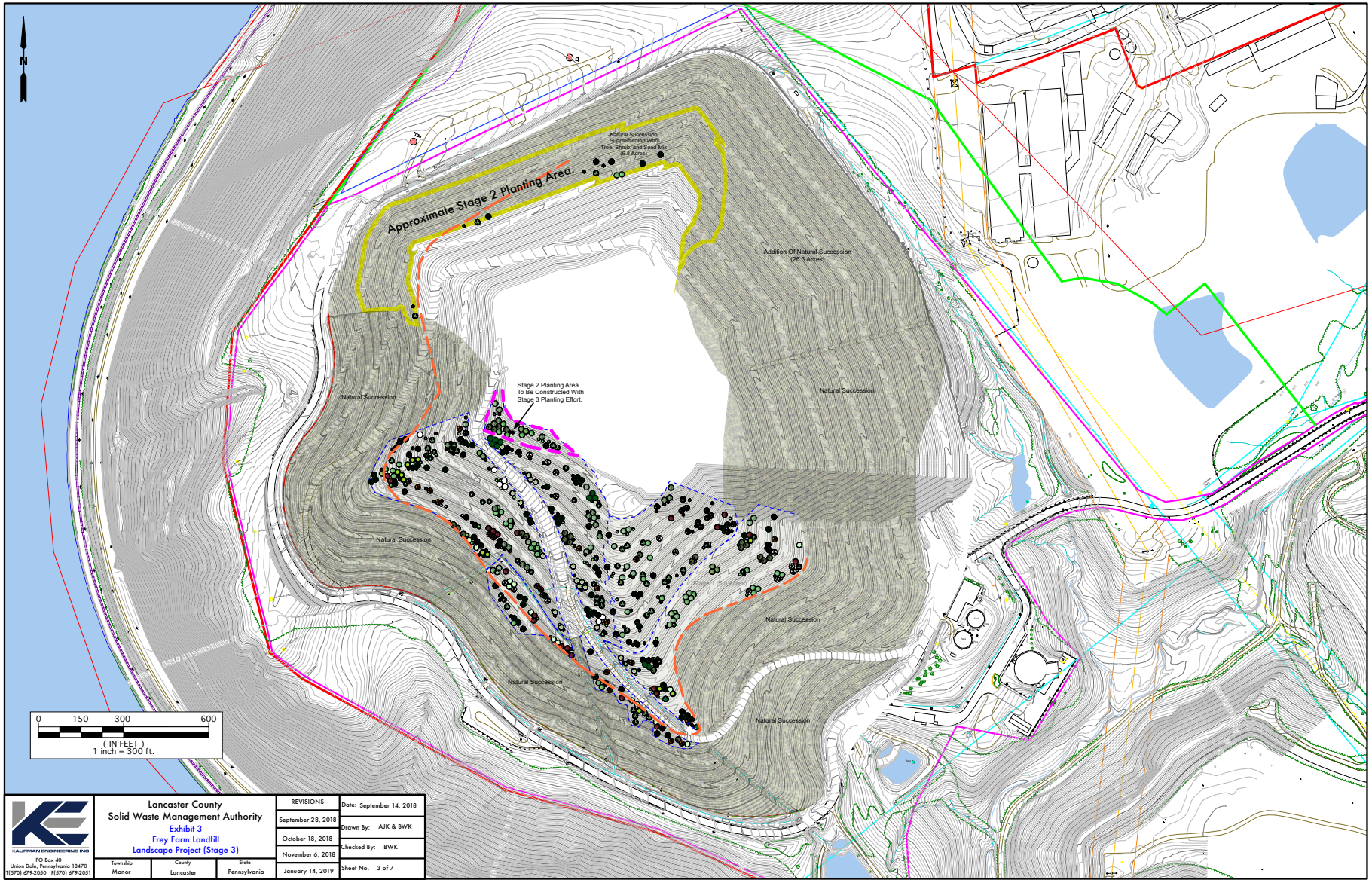


Trees, Shrubs, & Evergreens	Stage 1	Symbol
Striped Maple/Moosewood	6	
Red Maple	12	
Mountain Maple	0	
Speckled/Gray Alder	7	
Smooth Alder	3	
Common Serviceberry	3	
Allegheny Serviceberry	4	
Red Chokeberry	7	
River Birch	8	
Gray Birch	9	
Hornbeam/Ironwood	1	
Eastern Redbud	2	
American Smoketree	0	
Mountain Witchalder	3	
Thornless Honeylocust	12	
Witch-hazel	0	
Eastern Red-Cedar	5	
Spicebush	2	
Sweetgum	2	
Bayberry	2	
Black Gum	7	
Hophornbeam	2	
White Pine	7	
Big Tooth Aspen	7	
Pin Cherry	2	
Chokecherry	3	
Black Locust	8	
Black Elderberry	2	
American Basswood	2	
High-Bush Blueberry	4	
Arrowwood Viburnum	4	
Black-haw Viburnum	6	
Tulip Poplar	12	
Silver Maple	4	
Total Planted Per Stage	158	

Stage One Overview Map



Overview Map of Stage Two Planting Completed in 2021 (Inside Yellow). Remaining Stage Two Planting is Highlighted (In Pink)



Stage Three (Planned) Overview Map - For Future Reference

Inspection Reports

May 16, 2023
(By: Kaufman Engineering, Inc.)

