DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING PERMIT

This is to certify that SHEILA LOWRY DUNBAR Located At 541 ISLAND AVE

Job ID: 2012-03-3579-SUBSRF CBL: 090- R-005-001

has permission to Subsurface Complete Non-Engineered Replacement System.
provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.	A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

04/20/2012

Fire Prevention Officer **Code Enforcement Officer / Plan Reviewer**

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
PENALTY FOR REMOVING THIS CARD

closed.

5-3-12 DWM Guy OK to cover system

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

1. Septic field and extension inspection for bottom preparation/ scarification to verify removal of vegetation, established transitional horizon and erosion and sedimentation control measures.
2. Backfill inspection of septic field for approved materials, stabilization, slopes and extensions.
3. Exposed septic field installation and tank location inspection to check elevations, dimensions, piping, plumbing station and system design prior to covering.

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.

#11850

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: PORTLAND
Street or Road: 541 ISLAND AVE
Subdivision, Lot #: (PEAKS ISLAND)

>> CAUTION: LPI APPROVAL REQUIRED <<

Town/City: Portland ME Permit #: 20120135
Date Permit Issued: 2/9/12 Fee: $_____ Double Fee Charged ( )
Local Plumbing Inspector Signature: _____ L.P.I. #: 1081

OWNER/APPLICANT INFORMATION

Name (last, first, MI): DUNBAR SHEILA ☒ Owner ☐ Applicant
Mailing Address of Owner/Applicant: 1819 PATRICK HENRY AVE. ARLINGTON, VA. 22205
Daytime Tel. #: c/o TOM BLACKBURN 232-8134

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 # _____ Lot # _____

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: CESSPOOL
Year installed: PRE-1974
☐ 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
9832 ☒ SQ. FT. ☐ ACRES

SHORELAND ZONING
☐ Yes ☒ No

DISPOSAL SYSTEM TO SERVE
☒ 1. Single Family Dwelling Unit, No. of Bedrooms: 4
☐ 2. Multiple Family Dwelling, No. of Units: _____
☐ 3. Other: _____ (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 TANK
☒ 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: 134 ☒ sq. ft. ☐ lin. ft.

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

DESIGN FLOW
360 gallons per day
BASED ON:
☒ 1. Table 4A (dwelling unit(s))
☐ 2. Table 4C(other facilities)
SHOW CALCULATIONS for other facilites
☐ 3. Section 4G (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS
PROFILE CONDITION
2 / B
at Observation Hole # TP1
Depth >48"
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING
☐ 1. Medium—2.6 sq. ft. / gpd
☒ 2. Medium—Large 3.0 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

LATITUDE AND LONGITUDE
at center of disposal area
Lat. 43 d 40 m 07.3 s
Lon. 70 d 11 m 23.4 s
If g.p.s, state margin of error: 10'

SITE EVALUATOR STATEMENT

I certify that on 2/9/12 (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 G. Mancini — Site Evaluator Signature
247 — SE #
Feb. 9, 2012 / April 18, 2012 — Date
JAMES G. MANCINI — Site Evaluator Name Printed
892-9498 — Telephone Number
E-mail Address

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

Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services

Department of Health and Human Services
Maine Center for Disease Control and Prevention
286 Water Street
11 State House Station
Augusta, Maine 04333-0011
Tel: (207) 287-5672
Fax: (207) 287-4172; TTY: 1-800-606-0215

SUBSURFACE WASTEWATER DISPOSAL SYSTEM VARIANCE REQUEST

This form must accompany an application (HHE-200 Form) for any subsurface wastewater disposal system which requires a variance to provisions of the Subsurface Wastewater Disposal Rules. The Local Plumbing Inspector must not issue a permit for the installation of a subsurface wastewater disposal system requiring a variance from the Department of Health and Human Services until approval has been received from the Department.

GENERAL INFORMATION Town of PORTLAND

Property Owner's Name: SHEILA DUNBAR c/o TOM BLACKBURN Tel. No.: 232-8134

System's Location: 541 ISLAND AVE. (PEAKS ISL.)

Property Owner's Address: 1819 PATRICK HENRY AVE., ARLINGTON VA. Zip Code 22205

e-mail address:

The subsurface wastewater disposal system design for the subject property requires a ☒ replacement system variance ☐ first time system variance to the Subsurface Wastewater Disposal Rules. This variance requires ☒ local approval ☐ local and state approval.

SPECIFIC VARIANCE REQUESTED (To be filled in by Site Evaluator. Use additional sheets if needed.) — **SECTION OF RULE**

1. 10' FROM OWNERS FOUNDATION, 10' FROM NEIGHBORS FOUNDATION (FIELD). — TABLE 8A
2. 6' FROM PROPERTY LINES (FIELD). — TABLE 8A
3. SEPTIC TANK 5' FROM FOUNDATION, 8' FROM PROPERTY LINE. — TABLE 8A

SITE EVALUATOR

When a property is found to be unsuitable for subsurface wastewater disposal by a licensed Site Evaluator, the Evaluator shall so inform the property owner. If the property owner, after exploring all other alternatives, wishes to request a variance to the Rules, and the Evaluator in his professional opinion feels the variance request is justified and the site limitations can be overcome, he shall document the soil and site conditions on the Application. The Evaluator shall list the specific variances necessary plus describe below the proposed system design and function. The Evaluator shall further describe how the specific site limitations are to be overcome, and provide any other support documentation as required prior to consideration by the Department. Attach a separate sheet if necessary.

SETBACK DISTANCES MAXIMIZED.

I, JAMES G. MANCINI, S.E., certify that a variance to the Rules is necessary since a system cannot be installed which will completely satisfy all the Rule requirements. In my judgment, the proposed system design on the attached Application is the best alternative available; enhances the potential of the site for subsurface wastewater disposal; and that the system should function properly.

