NHDES Waste Management Division
29 Hazen Drive; PO Box 95
Concord, NH 03302-0095

Standard Permit for Solid Waste Landfill
Granite State Landfill
Douglas Drive
Dalton, NH 03598
NHDES Site #: TBD
Project Type: SW-LNDFILL
Project Number: TBD
Permit: DES-SW-SP-XX-XXX (TBD)
Volume 7
Full Size Plans

Kate Leith

Digitally signed by Kate Leith
Date: 2023.10.17 18:25:40 -04'00'

Prepared For:
Granite State Landfill, LLC
1855 VT Route 100
Hyde Park, VT 05655
Phone Number (802) 651-5454
RP Contact Name: John Gay
RP Contact Email: john.gay@casella.com

STATE OF NEW HAMPSHIRE
ADAM J. SANDAHL
No. 12544
LICENSED PROFESSIONAL ENGINEER

Prepared By:
CMA Engineers, Inc.
35 Bow Street
Portsmouth, NH 03801
Phone Number: (603) 431-6196
Contact Name: Adam Sandahl, P.E.
Contact Email: asandahl@cmaengineers.com

Date of Report: October 16, 2023

Granite State Landfill, LLC

Granite State Landfill

Dalton, New Hampshire

Permitting Plan Set

Submitted to NHDES for Review - October 2023

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3	OVSP-1	Overall Site Plan
4	LP-1	Base Grading Plan Index Plan
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9	G&D-2	Stormwater Ponds Grading and Drainage Plan Sheet 1
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11	G&D-4	Stormwater Ponds Grading and Drainage Plan Sheet 3
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13	INT-1	Interim Grading Plan Stage 1 Cell 1
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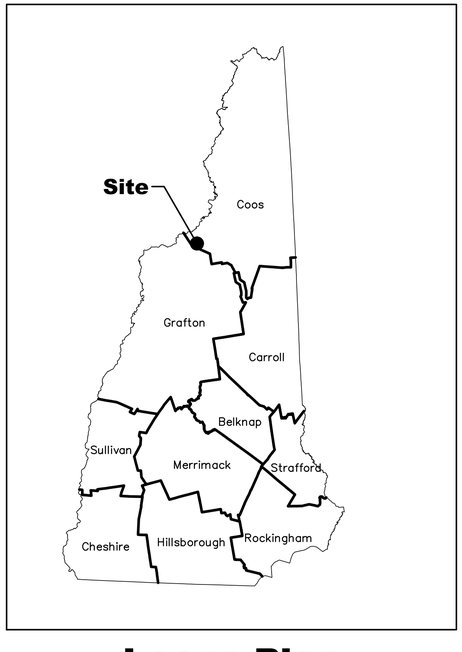

Locus Plan

Prepared For:

Granite State Landfill, LLC
1855 VT Route 100
Hyde Park, VT 05655

Prepared By:

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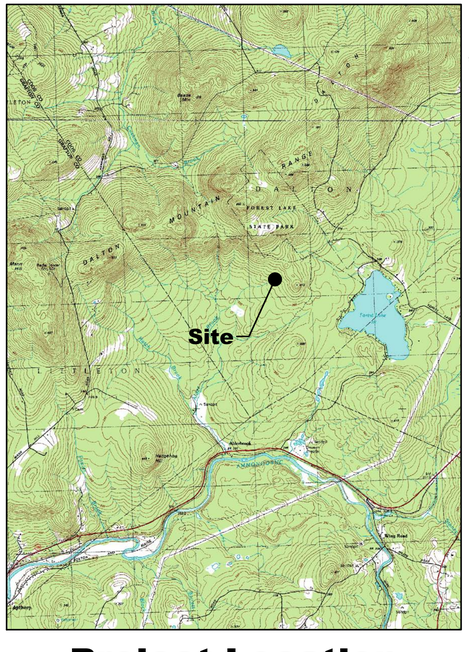
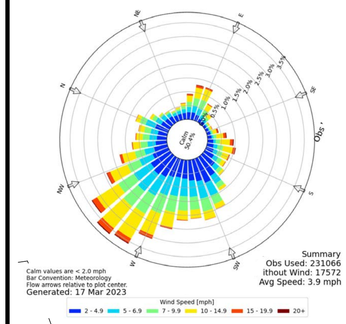


Project Location

STATE OF NEW HAMPSHIRE
ADAM J SANDAHL
No. 12544
LICENSED
PROFESSIONAL ENGINEER



FOREST LAKE

WHITEFIELD

DALTON

STATE PARK MANAGED FOREST

EXISTING OFF-ROAD SNOW RALLY DRIVING SCHOOL

GRANITE STATE LANDFILL (GSL)

EXISTING VERNAL POOL (TYP)

PROPOSED LANDFILL LINED LIMIT

WETLANDS EAST OF DELINEATION LIMIT ESTIMATED FROM AERIAL IMAGERY

WETLANDS FIELD DELINEATION LIMIT

PLANNED BUSINESS PARK

FORMER ASPHALT PLANT

EXISTING ROCK QUARRY

EXISTING VERNAL POOL (TYP)

SITE ACCESS ROAD

FORMER LOG PROCESSING FACILITY

EXISTING GRAVEL PIT LIMITS

WETLANDS WEST OF DELINEATION LIMIT ESTIMATED FROM AERIAL IMAGERY

BETHLEHEM

DALTON

INGERSON RESIDENCE

W. FOREST LAKE ROAD

FUTURE DRAG STRIP LOCATION

DOUGLAS DRIVE

DALTON

LITTLETON

BETHLEHEM

LITTLETON

ROUTE 116

DALTON

LITTLETON

EXISTING GUN CLUB FIRING RANGE

Notes:

1. Existing topography was created by Eastern Topographics of Wolfeboro, New Hampshire. The survey was created from Aerial Survey performed on November 15, 2022. Horizontal datum is based on NAD83 NH State Plane coordinates system and the Vertical datum is based on NAVD88.
2. Existing conditions Base Map provided by Horizons Engineering of Littleton, New Hampshire. Existing features composed from site surveys and Aerial Survey.
3. Wetlands delineated by Barry Keith, CWS #87.
4. Applicant will purchase land comprising the property line and Facility Compliance Boundary upon upon receipt of solid waste permit. Refer to Section IV of application for existing property limits and abutters.

Legend

- Existing Property Line
- Existing Edge of Gravel
- Existing Edge of Pavement
- Existing Perennial Stream
- Existing Intermittent Stream
- Existing Wetlands
- Existing Contours 10'
- Wetland Field Delineation Limit
- Property Line and Facility Compliance Boundary
- Proposed Landfill Lined Limit

no.	revision	date	by

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STATE OF NEW HAMPSHIRE - ADAM J. SANDAHL - 19454 - LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS	drawn by: ATR/NJM/STF	approved by: AJS	scale: 1" = 450'
date: October 2023	project no: 1101	checked by: AJS	0 450' 900'

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Existing Conditions Plan

drawing no.
ECP-1

sheet: 2 of 50

General Construction Sequence Notes:

1. Prepare Stormwater Pollution Prevention Plan (SWPPP) and establish coverage under EPA's Construction General Permit and implement SWPPP training.
2. Complete DigSafe notifications (811 or 888–DIG–SAFE).
3. Establish horizontal and vertical control.
4. Site mobilization.
5. Install perimeter erosion controls including silt fencing, compost sock or ECM Berm. Erosion controls shall be maintained throughout construction.
6. Construct stormwater infiltration basins, stormwater ponds, forebays, and swales. Clearing to be kept to the minimum area practical. Anytime that greater than 5–acres of soil is exposed, an Environmental Monitor (EM) shall be utilized to monitor the site and complete the required reporting in compliance with Section Env–Wq 1505.03(d) of the AoT Rules.
7. Construct improvements at site entrance and Route 116.
8. Construct improvements to Douglas Drive.
9. Construct internal landfill roads, infrastructure area, Stage I, Cell I lined landfill and berm construction.
10. Installation of leachate and landfill gas conveyance and other utilities.
11. Once Engineer has determined the site to be stabilized in compliance with AoT Rules, remove erosion controls and sediment to a location designated by the Owner.
12. Site demobilization and termination of EPA CGP coverage

Wildlife Protection Notes:

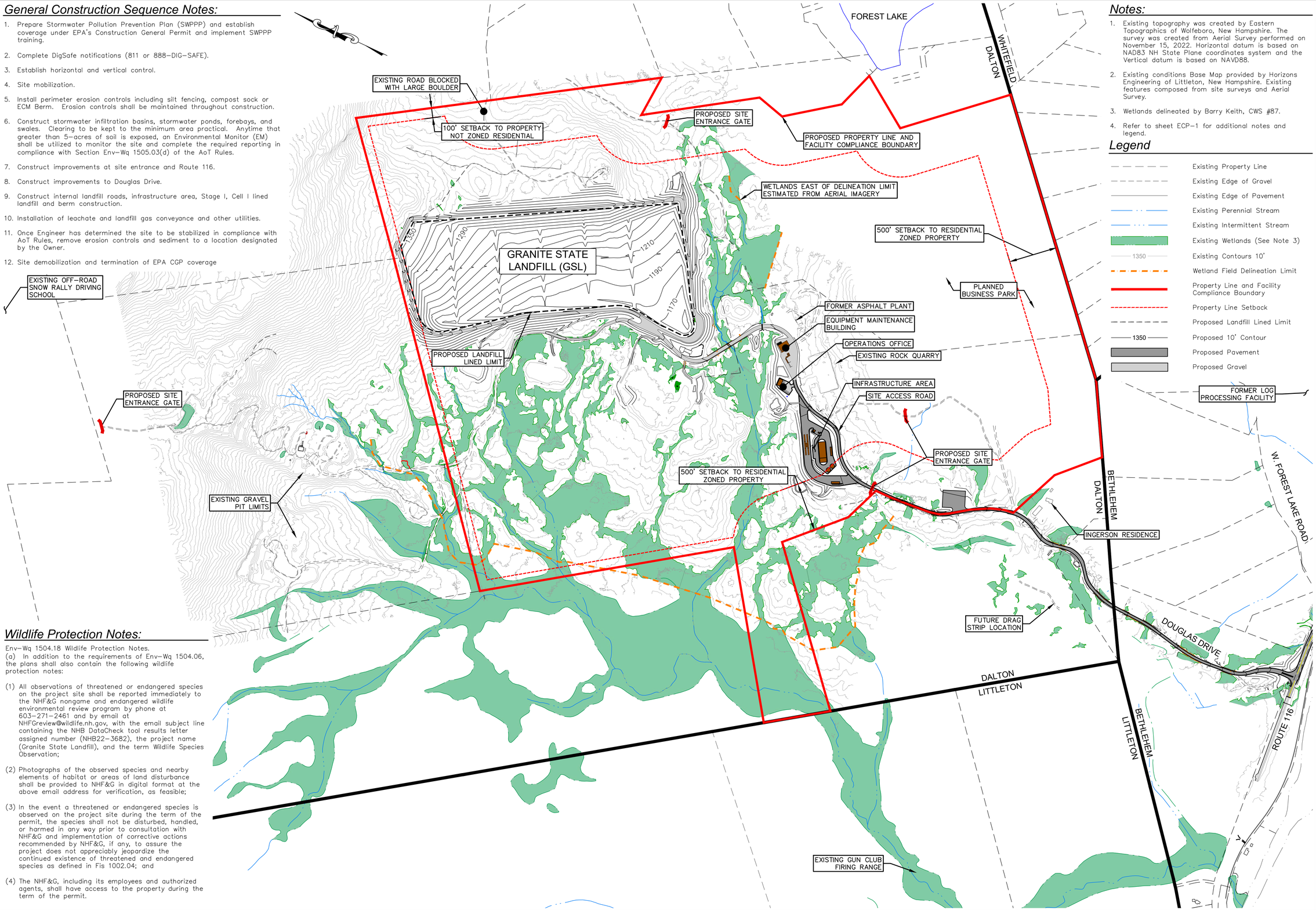
Env–Wq 1504.18 Wildlife Protection Notes.
(a) In addition to the requirements of Env–Wq 1504.06, the plans shall also contain the following wildlife protection notes:

(1) All observations of threatened or endangered species on the project site shall be reported immediately to the NHF&G nongame and endangered wildlife environmental review program by phone at 603–271–2461 and by email at NHFGreview@wildlife.nh.gov, with the email subject line containing the NHB DataCheck tool results letter assigned number (NHB22–3682), the project name (Granite State Landfill), and the term Wildlife Species Observation;

(2) Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHF&G in digital format at the above email address for verification, as feasible;

(3) In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHF&G and implementation of corrective actions recommended by NHF&G, if any, to assure the project does not appreciably jeopardize the continued existence of threatened and endangered species as defined in Fis 1002.04; and

(4) The NHF&G, including its employees and authorized agents, shall have access to the property during the term of the permit.



Notes:

1. Existing topography was created by Eastern Topographics of Wolfeboro, New Hampshire. The survey was created from Aerial Survey performed on November 15, 2022. Horizontal datum is based on NAD83 NH State Plane coordinates system and the Vertical datum is based on NAVD88.
2. Existing conditions Base Map provided by Horizons Engineering of Littleton, New Hampshire. Existing features composed from site surveys and Aerial Survey.
3. Wetlands delineated by Barry Keith, CWS #87.
4. Refer to sheet ECP–1 for additional notes and legend.

Legend

- Existing Property Line
- Existing Edge of Gravel
- Existing Edge of Pavement
- Existing Perennial Stream
- Existing Intermittent Stream
- Existing Wetlands (See Note 3)
- 1350 Existing Contours 10'
- Wetland Field Delineation Limit
- Property Line and Facility Compliance Boundary
- Property Line Setback
- Proposed Landfill Lined Limit
- 1350 Proposed 10' Contour
- Proposed Pavement
- Proposed Gravel

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by	date	revision	no.

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 450' 0 900' Scale: 1" = 450'

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Overall Site Plan

drawing no. OVSP-1

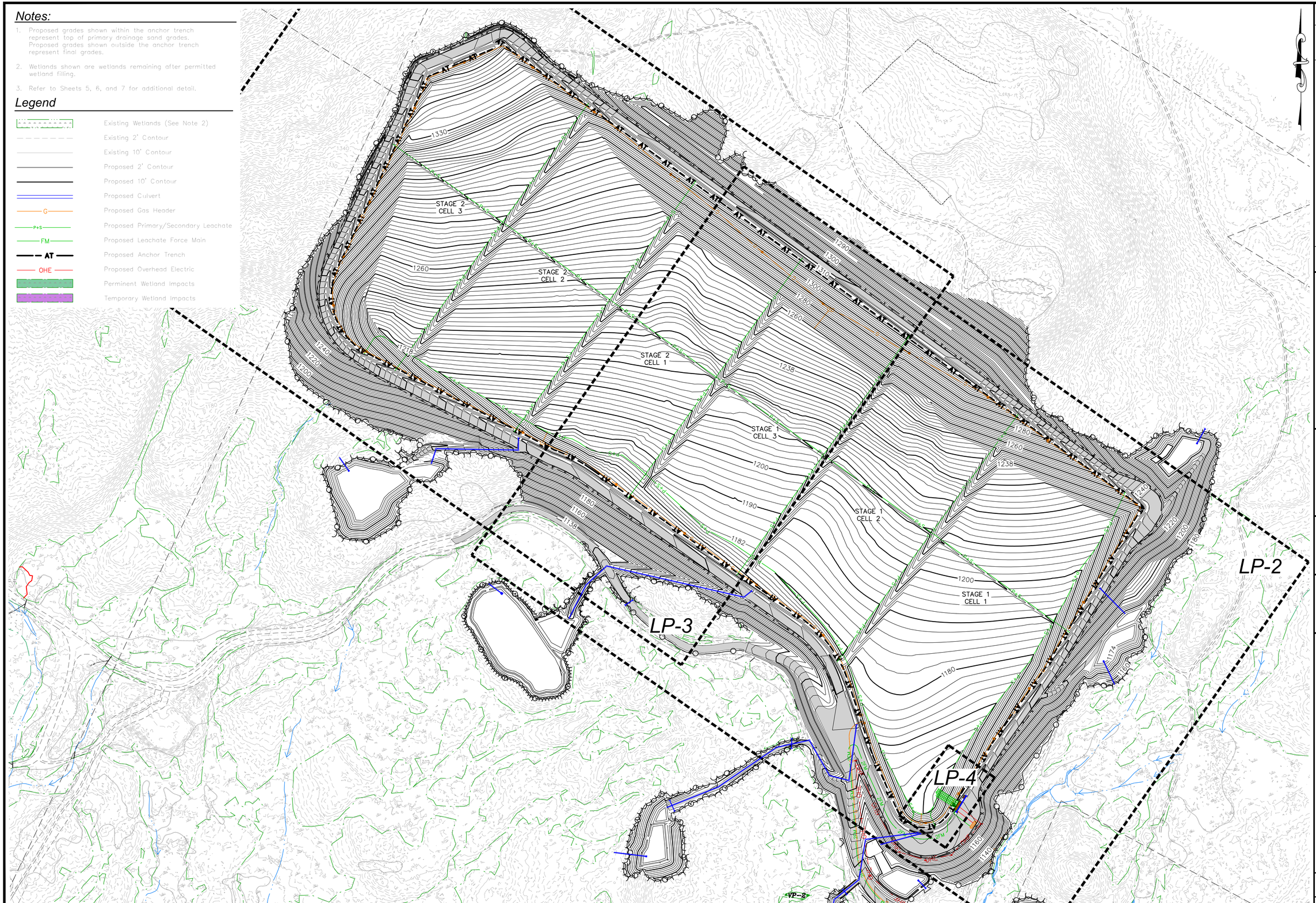
sheet: 3 of 50

Notes:

1. Proposed grades shown within the anchor trench represent top of primary drainage sand grades. Proposed grades shown outside the anchor trench represent final grades.
2. Wetlands shown are wetlands remaining after permitted wetland filling.
3. Refer to Sheets 5, 6, and 7 for additional detail.

Legend

- Existing Wetlands (See Note 2)
- Existing 2' Contour
- Existing 10' Contour
- Proposed 2' Contour
- Proposed 10' Contour
- Proposed Culvert
- G — Proposed Gas Header
- P+S — Proposed Primary/Secondary Leachate
- FM — Proposed Leachate Force Main
- AT — Proposed Anchor Trench
- OHE — Proposed Overhead Electric
- Perminent Wetland Impacts
- Temporary Wetland Impacts



no.	revision	date	by

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STATE OF NEW HAMPSHIRE - ADAM J SANDAL 14241 LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 1" = 150' (0, 150', 300')

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set
Base Grading Plan
Index Sheet

drawing no. LP-1

sheet: 4 of 50

PROPOSED PRIMARY & SECONDARY CLEANOUT

OSED VERTICAL RISER (TYP) (4/45)

PROPOSED 24" GAS HEADER (4/42)

PROPOSED PRIMARY & SECONDARY CLEANOUT (6/40)

PROPOSED PRIMARY & SECONDARY CLEANOUT

PROPOSED PRIMARY & SECONDARY CLEANOUT

PROPOSED VERTICAL GAS RISER (TYP) (4/45)

PROPOSED CONDENSATE TRAP (1/45)

PROPOSED ANCHOR TRENCH (4/42)

PROPOSED 24" GAS HEADER (4/42)

PROPOSED PRIMARY & SECONDARY CLEANOUT (6/40)

(4/37) PROPOSED CELL DIVERSION BERM

(4/37) PROPOSED CELL DIVERSION BERM

(4/37) PROPOSED CELL DIVERSION BERM

PROPOSED LEACHATE COLLECTION LATERAL PIPING (3/37)

(1/37) PROPOSED BASE LINER SYSTEM

STAGE 2 CELL 1

STAGE 1 CELL 3

STAGE 1 CELL 2

STAGE 1 CELL 1

0.5% MIN.

2% MIN.

(3/D4) PROPOSED LEACHATE COLLECTION PIPING

PROPOSED 24" GAS HEADER (4/42)

PROPOSED PRIMARY & SECONDARY CLEANOUT (6/40)

PROPOSED PRIMARY & SECONDARY CLEANOUT

PROPOSED CONDENSATE TRAP

PROPOSED PRIMARY & SECONDARY CLEANOUT

(1/39) PROPOSED LANDFILL SUMP

PROPOSED PUMP STATION BUILDING (1/38)

PROPOSED CONDENSATE TRAP (1/45)

Note:

1. Refer to Sheet 4 for notes and legend.

no.	revision	date	by

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STATE OF NEW HAMPSHIRE – ADAM J SANDAHL 14464 LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 1" = 80'

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Base Grading Plan
Primary Sand 1

drawing no. LP-2

sheet: 5 of 50

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PROPOSED PRIMARY & SECONDARY CLEANOUT (6/40)

PROPOSED VERTICAL GAS RISER (TYP) (4/45)

PROPOSED PRIMARY & SECONDARY CLEANOUT

PROPOSED 24" GAS HEADER (4/42)

PROPOSED CONDENSATE TRAP (1/45)

PROPOSED CELL DIVERSION BERM (4/37)

PROPOSED ANCHOR TRENCH (4/42)

STAGE 2 CELL 3

STAGE 2 CELL 2

STAGE 2 CELL 1

STAGE 1 CELL 3

PROPOSED BASE LINER SYSTEM (1/37)

PROPOSED LEACHATE COLLECTION PIPING (3/D4)

PROPOSED LEACHATE COLLECTION LATERAL PIPING (9/40)

PROPOSED 24" GAS HEADER (4/42)

PROPOSED PRIMARY & SECONDARY CLEANOUT (6/40)

PROPOSED PRIMARY & SECONDARY CLEANOUT (6/40)

1% MIN.

0.5% MIN.

2% MIN.

1330 1320 1310 1300 1290 1280 1260 1238 1218 1200 1190 1182 1180 1160 1138 1240 1220

AT PD P+S S+d

Note:

1. Refer to Sheet 4 for notes and legend.

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designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 1" = 80' (80' / 0 / 160')

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Base Grading Plan
Primary Sand 2

drawing no. LP-3

sheet: 6 of 50

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LIMITS OF TOP OF SUMP DRAINAGE STONE

PROP. 24"X12" REDUCER

PROP. 24" PERF. HEADER

8" TEE

1/39 PROPOSED SECONDARY SUMP

PROP. 24"X12" REDUCER

1/45 PROPOSED CONDENSATE TRAP

2/42

1160

1170

PROPOSED SIDE SLOPE SUMP RISER SECTION 2/40

PROPOSED VERTICAL GAS RISER (TYP) 4/45

1180

6/40 PROPOSED PRIMARY & SECONDARY CLEANOUT

1172

7/40 PROPOSED (2) 3"x6" DUAL CONTAINMENT FORCEMAIN

1180

PROPOSED ANCHOR TRENCH 4/42

PROPOSED EMERGENCY GENERATOR

PROPOSED PUMPSTATION ROOM 1/38

1180

1174

1176

1178

1170

2/46 PROPOSED 10,000 GALLON LEACHATE CONTINGENCY TANK

1160

Note:

1. Refer to Sheet 4 for notes and legend.

Primary & Secondary Pump Station

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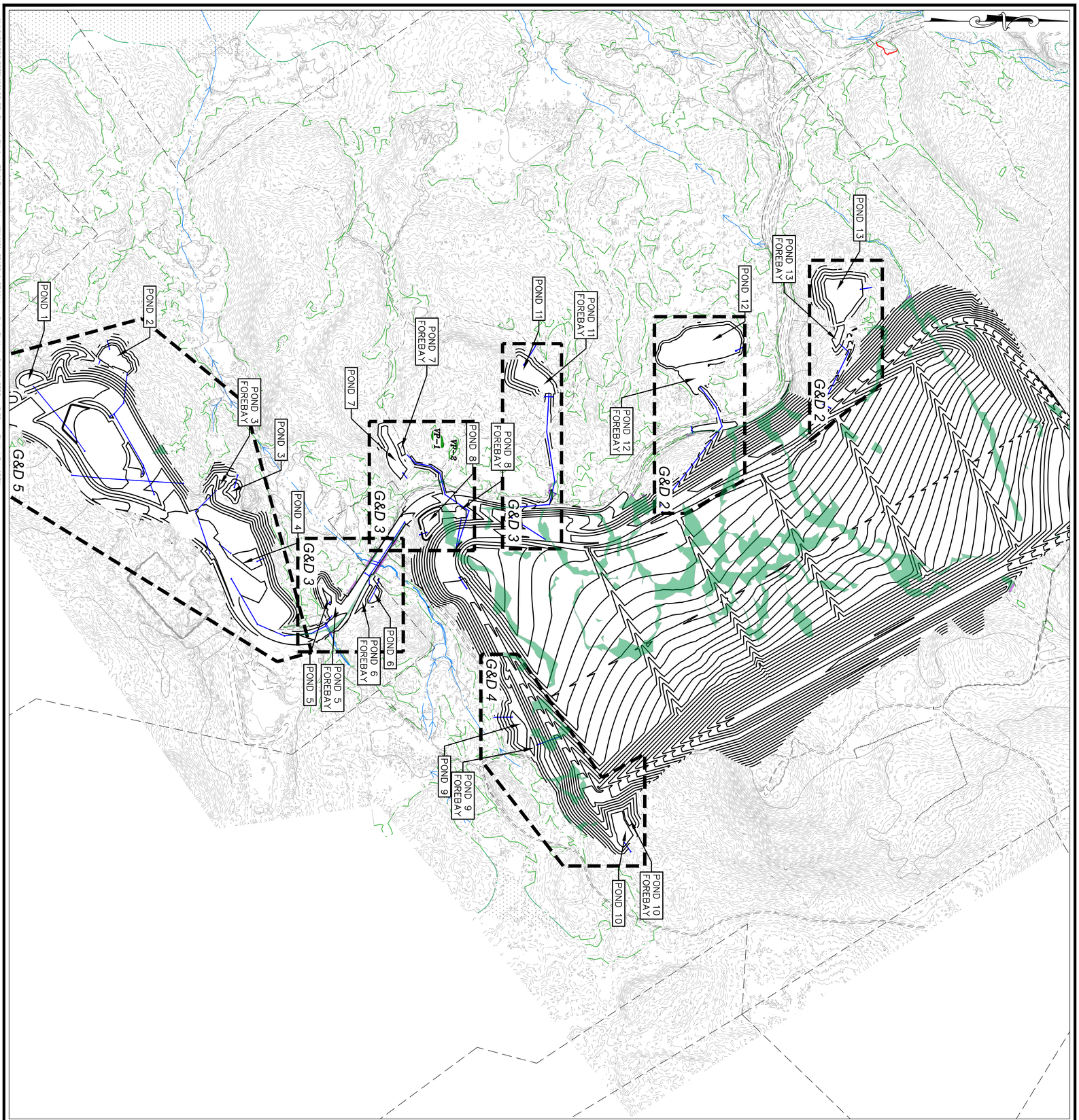
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 1" = 10'

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set
Base Grading Plan
Pump Station & Sump

drawing no. LP-4

sheet: 7 of 50



Notes:

1. Proposed grades shown within the anchor trench represent top of sand base grades. Proposed grades shown outside the anchor trench represent final grades.
2. Plant tree species native to the site wetlands on the pond bottoms on a maximum 50-foot center-to-center spacing to shade standing water in the ponds. Tree species shall include northern conifer (spruce, fir) and swamp hardwood (white birch, quaking aspen).
3. Refer to Sheets 9, 10, 11, and 12 for additional detail.

Legend

- Existing 2' Contour
- Existing 10' Contour
- Existing Tree Line
- Existing Edge of Gravel
- Existing Perennial Stream
- Existing Intermittent Stream
- Wetland Delineation Limit
- Proposed 1' Contour
- Proposed 5' Contour
- Proposed Anchor Trench
- Proposed Erosion Control (Compost Sock, Silt Fence, ECM Berm)
- Proposed Guardrail
- Proposed Wall
- Proposed Treeline
- Proposed Litter Fence
- Proposed Gas Line
- Proposed Forcemain
- Proposed Overhead Electric
- Proposed Sewer
- Proposed Pavement Road
- Proposed Gravel Road
- Permanent Wetland Impacts
- Temporary Wetland Impacts

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Stormwater Ponds
Grading and Drainage Plan Index

date:	designed by:
October 2023	ATR/NJM/STF/AJS
project no: 1101	drawn by: ATR/NJM/STF
checked by: AJS	approved by: AJS

scale: 0 250' 500' Scale: 1" = 250'

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drawing no. G&D-1
sheet 8 of 50

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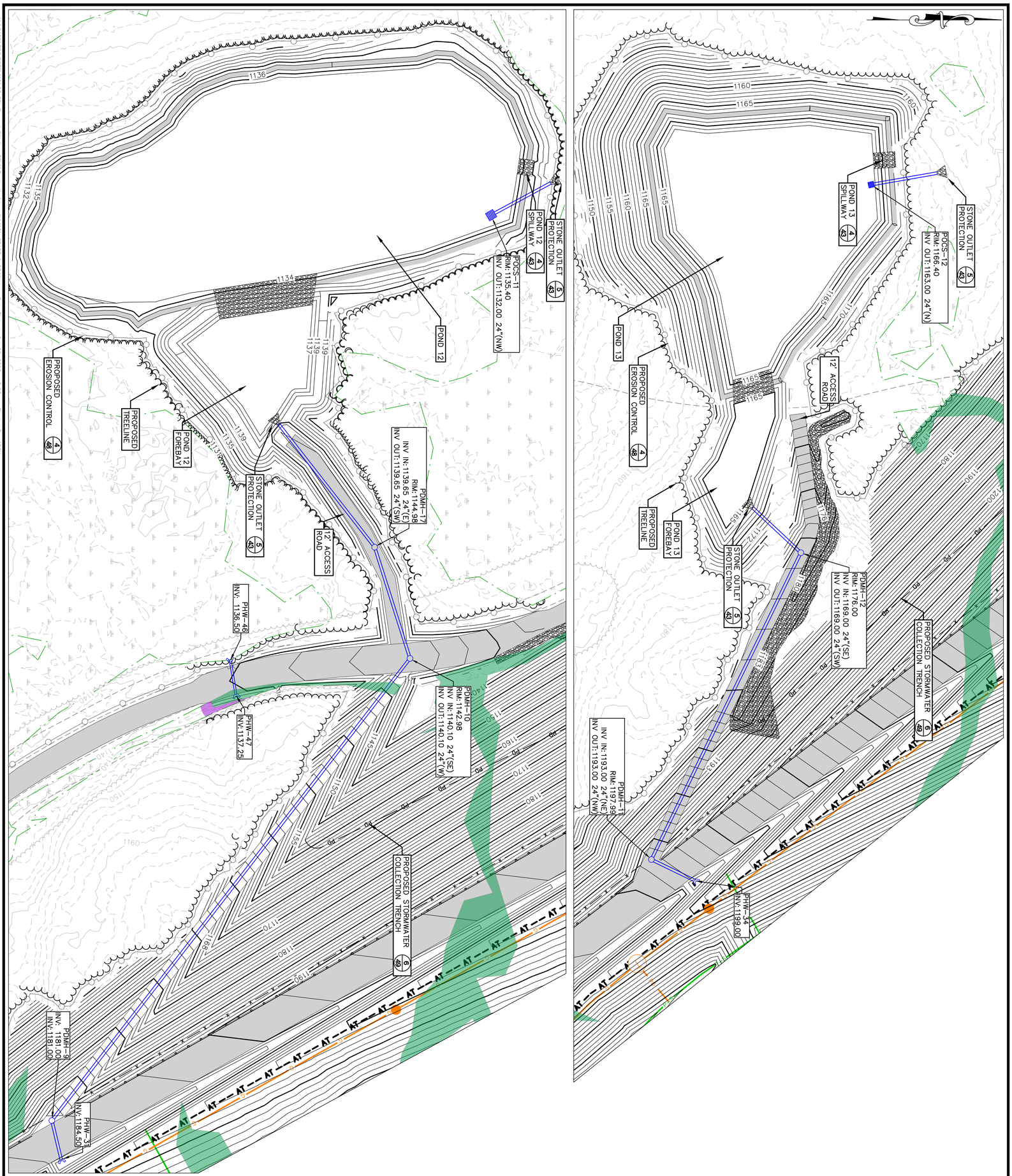

Note:

1. Refer to Sheet 8 for notes and legend.

sheet 9 of 50	drawing no. G&D-2	Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set	date: October 2023	designed by: ATR/NJM/STF/AJS	
			project no: 1101	drawn by: ATR/NJM/STF	
			checked by: AJS	approved by: AJS	
		Stormwater Ponds Drading and Drainage Plan 1	scale: 0 40' 80' Scale: 1" = 40'		

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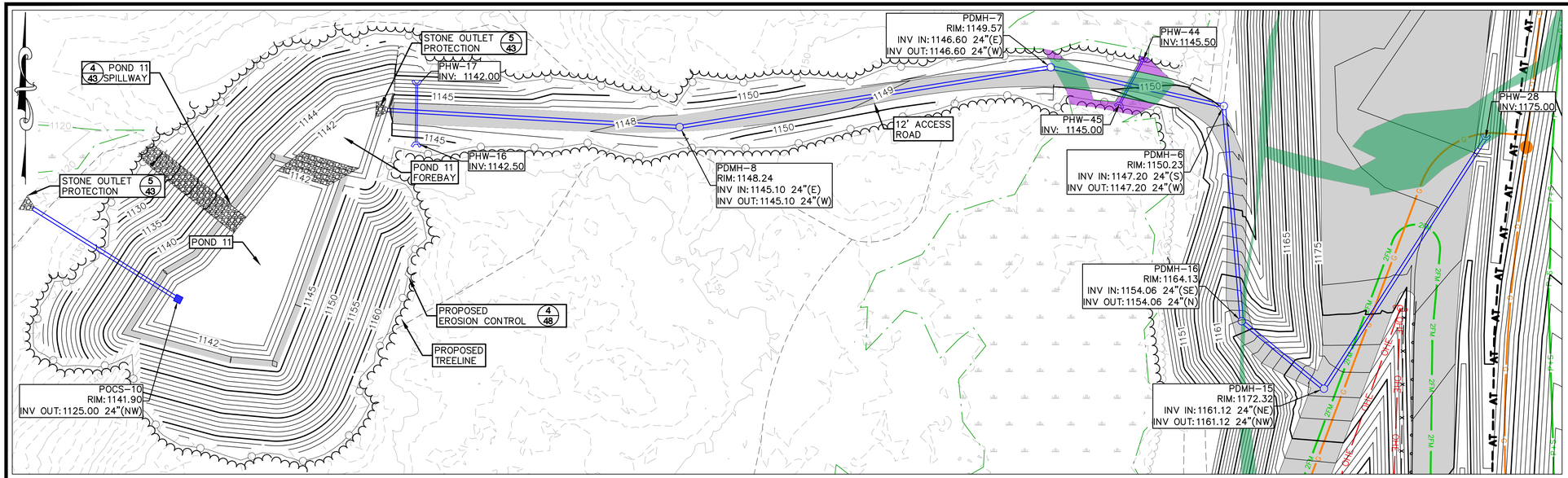
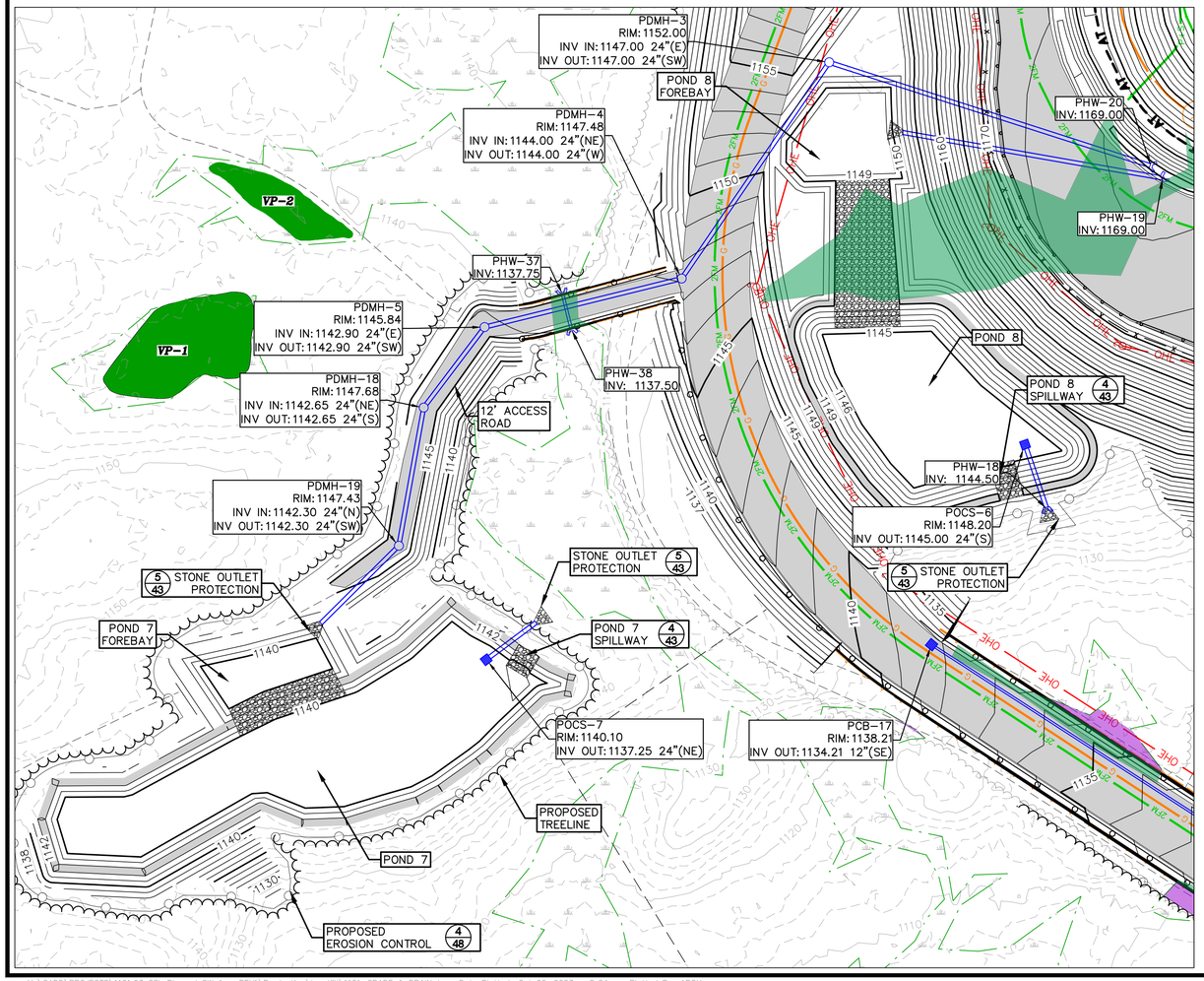


Note:

1. Refer to Sheet 8 for notes and legend.



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STATE OF NEW HAMPSHIRE – ADAM J SANDAL – 19564 – LICENSED PROFESSIONAL ENGINEER

no.	revision	date	by

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 40' 0 80' Scale: 1" = 40'

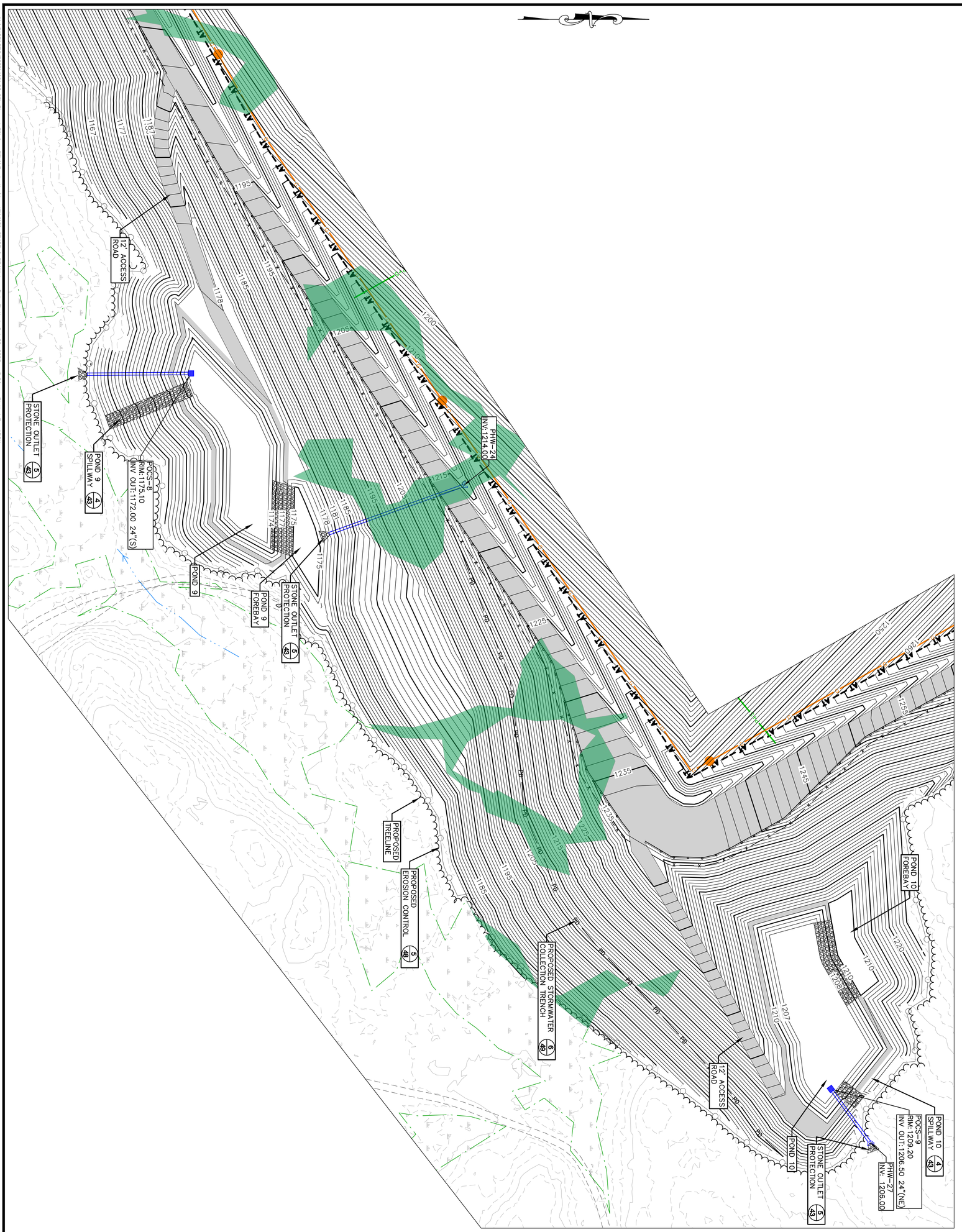
Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Stormwater Ponds
Grading and Drainage Plan 2

drawing no. G&D-3

sheet: 10 of 50

M:\CADD\PROJECTS\1101.03 GSL Phase I SW App-REV1\Production\Landfill\1101-GRADE & DRAIN.dwg Date Plotted: Oct 06, 2023 – 8:24am Plotted By: AROY



Note:

1. Refer to Sheet 8 for notes and legend.

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sheet 11 of 50	drawing no. G&D-4	Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set	Stormwater Ponds Grading and Drainage Plan 3

date: October 2023	designed by: ATR/NJM/STF/AJS
project no: 1101	drawn by: ATR/NJM/STF
checked by: AJS	approved by: AJS

scale: 0 40' 80' — Scale: 1" = 40'

STATE OF NEW HAMPSHIRE — ADAM J. SANDORI No. 12544 LICENSED PROFESSIONAL ENGINEER

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no.	revision	date	by

STONE OUTLET PROTECTION 5/43
POND 3 SPILLWAY 4/43
POND 3
PHW-7
INV: 1116.50
POCS-2
RIM: 1120.35
INV OUT: 1117.50 24"(W)
PROPOSED TREELINE
POND 3 (OPERATIONAL)
WATER SUPPLY WELL
OPERATIONS OFFICE
POCS-3
RIM: 1141.40
INV OUT: 1138.00 12"(NW)
4/43 POND 4 SPILLWAY
PHW-8
INV: 1142.00
POND 4
PCB-12
RIM: 1138.79
INV IN: 1135.60 15"(S)
INV OUT: 1135.50 15"(NW)
MAINTENANCE BUILDING
PCB-4
RIM: 1142.14
INV IN: 1133.00 15"(NE)
INV IN: 1133.00 12"(SE)
INV OUT: 1133.00 15"(NW)
PCB-5
RIM: 1141.47
INV IN: 1134.00 12"(E)
INV IN: 1134.00 12"(E)
INV OUT: 1134.00 15"(SW)
5/43 STONE OUTLET PROTECTION
PDMH-2
RIM: 1142.61
INV IN: 1131.40 15"(E)
INV OUT: 1130.90 15"(NW)
PCB-8
RIM: 1147.61
INV OUT: 1144.80 12"(NE)
PCB-9
RIM: 1145.60
INV OUT: 1141.00 15"(NE)
PHW-5
INV: 1140.00
PCB-10
RIM: 1144.03
INV IN: 1139.60 15"(SW)
INV OUT: 1139.50 15"(NE)
PCB-3
RIM: 1143.06
INV IN: 1132.00 15"(SE)
INV OUT: 1132.00 15"(W)
POCS-15
RIM: 1140.00
INV OUT: 1136.00 12"(NW)
SCALE/ SCALEHOUSE
PHW-4
INV: 1128.00
POCS-1
RIM: 1110.40
INV OUT: 1105.00 24"(W)
4/43 POND 2 SPILLWAY
STONE OUTLET PROTECTION 5/43
POND 2
POCS-14
RIM: 1142.00
INV OUT: 1136.00 12"(W)
POCS-13
RIM: 1140.00
INV OUT: 1138.00 12"(W)
FLARE AND BLOWER
EMERGENCY GENERATOR
FUTURE GAS FACILITY
2/41 LEAK DETECTION MANHOLE
PDMH-1
RIM: 1146.05
INV IN: 1142.00 15"(S)
INV OUT: 1142.00 15"(N)
TRUCK DE-ODORIZING STATION
LEACHATE TANKS
POND 1
4/43 POND 1 SPILLWAY
PHW-3
INV: 1153.50
LEACHATE LOADOUT AREA
PLC-1
RIM: 1146.17
INV OUT: 1144.00 6"(SW)
PCB-1
RIM: 1144.00
INV IN: 1141.00 6"(NE)
INV OUT: 1141.50 12"(SW)
5/43 STONE OUTLET PROTECTION
STONE OUTLET PROTECTION 5/43
STRUCTURE – (14)
RIM: 1147.40
INV OUT: 1144.00 12"(W)

Note:

1. Refer to Sheet 8 for notes and legend.

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ADAM J. SANDAHL 14 CERTIFIED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

no.	revision	date	by

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 60' 0 120' Scale: 1" = 60'

