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RUN-ON AND RUN-OFF CONTROL SYSTEM PLAN

Gavin Plant Residual Waste Landfill, Cheshire, Ohio

2026 Periodic Update

Prepared for

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November 13, 2026

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PROFESSIONAL ENGINEER CERTIFICATION

I certify that, to the best of my knowledge, information, and belief, this periodic Run-On and Run-Off Control System Plan for the Gavin Plant Residual Waste Landfill meets the requirements of 40 CFR Part 257.81 and is supported by appropriate engineering calculations.

Signature: _____

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Date: November 13, 2026



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ACRONYMS AND ABBREVIATIONS

ac	acre(s)
ac-ft	acre-foot (acre-feet)
AEP	American Electric Power Service Corporation
CCR	coal combustion residuals
CFR	Code of Federal Regulations
cfs	cubic feet per second
CN	curve number
El.	elevation
EPA	Environmental Protection Agency
ERM	Environmental Resources Management, Inc.
FGD	flue gas desulfurization
ft	foot (feet)
gpm	gallons per minute
H&H	hydrologic and hydraulic
H:V	horizontal to vertical
HDPE	high-density polyethylene
HEC-HMS	Hydrologic Engineering Center–Hydrologic Modeling System
HELP	Hydrologic Evaluation of Landfill Performance
in.	inch(es)
LLDPE	linear low-density polyethylene
LTP	leachate transmission pipe
mg/L	Milligrams per liter
mil	one-thousandth of an inch
MW	monitoring well
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System

NRCS	Natural Resources Conservation Service
NWL	Normal water level
OAC	Ohio Administrative Code
ODOT	Ohio Department of Transportation
Ohio EPA	Ohio Environmental Protection Agency
ORC	Ohio Revised Code
P.E.	professional engineer
PTI	permit-to-install
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
SCS	Soil Conservation Service
sq ft	Square foot (feet)
SWMM	Storm Water Management Model
TR-55	Technical Release 55
TSS	total suspended solids
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
WL	water level
yr	year

1. INTRODUCTION

1.1 Purpose of the Periodic Update

This Run-On and Run-Off Control System Plan (Plan) is the periodic update required under 40 CFR § 257.81(c) for the Residual Waste Landfill (Landfill), at the General James M. Gavin Power Plant, located near Cheshire, Ohio, and owned and operated by Gavin Power, LLC (Gavin). It describes the Run-On and Run-Off controls in place in 2026, identifies the engineering calculations that support them, and documents whether any change in site conditions substantially affects the written Plan currently in effect.

This Plan is a periodic update and re-certification. It is not a new drainage design. The continued applicability of the existing hydrologic and hydraulic (H&H) design basis was evaluated by reviewing the current Plan, the supporting permit-to-install (PTI) calculations and subsequent PTI alterations, the current National Pollutant Discharge Elimination System (NPDES) permit, the 2025 Annual Inspection Report (ERM, 2026), and current facility records. Existing H&H calculations were reviewed for continued applicability but were not independently re-performed or comprehensively recalculated.

1.2 Regulatory Requirements

The Landfill is an existing coal combustion residuals (CCR) landfill with a lateral expansion, regulated under 40 CFR Part 257, Subpart D. **Table 1** provide a cross-reference to the section of this Plan in which each of the run-on and run-off requirements shows where each requirement is addressed.

Table 1: Regulatory Crosswalk

Requirement	40 CFR Part 257	Plan Section
Run-On control for peak discharge from the 25-year storm, 24-hour	§ 257.81(a)(1)	4
Run-Off control to collect and control the 25-year, 24-hour storm volume	§ 257.81(a)(2)	5
Run-Off handled under surface water requirements	§ 257.81(b), § 257.3-3	5.3
Plan documents design and construction, supported by calculations	§ 257.81(c)(1)	3, 4, 5
Amendment for a change in conditions that substantially affects the Plan	§ 257.81(c)(2)	6, 7.2
Qualified P.E. certification	§ 257.81(c)(5)	Cert. page
Operating record, notification, and website	§§ 257.105(g)(3), 257.106(g)(3), 257.107(g)(3)	7.3

1.3 Organization of This Plan

This Plan is organized as follows:

- Section 2 describes the Landfill, the waste receiving portion, the construction and cover status of each phase, and the PTI alterations since 2014.
- Section 3 presents the design criteria, rainfall data, H&H methods, and supporting calculations.
- Section 4 describes the Run-On control system.
- Section 5 describes the Run-Off control system, including leachate collection, the leachate and sediment ponds, and discharge requirements.
- Section 6 evaluates changes in conditions since the previous Plan.
- Section 7 addresses Plan update and recordkeeping.
- Section 8 lists references.

Figures 1 through 6 follow the text. The supporting drawings and engineering calculations are part of the Ohio EPA PTI record cited in Section 8 and are not reproduced in this Plan.

2. FACILITY CONFIGURATION AND CURRENT STATUS

2.1 Facility and Development Framework

The original Plan described an approximately 255-acre landfill, Phases A through F, permitted under PTI 06-3764 (AEP, 2016). Since the 2016 PTI approval, the Landfill has undergone a lateral and vertical expansion, adding about 149 acres within Phases G through J, under PTI 06-08447 (Geosyntec, 2011), to increase the total Landfill area to approximately 404 acres.

Gavin owns and operates the Landfill. The 2025 Annual Inspection Report documents continued waste placement in the combined Phase H and Phase I area (ERM, 2026). The Landfill constitutes an active facility under the federal and Ohio CCR rules. The Landfill location is shown in Figure 1, and the Phase boundaries are shown in Figures 2 and 3.

Three terms are used in this Plan to describe portions of the Landfill (**Table 2**). Phases (A through J) are the permitted cells of liner construction and waste placement shown in Figures 2 and 3. Areas (1 through 10) are the surveyed surface areas shown in Figure 4 and are used to report current cover status; each Area lies within one or more Phases (**Table 3**). Construction stages (Stages 1 through 10) are the interim filling and grading configurations modeled in the PTI drainage analyses and shown on PTI Drawings 6A through 6J; each stage defines the drainage area reporting to each pond at that point in landfill development. In short, Phases describe where waste is placed, Areas describe the current surface cover, and Stages describe the drainage configuration used in the pond calculations. Alteration No. 3 (2018) is the governing analysis for the interim stages, and Stage 5 represents the current configuration (Section 4.2).

Table 2: Definitions of Phase, Construction Stage, and Area

Term	Description	Use
Phase A through Phase J	Permitted cell of liner construction and waste placement	Figure 2 and 3; Table 3
Area 1 through 10	Surveyed surface area used to report cover status	Figure 4; Table 3
Stages 1 through 10	Modeled interim filling configuration that sets each pond's drainage area	Figure 6; Tables 7, 10-12
"Areas" 301, 501-503, 601-605, 405	Drainage sub-catchment IDs from the permit (PTI) H&H model	Section 4.2; Figure 6; Table 7-8

2.2 Waste Receiving Portion

Phases A through F are covered (final cover or temporary cover), and Phases G and J have not received waste beyond existing grades. Phases H and I are the receiving waste portion for the 2026 Plan and are represented by Areas 7 and 8 in Figure 4 (Geosyntec, 2026). **Table 3** summarizes the

surface areas of the Landfill that are covered or actively receiving waste, as shown in Figure 4, and **Table 4** summarizes the construction, waste-placement, and cover status of each phase:

Table 3: Landfill Area and Cover Status Based on Figure 4

Phase	Area Name	Current Status	Surface Area (sq. ft)	Surface Area (Acres)
A-F	Area 1	Final Cover	1,160,834.96	26.65
A-F	Area 2	Final Cover	580,521.88	13.33
A-F	Area 3	Final Cover	282,867.66	6.49
A-F	Area 4	Final Cover	665,290.21	15.27
A-F	Area 5	Final Cover	111,242.37	2.55
A-F	Area 6	Final Cover	71,931.99	1.65
H	Area 7	Receiving Waste	708,469.13	16.26
H and I	Area 8	Receiving Waste	6,338,437.50	145.51
A-F	Area 9	Temporary Cover	3,762,506.30	86.38
A-F	Area 10	Final Cover	6,364,228.20	146.10

Note: Figure 4 areas are three-dimensional surface areas and are not horizontal drainage areas. Areas 9 and 10 are reference areas that overlap the existing landfill footprint and are not additive with Areas 1 through 8. Area 7 is excluded from the final-cover quantity because the cover was removed to allow Phase H filling (Geosyntec, 2026).

Table 4: Construction Phase, Waste Placement, and Cover Status

Phase / Figure 4 Area	Construction Status	Waste Placement	Cover Status	Run-On / Run-Off Control
Phases A-F (Areas 1-6, 9, 10)	Constructed under PTI 06-3764	None	Final cover (Areas 1-6, 10); temporary cover (Area 9). F2 summit at interim grade of approx. El. 965 pending adjacent cells (ERM, 2026)	Covered-area runoff conveyed by benches, down-chutes, and perimeter channels to Ponds 1, 2, and 3; interphase berms divert runoff away from Areas 7 and 8

Phase / Figure 4 Area	Construction Status	Waste Placement	Cover Status	Run-On / Run-Off Control
Phase H (Area 7 and part of Area 8)	Liner and leachate collection constructed	Ongoing in sequential lifts (active)	Closure cap to first bench on southeast slope; temporary cover on part of slope; cover over Area 7 removed to allow Phase H filling (ERM, 2026; Geosyntec, 2026)	Interior grading to chimney drains and leachate collection; interphase swales (**Table 9**); routed to Ponds 3/5 and 6
Phase I (part of Area 8)	Lateral-expansion construction complete (2023)	Ongoing (active)	Exposed working surface and interim cover	Interior grading to chimney drains and leachate collection; routed to Ponds 3/5 and 6
Phase G	Not constructed (deferred under Alteration No. 3)	None	Undisturbed / wooded	Temporary swale and sediment basin (Section 4.2) until Pond 4 is built
Phase J	Future development under PTI 06-08447	None beyond current grades	F2/J slopes under intermediate cover (ERM, 2026)	Covered-area controls

2.3 PTI Alterations

The PTI alterations that define the current design basis are summarized in **Table 5**. Each component of this Plan relies on the latest applicable alteration for that component.

Table 5: PTI Alterations and Effect on the Run-On and Run-Off Design Basis

Alteration	Date	Principal Changes	Effect on Run-On / Run-Off Basis
No. 1	February 28, 2014	Phase H developed before Phase G; Pond 5 redesigned; Pond 3 outfall capacity; chimney drains relocated/added; liner, cover, and leachate revisions; H&H recalculated (AEP and Geosyntec, 2014; Geosyntec, 2014)	Established interim interphase berm/swale and chimney-drain detention design for Stages 3-6
No. 2	August 12, 2016	Revised expansion design and supporting H&H calculations	Permitted basis in effect when the current Plan was prepared

Alteration	Date	Principal Changes	Effect on Run-On / Run-Off Basis
No. 3	October 29, 2018 (Phase I before Phase G approved January 2019)	Phase I developed before Phase G; interior phase limits adjusted; interim pond drainage areas re-delineated; temporary Phase G swale and sediment basin added (Gavin Power and Geosyntec, 2018a, 2018b)	Defines the Stage 5 configuration used for this Plan. Permanent swales, culverts, and down-chutes unchanged
No. 4	April 23, 2019	Pond 6 liner changed from 30-mil PVC to 40-mil HDPE microspike; normal water level El. 713 to El. 711; principal spillway El. 721 to El. 720; emergency spillway El. 721.5 to El. 721; MW-13/MW-14 relocated; LTP-4 realigned (Gavin Power and Geosyntec, 2019)	Pond 6 routing revised (Table 12)
No. 5	September 2, 2021	Final-cover materials: cover-soil hydraulic conductivity and placement/testing; amended-soil vegetative layer; added geotextile; 40-mil LLDPE geomembrane (no PVC at the top of the Landfill); QA/QC Plan revised; Drawings 1A and 7E revised (Gavin Power and Geosyntec, 2021)	Cap infiltration and drainage capacity recalculated; cover drainage concept retained. No new channel, culvert, or pond design.

3. DESIGN BASIS AND ENGINEERING CALCULATIONS

3.1 Run-On and Run-Off Design Criteria

The Run-On and Run-Off Control System is based on the federal requirements (USEPA, 2026) and the facility-specific design criteria in the Ohio EPA PTI (Geosyntec, 2011, 2014; Gavin Power and Geosyntec, 2018a). **Table 6** summarizes the regulatory and engineering criteria applicable to the principal stormwater-control features.

Table 6: Design Criteria for Run-On and Run-Off Controls

Control Element	Design Criterion	Source
Run-On control system	Prevent flow onto the waste receiving areas during the peak discharge from the 25-year, 24-hour storm	40 CFR § 257.81(a)(1)
Run-Off control system	Collect and control at least the runoff volume from the 25-year, 24-hour storm	40 CFR § 257.81(a)(2)
Perimeter channels and swales	Convey the peak discharge from the 25-year, 24-hour storm	AEP (2016), Section 4.1.1; Geosyntec (2011).
Channel and swale lining	Resist erosion from the 25-year, 24-hour storm; riprap or turf reinforcement matting selected so that the velocity at the 25-year, 24-hour peak flow does not exceed the permissible velocity of the lining	Geosyntec (2014); Gavin Power and Geosyntec (2018a), Appendix B.2
Culverts and culvert outlets	Convey the peak discharge from the 25-year, 24-hour storm; provide riprap or Fabriform (armored grout bag) outlet protection	AEP (2016), Section 4.1.1; Geosyntec (2011)
Cover benches and down-chutes	Convey the peak discharge from the 25-year, 24-hour storm from covered areas	AEP (2016), Section 4.2
Sediment pond (sediment storage)	Provide sediment storage below the normal water level equal to the greater of 0.125 ac-ft per acre of tributary area or the 10-year, 24-hour runoff volume	Geosyntec (2011); AEP (2016), Section 5.2
Sediment pond (flood storage)	Provide flood storage for the 25-year, 24-hour storm with no flow through the emergency spillway	Geosyntec (2011, 2014).
Sediment pond (spillways and freeboard)	Pass the 100-year, 24-hour storm through the principal and emergency spillways with no less than 1 foot of freeboard	Geosyntec (2011, 2014); AEP (2016), Section 5.2

Control Element	Design Criterion	Source
Leachate collection system	Convey the peak leachate generation rate computed with the HELP model for a 4.5-inch, 25-year, 24-hour storm to the leachate/sediment ponds	Geosyntec (2011); AEP (2016), Section 5.1; Schroeder et al. (1994)

3.2 Rainfall Data

The H&H calculation package used precipitation-frequency data from NOAA Atlas 14, Volume 2, Version 3 (Bonnin et al., 2006; Gavin Power and Geosyntec, 2018a) for the Gavin Landfill area near Cheshire, Ohio. The PTI calculations used 24-hour precipitation depths of 3.64 inches, 4.28 inches, and 5.33 inches for the 10-year, 25-year, and 100-year recurrence intervals, respectively. These values were checked against the NOAA Atlas 14 Precipitation Frequency Data Server information included in the PTI package for coordinates 38.9400°N, 82.1200°W and were found to be consistent. The current Plan also identifies NOAA Atlas 14, Volume 2, Version 3 as the precipitation source; therefore, no change in the surface-water design rainfall basis was identified for this update**.**

The separate HELP-model analysis used a 4.5-inch, 25-year, 24-hour precipitation depth for evaluation of peak leachate generation (AEP, 2016). This value is specific to the HELP-model analysis and is separate from the 4.28-inch 25-year, 24-hour precipitation depth used for the surface-water H&H calculations; therefore, the 4.5-inch value does not represent a change in the Run-On/Run-Off design rainfall basis.

3.3 Hydrologic and Hydraulic Methods

This section describes the methods used in the PTI H&H calculations and confirms that they remain applicable. Runoff was computed with the NRCS TR-55 curve number method (USDA-SCS, 1986) using a Type II 24-hour rainfall distribution, curve numbers of 91 for active and interim surfaces, 74 for final cover, and 73 for wooded areas, and times of concentration computed from sheet, shallow concentrated, and channel flow segments. HEC-HMS version 4.2.1 (USACE, 2017) was used to develop runoff hydrographs and routes through the ponds; channel and swale capacity and velocity were evaluated with Manning's equation; and culvert capacity was evaluated with HY-8 (Geosyntec, 2011, 2014; Gavin Power and Geosyntec, 2018a). Alteration No. 3 also used EPA SWMM version 5.1.011 (USEPA, 2016) to evaluate the temporary Phase G sediment basin (Gavin Power and Geosyntec, 2018a).

Construction stages are relevant because the drainage area to each pond changes as the Landfill develops, so the largest required pond storage may occur at an interim stage rather than at final cover. Each pond was therefore evaluated for predevelopment, each interim stage, and final-cover conditions, and the governing (largest-demand) stage was identified for each pond. Ponds were evaluated for sediment storage (10-year, 24-hour), flood storage and routed discharge (25-year, 24-hour), and spillway performance and freeboard (100-year, 24-hour) (Geosyntec, 2011). For

sediment storage, the 10-year, 24-hour runoff volume governed over the 0.125 ac-ft per acre criterion for Ponds 1, 3/5, 4, and 6 (Gavin Power and Geosyntec, 2018a). Alteration No. 3 re-delineated interim drainage areas for the revised staging, and the 2014 analysis confirmed that final-cover peak flows to Ponds 1, 2, and 3 are lower than existing-condition peak flows (Geosyntec, 2014).

Leachate generation was evaluated separately using the HELP model, Version 3.07 (Schroeder et al., 1994), as described in Section 5.1. The review found that these methods remain applicable and that no change in landfill design or operation since 2016 has changed the drainage areas, curve numbers, rainfall, or conveyance geometry outside the conditions already analyzed (Section 6).

3.4 Supporting Engineering Calculations

The current Plan does not include the calculations; it references the Ohio EPA PTI package. This Plan update does not re-perform those calculations. The governing calculations are those in the PTI record (Geosyntec, 2011, 2014; Gavin Power and Geosyntec, 2018a, 2019), and the values relied on are summarized in Tables 6 through 11. Current conditions are defined as the Stage 5 configuration, with waste placement in Phases H and I (Areas 7 and 8), as documented in the 2025 Annual Inspection Report (ERM, 2026) and the 2026 cover-area survey (Geosyntec, 2026).

4. RUN-ON CONTROL SYSTEM

The Run-On control system must prevent flow onto the active portion of the CCR unit during the peak discharge from the 25-year, 24-hour storm (40 CFR § 257.81(a)(1)). Because the active portion is the entire Landfill area that has received waste (Section 2.2), run-on is runoff from areas outside the waste limits. At the Landfill, run-on is prevented by perimeter channels, swales, ditches, berms, and culverts that intercept this runoff and convey it around the Landfill (Section 4.1). The interphase berms and swales separate runoff from covered areas and areas receiving waste (Section 4.2).

4.1 Run-On Control Outside the Landfill Footprint

Runoff from areas outside the limits of waste placement is intercepted by perimeter channels, swales, ditches, berms, and culverts and conveyed around the Landfill without contacting CCR (AEP and Geosyntec, 2014). Perimeter and haul-road channels and culverts are designed to convey the peak discharge from the 25-year, 24-hour storm. The drainage system comprises benches, slope drains, channels, pipes, manholes, catch basins, and culverts; the current Plan identifies 19 existing or future culverts. Alteration No. 3 did not modify the permanent perimeter and haul-road swales, culverts, or down-chutes (Gavin Power and Geosyntec, 2018b). The only culvert modification identified since 2016 is the 2025 replacement of the Pond 3 inlet culvert with twin HDPE pipes (ERM, 2026); the design criterion (25-year, 24-hour peak discharge) is unchanged. Run-On control features for all phases (A through J) are shown in Figure 5.

4.2 Run-On Control Within the Landfill

Within the Landfill, interphase berms, benches, swales, haul-road drainage features, and temporary conveyances separate runoff from covered areas from the areas receiving waste (Areas 7 and 8) and maintain the pond drainage areas established for each construction stage (Geosyntec, 2014). These features are designed for the 25-year, 24-hour storm. Areas receiving waste and areas with final or temporary cover are summarized in Tables 2 and 3 and shown in Figure 4.