November 2, 2023
(By: Kaufman Engineering, Inc.)

Multiple Inspection Reports
(By: Site Management)

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection R Stage 1 and Stage 2

Date: 5/16/23

Name of Inspector: Brian W. Kaufman - Kaufman Engineering, Inc.

Weather Conditions: Sunny, light breeze, low humidity 68°

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		*	
2	Are there any test plots with erosion damage (including toe of test plots).		*	
3	Do benches have sedimentation or unusual conditions?		*	
4	Is there water flowing onto bench that is unusual or a potential issue?		*	
5	Does there appear to be any slumping of the test plots?		*	
6	Are there any areas that are overly dry and in need of water?		*	
7	Other - Explain		*	

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?	*		Some recent buck rubs observed. Guards doing a good job. Deer guards have helped but deer are aggressive.
2	Is there damage to mulch beds from animals?		*	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		*	No issues observed this trip
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		*	Mainly Ashley is finding these during her inspections. We do find an occasional groundhog borrow. They typically are filled in or mitigated.
5	Other - Explain			Continued visability of many grassland birds on this trip.

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?	*		Deer browse and buck rubs as previously noted.
2	Is there insect damage to plant material?		*	
3	Is there animal damage to plant material?		*	
4	Is there storm damage to plant material?		*	Continued May dry spell should be monitored. It has ben a dry spring to date. Spray irregation from water trucks (misting slopes might be warented if dry spell persists)
5	Is there wind blow to plant material?		*	Root balls are all secure and properly placed. Some plants leaning within Stage 1(curved) due to prevailing wind pressures - continue monitor for potential staking.
6	Is there noticeable fatigue to any plant material?	*		Dry conditions are beginning to stress new plantings
7	Is there damage to plant material from landscape crew?		*	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		*	
9	Any plant material missing "identification stakes"?		*	Natural succession and weed growth is beginning to make it harder to find ID markers.
10	Other - Explain		*	Weed growth is aggressive around the base of many trees and shrubs. Recommend weed controll around base of plants withing Stage 1 to allow plants to thrive. Care should be given to not damage bark around base of any plant material during weeding.

Photos

		Yes	No	Comments
1	Did you take photos today?	*		Select photos attached - Additional photos taken exist in computer files.

Additional Notes or Comments:

Walk through was completed with Jeff Musser, Michelle Marsh, Ashley Gichuki Jordan Bigler of LCSWMA. Most plant material continues to do well. It is my belief that most plants continue to spend energy establishing to the site. Subsurface root development and establishment to the windy site are likely nearing completion. Starting to see small signs of additional vertical growth in Stage 1 plantings.

Larger deer guards were added to try and create additional protection. Deer guards were added to all Stage 2 plants concurrent with the October implementation. Still it will be likely be difficult to mitigate all deer damage.

Natural succession zone ranges 18" - 72"+ in height. Slopes appear full with grasses thriving. Visual softening of benching and greater visual appeal continue to be extremely successful when contrasted with traditional mowed slope aesthetic. Some natural succession of locust, cherry and multiflora rose, american pokeweed was observed in natural secession area. I believe we will continue to see the "natural sucession" area do well.