James G. Mancini — SIGNATURE OF SITE EVALUATOR

2/9/12 + 4/18/12 — DATE

PROPERTY OWNER

I, THOMAS BLACKBURN, am the ☐ owner ☒ agent for the owner of the subject property. I understand that the installation on the Application is not in total compliance with the Rules. Should the proposed system malfunction, I release all concerned provided they have performed their duties in a reasonable and proper manner, and I will promptly notify the Local Plumbing Inspector and make any corrections required by the Rules. By signing the variance request form, I acknowledge permission for representatives of the Department to enter onto the property to perform such duties as may be necessary to evaluate the variance request.

☐ SIGNATURE OF OWNER
☐ AGENT FOR THE OWNER

4/19/12 — DATE

LOCAL PLUMBING INSPECTOR - Approval at local level

The local plumbing inspector shall review all variance requests prior to rendering a decision.

I, Jonathan Rice, the undersigned, have visited the above property and find that the variance request submitted by the applicant does not conform with certain provisions of the wastewater disposal rules. The variance request submitted by the applicant is the best alternative for a subsurface wastewater disposal system on this property. The proposed system (☐ does ☒ does not) conflict with any provisions controlling subsurface wastewater disposal in the shoreland zone. Therefore, I (☒ do ☐ do not) approve the requested variance. I (☐ will ☐ will not) issue a permit for the system's installation as proposed by the application.

LPI Signature: [signature] LPI 1081 Date: 04/19/12

LOCAL PLUMBING INSPECTOR - Referral to the Department

The local plumbing inspector shall review all variance requests prior to forwarding to the Division of Environmental Health.

I, _____, the undersigned, have visited the above property and find that the variance request submitted by the applicant does not conform with certain provisions of the wastewater disposal rules. The variance request submitted by the applicant is the best alternative for a subsurface wastewater disposal system on this property. The proposed system (☐ does ☐ does not) conflict with any provisions controlling subsurface wastewater disposal in the shoreland zone. Therefore, I (☐ do ☐ do not) recommend the issuance of a permit for the system's installation as proposed by the application.

LPI Signature _____ Date _____

FOR USE BY THE DEPARTMENT ONLY

The Department has reviewed the variance(s) and (☐ does ☐ does not) give its approval. Any additional requirements, recommendations, or reasons for the Variance denial, are given in the attached letter.

SIGNATURE OF THE DEPARTMENT _____ DATE _____

Notes: 1. Variances for soil conditions may be approved at the local level as long as the total point assessment is at least the minimum allowed. (See Section 7.B.4 of the Subsurface Wastewater Disposal Rules for Municipal Review.)

2. Variances for other than soil conditions or soil conditions beyond the limit of the LPI's authority are to be submitted to the Department for review. (See Section 7.B.3 for Department Review.) The LPI's signature is required on these variance requests prior to sending them to the Department.

SOIL, SITE AND ENGINEERING FACTORS FOR FIRST TIME SYSTEM VARIANCE ASSESSMENT WITH LIMITING SOIL DRAINAGE CONDITIONS (SEE TABLES 7C THROUGH 7M).

CHARACTERISTIC		POINT ASSESSMENT
Soil Profile		
Depth to Groundwater/Restrictive Layer		
Terrain		
Size of Property		
Waterbody Setback		
Water Supply		
Type of Development		
Disposal Area Adjustment		
Vertical Separation Distance		
Additional Treatment		
	TOTAL POINT ASSESSMENT:	

Minimum Points (Check One): ☐ Outside Shoreland Zone-50 ☐ Inside Shoreland Zone-65 ☐ Subdivision-65

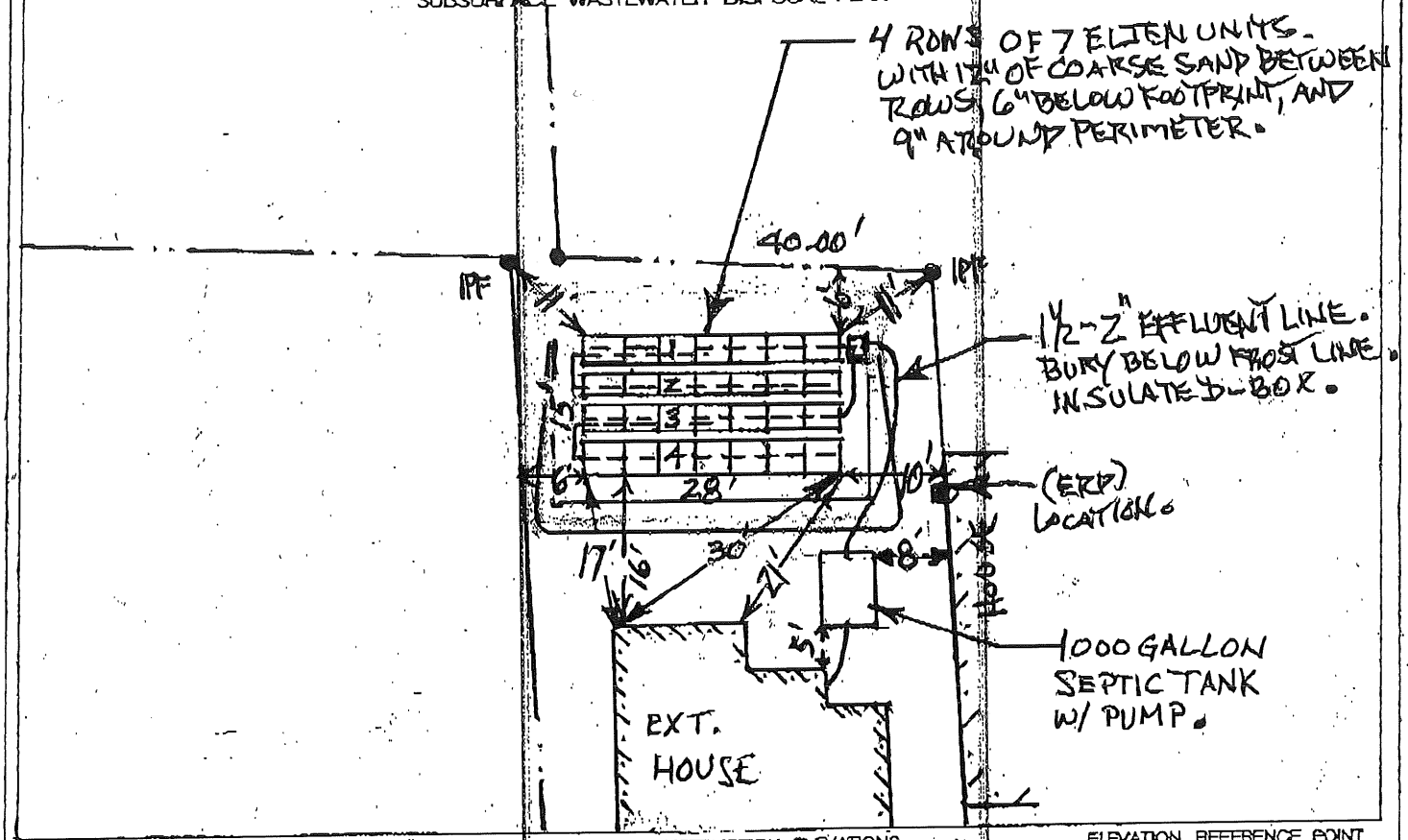
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-4172