Under Alteration No. 3 (2018), interim drainage areas were re-delineated for development of Phase I before Phase G, and temporary controls were added for the undeveloped Phase G area: a temporary swale with a 25-year, 24-hour peak flow of 65.1 cfs and a capacity of 68.5 cfs (15-foot bottom width, 2H:1V side slopes), and a temporary sediment basin with a 25-year, 24-hour peak water level of El. 713.06 and peak discharge of 26.27 cfs, less than the existing-condition peak of 67.5 cfs (Gavin Power and Geosyntec, 2018a). Current drainage divides were compared with Alteration No. 3 Stage 5 staging drawing (Ohio EPA Drawing 6E, No. 12-30492-11-B, December 14, 2018), and the waste receiving area lies within the Stage 5 drainage areas analyzed. The principal Run-On and Run-Off control features for all phases (A through J) are shown in Figure 5.

Current landfill development is represented by the Stage 5 configuration; therefore, the Stage 5 drainage conditions established under Alteration No. 3 provide the basis for this Plan. The covered area and waste receiving areas are shown in Figure 4. The Stage 5 drainage-area exhibit (Figure

6) indicates that Areas 7 and 8 contribute drainage to Pond 6 and Ponds 3/5. For the controlling Stage 5 Ponds 3/5 condition, the PTI analysis evaluated a 156.6-acre tributary area using a 4.28-inch, 25-year, 24-hour storm, a composite curve number of 81, a runoff depth of 2.368 inches, and a runoff volume of 30.91 acre-feet (Gavin Power and Geosyntec, 2018a).

Table 7 lists the pond tributary areas for each construction stage evaluated under Alteration No. 3, with the current Stage 5 configuration highlighted. For each constructed pond, the Stage 5 tributary area does not exceed the maximum area analyzed in the PTI calculations.

Table 7: Pond Tributary Areas by Construction Stage, Alteration No. 3 (acres)

Stage	Staging Drawing	Development Under Alteration no. 3	Pond 1	Pond 2	Ponds 3/5	Pond 4*	Pond 6
2	6B	Phase F2 filling	117.2	83.9	141.9	n/a	n/a
3	6C	Phase I subgrade construction	96.8	83.9	142.9	99.8	81.1
4	6D	Phase I liner construction	83.7	83.9	146.1	112.9	75.3
5 (current)	**6E**	**Phase I filling to approx. El. 900; Phase G development**	**83.7**	**83.9**	**156.6**	**114.6**	**63.0**
6	6F	Phase I filling to approx. EL. 900; Phase G development	65.3	83.9	143.0	147.5	62.1
7	6G	Phase G filling	60.1	83.9	143.0	152.8	62.0
8	6H	Phase G filling	69.2	83.9	143.0	143.1	62.6
Maximum analyzed			117.2 (Stage 2)	83.9	156.6 (Stage 5)	152.8 (Stage 7)	81.1 (Stage 3)

Source: Gavin Power and Geosyntec (2018a), Tables 2-1, 2-2, and 3-1. Phase H is currently receiving waste along with Phase I, and Phase G has not been developed. Phase G drainage is handled by the temporary channel and sediment basin described above. *Pond 4 values are comparison-point areas; at Stage 7, 132.6 ac is tributary to the pond, and 20.2 ac (Area 405) bypasses it. Pond 4 has not been constructed and is not credited as a current control. Stage 9 was not re-analyzed under Alteration No. 3.

Table 8 identifies, for each area of the Landfill, the Stage 5 receiving catchment, the Run-On control, and the Run-Off collection route to the receiving pond and outfall. Control features are shown in Figure 5 and the pond drainage areas in Figure 6.

Table 8: Stage 5 Area-to-Control Crosswalk

Area	Surface Condition	Stage 5 Receiving Catchment	Run-On Control	Run-Off Collection and Route
Areas 7 and 8 (Phases H and I, active portion)	Exposed waste and interim cover	Ponds 3/5 (Areas 301, 501-503) and Pond 6 (Areas 601-605)	Interphase berms and swales (Table 9); perimeter channels upslope	Interior grading to chimney drains; leachate collection and transmission piping; chimney-drain detention; to Pond 5 then Pond 3 (Outfall 009) and to Pond 6 (Outfall 011)
Areas 1-6 and 10 (final cover)	Vegetated final cover	Ponds 1, 2, and 3 per Figure 6 drainage divides	Part of the landfill area; runoff diverted away from Areas 7 and 8 by interphase berms and collected by the pond system	Benches, down-chutes, and perimeter channels to Ponds 1 (Outfall 007), 2 (Outfall 008), and 3 (Outfall 009); diverted away from Areas 7 and 8
Area 9 (temporary cover)	Temporary cover	Per Figure 6 drainage divides	Interphase berms between Area 9 and Areas 7/8	Benches and swales to receiving ponds
Phase G (not constructed)	Wooded / undisturbed	Pond 4 comparison area (114.6 ac)	Temporary swale (65.1 cfs peak; 68.5 cfs capacity)	Temporary sediment basin (25-year peak El. 713.06; discharge 26.27 cfs); Pond 4 not credited
Off-site upland	Undisturbed	Perimeter drainage	Perimeter channels, ditches, and culverts sized for the 25-year, 24-hour peak	Conveyed around the waste limits without contacting CCR

Interphase berms and swales were sized in the February 2014 interim-condition routing analysis for Stages 3 through 6, which include Stage 5 (Geosyntec, 2014). **Table 9** summarizes the 25-year, 24-hour design-point results. Where incoming flow exceeds chimney-drain capacity, temporary detention around the chimney drains attenuates flow before it enters the leachate transmission system.

Table 9: Interphase Swale 25-Year, 24-Hour Design Checks (Stages 3 through 6)

Design Point	Area (ac)	25-yr Peak, CN 91 (cfs)	25-yr Peak, CN 74 (cfs)	Flow Depth (ft)	Freeboard (ft)
H6_EAST_1	6.26	26.6	15.0	0.83	1.17
H6_EAST_2	3.13	13.3	7.5	0.58	1.42
H6_WEST	1.02	4.3	2.4	0.20	1.80
H1_EAST	2.41	10.2	5.8	0.55	1.45
H2A_NORTH	3.87	16.5	9.3	0.73	1.27
H2_NORTH	11.07	47.1	26.6	1.22	0.78
H2A_SOUTH	5.10	21.7	12.2	0.83	1.17
H2_SOUTH	10.19	43.3	24.5	1.17	0.83
H2_WEST	5.22	22.2	12.5	0.63	1.37

Source: Geosyntec (2014), Appendix C Addendum, Table 1. Sections have a 3-ft bottom width, 3H:1V side slopes, Manning n = 0.025, and a 2-ft berm; flow depth and freeboard are for the CN 91 interim condition. Design-point flows overlap and are not additive.

4.3 Operation, Inspection, and Maintenance

Run-On and Run-Off controls are inspected weekly and annually as required by 40 CFR § 257.84 and OAC 3745-525-650. Routine practices carried forward from the current Plan (AEP, 2016) include:

- Constructing containment berms and keeping active fill areas as small as practical;
- Inspecting, maintaining, and repairing channels and structures;
- Removing accumulated sediment from the ponds;
- Placing temporary and permanent cover and establishing vegetation;
- Installing and maintaining silt fence and inlet protection;
- Following the Soil Erosion and Sediment Control Plan; and
- Constructing temporary and permanent roads.

The 2025 annual inspection did not identify significant deficiencies affecting the overall Run-On or Run-Off control systems (ERM, 2026). Erosion repair, sediment removal, and replacement of the Pond 3 inlet culvert were completed or in progress. The report identified a leachate seep on the eastern slope above Pond 2. The seep was collected and conveyed to the Pond 2 headworks and was corrected in 2026. The Pond 2 tributary drainage area is unchanged (Section 6.2).

5. RUN-OFF CONTROL SYSTEM

The Run-Off control system must collect and control at least the water volume from the 25-year, 24-hour storm falling on the active portion of the CCR unit (40 CFR § 257.81(a)). The active portion is the entire Landfill area that has received waste (Section 2.2). Contact water from the areas receiving waste (Areas 7 and 8) is collected by the leachate collection system (Section 5.1), and runoff from the entire Landfill surface, including covered areas, is routed to the five constructed leachate and sediment ponds (Ponds 1, 2, 3, 5, and 6) and the temporary Phase G sediment basin (Section 5.2) before discharge under the NPDES permit (Section 5.3).

5.1 Contact Water and Leachate Collection

Contact water from areas receiving waste (Areas 7 and 8) drains to vertical chimney drains, enters the leachate collection system, and flows through transmission pipes to the leachate ponds. The working surface is sloped toward the interior to limit ponding and to direct excess water to the chimney drains (AEP, 2016). The HELP analysis (Schroeder et al., 1994) from the current Plan estimated a maximum leachate collection rate of 2.67 cfs (1,197 gpm) in a main corridor pipe, occurring during Phase H with 1.5 feet of FGD waste in place, based on a 25-year, 24-hour precipitation depth of 4.5 inches (AEP, 2016). Alteration No. 5 increased the allowable hydraulic conductivity of the protective cover soil; because the geomembrane remains the controlling barrier, this change does not affect the peak leachate estimate (Gavin Power and Geosyntec, 2021). The Phase H and I leachate collection layout is consistent with the permitted design based on as-built drawings and is shown on Ohio EPA Drawing 4E of the PTI.

5.2 Leachate and Sediment Ponds

The permitted pond system comprises Ponds 1 through 6 and forms one combined stormwater and leachate management system. Ponds 1, 2, and 3 serve Phases A through F permitted under PTI 06-3764, and Ponds 4, 5, and 6 serve Phases G through J permitted under PTI 06-08447. Ponds 1, 2, 3, 5, and 6 are constructed; Pond 4, planned to be located west of Phase G, has not been constructed and is not credited as a current control. Pond 5 is northeast of Phase H, adjacent to Pond 3, and discharges only to Pond 3; Pond 6 is north of Phase I (AEP and Geosyntec, 2014). Ponds 3 and 5 are evaluated as one system. Each pond provides sediment storage below the normal water level and flood storage above it (Geosyntec, 2011). The contributing drainage areas to the ponds are shown in Figure 6.

Table 10 summarizes each pond with its Stage 5 tributary area and the governing construction stage under Alteration No. 3 (Gavin Power and Geosyntec, 2018a). **Table 11** presents the Stage 5 25-year, 24-hour runoff calculation for Ponds 3/5, the pond system governed by Stage 5, and **Table 12** summarizes pond hydraulic performance from the PTI analyses. The PTI calculations report routed discharge and peak water level, not pond inflow; this Plan reports those values and does not recalculate them. For Ponds 3/5, the Stage 5 runoff volume of 30.91 ac-ft is less than the 52.50 ac-ft of storage above the normal water level. For Ponds 1 and 6, the Stage 5 tributary areas

are smaller than the governing-stage areas for which the PTI analyses demonstrated adequate storage and freeboard, and the Pond 2 tributary area is unchanged across all stages.

Table 10: Leachate and Sediment Pond Summary

Pond	Location	Current Status	Stage 5 Area/ Governing Stage (ac)
1	South	In use and functioning satisfactorily	83.7 / Stage 2: 117.2
2	East	In use and functioning satisfactorily	83.9 / All Stages: 83.9
3/5	Northeast	In use; Pond 3 rehabilitated in 2025	156.6 / Stage 5: 156.6
4	West	Not constructed; redesign pending	114.6* / Stage 7: 152.8*
6	Northwest	Constructed (Alteration No. 4)	63.0 / Stage 3: 81.1

*Pond 4 values are comparison-point areas (**Table 7**). Pond 4 has not been constructed.

Table 11: Stage 5 Ponds 3/5 Runoff Calculation

Parameter	10-Year, 24-Hour	25-Year, 24-Hour
Tributary area (ac)	156.63	156.63
Rainfall depth (in.)	3.64	4.28
Composite curve number	81	81
Potential retention, S (in.)	2.330	2.330
Initial abstraction, Ia = 0.2S (in.)	0.466	0.466
Runoff depth (in.)	1.831	2.368
Runoff volume (ac-ft)	23.89	30.91
Storage above normal water level (ac-ft)	-	52.50
Pond 5 routed outflow / peak water level	-	0.0 cfs / El. 605.61

Source: Gavin Power and Geosyntec (2018a), Tables 3-1, 3-2, and 3-10. The runoff volume applies to the full Ponds 3/5 catchment, which includes covered areas; Pond 5 zero outflow is not the combined Pond 3 discharge.

Table 12: Pond Hydraulic Performance from PTI Analyses

Pond	Governing Stage / Area (ac)	25-yr Runoff Vol.(ac-ft)	Storage Above NWL (ac-ft)	25-yr Discharge (cfs) / Peak WL	100-yr Peak WL / Freeboard
1	Stage 2 / 117.2	19.67	21.50	Per PTI routing (Geosyntec, 2011, 2014)	Per PTI routing (Geosyntec, 2011, 2014)
2	All / 83.9	Per PTI analyses (Geosyntec, 2011, 2014)	Per PTI analyses	Per PTI routing	Per PTI routing
3/5	Stage 5 / 156.6	30.91	52.50	0.0 from Pond 5 / El. 605.61	-
4 (Planned)	Stage 7 / 132.6 to pond	34.02	24.62	29.9 / El. 688.1	El. 689.0 / 1.0 ft
6	Stage 3 / 81.1	22.04	32.09 (2018); geometry revised 2019	8.5 / El. 718.1	El. 719.7 / 3.3 ft
Phase G temporary basin	56.7	-	-	26.27 / El. 713.06	-

Sources: Gavin Power and Geosyntec (2018a, 2019). Pond 6 values are from Alteration No. 4, Table 2 (normal water level El. 711.0, principal spillway El. 720.0, emergency spillway El. 721.0, embankment El. 723.0); 25-year freeboard to the embankment is 4.9 ft. Pond 4 is not constructed; its values are shown for completeness and are not part of the current Run-Off control demonstration. Phase G temporary basin values are from Alteration No. 3, Appendix B.2. All elevations (El.) are in feet.

5.3 Discharge and Surface Water Requirements

Run-Off from the waste receiving portion of the Landfill is managed in accordance with the surface-water requirements of 40 CFR § 257.3-3 and ORC Chapter 6111, including the facility's NPDES permit. The NPDES permit in effect when the current Plan was prepared was Permit No. 0IB00006*ND, issued May 1, 2014, and effective June 1, 2014 (Ohio EPA, 2014). The permit has since been renewed and modified as Permit No. 0IB00006*QD, with Gavin identified as the permittee and an expiration date of August 31, 2026(Ohio EPA, 2026b). The renewal application was submitted at least 180 days before the expiration date; the facility therefore continues to operate under the existing permit until Ohio EPA acts on the renewal.

Comparison of the permits indicates that the landfill pond outfall configuration has remained generally consistent. Both permits authorize Outfalls 007, 008, 009, 010, and 011 for Ponds 1, 2, 3, 4, and 6, respectively. Pond 5 discharges to Pond 3 and has no separate outfall, and Outfall 010 will become active when Pond 4 is constructed. The receiving-water description for Outfall 009 differs between permits, but the outfall location is unchanged. No outfalls have been added or removed since 2016.

6. VALUATION OF CHANGES IN CONDITIONS

6.1 Review Approach

The review compared the current Plan and its supporting PTI calculations with the following records, provided by Gavin and from Geosyntec project files: PTI Alterations Nos. 1 through 5 (AEP and Geosyntec, 2014; Geosyntec, 2014; Gavin Power and Geosyntec, 2018a, 2018b, 2019, 2021); NPDES Permits 0IB00006*ND and *QD (Ohio EPA, 2014, 2026b); the 2025 Annual Inspection Report (ERM, 2026); and current NOAA Atlas 14 data (Bonnin et al., 2006). Each item in **Table 13** was screened using five questions:

- Has any drainage area reporting to a channel, culvert, or pond changed in size or routing?
- Has the surface condition changed enough to change runoff?
- Has any conveyance or pond been added, removed, resized, or modified, including outlets and spillways?
- Do current design rainfall depths differ from those used in the PTI calculations?
- Has the NPDES permit or a PTI alteration changed the design criterion?

Changes identified were compared with the conditions already analyzed in the PTI calculations. No field survey was conducted. **Table 13** summarizes the review approach and evaluation criteria for this analysis.

Table 13: Review Approach and Evaluation Criteria for 2026 Run-On and Run-Off Control System

Review Item	Review Approach	Basis
Drainage area and routing	Changes in the size, boundaries, or routing of drainage areas directing to channels, culverts, and sediment/leachate ponds were evaluated against the latest applicable PTI analyses.	Comparison of the current Plan and subsequent PTI drainage areas with current grading, phasing, and drainage information.
Landfill phasing and surface conditions	Landfill development, grading, waste receiving areas, interim cover, and final cover were reviewed to identify changes that could materially affect runoff characteristics.	Compare Phases H, I, G, and J and current cover conditions against the applicable PTI staging and final-cover assumptions.
Run-On controls	Diversion berms, perimeter swales, channels, and other Run-On controls were reviewed for additions, removals, relocations, or modifications.	Confirm whether external runoff continues to be intercepted and conveyed consistently with the permitted design.

Review Item	Review Approach	Basis
Run-Off conveyance	Channels, culverts, down-chutes, benches, and other conveyance features were reviewed for additions, removals, resizing, relocations, or other modifications.	Compare current features with the latest applicable PTI drawings and calculations and identify changes that could affect hydraulic capacity.
Sediment/leachate ponds	Pond geometry, tributary drainage areas, storage capacity, inlet/outlet structures, normal water levels, and spillways were reviewed for changes relative to the latest applicable PTI design.	Review Ponds 1-6 against the latest applicable PTI basis, including Pond 6 modification.
Design rainfall event	Current design rainfall depths were compared with the precipitation depths used in the applicable PTI calculations to identify material differences.	Compare current precipitation-frequency information with the rainfall values used in the PTI H&H analyses.
PTI alterations	PTI alterations were reviewed to identify changes to drainage areas, flow routing, hydraulic structures, ponds, final-cover configuration, or applicable design criteria.	Review PTI Alterations Nos. 3, 4, and 5 and carry forward the latest applicable design basis for each affected component.
NPDES requirements	Current NPDES permit conditions and landfill pond outfalls were compared with the prior permit conditions to identify changes affecting the Run-On and Run-Off Control System.	Compare the prior permit with the current 2026 permit, including pond/outfall configuration and discharge locations.
Current condition/maintenance	Available inspection records were reviewed for erosion, sedimentation, seepage, reduced pond storage, culvert deficiencies, or other conditions that could affect system performance.	Review available inspection and maintenance records and distinguish routine maintenance from changes affecting the engineering basis.
H&H reanalysis decision	Identified changes were evaluated against the conditions previously analyzed in the applicable PTI H&H calculations to determine whether the existing analyses remain representative or additional H&H evaluation is warranted.	If no, carry forward the existing calculations. If a localized component has materially changed, perform a targeted H&H evaluation. A broader H&H update is warranted only if current drainage areas, routing, conveyances, or pond conditions are no longer represented by the existing analyses.

6.2 Findings

Table 14 summarizes the findings for each review item, including the change, the design assumption it was compared against, and whether the change falls within the conditions analyzed in the PTI.