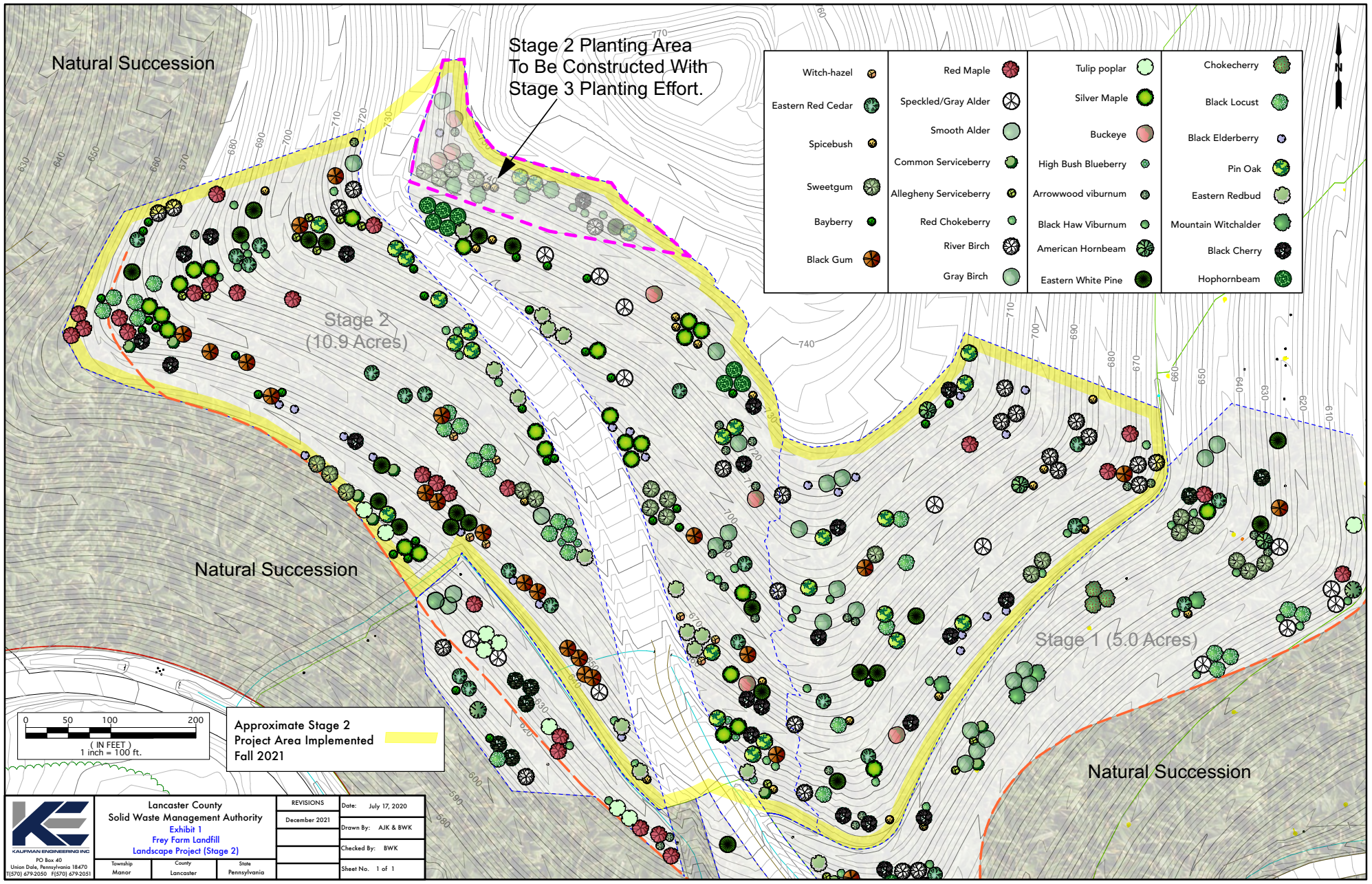
The increased texture has introduced greater seasonal visual interes and texture, matching surrounding "buffer" will continue to improve with time.

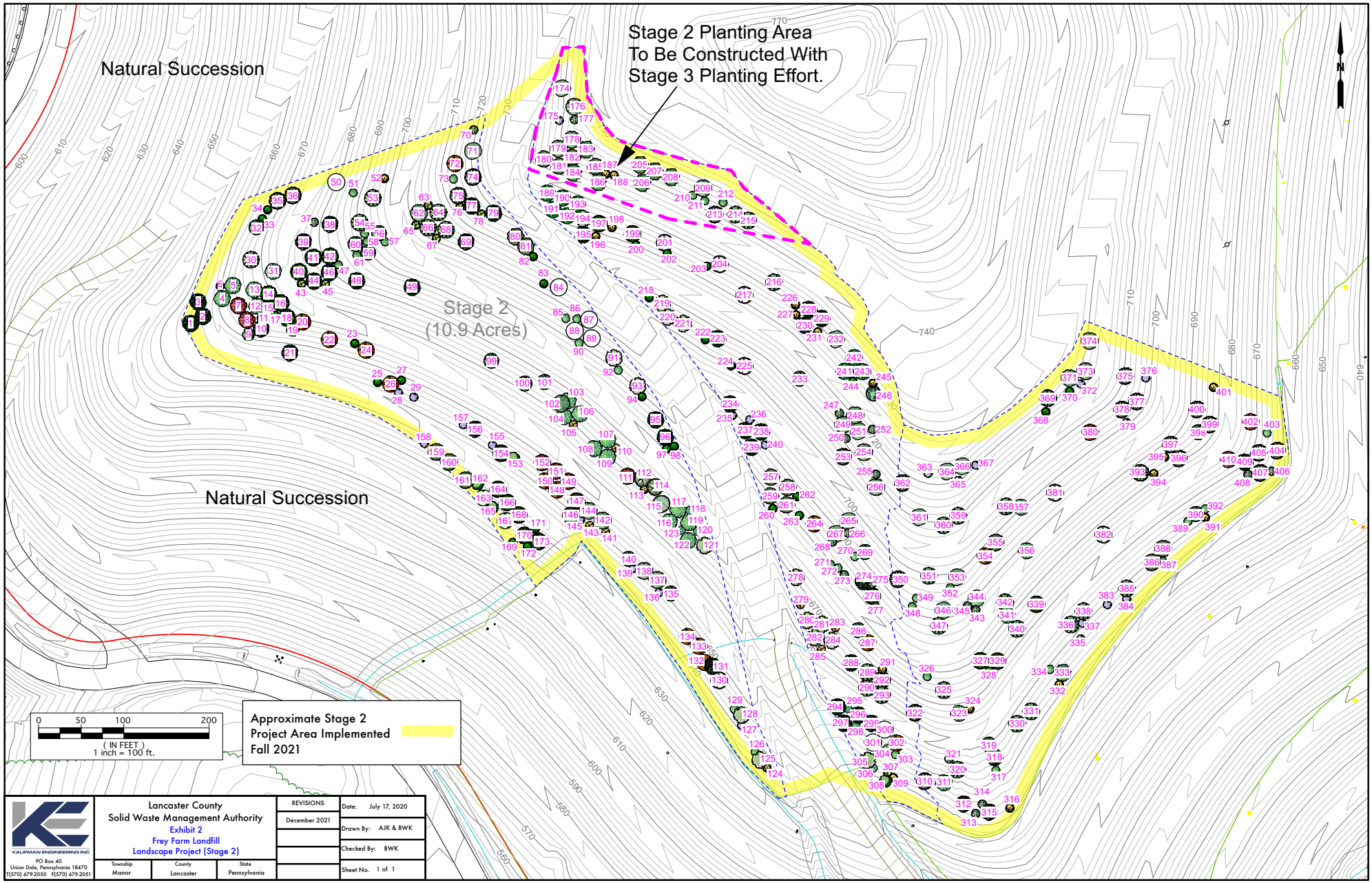
Other notes: Several meadow birds were observed in trees.

