389-A-4 Hope Avenue Presumps cot River Place Word Wolf (Riverwalk)

2005-0053

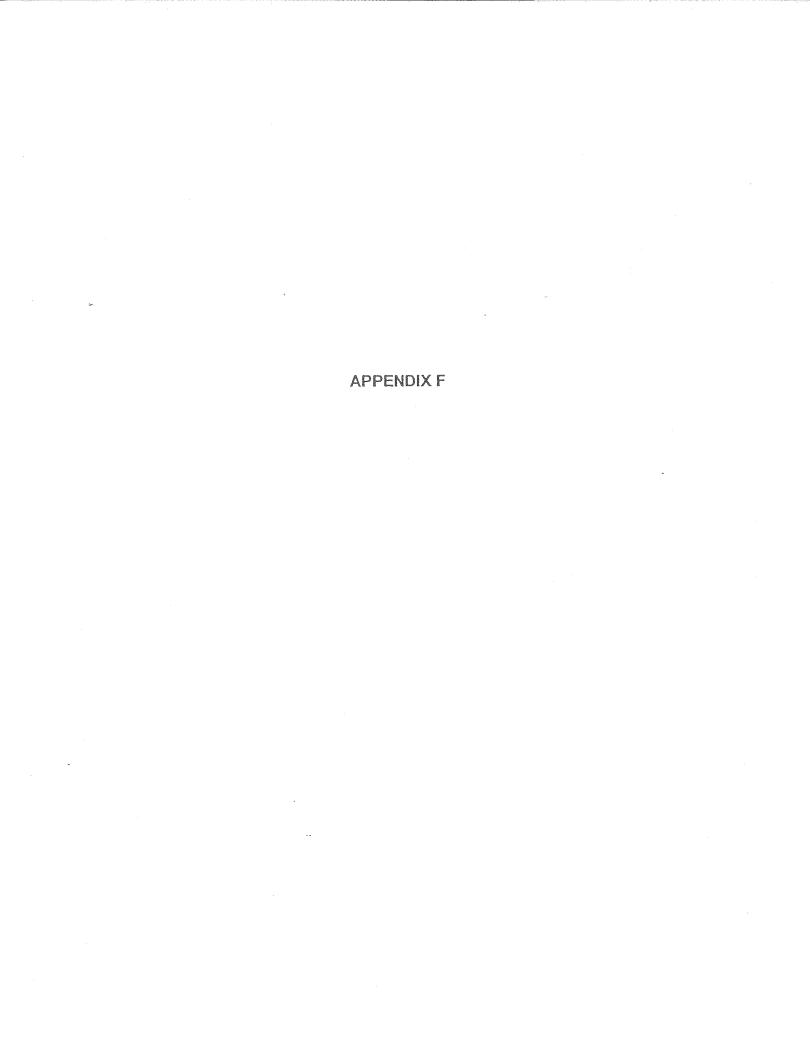
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ATTACHMENT C

WETLAND DEPICTION CONFIRMATION LETTER

Appendix F Methodology

- F.1 A description of the guidelines and methods that we utilized during this project follows below.
- F.1.1 Guidelines For Conducting Soil Surveys Our investigation was performed generally following the Maine Association Of Professional Soil Scientists (MAPSS) publication entitled Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping (September 2000). We used criteria for documenting very poorly drained and poorly drained soils (hydric soils) that were described in the New England Interstate Water Pollution Control Commission publication entitled Field Indicators for Identifying Hydric Soils in New England, Version 2 (1998). We examined exposed soil profiles for horizon development, color, depth of redoximorphic features (mottling), texture, coarse fragment content, root abundance, consistence, structure, depth of saturation, and other pertinent soil characteristics as observed. We examined surficial features such as rock outcrop, stoniness, and groundwater seepage when observed.
- F.1.2 Class B High Intensity Soil Survey The scale for a Class B High Intensity soil survey must be 1" = 500' or larger. Inclusions in a Class B High Intensity survey, as defined by MAPSS "will not contain dissimilar limiting inclusions larger than 1 acre" [per mapping unit but] "may total more than 1 acre per map unit delineation, in the aggregate, if not contiguous." This means that each mapping unit, as illustrated on the accompanying soils map, may include other soils other than those for which the mapping unit was named.
- F.1.3 Explanation for Map Unit Symbols Each map unit symbol consists of three letters (Ex: WaC). The first two letters represent the soil that exists within the area delineated on the map (e.g., Wa = Waumbek very bouldery fine sandy loam). The third letter in the map unit symbol represents a phase, which is usually the surface slope of the soil (e.g., C = 8-15 percent slopes). Phases are also based on texture, stoniness, drainage, depth to bedrock, or similar characteristics that may affect the use and management of that soil. Each map unit having the same symbol essentially delineates the same soil type and phase. The soils within an area enclosed by a map unit boundary will have a minimum of 75 percent of the named soil(s), or similar soil, for that map unit.



APPENDIX F Methodology

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- F.1.1 Guidelines For Conducting Soil Surveys Our investigation was performed generally following the Maine Association Of Professional Soil Scientists (MAPSS) publication entitled <u>Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping</u> (September 2000). We used criteria for documenting very poorly drained and poorly drained soils (hydric soils) that were described in the New England Interstate Water Pollution Control Commission publication entitled <u>Field Indicators for Identifying Hydric Soils in New England</u>, Version 2 (1998). We examined exposed soil profiles for horizon development, color, depth of redoximorphic features (mottling), texture, coarse fragment content, root abundance, consistence, structure, depth of saturation, and other pertinent soil characteristics as observed. We examined surficial features such as rock outcrop, stoniness, and groundwater seepage when observed.
- F.1.2 Class B High Intensity Soil Survey The scale for a Class B High Intensity soil survey must be 1" = 200' or larger. Inclusions in a Class B High Intensity survey, as defined by MAPSS "...will not contain dissimilar limiting inclusions larger than one acre" [per mapping unit but] "may total more than one acre per map unit delineation, in the aggregate, if not contiguous." This means that each mapping unit, as illustrated on the accompanying soils map, may include other soils than those for which the mapping unit was named.
- F.1.3 Explanation for Map Unit Symbols Each map unit symbol consists of three letters (Ex: LeB). The first two letters represents the soil that exists within the area delineated on the map (e.g., Le = Lamoine silt loam). The third letter in the map unit symbol represents a phase, which is usually the surface slope of the soil (e.g., B = 1-5 percent slopes). Phases are also based on texture, stoniness, drainage, depth to bedrock, or similar characteristics that may affect the use and management of that soil. Each map unit having the same symbol essentially delineates the same soil type and phase. The soils within an area enclosed by a map unit boundary will have a minimum of 75 percent of the named soil(s), or similar soil, for that map unit.

Map Unit - A collection of soil areas delineated during mapping. It is generally an aggregate of several different bodies of a soil type and named for the principal components.

Ponding - Ponding is standing water in a closed depression. The water is removed only by percolation, transpiration, or evaporation.

Soil Slope - The slope of the soil surface has several distinct properties: gradient, complexity, configuration, length, and aspect. In soil science, slope is considered a property of the soil, not a landform like a ridge or a valley side.

Stoniness - See table of surface phase names and stoniness class attached.

Surface P	HASE CLASSIFICATION OF SOILS HAVING STONES	S AND BOULDERS
Stoniness Class	Phase Name	Surface Covered (%)
0	Nonstony	Less than 0.01
1	Stony or bouldery 1/	0.01-0.1
2	Very stony or very bouldery 1/	0.1-3.0
3	Extremely stony or extremely bouldery 1/	3.0-15
4	Rubbly 1/	15-75
5	Rubble land 2/	More than 75

1/ The term "bouldery" is used if boulders dominate stones as a limiting factor for use even though stones may occupy a greater proportion of the surface

2/ Areas that stony are treated as the kind of miscellaneous area, "rubble land."

through the soil, is used by plants, or evaporates. The soils are nearly level to gently sloping, or they are steeper and absorb precipitation very rapidly.

Medium - Surface water flows away fast enough that free water stands on the surface for only short periods. Part of the precipitation enters the soil and is used by plants, is lost by evaporation, or moves into underground channels. The soils are nearly level to gently sloping and absorb precipitation at a moderate rate, or they are steeper and absorb water rapidly.

Rapidly - Surface water flows away fast enough that the period of concentration is brief and free water does not stand on the surface. Only small portion of the water enters the soil. The soils are mainly moderately steep or steep and have moderate to slow rates of absorption.

Very rapidly - Surface water flows away so fast that the period of concentration is brief and free water does not stand on the surface. Only a small portion of the water enters the soil. The soils are mainly steep or very steep and absorb precipitation slowly.

ADDITIONAL TERMS

Complex - A map unit that consists of areas of two or more kinds of soils that are in a consistently repeating pattern so intricate that the two components cannot be delineated separately at the scale of mapping selected.

Flooding - Flooding is the temporary covering of soil surface by flowing water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, inflow from high tides, or any combination of sources. Shallow water, standing or flowing during or shortly after rain or snowmelt is excluded form the definition of flooding. Standing water (see ponding) or water that forms a permanent cover is excluded form the definition.

Flooding hazard is expressed by frequency classes, duration classes, and time of year flooding occurs. Also important are velocity and depth of floodwater.

Very slow	less than 0.06 inch
Slow	0.06 to 0.20 inch
Moderately slow	0.20 to 0.60 inch
Moderately	0.6 to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

SURFACE RUNOFF

Surface runoff is the water that flows away from the soil over the surface without infiltrating. The water may come from precipitation or run-on from adjacent areas. The rate and amount of runoff are determined by internal and external characteristics of the soil and by climate and plant cover. Runoff can be significantly different on a soil under natural cover, under cultivation, and under different kinds of management. Differences in runoff can also be caused by difference sin topography and rainfall density. Soils usually have a high rate of runoff when frozen.

Six classes of runoff rates are recognized:

Ponded - Little or none of the precipitation and run-on escapes as runoff. Free water stands on the surface for significant periods of time. The amount of water that must be removed from ponded areas by percolation into and through he soil, by plants, or by evaporation is usually greater than the total rainfall. Ponding normally occurs on level to nearly level soils in depressions or concave positions of the microrelief. Water depth may fluctuate greatly.

Very slow - Surface water flows away slowly, and free water stands on the surface for long periods or immediately enters the soil. Most of the water passes through the soil, is used by plants, or evaporates. These soils are commonly level to nearly level or are very open and porous.

Slow - Surface water flows away slowly enough that free water stands on the surface for moderate periods or enters the soil rapidly. Most of the water passes

shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of mottling related to wetness.

Well drained - Water is removed from the soil readily, but not rapidly. It is not available to plants throughout most of the growing season. Wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained - Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive.

Somewhat poorly drained - Water is removed slowly enough that the soil is wet for significant periods during the growing season. Somewhat poorly drained soils commonly have slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained - Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. The soil is not continuously saturated in layers below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained - Water is removed from these soils so slowly that free water remains at or on the surface during most of the growing season. They are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate of high slope gradients.

PERMEABILITY

Permeability is the quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward though the saturated soil. Terms describing permeability are:

compressibility, permeability, shrink/sell potential, and compaction. Rock fragments also affect construction applications.

Soil texture influences plant growth by its influence on aeration, water intake rate, available water capacity, cation exchange capacity, permeability and workability.

Soil Texture Modifiers

The texture classes may be modified by the addition of suitable adjectives when rock fragments exceed about 15 percent by volume (for example, gravelly loam). The terms "very and "extremely" are used when rock fragments exceed about 35 and 60 percent by volume respectively. "Mucky" and "peaty" are terms used to modify soils when the organic matter content is more then 40 percent (for example, mucky loam).

Terms Used in Lieu of Textures

Organic materials, materials coarser than 2 mm, or materials that limit root penetration are used in a way similar to texture terms. Examples are fibric material, sand and gravel, and unweathered bedrock.

DEPTH TO CLASSES				
Very Shallow	Less than 10 inches			
Shallow	10 to 20 inches			
Moderately Deep	20 to 40 inches			
Deep	40 to 60 inches			
Very Deep	Greater than 60 inches			

DRAINAGE CLASSES

Drainage Class refers to the frequency and duration of periods of saturation or particle saturation. Seven classes of soil drainage are recognized:

Excessively drained - Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some have steep slopes. All are free of mottling related to wetness.

Somewhat excessively drained - Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are

enters into the soil at the surface and is controlled by he surface conditions. Transmission rate is the rate at which water moves within the soil and is controlled by the inherent properties of each horizon.

- A. (Low runoff potential) Soils in this class have high infiltration rates even when thoroughly wetted and consist chiefly of deep, well drained to excessively drained sands or gravels. These soils have a high rate of water transmission.
- B. (Moderately low runoff potential) Soils in this group have moderate infiltration rates when thoroughly wetted. They consist primarily of moderately deep to deep, moderately well drained to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.
- C. (Moderately low runoff potential) Soils in this class have slow infiltration rates when thoroughly wetted. They consist mainly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine textures. These soils have a slow rate of water transmission.
- D. (High runoff potential) Soils in this class have very slow infiltration rates when thoroughly wetted. They consist primarily of clays oils with a high shrink/swell potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

USDA TEXTURE

USDA texture refers to the U.S. Department of Agriculture's soil texture classification. Soil texture is the relative proportions by weight, of the several soil particle size classes finer than 2 mm in equivalent diameter. The material finer than 2 mm is called the fine earth fraction. Material larger than 2 mm is called the rock fragments.

Soil texture influences both engineering works and plant growth. Soil texture has a strong influence on soil mechanics and the behavior of soil when it is used as a construction or foundations material. It influences such properties as bearing strength,

APPENDIX E- GLOSSARY

SOIL ERODIBILITY FACTOR (K)

The soil erodibility factor (K) is a measure of the susceptibility of a soil to particle detachment and transport by rainfall. It is a quantitative value, experimentally determined. Values of K range from 0.02 to 0.69. The higher the value the more susceptible the soil to sheet and rill erosion by water. In the table below, K factors are assigned to each surface textural phase of all soil series in the survey area. The major subhorizons that would be exposed by cutting or scalping are listed below the existing surface phase for each series.

Soil properties that influence rainfall erosion are: (1) those that affect infiltration rate, movement of water through the soil, and the water storage capacity; and (2) those that affect dispersion, detachability, abrasion, and mobility of soil particles by rainfall and runoff. Some of the most important properties are texture and organic matter content of the exposed soil layer, size and stability of structural aggregates in the exposed permeability of the subsoil, and depth to slowly permeable layers. Antecedent soil moisture and presence of frozen soil also influence rainfall erosion.

SOIL CONSISTENCE

Soil consistence refers to "attributes of soil material as expressed in degree of cohesion and adhesion or in resistance to deformation or rupture" (USDA). Consistence includes resistance of soil material to rupture, resistance to penetration, plasticity, toughness, and stickiness of puddled soil material, and the manner in which the soil material behaves when subject to compression (USDA).

HYDROLOGIC SOIL GROUPS

A hydrologic soil group is a class of soils having the same runoff potential under similar storm and vegetative cover conditions. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to seasonally high water table, intake rate, permeability after prolonged wetting, and depth to a very slowly permeable layer. The influence of ground cover is treated independently (not in hydrologic soil groups). The soils in the U.S. are placed into four groups: A, B, C, and D. In the following definitions of the groups, infiltration rate is the rate at which water

APPENDIX E

PAGE ____OF ___ FORM F 9/01 DETAILED DESCRIPTION OF SOIL PROFILE/CLASSIFICATION INFORMATION SUBSURFACE CONDITIONS AT PROJECT SITES Project Name: PRESUMPSCOT Applicant Name: Project Location (municipality): KIVEL PLACE ZALMEL GORRICC-OTTAND Exploration Symbol: 7P6 X Test Pit Exploration Symbol: 195 Test Pit ☐ Boring ☐ Boring 2 " Organic horizon thickness Ground surface elev. " Organic horizon thickness Ground surface elev. Mottling Texture Consistency Color Mottling Texture Consistency Color - DAK DAKK GAAY BRO NONE FRIABLE PINE BROWN THRUE JAVO) inineral soil surface (inches) surface (inches) COAM 12 12 Elfor - WE Blows 18 18 Depth below mineral soil 24 24 OLIVE BROWN SOAM 30 30 Moles BSELVAT 42 42 Limiting Factor soil data soil data Classification Stope D Groundwater December (Compositions) Resinctive Laver Gesincine Lave S.E. # S.E. ₩ D Becrack Condition saso lica Soil series/phase name soil data Soil series/phase name: hyarologic hyarolog:c Hydric □ Hydric by MOWE Non-hydric Non-hydric S.S. № UNBRIDGE S.S. >> Soil Group Soil Group Exploration Symbol: ☐ Test Pit □ Boring Exploration Symbol: □ Test Pit Boring " Organic horizon thickness Ground surface elev. * Organic horizon thickness Ground surface elev. Consistency Color Mottling Mottling Texture Consistency Color 6 surface (inches) surface (inches) 12 12 18 18 Depth below mineral soil. below mineral soil 24 24 30 30 36 36 Depth 42 42 48 soil data Slope Limitino Factor soil data ☐ Groundwater Classification Slope Limiting Factor D Groundwater by S.E.₩ S.E. » Condition Profile Percent D Bedrock D Bedrock Depth Condition Percent Profile soil data Soil series/phase name: soil data Hydrologic Hydrologic Soil series/phase name: □ Hydric □ Hydric by bу Northyou S.S. » Non-hydric S.S. » Soil Group INVESTIGATOR INFORMATION AND SIGNATURE

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Name Printed/typed:

Stephen

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Cert/Lic/Req. #

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SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE

2011 COMPUTERS OF	Minimali Labab	EXPLORATIONS AT PROJECT STIES
	Applicant Name: Source Palmer	Project Location (municipality):
PLACE	1 3 8 % c/cc / / 3 = -	

		,	PLACE	Dontho	to (-b1,): 🛘 inches	s 🗆 cm	
	Exploration	√ or X	Description of subsurface materials by:		to (check one			Ground Surface
Lot	Symbol	if at	Soil profile/condition (if by S.E.),	Mottling		Firm or	Limit	Slope
No.	(TP 1, B 2,	SSWD	 Soil series name (if by C.S.S.), or by 	(seasonal	Bedrock	Restrictive	_ of	(%)
110.	etc.)	Field	Geologic unit (if by C.G.)	watertable)		Layer	Exploration	(70)
NA		NA	LAMOINE SIL	11	>40	11	35	1-5
1	172		11 11	8	11	8	25	1-5
 	·773		11 LDAM	13	11	13	35	1-5
-		 		2	>40		25	0-1
 	774	-	Sounc SIL	11	>40	11	35	1-5
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INVESTIGATOR INFORMAT	ION AND SIGNATURE
Signature:	Date: 7/24/2002
Name Printed/typed: H. Howell	Cert/Lid/Reg. # 187
Title: Licensed Site Evaluator	Certified Soil Scientist

Other:

Stephen

APPENDIX D

(TID cont.)

Lyman stony fine sandy loam, 3 to 8 percent slopes

Depth to Bedrock:

Shallow (10 to 20 inches below the soil surface)

Drainage:

Somewhat excessively drained. Redoximorphic features are not evident

above bedrock.

<u>SETTING</u>

Parent Material:

Loamy glacial till

Landform:

Bedrock controlled sideslopes

Landscape Position:

Gently sloping

TYPICAL PROFILE DESCRIPTION

A typical pedon was not described for this soil. However, typically, the surface is covered with 2 inches of organic matter. The surface layer is 4 inch of dark brown stony fine sandy loam. The upper subsoil is 12 inches of dark yellowish brown gravelly fine sandy loam underlain by 2 inches of light olive brown gravelly fine sandy loam. Bedrock is at 18 inches below the soil surface.

WATER RELATED INFORMATION

Permeability:

Moderate (0.6 – 2 in/hr) or moderately rapid (2.0 – 6.0 in/hr) throughout

Surface Runoff:

Slow to Medium

Hydrologic Group:

C/D

K-Factor:

0.20 in the surface horizons and .32 in the subsoil

Flooding Potential:

None

USE AND MANAGEMENT

Development for a residential subdivision: Soil limitations for residential subdivisions on Tunbridge and Lyman soils are "severe" due to shallow depth to bedrock. Limitations are also "moderate" due to frost action and stoniness, "moderate" or "severe" due to depth to bedrock, and "severe" due to droughtiness for local roads and streets, and lawns. Removal of bedrock or building on top of bedrock would eliminate or mitigate the limitations of shallow depth to bedrock. Roads will require frost resistant construction and lawns will require the removal of surface stones and frequent watering in the summer months.

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(TIB) Tunbridge-Lyman complex, 3 to 8 percent slopes

MAP UNIT COMPOSITION

Soils in this complex consist of 60 percent Tunbridge stony fine sandy loam, 3 to 8 percent slopes; 30 percent Lyman stony loam, 3 to 8 percent slopes; 10 percent other soils, listed as inclusions below.

<u>INCLUSIONS</u>

Šimilar:

Tunbridge loam, 1 to 8 percent slopes

Tunbridge stony loam, 8 to 15 percent slopes Lyman stony loam, 1 to 8 percent slopes

Dissimilar:

Abram bouldery loam, 3 to 8 percent slopes

Rock Outcrop

Scantic silt loam, 0 to 3 percent slopes Lamoine silt loam, 1 to 5 percent slopes

Tunbridge stony loam, 3 to 8 percent slopes

Depth to Bedrock:

Moderately deep (20 to 40 inches below the soil surface)

Drainage:

Well drained. Redoximorphic features are greater than 40 inches below

the soil surface.

SETTING

Parent Material:

Loamy glacial till

Landform:

Bedrock controlled sideslopes

Landscape Position:

Gently sloping

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-6. Typically, the surface is covered with 2 inches of organic matter. The surface layer is 8 inches of brown stony fine sandy loam. The upper subsoil is 8 inches of dark yellowish brown fine sandy loam underlain by 10 inches of light olive brown fine sandy loam. Bedrock is at 28 inches below the soil surface.

WATER RELATED INFORMATION

Permeability:

Moderate (0.6 - 2 in/hr) or moderately rapid (2.0 - 6.0 in/hr) throughout

Surface Runoff:

Slow to Medium

Hydrologic Group:

C

K-Factor:

0.17 in the surface horizon and .20 in the subsurface and subsoil

Flooding Potential:

None

Lamoine silt loam, 1 to 8 percent slopes, eroded

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Toe slopes on lake and marine plains

Landscape Position:

Nearly level to gently sloping toe slopes

TYPICAL PROFILE DESCRIPTION

A typical pedon was not described for this soil. However, typically, the surface is covered with 1 inch of organic matter. The eroded surface is 4 inches of olive brown loam underlain by 5 inches of mottled olive gray silt loam. The upper substratum is 3 inches of firm mottled olive gray silty clay loam underlain by very firm mottled dark olive gray silty clay loam to greater than 60 inches in depth.

WATER RELATED INFORMATION

Permeability:

Moderate (0.6–2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06–0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Slow

Hydrologic Group:

D

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness, low strength and frost action. Lamoine soils have a "perched" seasonal groundwater table from about 6 inches to 2 feet in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. The fine sediments associated with Lamoine soils make them susceptible to erosion if disturbed, however, this can be mitigated by immediate seeding and/or mulching after disturbance.

(LIB) Lamoine Complex, 1 to 8 percent slopes

MAP UNIT COMPOSITION

Soils in this complex consist of 40 percent Lamoine silt loam, 1 to 8 percent slopes, 40 percent Lamoine silt loam, 1 to 8 percent slopes, eroded, and 20 percent other soils, listed as inclusions below.

INCLUSIONS

Similar:

Lamoine loam, 1 to 8 percent slopes, eroded

Lamoine loam, 8 to 40 percent slopes

Dissimilar:

Scantic silt loam, 0 to 8 percent slopes

Tunbridge stony fine sandy loam, 3 to 8 percent slopes

Lamoine loam, 1 to 8 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Toe slopes on lake and marine plains

Landscape Position:

Nearly level to gently sloping toe slopes

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-5. Typically, the surface layer is 5 inches of very dark grayish brown silt loam. The subsoil is 6 inches of light olive brown silt loam over 6 inches of olive brown silt loam. The substratum is very firm mottled olive silty clay loam to greater than 60 inches in depth.

WATER RELATED INFORMATION

Permeability:

Moderate (0.6-2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06-0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Slow

Hydrologic Group:

D

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

(LaD) Lamoine silt loam, 15 to 40 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Sideslopes on lake and marine plains

Landscape Position:

Moderately steep to steeply sloping sideslopes

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was not described. However, typically, the surface layer is 7 inches of very dark grayish brown silt loam. The subsoil is 5 inches of dark yellowish brown silt loam with a discontinuous grayish brown horizon underlain by 4 inches of firm olive brown silt loam. The lower substratum is firm mottled olive silty clay loam to greater than 60 inches in depth.

INCLUSIONS

Similar:

Lamoine silt loam, 40 to 60 percent slopes Lamoine silt loam 8 to 15 percent slopes

Dissimilar:

Scantic silt loam, 0 to 3 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6-2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06-0.2"/hr) in the upper part of the subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Rapid

Hydrologic Group:

D

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness, low strength, slope and frost action. Lamoine soils have a "perched" seasonal groundwater table from about 6 inches to 2 feet in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. The fine sediments associated with Lamoine soils make them susceptible to erosion if disturbed, especially on steep slopes. This can be mitigated by immediate seeding and/or mulching combined with the use of a geotextile fabric, after disturbance.

(LaB) Lamoine silt loam, 1 to 8 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

<u>SETTING</u>

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Toe slopes on lake and marine plains

Landscape Position:

Nearly level to gently sloping ridge top and sideslope

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-1. Typically, the surface is covered with 1 inch of organic matter. The surface layer is 5 inches of very dark grayish brown silt loam. The subsoil is 6 inches of light olive brown silt loam over 6 inches of olive brown silt loam. The substratum is very firm mottled olive silty clay loam to greater than 60 inches in depth.

INCLUSIONS

Similar:

Lamoine Ioam, 8 to 30 percent slopes Lamoine Ioam, 1 to 8 percent slope Lamoine silt Ioam, 1 to 8 percent eroded

Dissimilar:

Scantic silt loam, 0 to 3 percent slopes

Tunbridge stony fine sandy loam, 3 to 8 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6–2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06–0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Slow

Hydrologic Group:

D

K-Factor:

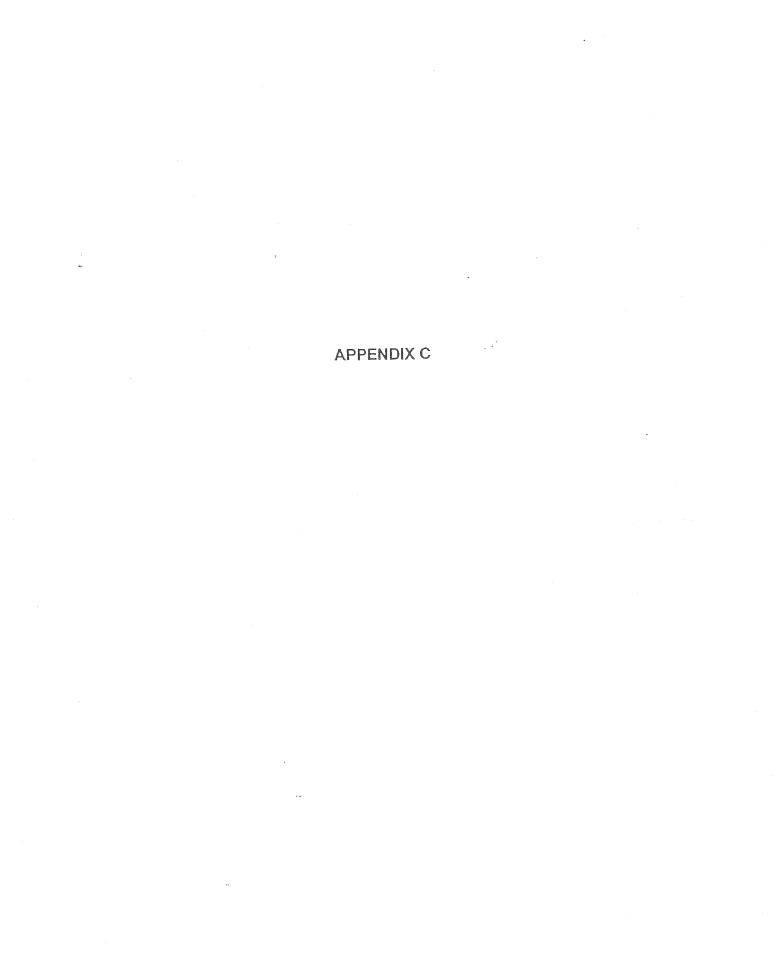
0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness, low strength and frost action. Lamoine soils have a "perched" seasonal groundwater table from about 6 inches to 2 feet in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. The fine sediments associated with Lamoine soils make them susceptible to erosion if disturbed, however, this can be mitigated by immediate seeding and/or mulching after disturbance.