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set
Stormwater Ponds
Grading and Drainage Plan 4

drawing no. G&D-5

sheet: 12 of 50

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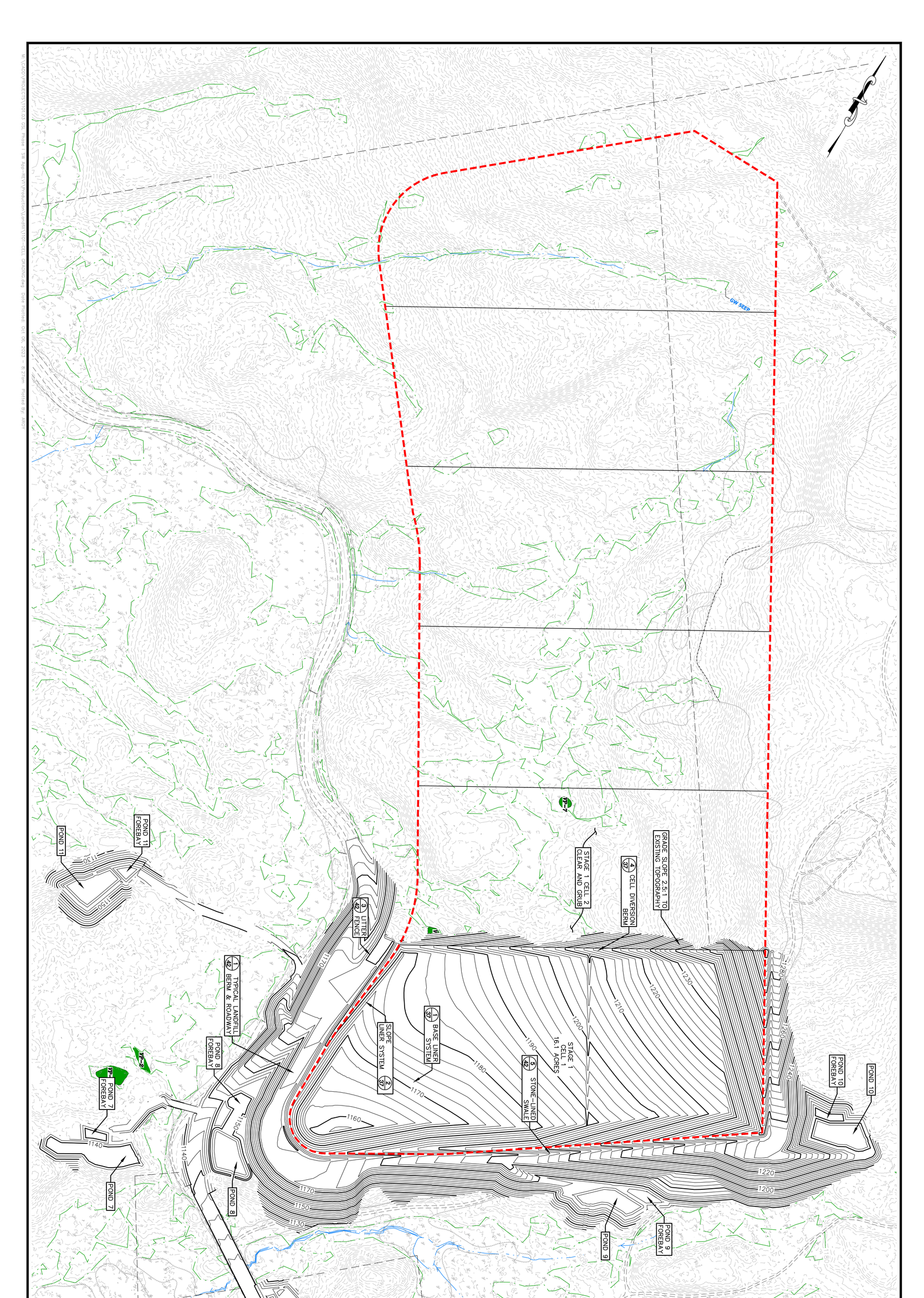

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Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Interim Grading Plan
Stage 1 Cell 1

date: October 2023	designed by: ATR/NJM/STF/AJS
project no: 1101	drawn by: ATR/NJM/STF
checked by: AJS	approved by: AJS

scale: 0 120' 240'
Scale: 1" = 120'

ADAM J. SANDORI No. 12644 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

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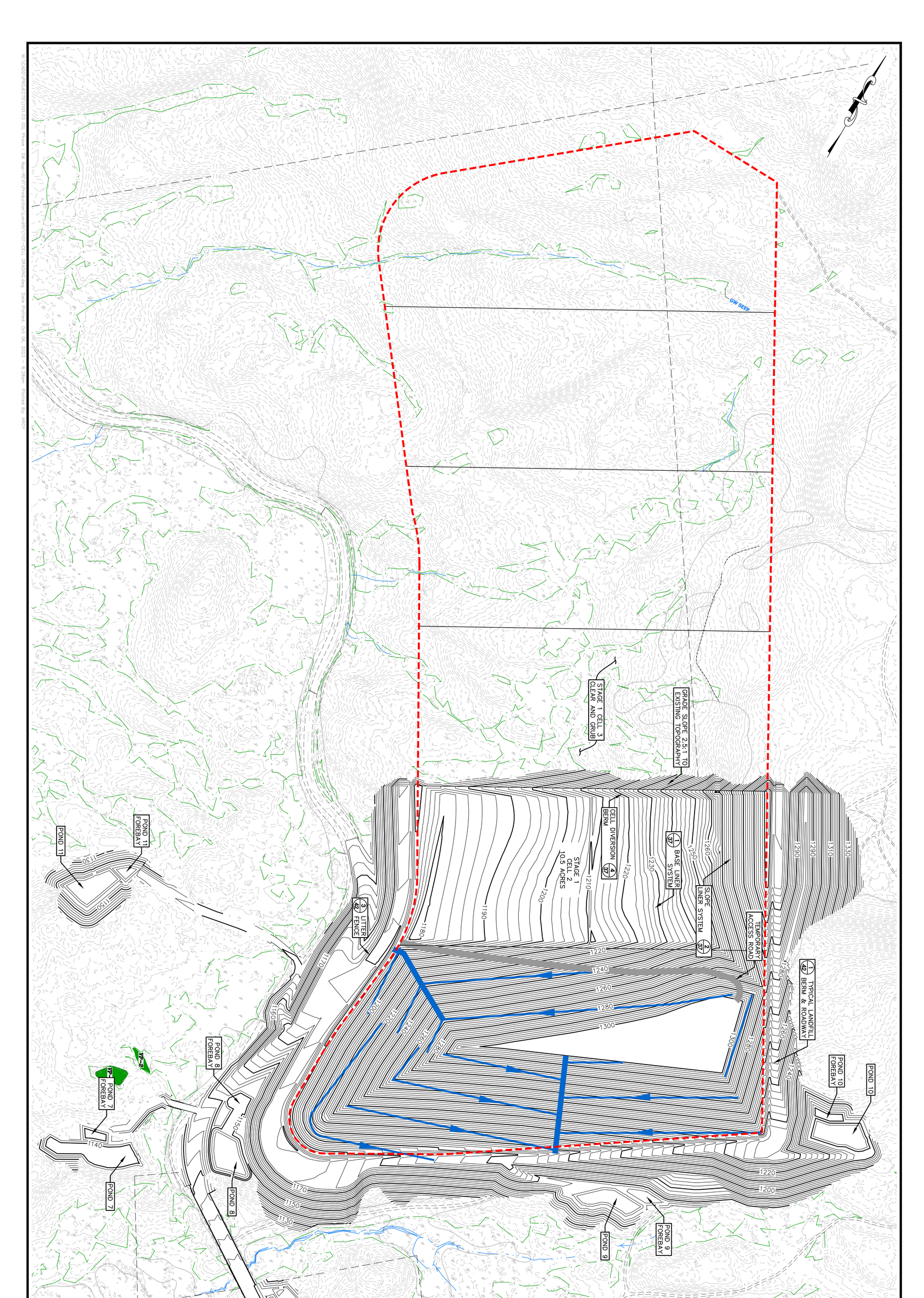
no.	revision	date	by

drawing no. INT-1
sheet 13 of 50



sheet 14 of 50	drawing no. INT-2	Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set Interim Grading Plan Stage 1 Cell 2	date: October 2023 project no: 1101 checked by: AJS scale: 0 120' 240' Scale: 1" = 120'	designed by: ATR/NJM/STF/AJS drawn by: ATR/NJM/STF approved by: AJS	STATE OF NEW HAMPSHIRE ADAM J. SANDAHL No. 12644 LICENSED PROFESSIONAL ENGINEER

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no.	revision	date	by

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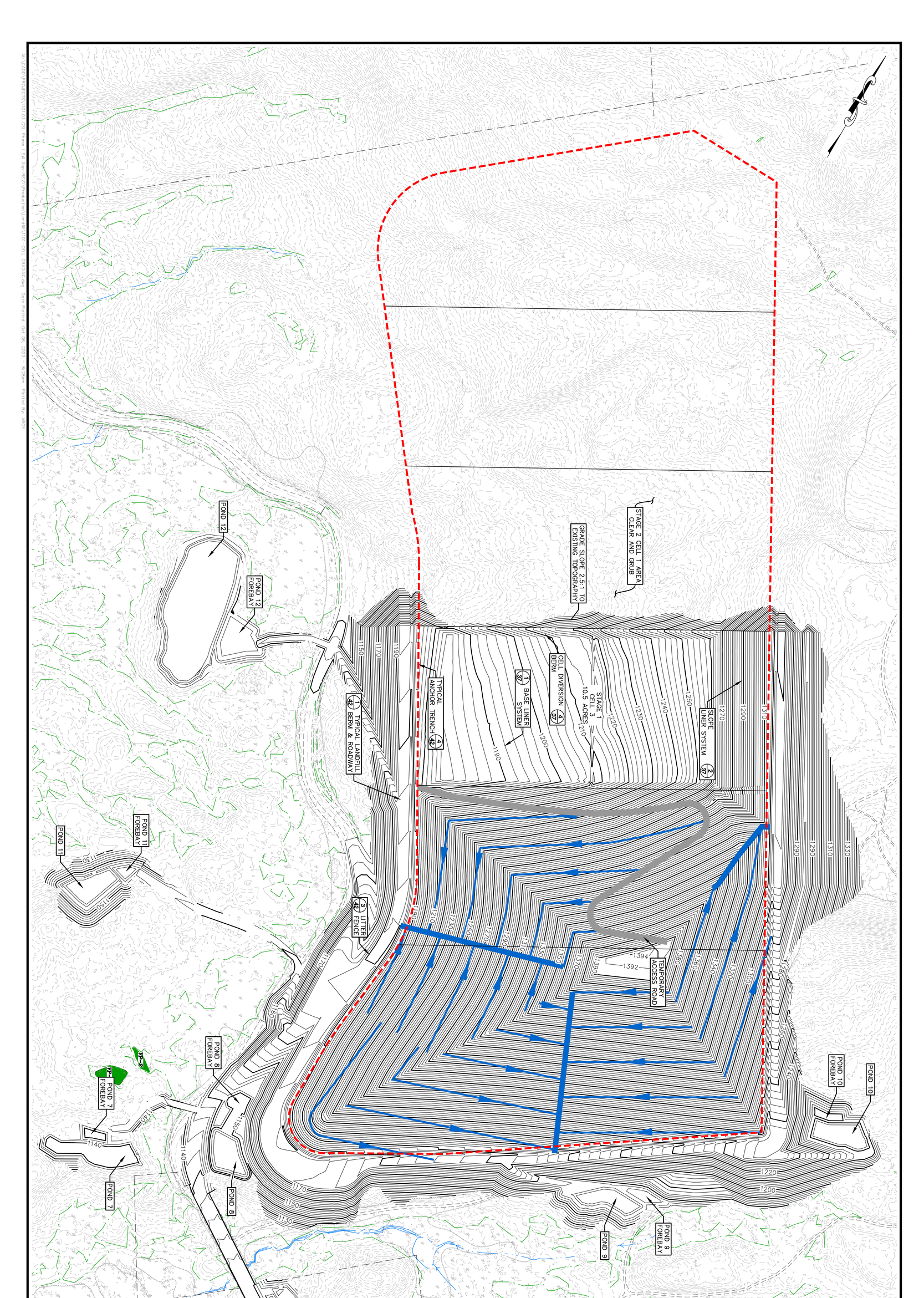

sheet 15 of 50	drawing no. INT-3	Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set Interim Grading Plan Stage 1 Cell 3	date: October 2023 project no: 1101 checked by: AJS scale: 0 120' 240' Scale: 1" = 120'	designed by: ATR/NJM/STF/AJS drawn by: ATR/NJM/STF approved by: AJS	STATE OF NEW HAMPSHIRE ADAM J. SANDORI No. 12644 LICENSED PROFESSIONAL ENGINEER

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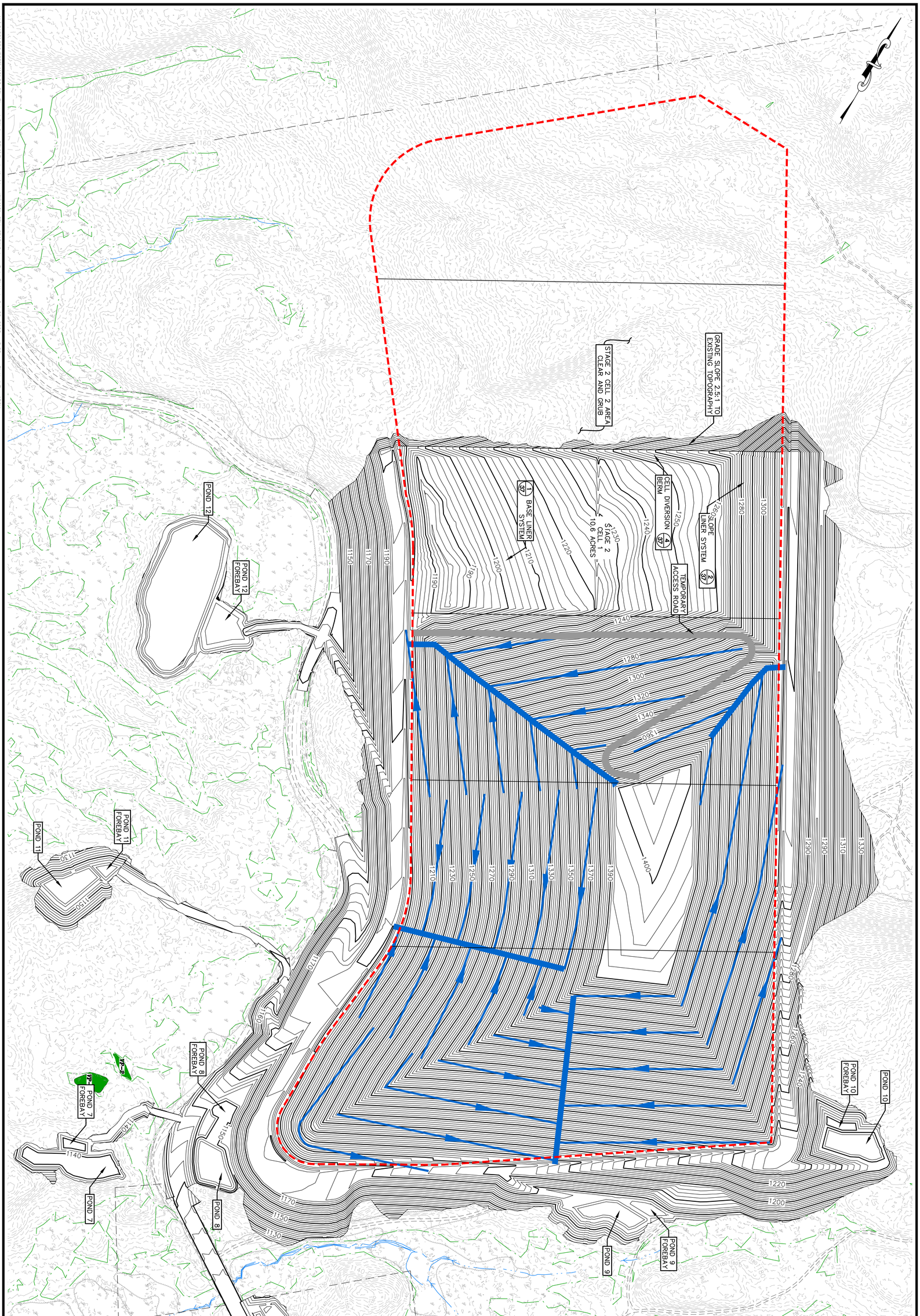
no.	revision	date	by

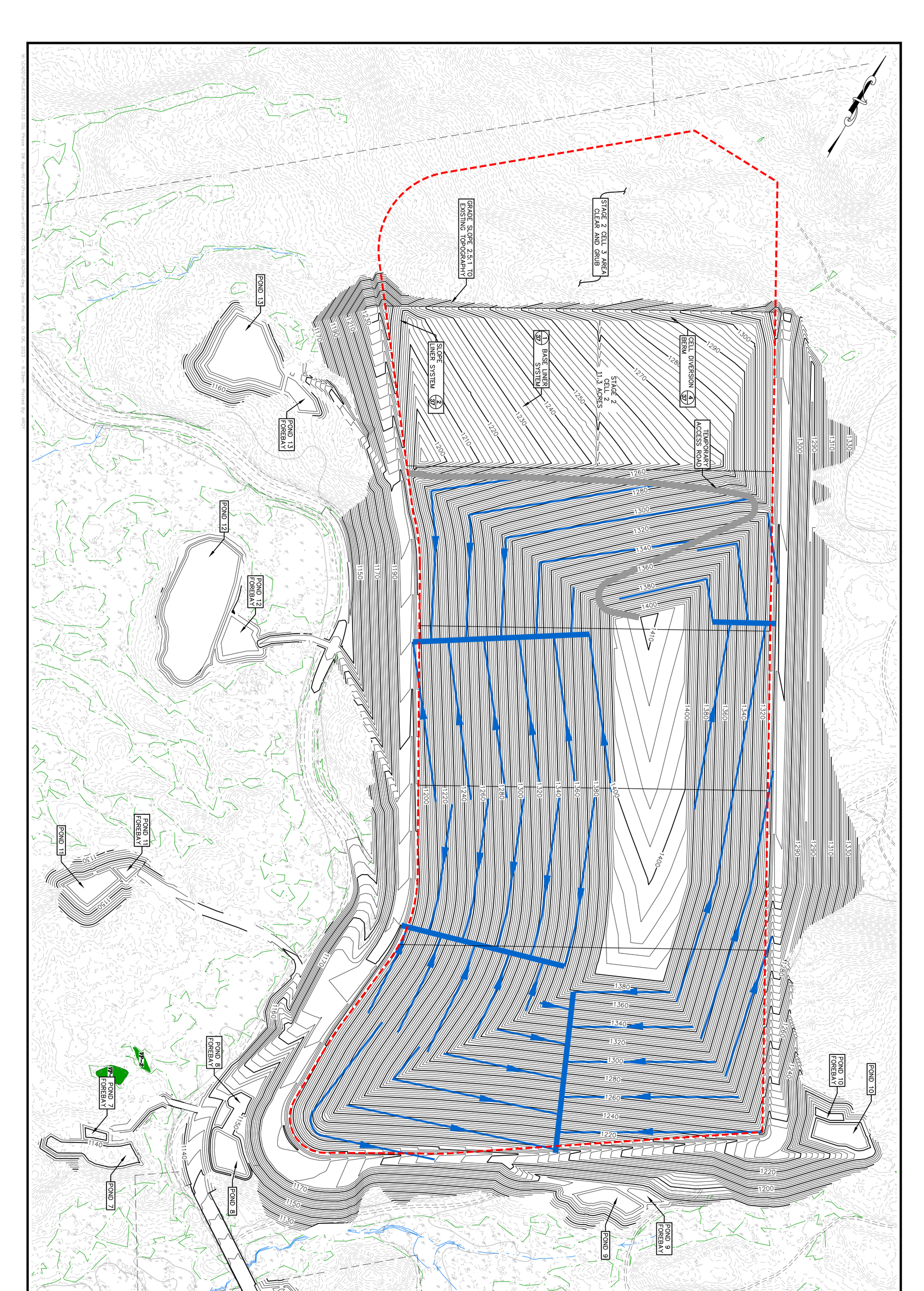


Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set	date: October 2023	designed by: ATR/NJM/STF/AJS	CMA ENGINEERS Civil/Environmental/Structural Portsmouth, NH 603/431-6196 • Manchester, NH 603/627-0708 • Portland, ME 207/541-4223 cmaengineers.com
	project no: 1101	drawn by: ATR/NJM/STF	
	checked by: AJS	approved by: AJS	
Interim Grading Plan Stage 2 Cell 1	scale: 0 120' 240' Scale: 1" = 120'		

STATE OF NEW HAMPSHIRE — ADAM J. SANDORI No. 12544 LICENSED PROFESSIONAL ENGINEER

sheet	drawing no.
16 of 50	INT-4

no.	revision	date	by



sheet 17 of 50	drawing no. INT-5	Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set Interim Grading Plan Stage 2 Cell 2	date: October 2023 project no: 1101 checked by: AJS scale: 0 120' 240' Scale: 1" = 120'	designed by: ATR/NJM/STF/AJS drawn by: ATR/NJM/STF approved by: AJS	STATE OF NEW HAMPSHIRE ADAM J. SANDAHL No. 12644 LICENSED PROFESSIONAL ENGINEER

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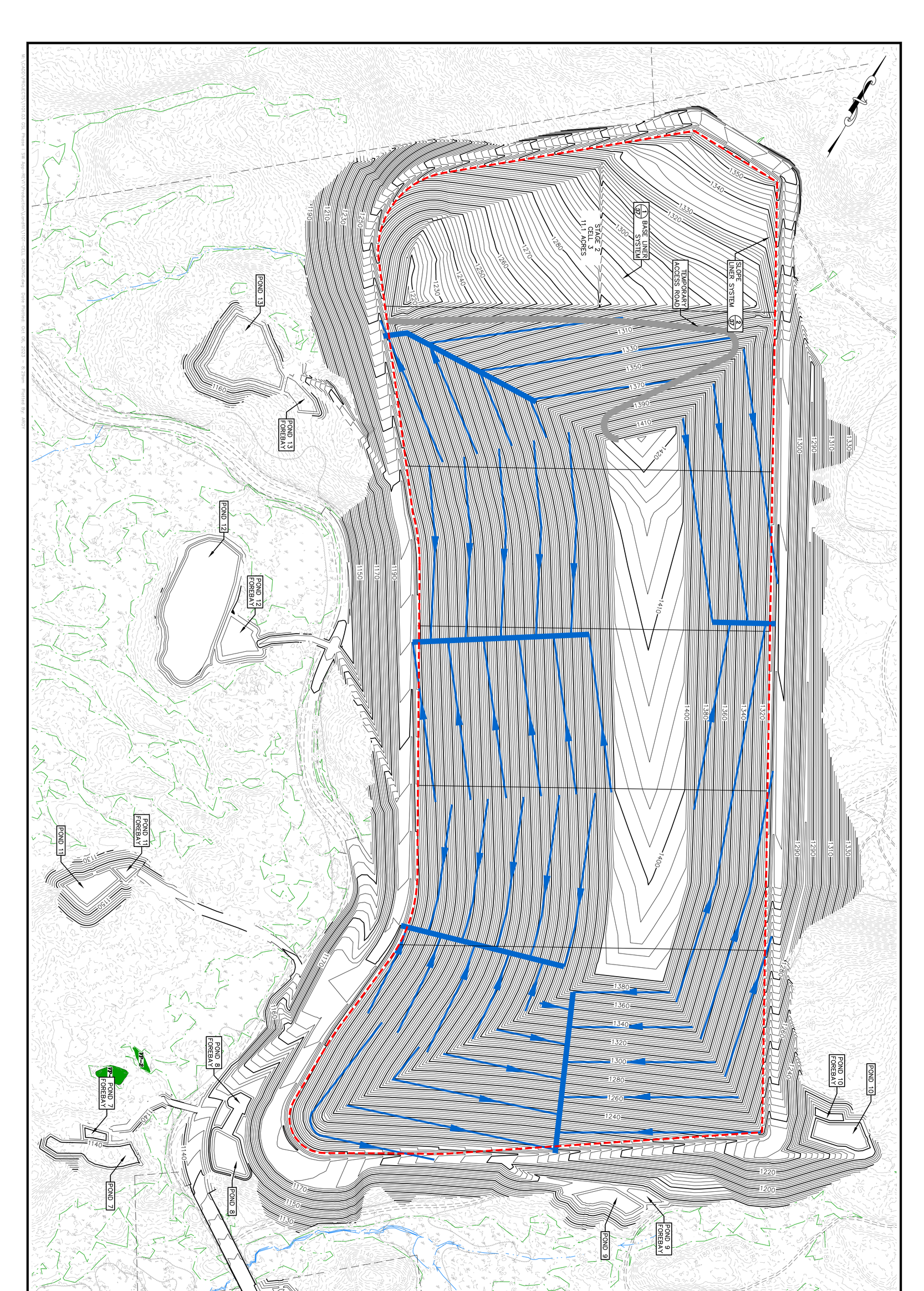
no.	revision	date	by

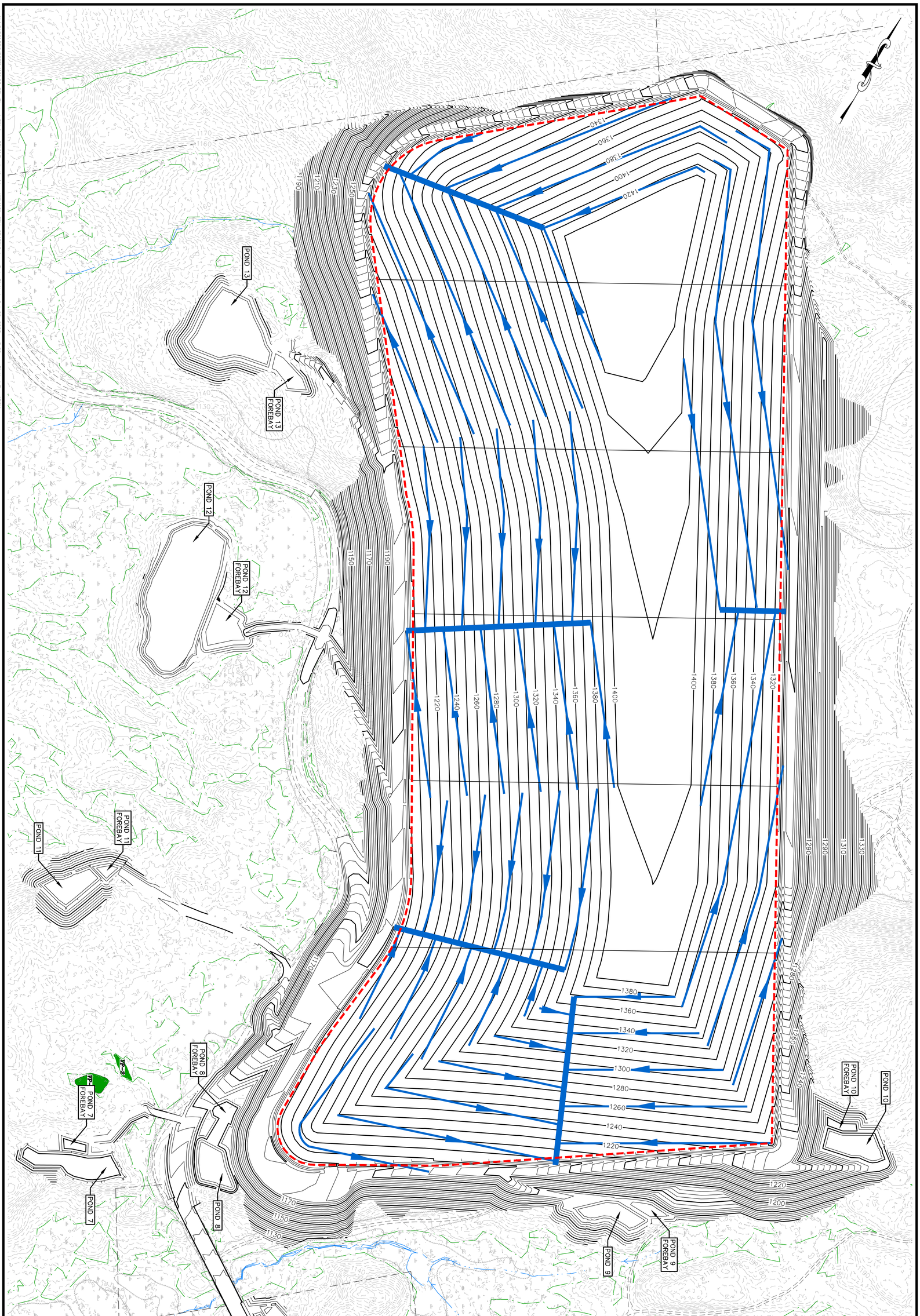


Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set	date: October 2023	designed by: ATR/NJM/STF/AJS	CMA ENGINEERS Civil/Environmental/Structural
	project no: 1101	drawn by: ATR/NJM/STF	Portsmouth, NH 603/431-6196 • Manchester, NH 603/627-0708 • Portland, ME 207/541-4223
	checked by: AJS	approved by: AJS	cmaengineers.com
Interim Grading Plan Stage 2 Cell 3	scale: 0 120' 240' Scale: 1" = 120'	ADAM J. SANDAHL No. 12644 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE	

no.	revision	date	by

sheet 18 of 50

drawing no. INT-6



sheet 19 of 50	drawing no. INT-7	Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set Interim Grading Plan Final Grading	date: October 2023 · designed by: ATR/NJM/STF/AJS project no: 1101 · drawn by: ATR/NJM/STF checked by: AJS · approved by: AJS scale: 0 120' 240' Scale: 1" = 120'

STATE OF NEW HAMPSHIRE — ADAM J. SANDAHL — No. 12644 — LICENSED PROFESSIONAL ENGINEER

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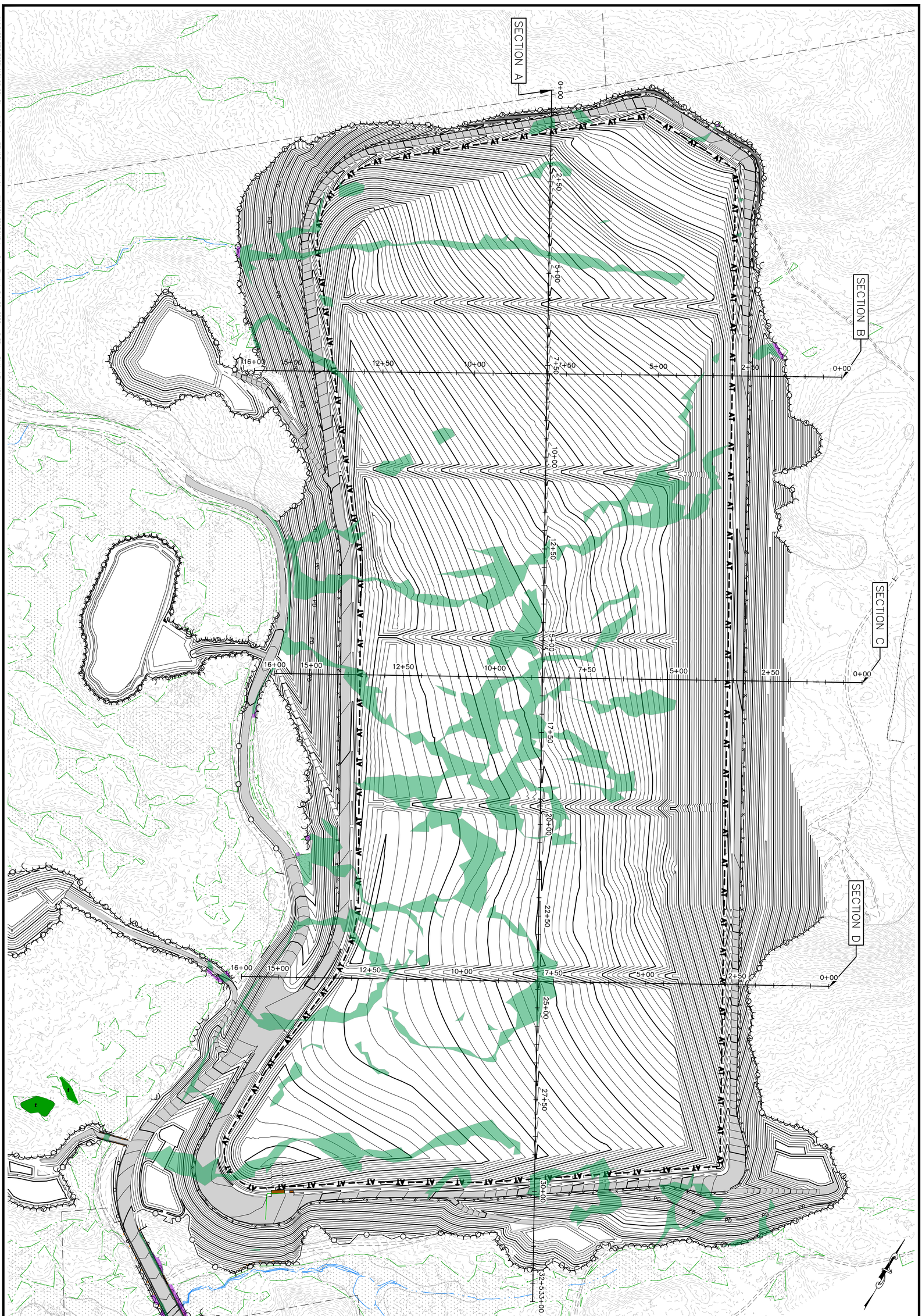

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set
Landfill Cross Sections
Sheet 1

date: October 2023	designed by: ATR/NJM/STF/AJS
project no: 1101	drawn by: ATR/NJM/STF
checked by: AJS	approved by: AJS

scale: 0 120' 240'
Scale: 1" = 120'

drawing no. XS-1
sheet 20 of 50

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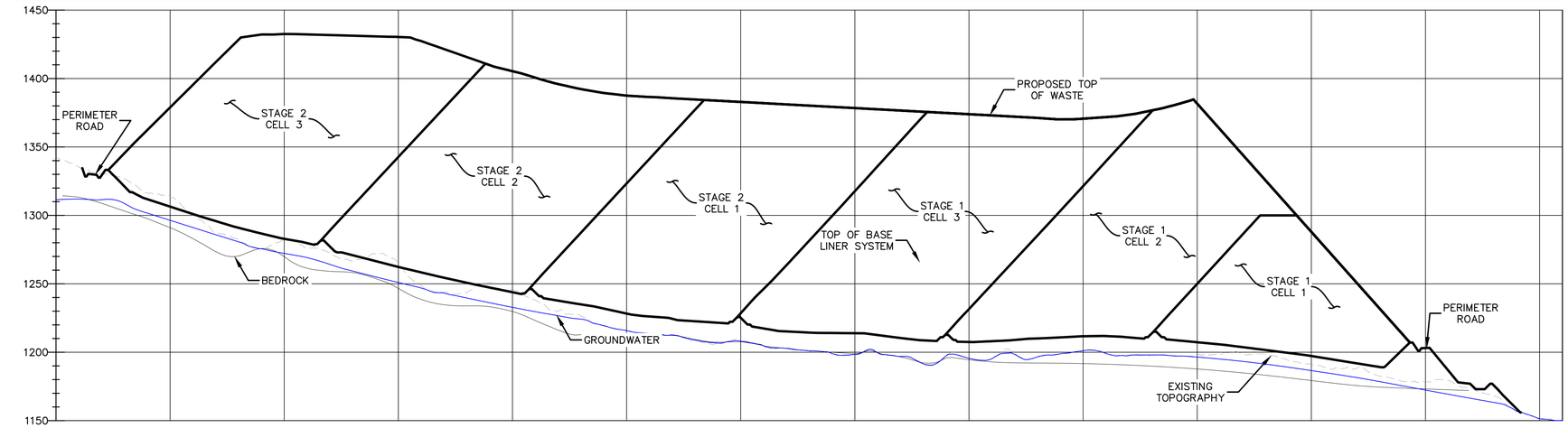
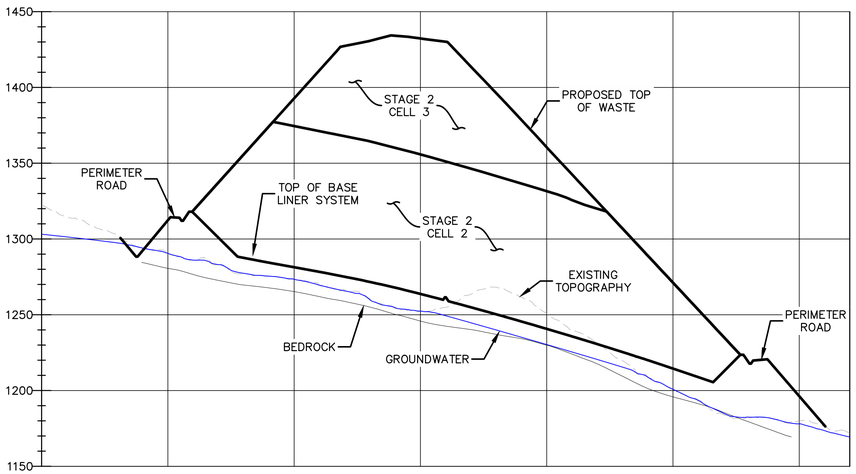
no.	revision	date	by



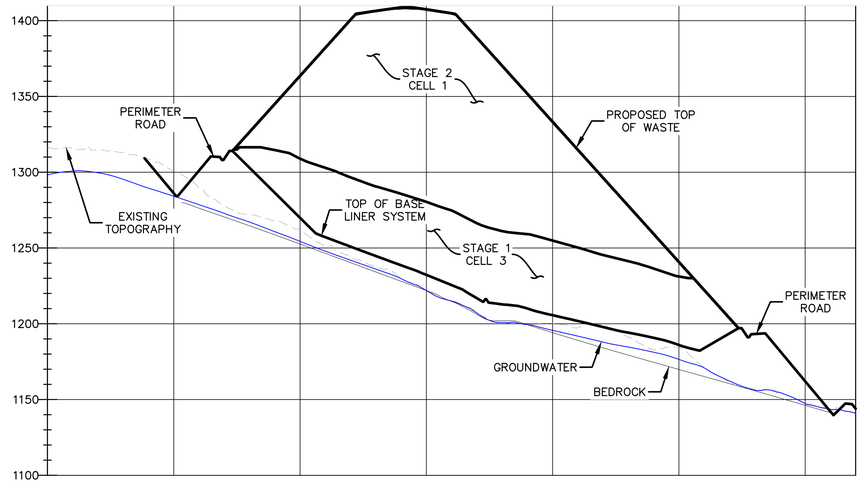
Section A-A'

Horizontal: 1" = 150'
Vertical: 1" = 50'



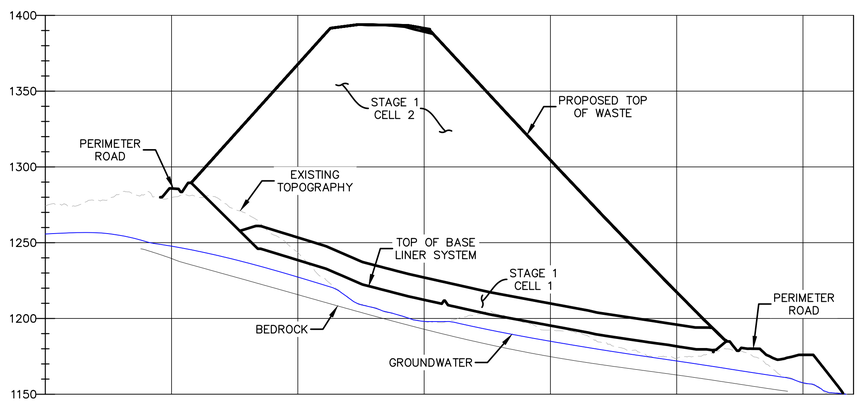
Section B-B'

Horizontal: 1" = 150'
Vertical: 1" = 50'



Section C-C'

Horizontal: 1" = 150'
Vertical: 1" = 50'



Section D-D'

Horizontal: 1" = 150'
Vertical: 1" = 50'

no.	revision	date	by

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designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 150' 0 300' Scale: 1" = 150'

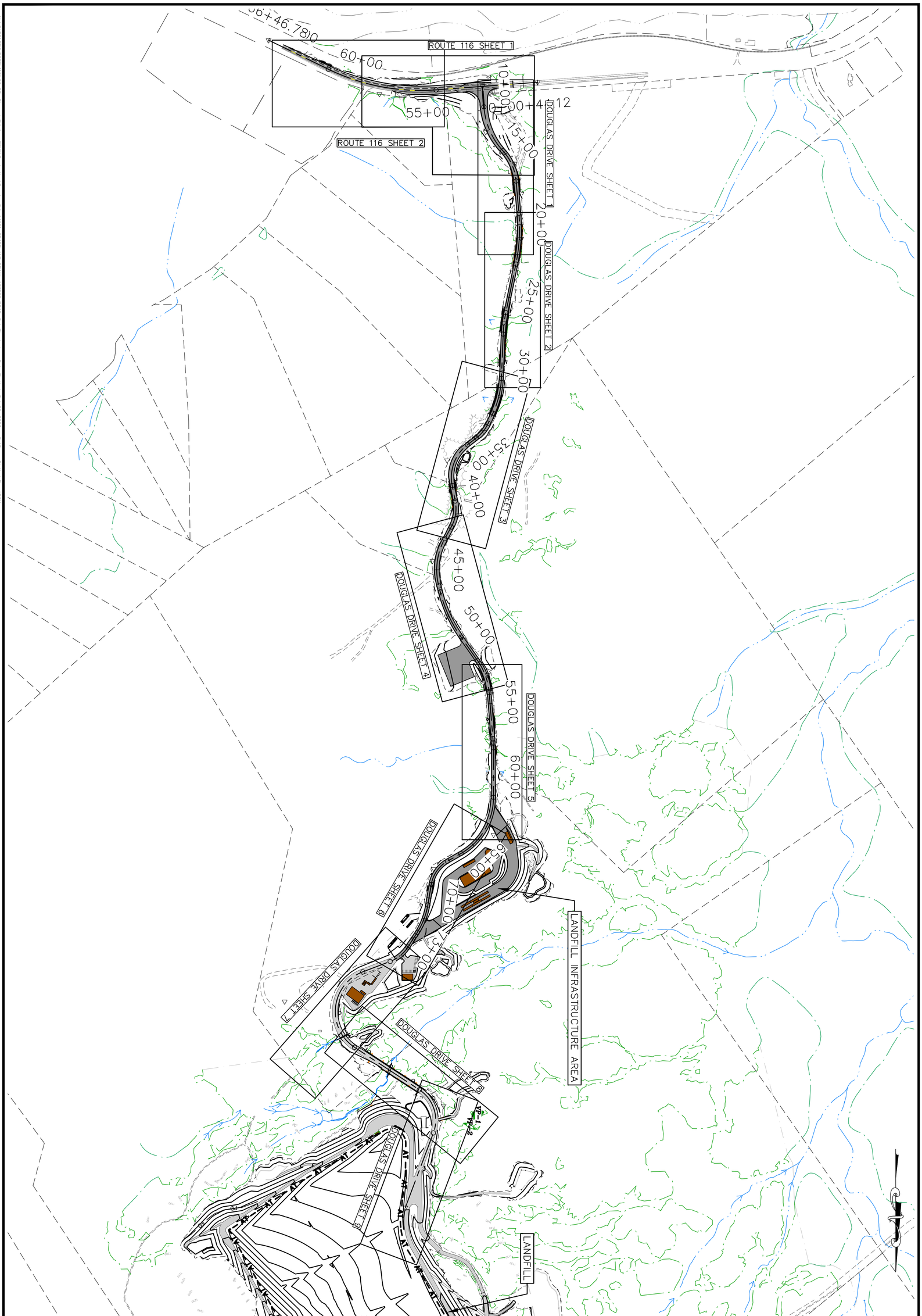
Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Landfill Cross Sections
Sheet 2

drawing no.
XS-2

sheet: 21 of 50

M:\CADD\PROJECTS\1101.03 GSL Phase I SW App-REV1\Production\Landfill\1101-SECTIONS.dwg Date Plotted: Oct 06, 2023 — 8:34am Plotted By: AROY



