

BGS #3478

Bradbury Mountain State Park Campground

Improvements

10.23.2024

## **Addendum #2**

Summary :

PaulDesignsProject and consultants are responding to onsite and emailed questions regarding the Bradbury Mountain State Park Campground Improvements. If any questions are not answered, or additional details, drawings and information is required, please contact [andrew@pauldesignsproject](mailto:andrew@pauldesignsproject).

Bid Opening Date : Tuesday 10/29/ 2024 at 2:00pm

Contents:

- Revised Questions from Addendum #1
- Questions and Answers Bulleted List
- Revised Drawings
- Additional Requested Materials

QUESTION REVISIONS FROM ADDENDUM 1:

1. Attach a new Contractor Bid Form 00 41 13 to the Addendum
  - a. #6 – Add an add-alt for the interior envelop of the Maintenance Building. The pricing of the envelope to be independent of the building.
  - b. **Remove water storage from the project AND ensure that the pumphouse and pump house electrical is shown as a base bid item**

2:

*4) Pumphouse design inclusion in Q/C response  
Internal pumphouse needs to be designed  
i. Bennett or another firm?#*

**Contractor is responsible for electrical in pumphouse**

6 – Identify insulated envelope as add-alt number \_\_\_\_.

*Is erosion control inspection needed by licensed engineer?*

*Erosion control inspection can be by an engineer or an individual certified in erosion control by Maine DEP. **Does not have to be a hired third-party inspector if an in-house inspector is qualified***

*Spec 31 20 00 Earthmoving states “that all excavation – including rock is unclassified”. The site cannot be bid as “unclassified” without proper rock/ledge probes and a geotechnical report. Please forward all ledge probes/data and the site geotechnical report for review. If that information is not readily available, or not in sufficient detail maybe bid allowances for ledge and unsuitable soils would be in order?*

**There is no geotechnical report for this site.**

**There are test pits from the soils scientist/site evaluator who completed the High Intensity Soil Survey and septic design. These are not the same as geotechnical test pits, but show that bedrock was not found in any area of the project site. Test pit depth was generally 4’ to 5’ deep. The soils are not classified as clay. These documents are**

provided if BPL wishes to share them with the contractors.

It is up to BPL if they want to add a bid allowance for ledge & unsuitables, and what the amount would be.

Ledge is not at the site. I recall the well drilling report stating that ledge was encountered at 10 feet. I don't think we need to include an allowance for ledge removal as the development is all within the top soil layers. If they encounter ledge and we can't find an alternative solution to work around it, we would do a change order.

*Can you please clarify items that the park service will be providing installing? There was some discussion at the site visit, but want to confirm. It is noted that we are to provide and install the MUTCD directory signage, and that the park service (others) would provide and install informational signage. Drawing L501 details wood benches, bike racks and fire rings.*

*Are those the contractor's responsibility? Also – mention of picnic tables and other furnishings were mentioned this am.*

1. #15 – **BPL is responsible for the picnic tables.**

*I don't see any details for the Toilet Privies. Can you please get them included/added to the plan set?*

2. #18 – **Privy vault base is to be purchased and installed by the contractor. Structure materials will be purchased and installed BPL.**

## NEW ADDENDUM QUESTIONS

1. Is this a LEED project? Are LEED Submittals required?

**NO**

2. In the structural Steel 051200 spec, it calls for the owner to engage testing and inspections (2.8A) and it calls for the contractor to provide testing and inspections (1.4C.1), who is responsible for this? If the contractor is can an allowance be carried?

**Contractor cannot carry an allowance if BPL has not approved an allowance to be carried. BPL does not want any unnecessary testing. Any testing required is the responsibility of contractor**

3. Is a mock up required for Concrete? 033000 – Cast-In-Place, section 1.3D.

**NO**

4. It appears per section 033000 – Cast In Place Concrete the contractor is responsible for testing & Inspections, can an allowance be carried for this item?

**NO. Any testing required is the responsibility of the contractor. No Allowance that is not specified**

5. Is BABAA required on this project?

**NOT EXPLICITLY, HOWEVER, AMERICAN MADE PRODUCTS ARE PREFERRED**

6. In section 31 25 13 – Erosion Controls section 1.4 Section B.1 through B.4, it calls out for the GC to carry a PE to assist in implementing with erosion control including several other tasks from B.1 through B.5. Is this going to be required? Should an allowance be carried for this?

7. Who is providing vault toilets? If the contractor please provide details and requirements

**Contractor purchases and installs the vault privy base based on the spec proved by BPL, or approved equal**

### **Maintenance Building**

8. Foundation wall height on the structural drawings is 4'6" from TOF to TOW. The architectural drawings show a 2' wall above slab elevation, when the structural drawings show 6" from slab elevation to TOW. Can you confirm which we should provide?

**2' stem wall above slab elevation, please, this was increased to protect base of building**

9. Should there be rigid foam on exterior foundation walls at maintenance building?

**No**



### **Gatehouse**

10. On drawing A1.101 the clouded elevation reference and enlarged plan areas are not identified. There appears to be a bench/knee wall area – is this part of the contract? If so, can you provide a wall type and bench materials?

**THIS IS PART OF THE BASE BID. SEE DETAIL AT END OF ADDENDUM**

11. HHE-2000 Forms (Septic Design) do not appear to be in the plans/specs/addendum 1. These are needed so we can at a minimum price the system for the maintenance garage. There is no detail present.

**SEE ATTACHMENTS FROM LONGVIEW PARTNERS**

12. Also – SMH-2 will not work as designed. It is too shallow – the pipe connections/boots will be above the top of barrel section and into the flat top/casting. The inverts need to drop by at least 10 inches.

**SMH-2 adjacent to the bathhouse could adjust slightly so the RIM moves up to 260.28 (gains 3.4”). The frame/cover shall be a shorter 3” height and the structure shall have a flat top (7”). I believe the joint between flat top and barrel section is 4.5”, therefore the bottom of joint would be at 259.07. The sewer pipes are 4”. The invert in is 258.29, so top of pipe is 258.62. Difference between top of pipe and bottom of joint is 5.4”. I believe this is workable. We cannot lower the inverts as we are already up against minimum slopes and separations. We can work up a more specific detail on the construction set. If the contractors need more information on this item I am happy to discuss further.**

13. Are the plants shown/listed on L102 **IN ADDITION** to those shown/listed on L101? Or are they included in the quantities shown/listed on L101? The term “Plant Schedule – This Sheet Only” makes us think they are in addition to the plants on L101. Please confirm/advise.

**Each planting sheet contains planting lists for only the plants on those sheets. Those plants are not accounted for on other sheets.**

14. Can you provide the septic designs for the non-engineered septic systems? Sheet C5.3 says “See HHE-200 by Longview Partners” for both the maintenance building and RV dumping station systems.

15. Is there a detail for the RV dump station connection point?

**Sheet C-6.2 Campsite Sewer Hook Up Detail.**

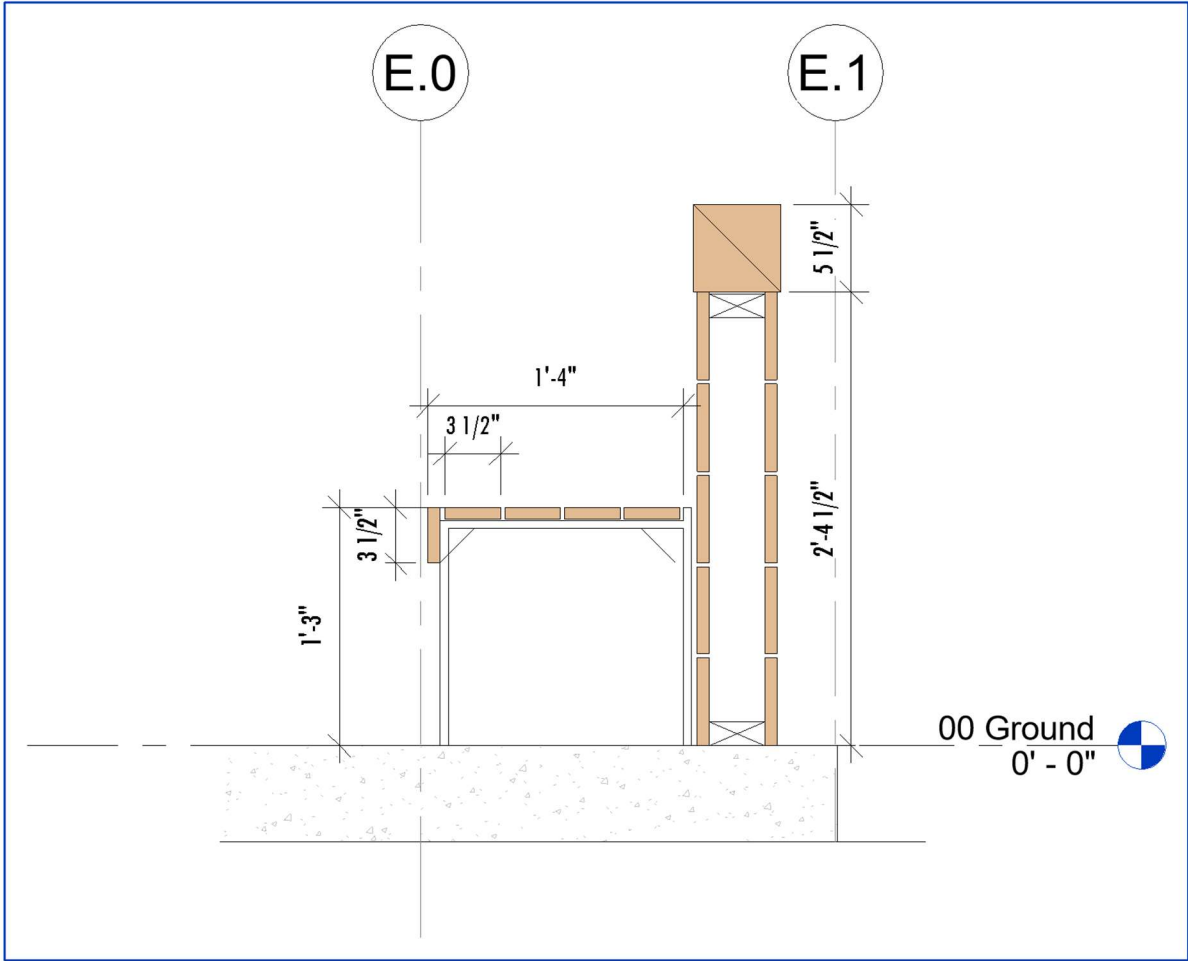
16. The utility plan shows a 250 gallon propane tank for the bath house. Will this be installed on a concrete pad?

**Yes, unless BPL says otherwise. BPL specified that they wanted a 250 gallon LP tank here so we should confirm with them that this standard construction on concrete is acceptable?**

17. The plans for the pole barn/storage barn that were included in the addendum include the design for a 3 bay, 4 bay, and 5 bay barn. Do you know which size building will be built?

**5 BAY BARN**

**DETAIL FOR BENCH / KNEE WALL:**



**00 41 13**  
**Contractor Bid Form**

**Bradbury Mountain State Park Campground Improvements**

3478

Bid Form submitted by: *email only to email address below*

Bid Administrator:

*Paul Barber, BGS Project Manager*

BGS.Architect@Maine.gov

Bureau of General Services

111 Sewall Street, Cross State Office Building, 4th floor

77 State House Station

Augusta, Maine 04333-0077

Bidder:

Signature: \_\_\_\_\_

Printed name and  
title: \_\_\_\_\_

Company name: \_\_\_\_\_

Mailing address: \_\_\_\_\_

City, state, zip code: \_\_\_\_\_

Phone number: \_\_\_\_\_

Email address: \_\_\_\_\_

State of  
incorporation,  
if a corporation: \_\_\_\_\_

List of all partners,  
if a partnership: \_\_\_\_\_

The Bidder agrees, if the Owner offers to award the contract, to provide any and all bonds and certificates of insurance, as well as Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers if required by the Owner, and to sign the designated Construction Contract within twelve calendar days after the date of notification of such acceptance, except if the twelfth day falls on a State of Maine government holiday or other closure day, or a Saturday, or a Sunday, in which case the aforementioned documents must be received before 12:00 noon on the first available business day following the holiday, other closure day, Saturday, or Sunday.

As a guarantee thereof, the Bidder submits, together with this bid, a bid bond or other acceptable instrument as and if required by the Bid Documents.

- \$ .00

- \$ 0.00

- \$ .00

- \$ .00

- \$ .00

- \$ .00

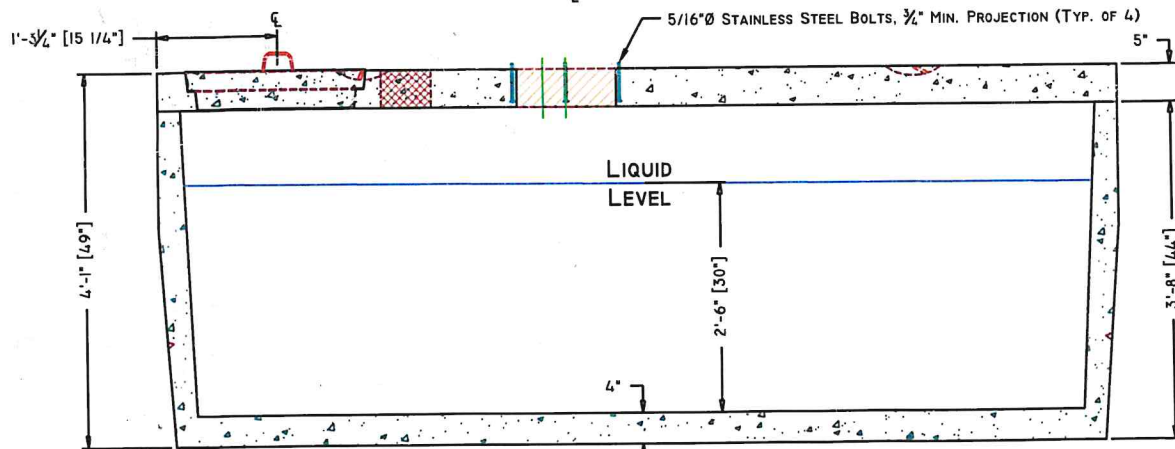
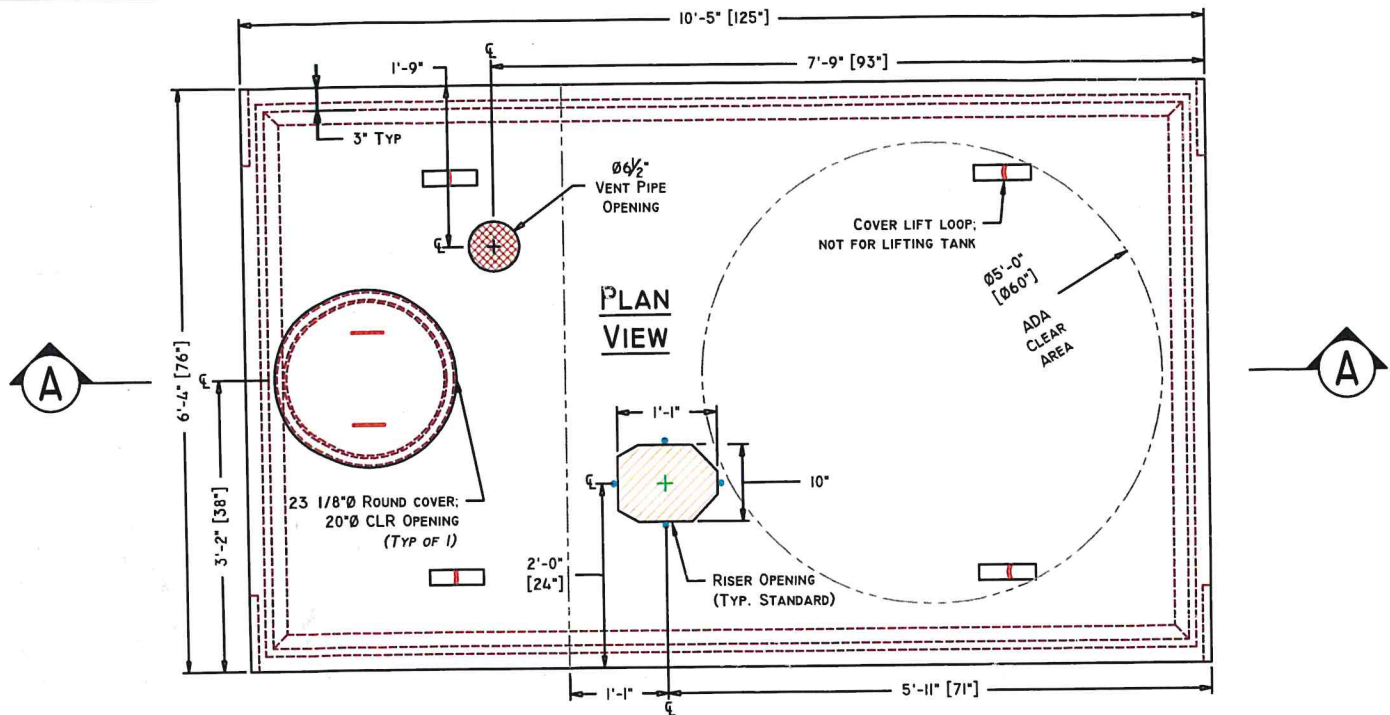
- If noted above as required, the Bidder shall include with this bid form a list of each Filed Sub-bidder selected by the Bidder on the form provided (section 00 41 13F).



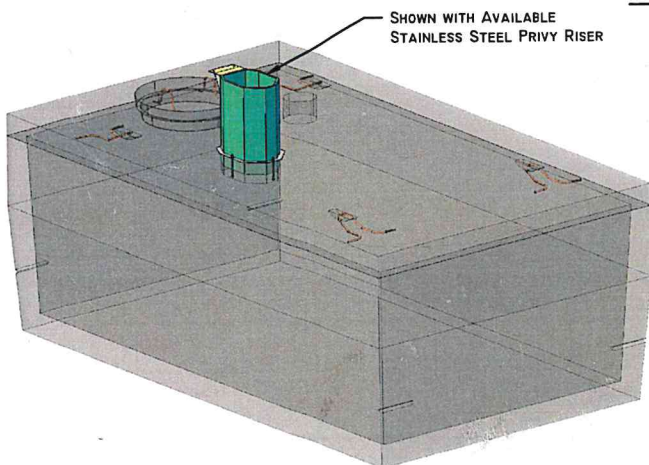
# American Concrete Industries

## 1000 GALLON LOWBOY PRIVY TANK

WWW.AMERICANCONCRETE.COM  
1717 STILLWATER AVE.  
VEAZIE, ME. 04401  
TEL: (207) 947-8334  
FAX: (866) 414-9083



SECTION A-A



### CONCEPTUAL VIEW

SCALE: NTS

\*Dimension is taken from bottom of tank

#### Manufacturing Notes

- 1.1. CONCRETE COMPRESSIVE STRENGTH: 5000PSI @ 28 DAYS
- 1.2. AIR ENTRAINMENT: 4-6%
- 1.3. GRADE 60 REINFORCEMENT
- 1.4. STRUCTURAL FIBER REINFORCED BASE
- 1.5. TANKS SHOULD BE PUMPED DEPENDING ON VOLUME OF USE
- 1.6. NEVER USE SEPTIC CLEANING AGENTS
- 1.7. DESIGNED FOR PEDESTRIAN LOAD RATING ONLY
- 1.8. ALL TANK PENETRATIONS ARE INTEGRALLY CAST
- 1.9. BOLTS CAST-INTO COVER, RISER (PROVIDED)  
[INSTALLATION BY OTHERS]
- 1.10. ALL JOINTS SEALED W/ BUTYL RUBBER JOINT SEALANT

#### Physical Specifications:

Cover Weight:	4,100 lbs
Tank Weight:	7,575 lbs
Total Weight:	11,675 lbs
Available Capacity:	1,386 gal (Max.)
Working Capacity:	1,000 gal

RESIDENTIAL | PRIVY TANKS | 1000GAL

AMERICAN CONCRETE INDUSTRIES CATALOG ITEM#

SCALE: 1/2" = 1'-0" UNLESS OTHERWISE NOTED

DRAWN DATE: 5/22/2020

ABL

REVISION #: 0.01 ABL

REVISION DATE: 9/17/20

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services  
Div of Environmental Health, 11 SHS  
(207) 287-5672 Fax: (207) 287-4172

## PROPERTY LOCATION

City, Town, or Plantation **POWNA**

Street or Road **HALLOWELL ROAD**

Subdivision, Lot # **BRADBURY MOUNTAIN STATE PARK CAMPGROUND**

## >> CAUTION: LPI APPROVAL REQUIRED <<

Town/City \_\_\_\_\_ Permit # \_\_\_\_\_

Date Permit Issued \_\_\_\_/\_\_\_\_/\_\_\_\_ Fee: \$ \_\_\_\_\_ Double Fee Charged \_\_\_\_\_

Local Plumbing Inspector Signature \_\_\_\_\_

LPI # \_\_\_\_\_

☐ Owner ☐ Town ☐ State

## OWNER/APPLICANT INFORMATION

Name (last, first, MI) \_\_\_\_\_ ☐ Owner  
**STATE OF MAINE, BUREAU OF PARKS AND LAND** ☐ Applicant

Mailing Address of Owner/Applicant **C/O TERRADYN CONSULTANTS, LLC  
565 CONGRESS STREET, SUITE 201  
PORTLAND, ME 04101**

Daytime Tel. # **207-322-1223**

The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map # **5** Lot # **P/O 9**

## OWNER OR APPLICANT STATEMENT

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.