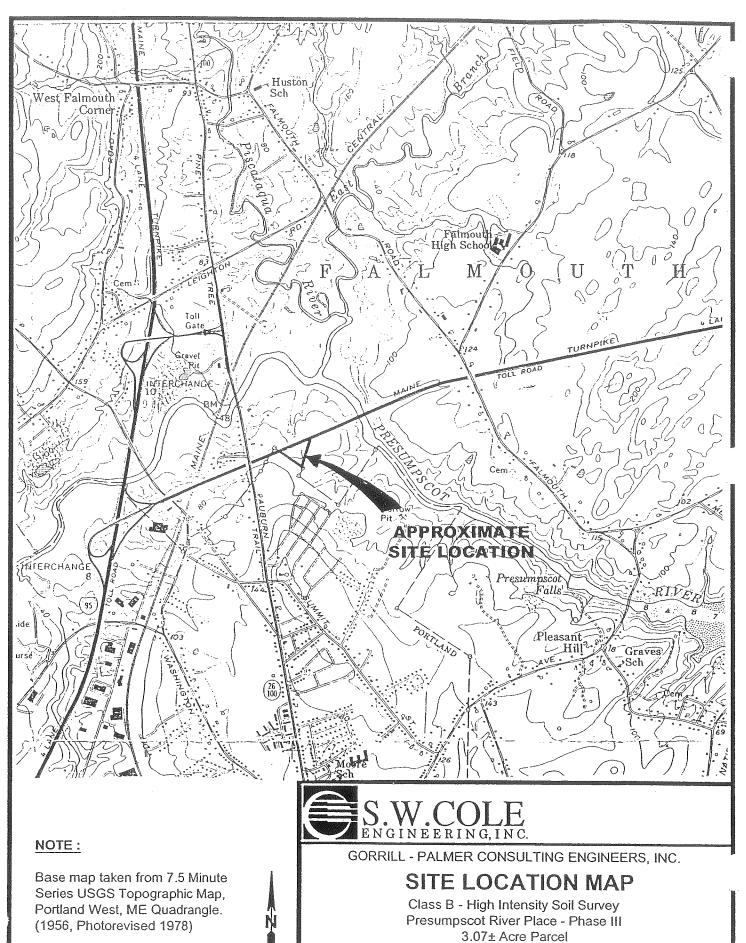
Soil Legend

<u>Symbol</u>	Series and Phase
LaB	Lamoine silt loam, 1 to 8% slopes
LaD	Lamoine silt loam, 15 to 40% slopes
LIB	Lamoine Complex, 1 to 8% slopes
TIB	Tunbridge-Lyman complex, 3 to 8% slopes

Notes:

- Soils mapping was conducted using Class B High Intensity Soil Survey standards in general accordance with soil survey standards established by the September 2000 publication <u>Guidelines For Maine Certified Soil Scientists For Soil Identification and Mapping</u>. This map should be used and interpreted in conjunction with the accompanying Class B – High Intensity Soil Survey.
- 2. S.W. COLE ENGINEERING, INC. selected test pit locations in the field based on perceived differences in landform and topography. We located the test pits onto the base map using a hand compass and measuring tape to surveyed features. The base map was provided to us by Gorrill Palmer Consulting Engineers, Inc. of Gray, Maine. The location of soil map unit boundaries are approximate.

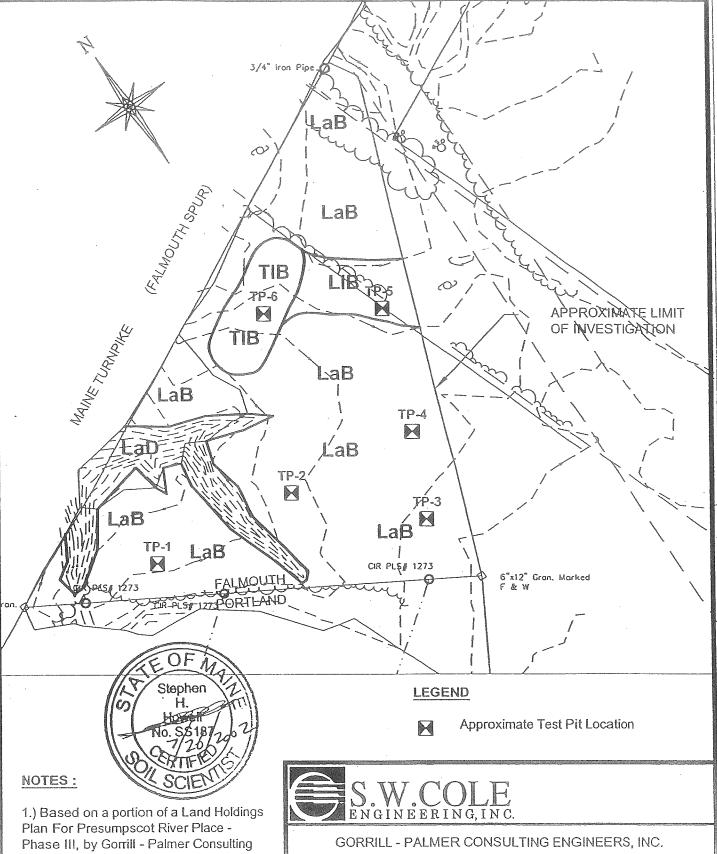
F:\PROJECTS\2000\00-0154 SHH\Soil Legend2.doc



Job No. 00-0154 D

Falmouth, Maine

Scale 1" = 2,000'



Engineers, Inc., dated August 2001

2.) This soil survey is incomplete without the soil survey report.

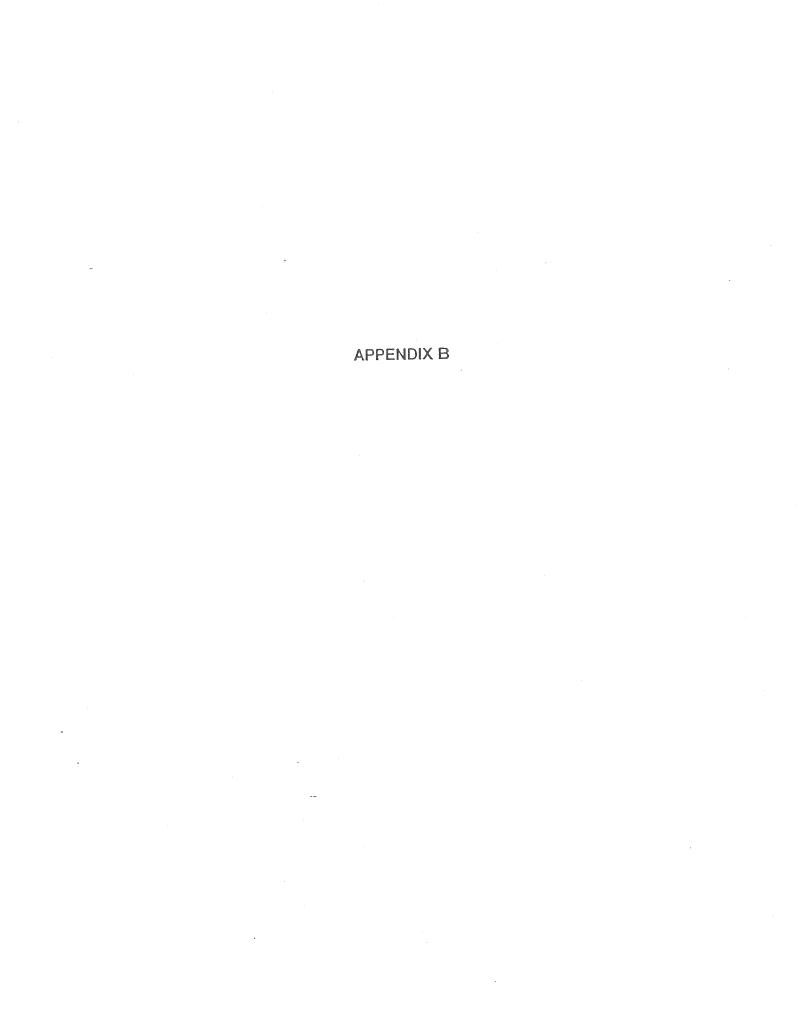
CLASS B - HIGH INTENSITY SOIL SURVEY

Presumpscot River Place - Phase III 3.07± Acre Parcel Falmouth, Maine

Job No. 00-0154 D Dale: 07/26/02

Scale

Sheet



APPENDIX A Limitations

This report has been prepared for the exclusive use of Gorrill-Palmer Consulting Engineers, Inc. for specific application to the west lot of the Presumpscot River Place – Phase III project site in Falmouth, Maine. S. W. COLE ENGINEERING, INC. has conducted the work in accordance with generally accepted soil science practices. No other warranty, expressed or implied, is made.

This investigation was conducted, compiled and reported in general accordance with guidelines described in the <u>Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping</u> (2000) for a Class B – High Intensity Soil Survey and Version 2 of the <u>Field Indicators for Identifying Hydric Soils in New England</u> (1998). The conclusions and recommendations presented in this report are based upon the data obtained from the areas explored.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site, and published information from the USDA Natural Resources Conservation Service. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

APPENDIX A



7.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. If you have any further questions, or if we may be of further assistance, please do not hesitate to contact us.

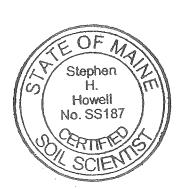
Very truly yours,

S. W. COLE ENGINEERING, INC.

· Stephen H. Howell, C.S.S.

SHH;amb/lmb/slh

F:\PROJECTS\2000\00-0154 SHH\Soils Report - east lot.doc





poorly and moderately well drained soils. A small area of moderately deep soil over bedrock occurs adjacent to the Maine Turnpike right-of-way and the powerline corridor.

5.0 SOIL MAPPING UNIT DESCRIPTIONS

The mapping unit descriptions attached in Appendix C outline the major soil types identified during our investigations. Please refer to the Soil Legend to identify soil mapping unit symbols shown on the Soil Survey Map in Appendix B.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our observations of the site, information obtained at our explorations, and our knowledge of the proposed use of the site, the soils on the site are generally suitable for building site development with proper construction and site preparation techniques. Specific information concerning soil limiting factors relevant to construction activities are summarized in each of the map unit descriptions attached in Appendix C.

The glaciolacustrine or marine soils are generally limited by a shallow depth to a perched seasonal groundwater table and frost susceptibility. These limitations for the proposed use can be reduced by designing proper drainage under the building and around the building grounds, and designing frost resistant foundations and roadways.

These fine-textured soils are also susceptible to erosion when disturbed, especially in the sloped areas. Erosion can be mitigated by designing an erosion control plan that includes immediate seeding, mulching and/or stabilization of the soils with a geotextile fabric after disturbance. Long-term erosion control can include stabilization of gullies by riprap and/or water "breaks" that slow erosive, fast-moving water. We recommend that landscaped and lawn areas be capped with up to 6 inches of loam or fine sandy loam to speed drainage and aid in establishing disturbance resistant vegetation for the long term.

The moderately deep to bedrock soils are limited by depth to bedrock. This limitation can be mitigated by additions of granular fill and/or removal of bedrock.



the location, type, and extent of the soils we observed at the site. Appendix C contains Mapping Unit Descriptions for each of the soil types we identified in the survey. Appendix D contains a Soil Conditions Summary Table and Soil Description and Classification Logs for each test pit. Appendix E contains a glossary. Appendix F contains a methodology, which also describes the minimum standards established by the Maine Association of Professional Soil Scientists for this level of soil investigation.

2.0 SITE LOCATION

The approximately 3.07-acre site is located in Falmouth, Maine on the Falmouth/Portland city line and east of the Maine Turnpike Falmouth spur (refer to Site Locus, Sheet B-1).

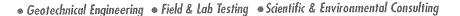
3.0 EXPLORATION AND TESTING

We conducted our field investigation for the Class B - High Intensity Soil Survey July 02, 2002. We explored six test pits using a hand spade and auger. The test pits were located by us onto the base map using a hand compass and measuring tape to known site features. The base map was provided to us by Gorrill-Palmer Consulting Engineers, Inc. of Gray, Maine.

4.0 GENERAL SITE AND SUBSURFACE CONDITIONS

The survey area is characterized by a marine or lake plain. The central portion of the site is dominated by broad ridge top and dissected on the west side by a deeply incised gully. Most of the site is eroded or has been altered by past agricultural use. Where past soil erosion or mining of topsoil has occurred, the terrain has a "hilly" or "hummocky" surface. The site is currently mostly wooded except for a powerline corridor in the east side of the lot.

The soils in the survey area are dominated by glaciolacustrine and/or glaciomarine deposits. The glaciolacustrine or marine soils are characterized by loamy sediments underlain by silty and clayey substratum layers. The narrow bottoms of the gullies contain hydric soils (poorly drained) while the remainder of the site contains somewhat





00-0154 D

July 26, 2002

Gorrill-Palmer Consulting Engineers, Inc. Attention: Mr.Paul Ostrowski P.O. Box 1237 15 Shaker Road Gray, ME 04039

Subject:

Class B – High Intensity Soil Survey

Presumpscot River Place - Phase III

3.07 Acre Lot Falmouth, Maine

1.0 INTRODUCTION

In accordance with your request, we have completed a Class B – High Intensity Soil Survey on a 3.07 acre lot in the Presumpscot River Place – Phase III project site in Falmouth, Maine.

1.1 Purpose

The purpose of our investigation was to identify and describe the soils within the 3.07 acre lot, and to identify potential limitations of the soil with respect to the proposed development at the site. Specifically, our investigations were conducted at a Class B - High Intensity level of soils mapping on the proposed site.

We understand that our findings may be used to supplement other information that may be required to obtain land development permits from the Maine Department of Environmental Protection (MDEP).

1.2 Appendices

This report is subject to the limitations attached in Appendix A. Appendix B contains a Site Locus and Class B - High Intensity Soil Survey Map. The Survey Map illustrates

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1.0 INTRODUCTION	1
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3.0 EXPLORATION AND TESTING	2
4.0 GENERAL SITE AND SUBSURFACE CONDITIONS	
5.0 SOIL MAPPING UNIT DESCRIPTIONS	
6.0 CONCLUSIONS AND RECOMMENDATIONS	
7.0 CLOSURE	
APPENDIX A - Limitations APPENDIX B - Site Locus/Class B - High Intensity Soil Survey Map APPENDIX C - Mapping Unit Descriptions APPENDIX D - Soil Conditions Summary Table/Soil Description & Classification APPENDIX E - Methodology	ı Logs

CLASS B – HIGH INTENSITY SOIL SURVEY PRESUMPSCOT RIVER PLACE, PHASE III 3.07 ACRE LOT FALMOUTH, MAINE

00-0154 D JULY 26, 2002

ATTACHMENT B

Class B (High Intensity) Soul Survey Map and Report 3.07 Acre Lot (July 2002)

APPENDIX F Methodology

- F.1 A description of the guidelines and methods that we utilized during this project follows below.
- generally following the Maine Association Of Professional Soil Scientists (MAPSS) publication entitled <u>Guidelines For Maine Certified Soil Scientists For Soil Identification And Mapping</u> (February, 1995). We used criteria for documenting very poorly drained and poorly drained soils (hydric soils) that were described in the New England Interstate Water Pollution Control Commission publication entitled <u>Field Indicators For Identifying Hydric Soils In New England</u>, Version 2 (1998). We examined exposed soil profiles for horizon development, color, depth of redoximorphic features (mottling), texture, coarse fragment content, root abundance, consistence, structure, depth of saturation, and other pertinent soil characteristics as observed. We examined surficial features such as rock outcrop, stoniness, and groundwater seepage when observed.
 - F.1.2 Class B- High Intensity Soil Survey The scale for a Class B High Intensity soil survey must be 1" = 500' or larger. Inclusions in a Class B High Intensity survey, as defined by MAPSS "...will not contain dissimilar limiting inclusions larger than 1 acre" [per mapping unit but] "may total more than one acre per map unit delineation, in the aggregate, if not contiguous." This means that each mapping unit, as illustrated on the accompanying soils map, may include other soils other than those for which the mapping unit was named.
 - F.1.3 Explanation for Map Unit Symbols Each map unit symbol consists of three letters (Ex: WaC). The first two letters represents the soil that exists within the area delineated on the map (e.g., Wa = Waumbek very bouldery fine sandy loam). The third letter in the map unit symbol represents a phase, which is usually the surface slope of the soil (e.g., C = 8-15 percent slopes). Phases are also based on texture, stoniness, drainage, depth to bedrock, or similar characteristics that may affect the use and management of that soil. Each map unit having the same symbol essentially delineates the same soil type and phase. The soils within an area enclosed by a map unit boundary will have a minimum of 75 percent of the named soil(s), or similar soil, for that map unit.

APPENDIX F

Map Unit - A collection of soil areas delineated during mapping. It is generally an aggregate of several different bodies of a soil type and named for the principal components.

Ponding - Ponding is standing water in a closed depression. The water is removed only by percolation, transpiration, or evaporation.

Soil Slope - The slope of the soil surface has several distinct properties: gradient, complexity, configuration, length, and aspect. In soil science, slope is considered a property of the soil, not a landform like a ridge or a valley side.

Stoniness - See table of surface phase names and stoniness class attached.

TASE CE ASSIEICATION OF SOLES HAVING STONES	AND BOULDERS
Phase Name .	Surface Covered (%)
	Less than 0.01
	0.01-0.1
*	0.1-3.0
Very stony of very bouldery 1/	3.0-15
	15-75
, , , , , , , , , , , , , , , , , , ,	More than 75
Rubble land 2/	More man 19
	Phase Name Nonstony Stony or bouldery 1/ Very stony or very bouldery 1/ Extremely stony or extremely bouldery 1/ Rubbly 1/ Rubble land 2/

1/ The term "bouldery" is used if boulders dominate stones as a limiting factor for use even though stones may occupy a greater proportion of the surface

2/ Areas that stony are treated as the kind of miscellaneous area, "rubble land."

through the soil, is used by plants, or evaporates. The soils are nearly level to gently sloping, or they are steeper and absorb precipitation very rapidly.

Medium - Surface water flows away fast enough that free water stands on the surface for only short periods. Part of the precipitation enters the soil and is used by plants, is lost by evaporation, or moves into underground channels. The soils are nearly level to gently sloping and absorb precipitation at a moderate rate, or they are steeper and absorb water rapidly.

Rapidly - Surface water flows away fast enough that the period of concentration is brief and free water does not stand on the surface. Only small portion of the water enters the soil. The soils are mainly moderately steep or steep and have moderate to slow rates of absorption.

Very rapidly - Surface water flows away so fast that the period of concentration is brief and free water does not stand on the surface. Only a small portion of the water enters the soil. The soils are mainly steep or very steep and absorb. precipitation slowly.

Complex - A map unit that consists of areas of two or more kinds of soils that are in a consistently repeating pattern so intricate that the two components cannot be delineated separately at the scale of mapping selected.

Flooding - Flooding is the temporary covering of soil surface by flowing water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, inflow from high tides, or any combination of sources. Shallow water, standing or flowing during or shortly after rain or snowmelt is excluded form the definition of flooding. Standing water (see ponding) or water that forms a permanent cover is excluded form the definition.

Flooding hazard is expressed by frequency classes, duration classes, and time of year flooding occurs. Also important are velocity and depth of floodwater.

	less than 0.06 inch
Very slow	
Slow	0.06 to 0.20 inch
Moderately slow	0.20 to 0.60 inch
Moderately	0.6 to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

SURFACE RUNOFF

Surface runoff is the water that flows away from the soil over the surface without infiltrating. The water may come from precipitation or run-on from adjacent areas. The rate and amount of runoff are determined by internal and external characteristics of the soil and by climate and plant cover. Runoff can be significantly different on a soil under natural cover, under cultivation, and under different kinds of management. Differences in runoff can also be caused by difference sin topography and rainfall density. Soils usually have a high rate of runoff when frozen.

Six classes of runoff rates are recognized:

Ponded - Little or none of the precipitation and run-on escapes as runoff. Free water stands on the surface for significant periods of time. The amount of water that must be removed from ponded areas by percolation into and through he soil, by plants, or by evaporation is usually greater than the total rainfall. Ponding normally occurs on level to nearly level soils in depressions or concave positions of the microrelief. Water depth may fluctuate greatly.

Very slow - Surface water flows away slowly, and free water stands on the surface for long periods or immediately enters the soil. Most of the water passes through the soil, is used by plants, or evaporates. These soils are commonly level to nearly level or are very open and porous.

Slow - Surface water flows away slowly enough that free water stands on the surface for moderate periods or enters the soil rapidly. Most of the water passes shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of mottling related to wetness.

Well drained - Water is removed from the soil readily, but not rapidly. It is not available to plants throughout most of the growing season. Wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained - Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive.

Somewhat poorly drained - Water is removed slowly enough that the soil is wet for significant periods during the growing season. Somewhat poorly drained soils commonly have slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained - Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. The soil is not continuously saturated in layers below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained - Water is removed from these soils so slowly that free water remains at or on the surface during most of the 'growing season. They are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate of high slope gradients.

PERMEABILITY

Permeability is the quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward though the saturated soil. Terms describing permeability are:

compressibility, permeability, shrink/sell potential, and compaction. Rock fragments also affect construction applications.

Soil texture influences plant growth by its influence on aeration, water intake rate, available water capacity, cation exchange capacity, permeability and workability.

Soil texture modifiers

The texture classes may be modified by the addition of suitable adjectives when rock fragments exceed about 15 percent by volume (for example, gravelly loam). The terms "very and "extremely" are used when rock fragments exceed about 35 and 60 percent by volume respectively. "Mucky" and "peaty" are terms used to modify soils when the organic matter content is more then 40 percent (for example, mucky loam).

Terms used in lieu of textures

Organic materials, materials coarser than 2 mm, or materials that limit root penetration are used in a way similar to texture terms. Examples are fibric material, sand and gravel, and unweathered bedrock.

CEASSES SOLD TO
Less than 10 inches
10 to 20 inches
20 to 40 inches
40 to 60 inches
Greater than 60 inches

DRAINAGE CLASSES

Drainage Class refers to the frequency and duration of periods of saturation or particle saturation. Seven classes of soil drainage are recognized:

Excessively drained - Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some have steep slopes. All are free of mottling related to wetness.

Somewhat excessively drained - Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are enters into the soil at the surface and is controlled by he surface conditions. Transmission rate is the rate at which water moves within the soil and is controlled by the inherent properties of each horizon.

A. (Low runoff potential) Soils in this class have high infiltration rates even when thoroughly wetted and consist chiefly of deep, well drained to excessively drained sands or gravels. These soils have a high rate of water transmission.

- B. (Moderately low runoff potential) Soils in this group have moderate infiltration rates when thoroughly wetted. They consist primarily of moderately deep to deep, moderately well drained to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.
- C. (Moderately low runoff potential) Soils in this class have slow infiltration rates when thoroughly wetted. They consist mainly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine textures. These soils have a slow rate of water transmission.
- D. (High runoff potential) Soils in this class have very slow infiltration rates when thoroughly wetted. They consist primarily of clays oils with a high shrink/swell potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

USDA TEXTURE

USDA texture refers to the U.S. Department of Agriculture's soil texture classification. Soil texture is the relative proportions by weight, of the several soil particle size classes finer than 2 mm in equivalent diameter. The material finer than 2 mm is called the fine earth fraction. Material larger than 2 mm is called the rock fragments.

Soil texture influences both engineering works and plant growth. Soil texture has a strong influence on soil mechanics and the behavior of soil when it is used as a construction or foundations material. It influences such properties as bearing strength,

APPENDIX E- GLOSSARY

SOIL ERODIBILITY FACTOR (K)

The soil erodibility factor (K) is a measure of the susceptibility of a soil to particle detachment and transport by rainfall. It is a quantitative value, experimentally determined. Values of K range from 0.02 to 0.69. The higher the value the more susceptible the soil to sheet and rill erosion by water. In the table below, K factors are assigned to each surface textural phase of all soil series in the survey area. The major subhorizons that would be exposed by cutting or scalping are listed below the existing surface phase for each series.

Soil properties that influence rainfall erosion are: (1) those that affect infiltration rate, movement of water through the soil, and the water storage capacity; and (2) those that affect dispersion, detachability, abrasion, and mobility of soil particles by rainfall and runoff. Some of the most important properties are texture and organic matter content of the exposed soil layer, size and stability of structural aggregates in the exposed permeability of the subsoil, and depth to slowly permeable layers. Antecedent soil moisture and presence of frozen soil also influence rainfall erosion.

SOIL CONSISTENCE

Soil consistence refers to "attributes of soil material as expressed in degree of cohesion and adhesion or in resistance to deformation or rupture" (USDA). Consistence includes resistance of soil material to rupture, resistance to penetration, plasticity, toughness, and stickiness of puddled soil material, and the manner in which the soil material behaves when subject to compression (USDA).

HYDROLOGIC SOIL GROUPS

A hydrologic soil group is a class of soils having the same runoff potential under similar storm and vegetative cover conditions. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to seasonally high water table, intake rate, permeability after prolonged wetting, and depth to a very slowly permeable layer. The influence of ground cover is treated independently (not in hydrologic soil groups). The soils in the U.S. are placed into four groups: A, B, C, and D. In the following definitions of the groups, infiltration rate is the rate at which water

APPENDIX E

S.W. COLE

ENGINEERING, INC.

Soil Description and Classification

. Į	Name	e:	1	River Place, Ph		Applicant					Suiting Engin			
Symbo	l:	1 La1	3	O Horizon Thicl	(ness: / "-2"	Symbo			1 44	LIB O Horizon Thickness: 1'				
Test Pi		TP	5/	Hydric (y/n)	No	Test P	t			52	Hydric (y	<u>-</u>		
Soil Na			DONE.	LOAM		Soil Na	me:		LAMOINE LOAM, ENDE					
Horiz	0	Texture	Consistency	Color ,	Mottling	Horiz	0	1	Texture	Consistency	Color	Mottling		
	1 -						1							
	2					カ	2	10	am		Z.54.13	none		
	3					BW	3					observer		
	4					To the second	4			friable	-			
Λ	5					Approximate the first	5							
Ap	6	loam	Frable.	104R3/Z	none	Bwg	6	5	ilt		5/1/2	emf		
	7				observed	Jung	7	10	am.			545/z		
	8			•			5	J						
	9						9	ļ		1	•			
BC	10					9,	10	<u></u>		film	5Y.4/z	CCF		
<i></i>	12			2.544/4			12	5	91H	-		546/z		
	14					melenterenseures maternatures es	14		Kry					
0	16					I Ggz	16	10	cam	very	5Y3/z	mfp		
C	18	.bilty	Very	5Y4/3	cmf	waterwaterwaterwaterwaterwaterwaterwater	18	4		film		2.54 2/E		
	20	Clay	film		5Y5/Z		20					mfcl		
	25	loam			CMP		25					546/Z		
	30				2.545/6	Golden Control of the	30							
	35						35							
	40					The state of the s	40							
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	50	ļ			_		50							
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	55 70				-	-	7							
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S.W. GOLE

Soil Description and Classification

NGINE	ERING	, INC.														
. Name: Presumpscot River Place, Phase III							Applicant Name: Gorrill-Palmer Consulting Engineers, Inc.									
lodniy	:	La	BO	Horizon Thick	ness: //-Z"		Symbol:		American Color	LIE	3 O Ho	rizon Thickne	ess: //			
est Pit		TP	49 H	ydric (y/n)	10	C SHOWING	Test Pit		-		P50	Hydric (y/n				
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	2					. —	BW	2				7.5Y1/3.	MORE Observed			
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:				7/14/21	17 / pull	-66	- 1 = 100		···] -	<i>. 0</i>						

S.W. GOLE ENGINEERING, INC.