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
PORTLAND	541 ISLAND AVE.	DUNBAR, SHEILA

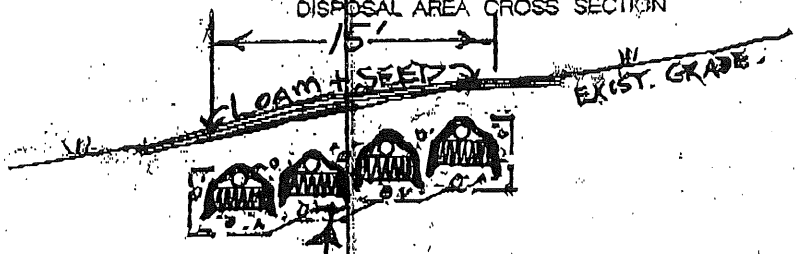
SCALE 1" = 20 FT.

SUBSURFACE WASTEWATER DISPOSAL PLAN



FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS	ELEVATION REFERENCE POINT
Depth of Fill (upslope)	0"	Finished Grade Elevation	"SEE DETAIL BELOW" Location & Description TOP OF METER BOX ON NEIGHBORS HOUSE.
Depth of Fill (Downslope)	5"	Top of Distribution Pipe or Proprietary Device	
		Bottom of Disposal Area (6" SAND BASE)	Reference Elevation AT 00"

DISPOSAL AREA CROSS SECTION



SCALE:
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 10'

ELEVATIONS BELOW ERP FOR ROW #:

	(1)	(2)	(3)	(4)
CLEAN FILL	38"	45"	52"	59"
GEOTECHNICAL FABRIC OVER 4" DIA. PERF. PIPE	53"	60"	67"	74"
ELJEN IN-DRAIN UNIT	60"	67"	74"	81"
6" COARSE SAND BASE	66"	73"	80"	87"

DETAIL (NO SCALE)