Signature of Owner or Applicant \_\_\_\_\_ Date \_\_\_\_\_

## CAUTION: INSPECTION REQUIRED

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. (1st) date approved \_\_\_\_\_

Local Plumbing Inspector Signature \_\_\_\_\_ (2nd) date approved \_\_\_\_\_

## PERMIT INFORMATION

### TYPE OF APPLICATION

- ☒ 1. First Time System
2. Replacement System
- Type replaced: \_\_\_\_\_
- Year installed: \_\_\_\_\_
- ☒ 3. Expanded System
- a. <25% Expansion
- b. >25% Expansion
- ☐ 4. Experimental System
- ☐ 5. Seasonal Conversion

### THIS APPLICATION REQUIRES

- ☒ 1. No Rule Variance
- ☐ 2. First Time System Variance
- a. Local Plumbing Inspector Approval
- b. State & Local Plumbing Inspector Approval
- ☐ 3. Replacement System Variance
- a. Local Plumbing Inspector Approval
- b. State & Local Plumbing Inspector Approval
- ☐ 4. Minimum Lot Size Variance
- ☐ 5. Seasonal Conversion Permit

### DISPOSAL SYSTEM COMPONENTS

- ☒ 1. Complete Non-engineered System
- ☐ 2. Primitive System (graywater & alt. toilet)
- ☐ 3. Alternative Toilet, specify: \_\_\_\_\_
- ☐ 4. Non-engineered Treatment Tank (only)
- ☐ 5. Holding Tank, \_\_\_\_\_ gallons
- ☐ 6. Non-engineered Disposal Field (only)
- ☐ 7. Separated Laundry System
- ☐ 8. Complete Engineered System (2000 gpd or more)
- ☐ 9. Engineered Treatment Tank (only)
- ☐ 10. Engineered Disposal Field (only)
- ☐ 11. Pre-treatment, specify: \_\_\_\_\_
- ☐ 12. Miscellaneous Components

### SIZE OF PROPERTY

**71 +/-** SQ. FT. ACRES

### DISPOSAL SYSTEM TO SERVE

- ☐ 1. Single Family Dwelling Unit, No. of Bedrooms: \_\_\_\_\_
- ☐ 2. Multiple Family Dwelling, No. of Units: \_\_\_\_\_
- ☐ 3. Other: **CAMPGROUND DUMP STATION-43 SITES** (specify)
- Current Use ☒ Seasonal ☐ Year Round ☐ Undeveloped

### TYPE OF WATER SUPPLY

- ☒ 1. Drilled Well ☐ 2. Dug Well ☐ 3. Private
- ☐ 4. Public ☐ 5. Other

## DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

### TREATMENT TANKS

- ☒ 1. Concrete
- a. Regular
- b. Low Profile
2. Plastic
3. Other: \_\_\_\_\_
- CAPACITY: **2000** GAL.

### DISPOSAL FIELD TYPE & SIZE

- ☐ 1. Stone Bed ☐ 2. Stone Trench
- ☒ 3. Proprietary Device
- a. cluster array c. Linear
- b. regular load d. H-20 load
- ☐ 4. Other: \_\_\_\_\_
- SIZE: **2688** sq. ft. lin. ft.

**42 CONCRETE CHAMBERS**

### GARBAGE DISPOSAL UNIT

- ☒ 1. No ☐ 2. Yes ☐ 3. Maybe
- If Yes or Maybe, specify one below:
- a. multi-compartment tank
- b. \_\_\_\_\_ tanks in series
- c. increase in tank capacity
- ☒ d. Filter on Tank Outlet
- RECOMMENDED**

### DESIGN FLOW

**430** gallons per day

BASED ON:

- ☐ 1. Table 4A (dwelling unit(s))
- ☐ 2. Table 4C (other facilities)
- SHOW CALCULATIONS for other facilities
- CAMPGROUND DUMP STATION-  
43 SITES @ 10 GPD/SITE**

### SOIL DATA & DESIGN CLASS

PROFILE CONDITION

**7 / C**

at Observation Hole # **TP 33**

Depth **16** "

of Most Limiting Soil Factor

### DISPOSAL FIELD SIZING

- ☐ 1. Medium--2.6 sq. ft. / gpd
- ☒ 2. Medium--Large 3.3 sq. ft. / gpd
- ☐ 3. Large--4.1 sq. ft. / gpd
- ☐ 4. Extra Large--5.0 sq. ft. / gpd

### EFFLUENT/EJECTOR PUMP

- ☐ 1. Not Required **SEE NOTE**
- ☐ 2. May Be Required **PAGE 3**
- ☐ 3. Required
- Specify only for engineered systems:
- DOSE: \_\_\_\_\_ gallons

☒ 3. Section 4G (meter readings)

ATTACH WATER METER DATA

### LATITUDE AND LONGITUDE

at center of disposal area

Lat. **43** d **54** m **01** s

Lon. **70** d **10** m **38** s

if g.p.s, state margin of error: \_\_\_\_\_

## SITE EVALUATOR STATEMENT

I certify that on **8/19/24** (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

*James Logan*

Site Evaluator Signature

**237**

SE #

**9/5/24**

Date

**JAMES LOGAN**

Site Evaluator Name Printed

**207-693-8799**

Telephone Number

**longviewpartners213@gmail.com**

E-mail Address

Note : Changes to or deviations from the design should be confirmed with the Site Evaluator.

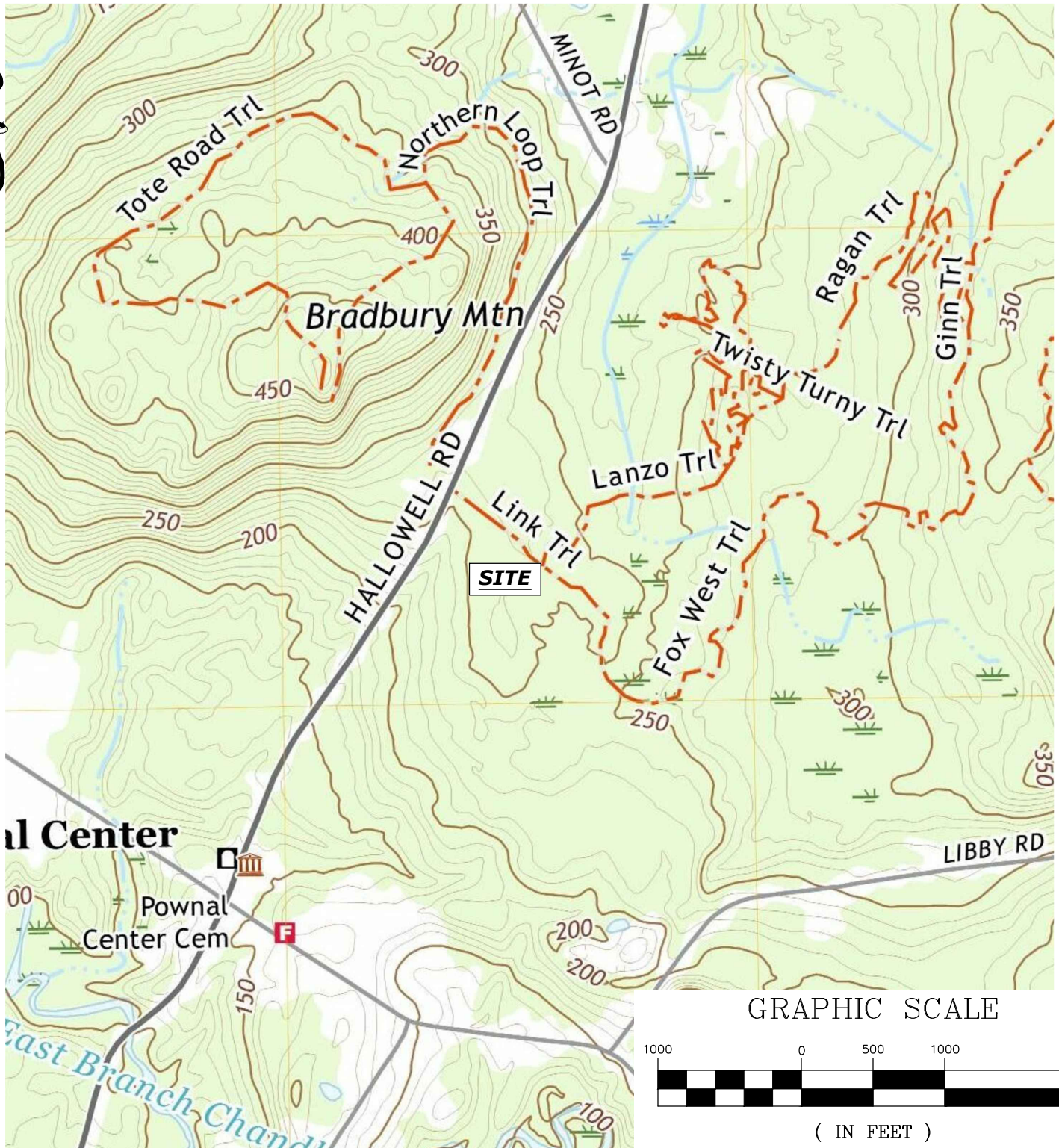
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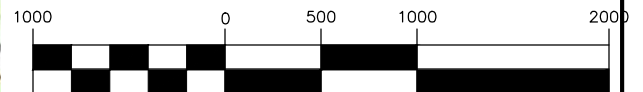
## rev. 02/2004

Quarterly
h percentile
10
5
ds





GRAPHIC SCALE



( IN FEET )  
1 inch = 1000 ft.

**SITE LOCATION PLAN**  
**PREPARED FOR**  
**BRADBURY MOUNTAIN STATE**  
**PARK CAMPGROUND**  
**(TERRADYN CONSULTANTS, LLC)**  
**HALLOWELL ROAD**  
**POWNA, MAINE**



ENVIRONMENTAL PERMITTING SPECIALISTS

DRAFT:  
BO

SCALE:  
1" = 1000'

CHECKED:  
JL

PLAN DATE:  
4/4/24

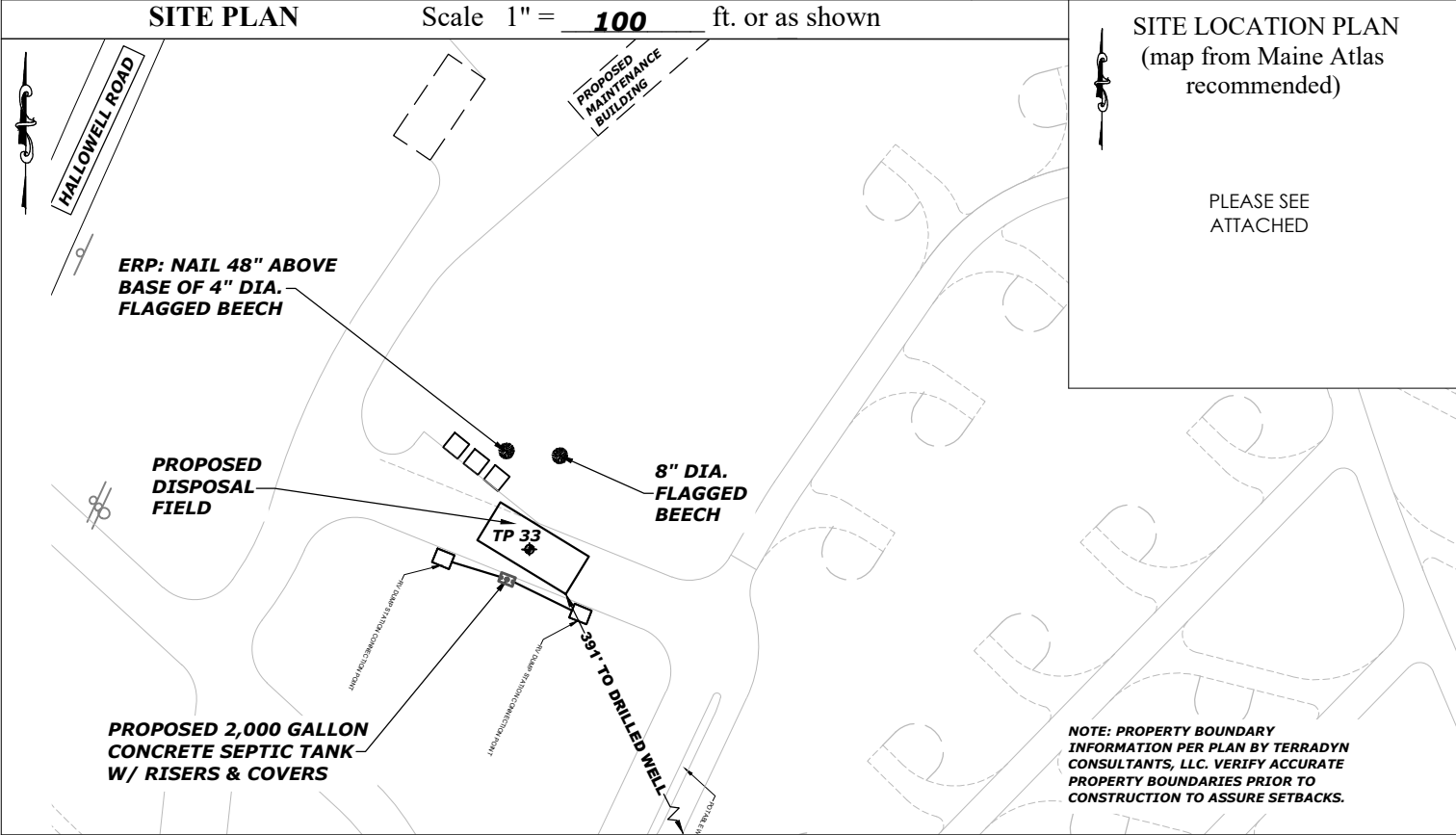
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Town, City, Plantation  
**POWNA**

Street, Road, Subdivision  
**HALLOWELL ROAD (BRADBURY MOUNTAIN STATE PARK CAMPGROUND)**

Owner's Name  
**STATE OF MAINE, BUREAU OF PARKS & LAND**

Department of Human Services  
Division of Health Engineering  
(207) 287-5672 Fax: (207) 287-3165



SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole **TP 33** ☒ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
0		DARK BROWN	
STONY SANDY LOAM			
10		DARK YELLOWISH BROWN	
STONY LOAMY SAND	FRIABLE		
20			FEW FAINT
LOAMY FINE SAND			COMMON FAINT
30	FIRM	OLIVE BROWN	COMMON DISTINCT
STONY LOAMY SAND & SAND			
40			
50			

Soil Classification  
**7 C**  
Profile Condition

Slope  
**4-7** %

Limiting Factor  
**16** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

Observation Hole \_\_\_\_\_ ☐ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
0			
10			
20			
30			
40			
50			

Soil Classification  
\_\_\_\_\_  
Profile Condition

Slope  
**0-1** %

Limiting Factor  
\_\_\_\_\_"

☐ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services  
Division of Health Engineering  
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

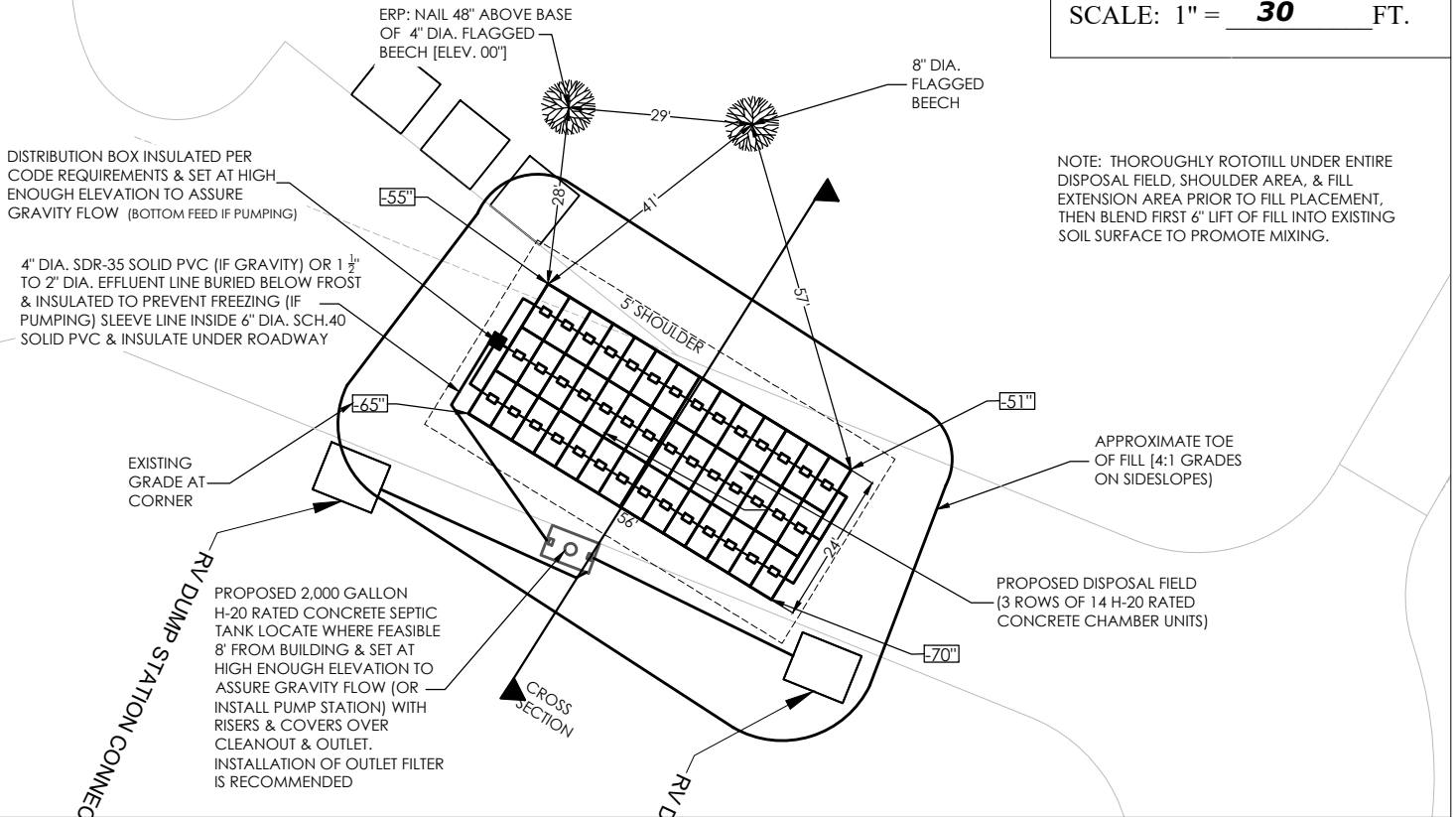
**POWNA**

**HALLOWELL ROAD (BRADBURY MOUNTAIN STATE PARK CAMPGROUND)**

**STATE OF MAINE, BUREAU OF PARKS & LAND**

## SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE: 1" = **30** FT.



### FILL REQUIREMENTS

### CONSTRUCTION ELEVATIONS

### ELEVATION REFERENCE POINT

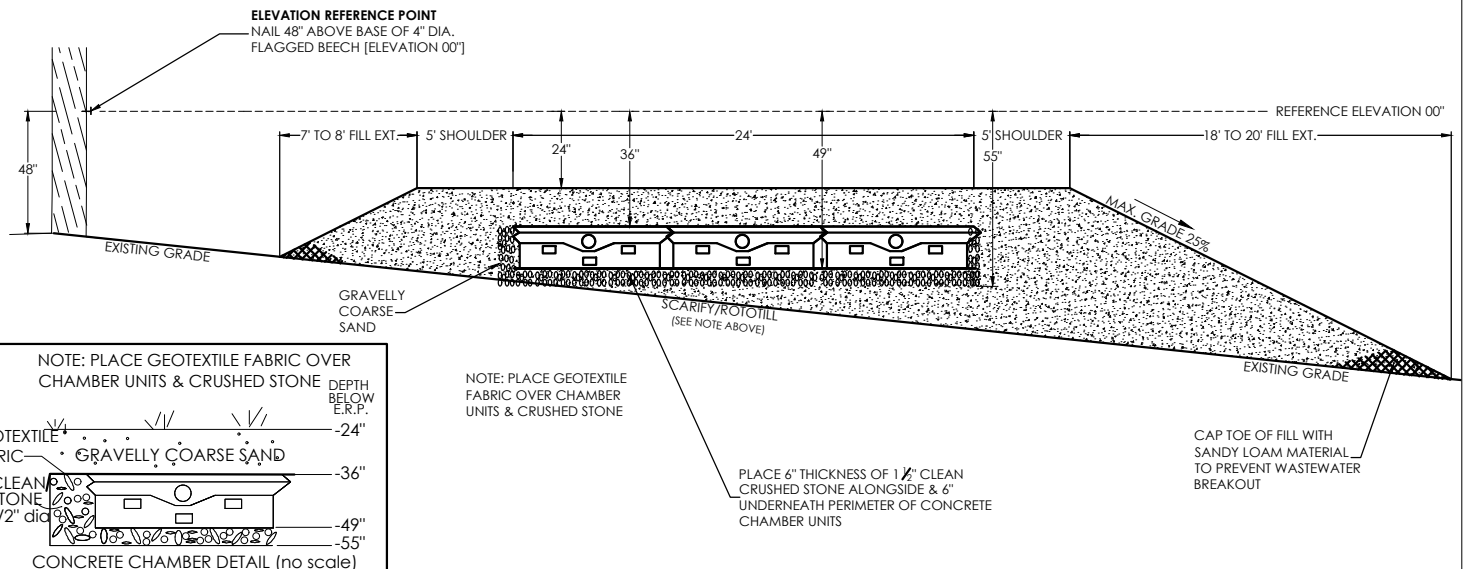
Depth of Fill (Upslope) **27"- 31"** Finished Grade Elevation  
Depth of Fill (Downslope) **41"- 46"** Top of Distribution Pipe or Proprietary Device  
Bottom of Disposal Area

**SEE  
DETAIL  
BELOW**

Location & Description:  
**NAIL 48" ABOVE BASE OF 4" DIA. FLAGGED BEECH**  
Reference Elevation: \_\_\_\_\_

## DISPOSAL AREA CROSS SECTION

Scale  
Horizontal 1" = **10** ft.  
Vertical 1" = **5** ft.