Not recommending replacing plants within Stage 1 planting.

Moniter dry conditions.

Stage One and Two
Photos Taken During
May 2023 Inspection


Natural Succession
Stage 2 Planting Area
To Be Constructed With
Stage 3 Planting Effort.
Witch-hazel
Eastern Red Cedar
Spicebush
Sweetgum
Bayberry
Black Gum
Red Maple
Speckled/Gray Alder
Smooth Alder
Common Serviceberry
Allegheny Serviceberry
Red Chokeberry
River Birch
Gray Birch
Tulip poplar
Silver Maple
Buckeye
High Bush Blueberry
Arrowwood viburnum
Black Haw Viburnum
American Hornbeam
Eastern White Pine
Chokecherry
Black Locust
Black Elderberry
Pin Oak
Eastern Redbud
Mountain Witchalder
Black Cherry
Hophornbeam
N
Stage 2
(10.9 Acres)
Natural Succession
Stage 1 (5.0 Acres)
Natural Succession
0 50 100 200
(IN FEET)
1 inch = 100 ft.
Approximate Stage 2
Project Area Implemented
Fall 2021
KAUFFMAN ENGINEERING INC
PO Box 40
Union Dale, Pennsylvania 18470
T(570) 679-2050 F(570) 679-2051
Lancaster County
Solid Waste Management Authority
Exhibit 1
Frey Farm Landfill
Landscape Project (Stage 2)
Township Manor
County Lancaster
State Pennsylvania
REVISIONS
December 2021
Date: July 17, 2020
Drawn By: AJK & BWK
Checked By: BWK
Sheet No. 1 of 1



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Lancaster County
Solid Waste Management Authority
Exhibit 2
Frey Farm Landfill
Landscape Project (Stage 2)

Township	County	State
Manor	Lancaster	Pennsylvania

REVISIONS	
December 2021	

Date: July 17, 2020
Drawn By: AJK & BWK
Checked By: BWK
Sheet No. 1 of 1

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection R Stage 1 and Stage 2

Date: 11/2/23

Name of Inspector: Brian W. Kaufman - Kaufman Engineering, Inc.

Weather Conditions: Sunny, dry, warm 72°

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		*	
2	Are there any test plots with erosion damage (including toe of test plots).		*	
3	Do benches have sedimentation or unusual conditions?		*	
4	Is there water flowing onto bench that is unusual or a potential issue?		*	
5	Does there appear to be any slumping of the test plots?		*	
6	Are there any areas that are overly dry and in need of water?	*	*	Rainfall has normalized in the last few weeks. However, the region was impacted by very dry conditions in May and June. Some plant material is showing signs of stress due to this prolonged dry spell.
7	Other - Explain		*	

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?	*		A few fresh buck rugs were noticed. However, deer guards seem to be helping the cause.
2	Is there damage to mulch beds from animals?		*	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		*	No issues observed this trip
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		*	
5	Other - Explain			Site continues to now be home to many bird species. Hawks observerd flying over the site today too.