James H. Mancini — Site Evaluator Signature

247 — SE #

FEB. 9, 2012 — Date

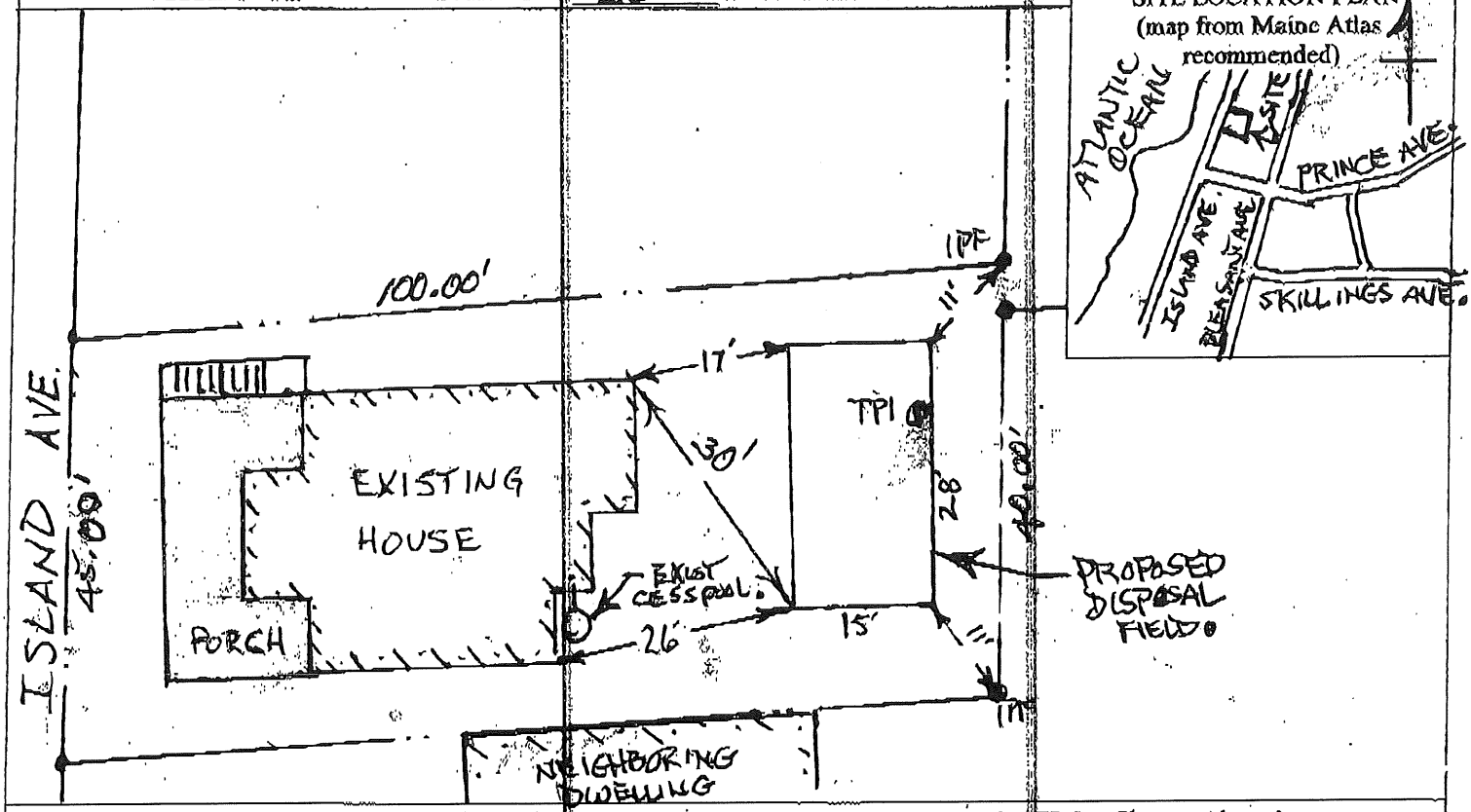
APRIL 18, 2012

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Division of Environmental Health
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
PORTLAND	541 ISLAND AVE.	DUNBAR, SHEILA

SITE PLAN Scale 1" = 20' ft. or as shown



SITE LOCATION PLAN
(map from Maine Atlas recommended)

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

Observation Hole TP1 ☒ Test Pit ☐ Boring
____" Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	COBBLY GRAVELLY VERY SANDY LOAM	FLUFFY	DARK BROWN	
10–20				
20–30				
30–40	LEVEL OF EXCAVATION			
40–50	PROBED DEPTH			

Soil Classification	Slope	Limiting Factor	
2 B (Profile / Condition)	14 %	48"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [X] Pit Depth

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

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10				
10–20				
20–30				
30–40				
40–50				

Soil Classification	Slope	Limiting Factor	
____ ____ (Profile / Condition)	____ %	____"	[ ] Ground Water [ ] Restrictive Layer [ ] Bedrock [ ] Pit Depth

James H. Marcum 247 FEB. 9, 2012 + APRIL 18, 2012
Site Evaluator Signature | SE # | Date

1.0 Basic System Design

1.1 **Design and Installation:** Design and installation of In-Drain systems shall comply with all state and local regulations and the requirements of this manual.

1.2 **System sizing:** In-Drain systems must be sized on the basis of Table 600.1 of the Maine Subsurface WasteWater Disposal Rules (Maine Rules). Disposal field sizing is based on an **approved credit of 1 sq.ft. of In-Drain bottom area equal to 4 sq.ft. of stone bed.** Use In-Drain sizing Table #1 to determine the number of Type B units for a given design flow and disposal field size group. The 4 to 1 credit applied for all systems, commercial and non-commercial. The number of In-Drains required is the same for trench or Eljen's spaced cluster configurations. Please refer to section 5 for additional design information on commercial systems. **Increase septic tank size by 50% and system size by 30% when garbage disposal is used.**

1.3 **Trench Configurations:** Trench configurations shall provide a minimum spacing of 6' center to center (3 feet between units) with 6" of sand (see section 1.7 for sand specifications) below the In-Drain and 9" of sand around the outer edge of Type B units. Trench configurations utilize the same number of In-Drains as clustered configurations. Most designs utilize cluster configurations unless the site designer feels that the site has some unusual hydraulic capacity characteristics.

1.4 **Clustered Configurations:** In-Drains may be installed in a clustered configuration with a minimum of 12" of sand (See section 1.7 for sand specification) between rows, 9" of sand around the outer edge of the In-Drains and 6" of sand below the In-Drain rows.

1.5 **Experimental Systems:** Use of In-Drains at a higher loading rate than the stated in Section 1.2 and or less that 12" of spacing between the rows of In-Drains, are considered experimental systems under Chapter 18 of the Maine Rules. Installations on some sites may result in reduced capacity due to mounding and /or the hydraulic capacity of the site. Special care must be given on sites with AI, AII, D or E conditions.

1.6 **Depth to seasonal Ground Water Table:** Maine rules require 12",18" or 24" from disposal bed bottom to MLF depending on Design Class and depth to ledge. Eljen's conservative leach field design specifies a receiving sand bed layer (level to within ½ inch) directly beneath the In-Drain assembly as shown in Figures 3,4,and 5. The bottom of the disposal area is the bottom of the In-Drain unit. **The vertical separation from the bottom of the In-Drain unit to the MLF shall not be less than 18".** In-Drain's low profile results in a system finished grade comparable to or lower than conventional disposal fields.

1.7 **Sand and Fill Specifications:**

a. The first 6" directly beneath the In-Drains shall be a medium to coarse sand, with an effective size of 0.25 to 2.0 mm, no greater than 5% passing a #200 sieve, and no particles larger than ¾ inch; or materials meeting the ASTM C-33 specifications. Washed concrete sand easily meets the above specification and is a reliable choice. Suitability of bank run sand must be verified.

b. Fill material for raised systems shall meet the requirement of Section 804.0 of the Maine Rules. Fill must be consolidated (stabilized) in lifts to prevent differential settling. Do not use any type compactor.

1.8 **Lined Disposal Fields:** Disposal fields for very permeable shoreline sites must comply with Chapter 16 of the Maine Rules. Place lining material at required depth followed by a 6" sand bed as described in Section 1.7 of this manual.

