

SITE PLAN REVIEW

CAMP PEMBROKE YURT VILLAGE

**306 Oldham Street
Pembroke, Massachusetts**

Prepared for:
**Eli & Bessie Cohen Camps of
Massachusetts, Inc.
888 Worcester Street, Suite 350
Wellesley, MA 02482**

Prepared by:



BEALS + THOMAS

BEALS AND THOMAS, INC.
32 Court Street
Plymouth, MA 02360-3866

*Submitted in Compliance with the Town of Pembroke
Zoning Bylaws and the Planning Board Rules and
Regulations Governing the Issuance of Site Plan
Approval*

November 1, 2019

November 1, 2019

Rebecca Coletta, Chairperson
Pembroke Planning Board
c/o Matthew Heins
100 Center Street
Pembroke, Massachusetts

Via: FedEx and Email to mheins@townofpembrokemass.org

Reference: Site Plan Review Application
Camp Pembroke Yurt Village
306 Oldham Street
Pembroke, Massachusetts
B+T Project No. 1762.11

Dear Chairperson Coletta and Members of the Commission:

On behalf of the Applicant, Eli & Bessie Cohen Camps of Massachusetts, Inc., Beals and Thomas, Inc. (B+T) respectfully submits this Site Plan Review Application for the development of a common house and four (4) yurts as an addition to the existing Camp Pembroke. The proposed development includes the installation of a $\pm 2,600$ square-foot common house, four (4) yurts, and gathering area and firepit at 306 Oldham Street in Pembroke, Massachusetts (also identified as 290 Oldham Street by the Pembroke Assessors). This filing is submitted in accordance with Massachusetts General Law (MGL) Chapter 40A, Section 3, referred to as the Dover Amendment, the Town of Pembroke Zoning Bylaws (the Bylaws) and the Planning Board Rules and Regulations Governing Issuance of Site Plan Approval (the Regulations). A Notice of Intent was filed with the Pembroke Conservation Commission for work within the 100-foot buffer zone, with an associated Order of Conditions approving the project forthcoming.

Please see Section 2.5 herein for Waiver Request Information.

As required, enclosed are three (3) copies of the Site Plan Review Application submission package, six (6) full sized plan sets, and four (4) 11x17 plan sets. The following information is included for your review:

Section 1: Site Plan Review Application Form;
Section 2: Project Narrative;
Section 3: Abutter Information;
Section 4: Stormwater Management Information;
Section 5: Plans.

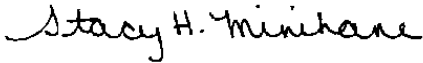
Rebecca Coletta, Chairperson
Pembroke Planning Board
November 1, 2019
Page 2

Pursuant to requirements of the Bylaw, we understand that the Planning Board will notify abutters within 300 feet of the subject property and appropriate mailing materials (envelopes, certified mail forms, and return receipt forms with the return address addressed to the Office of the Planning Board) are included with this submission. Enclosed is a check payable to the Town of Pembroke in the amount of \$1,000.00 for the appropriate filing fee as required by the Regulations and a check for \$500.00 for the administrative review fee. A third check for \$6,000 is enclosed as a deposit for the engineering review fee. It is our understanding that the legal ad will be published in the Pembroke Mariner Express by the Planning Board and the related fee will be deducted from the engineering review deposit.

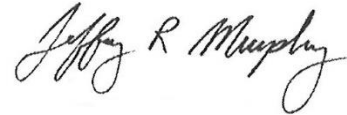
Should you have any questions regarding this matter or require additional information, please contact us at (508) 366-0560. We thank you for your consideration of this Site Plan Review Application and look forward to meeting with the Board at the next available public hearing.

Very truly yours,

BEALS AND THOMAS, INC.



Stacy H. Minihane PWS
Senior Associate



Jeffrey R. Murphy PE
Civil Engineer

Enclosures

cc: Eli & Bessie Cohen Camps of Massachusetts, Inc. (1 copy via U.S. Mail)

CEB/shm/cmv/176211PT001



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Section 1.0
Site Plan Review Application Form

TOWN OF PEMBROKE
APPLICATION FOR SITE PLAN APPROVAL

Submit to Town Clerk with \$1,000.00 Filing Fee and Complete Site Plans as required in Section V. 7., Site Plan Approval of the Zoning By-laws.