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?	*		Deer browse and buck rubs as previously noted.
2	Is there insect damage to plant material?		*	Dry conditions have removed any mite issues we've observed in the past.
3	Is there animal damage to plant material?		*	
4	Is there storm damage to plant material?		*	Stress due to dry spell. Some plants may have entered dormancy earlier than normal.
5	Is there wind blow to plant material?		*	Root balls are all secure and properly placed. Some plants leaning within Stage 1(curved) due to prevailing wind pressures - continue monitor for potential staking.
6	Is there noticeable fatigue to any plant material?	*		Dry conditions are beginning to stress new plantings
7	Is there damage to plant material from landscape crew?		*	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		*	
9	Any plant material missing "identification stakes"?		*	
10	Other - Explain		*	

Photos

		Yes	No	Comments
1	Did you take photos today?	*		Select photos attached - Additional photos taken exist in computer files.

Additional Notes or Comments:

Walk through was completed with Jeff Musser, Michelle Marsh, Ashley Gichuki Jordan Bigler of LCSWMA Mary and Penn Glazier also attended. Dry spell running May - July has impacted some of the plantings. Some replacements will likely be needed by the end of 2024 (fall). We need a bit of time to see if some plants entered dormancy early and rebound in 2024.

Natural succession zone ranges 18" - 72"+ in height. Slopes appear full with grasses thriving. Visual softening of benching and greater visual appeal continue to be extremely successful when contrasted with traditional mowed slope aesthetic. Continue to see natural succession of locust, cherry and multiflora rose, american pokeweed was observed in natural secession area.

Most all of the project area continues to have increased texture and appropriate seasonal texture, matching surrounding landscape. Due to this fact, the landfill slopes continue to be much less obvious and now blend with surroundings to a much higher degree.

Other notes: Several meadow birds were observed in trees.

Not recommending replacing plants within Stage 1 planting.

Moniter dry conditions.