Table 14: Summary of Design-Basis Review and Findings

Review Item	Design Basis	Consistency with Applicable Design Basis	Effect on Design Basis and 2026 Update
Landfill phasing	Alteration No. 2 (August 12, 2016) set the permitted development sequence used as the basis for the current Plan (Gavin Power and Geosyntec, 2018a).	Alteration No. 3 (October 29, 2018) subsequently evaluated development of Phase I before Phase G, including revised interim drainage areas and stormwater routing.	Phasing differs from the current Plan, but the change was subsequently evaluated through the PTI process. Existing permanent stormwater controls were determined to remain adequate.
Phases H and I development	Phases H and I were Planned expansion phases (AEP, 2016).	Phases H and I were constructed under Alteration No. 3 sequence; Closure cap is being placed on portions of Phase H (ERM, 2026).	Phases H and I (Areas 7 and 8) are currently receiving waste; the current configuration is Stage 5 of Alteration No. 3 (Tables 4, 7, and 8).
Phase G and temporary controls	Phase G was a planned expansion phase (AEP, 2016).	Alteration No. 3 deferred Phase G and added temporary controls: (1) a swale carrying a 25-year, 24-hour peak of 65.1 cfs, with 68.5 cfs capacity; (2) a sediment basin with a 25-year, 24-hour peak water level of El. 713.06, discharging 26.27 cfs, below the 67.5 cfs existing-condition peak (Gavin Power and Geosyntec, 2018a).	No waste placement has occurred in Phase G. Temporary Phase G controls were analyzed under Alteration No. 3 (Gavin Power and Geosyntec, 2018a).
Drainage areas (general)	The PTI design evaluated drainage areas to each pond at each construction stage and at final cover (Geosyntec, 2011, 2014).	Stage 5 tributary areas are 83.7 ac (Pond 1), 83.9 ac (Pond 2), 156.6 ac (Ponds 3/5), 114.6 ac (Pond 4 comparison area), and 63.0 ac (Pond 6) (Gavin Power and Geosyntec, 2018a).	For each constructed pond, the Stage 5 area does not exceed the maximum area analyzed (**Table 7**). Within analyzed conditions.

Review Item	Design Basis	Consistency with Applicable Design Basis	Effect on Design Basis and 2026 Update
Pond 1 drainage area	Ponds 1 to 3 were limited to the drainage areas and discharges permitted in 1993; for Pond 1 that area was 108.96 ac (Geosyntec, 2011).	Under Alteration No. 3, Pond 1 receives 117.2 ac at Stage 2, more than the 1993 permitted area. Sediment storage of 21.24 ac-ft exceeds both the area-based requirement (14.65 ac-ft) and the 10-year runoff volume (14.83 ac-ft). The final-cover area of 90.3 ac is below the permitted area (Gavin Power and Geosyntec, 2018a).	Temporary Stage 2 exceedance was evaluated under Alteration No. 3. At Stage 5 the Pond 1 area is 83.7 ac, below the 1993 permitted area.
Permanent channels, swales and down-chutes	Surface water controls were designed for the applicable 25-year, 24-hour design event.	Alteration No. 3 (Gavin Power and Geosyntec, 2018a) concluded that no changes were required to permanent stormwater design features because of the revised staging.	No change to the permanent conveyance-system design basis.
Culverts	The current Plan identifies 19 existing or future culverts associated with landfill development (AEP, 2016).	Alteration No. 3 identifies culverts as unchanged (Gavin Power and Geosyntec, 2018b). Alterations No. 4 and No. 5 do not modify culverts (Gavin Power and Geosyntec, 2019, 2021). The degraded Pond 3 inlet culvert was replaced with twin HDPE pipes in 2025 (ERM, 2026).	The Pond 3 inlet culvert is the only culvert change identified (see Pond 3 row).
Sediment/leachate ponds (general)	PTI analyses evaluated tributary drainage areas, required sediment storage, pond routing, high-water levels, and outlet/spillway performance for applicable development stages	Alteration No. 3 (Gavin Power and Geosyntec, 2018a) re-evaluated drainage areas and storage requirements for the revised staging and concluded that the existing pond storage remains adequate (Gavin Power and Geosyntec, 2018a, 2018b).	Existing pond-sizing calculations are carried forward; sediment-storage values are checked.

Review Item	Design Basis	Consistency with Applicable Design Basis	Effect on Design Basis and 2026 Update
	(Geosyntec, 2011, 2014).		
Ponds 3 and 5	Pond 5 discharges to Pond 3 and was designed to limit its 100-year discharge to Pond 3 (Geosyntec, 2011).	Alteration No. 3 governing condition is Stage 5, 156.6 ac. Pond 5 does not discharge to Pond 3 in the 25-year, 24-hour storm, with a peak water level of El. 605.61 (Gavin Power and Geosyntec, 2018a).	Stage 5 is the governing and current condition; runoff volume 30.91 ac-ft is less than 52.50 ac-ft storage above the normal water level (**Table 11**). Pond 5 has no separate NPDES outfall.
Pond 4	Planned pond. The 2011 design gave a 100-year, 24-hour peak water level of El. 688.2, 1.8 ft of freeboard to the El. 690 crest, and no use of the emergency spillway (Geosyntec, 2011).	Under Alteration No. 3 (Stage 7; 152.8 ac at the comparison point, 132.6 ac tributary to the pond): 25-year, 24-hour discharge 29.9 cfs at El. 688.1; 100-year, 24-hour peak water level El. 689.0, leaving 1.0 ft of freeboard, with the emergency spillway (El. 688.5) flowing (Gavin Power and Geosyntec, 2018a).	Freeboard is reduced but meets the 1.0 ft minimum; evaluated under Alteration No. 3. Pond 4 has not been built and is being redesigned.
Pond 6 design	Planned pond (AEP, 2016).	Alteration No. 4 changed the liner from 30-mil PVC to 40-mil HDPE microspike, lowered the normal water level from El. 713 to El. 711, and lowered the spillway elevations. For the critical stage (Stage 3, 81.1 ac): 25-year, 24-hour discharge 8.5 cfs at El. 718.1; 100-year peak water level El. 719.7 (Gavin Power and Geosyntec, 2019).	Pond 6 was built to the Alteration No. 4 design (Drawing 7H, Drawing No. 12-30489-E). Freeboard to the El. 723.0 embankment is 4.9 ft (25-year) and 3.3 ft (100-year). At Stage 5 the Pond 6 area is 63.0 ac, below the 81.1-ac critical stage. Sediment storage is checked.
Pond 3 rehabilitation	Existing sediment/leachate pond (AEP, 2016).	In 2025, Pond 3 was dredged and relined, and its inlet culvert was replaced with twin HDPE pipes. The post-rehabilitation inspection reported	Maintenance and rehabilitation; pond function unchanged. Twin-pipe inlet capacity and restored pond geometry are

Review Item	Design Basis	Consistency with Applicable Design Basis	Effect on Design Basis and 2026 Update
		satisfactory performance (ERM, 2026).	confirmed against the design basis.
Final-cover system	Geomembrane final cover with geo-composite drainage on side slopes (AEP, 2016).	Alteration No. 5 revised cover materials: (1) allowable cover-soil hydraulic conductivity and placement; (2) amended-soil vegetative layer; (3) added geotextile; (4) 40-mil LLDPE geomembrane; (5) PVC no longer allowed at the top of the Landfill. The cover drainage concept was retained (Gavin Power and Geosyntec, 2021).	The alteration does not indicate a facility-wide change to the landfill drainage concept.
Leachate/contact-water	Contact water and leachate are collected through chimney drains and leachate collection/transmission piping and routed to the pond system. The HELP peak collection rate is 2.67 cfs (1,197 gpm) (AEP, 2016).	Generally consistent. No fundamental change to the permitted leachate/contact-water collection approach was identified in the reviewed post-2016 records. The 2025 inspection confirms continued active landfill development and operation of the leachate/treatment pond system.	No fundamental change to the overall collection approach has been identified.
Pond 2 leachate seep	The design assumes contact water/leachate is captured and conveyed to the treatment system (AEP, 2016).	The 2025 Annual Inspection Report identified a leachate seep on the eastern landfill slope above Pond 2. The seep is currently managed through temporary collection and conveyance measures that direct the collected leachate to the existing Pond 2 treatment system. Investigations are ongoing to evaluate the seepage condition, and a permanent remediation measure is being developed for	Pond 2 seep has been corrected in 2026.

Review Item	Design Basis	Consistency with Applicable Design Basis	Effect on Design Basis and 2026 Update
		implementation in 2026 (ERM, 2026).	
Design rainfall	2016 surface-water analyses used NOAA Atlas 14 rainfall depths of 3.64, 4.28, and 5.33 inches for the 10-, 25-, and 100-year, 24-hour events, respectively (Bonnin et al., 2006; AEP, 2016).	Review found the PTI (2014), current Plan precipitation source, and applicable NOAA Atlas 14 basis consistent.	No material change to the rainfall design was identified.
NPDES pond outfalls	Ponds 1, 2, 3, 4, and 6 were associated with Outfalls 0IB00006007, 0IB00006008, 0IB00006009, 0IB00006010, and 0IB00006011, respectively, in NPDES Permit No. 0IB00006*ND (Ohio EPA, 2014).	Outfalls of the respective ponds are found consistent based on NPDES Permit No. 0IB00006*QD (Ohio EPA, 2026b).	No outfalls added or removed. Outfall 010 becomes active when Pond 4 is built.
Overall H&H design basis	The current Plan was supported by the applicable PTI H&H analyses demonstrating adequate capacity of the Run-On/Run-Off conveyance and sediment/leachate pond systems (AEP, 2016).	Changes were: (i) revised phasing and interim drainage areas; (ii) development of Phases H and I; (iii) deferred Phase G and temporary controls; (iv) Stage 2 drainage area to Pond 1 above the 1993 permitted area; (v) reduced 100-year freeboard at Pond 4; (vi) Pond 6 redesign; (vii) Pond 3 rehabilitation and inlet culvert replacement; and (viii) final-cover material revisions. Items (i) through (vi) and (viii) were evaluated in Ohio EPA approved PTI alterations (Gavin Power and	A new site-wide H&H analysis is not warranted.

Review Item	Design Basis	Consistency with Applicable Design Basis	Effect on Design Basis and 2026 Update
		Geosyntec, 2018a, 2018b, 2019, 2021). Items (vii) and (ix) are documented in ERM (2026).	

6.3 Determination Under 40 CFR § 257.81(c)(2)

Based on the review in Sections 6.1 and 6.2, no changes in conditions from those used to prepare the current Plan have been identified that substantially affect the Run-On and Run-Off Control System Plan. The active portion is the entire Landfill area that has received waste (Section 2.2), and waste is currently placed in Phases H and I (Areas 7 and 8). The current configuration is represented by Stage 5 of Alteration No. 3, for which the tributary area to each constructed pond does not exceed the area analyzed (**Table 7**). Changes in landfill sequencing, interim drainage areas, Pond 6, and the final cover system were evaluated through Ohio EPA PTI alterations (Gavin Power and Geosyntec, 2018a, 2018b, 2019, 2021). The Pond 3 rehabilitation and the Pond 2 seep are maintenance and corrective-action items documented in ERM (2026). The existing engineering calculations are therefore carried forward, and a new site-wide H&H analysis is not warranted.

7. PLAN UPDATE AND RECORDKEEPING

Gavin will amend the Plan whenever a change in conditions substantially affects it (§ 257.81(c)(2)).

7.1 Next Periodic Plan Update

The next periodic Plan update is due five years after this Plan is placed in the operating record (40 CFR § 257.81(c)(4)).

7.2 Operating Record, Notification, and Website Posting

Gavin will place this Plan in the operating record, notify Ohio EPA within 30 days of placement, and post the Plan on the Gavin CCR website within 30 days (40 CFR §§ 257.105(g)(3), 257.106(g)(3), and 257.107(g)(3); OAC 3745-525-50, -60, and -70).

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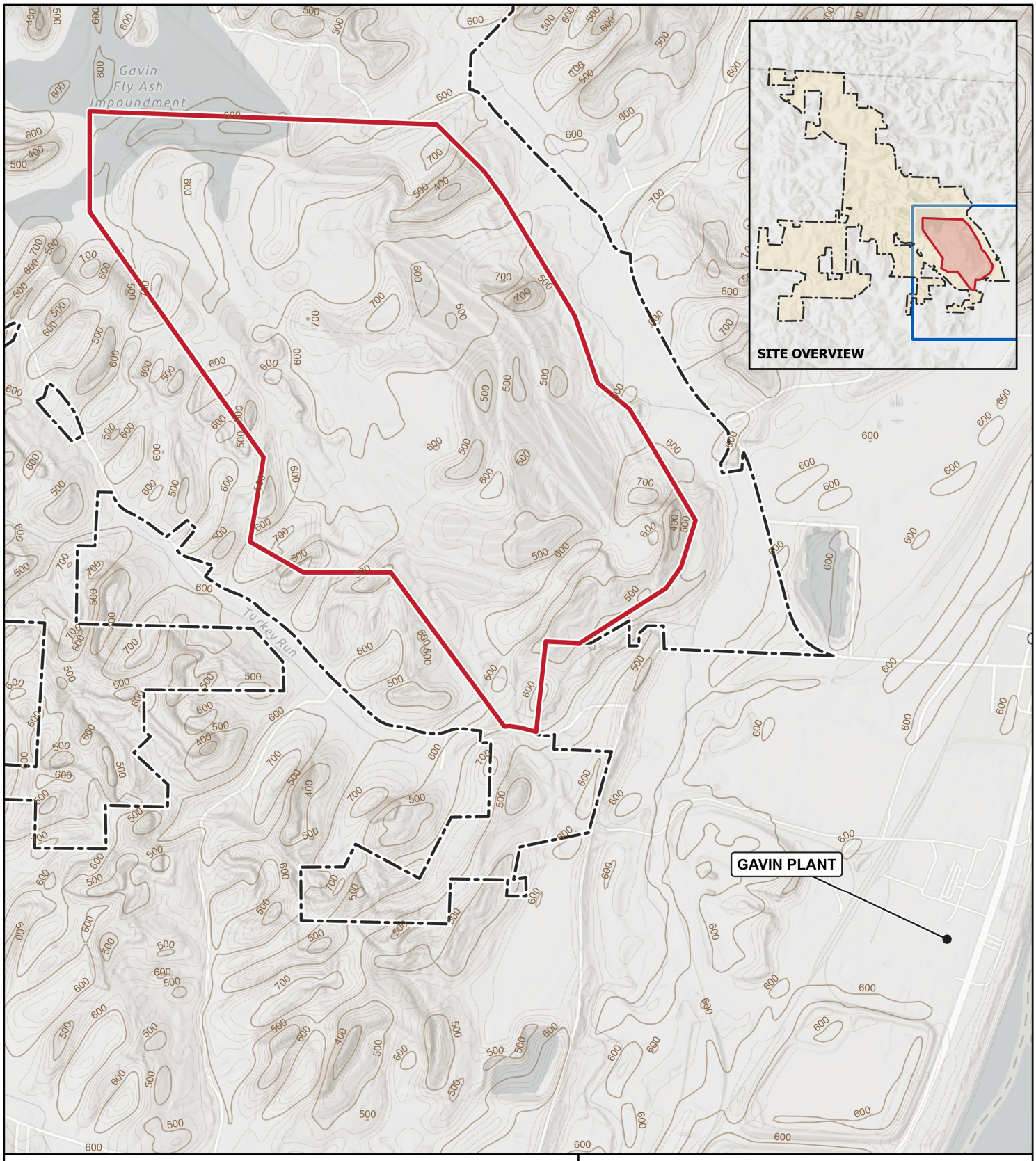
FIGURES

FIGURE-1
Figure 1: Site Location Map



Legend

- Permitted Facility Boundary
- Gavin Power LLC Property Boundary

N

0 2,000 Feet

Site Location Map

Gavin Power LLC Residual Waste Landfill
Cheshire, Gallia County, Ohio

Geosyntec consultants

November 2026

Figure 1

FIGURE-2

Figure 2: Facility Layout and Phase Boundaries, Sheet 1 of 2 (Drawing 3K)

DWG. NO. 12-30441-G

WASTE PLACEMENT (SEE NOTE 8)

PHASE F2 LIMIT OF WASTE PLACEMENT (SEE NOTE 8)

MATCHLINE (SEE SHEET 3L)

PROPOSED LIMIT OF WASTE

PHASE J LIMIT OF WASTE PLACEMENT (SEE NOTE 8)

EXISTING FACILITY BOUNDARY

PHASE G LINER AREA (SEE NOTE 8)

EXISTING LIMIT OF WASTE

AEP PROPERTY BOUNDARY

EXISTING LEACHATE/SEDIMENTATION POND NO. 2

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

300-FOOT OFFSET FROM PROPOSED LIMIT OF WASTE

1,000-FOOT OFFSET FROM PROPOSED LIMIT OF WASTE

PROPOSED LEACHATE/SEDIMENTATION POND No. 4

PROPOSED FACILITY BOUNDARY

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

EXISTING LEACHATE/SEDIMENTATION POND NO. 1

1,000-FOOT OFFSET FROM PROPOSED LIMIT OF WASTE

BM-3 (REV)

BM-4 (REV)

GV-3

GV-4

8302

1041

12903

3517

TURKEY RUN ROAD

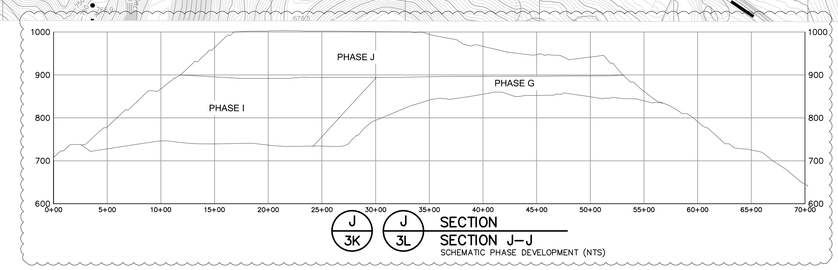
TURKEY RUN CREEK

KYGER CREEK

ROUSH LANE

GRAVEL HILL ROAD

BROWER ROAD



J 3K SECTION

J 3L SECTION J–J

SCHEMATIC PHASE DEVELOPMENT (NTS)

BASE MAP LEGEND

- 750 — EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- 750.0 + EXISTING GROUND SURFACE SPOT ELEVATION
- WE 694.9 EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- OE EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- G EXISTING UNDERGROUND GAS PIPELINE
- SLP EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- WP EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- O/H EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- WL EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

GENERAL DEVELOPMENT LEGEND

- AEP PROPERTY BOUNDARY
- EXISTING LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- 300 FT. OFFSET FROM PROPOSED LIMIT OF WASTE
- 1,000 FT. OFFSET FROM PROPOSED LIMIT OF WASTE
- EXISTING FACILITY BOUNDARY
- PROPOSED FACILITY BOUNDARY
- PROPOSED GRADING LIMITS
- PHASE F2 HORIZONTAL LIMIT
- W12 DELINEATED WETLAND LIMITS (PER WETLAND DELINEATION)
- S5 DELINEATED STREAM (PER WETLAND DELINEATION)
- △3517 EXISTING BENCHMARK
- BM-2 (REV) PROPOSED BENCHMARK
- SEQUENTIAL DETAIL NUMBER / SHEET ON WHICH ABOVE DETAIL IS PRESENTED — 4/7 DETAIL REFERENCE SYMBOL KEY

NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVIOUSLY NAVD 29).
3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. WETLAND DELINEATION PROVIDED BY AEP AND PERFORMED BY THE MANNIK & SMITH GROUP, INC.
5. PROPERTY LIMIT LINE PROVIDED BY AEP IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
6. BENCHMARKS GV–2, GV–3, GV–4, AND 8302 WILL BE USED UNTIL SUCH TIME THAT THEY ARE ABANDONED DUE TO PROPOSED CONSTRUCTION.
7. THE PROPOSED LANDFILL EXPANSION WILL INCLUDE PERMANENT GROUNDWATER CONTROL STRUCTURES IN THE FORM OF GROUNDWATER UNDERDRAIN SYSTEMS BENEATH PORTIONS OF THE LATERAL EXPANSION AREA AND BENEATH PROPOSED LEACHATE/SEDIMENTATION POND NOS. 4 AND 5. FOR GRAPHIC CLARITY, THE PROPOSED UNDERDRAIN SYSTEMS ARE NOT DEPICTED ON THIS DRAWING. REFER TO DRAWING NO. 48 FOR THE LOCATION AND LAYOUT OF THE PROPOSED GROUNDWATER UNDERDRAIN SYSTEMS.
8. THE HORIZONTAL LIMITS OF PHASES G, H, AND I ARE SHOWN ON DRAWINGS 3K AND 3L, AND WERE BASED ON THE GRADING OF THE LEACHATE MANAGEMENT LAYER SHOWN ON DRAWING 4E. PHASE J BOUNDARY REPRESENTS THE HORIZONTAL LIMIT OF WASTE PLACED WITHIN PHASE J. VERTICAL WASTE FILLING WITHIN PHASE J AND PHASE F2 OCCURS ABOVE ELEVATION 900 FT, AND IS ABOVE EXISTING LANDFILL APPROVED GRADES. HORIZONTAL WASTE FILLING WITHIN PHASE J AND PHASE F2 OCCURS OVER THE EXISTING LANDFILL AS WELL AS OVER PHASES G, H, AND I.