Name of Applicant: Eli and Bessie Cohen Camps, of Massachusetts, Inc.

Address: 888 Worcester Street, Suite 350, Wellesley, MA 02482

Telephone: (781)489-2070

E-Mail: jcohen@cohencamps.org

If applicant is not the owner complete the following. NOTICE: written permission of the owner is required for a complete application.

Name of Property Owner: _____

Address: _____

Telephone: _____ Email: _____

Property Address: 306 (aka 290) Oldham Street, Pembroke, MA

Assessors Map(s) and lot(s) number: B10-15

Zoning District: Residential A

Explain current use of property, attach additional information if needed: The property is occupied by Camp Pembroke and used as a religious youth camp.

Explain proposed use of property, attach additional information if needed: The use is not proposed to change.

	By-law Requirement	Existing Condition	Proposed Condition
Site Size (Sq. ft.)	40,000	1,598,783	1,598,783
Structure Coverage	N/A	9.6%	10.0%
Frontage	40	242	242
Side yard Setbacks	20	40	40
Rear yard Setbacks	25	35	35
Sideline Buffers (ft.)	N/A	± 300	±235
Rear line Buffer	N/A (Abuts Oldham Pond)	N/A (Abuts Oldham Pond)	N/A (Abuts Oldham Pond)
Frontline Buffer	N/A	N/A	±560
Parking Spaces (No)	0	Unknown	No change

Anticipated Traffic: (Vehicle number per day)

Trucks: 0

Autos: 0

Employee Autos: 0

Section 2.0

Project Narrative

2.0 PROJECT NARRATIVE

2.1 Introduction

The Proposed Project consists of the addition of a Yurt Village (the Project) which will include a $\pm 2,600$ square-foot (SF) meeting house that will contain bathrooms, three (3) bedrooms, and showers as well as some office space and a common room utilized by the Camp. The Yurt Village will also have four (4) yurts installed to the south of the meeting house as seasonal housing. The Project is located in the southwest corner (the Site) of 306 (aka 290) Oldham Street in Pembroke, Massachusetts (the Property), also known as Camp Pembroke. The entire property is located within the Residential A District and the Wellhead Protection Zone II of the Water Resource and Groundwater Protection District according to the Town of Pembroke's Assessor database. The Camp was established over 85 years ago as a religious youth camp during the summer months and has been gradually expanded to benefit the increase in interest in the Camp. The property fronts on the south side of Oldham Street and is located to the north of Oldham Pond and is otherwise surrounded by single-family residents. The Site is adjacent to wooded areas on the Camp property, just north of the pond.

2.2 Existing Conditions

Camp Pembroke fronts on the south side of Oldham Street at 306 Oldham Street, identified as 290 Oldham Street, parcel B10-15 by the Pembroke Assessors Office. The property is approximately 37-acres. The property is located to the north of Oldham Pond and is otherwise surrounded by single-family dwellings in the Residential A District. On the north side of the property, there are several buildings including the main office building, meeting houses, tennis courts, a basketball court, and a baseball diamond. On the southern side of the property, there are fifteen bunkhouse units, a soccer field, and a recreational building. There are several paved and gravel paths and roads distributed throughout the property.

2.3 Proposed Conditions

The proposed Project will be located on the southwest side of the property and consist of the four yurts around a gathering area with a fire pit centrally located. The Project also proposes a new common house to the north of the Yurts. This expansion of the development already on the property is minimal in comparison to the size of the Camp. The proposed Yurts would be approximately 30' in diameter, constructed on a wooden platform on top of helical screw or concrete piles. The proposed common house is anticipated to be approximately $\pm 2,600$ SF consisting of additional bedrooms, showers and restrooms, office space, a storage area, and a large common room. The building will also have a porch off the south side of the building, for a total footprint of $\pm 3,250$ SF. Access to the Yurt Village will be via wood chip footpaths off existing pathways.

The common house is proposed to have water, sewer, propane (for the water heaters), internet access, and electricity connection to support the use of the bathrooms, showers, and office/meeting areas. The proposed electricity is to connect to the poles located on

the east side of the site and to continue aboveground to coincide with the existing state of the Camp's electrical connections. The Yurts will include electricity sourced from the common house. The septic system for the proposed common house will be designed and permitted by others. Stormwater management facilities are proposed to be implemented on the Site to address the additional impervious surface created by the Project. Tree and shrub trimming will also be undertaken in the vicinity of the Yurt Village, to provide maximum safety, while leaving as much natural vegetation as possible. Some of the trees in the area will need to be cleared or trimmed to prevent potential hazard to campers and staff. The property has suffered much wind damage in the past few years so the Camp is very cognizant of the potential hazards.