Soil Description and Classification

t Name: Presumpscot River Place, Phase III						Ар	plicant h	lame	: Gorril	Gorrill-Palmer Consulting Engineers, Inc.					
Symbo	1:	La	0 0	O Horizon Thic	kness: /"-Z"		Symbol	l:	La	B OHO	orizon Thickne	ess: //-Z			
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	3						Ap	3			10.4K3/Z				
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3.W. GOLE

Soil Description and Classification

NGINEE	RING	, INC.													
7 c	lame		Presumpsco	River Place, Ph	ase III	Applicant Name: Gorrill-Palmer Consulting Engineers, Inc.									
ynipol:		Boc		O Horizon Thick	(ness: / "-Z"		Symbol:		Lat	ОНо	rizon Thicknes	s: 7"			
est Pit		TPAS	571	Hydric (y/n)	No		Test Pit		TP	46	Hydric (y/n)	No			
ioil Nar	ne:			LOAM			Soil Nan	ne:	Bu	1X70N	LOAM				
			1.1.4.7												
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E	3						,	3			And the second s				
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U3/	6				none			5	Joam .						
	7.	loam	Friable		Observed		Bu	7			10483/4	none			
$\mathcal{B}_{1_{\mathcal{Z}}}$	8	. (75.7513034	104R 4/4		POLICE STATE OF THE PARTY OF TH		8		friable.		observal			
DIZ	9							9							
	10							10							
p.	12			2545/4				12							
	14		-					14		-					
200	16	very fixe	firm.	5 Y 5 /3	mff 546/2			16	Silt	_					
C',	18	-sandy loam	1		mfp 2.545/6		BC	18	Joam.		7.5414				
	20	silt/com/			mff	*		20							
C_z	25	Very Fine	very	54413	546/Z			25							
	30	sandy	Firm		mfp		10	30	Silty	very	Z.5.Y.413	cmd			
	35	loam			Z:5Y5/6			35	Clay	firm.		2:5.Y.5/Z			
	40							40	loam			-			
	45							45				-			
	50							50				-			
	55	·						55	_						
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S.W. GOLE

Soil Description and Classification

t Name: Presumpscot River Place, Phase III							pplicant N	lame	: Go	Gorrill-Palmer Consulting Engineers, Inc.					
ynıbol		1 41B	. (0	Horizon Thick	(ness: 0 "	and the same of th	Symbol	l:		Bo E	3 O Ho	rizon Thickne	ess: /"- Z		
est Pil		TP 4	13. It	łydric (y/n)	110		Test Pi	t		TP44		Hydric (y/n			
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			·								<i>?</i>				
Sinch	0	Texture	Consistency	Color ,	Mottling		Horiz	0	Texture		Consistency	Color	Mottling		
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	2					· ·	$ \epsilon $	2				104R5k			
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	7		-			-		7					Observe		
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	10	5j.lt		-				10							
	14	loam	Cana	i	mff 546/z		BC	14				2:5Y5/4			
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	18				7,574/4		10.	18	Veryfin	1E	Firm	. 5.Y.5/3.	m44 546/2		
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	30	loam		-	CFP		Cz	30	Veryf			54.1/3	546/z		
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S.W. GOLE

Soil Description and Classification

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est Pit bil Name:		TP41		ydric (y/n)	1/2									
									demonstration and an incident and a second	TP4Z Hydric (y/n) 1/65 SCANTIC 51LT LOAN				
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6	5			13.27.34.2			Q.	6				2.54.4/z.	.mm.d	
7	leam	7	Fiable		none		\mathcal{B}_q	7					2.546/z	
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. [18				-	-	,	20					2.545/2	
	20 Very Fi	na	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1-1-1	Mff 516/2 Mfp.7.515/6	-		25						
C, F	- sandy	lam.	firm	5Y5/3	MEP. 7.5. 1.5/b.			30						
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3.W. GOLE

Soil Description and Classification

Job Number: 00-0154 D

NGINEE	RING	, INC.					T .				Gorrilla	Palmer Consu	Iltina Engine	ers, Inc.
۱,	lame	•	Presu	mpscot f	River Place, Phas	se III	API	plicant N					rizon Thickne	
ynınol:		Lat	2	0	Horizon Thickr	ess: //	No.	Symbol			5c/	7 101101		
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oil Nan		300	アドピィ	V d	MAVELLY	LOAM		Soil Na	me:		15	ANTIC	LOAM	
		1-0	-											
-loriz	0	Texture	Cons	istency	Color :	Mottling	_	Horiz	0	T	exture	Consistency	Color	Mottling
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de processo de la companya de la com	2		and the second s				on designations	Ap	2				Z.5¥3/2.	
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	6	gravelly.						0	6				514/1	546/z CFP
	7					none		Bg	7	ļ				2.5Y 4/4
	8		fil	able		observed	e designations		8	ļ				100/7/4
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		80	pompetibeliäteiti							80			1/2	OFTO
	_												1/2/	Stephen
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STEPHEN H. HOWELL

License #:

Name:

C.S.S.

M. GOLE

Soil Description and Classification

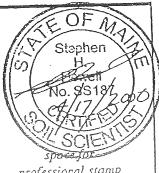
NGÏNEB	RING	, INC.				1			Carrill	Dalmar Cansu	Illina Enginee	rs Inc			
	lame			iver Place, Pha		Applicant Name: Gorrill-Palmer Consulting Engineers, Inc. Symbol: LaB O Horizon Thickness: / "									
mbol		LaB	0	Horizon Thick	ness: /"		Symbol:	-	1 191	3 0 110					
est Pit	 -	TP3	37 H	/dric (y/n)	No		Test Pit			38	Hydric (y/n)				
oil Nar	ne:	LAN	roWE 2	OAM			Soil Nan	ne:	12	AMOUS	E LOA	M			
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S. W. COLE ENGINEERING, INC.

Soil Conditions of Conditions of	Summary Table Page / of /
10 introduction	Project #
PIESUMPSCOT River Place - Phase 111	5WC 00-0154D
Applicant name:	Consultant name:
Gorrill - Palmer Consulting Eng.	5.W. COLE ENGINGERING, INC.
Project location (municipality):	Type of investigation:
Postland	Class B - High Interisity Soil Gurvey

			and the second of the second o	CAR 100 C CO ASSOCI			- 50 × 51 × 51
Map	Explor-	J	• soil profile/condition (S.E.)	Depths, in inches, to:		Ground	
Lo t	ation	ifat	• soil series name (C.S.S.)			Restrict-	surface
No.	Symbol	SSWD	e geologic unit (C.G.)	Mottling	Bedrock	ive layer	slope
Unit	(alph/num)	system	(as appropriate to the investigation)			1.012,01	(%)
			hamoine loam	15"	>60"	15 "	1-5%
LaB	TP37		Lamoine loam	16"	>60"	16"	1-8%
LaB	TP 38		Boothbay gravelly loam	21"	>60"	31"	15-40%
La D SCA	TP40		Seantie loam	4"	>60"_	9"	0-3%
BoB	TPAI		Boothbay lam	20"	>60"	20"	1-5%
Sc A	TP12		Scantic silt loam	3"	>60"	10	0-3%
LIB	TP43		tamaire loom	11"	>60"	11"	1-8%
Bob	TP44	1	Boothbay loom	16"	>60"	16"	1-5%
Boc	77945	1	Boothbay lown	14"	760"	14"	3-15%
LaD	TP46		. Buxton loam	31"	>60"	21"	3-15%
LaD	TP47		Lamoire Silt loam	12"	>60"	12"	1-890
Ia B	TP48		Hamoine loam	/2"	>60"	12"	1-8%
LaB	TP49		Lamone loam		760"	9"	1-8%
LIB	TP50		Farmoine silt loam, exaded	3"	>60"	12"	1-5%
LaB	TP51		tamoine loam	12"	1 >60"	911	1-5%
LIB	1752		Lamoine loam, eroded	1-4	760	+	1 9 12
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超級	Professional Endorsements (as applicated)	ole) THE THE MARKET
	signature:	Date:
S.E.	name printed/typed:	Lic. #:
J.S.S.	signature:	Date: 4/17/2000
	name printed/typed: STEPHEN H. HOWELL	Cert. #: 187
C.G.	signature:	Date:





(ScB) Scantic stony loam, 3 to 8 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Poorly drained. Depth to seasonal groundwater is 0 to 6 inches.

SETTING

Parent Material:

Glaciomarine or glaciolacustrine deposits

Landform:

Toe slopes and depressions

Landscape Position:

Gently sloping drainageways

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was not described, however, a similar test pit was described at TP-42. Typically, the surface is covered with 1 inch of organic matter. The surface layer is 3 inches of very dark grayish brown silt loam. The subsoil is 7 inches of gleyed dark grayish brown silt loam. The substratum is firm gleyed dark gray silty clay loam to greater than 60 inches in depth.

INCLUSIONS

Similar:

Swanville loam, 0 to 3 percent slopes

Scantic loam, 0 to 3 percent slopes

Scantic stony silt loam, 0 to 8 percent slopes Scantic silt loam, 0 to 3 percent slopes

Dissimilar:

Lamoine loam, 0 to 30 percent slopes Udorthents 0 to 30 percent slopes Boothbay loam, 3 to 8 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6-2"/hr) or moderately slow (0.2-0.6"/hr) in the surface and subsurface horizons, and slow (0.06-0.2"/hr) or very slow (<0.06"/hr) in

the subsoil and substratum

Surface Runoff:

Slow

Hydrologic Group:

D

K-Factor:

0.32 in surface layers, .49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness low strength, and frost action. Scantic soils have a "perched" seasonal groundwater table from about 0 to 1 foot in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. Scantic soils are often a component of wetlands and may present permitting limitations. The fine sediments associated with Scantic soils make them susceptible to erosion if disturbed, however, this can be mitigated by immediate seeding and/or mulching after disturbance.

(ScA) Scantic silt loam, 0 to 3 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Poorly drained. Depth to seasonal groundwater is 0 to 6 inches.

SETTING

Parent Material:

Glaciomarine or glaciolacustrine deposits

Landform:

Toe slopes and depressions

Landscape Position:

Nearly flat depressions

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-40. Typically, the surface is covered with 1 inch of organic matter. The surface layer is 4 inches of very dark grayish brown loam. The subsoil is 5 inches of gleyed dark gray loam. The substratum is firm gleyed silty clay to greater than 60 inches in depth.

INCLUSIONS

Similar:

Biddeford muck, 0 to 1 percent slopes Swanville loam, 0 to 3 percent slopes Scantic loam, 0 to 3 percent slopes

Scantic stony silt loam, 0 to 8 percent slopes

Dissimilar:

Lamoine loam, 0 to 30 percent slopes Udorthents 0 to 30 percent slopes Boothbay loam, 0 to 8 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6–2"/hr) or moderately slow (0.2-0.6"/hr) in the surface and subsurface horizons, and slow (0.06-0.2"/hr) or very slow (<0.06"/hr) in

the subsoil and substratum

Surface Runoff:

Ponded to Slow

Hydrologic Group:

D

K-Factor:

0.32 in surface layers, .49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness low strength, and frost action. Scantic soils have a "perched" seasonal groundwater table from about 0 to 1 foot in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. Scantic soils are often a component of wetlands and may present permitting limitations. The fine sediments associated with Scantic soils make them susceptible to erosion if disturbed, however, this can be mitigated by immediate seeding and/or mulching after disturbance.

Lamoine loam, 1 to 8 percent slopes, eroded

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Toe slopes on lake and marine plains

Landscape Position:

Nearly level to gently sloping toe slopes

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-52. Typically, the surface is covered with 1 inch of organic matter. The eroded surface is 4 inches of olive brown loam underlain by 5 inches of mottled olive gray silt loam. The upper substratum is 3 inches of firm mottled olive gray silty clay loam underlain by very firm mottled dark olive gray silty clay loam to greater than 60 inches in depth.

WATER RELATED INFORMATION

Permeability:

Moderate (0.6-2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06-0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Slow

Hydrologic Group:

D

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness, low strength and frost action. Lamoine soils have a "perched" seasonal groundwater table from about 6 inches to 2 feet in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. The fine sediments associated with Lamoine soils make them susceptible to erosion if disturbed, however, this can be mitigated by immediate seeding and/or mulching after disturbance.

(LIB) Lamoine Complex, 1 to 8 percent slopes

MAP UNIT COMPOSITION

Soils in this complex consist of 40 percent Lamoine loam, 1 to 8 percent slopes, 40 percent Lamoine loam, 1 to 8 percent slopes, eroded, and 20 percent other soils, listed as inclusions below.

INCLUSIONS

Similar:

Boothbay loam, 0 to 8 percent slopes

Lamoine silt loam, 1 to 8 percent slopes, eroded

Lamoine loam, 8 to 40 percent slopes Buxton loan, 1 to 8 percent slopes

Dissimilar:

Scantic silt loam, 0 to 8 percent slopes Udorthents, 0 to 30 percent slopes

Borrow Pits

Lamoine loam, 1 to 8 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Toe slopes on lake and marine plains

Landscape Position:

Nearly level to gently sloping toe slopes

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-43. Typically, the surface layer is 7 inches of dark brown loam. The subsoil is 4 inches of olive brown silt loam. The substratum is 5 inches of firm mottled olive silt loam underlain by very firm mottled olive silty clay loam to greater than 60 inches in depth.

WATER RELATED INFORMATION

Permeability:

Moderate (0.6-2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06-0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Slow

Hydrologic Group:

 \cap

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

(LaE) Lamoine loam, 40 to 60 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Sideslopes on lake and marine plains

Landscape Position:

Steeply sloping sideslopes

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was not described, however, a similar test pit was described at TP-48. Typically, the surface is covered with 1 to 2 inches of organic matter. The surface layer is 5 inches of very dark grayish brown loam. The subsurface is 2 inches of grayish brown loam. The subsurface of dark yellowish brown loam underlain by 3 inches of olive brown loam. The substratum is very firm mottled olive silty clay loam to greater than 60 inches in depth.

INCLUSIONS

Similar:

Boothbay loam, 15 to 40 percent slopes Buxton loam, 40 to 60 percent slopes

Lamoine loam, eroded, 40 to 60 percent slopes

Lamoine loam, 15 to 40 percent slopes

Dissimilar:

Swanville loam, 0 to 8 percent slopes Scantic silt loam, 0 to 8 percent slopes Udorthents, 15 to 60 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6–2"hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06–0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Rapid

Hydrologic Group:

D

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness, low strength, slope and frost action. Lamoine soils have a "perched" seasonal groundwater table from about 6 inches to 2 feet in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. The fine sediments associated with Lamoine soils make them susceptible to erosion if disturbed, especially on steep slopes. This can be mitigated by immediate seeding and/or mulching combined with the use of a geotextile fabric, after disturbance.

(LaD) Lamoine loam, 15 to 40 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Sideslopes on lake and marine plains

Landscape Position:

Moderately steep to steeply sloping sideslopes

TYPICAL PROFILE DESCRIPTION

A typical pedon-for this soil was not described, however, a similar test pit was described at TP-47. Typically, the surface is covered with 1 to 2 inches of organic matter. The surface layer is 8 inches of very dark grayish brown silt loam. The subsoil is 4 inches of light olive brown silt loam. The upper substratum is 15 inches of firm mottled olive silty clay loam underlain by very firm mottled olive gray silty clay to greater than 60 inches in depth.

INCLUSIONS

Similar:

Lamoine loam, 40 to 60 percent slopes

Buxton loam, 8 to 15 percent slopes

Lamoine silt loam, eroded, 8 to 15 percent slopes

Boothbay loam, 15 to 40 percent slopes

Dissimilar:

Scantic silt loam, 0 to 8 percent slopes Swanville loam, 1 to 8 percent slopes Udorthents, 15 to 40 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6–2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06–0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Rapid

Hydrologic Group:

D

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness, low strength, slope and frost action. Lamoine soils have a "perched" seasonal groundwater table from about 6 inches to 2 feet in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. The fine sediments associated with Lamoine soils make them susceptible to erosion if disturbed, especially on steep slopes. This can be mitigated by immediate seeding and/or mulching combined with the use of a geotextile fabric, after disturbance.

(LaC) Lamoine loam, 8 to 15 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Sideslopes on lake and marine plains

Landscape Position:

Strongly sloping sideslopes

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was not described, however, a similar test pit was described at TP-38. Typically, the surface is covered with 1 inch of organic matter. The surface layer is 10 inches of very dark grayish brown loam. The subsoil is 6 inches of olive brown loam. The substratum is very firm mottled olive silty clay loam to a depth of 60 inches or more.

INCLUSIONS

Similar:

Lamoine loam, 15 to 40 percent slopes

Buxton loam, 8 to 15 percent slopes

Lamoine silt loam, eroded, 8 to 15 percent slopes

Lamoine gravelly fine sandy loam, 1 to 15 percent slopes

Dissimilar:

Scantic silt loam, 0 to 8 percent slopes

Udorthents, 0 to 30 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6-2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06-0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Medium

Hydrologic Group:

D

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness, low strength and frost action. Lamoine soils have a "perched" seasonal groundwater table from about 6 inches to 2 feet in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. The fine sediments associated with Lamoine soils make them susceptible to erosion if disturbed, especially on moderate slopes. This can be mitigated by immediate seeding and/or mulching combined with the use of a geotextile fabric, after disturbance.

(LaB) Lamoine loam, 3 to 8 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Somewhat poorly drained.

SETTING

Parent Material:

Glaciolacustrine or glaciomarine deposits

Landform:

Toe slopes on lake and marine plains

Landscape Position:

Gently sloping ridge top and sideslope

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-37. Typically, the surface is covered with 1 inch of organic matter. The surface layer is 9 inches of very dark grayish brown loam. The subsoil is 6 inches of olive brown loam. The substratum is very firm mottled olive silty clay loam to greater than 60 inches in depth.

INCLUSIONS

Similar:

Lamoine loam, 8 to 30 percent slopes

Lamoine gravelly fine sandy loam, 1 to 15 percent slope

Buxton loam, 3 to 8 percent slopes Boothbay loam, 3 to 8 percent slopes Lamoine silt loam, 1 to 8 percent eroded

Dissimilar:

Udorthents, 0 to 30 percent slope

Scantic stony silt loam, 0 to 3 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6–2"/hr) or moderately slow (0.2-0.6"/hr) in the surface horizon, moderately slow or slow (0.06–0.2"/hr) in the upper part of the

subsoil, and slow or very slow (<0.06"/hr) in the lower horizons

Surface Runoff:

Slow

Hydrologic Group:

 \Box

K-Factor:

0.32 in the surface horizon, 0.49 in lower horizons

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness, low strength and frost action. Lamoine soils have a "perched" seasonal groundwater table from about 6 inches to 2 feet in depth with a slow permeability in the dense substratum. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or underdrain requirements, and can cause poor roadways and lawns. The fine sediments associated with Lamoine soils make them susceptible to erosion if disturbed, however, this can be mitigated by immediate seeding and/or mulching after disturbance.

(BP) Borrow Pits

Borrow Pits is a miscellaneous land type that is characterized by areas where soil has been removed for deposition elsewhere. It consists of nearly level to very steep areas that are at least 90 percent excavated. The exposed soil consists of the substratum horizons of the nearby undisturbed soil with textures including silt loam, silty clay loam, and/or silty clay. Some areas may contain standing water.

This miscellaneous land type does not have a typical profile description, permeability, hydraulic group, K-factor or flooding potential. Surface runoff is ponded to very rapid.

USE AND MANAGEMENT

Building Site Development: The limiting factor is clayey substratum soils. These soils are subject to erosion, are frost susceptible, and can hold ponded water in the level areas.

(BoC) Boothbay Ioam, 8 to 15 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Moderately well drained and somewhat poorly drained.

SETTING

Parent Material:

Glaciomarine and glaciolacustrine deposits

i andform:

Sideslopes on lake and marine plains

Landscape Position:

Strongly sloping sideslopes

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-45. Typically, the surface is covered with 1 to 2 inches of organic matter. The surface layer is 1 inch of a black loam plow layer. The subsurface layer is 2 inches of grayish brown loam. The subsoil is 6 inches of dark yellowish brown loam over 5 inches of light olive brown loam. The substratum is 4 inches of firm mottled olive very fine sandy loam underlain by very firm mottled olive silt loam/very fine sandy loam to a depth of 60 inches or more.

INCLUSIONS

Similar:

Boothbay loam, 3 to 8 percent slopes Lamoine loam, 3 to 15 percent slopes Lamoine loam, 15 to 40 percent slopes

Dissimilar:

Scantic silt loam, 1 to 8 percent slopes

Lamoine silt loam, 1 to 8 percent slopes, eroded

Udorthents, 0 to 30 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6–2"/hr) in the surface horizon and moderately slow (0.2–

0.6"/hr) or slow (0.06-0.2"/hr) in the underlying material

Surface Runoff:

Slow to medium

Hydrologic Group:

C

K-Factor:

0.32 in surface layer, .49 in underlying material

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness and frost action. Boothbay soils have a "perched" seasonal groundwater table from about 1 to 2 feet in depth with a slow permeability under the surface horizon. Potential frost action is "high". Limitations can be "moderate" for lawns and landscaping areas due to wetness and slope. The perched water table and high potential frost action can cause flooded basements and/or require special foundation design requirements, and can cause poor roadways and lawns. The fine sediments associated with Boothbay soils make them susceptible to erosion if disturbed, especially on moderate slopes. This can be mitigated by immediate seeding and/or mulching combined with the use of a geotextile fabric, after disturbance.

(BoB) Boothbay Ioam, 3 to 8 percent slopes

Depth to Bedrock:

Very deep (greater than 60 inches)

Drainage:

Moderately well drained and somewhat poorly drained.

SETTING

Parent Material:

Glaciomarine and glaciolacustrine deposits

Landform:

Toe slopes on lake and marine plains

Landscape Position:

Gently sloping ridge tops and sideslopes

TYPICAL PROFILE DESCRIPTION

A typical pedon for this soil was described at TP-41. Typically, the surface is covered with 1 to 2 inches of organic matter. The surface layer is 1 inch of black loam. The subsurface is 2 inches of grayish brown loam. The subsoil is 6 inches of dark yellowish brown loam underlain by 11 inches of light olive brown loam. The upper substratum is 7 inches of firm mottled olive very fine sandy loam underlain by very firm mottled olive silt loam to 60 inches or more in depth.

INCLUSIONS

Similar:

Lamoine loam, 1 to 5 percent slopes

Boothbay gravelly fine sandy loam, 3 to 8 percent slopes

Boothbay loam, 8 to 15 percent slopes Lamoine loam, 5 to 30 percent slopes

Dissimilar:

Scantic stony silt loam, 0 to 3 percent slopes

Buxton loam, 3 to 30 percent slopes Udorthents, 0 to 30 percent slopes

WATER RELATED INFORMATION

Permeability:

Moderate (0.6-2"/hr) in the surface horizon and moderately slow (0.2-

0.6"/hr) or slow (0.06-0.2"/hr) in the underlying material

Surface Runoff:

Slow

Hydrologic Group:

C

K-Factor:

0.32 in surface layer, .49 in underlying material

Flooding Potential:

None

USE AND MANAGEMENT

Building Site Development: Limitations for Building Development are "severe" due to wetness and frost action. Boothbay soils have a "perched" seasonal groundwater table from about 1 to 2 feet in depth with a slow permeability under the surface horizon. Potential frost action is "high". The perched water table and high potential frost action can cause flooded basements and/or require special foundation design requirements, and can cause poor roadways and lawns. The fine sediments associated with Boothbay soils make them susceptible to erosion if disturbed, however, this can be mitigated by immediate seeding and/or mulching after disturbance.

APPENDIX C

GO Gorrill-Palmer Consulting Engineers, Inc.

PO Box 1237 15 Shaker Rd. Gray, ME 04039

Traffic and Civil Engineering Services

August 1, 2002

207-657-6910 FAX: 207-657-6912 E-Mail:gpcei@maine.rr.com

Mark Hampton Mark Hampton Associates, Inc. Box 1931 Portland, Maine 04104 AUG 0 7 2002

Subject:

Wetlands Delineation

Riverwalk: Portland, Maine

Dear Mr. Hampton:

Enclosed is a survey plan that includes the wetlands that were delineated by you and located by the surveyor for the above referenced project. Please review the enclosed plan to ensure that all wetlands that were delineated are shown on the plan and that there are no inaccuracies between the survey plan and what was delineated by you.

If after review there are no inaccuracies or discrepancies within the survey plan, please sign below indicating that the plan as shown is accurate to the best of your knowledge and return to us.

Sincerely,

Gorrill-Palmer Consulting Engineers, Inc.

Alton M. Palmer, P.E. Vice President

I have reviewed the enclosed survey plan which shows wetlands that were delineated and flagged by Mark Hampton Associates, Inc. This plan, as shown, is accurate in the representation of wetland areas to the best of my knowledge.

Signature

Date

W/Addition of stream as Shown on attached Plan MAT

DRAINAGE EASEMENT DEED

WHEREAS, Grantor is the owner of land described in a decd from Goldeneye Corp. dated February 9, 2005 and recorded at the Cumberland County Registry of Deeds in Book 22331, Page 122; and

WHEREAS, Grantees are the owners of an adjoining parcel of land located on the westerly sideline of Grantees' land described in a deed recorded at said Registry of Deeds in Book 7058, Page 70; and

WHEREAS, Grantor's land being further described as Lot 1 on a plan entitled "Presumpscot River Place Phase III – Amended Subdivision Plan" made by Titcomb Associates dated December 4, 2001 and revised through July 21, 2005, to be recorded at said Registry of Deeds (hereinafter referred to as "Revised Plan of Lot 1"); and

WHEREAS, Grantees desire a drainage easement across Grantor's property as hereinafter described in Exhibit A.

NOW THEREFORE, for One Dollar (\$1.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Grantor hereby grants unto the Grantees a drainage easement in common with Grantor, on that portion of the Grantor's property as described in Exhibit A (hereinafter "easement area") and the right in common with the Grantor to enter upon said easement area to maintain the drainage system.

Said drainage easement being further described on said Revised Plan of Lot 1.

Grantees hereby covenant with Grantor that Grantees shall bear any costs with respect to this drainage easement; that if Grantees disturb Grantor's land, Grantees shall restore Grantor's land to substantially its former condition at the cost of Grantees; and that Grantees shall indemnify and hold harmless Grantor against claims arising out of their use of this drainage easement.

Grantor reserves the use and enjoyment of said easement area for such purposes only as will in no way interfere with the perpetual use thereof by the Grantees, for the purposes above-mentioned, provided that no improvements of any kind shall be erected on said parcel by the Grantor.

The provisions described herein shall be deemed covenants running with the
land, burdening and benefiting the respective premises, and this easement with the
covenants therein shall be binding on the respective heirs, devisees, successors and
assigns of the parties herein.
bus of the parties notoni.

IN WITNESS WHEREOF, Grantor and Grantees have caused this instrument to be executed on the day and year first above written.