*James Logan*  
Site Evaluator Signature

**237**

SE #

**9/5/24**

Date

Page 3 of 3  
HHE-200 Rev. 8/01



**DISPOSAL SYSTEM INSTALLATION NOTES**

1. The State of Maine *Subsurface Wastewater Disposal Rules (10-144 Chapter 241 the Rules)* are incorporated by reference and made a part of this application. These shall be consulted by the owner/applicant, the system installer and/or building contractor for further construction details and material specifications. The system installer shall contact Longview Partners, LLC (207-693-8799) if there are any questions concerning materials, procedures or the design. The system installer and/or building contractor installing the system shall be solely responsible for compliance with the *Rules* and with all State and municipal laws and ordinances pertaining to the permitting, construction, and inspection of subsurface wastewater disposal systems.
2. This application is intended to represent facts pertinent to the *Rules* only. It shall be the responsibility of the owner/applicant, system installer and/or building contractor to determine compliance with and to obtain other permits under all applicable local, State and/or Federal laws and regulations before installing the system or considering the property on which the system is to be installed a "buildable" lot. It is recommended that a wetland scientist be consulted regarding wetland regulations, should wet areas exist. Prior to commencement of construction/installation, the Local Plumbing Inspector or Code Enforcement Officer shall inform the owner/applicant and Longview Partners, LLC of any local ordinances which are more restrictive than the *Rules* in order that the design may be amended. All designs are subject to review by local, State and/or Federal authorities. Longview Partners, LLC's liability shall be limited to revisions required by regulatory agencies and based on laws or regulations in effect at the time of preparation of this application.
3. All information shown on this application relating to property lines, well locations, subsurface structures, and underground facilities (such as utility lines, drains, septic systems, water lines, etc.) are based upon information provided by the owner/applicant and has been relied upon by Longview Partners, LLC in preparing this application. The owner/applicant shall review this application prior to the start of construction and confirm this information. Well locations on abutting properties not readily visible above-grade (such as well points) should be confirmed by the owner/applicant prior to system installation to assure minimum setbacks.
4. Installation of a garbage (grinder) disposal is **not recommended**. If one is installed, an additional 1,000 gallon septic tank shall be connected in series to the proposed septic tank or a septic tank outlet filter shall be installed in the tank outlet. Risers and covers should be installed over the septic tank cleanout and outlet per the *Rules* for easy maintenance of the filter.
5. The septic tank should be pumped within 2 years of installation and subsequently as recommended by the pump service. **In no event should the septic tank be pumped less often than every 3 years.** The system use shall avoid introducing kitchen grease or fats into the system. Chemicals such as septic tank cleaners and/or chlorine (such as from water treatment units) and controlled or hazardous substances shall not be disposed of in this system. Additives such as yeast or enzymes are discouraged, since they have not been proven to extend system life or performance.
6. All septic tanks, pump stations and additional treatment tanks shall be installed to prevent ground water and surface water infiltration. Risers and covers should be properly installed to provide access while preventing surface water intrusion within 6" of a finished ground surface. Vehicular traffic over disposal system is prohibited unless specifically designed with H-20 rated components.

**DISPOSAL SYSTEM INSTALLATION NOTES**

7. The daily wastewater flow, number of bedrooms, or use of structure shall not exceed the design criteria indicated on this application without a re-evaluation of the system as proposed.
8. The general minimum setbacks between a well (public or private) and septic system serving a single family residence are 100-300 feet, unless the local municipality has a more stringent requirement or a liner seal is installed in the well. A well installed by an abutter within the minimum setback distances prior to the issuance of a permit for the proposed disposal system may void this design.
9. When a gravity flow is anticipated, **before construction/installation begins**, the system installer or building contractor shall review the elevation of all points given in this application and the elevation of the existing and/or proposed building drain and septic tank inverts for compatibility to minimum pipe pitch requirements.
10. When an effluent pump is required, pump stations should be sized per manufacturer's specifications to meet lift requirements and friction/head loss. Provisions shall be made to make certain that surface and ground water does not enter the septic tank or pump station, by sealing/grouting all seams and connections, and by placement of a riser and cover at or above grade. An alarm device warning of a pump failure shall be installed. Bottom-feed distribution box is specified to prevent freezing. Insulate distribution boxes per the *Rules*.
11. On all systems, remove the vegetation, organic duff and roots, and old fill material from under the disposal area and any fill extension. Additional fill beyond indicated on the plan may be necessary to replace organic matter and/or stumps. On sites where the proposed disposal area is to be installed in natural soil, scarify the bottom and sides of the excavated disposal area with a rake. Do not use wheeled equipment on the scarified soil surface. For systems installed in fill, scarify the native soil by roto-tilling or scarifying with teeth of backhoe to a depth of at least 8 inches over the entire disposal field and fill extension are to prevent glazing and to promote fill bonding. Place fill in loose layers no deeper than 8 inches and compact before placing more fill (this ensures that voids and loose pockets are eliminated to minimize the chance of leakage or different settling). Do not use wheeled equipment on the scarified soil until after 12 inches of fill is in place. Keep equipment off of proprietary leaching devices. Divert surface water away from the disposal area by ditching or shallow landscape swales.
12. Unless noted otherwise, fill shall be gravelly coarse sand, which contains no more than 5% fines (silt and clay). Crushed stone shall be clean and free of any rock dust from the crushing process. Refer to the *Rules* for more specific information regarding fill and stone.
13. Seed all filled and disturbed surfaces with perennial grass seed, with 4 inches minimum soil or soil amendment mix suitable for growing, then mulch with hay or equivalent material to prevent erosion. Alternatively, bark or permanent landscape mulch may be used to cover the system. Woody trees or shrubs are not permitted on the disposal field or fill extensions.
14. If an advanced wastewater treatment unit is part of this design, the system shall be operated and maintained per manufacturer's specifications.
15. Effluent (backwash) from water treatment units **SHALL NOT** be disposed of within this disposal system and **MUST** be redirected away from the disposal field

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services  
Div of Environmental Health, 11 SHS  
(207) 287-5672 Fax: (207) 287-4172

## PROPERTY LOCATION

City, Town, or Plantation	<b>POWNA</b>
Street or Road	<b>HALLOWELL ROAD</b>
Subdivision, Lot #	<b>BRADBURY MOUNTAIN STATE PARK CAMPGROUND</b>

## >> CAUTION: LPI APPROVAL REQUIRED <<

Town/City \_\_\_\_\_ Permit # \_\_\_\_\_  
Date Permit Issued \_\_\_\_/\_\_\_\_/\_\_\_\_ Fee: \$ \_\_\_\_\_ Double Fee Charged \_\_\_\_\_

Local Plumbing Inspector Signature \_\_\_\_\_

LPI # \_\_\_\_\_  
☐ Owner ☐ Town ☐ State

## OWNER/APPLICANT INFORMATION

Name (last, first, MI) <b>STATE OF MAINE, BUREAU OF PARKS AND LAND</b>	<input type="checkbox"/> Owner <input type="checkbox"/> Applicant
Mailing Address of Owner/Applicant <b>C/O TERRADYN CONSULTANTS, LLC 565 CONGRESS STREET, SUITE 201 PORTLAND, ME 04101</b>	
Daytime Tel. #	<b>207-322-1223</b>

The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map # **5** Lot # **P/O 9**

## OWNER OR APPLICANT STATEMENT

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.

Signature of Owner or Applicant \_\_\_\_\_ Date \_\_\_\_\_

## CAUTION: INSPECTION REQUIRED

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.  
(1st) date approved \_\_\_\_\_

Local Plumbing Inspector Signature \_\_\_\_\_ (2nd) date approved \_\_\_\_\_

## PERMIT INFORMATION

### TYPE OF APPLICATION

- ☒ 1. First Time System  
☐ 2. Replacement System  
Type replaced: \_\_\_\_\_  
Year installed: \_\_\_\_\_  
☒ 3. Expanded System  
a. <25% Expansion  
b. >25% Expansion  
☐ 4. Experimental System  
☐ 5. Seasonal Conversion

### THIS APPLICATION REQUIRES

- ☒ 1. No Rule Variance  
☐ 2. First Time System Variance  
a. Local Plumbing Inspector Approval  
b. State & Local Plumbing Inspector Approval  
☐ 3. Replacement System Variance  
a. Local Plumbing Inspector Approval  
b. State & Local Plumbing Inspector Approval  
☐ 4. Minimum Lot Size Variance  
☐ 5. Seasonal Conversion Permit

### DISPOSAL SYSTEM COMPONENTS

- ☒ 1. Complete Non-engineered System  
☐ 2. Primitive System (graywater & alt. toilet)  
☐ 3. Alternative Toilet, specify: \_\_\_\_\_  
☐ 4. Non-engineered Treatment Tank (only)  
☐ 5. Holding Tank, \_\_\_\_\_ gallons  
☐ 6. Non-engineered Disposal Field (only)  
☐ 7. Separated Laundry System  
☐ 8. Complete Engineered System (2000 gpd or more)  
☐ 9. Engineered Treatment Tank (only)  
☐ 10. Engineered Disposal Field (only)  
☐ 11. Pre-treatment, specify: \_\_\_\_\_  
☐ 12. Miscellaneous Components

### SIZE OF PROPERTY

**71 +/-** SQ. FT.  
ACRES

### DISPOSAL SYSTEM TO SERVE

- ☐ 1. Single Family Dwelling Unit, No. of Bedrooms: \_\_\_\_\_  
☐ 2. Multiple Family Dwelling, No. of Units: \_\_\_\_\_  
☐ 3. Other: **MAINTENANCE BUILDING-UP TO 5 EMPLOYEES**  
(specify)  
Current Use ☒ Seasonal ☐ Year Round ☐ Undeveloped

### TYPE OF WATER SUPPLY

- ☒ 1. Drilled Well ☐ 2. Dug Well ☐ 3. Private  
☐ 4. Public ☐ 5. Other

## DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

### TREATMENT TANKS

- ☒ 1. Concrete  
a. Regular  
b. Low Profile  
☐ 2. Plastic  
☐ 3. Other: \_\_\_\_\_  
CAPACITY: **1000** GAL.

### DISPOSAL FIELD TYPE & SIZE

- ☐ 1. Stone Bed ☐ 2. Stone Trench  
☒ 3. Proprietary Device  
a. cluster array c. Linear  
b. regular load d. H-20 load  
☐ 4. Other: \_\_\_\_\_  
SIZE: **384** sq. ft. lin. ft.

**8 ELJEN GSF UNITS**

### GARBAGE DISPOSAL UNIT

- ☒ 1. No ☐ 2. Yes ☐ 3. Maybe  
If Yes or Maybe, specify one below:  
a. multi-compartment tank  
b. \_\_\_\_\_ tanks in series  
c. increase in tank capacity  
☒ d. Filter on Tank Outlet  
**RECOMMENDED**

### DESIGN FLOW

**100** gallons per day

BASED ON:

- ☐ 1. Table 4A (dwelling unit(s))  
☒ 2. Table 4C (other facilities)

SHOW CALCULATIONS for other facilities  
**-MAINTENANCE BUILDING-  
UP TO 5 EMPLOYEES  
AT 20 GPD/EMPLOYEE**

### SOIL DATA & DESIGN CLASS

PROFILE CONDITION

**7 / C**  
at Observation Hole # **TP 34**  
Depth **20** "  
of Most Limiting Soil Factor

### DISPOSAL FIELD SIZING

- ☐ 1. Medium--2.6 sq. ft. / gpd  
☒ 2. Medium--Large 3.3 sq. ft. / gpd  
☐ 3. Large--4.1 sq. ft. / gpd  
☐ 4. Extra Large--5.0 sq. ft. / gpd

### EFFLUENT/EJECTOR PUMP

- ☐ 1. Not Required **SEE NOTE PAGE 3**  
☐ 2. May Be Required  
☐ 3. Required  
Specify only for engineered systems:  
DOSE: \_\_\_\_\_ gallons

- ☐ 3. Section 4G (meter readings)  
ATTACH WATER METER DATA

### LATITUDE AND LONGITUDE

at center of disposal area  
Lat. **43** d **54** m **17** s  
Lon. **70** d **10** m **36** s  
if g.p.s, state margin of error: \_\_\_\_\_

## SITE EVALUATOR STATEMENT

I certify that on **8/19/24** (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

*James Logan*  
Site Evaluator Signature

**237**  
SE #

**9/11/24**  
Date

**JAMES LOGAN**

Site Evaluator Name Printed

**207-693-8799**  
Telephone Number

**longviewpartners213@gmail.com**  
E-mail Address

Note : Changes to or deviations from the design should be confirmed with the Site Evaluator.

Page 1 of 3

HHE-200 Rev. 08/2011

## SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services  
Division of Health Engineering  
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

***POWNAL***

**HALLOWELL ROAD (BRADBURY MOUNTAIN STATE PARK CAMPGROUND)**

STATE OF MAINE, BUREAU OF PARKS &amp; LAND

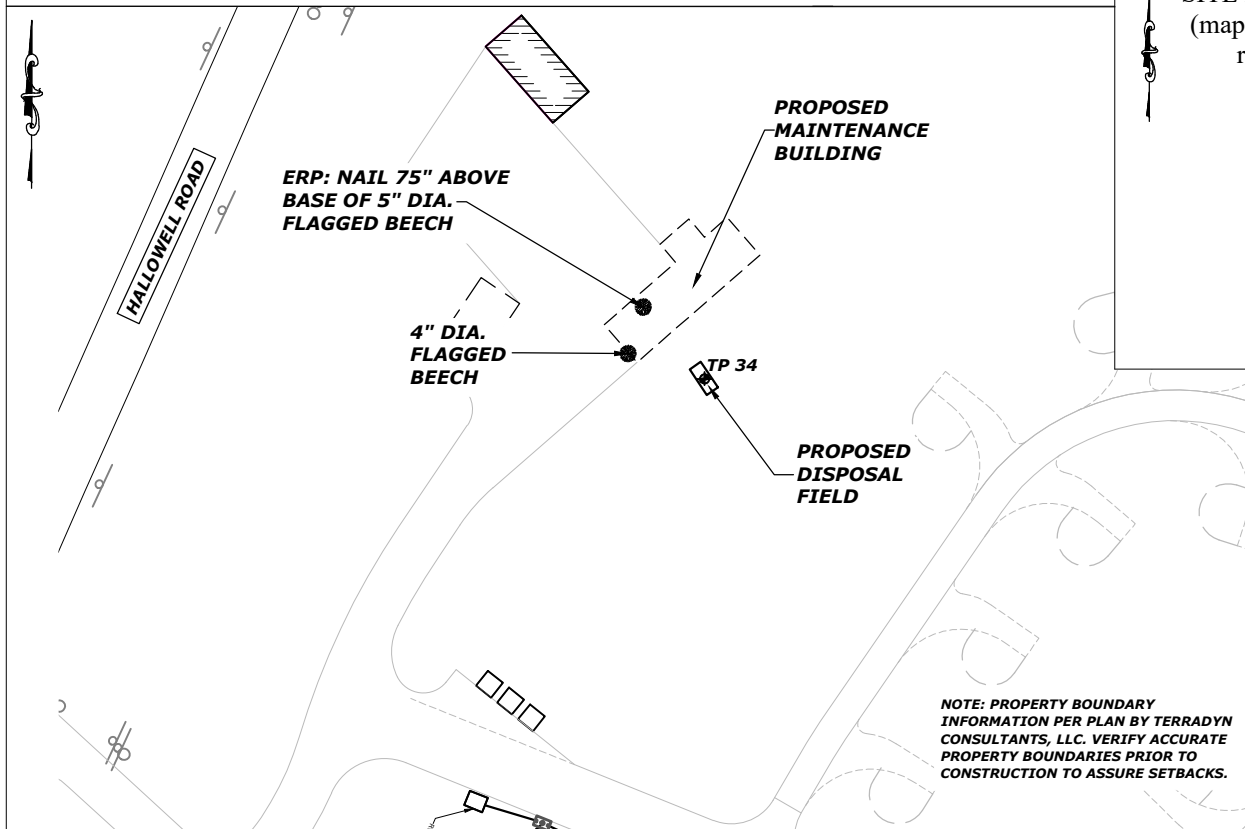
## SITE PLAN

Scale 1" = **100** ft. or as shown

## SITE LOCATION PLAN

(map from Maine Atlas  
recommended)

PLEASE SEE  
ATTACHED



## SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole **TP 34**    ☒ Test Pit    ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

Observation Hole ☐ Test Pit ☐ Boring ☐  
 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0			<b>DARK BROWN</b>	
10	<b>STONY SANDY LOAM</b>		<b>DARK YELLOWISH BROWN</b>	
20	<b>STONY LOAMY SAND</b>	<b>FRIABLE</b>	<b>LIGHT YELLOWISH BROWN</b>	
30	<b>STONY LOAMY SAND &amp; SAND</b>	<b>FIRM</b>	<b>OLIVE BROWN</b>	<b>FEW FAINT</b>
40				
50				

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water <input checked="" type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
<u>7</u> <u>C</u> Profile      Condition	<u>2-7</u> %	<u>20</u> "	

	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

Soil Classification	Slope	Limiting Factor	<input type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
_____ Profile      Condition	_____ %	_____ "	

James Logan  
Site Evaluator Signature

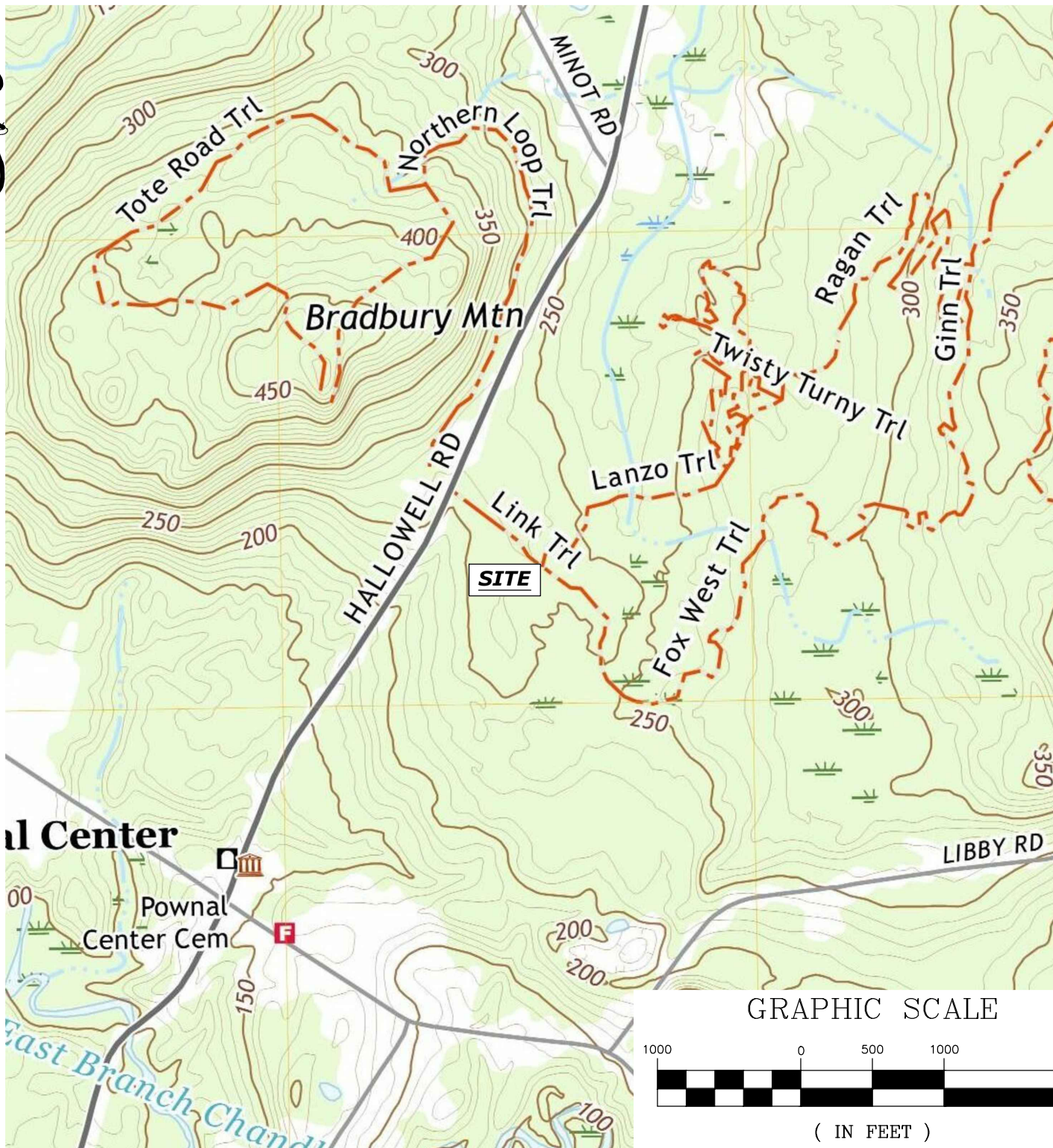
237

SE #

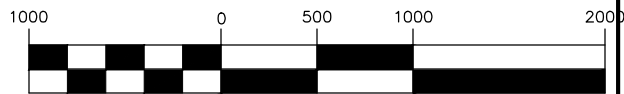
**9/11/24**

Date \_\_\_\_\_





GRAPHIC SCALE



( IN FEET )  
1 inch = 1000 ft.