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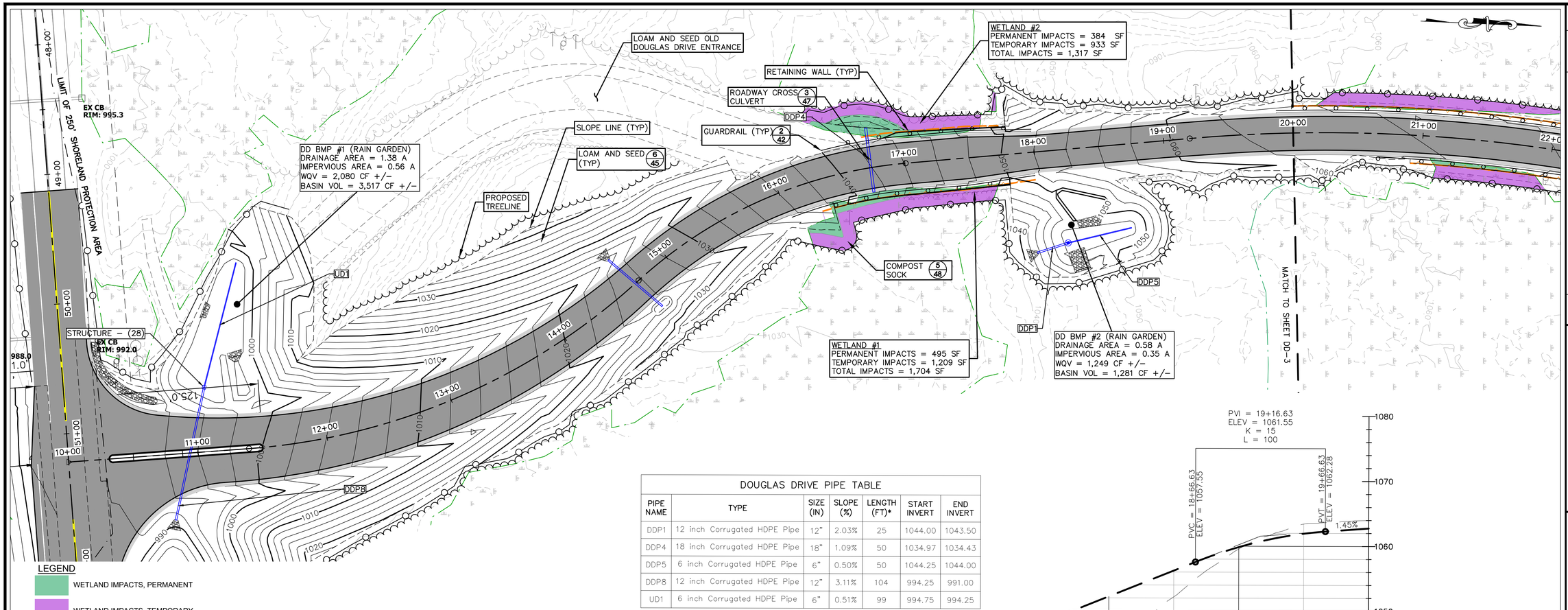
sheet 22 of 55	Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set	date: October 2023	designed by: ATR/NJM/STF/AJS	CMA ENGINEERS CIVIL/ENVIRONMENTAL/STRUCTURAL Portsmouth, NH 603/431-6196 • Manchester, NH 603/627-0708 • Portland, ME 207/541-4223 cmaengineers.com
drawing no. DD-1		project no: 1101	drawn by: ATR/NJM/STF	
		checked by: AJS	approved by: AJS	
	Douglas Drive Overall Site Plan	scale: 0 300' 600' Scale: 1" = 300'	ADAM J. SANDAHL No. 12544 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE	

no.	revision	date	by

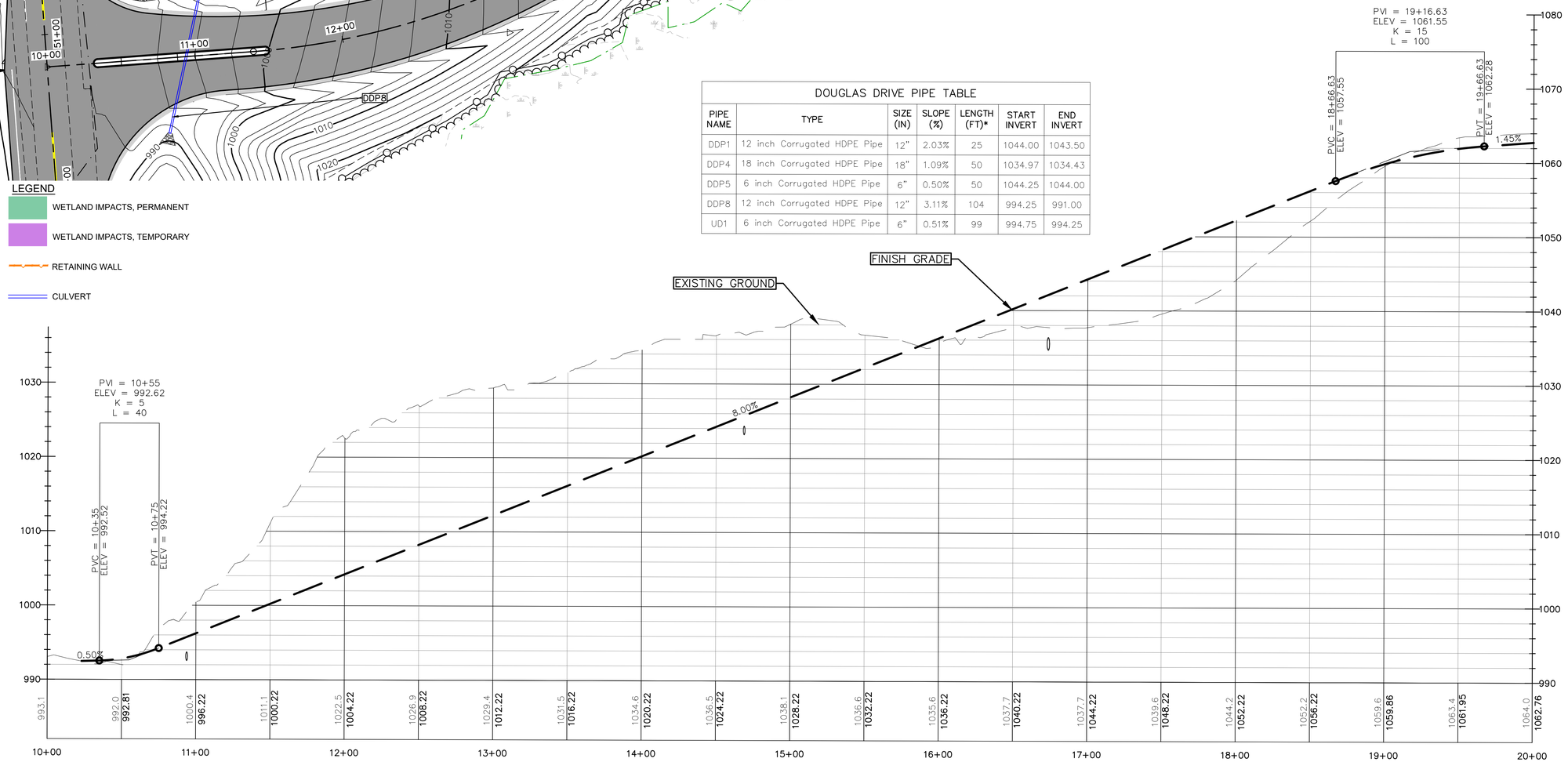


LEGEND

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT

DOUGLAS DRIVE PIPE TABLE

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP1	12 inch Corrugated HDPE Pipe	12"	2.03%	25	1044.00	1043.50
DDP4	18 inch Corrugated HDPE Pipe	18"	1.09%	50	1034.97	1034.43
DDP5	6 inch Corrugated HDPE Pipe	6"	0.50%	50	1044.25	1044.00
DDP8	12 inch Corrugated HDPE Pipe	12"	3.11%	104	994.25	991.00
UD1	6 inch Corrugated HDPE Pipe	6"	0.51%	99	994.75	994.25



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no.	revision	date	by

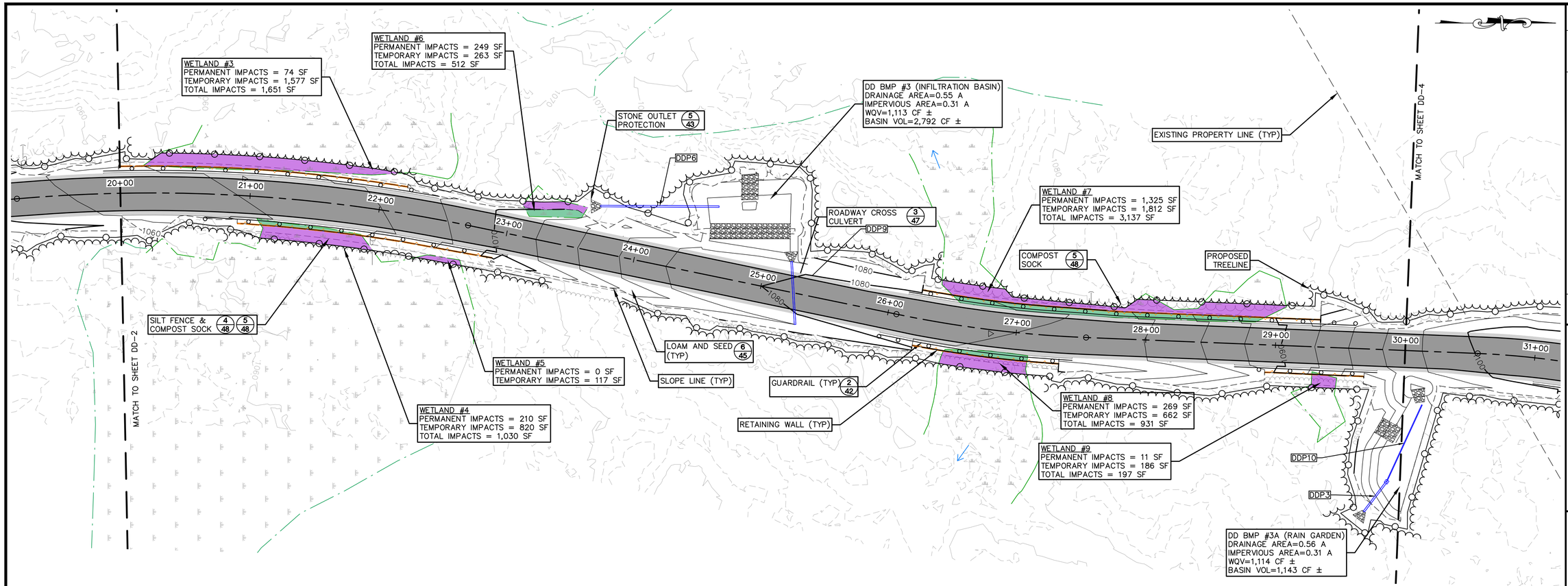
ADAM J. STRIFFOLINO 14 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
scales: 40' 0 80' Scale: 1" = 40' H / 4"V
date: October 2023
project no: 1101
checked by: AJS

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set
Douglas Drive
Plan and Profile Sheet 1

drawing no. DD-2

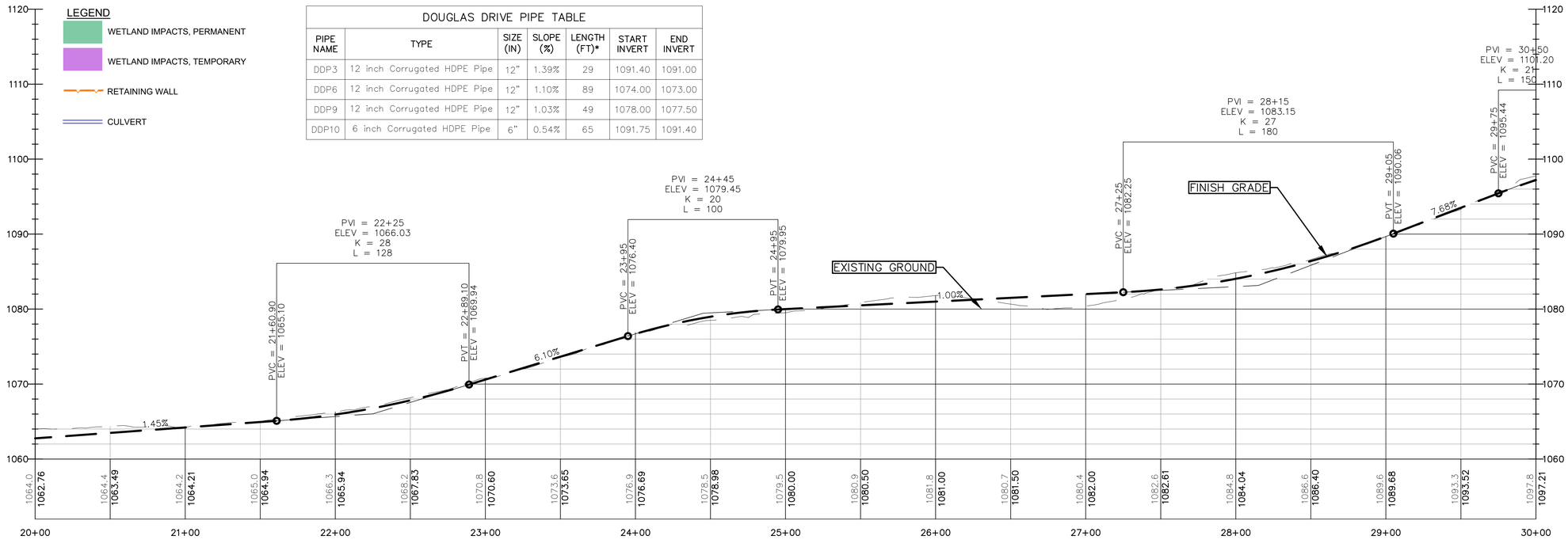
sheet: 23 of 50



LEGEND

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT

DOUGLAS DRIVE PIPE TABLE						
PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP3	12 inch Corrugated HDPE Pipe	12"	1.39%	29	1091.40	1091.00
DDP6	12 inch Corrugated HDPE Pipe	12"	1.10%	89	1074.00	1073.00
DDP9	12 inch Corrugated HDPE Pipe	12"	1.03%	49	1078.00	1077.50
DDP10	6 inch Corrugated HDPE Pipe	6"	0.54%	65	1091.75	1091.40



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STATE OF NEW HAMPSHIRE – 8339 – ADAM J. SANDAL – LICENSED PROFESSIONAL ENGINEER

no.	revision	date	by

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 40' 0 80' Scale: 1" = 40' H / 4'V

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Douglas Drive
Plan and Profile Sheet 2

drawing no. DD-3

sheet: 24 of 50

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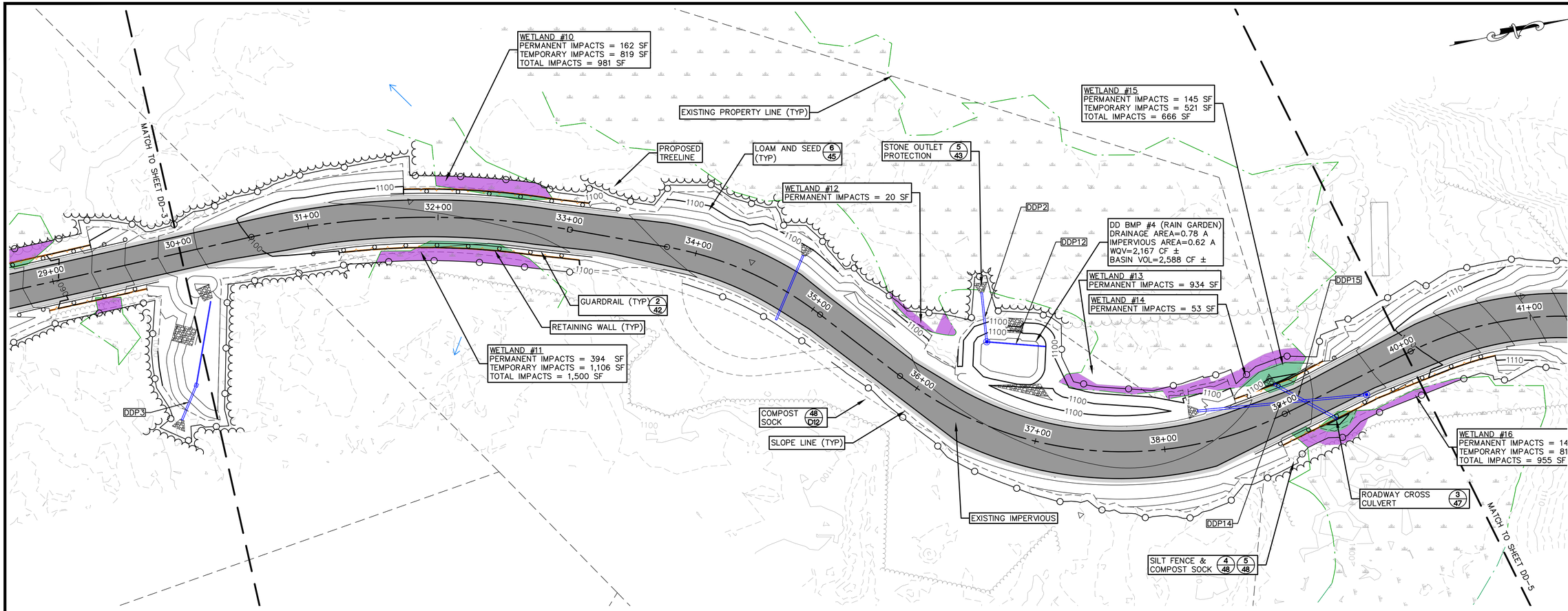
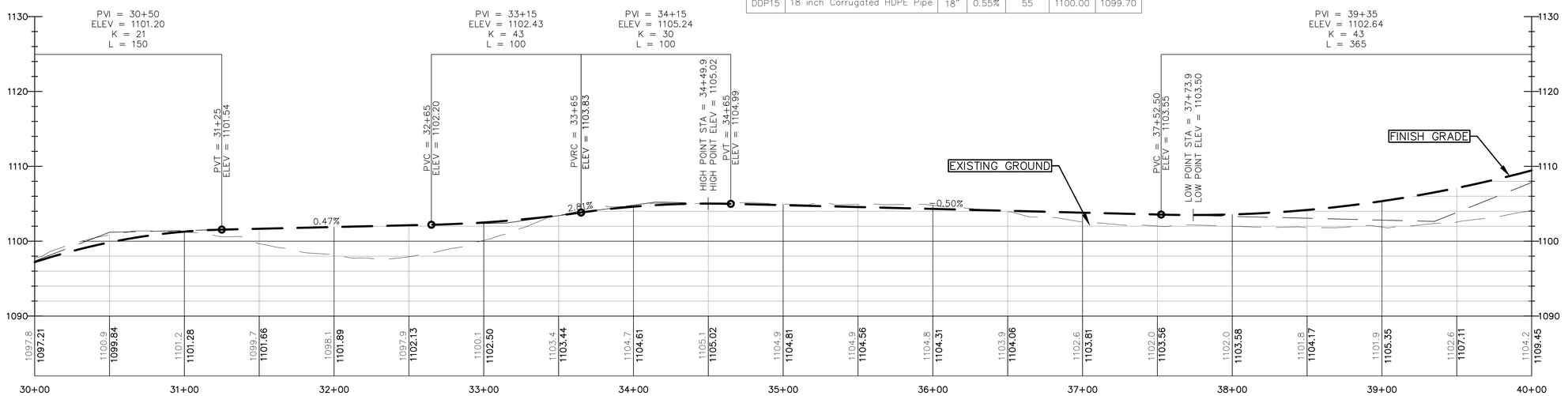


LEGEND

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT

DOUGLAS DRIVE PIPE TABLE

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP2	12 inch Corrugated HDPE Pipe	12"	0.66%	38	1097.00	1096.75
DDP12	6 inch Corrugated HDPE Pipe	6"	0.55%	45	1097.25	1097.00
DDP14	15 inch Corrugated HDPE Pipe	15"	1.95%	128	1104.00	1101.50
DDP15	18 inch Corrugated HDPE Pipe	18"	0.55%	55	1100.00	1099.70



by			
date			
revision			
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STATE OF NEW HAMPSHIRE - ADAM J. SANDAL - 23SEN0001 - PROFESSIONAL ENGINEER

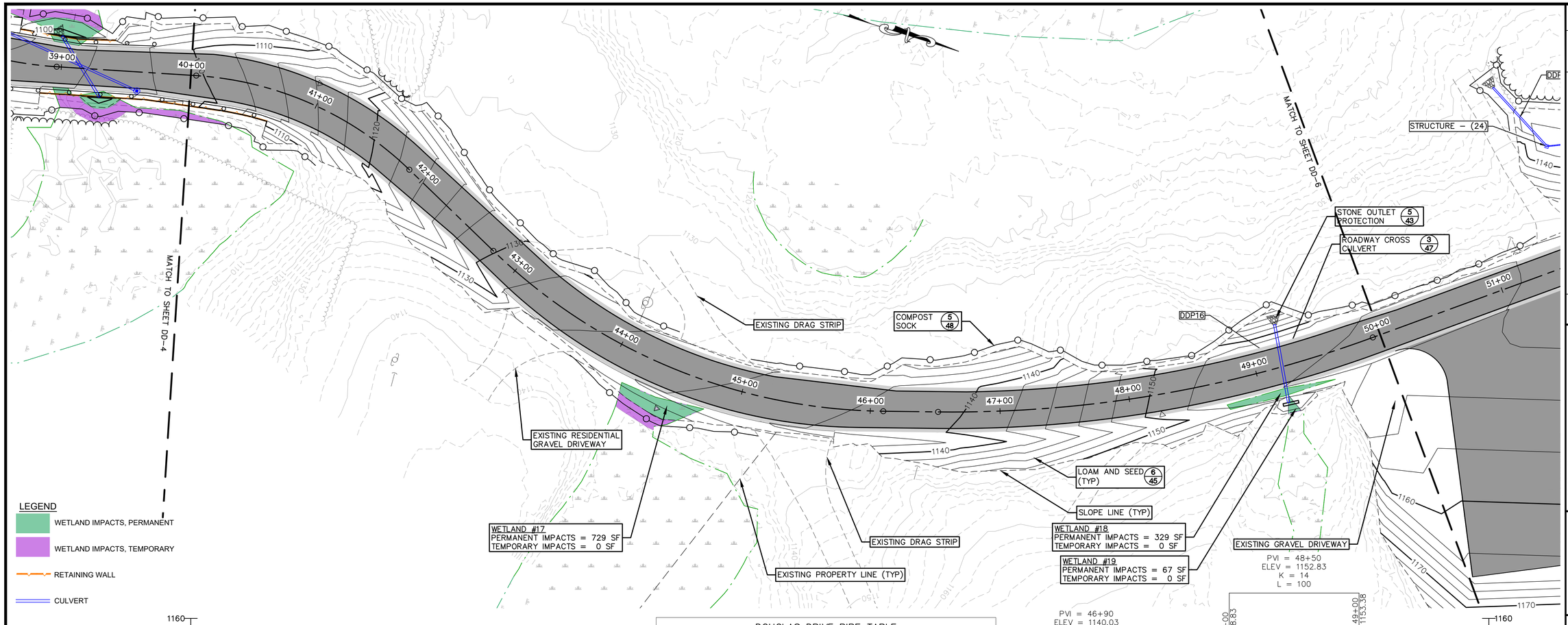
designed by: ATR/NJM/STF/AJS	drawn by: ATR/NJM/STF	approved by: AJS	scale: 1" = 40' H / 4'V
date: October 2023	project no: 1101	checked by: AJS	0 40' 80'

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

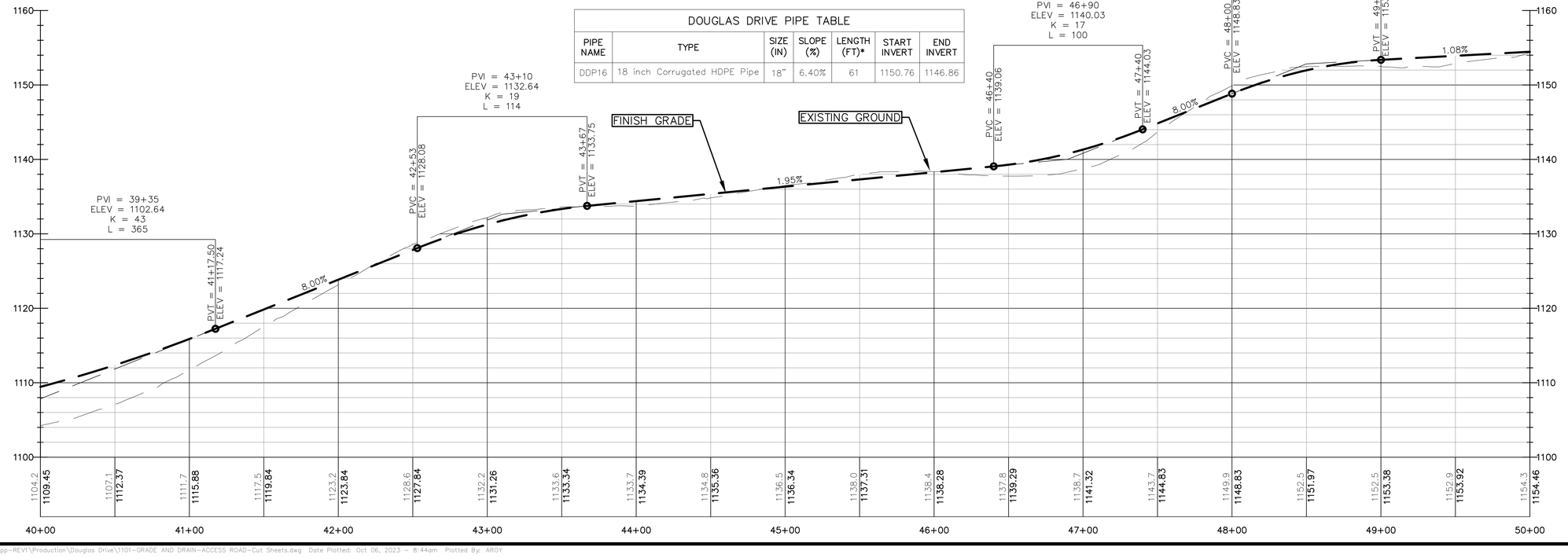
Douglas Drive
Plan and Profile Sheet 3

drawing no. DD-4

sheet: 25 of 50



DOUGLAS DRIVE PIPE TABLE						
PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP16	18 inch Corrugated HDPE Pipe	18"	6.40%	61	1150.76	1146.86



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STATE OF NEW HAMPSHIRE – 833NONAL – ADAM J SANDAL – LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 80' 40' 0 Scale: 1" = 40' H / 4'V

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Douglas Drive
Plan and Profile Sheet 4

drawing no.
DD-5

sheet: 26 of 50

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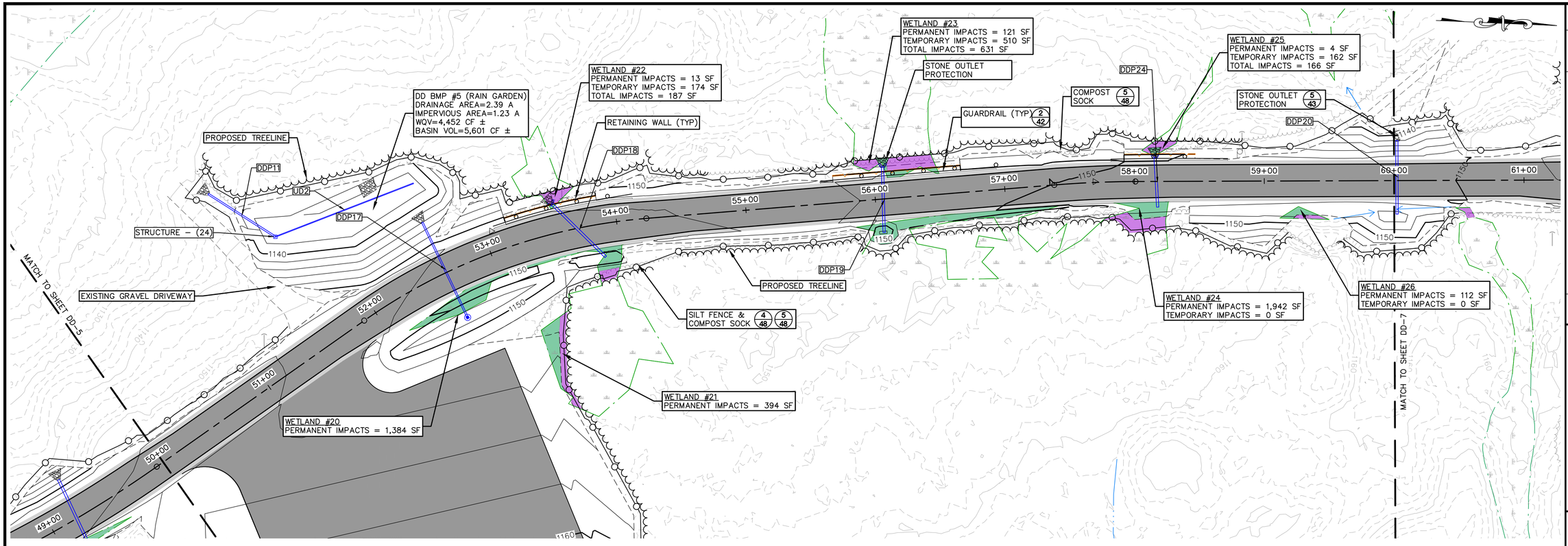
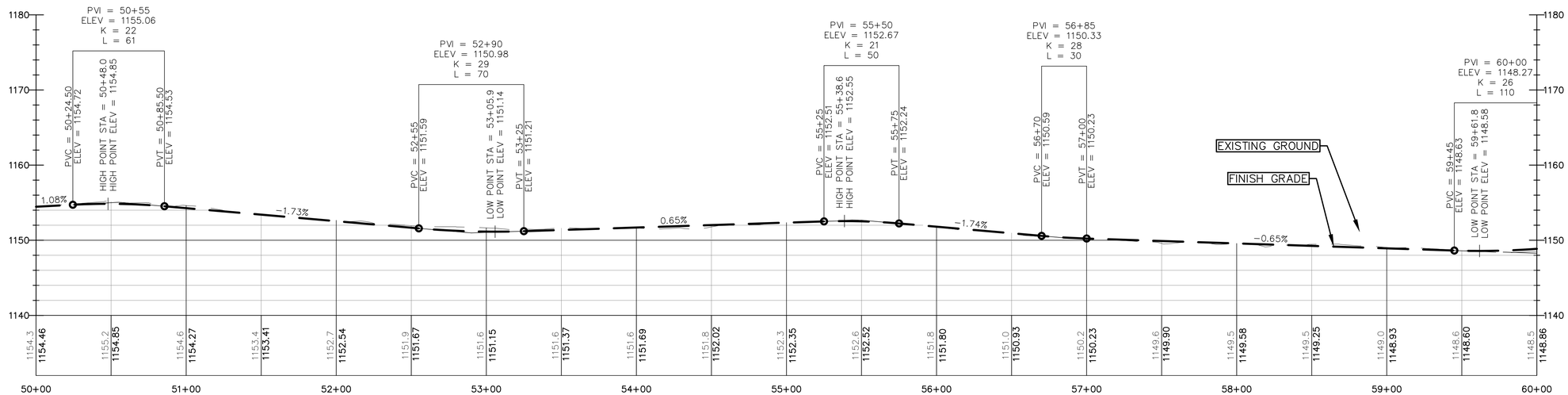


LEGEND

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT

DOUGLAS DRIVE PIPE TABLE

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP11	12 inch Corrugated HDPE Pipe	12"	0.49%	61	1133.20	1132.90
DDP17	12 inch Corrugated HDPE Pipe	12"	6.18%	81	1147.00	1142.00
DDP18	18 inch Corrugated HDPE Pipe	18"	2.41%	58	1149.00	1147.60
DDP19	18 inch Corrugated HDPE Pipe	18"	1.12%	51	1148.57	1148.00
DDP24	18 inch Corrugated HDPE Pipe	18"	2.60%	38	1148.00	1147.00
UD2	6 inch Corrugated HDPE Pipe	6"	0.48%	114	1133.75	1133.20



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STATE OF NEW HAMPSHIRE – 833 – ADAM J. STANDAL – LICENSED PROFESSIONAL ENGINEER

designed by:	drawn by:	approved by:	scales:
ATR/NJM/STF/AJS	ATR/NJM/STF	AJS	80' 40' 0 Scale: 1" = 40' H / 4'V

date:	project no:	checked by:
October 2023	1101	AJS

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Douglas Drive
Plan and Profile Sheet 5

drawing no.
DD-6

sheet: 27 of 50

no.	revision	date	by

TRUCK DEODORIZING STATION

LEACHATE TANKS

SCALE/ SCALEHOUSE

DD BMP #6 (INFILTRATION BASIN)
DRAINAGE AREA=4.40 A
IMPERVIOUS AREA=0.38 A
WQV=2,040 CF ±
BASIN VOL=2,181 CF ±

FUTURE GAS FACILITY

DP-6

DP-1

LEAK DETECTION MANHOLE

PCB-1

FLARE AND BLOWER

PCB-5

DP-10

DP-8

EMERGENCY GENERATOR

DDP22

EXISTING PROPERTY LINE (TYP)

POCS-14

SLOPE LINE (TYP)

LEACHATE LOADOUT AREA

DP-9

PDMH-1

PHW-3

LOAM AND SEED (TYP) (6/45)

ROADWAY CROSS CULVERT (3/47)

SILT FENCE & COMPOST SOCK (4/48) (5/48)

PROPOSED TREELINE

ROADWAY CROSS CULVERT (3/47)

MATCH TO SHEET DD-6

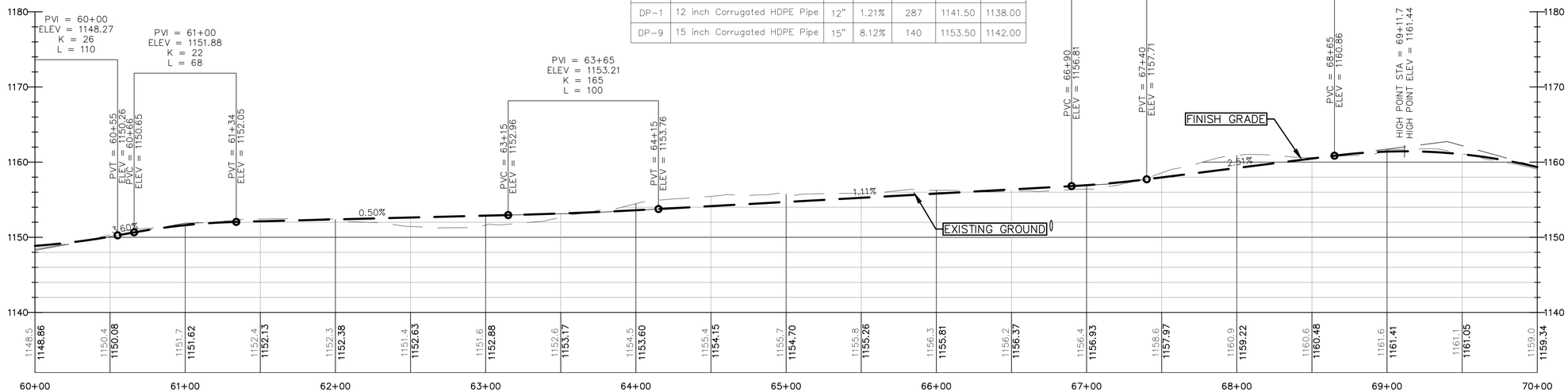
MATCH TO SHEET DD-7

LEGEND

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT

DOUGLAS DRIVE PIPE TABLE

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP20	18 inch Corrugated HDPE Pipe	18"	5.30%	57	1145.00	1142.00
DDP21	12 inch Corrugated HDPE Pipe	12"	2.25%	89	1149.50	1147.50
DDP22	12 inch Corrugated HDPE Pipe	12"	1.13%	44	1144.00	1143.50
DP-1	12 inch Corrugated HDPE Pipe	12"	1.21%	287	1141.50	1138.00
DP-9	15 inch Corrugated HDPE Pipe	15"	8.12%	140	1153.50	1142.00



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STATE OF NEW HAMPSHIRE - 833 - ADAM J. STRAGAL - LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 40' 0 80' Scale: 1" = 40' H / 4"V

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Douglas Drive
Plan and Profile Sheet 6

drawing no. DD-7

sheet: 28 of 50

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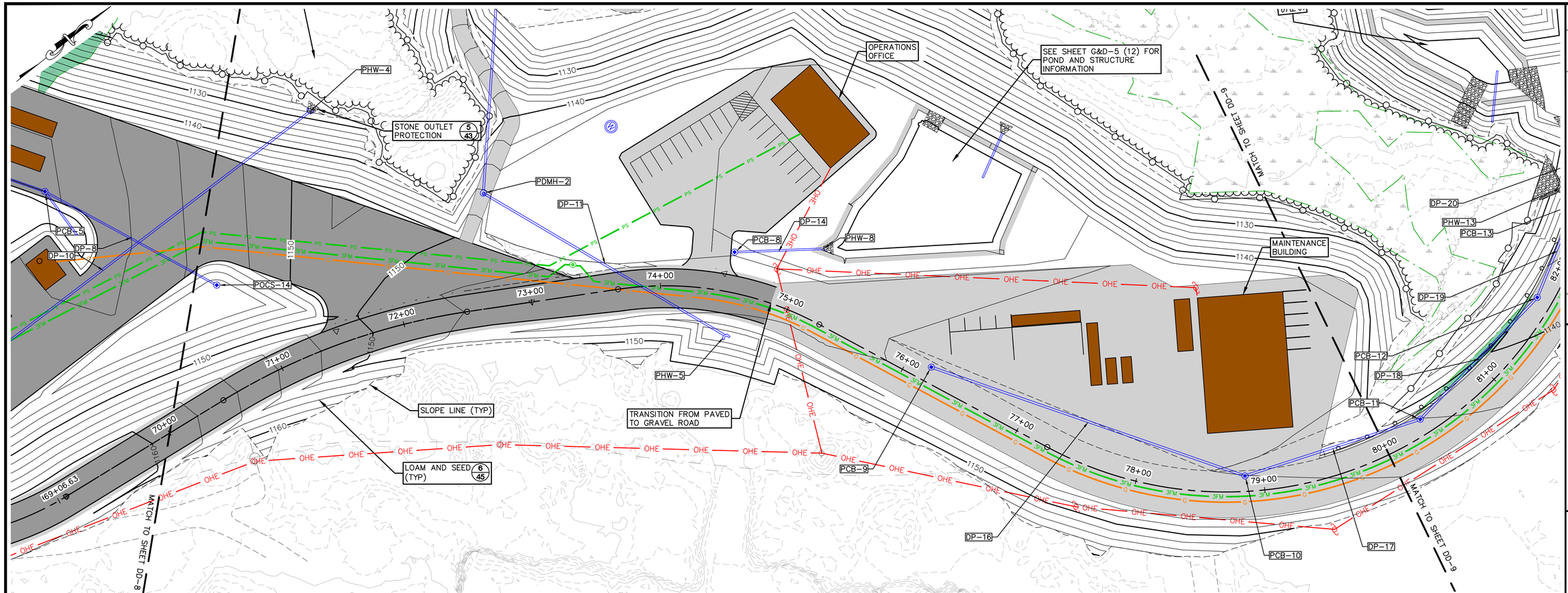
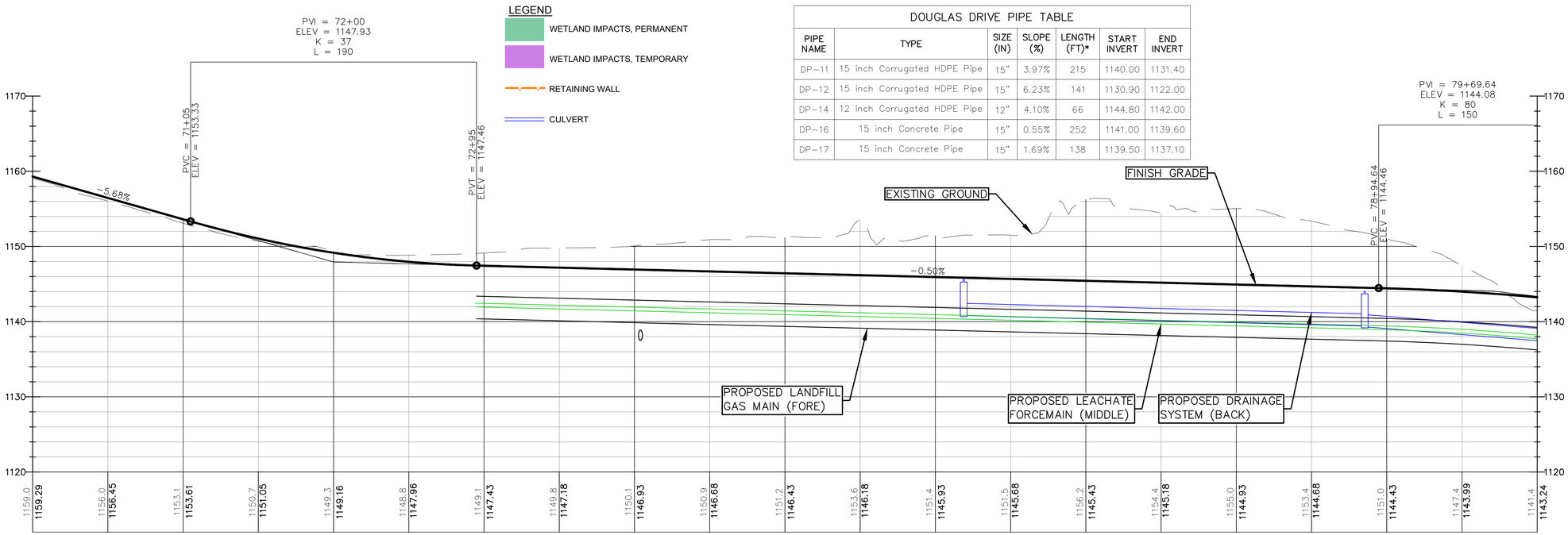


LEGEND

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT

DOUGLAS DRIVE PIPE TABLE

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DP-11	15 inch Corrugated HDPE Pipe	15"	3.97%	215	1140.00	1131.40
DP-12	15 inch Corrugated HDPE Pipe	15"	6.23%	141	1130.90	1122.00
DP-14	12 inch Corrugated HDPE Pipe	12"	4.10%	66	1144.80	1142.00
DP-16	15 inch Concrete Pipe	15"	0.55%	252	1141.00	1139.60
DP-17	15 inch Concrete Pipe	15"	1.69%	138	1139.50	1137.10



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no.	revision	date	by

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 0 40' 80' Scale: 1" = 40' H / 4'V

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Douglas Drive
Plan and Profile Sheet 7

drawing no. DD-8

sheet: 29 of 50

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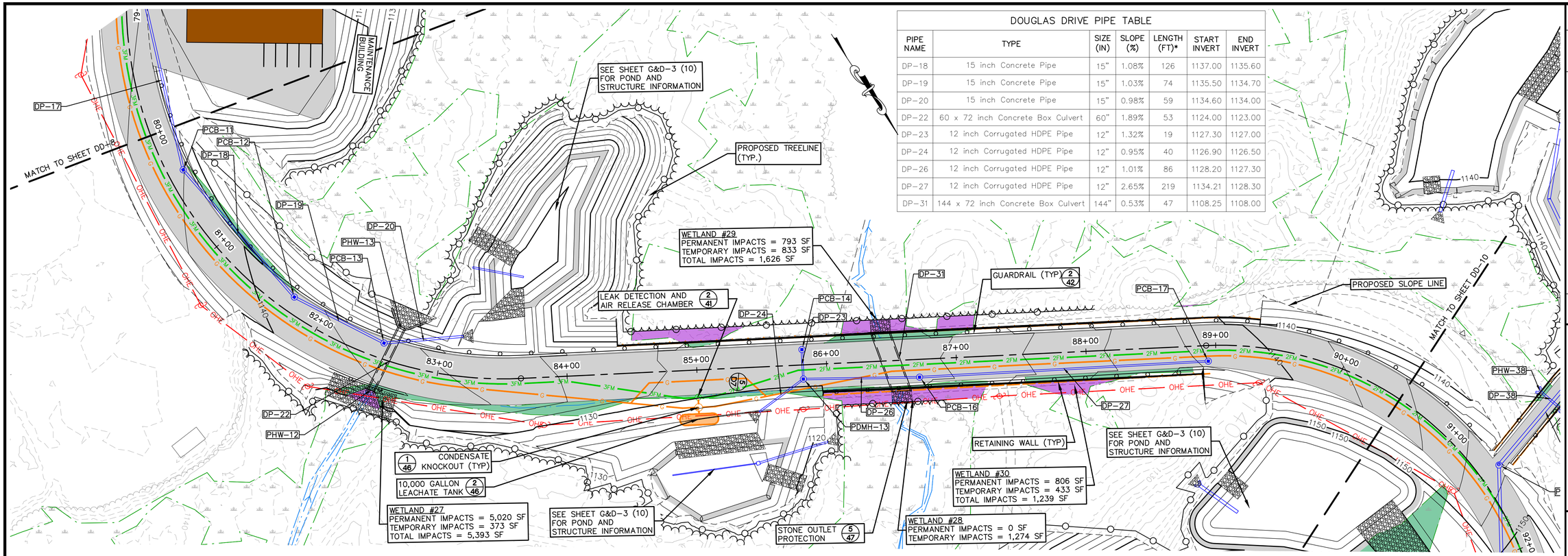
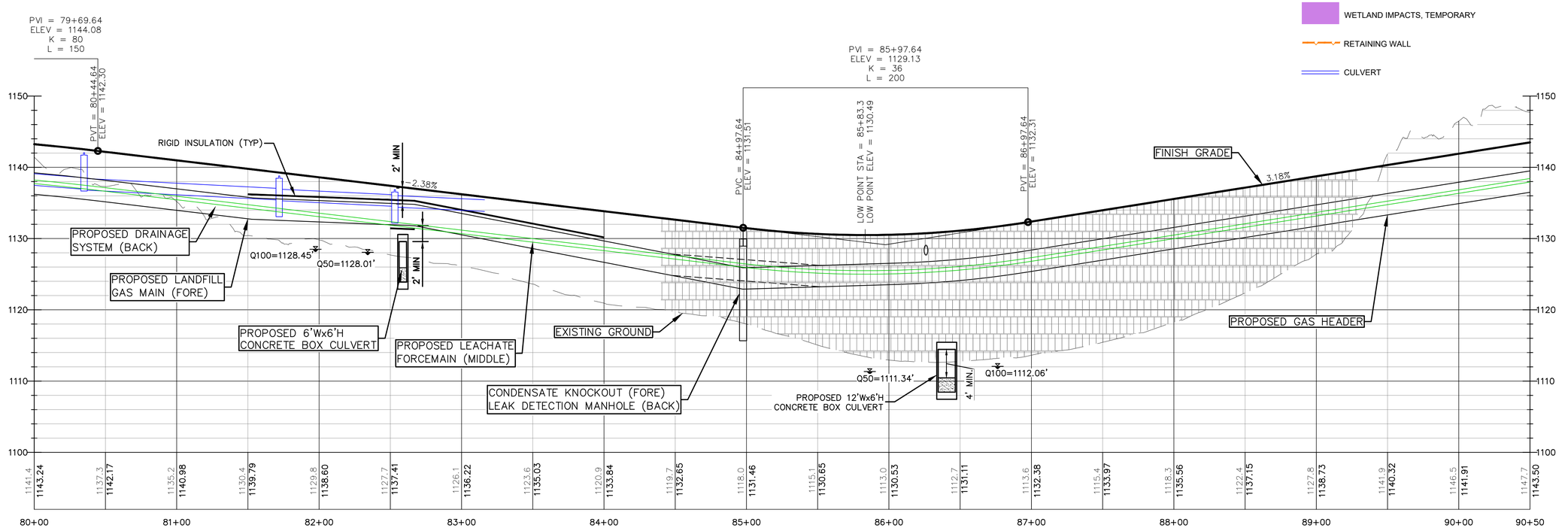
DOUGLAS DRIVE PIPE TABLE						
PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DP-18	15 inch Concrete Pipe	15"	1.08%	126	1137.00	1135.60
DP-19	15 inch Concrete Pipe	15"	1.03%	74	1135.50	1134.70
DP-20	15 inch Concrete Pipe	15"	0.98%	59	1134.60	1134.00
DP-22	60 x 72 inch Concrete Box Culvert	60"	1.89%	53	1124.00	1123.00
DP-23	12 inch Corrugated HDPE Pipe	12"	1.32%	19	1127.30	1127.00
DP-24	12 inch Corrugated HDPE Pipe	12"	0.95%	40	1126.90	1126.50
DP-26	12 inch Corrugated HDPE Pipe	12"	1.01%	86	1128.20	1127.30
DP-27	12 inch Corrugated HDPE Pipe	12"	2.65%	219	1134.21	1128.30
DP-31	144 x 72 inch Concrete Box Culvert	144"	0.53%	47	1108.25	1108.00



LEGEND

- WETLAND IMPACTS, PERMANENT
- WETLAND IMPACTS, TEMPORARY
- RETAINING WALL
- CULVERT



by	date	revision	no.