•	HOUSING STRATEGIES, LLC
	By: Eugenie Nakell Its Sole Member
	Robert L. Adam
	Lloyd B. Wolf
STATE OF MAINE CUMBERLAND, SS.	
	named EUGENIE NAKELL, Sole Member said and acknowledged the foregoing said capacity and the free act and deed of
	Before me,
	Attorney at Law/Notary Public Print Name: My Commission Expires:

EXHIBIT A

Drainage Easement Deed from Housing Strategies, LLC to Robert L. Adam & Lloyd B. Wolf

A certain easement northeasterly of but not adjacent to Hope Avenue, in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the northwesterly side of Lot 1 as depicted on a plan entitled Presumpscot River Place Phase III- Subdivision Plan, made by Titcomb Associates dated December 4, 2001 and recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650, and line of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70, said point lying N 31°28'15" E by said land of Wolf and Adam and said Lot1 a distance of Two Hundred Sixty-Three and 25/100 (263.25) feet from the northeasterly side of Hope Avenue as depicted on said plan. Thence:

- 1) N 31°28'15" E by said land of Wolf and Adam and said Lot 1 a distance of Twenty-Two and 44/100 (22.44) feet to a point.
- 2) N 80°34'48" E a distance of Eighty-Six and 48/100 (86.48) feet to a point on the northwesterly line of a drainage easement lying over said Lot 1.
- 3) S 33°00'23" W by said drainage easement a distance of Fifteen and 15/100 (15.15) feet to a point.
- 4) S 04°21'52' W by said drainage easement a distance of Eighteen and 03/100 (18.03) feet to a point.
- 5) S 41°27'30" W by said drainage easement a distance of Thirty and 77/100 (30.77) feet to point.
- 6) S 44°37'07" W by said drainage easement a distance of Eighteen and 03/100 (18.03) feet to a point.
- 7) N 58°31'45" W a distance of Sixty-Three and 75/100 (63.75) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains 3,537 square feet and lies over a portion of Lot 1 as depicted on a plan entitled Presumpscot River Place Phase III- Subdivision Plan, made by Titcomb Associates dated December 4, 2001 recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650.

BYLAWS OF RIVERWALK SUBDIVISION, SECTION 1, HOMEOWNERS' ASSOCIATION

ARTICLE I Name, Offices, and Purpose

Section 1. Name. The name of the Association is the Riverwalk Subdivision, Section 1, Homeowners' Association.

Section 2. The purposes of the Association are:

- a. To establish an association of Lot owners for the fulfillment and enforcement of the Lot owners' responsibilities as described in the Declaration. The effectiveness of this Association depends upon the cooperation and participation of the members.
- b. In addition to all of the powers, authority and responsibilities granted to or imposed upon this Association as a nonprofit corporation by the laws of the State of Maine, all of which this Association shall have, this Association shall have the following specific powers to the fullest extent permitted by law:

To levy and collect annual and special assessments and other charges against members as Lot owners; to appoint agents, to hire employees, and to make contracts; to promulgate rules and regulations as may be permitted by the Declaration, for the members of the Association; and generally to do any and all lawful acts necessary or convenient for the fulfillment of the foregoing purposes permitted under Title 13-B of the Maine Revised Statutes, as amended.

ARTICLE II Definitions

- Section 1. "Association" shall mean and refer to the nonprofit corporation, Riverwalk Subdivision, Section 1, Homeowners' Association, its successors and assigns.
- Section 2. "Property" shall mean and refer to that certain real property in Portland, Maine, shown as "Lots 17-23, Hope Avenue and Basket Lane" on a Plan prepared by Titcomb Associates, Sheet 1 of 2, October 25, 2005, as revised, entitled "Riverwalk Subdivision Plan, Section 1," which plan is to be recorded in the Cumberland County Registry of Deeds (hereinafter referred to as the "Plan"), as it may be amended from time to time, and such additions thereto as may hereafter be brought within the jurisdiction of the Association.
- Section 3. "Lot" shall mean and refer to any of the individual lots of land, Lots 17-23, as shown upon the Plan.

Section 4. "Owner" shall mean and refer to the record owner, whether one or more persons or entities, of the fee simple title to any Lot which is a part of the Properties, including contract sellers, but excluding those having such interest merely as security for the performance of an obligation.

- Section 5. "Declarant" shall mean and refer to Lloyd B. Wolf, his nominee or assignee.
- Section 6. "Declaration" shall mean and refer to the "Declaration of Covenants, Restrictions and Easements, RIVERWALK SUBDIVISION, Section 1," applicable to the Property, to be recorded in the Cumberland County Registry of Deeds, as amended.
- Section 7. "Member" shall mean and refer to those persons entitled to membership as provided in the Declaration.

ARTICLE III Meetings of Members

Section 1. Place of Meetings. Meetings of members may be held at the offices of the Association or at any other place within or without the State of Maine, as determined by the officers. It is permissible to hold meetings wherein one or two of the members to be present may be present by means of a conference call amplified to be heard by all those present in the meeting room.

Section 2. Annual Meeting. The first annual meeting of the members shall be held within one year from the date of incorporation of the Association, and each subsequent regular annual meeting of the members shall be held on the same day of the same month of each year thereafter, at the hour of six o'clock, p.m., unless otherwise mutually agreed. If the day for the annual meeting is a legal holiday, the meeting will be held at the same hour on the first day following which is not a legal holiday at the offices of the Association or at such other time and place as the members may determine. At the annual meeting, directors for the upcoming year shall be elected and other business shall be conducted. If a quorum shall not be present, such meeting may be adjourned by the members present for a period not exceeding sixty (60) days.

In case it shall happen at any time that an election shall not be held on the day hereinbefore designated, such election may by be held at any subsequent meeting of the members at which a quorum may be present, such meeting to be called by the Board of Directors or any member or members holding not less than a majority of the number of voting rights, or by the Registered Agent, upon written request of such directors or members, by giving notice of the time and the place of holding such meeting in the manner provided by these Bylaws for giving notice of meetings.

Section 3. Special Meetings. Special meetings of the members, except as otherwise expressly provided, may be called by any of the following:

A. The President of the Association;

- B. Written request of not less than twenty-five percent (25%) of the members; or
- C. The Board of Directors.

Section 4. Notice of Meetings.

A. Except when notice is waived, as hereinafter provided, written or printed notice of each annual or special meeting of members shall be sent by the Registered Agent to all members entitled to vote at the meeting, by mailing the same, postage prepaid, not less than fifteen (15) days and not more than fifty (50) days prior to the meeting, addressed to such members at their respective addresses as recorded upon the books of the Association. Such notice shall state the place, day and hour of the meeting, and the purpose or purposes for which it is called. An affidavit of the mailing of such notice with a copy of the notice attached made by the person depositing the notices in the post office shall be sufficient proof of compliance with this requirement. No notice of any regular or special meeting of members is required, if all members entitled to vote or their respective attorneys thereunto duly authorized file with the records of the meeting a written waiver of such notice.

Section 5. Waiver of Notice and Call.

- A. Notice of a meeting of members need not be given to any member who signs a waiver of notice in person or by proxy, either before or after the meeting.
- B. Such signed waiver of notice shall also constitute a waiver of formal call of the meeting.
- C. Attendance of a member at a meeting, in person or by proxy, shall of itself constitute waiver of notice and call, and of any defects therein, except when the member attends a meeting solely for the purpose of stating his objection, at the beginning of the meeting, to the transaction of any business on the ground that the meeting is not lawfully called or convened, or that insufficient notice thereof was given.

Section 6. Record Date for Determining Members.

Members of record at the close of business, two business days prior to the date notice of meeting is mailed or given, shall be the members entitled to notice and have voting rights.

- Section 7. Quorum of Members. The presence at the beginning of any meeting of the Association, in person or by proxy, of more than fifty percent (50%) of the members of the Association shall constitute a quorum for the transaction of all business.
- Section 8. Proxies. At all meetings of members, each member may vote in person or by proxy. All proxies shall be in writing and filed with the secretary. Every proxy shall be revocable and shall automatically cease upon conveyance by the member of his Lot.
- Section 9. Unanimous Consent. Any action required or permitted to be taken at a meeting of the members, including annual meetings, may be taken without a meeting, if a

consent in writing, setting forth the actions so taken, is signed by all of the members entitled to vote thereon.

Section 10. Order of Business. The order of business at all meetings shall be generally as follows, if applicable:

- A. Roll Call.
- B. Proof of Notice of Meeting or Waiver of Notice.
- C. Reading of Minutes of preceding meeting.
- D. Reports of Officers.
- E. Report of Board of Directors.
- F. Report of Committees.
- G. Election of the Board of Directors.
- H. Unfinished Business.
- I. New Business.
- J. Adjournment.

ARTICLE IV Membership in the Association

Section 1. Membership. The members of the Association shall consist of each Owner of Lot 17 through 23 of RIVERWALK SUBDIVISION, Section 1, Portland, Maine, as shown on the Plan.

Section 2. Election. Each Owner of Lots 17-23 shall become a member upon execution and delivery to each Owner of a deed conveying each Lot. Such membership shall be thereafter effective until each such Owner shall convey each Lot or residence, whether or not for value, by gift, devise or otherwise. Where property is owned by more than one Owner, such Owners shall be considered one member.

Section 3. Voting. Voting of members shall be in accordance with the provisions of the Declaration and the Articles of Incorporation for the Association. Votes allocated to a member may be cast pursuant to a proxy duly executed in writing by a member. A proxy is void if it is not dated or purports to be revocable without notice. A proxy shall automatically terminate ten (10) months after its date, unless it specifies a shorter time.

At any meeting at which a quorum is present, the affirmative vote of a majority of the members present shall determine any question except the election of the Directors, unless a greater percentage vote is required by Law or by these Bylaws. In the election of Directors, those receiving the greatest number of votes, though less than a majority shall be elected.

The Board of Directors of the Association shall manage the Association and exercise such powers on behalf of the Association, subject to the terms of these Bylaws.

Section 4. The Association is a corporation that is not organized for profit and no property or profit thereof shall inure to the benefit of any person except in furtherance of the non-profit making purposes of the Association.

ARTICLE V Board of Directors

Section 1. General. The business and affairs of the Association shall be managed by a Board of Directors, which shall exercise such powers on behalf of the Association, subject to the terms of these Bylaws. The Board of Directors shall consist of not less than three (3) nor more than seven (7) individuals, and the initial number is set at three (3). The directors need not be members or residents of the State of Maine. Each director shall hold office for a one (1) year term and until his successor shall have been elected and qualified.

Section 2. Election. The Board of Directors shall be elected by the members at the Annual Meeting.

Section 3. Meeting. The Board of Directors may provide, by resolution, for regular meetings at a time and place, within or without the State designated in such resolution. Annual meetings shall usually follow the annual meetings of the members. Special meetings of the Board of Directors may be called by or at the request of the President or any two directors at a time and place designated by the Board of Directors.

Section 4. Notice. Regular meetings of the Board of Directors may be held without notice if the time and place of the meetings are fixed by the Board. If a time and place has not been fixed, regular meetings and special meetings shall be held upon written notice sent by mail not less than three (3) business days before the meeting. Any director may waive notice in writing either before or after the meeting. Notice of adjournment of a meeting need not be given if the time and place to which it is adjourned is fixed and announced at such meeting. Neither the business to be transacted at, nor the purpose for which any Board meeting is called need be specified in the notice or waiver of notice. Attendance of a director at a meeting shall constitute a waiver of any notice and any defect in such notice.

Section 5. Quorum. A majority of directors then in office shall constitute a quorum for the transaction of business. If there is less than a majority at any meeting, a majority of the directors present may adjourn the meeting from time to time without further notice. The vote of a majority of the directors present at a meeting at which a quorum is present shall be the act of the Board of Directors. The Directors present at a duly called or held meeting at which a quorum was once present may continue to do business notwithstanding the withdrawal of enough directors to leave less than a quorum.

Section 6. Action. Action taken by the Board of Directors shall be by majority vote.

- Section 7. Compensation. The Board of Directors shall receive no compensation for their services as Directors; however, the members may by vote at any meeting reimburse Directors for out of pocket expenses incurred in such capacity.
 - Section 8. All members of the Board of Directors shall be members of the Association.
- Section 9. Committees. The Board of Directors may, by resolution, designate an executive committee and other committees consisting of two (2) or more directors and such committees may exercise all the power of the Board except those prohibited by law.
- Section 10. Unanimous Consent. Any action required or permitted to be taken at a meeting of the Board of Directors, including annual meetings, may be taken without a meeting, if a consent in writing, setting forth the actions so taken, is signed by all of the directors entitled to vote thereon.
- Section 11. Vacancies. Any vacancy in the Board of Directors may be filled for the unexpired term by a majority of the remaining directors though less than a quorum of the Board.
- Section 12. In addition to all the powers, authority and responsibilities granted to or imposed upon this Association by the laws of the State of Maine, the Association shall have the specific powers to:
 - A. Adopt and amend Bylaws;
 - B. Prepare a proposed budget for presentation to the annual meeting of members;
- C. Adopt and amend Rules and Regulations regarding the use, repair, maintenance and replacement of any property owned or managed by the Association, and the verification of occupancy relating to the senior housing restrictions of the Declaration;
 - D. Hire and terminate employees, agents and independent contractors;
- E. Pay taxes and assessments which may be levied against any part of the Association Property and provide for the payment of the same by the members through budget approval;
- F. Determine the appropriate annual pro-ration and apportionment of dues among members, and the timely due date for payment thereof;
- G. Take such action against such members as may be appropriate and lawful to collect unpaid dues or assessments;
- H. Institute, defend, or intervene in litigation or administrative proceedings in its own name on behalf of itself or members of the Board of Directors on matters affecting the Association; and
 - I. Exercise any other powers conferred by the Declaration or these Bylaws.

ARTICLE VI Officers and Term of Office

Section 1. Reservation of Authority. Until the members specifically vote to elect directors, or the same shall come into existence by operation of law, all authorities, privileges and rights ordinarily delegated to directors are vested in the Registered Agent of the Corporation. Meetings of the members may be represented to be meetings of directors if the nomenclature used by others demands it.

Section 2. Officers, Powers and Duties. The Association shall have as officers, a President, Treasurer and Registered Agent and such other officers, which may included one or more Vice Presidents, one or more Assistant Treasurers, a Secretary and one or more Assistant Secretaries, as the members may from time to time determine. The officers of the Association shall be the same as the officers of the Board of Directors. The several officers shall have such powers and duties not inconsistent with these Bylaws, as the Board of Directors may from time to time determine. The same person may occupy one or more offices. Officers shall be chosen annually, may be removed at any time with or without cause by the Board of Directors and subject to such removal shall continue in office until their successors are chosen and qualified. The Board of Directors may establish an Executive Committee to act between the directors meetings with such authorities as the Board of Directors may from time to time determine.

Section 3. Election of Officers. All officers shall be elected by ballot of the directors, except that in the first instance all such officers may be elected at the first meeting of incorporation to serve until their successors are duly chosen and qualified. The Treasurer and Assistant Treasurer shall give bond for the faithful performance of their duties, if the directors shall so require, in such form and for such sum as the directors shall determine. The Registered Agent shall be a resident of the State of Maine and shall be sworn to the faithful performance of his duties.

Section 4. Vacancies. In case of a vacancy in any office for any cause, the directors may elect a successor to the vacant office, and any successor so elected shall hold office until the next annual meeting of the directors and until his successor shall be duly elected and qualified.

Section 5. President. The President shall be the chief executive officer of the Association, shall preside at all meetings of the members and directors and shall also have such powers and duties as the Board of Directors shall from time to time determine.

Section 6. Vice Presidents. Vice Presidents, if and when elected, shall have such powers and duties as the Board of Directors and the President shall designate.

Section 7. Treasurer. The Treasurer shall be the general financial agent of the Association. Subject to the direction of the directors, he shall have custody of the monies and securities of the Association, except his own bond, and shall keep in books of the Association which shall be in his custody accurate records of all transactions of the office, which shall be

open at all reasonable times to the inspection of any director. He shall have the authority to sign and endorse all checks and notes received by the Association, draw and accept all bills and drafts and also receive and give proper receipts and discharges for all monies due the Association from whatever source, unless otherwise restricted. He shall perform such other duties as the Board of Directors may prescribe.

Secretary or Treasurer, as the case may be, in the performance of his duties and at the request of such officers or of the President, shall perform the duties of such officers in the event of the absence or inability to act of such officers. They shall also perform such duties as the Board of Directors may from time to time prescribe for them or as the President may from time to time direct. Each Assistant Treasurer shall, if requested to do so by the Board of Directors, furnish bond in such amount as may be determined by the Board of Directors.

Section 9. Registered Agent. The Registered Agent shall be sworn to the faithful discharge of his duties and shall record in books kept for that purpose all the votes and proceedings of the Board of Directors at their meetings. He shall also perform such other duties as shall be prescribed by the Board of Directors.

Section 10. Salaries. The several officers of the Association shall not receive salaries for their services.

Section 11. Indemnification.

- A. Each person who shall be or shall have been an officer of this Association shall be indemnified by this Association against all liabilities and expenses at any time imposed upon or reasonably incurred by him in connection with, arising out of or resulting from any action, suit or proceeding in which he may be involved or with which he may be threatened, by reason of his then serving or theretofore having served as an officer of this Association, or of any other corporation, of which he shall at the request of this Association then be serving or theretofore have served as an officer or director or by reason of any alleged act or omission by him in any such capacity, whether or not he shall be serving as an officer or director of this or such other corporation at the time any or all of such liabilities or expenses shall be imposed upon or incurred by him.
- B. The matters covered by the foregoing indemnity shall include any amounts paid by any such person in compromise or settlement if such compromise or settlement shall be approved as in the best interests of the Corporation by vote of a majority of disinterested Board of Directors and members present or represented at a meeting called for that purpose; but such matters shall not include liabilities or expenses imposed or incurred in connection with any matters as to which such person shall be finally adjudged in such action, suit or proceeding to be liable to this or such other corporation by reason of dereliction in the performance of his duty as such officer.
- C. Each person who shall become an officer of this Association or of any such other corporation as aforesaid shall be deemed to have accepted and to have continued to serve in

reliance in such office in reliance upon the indemnity herein provided. These indemnity provisions shall be separable, and if any portion thereof shall be adjudged to be invalid, such invalidity shall not affect any other portion which can be given effect without the invalid portion.

ARTICLE VII Checks, Notes, Drafts and Other Instruments

Section 1. Checks, notes, drafts and other instruments for the payment of money drawn or endorsed in the name of the Association may be signed by any officer or officers or person or persons authorized by the Board of Directors to sign the same. No officer or person shall sign any such instrument as aforesaid unless authorized by the Board of Directors to do so.

Section 2. Any loans from members to the Association shall be memorialized by promissory notes from the Association.

ARTICLE VIII Assessments

As more fully provided in the Declaration, each member is obligated to pay to the Association annual and special assessments which are secured by a continuing lien upon the property against which the assessment is made. No Lot Owner may waive or otherwise escape liability for the assessments provided for herein by nonuse of the Association Property or abandonment of his Lot.

ARTICLE IX Corporate Seal

The Association shall have a seal in circular form having within its circumference the words: Riverwalk Subdivision, Section 1, Homeowners' Association.

ARTICLE X Amendments

Section 1. These Bylaws may be amended at a regular or special meeting of the members, by a vote of a majority of a quorum of members present in person or by proxy. In addition, the Declarant shall be entitled to amend these Bylaws as necessary or desirable to Declarant in order to coincide with any amendments Declarant may make to the Plan or Declaration, as such rights are set forth in the Declaration.

Section 2. In the case of any conflict between the Articles of Incorporation and these Bylaws, the Articles shall control; and in the case of any conflict between the Declaration and these Bylaws, the Declaration shall control.

THAT the foregoing Bylaws constitute the original Bylaws of said Riverwalk Subdivision, Section 1, Homeowners' Association.
IN WITNESS WHEREOF, the following parties have executed this instrument this day of, 2005.
Lloyd B. Wolf, Incorporator

Declaration of Covenants, Restrictions and Easements RIVERWALK SUBDIVISION Section 1 City of Portland, Cumberland County, Maine

This DECLARATION is made this	day of	, 2005, by Lloyd B.
Wolf, of South Portland, Maine (Lloyd B.	Wolf, his nominee or	assignee, hereinafter referred to
as the "Declarant").		

WITNESSETH:

WHEREAS, the Declarant has established a certain seven (7) lot subdivision known as Riverwalk Subdivision, Section 1, approved by the Portland Planning Board as depicted on a Plan prepared by Titcomb Associates, dated October 25, 2005, as revised, entitled "Riverwalk Subdivision Plan," Sheet 1 of 2, which plan is to be recorded in the Cumberland County Registry of Deeds (hereinafter referred to as the "Plan"), and Declarant intends to subject the property described as "Lots 17-23, Hope Avenue and Basket Lane" as shown on the Plan (hereinafter referred to as the "Property"), as further indicated herein, to these Declarations of Covenants, Restrictions and Easements for Riverwalk Subdivision, Section 1, that are to be recorded in the Cumberland County Registry of Deeds;

WHEREAS, the Declarant being about to sell and convey lots in said subdivision desires to assure to itself, the purchasers and their heirs, successors and assigns owning such lots, the use, benefit and enjoyment of said lots in accordance with a harmonious plan, and to this end desires that said lots in said subdivision shall be subjected to certain restrictions, reservations, servitudes, covenants, agreements and easements as hereinafter set forth;

WHEREAS, Declarant intends to establish said subdivision as a senior housing community, for the occupancy of persons fifty-five (55) years of age or older, consistent with provisions of the Fair Housing Act, 42 U.S.C. § 3601, et seq. (hereinafter referred to as the "FHA"); and

NOW THEREFORE, the Declarant hereby declares that the Property shall be held and shall be conveyed subject to the restrictions, reservations, servitudes, covenants, agreements and easements as set forth in the following provisions of this Declaration, which Declaration shall inure to the benefit of and be binding upon the Declarant, its successors and assigns, and the purchasers of the Property, their successors and assigns, to wit:

ARTICLE A. General Restrictions

Each of the lots within the Property, numbered 17 through 23 as shown on the Plan, shall be subject to the following covenants and restrictions, which shall run with the land:

- 1. Residential Use. No lot within the Property shall be improved or used except for single-family residential purposes, with no more than one single family residence. The Property shall be used only for residential and ancillary purposes, and no commercial, industrial, business or professional use or enterprise of any nature or description shall be allowed on the Property, unless: (a) such use is wholly confined to the interior of the residential structure located on the lot; (b) such use does not include the use of employees on the lot, (c) such use is not advertised on the lot; (d) the traffic, noise, odor and all other aspects of such use generated on the lot does not interfere with the enjoyment of the remaining lot owners within the Property; and (e) such use is in full compliance with all federal, state and municipal laws, codes, ordinances and regulations. No temporary structures, mobile homes or tents shall be used as a residence. No temporary structures, mobile homes, tents or carports shall be kept, maintained or stored on any part of any lot within the Property. No lot shall be further subdivided without prior written approval of the Portland Planning Board and the Declarant.
- 2. Primary Structure. No structure shall be erected on any lot except one detached single family, residential dwelling containing not less than _____ (____) square feet of enclosed space above the foundation, excluding garages, porches and breezeways. All homes shall be required to include an attached garage containing not less than two (2) bays. Any barns, sheds or outbuildings of any nature shall be built of style and material similar to the dwelling structure.
- 3. Compliance with Ordinances. All construction activities, including the siting of buildings, shall be in accordance with all state and municipal laws, codes, ordinances and regulations.
- 4. Maintenance. All lots and buildings thereon shall be maintained in a neat and attractive manner and kept in good repair at all times.
- 5. Animals. No livestock, animals or poultry, other than small household pets, shall be kept, maintained or allowed on any of the lots. No boarding or breeding kennels may be kept or maintained on any of the lots. Animals and pets shall not be a nuisance and shall be kept on their owner's lot.
- 6. Vehicles. No business or commercial vehicle shall be brought upon, maintained or permitted to remain on any lot, except a business vehicle normally used by a lot owner in his or her occupation. No unregistered or inoperable motor vehicles or trailers of any nature may be kept upon any lot unless such vehicle is stored in a garage or other enclosed structure. No tractor-trailers may be kept on any lot.
- 7. Nuisances. No owner of a lot shall do or permit to be done any act upon the lot which is, may be, or may become a nuisance as defined by state or municipal law, code, ordinance or regulation.
- 8. Construction. When the construction of the buildings on a lot is begun, work thereon must proceed diligently and must be completed in a reasonable time. All houses and other structures shall be completed on the exterior within one (1) year from start of construction,

including two coats of paint, stain or varnish on any exterior wood surfaces. Exterior walls must be finished with wood or masonry byproduct typical of clapboards, shingles, masonry and other quality finishes. No tarpaper, tarred shingle, or other types of tarred siding shall be allowed. All structures shall be located within the building envelope as shown on the Plan. No buildings shall be occupied during construction.

- 9. Architectural Review. Prior to the construction of any building, the lot owner shall submit to Declarant the following: (a) a site plan showing the location on the lot of the dwelling, the garage, the driveway, and all walks, patios, landscaping and any proposed tree cutting and (b) elevation plans showing all facades of all buildings on the lot. Declarant shall approve such plans provided that construction in accordance with such plans would not be detrimental to the subdivision, which determination shall be solely within the judgment and discretion of Declarant.
- 10. Signs. No signs or advertising devices, other than temporary signs less than three square feet in size, will be allowed on any lot or parcel of land without the prior written consent of Declarant. The Declarant may erect a sign to identify the subdivision and "For Sale" signs on each individual lot.
- 11. Trash. No lot shall be used or maintained as a dumping ground for rubbish, trash, junk, cuttings or other refuse. Trash, garbage or other waste shall be kept in sanitary containers. Such containers shall not be visible from the street or from any other lot, except for limited periods that coincide with trash collection.
- 12. Miscellaneous. Clotheslines and drying racks shall be screened or located so as not to be visible from any point on public roadways or adjacent lots.
- 13. Antennas. No Antennas or satellite dishes shall extend beyond the roof by more than two (2) feet, and there shall be no satellite dish antennas visible from public roadways.
- 14. Surface Water. No owner of a lot, his agents or employees shall alter the natural course of surface water on any lot in any way which would materially alter the natural flow of such water across any other lot unless such alteration is approved by the owners of all lots affected.
- 15. Do Not Disturb Areas. The "Do Not Disturb Areas" shown on the Plan shall remain in their natural state. No construction, alteration of the soil or natural vegetation, or siting of any structures, shall be permitted within said Do Not Disturb Areas.
- 16. Plan. Each lot shall be subject to the restrictions, conditions and easements indicated or referred to on the Plan.
- 17. Hope Avenue, Basket Lane, Lighting and Trash Collection. It is intended that the roads shown on the Plan as "Hope Avenue" and "Basket Lane" shall be offered and dedicated to the City of Portland, by Declarant, for acceptance as public ways. Declarant specifically reserves its fee interest in Hope Avenue and Basket Lane as shown on the Plan. In the event that

that any individual lot owner is deemed to hold title to Hope Avenue or Basket Lane, or any portion thereof, such lot owner shall be required to offer and dedicate said parcel to the City of Portland for acceptance as directed by Declarant.

Until such time as the City of Portland accepts Hope Avenue and Basket Lane as public ways, the Association (regardless of whether the Association is the record title holder of such roads) shall be solely responsible for: (A) the regular maintenance, repair, snowplowing, salting and sanding of Hope Avenue and Basket Lane, and all costs and expenses associated with such work; (B) all costs of exterior lighting located on or adjacent to Hope Avenue or Basket Lane; and (C) all costs of curbside trash collection, which the Association shall arrange to have performed by an independent trash collection company. During any period of time in which the Association is responsible for arranging and paying for the costs of curbside trash collection, the Association may allocate the costs of such trash collection among the individual lot owners as it deems reasonable.

Senior Housing. Each single family residential structure located on lots 17-23 18. within the Property shall be occupied by at least one (1) person who is fifty-five (55) years of age or older. Each owner of a lot, after a single family residential structure has been constructed thereon, shall promptly submit to the Association, copies of a driver's license or birth certificate (or other reliable documentation requested by the Association) for each occupant of such residential structure within thirty (30) days of the initial certificate of occupancy issued by the City of Portland. The Association shall conduct annual occupancy surveys to verify that at least one (1) person fifty-five (55) years of age or older occupies each single family residential structure. As part of the annual occupancy surveys the Association shall: (a) request documentation (sufficient pursuant to the FHA) from each lot owner verifying that at least one (1) person fifty-five (55) years of age or older occupies their residence; (b) prepare a summary of such annual occupancy surveys; and (c) keep any records required by the FHA. The Association shall, each year, mail a copy of the summary of such annual occupancy surveys to the City of Portland Planning Division. The Association shall also conduct an annual review of the FHA, and any rules related thereto issued by the Department of Housing and Urban Development, to ensure it complies with the most recent requirements for verification of occupancy. Each lot owner shall cooperate fully with, and promptly respond to, the annual occupancy surveys and accompanying requests for documentation by the Association. The Association may establish, with the prior consent of the City of Portland and Declarant, such additional reasonable rules and regulations relating to the verification of occupancy as may be necessary, from time to time, to comply with the FHA and any rules related thereto issued by the Department of Housing and Urban Development, as the same may be amended.