**SITE LOCATION PLAN**  
**PREPARED FOR**  
**BRADBURY MOUNTAIN STATE**  
**PARK CAMPGROUND**  
**(TERRADYN CONSULTANTS, LLC)**  
**HALLOWELL ROAD**  
**POWNA, MAINE**



ENVIRONMENTAL PERMITTING SPECIALISTS

DRAFT:  
BO

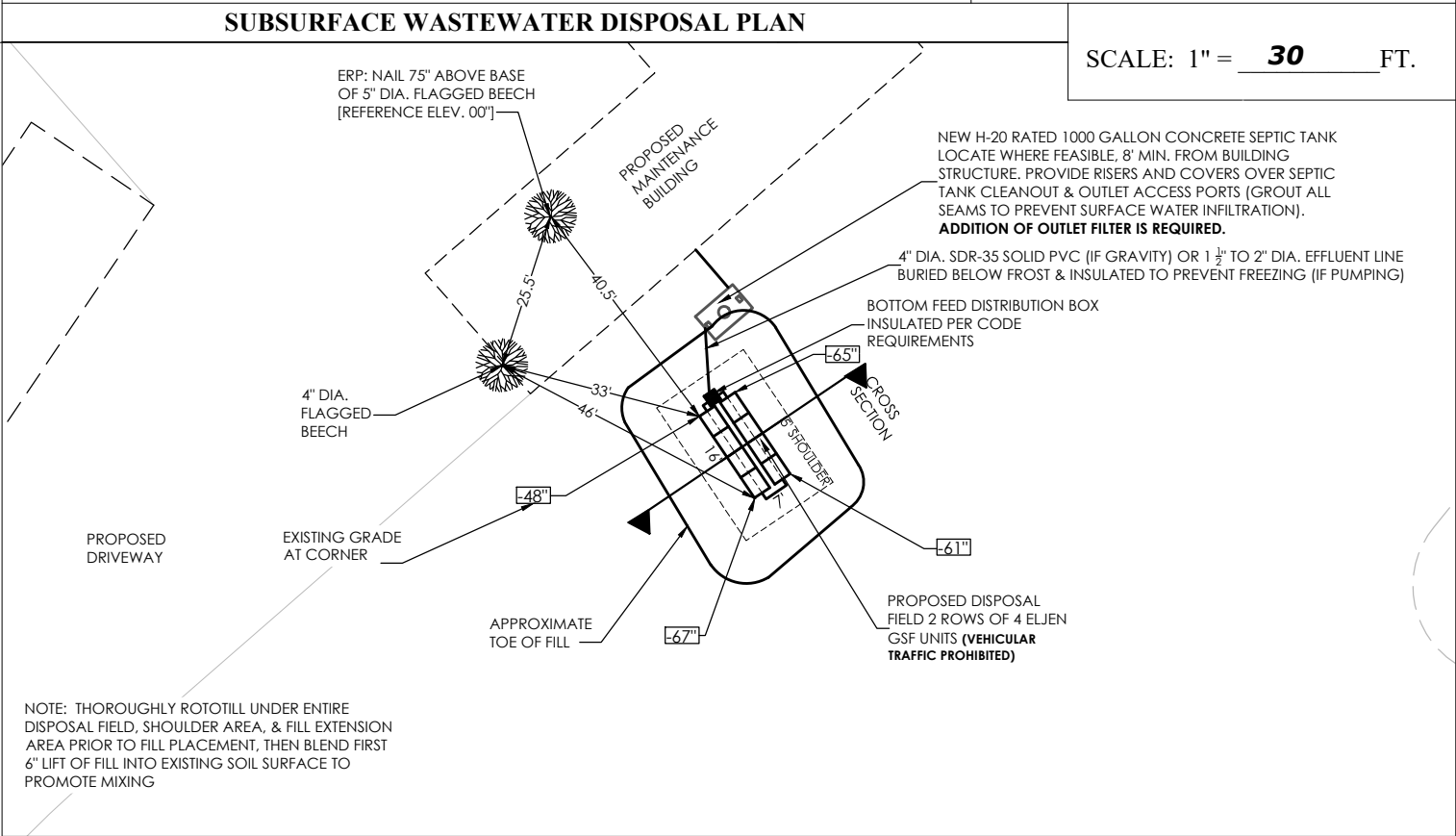
SCALE:  
1" = 1000'

CHECKED:  
JL

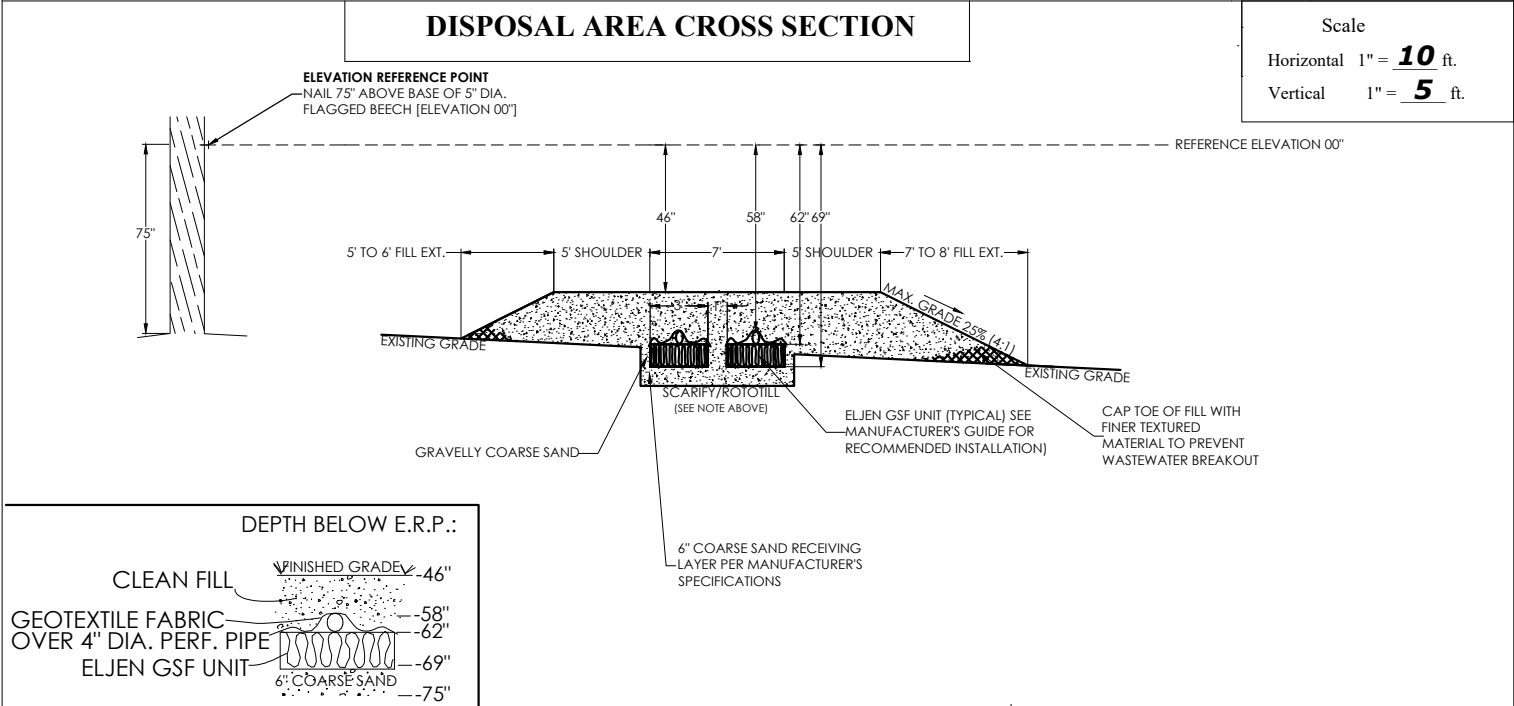
PLAN DATE:  
4/4/24



<b>SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION</b>		Department of Human Services Division of Health Engineering (207) 287-5672 Fax: (207) 287-3165
Town, City, Plantation <b>POWNA</b>	Street, Road, Subdivision <b>HALLOWELL ROAD (BRADBURY MOUNTAIN STATE PARK CAMPGROUND)</b>	Owner's Name <b>STATE OF MAINE, BUREAU OF PARKS &amp; LAND</b>



FILL REQUIREMENTS	CONSTRUCTION ELEVATIONS	ELEVATION REFERENCE POINT
Depth of Fill (Upslope) <b>15"- 19"</b>	Finished Grade Elevation	Location & Description: <b>NAIL 75" ABOVE BASE OF 5" DIA. FLAGGED BEECH</b>
Depth of Fill (Downslope) <b>17"- 21"</b>	Top of Distribution Pipe or Proprietary Device	Reference Elevation: _____
	Bottom of Disposal Area	



**DISPOSAL SYSTEM INSTALLATION NOTES**

1. The State of Maine *Subsurface Wastewater Disposal Rules (10-144 Chapter 241 the Rules)* are incorporated by reference and made a part of this application. These shall be consulted by the owner/applicant, the system installer and/or building contractor for further construction details and material specifications. The system installer shall contact Longview Partners, LLC (207-693-8799) if there are any questions concerning materials, procedures or the design. The system installer and/or building contractor installing the system shall be solely responsible for compliance with the *Rules* and with all State and municipal laws and ordinances pertaining to the permitting, construction, and inspection of subsurface wastewater disposal systems.
2. This application is intended to represent facts pertinent to the *Rules* only. It shall be the responsibility of the owner/applicant, system installer and/or building contractor to determine compliance with and to obtain other permits under all applicable local, State and/or Federal laws and regulations before installing the system or considering the property on which the system is to be installed a "buildable" lot. It is recommended that a wetland scientist be consulted regarding wetland regulations, should wet areas exist. Prior to commencement of construction/installation, the Local Plumbing Inspector or Code Enforcement Officer shall inform the owner/applicant and Longview Partners, LLC of any local ordinances which are more restrictive than the *Rules* in order that the design may be amended. All designs are subject to review by local, State and/or Federal authorities. Longview Partners, LLC's liability shall be limited to revisions required by regulatory agencies and based on laws or regulations in effect at the time of preparation of this application.
3. All information shown on this application relating to property lines, well locations, subsurface structures, and underground facilities (such as utility lines, drains, septic systems, water lines, etc.) are based upon information provided by the owner/applicant and has been relied upon by Longview Partners, LLC in preparing this application. The owner/applicant shall review this application prior to the start of construction and confirm this information. Well locations on abutting properties not readily visible above-grade (such as well points) should be confirmed by the owner/applicant prior to system installation to assure minimum setbacks.
4. Installation of a garbage (grinder) disposal is **not recommended**. If one is installed, an additional 1,000 gallon septic tank shall be connected in series to the proposed septic tank or a septic tank outlet filter shall be installed in the tank outlet. Risers and covers should be installed over the septic tank cleanout and outlet per the *Rules* for easy maintenance of the filter.
5. The septic tank should be pumped within 2 years of installation and subsequently as recommended by the pump service. **In no event should the septic tank be pumped less often than every 3 years.** The system use shall avoid introducing kitchen grease or fats into the system. Chemicals such as septic tank cleaners and/or chlorine (such as from water treatment units) and controlled or hazardous substances shall not be disposed of in this system. Additives such as yeast or enzymes are discouraged, since they have not been proven to extend system life or performance.
6. All septic tanks, pump stations and additional treatment tanks shall be installed to prevent ground water and surface water infiltration. Risers and covers should be properly installed to provide access while preventing surface water intrusion within 6" of a finished ground surface. Vehicular traffic over disposal system is prohibited unless specifically designed with H-20 rated components.

**DISPOSAL SYSTEM INSTALLATION NOTES**

7. The daily wastewater flow, number of bedrooms, or use of structure shall not exceed the design criteria indicated on this application without a re-evaluation of the system as proposed.
8. The general minimum setbacks between a well (public or private) and septic system serving a single family residence are 100-300 feet, unless the local municipality has a more stringent requirement or a liner seal is installed in the well. A well installed by an abutter within the minimum setback distances prior to the issuance of a permit for the proposed disposal system may void this design.
9. When a gravity flow is anticipated, **before construction/installation begins**, the system installer or building contractor shall review the elevation of all points given in this application and the elevation of the existing and/or proposed building drain and septic tank inverts for compatibility to minimum pipe pitch requirements.
10. When an effluent pump is required, pump stations should be sized per manufacturer's specifications to meet lift requirements and friction/head loss. Provisions shall be made to make certain that surface and ground water does not enter the septic tank or pump station, by sealing/grouting all seams and connections, and by placement of a riser and cover at or above grade. An alarm device warning of a pump failure shall be installed. Bottom-feed distribution box is specified to prevent freezing. Insulate distribution boxes per the *Rules*.
11. On all systems, remove the vegetation, organic duff and roots, and old fill material from under the disposal area and any fill extension. Additional fill beyond indicated on the plan may be necessary to replace organic matter and/or stumps. On sites where the proposed disposal area is to be installed in natural soil, scarify the bottom and sides of the excavated disposal area with a rake. Do not use wheeled equipment on the scarified soil surface. For systems installed in fill, scarify the native soil by roto-tilling or scarifying with teeth of backhoe to a depth of at least 8 inches over the entire disposal field and fill extension are to prevent glazing and to promote fill bonding. Place fill in loose layers no deeper than 8 inches and compact before placing more fill (this ensures that voids and loose pockets are eliminated to minimize the chance of leakage or different settling). Do not use wheeled equipment on the scarified soil until after 12 inches of fill is in place. Keep equipment off of proprietary leaching devices. Divert surface water away from the disposal area by ditching or shallow landscape swales.
12. Unless noted otherwise, fill shall be gravelly coarse sand, which contains no more than 5% fines (silt and clay). Crushed stone shall be clean and free of any rock dust from the crushing process. Refer to the *Rules* for more specific information regarding fill and stone.
13. Seed all filled and disturbed surfaces with perennial grass seed, with 4 inches minimum soil or soil amendment mix suitable for growing, then mulch with hay or equivalent material to prevent erosion. Alternatively, bark or permanent landscape mulch may be used to cover the system. Woody trees or shrubs are not permitted on the disposal field or fill extensions.
14. If an advanced wastewater treatment unit is part of this design, the system shall be operated and maintained per manufacturer's specifications.
15. Effluent (backwash) from water treatment units **SHALL NOT** be disposed of within this disposal system and **MUST** be redirected away from the disposal field

Janet T. Mills  
Governor

Jeanne M. Lambrew, Ph.D.  
Commissioner



Maine Department of Health and Human Services  
Maine Center for Disease Control and Prevention  
11 State House Station  
286 Water Street  
Augusta, Maine 04333-0011  
Tel: (207) 287-8016; Fax (207) 287-9058  
TTY: Dial 711 (Maine Relay)

APPLICATION FOR ENGINEERED  
SUBSURFACE WASTEWATER DISPOSAL SYSTEM

Please complete the following Sections. Please print or type.

**Applicant/Owner**

Company Name: \_\_\_\_\_  
Contact Person: \_\_\_\_\_  
Address: \_\_\_\_\_  
Town/City: \_\_\_\_\_ State/Province: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_  
Country: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_  
e-mail: \_\_\_\_\_

**Design Engineer**

Company Name: \_\_\_\_\_  
Contact Person: \_\_\_\_\_  
Address: \_\_\_\_\_  
Town/City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_  
e-mail: \_\_\_\_\_

**1. Property Location**

Town/City: \_\_\_\_\_ County: \_\_\_\_\_  
Tax Map and Lot Number: Map \_\_\_\_\_ Lot \_\_\_\_\_

Attach as "Exhibit A" a copy of the relevant section of the USGS 7.5' topographic map, if available, or 15' topographic map showing the location of the proposed engineered disposal system.

**2. Project Description**

Provide a brief written description of the proposal. Use a separate sheet if necessary.

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### 3. Design Flow

The design flow for this project is: \_\_\_\_\_ gallons per day. Provide design flow calculations and assumptions used in the calculations. Use a separate sheet if necessary.

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### 4. Mounding Analysis

Submit as "Exhibit B" an analysis of the proposed system design showing that there is adequate vertical separation between the bottom of the disposal field and any mounded water table. Include all calculations and assumptions used.

### 5. Transmissivity Analysis

Submit as "Exhibit C" an analysis of the proposed system design showing that there are sufficient suitable soils down-gradient to prevent the effluent from surfacing within 50 feet of the disposal field. Include all calculations and assumptions used.

### 6. HHE-200 and Variance Form(s)

Submit as "Exhibit D" a complete HHE-200 Form, and variance forms if applicable, signed by a Professional Engineer. The design engineer may reference associated plans and soil test pit logs on pages 2 and 3 of the HHE-200 Form.

This project requires:

a First Time System Variance to the Maine Subsurface Wastewater Disposal Rules.

a Replacement System Variance to the Maine Subsurface Wastewater Disposal Rules.

no variance to the Maine Subsurface Wastewater Disposal Rules.

### 7. Operations and Maintenance Manual

Submit as "Exhibit E" an operations and maintenance manual for the owner with written recommendations for the operation and maintenance of the system, including inspection schedules, pumping schedules, and record keeping procedures.

### 8. Soil and Site Conditions

Submit as "Exhibit F" soil test pit logs prepared by a licensed Site Evaluator. The test pits shall be of sufficient number to accurately describe the site conditions under the proposed disposal area and the down gradient fill extension.

## 9. Plans

Submit as "Exhibit G" plans for the proposed engineered disposal system meeting provisions of Section 1102 of the Maine Subsurface Wastewater Disposal Rules. Two sets of plans are required, or one set of plans and one set of copies no larger than 11" x 17". Plans may be submitted for review purposes in digital format.

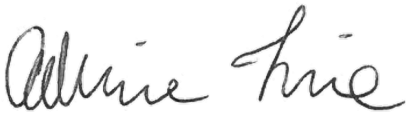
The plans must specify the latitude and longitude of the center of the disposal area(s), expressed as degrees, minutes, and seconds. If this data is obtained from an electronic GIS device, provide the device's margin of error.

## 10. Review Fee

Submit a check or money order in the amount of \$100.00 U.S. made payable to the Treasurer of the State of Maine.

I, \_\_\_\_\_, am the design engineer for the subject design.  
(print name)

I state that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department to deny the project.