EXISTING LANDFILL BENCHMARKS

POINT ID	NORTHING	EASTING	ELEVATION
GV–1	349089.507	2103310.071	718.533
GV–2	349089.987	2101724.140	784.101
GV–3	347703.759	2101382.899	803.881
GV–4	345904.117	2102296.932	777.140
1041	345750.374	2104655.016	753.008
3517	344044.160	2101607.810	610.08
8302	345795.398	2102393.747	772.69
2H–3	350472.360	2101335.248	733.900
12902	348601.760	2105489.190	550.89
12903	346318.860	2106850.460	564.49

PROPOSED LANDFILL BENCHMARKS

POINT ID	NORTHING	EASTING	ELEVATION
BM–2 (REV)	349284.084	2099289.258	TBD
BM–3 (REV)	347647.231	2100295.042	TBD
BM–4 (REV)	345630.405	2101757.699	TBD

PHASE	FINAL COVER SURFACE AREA (AC)	LINER SURFACE AREA (AC)	AIR SPACE (MCY)
G	46.7	41.8	9.4
H	33.9	45.4	7.2
I	44.4	63.9	14.6
F2	20.7	NO LINER	5.7
J	121.7	NO LINER	8.6
TOTAL	267.4	151.1	45.5

NOTE: THE SURFACE AREAS AND AIR SPACE VOLUMES GIVEN ABOVE CORRESPOND TO PHASE PROGRESSION AND FILLING CONFIGURATIONS. REFER TO 6-SERIES DRAWINGS FOR THE CONCLUSION OF FILLING FOR THAT PHASE. AIR SPACE VOLUME CALCULATIONS ARE BASED ON APPROXIMATE LIMITS OF THE FINAL GEOMETRIES FOR EACH PHASE.

N

200' 400' SCALE IN FEET

O.E.P.A. DRAWING NO.: 3K

DATE	NO.	DESCRIPTION	APPD.
10/11/17	G	RE-ISSUED FOR PHASE H LIMITS ALT. REQUEST - NOD 1	PJS
03/21/17	F	REVISED AIR SPACE QUANTITY OF PHASE F2, J, G AND I IN THE TABLE	PJS
08/12/16	E	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	D	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/28/14	C	ISSUED FOR PERMIT ALTERATION	JPS
04/12/12	B	REISSUED FOR PERMIT (NOD 1)	JPS
08/22/11	A	ISSUED FOR PERMIT	JPS

REVISIONS

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Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 606-0500

STATE OF OHIO — Paul J. Sabatini #E-71602 — REGISTERED PROFESSIONAL ENGINEER

Paul J. Sabatini — DATE: October 27, 2017

PROJECT NO. CHE8259
FILE NO. 8259–003KL
DRAWING 17 OF 68

AEP GENERATION RESOURCES, INC.

GAVIN PLANT RESIDUAL WASTE LANDFILL

CHESHIRE OHIO

TITLE:

GAVIN EXPANSION RESIDUAL WASTE LANDFILL GENERAL DEVELOPMENT PLAN – I OF II

DWG. NO. 12-30441-G

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: XXX
ENGR: XXX
PROJ. ENGR: XXX
DATE: 03/13/2013
APPROVED BY:

CIVIL ENGINEERING DIVISION

AEP AMERICAN ELECTRIC POWER — 1 RIVERSIDE PLAZA COLUMBUS, OH 43215

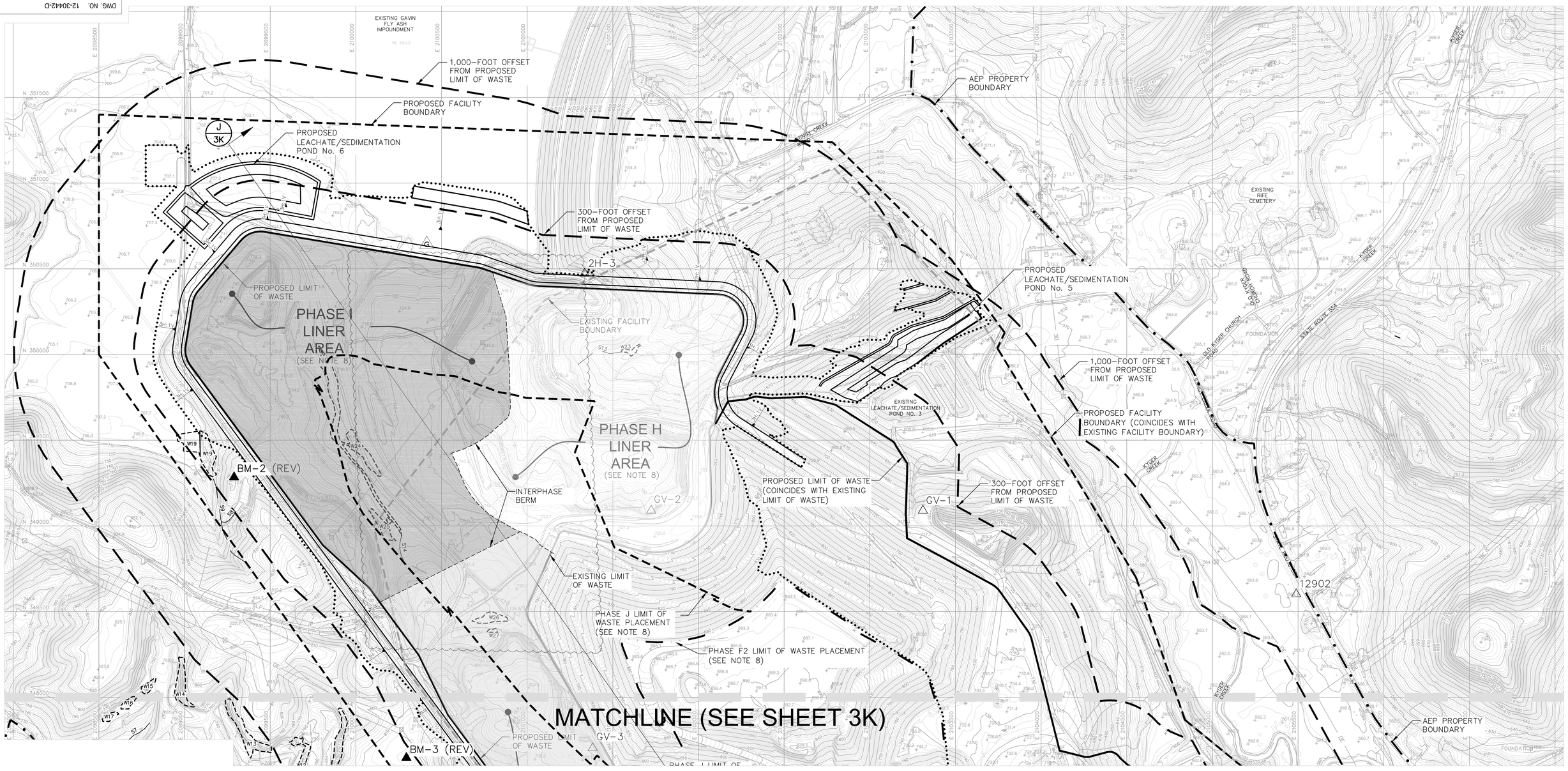
H:\A\AEP\GAVIN RWL LANDFILL – CHE8259\PERMIT AND CONSTRUCTION DRAWINGS\PERMIT\PTI_DESIGN_PACKAGE\DRAWINGS\8259–003KL_GENERAL_DEVELOPMENT.DWG

IGS1092

FIGURE-3

Figure 3: Facility Layout and Phase Boundaries, Sheet 2 of 2 (Drawing 3L)

DWG. NO. 12-30442-D



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- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

GENERAL DEVELOPMENT LEGEND

- AEP PROPERTY BOUNDARY
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- 300 FT. OFFSET FROM PROPOSED LIMIT OF WASTE
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△G

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N

0 200' 400'
SCALE IN FEET

DATE	NO.	DESCRIPTION	APPD.
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04/12/12	B	REISSUED FOR PERMIT (NOD 1)	JPS
08/22/11	A	ISSUED FOR PERMIT	JPS

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AEP GENERATION RESOURCES, INC.

GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE:

GAVIN EXPANSION
RESIDUAL WASTE LANDFILL
GENERAL DEVELOPMENT
PLAN – II OF II

DWG. NO. 12-30442-D

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: XXX
ENGR: XXX
PROJ. ENGR: XXX
DATE: 03/13/2013

CIVIL ENGINEERING DIVISION

APPROVED BY:

Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA (312) 658-0500

STATE OF OHIO
Paul J. Sabatini
#E-71602
REGISTERED
PROFESSIONAL ENGINEER
SIGNATURE
Date: Oct 27, 2017
DATE

PROJECT NO. CHE8259
FILE NO. 8259–003KL

DRAWING 18 OF 68

O.E.P.A. DRAWING NO.: 3L

AEP AMERICAN ELECTRIC POWER
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

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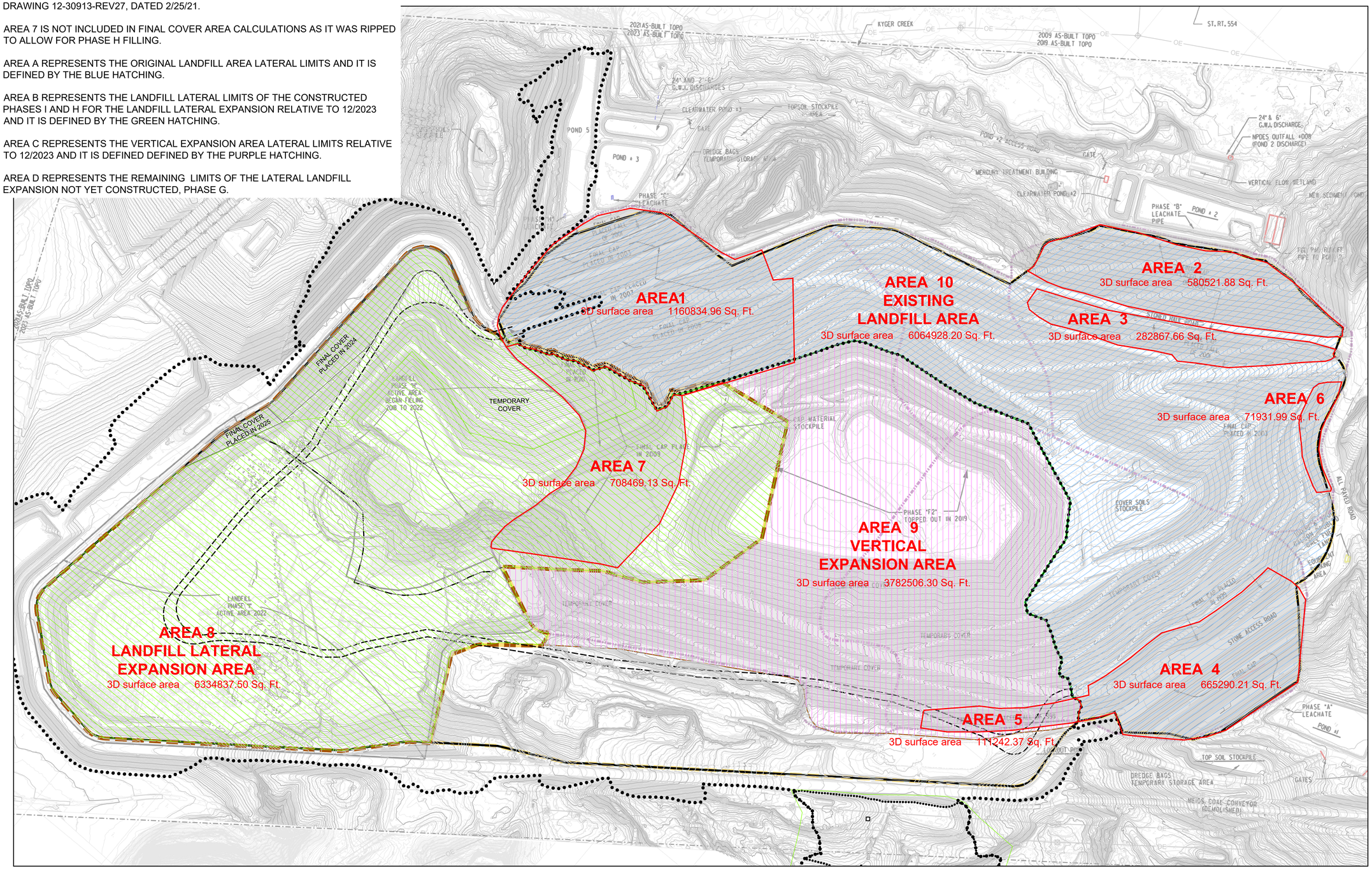
FIGURE-4

Figure 4: Current Waste Placement, Active Areas, and Cover Status

NOTES:

- AREAS 1, 2, 3, 4, 5, 6, 7 ARE DEFINED BY RED BOUNDARY LINES AND WERE TRACED FROM THE "RESIDUAL WASTE LANDFILL FACILITY ANNUAL AS-BUILT TOPOGRAPHY" DRAWING 12-30913-REV27, DATED 2/25/21.
- AREA 7 IS NOT INCLUDED IN FINAL COVER AREA CALCULATIONS AS IT WAS RIPPED TO ALLOW FOR PHASE H FILLING.
- AREA A REPRESENTS THE ORIGINAL LANDFILL AREA LATERAL LIMITS AND IT IS DEFINED BY THE BLUE HATCHING.
- AREA B REPRESENTS THE LANDFILL LATERAL LIMITS OF THE CONSTRUCTED PHASES I AND H FOR THE LANDFILL LATERAL EXPANSION RELATIVE TO 12/2023 AND IT IS DEFINED BY THE GREEN HATCHING.
- AREA C REPRESENTS THE VERTICAL EXPANSION AREA LATERAL LIMITS RELATIVE TO 12/2023 AND IT IS DEFINED DEFINED BY THE PURPLE HATCHING.
- AREA D REPRESENTS THE REMAINING LIMITS OF THE LATERAL LANDFILL EXPANSION NOT YET CONSTRUCTED, PHASE G.



0 250
SCALE IN FEET

N

3D FINAL COVER AREAS
FOR PERMITTED AREAS TO RECEIVED
WASTE AS OF DECEMBER 2025
GAVIN LANDFILL

Geosyntec consultants

FIGURE 1

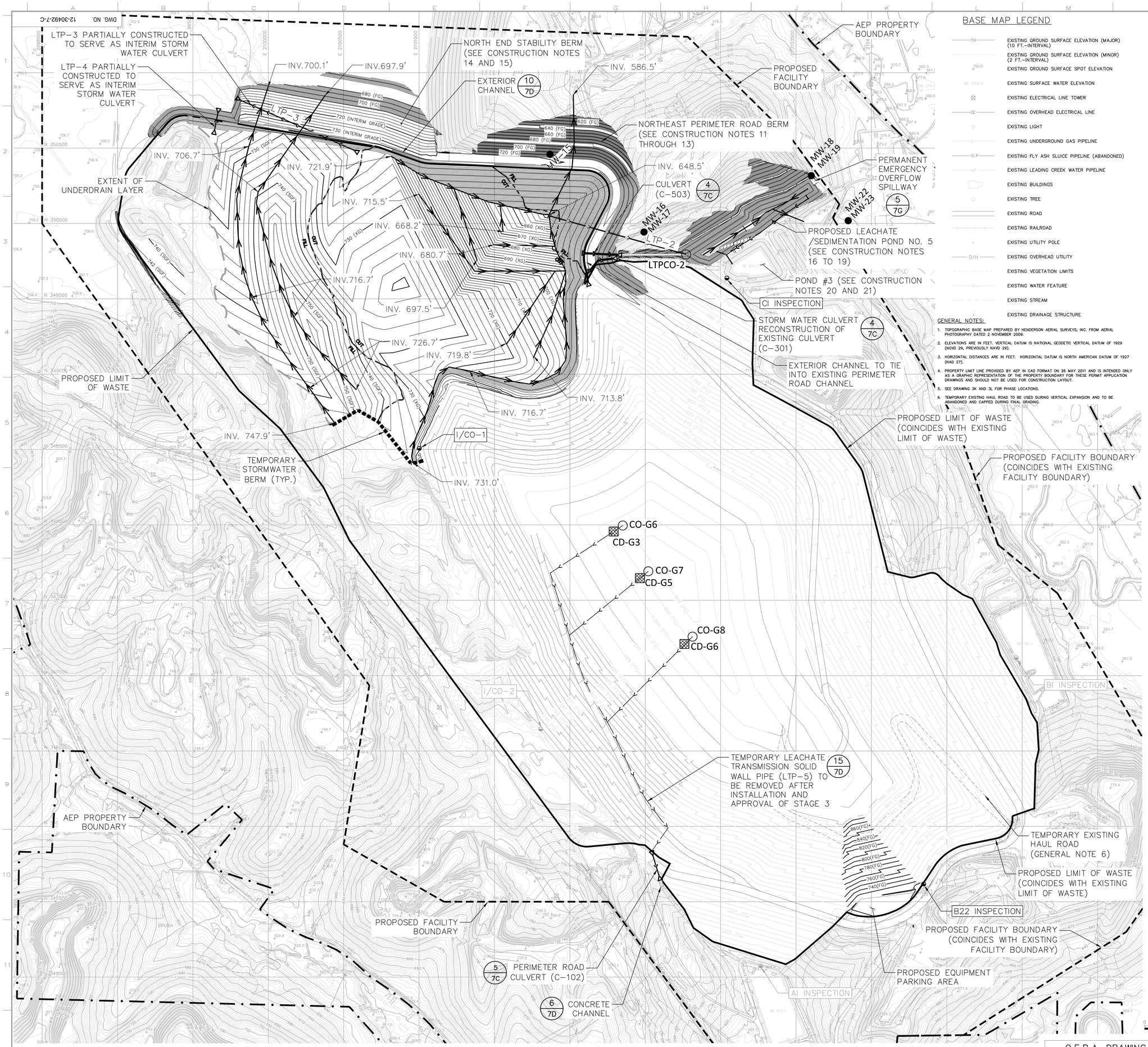
PROJECT NO: CHE8259H | MAY 2026

C:\PROJECTS\GAVIN\VOLUMES COMPARISON 2026\FIGURE_3D FINAL COVER AREAS_2026

FIGURE-5

Figure 5: Run-On and Run-Off Control Features (Phases A through J)

DWG. NO. 12-30492-7-C



BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
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- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 1 LEGEND

- AEP PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- FILL / CUT — CUT / FILL LINE
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XG: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- LTP–1 — PROPOSED LEACHATE TRANSMISSION PIPE AND FLOW DIRECTION
- CSD–G1 — PROPOSED CHIMNEY SLOPE DRAIN
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED UNDERDRAIN PIPES AND FLOW DIRECTION
- PROPOSED HAUL ROAD/COVER ROAD PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO–1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

GENERAL NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVIOUSLY NAVD 29).
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4. PROPERTY LIMIT LINE PROVIDED BY AEP IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 1 CONSTRUCTION & OPERATION NOTES

GENERAL ACTIVITIES

1. INSTALL PERMANENT BENCHMARKS FOR PROJECT.
2. ABANDON GROUNDWATER MONITORING WELLS LOCATED WITHIN AREA OF CONSTRUCTION AND REPLACE WITH NEW MONITORING WELLS LOCATED OUTSIDE OF LIMITS OF WASTE AS DIRECTED BY AEP.
3. LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN.
4. AEP TO CONSTRUCT NEW TOWER STRUCTURES FOR EXISTING OVERHEAD ELECTRICAL TRANSMISSION LINES THAT CROSS THE PHASE H AND PHASE I LANDFILL AREAS. AEP TO RELOCATE TRANSMISSION LINES TO NEW TOWERS. REMOVE ABANDONED TOWER LOCATED WITHIN PHASE H EXCAVATION AREA. REMAINING TOWERS MAY BE REMOVED DURING STAGE 3.
5. PERFORM CONSTRUCTION SITE PREPARATION ACTIVITIES IN THE FOLLOWING AREAS: PHASE H LINER LIMITS; PHASE I CENTRAL SUBGRADE FILL (PRELOAD) AREAS; PERIMETER ROAD; NORTH STABILITY BERM AREA; AND PROPOSED STOCKPILE AREAS. SITE PREPARATION ACTIVITIES INCLUDE PROVIDING EROSION AND SEDIMENT CONTROLS, REMOVAL OF EXISTING STRUCTURES, CLEARING AND GRUBBING AND CONSTRUCTION OF TEMPORARY HAUL ROADS.