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STATE OF NEW HAMPSHIRE – 833 – ADAM J SANDAHL – PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS	drawn by: ATR/NJM/STF	approved by: AJS	scale: 40' 0 80' Scale: 1" = 40' H / 4'V
date: October 2023	project no: 1101	checked by: AJS	

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Douglas Drive
Plan and Profile Sheet 8

drawing no. DD-9

sheet: 30 of 50

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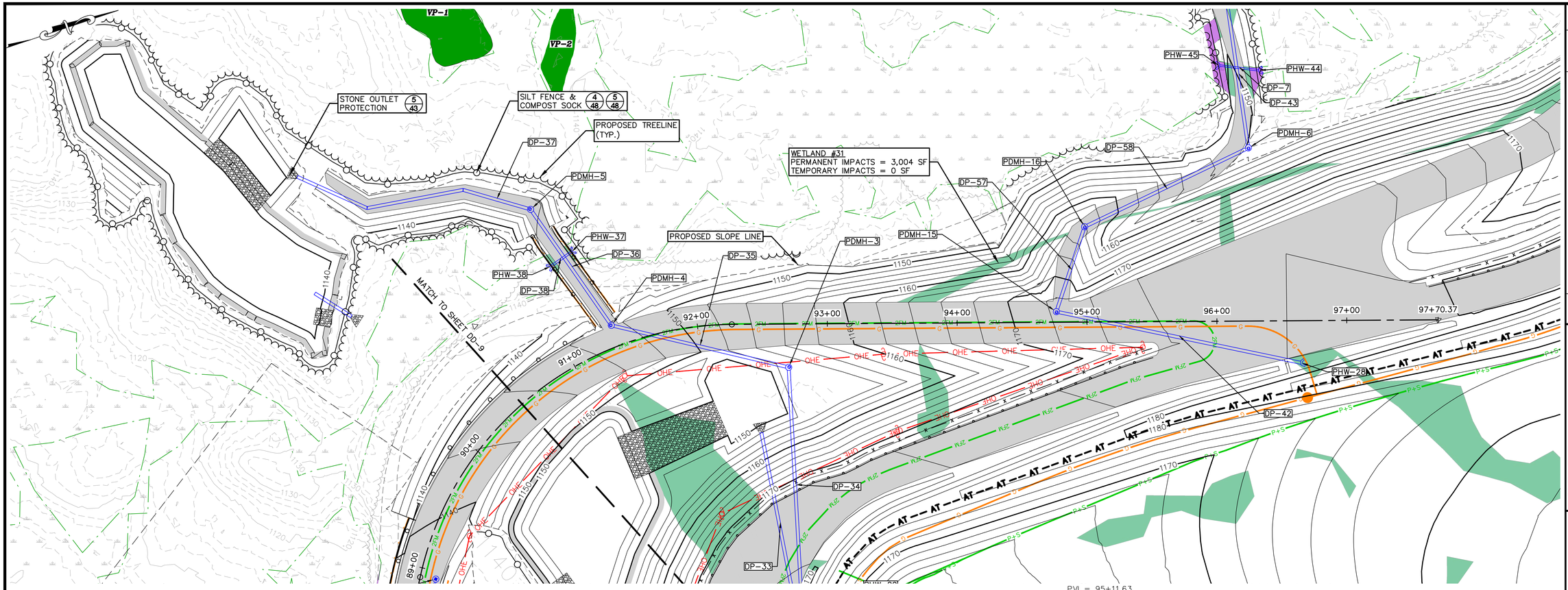
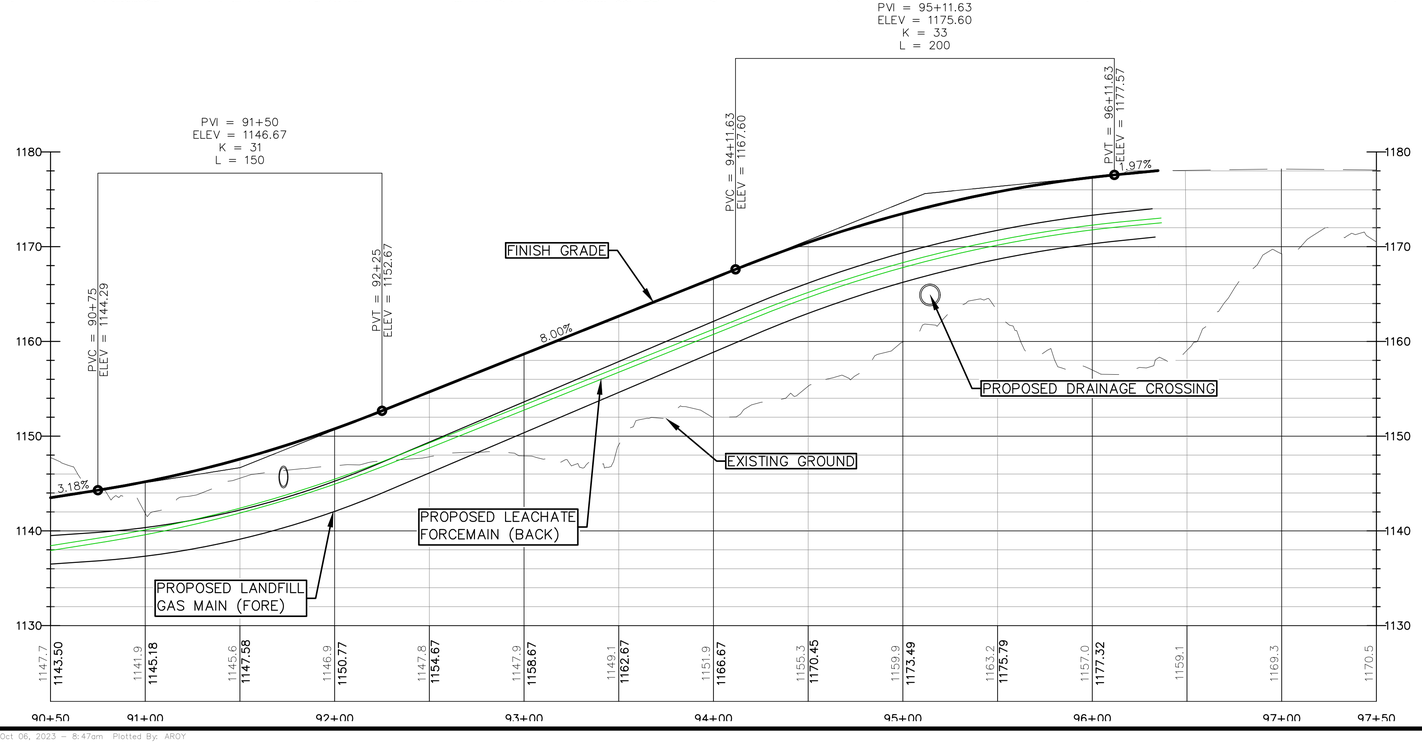


DOUGLAS DRIVE PIPE TABLE						
PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DP-7	12 inch Corrugated HDPE Pipe	12"	1.58%	32	1145.50	1145.00
DP-33	24 inch Corrugated HDPE Pipe	24"	12.00%	143	1169.00	1152.00
DP-34	24 inch Corrugated HDPE Pipe	24"	12.13%	181	1169.00	1147.00
DP-35	24 inch Corrugated HDPE Pipe	24"	2.14%	136	1147.00	1144.00
DP-36	24 inch Corrugated HDPE Pipe	24"	1.01%	105	1144.00	1142.90
DP-38	15 inch Corrugated HDPE Pipe	15"	1.26%	20	1137.75	1137.50
DP-42	24 inch Corrugated HDPE Pipe	24"	7.19%	192	1175.00	1161.12
DP-43	24 inch Corrugated HDPE Pipe	24"	0.52%	111	1147.20	1146.60
DP-55	24 inch Corrugated HDPE Pipe	24"	1.51%	31	1137.25	1136.75
DP-57	24 inch Corrugated HDPE Pipe	24"	10.25%	65	1161.12	1154.06
DP-58	24 inch Corrugated HDPE Pipe	24"	4.90%	136	1154.06	1147.20



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STATE OF NEW HAMPSHIRE – ADAM J. SKIDDAL – 23309 – LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 0 40' 80' Scale: 1" = 40' H / 4'V

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Douglas Drive
Plan and Profile Sheet 9

drawing no.
DD-10

sheet: 31 of 50

DOUGLAS DRIVE PIPE TABLE						
PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
DDP8	12 inch Corrugated HDPE Pipe	12"	3.11%	104	994.25	991.00
UD1	6 inch Corrugated HDPE Pipe	6"	0.51%	99	994.75	994.25

PROPOSED TREELINE (TYP.)
PROPOSED SLOPE LINE
EXISTING PROPERTY LINE (TYP)
DD BMP #1
DRAINAGE AREA=1.39 A
IMPERVIOUS AREA=0.56 A
WQV=2,082± CF
BASIN VOL=3,157± CF
325' FULL WIDTH DECELERATION LANE
180' TAPER
PROPOSED DECELERATION LANE
PC: 54+38.24
PROPOSED TREELINE (TYP.)
24" CONC
INV IN: 970.5
STRUCTURE – (28)
EX CB
LIMIT OF 250' SHORELAND PROTECTION AREA
PROPOSED ACCELERATION LANE
810' FULL WIDTH ACCELERATION LANE
24" CONC
INV OUT: 988.0
24" CONC
INV OUT: 989.8
24" CONC
INV OUT: 979.3
LIMIT OF 150' NATURAL WOODLAND BUFFER
EXISTING RAILROAD
LIMIT OF 50' PRIMARY STRUCTURE SETBACK
MATCH TO SHEET DD-15
DDP8
UD1
11.0'
12.0'
4.0'
11.1'

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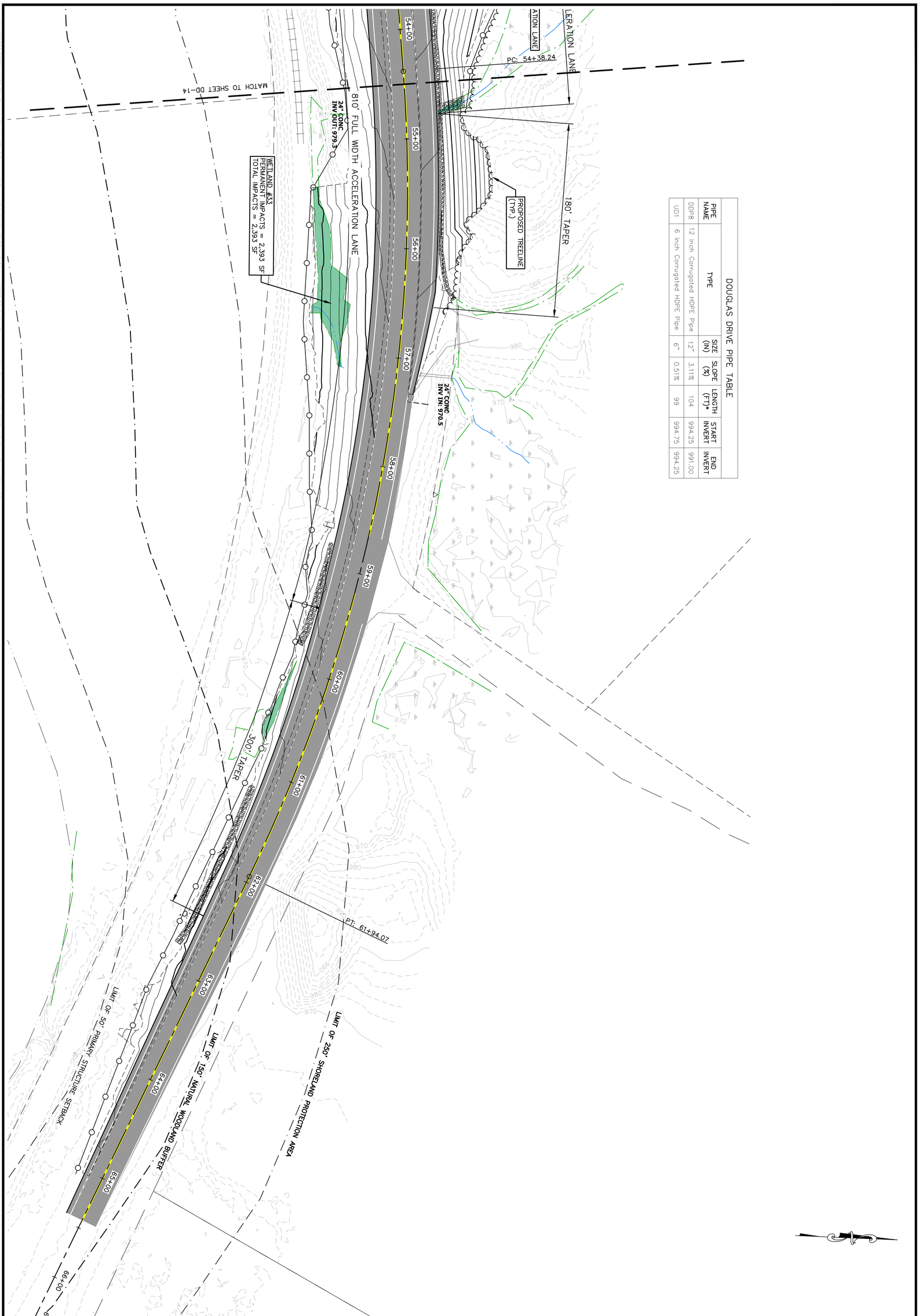
no.	revision	date	by

STATE OF NEW HAMPSHIRE – ADAM J. SANDAHL – 23333 – LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 0 40' 80' State: 1" = 40'

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set
Douglas Drive
Rout 116 Plan Sheet 1

drawing no. DD-11
sheet: 32 of 50



DOUGLAS DRIVE PIPE TABLE

PIPE NAME	TYPE	SIZE (IN)	SLOPE (%)	LENGTH (FT)*	START INVERT	END INVERT
UD1	6 inch Corrugated HDPE Pipe	6"	0.51%	99	994.75	994.25
DDP8	12 inch Corrugated HDPE Pipe	12"	3.11%	104	994.25	991.00

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sheet 33 of 50	drawing no. DD-12	Granite State Landfill, LLC Dalton, New Hampshire Permitting Plan Set Douglas Drive Route 116 Plan Sheet 2	date: October 2023 · designed by: ATR/NJM/STF/AJS project no: 1101 · drawn by: ATR/NJM/STF checked by: AJS · approved by: AJS scale: 0 40' 80' Scale: 1" = 40'

STATE OF NEW HAMPSHIRE · ADAM J. SANDAHL · NO. 15644 · LICENSED PROFESSIONAL ENGINEER

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Erosion Control Notes:

1) THE CONTRACTOR IS RESPONSIBLE FOR THE DEVELOPMENT AND APPROVAL OF THE EROSION AND SEDIMENT CONTROL PLAN.

2) PRIOR TO CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NECESSARY. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION. WHEN LAND IS EXPOSED DURING CONSTRUCTION, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. ANY DISTURBED AREAS THAT ARE TO BE LEFT UN-STABILIZED LONGER THAN TWO WEEKS SHALL BE TEMPORARILY SEEDED AND MULCHED AT THE RATE OF 2 TONS PER ACRE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL REMEDIAL WORK REQUIRED TO REPAIR AREAS WHICH ARE DAMAGED BY EROSION.

3) HAY BALE BARRIERS SHALL BE INSTALLED AND MAINTAINED AT DRAIN INLETS AND OUTLETS AND ALONG LIMITS OF WORK WHERE NECESSARY. HAY BALE BARRIERS SHALL NOT BE PLACED CLOSER THAN 25-FEET TO DRAIN INLETS AND OUTLETS. ADDITIONAL HAY BALES SHALL BE ADDED AS REQUIRED BY THE ENGINEER. HAY BALES WILL BE STAKED AND MAINTAINED PRIOR TO AND DURING CONSTRUCTION UNTIL DISTURBED AREAS HAVE A HEALTHY STAND OF GRASS.

4) ALL DISTURBED AREAS AND SIDE SLOPES THAT ARE AT ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TAKING PLACE SHALL BE TRACKED, SEEDED (IN ACCORDANCE WITH SECTION 644 OF THE STANDARD SPECIFICATIONS) AND MULCHED. ALL SEED, LIME AND FERTILIZER PROGRAMS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS (SECTION 642 AND SECTION 643).

5) CONSTRUCTION TRAFFIC SHALL TRAVEL THE ROADBEDS OF EXISTING ROADS.

6) COMPOST SOCK AND SILT FENCE SHALL BE INSTALLED AND MAINTAINED WHERE NECESSARY PRIOR TO ANY ON-SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. GENERALLY, COMPOST SOCK SHALL BE INSTALLED TO PREVENT MIGRATION OF THE SEDIMENT FROM THE WORK AREA. IN AREAS WHERE WETLANDS ARE DOWN SLOPE OF DISTURBED AREAS, SILT FENCE SHALL BE INSTALLED IN ADDITION TO SILT SOCKS. ALL EROSION CONTROL MEASURES SHOULD BE MAINTAINED DURING AND AFTER CONSTRUCTION TO REMOVE SEDIMENT FROM NATURAL DRAINAGE WAYS. EROSION CONTROL SHALL BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.

7) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND ACCUMULATED SEDIMENT DISPOSED OF IN A LOCATION DESIGNATED BY THE OWNER.

8) HAY BALES AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS AND SHALL BE DRY.

9) SILT FENCES SHALL BE A MINIMUM OF 36 INCHES HIGH WITH THE BOTTOM OF THE CLOTH KEYING INTO THE GROUND. POSTS SHALL BE OF WOOD OR STEEL.

10) THE EROSION CONTROL DEVICES DESCRIBED AND AS SPECIFIED IN THE SPECIFICATIONS REPRESENT THE MINIMUM REQUIRED MEASURES FOR EROSION CONTROL. THE CONTRACTOR SHALL ADD TO THESE DEVICES ANY OTHER MEASURES AS REQUIRED OR AS DIRECTED BY THE ENGINEER TO EFFECTIVELY PREVENT MIGRATION OF SEDIMENT FROM THE WORK AREA AND PROTECT WETLAND AREAS, WATERWAYS, EXISTING AND PROPOSED DRAINAGE FEATURES, SLOPES, LAWNS, AND PLANTS ADJACENT TO THE WORK AREA.

11) WELDED PLASTIC OR BIODEGRADABLE PLASTIC EROSION CONTROL NETTING SHALL NOT BE USED.

Foundation Notes:

1) FOOTINGS SHALL BE PLACED ON COMPACTED STRUCTURAL FILL (NHDOT ITEM 508) OVERLAYING UNDISTURBED SOIL. ALL EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL. PLACEMENT OF STRUCTURAL FILL AND FOOTING CONSTRUCTION SHALL BE COMPLETED IN THE DRY.

2) PROTRUDING COBBLES AND BOULDERS ENCOUNTERED AT THE FINAL EXCAVATION LEVEL SHOULD BE EITHER REMOVED OR SPLIT TO PROVIDE A LEVEL SURFACE. ENGINEER TO MAKE FINAL DETERMINATION.

3) CONTROL OF WATER WITHIN THE EXCAVATION SHALL BE CONDUCTED IN SUCH A MANNER AS TO PREVENT DISTURBANCE OF THE BEARING SOIL. WELL POINTS, SUMPS, OR OTHER PUMPING AREAS SHALL BE LOCATED OUTSIDE THE FOOTING EXCAVATION LIMITS.

4) ANY FOUNDATION SOIL WEAKENED AS A RESULT OF INSUFFICIENT CARE TAKEN IN MAINTAINING A DEWATERED CONDITION SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL (CRUSHED STONE CONFORMING TO 508.2.1.3) AT THE CONTRACTOR'S EXPENSE.

5) DEWATERING SHALL BE CONTINUOUS UNTIL THE STRUCTURE IS BACKFILLED TO THE ELEVATION OF THE SURROUNDING WATER TABLE, UNLESS DIRECTED OTHERWISE.

Water Diversion Structure Notes:

1) ITEM 503.1-WATER DIVERSION STRUCTURES SHALL BE REQUIRED TO CONSTRUCT THE CULVERT. THE CONTRACTOR SHALL SUBMIT THE DIVERSION STRUCTURE TYPE, DESIGN, AND PROPOSED METHOD OF CONSTRUCTION TO THE ENGINEER IN ACCORDANCE WITH SECTION 105.02 OF THE NHDOT STANDARD SPECIFICATIONS.

2) THE CONTRACTOR SHALL SUBMIT FOR REVIEW BY ENGINEER A WATER DIVERSION PLAN PREPARED AND STAMPED BY A NH LICENSED PROFESSIONAL ENGINEER.

3) THE CONTRACTOR SHALL DETERMINE THE REQUIRED LIMITS TO MAINTAIN A DEWATERED AND ADEQUATELY SUPPORTED EXCAVATION DURING CONSTRUCTION.

4) ALL WATER DIVERSION STRUCTURES ARE TO BE INSTALLED DURING PERIODS OF LOW FLOW. THE CONTRACTOR SHALL PUMP/DIVERT STREAM FLOW AROUND WORK AREA TO MINIMIZE SILTATION OF STREAM WATERS. THE CONTRACTOR SHALL BE PREPARED FOR, AND MAKE PROVISIONS FOR, HIGH FLOW EVENTS THAT MAY OCCUR EVEN DURING TYPICAL LOW FLOW PERIODS.

5) ALL COSTS FOR DESIGN, INSTALLATION, AND REMOVAL OF THE WATER DIVERSION STRUCTURES SHALL BE INCLUDED IN THE WATER DIVERSION STRUCTURES ITEM.

Design Notes:

1) DESIGN LIVE LOAD: HL-93

2) DESIGN METHOD: LOAD RESISTANCE FACTOR DESIGN (LRFD)

3) SPECIFICATIONS: AASHTO LRFD 8TH ED. 2017, AS AMENDED
NHDOT 2016 STANDARD SPECIFICATIONS, AS AMENDED

4) FOUNDATION DATA: SPREAD FOOTINGS ON SOIL

5) REINFORCING STEEL: AASHTO M 31 (ASTM A 615) GRADE 60.

PRECAST:	UNCOATED
CAST-IN-PLACE:	EPOXY COATED
CURB	EPOXY COATED

6) CONCRETE: PRECAST CONCRETE = 5000 PSI (CLASS AAA)
CAST-IN-PLACE CONCRETE = 4000 PSI (CLASS AA)

7) FROST COVER: 5 FEET MINIMUM

Culvert Installation Construction Sequence:

1) INSTALL ALL EROSION CONTROL DEVICES.
2) VERIFY HORIZONTAL AND VERTICAL DATUM.
3) INSTALL TEMPORARY WATER DIVERSION DEVICE(S), AND EROSION CONTROL.
4) EXCAVATE FOR THE PROPOSED CULVERT.
5) INSTALL PROPOSED CULVERT, STREAM BED MATERIAL, AND BACKFILL.
6) INSTALL INLET AND OUTLET PROTECTION.
7) INSTALL SLOPE PROTECTION.
8) REMOVE TEMPORARY WATER DIVERSION DEVICES.
9) CONSTRUCT ROAD AS SHOWN IN PLANS.
10) INSTALL GUARDRAIL IN LOCATIONS SHOWN IN PLANS.
11) INSTALL LOAM AND SEED OVER ALL DISTURBED AREAS.
12) REMOVE ALL EROSION CONTROL DEVICES ONCE SITE HAS BEEN DETERMINED STABLE BY THE ENGINEER.

Hydraulic Data Summary

NORTHERN CULVERT
DRAINAGE AREA: 81.72 ac
DESIGN FLOOD (Q50): 27.8 cfs
DESIGN VELOCITY: 3.30 fps
DESIGN FLOOD ELEVATION: 1111.19 ft
Q100 FLOOD ELEVATION: 1112.03 ft
Q100 FLOOD VELOCITY: 4.22 fps

SOUTHERN CULVERT
DRAINAGE AREA: 54.07 ac
DESIGN FLOOD (Q50): 54.8 cfs
DESIGN VELOCITY: 6.06 fps
DESIGN FLOOD ELEVATION: 1128.01 ft
Q100 FLOOD ELEVATION: 1128.45 ft
Q100 FLOOD VELOCITY: 6.85 fps

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designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
date: October 2023
project no: 1101
checked by: AJS
scale: 0 40' 80' Scale: 1" = 40' H / 4'V

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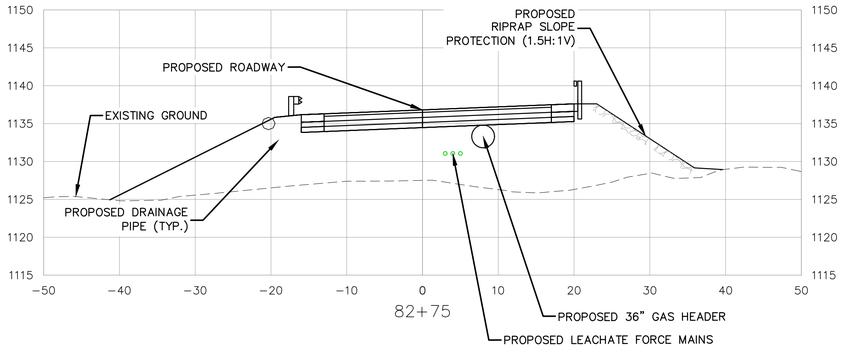
Dalton, New Hampshire

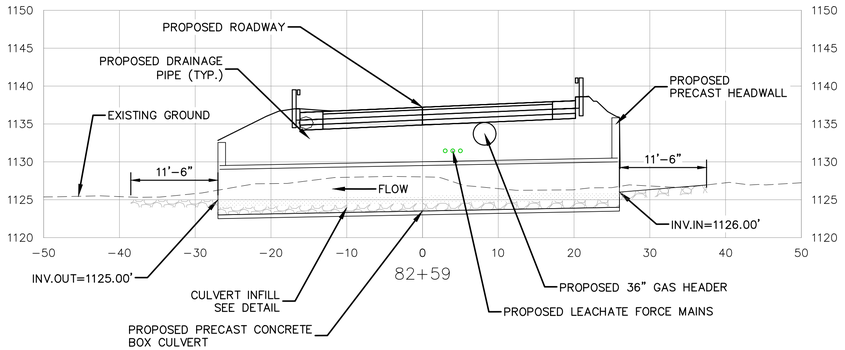
Permitting Plan Set

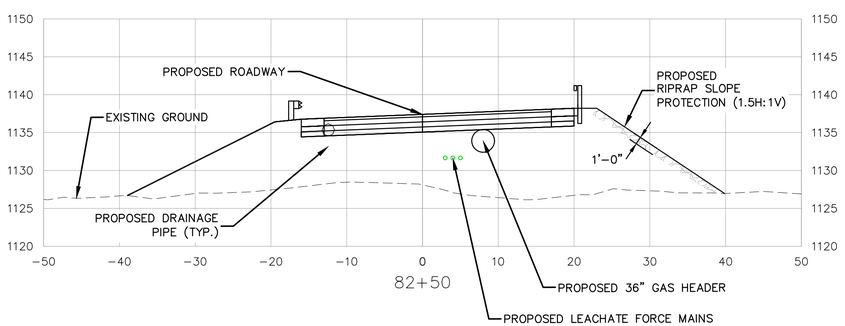
Roadway Sections and Culvert Layout Plan 1

drawing no.
DD-13

sheet: 34 of 50

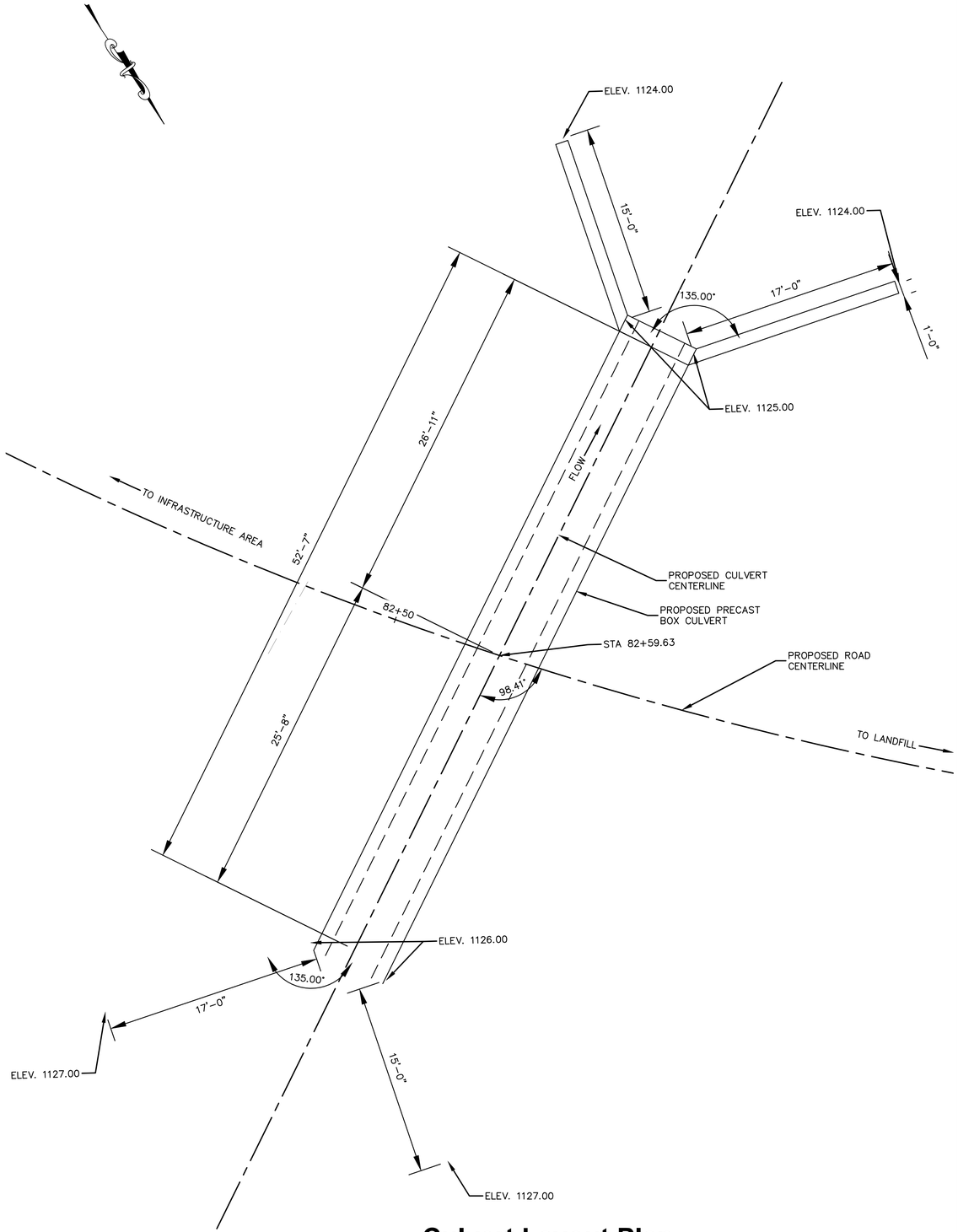






Roadway Sections

Scale: 1" = 10'



Culvert Layout Plan

Scale: 1" = 5'

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project no: 1101
checked by: AJS
scale: 0 40' 80' Scale: 1" = 40' H / 4'V

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Roadway Sections and Culvert Layout Plan 2

drawing no. DD-14

sheet: 35 of 50

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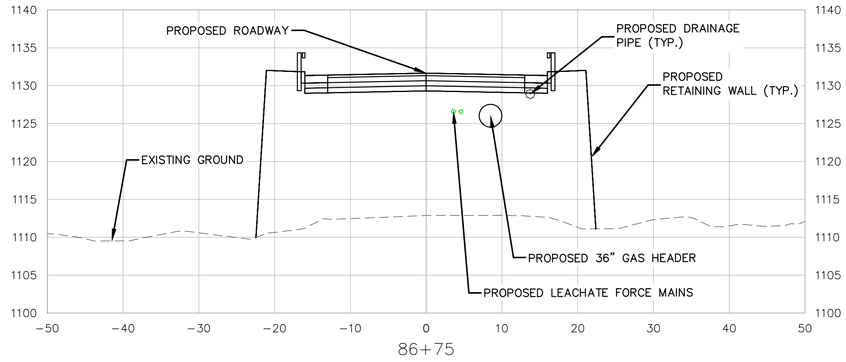
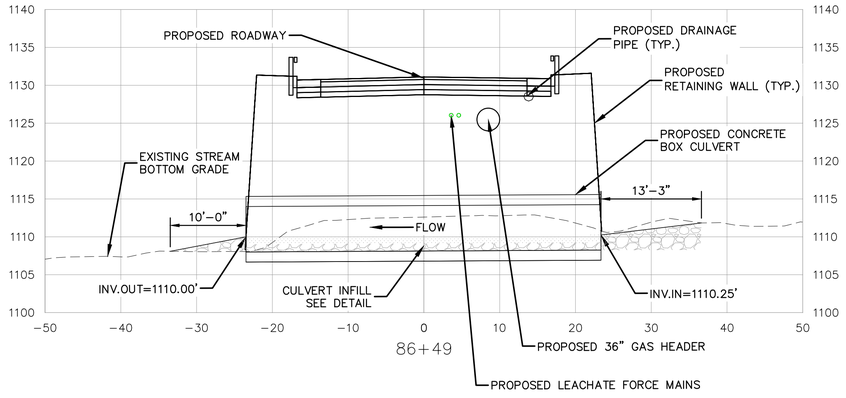
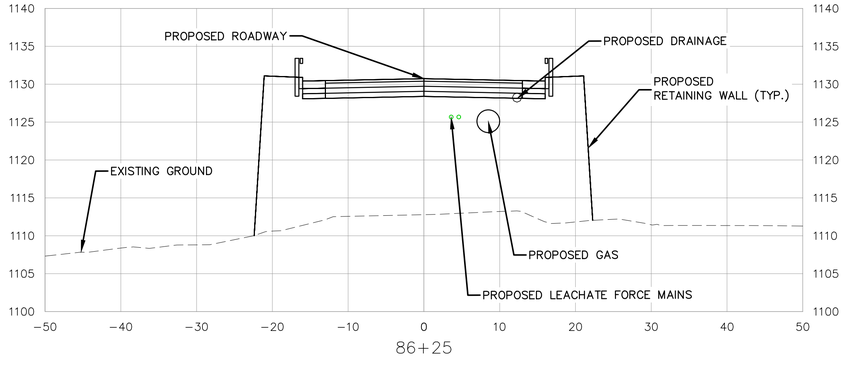
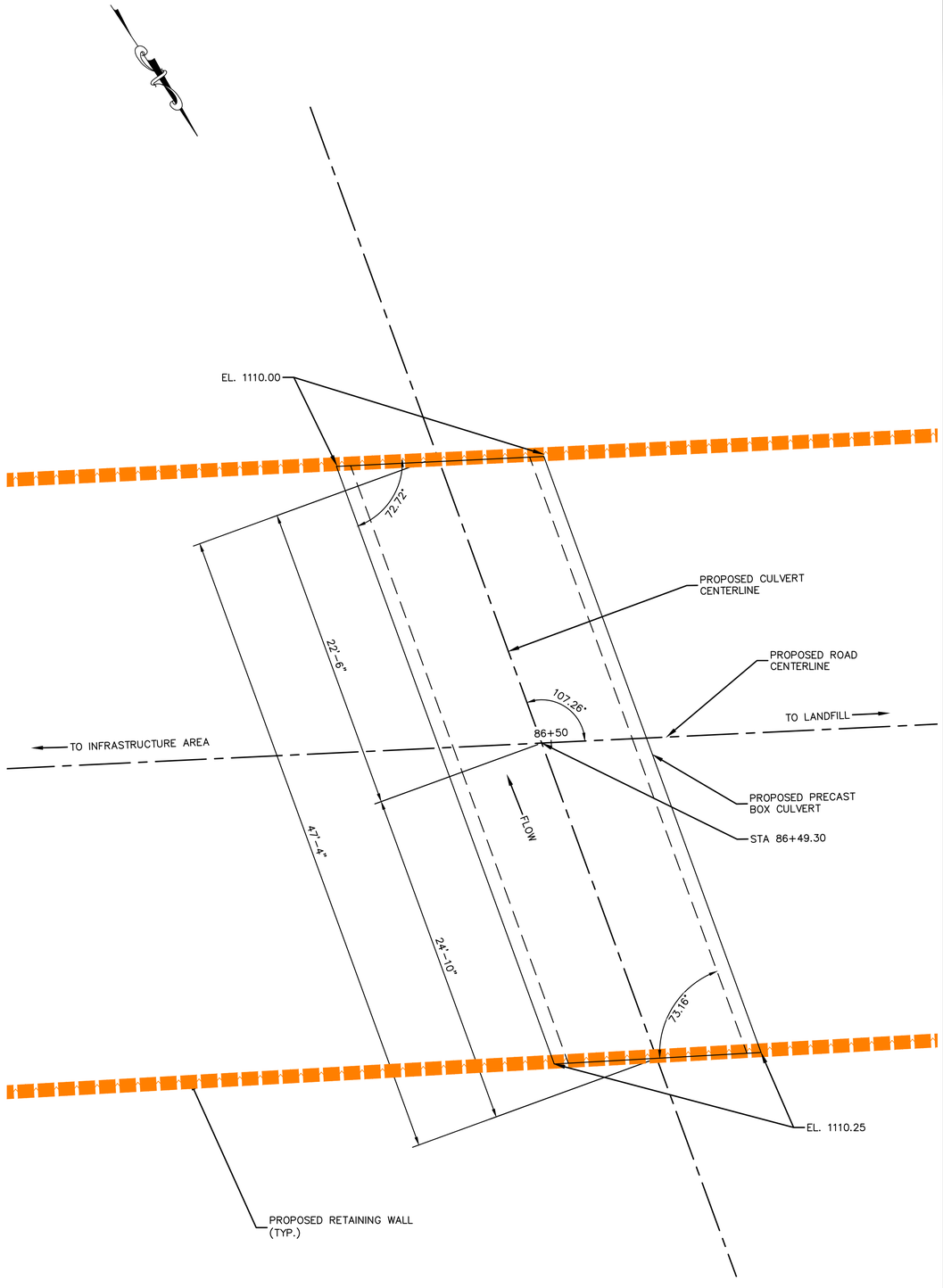






Roadway Sections

Scale: 1" = 10'



Culvert Layout Plan

Scale: 1" = 5'

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approved by: AJS
scale: Scale: 1" = 40' H / 4'V
date: October 2023
project no: 1101
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Roadway Sections and Culvert Layout Plan 3

drawing no. DD-15

sheet: 36 of 50

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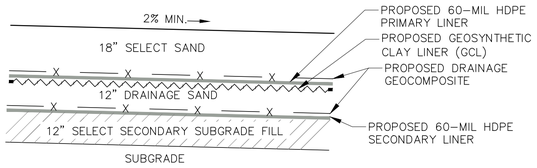
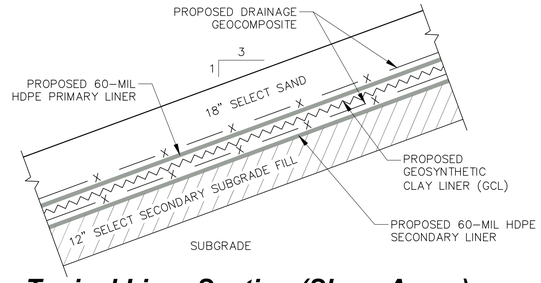


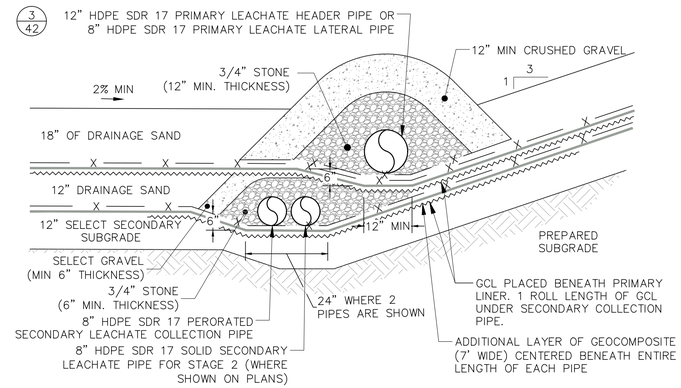
Typical Liner Section (Base Areas) — 1

Not to Scale



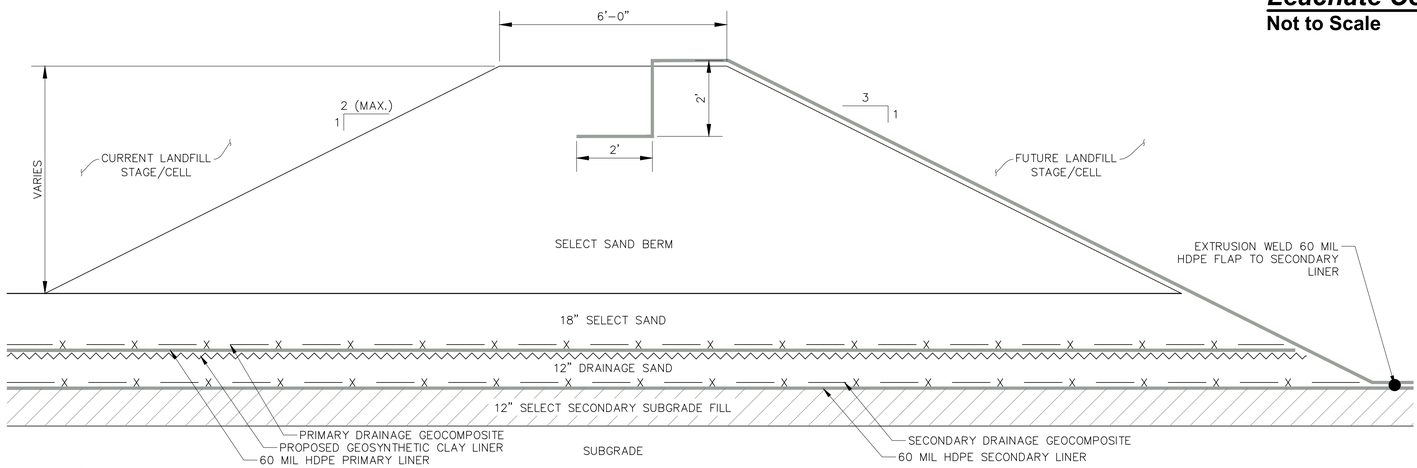
Typical Liner Section (Slope Areas) — 2

Not to Scale



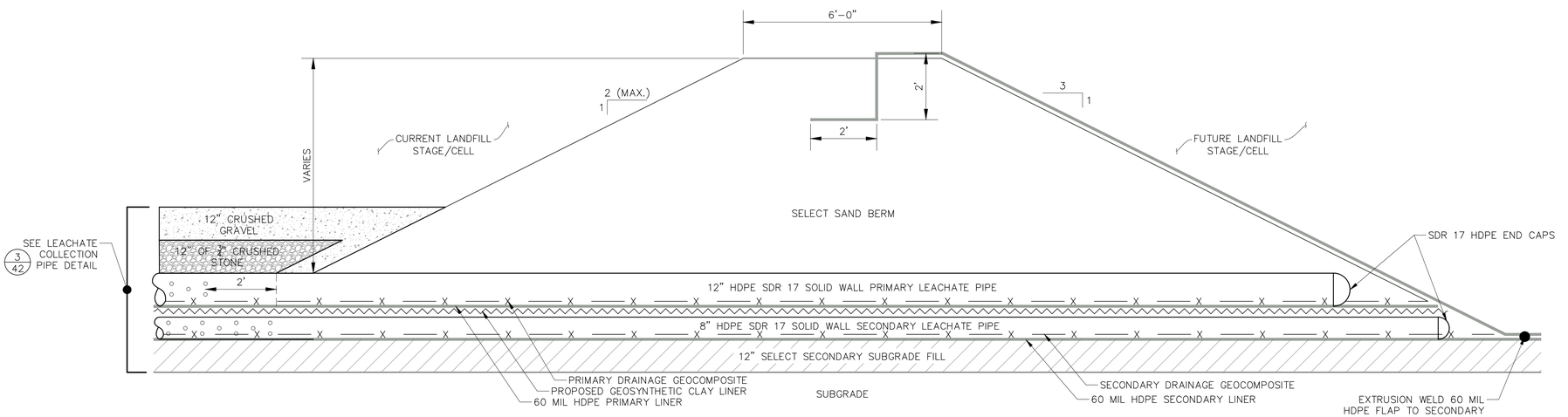
Leachate Collection Pipe — 3

Not to Scale



Cell Diversion Berm — 4

Not to Scale



Cell Diversion Berm - Pipe Penetration — 5

Not to Scale

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STATE OF NEW HAMPSHIRE - ADAM J SANDAHL 14424 LICENSED PROFESSIONAL ENGINEER

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approved by: AJS
scale:
date: October 2023
project no: 1101
checked by: AJS

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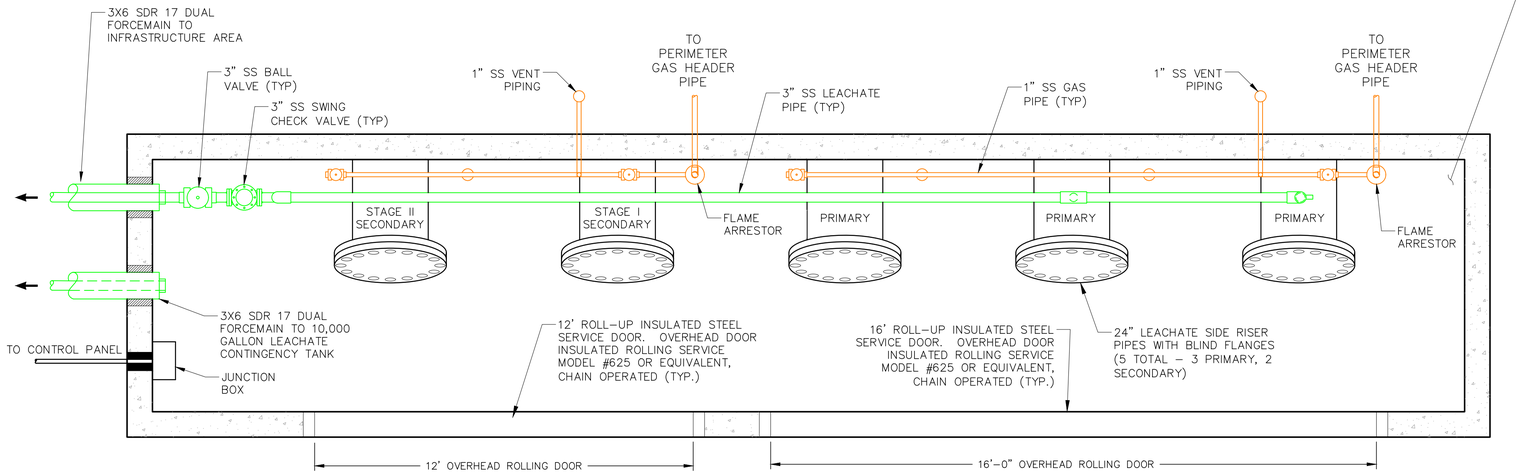
Landfill Details

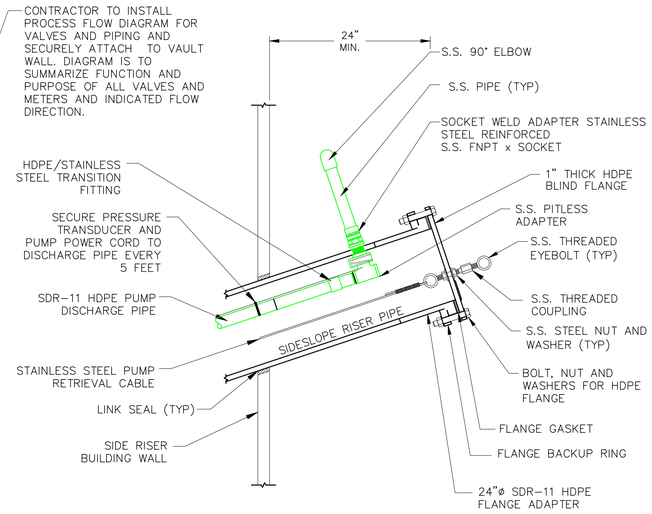
drawing no. D-1

sheet: 37 of 50



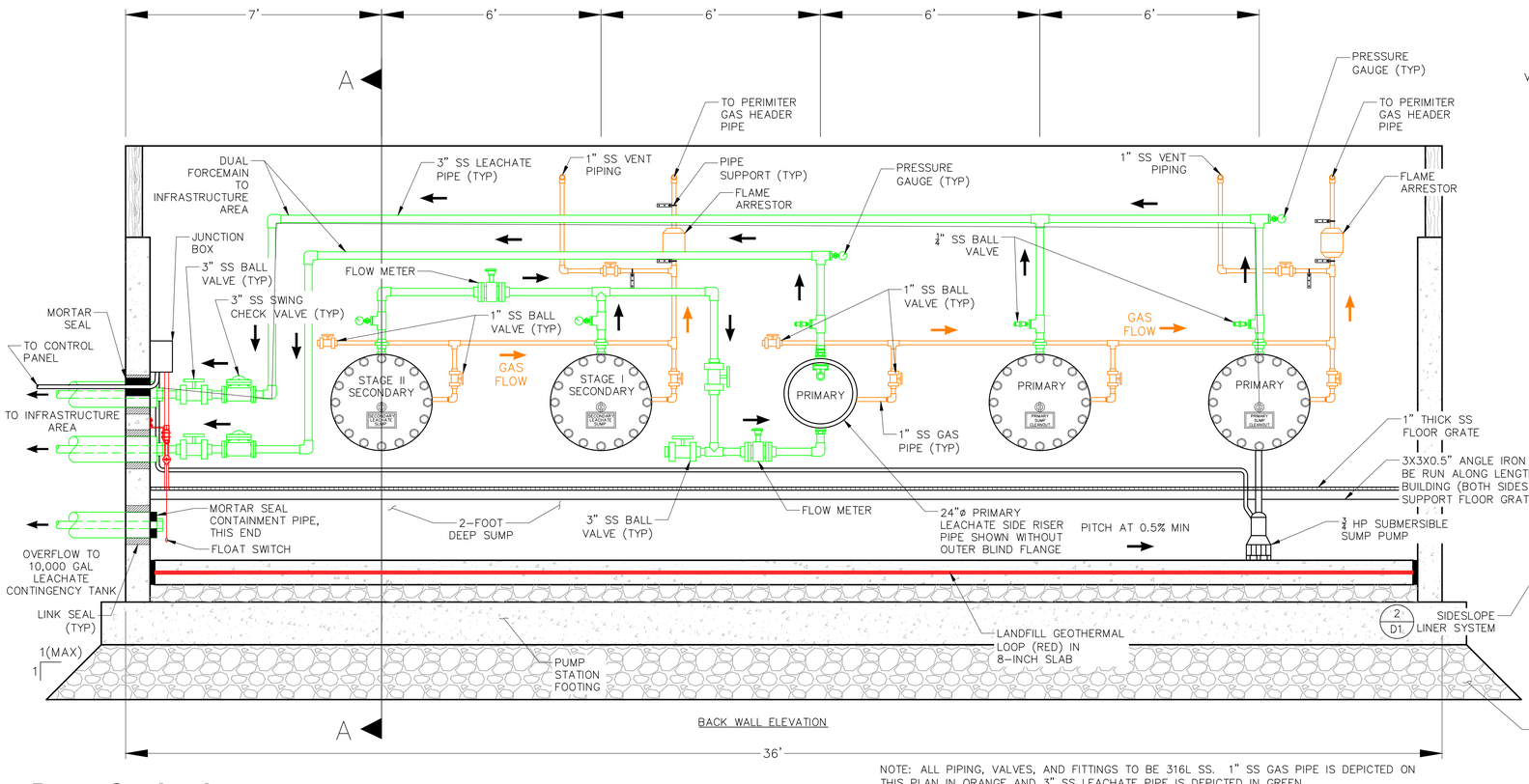
NOTE:
TWO COATS OF SIKAGARD 62 SHALL BE APPLIED TO ALL CONCRETE SURFACES INSIDE THE PUMP STATION. CONCRETE SURFACE TO BE COATED SHALL BE DRY, FREE OF SURFACE VOIDS, HONEYCOMBED CONCRETE, CRACKS, MORTAR SMEARS, DIRT, AND FORM RELEASE AGENTS. SURFACE DEFECTS SUCH AS CRACKS, HOLES, OR CAVITIES SHALL BE FILLED AND FINISHED FLUSH WITH A PORTLAND CEMENT GROUT OR CONCRETE. VOIDS IN SURFACES ARE TO BE FILLED TO CREATE A SMOOTH, SLIGHTLY POROUS SURFACE. CLEAN ALL SURFACES TO REMOVE DIRT, MUD, DEBRIS, DUST, LAITANCE, ETC.