2.4 Conformance with Applicable Requirements

The Applicant proposes this Project in accordance with MGL c.40A, s. 3: Massachusetts Zoning Law stating that no zoning ordinance or by-law shall prohibit, regulate or restrict the use of land or structures for religious purposes or for educational purposes on land owned or leased by the commonwealth or any of its agencies, subdivisions or bodies politic or by a religious sect or denomination, or by a nonprofit educational corporation; provided, however, that such land or structures may be subject to reasonable regulations concerning the bulk and height of structures and determining yard sizes, lot area, setbacks, open space, parking and building coverage requirements. Additionally, the Project has been designed to meet the requirements of the Pembroke Bylaw and Regulations as outlined below.

2.4.1 Regulations Section V – Site Plan Requirements

5.1.1 Every effort shall be made to retain and protect existing (6" trunk diameter or greater measured 4 feet above grade) trees, shrubs and other landscape features on a site.

The Project has been sited to avoid tree clearing to the extent practicable, considering existing constraints including buildings, an abandoned soil absorption system to the east, and a soccer field to the north. That said, tree clearing has been minimized by siting the Project partially within the southern portion of the existing soccer field. Additionally, the limit of clearing has been maintained immediately adjacent to the yurts and common house in order to further minimize clearing. Brush and stumps will be disposed of in accordance with applicable requirements.

5.1.2 Regarding foundation landscaping, refer to the Waiver request in Section 2.5.

5.1.3 A undisturbed natural buffer area shall be maintained from any wetland resource area defined under the Massachusetts Wetland Protection Act and recognized by the Pembroke Conservation Commission. Stairways, decks, fences

and water dependent structures (and the grading for such) internal to parking lots and around buildings are not exempted from the minimum setback requirements.

At a minimum, a 20-foot setback will be maintained between the Bordering Vegetated Wetland (BVW) and the yurts, and a 60-foot setback has been maintained from the common house. At the October 7, 2019 hearing, the Pembroke Conservation Commission voted to approve the Project.

5.1.4 It is the purpose of these Rules and Regulations to preserve and/or maintain open space for new sites. Therefore, any lot or group of contiguous lots totaling less than three (3) acres shall provide twenty-five (25) percent open space. Any lot or group of contiguous lots totaling more than three (3) acres shall provide thirty-five (35) percent open space.

The Property is not a new lot and consists of a total of 37-acres. The existing conditions provide 90.4% open space. The proposed conditions will result in 90.0% open space onsite.

All open space areas on a site shall be adequately landscaped with trees, shrubs, flowers, grass, and/or mulch, wherever feasible, open space shall be contiguous with other open space of abutting land and must be continuously maintained by the owner.

The majority of the existing property is not to be altered by the work described in this application and therefore the existing landscaping will not be altered. The project is located adjacent to other developed areas of the Camp and such remaining open space will be contiguous with other open space onsite and of abutting land. Native shrubs and trees are proposed within the project area. Refer to the enclosed Plans for further landscaping information.

5.1.5 Parking lots containing ten (10) or more parking spaces shall have at least one tree per six (or fractions of six) parking spaces ... Such trees to be located within the paved parking area. Such trees shall be at least four (4)" trunk diameter measured twelve (12)' to eighteen (18)' above the ground with a minimum of sixty (60) square feet of seeded or landscaped permeable surface area per tree. When parking areas contain twenty-five (25) or more spaces, at least five (5) percent of the parking area shall be maintained with landscaping (within the interior of the parking area), including trees as above, in plots of at least ten (10) feet in width. Trees and landscaped plots shall be so designed and located as to provide visual relief and sun and wind screening within the parking area, and to assure safe patterns of internal circulation. Planting areas are required along parking area perimeters to prevent off-site glare onto the public or private way(s). Parking lot plantings shall not block motorists' line of sight upon

entering and exiting a site. Any landscaped area described above can be used to meet the open space requirement of this section for new sites.

The Project does not propose any additional parking and the existing conditions of the onsite parking are not proposed to be altered with this Application.