PHASE H LANDFILL AREA ACTIVITIES

6. EXCAVATE PHASE H LANDFILL LINER AREA. SEPARATE EXCAVATED MATERIALS BASED ON GEOTECHNICAL PROPERTIES INTO MATERIALS SUITABLE FOR USE AS LOW–PERMEABILITY CLAY LINER/COVER, STRUCTURAL FILL AND VEGETATIVE COVER. HAUL AND PLACE FILL IMMEDIATELY, AS REQUIRED, OR STOCKPILE. PLACE/COMPACT STRUCTURAL FILL TO DESIGN SUBGRADE (WHERE REQUIRED). PLACE EXCESS EXCAVATION IN STINGY RUN FLY ASH RESERVOIR AS DIRECTED BY THE OWNER.
7. INSTALL GROUNDWATER UNDERDRAIN SYSTEM PIPING IN PHASE H LANDFILL AREA. INSTALL LTP–2 TO CONNECT TO POND 5.

PHASE I LANDFILL AREA ACTIVITIES

8. INSTALL GROUNDWATER UNDERDRAIN SYSTEM DRAINAGE LAYER AND PIPING IN AREAS THAT WILL BE COVERED BY SUBGRADE FILL, PERIMETER ROAD FILL, NORTH END STABILITY BERM FILL, OR POND 6 FILL TO DISCHARGE POINT NORTH OF THE POND 6 FOOTPRINT. INSTALL TEMPORARY STORMWATER CULVERT.
9. INSTALL PORTION OF PHASE I LEACHATE TRANSMISSION PIPES THROUGH PERIMETER ROAD EMBANKMENT FILL. INSTALL TEMPORARY EXTENSION THROUGH POND 6 SUBGRADE FILL TO DISCHARGE IN FLY ASH RESERVOIR. THIS PIPING WILL SERVE TO DRAIN STORMWATER FROM THE EAST SIDE OF PHASE I AREA DURING CONSTRUCTION.
10. PLACE SUBGRADE FILL IN CENTRAL PORTION OF PHASE I LANDFILL LINER AREA. THIS FILL WILL SERVE TO CONSOLIDATE THE UNDERLYING SOILS PRIOR TO EVENTUAL LINER CONSTRUCTION AND FILLING OPERATIONS IN THIS AREA.

PERIMETER ROAD AND NORTHEAST BERM ACTIVITIES

11. PARTIALLY CONSTRUCT LANDFILL PERIMETER ROAD, INCLUDING ALL NECESSARY EXCAVATION AND EMBANKMENT FILL, TO DESIGN ALIGNMENT AND PROFILE AS SHOWN. NOTE THAT THE PERIMETER ROAD BERM LOCATED NORTH OF THE PHASE I LANDFILL LINER AREA IS DEPICTED AS BEING PARTIALLY CONSTRUCTED AS PART OF STAGE 1 CONSTRUCTION ACTIVITIES. ALTHOUGH SUFFICIENT BORROW MATERIAL OF REQUIRED GEOTECHNICAL PROPERTIES IS EXPECTED TO BE GENERATED BY PHASE H EXCAVATION AND WILL BE AVAILABLE FOR THE CONSTRUCTION OF THE BERM DURING STAGE 1, COMPLETION OF THE BERM CONSTRUCTION MAY BE DELAYED UNTIL STAGE 2, 3, OR 4.
12. INSTALL UNDERDRAIN AND LEACHATE SYSTEM PIPING THAT WILL BE LOCATED BELOW OR WITHIN THE PERIMETER ROAD EMBANKMENT FILL FOR PHASE G, PHASE H, AND PHASE I AREAS. CAP AND PROTECT FOR FUTURE CONNECTIONS.
13. INSTALL CULVERTS THAT WILL BE LOCATED BELOW PERIMETER ROAD EMBANKMENT FILL FOR PHASE H AND PHASE I.

NORTH END STABILITY BERM ACTIVITIES

14. LOWER FLY ASH POND WATER LEVEL TO EXPOSE THE FLY ASH SURFACE OUT TO A 300 FT BOUNDARY FROM THE EXPANSION LIMIT OF WASTE ALONG THE NORTH SIDE.
15. PARTIALLY CONSTRUCT NORTH END STABILITY BERM LOCATED OUTSIDE OF THE PERIMETER ROAD TO ELEVATION 710 FT AT 3H:1V SLOPE AND THEN CONSTRUCT TO ELEVATION 734 FT AT APPROXIMATE 9% GRADE, NORTH OF PHASE I LANDFILL AREA. SEE ALSO NOTE 11.

POND 5 AREA ACTIVITIES

16. EXCAVATE TO SUBGRADE AND INSTALL UNDERDRAINS. PLACE/COMPACT EMBANKMENT FILL.
17. INSTALL DISCHARGE STRUCTURE AND DISCHARGE PIPE TO POND 3.
18. INSTALL POND LINER SYSTEM AND PROTECTIVE COVER.
19. CONNECT TO PREVIOUSLY INSTALLED STUBBED–OUT PHASE H LANDFILL LEACHATE PIPE.

POND 3 MODIFICATIONS

20. INSTALL SPILLWAY BETWEEN POND 3 AND POND 5.
21. MODIFY DISCHARGE STRUCTURES IN POND 3 TREATMENT POND THAT LEADS TO POND 3 CLEARWATER POND.

PHASE G LANDFILL AREA ACTIVITIES

22. INSTALL CHIMNEY DRAINS (CD–G3, G5, AND G6), CLEAN OUTS (CO–G6, G7, AND G8), CHIMNEY SLOPE DRAINS (CSD–G2, G3, AND G4), AND THE TEMPORARY LEACHATE TRANSMISSION PIPE (LTP–5) ALONG THE WEST SIDE OF THE EXISTING LANDFILL. THE TEMPORARY LEACHATE TRANSMISSION PIPE SHALL BE SOLID HDPE 18 INCH DIAMETER SDR 17 PIPE.

DATE	NO.	DESCRIPTION	APPD.
08/12/16	C	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	B	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/28/14	A	ISSUED FOR PERMIT ALTERATION	JPS

REVISIONS

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GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE: GAVIN EXPANSION RESIDUAL WASTE LANDFILL CONSTRUCTION STAGING AND OPERATION – STAGE 1

Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 658–0500

UNIT:	DRAWING NUMBER:	REV:
12	30492-7	C

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: JPC
ENGR: PA
PROJ. ENGR.: XXX
DATE: 03/13/2013
APPROVED BY:

SIGNATURE
DATE

PROJECT NO. CHE8259
FILE NO. 8259–006A
DRAWING 48 OF 68

GAVIN POWER LLC. 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

O.E.P.A. DRAWING NO.: 6A

SCALE IN FEET: 0, 200', 400

DWG. NO. 12-30492-8-B

EXTENT OF UNDERDRAIN LAYER

CD/CO-H6

LCP-6

CO-H5

CD-H5

TEMPORARY INTERPHASE BERM (TYP.) 5/7E

LCP-5

CO-H7

CO-H4

CD/CO-H1

LCP-3

LCP-4

CD-H2A

CO-H2

CD-H2

CSD-H1

CO-H3

CD-H7

CO-H10

I/CO-1

TEMPORARY STORMWATER BERM (TYP.)

OUTER LIMITS OF PHASE H

CO-G6

CD-G3

CO-G7

CD-G5

CO-G8

CD-G6

CSD-G1

CSD-G2

CSD-G3

GAVIN POWER LLC. PROPERTY BOUNDARY

PROPOSED FACILITY BOUNDARY

LEACHATE/ SEDIMENTATION POND NO. 5

LTPCO-2

CI INSPECTION

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

NEW FINAL COVER TRANSITION TO EXISTING COVER (TYP.) 17/7D

TEMPORARY STORMWATER BERM (TYP.) 16/7D

I/CO-2

BI INSPECTION

TEMPORARY LEACHATE TRANSMISSION SOLID WALL PIPE (LTP-5) TO BE REMOVED AFTER INSTALLATION AND APPROVAL OF STAGE 6

GAVIN POWER LLC. PROPERTY BOUNDARY

PROPOSED FACILITY BOUNDARY

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

TEMPORARY EXISTING HAUL ROAD (NOTE 6)

B22 INSPECTION

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

AI INSPECTION

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.-INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.-INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 2 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.-INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.-INTERVAL)
- MAJOR ELEVATION IN NON-ACTIVE AREA (10 FT.-INTERVAL)
- MINOR ELEVATION IN NON-ACTIVE AREA (10 FT.-INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XG: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- LCP-1 — PROPOSED LEACHATE CORRIDOR PIPE AND FLOW DIRECTION
- LLP-1 — PROPOSED LEACHATE LATERAL PIPE AND FLOW DIRECTION
- LTP-1 — PROPOSED LEACHATE TRANSMISSION PIPE AND FLOW DIRECTION
- CSD-G1 — PROPOSED CHIMNEY SLOPE DRAIN AND FLOW DIRECTION
- CO-G1 — PROPOSED BASE OF LEACHATE INSPECTION/CLEANOUT PIPE
- CD/CO-H1 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C-XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED UNDERDRAIN PIPES AND FLOW DIRECTION
- PROPOSED HAUL ROAD/COVER ROAD
  PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

GENERAL NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009 AND 20 DECEMBER 2017.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVIOUSLY NAVD 29).
3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY GAVIN POWER LLC. IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 2 CONSTRUCTION & OPERATION NOTES

PHASE I LANDFILL AREA ACTIVITIES

1. MONITOR CONSOLIDATION SETTLEMENT OF SUBGRADE FILL IN CENTRAL PORTION OF PHASE I LANDFILL LINER AREA. PLACE/COMPACT ADDITIONAL FILL TO RESTORE DESIGN SUBGRADE ELEVATIONS.

NORTH END STABILITY BERM ACTIVITIES

2. MONITOR CONSOLIDATION SETTLEMENT OF STABILITY BERM FILL. PLACE/COMPACT ADDITIONAL FILL TO RESTORE DESIGN ELEVATIONS.

PHASE H LANDFILL AREA ACTIVITIES

3. LOCATE EDGE OF EXISTING LANDFILL GEOMEMBRANE AND CONSTRUCT NEW OVERLAP DETAIL FOR NEW GCL.
4. INSTALL GEOSYNTHETIC CLAY LINER.
5. INSTALL GEOMEMBRANE LINER.
6. INSTALL GEOTEXTILE CUSHION OVER GEOMEMBRANE.
7. CONSTRUCT TEMPORARY INTERPHASE BERM ON PHASE I SIDE OF BOUNDARY WITH PHASE I LANDFILL SUBGRADE AREA.
8. INSTALL LEACHATE MANAGEMENT SYSTEM INCLUDING COLLECTION AND TRANSMISSION PIPING AND SPECIFIED THICKNESS OF DRAINAGE LAYER MEDIA. CONNECT LEACHATE PIPING TO LEACHATE TRANSMISSION PIPE BENEATH NORTHEAST PERIMETER ROAD BERM THAT WAS PREVIOUSLY INSTALLED DURING STAGE 1.
9. PLACE SPECIFIED THICKNESS OF PROTECTIVE LAYER MATERIAL OVER LEACHATE DRAINAGE LAYER.
10. PHASE H IS READY TO RECEIVE WASTE UPON COMPLETION OF AS-BUILT CERTIFICATION AND APPROVAL.

PHASE F2 LANDFILL AREA ACTIVITIES

11. COMMENCE FILLING WASTE IN PHASE F2 UP TO ELEV. 965. PLACE A TEMPORARY CAP OVER THE WASTE IN PHASE F2 WHILE WASTE IS PLACED IN OTHER PHASES.
12. STRIP SOIL COVER FROM EXISTING LANDFILL SLOPES WITHIN THE PHASE H VERTICAL EXPANSION AREA TO A LIMITED DISTANCE ABOVE THE PHASE H WORKING LIFT ELEVATION. CONTINUE TO STRIP SOIL COVER IN ADVANCE OF FILLING OPERATIONS AS DISPOSAL OPERATIONS ADVANCE.
13. PLACE WASTE IN ROUGHLY HORIZONTAL LIFTS OVER THE PHASE H FILLING AREA. SLOPE THE UPPER SURFACE OF ACTIVE DISPOSAL AREAS AT APPROXIMATELY 2% OR GREATER TO PROMOTE STORMWATER DRAINAGE TOWARD CHIMNEY DRAINS.
14. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V BETWEEN STORMWATER BENCHES). PERIODICALLY PLACE FINAL COVER ON FINAL WASTE SLOPES.
15. GRADE TEMPORARY INTERIOR WASTE SLOPES (INTER-PHASE SLOPES) TO A MAXIMUM OF 3H:1V.
16. EXTEND WASTE HAUL ROAD VERTICALLY/LATERALLY ACROSS DISPOSAL AREA AS WASTE FILLING PROGRESSES.
17. EXTEND CHIMNEY DRAINS, SLOPE DRAINS, AND CLEAN-OUTS VERTICALLY/LATERALLY THROUGH WASTE AS WASTE FILLING PROGRESSES.

N

0 200' 400'
SCALE IN FEET

DATE	NO.	DESCRIPTION	APPD.
10/29/18	E	REISSUED FOR PERMIT ALTERATION (RESTAGING)	PJS
08/24/17	D	REVISION TO THE PHASE H INTERPHASE BERM	PJS
08/12/16	C	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	B	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/28/14	A	ISSUED FOR PERMIT ALTERATION	JPS

REVISIONS

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GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE:
GAVIN EXPANSION
RESIDUAL WASTE LANDFILL
CONSTRUCTION
STAGING AND OPERATION
– STAGE 2

Geosyntec consultants
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(312) 658-0500

STATE OF OHIO
Paul J. Sabatini
#E-71602
REGISTERED PROFESSIONAL ENGINEER
SIGNATURE
Paul J. Sabatini
10/29/2018
DATE

UNIT:	DRAWING NUMBER:	REV:
12	30492-8	E

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: JPC
ENGR: PA
PROJ. ENGR: XXX
DATE: 03/13/2013
APPROVED BY:

PROJECT NO. CHE8259
FILE NO. 8259-0068

DRAWING 49 OF 68

O.E.P.A. DRAWING NO.: 6B

GAVIN POWER LLC.
7397 NORTH STATE ROUTE 7
CHESHIRE, OH 45620

H:\A\AEP\GAVIN RWL LANDFILL - CHE8259\PERMIT AND CONSTRUCTION DRAWINGS\PERMIT\2018 DRAWINGS\CHE8259-0068_STAGE_2 - ALTERNATE.DWG

IGS1092

DWG. NO. 12-30492-9-G

LEACHATE/SEDIMENTATION POND NO. 6 LOCATION (SEE CONSTRUCTION NOTE 3, 4 AND 5)

PERIMETER ROAD CULVERT (C-601) 9/7C

CLEAR WATER POND OUTLET STRUCTURE 4/7H

POND OUTLET STRUCTURE 3/7H

EXTENT OF UNDERDRAIN LAYER

PERIMETER ROAD CULVERT (C-602) 11/7C

LANDFILL PERIMETER INTERIM STORMWATER DRAINAGE 4/7E

PROPOSED FACILITY BOUNDARY

GAVIN POWER LLC. PROPERTY BOUNDARY

HAUL ROAD CULVERT (C-502) 3/7C

LEACHATE/ SEDIMENTATION POND NO. 5

TEMPORARY INTERPHASE BERM (TYP.) 5/7E

PIPELINE SEGMENT C (SEE CONSTRUCTION NOTE 1)

SLOPE DRAIN 5/7D

CI INSPECTION

PROPOSED LIMIT OF WASTE

EXTERIOR CHANNEL 10/7D

TEMPORARY INTERPHASE BERM (TYP.) 5/7E

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

PIPELINE SEGMENT B (SEE CONSTRUCTION NOTE 1)

OUTER LIMITS OF PHASE H

TEMPORARY STORM WATER CHANNEL (SEE CONSTRUCTION NOTE 7)

PROPOSED FACILITY BOUNDARY

TEMPORARY STORMWATER BERM (TYP.)

PIPELINE SEGMENT A (SEE CONSTRUCTION NOTE 1)

EXTERIOR CHANNEL 10/7D

INV. 740'

INV. 714'

BI INSPECTION

GAVIN POWER LLC. PROPERTY BOUNDARY

TEMPORARY STORM WATER CULVERT (NOTE 8, 9 AND 10) 36"ø 147 LF HDPE INVERT ELEV. U/S 710' D/S 708'

TEMPORARY LEACHATE TRANSMISSION SOLID WALL PIPE (LTP-5) TO BE REMOVED AFTER INSTALLATION AND APPROVAL OF STAGE 6

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

TEMPORARY SEDIMENT POND (SEE CONSTRUCTION NOTE 8)

EXTERIOR CHANNEL TO TIE INTO ROAD CHANNEL

TEMPORARY EXISTING HAUL ROAD (GENERAL NOTE 6)

B22 INSPECTION

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

AI INSPECTION

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.-INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.-INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 3 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.-INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.-INTERVAL)
- MAJOR ELEVATION IN NON-ACTIVE AREA (10 FT.-INTERVAL)
- MINOR ELEVATION IN NON-ACTIVE AREA (10 FT.-INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XG: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- LCP-1 — PROPOSED LEACHATE CORRIDOR PIPE AND FLOW DIRECTION
- LLP-1 — PROPOSED LEACHATE LATERAL PIPE AND FLOW DIRECTION
- LTP-1 — PROPOSED LEACHATE TRANSMISSION PIPE AND FLOW DIRECTION
- CSD-G1 — PROPOSED CHIMNEY SLOPE DRAIN AND FLOW DIRECTION
- CO-G1 — PROPOSED BASE OF LEACHATE/INSPECTION CLEANOUT PIPE
- CD-H3 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C-XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED UNDERDRAIN PIPES AND FLOW DIRECTION
- PROPOSED HAUL ROAD/COVER ROAD PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 / 94124 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER
- GROUNDWATER MONITORING WELL TO BE ABANDONED

GENERAL NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009 AND 20 DECEMBER 2017.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVIOUSLY NAVD 29).
3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY GAVIN POWER LLC. IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWINGS 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 3 CONSTRUCTION & OPERATION NOTES

GENERAL ACTIVITIES

1. RELOCATION OF THREE SEGMENTS OF THE LEADING CREEK WATER PIPELINE WILL BE REQUIRED DUE TO MODIFICATIONS IN THE VERTICAL ALIGNMENT OF THE OVERLYING ROADWAY. CURRENTLY, THE HORIZONTAL ALIGNMENT OF THE WATER PIPELINE APPROXIMATELY LIES WITHIN THE ROADWAY RIGHT-OF-WAY. THE VERTICAL ALIGNMENT OF THE CROWN OF THE WATER PIPELINE IS REPORTED TO BE APPROXIMATELY 24 INCHES BELOW THE SURFACE OF THE EXISTING ROADWAY. AT SEGMENT A THE PROFILE OF THE OVERLYING ROADWAY WILL BE LOWERED BY 0 TO 11 FEET. AT SEGMENT B (SEE DRAWING), THE EXISTING CORRUGATED METAL TUNNEL BENEATH THE ROADWAY AND PIPELINE WILL BE REMOVED AND THE PROFILE OF THE OVERLYING ROADWAY WILL BE RAISED BY 0 TO 25 FEET. AT SEGMENT C (SEE DRAWING), THE PROFILE OF THE OVERLYING ROADWAY WILL BE RAISED BY 0 TO 18 FEET. RELOCATION OF THE WATER PIPELINE IN THESE AREAS MAY CONSIST OF A HORIZONTAL RE-ALIGNMENT TO THE WEST SIDE OF THE PERIMETER ROAD (AT EXISTING ELEVATION) OR A VERTICAL RE-ALIGNMENT TO APPROXIMATELY 24 INCHES BELOW THE SURFACE OF THE RECONSTRUCTED PERIMETER ROAD (AT CURRENT HORIZONTAL ALIGNMENT).
2. INSTALL PROPOSED MW SERIES GROUNDWATER MONITORING WELLS, WEST OF THE PERIMETER ACCESS ROAD, AND THEN ABANDON EXISTING 94 SERIES GROUNDWATER MONITORING WELLS.