TOP ELEVATION



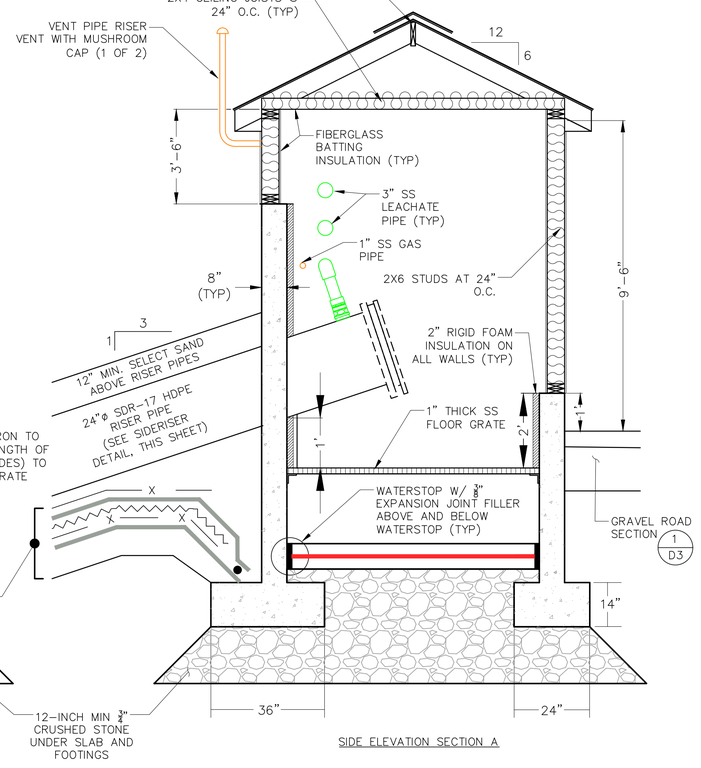
NOTE:
CONTRACTOR SHALL PROVIDE AN ENGRAVED STAINLESS STEEL LABEL ON THE TOP OF EACH RISER THAT SHOWS THE TOTAL LENGTH OF THE SIDE RISER PIPE ALONG THE INVERT.

SIDERISER DETAIL



BACK WALL ELEVATION

NOTE: ALL PIPING, VALVES, AND FITTINGS TO BE 316L SS. 1" SS GAS PIPE IS DEPICTED ON THIS PLAN IN ORANGE AND 3" SS LEACHATE PIPE IS DEPICTED IN GREEN.



SIDE ELEVATION SECTION A

Pump Station Layout

Not to Scale

1

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STATE OF NEW HAMPSHIRE – REGISTERED PROFESSIONAL ENGINEER – ADAM J SKINGLE – 14741 – LICENSED

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approved by: AJS
scale:
date: October 2023
project no: 1101
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Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Leachate Details 1

drawing no. D-2

sheet: 38 of 50

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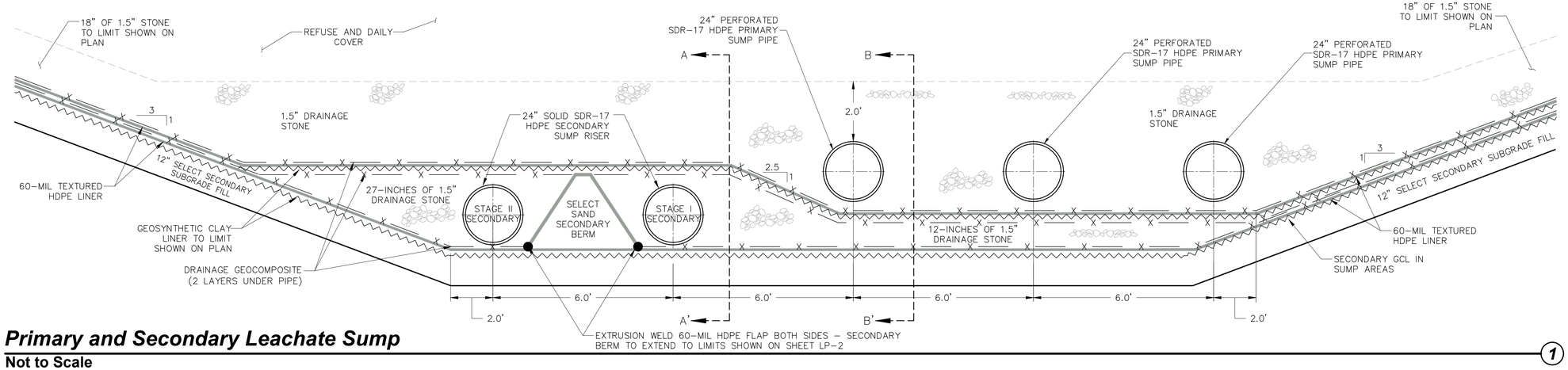
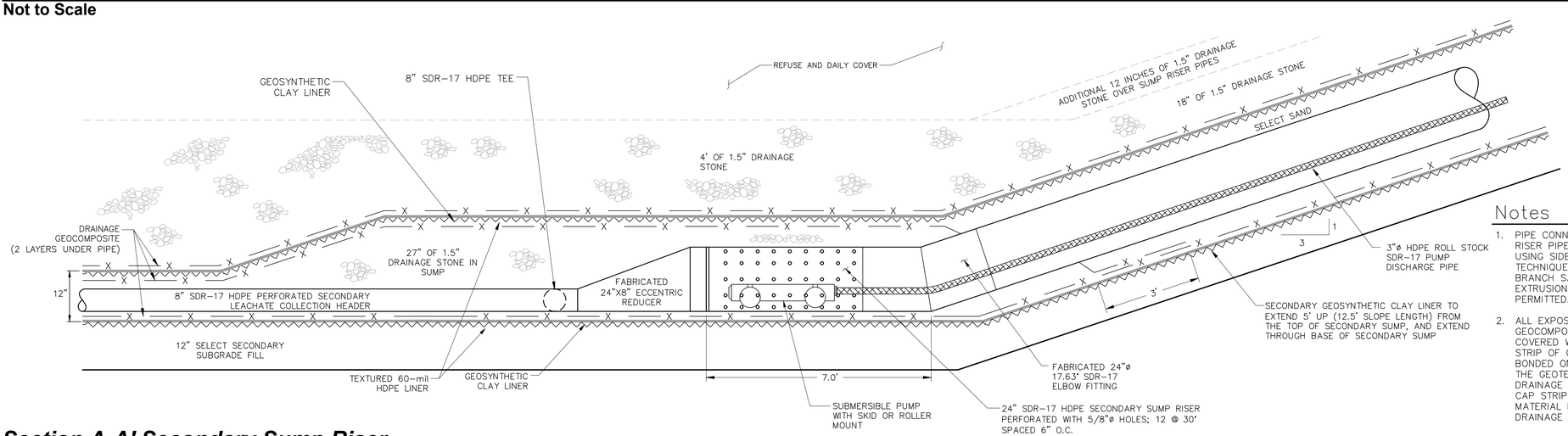


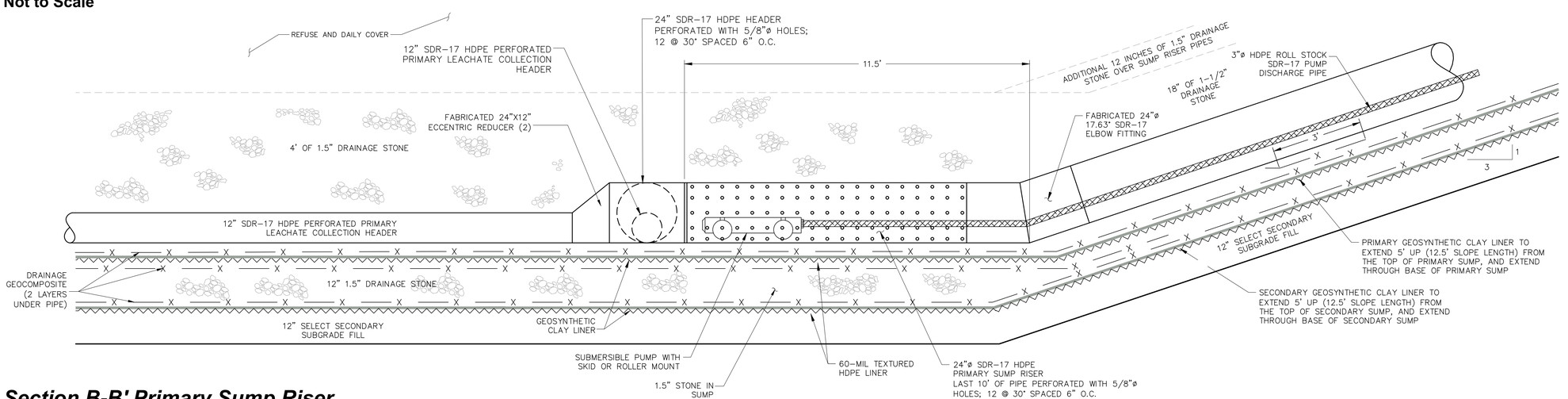
Primary and Secondary Leachate Sump

Not to Scale — (1)



Section A-A' Secondary Sump Riser

Not to Scale — (2)



Section B-B' Primary Sump Riser

Not to Scale — (3)

Notes

1. PIPE CONNECTIONS TO 24"ø RISER PIPES SHALL BE MADE USING SIDE FUSION WELDING TECHNIQUES OR ELECTROFUSION BRANCH SADDLE FITTINGS. EXTRUSION WELDING IS NOT PERMITTED.
2. ALL EXPOSED ENDS OF DRAINAGE GEOCOMPOSITE SHALL BE COVERED WITH AN END CAP STRIP OF GEOTEXTILE HEAT BONDED ON THE TOP SIDE OF THE GEOTEXTILE PORTION OF THE DRAINAGE GEOCOMPOSITE. END CAP STRIP SHALL BE THE SAME MATERIAL PROVIDED ON THE DRAINAGE GEOCOMPOSITE.

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date: October 2023	project no: 1101	checked by: AJS	

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Leachate Details 2

drawing no. *D-3*

sheet: 39 of 50

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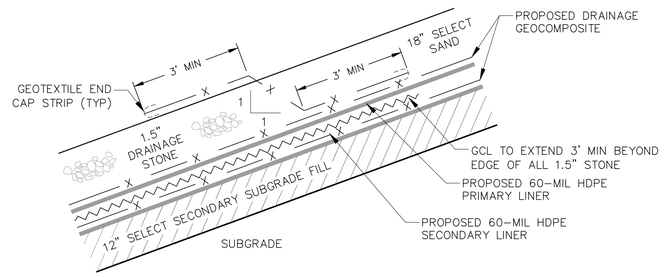
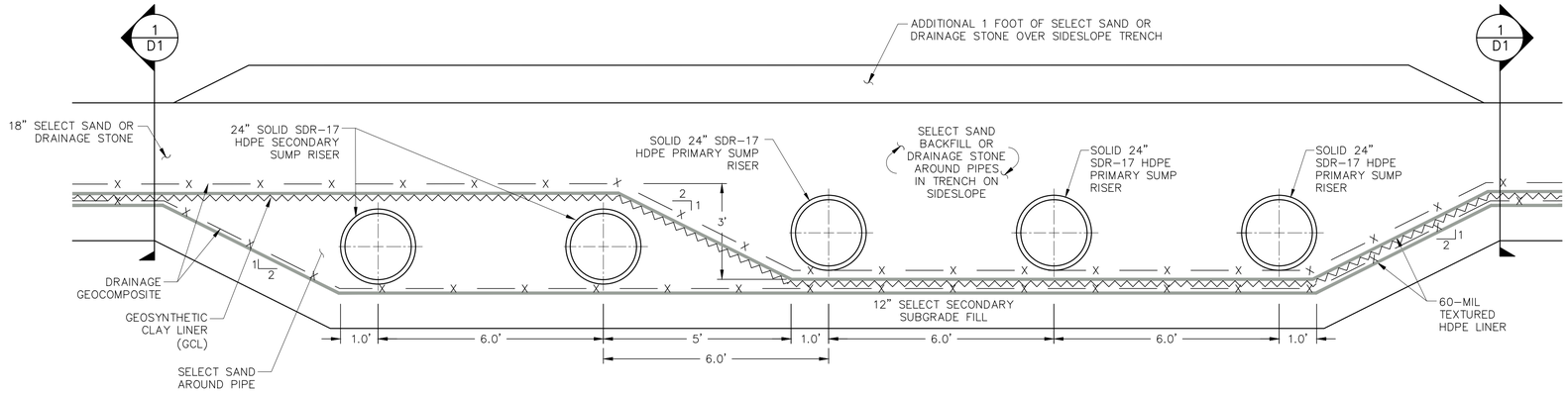
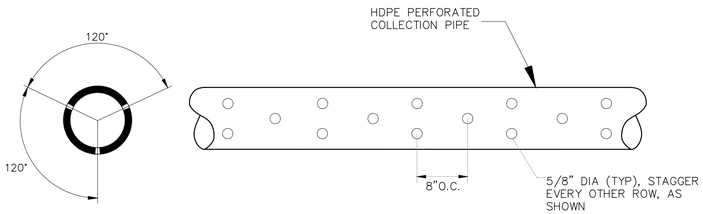


Stone/Sand Transition (1)
Not to Scale

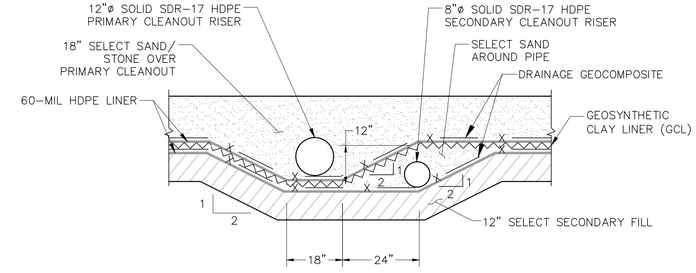


Side Slope Sump Riser Section (2)
Not to Scale



NOTES:
1. PRIMARY LEACHATE HEADER COLLECTION PIPE INSIDE LANDFILL SHALL BE 12" DIA. HDPE SDR 17.
2. PRIMARY LATERAL LEACHATE COLLECTION PIPE INSIDE LANDFILL SHALL BE 8" DIA. HDPE SDR 17.
3. SECONDARY LEACHATE COLLECTION PIPE INSIDE LANDFILL SHALL BE 8" DIA HDPE SDR 17.
4. PRIMARY AND SECONDARY CLEANOUT/VENT PIPES ARE NON-PERFORATED.

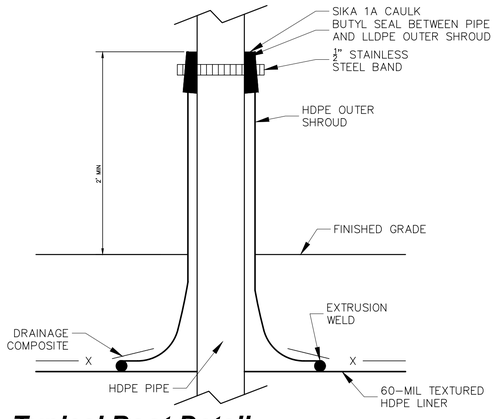
Perforated Collection Pipe (3)
Not to Scale



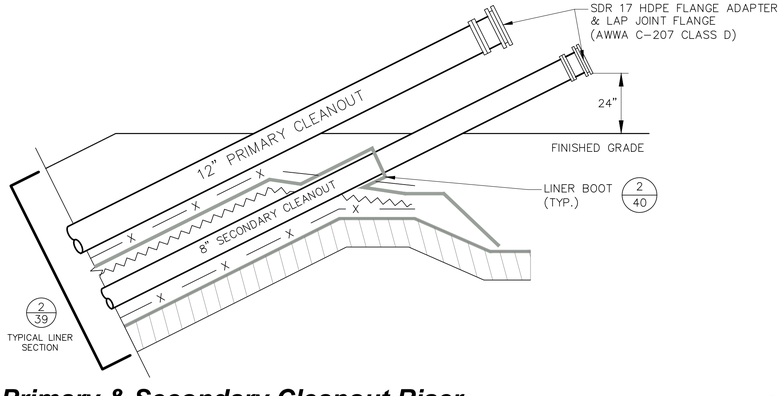
PRIMARY AND SECONDARY

NOTES:
1. CLEANOUTS SHALL EXTEND 24" ABOVE FINISHED GRADE AND PROVIDED WITH SDR 17 HDPE FLANGE ADAPTER & LAP JOINT FLANGE.
2. SEE BOOT REQUIREMENTS FOR SECONDARY CLEANOUT AT ANCHOR TRENCH THIS SHEET.

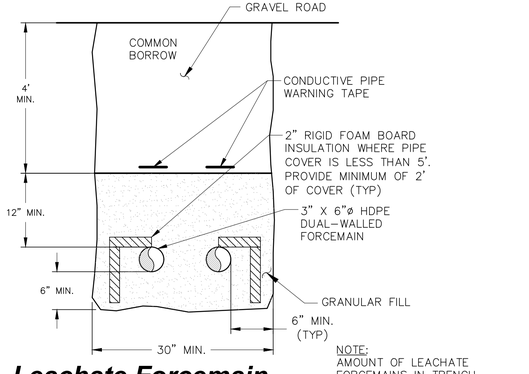
Cleanout Cross Section (4)
Not to Scale



Typical Boot Detail (5)
Not to Scale



Primary & Secondary Cleanout Riser (6)
Not to Scale



NOTE:
AMOUNT OF LEACHATE FORCEMAINS IN TRENCH VARIES.SEE PLAN FOR MORE DETAIL.

Leachate Forcemain Outside Anchor Trench (7)
Not to Scale

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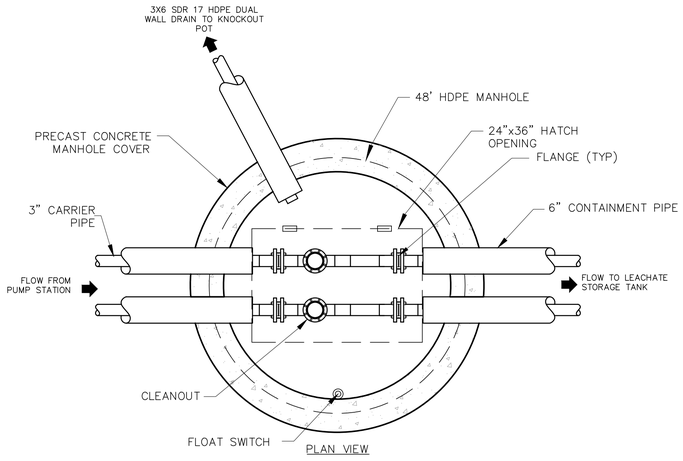
scale:
date: October 2023
project no: 1101
checked by: AJS

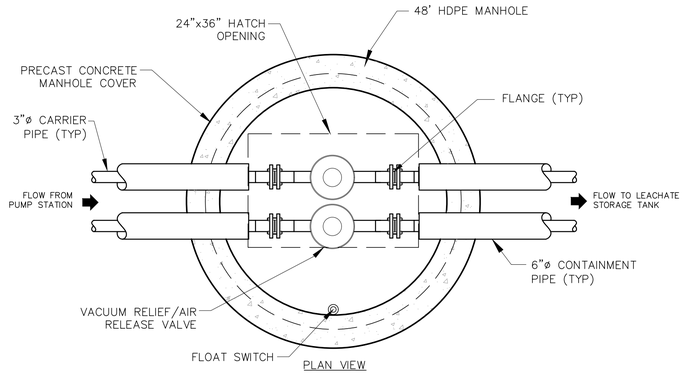
Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

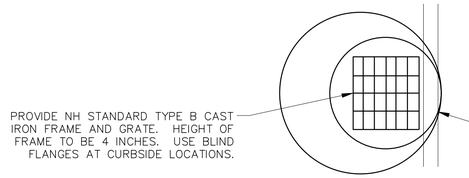
Leachate Details 3

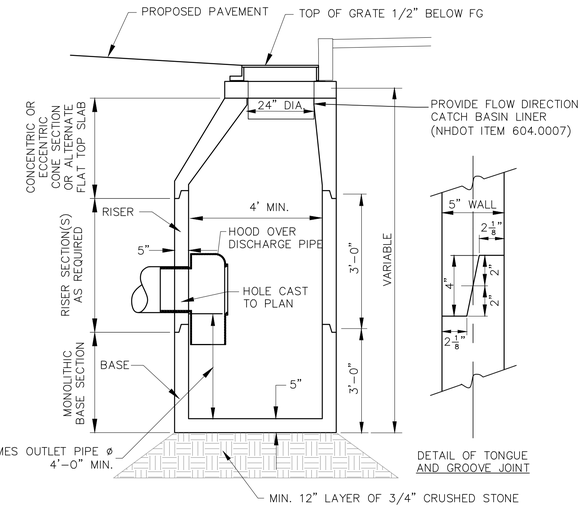
drawing no. D-4

sheet: 40 of 50





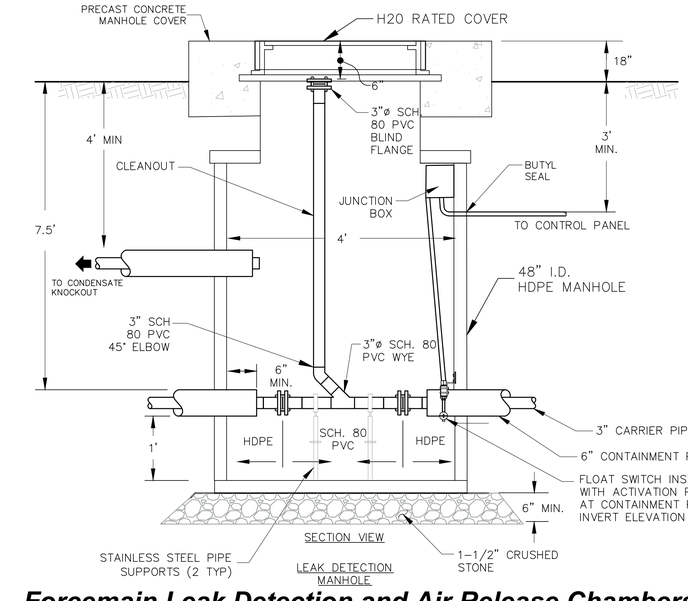


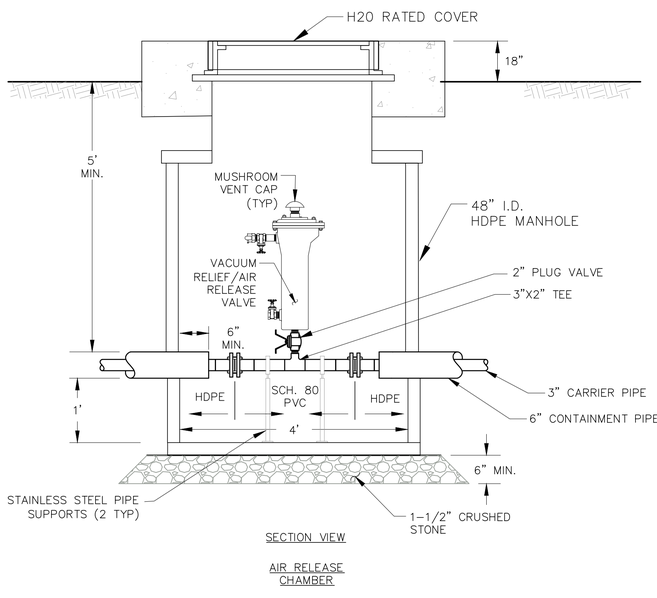


Deep Sump Catch Basin Detail

Not to Scale

1





Forcemain Leak Detection and Air Release Chambers

Not to Scale

2

GENERAL LEAK DETECTION AND AIR RELEASE CHAMBER NOTES:

1. ASSUME CLASS 1 DIVISION 1 GROUP D ATMOSPHERE IN ALL BELOW-GRADE STRUCTURES, INCLUDING MANHOLES AND VALVE BOXES.
2. FLOAT SWITCH CIRCUITS SHALL BE INTRINSICALLY SAFE.
3. CONTRACTOR SHALL PROVIDE SUPPORTS AND RESTRAINTS AS REQUIRED TO SECURE THE PIPE SYSTEM IN THE MANHOLES.
4. PROVIDE FULL-FACE VITON GASKET FOR ALL FLANGE CONNECTIONS.
5. CONTAINMENT PIPES ARE TO BE LEFT OPEN-ENDED IN MANHOLES UNLESS OTHERWISE NOTED.
6. FORCE MAIN PIPING SHALL BE SDR-17 CARRIER PIPE WITHIN SDR-17 CONTAINMENT PIPE UNLESS OTHERWISE NOTED.
7. MANHOLES SHALL BE 48" I.D., DR21 PE 4710 HDPE SOLID WALL MANHOLES.
8. ALL SECTIONS OF THE MANHOLE SHALL BE WELDED TOGETHER AND WATER TIGHT.
9. PIPE STUBS SHALL BE WELDED TO THE MANHOLE AND BE WATER TIGHT.
10. OFF-ROAD MANHOLES:
    a. RIM ELEVATION SHALL BE 1.5-FT ABOVE FINISHED GRADE.
    b. COVERS SHALL BE A FLAT, HDPE, HINGED COVER, LOCKABLE, AND WITH STAINLESS STEEL HARDWARE.
    c. NOTED MANHOLES WILL BE DESIGNATED AS LEAK DETECTION MANHOLES AND THE INLET PIPE FROM THE SECONDARY LEACHATE SELECTION SYSTEM SHALL BE FABRICATED PER THE DETAIL ON THIS SHEET.
    d. FALL PROTECTION GRATING IN LEAK DETECTION MANHOLES SHALL INCLUDE A 2-FT DIA. HOLE IN THE GRATING TO ALLOW FOR A BUCKET TO BE LOWERED INTO THE MANHOLE BELOW THE PIPING FROM THE LANDFILL.

no.	revision	date	by

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STATE OF NEW HAMPSHIRE ADAM J SKUDAL 14741 LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
scale:
date: October 2023
project no: 1101
checked by: AJS

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Leachate Details 4

drawing no. *D-5*

sheet: 41 of 50

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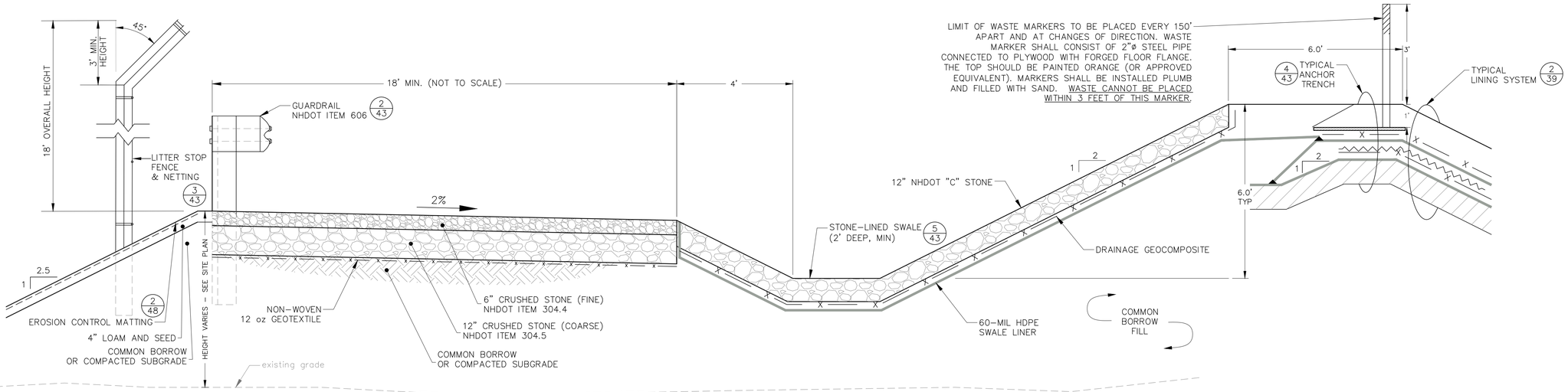
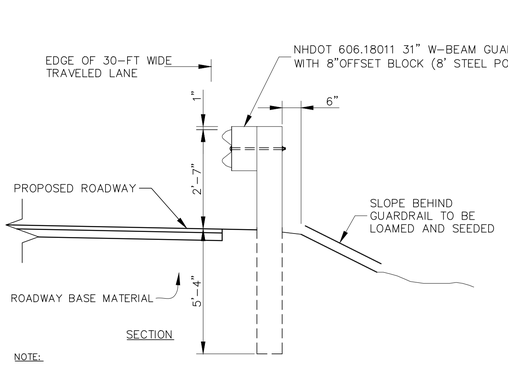


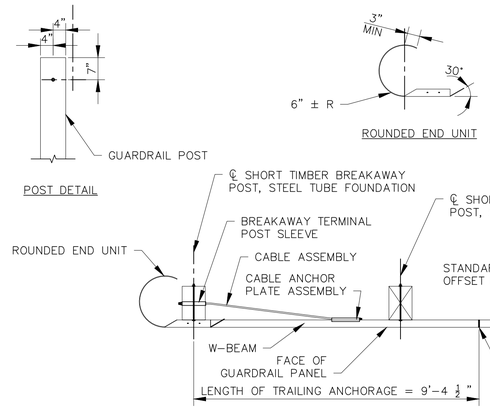
Typical Landfill Berm & Roadway (1)

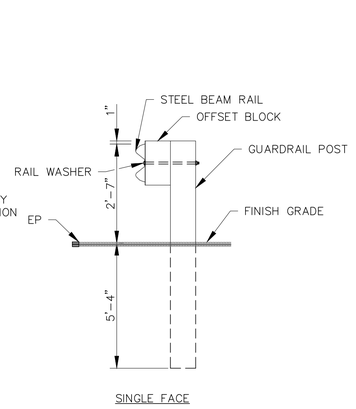
Not to Scale



NOTE:

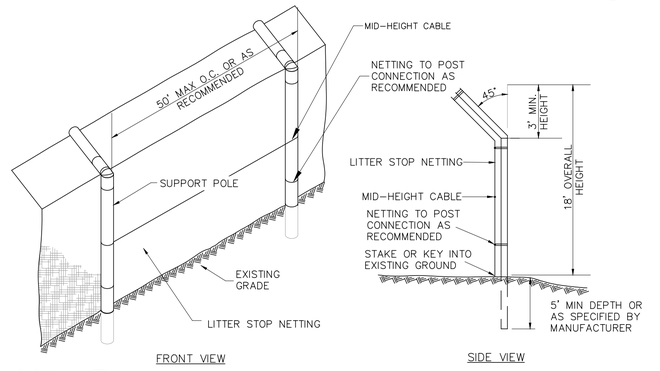
1. GUARDRAIL AND POSTS SHALL CONFORM WITH SECTION 606 OF THE NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.





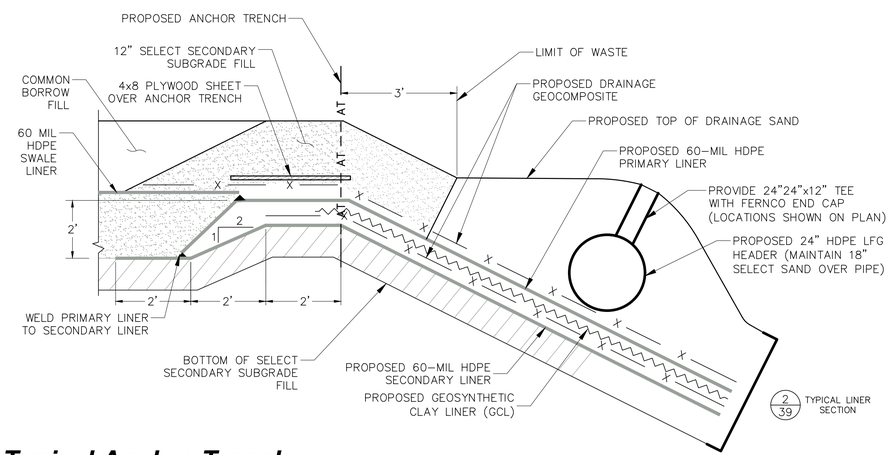
Typical Guardrail Detail (2)

Not to Scale



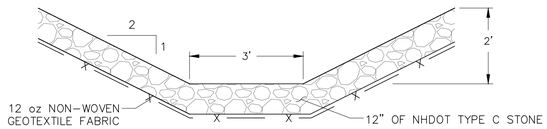
Litter Fence (3)

Not to Scale



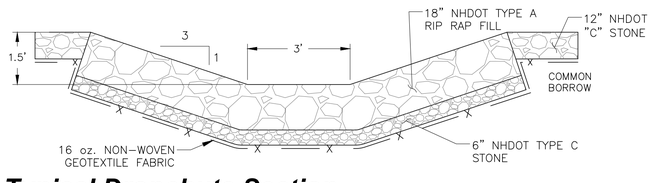
Typical Anchor Trench (4)

Not to Scale



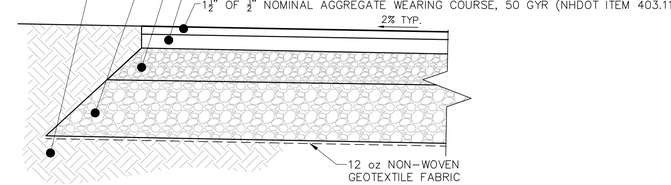
Stone-Lined Swale (5)

Not to Scale



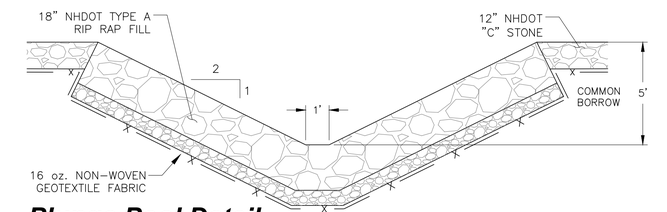
Typical Dropchute Section (6)

Not to Scale



General Pavement Section (7)

Not to Scale



Plunge Pool Detail (8)

Not to Scale

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no.	revision	date	by

NEW HAMPSHIRE - BRENDAN ADAM J SANDAL NUMBER 15355 LICENSED PROFESSIONAL ENGINEER

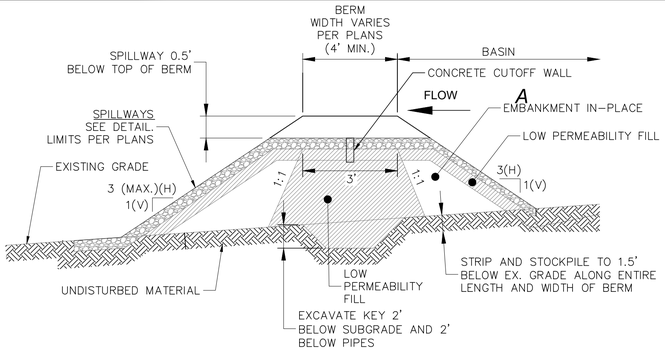
designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
scale:
date: October 2023
project no: 1101
checked by: AJS

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Site Details

drawing no. D-6

sheet: 42 of 50



LOCATION	MATERIAL	NHDOT SPEC #	LOOSE LIFT THICKNESS (IN)	COMPACTION REQUIREMENTS (% MDD)[1]
EMBANKMENT	NATIVE SOIL[2]	203.6	12 (MAX)	92%[3]
LOAM COVER	BORROW[2]	646.51	4 (MIN)	80%
IMP. CORE	LOW PERMEABILITY	203.53	6 (MAX)	95%[3]

NOTES:

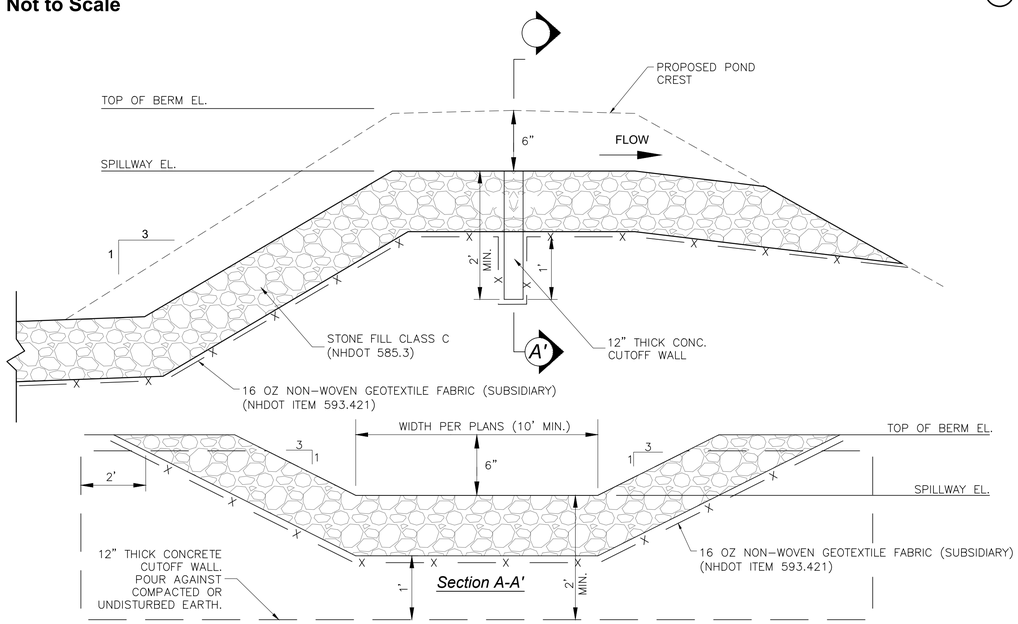
1. MDD: MAXIMUM DRY DENSITY.
2. ACCEPTABLE TO ENGINEER.
3. COMPACT TO TEST AVERAGE OF 92%, NO TEST LESS THAN 90.
4. BERM MATERIAL, CORE DIMENSIONS, AND PLACEMENT SPECIFICATIONS ARE PRELIMINARY AND NOT FOR CONSTRUCTION. FINAL DESIGN BY OTHERS.

LOW PERMEABILITY FILL	
SIEVE SIZE	% PASSING
3 IN	100
#4	80–100
#40	60–90
#100	40–60
#200	25–45

Stormwater Dam/Berm Detail (1)
Not to Scale

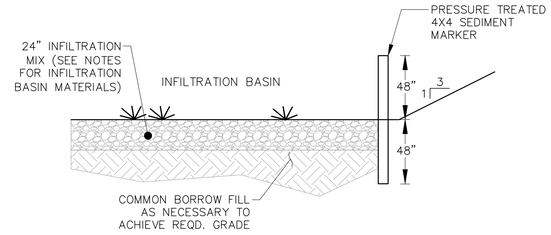
Forebay	Rock Check Dam	Floor of Pond
3	1122.00	1120.00
5	1134.00	1132.00
6	1126.00	1124.00
7	1142.00	1140.00
8	1150.00	1148.00
9	1177.00	1175.00
10	1212.00	1210.00
11	1144.00	1142.00
12	1139.00	1137.00
13	1167.00	1165.00
DD1	998.00	996.00
DD2	1049.00	1047.00
DD3	1077.25	1075.25
DD3A	1096.00	1094.00
DD4	1100.00	1098.00
DD5	-	1147.00
DD6	1147.00	1145.00

Rock Check Dam for Forebay BMP Outlet (2)
Not to Scale



POND	Top of Berm	Spillway	Floor of Pond
1	1138.00	1137.50	1135.00
2	1111.00	1110.50	1106.00
3	1122.00	1121.50	1115.00
4	1142.00	1141.50	1139.00
5	1134.00	1133.50	1129.75
6	1126.00	1125.50	1124.00
7	1142.00	1141.50	1139.00
8	1150.00	1149.50	1145.00
9	1177.00	1176.50	1173.00
10	1211.00	1210.50	1207.00
11	1144.00	1143.50	1141.00
12	1136.00	1135.50	1134.00
13	1167.00	1166.50	1163.00
DD1	999.00	998.50	997.50
DD1A	988.00	987.50	985.00
DD2	1049.00	1048.50	1047.00
DD3	1077.25	1076.75	1074.25
DD3A	1096.00	1095.50	1094.50
DD4	1101.00	1100.50	1100.00
DD5	1139.00	1138.50	1137.00
DD6	1148.00	1147.50	1144.00

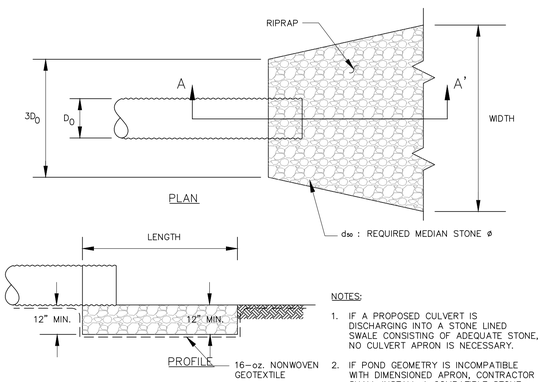
Spillway Detail (4)
Not to Scale



INFILTRATION BASIN NOTES:
INFILTRATION BASINS SHALL CONFORM TO THE REQUIREMENTS ON Env-Wq 1508.06, AS SUMMARIZED BELOW:

1. THE VOLUME OF THE PRACTICE SHALL BE LARGE ENOUGH TO COMPLETELY DRAIN THE WATER QUALITY VOLUME WITHIN 72 HOURS.
2. THE SEASONAL HIGH WATER TABLE (SHWT) AND BEDROCK SHALL BE AT LEAST 3 FEET BELOW THE BOTTOM OF THE PRACTICE.
3. THE PERIMETER OF THE BASIN SHALL BE CURVILINEAR.
4. SIDE SLOPES SHALL BE NO STEEPER THAN 3H:1V OR FLATTER THAN 20H:1V AND THE BASIN FLOOR SHALL BE FLAT (0% SLOPE).
5. THE BASIN FLOOR SHALL BE PREPARED WITH 24-INCHES OF AN APPROVED ENGINEERED MIX THAT WILL:
   A. INFILTRATE STORMWATER AT A RATE OF 5 IN/HOUR (AFTER APPLYING A FACTOR OF SAFETY OF 2)
   B. SUPPORT GRASS TURF THAT CAN SURVIVE INUNDATION FOR UP TO 72 HOURS AND STILL PROVIDE A DENSE, VIGOROUS TURF LAYER
   C. BE PLANTED WITH NATIVE TREES HAVING A CANOPY DIAMETER APPROXIMATELY 6' IN DIAMETER EACH, AND PLANTED DENSELY ENOUGH TO SHADE THE POND FLOOR.
6. WOODY VEGETATION ON AND NEAR EMBANKMENTS SHALL BE REMOVED.
7. IF AN INFILTRATION SYSTEM DOES NOT DRAIN WITHIN 72 HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY.

Stormwater Pond/Infiltration Basin (3)
Not to Scale



NOTES:

1. IF A PROPOSED CULVERT IS DISCHARGING INTO A STONE LINED SWALE CONSISTING OF ADEQUATE STONE, NO CULVERT APRON IS NECESSARY.
2. IF POND GEOMETRY IS INCOMPATIBLE WITH DIMENSIONED APRON, CONTRACTOR SHALL INSTALL A COMPATIBLE STONE LAYOUT WITH AN EQUIVALENT AREA.