5.1.6 All residential properties shall be protected by a landscaped buffer strip with a minimum width of 50 feet, with such berms, fences, sound walls, and plantings deemed necessary by the Planning Board to protect neighboring residences.

The limit of work is approximately 235-feet from the closest abutting property line. This buffer is fully wooded.

5.2 Site Lighting

Access ways, parking areas, and pedestrian walkways shall have adequate lighting for security and safety reasons. Lighting shall meet the following standards: Standards 5.2.1 through 5.2.5

The exterior of the common house is proposed to have lights at all building entrances for the safety of the occupants entering and exiting at night and low path lights between the building and the yurts. The proposed lighting will be aimed downward to prevent light pollution and designed to appear decorative in nature.

The lighting proposed to be located at the entrances and exits of the proposed buildings will not exceed the height of the building's roofline and the light fixtures along the pathways will not exceed 12 feet in height.

Proposed lighting will meet the requirements of 5.2.1 through 5.2.5.

5.3 Drainage

Refer to the enclosed Plans in Section 5.0 and the Stormwater Management Report in Section 4.0 herein for additional drainage system and stormwater management information. Note that the Project meets the stormwater standards to the maximum extent practicable.

The drainage system shall be designed so that there is no net increase in the pre v. post peak rates of storm water discharge for the 2, 10- and 100-year storm events and rates. The applicant shall demonstrate to the satisfaction of the Planning Board that the project is designed to have no measurable or significant impact as to existing vegetation, topography, wetlands, and other natural or man-made features.

Peak rates of runoff are maintained to the maximum extent practicable in accordance with the Stormwater Management Handbook, and the design meets the intent of this provision given the character of the Project. Refer to the Stormwater Management Report in Section 4.0 for additional information.

The system shall be designed to treat storm water to all applicable standards of town state and federal agencies. The system design shall promote on-site infiltration and minimize the discharge of pollutants to the ground and surface water.

The proposed infiltration trenches are designed to recharge the required volume of clean roof runoff in accordance with MassDEP stormwater standards.

Drainage systems shall have an emergency overflow for the one hundred (100) year storm event.

The proposed infiltration trenches are sized to infiltrate the required volume of runoff based on the proposed impervious area and the soil type onsite. Due to the highly permeable onsite soils, as documented by the NRCS mapping of Hinckley loamy sand (HSG A) and prior test pits done in the area, an overflow for the trenches and chambers is not anticipated to be necessary.

Additionally, the drainage system will be designed in accordance with Stormwater Management Volume I and II prepared by: MA Department of Environmental Protection and MA Office of Coastal Zone Management as most recently revised.

The proposed stormwater system has been designed to comply with the MassDEP stormwater standards.

In special cases, the site drainage can utilize the Town's drainage system with the approval of the Highway Department. The Planning Board requires that proper calculations be submitted. A minimum of one foot of freeboard shall be provided for all detention/retention structures.

The proposed project will not create discharge to the Town's drainage system. The freeboard requirement does not apply to the type of infiltration that is proposed.

5.3.1 Design Criteria: The applicant shall use the best available drainage systems. The suitability of the drainage design shall be based on the natural features, such as soil types, slope, vegetative cover, water table etc., of the site. Drainage plans shall be developed in consultation with the Planning Board office and the Board's consultants with the following objectives in mind:

5.3.1.1 Protection of surface and groundwater quality;

Additional runoff from the proposed work will only result in clean roof runoff that is planned to be infiltrated onsite.

5.3.1.2 Public safety;

Stormwater BMPs will be built into flush with existing grades or below grade which will provide protection of the BMPs and public safety.

5.3.1.3 Protection of existing abutting properties and septic systems;

The proposed drainage system will be self-contained on the property and sufficiently off-set from existing septic systems.

5.3.1.4 Enhancement of and connection to natural drainage systems, including streams, floodplains, and associated wetlands;

The infiltration from the additional runoff is designed to imitate the natural flow of stormwater onsite and allow for natural groundwater recharge.

5.3.1.5 Attractiveness of the plan, minimizing disruption to existing features, and successful imitation of natural systems;

The infiltration from the additional runoff is designed to imitate the natural flow of stormwater onsite and allow for natural groundwater recharge.

5.3.1.6 Minimizing of long-term maintenance and/or reconstruction obligations.

The infiltration trenches are designed to be low maintenance for short and long-term use. Further requirements regarding operation and maintenance of the Stormwater BMPs are outlined in the Site Owner's Manual in the Stormwater Management Report in Section 4.0.