POND 6 AREA ACTIVITIES

3. EXCAVATE POND 6 AREA PLATFORM DOWN TO SUBGRADE.
4. PLACE STRUCTURAL FILL TO APPROXIMATE POND BERM SUBGRADE.
5. INSTALL POND LEAK DETECTION LAYER, LINER SYSTEM, POND DISCHARGE STRUCTURES AND PROTECTIVE COVER. INSTALL GROUNDWATER MONITORING WELLS.
6. TIE-IN EDGE OF POND 6 TO THE STINGY RUN COVER SYSTEM.

PHASE G LANDFILL AREA ACTIVITIES

7. EXCAVATE TEMPORARY STORMWATER CHANNEL TO DIVERT STORM WATER TOWARDS THE TEMPORARY SEDIMENT POND.
8. EXCAVATE TEMPORARY SEDIMENT POND AND INSTALL TEMPORARY DISCHARGE CULVERT UNDERNEATH THE PERIMETER ROAD.
9. HDPE STORM WATER CULVERTS, INCLUDING ROAD CULVERTS, WILL BE ADS N-12 WT (ASTM F2648) OR EQUIVALENT.
10. INLET FOR THE TEMPORARY STORM WATER CULVERT TO BE A PERFORATED STANDING PIPE CONNECTED TO THE CULVERT WITH 90 DEGREE ELBOW. PERFORATIONS TO BEGIN AT ELEVATION 711 FT. TOP OF STANDING PIPE AT ELEVATION 714 FT.

PHASE H LANDFILL AREA ACTIVITIES

11. WASTE DISPOSAL CONTINUES IN PHASE H WITH TOP OF WASTE AT APPROXIMATELY ELEVATION 820 FEET.
12. STRIP SOIL COVER FROM EXISTING LANDFILL SLOPES WITHIN THE PHASE H VERTICAL EXPANSION AREA TO A LIMITED DISTANCE ABOVE THE PHASE H WORKING LIFT ELEVATION. CONTINUE TO STRIP SOIL COVER IN ADVANCE OF FILLING OPERATIONS AS DISPOSAL OPERATIONS ADVANCE.
13. PLACE WASTE IN ROUGHLY HORIZONTAL LIFTS OVER THE PHASE H FILLING AREA. SLOPE THE UPPER SURFACE OF ACTIVE DISPOSAL AREAS AT APPROXIMATELY 2% OR GREATER TO PROMOTE STORMWATER DRAINAGE TOWARD CHIMNEY DRAINS.
14. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V BETWEEN STORMWATER BENCHES). PERIODICALLY PLACE FINAL COVER ON FINAL WASTE SLOPES.
15. GRADE TEMPORARY INTERIOR WASTE SLOPES (INTER-PHASE SLOPES) TO A MAXIMUM OF 3H:1V.
16. EXTEND WASTE HAUL ROAD VERTICALLY/LATERALLY ACROSS DISPOSAL AREA AS WASTE FILLING PROGRESSES.
17. EXTEND CHIMNEY DRAINS, SLOPE DRAINS, AND CLEAN-OUTS VERTICALLY/LATERALLY THROUGH WASTE AS WASTE FILLING PROGRESSES.

PHASE I LANDFILL AREA ACTIVITIES

18. MONITOR CONSOLIDATION SETTLEMENT OF SUBGRADE FILL IN CENTRAL AND WEST CORNER PORTIONS OF PHASE I LANDFILL LINER AREA. PLACE/COMPACT ADDITIONAL FILL TO RESTORE DESIGN SUBGRADE ELEVATIONS.
19. PERFORM CONSTRUCTION SITE PREPARATION ACTIVITIES IN PHASE I LANDFILL LINER AREA. SITE PREPARATION ACTIVITIES INCLUDE PROVIDING EROSION AND SEDIMENT CONTROLS, REMOVAL OF EXISTING STRUCTURES, CLEARING AND GRUBBING AND CONSTRUCTION OF TEMPORARY HAUL ROADS.
20. EXCAVATE PHASE I LANDFILL LINER AREA. SEPARATE EXCAVATED MATERIALS BASED ON GEOTECHNICAL PROPERTIES INTO MATERIALS SUITABLE FOR USE AS LOW-PERMEABILITY CLAY LINER/COVER, STRUCTURAL FILL AND VEGETATIVE COVER. HAUL AND PLACE FILL IMMEDIATELY, AS REQUIRED, OR STOCKPILE.

PERIMETER ROAD ACTIVITIES

21. ABANDON EXISTING LARGE-DIAMETER CORRUGATED METAL SITE ROAD TUNNEL (SEE DRAWING) BY REMOVING TUNNEL AND BACKFILLING WITH STRUCTURAL FILL. (SEE NOTE 1).
22. COMPLETE CONSTRUCTION OF PERIMETER ROAD. COORDINATE WITH LEADING CREEK WATER PIPELINE AS NEEDED.

NORTH END STABILITY BERM ACTIVITIES

23. MONITOR CONSOLIDATION SETTLEMENT OF STABILITY BERM FILL. PLACE/COMPACT ADDITIONAL FILL TO RESTORE DESIGN ELEVATIONS.

DATE	NO.	DESCRIPTION	APPD.
02/26/20	H	REISSUED FOR PERMIT ALTERATION (NOD 1)	PJS
04/23/19	G	REISSUED FOR PERMIT ALTERATION	PJS
12/14/18	F	REISSUED FOR PERMIT ALTERATION (RESTAGING) (NOD 1)	PJS
10/29/18	E	REISSUED FOR PERMIT ALTERATION (RESTAGING)	PJS
08/24/17	D	REVISION TO THE PHASE H INTERPHASE BERM	PJS
08/12/16	C	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	B	REISSUED FOR PERMIT ALTERATION (NOD1)	JPS
02/28/14	A	ISSUED FOR PERMIT ALTERATION	JPS

REVISIONS

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SCALE IN FEET (0, 200', 400)

Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 658-0500

STATE OF OHIO — Paul J. Gabalski — #PE-71602 — REGISTERED PROFESSIONAL ENGINEER
SIGNATURE
February 26, 2020
DATE

PROJECT NO. CHE8259
FILE NO. 8259-006C
DRAWING 50 OF 68

GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE: GAVIN EXPANSION RESIDUAL WASTE LANDFILL CONSTRUCTION STAGING AND OPERATION – STAGE 3

UNIT:	DRAWING NUMBER:	REV:
12	30492	H

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: JPC
ENGR: PA
PROJ. ENGR: XXX
DATE: 03/13/2013
APPROVED BY:

GAVIN POWER LLC. 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

O.E.P.A. DRAWING NO.: 6C

P:\GW\GAVIN RWL LANDFILL - CHE8259\PERMIT AND CONSTRUCTION DRAWINGS\PERMIT\PLDESIGN_PACKAGE_2019\CHE8259-006C_STAGE_3 - ALTERNATE

IGS1092

DWG. NO. 12-30492-10-B

LEACHATE/SEDIMENTATION POND NO. 6

ABANDON TEMPORARY STORMWATER DISCHARGE LINE

RIP RAP OUTLET PROTECTION (SEE NOTE 11)

LTPCO-4

LTPCO-3

LTP-3

SEE NOTE 8

SEE NOTE 8

CO-I1

CD/CO-H6

MATCH THE TEMPORARY INTERPHASE BERM (TYP.)

LANDFILL PERIMETER INTERIM STORMWATER DRAINAGE

5 7E

4 7E

GAVIN POWER LLC. PROPERTY BOUNDARY

PROPOSED FACILITY BOUNDARY

CO-H5

CO-H9

CO-H8

CO-I3

CO-I2

LCP-7

LLP-3

LLP-2

LLP-1

CD-I1

CO-I5

LCP-8

CO-I6

CO-H1

CD/CO-H1

CO-H7

CD-H5

CO-H4

LEACHATE/ SEDIMENTATION POND NO. 5

LTPCO-2

CI INSPECTION

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

CD-H2A

CO-H2

CO-H3

CD-H2

CO-I4

TEMPORARY INTERPHASE BERM (TYP.)

5 7E

CO-H10

CD-H7

SLOPE DRAIN

5 7D

CSP-H1

CD-H3

CO-H6

CO-G4

I/CO-1

OUTER LIMITS OF PHASE H

CO-G6

CD-G3

CSP-G2

CSP-G3

CO-G7

CD-G5

CO-G8

CD-G6

PROPOSED FACILITY BOUNDARY

TEMPORARY STORM WATER CHANNEL

TEMPORARY STORMWATER BERM (TYP.)

PROPOSED LIMIT OF WASTE

BI INSPECTION

TEMPORARY LEACHATE TRANSMISSION SOLID WALL PIPE (LTP-5) TO BE REMOVED AFTER INSTALLATION AND APPROVAL OF STAGE 6

GAVIN POWER LLC. BOUNDARY

TEMPORARY SEDIMENT POND

TEMPORARY EXISTING HAUL ROAD (GENERAL NOTE 6)

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

B22 INSPECTION

PROPOSED FACILITY BOUNDARY

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

AI INSPECTION

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 4 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XG: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- LCP–1 — PROPOSED LEACHATE CORRIDOR PIPE AND FLOW DIRECTION
- LLP–1 — PROPOSED LEACHATE LATERAL PIPE AND FLOW DIRECTION
- LTP–1 — PROPOSED LEACHATE TRANSMISSION PIPE AND FLOW DIRECTION
- CSD–G1 — PROPOSED CHIMNEY SLOPE DRAIN AND FLOW DIRECTION
- CO-G1 — PROPOSED BASE OF LEACHATE INSPECTION/CLEANOUT PIPE
- CD-H3 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED HAUL ROAD/COVER ROAD
- PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

GENERAL NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009 AND 20 DECEMBER 2017.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVOUSLY NAVD 29).
3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY GAVIN POWER LLC. IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 4 CONSTRUCTION & OPERATION NOTES

PHASE H LANDFILL AREA ACTIVITIES

1. PLACE WASTE UP TO APPROXIMATE ELEVATION 965 FT AS SHOWN. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V) BETWEEN STORMWATER BENCH(ES). PERIODICALLY PLACE FINAL COVER (VEGETATIVE SOIL LAYER, COVER SOIL, DOUBLE SIDED GEOCOMPOSITE, AND GEOMEMBRANE) ON FINAL WASTE SLOPES AND RAISE CHIMNEY DRAINS.

PHASE I LANDFILL AREA ACTIVITIES

2. MONITOR CONSOLIDATION SETTLEMENT OF SUBGRADE FILL IN CENTRAL AND WEST CORNER PORTIONS OF PHASE I LANDFILL LINER AREA. PLACE/COMPACT ADDITIONAL FILL TO RESTORE DESIGN SUBGRADE ELEVATIONS.
3. PLACE/COMPACT ANY ADDITIONAL STRUCTURAL FILL TO DESIGN SUBGRADE (WHERE REQUIRED).
4. INSTALL GEOSYNTHETIC CLAY LINER.
5. INSTALL GEOMEMBRANE LINER.
6. INSTALL GEOTEXTILE CUSHION OVER GEOMEMBRANE.
7. INSTALL LEACHATE MANAGEMENT SYSTEM INCLUDING COLLECTION AND TRANSMISSION PIPING AND SPECIFIED THICKNESS OF DRAINAGE LAYER MEDIA. CONNECT TO LEACHATE TRANSMISSION PIPES BENEATH PERIMETER ROAD BERM THAT WERE PREVIOUSLY INSTALLED DURING STAGE 1.
8. CONNECT PREVIOUSLY INSTALLED POND 6 LEACHATE PIPING TO PHASE I LEACHATE PIPING.
9. PLACE SPECIFIED THICKNESS OF PROTECTIVE LAYER MATERIAL OVER LEACHATE MANAGEMENT LAYER.
10. PHASE I IS READY TO RECEIVE WASTE UPON COMPLETION OF AS–BUILT CERTIFICATION AND APPROVAL.

POND 6 AREA ACTIVITIES

11. FOR RIP RAP OUTLET PROTECTION, USE TYPE C RIP RAP WITH 18" DEPTH AND MINIMUM 10 FEET OF LENGTH OF PROTECTION. FOLLOW ODOT STANDARD SPECIFICATION AND DRAWINGS, HW–2.1.

N

0 200' 400'
SCALE IN FEET

DATE	NO.	DESCRIPTION	APPD.
12/14/18	F	REISSUED FOR PERMIT ALTERATION (RESTAGING) (NOD 1)	PJS
10/29/18	E	REISSUED FOR PERMIT ALTERATION (RESTAGING)	PJS
08/24/17	D	REVISION TO THE PHASE H INTERPHASE BERM	PJS
08/12/16	C	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	B	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/28/14	A	ISSUED FOR PERMIT ALTERATION	JPS

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GAVIN POWER LLC.

GAVIN PLANT RESIDUAL WASTE LANDFILL

CHESHIRE OHIO

TITLE:

GAVIN EXPANSION RESIDUAL WASTE LANDFILL CONSTRUCTION STAGING AND OPERATION – STAGE 4

Geosyntec consultants
124 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 606-0500

STATE OF OHIO
Paul J. Sabatini
#PS-71600
REGISTERED
PROFESSIONAL ENGINEER
DEC 14, 2018
DATE

UNIT:	DRAWING NUMBER:	REV:
12	30492-10	F

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: JPC
ENGR: PA
PROJ. ENGR: XXX
DATE: 03/13/2013
APPROVED BY:

PROJECT NO. CHE8259
FILE NO. 8259-006D
DRAWING 51 OF 68

GAVIN POWER LLC. 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

O.E.P.A. DRAWING NO.: 6D

H:\A\AEP\GAVIN RWL LANDFILL - CHE8259\PERMIT AND CONSTRUCTION DRAWINGS\PERMIT\2018 DRAWINGS\CHE8259-006D_STAGE_4 - ALTERNATE.DWG

IGS1092

DWG. NO. 12-30492-11-B

LEACHATE/SEDIMENTATION POND NO. 6

LTPCO-4

LTPCO-3

LTP-3

HAUL ROAD CULVERT (C-501)

3 / 7C

GAVIN POWER LLC. PROPERTY BOUNDARY

PROPOSED FACILITY BOUNDARY

LEACHATE/ SEDIMENTATION POND NO. 5

LTPCO-2

CI INSPECTION

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

CO-I1
CD/CO-H6
CO-H5
CO-H9
CO-H8
CO-I3
CO-I2
CD-H5
CO-H7
SLOPE DRAIN
5 / 7D
CD-I1
CO-I5
CO-H1
CD/CO-H1
CO-H4
CO-I6
CD-H2A
CO-H2
CO-H3
CO-I4
CO-H10
CD-H7
CO-G4
I/CO-1
CD-H3
CO-H6
TEMPORARY INTERPHASE BERM (TYP.)
5 / 7E
CO-G6
CD-G3
CO-G7
CD-G5
CO-G8
CD-G6
PROPOSED FACILITY BOUNDARY
PROPOSED LIMIT OF WASTE
TEMPORARY STORMWATER BERM (TYP.)
POND OUTLET STRUCTURE
3 / 7F
4 / 7E
LANDFILL PERIMETER INTERIM STORMWATER DRAINAGE
INV. 685'
INV. 662'
INV. 658'
INV. 658'
INV. 690'
4 / 7F
POND OUTLET STRUCTURE
I/CO-2
5 / 7F
EMERGENCY OVERFLOW SPILLWAY
PHASE G CATCH BASIN INTERIM STORMWATER PIPING (C-401)
7 / 7C
TEMPORARY LEACHATE TRANSMISSION SOLID WALL PIPE (LTP-5) TO BE REMOVED AFTER INSTALLATION AND APPROVAL OF STAGE 6
CULVERT (C-403)
INV.702'
INV.702'
RIP RAP OUTLET PROTECTION (CONSTRUCTION NOTE 7)
MW-04
MW-21
MW-20
INV. 662'
INV. 653'
GAVIN POWER LLC. PROPERTY BOUNDARY
LEACHATE/ SEDIMENTATION POND NO. 4
INV. 662'
PROPOSED FACILITY BOUNDARY
LEACHATE/ SEDIMENTATION POND NO. 4
10 / 7D
EXTERIOR CHANNEL
BI INSPECTION
B22 INSPECTION
AI INSPECTION
TEMPORARY EXISTING HAUL ROAD (GENERAL NOTE 6)
PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)
PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 5 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XC: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- LCP–1 — PROPOSED LEACHATE CORRIDOR PIPE AND FLOW DIRECTION
- LLP–1 — PROPOSED LEACHATE LATERAL PIPE AND FLOW DIRECTION
- LTP–1 — PROPOSED LEACHATE TRANSMISSION PIPE AND FLOW DIRECTION
- CSD–G1 — PROPOSED CHIMNEY SLOPE DRAIN AND FLOW DIRECTION
- CO-G1 — PROPOSED BASE OF INSPECTION/LEACHATE CLEANOUT PIPE
- CD-H3 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED UNDERDRAIN PIPES AND FLOW DIRECTION
- PROPOSED HAUL ROAD/COVER ROAD
- PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

GENERAL NOTES:

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3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY GAVIN POWER LLC. IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3k AND 3l FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 5 CONSTRUCTION & OPERATION NOTES

POND 4 AREA ACTIVITIES

1. EXCAVATE TO SUBGRADE ELEVATION. SEPARATE EXCAVATED MATERIALS BASED ON GEOTECHNICAL PROPERTIES INTO MATERIALS SUITABLE FOR USE AS LOW–PERMEABILITY CLAY LINER/COVER, STRUCTURAL FILL AND VEGETATIVE COVER. HAUL AND PLACE FILL IMMEDIATELY, AS REQUIRED, OR STOCKPILE. PLACE EXCESS EXCAVATION IN STINGY RUN FLY ASH RESERVOIR AS DIRECTED BY THE OWNER.
2. INSTALL GROUNDWATER UNDERDRAIN SYSTEM PIPING FROM PHASE G LANDFILL AREA, BENEATH POND 4, AND TO OUTLET DOWNSTREAM OF POND 4. INSTALL POND UNDERDRAIN SYSTEM PIPING. SEE UNDERDRAIN PLAN FOR PERFORATED AND SOLID PIPING DETAILS.
3. PLACE/COMPACT EMBANKMENT FILL.
4. INSTALL POND LINER SYSTEM, PROTECTIVE COVER, AND STRUCTURES.
5. INSTALL REMAINING STORMWATER CONTROL STRUCTURES.
6. POND WILL BE USED AS STORMWATER RUNOFF SEDIMENTATION POND DURING CONSTRUCTION OF PHASE G LINER AREA. SEE LEACHATE AND STORMWATER MANAGEMENT PLANS FOR POND DETAILS.
7. FOR RIPRAP OUTLET PROTECTION USE TYPE B RIP RAP WITH 30 INCH DEPTH AND MINIMUM 11 FEET LENGTH OF PROTECTION. FOLLOW ODOT STANDARD SPECIFICATIONS AND DRAWINGS HW–2.1.
8. INSTALL NEW GROUNDWATER MONITORING WELLS.