Location	Pipe Size (ft)	Length (ft)	Width (ft)
DD1-OUT	1	12	15
DD2-OUT	1	10	13
DD3-OUT	1	7	10
DD3A-OUT	1	10	13
DD4-OUT	1	10	13
DD5-OUT	1	13	16
DD6-OUT	1	7	10
POND-2-OUT	2	14	20
POND-3-OUT	2	16	22
POND-4-OUT	1	9	12
POND-5-OUT	1	14	17
POND-6-OUT	1	8	11
POND-7-OUT	2	22	28
POND-8-OUT	2	19	25
POND-9-OUT	2	22	28
POND-10-OUT	2	17	23

POND-11-OUT	2	27	33
POND-12-OUT	2	14	20
POND-13-OUT	2	14	20
DD-1A-IN	1	17	20
FOREBAY-DD6-IN	1	12	15
POND-2-IN	1.25	39	43
DP-10	1.25	10	14
FOREBAY-3-IN	1.25	21	25
POND-4-IN	1	11	14
FOREBAY-5-IN	1.25	18	21
FOREBAY-6-IN	1	13	16
FOREBAY-7-IN	2	27	33
FOREBAY-8-IN	2	27	33
FOREBAY-9-IN	2	23	29
FOREBAY-11-IN	2	28	34
FOREBAY-12-IN	2	37	43
FOREBAY-13-IN	2	36	42

Stone Outlet Protection (5)
Not to Scale

no.	revision	date	by

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STATE OF NEW HAMPSHIRE – ADAM J SKINDAL – 23425 – LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
scale:
date: October 2023
project no: 1101
checked by: AJS

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set
Stormwater Details 1

drawing no. *D-7*
sheet: 43 of 50

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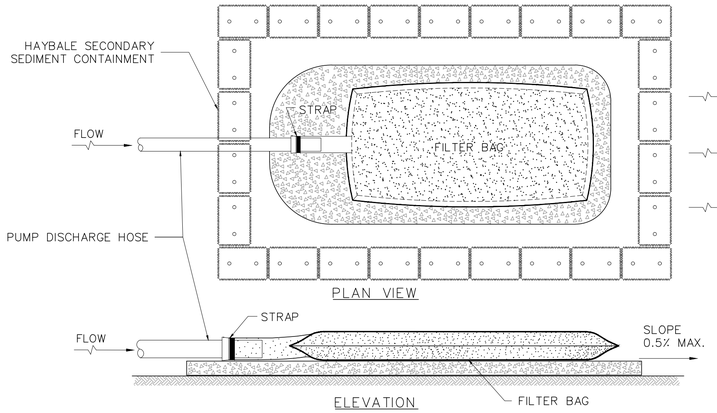


NOTES:

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE LOCATED ON A LEVEL OR 0.5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

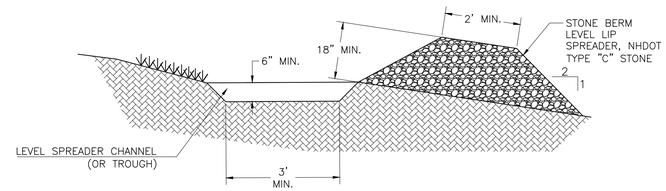
GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC^{-1})	1.2 SEC^{-1}	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

Dewatering Filter Bag Detail

Not to Scale

1



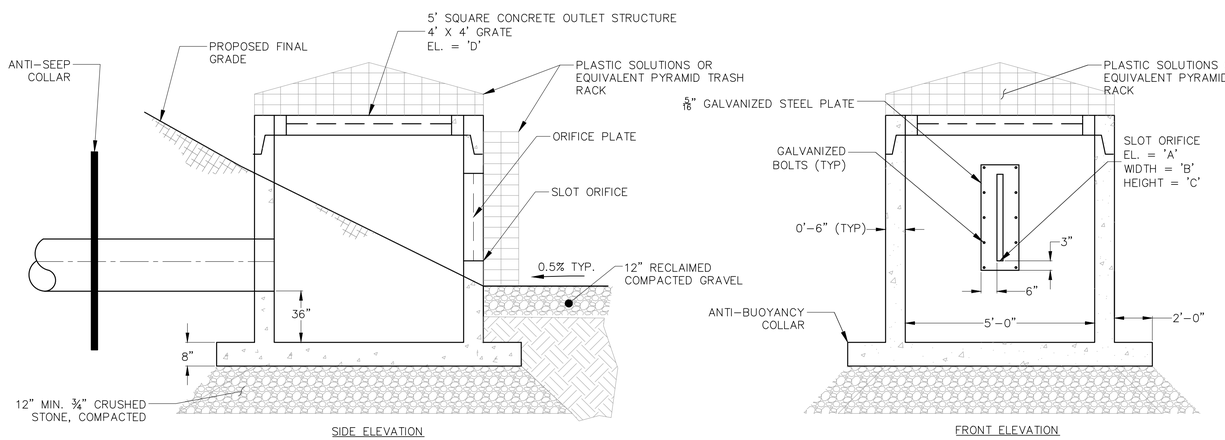
NOTES:

1. THIS DETAIL IS TAKEN FROM THE NEW HAMPSHIRE STORMWATER MANUAL, CHAPTER 4-6 FOR STONE BERM LEVEL SPREADERS (DESIGN REFERENCE MaineDEP (2006).
2. LEVEL SPREADER MUST DISCHARGE TO A VEGETATED RECEIVING AREA WITH CAPACITY TO CONVEY THE DISCHARGE WITHOUT EROSION. THE RECEIVING AREA MUST BE STABLE PRIOR TO CONSTRUCTION OF LEVEL SPREADER.

Stone Berm Level Spreader

Not to Scale

2



NOTES:

1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. PRECAST BOX STRUCTURE SHALL CONFORM TO ASTM C913 SPECIFICATIONS.
3. SEE DETAIL TITLE PIPE CONNECTION TO PRECAST MANHOLE STRUCTURES.
4. REINFORCEMENT:
   - 4.1. DEFORMED BARS SHALL CONFORM TO ASTM A-615 GRADE 60.
   - 4.2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185-GRADE 70
5. REIN. STEEL SHALL HAVE 1' MINIMUM COVER.
6. THE STRUCTURE SHALL BE DESIGNED FOR HS 20-44 LOADING AND TO PREVENT FLOTATION IF FULLY SUBMERGED.
7. CRUSHED STONE BEDDING SHALL CONFORM TO NHDOT 304.4.
8. PIPE ELEVATIONS SHOWN SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
9. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
10. OUTLET PIPE SHALL BE FLUSH WITH INNER WALL.
11. BASE SHALL BE A SINGLE CAST UP TO A MINIMUM OF 8 INCHES ABOVE OUTFALL PIPE OR TOP OF BMP SURFACE WHICH EVER IS HIGHER

POND	DD1	DD1A	DD2	DD3	DD3A	DD4	DD5	DD5 FOREBAY	DD6	2	3	4	5	6	7	8	9	10	11	12	13
A	-	985.00	-	-	-	-	-	1147.00	-	-	-	-	-	-	-	-	-	-	-	-	-
B (IN)	-	2	-	-	-	-	-	3.5Ø	-	-	-	-	-	-	-	-	-	-	-	-	-
C (IN)	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	998.00	987.90	1048.15	1076.65	1019.15	1100.40	1138.10	1149.00	1147.40	1109.40	1120.35	1141.40	1132.25	1124.40	1140.10	1148.20	1175.10	1209.20	1141.90	1135.40	1166.40
GRATE DIMENSIONS (FT)	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	2 X 2	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4	4 X 4

Typical Outlet Structure Detail

Not to Scale

3

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STATE OF NEW HAMPSHIRE - ADAM J SKADAL - 23425 LICENSED PROFESSIONAL ENGINEER

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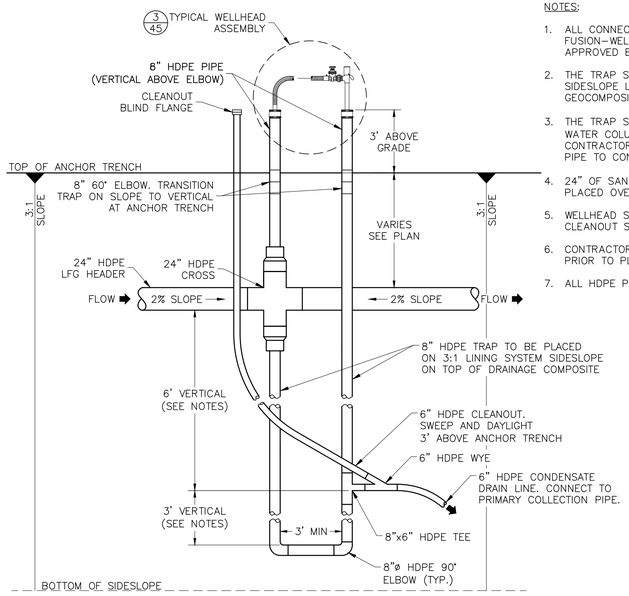
Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Stormwater Details 2

drawing no. *D-8*

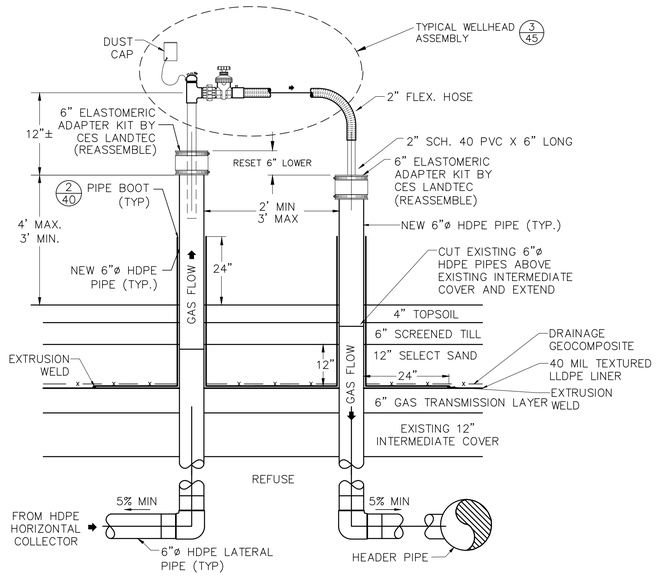
sheet: 44 of 50



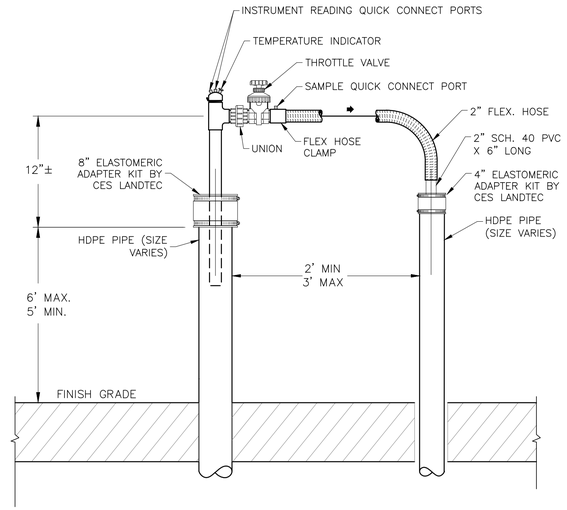
NOTES:

1. ALL CONNECTIONS ARE TO BE BUTT FUSION–WELDED UNLESS ALTERNATIVE APPROVED BY THE ENGINEER.
2. THE TRAP SHALL BE PLACED ON THE 3:1 SIDESLOPE LINING SYSTEM ON TOP OF THE GEOCOMPOSITE.
3. THE TRAP SHALL RESIST VERTICAL 100" OF WATER COLUMN (SYSTEM VACUUM). CONTRACTOR SHALL CONFIRM LENGTHS OF PIPE TO CONSTRUCT TRAP ON 3:1 SLOPE.
4. 24" OF SAND OR CRUSHED STONE SHALL BE PLACED OVER THE TRAP PIPING.
5. WELLHEAD STICKUP SHALL BE VERTICAL. CLEANOUT SHALL REMAIN 3:1 SLOPE.
6. CONTRACTOR SHALL FILL TRAP WITH WATER PRIOR TO PLACING TRAP IN SERVICE.
7. ALL HDPE PIPING SHALL BE SDR 17.

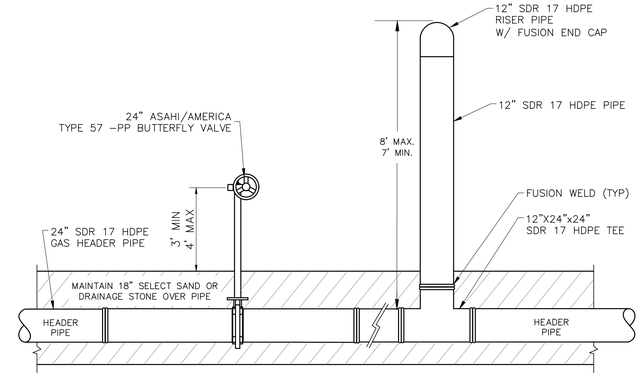
Condensate Trap (1)
Not to Scale



Horizontal Gas Collection Wellhead (2)
Not to Scale



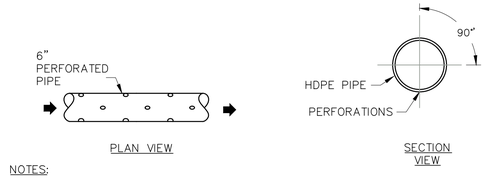
Typical Wellhead Assembly (3)
Not to Scale



NOTES:

1. VALVES SHALL BE ASAHI/AMERICA TYPE–57 PP BUTTERFLY VALVES WITH EPDM SEAT, PP DISC, GEAR DRIVEN WITH EXTENSION OR APPROVED EQUIVALENT.
2. CONTRACTOR TO PROVIDE ALL FITTINGS/ADAPTORS FOR DETAILED COMPONENTS SHOWN.

Flow Control Valve and Vertical Gas Riser (4)
Not to Scale



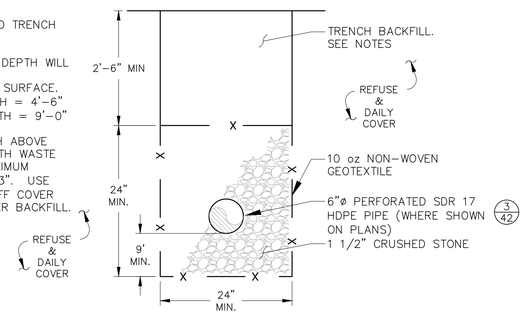
NOTES:

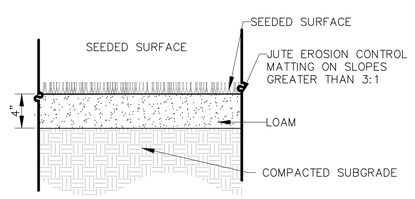
1. HOLES SHALL BE 1/2"ø DRILLED HOLES SPACED 12" APART IN 4 ROWS ALONG THE LENGTH OF THE PIPE. ROWS SHALL BE LOCATED 90°APART OFFSET 6" ALONG THE AXIS OF THE PIPE.

Typical Perforated Gas Pipe (5)
Not to Scale

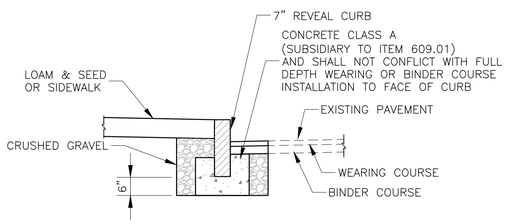
NOTES:

1. 2% MIN SLOPE TO TRENCH DRAIN PITS.
2. ACTUAL TRENCH DEPTH WILL VARY BASED ON TOPOGRAPHY AT SURFACE.
   –MINIMUM DEPTH = 4'–6"
   –MAXIMUM DEPTH = 9'–0"
3. BACKFILL TRENCH ABOVE PIPE BEDDING WITH WASTE EXCAVATED; MAXIMUM PARTICLE SIZE <3". USE 12" OF AUTOFLUFF COVER AT SURFACE OVER BACKFILL.

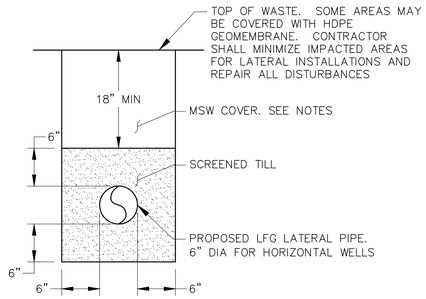




Loam and Seed (6)
Not to Scale



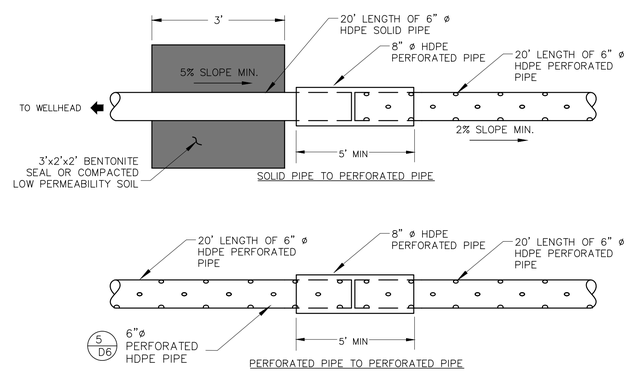
Concrete Curb Backing Detail (7)
Not to Scale



NOTES:

1. 24" MIN COVER FOR LATERALS
2. 5% MIN SLOPE
3. BACKFILL TRENCH ABOVE PIPE BEDDING WITH WASTE EXCAVATED; MAXIMUM PARTICLE SIZE <3". USE 12" OF AUTOFLUFF COVER AT SURFACE OVER BACKFILL.

Gas Lateral (8)
Not to Scale



Horizontal Gas Collection Well (9)
Not to Scale

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STATE OF NEW HAMPSHIRE – ADAM J SANDAHL – 17984 – LICENSED PROFESSIONAL ENGINEER

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Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Landfill Gas Details 1

drawing no. D-9

sheet: 45 of 50

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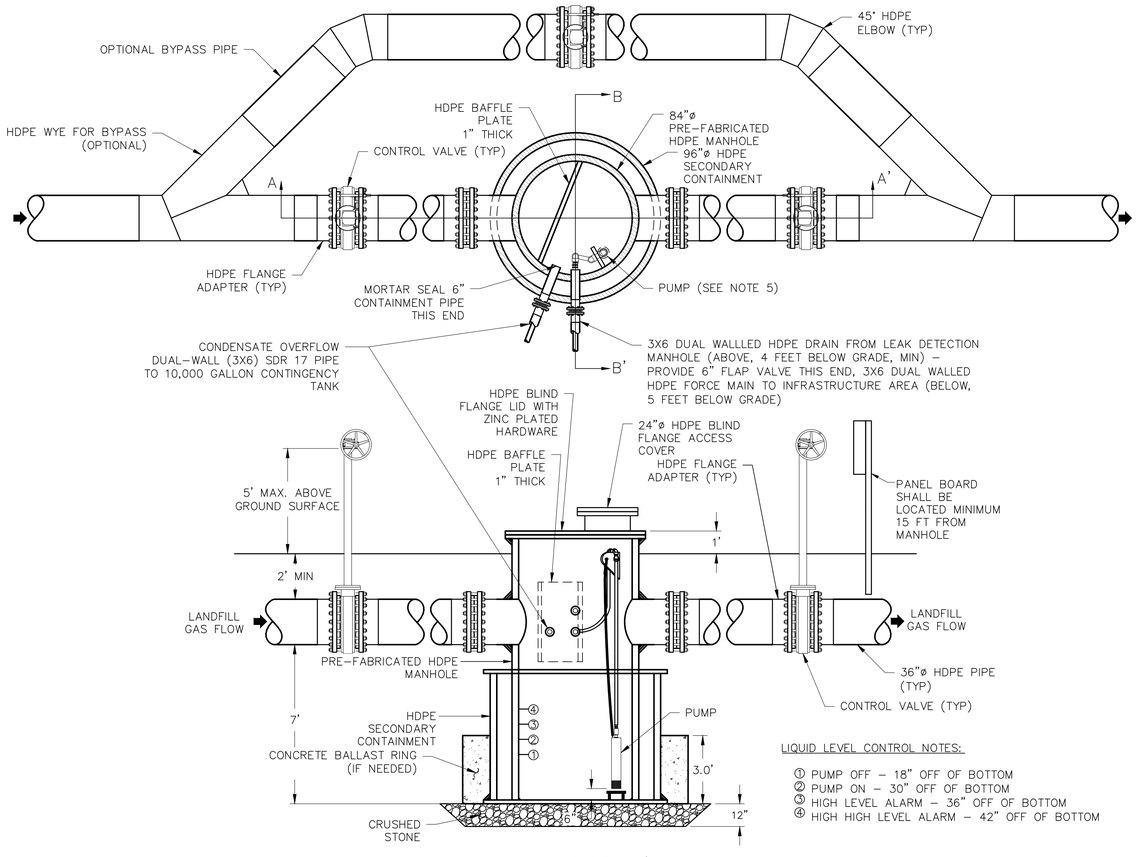


LIQUID LEVEL CONTROL NOTES:

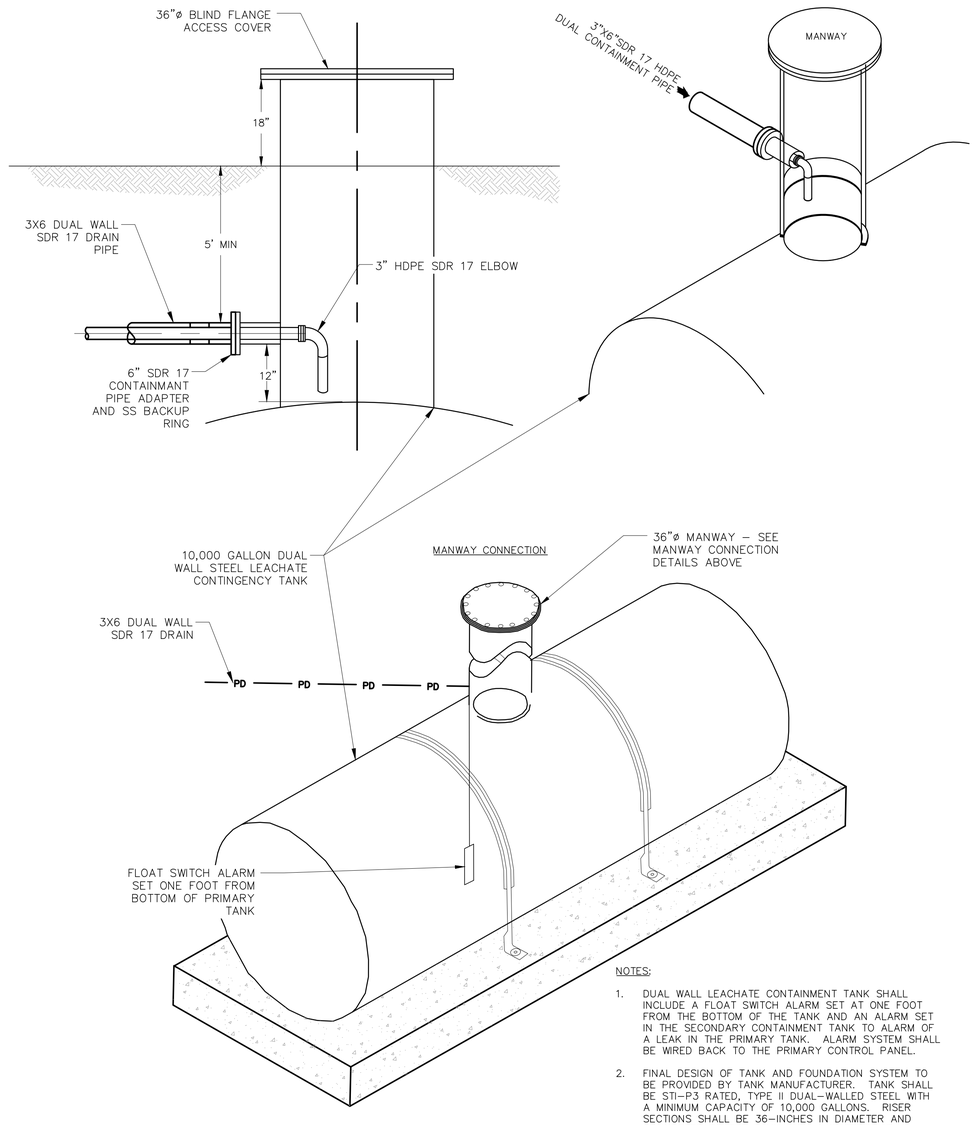
① PUMP OFF – 18" OFF OF BOTTOM
② PUMP ON – 30" OFF OF BOTTOM
③ HIGH LEVEL ALARM – 36" OFF OF BOTTOM
④ HIGH HIGH LEVEL ALARM – 42" OFF OF BOTTOM

NOTES:

1. CONDENSATE KNOCKOUT DESIGN CONFIGURATION IS SUBJECT TO CHANGE BASED ON CONSULTATION WITH HDPE MANHOLE MANUFACTURER. SHOP DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
2. CONDENSATE KNOCKOUT SHALL HAVE AN OSHA APPROVED CONFINED SPACE SIGN ATTACHED TO THE TOP OF THE COVER. SIGN SHALL BE 14" WIDE BY 10" HIGH, AND SHALL HAVE UV-RESISTANT PAINT ON AN ALUMINUM BASE. SIGN SHALL READ "DANGER, CONFINED SPACE, HAZARDOUS ATMOSPHERE, ENTER BY PERMIT ONLY."
3. CONDENSATE KNOCKOUT IS A CLASS 1 DIVISION 1 GROUP D CLASSIFIED SPACE. ELECTRICAL EQUIPMENT SHALL BE EXPLOSION-PROOF AND INTRINSICALLY-SAFE. CONDUIT SEALS SHALL BE PROVIDED ON ALL ELECTRICAL CONDUIT.
4. PUMP SHALL BE EPG COMPANIES SUREPUMP SERIES 2 MODEL 2-5 0.50 HP VERTICAL PUMP OR APPROVED EQUIVALENT. PUMP SHALL BE EXPLOSION PROOF RATED.
5. PUMP CONTROLS SHALL COMPENSATE FOR SYSTEM VACUUM.

Condensate Knockout Detail - Provided by Sanborn Head & Associates (1)

Not to Scale



NOTES:

1. DUAL WALL LEACHATE CONTAINMENT TANK SHALL INCLUDE A FLOAT SWITCH ALARM SET AT ONE FOOT FROM THE BOTTOM OF THE TANK AND AN ALARM SET IN THE SECONDARY CONTAINMENT TANK TO ALARM OF A LEAK IN THE PRIMARY TANK. ALARM SYSTEM SHALL BE WIRED BACK TO THE PRIMARY CONTROL PANEL.
2. FINAL DESIGN OF TANK AND FOUNDATION SYSTEM TO BE PROVIDED BY TANK MANUFACTURER. TANK SHALL BE STI-P3 RATED, TYPE II DUAL-WALLED STEEL WITH A MINIMUM CAPACITY OF 10,000 GALLONS. RISER SECTIONS SHALL BE 36-INCHES IN DIAMETER AND CONNECTED TO THE TANK WITH A WATERTIGHT, FLANGED CONNECTION.
3. TANK INTERIOR TO BE COATED WITH SHERWIN WILLIAMS CORROCOTE II ULTRALINER (A TWO-COMPONENT, SOLVENT-FREE POLYURETHANE RESIN)

10,000 Gallon Dual Wall Steel Leachate Contingency Tank (2)

Not to Scale

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STATE OF NEW HAMPSHIRE – ADAM J SKINDAL – 24896 – LICENSED PROFESSIONAL ENGINEER

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Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Landfill Gas Details 2

drawing no. D-10

sheet: 46 of 50

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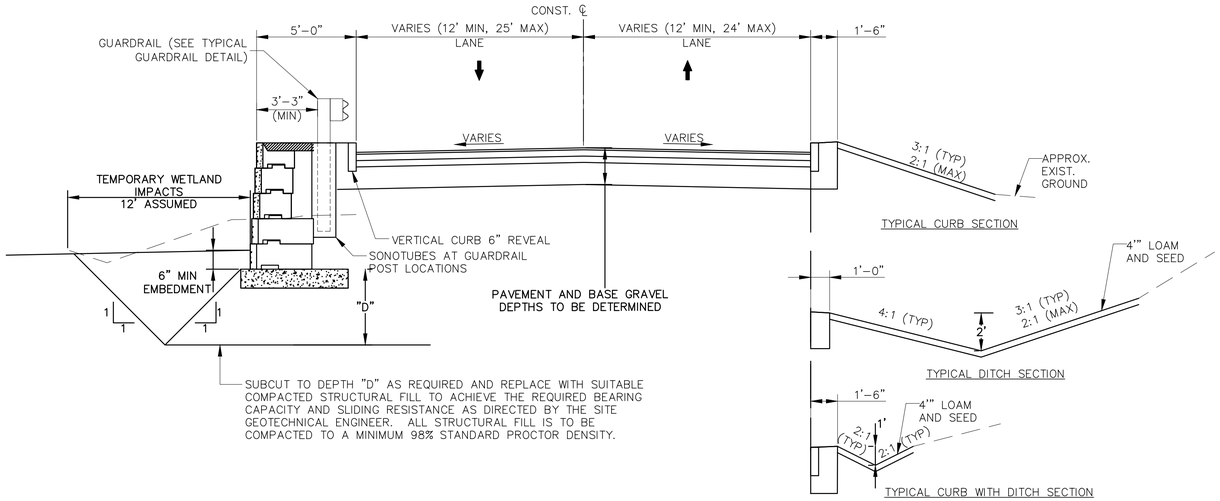
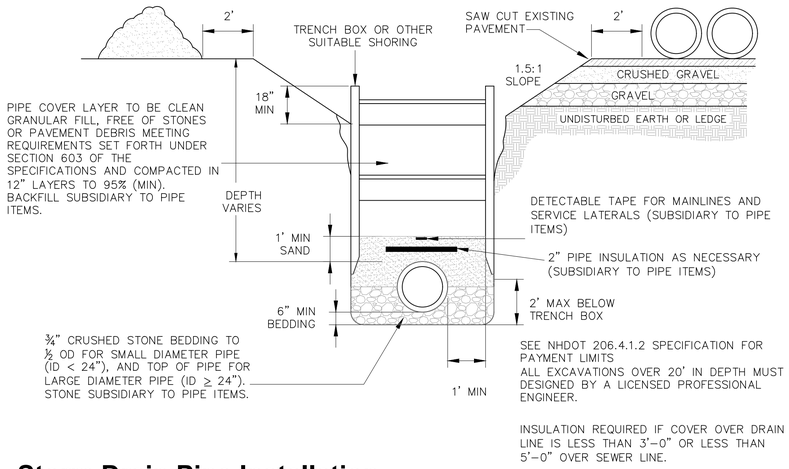


Douglas Drive Typical Section
Not to Scale

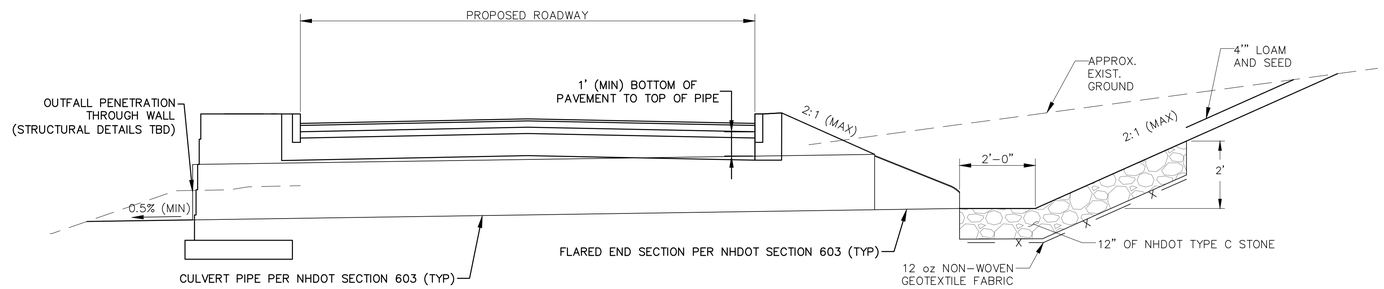
1

EXCAVATION TO BE CONSTRUCTED PER TYPICAL SECTION OR RECONSTRUCTED TO MATCH EXISTING PAVEMENT AND SUB-BASE DEPTHS.



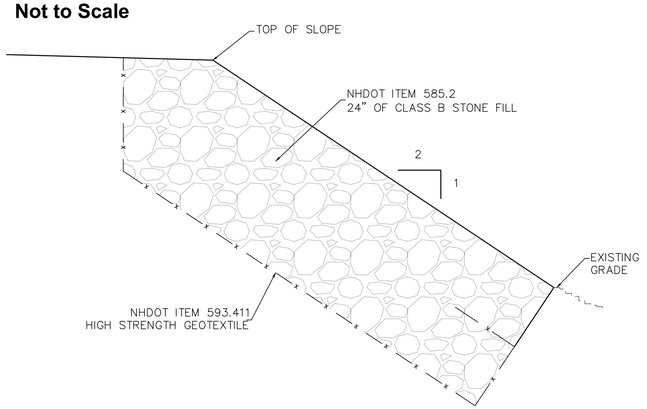
Storm Drain Pipe Installation
Not to Scale

2



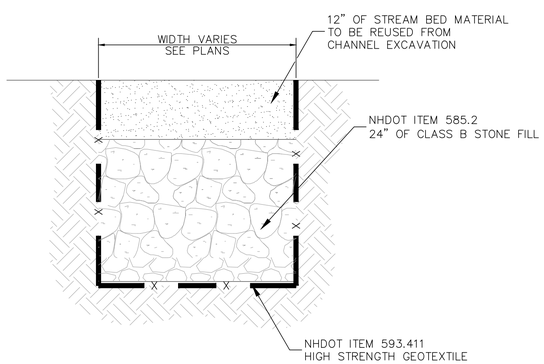
Roadway Cross Culvert Detail
Not to Scale

3



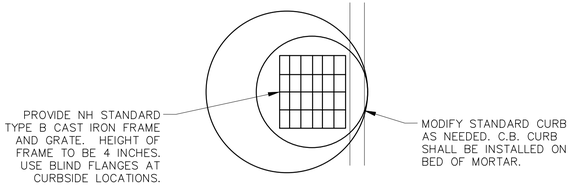
Slope Protection Detail
Not to Scale

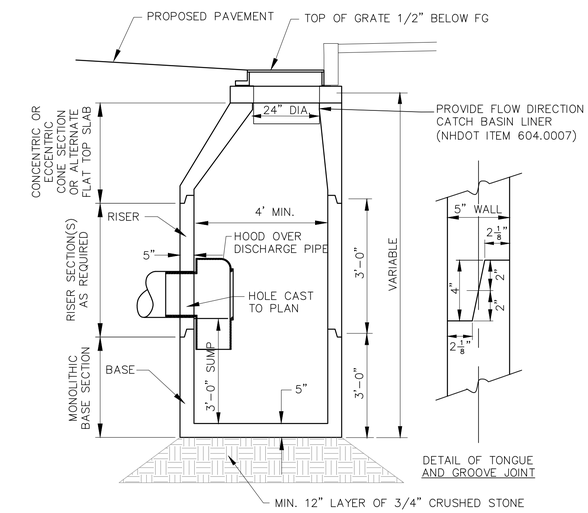
5



Culvert Infill Detail
Not to Scale

6





Catch Basin Detail
Not to Scale

4

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Granite State Landfill, LLC
Dalton, New Hampshire
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Roadway Details

drawing no. D-11

sheet: 47 of 50

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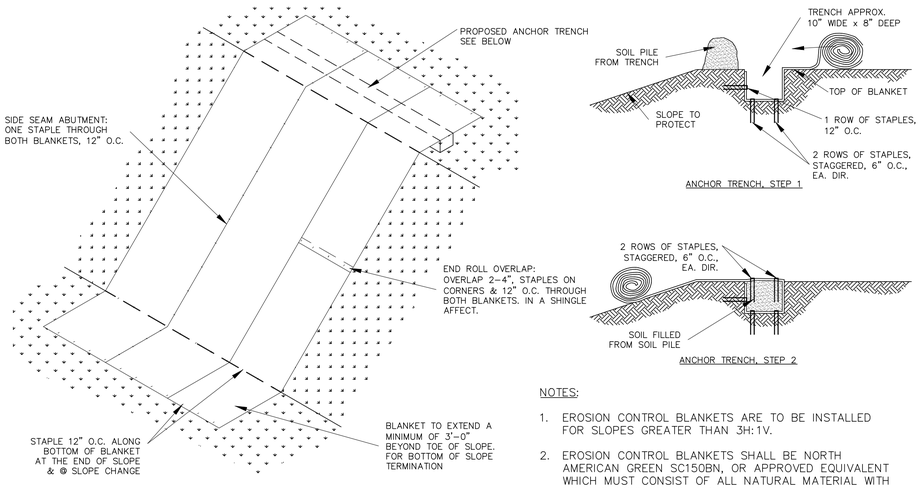
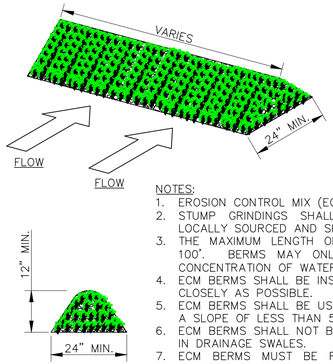


NOTES:

1. EROSION CONTROL BLANKETS ARE TO BE INSTALLED FOR SLOPES GREATER THAN 3H:1V.
2. EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GREEN SC150BN, OR APPROVED EQUIVALENT WHICH MUST CONSIST OF ALL NATURAL MATERIAL WITH NO PHOTOSYNTHETIC THREAD. BLANKETS SHALL BE INSTALLED IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.

Erosion Control Blanket Slope Detail

Not to Scale — 1



NOTES:

1. EROSION CONTROL MIX (ECM) BERMS SHALL CONFORM TO Env–Wq 1506.05.
2. STUMP GRINDINGS SHALL BE GENERATED FROM THE PROJECT SITE OR LOCALLY SOURCED AND SHOULD BE VOID OF INVASIVE SPECIES.
3. THE MAXIMUM LENGTH OF SLOPE ABOVE THE EROSION CONTROL BERM IS 100'. BERMS MAY ONLY BE UTILIZED IN AREAS WHERE THERE IS NO CONCENTRATION OF WATER.
4. ECM BERMS SHALL BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE.
5. ECM BERMS SHALL BE USED ONLY IF THE AREA UPSLOPE OF THE BERM HAS A SLOPE OF LESS THAN 5%.
6. ECM BERMS SHALL NOT BE INSTALLED IN LIVE STREAMS OR AS CHECK DAMS IN DRAINAGE SWALES.
7. ECM BERMS MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH.
8. THE ORGANIC MATTER CONTENT SHOULD BE BETWEEN 25% AND 65% BASED ON DRY WEIGHT THAT IS FIBROUS AND ELONGATED SUCH AS FROM SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR EQUIVALENT MANUFACTURED PRODUCTS AND NOT COMPRISED OF WOOD CHIPS, BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS.
9. THE MIX SHOULD NOT CONTAIN SILTS, CLAYS OR FINE SAND, HAVE A pH BETWEEN 5.0 AND 8.0, AND HAVE A PARTICLE SIZE BY WEIGHT OF 100% PASSING A 3–INCH SCREEN, 90 TO 100% PASSING A 1–INCH SCREEN, 70 TO 100% PASSING A 0/75–INCH SCREEN, AND 40 TO 75% PASSING A 0.25–INCH SCREEN.

Erosion Control Mix (ECM) Berm

Not to Scale — 2

NOTES:

1. CRUSHED STONE SHALL BE KEYED INTO THE BANKS OF THE CHANNEL.
2. FOR ACTIVE DRAINAGE OUTFLOW CHECK DAMS SHALL BE PLACED IN SERIES (100–FEET MIN) ALONG FLOW LINE TO RETAIN SEDIMENTS.
3. THE MAXIMUM HEIGHT OF THE STONE CHECK DAM SHALL NOT EXCEED 2 FEET.
4. STONE CHECK DAMS SHALL BE CHECKED AFTER EACH RAINFALL AND REPAIRED IMMEDIATELY.
5. THE MAXIMUM SPACING BETWEEN THE DAMS SHALL BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE OVERFLOW ELEVATION OF THE DOWNSTREAM DAM (POINT A ELEVATION = POINT B ELEVATION).

Stone Check Dam

Not to Scale — 3

NOTE:

1. AT A MINIMUM, SILT FENCE IS TO BE INSTALLED TO PROTECT WETLAND AREAS, WATERWAYS, EXISTING AND PROPOSED DRAINAGE FEATURES, SLOPES, LAWNS AND PLANTINGS ADJACENT TO THE WORK.

Silt Fence

Not to Scale — 4

FILTREXX FOR SEDIMENT CONTROL

COMPOST SOCK CONNECTION/ATTACHMENT DETAIL

NOTES:

1. COMPOST SOCKS SHALL BE FILTREXX SILTSOXX®, OR APPROVED EQUIVALENT.
2. FILTER MEDIA SHALL BE CONSISTENT WITH PRODUCT REQUIREMENTS.
3. COMPOST STOCKS TO REMAIN IN PLACE UNTIL SITE IS STABILIZED. REMOVAL OF THE SOCKS SHALL BE DETERMINED BY THE ENGINEER.
4. COMPOST AND SOCKS TO BE DISPOSED AT AN ON–SITE LOCATION DESIGNATED BY THE OWNER.

Compost Sock

Not to Scale — 5

Erosion Control Notes

1. PRIOR TO CONSTRUCTION AND THEREAFTER EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHALL BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. LAND SHALL NOT BE LEFT EXPOSED DURING THE WINTER MONTHS. PERIMETER CONTROLS, INCLUDING SILT FENCE, COMPOST SOCK, ECM BERMS, STORMWATER PONDS, AND INFILTRATION BASINS SHALL BE INSTALLED PRIOR TO ROUGH GRADING OF THE SITE.
2. THIS PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR–3800 RELATIVE TO INVASIVE SPECIES.
3. ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TO TAKE PLACE SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS. ALL SEED, LIME AND FERTILIZER PROGRAMS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS.
4. ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, OR LONGER THAN TWO WEEKS AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION, SHALL BE MACHINE HAY MULCHED AND SEEDED AT THE RATE OF 2 TONS PER ACRE. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT SHALL NOT EXCEED 5–ACRES AT ANY ONE TIME UNLESS AN AoT–APPROVED ENVIRONMENTAL MONITOR (EM) IS UTILIZED. THE EM SHALL COMPLETE REQUIRED INSPECTIONS AND REPORTING IN COMPLIANCE WITH SECTION ENV–WQ 1505(D) OF THE AoT RULES.
5. AVOID USE OF UNDISTURBED AREAS WHENEVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL TRAVEL THE ROADBEDS OF EXISTING AND FUTURE ROADS.
6. SILT FENCE, COMPOST SOCK, AND ECM BERMS SHALL BE INSTALLED & MAINTAINED WHERE SHOWN AND ADDITIONAL SILT FENCE AND COMPOST SOCK ADDED AS REQUIRED BY THE ENGINEER PRIOR TO ANY ON–SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. IT SHOULD BE MAINTAINED DURING AND AFTER DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER AND FROM LAND UNDERGOING DEVELOPMENT. WHERE POSSIBLE NATURAL DRAINAGE WAYS SHOULD BE UTILIZED AND LEFT OPEN TO REMOVE CLEAN EXCESS SURFACE WATER. THE SILT FENCE IS TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
7. EROSION CONTROL DEVICES SHALL BE INSPECTED WEEKLY AND AFTER EVERY 0.5–IN OF RAINFALL.
8. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 4 INCHES OF LOAM PLACED, BEFORE BEING SEEDED AND MULCHED UNLESS OTHERWISE SHOWN. EROSION CONTROL MATTING SHALL BE PLACED ON ALL SLOPES STEEPER THAN 3:1 AND WITHIN GRASS LINED SWALES AS SHOWN.
9. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND ACCUMULATED SEDIMENT DISPOSED OF IN AN ON SITE LOCATION DESIGNATED BY THE OWNER.
10. BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY.
11. SILT FENCES SHALL BE MINIMUM OF 36 INCHES HIGH WITH THE BOTTOM OF THE FABRIC KEYED INTO THE GROUND (SEE DETAIL). POSTS SHALL BE OF WOOD OR STEEL.
12. THE EROSION CONTROL DEVICES SHOWN ON THE DRAWINGS AND AS SPECIFIED IN THE SPECIFICATIONS REPRESENT THE MINIMUM REQUIRED FOR EROSION CONTROL. THE CONTRACTOR SHALL ADD TO THESE DEVICES ANY AND ALL MEASURES AS REQUIRED BY THE ENGINEER TO EFFECTIVELY PREVENT MIGRATION OF SEDIMENT FROM THE WORK AREA.
13. ALL SLOPES AND DISTURBED AREAS TO BE SEEDED SHALL COMPLY WITH THE NHDES SECTION 644 WF SEED TYPE 45.
14. LIME SHALL CONFORM TO NHDOT SPECIFICATIONS, DIV. 600, SEC. 642 "LIMESTONE". LIMESTONE SHALL BE APPLIED BY EITHER THE DRY OR HYDRAULIC METHOD AS DESCRIBED IN NHDOT DIV 600, SEC. 644.2.5. THE AMOUNT OF LIMESTONE APPLIED SHOULD BE BASED ON EVALUATION OF SOIL TESTS CONDUCTED BY THE CONTRACTOR. THE MINIMUM RATE OF 2 TONS PER ACRE OR 100 LBS PER SQ. FT. SHALL BE APPLIED IF REQUIRED.
15. FERTILIZER TO BE USED MUST BE THE EQUIVALENT OF A 15–15–15 MIXTURE AND SHALL BE REVIEWED BY THE ENGINEER. FERTILIZER SHALL CONFORM TO NHDOT SPECIFICATIONS DIV. 600, SEC. 643 "FERTILIZER FOR GRASSES." KINDS AND AMOUNTS OF FERTILIZER SHOULD BE BASED ON EVALUATION OF SOIL TESTS CONDUCTED BY THE CONTRACTOR. THE MINIMUM AMOUNTS APPLIED SHALL BE AS FOLLOWS:

    NITROGEN (N) 150 LBS PER ACRE OR 1.1 LBS PER 1000 S.F.
    PHOSPHATE (P 0) 100 LBS PER ACRE OR 2.2 LBS PER 1000 S.F.
    POTASH (K O) 100 LBS PER ACRE OR 2.2 LBS PER 1000 S.F.