5.3.2 Performance Standards:

On site drainage systems, including detention/retention areas, shall meet the following:

5.3.2.1 A twenty-five (25) foot buffer screen that is aesthetically pleasing of existing vegetation shall be retained between all detention or siltation structures and adjacent off-site uses (roadways and/or structures).

There is a vegetated buffer of at least 235-feet between the closest adjacent property line, and the proposed limit of work. BMPs are designed to be implemented underground and therefore will not have an esthetic impact to the surrounding properties.

5.3.2.2 A thirty (30) foot buffer zone of existing vegetation shall be retained between all point source discharges of stormwater and surface waters and wetlands;

There are no point source discharges proposed with this Project.

5.3.2.3 All piping within the drainage system shall be sized for the twenty-five (25) year storm event.

There is no proposed drainage that will involve piping.

5.3.2.4 Detention facilities shall be designed to function as natural wetlands, having characteristics of side slopes, gradients, vegetation and topographic location which follow naturally occurring wetland.

There are no detention basins proposed.

5.3.2.5 Side slopes of detention/retention facilities should be no steeper than 3: 1 horizontal to vertical relationship unless steeper slopes can be shown to be typical for conditions on the site;

There are no detention/retention basins proposed.

5.3.2.6 A maximum of 2% slope shall be permitted for the bottom of the basin;

There are no detention/retention basins proposed.

5.3.2.7 Where clearing and/or regrading is unavoidable, vegetation shall be re-established in conformance with the landscaping plan.

The proposed Project has been designed to avoid vegetation removal as much as practicable. Tree and shrub plantings are proposed to maintain the environmental character of the area.

5.3.2.8 Retention basins shall provide one-hundred and fifty (150) of the required storage volume for the one hundred (100)-year storm event. At least one permeability test shall be conducted within each retention basin to estimate the infiltration rate. (one test per 10,000 square feet of overall detention/retention basin area is required).

There are no retention basins proposed.

5.3.2.9 Ground infiltration by means of leaching pits, leaching catch basins or similar facilities are not allowed as a means to calculate or mitigate storm water disposal;

There are no leaching pits or leaching catch basins (or similar) proposed. Clean roof runoff is being directed to infiltration trenches and chambers.

5.3.2.10 No drainage outfall shall be discharged at an elevation below the high-water line of a wetland, stream or water body;

There are no drainage outfalls proposed.

5.3.2.11 A headwall with wing walls protected by rip-rapped aprons shall be provided at the outfall of all drainage pipes.

There are no drainage pipes/outfalls proposed.

5.3.2.12 Test holes shall be conducted by a licensed soil evaluator in each detention/retention basin in accordance with the 310 CMR: Department of Environmental Protection (Title V) methods. A minimum of one test per 10,000 square feet of overall detention/retention basin area is required. Monitoring wells may be required by the Planning Board.

There are no retention/detention basins proposed. However, existing test pit information in the vicinity of the project site was utilized to inform the design of the infiltration trenches.

5.3.2.13 All retention/detention basins within ten (10) feet of parking lots, driveways, or areas of public access shall be protected by a guardrail. All retention/detention basins within forty (40) feet of public ways shall be protected by a guardrail. The Planning Board may require additional guardrails.

There are no retention/detention basins proposed.

5.4 Parking and Loading

There are no proposed parking lots or access drives associated with the project. Existing access to the Property comes from Oldham Street and is not proposed to be altered.

5.5 Service Facilities

Service facilities such as: garbage collection, recycling containers, refrigeration units, utility areas and other facilities not specifically identified shall be screened around their perimeters. Screening may consist of fencing and/or natural vegetation. Screening shall have an effective height and width to screen from public view said service facility.

There are no new service facilities proposed.

5.6 Construction

5.6.1 All access drives and parking areas shall be graded, paved, and drained in accordance with standards enumerated above.

There are no new access drives or parking areas proposed.

5.6.2 Curbing shall be placed at the edges of all paved surfaces. Wheelstops shall be placed where parking spaces abut sidewalks and/or walkways for pedestrians. Guardrails shall be placed along parking spaces and drive aisles where slopes exceed 3:1. Curbing shall not be bituminous concrete.

There are no paved surfaces proposed, including parking spaces that abut sidewalks or drive aisles.