PHASE G LANDFILL AREA ACTIVITIES

9. EXCAVATE PHASE G LANDFILL LINER AREA. SEPARATE EXCAVATED MATERIALS BASED ON GEOTECHNICAL PROPERTIES INTO MATERIALS SUITABLE FOR USE AS LOW–PERMEABILITY CLAY LINER/COVER, STRUCTURAL FILL AND VEGETATIVE COVER. HAUL AND PLACE FILL IMMEDIATELY, AS REQUIRED, OR STOCKPILE.
10. REFER TO PERMIT & CONSTRUCTION DRAWINGS FOR EXCAVATION AND VISUAL EXAMINATION/DOCUMENTATION REQUIREMENT FOR THE POWDERY COAL EXPOSED WITHIN THE LANDFILL FOOTPRINT.
11. INSTALL GROUNDWATER UNDERDRAIN SYSTEM PIPING IN PHASE G LANDFILL AREA.
12. CHIMNEY DRAIN CD–H2 WILL BE CAPPED PRIOR TO WASTE PLACEMENT OVER THE CHIMNEY DRAIN.

PHASE I LANDFILL AREA ACTIVITIES

13. WASTE DISPOSAL CONTINUES IN PHASE I TO APPROXIMATE ELEVATION 850 FEET AND GRADE AS SHOWN.
14. PLACE WASTE IN ROUGHLY HORIZONTAL LIFTS OVER THE PHASE I FILLING AREA. SLOPE THE UPPER SURFACE OF ACTIVE DISPOSAL AREAS AT APPROXIMATELY 2% OR GREATER TO PROMOTE STORMWATER DRAINAGE TOWARD CHIMNEY DRAINS CONNECTED TO THE PHASE H, AND I LEACHATE MANAGEMENT SYSTEM PIPING.
15. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V BETWEEN STORMWATER BENCHES). PERIODICALLY PLACE FINAL COVER (VEGETATIVE LAYER, COVER SOIL, DOUBLE SIDED GEOCOMPOSITE, AND GEOMEMBRANE) ON FINAL WASTE SLOPES.
16. EXTEND WASTE HAUL ROAD VERTICALLY/LATERALLY ACROSS DISPOSAL AREA AS WASTE FILLING PROGRESSES.
17. EXTEND CHIMNEY DRAINS, SLOPE DRAINS, AND CLEAN–OUTS VERTICALLY/LATERALLY THROUGH WASTE AS WASTE FILLING PROGRESSES.

NORTH STABILITY BERM ACTIVITIES

18. MONITOR CONSOLIDATION SETTLEMENT OF PREVIOUSLY PLACED STABILITY BERM FILL. PLACE/COMPACT ADDITIONAL FILL TO RESTORE DESIGN ELEVATIONS DURING THIS STAGE OR DURING STAGE 6.

N

0 200' 400'
SCALE IN FEET

DATE	NO.	DESCRIPTION	APPD.
12/14/18	F	REISSUED FOR PERMIT ALTERATION (RESTAGING) (NOD 1)	PJS
10/29/18	E	REISSUED FOR PERMIT ALTERATION (RESTAGING)	PJS
08/24/17	D	REVISION TO THE PHASE H INTERPHASE BERM	PJS
08/12/16	C	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	B	REISSUED FOR PERMIT ALTERATION (NOD1)	JPS
02/28/14	A	ISSUED FOR PERMIT ALTERATION	JPS

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GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE:
GAVIN EXPANSION
RESIDUAL WASTE LANDFILL
CONSTRUCTION
STAGING AND OPERATION
– STAGE 5

Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 658–0500

STATE OF OHIO — Paul J. Sabatini #PS-71602 — PROFESSIONAL ENGINEER — DEC. 14, 2018 — DATE

UNIT:	DRAWING NUMBER:	REV:
12	30492-11	F

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: JPC
ENGR: PA
PROJ. ENGR: XXX
DATE: 03/13/2013
APPROVED BY:

PROJECT NO. CHE8259
FILE NO. 8259–0066
DRAWING 52 OF 68

GAVIN POWER LLC. — 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

O.E.P.A. DRAWING NO.: 6E

H:\A\AEP\GAVIN RWL LANDFILL – CHE8259\PERMIT AND CONSTRUCTION DRAWINGS\PERMIT\2018 DRAWINGS\CHE8259–006E_STAGE_5 – ALTERNATE.DWG

IGS1092

DWG. NO. 12-30477-D

LEACHATE/SEDIMENTATION POND NO. 6

LTPCO-4
LTPCO-3
LTP-3
CO-I1
CD/CO-H6
CO-H5
SLOPE DRAIN
5 / 7D
CO-I3
CO-H9
CO-H8
CO-I2
CD-H5
CD-I1
CO-I5
CO-H4
CO-H1
CD/CO-H1
CO-I6
CD-H2A
CO-H2
CO-H3
CD-H7
CO-H10
TEMPORARY INTERPHASE BERM (TYP.)
5 / 7E
CD-G1
I/CO-1
CO-G5
CO-G4
CD-G2
CD-H3
CO-H6
CD/CO-G9
CSD-G1
LCP-2
1 / 7B
LINER SYSTEM TIE-IN (NOTE 2)
CO-G6
CD-G3
CD-G7
CSD-G2
CO-G7
CD-G5
CO-G3
CD-G8
CSD-G3
I/CO-2
CHIMNEY DRAIN
8 / 7B
CD-G4
CSD-G4
1 / 7E
CO-G2
LLP-1
LCP-1
LTP-1
CO-G1
LTPCO-1
710 (LCG)
720 (LCG)
730 (LCG)
740 (LCG)
780 (LCG)
770 (LCG)
760 (LCG)
750 (LCG)
740 (LCG)
GAVIN POWER LLC. PROPERTY BOUNDARY
PROPOSED FACILITY BOUNDARY
PROPOSED BASE OF LEACHATE CLEANOUT PIPE
PROPOSED LIMIT OF WASTE
LEACHATE/ SEDIMENTATION POND NO. 4
GAVIN POWER LLC. PROPERTY BOUNDARY
PROPOSED FACILITY BOUNDARY
LEACHATE/ SEDIMENTATION POND NO. 5
LTPCO-2
CI INSPECTION
PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)
TEMPORARY STORMWATER BERM (TYP.)
BI INSPECTION
TEMPORARY EXISTING HAUL ROAD (GENERAL NOTE 6)
PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)
B22 INSPECTION
PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)
AI INSPECTION
PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 6 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XG: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- LCP–1 — PROPOSED LEACHATE CORRIDOR PIPE AND FLOW DIRECTION
- LLP–1 — PROPOSED LEACHATE LATERAL PIPE AND FLOW DIRECTION
- LTP–1 — PROPOSED LEACHATE TRANSMISSION PIPE AND FLOW DIRECTION
- CSD–G1 — PROPOSED CHIMNEY SLOPE DRAIN AND FLOW DIRECTION
- CO-G1 — PROPOSED BASE OF LEACHATE INSPECTION/CLEANOUT PIPE
- CD/CO-H1 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED HAUL ROAD/COVER ROAD PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

GENERAL NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009 AND 20 DECEMBER 2017.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVIOUSLY NAVD 29).
3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY GAVIN POWER LLC. IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 6 CONSTRUCTION & OPERATION NOTES

PHASE G LANDFILL AREA ACTIVITIES

1. PLACE/COMPACT STRUCTURAL FILL TO DESIGN SUBGRADE (WHERE REQUIRED).
2. LOCATE AND EXPOSE EXISTING LANDFILL LINER SYSTEM FROM THE EXISTING ANCHOR TRENCH ALONG EXISTING LANDFILL SUFFICIENTLY WIDE TO ALLOW CONSTRUCTION OF THE GEOMEMBRANE OVERLAP AND TIE–IN BETWEEN THE NEW GEOMEMBRANE LINER AND THE EXISTING LINER. AS–BUILT DOCUMENTATION IS AVAILABLE TO LOCATE ANCHOR TRENCH.
3. REMOVE TEMPORARY STORMWATER BERM. INSTALL GEOSYNTHETIC CLAY LINER TYING INTO EXISTING LANDFILL RSL.
4. INSTALL GCL AND GEOMEMBRANE LINER.
5. INSTALL GEOTEXTILE CUSHION OVER GEOMEMBRANE.
6. INSTALL LEACHATE MANAGEMENT SYSTEM INCLUDING CHIMNEY DRAINS, DOUBLE SIDED GEOCOMPOSITE, GEOTEXTILE, COLLECTION SLOPE TRANSMISSION PIPING, AND SPECIFIED THICKNESS OF DRAINAGE LAYER MEDIA. CONNECT LEACHATE CORRIDOR PIPES TO LEACHATE TRANSMISSION PIPE TO POND 4 THAT WAS PREVIOUSLY INSTALLED DURING STAGE 5.
7. PLACE SPECIFIED THICKNESS OF PROTECTIVE LAYER MATERIAL OVER LEACHATE MANAGEMENT LAYER.
8. PHASE G IS READY TO RECEIVE WASTE UPON COMPLETION OF AS–BUILT CERTIFICATION AND APPROVAL.
9. REMOVE TEMPORARY LTP–5 AND EXTEND CSD–G2, G3 AND G4 TO LCP–1 AND LCP–2 AS SHOWN.

PHASE I LANDFILL AREA ACTIVITIES

10. WASTE DISPOSAL CONTINUES TO COMPLETION OF PHASE I FILLING WITH TOP OF WASTE AT APPROXIMATELY ELEVATION 900 FEET.
11. PLACE WASTE IN ROUGHLY HORIZONTAL LIFTS OVER THE PHASE I FILLING AREA. SLOPE THE UPPER SURFACE OF ACTIVE DISPOSAL AREAS AT APPROXIMATELY 2% OR GREATER TO PROMOTE STORMWATER DRAINAGE TOWARD CHIMNEY DRAINS CONNECTED TO THE LEACHATE MANAGEMENT SYSTEM PIPING.
12. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V BETWEEN STORMWATER BENCHES). PERIODICALLY PLACE FINAL COVER (VEGETATIVE LAYER, COVER SOIL, DOUBLE SIDED GEOCOMPOSITE, AND GEOMEMBRANE) ON FINAL WASTE SLOPES.
13. EXTEND WASTE HAUL ROAD VERTICALLY/LATERALLY ACROSS DISPOSAL AREA AS WASTE FILLING PROGRESSES.
14. EXTEND CHIMNEY DRAINS, SLOPE DRAINS, AND CLEAN–OUTS VERTICALLY/LATERALLY THROUGH WASTE AS WASTE FILLING PROGRESSES.

PHASE J LANDFILL AREA ACTIVITIES

15. REMOVE TEMPORARY LEACHATE TRANSMISSION SOLID WALL PIPE (LTP–5) FROM PHASE J LANDFILL AREA ACTIVITIES.

N

0 200' 400'
SCALE IN FEET

DATE	NO.	DESCRIPTION	APPD.
10/29/18	F	REISSUED FOR PERMIT ALTERATION (RESTAGING)	PJS
08/12/16	E	REISSUED FOR PERMIT ALTERATION (PHASE FJ)	PJS
09/25/14	D	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/25/14	C	ISSUED FOR PERMIT ALTERATION	JPS
04/12/12	B	REISSUED FOR PERMIT (NOD 1)	JPS
06/22/11	A	ISSUED FOR PERMIT	JPS

REVISIONS

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Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 606–0500

STATE OF OHIO — Paul J. Sabatini #E-71602 — REGISTERED PROFESSIONAL ENGINEER
SIGNATURE
10/29/2018
DATE

PROJECT NO. CHE8259
FILE NO. 8259–006F
DRAWING 53 OF 68

GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE:
GAVIN EXPANSION
RESIDUAL WASTE LANDFILL
CONSTRUCTION STAGING AND
OPERATION – STAGE 6

UNIT:	DRAWING NUMBER:	REV:
12	30477	F

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: JPC
ENGR: PA
PROJ. ENGR: XXX
DATE: 03/13/2013
APPROVED BY:

GAVIN POWER LLC. — GAVIN POWER LLC. 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

O.E.P.A. DRAWING NO.: 6F

H:\VAEP\GAVIN RWL LANDFILL – CHE8259\PERMIT AND CONSTRUCTION DRAWINGS\PERMIT\2018 DRAWINGS\CHE8259–006F_STAGE_6.DWG

IGS1092

DWG. NO. 12-30478-D

LEACHATE/SEDIMENTATION POND NO. 6

GAVIN POWER LLC. PROPERTY BOUNDARY

PROPOSED FACILITY BOUNDARY

LEACHATE/ SEDIMENTATION POND NO. 5

CI INSPECTION

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

LTPCO-4
LTPCO-3
LTP-3
LTPCO-2
LTPCO-1
SLOPE DRAIN
CO-I1
CD/CO-H6
CO-H5
CO-H9
CO-H8
CO-I3
CO-I2
CD-I1
CO-I5
CD-H5
CO-H7
CO-H4
CD/CO-H1
CO-I6
CD-H2A
CO-H2
CO-H3
CO-I4
CD-G1
CO-G5
CO-G4
CD-H3
CO-H6
I/CO-1
CD-G2
CD/CO-G9
CD-H7
CO-H10
CO-G9
SLOPE DRAIN TRANSITION
14/7C
CD-G7
CO-G6
CD-G3
CO-G7
CD-G5
CO-G3
CD-G8
CO-G8
CD-G6
CD-G4
I/CO-2
CO-G2
CO-G1
4/7E
LANDFILL PERIMETER INTERIM STORMWATER DRAINAGE
2/7E
PROPOSED LIMIT OF WASTE
PERMANENT HAUL ROAD CULVERT (C-101)
1/7C
PERMANENT CONCRETE CHANNEL
6/7D
TEMPORARY STORMWATER BERM (TYP.)
TEMPORARY EXISTING HAUL ROAD (GENERAL NOTE 6)
PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)
PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)
GAVIN POWER LLC. PROPERTY BOUNDARY
LEACHATE/ SEDIMENTATION POND NO. 4
PROPOSED FACILITY BOUNDARY
BI INSPECTION
B22 INSPECTION
AI INSPECTION
CO-H1

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 7 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XC: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- LCP–1 — PROPOSED LEACHATE CORRIDOR PIPE AND FLOW DIRECTION
- LLP–1 — PROPOSED LEACHATE LATERAL PIPE AND FLOW DIRECTION
- LTP–1 — PROPOSED LEACHATE TRANSMISSION PIPE AND FLOW DIRECTION
- CSD–G1 — PROPOSED CHIMNEY SLOPE DRAIN AND FLOW DIRECTION
- CO-G1 — PROPOSED BASE OF LEACHATE INSPECTION/CLEANOUT PIPE
- CD-H3 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED HAUL ROAD/COVER ROAD
- PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

GENERAL NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009 AND 20 DECEMBER 2017.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVIOUSLY NAVD 29).
3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY GAVIN POWER LLC. IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 7 CONSTRUCTION & OPERATION NOTES

PHASE G LANDFILL AREA ACTIVITIES

1. WASTE DISPOSAL COMMENCES AND CONTINUES (INTERIM CONDITION WITH PHASE G UPPER WASTE SURFACE AT APPROXIMATELY ELEVATION 850 FEET IS DEPICTED).
2. STRIP SOIL COVER FROM EXISTING LANDFILL SLOPES WITHIN THE PHASE G VERTICAL EXPANSION AREA TO A LIMITED DISTANCE ABOVE THE PHASE G WORKING LIFT ELEVATION. CONTINUE TO STRIP SOIL COVER IN ADVANCE OF FILLING OPERATIONS AS DISPOSAL OPERATIONS ADVANCE. STOCKPILE USABLE COVER SOILS THAT ARE STRIPPED.
3. PLACE WASTE IN ROUGHLY HORIZONTAL LIFTS OVER THE PHASE G FILLING AREA. SLOPE THE UPPER SURFACE OF ACTIVE DISPOSAL AREAS AT APPROXIMATELY 2% OR GREATER TO PROMOTE STORMWATER DRAINAGE TOWARD CHIMNEY DRAINS INCLUDING NEW CHIMNEY DRAINS ADDED IN STAGE 6.
4. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V BETWEEN STORMWATER BENCHES). PERIODICALLY PLACE FINAL COVER (VEGETATIVE LAYER, COVER SOIL, DOUBLE SIDED GEOCOMPOSITE, AND GEOMEMBRANE) ON FINAL WASTE SLOPES.
5. GRADE TEMPORARY INTERIOR WASTE SLOPES (INTER–PHASE SLOPES) TO A MAXIMUM OF 3H:1V.
6. EXTEND WASTE HAUL ROAD VERTICALLY/LATERALLY ACROSS DISPOSAL AREA AS WASTE FILLING PROGRESSES.
7. EXTEND CHIMNEY DRAINS, SLOPE DRAINS, AND CLEAN–OUTS VERTICALLY/LATERALLY THROUGH WASTE AS WASTE FILLING PROGRESSES.

N

0 200' 400'
SCALE IN FEET

DATE	NO.	DESCRIPTION	APP'D.
10/29/18	F	REISSUED FOR PERMIT ALTERATION PJS (RESTAGING)	
08/12/16	E	REISSUED FOR PERMIT APPLICATION (PHASE F2)	PJS
09/25/14	D	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/28/14	C	ISSUED FOR PERMIT ALTERATION	JPS
04/12/12	B	REISSUED FOR PERMIT (NOD1)	JPS
08/2/11	A	ISSUED FOR PERMIT	JPS

REVISIONS

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GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE:
GAVIN EXPANSION
RESIDUAL WASTE LANDFILL
CONSTRUCTION STAGING AND
OPERATION – STAGE 7

Geosyntec consultants
124 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA (312) 606-0500

STATE OF OHIO Paul J. Sabatini #E-71602 REGISTERED PROFESSIONAL ENGINEER
SIGNATURE
10/29/2018
DATE

UNIT:	12
DRAWING NUMBER:	30478
REV:	F
SCALE: AS SHOWN	
DR: SMS/DK/SWH	
CH: JPC	
ENGR: PA	
PROJ. ENGR: XXX	
DATE: 03/13/2013	
APPROVED BY:	
PROJECT NO.	CHE8259
FILE NO.	8259-006G
DRAWING	54 OF 68

GAVIN POWER LLC. 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

O.E.P.A. DRAWING NO.: 6G

H:\A\AEP\GAVIN RWL LANDFILL - CHE8259\PERMIT AND CONSTRUCTION DRAWINGS\PERMIT\2018 DRAWINGS\CHE8259-006G_STAGE_7.DWG

IGS1092

DWG. NO. 12-30479-F

LEACHATE/SEDIMENTATION POND NO. 6

GAVIN POWER LLC. PROPERTY BOUNDARY

PROPOSED FACILITY BOUNDARY

LEACHATE/ SEDIMENTATION POND NO. 5

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

LTPCO-4
LTPCO-3
LTP-3
LTPCO-2
LTPCO-1
CO-I1
CD/CO-H6
CO-H5
CO-H9
CO-H8
CO-I3
CO-I2
CD-H5
CO-H7
CD-I1
CO-I5
CO-H1
CO-H4
CD/CO-H1
CO-I6
CO-H2
CO-H3
CD-H7
CO-H10
CD-H2A
CO-I4
CD-G1
CO-G4
CO-G5
I/CO-1
CD-H3
CO-H6
CD-G2
CD/CO-G9
CO-G9
CD-G7
CO-G6
CD-G3
CO-G7
CD-G5
CO-G8
CD-G6
CO-G3
CD-G4
CO-G2
CO-G1
I/CO-2

5/7D SLOPE DRAIN

1/7D HAUL ROAD CULVERT (C-402)

TEMPORARY STORMWATER BERM (TYP.)