1.9 **Distribution Pipe Layout:** Perforated 4" diameter pipe is placed on top of In-Drain units with holes at 5 and 7 o'clock and secured by Eljen provided wire clamps (hoops). Pipe runs perpendicular to the In-Drains fins and lines up with the stripe painted on the top of the units. Use solid pipe over sand and perforated pipe only over the In-Drains. Refer to Figure 2 for typical pipe layouts. **Eljen strongly recommends SDR 35 pipe and fittings as to assure against crushing during backfill.** Systems with excessive wheel loading require Schedule 40 depending on design specifics.

1.10 **Connection to Distribution Box:** Install 4" solid pipe at a minimum 1/8" per foot slope between the end of the In-Drains and the D-Box. Place D-Box on well compacted sand or gravel to prevent settling and effects of frost heaving. Level gravity flow systems may use flow equalizers or other approved equal distribution devices.

1.11 **Septic Tank Filters:** Eljen strongly recommends the use of septic tank filters and septic tank in series or duel compartment tanks. This is a means to prevent excess solids leaving the septic tank due to lack of owner maintenance.

1.12 **System Venting:** It is strongly recommended to vent the following systems: Pumped systems, systems over 18" below finished grade, systems beneath paved or any surface condition that would not allow for surface air exchange with the system or areas subject to compaction, such as livestock, patios, and areas with vehicle traffic.

1.13 **Geotextile Antisiltation Cover Fabric:** Geotextile filter fabric, provided by Eljen, is placed over the top and sides of In-Drain rows to prevent long term siltation and failure. Fabric must drape slightly outward at distribution pipe to prevent blocking holes.

1.14 **Backfill and Seeding:** Place a minimum of 8" of clean backfill material per section 804.2 of the Maine Rules plus at least 4" of cover material per Maine Rules section 804.2.6 over the In-Drain assembly. Backfill must be free of large rocks that would damage distribution pipe, cover fabric or In-Drain units. All other required fill shall meet the requirements of Section 804.2 of the Maine Rules. Topsoil should be seeded and protected from erosion per the Maine Rules.

1.15 **Optimum Leach Field Geometries:** The optimum leach field layout for systems is 1 or 2 rows of Standard In-Drains running along contour lines. Cluster geometries provide the best solution for leach systems requiring fill. Longer narrower proportions are preferred to more square geometries, so as to increase system hydraulic capacity. This can be particularly important for large systems in slow percolation sites and in level areas with high ground water table. Refer to Table 1 and Figure 1 for several design examples.

1.16 **System Grading & Erosion Control:** Grading in the leach bed area during construction and upon completion must divert surface runoff from buildings, parking areas and nearby sloped terrain. Grade bed area in level systems at a minimum 3% prevent surface ponding.

1.17 **Vehicular Traffic:** While not generally recommended for subsurface disposal systems, In-Drains can be used under drive and parking areas with proper thickness and quality of fill.

Typical design requires 24" of compacted and properly graded material. Distribution pipe with at least SDR35 rating is required. **Systems can easily be engineered to handle H20 loading. Please consult with Eljen's Maine technical representative for design subject to vehicular traffic.**

2.0 Systems for Level Sites

2.1 **System Configuration:** Level systems layout may employ all leach field configurations. Bottom of systems, In-Drains and distribution pipes are installed level at their design elevations. Flow equalizers are recommended in **non-pumped** systems using distribution boxes. Non perforated interconnecting pipes between rows of In-Drains at midpoints (in systems over 40' long) and at ends to form pipe loops to insure long term system capacity. Refer to Figures 2 & 3 for section and plan views of in-ground and raised bed designs.

2.2 **In-Ground Systems:** The First 6" of material directly under and 9" beside the In-Drains must conform to Section 1.7a of this manual.

2.3 **Raised Systems:** Fill material used in raised systems must conform to Section 1.7a and 1.7b of this manual.

3.0 Systems for Sloped Sites

3.1 **System Configuration:** Sloping sites are best served by serial distribution with In-Drain cluster or trench layouts. Field sizing is the same as for level systems. A **securely anchored** distribution box is recommend between the septic tank and the leach areas as an access port and for flow velocity reduction.

3.2 **Cluster Row Spacing:** Minimum spacing between adjacent rows of In-Drains is 12" for sites with 0 to 15% slope. **Sites with over 15% slope should have minimum spacing of 24" between rows.**

3.3 **Distribution piping:** The distribution pipe is capped at the end of each row of In-Drains Overflow in achieved by placing an end-capped length of perforated pipe (minimum of 10' or 50%of the In-Drain row length which ever is longer) at the end of each row next to the distribution pipe and connecting it with solid pipe to the next lower elevation row of In-Drains as shown in the Eljen Installation Instruction sheet. This procedure continues until the end of the last row of In-Drains. Refer to Figure 5 for sloped field design and section detail of over flow pipe.

3.4 Sand and Fill Specifications: Fill material, sand bed bottom and backfill are the same as in level systems.

4.0 Combination Systems

4.1 Dosing: Use an appropriate dosing device to assure proper effluent distribution to each field. If standard distribution boxes are used, anchor them adequately on stable compacted fill or place on a concrete pad not subject to frost heaving. The use of flow equalizers are

recommended to provide the same effluent volume to each serial leach field. Refer to Figure 5 for combination system detail.

5.0 Commercial Systems

5.1 System Sizing: Sizing Table #1 for Standard In-Drains apply for commercial and non-commercial systems. Table 501.2 of the Maine Rules is used to determine design flow for various commercial facilities. Site specific loading conditions as well as expected maintenance levels must be factored into final system size.