5.6.3 Regarding utility connections, refer to the Waiver requests in Section 2.5.

5.6.4 Bollards shall be placed along the sides of the building exposed to vehicle traffic.

The proposed common house and yurts will not be exposed to vehicle traffic.

Note that Section 5.7 (Access Connections) and 5.8 (Drive through Facilities) of the Regulations are not applicable to the Project.

2.5 Waivers:

The Applicant respectfully requests the following waivers:

Town of Pembroke Zoning Bylaws Site Plan Approval D.13: Relevant zoning information is provided on Plan Sheet C1.1, on the application form in Section 1 and within the narrative herein. Certain components are not addressed in table format or on the plans due to the nature of the project (specifically lot perimeter ratio, lot width, building heights, building floor area, landscaping, use of all buildings, number of people anticipated on the site) and the Applicant respectfully requests a waiver from these requirements.

Planning Board Rules & Regulations Governing the Issuance of Site Plan Approval Section 4.22: The proposed project will not result in increased traffic beyond the Camp's existing operations, and The Applicant therefore requests a waiver from the requirement to prepare a traffic impact study.

Planning Board Rules and Regulations Governing the Issuance of Site Plan Approval Section 5.1.2: A three (3) foot wide landscaping strip shall be provided along the foundation walls to soften their appearance for all non-residential building(s). The landscape strip may be staggered in order to vary the landscape design for a Site. The landscaping strip shall provide screening to the portion of the foundation above grade: The proposed common house and yurts are designed to have stone infiltration trenches surrounding the exterior walls and therefore will not be able to provide a three-foot wide landscaping strip along the foundation walls. The proposed structures are set well within the boundaries of the property (minimum ± 235 -feet from the nearest property line to the limit of work). Additionally, appropriate landscaping with native plants is proposed as depicted on the Plans. The landscaping around the proposed common house and yurts will mimic the appearance of the existing landscaping conditions of the rest of the Camp. Therefore, the Applicant respectfully requests a waiver from the requirement stated above.

Planning Board Rules and Regulations Governing the Issuance of Site Plan Approval Section 5.6.3: All utility connections shall be underground and constructed in accordance with the requirements of the town and other utility companies. Utilities are designed to be located underground with the exception of the electricity connections. The existing state of the site includes aboveground electric lines. Due to this, the proposed electric extension is anticipated to be located aboveground to coincide with the existing electric infrastructure and allow for connection to the existing poles on the east side of the property. Therefore, the Applicant respectfully requests a waiver from the requirement that utilities be located underground.

Section 3.0
Abutter Information
Certified List of Abutters

**Town of Pembroke
Abutters List**

Subject Parcel ID: B10-15 9/24/19

Subject Property Location:

ParcelID	Location	Owner	Co-Owner	Mailing Address	City	State	Zip
A10-11	327 OLDHAM STREET	OSBORNE THOMAS C.	OSBORNE LINDA J.	327 OLDHAM STREET	PEMBROKE	MA	02359
A10-14	364 OLDHAM STREET	BALSIS ASHLEY L.		364 OLDHAM STREET	PEMBROKE	MA	02359
A10-15	352 OLDHAM STREET	GLAUBEN SCOTT E.	GLAUBEN SUSAN M.	352 OLDHAM STREET	PEMBROKE	MA	02359
A10-16	318 OLDHAM STREET	MOHAN KAREN		318 OLDHAM STREET	PEMBROKE	MA	02359
A10-17	314 OLDHAM STREET	DRAGO MICHAEL J.	MARTELL MARGARET M.	314 OLDHAM STREET	PEMBROKE	MA	02359
A10-18	363 OLDHAM STREET	THE ANNE S. KELLY IRREVOCABL	KELLY AMY K., TR	363 OLDHAM STREET	PEMBROKE	MA	02359
A10-28	14 SHORE'S EDGE	FRIZZELL RONALD J.	FRIZZELL DAWN M.	14 SHORES EDGE	PEMBROKE	MA	02359
A10-29	22 SHORE'S EDGE	MOLLO BRIAN	MOLLO KATARINA	22 SHORE'S EDGE	PEMBROKE	MA	02359
A10-30	30 SHORE'S EDGE	JACOBSON CARL G. JR.	JACOBSON PAULA A.	30 SHORE'S EDGE	PEMBROKE	MA	02359
A10-31	38 SHORE'S EDGE	FITZPATRICK JOSEPH R.	FITZPATRICK JACLYN S.	38 SHORES EDGE	PEMBROKE	MA	02359
A10-32	42 SHORE'S EDGE	BORAGINE VINCENT G.	BORAGINE JUDITH C.	42 SHORE'S EDGE	PEMBROKE	MA	02359
A10-33	50 SHORE'S EDGE	SHORE'S EDGE REALTY TRUST	GOULD JOHN R.	50 SHORES EDGE	PEMBROKE	MA	02359
A10-4	359 OLDHAM STREET	NARDUZZO JOSEPH		359 OLDHAM STREET	PEMBROKE	MA	02359
A10-5	351 OLDHAM STREET	PETERSON FAMILY TRUST	PETERSON ALAN C. + LIN	351 OLDHAM STREET	PEMBROKE	MA	02359
A10-5A	0 OLDHAM STREET	PETERSON FAMILY TRUST	PETERSON ALAN C. + LIN	351 OLDHAM STREET	PEMBROKE	MA	02359
A10-6	323 OLDHAM STREET	THREE HUNDRED AND TWENTY T	HENNIGAN SHAWN P.	323 OLDHAM STREET	PEMBROKE	MA	02359
A10-7A	319 OLDHAM STREET	WANDELL ANDREW C.	WANDELL VIRGINIA J.	319 OLDHAM STREET	PEMBROKE	MA	02359
A10-8	358 OLDHAM STREET	PHYLLIS D. ADAMS TRUST	PHYLLIS D. ADAMS TRUSTE	358 OLDHAM STREET	PEMBROKE	MA	02359
A9-28	47 SHORE'S EDGE	DRISCOLL STEPHEN P	TOCCI ROBERT A	47 SHORE'S EDGE	PEMBROKE	MA	02359
B10-13	285 OLDHAM STREET	INGRID BANESSA GONZALEZ MEJ	BANESSA GONZALEZ MEJI	285 OLDHAM STREET	PEMBROKE	MA	02359
B10-13A	279 OLDHAM STREET	LEAHY RAE ANN		P O BOX 1505	PEMBROKE	MA	02359-1505
B10-13B	271 OLDHAM STREET	BRENGLE ROXANNE M.		271 OLDHAM STREET	PEMBROKE	MA	02359
B10-15	290 OLDHAM STREET	COHEN ELI	COHEN BESSIE	33 SOUTH COMMERCIAL ST	MANCHESTER	NH	03101
B10-16	308 OLDHAM STREET	LANE PATRICK T	LANE MOLLIE M	308 OLDHAM STREET	PEMBROKE	MA	02359
B10-17	289 OLDHAM STREET	FOTEV YORDAN	FOTEV MICHELLE	289 OLDHAM STREET	PEMBROKE	MA	02359
B10-17A	291 OLDHAM STREET	OLDHAM STREET NOMINEE TRU	BANKS JERRY S., TRUSTE	291 OLDHAM STREET	PEMBROKE	MA	02359
B10-17B	293 OLDHAM STREET	BANKS TIMOTHY	BANKS JEAN	293 OLDHAM STREET	PEMBROKE	MA	02359
B10-1A	76 COUNTRY CLUB CIRCLE	ROBERTS DOUGLAS P.	FITZGERALD SUSAN	76 COUNTRY CLUB CIRCLE	PEMBROKE	MA	02359
B10-1B	66 COUNTRY CLUB CIRCLE	BRIFFETT JOLANTA R.		66 COUNTRY CLUB CIRCLE	PEMBROKE	MA	02359
B10-1C	14 COUNTRY CLUB CIRCLE	KEEFE JOYCE C.	KEEFE JOSEPH E., JR.	14 COUNTRY CLUB CIRCLE	PEMBROKE	MA	02359
B10-1U	9 COUNTRY CLUB CIRCLE	MICA REALTY TRUST	FEMINO AMY J., TR.	9 COUNTRY CLUB CIRCLE	PEMBROKE	MA	02359
B10-1V	3 COUNTRY CLUB CIRCLE	AMIOTT KENNETH J.	AMIOTT WENDY	3 COUNTRY CLUB CIRCLE	PEMBROKE	MA	02359
B10-27	70 BONNEY STREET	MAY KATHY A.		70 BONNEY STREET	PEMBROKE	MA	02359
B10-28	66 BONNEY STREET	JOHNSON-ROBINSON JACKLYN	ROBINSON MARK D.	P.O. BOX 1263	PEMBROKE	MA	02359
B10-47	62 BONNEY STREET	GRADY COLIN J.		62 BONNEY STREET	PEMBROKE	MA	02359
B10-49	59 BONNEY STREET	MCLAUGHLIN JAMES M.	MCLAUGHLIN SHERI J.	59 BONNEY STREET	PEMBROKE	MA	02359
B10-54	44 PINE TREE LANE	BOYCE JOHN S.	BOYCE JENNIFER L.	44 PINE TREE LANE	PEMBROKE	MA	02359
B10-55	48 PINE TREE LANE	DAHER GABRIEL J. JR.		48 PINE TREE LANE	PEMBROKE	MA	02359
B10-56	52 PINE TREE LANE	STEVENS DUDLEY J.	SHEPHARD KAREN M.	52 PINE TREE LANE	PEMBROKE	MA	02359
B10-57	56 PINE TREE LANE	CERULLO PATRICIA		56 PINE TREE LANE	PEMBROKE	MA	02359