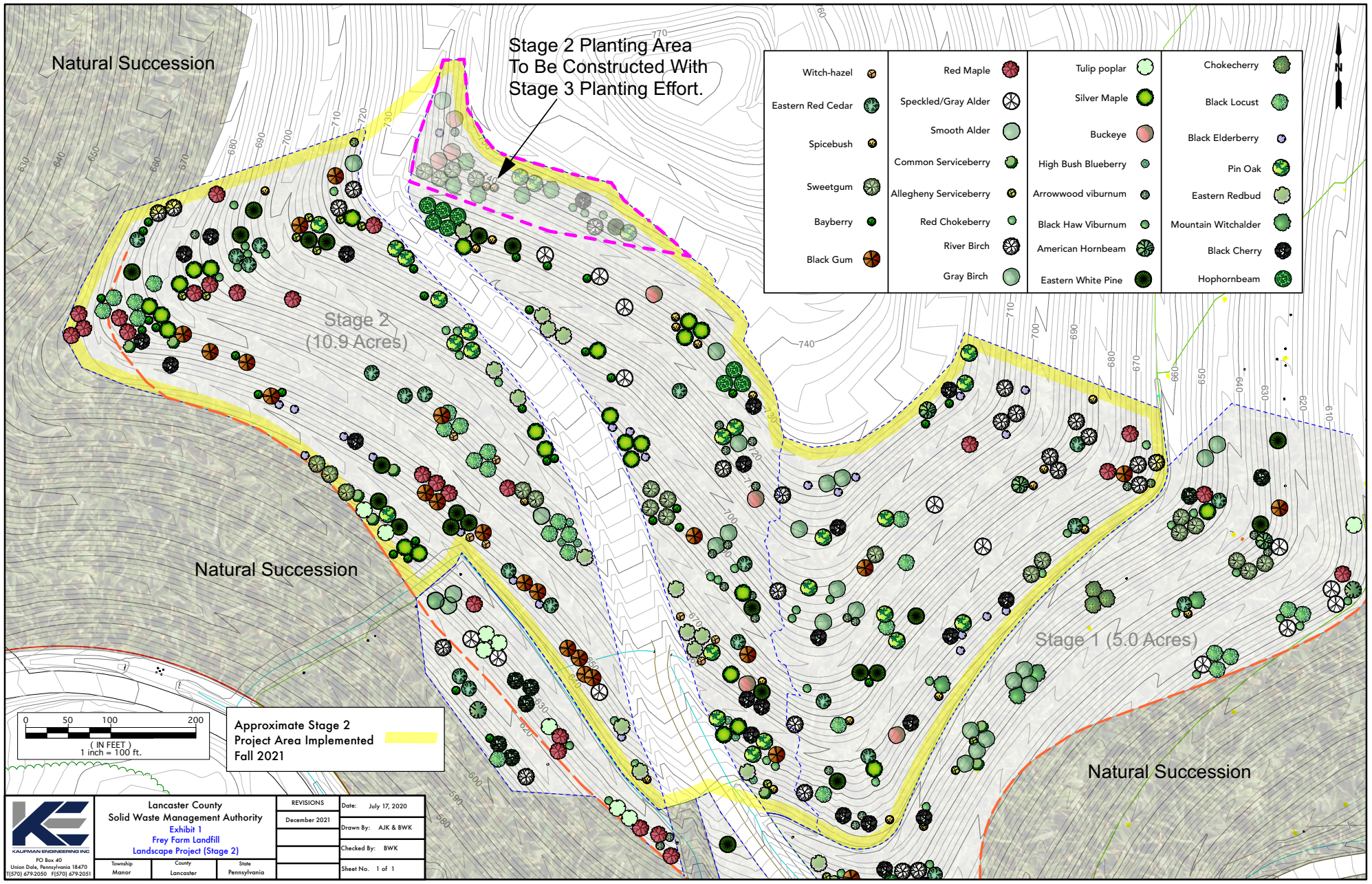
Stage One and Two

Photos Taken During

November 2023 Inspection

Frey Farm Landfill
Visual Landscape Synthsis Plan

Fall 2023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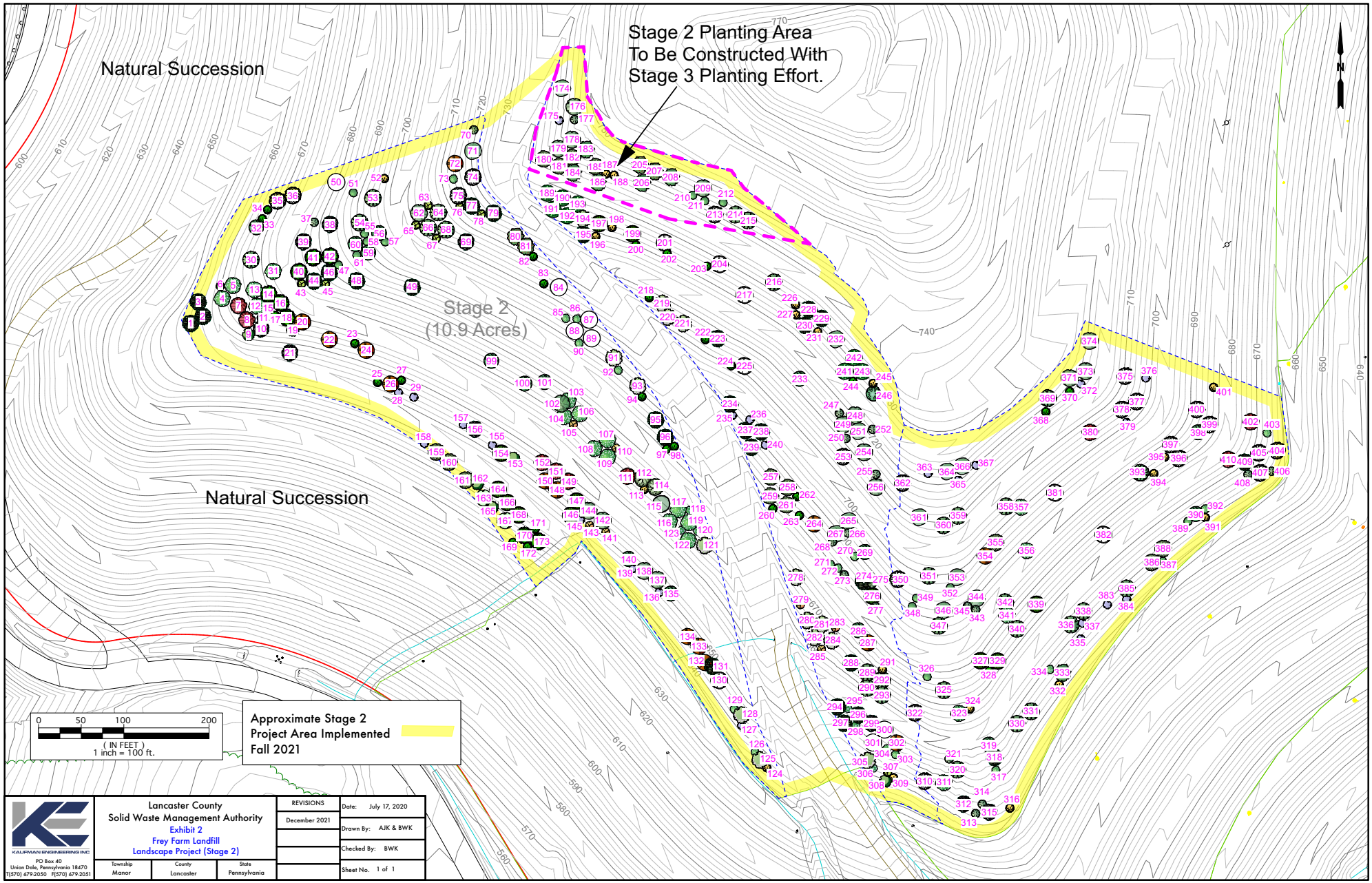