ARTICLE B. Homeowners Association

1. Association. Every owner of a lot within the Property (lots 17-23) shall be a member of the Riverwalk Subdivision, Section 1, Homeowners' Association (herein referred to as the "Association"), which has or shall be created as a nonprofit and nonstock corporation, duly organized under the laws of the State of Maine. Membership shall be appurtenant to and may not be separated from lot ownership. The lot owners shall be entitled to one vote for each

lot owned. The Association shall be the governing body for all of the above-mentioned lot owners with respect to: (a) the administration, management, maintenance, repair, snowplowing, salting and sanding of "Hope Avenue" and "Basket Lane," during such time as the Association remains liable for such work; (b) the administration, management, maintenance and repair of all exterior lighting located on or adjacent to "Hope Avenue" or "Basket Lane," during such time as the Association remains liable for such work; (c) the administration and management of curbside trash collection by an independent trash collection company, during such time as the Association remains liable for such work; and (d) the administration, management, maintenance and enforcement of the "Do Not Disturb Areas" as shown on the Plan; (e) the administration, management and enforcement of the senior housing restrictions, including without limitation satisfactory procedures for verification of occupancy, set forth in this Declaration.

- 2. Bylaws. Where not inconsistent with the provisions of this Declaration, the Bylaws of the Association shall govern issues such as meetings, election and authority of officers, authority and power of the Association and its members, and annual and special assessments.
- 3. Assessments. The Declarant, for each applicable lot (lots 17-23) owned within the Property, hereby covenants, and each owner of such lots, by acceptance of a deed therefor, whether or not it shall be so expressed in such deed, is deemed to covenant and agree to pay to the Association all annual assessments, special assessments and other charges, established and collected as hereinafter provided.

Owners of lots 17-23 within the Property shall pay annually to the Association, or its authorized representative, his or her proportionate share of all costs and expenses incurred (or projected to be incurred) by the Association, including without limitation all costs and expenses associated with the activities set forth above in Article B(1)(a-e) of this Declaration. Such proportionate share of expenses shall be evenly prorated for each lot that has received a certificate of occupancy from the City of Portland.

The annual budget shall be prepared by the Board of Directors and ratified by the lot owners in accordance with the Bylaws.

The annual assessments provided for herein shall commence to all applicable lots (lots 17-23), upon receipt of the first certificate of occupancy. The Board of Directors shall fix the amount of the annual assessment against each applicable lot at least thirty (30) days in advance of each annual assessment period. Written notice shall be sent to each owner of lots 17-23 subject to such assessments.

4. Assessment Lien. Assessments, both annual and special, and other proper charges authorized and billed by the Association shall be a charge on the lot and shall be a continuing lien upon the lot on which such assessment is made. If the assessment to the lot owner is not paid within thirty (30) days after the due date, then said assessment shall become delinquent and shall, together with interest at the rate of one percent (1%) per month, costs of collection and reasonable attorneys' fees, become a continuing lien on the lot owned by the delinquent lot owner, which lien shall bind the lot, with the buildings and improvements thereon, as well as the delinquent lot owner, heirs, devisees, successors, personal representatives and assigns. Said lien

may be enforced in the same manner as a lien for assessments against condominium units provided in the Maine statutes, as the same may be amended. Said lien for unpaid assessments shall be prior to all of the liens and encumbrances on the lot other than mortgages recorded before the date on which the assessment which is sought to be enforced becomes delinquent and liens for real estate taxes and other governmental/municipal assessments or similar charges against the lot. All such charges in addition to being a lien, shall also constitute the personal liability of the owner of the lot so assessed at the time of the assessment.

ARTICLE C. General Provisions

1. Binding Effect. The provisions of this Declaration may be amended as further described in this paragraph. Until such time as Declarant owns less than two (2) of the lots in Riverwalk Subdivision, Section 1, pursuant to the provisions of Article C(2)(A)(i), and until ten (10) years after the recording of this Declaration pursuant to the provisions of Article C(2)(B)(i), Declarant retains the right to amend the provisions of this Declaration, thereafter, any amendments shall require the consent of sixty-six percent (66%) of the lot owners. The foregoing notwithstanding, any amendment to the provisions of Article A(18) relating to the elderly housing restrictions, and Article B relating to the homeowner's association, shall require the written consent of the City of Portland. All such amendments shall be set forth in writing and recorded in the Cumberland County Registry of Deeds.

2. Rights of Declarant.

- A. The Declarant reserves the right until the construction, marketing and sale of all lots (17-23) is completed to:
 - i. Until such time as Declarant owns less than two (2) of the lots (17-23) within the Property, Declarant retains the right to waive, change or cancel all or any of the size, number and location of lots, restrictions, covenants, easements, road right-of-way, layout and location of any lot. The change or changes shall be effective upon the recording of any amendment to this Declaration and/or the filing of a modified subdivision plan indicating the changes made.
 - ii. Locate on the Property, even though not depicted on the Plan, and grant and reserve easements and rights of way for the installation, maintenance, repair, replacement and inspection of utility lines, wires, pipes, conduits and facilities.
 - iii. Connect with and make use of utility lines, wires, pipes and conduits, located on the property, for construction and sale purposes, provided that the Declarant shall be responsible for the cost of the service so used.
 - iv. Place "For Sale" signs or other signs to aid in marketing of the lots and dwellings thereon.

- v. Appoint and remove the officers of the Association and members of the Executive Board and veto any action of the Association or the Executive Board, in accordance with the provisions of the Bylaws. The Declarant shall relinquish all special rights expressed or implied through which it may directly or indirectly control, direct, modify, or veto any action of the Association, its Board of Directors or the majority of lot owners, and control of the Association shall pass to the lot owners not later than the date on which one hundred percent (100%) of the lots (17-23) have been conveyed to purchasers. The requirements of this paragraph shall not affect the Declarant's rights, as a lot owner, to exercise the votes allocated to lots owned by the Declarant.
- B. The Declarant reserves the following rights, which shall terminate ten (10) years after the recording of this Declaration if not sooner exercised:
 - i. Declarant reserves the right to amend this Declaration, from time to time, to add any additional lots, roadways, improvements and easements that may be created within all or any portion of "Lot 1" (approximately 6.46 acres) as shown on the Plan, and approved by the City of Portland, as Declarant deems necessary or desirable. The change or changes shall be effective upon the recording of any amendment to this Declaration and/or the filing of a modified subdivision plan indicating the changes made.
 - ii. Declarant reserves the right to locate on the Property (as may be amended), even though not depicted on the Plan, and grant and reserve easements and rights of way for the installation, maintenance, repair, replacement and inspection of utility lines, wires, pipes, conduits and facilities, in connection with the development of Lot 1.
 - iii. Declarant reserves the right to connect with and make use of utility lines, wires, pipes and conduits, located on the Property (as may be amended), for construction and sale purposes in connection with the development of Lot 1, provided that the Declarant shall be responsible for the cost of the service so used.
 - iv. Declarant reserves the right to place "For Sale" signs or other signs on the Property to aid in the marketing of Lot 1, and such lots and any dwellings created therein.
 - v. Declarant reserves the right to grant easements for vehicular and pedestrian ingress and egress over Hope Avenue (and construction, maintenance and repair of utilities under or over Hope Avenue), for the benefit of "Lot 1" and "Lot 24" as shown on the Plan, as Declarant deems necessary or desirable.
- 3. Governing Law. This Declaration shall be governed by and interpreted in accordance with the laws of the State of Maine.
- 4. Enforcement. These covenants, easements and restrictions are posed as part of a general scheme for the protection and benefit of the Declarant and each subsequent owner of lots numbered 17-23 within the Property. The provisions herein set forth shall run with the land and bind Declarant, its successors and assigns, and all parties claiming by, through, or under

Declarant. Declarant, its successors or assigns, the City of Portland, and each owner or owners of any of the aforementioned lots (17-23) within the Property, shall, from time to time, have the right, but not the obligation, jointly and separately to sue for and obtain a prohibitive or mandatory injunction to prevent the breach of, or to enforce the observance of, the provisions above set forth, or any of them, in addition to the right to bring an ordinary legal action for damages. Each lot owner agrees, by acceptance of a deed for such lot, to pay all costs of collection, including reasonable attorney's fees, incurred in any action taken to enforce the provisions of this Declaration. In no event shall the failure of Declarant, or its successor or assign, and such owners to enforce any of the provisions herein set forth as to a particular violation be deemed to be a waiver of the right to do so as to any continuing or subsequent violation.

- 5. Evidence of Consent or Amendment. Any consents required or permitted herein, and any amendments permitted herein, shall be effective only if expressed in a written instrument or instruments executed and acknowledged by the parties granting such consent or adopting such amendment, and recorded in the Cumberland County Registry of Deeds. Upon and after the effective date of any such amendment or consent, it shall be binding upon the lots subject to this Declaration and all persons then owning said lots in Riverwalk Subdivision, Section 1, and shall run with the land and bind all persons claiming, by through or under any one or more of them.
- 6. Separate Provisions: If any part or provision of this Declaration shall be held invalid or unenforceable by a Court of Law, such holding shall not impair, invalidate or otherwise affect the remainder of this Declaration, which shall remain in full force and effect.

IN WITNESS WHEREOF, Declarant has ex, 2005.	ecuted this Declaration this	day of
	Lloyd B. Wolf	
STATE OF MAINE CUMBERLAND, ss.		, 2005
Personally appeared before me the above na foregoing instrument to be his free act and deed.	med Lloyd B. Wolf, and ackno	wledged the
	Notary Public/Attorney at Lav	V

EASEMENT DEED

Т	his EASEMENT DE	ED is made this	day of	, 200,
by and b	etween LLOYD B. V	VOLF, of South Port	land, Maine, and RO	OBERT L.
	of Westbrook, Maine			
the CITY and State	OF PORTLAND a cof Maine, with a material tereinafter referred to	body corporate and ailing address of 389	politic, in the Count	y of Cumberland
further d	VHEREAS, Grantee escribed herein, and set forth herein;			
76		6 O D-11 (01 (M) and other realizab	la consideration

NOW THEREFORE, for One Dollar (\$1.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantors hereby grant unto Grantee the following easement:

A certain p	edestrian easement, in gross, located on and over a portion of	
	situated in the City of Portland, County of Cumberland and State of	٠
	erly of but not adjacent to Hope Avenue in the City of Portland,	
County of Cumber	land, State of Maine, said easement parcel being depicted as	
"Pedestrian Easen	ent (Dotted Area)" on a certain plan entitled	
66	" prepared by Titcomb Associates, dated	. 9
to be recorded in t	ne Cumberland County Registry of Deeds, and said easement parcel	
being more partice	larly bounded and described as follows:	

Beginning at the northwesterly corner of the second parcel of land conveyed to the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276. Thence:

- 1) N 19°30'58" W a distance of Thirty and 00/100 (30.00) feet to a point.
- 2) S 70°29'02" W a distance of Seventy-Two and 14/100 (72.14) feet to a point herein designated as "Point A".
- 3) Northerly following a non-tangent curve to the left having a radius of Three Hundred Fifty and 00/100 (350.00) feet ,an arc length of Twenty and 23/100 (20.23) feet to a point, said point lying N $10^{\circ}56'31''$ W a distance of Twenty and 23/100 (20.23) feet from the herein described "Point A".
- 4) N 70°29'02" E a distance of Sixty-Nine and 13/100 (69.13) feet to a point.
- 5) N 19°30'58" W a distance of Twenty-Five and 00/100 (25.00) feet to a point and the southwesterly corner of the first parcel of land conveyed to the City of Portland as described in a deed recorded in the said Registry in Book 17463,

Page 276.

- 6) N 70°29'02" E by said land of the City of Portland a distance of One Hundred Fifty and 00/100 (150.00) feet to a point.
- 7) S 19°30'58" E a distance of Seventy-Five and 00/100 (75.00) feet to a point and the northeasterly corner of the second parcel of land conveyed to the City of

Portland as described in a deed recorded in said Registry in Book 17463, Page 276.

8) S 70°29'02" W by said land of the City of Portland One Hundred Fifty and 00/100 (150.00) feet to the point of beginning

Bearings are based on true north.

The above described parcel contains 12,662 square feet and lies over a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The easement granted herein shall be for the purpose of providing a public pedestrian easement over the easement parcel described above, to allow public access to and from "Road A" as shown on the above referenced "Riverwalk Subdivision Plan" and two non-contiguous parcels of property that are located adjacent to the easement parcel and owned by the City of Portland pursuant to a certain deed recorded in said registry of deed in Book 17463, Page 276.

The pedestrian easement shall be limited to hours of use between sunrise and sunset each day. Use of the within easement parcel shall be limited to pedestrian foot traffic, and shall exclude all motorized vehicles (except wheelchairs or other similar non-recreational vehicles). Grantors reserve the right in common with Grantee to enforce these restrictions, supplement or modify these restrictions (with the approval of the City of Portland Planning Board) and to remove anyone that Grantors believe, in their sole discretion, is acting inappropriately, as Grantors deem necessary to protect the residents of the Riverwalk development, and to maintain, protect and enhance the residential community within said development. If the pedestrian easement is not being used as provided herein, Grantors, with the consent of the City of Portland, may close the pedestrian easement to public use. Grantee agrees to use its best efforts to enforce the restrictions contained herein.

The granting of this pedestrian easement shall be subject to any existing easements of record and any restrictions, easements or conditions established as part of the site plan approval, subdivision approval or conditional zoning agreement for the creation of the Riverwalk project on Grantors' adjacent property.

Exclusive use of the easement parcel is not hereby granted. Grantors reserve the right to use any surface or subsurface of the easement parcel that does not unreasonably interfere with the Grantee's use of such parcel.

Grantors specifically reserve the right to use the easement parcel, and any portion thereof, for the vehicular and pedestrian ingress and egress of Grantors, their successors and assigns, including the right, but not the obligation, to improve and pave any portion of the easement parcel for use as a private or public road, and to grant easements to third parties for such purposes. No such use by Grantors, their successors or assigns, shall be deemed to interfere with, violate or overburden the easement rights granted to Grantee herein.

This easement shall run with the land of Grantors and shall be binding upon the successors and assigns of Grantors.

This easement deed shall be construed in accordance with and governed by the laws of the State of Maine.

[SIGNATURE PAGE TO FOLLOW]

WITNESS our hands and seals this	day of, 200
Witness	Lloyd B. Wolf
Withoss	
STATE OF MAINE CUMBERLAND, ss.	
Then personally appeared before a acknowledged the foregoing instrument to	me the above-named LLOYD B. WOLF and be his free act and deed.
	Notary Public/Attorney at Law Printed Name:
Witness	Robert L. Adam
	Robert L. Adam
STATE OF MAINE CUMBERLAND, ss.	, 200
Then personally appeared before acknowledged the foregoing instrument t	me the above-named ROBERT L. ADAM and to be his free act and deed.
	Notary Public/Attorney at Law
	Printed Name:

EXHIBIT A

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on a line of the remaining land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70, said point of beginning lying N 62° 51'18" W a distance of One Hundred Twenty-Nine and 32/100 (129.32) feet from the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 recorded in said Registry in Plan Book 202, Page 650; Thence:

- 1) N 59°34'29" W by said remaining land of Adam and Wolf a distance of Twenty-Eight and 61/100 (28.61) feet to a point
- 2) N 54°10'20" W by said remaining land of Adam and Wolf a distance of One Hundred Ten and 21/100 (110.21) feet to a point.
- 3) N 12°34'45" E by said remaining land of Adam and Wolf a distance of a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.
- 4) N 05°41'39" W by said remaining land of Adam and Wolf a distance of Fifty-Three and 28/100 (53.28) feet to a point.
- 5) S 57°41'42" E a distance of Twenty-One and 28/100 (21.28) feet to a point.
- 6) S 39°27'41" E a distance of Sixty-Six and 70/100 (66.70) feet to a point.
- 7) S $10^{\circ}53'57'$ E a distance of One Hundred Eighty-Two and 18/100 (182.18) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains approximately 13,787 square feet and is a portion of land now or formerly of the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276. Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

EXHIBIT B

PARCEL ONE:

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, generally depicted as "Land Proposed For Conveyance To City Of Portland (11,714 S.F.)" on a certain plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, being more particularly bounded and described as follows:

Beginning at a point on a line of land now or formerly of the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276, said point of beginning lying N 34°54'40" W a distance of Three Hundred Sixty-Six and 77/100 (366.77) feet from the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 recorded in said Registry in Plan Book 202, Page 650; Thence:

- 1) N 57°41'42" W a distance of One Hundred Twenty-Nine and 99/100 (129.99) feet to a point.
- 2) S 82°42'53" W a distance of Thirty and 98/100 (30.98) feet to a point.
- 3) S 74°57'11" W a distance of Twenty-Seven and 25/100 (27.25) feet to a point.
- 4) S $67^{\circ}31'46"$ W a distance of Fifty and 73/100 (50.73) feet to a point.
- 5) N 26°42'50" W a distance of Forty-Four and 69/100 (44.69) feet to a point and said land of the City of Portland.
- 6) N $65^{\circ}44'31''$ E by said land of the City of Portland a distance of Eighty-Six and 46/100 (86.46) feet to a point.
- 7) N 85°12'34" E by said land of the City of Portland a distance of Seventy-Six and 24/100 (76.24) feet to a point.
- 8) S 43°03'01" E by said land of the City of Portland a distance of One Hundred Nine and 95/100 (109.95) feet to a point.
- 9) S 05°41'39" E by said land of the City of Portland a distance of Forty and 73/100 (40.73) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains approximately 11,714 square feet and is a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70. Reference is made to a certain deed from AJS Family Limited Partnership, dated October 18, 2002, recorded in the said registry of deeds in Book 18262, Page 157, for Lloyd B. Wolf's source of title.

Reference is also made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

PARCEL TWO:

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, generally depicted as "Land Proposed For Conveyance To City Of Portland (46,012 S.F.)" on a certain plan entitled "Riverwalk Subdivision Plan," prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, being more particularly bounded and described as follows:

Beginning at the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 and recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650; and land now or formerly of the City of Portland as described in a deed recorded in said Registry in Book 17463, Page 276. Thence:

- 1) S 29°48'53" E by said land of the City of Portland a distance of Two Hundred Seventeen and 71/100 (217.71) feet to a point.
- 2) S 71°30'11" W a distance of One Hundred Sixteen and 74/100 (116.74) feet to a point.
- 3) N 87°28'23" W a distance of Sixty- One and 15/100 (61.15) feet to a point.
- 4) N 55°18'28" W a distance of Seventy-Three and 84/100 (73.84) feet to a point.
- 5) N 27°16' 40" W a distance of Sixty and 84/100 (60.84) feet to a point.
- 6) N 01°32'31" E a distance of Seventy-Seven and 90/100 (77.90) feet to a point
- 7) N 20°34'09" E a distance of Sixty-Six and 74/100 (66.74) feet to a point.

- 8) N 14°07'58" E a distance of Forty-Seven and 20/100 (47.20) feet to a point and said land of the City of Portland.
- 9) S 59°34'29" E by said land of the City of Portland a distance of Sixty-One and 01/100 (61.01) feet to a point.
- 10) S 65°46'36" E by said land of the City of Portland a distance of Sixty-Eight and 50/100 (68.50) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains approximately 46,012 square feet and consists of a portion of Lot 1 as depicted on the Presumpscot River Place Phase III-Subdivision Plan, dated December 4, 2001 recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650; and a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in said Registry in Book 7058, Page 70. Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

TURNAROUND EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that Lloyd B. Wolf, of South Portland, Maine ("Grantor"), for consideration paid, grants to the CITY OF PORTLAND a body corporate and politic, in the County of Cumberland and State of Maine, with a mailing address of 389 Congress Street, Portland, Maine 04101 ("Grantee"), an easement described as follows:

A turnaround easement, in gross, located on certain land situated in the City of Portland, County of Cumberland and State of Maine, being more particularly bounded and described as follows:

That portion of land depicted as "Turnaround Easement to be conveyed to the City of Portland" on Lot 22 in Riverwalk Subdivision, Section 1, as shown on a certain plan prepared by Titcomb Associates, dated October 25, 2005, as revised, entitled "Riverwalk Subdivision Plan," Sheet 1 of 2, which plan is to be recorded in the Cumberland County Registry of Deeds (the "Plan").

For Grantor's source of title, reference is made to a deed from Robert L. Adam to the Grantor herein, of even or recent date herewith, to be recorded in the Cumberland County Registry of Deeds.

The easement conveyed herein shall be for the limited purpose of permitting the use of said easement area for turning around and reversing directions in connection with public vehicular travel on "Basket Lane" as shown on the Plan referenced above. Paving of the easement parcel is permitted. No parking, for any period of time, shall be permitted within the easement. The Grantee shall be entitled, but not obligated, to perform regular maintenance, repair, replacement, paving, snowplowing, salting and sanding of the turnaround easement. The easement conveyed shall include the right of the Grantee, but not the obligation, to enter the easement area (and such additional portion of Lot 22 as is necessary), with personnel and equipment, at any and all times, for any of the foregoing purposes.

The rights herein conveyed to Grantee shall be exercised so as to minimize the interference with the use of the easement parcel by the Grantor, its successors and assigns. Grantee hereby covenants to return the surface of the easement parcel described herein to its former condition as soon as possible after Grantee has exercised the within granted rights.

Reserving to the Grantor herein, its successors and assigns, the use and enjoyment of said easement parcel for such purposes as will in no way interfere with the safe and proper use thereof by the Grantee for the purposes above mentioned.

WITNESS my hand and seal this	day of, 2005.
Witness	Lloyd B. Wolf
STATE OF MAINE CUMBERLAND, ss.	, 2005
Then personally appeared befacknowledged the foregoing instrument	fore me the above-named LLOYD B. WOLF and ent to be his free act and deed.
	Notary Public/Attorney at Law Printed Name:

WARRANTY DEED

(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS, that we, LLOYD B. WOLF, of South Portland, Maine, ROBERT L. ADAM, of Westbrook, Maine (hereinafter collectively referred to as "Grantors"), for valuable consideration, grant to the CITY OF PORTLAND a body corporate and politic, in the County of Cumberland and State of Maine, with a mailing address of 389 Congress Street, Portland, Maine 04101 (hereinafter referred to as "Grantee"), with warranty covenants, the land in Portland, Cumberland County, Maine, described as follows:

See Attached Exhibit A. WITNESS our hands and seals this _____ day of ______, 2005. Lloyd B. Wolf Witness STATE OF MAINE , 2005 CUMBERLAND, ss. Then personally appeared before me the above-named LLOYD B. WOLF and acknowledged the foregoing instrument to be his free act and deed. Notary Public/Attorney at Law Printed Name: Robert L. Adam Witness STATE OF MAINE _____, 2005 CUMBERLAND, ss. Then personally appeared before me the above-named ROBERT L. ADAM and acknowledged the foregoing instrument to be his free act and deed. Notary Public/Attorney at Law Printed Name:

Exhibit A

PARCEL ONE:

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, generally depicted as "Land Proposed For Conveyance To City Of Portland (11,714 S.F.)" on a certain plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, being more particularly bounded and described as follows:

Beginning at a point on a line of land now or formerly of the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276, said point of beginning lying N 34°54'40" W a distance of Three Hundred Sixty-Six and 77/100 (366.77) feet from the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 recorded in said Registry in Plan Book 202, Page 650; Thence:

- 1) N 57°41'42" W a distance of One Hundred Twenty-Nine and 99/100 (129.99) feet to a point.
- 2) S 82°42'53" W a distance of Thirty and 98/100 (30.98) feet to a point.
- 3) S 74°57'11" W a distance of Twenty-Seven and 25/100 (27.25) feet to a point.
- 4) S $67^{\circ}31'46"$ W a distance of Fifty and 73/100 (50.73) feet to a point.
- 5) N 26°42'50" W a distance of Forty-Four and 69/100 (44.69) feet to a point and said land of the City of Portland.
- 6) N 65°44'31" E by said land of the City of Portland a distance of Eighty-Six and 46/100 (86.46) feet to a point.
- 7) N 85°12'34" E by said land of the City of Portland a distance of Seventy-Six and 24/100 (76.24) feet to a point.
- 8) S 43°03'01" E by said land of the City of Portland a distance of One Hundred Nine and 95/100 (109.95) feet to a point.
- 9) S 05°41'39" E by said land of the City of Portland a distance of Forty and 73/100 (40.73) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains approximately 11,700 square feet and is a portion of land conveyed to Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70. Reference is made to a certain deed from AJS Family Limited Partnership, dated October 18, 2002, recorded in the said registry of deeds in Book 18262, Page 157, for Lloyd B. Wolf's source of title.

Reference is also made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The parcel is conveyed subject to any and all easements and restrictions of record and include all rights, easements, privileges and appurtenances pertaining thereto.

The parcel conveyed herein is subject to the following easements, restrictions, rights, exceptions and reservations set forth below:

- 1. Rights and easements granted to Central Maine Power Company in instruments dated February 10, 1994, recorded in Book 2167, Page 432 and in Book 2167, Page 435.
- 2. Rights and easements granted to New England Telephone and Telegraph and Central Maine Power Company in an instrument dated December 29, 1955 and recorded at said Registry of Deeds in Book 2276, Page 277, to the extent it may apply.

PARCEL TWO:

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, generally depicted as "Land Proposed For Conveyance To City Of Portland (46,012 S.F.)" on a certain plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, being more particularly bounded and described as follows:

Beginning at the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 and recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650; and land now or formerly of the City of Portland as described in a deed recorded in said Registry in Book 17463, Page 276. Thence:

1) S 29°48'53" E by said land of the City of Portland a distance of Two Hundred Seventeen and 71/100 (217.71) feet to a point.

- 2) S 71°30'11" W a distance of One Hundred Sixteen and $74/100 \ (116.74)$ feet to a point.
- 3) N 87°28'23" W a distance of Sixty- One and 15/100 (61.15) feet to a point.
- 4) N 55°18'28" W a distance of Seventy-Three and 84/100 (73.84) feet to a point.
- 5) N 27°16' 40" W a distance of Sixty and 84/100 (60.84) feet to a point.
- 6) N 01°32'31" E a distance of Seventy-Seven and 90/100 (77.90) feet to a point
- 7) N 20°34'09" E a distance of Sixty-Six and 74/100 (66.74) feet to a point.
- 8) N 14°07'58" E a distance of Forty-Seven and 20/100 (47.20) feet to a point and said land of the City of Portland.
- 9) S 59°34'29" E by said land of the City of Portland a distance of Sixty-One and 01/100 (61.01) feet to a point.
- 10) S 65°46'36" E by said land of the City of Portland a distance of Sixty-Eight and 50/100 (68.50) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains approximately 46,012 square feet and is a portion of the land conveyed Robert L. Adam and Lloyd B. Wolf as described in a deed recorded in said Registry in Book 7058, Page 70, and the entire parcel of land conveyed to Grantors herein by deed recorded at said Registry of Deeds in Book 22412, Page 343.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The parcel is conveyed subject to any and all easements and restrictions of record and include all rights, easements, privileges and appurtenances pertaining thereto.

The parcel conveyed herein is subject to the following easements, restrictions, rights, exceptions and reservations set forth below:

1. Such state of facts as shown or depicted on plan entitled Presumpscot River Place, Phase III- Subdivision Plan, dated December 4, 2001, recorded at said Registry of Deeds in Plan Book 202, Page 650, as

amended by plan revised through April 28, 2003 and recorded in Plan Book 204, Page 373, including without limitation a certain 30' City of Portland public pedestrian easement as shown thereon.