Signature of Design Engineer

P.E. License Number

Date

HHE-220  
04/2019

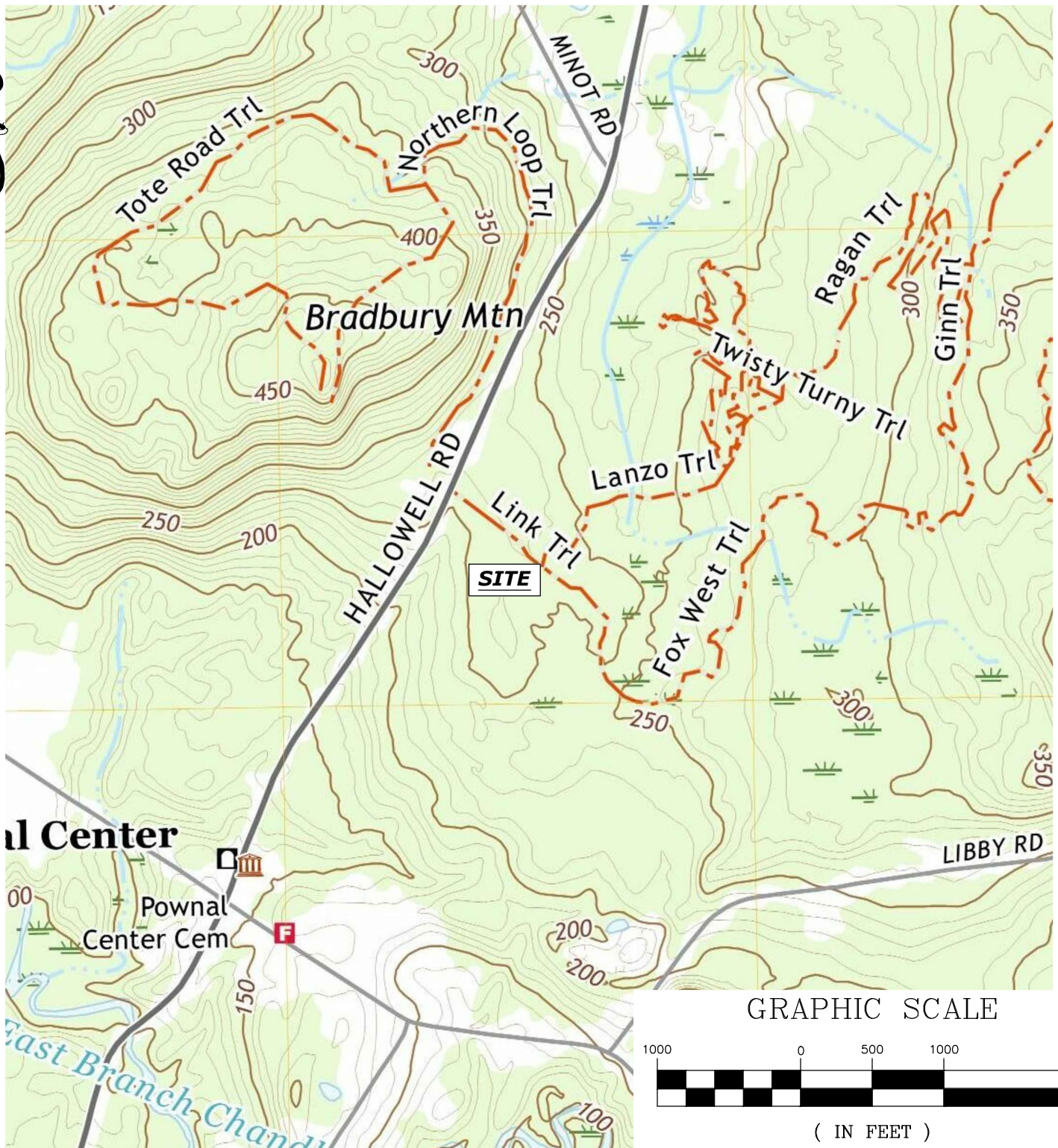
Terradyn Consultants, LLC  
Bradbury Mountain State Park Campground  
Hallowell Road  
Pownal, Maine

Exhibit A

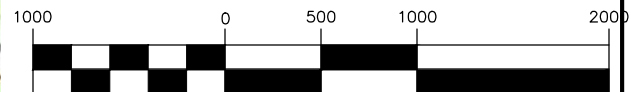
Site Location Plan







GRAPHIC SCALE



( IN FEET )

1 inch = 1000 ft.

**SITE LOCATION PLAN**  
**PREPARED FOR**  
**BRADBURY MOUNTAIN STATE**  
**PARK CAMPGROUND**  
**(TERRADYN CONSULTANTS, LLC)**  
**HALLOWELL ROAD**  
**POWNA, MAINE**



**ENVIRONMENTAL PERMITTING SPECIALISTS**

**DRAFT:**  
BO

**SCALE:**  
1" = 1000'

**CHECKED:**  
JL

**PLAN DATE:**  
4/4/24



Terradyn Consultants, LLC  
Bradbury Mountain State Park Campground  
Hallowell Road  
Pownal, Maine

Exhibit B

Mounding Analysis



# Bradbury Mountain State Park Campground

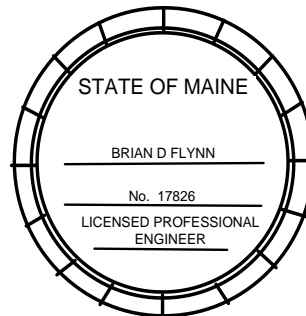
## Disposal Field Water Mounding and Transmissivity Analysis

Prepared for Mark Cenci Geologic INC.

Prepared by Brian Flynn, P.E.

May 25<sup>th</sup>, 2024 Revised August 8<sup>th</sup>, 2024

 8/7/2024



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Results.....	2,3,4
USGS Hantush Sample Spreadsheet .....	5
HydroGeoSieve XL Summaries .....	6,7

Bradbury Mountain State Park Campground Disposal Field Water Mounding and Transmissivity Analysis  
Prepared by Brian Flynn for Marc Cenci Geologic, INC.

## SUMMARY

A water mounding and transmissivity analysis has been conducted for the Bradbury State Park Campground's new wastewater disposal field. The results of this analysis have confirmed that a separation bed of 2' minimum will be maintained between the existing peak mounded ground water table and the base of the proposed chamber crushed stone bedding. It has also been confirmed that wastewater will not surface down gradient from the disposal field.

## PURPOSE

At the request of Mark Cenci Geologic, a water mounding analysis has been conducted for the Bradbury Mountain State Park Campground. The purpose of the water analysis is to determine how the proposed wastewater disposal field will affect the water table elevation. Water table mounding was analyzed using the Hantush (USGS Investigation Report 2010-5102) method in the longitudinal (N-S) and transverse (E-W) directions. A factor of safety of 3 was applied to all peak water mounding elevations. Following results from the water mounding analysis, the wastewater transmission beyond the limits of the disposal field was investigated.

## REFERENCE DOCUMENTS

- [https://pubs.usgs.gov/sir/2010/5102/support/Hantush\\_USGS\\_SIR\\_2010-5102-1110.xlsx](https://pubs.usgs.gov/sir/2010/5102/support/Hantush_USGS_SIR_2010-5102-1110.xlsx)
- HydroGeoSieveXL
- 'Scan 0786' sent to Brian Flynn from Mark Cenci Geologic on 5/16/24, document included gradation reports for TP12 and 15, calculated daily discharge, system application, test pit reports, and the proposed disposal field drawings.

## ANALYSIS METHODOLOGY AND ASSUMPTIONS

The USGS spreadsheet for solving the Hantush equation (1967) for water mounding under an infiltration basin was used for ground water plotting. The following assumptions were made;

- Both disposal field chamber systems (32 ft X 80 ft) were treated as a single system with dimensions 32 ft X 160 ft. This assumption is conservative because the footprint of the two systems is larger than 32 ft X 160 ft.
- Waste water is discharged equally along the foot print of the disposal field.
- The total daily waste water flow occurs constantly over the course of a 14-hour period (between the hours of 0600 and 2000).
- After analysis of all gradations, the most conservative value for the horizontal hydraulic conductivity will be used (Test Pit #15).
- Test pits showed free water between depths of 22 in. and 34 in. The water table used for analysis will be 22 in. below the existing grade.
- The bottom of the disposal field system is, on average, 10 in. above the existing grade.
- The water table depth at the time of test pit excavation is assumed peak (04/04/2024).
- A daily discharged rate of 3000 GPD (410 cf/day) was used.

The following is a description of variables used for the spreadsheet.

Bradbury Mountain State Park Campground Disposal Field Water Mounding and Transmissivity Analysis  
Prepared by Brian Flynn for Marc Cenci Geologic, INC.

Recharge/Infiltration Rate (**R**):

$$R = \frac{\text{Daily Flow} \left( \frac{ft^3}{day} \right)}{\text{Surf A of LF} (ft^2)} = \frac{410}{5120} \frac{ft}{day} = 0.0801 \frac{ft}{day}$$

Specific Yield (**S<sub>y</sub>**):

**S<sub>y</sub>** ranges from 15% to 32% for medium sands (USGS Water Supply Paper 1662-D), see the attached documents for soil classifications. **15%** will be used as a conservative value for specific yield.

Horizontal Hydraulic Conductivity (**K<sub>H</sub>**):

HydroGeoSieveXL (Devlin, J.F. 2015) was utilized to compute the conductivity using 10 different industry approved methods for Test Pit #15. See the printout attached for a summary of the applicable equations used. The geometric mean value was used (39 ft/day) as data sets showed a wide variation. This hydraulic conductivity is assumed constant over the entire site.

Basin Dimensions (**x and y**):

When computing water table mounding in the N-S direction, x was input as 160/2 ft and y as 32/2 ft. The opposite was used for the E-W direction. See attached for a sample printout of the spreadsheet.

Duration of Infiltration Period (**t**):

The duration of infiltration period is 14 hours or 0.583 days, this assumes the daily wastewater flow occurs between the hours of 0600 and 2000.

Initial Thickness of Saturated Zone (**h<sub>i</sub>(0)**)

The initial thickness of the saturated zone is the distance from the bottom of the infiltration system to the top of the water table. The water table is assumed to be 22 in. below the existing grade. The bottom of the crushed stone bedding material for the disposal field is assumed to be 10 in. above the existing grade. This elevation was determined using the mid-point of the cross section provided. Therefore, the distance from the bottom of the disposal field to the assumed water table is 32 in. or 2.667 ft.

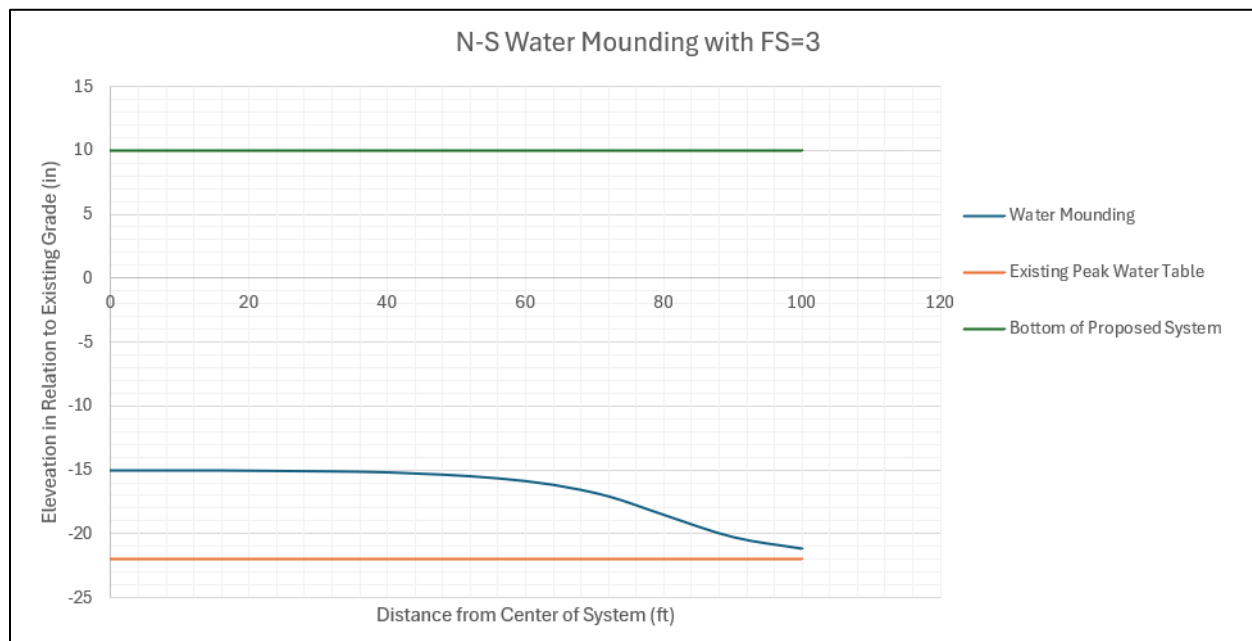
## RESULTS

Below are graphs representing the estimated water mounding in the N-S and E-W directions for the disposal field. All values for water mounding have been increased by a safety factor of 3. It can be seen

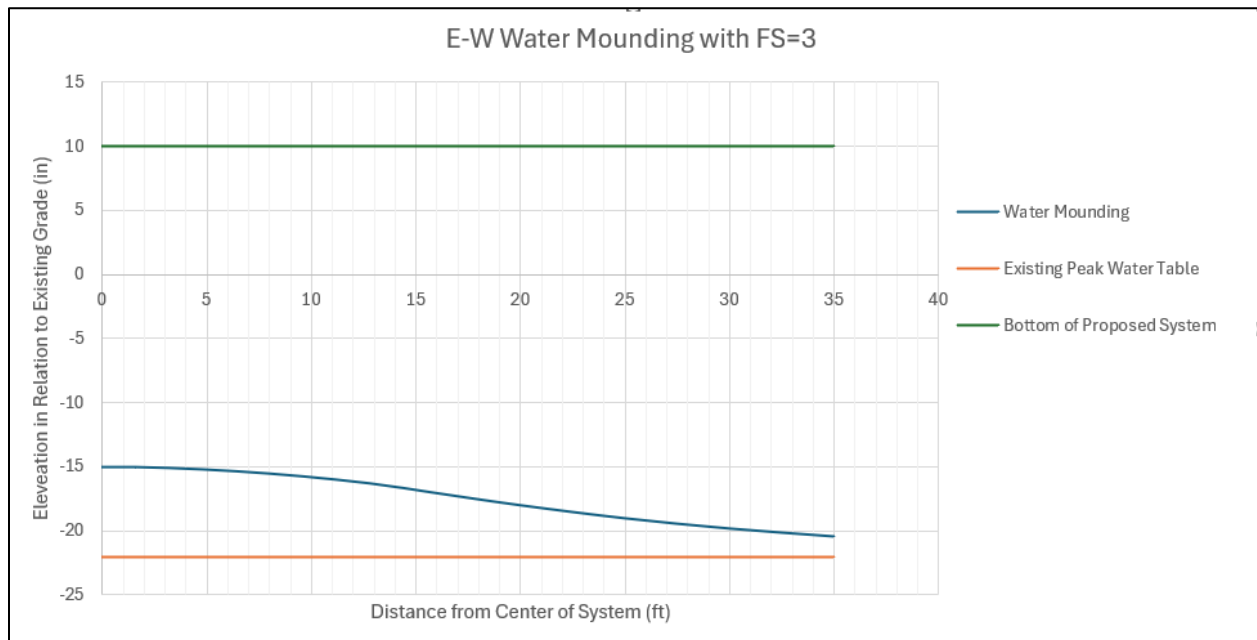
Bradbury Mountain State Park Campground Disposal Field Water Mounding and Transmissivity Analysis  
Prepared by Brian Flynn for Marc Cenci Geologic, INC.

from both graphs that the maximum water table mounding is 7 inches (0.6 feet) at the center of the disposal field. This leaves a separation bed of 25 inches (2.1 feet) between the base of the crushed stone bedding and the mounded water table. Based on the typical cross sections provided for this analysis, all water mounding will be confined to existing soils.

Site Transmission Analysis, as outlined in Section 10.A.2.i of the Maine Subsurface Wastewater Disposal Rules, confirms that wastewater will not prematurely surface down gradient from the proposed disposal field. It can be seen from the graphs that the wastewater has no effect on the water table elevation at the edge of the disposal field shoulders. Therefore, all wastewater is absorbed into the water table and will not surface down gradient from the disposal field. Based on the high conductivity of the existing soils it can be concluded that wastewater can be readily absorbed into the existing soils without water surfacing at the base of the shoulders.



Bradbury Mountain State Park Campground Disposal Field Water Mounding and Transmissivity Analysis  
Prepared by Brian Flynn for Marc Cenci Geologic, INC.



This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geol Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.

Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. The user must click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

Input Values		use consistent units (e.g. feet & days or inches & hours)		Conversion Table	
				inch/hour	feet/day
0.0801	R	Recharge (infiltration) rate (feet/day)		0.67	1.33
0.150	Sy	Specific yield, Sy (dimensionless, between 0 and 1)			
39.00	K	Horizontal hydraulic conductivity, Kh (feet/day)*		2.00	4.00
80.000	x	1/2 length of basin (x direction, in feet)			
16.000	y	1/2 width of basin (y direction, in feet)	hours	days	
0.583	t	duration of infiltration period (days)		36	1.50
2.667	hi(0)	initial thickness of saturated zone (feet)			
2.860	h(max)	maximum thickness of saturated zone (beneath center of basin at end of infiltration period)			
0.193	Δh(max)	maximum groundwater mounding (beneath center of basin at end of infiltration period)			

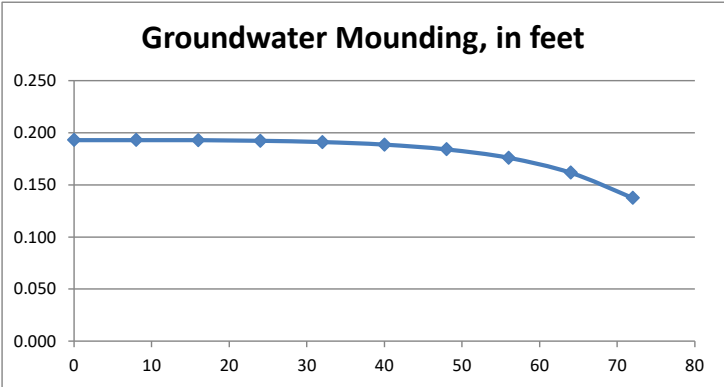
Ground-water Mounding, in feet

Distance from center of basin in x direction, in feet

0.193	0
0.193	8
0.193	16
0.192	24
0.191	32
0.189	40
0.184	48
0.176	56
0.162	64
0.137	72



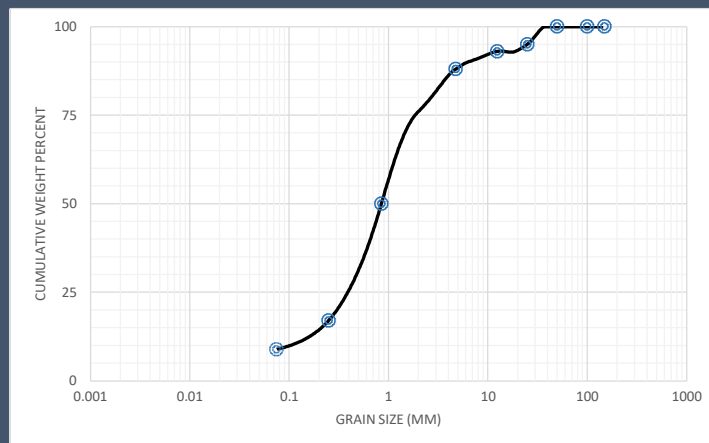
Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

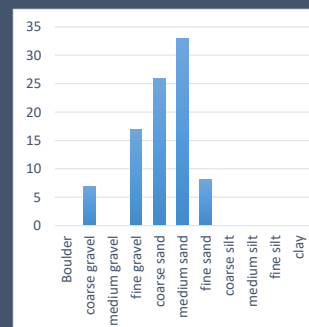
Sieve opening $d_i$ (φ)	Mass Sample (g):		T (°C)	
	Sieve opening (ps) $d_i$ (mm)	Mass of retained (mr) (g)	mass fraction (mf)	Percent Passing (pp)
7.2231	150	0	0	100
6.960273	125	0	0	100
6.6386	100	0	0	100
6.223891	75	0	0	100
5.639391	50	0	0	100
5.247564	38.1	0	0	100
4.640182	25	5	0.05	95
4.244567	19	2	0.02	93
3.640973	12.5	0	0	93
2.653251	6.3	3	0.03	90
2.246149	4.75	2	0.02	88
0.999209	2	12	0.12	76
-0.23428	0.85	26	0.26	50
-1.23349	0.425	23	0.23	27
-1.99842	0.25	10	0.1	17
-2.7348	0.15	5	0.05	12
-3.73401	0.075	3.1	0.031	8.9



Estimation of Hydraulic Conductivity	cm/s	m/s	m/d
Hazen	.731E-02	.731E-04	6.318
Hazen K (cm/s) = $d_{10}^2$ (mm <sup>2</sup> )	.103E-01	.103E-03	8.921
Slichter	.154E-02	.154E-04	1.332
Terzaghi	.237E-02	.237E-04	2.051
Beyer	.850E-02	.850E-04	7.347
Sauerbrei	.102E-01	.102E-03	8.830
Kruger	.117E+00	.117E-02	100.685
Kozeny-Carmen	.139E+00	.139E-02	120.376
Zunker	.100E+00	.100E-02	86.610
Zamarin	.123E+00	.123E-02	106.429
USBR	.305E-01	.305E-03	26.332
Barr	.172E-02	.172E-04	1.485
Alyamani and Sen	.671E-02	.671E-04	5.796
Chapuis	.138E-02	.138E-04	1.194
Krumbein and Monk	.433E-01	.433E-03	37.374
geometric mean	.139E-01	.139E-03	.120E+02
arithmetic mean	.437E-01	.437E-03	.378E+02