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Lancaster County
Solid Waste Management Authority
Exhibit 2
Frey Farm Landfill
Landscape Project (Stage 2)

Township	County	State
Manor	Lancaster	Pennsylvania

REVISIONS	
December 2021	

Date: July 17, 2020
Drawn By: AJK & BWK
Checked By: BWK
Sheet No. 1 of 1

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 1/27/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 30 deg. F, ligth snow, cloudy

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

No additional areas of concern today.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 2/10/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 50 deg. F, passing clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During the inspection today, I observed tree #250 in the new phase is quite possibly dead, and it seems as if the cause might by the root ball which is wrapped around itself.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 2/24/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 39 deg. F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I observed that tree #216 from the new phase is missing.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 3/10/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 39 deg. F, rain, fog

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I noted that tree #379 from Phase 2 is dead.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 3/24/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 48 deg F, cloudy

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I observed an groundhog hole around tree #243, which was addressed and filled in with dirt.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 4/7/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 52 deg. F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

No new areas of concern

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 4/21/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 70 degrees F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

No new areas of concern

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 5/5/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 64 degrees F, somewhat cloudy

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I observed tree #277 (new phase), has some suckers. This tree had some deer rub from last year so it was nice to see some green on it.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 6/2/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 82 degrees F, passing clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I observed some trees with no new growth on them. These are tree #s 63 and 65 (both in old phase), as well as 228 and 245 (new phase).

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 3/24/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 48 deg F, cloudy

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I observed an groundhog hole around tree #243, which was addressed and filled in with dirt.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 4/21/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 70 degrees F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

No new areas of concern

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 5/19/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 75 degrees F, partly sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

It is a very nice and warm day today! It has been rather dry here for the trees, and there are quite a few that might not make it through a dry summer.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 6/16/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 70 degrees F, scattered clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

No new areas of concern

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 6/30/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 82 degrees F, scattered clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I found a few additional trees that do not seem to have any new growth. These are tree #s 41, 45 and 62 (old phase).

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 7/14/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 85 degrees F, scattered clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I noticed a few trees that did not survive what little rainfall we've had. These are tree #s 36 (old phase) as well as #77 and 279 (new phase).

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 7/28/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 92 degrees F, scattered clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

No new areas of concern

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 8/25/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 81 degrees F, partly sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

No new areas of concern at this time.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 9/22/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 68 degrees F, passing clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During my inspection today, I observed several trees that have been snapped off (even with the tree guards) or have deer rub. The trees that have deer rub are #40 (old phase) and #65 (new phase). The tress that have been snapped off are tree #280 (new phase) and #246 (new phase).

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 10/6/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 73 degrees F, broken clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

During today's inspection, I observed some deer rub on tree #253, even with the more robust deer guards on the trees. Added an additional guard to prevent further scraping.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Report

Phase 1

Date: 10/20/23

Name of Inspector: Ashley Gichuki

Weather Conditions: 70 deg. F, broken clouds

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		x	
2	Are there any test plots with erosion damage (including toe of test plots).		x	
3	Do benches have sedimention or unusual conditions?		x	
4	Is there water flowing onto bench that is unusual or a potential issue?		x	
5	Does there appear to be any slumping of the test plots?		x	
6	Are there any areas that are overly dry and in need of water?		x	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		x	
2	Is there damage to mulch beds from animals?		x	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		x	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		x	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		x	
2	Is there insect damage to plant material?		x	
3	Is there animal damage to plant material?		x	
4	Is there storm damage to plant material?		x	
5	Is there wind blow to plant material?		x	
6	Is there noticeable fatigue to any plant material?		x	
7	Is there damage to plant material from landscape crew?		x	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		x	
9	Any plant material missing "dog tag"?		x	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		x	

Additional Notes or Comments:

There are some beautiful fall colors on the trees on the landfill. Observed several bucks during my inspection walk today. I also noticed a tree that was pushed over from the deer rubbing on the tree. This is tree #226 in the new phase.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Re Phase 1

Date: 11/3/2023

Name of Inspe Ashley Gichuki

Weather Conditions: 59 deg. F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		X	
2	Are there any test plots with erosion damage (including toe of test plots).		X	
3	Do benches have sedimention or unusual conditions?		X	
4	Is there water flowing onto bench that is unusual or a potential issue?		X	
5	Does there appear to be any slumping of the test plots?		X	
6	Are there any areas that are overly dry and in need of water?		X	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		X	
2	Is there damage to mulch beds from animals?		X	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		X	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		X	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		X	
2	Is there insect damage to plant material?		X	
3	Is there animal damage to plant material?		X	
4	Is there storm damage to plant material?		X	
5	Is there wind blow to plant material?		X	
6	Is there noticeable fatigue to any plant material?		X	
7	Is there damage to plant material from landscape crew?		X	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		X	
9	Any plant material missing "dog tag"?		X	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		X	