- 2. Rights and easements granted to New England Telephone and Telegraph and Central Maine Power Company in an instrument dated December 29, 1955 and recorded at said Registry of Deeds in Book 2276, Page 277, to the extent it may apply.
- 3. Such state of facts as shown or depicted on plan showing Plan of Property for Robert Adam dated August 1978, recorded at said Registry of Deeds in Plan Book 125, Pages 45 and 46.
- 4. Terms and conditions of a State of Maine Department of Environmental Protection Site Location of Development Natural Resources Protection Act Water Quality Certification Findings of Fact and Order dated August 23, 2002 and recorded at said Registry of Deeds in Book 18084, Page 64, as affected by Department of Environmental Protection Order of Condition Compliance dated February 12, 2003, recorded in Book 19017, Page 238.
- 5. Restrictions, covenants, terms and conditions set forth in Declaration of Covenants and Restrictions dated November 5, 2002, recorded at said Registry of Deeds in Book 18336, Page 59.
- 6. Rights and easements granted to Portland Water District in an instrument dated February 4, 2003, recorded at said Registry of Deeds in Book 18860, Page 249.
- 7. Rights and easements granted to New England Telephone and Telegraph and Central Maine Power Company in an instrument dated May 21, 2003, recorded at said Registry of Deeds in Book 19954, Page 188.

The premises herein conveyed, being PARCEL ONE and PARCEL TWO described above, is being acquired by Grantee with funds, in part, from the Land for Maine's Future Fund in accordance with the Land for Maine's Future Act, at Title 5, Maine Revised Statutes Annotated, Chapter 353, as amended, and P.L. 1999, c. 514, Sec. A-6, and pursuant to a Project Agreement between the Land for Maine's Future Board, the State of Maine, acting by and through its Department of Conservation, and the Grantee, said Project Agreement to be recorded. The premises is being acquired by the Grantee, a cooperating entity designated by the Land for Maine's Future Board, to ensure permanent preservation of the premises and its availability for public outdoor recreation in accordance with the foregoing statutory purposes and the express conditions and limitations set forth in said Project Agreement.

WARRANTY DEED

(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS, that I, ROBERT L. ADAM, of Westbrook, Maine (hereinafter collectively referred to as "Grantor"), for valuable consideration, grant to LLOYD B. WOLF, with a mailing address of 9 Loveitt's Field Road, South Portland, Maine (hereinafter referred to as "Grantee"), with warranty covenants, Grantor's one-half undivided interest as tenant in common in the land, and any improvements thereon, situated in Portland, Cumberland County, Maine, described as follows:

See Attached Exhibit A

	of "PARCEL ONE" described in Exhibit A tion of "PARCEL ONE" for the purposes set
WITNESS our hands and seals this da	y of, 2005.
Witness	Robert L. Adam
STATE OF MAINE CUMBERLAND, ss.	, 2005
Then personally appeared before me acknowledged the foregoing instrument to be	the above-named ROBERT L. ADAM and be his free act and deed.
	Notary Public/Attorney at Law Printed Name:
Witness	Lloyd B. Wolf
STATE OF MAINE CUMBERLAND, ss.	, 2005
Then personally appeared before me acknowledged the foregoing instrument to be	e the above-named LLOYD B. WOLF and be his free act and deed.
	Notary Public/Attorney at Law Printed Name:

Exhibit A

PARCEL ONE

A certain lot or parcel of land located on the northerly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a 6"x6" concrete monument found on the southerly side of land of the Maine Turnpike Authority and at the northeasterly corner of Lot 17 as depicted on a plan of the Auburn Pines Subdivision recorded in the Cumberland County Registry of Deeds in Plan Book 199, Page 393. Thence:

- 1) N 64°31'06' E by said land of the Maine Turnpike Authority a distance of Four Hundred Seventy-Eight and 86/100 (478.86) feet to a point and land now or formerly of the City of Portland as described in a deed recorded in said Registry in Book 17463, Page 276.
- 2) S 19°30'58" E by said land of City of Portland a distance of Four Hundred Thirty and 11/100 (430.11) feet to a point.
- 3) N 70° 29' 02" E by said land of City of Portland a distance of One Hundred Fifty and 00/100 (150.00) feet to a point and land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.
- 4) S 19° 30' 58" E by said land of Wolf and Adam a distance of Seventy-Five and 00/100 (75.00) to a point and said land of the City of Portland.
- 5) S 70°29'02" W by said land of the City of Portland a distance of One Hundred Fifty and 00/100 (150.00) feet to a point.
- 6) S 19°30'58" E by said land of the City of Portland a distance of Four Hundred Four and 18/100 (404.18) feet to the northerly sideline of Hope Avenue as depicted on the plan of Presumpscot River Place III recorded in said Registry in Plan Book 202, Page 650, said point being herein designated as Point A.
- 7) Southwesterly by said Hope Avenue following a non tangent curve to the left having a radius of Two Hundred Twenty-Five and 00/100 (225.00) feet an arc distance of One Hundred Five and 51/100 (105.51) feet to a point, said point lying S 45°27'10" W a distance of One Hundred Four and 54/100 (104.54) fee from previously described Point A.
- 8) S 32°01'10" W by said Hope Avenue a distance of Fifteen and 45/100 (15.45) feet to a point on the former Town Line between the City of Portland and the Town of Falmouth.

- 9) N 58°27'09' W by said former Town Line a distance of Four Hundred Fifty-Seven and 09/100 (457.09) feet to a point on the southeasterly side of Lot 13 as depicted on the said plan of Auburn Pines Subdivision.
- 10) N 30°55'13" E by said Lot 13 a distance of Two Hundred Ninety and 78/100 (290.78) feet to a point.
- 11) N 58°56'30" W by said Lot 13, and Lots 15-17 as depicted on the said plan of Auburn Pines Subdivision a distance of Four Hundred Eighty-Two and 24/100 (482.24) fee to the point of beginning.

Bearings are based on true north.

The above described parcel contains 6.46 acres and being a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

RESERVING to Grantor, and his successors in title, a certain easement located on the northerly side of but not adjacent to Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point lying N 19°30'58" W a distance of Twenty-Five and 00/100 (25.00) feet from the northwesterly corner of the second parcel conveyed to the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276. Thence:

- 1) S 70°29'02" W a distance of Seventy-Three and 08/100 (73.08) feet to a point.
- 2) Northwesterly following a non-tangent curve to the left having a radius of Three Hundred Fifty and 00/100 (350.00) feet an arc distance of Thirty and 35/100 (30.35) feet to a point, said point lying N $10^{\circ}56'15''$ W a distance of Thirty and 34/100 (30.34) feet from the last described point.
- 3) N 70°29'02" E a distance of Sixty-Eight and 56/100 (68.56) feet to a point.
- 4) S 19°30'58" E a distance of Thirty and 00/100 (30.00) feet to the point of beginning.

Bearings are based on true north.

The above described access right of way contains 2,118 square feet.

The easement shall be appurtenant to Grantor's remaining property, which consists of approximately fourteen (14) acres located adjacent to and easterly of the parcel conveyed to Grantee pursuant to this deed. The easement shall be for the purpose of providing a gravel emergency access road (public or private), as may be required by the City of Portland pursuant to Grantor's development of the dominant tenement. Grantee agrees to extend such easement rights to the general public, as necessary, by separate easement deed. In the event that Grantor is not required to construct such emergency access road, as a condition of site plan approval, subdivision approval or any conditional zone agreement that Grantor may enter into with the City of Portland to develop the dominant tenement, all rights of Grantor and his successors in and to the easement created hereby shall be promptly terminated, and Grantor shall record an instrument in the Cumberland County Registry of Deeds confirming the termination of such easement rights.

Parcel One described above is conveyed subject to a certain pedestrian easement described in an Easement Deed from Grantor and Grantee herein to the City of Portland, of even or recent date herewith, to be recorded at the Cumberland County Registry of Deeds.

Parcel One described above is conveyed subject to a certain Portland Water District Easement, recorded in the Cumberland County Registry of Deeds in Book 2267, Page 257, as well as a certain Central Maine Power Easement, recorded in said registry in Book 17463, Page 276.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

PARCEL TWO

A certain lot or parcel of land located on the southwesterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the southwesterly sideline of Hope Avenue and the northerly corner of Lot 30 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

1) S 31°28'15" W by said Lot 30 a distance of One Hundred Thirteen and 81/100 (113.81) feet to a point and the easterly corner of land now or formerly of James G. Somma and Constance Somma as described in a deed recorded in said Registry in Book 6230, Page 51.

- 2) N 57°48'44" W by said land of Somma, other land now or formerly of said Somma, land now or formerly of Stephen M. Colucci and Janet L. Colucci, and land now or formerly of James Elowitch as described in deeds recorded in said Registry in Book 4299, Page 46; Book 9460, Page 133; and Book 9388, Page 282 respectively, a distance of Four Hundred Forty-Two and 61/100 (442.61) feet to a point and the northerly corner of said land of Elowitch
- 3) S 32°01'40" W by said land of Elowitch a distance of Sixty-Three and 50/100 (63.50) feet to a point and the easterly corner of land now or formerly of Gloria J. LaBrecque and Mary T. Beyer as described in a deed recorded in said Registry in Book 16128, Page 262.
- 4) N 58°27'09" W by said land of LaBrecque & Beyer a distance of Ninety-Seven and 85/100 (97.85) feet to a point on the southeasterly sideline of said Hope Avenue.
- 5) N 32°01'10" E by said Hope Avenue a distance of Fifteen and 04/100 (15.04) feet to a point of curvature.
- 6) Northeasterly and easterly by said Hope Avenue following a curve to the right having a radius of One Hundred Seventy-Five and 00/100 (175.00) feet an arc length of Two Hundred Forty-Two and 65/100 (242.65) feet to a point.
- 7) S 30°40'13" W by said Hope Avenue a distance of Thirty-Four and 36/100 (34.36) feet to a point.
- 8) S 59° 19'47" E by said Hope Avenue a distance of Fifty and 00/100 (50.00) feet to a point.
- 9) N 30°40'13" E by said Hope Avenue a distance of Thirty-Five and 61/100 (35.61) feet to a point.
- 10) S 55°52'57" E by said Hope Avenue a distance of Three Hundred Forty-Six and 71/100 (346.71) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains 1.46 acres and being a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

The above described parcel is conveyed subject to a certain culvert easement, benefiting the City of Portland, located on the southeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, shown as "City of Portland Culvert Easement" on a plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, and more particularly bounded and described as follows:

Beginning at a point on the southeasterly sideline of Hope Avenue said point lying N 40°32'44" E a distance of Seventy-Eight and 77/100 (78.77) feet from the northerly corner of land now or formerly of Gloria J. LaBrecque and Mary T. Beyer as described in a deed recorded the Cumberland County Registry of Deeds in Book 16128, Page 262. Thence:

- 1) Easterly following a non-tangent curve to the right having a radius of One Hundred Seventy-Five and 00/100 (175.00) feet an arc length of Thirty-One and 05/100 (31.05) feet to a point, said point lying N 58°09'09' E a distance of Thirty-One and 01/100 (31.01) feet from the last described point of beginning.
- 2) S 17°11'02" E a distance of Thirty-Five and 83/100 (35.83) feet to a point.
- 3) S 72°37'44' W a distance of Thirty and 00/100 (30.00) feet to a point.
- 4) N $17^{\circ}11'02'$ W a distance of Twenty-Eight and 07/100 (28.07) feet to the point of beginning.

Bearings are based on true north.

The above described culvert easement contains 973 square feet. The above described culvert easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain culvert/drainage easement, benefiting the City of Portland, located on the southwesterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, shown as "City

of Portland Culvert Easement" on a plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, and more particularly bounded and described as follows:

Beginning at a point on the southwesterly sideline of Hope Avenue, said point lying N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixteen and 48/100 (216.48) feet from the northerly corner of Lot 30 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

- 1) S 06°46'58" E a distance of Forty-Seven and 80/100 (47.80) feet to a point.
- 2) S 83°13'02" W a distance of Thirty and 00/100 (30.00) feet to a point.
- 3) N $06^{\circ}46'58"$ W a distance of Seventy-Three and 79/100 (73.79) feet to said Hope Avenue.
- 4) S 55°52'57" E by said Hope Avenue a distance of Thirty-Nine and 69/100 (39.69) feet to the point of beginning.

Bearings are based on true north.

The above described culvert easement contains 1,824 square feet. The above described culvert easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain drainage easement, benefiting the City of Portland, adjoining the above referenced culvert/drainage easement, shown as "City of Portland Drainage Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, being thirty and 00/100 (30.00) feet in width, beginning near the southwesterly corner of the above described culvert/drainage easement and continuing southwesterly across the above described Lot 17. The center of said drainage easement follows the center of the naturally occurring drainage course, which course may vary from time to time. The easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all

necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

PARCEL THREE

A certain lot or parcel of land located on the northeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the northeasterly sideline of Hope Avenue and the westerly corner of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

- 1) N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixty-Five and 28/100 (265.28) feet to a point.
- 2) N 31°28'15" E a distance of Ninety-Nine and 50/100 (99.50) feet to a point.
- 3) N 58°31'45" W a distance of Twenty and 00/100 (20.00) feet to a point.
- 4) N 39°42'09" E a distance of One Hundred Seventeen and 91/100 (117.91) feet to a point.
- 5) N 75°51'37" E a distance of One Hundred Sixty-Four and 63/100 (164.63) feet to a point.
- 6) S 58°31'45" E a distance of One Hundred Fifty-Two and 96/100 (152.96) feet to a point and the northwesterly side of said Lot 1.
- 7) S 31°28'15' W by said Lot 1 a distance of Three Hundred Forty-Six and 08/100 (346.08) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains 1.95 acres and being a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

The above described parcel is conveyed subject to a portion of a certain culvert easement located on the northeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on the northeasterly sideline of Hope Avenue, said point lying N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixty-Five and 28/100 (265.28) feet from the westerly corner of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

- 1) N 31°28'15" E a distance of Seventeen and 51/100 (17.51) feet to a point.
- 2) S $06^{\circ}46'58''$ E a distance of Twenty-Three and 15/100 (23.15) feet to a point on the northeasterly side of said Hope Avenue.
- 3) N 55°52'57" W by said Hope Avenue a distance of Fourteen and 35/100 (14.35) feet to the point of beginning.

The above described portion of the culvert easement contains 126 square feet.

WARRANTY DEED

(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS, that I, LLOYD B. WOLF, of South Portland, Maine (hereinafter collectively referred to as "Grantor"), for valuable consideration, grant to ROBERT L. ADAM, with a mailing address of 662 East Bridge Street, Westbrook, Maine 04092 (hereinafter referred to as "Grantee"), with warranty covenants, Grantor's one-half undivided interest as tenant in common in the land, and any improvements thereon, situated in Portland, Cumberland County, Maine, described as follows:

See Attached Exhibit A	
WITNESS my hands and seal this day of	, 2005.
Witness	Lloyd B. Wolf
STATE OF MAINE CUMBERLAND, ss.	, 2005
Then personally appeared before me the aboacknowledged the foregoing instrument to be his fr	ove-named LLOYD B. WOLF and ree act and deed.
	Notary Public/Attorney at Law Printed Name:

Exhibit A

PARCEL ONE

A certain lot or parcel of land located on the northeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, generally depicted as "Lot 24" on a certain plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, to be recorded in the Cumberland County Registry of Deeds, being more particularly bounded and described as follows:

Beginning at a point on the northwesterly side of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650, said point of beginning lying N 31°28'15" E by said Lot 1 a distance of Three Hundred Forty-Six and 08/100 (346.08) feet from the northeasterly sideline of Hope Avenue as depicted on said plan of Presumpscot River Place III. Thence:

- 1) N 58°31'45" W a distance of One Hundred Fifty-Two and 96/100 (152.96) feet to a point.
- 2) S 75°51'37" W a distance of One Hundred Sixty-Four and 63/100 (164.63) feet to a point.
- 3) S 39°42'09" W a distance of One Hundred Seventeen and 91/100 (117.91) feet to a point.
- 4) S 58°31'45" E a distance of Twenty and 00/100 (20.00) feet to a point.
- 5) S 31°28'15" W a distance of Ninety-Nine and 50/100 (99.50) feet to a point on the northeasterly side of said Hope Avenue.
- 6) N 55°52'57" W by said Hope Avenue a distance of Ninety and 61/100 (90.61) feet to a point of curvature.
- 7) Northwesterly by said Hope Avenue following a curve to the left having a radius of Two Hundred Twenty-Five and 00/100 (225.00) feet an arc distance of One Hundred One and 64/100 (101.64) feet to a point and land now or formerly of the City of Portland as described in a deed recorded in said Registry in Book 17463, Page 276.
- 8) N 19°30'58" W by said land of City of Portland and land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in said Registry in Book 7058, Page 70, a distance of Eight Hundred Forty-Seven and 44/100 (847.44) feet to a point.

- 9) N 64°27'37" E by said land of City of Portland a distance of Five Hundred Forty-Four and 52/100 (544.52) feet to a point.
- 10 S 02°55'37" E by said land of City of Portland a distance of Seventy-Five 57/100 (75.57) feet to a point.
- 11) S 16°16'41" E by said land of City of Portland a distance of Ninety-Seven and 28/100 (97.28) feet to a point.
- 12) S 21°57'26" E by said land of City of Portland a distance of Seventy-Five and 78/100 (75.78) feet to a point.
- 13) S 26°42'50" E by said land of City of Portland a distance of One Hundred Twenty and 38/100 (120.38) feet to a point.
- 14) N 67°31'46" E by said land of City of Portland a distance of Fifty and 73/100 (50.73) feet to a point.
- 15) N 74°57'11" E by said land of City of Portland a distance of Twenty-Seven and 25/100 (27.25) feet to a point.
- 16) N 82°42'53" E by said land of City of Portland a distance of Thirty and 98/100 (30.98) feet to a point.
- 17) S 57°41'42" E by said land of City of Portland a distance of One Hundred Twenty-Nine and 99/100 (129.99) feet to a point.
- 18) S 05°41'39" E by said land of City of Portland a distance of Fifty-Three and 28/100 (53.28) feet to a point.
- 19) S 12°34'45" W by said land of City of Portland a distance of One Hundred Twelve and $44/100\ (112.44)$ feet to a point.
- 20) S 54°10'20" E by said land of City of Portland a distance of One Hundred Ten and 21/100 (110.21) feet to a point.
- 21) S 59°34'29" E by said land of City of Portland a distance of Twenty-Eight and 61/100 (28.61) feet to a point.
- 22) S 14°07'58" W by said land of City of Portland a distance of Forty-Seven and 20/100 (47.20) feet to a point.
- 23) S $20^{\circ}34'09''$ W by said land of City of Portland a distance of Sixty-Six and 74/100 (66.74) feet to a point.

- 24) S $01^{\circ}32'31''$ W by said land of City of Portland a distance of Seventy-Seven and 90/100 (77.90) feet to a point.
- 25) S 27°16'40" E by said land of City of Portland a distance of Sixty and 84/100 (60.84) feet to a point.
- 26) S 55°18'28" E by said land of City of Portland a distance of Eleven and 40/100 (11.40) feet to a point and the northwesterly side of said Lot 1.
- 27) S 31°28'15" W by said Lot 1 a distance of One Hundred Seventeen and 43/100 (117.43) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains 13.28 acres and being a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

The above described parcel is conveyed subject to a portion of a certain culvert easement, benefiting the City of Portland, located on the northeasterly sideline of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, shown as "City of Portland Culvert Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, and more particularly bounded and described as follows:

Beginning at a point on the northeasterly sideline of Hope Avenue, said point lying N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixty-Five and 28/100 (265.28) feet from the westerly corner of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

- 1) N $55^{\circ}52'57''$ W by said Hope Avenue a distance of Thirty-One and 95/100 (31.95) feet to a point.
- 2) N 06°46'58' W a distance of Eighty and 00/100 (80.00) feet to a point.
- 3) S 85°29'48" E a distance of Thirty-Five and 69/100 (35.69) feet to a point.

- 4) S 06°46'58" E a distance of Eighty and 18/100 (80.18) feet to a point.
- 5) S 31°28'15" W a distance of Seventeen and 51/100 (17.51) feet to a point and said Hope Avenue.

Bearings are based on true north.

The above described portion of the culvert easement contains 3,083 square feet. The above described culvert easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain drainage easement, benefiting the City of Portland, adjoining the above referenced culvert easement, shown as "City of Portland Drainage Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, being thirty and 00/100 (30.00) feet in width, beginning near the northeasterly corner of the above described culvert easement and continuing northeasterly across the above described parcel. The center of said drainage easement follows the center of the naturally occurring drainage course, which course may vary from time to time. The easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain Portland Water District Easement, recorded in the Cumberland County Registry of Deeds in Book 2267, Page 257.

PARCEL TWO

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on a line of the remaining land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70, said point of beginning lying N 62° 51'18" W a distance of One Hundred Twenty-Nine and 32/100 (129.32) feet from the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 recorded in said Registry in Plan Book 202, Page 650; Thence:

- 1) N 59°34'29" W by said remaining land of Adam and Wolf a distance of Twenty-Eight and 61/100 (28.61) feet to a point
- 2) N 54°10'20" W by said remaining land of Adam and Wolf a distance of One Hundred Ten and 21/100 (110.21) feet to a point.
- 3) N 12°34'45" E by said remaining land of Adam and Wolf a distance of a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.
- 4) N 05°41'39" W by said remaining land of Adam and Wolf a distance of Fifty-Three and 28/100 (53.28) feet to a point.
- 5) S 57°41'42" E a distance of Twenty-One and 28/100 (21.28) feet to a point.
- 6) S 39°27'41" E a distance of Sixty-Six and 70/100 (66.70) feet to a point.
- 7) S 10°53'57' E a distance of One Hundred Eighty-Two and 18/100 (182.18) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains approximately 13,787 square feet.

Being the same premises conveyed to Grantor and Grantee herein by the City of Portland, by deed of even or recent date herewith, to be recorded at the Cumberland County Registry of Deeds. The above described parcel is a portion of land formerly of the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276. Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

WARRANTY DEED

(Maine Statutory Short Form)

KNOW ALL BY THESE PRESENTS, that the CITY OF PORTLAND, a body corporate and politic, in the County of Cumberland and State of Maine, (hereinafter referred to as "Grantor"), for valuable consideration, grants to ROBERT L. ADAM, with a mailing address of 662 East Bridge Street, Westbrook, Maine 04092, and LLOYD B. WOLF, with a mailing address of 9 Loveitt's Field Road, South Portland, Maine 04106 (hereinafter collectively referred to as "Grantees"), with warranty covenants, the land in Portland, Cumberland County, Maine, described as follows:

See Attached Exhibit A

IN WITNESS WHEREOF, the City o	f Portland has caused this deed to be
executed in its name by, 2004	, its duly authorized,
	CITY OF PORTLAND:
	By:
	Its duly authorized,
STATE OF MAINE COUNTY OF CUMBERLAND, ss.	, 2004
Then personally appeared the above-re of the City of Portland as aforesaid, and ackn his/her free act and deed in his/her said capace Portland.	
	Before me,
	Notary Public/Attorney at Law Printed Name:
	I IIIICU I TUIIIC.

Exhibit A

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on a line of the remaining land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70, said point of beginning lying N 62° 51'18" W a distance of One Hundred Twenty-Nine and 32/100 (129.32) feet from the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 recorded in said Registry in Plan Book 202, Page 650; Thence:

- 1) N 59°34'29" W by said remaining land of Adam and Wolf a distance of Twenty-Eight and 61/100 (28.61) feet to a point
- 2) N 54°10'20" W by said remaining land of Adam and Wolf a distance of One Hundred Ten and 21/100 (110.21) feet to a point.
- 3) N 12°34'45" E by said remaining land of Adam and Wolf a distance of a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.
- 4) N 05°41'39" W by said remaining land of Adam and Wolf a distance of Fifty-Three and 28/100 (53.28) feet to a point.
- 5) S 57°41'42" E a distance of Twenty-One and 28/100 (21.28) feet to a point.
- 6) S 39°27'41" E a distance of Sixty-Six and 70/100 (66.70) feet to a point.
- 7) S 10°53'57' E a distance of One Hundred Eighty-Two and 18/100 (182.18) feet to the point of beginning.

Bearings are based on true north.

The above described parcel contains approximately 13,787 square feet and is a portion of land now or formerly of the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276. Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

DRAINAGE EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that the CITY OF PORTLAND, a body corporate and politic, in the County of Cumberland and State of Maine ("Grantor"), for good and valuable consideration received, grants to ROBERT L. ADAM, with a mailing address of 662 East Bridge Street, Westbrook, Maine 04092, LLOYD B. WOLF, with a mailing address of 9 Loveitt's Field Road, South Portland, Maine 04106, and PRESUMPSCOT RIVER PLACE HOMEOWNERS ASSOCIATION, a Maine nonprofit corporation with a mailing address of P.O. Box 1382, Portland, Maine 04104 (hereinafter collectively referred to as "Grantees"), and their successors, an easement described as follows:

A drainage easement, located on certain land situated in the City of Portland, County of Cumberland and State of Maine, being more particularly described as follows:

Those parcels of land depicted as thirty (30) foot wide "Drainage Easements," on certain plans entitled "Presumpscot River Place – Phase III, Subdivision Plan, Portland, Maine," prepared by Titcomb Associates, recorded in the Cumberland County Registry of Deeds in Plan Book 204, Page 373, and "Riverwalk Subdivision Plan, Section 1" prepared by Titcomb Associates, to be recorded in said Cumberland County Registry of Deeds.

The easement is appurtenant to certain parcels of land located in the City of Portland, being such parcels as are more particularly described in a certain deed to Lloyd B. Wolf and Robert L. Adam, recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70 and depicted on said Riverwalk Subdivision Plan to be recorded, and such parcels depicted as Lots 1-30, as shown on a certain plans entitled "Presumpscot River Place – Phase III, Subdivision Plan, Portland, Maine," prepared by Titcomb Associates, and recorded in the Cumberland County Registry of Deeds in Plan Book 204, Page 373.

For Grantor's source of title, reference is made to a deed from Robert L. Adam and AJS Family Limited Partnership, dated March 26, 2002, recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276.

The easement conveyed shall include the right of the Grantees, to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the Grantees herein is

necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

Reserving to the Grantor herein, its successors and assigns, the use and enjoyment of said easement parcel for such purposes as will in no way interfere with the safe and proper use thereof by the Grantees for the purposes above mentioned.

IN WITNESS WHEREOF, the said CITY OF PORTLAND, has caused this		
instrument to be signed this	day of	, 2005.
	CITY OF	PORTLAND:
	Ву:	
Witness	Joseph E.	Grav. Jr.
.,		uthorized City Manager
STATE OF MAINE		
CUMBERLAND, ss.		, 2005
Personally appeared before capacity as City Manager, and ac and deed in his said capacity and	knowledged the foreg	
	Notary Pu	ublic/Attorney at Law

NOW, THEREFORE, in consideration of the rezoning, the CITY and APPLICANT covenant and agree as follows:

1. The CITY shall amend the Zoning Map of the City of Portland dated December 2000, as amended, and on file in the Department of Planning and Development, and incorporated by reference into the Zoning Ordinance by Section 14-49 of the Portland City Code, by adopting the following map change amendment:

INSERT MAP

We will rezone City property as a straight rezoning.

2. The following plans and documents are attached and incorporated into this Agreement:

Exhibit A: PARCEL

Exhibit B: **PROPERTY** - Section I Detached Single Family Housing with lot designation and building envelopes

Exhibit C: Homeowner's Association Documents - Section I

Exhibit D: Feeno Marker locations

Exhibit E: City of Portland Technical and Design Standards and Guidelines – Street Design Standards

GENERAL REQUIREMENTS

3. An executed copy of this Conditional Zone Agreement shall be recorded by the **APPLICANT** at the Cumberland County Registry of Deeds no later than thirty (30) days after the date of Portland City Council approval of this Contract Zone Agreement. If this Agreement is not recorded by said date, then the conditional rezoning shall become null and void and the zoning of the **PROPERTY** shall revert to Residential-2 (R-2) zone.