## Poorly sorted gravelly sand low in fines

Effective Grain Diameters (mm)		Other Useful Parameters	
d <sub>10</sub>	0.102	Uniformity Coef.	12.72
d <sub>17</sub>	0.250	n computed	0.278844
d <sub>20</sub>	0.303	g (cm/s <sup>2</sup> )	980.00
d <sub>50</sub>	0.850	ρ (g/cm <sup>3</sup> )	0.9981
d <sub>60</sub>	1.292	μ (g/cm s)	0.0098
d <sub>geometric mean</sub>	1.169	ρg/μ (1/cm s)	9.9327E+04
d <sub>e</sub> (Kruger)	0.709	tau (Sauerbrei)	1.053
d <sub>e</sub> (Kozeny)	0.637	d <sub>5φ</sub>	-4.569
d <sub>e</sub> (Zunker)	0.660	d <sub>16φ</sub>	-2.120
d <sub>e</sub> (Zamarin)	0.684	d <sub>50φ</sub>	-0.234
Io (Alyamani)	-0.085	d <sub>84φ</sub>	1.939
		d <sub>95φ</sub>	4.644
		σ <sub>φ</sub>	2.411
	mm		% in sample
	>64	Boulder	0
	16 - 64	coarse gravel	7
	8 - 16	medium gravel	0.000
	2 - 8	fine gravel	17.000
	0.5 - 2	coarse sand	26.000
	0.25 - 0.5	medium sand	33.000
	0.063 - 0.25	fine sand	8.100
	0.016 - 0.063	coarse silt	
	0.008 - 0.016	medium silt	
	0.002 - 0.008	fine silt	
	<0.002	clay	







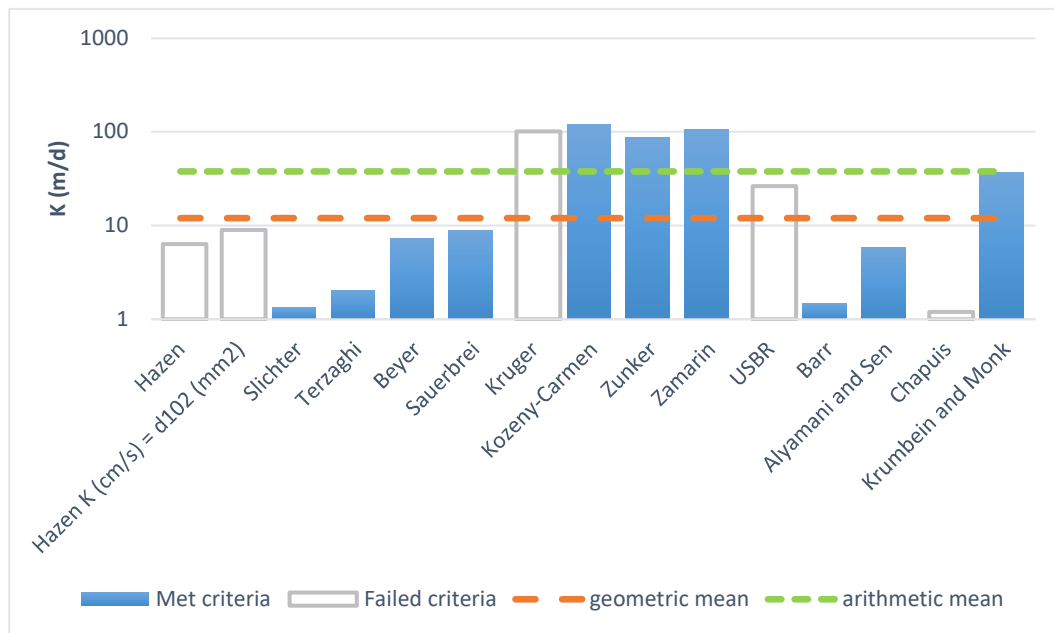
K from Grain Size Analysis Report

Date: 5/24/2024

Sample Name: TP-15 Gradation

Mass Sample (g):                      T (oC)                     

Poorly sorted gravelly sand low in fines



Estimation of Hydraulic Conductivity	cm/s	m/s	m/d	de
Hazen	.731E-02	.731E-04	6.32	
Hazen K (cm/s) = d <sub>10</sub> (mm)	.103E-01	.103E-03	8.92	
Slichter	.154E-02	.154E-04	1.33	
Terzaghi	.237E-02	.237E-04	2.05	
Beyer	.850E-02	.850E-04	7.35	
Sauerbrei	.102E-01	.102E-03	8.83	
Kruger	.117E+00	.117E-02	100.68	
Kozeny-Carmen	.139E+00	.139E-02	120.38	
Zunker	.100E+00	.100E-02	86.61	
Zamarin	.123E+00	.123E-02	106.43	
USBR	.305E-01	.305E-03	26.33	
Barr	.172E-02	.172E-04	1.49	
Alyamani and Sen	.671E-02	.671E-04	5.80	
Chapuis	.138E-02	.138E-04	1.19	
Krumbein and Monk	.433E-01	.433E-03	37.37	
geometric mean	.139E-01	.139E-03	12.03	39.45 ft/day
arithmetic mean	.437E-01	.437E-03	37.76	123.87 ft/day

Terradyn Consultants, LLC  
Bradbury Mountain State Park Campground  
Hallowell Road  
Pownal, Maine

Exhibit C

Transmissivity Analysis - included in  
Exhibit B: Mounding Analysis



Terradyn Consultants, LLC  
Bradbury Mountain State Park Campground  
Hallowell Road  
Pownal, Maine

Exhibit D

HHE-200 Form by Longview Partners



# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services  
Div of Environmental Health, 11 SHS  
(207) 287-5672 Fax: (207) 287-4172

## PROPERTY LOCATION

City, Town,  
or Plantation

**POWNA**

Street or Road

**HALLOWELL ROAD**

Subdivision, Lot #

**BRADBURY MOUNTAIN STATE PARK  
CAMPGROUND**

## OWNER/APPLICANT INFORMATION

Name (last, first, MI)

**STATE OF MAINE, BUREAU OF PARKS AND LAND**

☐ Owner

☐ Applicant

Mailing Address of  
Owner/Applicant

**C/O TERRADYN CONSULTANTS, LLC  
565 CONGRESS STREET, SUITE 201**

**PORTLAND, ME 04101**

Daytime Tel. #

**207-322-1223**

## >> CAUTION: LPI APPROVAL REQUIRED <<

Town/City

Permit #

Date Permit Issued

Fee: \$

Double Fee Charged

Local Plumbing Inspector Signature

LPI #

☐ Owner ☐ Town ☐ State

The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map #

**5**

Lot #

**P/O 9**

## OWNER OR APPLICANT STATEMENT

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.

Signature of Owner or Applicant

Date

## CAUTION: INSPECTION REQUIRED

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.

(1st) date approved

Local Plumbing Inspector Signature

(2nd) date approved

## PERMIT INFORMATION

### TYPE OF APPLICATION

☐ 1. First Time System

☐ 2. Replacement System

Type replaced:

Year installed:

☐ 3. Expanded System

a. <25% Expansion

b. >25% Expansion

☐ 4. Experimental System

☐ 5. Seasonal Conversion

### THIS APPLICATION REQUIRES

☐ 1. No Rule Variance

☐ 2. First Time System Variance

a. Local Plumbing Inspector Approval

b. State & Local Plumbing Inspector Approval

☐ 3. Replacement System Variance

a. Local Plumbing Inspector Approval

b. State & Local Plumbing Inspector Approval

☐ 4. Minimum Lot Size Variance

☐ 5. Seasonal Conversion Permit

### DISPOSAL SYSTEM COMPONENTS

☐ 1. Complete Non-engineered System

☐ 2. Primitive System (graywater & alt. toilet)

☐ 3. Alternative Toilet, specify: \_\_\_\_\_

☐ 4. Non-engineered Treatment Tank (only)

☐ 5. Holding Tank, \_\_\_\_\_ gallons

☐ 6. Non-engineered Disposal Field (only)

☐ 7. Separated Laundry System

☐ 8. Complete Engineered System (2000 gpd or more)

☐ 9. Engineered Treatment Tank (only)

☐ 10. Engineered Disposal Field (only)

☐ 11. Pre-treatment, specify: \_\_\_\_\_

☐ 12. Miscellaneous Components

### TYPE OF WATER SUPPLY

☐ 1. Drilled Well

☐ 2. Dug Well

☐ 3. Private

☐ 4. Public

☐ 5. Other

### SIZE OF PROPERTY

**71 +/-**

SQ. FT.

ACRES

### SHORELAND ZONING

☐ Yes

☐ No

### DISPOSAL SYSTEM TO SERVE

☐ 1. Single Family Dwelling Unit, No. of Bedrooms: \_\_\_\_\_

☐ 2. Multiple Family Dwelling, No. of Units: \_\_\_\_\_

☐ 3. Other: **CAMPGROUND-43 SITES, 3 "HOST" SITES,  
& GATEHOUSE W/ 2 EMPLOYEES**

Current Use ☐ Seasonal ☐ Year Round ☐ Undeveloped

## DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

### TREATMENT TANKS

☐ 1. Concrete

a. Regular

b. Low Profile

☐ 2. Plastic

☐ 3. Other: \_\_\_\_\_

CAPACITY: **7,000** GAL.

**(1) 5,000 & (2) 1,000s**

### DISPOSAL FIELD TYPE & SIZE

☐ 1. Stone Bed ☐ 2. Stone Trench

☐ 3. Proprietary Device

a. cluster array c. Linear

b. regular load d. H-20 load

☐ 4. Other: \_\_\_\_\_

SIZE: **10,240** sq. ft. lin. ft.

**160 CONCRETE CHAMBERS**

### GARBAGE DISPOSAL UNIT

☐ 1. No ☐ 2. Yes ☐ 3. Maybe

If Yes or Maybe, specify one below:

a. multi-compartment tank

b. \_\_\_\_\_ tanks in series

c. increase in tank capacity

d. Filter on Tank Outlet **(ALL)**

### DESIGN FLOW

**2,979**

gallons per day

BASED ON:

☐ 1. Table 4A (dwelling unit(s))

☐ 2. Table 4C (other facilities)

SHOW CALCULATIONS for other facilities

**-CAMPGROUND-**

**43 SITES SERVED BY CENTRAL TOILET @ 60**

**GPD/SITE (2,580 GPD)**

**3 "HOST" SITES @ 125 GPD/SITE (375 GPD)**

**-GATEHOUSE-**

**2 EMPLOYEES @ 12 GPD/EMPLOYEE (24 GPD)**

**2,580 + 375 + 24 = 2,979 GPD**

**LATITUDE AND LONGITUDE**

at center of disposal area

Lat. **43** d **53** m **58** s

Lon. **70** d **10** m **40** s

if g.p.s, state margin of error: \_\_\_\_\_

### SOIL DATA & DESIGN CLASS

PROFILE CONDITION

**7 / C**

at Observation Hole # **TP 14**

Depth **16** "

of Most Limiting Soil Factor

### DISPOSAL FIELD SIZING

☐ 1. Medium--2.6 sq. ft. / gpd

☐ 2. Medium--Large 3.3 sq. ft. / gpd

☐ 3. Large--4.1 sq. ft. / gpd

☐ 4. Extra Large--5.0 sq. ft. / gpd

### EFFLUENT/EJECTOR PUMP

☐ 1. Not Required

☐ 2. May Be Required

☐ 3. Required

Specify only for engineered systems:

DOSE: \_\_\_\_\_ gallons

**SEE NOTE**

**ON PAGE 3**

## SITE EVALUATOR STATEMENT

I certify that on **1/17/24** (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

*James Logan*  
Site Evaluator Signature  
**JAMES LOGAN**

Site Evaluator Name Printed

**237**

**4/4/24**

LSE #

Date

**207-693-8799**

Telephone Number

*Marie Fine*  
Professional Engineer Signature  
**longviewpartners213@gmail.com**

E-mail Address

**14252**

#

**8/12/24**

Date

Note : Changes to or deviations from the design should be confirmed with the Site Evaluator.

Page 1 of 3

HHE-200 Rev. 08/2011

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services  
Division of Health Engineering  
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

**POWNA**

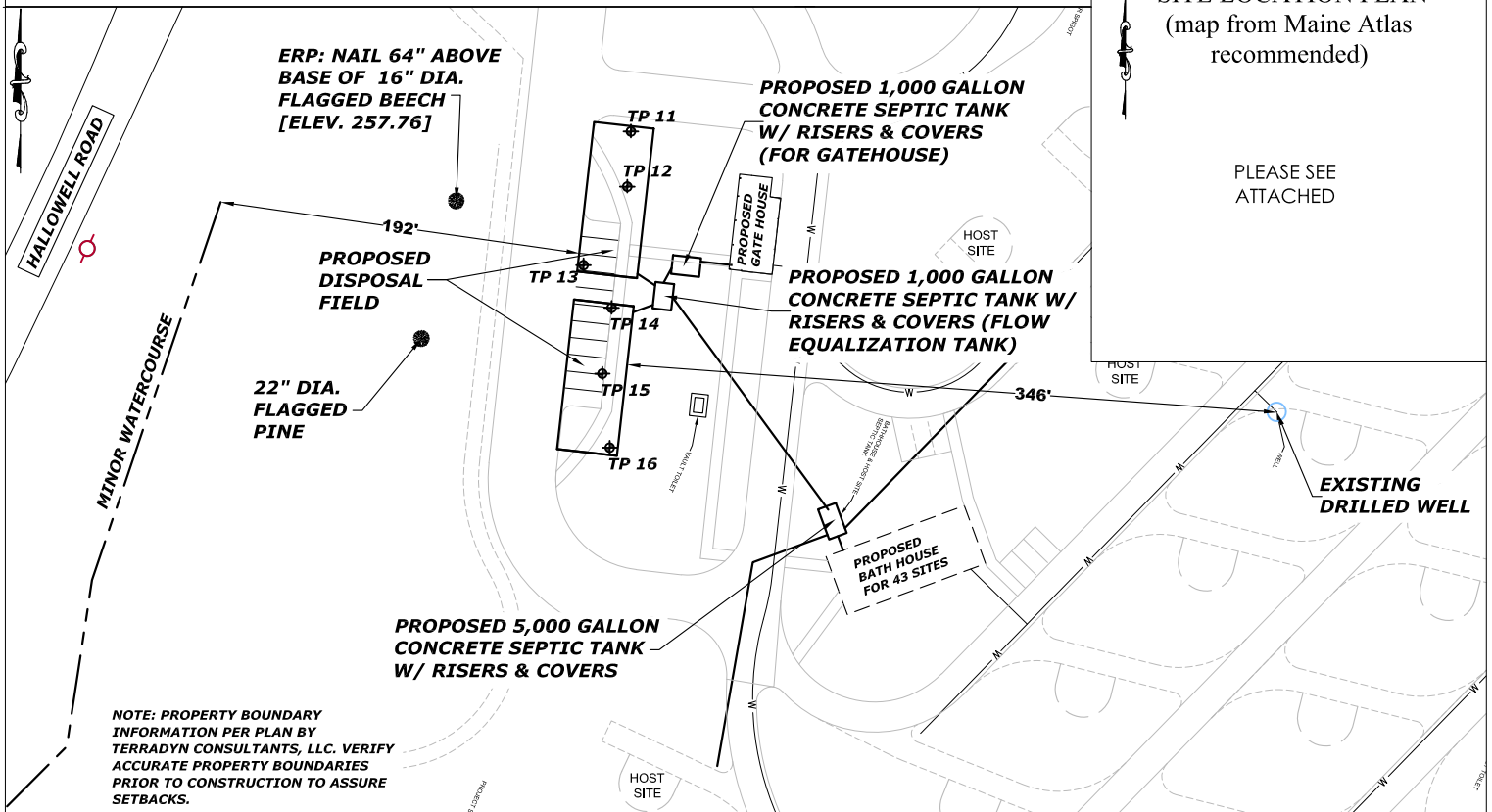
**HALLOWELL ROAD (BRADBURY MOUNTAIN STATE PARK CAMPGROUND)**

**STATE OF MAINE, BUREAU OF PARKS & LAND**

## SITE PLAN

Scale 1" = **100** ft. or as shown

SITE LOCATION PLAN  
(map from Maine Atlas  
recommended)



## SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole **TP 11** ■ Test Pit □ Boring  
" Depth of Organic Horizon Above Mineral Soil  
**SOIL TEST PIT BY BACKHOE**

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10		DARK YELLOWISH BROWN	
20	FRIABLE	YELLOWISH BROWN	FEW FAINT
30		OLIVE BROWN	
40	FIRM	OLIVE	COMMON DISTINCT
50			

Depth Below Mineral Soil Surface (inches)

LIMIT OF EXCAVATION @ 60"

Soil Classification  
**7** **C**  
Profile Condition

Slope  
%

Limiting Factor  
**24** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

Observation Hole **TP 12** ■ Test Pit □ Boring  
" Depth of Organic Horizon Above Mineral Soil  
**SOIL TEST PIT BY BACKHOE**

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10		DARK YELLOWISH BROWN	
20	FRIABLE	OLIVE BROWN	FEW FAINT
30	SOMEWHAT FIRM TO FIRM	OLIVE	COMMON DISTINCT FEW FAINT
40			
50			

Depth Below Mineral Soil Surface (inches)

LIMIT OF EXCAVATION @ 61"

Soil Classification  
**7** **C**  
Profile Condition

Slope  
%

Limiting Factor  
**20** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

*Jane Logan*  
Site Evaluator Signature

**237**

LSE #

**4/4/24**

Date

Page 2 of 3  
HHE-200 Rev. 8/01

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services  
Division of Health Engineering  
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

**POWNA**

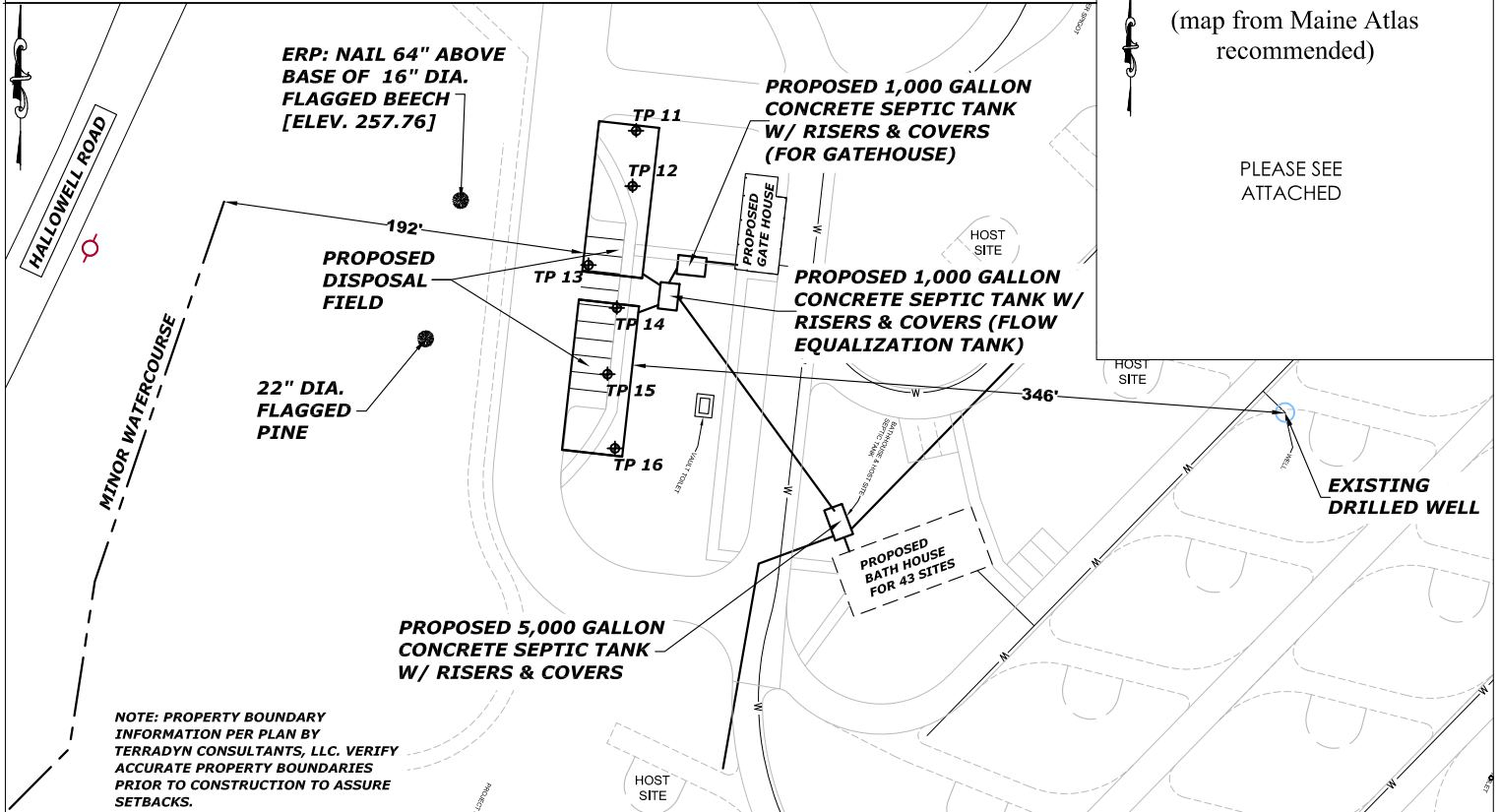
**HALLOWELL ROAD (BRADBURY MOUNTAIN STATE PARK CAMPGROUND)**

**STATE OF MAINE, BUREAU OF PARKS & LAND**

## SITE PLAN

Scale 1" = **100** ft. or as shown

SITE LOCATION PLAN  
(map from Maine Atlas  
recommended)



## SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole **TP 13** ■ Test Pit □ Boring  
" Depth of Organic Horizon Above Mineral Soil

SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND	FRIABLE	DARK YELLOWISH BROWN
20	FINE & MEDIUM SAND	MIXED OLIVE BROWN	FEW FAINT
30	MEDIUM & COARSE SAND		COMMON FAINT
40	STONY LOAMY SAND & SAND (TILL)	SOMEWHAT FIRM TO FIRM	
50	LIMIT OF EXCAVATION @ 58"		

Soil Classification  
**7 C**  
Profile Condition  
**ATYPICAL**

Slope  
%

Limiting Factor  
**18** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

Observation Hole **TP 14** ■ Test Pit □ Boring  
" Depth of Organic Horizon Above Mineral Soil

SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND		
20		FRIABLE	DARK YELLOWISH BROWN
30	MEDIUM & COARSE SAND	MIXED OLIVE BROWN	FREE WATER
40	FINE SAND W/ LENSES OF SILT LOAM & LOAMY FINE SAND (LACUSTRINE)	FIRM	OLIVE
50	LIMIT OF EXCAVATION @ 56"		

Soil Classification  
**7 C**  
Profile Condition

Slope  
%

Limiting Factor  
**16** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

*Jane Logan*  
Site Evaluator Signature

**237**

LSE #

**4/4/24**

Date

Page 2 of 3  
HHE-200 Rev. 8/01

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services  
Division of Health Engineering  
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

**POWNA**

**HALLOWELL ROAD (BRADBURY MOUNTAIN STATE PARK CAMPGROUND)**

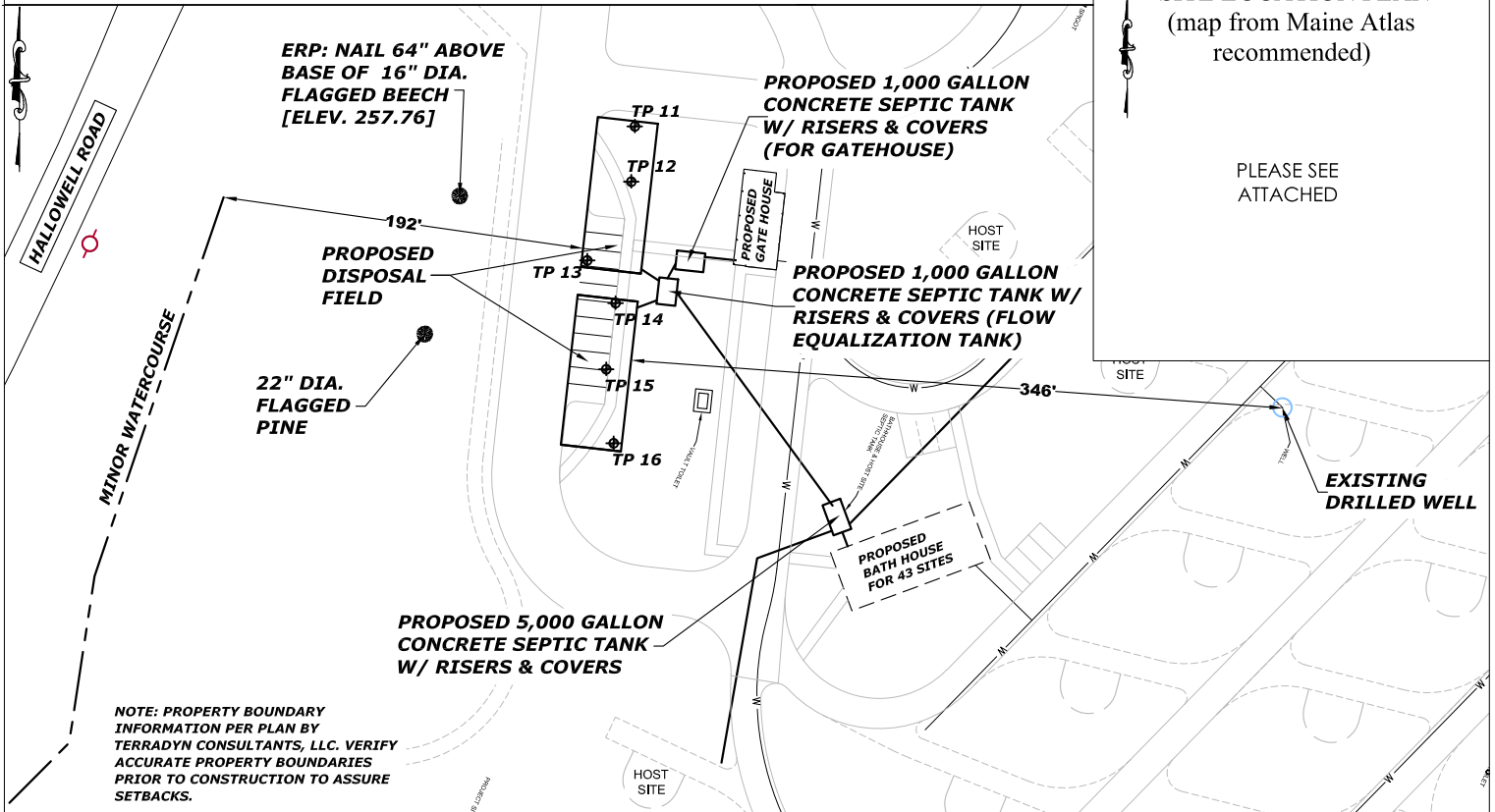
**STATE OF MAINE, BUREAU OF PARKS & LAND**

## SITE PLAN

Scale 1" = **100** ft. or as shown

SITE LOCATION PLAN  
(map from Maine Atlas  
recommended)

PLEASE SEE  
ATTACHED



## SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole **TP 15** ■ Test Pit □ Boring  
" Depth of Organic Horizon Above Mineral Soil  
**SOIL TEST PIT BY BACKHOE**

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10		DARK YELLOWISH BROWN	
20	FRIABLE	YELLOWISH BROWN	FEW FAINT
20		OLIVE BROWN	FREE WATER
30		OLIVE	COMMON DISTINCT
50			
LIMIT OF EXCAVATION @ 51"			

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7</b> <b>C</b>	%	<b>18</b> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
			<input type="checkbox"/> Pit Depth

Observation Hole **TP 16** ■ Test Pit □ Boring  
" Depth of Organic Horizon Above Mineral Soil  
**SOIL TEST PIT BY BACKHOE**

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10		DARK YELLOWISH BROWN	
20	FRIABLE	YELLOWISH BROWN	FEW FAINT
20		OLIVE GRAY	COMMON DISTINCT
30			
50			
LIMIT OF EXCAVATION @ 48"			

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7</b> <b>C</b>	%	<b>19</b> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
			<input type="checkbox"/> Pit Depth

*Jane Logan*  
Site Evaluator Signature

**237**

LSE #

**4/4/24**

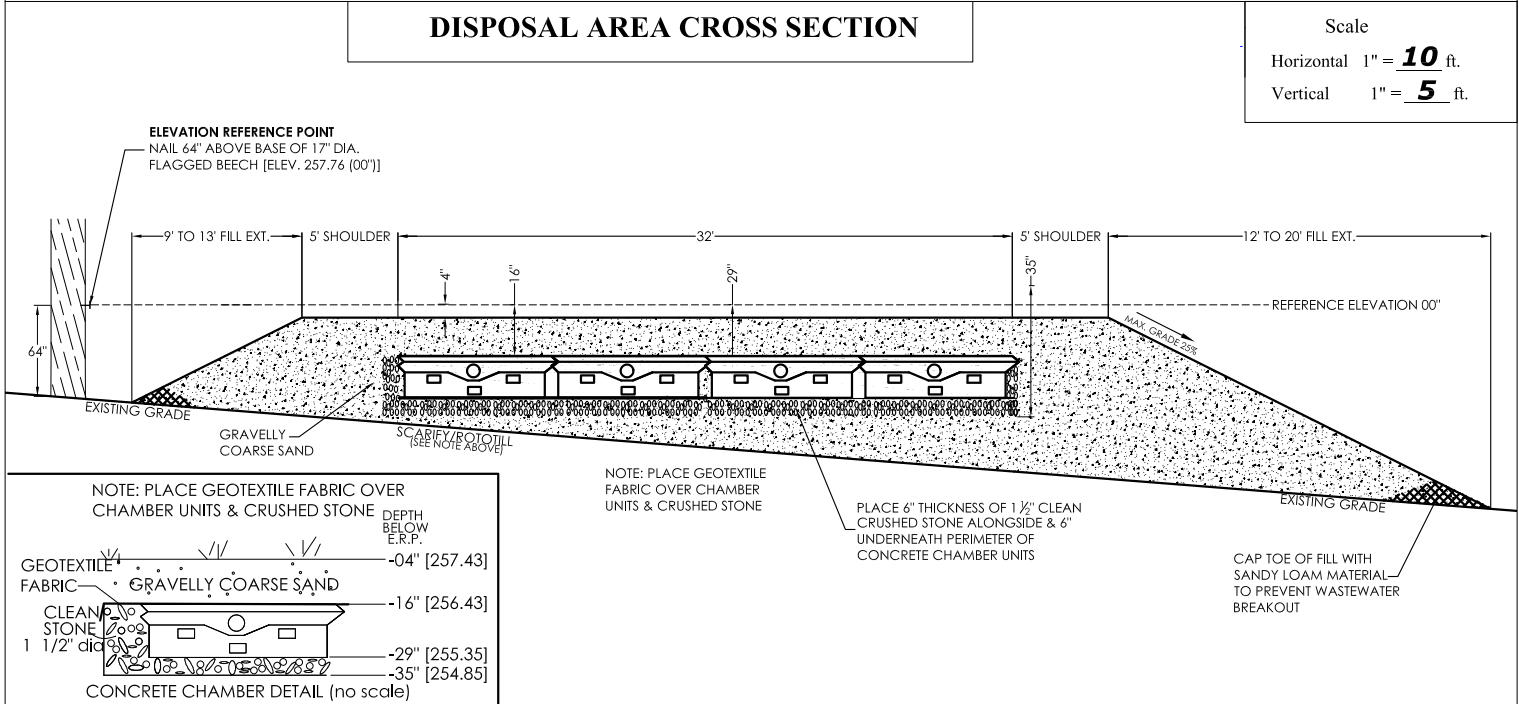
Date

Page 2 of 3  
HHE-200 Rev. 8/01

<b>SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION</b>		Department of Human Services Division of Health Engineering (207) 287-5672 Fax: (207) 287-3165
Town, City, Plantation <b>POWNA</b>	Street, Road, Subdivision <b>HALLOWELL ROAD (BRADBURY MOUNTAIN STATE PARK CAMPGROUND)</b>	Owner's Name <b>STATE OF MAINE, BUREAU OF PARKS &amp; LAND</b>

<b>SUBSURFACE WASTEWATER DISPOSAL PLAN</b>		SCALE: 1" = _____ FT.
<div>SEE "PROPOSED DISPOSAL FIELD PLAN" ATTACHED</div>		

FILL REQUIREMENTS (MIN. 12" COVER)	CONSTRUCTION ELEVATIONS	ELEVATION REFERENCE POINT
Depth of Fill (Upslope) <b>31"- 42"</b>	Finished Grade Elevation (MIN. 12" COVER) <b>257.43 (-04")</b>	Location & Description: <b>NAIL 64" ABOVE BASE OF 16" DIA. FLAGGED BEECH</b>
Depth of Fill (Downslope) <b>40"- 64"</b>	Top of Distribution Pipe or Proprietary Device <b>256.43 (-16")</b>	Reference Elevation: <b>257.76 (00")</b>
	Bottom of Disposal Area (CRUSHED STONE) <b>254.85 (-35")</b>	





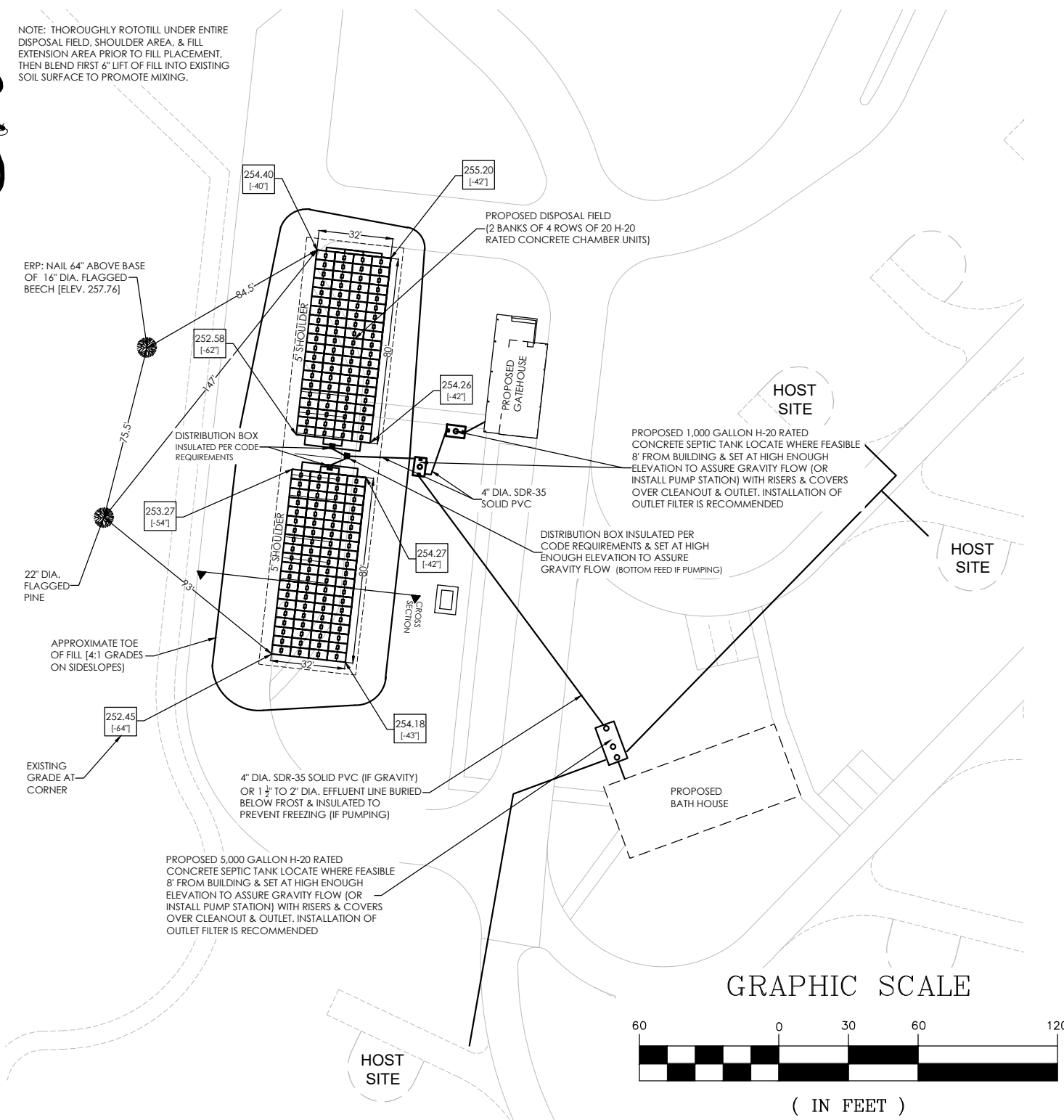
NOTE: THOROUGHLY ROTOTILL UNDER ENTIRE DISPOSAL FIELD, SHOULDER AREA, & FILL EXTENSION AREA PRIOR TO FILL PLACEMENT, THEN BLEND FIRST 6" LIFT OF FILL INTO EXISTING SOIL SURFACE TO PROMOTE MIXING.

ERP: NAIL 64" ABOVE BASE OF 16" DIA. FLAGGED-BEECH [ELEV. 257.76]

22" DIA. FLAGGED-PINE

APPROXIMATE TOE OF FILL [4:1 GRADES ON SIDESLOPES]

EXISTING GRADE AT CORNER



**PROPOSED DISPOSAL FIELD PLAN**  
**PREPARED FOR**  
**BRADBURY MOUNTAIN STATE PARK CAMPGROUND**  
**(TERRADYN CONSULTANTS, LLC)**  
**HALLOWELL ROAD**  
**POWELL, MAINE**

**LONGVIEW**  
**PARTNERS, LLC**  
**ENVIRONMENTAL PERMITTING SPECIALISTS**

DRAFT:  
BO

SCALE:  
1" = 60'

CHECKED:  
JL

PLAN DATE:  
4/4/24

Terradyn Consultants, LLC  
Bradbury Mountain State Park Campground  
Hallowell Road  
Pownal, Maine

Exhibit E

Operations & Maintenance Manual





# Wastewater Disposal System Operations & Maintenance

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prepared for  
Bradbury Mountain State Park  
Campground  
(for Terradyn Consultants, LLC)  
Hallowell Road  
Pownal, Maine  
April 2024

# Subsurface Wastewater Disposal System Operations and Maintenance Manual

## Bradbury Mountain State Park Campground

Pownal, Maine

### Operations and Maintenance Requirements:

#### Septic Tanks

The Campground is to be served by, (1) 5,000 gallon and (2) 1,000 gallon concrete septic tanks. Tanks shall be pumped annually, and all septic tank outlets shall be fitted with effluent filters (Zabel or equivalent). These shall be inspected, cleaned, and replaced with every pumping.

- Risers and covers shall be installed to ground surface over the inlet, outlet, and middle covers of all septic tanks. All connections should be inspected to assure watertightness.
- Check scum thickness and sludge thickness in each tank annually.
- The tanks shall be pumped at least once per year. Otherwise, if the sludge depth exceeds 24" or scum thickness exceeds 12", pumping should occur as needed. Proof of pumping is required, and shall be maintained by the Owner
- Inlet and outlet baffles to be inspected for integrity and obstructions at least once annually.

### Chamber Areas

- At least one riser shall be provided for each bank of chambers and over the distribution box for access to evaluate liquid levels in the future
- Mow top of chamber area, 5' shoulder, and fill extensions on a regular basis (grass less than 24" tall) so as to prevent trees from taking root in the disposal area

### Other

No garbage disposals shall be installed.

Introduction of foreign materials into the system such as food scraps, bones, feminine napkins or cleaners can negatively affect system/pump station performance and should be discouraged.

Chemicals such as septic tank cleaners and/or chlorine (such as from water treatment units) and controlled or hazardous substances shall not be disposed of in this system.

Additives such as yeast or enzymes are discouraged, since they have not been proven to extend system life or performance.

No chemicals or solvents shall be introduced to the system(s).

No floor drain, water treatment, dehumidifier, or other discharge (other than sanitary waste) shall be introduced into the system(s).

Records of tank/pump clean outs and/or inspections shall also be maintained by the Owner and can be provided to the Town of Pownal or the Maine Dept. of Environmental Protection upon request.