    (NOTE: THIS IS THE EQUIVALENT OF 500 LBS PER ACRE OF 10–20–20 FERTILIZER OR 1000 LBS PER ACRE OF 5–10–10)
16. ALL PROPOSED SWALES MUST BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
17. ALL ROADWAYS TO BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
18. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    –BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
    –A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    –A MINIMUM OF 3–IN OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
    –EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

Winter Construction Notes:

1. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER, 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3–INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

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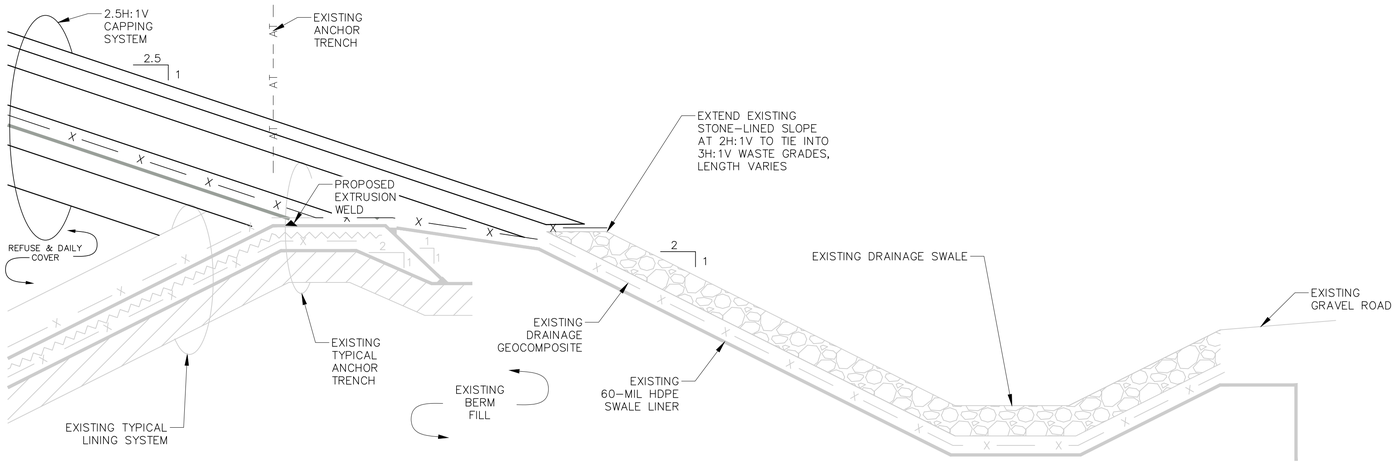
NEW HAMPSHIRE – STATE OF – ADAM J SANDAHL 14243 LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS	drawn by: ATR/NJM/STF	approved by: AJS	scale:
date: October 2023	project no: 1101	checked by: AJS	

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set
Erosion Control Details

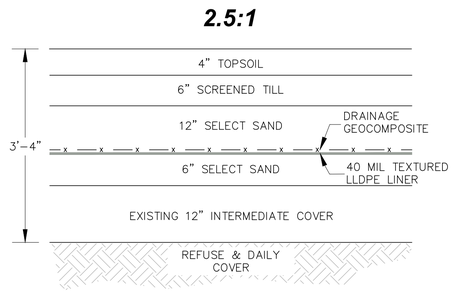
drawing no. D-12

sheet: 48 of 50



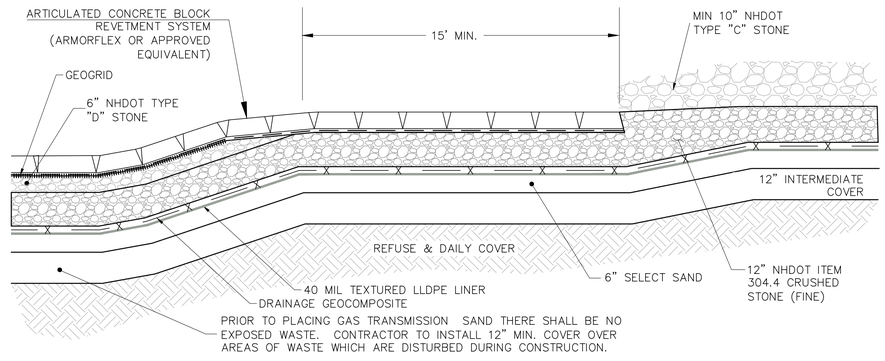
Capping System Tie-in at Anchor Trench (1)

Not to Scale



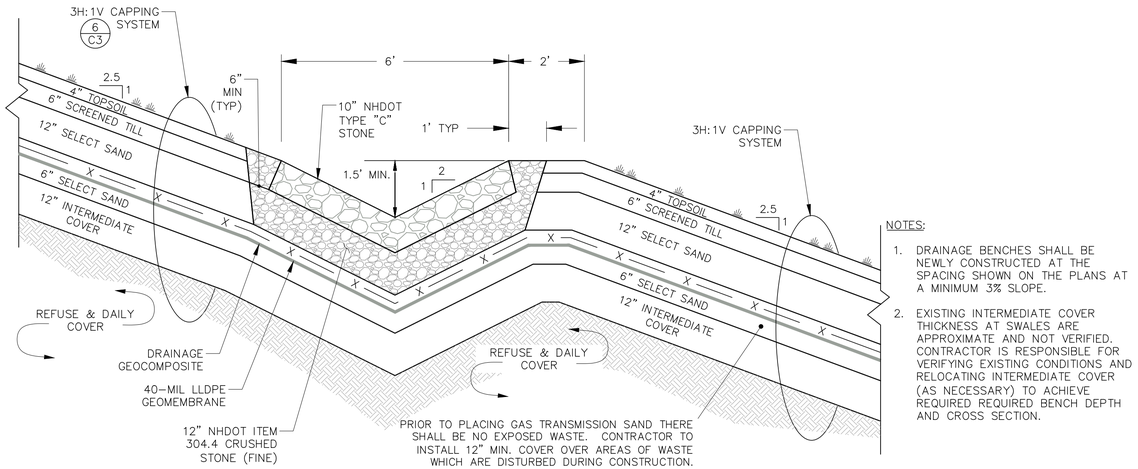
Capping System Sections (2)

Not to Scale



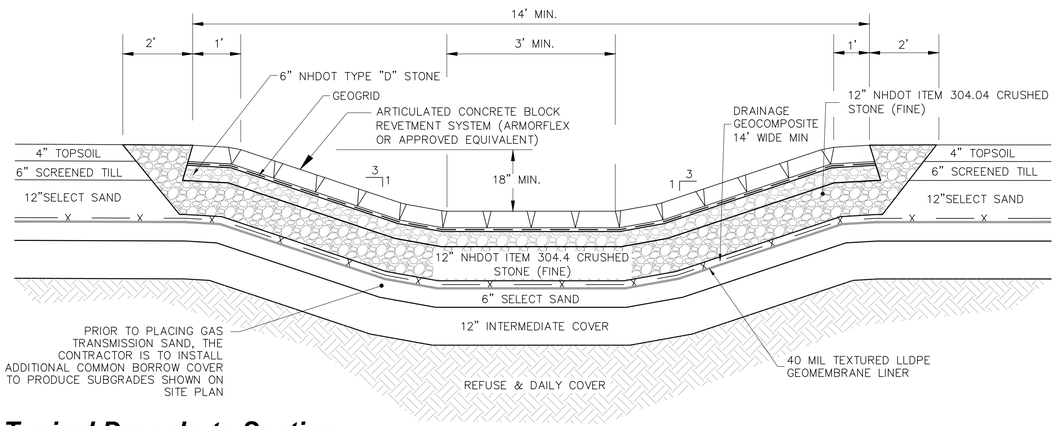
Drainage Bench Outlet Into Dropchute (3)

Not to Scale



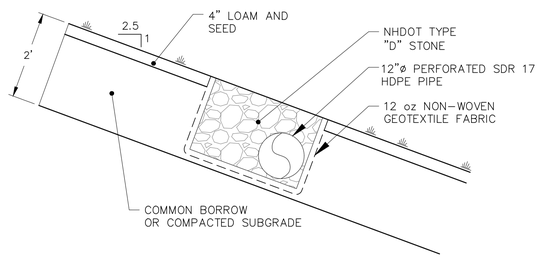
Drainage Bench (4)

Not to Scale



Typical Dropchute Section (5)

Not to Scale



Side Slope Stormwater Collection Trench (6)

Not to Scale

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ADAM J. SANDALL 9403 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

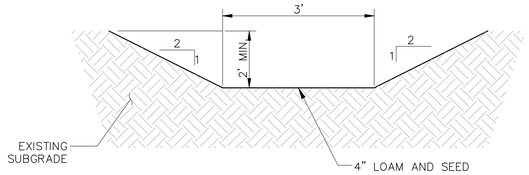
designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
scale:
date: October 2023
project no: 1101
checked by: AJS

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

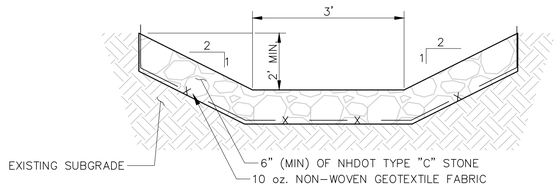
Closure Details

drawing no. D-13

sheet: 49 of 50



GRASS-LINED SWALE



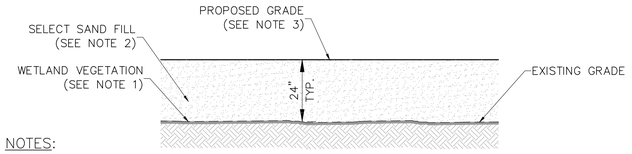
STONE-LINED SWALE

NOTES:

1. GRASS-LINED SWALE SHALL BE USED IN AREAS WHERE SWALE SLOPE <5%.
2. GRASS-LINED SWALES MUST INCLUDE A LAYER OF EROSION CONTROL MATTING DESIGNED TO ACCOMMODATE CHANNEL FLOW (NORTH AMERICAN GREEN SC150BN, OR APPROVED EQUIVALENT).

Cut Swale
Not to Scale (1)

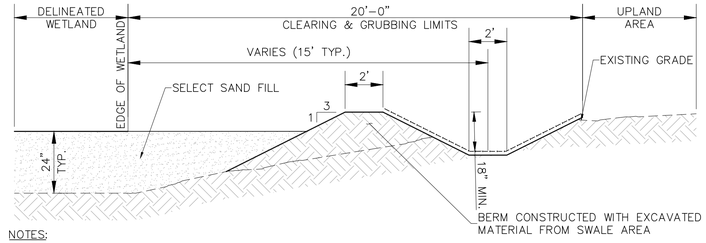
SELECT SAND	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
#4	60-100
#10	40-95
#40	10-50
#100	0-20
#200	0-6



NOTES:

1. WETLAND VEGETATION AND HYDRIC SOILS SHALL BE REMOVED PRIOR TO THE PLACEMENT OF SAND.
2. SELECT SAND FILL TO BE PLACED AN AVERAGE DEPTH OF 2 FEET ABOVE THE EXSTING GRADE AFTER VEGETATION REMOVAL OR SEASONAL HIGH WATER TABLE, WHICHEVER IS HIGHER.
3. PROPOSED GRADE SHALL RECEIVE NO TYPE OF SURFACE TREATMENT. IT IS INTENDED THAT THE FILLED WETLAND AREAS SHALL REMAIN VEGETATION FREE.

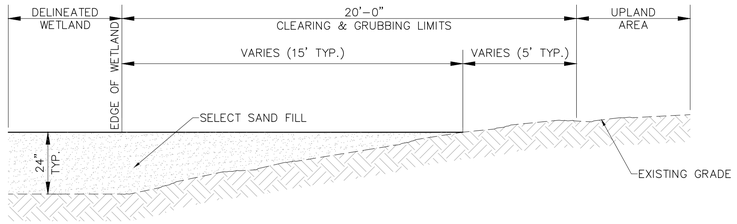
Wetland Fill Typical Section
Not to Scale (2)



NOTES:

1. CONTRACTOR MAY UTILIZE EXISTING SOILS FROM EXCAVATING THE ADJACENT STORMWATER SWALE TO CONSTRUCT THE BERM AS APPROVED BY THE ENGINEER.
2. SWALES DISCHARGE INTO STORMWATER PONDS.

EDGE WITH SURFACE WATER DIVERSION SWALE (WHERE DIRECTED BY ENGINEER)

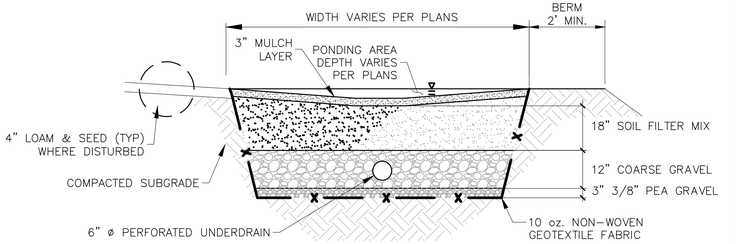


NOTES:

1. SELECT SAND FILL AT EDGE TO BE GRADED TO BLEND INTO EXISTING UPLAND.

EDGE WITHOUT SWALE

Wetland Edge Treatment Detail
Not to Scale (3)

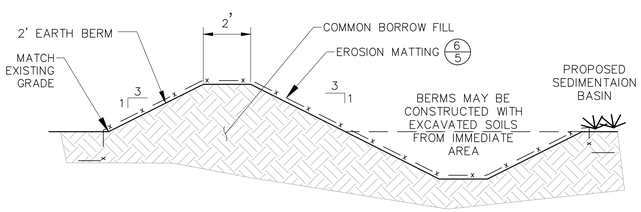


BIORETENTION FILTER MEDIA			
COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	SIEVE NO.	PERCENT BY WEIGHT PASSING STNDARD SIEVE
FILTER MEDIA OPTION A			
ASTM C-33 CONCRETE SAND	50 TO 55		
LOAMY SAND TOPSOIL	20 TO 30	200	15 TO 25
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH	20 TO 30	200	<5
FILTER MEDIA OPTION B			
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH	20 TO 30	200	<5
LOAMY COARSE SAND	70 TO 80	10	85 TO 100
		20	70 TO 100
		60	15 TO 40
		200	8 TO 15

NOTES:

1. PLANTING DESIGN: ONLY NATIVE, NON-INVASIVE SPECIES SHALL BE USED. VEGETATION SHALL HAVE A RANDOM AND NATURAL PLANT LAYOUT. NO WOODY VEGETATION SHALL GROW NEAR INFLOW LOCATIONS. ONLY FACULTATIVE WETLAND SPECIES SHALL BE PLANTED OVER THE FILTER MEDIA. TREES OR LARGE SHRUBS SHALL BE PROVIDED ALONG THE PERIMETER. A TREE CANOPY SHALL BE ESTABLISHED WITH AN UNDERSTORY OF SHRUBS AND HERBACEOUS PLANTS. VEGETATION SHALL BE DROUGHT TOLERANT.

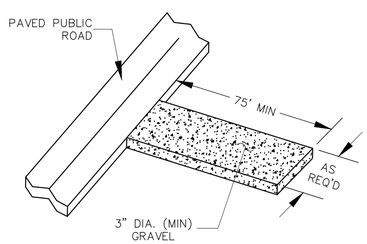
Bioretention System (Rain Garden)
Not to Scale (4)



NOTES:

1. THIS TEMPORARY SEDIMENTATION BASIN DETAIL IS PROVIDED AS A CONTINGENCY IN THE EVENT THE ENGINEER DETERMINES THAT ADDITIONAL EROSION CONTROLS ARE WARRANTED.
2. CONTRACTOR MAY UTILIZE EXISTING SOILS FROM EXCAVATING THE SEDIMENTATION BASIN TO CONSTRUCT THE BASIN IF APPROVED BY THE ENGINEER. THE DETAIL ABOVE, DEPICTS UTILIZING SOILS IMMEDIATELY ADJACENT TO THE PROPOSED BERM LOCATION.

Temporary Sedimentation Basin Berm
Not to Scale (5)



CONSTRUCTION SPECIFICATIONS:

1. STONE SIZE – USE 3" STONE (MIN)
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 75 FEET.
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH RAIN.

Stabilized Construction Entrance
Not to Scale (6)

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STATE OF NEW HAMPSHIRE – ADAM J SKADDAL – 14 OCTOBER 2023 – LICENSED PROFESSIONAL ENGINEER

designed by: ATR/NJM/STF/AJS
drawn by: ATR/NJM/STF
approved by: AJS
scale:
date: October 2023
project no: 1101
checked by: AJS

Granite State Landfill, LLC
Dalton, New Hampshire
Permitting Plan Set

Wetland Filling Details

drawing no. D-14

sheet: 50 of 50

n/f
LEBLANC FAMILY TRUST
GORDON & JANICE LEBLANC, TRUSTEES
LITTLETON TM 17-LOT 10

n/f
LEBLANC FAMILY TRUST
GORDON & JANICE
LEBLANC, TRUSTEES
LITTLETON TM 25-LOT 4

n/f
LEBLANC FAMILY TRUST
GORDON & JANICE LEBLANC, TRUSTEES
DALTON TM 405-LOT 32

n/f
TEAM O'NEIL REALTY TRUST
TIMOTHY O'NEIL TRUSTEE
DALTON TM 405-LOT 22

n/f
CYNTHIA CAROL PIERCE
CHARLES A PIERCE
LITTLETON TM 25-LOT 10

n/f
J.W. CHIPPING
DALTON TM 405-LOT 33

n/f
J.W. CHIPPING
LITTLETON TM 25-LOT 15
LOT NOT SURVEYED
INFORMATION PER DEED

n/f
STATE OF NH - DNCR
(DEPT. OF NATURAL AND CULTURAL RESOURCES)
DALTON TM 408-LOT 6

n/f
BRIAN & RACHEL KOPLOW
LITTLETON TM 25-LOT 9

n/f
J.W. CHIPPING
DALTON TM 406-LOT 1

n/f
J.W. CHIPPING
DALTON TM 406-LOT 2.1

DALTON
LITTLETON
TOWN
LINE

PROPOSED LIMIT
OF WASTE

n/f
ELIZABETH R KOBER, REV TRUST
ELIZABETH R KOBER, TRUSTEE
LITTLETON TM 36-LOT 15

n/f
CARL & DEBRAH HOWES
DALTON TM 407-LOT 1

n/f
ANTONIO T. ROSA JR. &
CINDY L. ROSA
DALTON TM 407-LOT 001.2

n/f
CROWE FAMILY INVESTMENTS, LLC
LITTLETON TM 36-LOT 17

n/f
AMMONOOSUC ASPHALT
LEASE AREA
WHITEFIELD TM 406-LOT 3A

n/f
ERIK M. JOHNSON
JUDITH R. JOHNSON
DALTON
TM 407-LOT 001.3

n/f
J.W. CHIPPING
DALTON TM 406-LOT 2.3
115.82 AC

n/f
J.W. CHIPPING
DALTON
TM 406-LOT 3.1

FOREST LAKE

n/f
CROWE FAMILY
INVESTMENTS, LLC
LITTLETON TM 48-LOT 5

n/f
DEBRA L. KELLEHER
LITTLETON TM 49-LOT 1

n/f
J.W. CHIPPING
DALTON TM 406-LOT 3

n/f
KEITH M ASHTON
HEIDI C ASHTON
DALTON
TM 201-LOT 13

n/f
JEAN BURGIN
JOANNE HENNESSEY REV TRUST
DALTON
TM 201-LOT 27

n/f
JEFFREY & JACQUELINE
COSTURA
DALTON TM 201-LOT 26

n/f
J.W. CHIPPING
DALTON
TM 406-LOT 2.4
10.26 AC

n/f
J.W. CHIPPING
DALTON
TM 406-LOT 2.5
11.54 AC

DALTON
WHITEFIELD

n/f
BOBBI SUE BAKER
BETHLEHEM
TM 405-LOT 53

LITTLETON
BETHLEHEM
TOWN
LINE

n/f
J.W. CHIPPING
BETHLEHEM
TM 406-LOT 1
76.83 AC

n/f
CHRISTOPHER & LEANNE
WITKOWSKI
BETHLEHEM
TM 406-LOT 5

n/f
ERIC S. BRYAN
THOMAS E. BRYAN
BETHLEHEM
TM 406-LOT 6

n/f
DOMINIC
VITACCO
DEBORAH A.
VITACCO
WHITEFIELD
M243 L1

n/f
THOMAS A.
MAJOR
WHITEFIELD
M243 L3

n/f
WILLIAM T. AVGERAKIS
BETHANY McLURE
WHITEFIELD M243 L20

n/f
THOMAS F.
BANIT
WHITEFIELD
M252 L4

n/f
ERYKA L.
LOWE
WHITEFIELD
M243 L2

n/f
BETHANY & AUSTIN
TAYLOR
WHITEFIELD M243 L4

n/f
STATE OF
NEW HAMPSHIRE
BETHLEHEM
TM 405-LOT 58

n/f
SCOTT J DIXON
BETHLEHEM
TM 405-LOT 57

n/f
RANDY C SMITH
BETHLEHEM
TM 405-LOT 56

n/f
CHRIS DUPONT
BETHLEHEM
TM 405-LOT 55

n/f
CHRISTOPHER M DUPONT
BETHLEHEM
TM 405-LOT 54

n/f
KAREN L BURRILL-MURRAY
BETHLEHEM
TM 406-LOT 39

n/f
DALTON
VALLEY
DRAGS, LLC
BETHLEHEM
TM 406-LOT 2

n/f
83 AIRPORT RD SOLAR, LLC
BETHLEHEM TM 406-LOT 3

n/f
CATHY COBURN & STEVEN PINETTE
BETHLEHEM TM 406-LOT 4

n/f
COSMO J VALENTE
BETHLEHEM
TM 406-LOT 16

n/f
NE RENEWABLE POWER
BETHLEHEM, LLC
BETHLEHEM
TM 406-LOT 39-99
(BUILDING ONLY)

n/f GREGORY THOMAS VANASSE
WHITEFIELD M252 L1

n/f JOSEPH M. VITAL & JESSI K. DAY
WHITEFIELD M252 L2

n/f DAVID H & TAMMY A ALDRICH
WHITEFIELD M252 L3

0 325 650 1300 2600

SCALE IN FEET

LEGEND

- CALCULATED POINT
- PROPERTY LINE
- ABUTTER LINE
- EDGE OF LAKE OR RIVER
- RIGHT OF WAY
- SUBJECT PARCELS FOR APPLICATION
- NON SUBJECT PARCELS (SAME OWNER AS SUBJECT PARCELS) OWNERS PER TOWN INFORMATION ON JULY 12, 2023
- PROPOSED LIMIT OF WASTE / ANCHOR TRENCH LIMIT

PART Env-Sw 102 SOLID WASTE RULE DEFINITIONS:

Env-Sw 102.01 "Abutter" means "abutter" as defined by RSA 149-M:4, I, namely "any person who owns property adjacent to, or across a road, railroad, or stream from the property on which a solid waste facility may be permitted."
Source. (See Revision Note at chapter heading for Env-Sw 100) #8460-B, eff 10-28-05

ABUTTER EXHIBIT

GRANITE STATE LANDFILL, LLC

DALTON, NEW HAMPSHIRE

NHDES SOLID WASTE APPLICATION

ABUTTER PLAN - JULY 12, 2023

horizons Engineering
Engineering - Land Surveying - Environmental
MAINE • NEW HAMPSHIRE • VERMONT
www.horizonsengineering.com

PROJECT #:	19045
DATE:	JULY 2023
SURVEYED BY:	HEI
ENGINEERED BY:	CMA
DRAWN BY:	SJB/BDD/KRP
CHECKED BY:	ESP/BHK

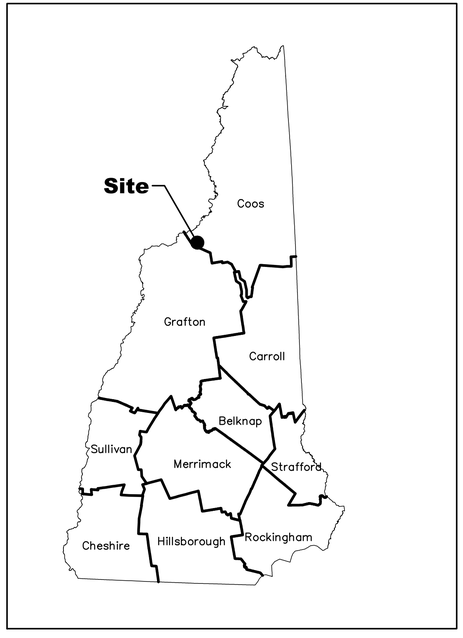
NO.	DATE	REVISION DESCRIPTION	ENG	DWG

Granite State Landfill, LLC
Granite State Landfill
Dalton, New Hampshire
Standard Permit for Solid Waste Landfill
Closure Plan

Submitted to NHDES for Review - July 2023

Sheet Index

C-1 Cover Sheet
C-2 Final Grading Plan
C-3 Closure Details
C-4 Gas Details
C-5 Gas Details



Locus Plan

STATE OF NEW HAMPSHIRE
ADAM J. SANDAHL
No. 12544
LICENSED PROFESSIONAL ENGINEER

Prepared For:

Granite State Landfill, LLC
1855 VT Route 100
Hyde Park, VT 05655

Prepared By:

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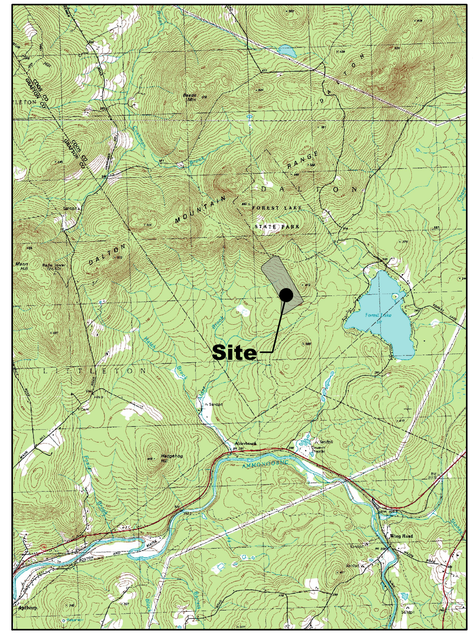

Project Location

M:\CADD\PROJECTS\1101.03 GSL Phase I SW App-REV1\Production\Closure Plans\1101-COVER.dwg Date Plotted: Jun 27, 2023 - 5:26pm Plotted By: AROY

CAPPING SYSTEM TIE-IN AT ANCHOR TRENCH (1/3)

TYP. CAPPING SECTION (2/3)

PROP. CONDENSATE TRAP (2/4)

DRAINAGE BENCH (4/3)

CONDENSATE TRAP INSTALLED ON PRIMARY LEACHATE COLLECTION SAND

PERIMETER HEADER PIPE INSTALLED ON PRIMARY LEACHATE COLLECTION SAND

DRAINAGE BENCH OUTLET INTO DROPCHUTE (3/3)

TYP. DROPCHUTE (5/3)

CONDENSATE KNOCKOUT (5/5)

PROJECT PROPERTY LINE

VERTICAL GAS EXTRACTION WELL (5/4)

HORIZONTAL GAS COLLECTION WELL (4/4)

GAS LATERAL TEE (1/5)

PRIMARY CONDENSATE TRAP

PRIMARY PUMP/STATION ROOM

WETLAND CROSSING

EQUIPMENT MAINTENANCE BUILDING

OPERATIONS OFFICE

BLOWER SYSTEM

INFRASTRUCTURE AREA

SITE ENTRANCE GATE

Notes:

1. Existing topography was created by Eastern Topographics of Wolfeboro, New Hampshire. The survey was created from Aerial Survey performed on November 15, 2022. Horizontal datum is based on NAD83 NH State Plane coordinates system and the Vertical datum is based on NAVD88.
2. Existing conditions Base Map provided by Horizons Engineering of Littleton, New Hampshire. Existing features composed from site surveys and Aerial Survey performed on May 7, 2018.
3. Wetlands delineated by Barry Keith, CWS #87.
4. Proposed grades represent top of capping system.
5. The approximate capacity is **10,800.00 CY**
6. Preliminary gas pipe layout provided by Sanborn Head & Associates

Legend

- Existing Property Line
- Existing Edge of Gravel
- Existing Edge of Pavement
- Existing Perennial Stream
- Existing Intermittent Stream
- Existing Wetlands
- Wetland Delineation Limit
- Project Property Line
- Landfill Phase Limits
- 10' Contour
- Litter Fence
- Drainage Swale
- Pavement Road
- Gravel Road
- Stone
- Gas Well
- 6" Gas Lateral
- 12" Gas Lateral
- Gas Header

no.	revision	date	by

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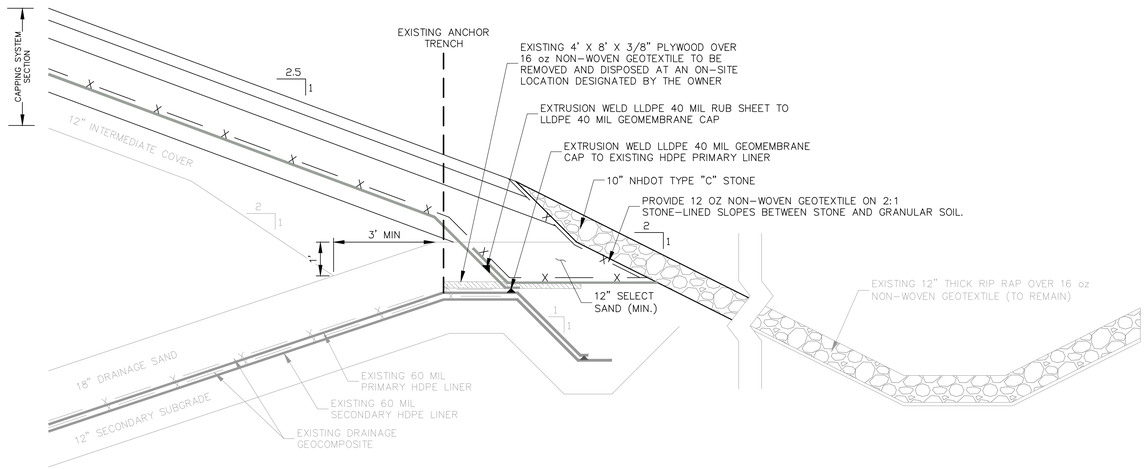
STATE OF NEW HAMPSHIRE - ADAM J. SAGORSKI No. 15544 LICENSED PROFESSIONAL ENGINEER

designed by: ATR	drawn by: ATR	approved by: AJS	scale: 1" = 200'
date: July 2023	project no: 1101	checked by: RJG	0 200' 400' Scale: 1" = 200

Granite State Landfill, LLC
Standard Permit for Slid Waste Landfill
Closure Plan
DES-SW-XX-XXX
Final Grading Plan

drawing no. C-2

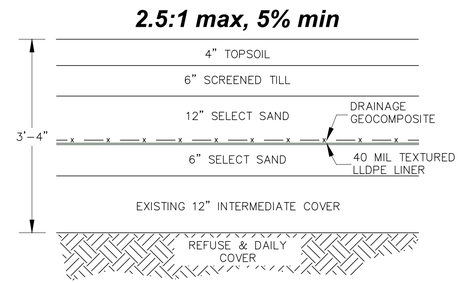
sheet: 2 of 5



Capping System Anchor Trench

Not to Scale

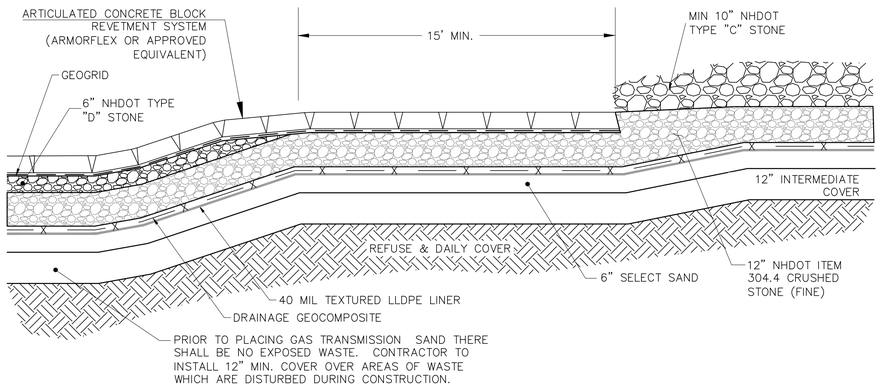
1



Capping System Section

Not to Scale

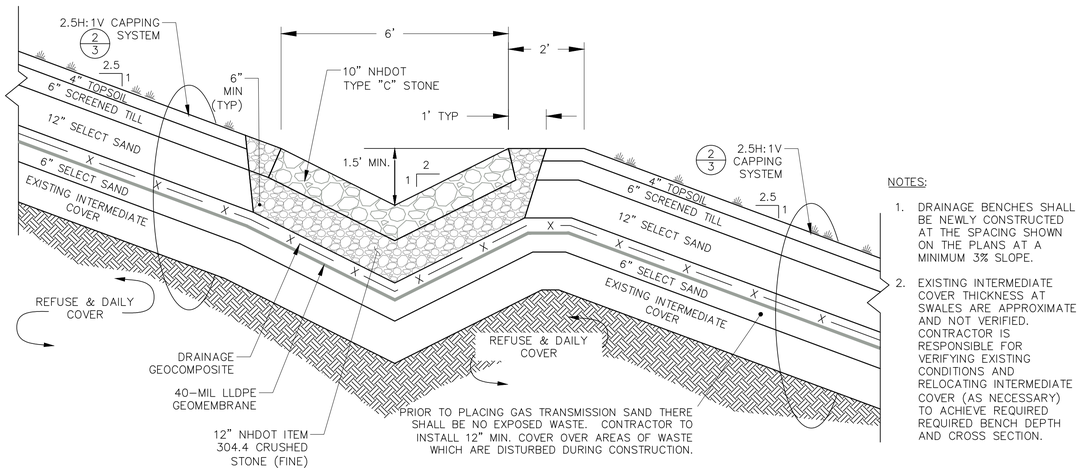
2



Drainage Bench Outlet Into Dropchute

Not to Scale

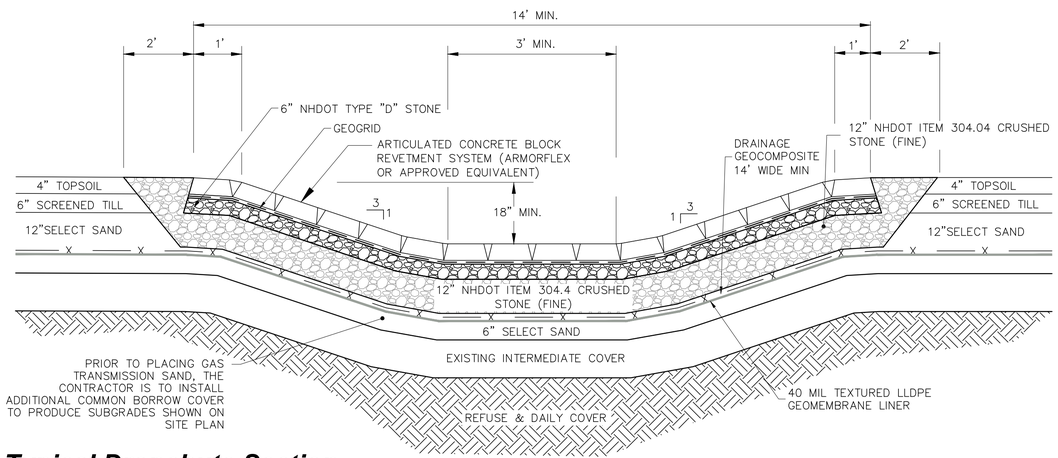
3



Drainage Bench

Not to Scale

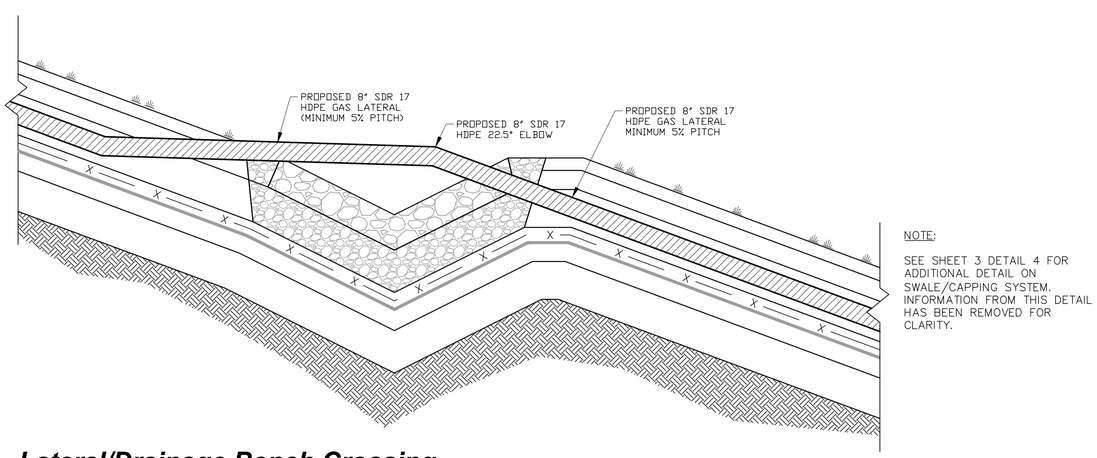
4



Typical Dropchute Section

Not to Scale

5



Lateral/Drainage Bench Crossing

Not to Scale

6

no.	revision	date	by

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STATE OF NEW HAMPSHIRE - ADAM J. SKARPINSKI - 13324 - LICENSED PROFESSIONAL ENGINEER

designed by: ATR	drawn by: ATR	approved by: AJS	scale:
date: July 2023	project no: 1101	checked by: RJG	

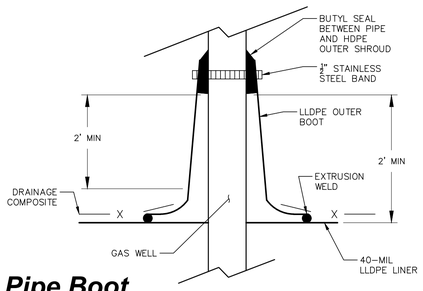
Granite State Landfill, LLC
Standard Permit for Slid Waste Landfill

Closure Plan
DES-SW-XX-XXX

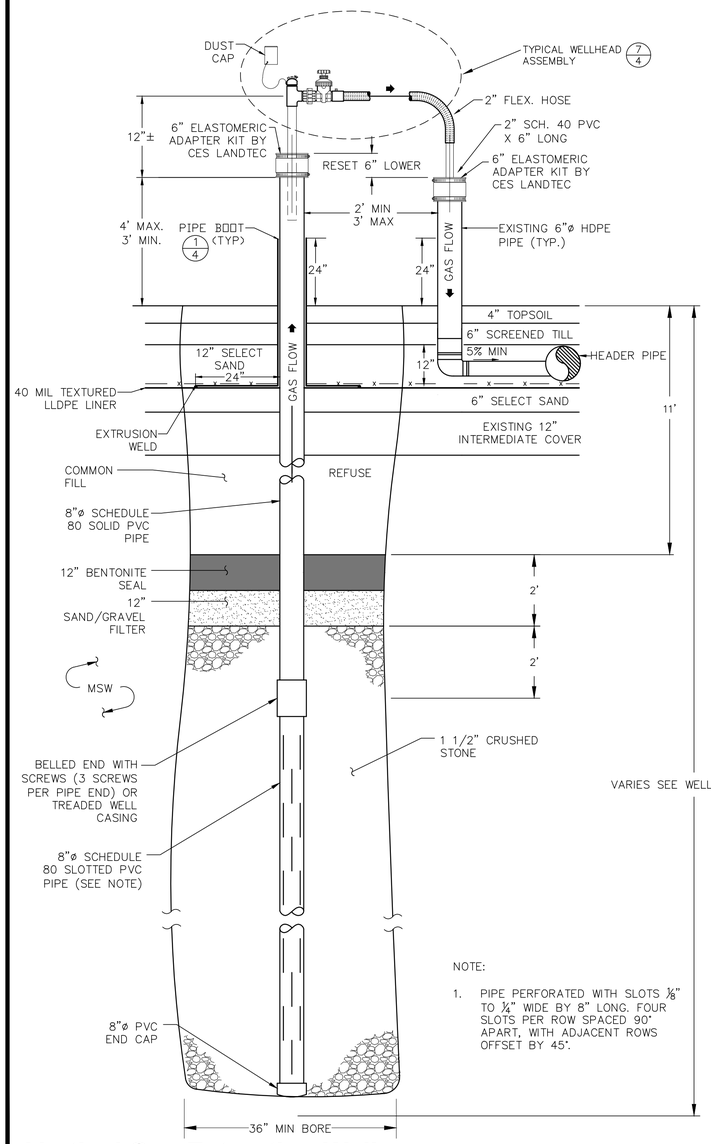
Closure Details

drawing no.
C-3

sheet: 3 of 5

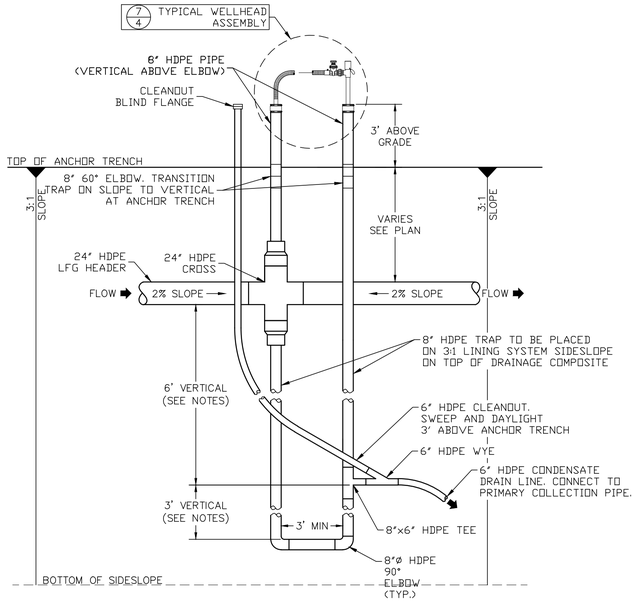


Pipe Boot
Not to Scale (1)



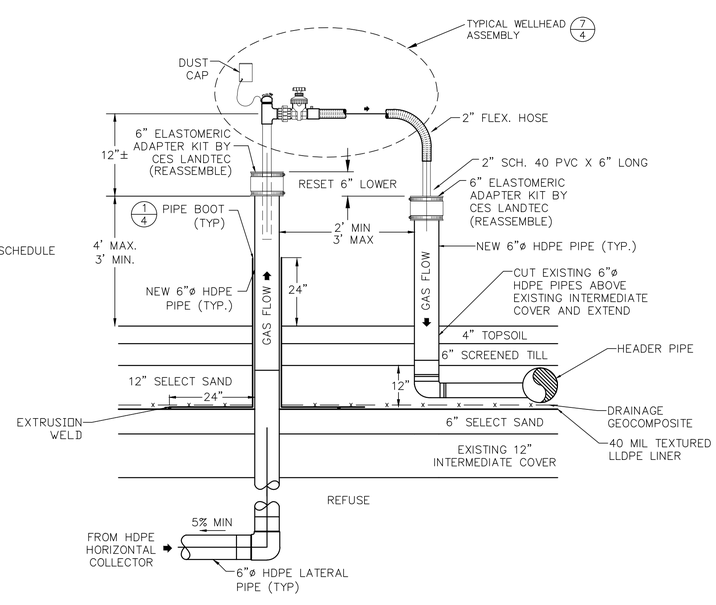
NOTE:
1. PIPE PERFORATED WITH SLOTS 1/8" TO 1/4" WIDE BY 8" LONG. FOUR SLOTS PER ROW SPACED 90° APART, WITH ADJACENT ROWS OFFSET BY 45°.

Vertical Gas Extraction Well
Not to Scale (5)

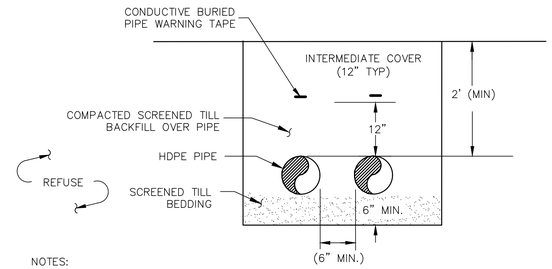


NOTES:
1. ALL CONNECTIONS ARE TO BE BUTT FUSION-WELDED UNLESS ALTERNATIVE APPROVED BY THE ENGINEER.
2. THE TRAP SHALL BE PLACED ON THE 3:1 SIDESLOPE LINING SYSTEM ON TOP OF THE GEOCOMPOSITE.
3. THE TRAP SHALL RESIST VERTICAL 100" OF WATER COLUMN (SYSTEM VACUUM). CONTRACTOR SHALL CONFIRM LENGTHS OF PIPE TO CONSTRUCT TRAP ON 3:1 SLOPE.
4. 24" OF SAND OR CRUSHED STONE SHALL BE PLACED OVER THE TRAP PIPING.
5. WELLHEAD STICKUP SHALL BE VERTICAL. CLEANOUT SHALL REMAIN 3:1 SLOPE.
6. CONTRACTOR SHALL FILL TRAP WITH WATER PRIOR TO PLACING TRAP IN SERVICE.
7. ALL HDPE PIPING SHALL BE SDR 17.

Condensate Trap
Not to Scale (2)

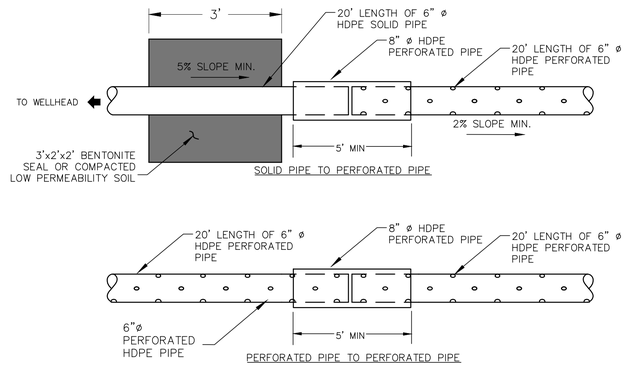


Horizontal Gas Collection Wellhead
Not to Scale (6)

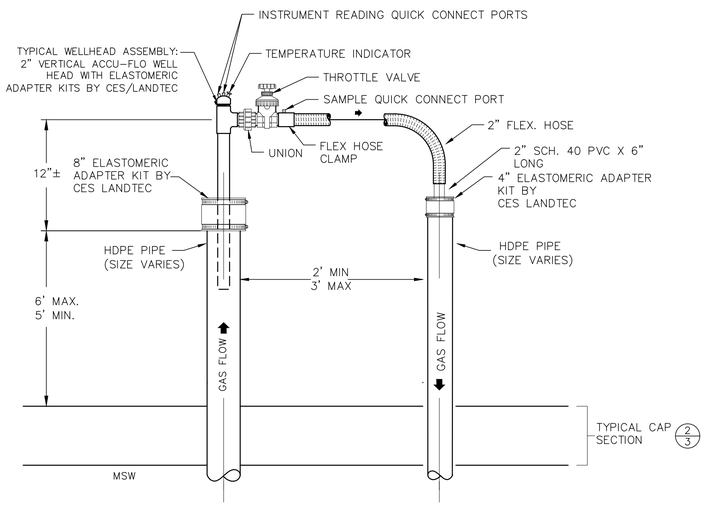


NOTES:
1. SCREENED TILL SHALL BE ON-SITE SOIL SCREENED TO 1" MINUS.
2. ALL HEADER AND LATERAL PIPING SHALL BE INSTALLED WITH A MINIMUM PITCH OF 5 PERCENT.
3. PROVIDE 2" RIGID INSULATION OVER AND ON SIDES OF PIPE, IF COVER IS LESS THAN 2-FEET.