Additional Notes or Comments:

No new areas of concern today.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Re Phase 1

Date: 11.17.2023

Name of Inspe Ashley Gichuki

Weather Conditions: 47 deg. F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		X	
2	Are there any test plots with erosion damage (including toe of test plots).		X	
3	Do benches have sedimention or unusual conditions?		X	
4	Is there water flowing onto bench that is unusual or a potential issue?		X	
5	Does there appear to be any slumping of the test plots?		X	
6	Are there any areas that are overly dry and in need of water?		X	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		X	
2	Is there damage to mulch beds from animals?		X	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		X	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		X	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		X	
2	Is there insect damage to plant material?		X	
3	Is there animal damage to plant material?		X	
4	Is there storm damage to plant material?		X	
5	Is there wind blow to plant material?		X	
6	Is there noticeable fatigue to any plant material?		X	
7	Is there damage to plant material from landscape crew?		X	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		X	
9	Any plant material missing "dog tag"?		X	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		X	

Additional Notes or Comments:

Phase 1 - Tree #14 looks dead

Phase 2 - Tree #251 was leaning over, added ziptie and attached to the other parts of the tree.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Re Phase 1

Date: 12/1/2023

Name of Inspe Ashley Gichuki

Weather Conditions: 40 deg. F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		X	
2	Are there any test plots with erosion damage (including toe of test plots).		X	
3	Do benches have sedimention or unusual conditions?		X	
4	Is there water flowing onto bench that is unusual or a potential issue?		X	
5	Does there appear to be any slumping of the test plots?		X	
6	Are there any areas that are overly dry and in need of water?		X	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		X	
2	Is there damage to mulch beds from animals?		X	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		X	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		X	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		X	
2	Is there insect damage to plant material?		X	
3	Is there animal damage to plant material?		X	
4	Is there storm damage to plant material?		X	
5	Is there wind blow to plant material?		X	
6	Is there noticeable fatigue to any plant material?		X	
7	Is there damage to plant material from landscape crew?		X	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		X	
9	Any plant material missing "dog tag"?		X	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		X	

Additional Notes or Comments:

Phase 2 - Tree #243 was pulled out of the ground, possibly from deer.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Re Phase 1

Date: 12/15/2023

Name of Inspe Ashley Gichuki

Weather Conditions: 43 deg. F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		X	
2	Are there any test plots with erosion damage (including toe of test plots).		X	
3	Do benches have sedimention or unusual conditions?		X	
4	Is there water flowing onto bench that is unusual or a potential issue?		X	
5	Does there appear to be any slumping of the test plots?		X	
6	Are there any areas that are overly dry and in need of water?		X	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		X	
2	Is there damage to mulch beds from animals?		X	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		X	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		X	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		X	
2	Is there insect damage to plant material?		X	
3	Is there animal damage to plant material?		X	
4	Is there storm damage to plant material?		X	
5	Is there wind blow to plant material?		X	
6	Is there noticeable fatigue to any plant material?		X	
7	Is there damage to plant material from landscape crew?		X	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		X	
9	Any plant material missing "dog tag"?		X	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		X	

Additional Notes or Comments:

No new areas of concern.

Frey Farm Landfill -Visual Landscape Synthesis Plan Bi-Weekly/Post Weather Event Inspection Re Phase 1

Date: 12/29/2023

Name of Inspe Ashley Gichuki

Weather Conditions: 49 deg. F, sunny

Water

		Yes	No	Comments
1	Are there any test plots with areas of saturation or pockets of water.		X	
2	Are there any test plots with erosion damage (including toe of test plots).		X	
3	Do benches have sedimention or unusual conditions?		X	
4	Is there water flowing onto bench that is unusual or a potential issue?		X	
5	Does there appear to be any slumping of the test plots?		X	
6	Are there any areas that are overly dry and in need of water?		X	
7	Other - Explain			

Animals

		Yes	No	Comments
1	Is there damage to plant material from animals (deer, birds, etc.)?		X	
2	Is there damage to mulch beds from animals?		X	
3	Are there nests of bees or other insects which could be harmful to humans / other animals?		X	
4	Are there any holes or burrows in mulch beds and soil from burrowing animals?		X	
5	Other - Explain			

Vegetation

		Yes	No	Comments
1	Is there damage to plant material?		X	
2	Is there insect damage to plant material?		X	
3	Is there animal damage to plant material?		X	
4	Is there storm damage to plant material?		X	
5	Is there wind blow to plant material?		X	
6	Is there noticeable fatigue to any plant material?		X	
7	Is there damage to plant material from landscape crew?		X	
8	Is there damage to plant material from other workers (LF staff or Contractors)?		X	
9	Any plant material missing "dog tag"?		X	
10	Other - Explain			

Photos

		Yes	No	Comments
1	Did you take photos today?		X	

Additional Notes or Comments:

No new areas of concern.