Terradyn Consultants, LLC  
Bradbury Mountain State Park Campground  
Hallowell Road  
Pownal, Maine

Exhibit F

Soil Test Pit Profile Descriptions



# SOIL TEST PIT PROFILE DESCRIPTIONS

**LONGVIEW PARTNERS, LLC**  
6 SECOND STREET BUXTON, MAINE

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

**POWNA**

**BRADBURY MOUNTAIN STATE PARK CAMPGROUND**

**TERRADYN CONSULTANTS, LLC**

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 1** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
GRAVELLY SANDY LOAM	FRIABLE	DARK YELLOWISH BROWN	
GRAVELLY LOAMY SAND & SAND		YELLOWISH BROWN	
LOAMY SAND & FINE SAND IN LENSES	SOMEWHAT FIRM TO FIRM	OLIVE GRAY	COMMON DISTINCT
		OLIVE	
50			

LIMIT OF EXCAVATION @ 55"

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>3 C</b>	%	<b>22 "</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>SKERRY</b>			<input type="checkbox"/> Pit Depth

Observation Hole **TP 2** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
GRAVELLY SANDY LOAM			
GRAVELLY LOAMY SAND	FRIABLE	DARK YELLOWISH BROWN	
FINE & MEDIUM SAND		OLIVE BROWN	FEW FAINT
LOAMY SAND & FINE SAND IN LENSES	SOMEWHAT FIRM TO FIRM	OLIVE	COMMON FAINT
50			

LIMIT OF EXCAVATION @ 48"

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>3/7 C</b>	%	<b>26 "</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>MIXED ORIGIN</b>			<input type="checkbox"/> Pit Depth

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 3** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
GRAVELLY SANDY LOAM	FRIABLE	DARK YELLOWISH BROWN	
GRAVELLY LOAMY SAND		LIGHT YELLOWISH BROWN	FEW FAINT
FINE & MEDIUM SAND		LIGHT OLIVE BROWN	
LOAMY SAND & FINE SAND IN LENSES	SOMEWHAT FIRM	OLIVE	COMMON DISTINCT
	FIRM		
50			

LIMIT OF EXCAVATION @ 46"

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>3 C</b>	%	<b>20 "</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>SKERRY (ATYPICAL)</b>			<input type="checkbox"/> Pit Depth

Observation Hole **TP 4** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
LOAMY SAND		DARK YELLOWISH BROWN	
LOAMY SAND	FRIABLE	YELLOWISH BROWN	
MEDIUM & COARSE SAND		OLIVE BROWN	FEW FAINT
FINE & MEDIUM SAND	SOMEWHAT FIRM	OLIVE GRAY	COMMON DISTINCT
GRAVELLY MEDIUM & COARSE SAND	FRIABLE	OLIVE	SATURATED
50			

LIMIT OF EXCAVATION @ 55"

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>5/3 C</b>	%	<b>28 "</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>"CROGHAN-LIKE"</b>			<input type="checkbox"/> Pit Depth

*James Logan*  
**SIGNATURE**

**237/213**  
**LSE/CSS #**

**11/15/23**  
**DATE**

<p><b><i>SOIL TEST PIT PROFILE DESCRIPTIONS</i></b></p>	<p><b><i>LONGVIEW PARTNERS, LLC</i></b>  <b><i>6 SECOND STREET BUXTON, MAINE</i></b></p>
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Town, City, Plantation	Street, Road, Subdivision	Owner's Name
<b>POWNAL</b>	<b>BRADBURY MOUNTAIN STATE PARK CAMPGROUND</b>	<b>TERRADYN CONSULTANTS, LLC</b>

**SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)**

Observation Hole TP 5 ☒ Test Pit ☐ Boring  
 \_\_\_\_\_ " Depth of Organic Horizon Above Mineral Soil

**SOIL TEST PIT BY BACKHOE**

Texture	Consistency	Color	Mottling
		DARK BROWN	
GRAVELLY SANDY LOAM	FRIABLE		
		YELLOWISH BROWN	
GRAVELLY LOAMY SAND & SAND			FEW FAINT
		MIXED OLIVE BROWN	COMMON DISTINCT
LOAMY SAND & FINE SAND IN LENSES	SOMEWHAT FIRM TO FIRM	OLIVE	
LIMIT OF EXCAVATION @ 52"			

Depth Below Mineral Soil Surface (inches)

Soil Classification <b>3</b> <b>C</b> Profile    Condition	Slope _____ %	Limiting Factor <u>19</u> "	<input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
--	------------------	-----------------------------------	--

Observation Hole <u><b>TP 5</b></u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring _____ " Depth of Organic Horizon Above Mineral Soil	Observation Hole <u><b>TP 6</b></u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring _____ " Depth of Organic Horizon Above Mineral Soil
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**SOIL TEST PIT BY BACKHOE**

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	GRAVELLY SANDY LOAM	FRIABLE		
20	GRAVELLY LOAMY SAND & SAND		YELLOWISH BROWN	FEW FAINT
30			MIXED OLIVE BROWN	COMMON DISTINCT
40	LOAMY SAND & FINE SAND IN LENSES	SOMEWHAT FIRM TO FIRM	OLIVE	
50	LIMIT OF EXCAVATION @ 52"			

**SOIL TEST PIT BY BACKHOE**

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0				
10	STONY SANDY LOAM		DARK YELLOWISH BROWN	
20	LOAMY SAND	FRIABLE		
30	FINE & MEDIUM SAND		YELLOWISH BROWN	FEW FAINT
40	MEDIUM & COARSE SAND		OLIVE BROWN	
50	SILT LOAM	FIRM	OLIVE GRAY	COMMON DISTINCT
56	LIMIT OF EXCAVATION @ 56"			

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>3</b>			<input type="checkbox"/> Restrictive Layer
<b>C</b>	_____ %	<b>19</b> "	<input type="checkbox"/> Bedrock
Profile			<input type="checkbox"/> Pit Depth
Condition			

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7</b>			<input type="checkbox"/> Restrictive Layer
<b>C</b>	_____ %	<b>22</b> "	<input type="checkbox"/> Bedrock
Profile			<input type="checkbox"/> Pit Depth
Condition			
<b>MIXED ORIGIN</b>			

**SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)**

Observation Hole TP 7 ☒ Test Pit ☐ Boring  
 \_\_\_\_\_ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	SOIL TEST PIT BY BACKHOE			
	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	SANDY LOAM	FRIABLE		
20	LOAMY SAND		DARK YELLOWISH BROWN	
30	GRAVELLY LOAMY SAND & SAND	SOMEWHAT FIRM	LIGHT OLIVE BROWN	FEW FAINT
40	LOAMY FINE SAND & FINE SAND IN LENSES	FIRM	OLIVE	COMMON DISTINCT
50	LIMIT OF EXCAVATION @ 50"			

Soil Classification <u>3/7</u> <u>C</u> Profile      Condition <b>"ELDRIDGE-LIKE"</b>	Slope _____ %	Limiting Factor <u>21</u> "	<input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
--	------------------	-----------------------------------	--

Observation Hole TP 7 ☒ Test Pit ☐ Boring  
\_\_\_\_\_ " Depth of Organic Horizon Above Mineral Soil

**SOIL TEST PIT BY BACKHOE**

**Left Chart (50" Limit):**

Depth (inches)	Texture	Consistency	Color	Mottling
0 - 10	SANDY LOAM	FRIABLE	DARK BROWN	
10 - 20	LOAMY SAND		DARK YELLOWISH BROWN	
20 - 30	GRAVELLY LOAMY SAND & SAND	SOMEWHAT FIRM	LIGHT OLIVE BROWN	FEW FAINT
30 - 50	LOAMY FINE SAND & FINE SAND IN LENSES	FIRM	OLIVE	COMMON DISTINCT

**Right Chart (54" Limit):**

Depth (inches)	Texture	Consistency	Color	Mottling
0 - 10	VARIABLE SANDY LOAM & LOAMY SAND (FILL)		DARK BROWN	
10 - 20	SANDY LOAM	FRIABLE	MIXED OLIVE BROWN	
20 - 30	LOAMY SAND		DARK BROWN	
20 - 30	LOAMY SAND		DARK YELLOWISH BROWN	FEW FAINT
30 - 40	LOAMY FINE SAND	SOMEWHAT FIRM	OLIVE BROWN	COMMON FAINT
40 - 50	GRAVELLY LOAMY SAND & SAND		OLIVE	


**Figure 1. SOIL TEST PIT BY BACKHOE**


Soil Classification <b>3/7 C</b> Profile Condition <b>"ELDRIDGE-LIKE"</b>	Slope _____ %	Limiting Factor <b>21</b> "	<input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
--	------------------	--------------------------------	--


  


Soil Classification <b>FILL OVER</b> <b>7 C</b> Profile Condition <b>STRIPPED</b>	Slope _____ %	Limiting Factor <b>18</b> "	<input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
---	------------------	--------------------------------	--

*James Logan*  
**SIGNATURE**

 <b>SIGNATURE</b>	<b>237/213</b> <b>LSE/CSS #</b>	<b>11/15/23</b> <b>DATE</b>
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 <b>SIGNATURE</b>	<b>237/213</b> <b>LSE/CSS #</b>	<b>11/15/23</b> <b>DATE</b>
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 <b>SIGNATURE</b>	<b>237/213</b> <b>LSE/CSS #</b>	<b>11/15/23</b> <b>DATE</b>
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 <b>SIGNATURE</b>	<b>237/213</b> <b>LSE/CSS #</b>	<b>11/15/23</b> <b>DATE</b>
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# SOIL TEST PIT PROFILE DESCRIPTIONS

LONGVIEW PARTNERS, LLC  
6 SECOND STREET BUXTON, MAINE

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

POWNAI

BRADBURY MOUNTAIN STATE PARK CAMPGROUND

TERRADYN CONSULTANTS, LLC

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 9** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	SOIL TEST PIT BY BACKHOE			
	Texture	Consistency	Color	Mottling
0	LOAMY SAND & SAND (FILL)	FRIABLE	OLIVE BROWN	
10	SANDY LOAM		DARK BROWN	
			LIGHT GRAY (ALBIC)	
20	LOAMY SAND	SOMEWHAT FIRM TO FIRM	DARK YELLOWISH BROWN	FEW FAINT
	LOAMY FINE SAND & SILT LENSES	FIRM	OLIVE BROWN	COMMON DISTINCT
30			MIXED OLIVE GRAY	
			OLIVE	
40				
50				
LIMIT OF EXCAVATION @ 52"				

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>8/7 C</b>	%	<b>18"</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>ATYPICAL</b>			<input type="checkbox"/> Pit Depth

Observation Hole **TP 10** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	SOIL TEST PIT BY BACKHOE			
	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	SANDY LOAM			
		FRIABLE	DARK YELLOWISH BROWN	
20	LOAMY SAND & SAND			FEW FAINT
	GRAVELLY LOAMY SAND & SILT IN LENSES	FIRM	OLIVE GRAY	COMMON DISTINCT
30			OLIVE	
40				
50				
LIMIT OF EXCAVATION @ 56"				

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7/3 C</b>	%	<b>16"</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>ATYPICAL</b>			<input type="checkbox"/> Pit Depth

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 11** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	SOIL TEST PIT BY BACKHOE			
	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	LOAMY SAND		DARK YELLOWISH BROWN	
20		FRIABLE	YELLOWISH BROWN	FEW FAINT
	MEDIUM & COARSE SAND		OLIVE BROWN	
30				FREE WATER
	GRAVELLY LOAMY SAND W/ LOAMY FINE SAND & SILT IN LENSES	FIRM	OLIVE	COMMON DISTINCT
40				
50				
LIMIT OF EXCAVATION @ 60"				

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7 C</b>	%	<b>24"</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>MIXED ORIGIN</b>			<input type="checkbox"/> Pit Depth

Observation Hole **TP 12** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	SOIL TEST PIT BY BACKHOE			
	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	LOAMY SAND		DARK YELLOWISH BROWN	
		FRIABLE		
20	MEDIUM & COARSE SAND		OLIVE BROWN	FEW FAINT
	GRAVELLY LOAMY SAND & SILT IN LENSES	SOMEWHAT FIRM TO FIRM	OLIVE	COMMON DISTINCT FEW FAINT
30				
40				
50				
LIMIT OF EXCAVATION @ 61"				

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7 C</b>	%	<b>20"</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
			<input type="checkbox"/> Pit Depth

*James Logan*  
SIGNATURE

237/213  
LSE/CSS #

11/15/23 & 1/17/24  
DATE

# SOIL TEST PIT PROFILE DESCRIPTIONS

**LONGVIEW PARTNERS, LLC**  
6 SECOND STREET BUXTON, MAINE

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

**POWNA**

**BRADBURY MOUNTAIN STATE PARK CAMPGROUND**

**TERRADYN CONSULTANTS, LLC**

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 13** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND FRIABLE	DARK YELLOWISH BROWN	
20	FINE & MEDIUM SAND	MIXED OLIVE BROWN	FEW FAINT
30	MEDIUM & COARSE SAND		COMMON FAINT
40	STONY LOAMY SAND & SAND (TILL)	SOMEWHAT FIRM TO FIRM	
50	LIMIT OF EXCAVATION @ 58"		

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7 C</b>	%	<b>18"</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>ATYPICAL</b>			<input type="checkbox"/> Pit Depth

Observation Hole **TP 14** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND	DARK YELLOWISH BROWN	
20	FRIABLE		FEW FAINT
30	MEDIUM & COARSE SAND	MIXED OLIVE BROWN	FREE WATER
40	FINE SAND W/ LENSES OF SILT LOAM & LOAMY FINE SAND (LACUSTRINE)	FIRM OLIVE	COMMON DISTINCT
50	LIMIT OF EXCAVATION @ 56"		

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7 C</b>	%	<b>16"</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>"ELDRIDGE-LIKE"</b>			<input type="checkbox"/> Pit Depth

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 15** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND	DARK YELLOWISH BROWN	
20	MEDIUM & COARSE SAND FRIABLE	YELLOWISH BROWN	FEW FAINT
30	COBBLY MEDIUM & COARSE SAND	OLIVE BROWN	FREE WATER
40	LOAMY FINE SAND & SILT IN LENSES	FIRM OLIVE	COMMON DISTINCT
50	LIMIT OF EXCAVATION @ 51"		

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7 C</b>	%	<b>18"</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>"ELDRIDGE-LIKE"</b>			<input type="checkbox"/> Pit Depth

Observation Hole **TP 16** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND	DARK YELLOWISH BROWN	
20	FINE & MEDIUM SAND FRIABLE		FEW FAINT
30	MEDIUM & COARSE SAND	YELLOWISH BROWN	
40	LOAMY FINE SAND W/ SILT IN LENSES	FIRM OLIVE GRAY	COMMON DISTINCT
50	LIMIT OF EXCAVATION @ 48"		

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>7 C</b>	%	<b>19"</b>	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
<b>"ELDRIDGE-LIKE"</b>			<input type="checkbox"/> Pit Depth

*James Logan*  
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**LSE/CSS #**

**1/17/24**  
**DATE**

# SOIL TEST PIT PROFILE DESCRIPTIONS

LONGVIEW PARTNERS, LLC  
6 SECOND STREET BUXTON, MAINE

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

**POWNA**

**BRADBURY MOUNTAIN STATE PARK CAMPGROUND**

**TERRADYN CONSULTANTS, LLC**

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 17** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND FRIABLE	DARK YELLOWISH BROWN	FEW FAINT
20	MEDIUM & COARSE SAND	MIXED OLIVE BROWN	COMMON FAINT SATURATED
30	LOAMY SAND & SAND (TILL)	FIRM OLIVE GRAY	COMMON DISTINCT
40			
50			

Soil Classification  
**7 C**  
Profile Condition  
OUTWASH OVER TILL

Slope  
\_\_\_\_\_%

Limiting Factor  
**16** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

Observation Hole **TP 18** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND	DARK YELLOWISH BROWN	FEW FAINT
20	MEDIUM & COARSE SAND FRIABLE	MIXED DARK YELLOWISH BROWN	
30	STONY LOAMY SAND & SAND (TILL)	FIRM MIXED OLIVE BROWN	COMMON DISTINCT & SATURATED
40			
50			

Soil Classification  
**7 D**  
Profile Condition

Slope  
\_\_\_\_\_%

Limiting Factor  
**12** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 19** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	LOAMY SAND	DARK YELLOWISH BROWN	FEW FAINT
20	MEDIUM & COARSE SAND FRIABLE	MIXED DARK YELLOWISH BROWN	COMMON FAINT
30	GOBBLY LOAMY SAND & SAND FIRM	MIXED OLIVE BROWN	COMMON DISTINCT
40			
50			

Soil Classification  
**3 D**  
Profile Condition  
SKERRY (ATYPICAL)

Slope  
\_\_\_\_\_%

Limiting Factor  
**12** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

Observation Hole **TP 20** ■ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
10	SANDY LOAM	DARK YELLOWISH BROWN	
20	STONY LOAMY SAND FRIABLE	OLIVE BROWN	FEW FAINT
30	STONY LOAMY SAND & SAND FIRM	OLIVE GRAY	COMMON DISTINCT
40			
50			

Soil Classification  
**3 C**  
Profile Condition  
SKERRY-LIKE

Slope  
\_\_\_\_\_%

Limiting Factor  
**15** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

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1/17/24  
DATE

# SOIL TEST PIT PROFILE DESCRIPTIONS

**LONGVIEW PARTNERS, LLC**  
6 SECOND STREET BUXTON, MAINE

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

**POWNA**

**BRADBURY MOUNTAIN STATE PARK CAMPGROUND**

**TERRADYN CONSULTANTS, LLC**

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 21** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
STONY FINE SANDY LOAM		DARK YELLOWISH BROWN	
	FRIABLE	YELLOWISH BROWN	FEW FAINT
STONY LOAMY SAND		MIXED OLIVE BROWN	
STONY LOAMY SAND & SAND	FIRM	OLIVE GRAY	COMMON DISTINCT
50			

LIMIT OF EXCAVATION @ 48"

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>3</b> <b>C</b>	%	<b>16</b> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
SKERRY			<input type="checkbox"/> Pit Depth

Observation Hole **TP 22** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
STONY FINE SANDY LOAM		DARK YELLOWISH BROWN	
	FRIABLE	MIXED DARK YELLOWISH BROWN	FEW FAINT
STONY LOAMY SAND		OLIVE GRAY	
STONY LOAMY SAND & SAND	FIRM		COMMON DISTINCT
50			

LIMIT OF EXCAVATION @ 52"

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>3</b> <b>C</b>	%	<b>16</b> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
SKERRY			<input type="checkbox"/> Pit Depth

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 23** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
STONY FINE SANDY LOAM		DARK YELLOWISH BROWN	
	FRIABLE	MIXED OLIVE BROWN	FEW FAINT
STONY LOAMY SAND		OLIVE GRAY	COMMON FAINT
STONY LOAMY SAND & SAND	FIRM		COMMON DISTINCT & FREE WATER
50			

LIMIT OF EXCAVATION @ 52"

Soil Classification	Slope	Limiting Factor	<input checked="" type="checkbox"/> Ground Water
<b>3</b> <b>C</b>	%	<b>15</b> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input type="checkbox"/> Bedrock
SKERRY			<input type="checkbox"/> Pit Depth

Observation Hole **TP 24** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	NONE EVIDENT
STONY SANDY LOAM	FRIABLE	DARK YELLOWISH BROWN	
		BEDROCK	
50			

Soil Classification	Slope	Limiting Factor	<input type="checkbox"/> Ground Water
<b>2</b> <b>AI</b>	%	<b>8</b> "	<input type="checkbox"/> Restrictive Layer
Profile Condition			<input checked="" type="checkbox"/> Bedrock
ABRAM			<input type="checkbox"/> Pit Depth

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**1/17/24**  
DATE

# SOIL TEST PIT PROFILE DESCRIPTIONS

LONGVIEW PARTNERS, LLC  
6 SECOND STREET BUXTON, MAINE

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

POWNAI

BRADBURY MOUNTAIN STATE PARK CAMPGROUND

TERRADYN CONSULTANTS, LLC

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 25** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
STONY SANDY LOAM			
10		DARK YELLOWISH BROWN	
STONY LOAMY SAND	FRIABLE		
20		FEW FAINT	
STONY LOAMY SAND & SAND	FIRM	OLIVE GRAY	COMMON DISTINCT
30			
40			
50			
LIMIT OF EXCAVATION @ 52"			

Soil Classification  
**3 C**  
Profile Condition  
SKERRY

Slope  
\_\_\_\_ %

Limiting Factor  
**18** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

Observation Hole **TP 26** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
STONY FINE SANDY LOAM			
10		DARK YELLOWISH BROWN	
STONY LOAMY SAND	FRIABLE		
20		FEW FAINT	
MEDIUM & COARSE SAND		MIXED OLIVE BROWN	COMMON FAINT
30			
40			
50			
LIMIT OF EXCAVATION @ 48"			

Soil Classification  
**7 C**  
Profile Condition  
SKERRY-LIKE

Slope  
\_\_\_\_ %

Limiting Factor  
**18** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

## SOIL DESCRIPTION AND CLASSIFICATION (PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES)

Observation Hole **TP 27** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		DARK BROWN	
STONY SANDY LOAM			
10		DARK YELLOWISH BROWN	
STONY LOAMY SAND	FRIABLE		
20		FEW FAINT	
STONY FINE SANDY LOAM		OLIVE BROWN	
30		OLIVE	FREE WATER
40			
50			
LIMIT OF EXCAVATION @ 52"			

Soil Classification  
**NICHOLVILLE/SKERRY**  
Profile Condition

Slope  
\_\_\_\_ %

Limiting Factor  
**15** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

Observation Hole **TP 28** ☒ Test Pit ☐ Boring  
" Depth of Organic Horizon Above Mineral Soil

### SOIL TEST PIT BY BACKHOE

Texture	Consistency	Color	Mottling
0		LIGHT GRAY (ALBIC)	
STONY LOAMY SAND & SAND			
10		DARK YELLOWISH BROWN	COMMON DISTINCT
STONY LOAMY SAND	FRIABLE		
20		MIXED DARK YELLOWISH BROWN	FREE WATER
STONY LOAMY SAND W/ LENSES OF SILT & LOAMY FINE SAND	FIRM	OLIVE GRAY	
30			
40			
50			
LIMIT OF EXCAVATION @ 52"			

Soil Classification  
**COLONEL (SWP)/ WESTBURY**  
Profile Condition

Slope  
\_\_\_\_ %

Limiting Factor  
**10** "

☒ Ground Water  
☐ Restrictive Layer  
☐ Bedrock  
☐ Pit Depth

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Terradyn Consultants, LLC  
Bradbury Mountain State Park Campground  
Hallowell Road  
Pownal, Maine

Exhibit G

Plans for the Proposed Engineered Disposal System by Terradyn Consultants., LLC





Terradyn Consultants, LLC  
Bradbury Mountain State Park Campground  
Hallowell Road  
Pownal, Maine

Design Flow Calculations

Bradbury Mountain State Park Campground

Campsites to be served by Bath House: 43 Sites @ 60 gpd/site = 2,580 gpd

“Host” Sites with Sewer & Water: 3 Sites @ 125 gpd/site = 375 gpd

Gatehouse Employees: 2 Employees @ 12 gpd/employee = 24 gpd

$$2,580 + 375 + 24 = 2,979 \text{ gpd}$$