- 4. The PARCEL is to be developed in two sections, Section I and Section II. This
 Conditional Zone Agreement shall apply to the development of Section I, which shall consist of
 twenty-three (23) detached, single-family house lots on property depicted on Exhibit B. Section
 II, consisting of fifty-five (55) clustered units, shall be subject to a separate conditional zone
 agreement. Section I shall be subject to City of Portland Subdivision review and approval as
 well as review and approval under the Site Location of Development Act either by the Maine
 Department of Environmental Protection (DEP) or the City of Portland under its delegated
 authority. APPLICANT shall obtain all DEP permits required for the development of Section I
 prior to final action by the Portland Planning Board on any application for Subdivision or Site
 Location approval. Within sixty (60) days after this conditional rezoning is approved by the
 Portland City Council, APPLICANT will file all required State applications for Section I with
 the DEP or the City of Portland under its delegated authority. APPLICANT shall comply with
 all requirements of the DEP or the City of Portland under its delegated authority.
- 5. **APPLICANT** is the owner of that portion of the **PARCEL** described herein as Section I, as identified in Exhibit B (referred to herein as the "**PROPERTY**").
- 6. APPLICANT may contract for the installation of improvements noted in this conditional rezoning but shall remain ultimately liable to the CITY for the financial obligation for compliance with CITY ordinances and approvals. Such financial obligation shall not be transferable without prior authorization of the transfer by the Planning Board. The foregoing notwithstanding, in the event that APPLICANT sells all or a portion of its interest in the PROPERTY, APPLICANT shall be entitled to transfer such financial obligation for compliance with CITY ordinances and approvals to said buyer, provided that the CITY is reasonably satisfied with the buyer's financial capacity.

7. The provisions of this Agreement are intended to supersede what would otherwise be Residential 2 (R-2) Zone.

SECTION I - CONDITIONS

- 8. The following conditions shall apply to the Section I:
- A. <u>Permitted Uses</u>. APPLICANT shall be authorized to establish and maintain the following use on the **PROPERTY**:
 - Age restricted residential use, consisting of twenty-three (23) single-family house 1. lots. "Age- restricted" shall mean that each housing unit in Section I shall be required to have one (1) owner-occupied individual who is fifty-five (55) years of age or older living in at least eighty (80%) percent of the total occupied units in each section. Said residential use shall be subject to the age-restricted limitations and restrictions contained within the Homeowner's Association documents and shall also be subject to the enforcement provisions set forth therein, which Homeowner's Association documents are attached hereto and incorporated herein as Exhibit C, (entitled "_____"). Said Homeowner's Association documents relative to age eligibility and enforcement shall not be modified or altered without the express written consent of the Portland City Council. The City of Portland is not obligated to enforce the age restricted eligibility requirements of this development, but, by virtue of this Conditional Zone Agreement, shall have a cause of action under the City's Zoning Ordinance against the owner/owners of any Lot, for any failure or neglect on the part of any Lot, to enforce the provisions of this Contract Zone Agreement. The owners of any Lot shall keep annual records of all occupants of the age-restricted units and shall make them available for CITY inspection upon reasonable notice. At such time as four (4) of the total units in Section I have been sold

to eligible individual homeowners, responsibility for maintaining annual records shall pass from the owners of the **PROPERTY** to the Homeowner's Association and any requirements of keeping annual records shall be the responsibility of the Homeowner's Association.

- 2. Accessory uses: trail networks, and public access uses.
- 3. **APPLICANT** may develop and sell Section I in three phases:
 - a. Lot 17 on Hope Avenue;
 - b. Lots 18-23 on Road B; and
 - c. Lots 1-16 on Road A.

APPLICANT reserves the right to re-order the phases according to demand and economic conditions.

B. Subdivision Requirements:

- 1. The following dimensional standards shall be required for any development of Section I:
 - a. Front yard Ten (10') feet
 - b. Side yard Ten (10') feet
 - c. Rear yard Ten (10') feet
 - d. Setback between structures- Fifteen (15') feet
 - e. Minimum lot size 6,000 s.f.
 - f. Minimum floor area, excluding garage 1,000 s.f.
 - g. Maximum structure height Thirty-five (35') feet

C. <u>Site Plan Requirements:</u>

- 1. On lots 17 through 23, the APPLICANT will adhere to the following: a) the site plan attached hereto as Exhibit __, which site plan contain a clear delineation of the limit of work on these lots and the "do not disturb zone" adjacent to these lots; and b) the grading plan(s) attached hereto as Exhibit __.
- 2. The building envelopes for lots 17 through 23 in Section I, as shown on Exhibit B, represent the maximum area for the construction of principal and accessory structures. Any deviations from, or changes to, the building envelopes from those depicted on Exhibit B must receive the approval of the Portland Planning Board prior to commencement of construction, and such approval, if granted, will be recorded in the Cumberland County Registry of Deeds with a reference to the Plan Book and Page Number of the originally approved plat.
- 3. Structure design, style and materials shall substantially conform to those included in the Homeowner's Association documents contained within Exhibit C.
- 4. In order to avoid and/or minimize the potential for the effects of windthrow, sunscald, loss of tree vigor and to preserve the existing vegetation beyond the delineated limit of work, Section I shall adhere to the written and graphic plan for buffer preservation around the perimeter of the PROPERTY, which includes proper arboricultural practices being implemented on the PROPERTY, as shown on Exhibit

 _____. In carrying out these practices (i.e. selective thinning, tree pruning and root protection) the standards contained within the *National Arborist Association, Inc.*Standards for Tree Care Operations shall be followed. However, APPLICANT shall not be responsible for performing any such work on the CITY property.

5. The Planning Board shall review and approve the Subdivision for Section I according to the subdivision provisions of the Portland Land Use Code.

D. <u>Subdivision Requirements:</u>

- 1. No further subdivision of lots shall be permitted without an amendment to this Conditional Zone Agreement by the CITY Council. No movement of lot lines shall be permitted without further review and approval of the CITY planning authority pursuant to ______ [Cite Ordinance].
- 2. The roadways servicing Section I shall be conveyed to the City of Portland as public roadways. The dedicated rights of way shall be at least fifty (50) feet wide, with the paved travel portion no less than twenty four (24) feet wide, and built to City Standards as contained in the City of Portland Technical and Design Standards and Guidelines, March 2000. Granite curb and sidewalk, shall be provided on both sides of the street, designated as Road A, so labeled on Exhibit B, and on one side of the street designated as Road B, so labeled on Exhibit B. The roadways will be completed and offered to the CITY for acceptance within two (2) years of the posting of each performance guarantee, unless the CITY and APPLICANT agree in writing to extend the duration for acceptance, and the performance guarantee is extended accordingly.
- 3. A turn around easement (at the terminus of Road B) for snow plowing and other City uses shall be provided. It shall not be located within the thirty (30) foot pedestrian easement shown on Exhibit B. The **APPLICANT** shall pave said turnaround easement area according to City Standards as contained in the City of Portland Technical and Design Standards and Guidelines, March 2000. The easement shall be conveyed from the **APPLICANT** to the **CITY** without consideration. **APPLICANT** shall convey said

turn around easement to the CITY no later than the date upon which the APPLICANT conveys Road B to the CITY.

- 4. When either Road A or B has been completed, or both Roads A and B of Section I have been completed, to the satisfaction of the CITY, the Portland City Council shall accept said streets, and the CITY agrees that such acceptance shall not be unreasonably withheld. Unless and until the CITY accepts Road A or Road B, said roadways shall be the financial responsibility of the APPLICANT and their successor for maintaining said roadways (including the cost of street sweeping, snowplowing, sanding, salting and street lighting as well as the cost of curb-side trash pick up). The CITY is not, and shall not, become responsible for providing such services until the streets are accepted as CITY streets. This provision shall be included, verbatim, in all conveyances of the property or any interest therein by APPLICANT or their successors, and shall not merely be referenced to a recorded instrument containing such restrictions.
- 5. Off street parking shall be provided to accommodate two (2) spaces per dwelling unit and shall be permitted on the driveway within the front setback of each dwelling unit. On-street parking shall be permitted on one side of Road A and Road B.
- 6. **APPLICANT** shall retain a licensed Civil Engineer to design the surface and subsurface improvements of the public right of way located in Section I, which design shall be subject to the approval of the Portland Planning Board at the time of subdivision review.

E. Construction Conditions:

During construction of Roadways A and B, so labeled on Exhibit B,
 APPLICANT shall retain either a licensed Civil Engineer or Landscape Architect

("PROFESSIONAL") to conduct site inspections and to report the results of such inspections to the CITY, in writing, on a semimonthly basis. At minimum, site inspections shall occur both semimonthly and as follows: 1) prior to site clearing and the commencement of construction; 2) at the completion of clearing and grubbing; 3) at the completion of rough grading; 4) at the completion of final grading; 5) upon completion of surface restoration; and 6) prior to the removal of erosion control measures.

The PROFESSIONAL shall submit to the Planning Authority, at least semimonthly, written notes of each inspection visit, summarizing: 1) the construction activity underway; 2) the compliance or non-compliance with the approved site plan and subdivision plan; 3) corrective actions, as appropriate, required to secure such compliance; 4) any changes in field conditions which require modification to the design or the roadway; and 5) the plan for construction activity to take place in the time period following the inspection. In addition, PROFESSIONAL shall also provide written certification to the Portland Planning Authority upon completion of construction of the road improvements certifying that the work is in substantial conformance to the approved plans and that all conditions of approval have been satisfied. Such certification shall be based upon the Engineer's or Architect's professional opinion. Any and all improvements not completed according to the initial approved plans shall be identified and subsequent City approval thereof shall be documented.

2. APPLICANT shall require each Lot Owner to retain a licensed Maine Land Surveyor to lay out and certify the location of each foundation for each proposed house, on lots 17 – 23 (Exhibit B), in order to ensure that said locations and elevations conform

to approved site plan submissions. Each Lot Owner shall be responsible for obtaining Planning Staff Review for his respective lot.

- 3. **APPLICANT** shall install one permanent Feeno-type marker (as described below) (see Exhibit D) at each of the outer rear yard corners of lots 10 and 16 (totaling two (2) Feeno-type markers). "Feeno- type" survey markers shall be markers with a granite head and an engraved identity disk with legend reading "City of Portland Presumpscot River Preserve", or an equivalent survey marker system approved by the Portland Planning Authority. APPLICANT shall install iron pins, with ID caps, at all other corners of lots 10-16, and at all corners of lots 1-9 and 17-23.
- 4. Roads A and B as shown on Exhibit B shall be constructed according to City
 Standards included within the Portland Technical and Design Standards and Guidelines
 (dated March 2000) (hereinafter "Tech Supp") incorporated herein as Exhibit E.

 APPLICANT shall include the cost of developing Roads A and B in the performance guarantee applicable to the project.
- 5. All backfill material placed within the right of ways for Roads A and B shall meet the MDOT common borrow specification.
- 6. Prior to the issuance of the first certificate of occupancy for Section I, the respective roadway access (Road A or B on Exhibit __) shall be completed to, at a minimum, base course pavement.
- 7. The storage of materials during construction shall be located in those areas shown on Exhibit __ and shall be located exclusively on the **PROPERTY**.

CONCLUSION

9. The above restrictions, provisions and conditions of this Agreement are an essential part of the rezoning, shall run with the **PROPERTY**, shall inure to the benefit of, be enforceable by and bind **APPLICANT**, his successors or assigns, and any party in possession or occupancy of the **PROPERTY** or any part thereof, and said restrictions, provisions and conditions shall inure to the benefit of, be enforceable by and bind the **CITY**, acting by and through its duly authorized representatives.

If any of the restrictions, provisions, conditions, or portions thereof, set forth herein should for any reason be held to be invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision and such determination shall not affect the validity of the remaining portions hereof.

Except as expressly modified herein, the development, use, and occupancy of the subject premises shall be governed by and comply with the provisions of the Land Use Code of the City of Portland and any applicable amendments thereto or replacement thereof.

In the event that a dispute arises under the terms of this Agreement, the parties agree to the following: [Language to be inserted by corporate counsel].

[Signature Page to Follow]

APPLICANT DRAFT (Revised – 5/20/04)

WITNESS:	APPLICANT:
	Lloyd B. Wolf
STATE OF MAINE CUMBERLAND, ss.	, 2004
Personally appeared before me the foregoing instrument to be his free act and	above-named Lloyd B. Wolf, and acknowledged the deed.
	Notary Public/Attorney at Law
WITNESS:	CITY OF PORTLAND:
В	y:
	Joseph E. Gray, Jr. Its duly authorized City Manager
STATE OF MAINE CUMBERLAND, ss.	, 2004
	above-named Joseph E. Gray, Jr., in his capacity as going instrument to be his free act and deed in his said ity of Portland.
	Notary Public/Attorney at Law

SECTION 12 STORMWATER MANAGEMENT

12.1 Overview

Under the Stormwater Management Statute (38 M.R.S.A §420-D) instituted by the Maine Department of Environmental Protection, any development that creates one acre or more of impervious surface not within a direct watershed of a body of water listed as most at risk from new development requires prior approval of the Department. The Stormwater Management Law requires that developments maintain the predevelopment peak runoff rates at each point of interest following completion of the development. Impervious and disturbed areas associated with construction of a single-unit, detached residence on a parcel of land do not require review pursuant to this section (38 M.R.S.A §420-D.7).

12.2 Introduction

Gorrill-Palmer Consulting Engineers, Inc. has been retained by Burt Wolf to prepare a Stormwater Analysis Report for the proposed Riverwalk subdivision, which is located off Hope Avenue in Portland, Maine. Figure 1 is an excerpt from the U.S.G.S. Portland West quadrangle map showing the project location. The developer is currently seeking Subdivision Approval from the City of Portland and a Site Location of Development Act Permit Modification for the development of a 24-lot subdivision with approximately 1,400 feet of roadway. The project will consist of 23 lots that will support individual agerestricted single-unit homes and a large lot to remain undeveloped at this time. The following narrative contains the stormwater management measures, which are appropriate for the site.

12.3 Development Description

The project site consists of approximately 22.5 acres of land north of Hope Avenue and Alice Street in the North Deering neighborhood. Land that was part of Falmouth was annexed into Portland with intent of contract zoning to allow age-restricted housing. The site is currently undeveloped. Abutting land uses include:

Northwest - Undeveloped
 Northeast - Presumpscot River
 Southeast - Residential

Southwest - Residential

12.4 Surface Water and Downstream Waterbodies

There are no lakes located on, adjacent to or downstream of the project site. The Presumpscot River is adjacent and downstream of the development site. The development site includes gullies that receive and transport runoff to the Presumpscot River.

12.5 General Topography

Topography on the site varies from relatively flat slopes; 2% - 6% for the northerly portion, to relatively steep slopes; 25% - 40% for the southerly portion of the site. There are several existing drainage swales along the southern portion of the site.

12.6 Flooding

There is no on-site evidence that indicates any portion of the site has been subjected to flooding. A portion of the 100-year floodplain for the Presumpscot River is located approximately 300-feet, at its closest point, from the development site. The area between the developable portion of the lot and the Presumpscot River has been transferred to possession of the City of Portland and will remain undeveloped land.

12.7 Natural Drainage Ways

The project as currently proposed includes the addition of culverts under the proposed Road A, which will convey flows through existing gullies. This crossing will require a Natural Resources Protection Act Permit.

12.8 Alterations to Land Cover

Changes in land cover and use will include removal of wooded and meadow areas throughout portions of the project. Changes in land cover would also include the addition of paved surfaces, and lawn.

12.9 Modeling Assumptions

The project site has frontage on and is directly adjacent to the Presumpscot River. The Presumpscot River includes tributaries or receives flows from waterbodies such as:

- Pleasant River (headwaters in Gray).
- Black Brook (headwaters in Windham)
- Mill Brook (headwaters in Cumberland)
- ♦ Tannery Brook (headwaters in Gorham)
- Piscataqua River (headwaters in Cumberland and Yarmouth)
- Sebago Lake

Based upon data provided by the U.S. Geological Survey, the following peak flow rates are predicted for the Presumpscot River at the gauging station in Westbrook:

Storm Event	Peak Flow (cfs)
2	5,301
10	9,895
25	13,005

The gauging station is located approximately 5.5 miles upstream of the project site. The Presumpscot River, below the gauging station, has an additional watershed area in excess of 60 square miles. By inspection, due to the size of the Presumpscot River watershed and the location of the site within this watershed, detention of the stormwater runoff is not warranted.

The remaining stormwater analysis evaluates the storm drainage requirements for the roadway and water quality requirements.

A Class B High Intensity Soil Survey prepared by S.W. Cole Engineering, Inc. was used as the basis for surficial soil conditions for the development area. (Refer to Section 11 – Soils for more information

regarding the soils found onsite.) Hydrologic soils groups C and D soils were mapped on the site. The medium intensity soil survey prepared by the Cumberland County SCS was used as the basis for surficial conditions for areas not included within the High Intensity Survey Area.

The SCS TR-20 methodology was employed by Gorrill-Palmer Consulting Engineers, Inc. to analyze postdevelopment flows for purposes of sizing the water quality treatment structures that are to be installed. Design flows for structure sizing for both HIL Downstream Defenders and Vortechnics units are based on a peak flow for the 1-year storm event. The corresponding rainfall for this storm event for Cumberland County (SE) is 2.5", for a 24-hour period.

Design of the internal storm drainage system was based on the flows calculated by the Rational method for the 25-year storm.

Culvert Inlet/Outlet apron and ditch scour protection was based upon a nomograph which provides a dso stone size based upon the respective conditions.

Land use cover delineations of watershed hydraulic flow paths, and hydraulic soils data were obtained using the following data:

- 1. Portland West 7.5 Minute Quadrangle Map prepared by the U.S.G.S.
- 2. On-site topographic survey with 2-foot contour intervals.
- 3. Aerial photographs of the area provided by the Greater Portland Council of Governments.
- 4. Field Reconnaissance.
- 5. Class B High Intensity Soil Survey prepared by S.W. Cole Engineering, Inc.
- 6. Soil Conservation Service Medium Intensity Soil Survey for Cumberland County.

12.10 Water Quality Control

12.10.1 General

The development is located within the watershed of the Presumpscot River. Under Chapter 500 & 502 of the MDEP Stormwater Law, the Presumpscot River is not listed as a watershed most at risk or as a sensitive or threatened area. The construction of the roadways will result in approximately 1.11 acres of new non-vegetated surface. The Developer will be responsible for the construction of the infrastructure (roadway and utilities) but will not be involved with the development of the individual lots. Therefore based upon Chapter 500 Stormwater Management from the MDEP, water quality treatment is not required apart from Best Management Practices for erosion control based upon the size of the project and the watershed in which it is located.

As with the development of Presumpscot River Place 3, it is assumed that the City would require that the project meet the requirements of Section 5.2.2 of Stormwater Management for Maine: BMP's. This section indicates that "Subdivisions with new or upgraded roads greater that 4,000 s.f. of impervious road surface" should be treated to a 40% Total Suspended Solids removal level.

Based upon recent correspondence with MDEP, it is assumed that the suggested 40% removal of TSS is applicable to the new proposed roadways and impervious surfaces expected to be created through the development of the individual lots as single-unit detached dwellings. The computations within Attachment B – Water Quality Calculations include calculations showing the treatment levels attained with the proposed treatment structures. The calculations are based on treating non-vegetated surfaces related to roadway or utility construction and related to the conceptual lot layouts included in the accompanying plan set.

12.10.2 Review of Current TSS Control Technology

MDEP has established methodologies for evaluating and controlling TSS export from development, as presented in the 1995 manual, <u>Stormwater Management for Maine: Best Management Practices.</u>

Gorrill-Palmer Consulting Engineers, Inc. has prepared a TSS control program for this project using the MDEP methodology established in the manual and regulations. TSS control often requires the integration of various reduction strategies. Common methods include the use of vegetated buffer strips, retention facilities, proprietary treatment devices and infiltration systems.

The following is a summary of the four primary TSS treatment methods, which are outlined in the MDEP methodology:

- <u>Vegetated Buffer Strips</u> Buffer strips are naturally vegetated strips of land preserved downslope of developed areas. These strips intercept and store surface runoff, allowing it to infiltrate rather than flow off-site. Water needs to enter the buffer strips in a sheet flow regime since concentrated flows are not significantly treated by buffers.
- ♦ <u>Infiltration Systems</u> Infiltration systems are more sophisticated. Runoff is collected from rooftop, driveway, and other impervious areas of a lot and then directed to an underground collection point, similar to a subsurface wastewater disposal area, from which it infiltrates into the soil.
- ♦ <u>Wet Ponds</u> Wet ponds are generally used to treat runoff from a large area. They receive and retain stormwater from large drainage areas, allowing suspended solids to settle out. Generally, flows enter wet ponds in a concentrated flow regime.
- ♦ Filters and Separators Filters and separators include treatment devices ranging from simple catch basin outlet hoods to proprietary filtering or settling units. Concentrated flows enter the devices and are treated to remove TSS prior to discharge. Filters remove suspended solids by passing the stormwater through a filtering medium such as sand, fabric, peat, or composted leaves; separating units generally remove suspended solids through the use of gravity settling enhanced by system hydraulics or coalescing media.

12.10.3 Approach and Analysis for Control

<u>Treatment Required</u> - As noted above, stormwater runoff from the non-vegetated area of the roadway should be treated to a 40% TSS removal standard.

Treatment Methods – In evaluating the project site for compliance with 40% TSS removal standard, it is apparent that treatment of the roadways and some developed lots can be attained due to the topography and grading of the property and surrounding area. Use of infiltration or wet ponds is not practicable when considering these various factors. The use of separators was selected as the practicable manner in which to provide treatment. Both Vortechnics and Hydro International water quality devices were analyzed for treatment efficiency. Also, it is proposed that "Snout" sediment hoods be installed on all storm drain structures with outlet pipes 15" or smaller. Though the hoods provide a treatment credit of 10% TSS removal when used in conjunction with other measures, the calculations for TSS removal have been based solely on the use of the structural treatment devices.

<u>Treatment Summary</u> – In summary, the water quality treatment measures proposed for the project will provide an overall weighted treatment efficiency greater than the 40% required for the proposed roadways and impervious surfaces expected to be created through the development of the lots. These treatment devices will also provide for TSS removal for approximately 0.21 acres of non-vegetated surfaces that are located offsite along the north end of Hope Avenue. Therefore, the project as designed would appear to meet the goals established by the City of Portland Staff regarding TSS removal.

Both the Vortechnics and HIL units are sized such that the treatment efficiency for stormwater runoff is 60% for each structural unit. This results in an overall weighted TSS removal rating of 48% for the development. Calculations and supporting information is contained within Attachment B.

Construction BMP's

Additional water quality treatment will be provided during construction by best management practices (BMP). Standard BMP's to be employed include siltation fencing around the downslope construction perimeter, riprap pipe inlet and outlet protection, and erosion control fabrics applied to grassed waterways and slopes prior to revegetation.

12.11 Maintenance of Facilities

The stormwater facilities within Road A and Road B will be maintained by the applicant, or their assigned heirs, prior to the City of Portland accepting the streets. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction as required by the Erosion Control Report. Long-term operation/maintenance recommended for the stormwater facilities is presented below.

- 1. Remove sediment from mechanical treatment devices annually for the first three years to establish sediment accumulation rates, then adjust schedule based upon conditions encountered.
- 2. Remove sediment from catch basins when sediment has accumulated to within 6 inches of the outlet invert, but not less than annually.

12.12 Conclusion

By inspection, due to the site's location in the overall watershed and the size of the Presumpscot River watershed, detention of stormwater runoff from the site is not warranted. Mr. Viola, from the MDEP concurred with this assumption during discussions during a site walk in November 2000 for the previously approved & constructed portion of the development. The project has incorporated water quality enhancement provisions to meet the goals established by City of Portland Staff for TSS removal, which exceeds the requirements contained within the Stormwater Law.

12.13 Attachments

Attached to this section are the following items:

Attachment A – Pipe and Riprap Sizing Calculations

Attachment B – Water Quality Calculations

Attachment C – Presumpscot River Peak Flow Rates

Attachment D - HIL & Vortechnics Maintenance Log Sheets

ATTACHMENT A

Pipe and Riprap Sizing Calculations

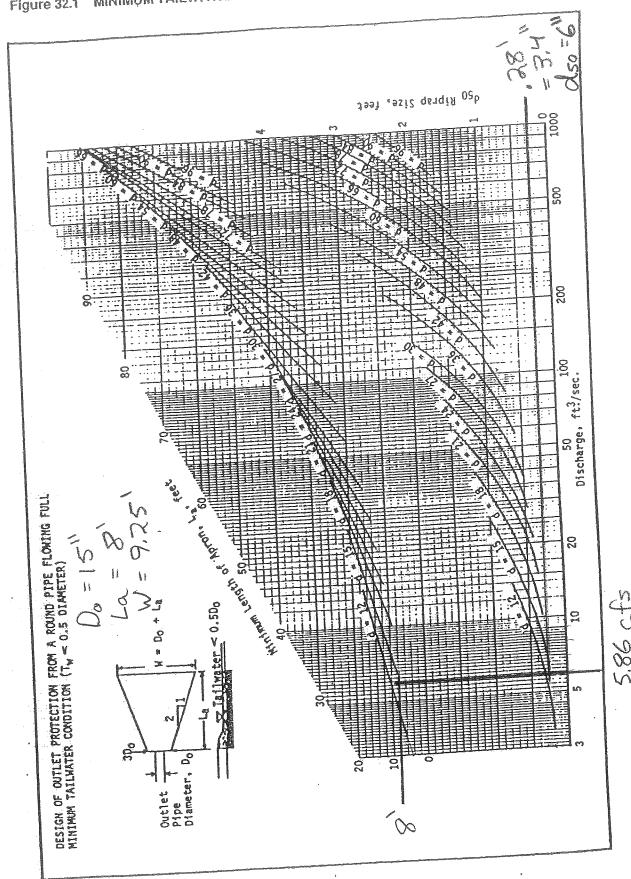
d_{SO} Riprap Size, feet 200 200 Discharge, ft3/sec. DESIGN OF OUTLET PROTECTION FROM A ROUND PIPE FLOWING FULL MINIMUM TAILWATER CONDITION (T_{ψ} < 0.5 DIAMETER) 20 Do + La Outlet Pipe Pipe Diameter, I

Figure 32.1 MINIMUM TAILWATER CONDITION (USDA Soil Conservation Service)

		r	Flow rate cfs)	S	ine ize n)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
	SALES PELISABELAN	4	4.41	30	С	98.0	70.68	72.50	1.857	72.90	74.72	1.44	End
	÷												
													-
							-						
									-				
4	' Cul	lvert	as 30i	nch.s 1	DAF File	: Portland	1.IDF	Total N	No. Lines:	1		Run Da	Run Date: 07-20-

NOTES: c = circular; e = elliptical; b = box; Return period = 25 Yrs.; * Indicates surcharge condition.

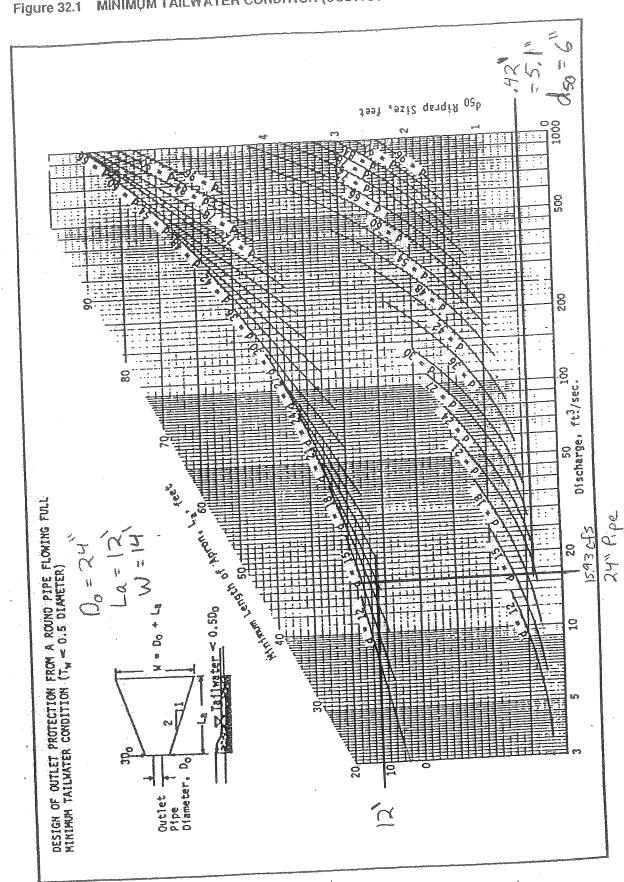
Figure 32.1 MINIMUM TAILWATER CONDITION (USDA Soil Conservation Service)

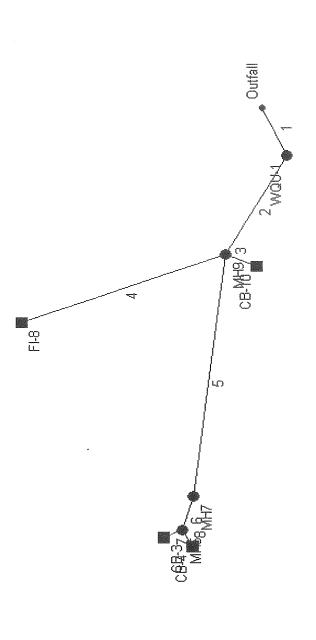


Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	WQU2 TO OUTFAL	5.86	15 c	29.0	73.00	76.51	12.103	73.97	77.48	0.44	End
2	MH1 TO WQU2	5.87	12 c	16.0	75.51	77.91	15.000	77.91	78.86	0.90	1
}	CB-1 TO MH1	3.95	12 c	16.0	81.17	81.33	1.000	82.17	82.33	0.39	2
4	CB-2 TO MH1	1.95	12 c	16.0	81.47	81.63	1.000	82.00	82.23	0.25	2
					•						
Pr	oject File: Rd 'A' WQU:	2 7-20-04.	stm IDF Fi	le: Portlan	d.IDF	Total I	No. Lines:	4	Run Da	ate: 07-21	-2004

NOTES: c = circular; e = elliptical; b = box; Return period = 25 Yrs.; * Indicates surcharge condition.