5.2 Problem Effluents: Commercial systems for the food service industry shall employ serviceable grease trapping to limit excess grease from the main leach field. Eljen requires installing a grease trap filter in the waste stream. Commercial laundry effluent can contain large quantities of suspended solids, which will quickly clog a leach field. Prefiltering is also required here. Other problems effluent situations include milk product plants, service stations, slaughterhouses and rendering plants. Contact Eljen's Maine Distributor for additional recommendations on designs for problem effluent and filter type.

5.3 Multiple Tanks: Multiple septic tanks in series or compartmentalized tanks are also recommended as a method of extending leach field life. Frequency of pumping of septic tanks and grease traps should be consistent with maximizing leach field life.

5.4 Ground Water Mounding: Disposal systems can produce ground water mounding in poorly drained sites, particularly those over 1000 GPD. Designers should avoid square leach field geometry. Maximize the leach field perimeter and place the short dimension of the leach field in the direction of the subsurface water gradient. The long dimension should follow the contour lines. Longer more narrow geometries produce the least ground water mounding. Level sites also require longer more narrow goemetries in order to maximize radial dispersion of effluent.

6.0 Pumped Systems

6.1 **Pump to Distribution Box:** Please specify an oversized distribution box for pumped systems. Provide velocity reduction in the D-Box with a tee or baffle. Set D-box invert 2" higher than invert of perforated pipe over In-Drain units. Do not use equalizers or other restriction devices in the outlet lines of the D-box.

6.2 **Dosing Design Criteria:** Use a maximum of 4 gallons per dose per Type B In-Drain in the system. Adjust pump gallons per minute and run time to achieve the above maximum dose. Use a minimum pump run time of one (1) minute. Longevity of currently available effluent pumps is not effected by shorter run times. Choose force main diameter to minimize percentage of dose drain back. Effluent velocity in force main should fall between approximately 3 and 5 ft/sec. Pump flow rate shall be less than 30 G.P.M. in residential systems. Design for 5-6 doses per day. Dosage should be 30-60 gallons per dose on a residential system.

6.3 **Pressure Distribution:** Dosing with small diameter pressurized laterals is not recommended. No system reduction is allowed.