Pipe Trench Within Landfill
Not to Scale (3)



Horizontal Gas Collection Well
Not to Scale (4)



Typical Wellhead Assembly
Not to Scale (7)

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designed by: ATR | drawn by: ATR | approved by: AJS | scale:
date: July 2023 | project no: 1101 | checked by: RJG

Granite State Landfill, LLC
Standard Permit for Slid Waste Landfill
Closure Plan
DES-SW-XX-XXX
Gas Details

drawing no. C-4

sheet: 4 of 5

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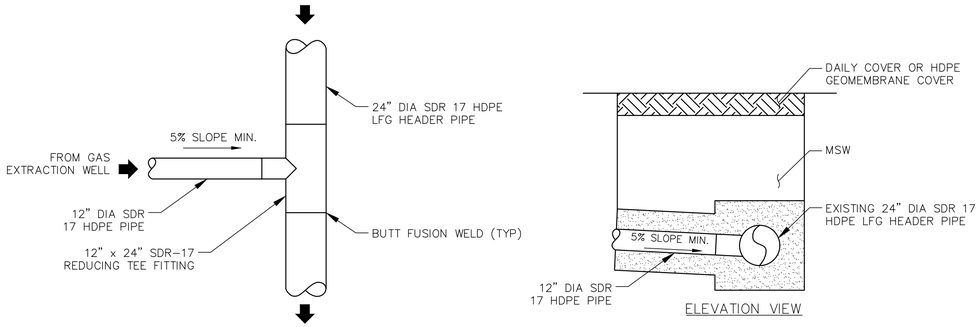
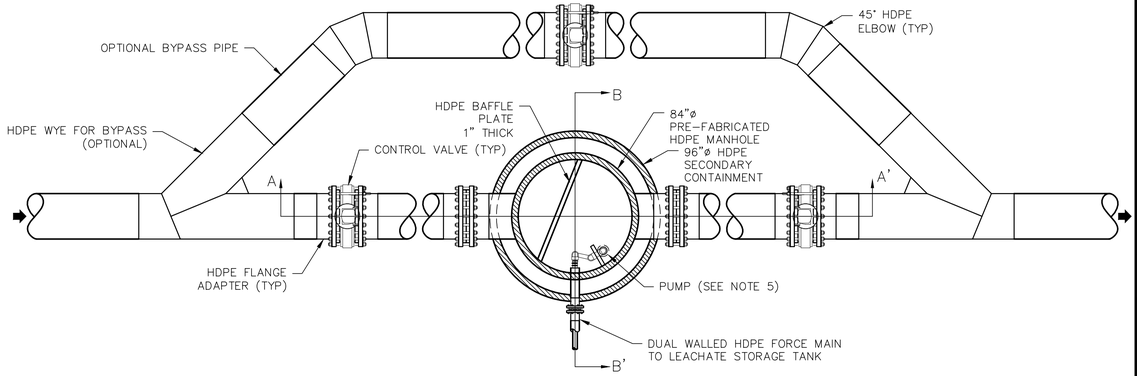


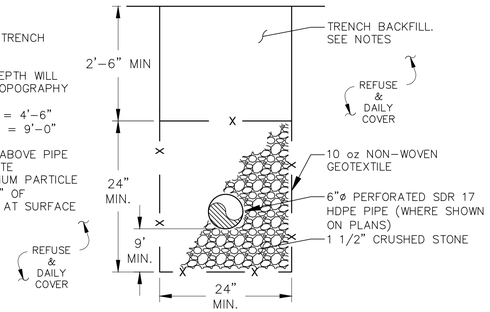
Gas Lateral Tee Connection (1)

Not to Scale



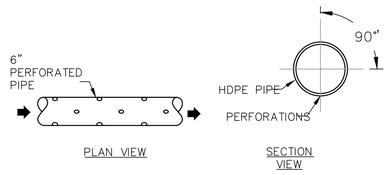
NOTES:

1. 2% MIN SLOPE TO TRENCH DRAIN PITS.
2. ACTUAL TRENCH DEPTH WILL VARY BASED ON TOPOGRAPHY AT SURFACE.
   - MINIMUM DEPTH = 4'-6"
   - MAXIMUM DEPTH = 9'-0"
3. BACKFILL TRENCH ABOVE PIPE BEDDING WITH WASTE EXCAVATED; MAXIMUM PARTICLE SIZE <3". USE 12" OF AUTOFLUFF COVER AT SURFACE OVER BACKFILL.



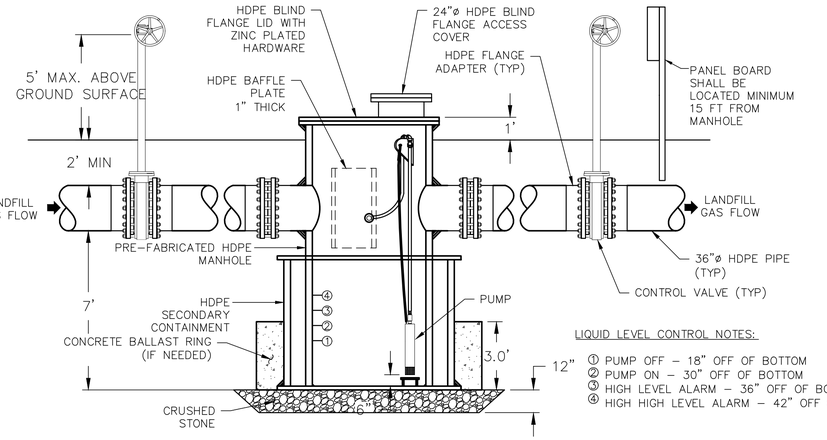
Typical Collection Trench (2)

Not to Scale



NOTES:

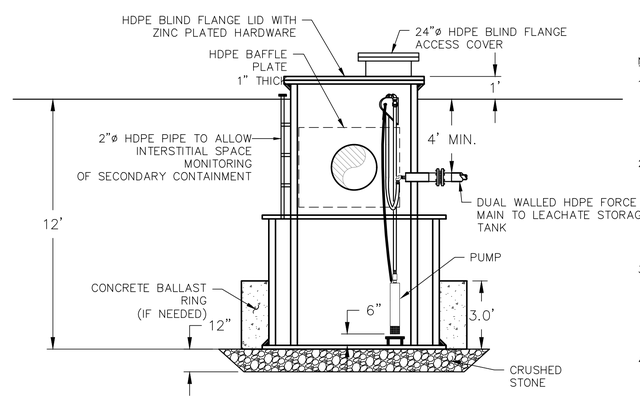
1. HOLES SHALL BE 1/2"ø DRILLED HOLES SPACED 12" APART IN 4 ROWS ALONG THE LENGTH OF THE PIPE. ROWS SHALL BE LOCATED 90°APART OFFSET 6" ALONG THE AXIS OF THE PIPE.



LIQUID LEVEL CONTROL NOTES:

① PUMP OFF – 18" OFF OF BOTTOM
② PUMP ON – 30" OFF OF BOTTOM
③ HIGH LEVEL ALARM – 36" OFF OF BOTTOM
④ HIGH HIGH LEVEL ALARM – 42" OFF OF BOTTOM

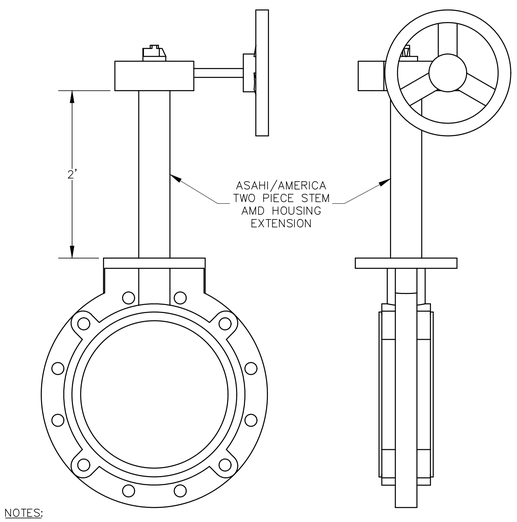
SECTION A–A'



SECTION B–B'

NOTES:

1. CONDENSATE KNOCKOUT DESIGN CONFIGURATION IS SUBJECT TO CHANGE BASED ON CONSULTATION WITH HDPE MANHOLE MANUFACTURER. SHOP DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
2. CONDENSATE KNOCKOUT SHALL HAVE AN OSHA APPROVED CONFINED SPACE SIGN ATTACHED TO THE TOP OF THE COVER. SIGN SHALL BE 14" WIDE BY 10" HIGH, AND SHALL HAVE UV-RESISTANT PAINT ON AN ALUMINUM BASE. SIGN SHALL READ "DANGER, CONFINED SPACE, HAZARDOUS ATMOSPHERE, ENTER BY PERMIT ONLY."
3. CONDENSATE KNOCKOUT IS A CLASS 1 DIVISION 1 GROUP D CLASSIFIED SPACE. ELECTRICAL EQUIPMENT SHALL BE EXPLOSION-PROOF AND INTRINSICALLY-SAFE. CONDUIT SEALS SHALL BE PROVIDED ON ALL ELECTRICAL CONDUIT.
4. PUMP SHALL BE EPG COMPANIES SUREPUMP SERIES 2 MODEL 2-5 0.50 HP VERTICAL PUMP OR APPROVED EQUIVALENT. PUMP SHALL BE EXPLOSION PROOF RATED.
5. PUMP CONTROLS SHALL COMPENSATE FOR SYSTEM VACUUM.

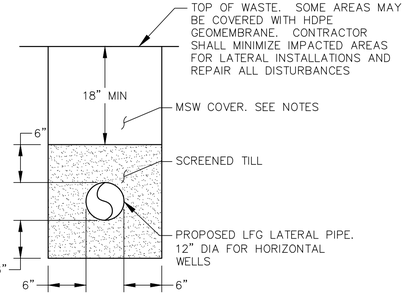


NOTES:

1. VALVES SHALL BE ASAHI/AMERICA TYPE-57 PP BUTTERFLY VALVES WITH EPDM SEAT, PP DISC, GEAR DRIVEN WITH EXTENSION OR EQUAL.

LFG Flow Control Valve (3)

Not to Scale



NOTES:

1. 24" MIN COVER FOR LATERALS
2. 5% MIN SLOPE
3. BACKFILL TRENCH ABOVE PIPE BEDDING WITH WASTE EXCAVATED; MAXIMUM PARTICLE SIZE <3". USE 12" OF AUTOFLUFF COVER AT SURFACE OVER BACKFILL.

Gas Lateral (4)

Not to Scale

Condensate Knockout Detail - Designed by Sanborn Head & Associates (5)

Not to Scale

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NEW HAMPSHIRE – STATE OF – ENGINEER
ADAM J. SANBORN 14741 LICENSED PROFESSIONAL

designed by:	drawn by:	approved by:	scale:
ATR	ATR	AJS	

date:	project no:	checked by:	
July 2023	1101	RJG	

Granite State Landfill, LLC
Standard Permit for Slid Waste Landfill

Closure Plan
DES-SW-XX-XXX

Gas Details

drawing no. C-5

sheet: 5 of 5

PREDEV-1

PREDEV-2

PREDEV-3

PREDEV-4

OUT-A

OUT-B

OUT-C

OUT-D

OUT-E

A1 A2 B1 B2 B3 C1 C2 C3 D1 D2 D3 D4 D5 D6 D7 D8 E1 E2 E3 E4 E5 E6 E7

PRE-DEVELOPMENT WATERSHED PLAN LEGEND

ABUTTERS PROPERTY LINE	
EXISTING CONTOUR (10')	1100
OUTFALL (OUT) A WATERSHED BOUNDARY	
OUTFALL (OUT) B WATERSHED BOUNDARY	
OUTFALL (OUT) C WATERSHED BOUNDARY	
OUTFALL (OUT) D WATERSHED BOUNDARY	
OUTFALL (OUT) E WATERSHED BOUNDARY	
SUBCATCHMENT BOUNDARY	
SUBBASIN ID	C1
MODEL REACH	
SUBBASIN TIME OF CONCENTRATION	Tc
IMPERVIOUS SURFACE	
OUTFALL	
EXISTING WETLAND	

NOTES:
1. FOR CLARITY Tc FLOW PATHS WITH TIMES LESS THAN OR APPROXIMATELY 6 MINUTES ARE NOT SHOWN.
2. DARK GREY IMPERVIOUS SYMBOLIZES PAVEMENT AND LIGHT GREY SYMBOLIZES GRAVEL SURFACES.

OUT-A

A1 AREA: 89.3 AC
A2 AREA: 92.8 AC

OUT-B

B1 AREA: 50.9 AC
B2 AREA: 51.5 AC
B3 AREA: 10.5 AC

OUT-C

C1 AREA: 39.3 AC
C2 AREA: 90.8 AC
C3 AREA: 106.9 AC

OUT-D

D1 AREA: 1.8 AC
D2 AREA: 3.3 AC
D3 AREA: 4.9 AC
D4 AREA: 1.8 AC
D5 AREA: 0.1 AC
D6 AREA: 5.1 AC
D7 AREA: 1.2 AC
D8 AREA: 6.7 AC

OUT-E

E1 AREA: 1.3 AC
E2 AREA: 15.0 AC
E3 AREA: 1.7 AC
E4 AREA: 4.1 AC
E5 AREA: 0.1 AC
E6 AREA: 0.8 AC
E7 AREA: 5.4 AC

no.	revision	date	by

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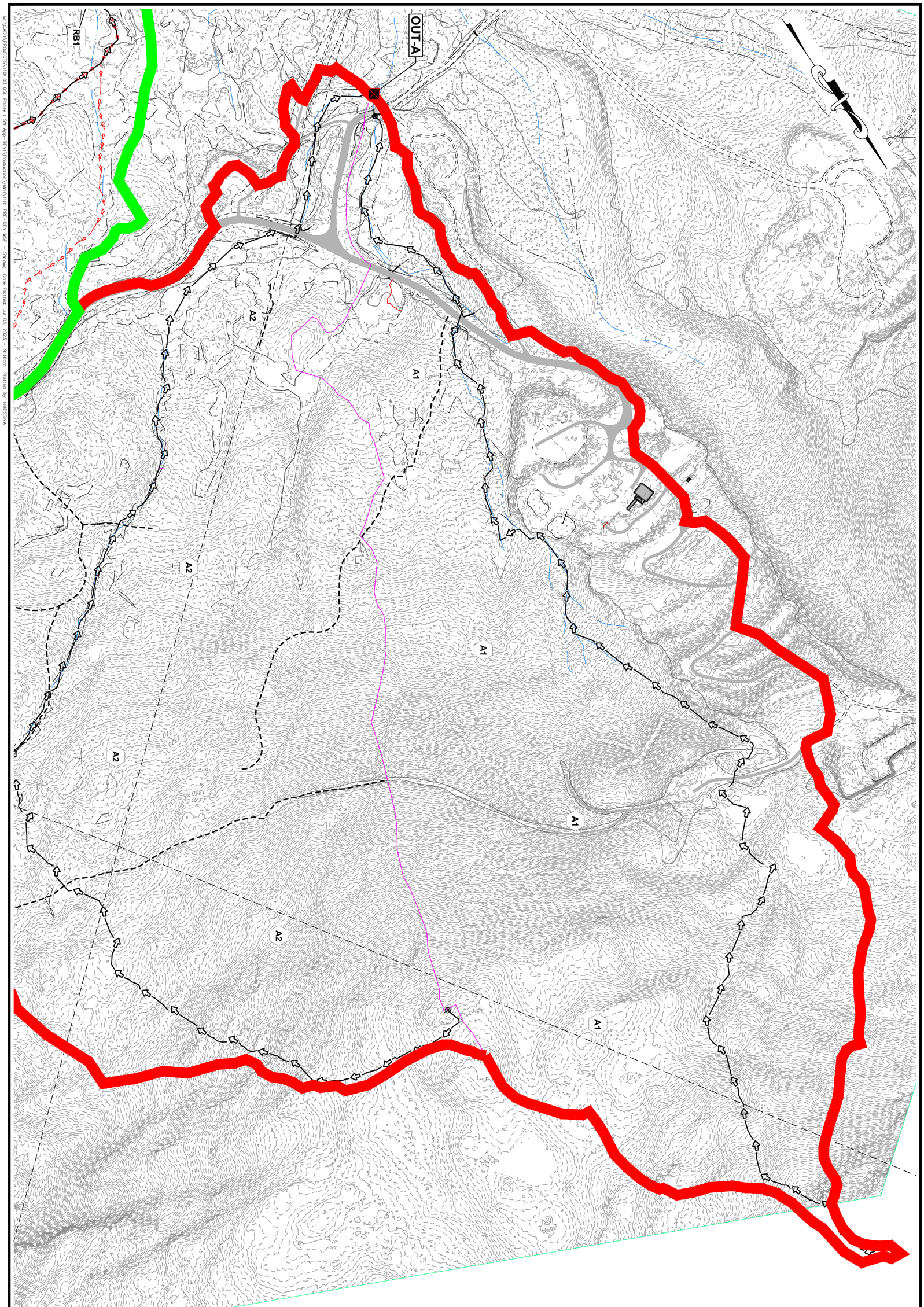
ADAM J SANDAL 9403 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

designed by: NJM	drawn by: NJM	approved by: AJS	scale: 500' 0 1000' Scale: 1" = 500'
date: July 2023	project no: 1101	checked by: AJS	

Granite State Landfill, LLC.
Dalton, New Hampshire
NHDES Solid Waste
Permit Application
Pre-Development Drainage Diagram
Index

drawing no.
PREDEV-1

sheet: 1 of 5



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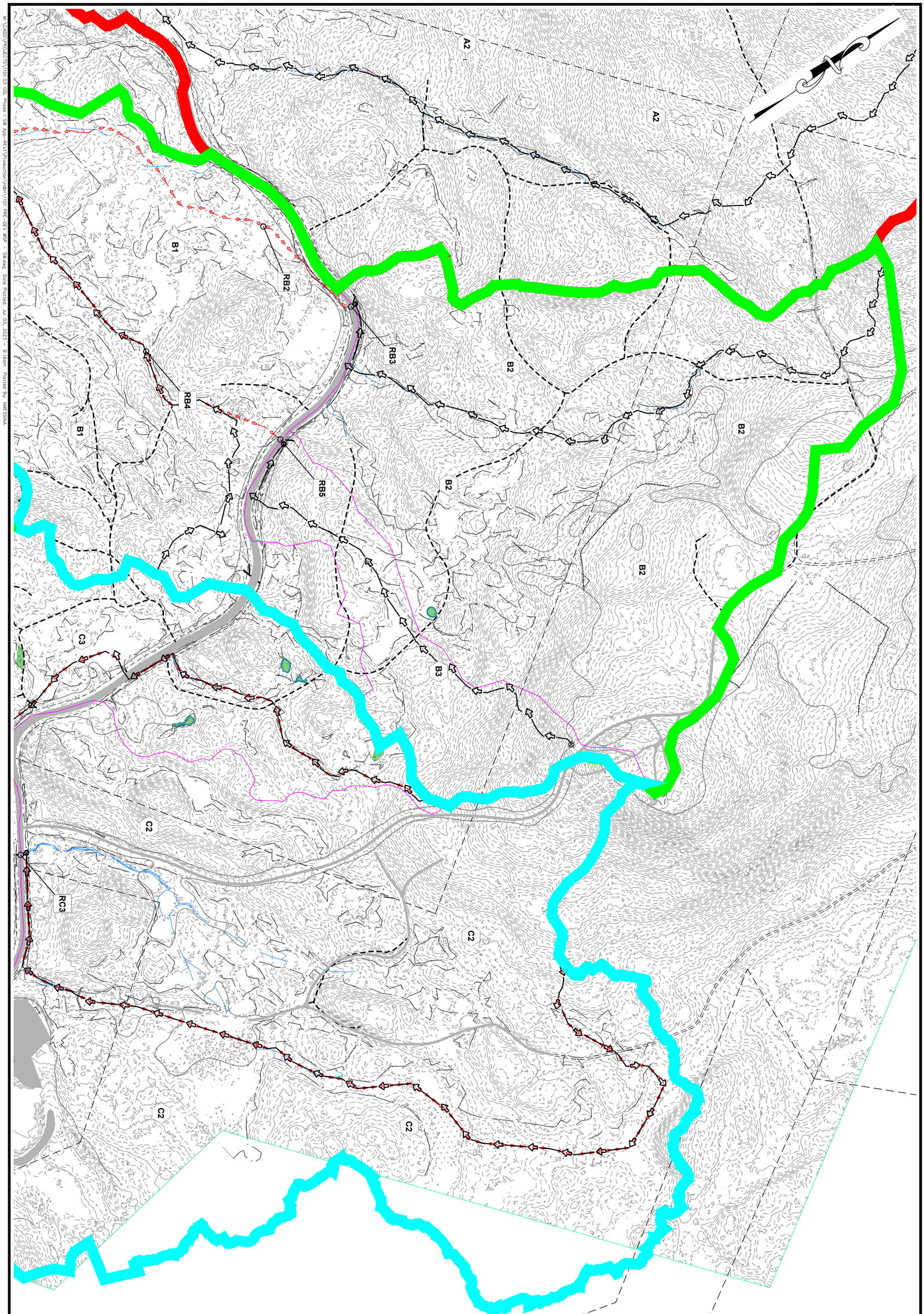
sheet 2 of 5	drawing no. PREDEV-2	Granite State Landfill, LLC. Dalton, New Hampshire NHDES Solid Waste Permit Application Pre-Development Drainage Diagram	date: July 2023 project no: 1101 checked by: AJS designed by: NJM drawn by: NJM approved by: AJS scale: 0 150' 300' Scale: 1" = 150'	STATE OF NEW HAMPSHIRE ADAM J SANDAHL No. 12544 LICENSED PROFESSIONAL ENGINEER	CMA ENGINEERS CIVIL/ENVIRONMENTAL/STRUCTURAL Portsmouth, NH 603/431-6196 • Manchester, NH 603/627-0708 • Portland, ME 207/541-4223 cmaengineers.com

no.	revision	date	by



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sheet 2 of 5	drawing no. PREDEV-3	Granite State Landfill, LLC. Dalton, New Hampshire NHDES Solid Waste Permit Application Pre-Development Drainage Diagram	date: July 2023 project no: 1101 checked by: AJS designed by: NJM drawn by: NJM approved by: AJS scale: 0 150' 300' Scale: 1" = 150'	ADAM J SANDAHL No. 12544 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE	CMA ENGINEERS CIVIL/ENVIRONMENTAL/STRUCTURAL Portsmouth, NH 603/431-6196 • Manchester, NH 603/627-0708 • Portland, ME 207/541-4223 cmaengineers.com

no.	revision	date	by

RB1
C1
OUT-B
C1
R2
C3
OUT-C
RC2
D2
D3
D6
D8
RD2
RD3
RD4
RD6
RD8
D

no.	revision	date	by

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STATE OF NEW HAMPSHIRE – ADAM J. SANDAHL No. 12544 – LICENSED PROFESSIONAL ENGINEER

designed by: NJM	drawn by: NJM	approved by: AJS	scale: 1" = 150'
date: July 2023	project no: 1101	checked by: AJS	0 150' 300'

Granite State Landfill, LLC.
Dalton, New Hampshire
NHDES Solid Waste Permit Application
Pre-Development Drainage Diagram

drawing no.
PREDEV-4

sheet: 4 of 5

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OUT-D

RE4

RE3

RE2

RD6

RD8

E4

E3

eCB2

OUT-E

RE1

E2

eCB1

RE5

E7

RE7

RD8

SPB-150

SPB-250

no.	revision	date	by

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NEW HAMPSHIRE - STATE OF - ADAM J SANDAHL No. 15544 LICENSED PROFESSIONAL ENGINEER

designed by:	drawn by:	approved by:	scale:
NJM	NJM	AJS	1" = 150'
date: July 2023	project no: 1101	checked by: AJS	0 150' 300'

Granite State Landfill, LLC.
Dalton, New Hampshire

NHDES Solid Waste
Permit Application

Pre-Development Drainage Diagram
Drainage Diagram

drawing no.
PREDEV-5

sheet: 5 of 5

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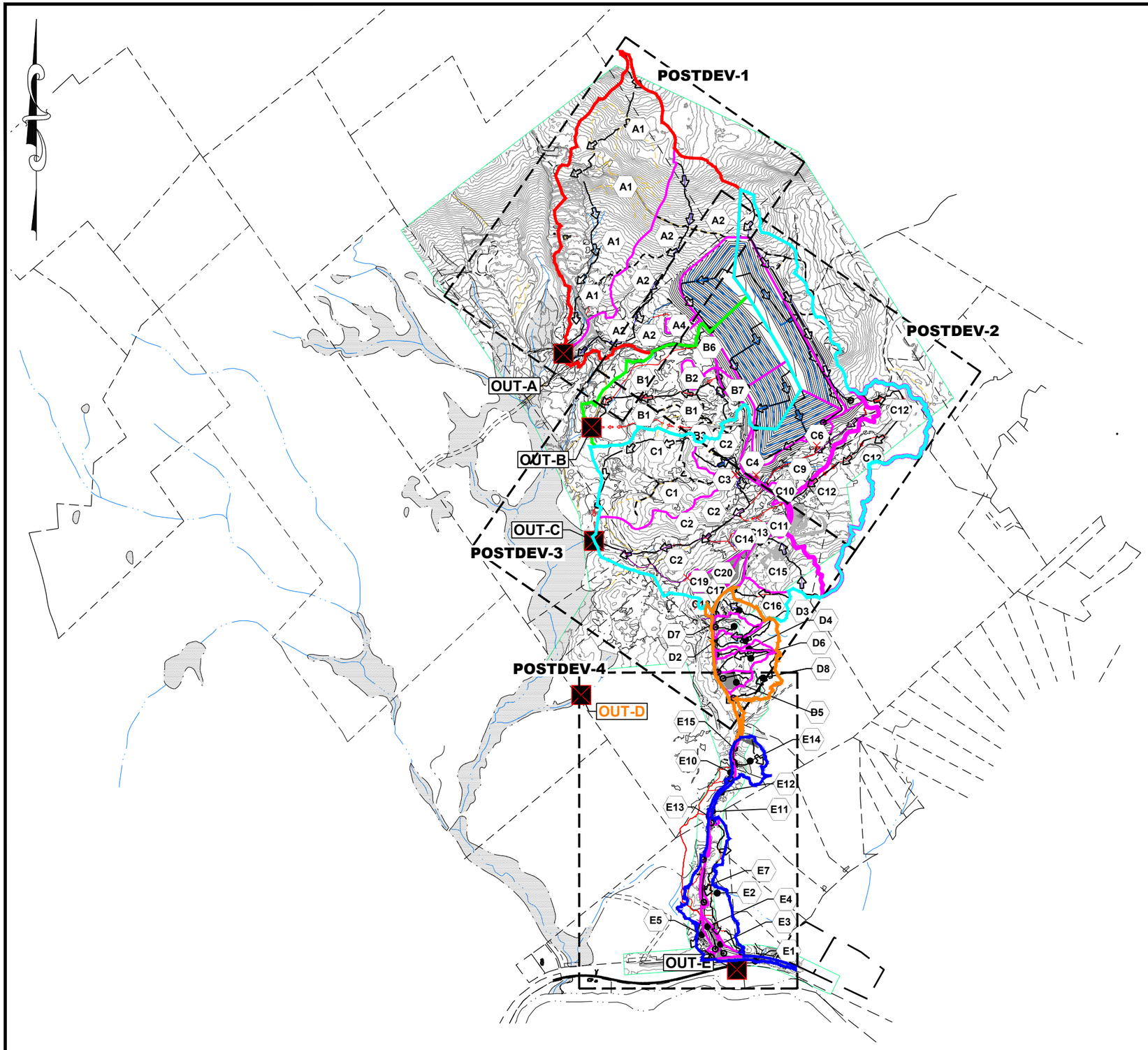

POST-DEVELOPMENT WATERSHED PLAN LEGEND

PROPOSED CONTOUR (2')	1100
PROPOSED CONTOUR (10')	1100
OUTFALL (OUT) A WATERSHED BOUNDARY	
OUTFALL (OUT) B WATERSHED BOUNDARY	
OUTFALL (OUT) C WATERSHED BOUNDARY	
OUTFALL (OUT) D WATERSHED BOUNDARY	
OUTFALL (OUT) E WATERSHED BOUNDARY	
SUBCATCHMENT BOUNDARY	
SUBBASIN ID	C1
SUBBASIN TIME OF CONCENTRATION	C
MODEL REACH	
IMPERVIOUS SURFACE	
OUTFALL	
EXISTING WETLAND	

NOTES:
1. FOR CLARITY Tc FLOW PATHS WITH TIMES LESS THAN OR APPROXIMATELY 6 MINUTES ARE NOT SHOWN.
2. DARK GREY IMPERVIOUS SYMBOLIZES PAVEMENT AND LIGHT GREY SYMBOLIZES GRAVEL SURFACES.

OUT-A

A1 AREA: 89.3 AC.	A2 AREA: 69.4 AC.	A3 AREA: 16.5 AC.	A4 AREA: 1.3 AC.

OUT-B

B1 AREA: 46.2 AC.	B2 AREA: 1.7 AC.	B3 AREA: 0.6 AC.	B4 AREA: 10.4 AC.	B5 AREA: 16.5 AC.	B6 AREA: 3.4 AC.

B7 AREA: 2.9 AC.

OUT-C

C1 AREA: 39.2 AC.	C2 AREA: 61.7 AC.	C3 AREA: 0.8 AC.	C4 AREA: 1.4 AC.	C5 AREA: 12.5 AC.	C6 AREA: 1.3 AC.
C7 AREA: 23.3 AC.	C8 AREA: 24.8 AC.	C9 AREA: 16.3 AC.	C10 AREA: 2.0 AC.	C11 AREA: 1.9 AC.	C12 AREA: 54.1 AC.
C13 AREA: 1.0 AC.	C14 AREA: 0.9 AC.	C15 AREA: 15.9 AC.	C16 AREA: 6.1 AC.	C17 AREA: 0.2 AC.	C18 AREA: 0.3 AC.
C19 AREA: 1.1 AC.	C20 AREA: 6.0 AC.				

OUT-D

D1 AREA: 1.4 AC.	D2 AREA: 3.3 AC.	D3 AREA: 5.0 AC.	D4 AREA: 1.8 AC.	D5 AREA: 2.4 AC.	D6 AREA: 3.7 AC.
D7 AREA: 4.4 AC.	D8 AREA: 5.7 AC.				

OUT-E

E1 AREA: 1.3 AC.	E2 AREA: 11.1 AC.	E3 AREA: 1.2 AC.	E4 AREA: 1.4 AC.	E5 AREA: 1.8 AC.	E6 AREA: 3.5 AC.
E7 AREA: 0.6 AC.	E8 AREA: 0.5 AC.	E9 AREA: 0.1 AC.	E10 AREA: 0.5 AC.	E11 AREA: 0.6 AC.	E12 AREA: 0.1 AC.
E13 AREA: 0.1 AC.	E14 AREA: 5.4 AC.	E15 AREA: 0.3 AC.			

no.	revision	date	by

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STATE OF NEW HAMPSHIRE - ENGINEER - ADAM J. SANDAHL No. 12544 - LICENSED PROFESSIONAL

designed by: NJM | drawn by: NJM | approved by: AJS
date: July 2023 | project no: 1101 | checked by: AJS
scale: 0 750' 1500' Scale: 1" = 750'

Granite State Landfill, LLC.
Dalton, New Hampshire
NHDES Solid Waste
Permit Application
Post-Development Drainage Diagram
Index

drawing no.
POSTDEV-1

sheet: 1 of 5

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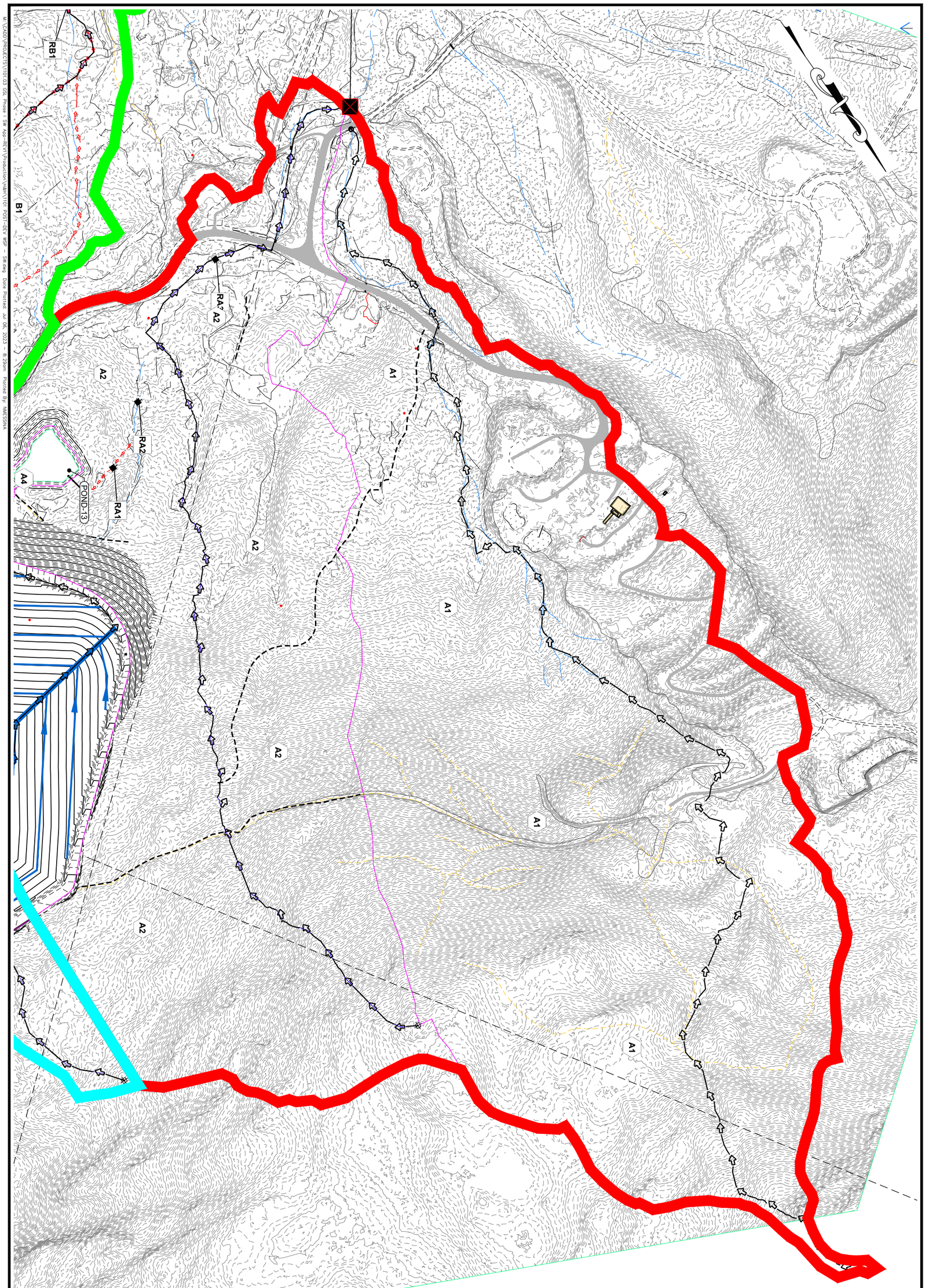

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sheet: 2 of 5	drawing no.: POSTDEV-2	Granite State Landfill, LLC. Dalton, New Hampshire NHDES Solid Waste Permit Application Post-Development Drainage Diagram	date: July 2023 project no: 1101 checked by: AJS designed by: NJM drawn by: NJM approved by: AJS scale: 0 150' 300' Scale: 1" = 150'	STATE OF NEW HAMPSHIRE – ADAM J SANDAHL No. 12544 LICENSED PROFESSIONAL ENGINEER

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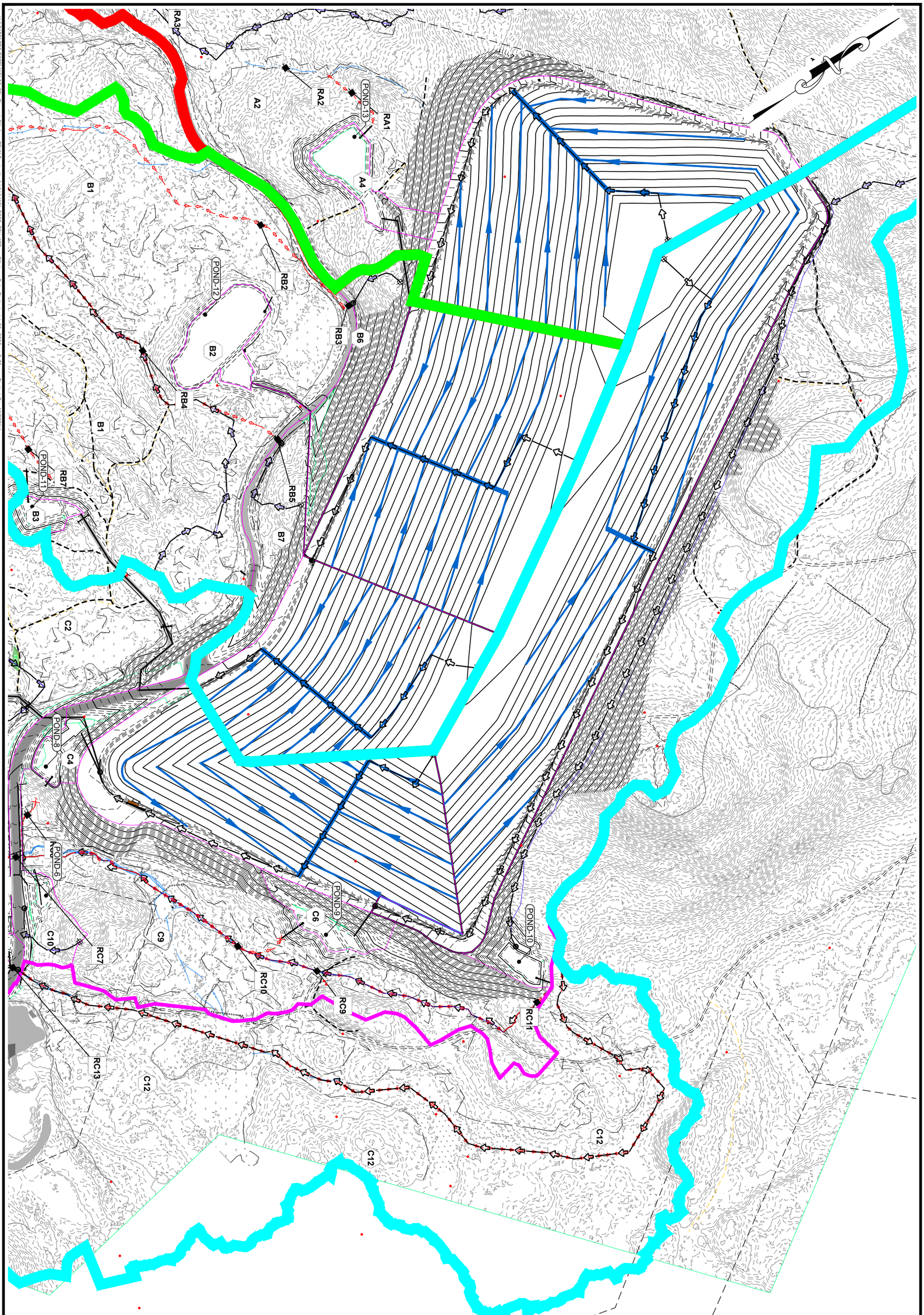

Granite State Landfill, LLC.
Dalton, New Hampshire

NHDES Solid Waste
Permit Application

Post-Development Drainage Diagram

drawing no. POSTDEV-3

sheet 3 of 5

date: July 2023
designed by: NJM
project no: 1101
drawn by: NJM
checked by: AJS
approved by: AJS
scale: 0 150' 300'
Scale: 1" = 150'

ADAM J SANDAHL No. 12544 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

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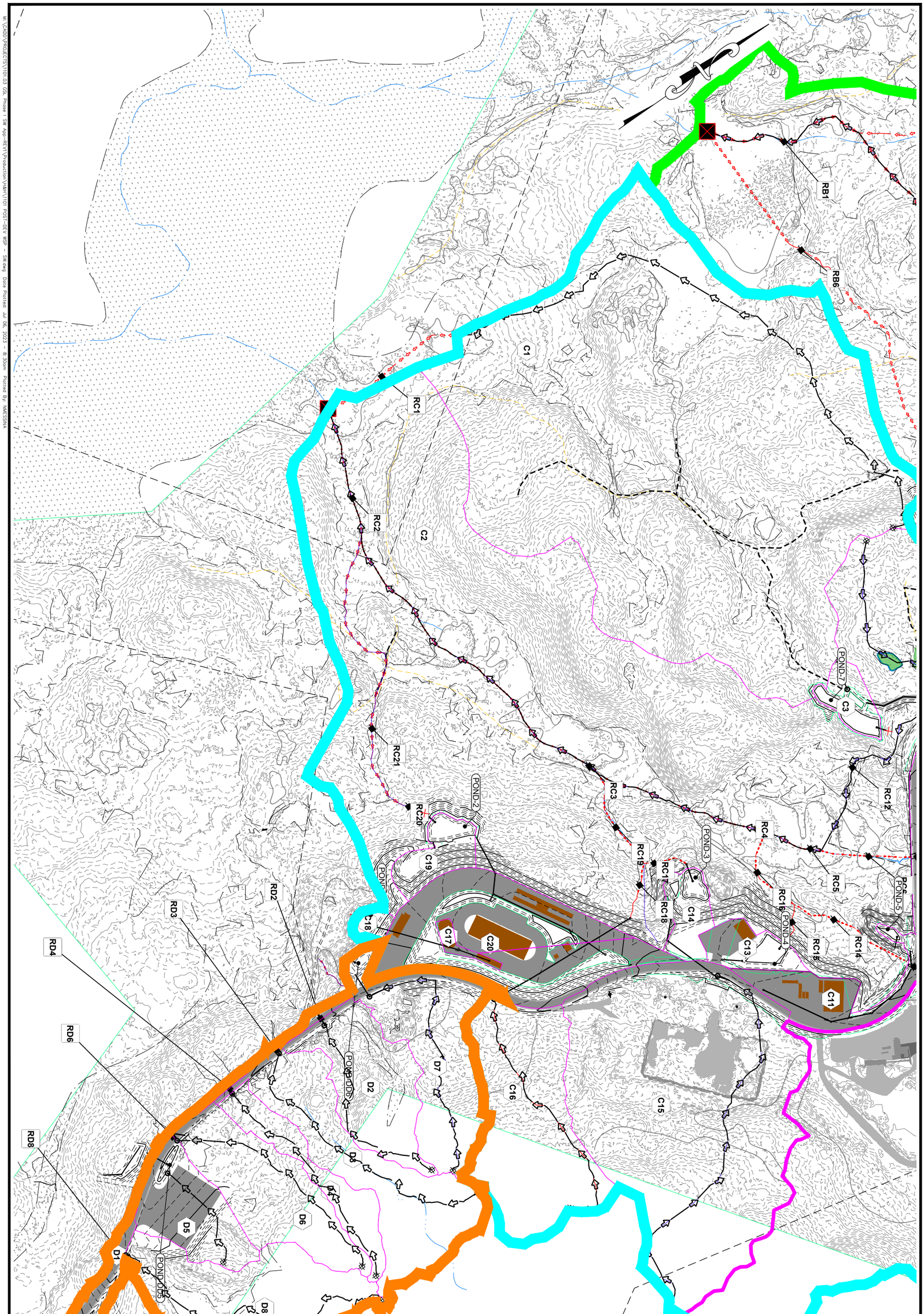

sheet: 4 of 5	drawing no.: POSTDEV-4	Granite State Landfill, LLC. Dalton, New Hampshire NHDES Solid Waste Permit Application Post-Development Drainage Diagram	date: July 2023	designed by: NJM	CMA ENGINEERS CIVIL/ENVIRONMENTAL/STRUCTURAL Portsmouth, NH 603/431-6196 • Manchester, NH 603/627-0708 • Portland, ME 207/541-4223 cmaengineers.com
			project no: 1101	drawn by: NJM	
			checked by: AJS	approved by: AJS	
			scale: 0 150' 300' Scale: 1" = 150'	ADAM J SANDAHL No. 12544 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE	

no.	revision	date	by

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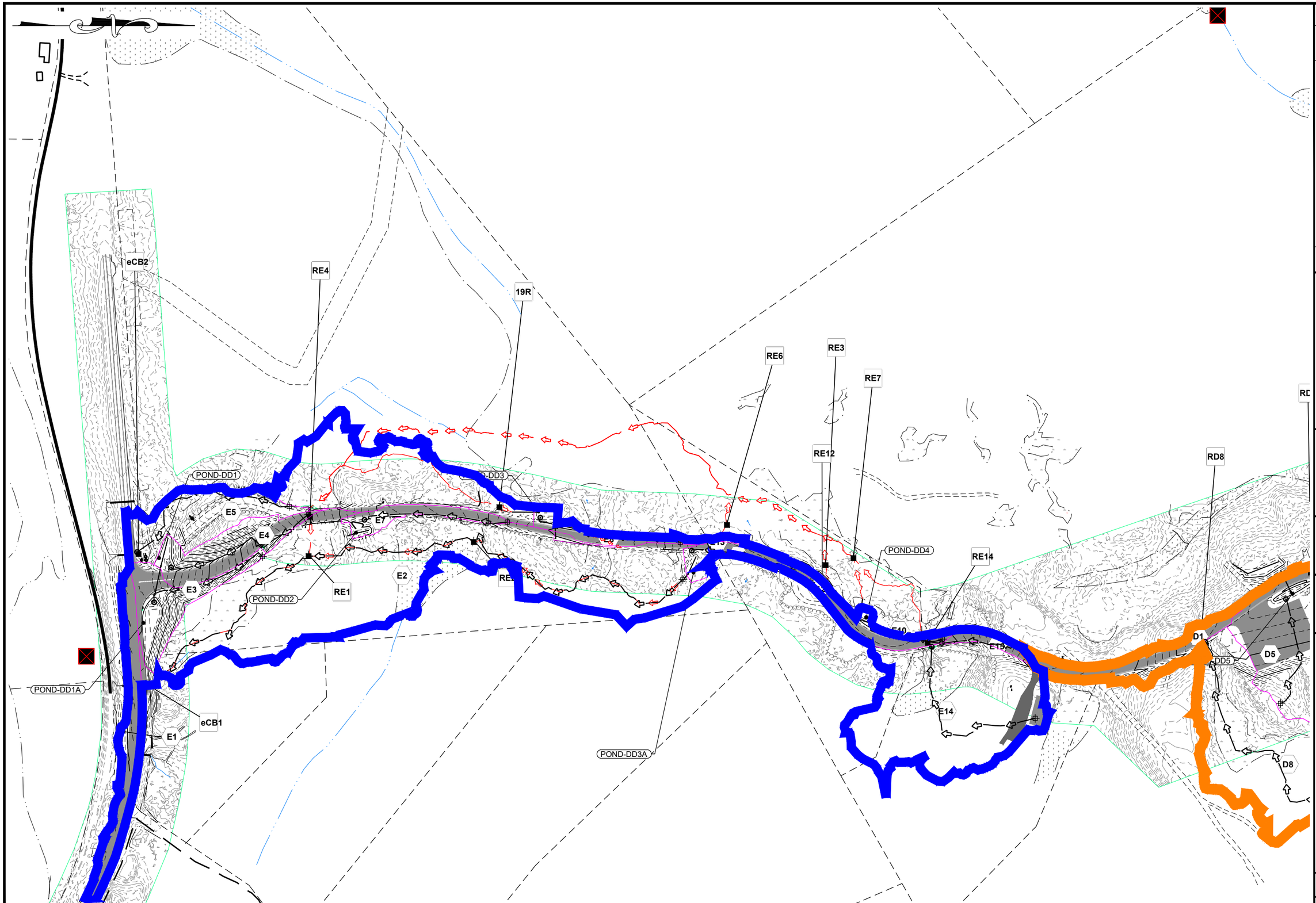

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ADAM J. SANDAHL No. 12544 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

designed by:	drawn by:	approved by:	scale:
NJM	NJM	AJS	300' 150' 0 Scale: 1" = 150'
date: July 2023	project no: 1101	checked by: AJS	

Granite State Landfill, LLC.
Dalton, New Hampshire

NHDES Solid Waste
Permit Application

Post-Development Drainage Diagram
Douglas Drive

drawing no.
POSTDEV-5

sheet: 5 of 5

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