TEMPORARY EXISTING HAUL ROAD (GENERAL NOTE 6)

CI INSPECTION
BI INSPECTION
BJ22 INSPECTION
AI INSPECTION

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 8 LEGEND

- AEP PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XG: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
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- LTP–1 — PROPOSED LEACHATE TRANSMISSION PIPE AND FLOW DIRECTION
- CSD–G1 — PROPOSED CHIMNEY SLOPE DRAIN AND FLOW DIRECTION
- CO-G1 — PROPOSED BASE OF LEACHATE INSPECTION/CLEANOUT PIPE
- CD-H3 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED HAUL ROAD/COVER ROAD PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

GENERAL NOTES:

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3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY AEP IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 8 CONSTRUCTION & OPERATION NOTES

PHASE G LANDFILL AREA ACTIVITIES

1. WASTE DISPOSAL CONTINUES TO COMPLETION OF PHASE G FILLING WITH TOP OF WASTE AT APPROXIMATELY ELEVATION 900 FEET.
2. PLACE WASTE IN ROUGHLY HORIZONTAL LIFTS OVER THE PHASE G FILLING AREA. SLOPE THE UPPER SURFACE OF ACTIVE DISPOSAL AREAS AT APPROXIMATELY 2% OR GREATER TO PROMOTE STORMWATER DRAINAGE TOWARD CHIMNEY DRAINS CONNECTED TO THE LEACHATE MANAGEMENT SYSTEM PIPING.
3. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V BETWEEN STORMWATER BENCHES). PERIODICALLY PLACE FINAL COVER (VEGETATIVE LAYER, COVER SOIL, DOUBLE SIDED GEOCOMPOSITE, AND GEOMEMBRANE) ON FINAL WASTE SLOPES.
4. EXTEND WASTE HAUL ROAD VERTICALLY/LATERALLY ACROSS DISPOSAL AREA AS WASTE FILLING PROGRESSES.
5. EXTEND CHIMNEY DRAINS, SLOPE DRAINS, AND CLEAN–OUTS VERTICALLY/LATERALLY THROUGH WASTE AS WASTE FILLING PROGRESSES.

N

0 200' 400'
SCALE IN FEET

DATE	NO.	DESCRIPTION	APPD.
10/29/18	F	REISSUED FOR PERMIT ALTERATION (RESTAGING)	PJS
08/12/16	E	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	D	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/28/14	C	ISSUED FOR PERMIT ALTERATION	JPS
04/12/12	B	REISSUED FOR PERMIT (NOD 1)	JPS
08/22/11	A	ISSUED FOR PERMIT	JPS

REVISIONS

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GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE:
GAVIN EXPANSION
RESIDUAL WASTE LANDFILL
CONSTRUCTION STAGING AND
OPERATION – STAGE 8

Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 606-0500

UNIT:	DRAWING NUMBER:	REV:
12	30479	F

SCALE: AS SHOWN
DR: SMS/DR/SWH
CH: JPC
ENGR: PA
PROJ. ENGR.: XXX
APPROVED BY:
DATE: 03/13/2013

SIGNATURE
DATE

PROJECT NO. CHE8259
FILE NO. 8259-006H
DRAWING 55 OF 68

GAVIN POWER LLC. 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

O.E.P.A. DRAWING NO.: 6H

IGS1092

DWG. NO. 12-30480-F

LEACHATE/SEDIMENTATION POND NO. 6

GAVIN POWER LLC. PROPERTY BOUNDARY

PROPOSED FACILITY BOUNDARY

LEACHATE/ SEDIMENTATION POND NO. 5

CI INSPECTION

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

LTPCO-4

LTPCO-3

LTP-3

LTPCO-2

LTPCO-1

CO-I1 CD/CO-H6

CO-H5

CO-H9 CO-H8

CO-I3

CO-I2

CD-H5

CD-I1 CO-I5

CO-H1

CO-H4

CD/CO-H1

5 7D SLOPE DRAIN

CO-H7

CO-I6

CO-H2

CD-H2A

CO-H3

CD-H7

CO-I4

CO-H10

CD-G1

I/CO-1

CO-G5

CD-H3

CO-G4

CD-G2

CO-H6

CD/CO-G9

5 7D SLOPE DRAIN

CO-G6

CD-G3

CO-G7 CD-G5

CD-G7

5 7D SLOPE DRAIN

CO-G8 CD-G6

TEMPORARY STORMWATER BERM (TYP.)

CO-G3

BI INSPECTION

CD-G4

I/CO-2

CO-G2

5 7D SLOPE DRAIN

PROPOSED LIMIT OF WASTE

CO-G1

TEMPORARY EXISTING HAUL ROAD (GENERAL NOTE 6)

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

B22 INSPECTION

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

AI INSPECTION

GAVIN POWER LLC. PROPERTY BOUNDARY

LEACHATE/ SEDIMENTATION POND NO. 4

PROPOSED FACILITY BOUNDARY

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

GENERAL NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009 AND 20 DECEMBER 2017.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVIOUSLY NAVD 29).
3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY GAVIN POWER LLC. IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 9 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XG: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- CO-G1 — PROPOSED BASE OF LEACHATE INSPECTION/CLEANOUT PIPE
- CD-H3 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED HAUL ROAD/COVER ROAD
- PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

STAGE 9 CONSTRUCTION & OPERATION NOTES

PHASE J LANDFILL AREA ACTIVITIES

1. CONTINUE WASTE DISPOSAL ABOVE ELEVATION 950 FT AS SHOWN.
2. PLACE WASTE IN ROUGHLY HORIZONTAL LIFTS OVER THE PHASE J FILLING AREA. SLOPE THE UPPER SURFACE OF ACTIVE DISPOSAL AREAS AT APPROXIMATELY 2% OR GREATER TO PROMOTE STORMWATER DRAINAGE TOWARD CHIMNEY DRAINS CONNECTED TO THE LEACHATE MANAGEMENT SYSTEM PIPING.
3. STRIP TEMPORARY COVER FROM TOP OF FORMER PHASE G AND PHASE H FILL AREAS AS PHASE J FILLING OPERATIONS PROGRESS OUT OVER THOSE AREAS.
4. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V BETWEEN STORMWATER BENCHES). PERIODICALLY PLACE FINAL COVER (VEGETATIVE LAYER, COVER SOIL, DOUBLE SIDED GEOCOMPOSITE, AND GEOMEMBRANE) ON FINAL WASTE SLOPES.
5. EXTEND WASTE HAUL ROAD VERTICALLY/LATERALLY ACROSS DISPOSAL AREA AS WASTE FILLING PROGRESSES.
6. EXTEND CHIMNEY DRAINS, SLOPE DRAINS, AND CLEAN–OUTS VERTICALLY/LATERALLY THROUGH WASTE AS WASTE FILLING PROGRESSES.

N

0 200' 400'
SCALE IN FEET

DATE	NO.	DESCRIPTION	APPD.
10/29/18	F	REISSUED FOR PERMIT ALTERATION (RESTAGING)	PJS
08/12/16	E	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	D	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/28/14	C	ISSUED FOR PERMIT ALTERATION	JPS
04/12/12	B	REISSUED FOR PERMIT (NOD 1)	JPS
06/22/11	A	ISSUED FOR PERMIT	JPS

REVISIONS

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GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE:
GAVIN EXPANSION
RESIDUAL WASTE LANDFILL
CONSTRUCTION STAGING AND
OPERATION – STAGE 9

UNIT:	DRAWING NUMBER:	REV:
12	30480	F

SCALE: AS SHOWN
DR: SMS/DR/SWH
CH: JPC
ENGR: PA
PROJ. ENGR: XXX
DATE: 03/13/2013
APPROVED BY:

Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA (312) 606–0500

SIGNATURE
DATE

PROJECT NO. CHE8259
FILE NO. 8259–0061
DRAWING 56 OF 68

GAVIN POWER LLC. 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

O.E.P.A. DRAWING NO.: 61

IGS1092

DWG. NO. 12-30481-E

LEACHATE/SEDIMENTATION POND NO. 6

GAVIN POWER LLC. PROPERTY BOUNDARY

PROPOSED FACILITY BOUNDARY

LEACHATE/ SEDIMENTATION POND NO. 5

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

PROPOSED FACILITY BOUNDARY

PROPOSED LIMIT OF WASTE

LEACHATE/ SEDIMENTATION POND NO. 4

GAVIN POWER LLC. PROPERTY BOUNDARY

TEMPORARY STORMWATER BERM (TYP.)

RIP RAP OUTLET PROTECTION (NOTE 8)

PERMANENT HAUL ROAD CULVERT (C-302) SEE NOTE 7.

TEMPORARY EXISTING HAUL ROAD (GENERAL NOTE 6)

PROPOSED LIMIT OF WASTE (COINCIDES WITH EXISTING LIMIT OF WASTE)

PROPOSED FACILITY BOUNDARY (COINCIDES WITH EXISTING FACILITY BOUNDARY)

SLOPE DRAIN 5/7D

LTPCO-4 LTPCO-3 LTP-3 LTPCO-2 LTPCO-1

CO-I1 CD/CO-H6 CO-I2 CO-I3 CO-I4 CO-I5 CO-I6

CO-H1 CD/CO-H1 CO-H2 CD-H2A CO-H3 CO-H4 CO-H5 CO-H6 CO-H7 CO-H8 CO-H9 CO-H10

CD-G1 CO-G5 I/CO-1 CD/CO-G9 CO-G4 CD-G2 CD-H5 CD-H3 CO-G6 CD-G3 CD-G5 CO-G7 CD-G7 CO-G8 CD-G6 CO-G3 CD-G4 I/CO-2 CO-G2 CO-G1

CI INSPECTION BI INSPECTION B22 INSPECTION AI INSPECTION

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 10 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XC: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- CO-G1 — PROPOSED BASE OF LEACHATE INSPECTION/CLEANOUT PIPE
- CD-H3 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED HAUL ROAD/COVER ROAD
- PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

GENERAL NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY HENDERSON AERIAL SURVEYS, INC. FROM AERIAL PHOTOGRAPHY DATED 2 NOVEMBER 2009 AND 20 DECEMBER 2017.
2. ELEVATIONS ARE IN FEET. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29, PREVIOUSLY NAVD 29).
3. HORIZONTAL DISTANCES ARE IN FEET. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).
4. PROPERTY LIMIT LINE PROVIDED BY GAVIN POWER LLC. IN CAD FORMAT ON 26 MAY 2011 AND IS INTENDED ONLY AS A GRAPHIC REPRESENTATION OF THE PROPERTY BOUNDARY FOR THESE PERMIT APPLICATION DRAWINGS AND SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT.
5. SEE DRAWING 3K AND 3L FOR PHASE LOCATIONS.
6. TEMPORARY EXISTING HAUL ROAD TO BE USED DURING VERTICAL EXPANSION AND TO BE ABANDONED AND CAPPED DURING FINAL GRADING.

STAGE 10 CONSTRUCTION & OPERATION NOTES

PHASE J LANDFILL AREA ACTIVITIES

1. CONTINUE WASTE DISPOSAL TO COMPLETION OF LANDFILLING (PEAK WASTE ELEVATION OF 1008 FEET).
2. PLACE WASTE IN ROUGHLY HORIZONTAL LIFTS OVER THE PHASE J FILLING AREA. SLOPE THE UPPER SURFACE OF ACTIVE DISPOSAL AREAS AT APPROXIMATELY 2% OR GREATER TO PROMOTE STORMWATER DRAINAGE TOWARD CHIMNEY DRAINS CONNECTED TO THE LEACHATE MANAGEMENT SYSTEM PIPING.
3. STRIP TEMPORARY COVER FROM TOP OF FORMER PHASE G AND PHASE H FILL AREAS AS PHASE J FILLING OPERATIONS PROGRESS OUT OVER THOSE AREAS.
4. GRADE FINAL EXTERIOR WASTE SLOPES TO ACHIEVE DESIGN FINAL WASTE GRADES (3H:1V BETWEEN STORMWATER BENCHES AND MINIMUM 2% SLOPE ABOVE ELEVATION 1000 FEET). PERIODICALLY PLACE FINAL COVER (RECOMPACTED SOIL LINER AND VEGETATIVE SOIL LAYER) ON FINAL WASTE SLOPES.
5. EXTEND WASTE HAUL ROAD VERTICALLY/LATERALLY ACROSS DISPOSAL AREA AS WASTE FILLING PROGRESSES.
6. EXTEND CHIMNEY DRAINS, SLOPE DRAINS, AND CLEAN–OUTS VERTICALLY/LATERALLY THROUGH WASTE AS WASTE FILLING PROGRESSES.
7. CULVERT SHOULD BE INSTALLED AFTER FINAL COVER IS INSTALLED.
8. FOR RIP RAP OUTLET PROTECTION, USE TYPE B RIP RAP WITH 30 INCH DEPTH AND MINIMUM 11 FEET LENGTH OF PROTECTION. FOLLOW ODOT STANDARD SPECIFICATIONS AND DRAWINGS HW–21.

N

0 200' 400'
SCALE IN FEET

O.E.P.A. DRAWING NO.: 6J

DATE	NO.	DESCRIPTION	APPD.
08/12/16	E	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/25/14	D	REISSUED FOR PERMIT ALTERATION (NOD 1)	JPS
02/28/14	C	ISSUED FOR PERMIT ALTERATION	JPS
04/12/12	B	REISSUED FOR PERMIT (NOD 1)	JPS
09/20/11	A	ISSUED FOR PERMIT	JPS

REVISIONS

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GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE:
GAVIN EXPANSION
RESIDUAL WASTE LANDFILL
CONSTRUCTION STAGING AND
OPERATION – STAGE 10

Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 658-0500

UNIT:	DRAWING NUMBER:	REV:
12	30481	E

SCALE: AS SHOWN
DR: SMS/DW/SWH
CH: JPC
ENGR: PA
PROJ ENGR: XXX
DATE: 03/13/2013
APPROVED BY:

SIGNATURE
DATE

PROJECT NO. CHE8259
FILE NO. 8259-006J
DRAWING 57 OF 68

GAVIN POWER LLC.
7397 NORTH STATE ROUTE 7
CHESHIRE, OH 45620

IGS1092

FIGURE-6

Figure 6: Pond Contributing Drainage Areas (Stage 5)

DWG. NO. 12-30492-11-B

BASE MAP LEGEND

- EXISTING GROUND SURFACE ELEVATION (MAJOR) (10 FT.–INTERVAL)
- EXISTING GROUND SURFACE ELEVATION (MINOR) (2 FT.–INTERVAL)
- EXISTING GROUND SURFACE SPOT ELEVATION
- EXISTING SURFACE WATER ELEVATION
- EXISTING ELECTRICAL LINE TOWER
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING LIGHT
- EXISTING UNDERGROUND GAS PIPELINE
- EXISTING FLY ASH SLUICE PIPELINE (ABANDONED)
- EXISTING LEADING CREEK WATER PIPELINE
- EXISTING BUILDINGS
- EXISTING TREE
- EXISTING ROAD
- EXISTING RAILROAD
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- EXISTING VEGETATION LIMITS
- EXISTING WATER FEATURE
- EXISTING STREAM
- EXISTING DRAINAGE STRUCTURE

STAGE 5 LEGEND

- GAVIN POWER LLC. PROPERTY BOUNDARY
- PROPOSED LIMIT OF WASTE
- PROPOSED FACILITY BOUNDARY
- MAJOR ELEVATION AT CONCLUSION OF STAGE (10 FT.–INTERVAL)
- MINOR ELEVATION AT CONCLUSION OF STAGE (2 FT.–INTERVAL)
- MAJOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)
- MINOR ELEVATION IN NON–ACTIVE AREA (10 FT.–INTERVAL)

* SUFFIX DENOTES NATURE OF SURFACE AS FOLLOWS:
XG: EXCAVATION GRADE
SGF: TOP OF SUBGRADE FILL
LCG: TOP OF LEACHATE COLLECTION LAYER GRADE
WG: WASTE GRADE
FG: FINISHED GRADE (EXISTING LANDFILL)

- CO-G1 — PROPOSED BASE OF INSPECTION/LEACHATE CLEANOUT PIPE
- CD-H3 — CHIMNEY DRAIN
- CD/CO-H1 — LEACHATE CORRIDOR CHIMNEY DRAIN WITH INSPECTION/CLEANOUT
- PROPOSED CULVERT (C–XXX) DENOTES CULVERT IDENTIFICATION IN STORMWATER CALCULATIONS
- PROPOSED POND OUTLET STRUCTURE
- PROPOSED CULVERT TERMINATION
- PROPOSED UNDERDRAIN PIPES AND FLOW DIRECTION
- PROPOSED HAUL ROAD/COVER ROAD PROPOSED PERIMETER ROAD
- I/CO — EXISTING LANDFILL INSPECTION/CLEANOUT ACCESS
- LTPCO-1 — INSPECTION/CLEANOUT ACCESS AT LEACHATE PONDS
- MW-01 — PROPOSED GROUNDWATER MONITORING WELL/PIEZOMETER

DRAINAGE MAP LEGEND

- PROPOSED MAJOR RIDGE LINE
- PROPOSED MINOR RIDGE LINE
- 302 — DRAINAGE AREA NUMBER
- CLEAN STORMWATER RUNOFF FROM EXISTING LANDFILL

Basin	Area (sq ft)	Area (ac)
100 Series		
101	301,610	6.9
102	2,186,194	50.2
103	1,157,413	26.6
100 Subtotal		83.7
200 Series		
201	3,656,037	83.9
200 Subtotal		83.9
300 Series		
301	270,602	6.2
302	320,554	7.4
303	1,285,285	29.5
304	922,792	21.2
501	932,468	21.4
502	1,868,454	42.9
503	961,892	22.1
506	260,845	6.0
300 Subtotal		156.6
400 Series		
401	495,492	11.4
402	2,911,979	66.8
403	704,849	16.2
404	880,417	20.2
400 Subtotal		114.6
600 Series		
601	519,040	11.9
602	304,837	7.0
603	448,959	10.3
604	1,025,395	23.5
605	446,376	10.2
600 Subtotal		63.0

DATE	NO.	DESCRIPTION	APPD.
08/24/18	E	REVISION TO THE PHASE H INTERPHASE BERM	PJS
08/24/17	D	REVISION TO THE PHASE H INTERPHASE BERM	PJS
06/12/16	C	REISSUED FOR PERMIT ALTERATION (PHASE F2)	PJS
09/29/14	B	REISSUED FOR PERMIT ALTERATION (NOD1)	JPS
02/28/14	A	ISSUED FOR PERMIT ALTERATION	JPS

REVISIONS

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N

0 200' 400'
SCALE IN FEET

DRAFT

Geosyntec consultants
134 N. LA SALLE STREET, SUITE 300 CHICAGO, IL 60602 USA
(312) 856-0900

SIGNATURE

DATE

PROJECT NO. CHE8259
FILE NO. 8259–006E

DRAWING 52 OF 68

O.E.P.A. DRAWING NO.: 6E

GAVIN POWER LLC.
GAVIN PLANT
RESIDUAL WASTE LANDFILL
CHESHIRE OHIO

TITLE: GAVIN EXPANSION RESIDUAL WASTE LANDFILL CONSTRUCTION STAGING AND OPERATION – STAGE 5

UNIT:	DRAWING NUMBER:	REV:
12	30492-11	E

SCALE AS SHOWN
DR. SWS/CW/SHH
CH. JPC
CK. PJA
APP. XXX
DATE 05/11/2018

GAVIN POWER LLC. 7397 NORTH STATE ROUTE 7 CHESHIRE, OH 45620

H:\A\AEP\GAVIN RWL LANDFILL – CHE8259\PERMIT AND CONSTRUCTION DRAWINGS\PERMIT\2018 DRAWINGS\CHE8259–006E_STAGE_5 – HYDRO ANALYSIS.DWG