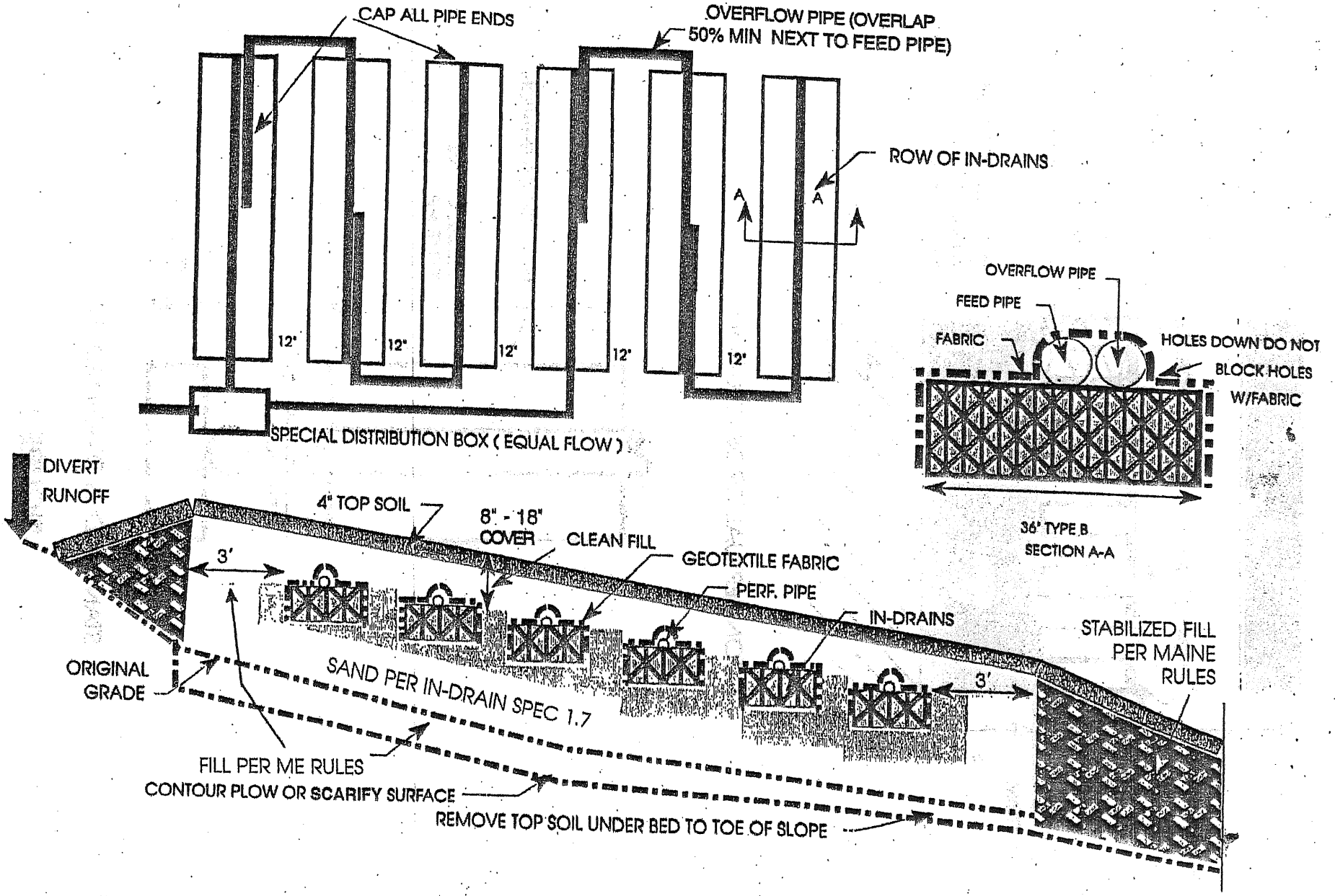
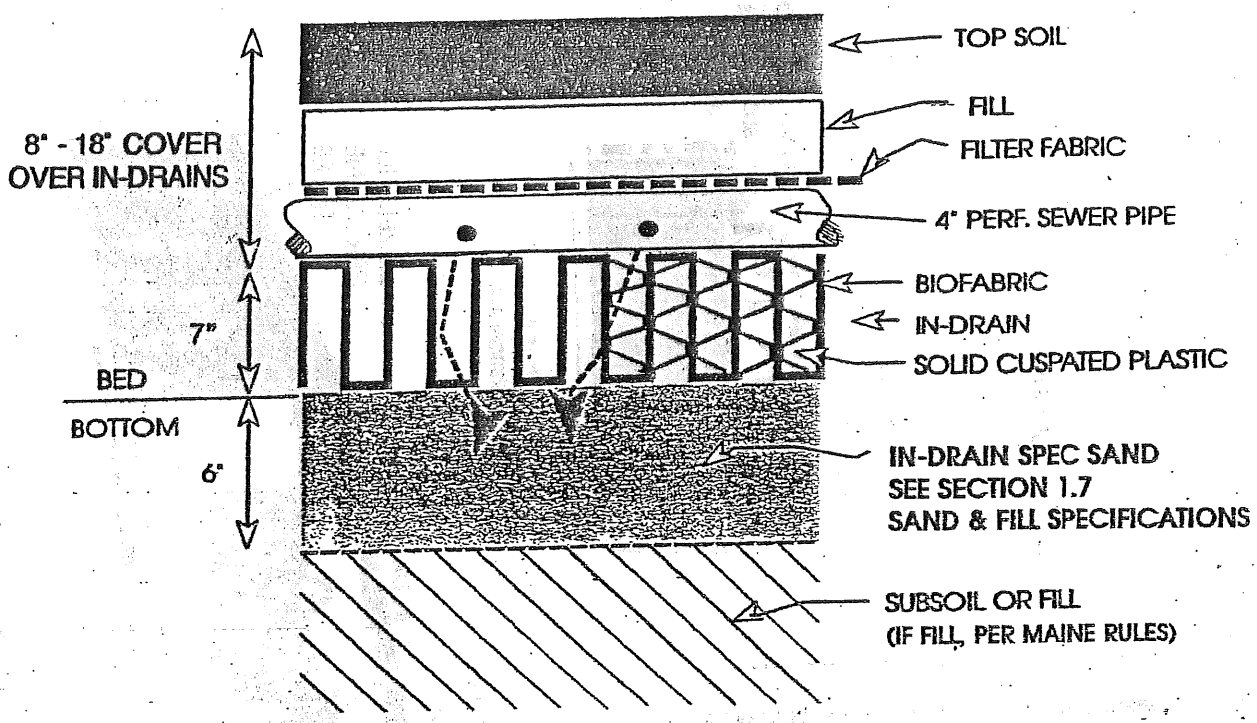
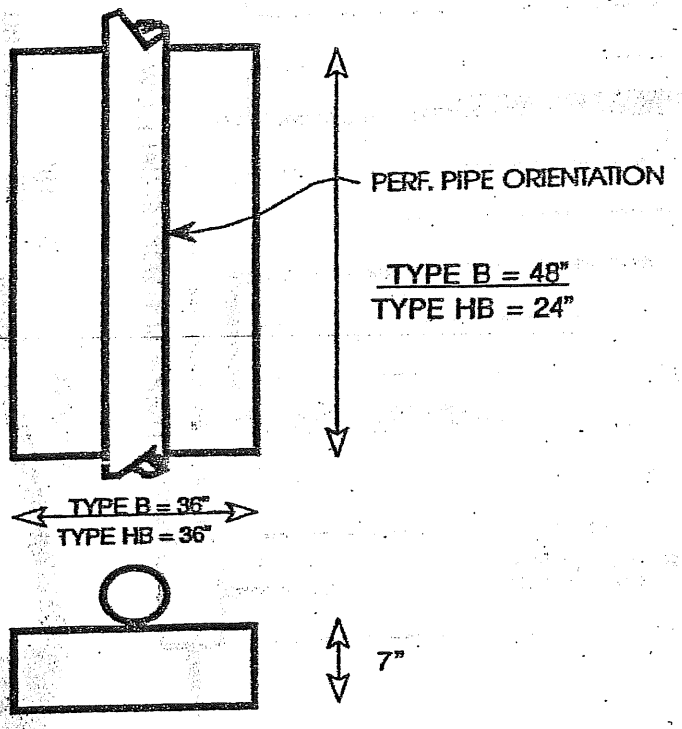


FIGURE 5. RAISED BED ON SLOPE WITH SERIAL DISTRIBUTION



CONCEPTUAL CROSS SECTION



STANDARD IN-DRAIN MODULE

FIGURE 1

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693(ONLY)

Or email buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the City of Portland Inspection Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.

Permits expire in 24 months, if the project is not started or ceases for 24 months.

If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue with construction.

1. **Septic field and extension inspection for bottom preparation/ scarification to verify removal of vegetation, established transitional horizon and erosion and sedimentation control measures.**
2. **Backfill inspection of septic field for approved materials, stabilization, slopes and extensions.**
3. **Exposed septic field installation and tank location inspection to check elevations, dimensions, piping, plumbing station and system design prior to covering.**

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services

Department of Health and Human Services
Maine Center for Disease Control and Prevention
286 Water Street
11 State House Station
Augusta, Maine 04333-0011
Tel: (207) 287-5672
Fax: (207) 287-4172; TTY: 1-800-606-0215

SUBSURFACE WASTEWATER DISPOSAL SYSTEM VARIANCE REQUEST

This form must accompany an application (HHE-200 Form) for any subsurface wastewater disposal system which requires a variance to provisions of the Subsurface Wastewater Disposal Rules. The Local Plumbing Inspector must not issue a permit for the installation of a subsurface wastewater disposal system requiring a variance from the Department of Health and Human Services until approval has been received from the Department.