Figure 32.1 MINIMUM TAILWATER CONDITION (USDA Soil Conservation Service)





IDF file: Portland.IDF

No. Lines: 8

07-21-2004

SEEDING PLAN

Pro	ject: Riverwalk		
Site	<u> Location</u> : Portland, Maine		
\boxtimes	Permanent Seeding	Temporary Seeding	
1.	Instruction on preparation of soil: Pre	pare a good seed bed for plan	ting method used.
2.	Apply lime as follows:# / acres,	OR <u>138</u> #/M Sq. Ft.	
3.	Fertilize with pounds of 1	N-P-K/ac. OR <u>18.4</u> pounds of <u>j</u>	<u>10-20-20</u> N-P-K/M Sq. Ft
4.	Method of applying lime and fertilizer:		
5.	Seed with the following mixture:		
	45% Kentucky Bluegrass		
	45% Creeping Red Fescue		
	10% Perennial Ryegrass		
6.	Mulching instructions: Apply at the re	ate ofper acre, OR <u>115</u>	pounds per M. Sq. Ft.
		Amount	Unit # Tons. Etc.
7.	TOTAL LIME	138	#/1000 sq. ft.
8.	TOTAL FERTILIZER	18.4	#/1000 sq. ft.
9.	TOTAL SEED	1.03	#/1000 sq. ft.
10.	. TOTAL MULCH	115	#/1000 sq. ft.
11.	TOTAL other materials, seeds, etc.		***************************************
12.	. REMARKS		

Spring seeding is recommended, however, late summer (prior to September 1) seeding can be made. <u>Permanent</u> seeding should be made prior to August 5 or as a dormant seeding after the first killing frost and before the first snowfall. If seeding cannot be done within these seeding dates, temporary seeding and mulching shall be used to protect the site. Permanent seeding shall be delayed until the next recommended seeding period.

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	WQU-1 TO OUT	15.93	24 c	31.0	72.00	72.93	3.000	73.41	74.34	0.60	End
2	MH9 TO WQU-1	16.03	18 c	68.0	71.43	76.81	7.912	74.94	78.24	1.33	1
3	CB-10 TO MH9	7.57	12 c	18.0	78.64	79.00	2.000	79.64*	80.45*	1.45	2
4	FI-8 TO MH9	6.32	18 c	117.0	77.32	78.00	0.581	79.56*	79.99*	0.20	2
5	мн7 то мн9	3.12	15 c	145.0	76.91	77.64	0.503	79.56*	79.90*	0.02	2
6	мн5 то мн7	3.14	12 c	21.0	81.11	81.37	1.238	81.78	82.12	0.28	5
7	CB-3 TO MH5	1.35	12 c	11.0	81.97	82.08	1.000	82.41	82.58	0.19	6
8	CB-4 TO MH5	1.81	12 c	11.0	81.97	82.08	1.000	82.47	82.65	0.23	6
	٠										

NOTES: c = circular; e = elliptical; b = box; Return period = 25 Yrs.; * Indicates surcharge condition.

ATTACHMENT B

Water Quality Calculations

Task:

Determine water quality treatment provided using HIL or Vortechnic's units for proposed Riverwalk Subdivision.

References:

- 1 Grading, Drainage & Erosion Control Plans for Riverwalk Single Family Lots by Gorrill-Palmer, dated July 2004
- 2 Stormwater Management for Maine Best Management Practices published by the MDEP, original date Nov. 95, addendum date 12/12/96
- 3 Stormwater Management & Erosion Control 2003 Legislative Summary Section published by the MDEP, May 27, 2003
- 4 Land Use Ordinance City of Portland, Maine reprinted 2004.
- 5 Letter dated August 5, 2002 from Donald Witherill indicating approved stormwater quality standards of 60% TSS removal for HIL Downstream Defender.
- 6 Correspondance from Vortechnics, Inc. indicating approved stormwater quality standards of 60% TSS removal for The Vortechs System.
- 7 Figure 1 Water Quality Treatment Areas.

Computations:

1. Determine % TSS Removal Required

From Ref. 4, Section 14-497.a.1. (Project) Will not result in undue water or air pollution...

From Ref. 2, Section 5.2.2 a subdivision with new or upgraded roads greater than 4,000 s.f. of non-vegetated road surface, should treat at the 40% TSS removal level.

From the above references, it is assumed that the City would require that the subdivision be treated to a level of 40% TSS removal for new roadways and non-vegetated areas associated with the proposed building lots. Based upon the project's layout, a section of Hope Avenue and some non-vegetated areas of adjacent lots uphill of Road 'A' will also be treated by the proposed stormwater system.

The overall level of treatment will be based upon attaining 40% TSS removal on the proposed roadways.

The following calculations and assumptions document the level of TSS removal which will be applied to the proposed non-vegetated surfaces.

Assumptions:

- 1 Each proposed lot is assumed to have non-vegetated areas, based upon a 2,000 s.f. building. Each lot has a 24' wide driveway of varying length associated with it based upon the potential location of the house within the lot. Driveway lengths and lot non-vegetated areas have been included on attached calculations based on the proposed grading and layout plans.
- 2 The proposed roadways will be treated based upon using a HIL 6' diameter Downstream Defender or a Vortechs Model 5000 for WQU#1 and a HIL 8' diameter Downstream Defender or a Vortechs Model 11000 for WQU#2, as determined by the accepted values for TSS removal included within Reference #5 and #6, respectively.

Calculations:

Non-vegetated area tributary to Water Quality Unit #1= Non-vegetated area tributary to Water Quality Unit #2=	1.12 Acres 0.80 Acres
Untreated non-vegetated surface=	0.49 Acres
From Ref. #5 or Ref. #6 the treatment for WQU#1 = From Ref. #5 or Ref. #6 the treatment for WQU#2 =	60% 60%

Statements from Hydro International follow this page, confirming the treatment levels.

Check of Treatment Level (Net Non-Vegetated Area*)

Component	Non-vegetated Area (acres)	TSS Removal Efficiency	Area x Efficiency
Non-treated	0.49	0	0
WQU 1	1.12	60%	0.67
WQU 2	0.59	60%	0.35
Tota	2.20		1.02
Area attributable to lots	s: N/A		
Net Non-vegetated area	*: 2.20 acres		
Areal Treatment Efficiend	cy = <u>Sum of Area x Efficience</u> Net Non-vegetated are		= 47%

Check of Treatment Level (Gross Non-Vegetated Area*)

(,		
Component	Non-vegetated Area (acres)	TSS Removal Efficiency	Area x Efficiency
Non-treated	0.49	0	0
WQU 1	1.12	60%	0.67
WQU 2	0.80	60%	0.48
То	tal 2.41 acres		1.15
Areal Treatment Efficier	ncy = Sum of Area x Efficie Total Non-vegetated		= 48%

Based upon the DEP requirements of only treating the roadways for water quality, the calculations above indicate that the roadways are treated above 40%. It should be noted that based upon the MDEP regulations, a 10% removal rate can be taken for the use of 'The Snout' sediment hoods. This project does propose the use of 'The Snout' sediment hoods on all catch basins, but the additional TSS removal has not been included in calculations.

^{*} Net non-vegetated area is the non-vegetated area from the onsite area only, while the gross non-vegetated area includes 0.21 acres of offsite area and should be considered a credit.

STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION



ANGUS S. KING. JA.
GOVERNOR
AUGUST 5, 2002

Pam Deahl Hydro International 94 Hutchins Drive Portland, ME 04102 RECEIVED

HYDRO INTERNATIONAL

MARTHA KIRKPATRICK COMMISSIONER

Dear Ms. Deahl,

The purpose of this letter is to inform you that, in accordance with the Laboratory Testing Protocol for Manufactured Treatment Systems and based on the results of the confirmation test for removal of OK-110 grade silica sand performed on July 12, 2002 and described in the attached report, the Downstream Defender stormwater treatment device with an aspect ratio of 0.5 is approved for a total suspended solids (TSS) removal rating of 60%, provided that the device is sized such that the projected one year peak flow from the device's drainage area does not exceed the flow indicated by the following formula:

 $Q_{lypf} = 583 (D/4)^{2.5}$ Where:

 Q_{1ypf} = the projected one year peak flow from the device's drainage area and D = the diameter in feet of the device's treatment chamber

This scaling factor is based on Froude's Law and on the fact that a 4 ft diameter Downstream Defender has been shown to provide at least 80 % removal of OK-110 grade silica sand at a flow of 583 gpm (see attached report). Solutions of this formula for a variety of Downstream Defender diameters are given in the following table.

Maximum 1 year peak flow (gpm//cfs)	
103//0.23	
583//1.30	æ
1607//3.58	
3297//7.35	
5761//12.85	
9088//20.27	
	103//0.23 583//1.30 1607//3.58 3297//7.35 5761//12.85

If you have any questions regarding this letter or the attached report, please feel free to call Jeff Dennis at 207-287-7847.

Sincerely,

Sonald T. Witherill

AUGUSTA Division of Watershed Management 17 STATE HOUSE STATION BANGOR AUGUSTA. MAINE 04113-0017 106 HOGAN ROAD

(207) 287-7688 RAY BLDG., HOSPITAL ST. ETSHED IMANAGEMENT BANGOR 106 HOGAN ROAD BANGOR, MAINE 64401 (207) 941-4570 FAX: (207) 941-4584

PORTLAND 312 CANCO ROAD PORTLAND, MAINE 04103 (207) 822-6300 FAX: (207) 822-6303 PRESQUE ISLE 1235 CENTRAL DRIVE, SKYWAY PARK PRESQUE ISLE, MAINE 04769-2094 (207) 764-0477 FAX: (207) 764-1507



Important Announcement

The Vortechs System now approved by the ME DEP for 60% TSS removal.

In accordance with the Laboratory Testing Protocol for Manufactured Treatment Systems and based on the results of the confirmation testing performed on May 1, 2002, the Vortechs Stormwater Treatment System is approved for a total suspended solids (TSS) removal rating of 60%.

To qualify for the 60% TSS removal rating Vortechs Systems shall be sized so that the projected one-year flow to the system does not exceed a grit chamber loading rate of 36.8 g.p.m./s.f.

If a 50% TSS removal is required, systems should be designed to have grit chamber loading rates of not greater than 42 g.p.m./s.f in the one-year storm.

Please refer to the chart below for system sizing.

Vortechs	Diameter	Grit Chamber	50% Removal Rate	60% Removal Rate
Model	(ft)	Area (ft²)	24 Hour – 1 Year	Flow (cfs)
1000	3	7.07	0.66	0.58
2000	4	12.57	1.18	1.03
3000	5	19.63	1.84	1.61
4000	6	28.27	2.65	2.31
5000	7	38.48	3.60	3.15
7000	8	50.27	4.70	4.11
9000	9	63.62	5.95	5.20
11000	10	78.54	7.35	6.42
16000	12	113.10	10.58	9.25

As always, if you have any questions don't hesitate to contact Vortechnics with any issues dealing with stormwater quality.

Vortechnics Contacts:

Jennifer Knowles Technical Support Engineer jknowles@vortechnics.com 207-885-8930 x 324

Kevin McKee, PE Regional Sales Engineer kmckee@vortechnics.com 207-885-8930 x 232

ATTACHMENT C

Presumpscot River Peak Flow Rates

Task:

Determine Peak flow in cubic feet per second for 2,

10, and 25 year storm.

References:

Information provided by the US Geological Survey titled Estimating the Magnitude of Peak Flows for Streams in Maine

for Selected Recurrence Intervals.

Assumptions:

Gauging Station used Presumpscot River at Westbrook, Maine Station is approximately 5.5 miles upstream from the site.

Computations:

From table 1 Peak Flow (cubic meters per second)

 2 year storm
 150

 10 year storm
 280

 25 year storm
 368

Peak Flow (cubic feet per second)

 2 year storm
 5301

 10 year storm
 9895

 25 year storm
 13005

Estimating the Magnitude of Peak Flows for Streams in Maine for Selected Recurrence Intervals

by Glenn Hodgkins

U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 99-4008

Prepared in cooperation with the MAINE DEPARTMENT OF TRANSPORTATION

Augusta, Maine 1999

um recorded flows for selected U.S. Geological Survey streamflow-gaging stations—Continued

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01062700	Pate Brook nr Bethel, Maine	ବ୍ୟତ	6.35	1. C. t. 4. O. d.	15.55 15.55 15.55	20.5	26.2 26.2 26.2	31:2	2.44 5.45 5.45	4-7-1902.	1984	. 1886-1996		1.18
01064000	Presumpscot River at Outlet of Sebago Lake, Meine	O	36.2 ^h	42.95	78.9h	110 ⁴	38.	534	262	10-22-1996	099	1895-1996	× V9	1,500
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Estimating the Magnitude of Peak Flows for Streams in Maine for Selected Recurrence intervals—USGS-WRIR 99-4008 16

ATTACHMENT D

HIL & Vortechnics Maintenance Specifications

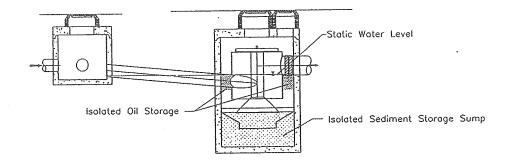


DOWNSTREAM DEFENDER® OPERATION AND MAINTENANCE

The Downstream Defender operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. Therefore, no procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The Downstream Defender has been designed to allow for easy and safe access for inspection/monitoring and clean-out procedures. Entry into the unit or removal of the internal components is not necessary for maintenance so that safety concerns related to confined-space-entry are avoided.

The internal components of the Downstream Defender have been designed to protect the oil, floatables and sediment storage volumes so that treatment capacities are not reduced as pollutants accumulate between clean-outs. Additionally, the Downstream Defender is designed and installed into the storm drain system so that the vessel remains wet between storm events. Oil and floatables are stored on the water surface in the outer annulus separate from the sediment storage volume in the sump of the unit providing the option for separate oil disposal, such as adsorbant pads. Since the oil and floatables storage volumes are isolated from the sediment storage, only the pollutant volumes need to be removed. The units are typically not completely drained, which minimizes disposal costs.

Keeping the unit wet also prevents stored sediment from solidifying in the base of the unit. The clean-out procedure becomes much more difficult and labor intensive if the system allows fine sediment to dry-out and consolidate. When this occurs, clean-out crews must enter the chamber and manually remove the sediment; a labor intensive operation in a hazardous environment.

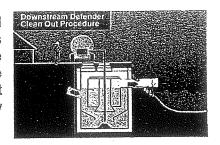


The Downstream Defender has large clear openings and no internal restrictions or weirs, minimizing the risk of blockage and hydraulic losses. Orifices and internal weirs can create two serious hydraulic problems:

- Increased risk of blockage Small orifices tend to collect debris and trash such as soda cans, sticks and Styrofoam cups which further reduce opening size and may even block openings completely. This alters the hydraulics in a flow-through treatment device, adversely affecting operation and performance and can eventually lead to system back-ups and maintenance issues. Removing debris from a submerged orifice may require pumping down the chamber.
- 2. Increased headlosses Internal restrictions and weirs significantly increase hydraulic losses in a flow-through treatment device. The higher the flow through the system, the higher the headloss. This problem is exacerbated during the more intense storm events, backing up the storm sewer and increasing the risk for upstream flooding.

MAINTENANCE PROCEDURE

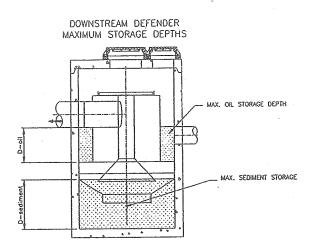
A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole. The floatables access port is above the area between the concrete manhole wall and the dip plate. The sediment removal access port is located directly over the hollow center shaft.





The frequency of the sump vac procedure is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe can be used to determine the level of solids in the sediment storage facility. This information can be recorded in the attached maintenance logs to establish a routine maintenance schedule. Maximum pollutant storage capacities are provided in the following chart.

In order to minimize disposal costs, removing oil and floatables prior to removing sediment is recommended. Removing the entire oil, floatables and sediment storage volumes is not required unless the pollutant depths are equal to the maximum storage capacities as indicated in the chart shown below. The vactor procedure for a typical 6-ft diameter Downstream Defender with one foot of sediment depth and two inches of oil and debris takes less than 30 minutes and removes about 150 gallons of water in the process.



-	UNIT DIAMETER	TOTAL OIL STORAGE	OIL CLEAN-OUT DEPTH	TOTAL SEDIMENT STORAGE	SEDIEMNT CLEAN-OUT DEPTH	UNIT DIAMETER
Ì	(FEET)	(GAL.)	(INCHES)	(GAL.)	(INCHES)	(FEET)
Ī	4	70	<16	141	<18	4
	6	230	<23	424	<24	6
1	8	525	<33	939 .	<30	8
ĺ	10	1050	<42	1,757	<36	10

NOTES: 1. OIL ACCUMULATION IS TYPICALLY MUCH LESS THAN SEDIMENT, HOWEVER, REMOVAL OF OIL AND SEDIMENT DURING THE SAME SERVICE IS RECOMMENDED.

2. IT IS NOT NECESSARY TO DRAIN THE UNIT'S ENTIRE VOLUME.
REMOVAL OF FLOATABLES FIRST, THEN ONLY THE UNIT'S SEDIMENT
STORAGE VOLUME AS INDICATED IN THE ABOVE CHART IS RECOMMENDED.



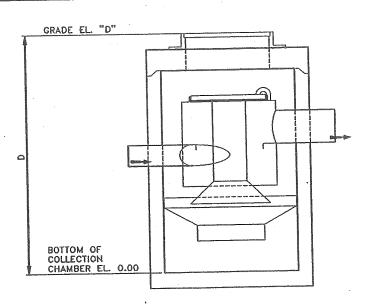
DOWNSTREAM DEFENDER MAINTENANCE LOG

Hydro Ref. No.: Site Name: Site Location:	
Owner:	Contractor:
Contact Name:	Contact Name:
Company Name:	Company Name:
Address:	Address:
Telephone:	Telephone:
Fax:	Fax:

Installation Date:

Downstream Defender Diameter:_____

Downstream Defender Depth: ("D"):______



DOWNSTREAM DEFENDER MAINTENANCE LOG

Date	Initials	Depth of Floatables and Oils	Sediment Depth ("D" less measurement)	Volume of Sediment Removed	Site Activity/Comments
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Vortechs™ Stormwater Treatment System:

Inspection & Maintenance

The Vortechs System requires minimal routine maintenance; however, it is important that the system be properly inspected and cleaned when necessary in order to function at its best. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit, e.g., heavy winter sanding will cause the grit chamber to fill more quickly, but regular sweeping will slow accumulation.

Inspection

Inspection is the key to effective maintenance and it is easily performed. In the first year of operation, frequent inspections of the accumulated sediment volume within the grit chamber are necessary to establish an appropriate maintenance plan. Vortechnics recommends quarterly (e.g. seasonal) inspections during the first year of Vortechs System operation. Inspections should be performed more often in the winter months in climates where street sanding operations may lead to rapid accumulations, or in equipment washdown areas. After the first year, the inspection schedule should be reviewed and modified according to experience. It is very useful to keep a record of each inspection. A simple form for doing so is provided.

For sediment, the Vortechs System only needs to be cleaned when inspection reveals that it is nearly full; specifically, when sediment depth has accumulated to within six inches of the dry-weather water level. This determination can be made by taking 2 measurements with a stadia rod or similar measuring device: one measurement is the distance from the manhole opening to the water surface, and the other is the distance from the manhole opening to the top of the sediment pile. If the difference between the two measurements is less than six inches, the system should be cleaned out. Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Finer, silty particles at the top of the pile typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.

In Vortechs installations where the risk of large petroleum spills is small, liquid contaminants are not likely to accumulate as quickly as sediment. For oil and grease under normal conditions, Vortechs Systems should be pumped out when an appreciable layer of oil has accumulated. Vortechs Systems can be designed to trap catastrophic spill events, providing for oil storage of up to 3 feet.

Cleaning

Cleanout of the Vortechs System with a vacuum truck is generally the most effective and convenient method. Alternate cleanout methods include the use of absorbent materials for oil removal or a "clamshell" device for sediment removal. Cleanout should not occur within 6 hours of a significant rain event, to allow for the entire collection system to drain down.

Properly maintained Vortechs Systems will only require evacuation of sediment and oil/grease from the grit chamber portion of the system, in which case it is necessary to remove only the manhole cover nearest to the system inlet to remove water and contaminants. However, all chambers should be checked to ensure the integrity of the system. In cases where a "clamshell" is being utilized, prior to removing the grit (as described above), absorbent pads or pillows can be placed in the oil chamber through the center access manhole. Once the oil has been absorbed, the absorbent materials can be taken out of the system for disposal.

In some cases, it may be necessary to pump out all Vortechs System chambers. An important maintenance feature built into Vortechs Systems is that floatables remain trapped after a cleaning, due to a waterlock maintained between the grit chamber and the outlet panel which keeps the bottom of the baffle submerged. Therefore, in the event of cleaning all chambers, it is imperative that the grit chamber be drained first. It is important that the Vortechs System be filled to the outlet pipe with clean water to re-establish the water lock.

Manhole covers should be securely seated following cleaning activities to ensure that surface runoff does not leak into the unit from above.



Vortechs™ Stormwater Treatment System Inspection & Maintenance Log

Model: 7000			Location: 123 Main Street, Capitol City, USA		
Date	Depth from Water Surface to Sediment — Max Depth 6"	Floatable Layer Thickness (approx)	Maintenance Performed	Maintenance Personnel	Comments
4/10/96	30"	0"	N/A	B. Johnson	Installed
8/15/96	26"	sheen	None	S. Ríley	
11/15/96	22"	shes	Ine J D	B. Johnson	
1/15/97	16"	sheen	None	B. Johnson	
2/15/97	7"	1"	Clean-out scheduled	S. Ríley	3 snowstorms
2/18/97	30"	0"	System cleaned w/ Vactor truck	S. Ríley	Cleaned
3/15/97	28"	Sheen		S. Ríley	swept parking lot
4/15/97	27"	0.5"	Placed oil-absorbent material in system	B. Johnson	
5/16/97	23"	0"	Replaced oil-absorbent material w/new	B. Johnson	
		-			
				STORAGE STATE STAT	

^{1.} The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement is the distance from the manhole opening to the water surface, and the other is the distance from the manhole opening to the top of the sediment pile. If the difference between the two measurements is less than six inches the system should be cleaned out.

^{2.} The system should be cleaned out when an appreciable layer of oil and/or other floating material has accumulated.



Vortechs™ Stormwater Treatment System Inspection & Maintenance Log

Model:			Location:			
Date	Depth from Water Surface to Sediment — Max Depth 6°	Floatable Layer Thickness 2 (approx)	Maintenance Performed	Maintenance Personnel	Comments	
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		- Land Control of the	·			
Volumental						
			-			
		·				

^{1.} The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement is the distance from the manhole opening to the water surface, and the other is the distance from the manhole opening to the top of the sediment pile. If the difference between the two measurements is less than six inches, the system should be cleaned out.

^{2.} The system should be cleaned out when an appreciable layer of oil and/or other floating material has accumulated.

SECTION 14 EROSION AND SEDIMENTATION CONTROL PLAN

14.1 Overview

Chapter 375 of the Site Law Regulations, Section 5 requires that applicants for approval demonstrate that the developer has made adequate provision for controlling erosion and sedimentation.

14.2 Introduction

Gorrill-Palmer Consulting Engineers, Inc. has been retained by Burt Wolf to prepare a Stormwater Analysis Report for the proposed Riverwalk subdivision, which is located off Hope Avenue in Portland, Maine. Figure 1 is an excerpt from the U.S.G.S. Portland West quadrangle map showing the project location. The developer is currently seeking Subdivision Approval from the City of Portland and a Site Location of Development Act Permit Modification for the development of a 24-lot subdivision with approximately 1,400 feet of roadway. The project will consist of 23 lots that will support individual age-restricted single-unit homes and a large lot to remain undeveloped at this time. This narrative contains the general erosion and sedimentation control measures, which are appropriate for the infrastructure and lot construction.

14.3 Narrative

14.3.1 Existing Conditions and Soil Types

The project site consists of approximately 22.5 acres of land north of Hope Avenue in the North Deering neighborhood. The development site is currently undeveloped. Abutting land uses include:

Northwest - Undeveloped

Northeast - Presumpscot River

♦ Southeast - Residential

Southwest - Residential

Topography on the site varies from relatively flat slopes; 2% - 6% for the northerly portion, to relatively steep slopes; 25% - 40% for the southerly portion of the site. There are several existing drainage swales along the southern portion of the site.

A Class B Soil Survey has been completed by S.W. Cole Engineering, Inc. A copy of the survey is located within Section 11 of the MDEP Site Location Permit Modification. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. The higher values are indicative of the more erodible soils. The following table lists the soils and their K values:

	KVALUE	
Type	Subsurface	Substratum
Boothbay	0.32	0.49
Lamoine	0.32	0.49
Scantic	0.49	0.49
Swanville	0.28	0.49
Turnbridge-Lyman Complex	0.17	0.20

Based on a review of the K Values, the on-site soils are moderately susceptible to erosion.

14.3.2 Critical Areas

If clearing of the lots is to be undertaken during roadway construction, the slopes at the westerly portions of lots 7 and 8 would be considered critical areas.

14.3.3 Protected Natural Resources

Based upon the work conducted for the project, wetland areas have been identified within the limit of the project by Mark Hampton Associates, Inc. of Portland, Maine. Minimal wetland impacts are anticipated as a result of the roadway construction and lot development. Wetlands associated with the floodplain of the Presumpscot River will not be affected, as a 500' buffer between the site and the riverbanks will be maintained.

14.3.4 Erosion Control Measures and Site Stabilization

The primary emphases of the erosion/sedimentation control plan to be implemented for the infrastructure construction are as follows:

- Development of a careful construction sequence.
- Rapid revegetation of denuded areas to minimize the period of soil exposure.
- Rapid stabilization of drainage paths to avoid rill and gully erosion.
- The use of on-site measures to capture sediment (hay bales/silt fence, etc.)

The following temporary and permanent erosion and sediment control devices will be implemented as part of the site development. These devices shall be installed as indicated on the plans or as described within this report. For further reference, see the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices.

A. Temporary Erosion Control Measures

The following measures are planned as temporary erosion/sedimentation control measures during construction:

- 1. Crushed stone-stabilized construction entrances shall be placed off from Hope Avenue at the intersections with the proposed roads.
- 2. Siltation fence or wood waste compost berms shall be installed downstream of any disturbed areas to trap runoff borne sediments until the roadway side slopes are revegetated. The silt fence and/or the wood waste compost berms shall be installed per the details provided in this package and inspected immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence or berm line. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind fence or berm, the barrier shall be replaced with a stone check dam. Wood waste compost berms are not to be used adjacent to wetland areas that are not to be disturbed.