GENERAL INFORMATION

Town of PORTLAND

Property Owner's Name: SHEILA DUNBAR Tel. No.: c/o TOM BLACKBURN 232-8134

System's Location: 541 ISLAND AVE. (PEAKS ISL.)

Property Owner's Address: 1819 PATRICK HENRY AVE., ARLINGTON VA. Zip Code 22205

e-mail address:

The subsurface wastewater disposal system design for the subject property requires a ☒ replacement system variance ☐ first time system variance to the Subsurface Wastewater Disposal Rules. This variance requires ☒ local approval ☐ local and state approval.

SPECIFIC VARIANCE REQUESTED (To be filled in by Site Evaluator. Use additional sheets if needed.) — SECTION OF RULE

1. 16' FROM OWNERS FOUNDATION, 10' FROM NEIGHBORS FOUNDATION (FIELD). — TABLE 7B
2. 6' FROM PROPERTY LINES (FIELD). — TABLE 7B
3. SEPTIC TANK 5' FROM FOUNDATION, 8' FROM PROPERTY LINE. — TABLE 7B

SITE EVALUATOR

When a property is found to be unsuitable for subsurface wastewater disposal by a licensed Site Evaluator, the Evaluator shall so inform the property owner. If the property owner, after exploring all other alternatives, wishes to request a variance to the Rules, and the Evaluator in his professional opinion feels the variance request is justified and the site limitations can be overcome, he shall document the soil and site conditions on the Application. The Evaluator shall list the specific variances necessary plus describe below the proposed system design and function. The Evaluator shall further describe how the specific site limitations are to be overcome, and provide any other support documentation as required prior to consideration by the Department. Attach a separate sheet if necessary.

SETBACK DISTANCES MAXIMIZED.

I, JAMES G. MANCINI, S.E., certify that a variance to the Rules is necessary since a system cannot be installed which will completely satisfy all the Rule requirements. In my judgment, the proposed system design on the attached Application is the best alternative available; enhances the potential of the site for subsurface wastewater disposal; and that the system should function properly.

James G. Mancini — SIGNATURE OF SITE EVALUATOR

2/9/12 — DATE

PROPERTY OWNER

I, Sheila Dunbar, am the ☑ owner ☐ agent for the owner of the subject property. I understand that the installation on the Application is not in total compliance with the Rules. Should the proposed system malfunction, I release all concerned provided they have performed their duties in a reasonable and proper manner, and I will promptly notify the Local Plumbing Inspector and make any corrections required by the Rules. By signing the variance request form, I acknowledge permission for representatives of the Department to enter onto the property to perform such duties as may be necessary to evaluate the variance request.

Sheila Dunbar
☑ SIGNATURE OF OWNER
☐ AGENT FOR THE OWNER

2/27/12 — DATE

LOCAL PLUMBING INSPECTOR - Approval at local level

The local plumbing inspector shall review all variance requests prior to rendering a decision.
I, _____, the undersigned, have visited the above property and find that the variance request submitted by the applicant does not conform with certain provisions of the wastewater disposal rules. The variance request submitted by the applicant is the best alternative for a subsurface wastewater disposal system on this property. The proposed system (☐ does ☐ does not) conflict with any provisions controlling subsurface wastewater disposal in the shoreland zone. Therefore, I (☐ do ☐ do not) approve the requested variance. I (☐ will ☐ will not) issue a permit for the system's installation as proposed by the application.

_____ _____
LPI Signature Date

LOCAL PLUMBING INSPECTOR - Referral to the Department

The local plumbing inspector shall review all variance requests prior to forwarding to the Division of Environmental Health.
I, _____, the undersigned, have visited the above property and find that the variance request submitted by the applicant does not conform with certain provisions of the wastewater disposal rules. The variance request submitted by the applicant is the best alternative for a subsurface wastewater disposal system on this property. The proposed system (☐ does ☐ does not) conflict with any provisions controlling subsurface wastewater disposal in the shoreland zone. Therefore, I (☐ do ☐ do not) recommend the issuance of a permit for the system's installation as proposed by the application.

_____ _____
LPI Signature Date

FOR USE BY THE DEPARTMENT ONLY

The Department has reviewed the variance(s) and (☐ does ☐ does not) give its approval. Any additional requirements, recommendations, or reasons for the Variance denial, are given in the attached letter.

_____ _____
SIGNATURE OF THE DEPARTMENT DATE

Notes: 1. Variances for soil conditions may be approved at the local level as long as the total point assessment is at least the minimum allowed. (See Section 7.B.4 of the Subsurface Wastewater Disposal Rules for Municipal Review.)

2. Variances for other than soil conditions or soil conditions beyond the limit of the LPI's authority are to be submitted to the Department for review. (See Section 7.B.3 for Department Review.) The LPI's signature is required on these variance requests prior to sending them to the Department.

SOIL, SITE AND ENGINEERING FACTORS FOR FIRST TIME SYSTEM VARIANCE ASSESSMENT WITH LIMITING SOIL DRAINAGE CONDITIONS (SEE TABLES 7C THROUGH 7M).

CHARACTERISTIC		POINT ASSESSMENT
Soil Profile		
Depth to Groundwater/Restrictive Layer		
Terrain		
Size of Property		
Waterbody Setback		
Water Supply		
Type of Development		
Disposal Area Adjustment		
Vertical Separation Distance		
Additional Treatment		
	TOTAL POINT ASSESSMENT:	

Minimum Points (Check One): ☐ Outside Shoreland Zone-50 ☐ Inside Shoreland Zone-65 ☐ Subdivision-65