Town of Pembroke Abutters List

Subject Parcel ID: B10-15 9/24/19

Subject Property Location:

ParcelID	Location	Owner	Co-Owner	Mailing Address	City	State	Zip
B10-58	60 PINE TREE LANE	BOSTROM DONALD G.	BOSTROM PATRICIA	60 PINE TREE LANE	PEMBROKE	MA	02359
B10-59	64 PINE TREE LANE	GALLINARO BARBARA L.		64 PINE TREE LANE	PEMBROKE	MA	02359
B10-60	68 PINE TREE LANE	BYRNE DANIEL G.	BYRNE ANNA K.	68 PINE TREE LANE	PEMBROKE	MA	02359
B10-61	270 OLDHAM STREET	FLANAGAN AMANDA M.	FLANAGAN JOHN JR.	270 OLDHAM STREET	PEMBROKE	MA	02359
B10-62	262 OLDHAM STREET	YAHOUN STANLEY T.	YAHOUN PATRICIA A.	262 OLDHAM STREET	PEMBROKE	MA	02359
B10-63	65 PINE TREE LANE	TEWKSBURY TAMMY ANN		65 PINE TREE LANE	PEMBROKE	MA	02359
B10-64	63 PINE TREE LANE	YOUNG CARL H.	YOUNG BARBARA F.	63 PINE TREE LANE	PEMBROKE	MA	02359
B10-65	55 PINE TREE LANE	THE ANN FAFEL REALTY TRUST		55 PINE TREE LANE	PEMBROKE	MA	02359
B10-66	49 PINE TREE LANE	KEANE FAMILY LIVING TRUST	KEANE KEANE E., TR	49 PINE TREE LANE	PEMBROKE	MA	02359
B10-67	45 PINE TREE LANE	TAMULYNAS CHARLES J., JR.	TAMULYNAS JOSEPHINE R.	45 PINE TREE LANE	PEMBROKE	MA	02359
B10-81D-1	256 OLDHAM STREET	HANSON BENJAMIN	IPPOLITI CORTNEY	256 OLDHAM STREET	PEMBROKE	MA	02359
B10-81E-1	260 OLDHAM STREET	SIDERS ROBERT A.	SIDERS VICTORIA	260 OLDHAM STREET	PEMBROKE	MA	02359
B10-86	311 OLDHAM STREET	CASSFORD RONALD J.	WALLENSTEIN THEODORE	311 OLDHAM STREET	PEMBROKE	MA	02359
B10-87	79 COUNTRY CLUB CIRCLE	WALLENSTEIN THEODORE	WALLENSTEIN BLAIR	79 COUNTRY CLUB CIRCLE	PEMBROKE	MA	02359
B10-88	73 COUNTRY CLUB CIRCLE	BORDEN JAMES J.	BORDEN JAMI-LEIGH	73 COUNTRY CLUB CIRCLE	PEMBROKE	MA	02359
B9-103	12 BEECHWOOD AVENUE	SULLIVAN JASON B.		12 BEECHWOOD AVE	PEMBROKE	MA	02359
B9-154	16 COVE LANE	HOWIE ROBERT MICHAEL	HOWIE JULIE ANN	16 COVE LANE	PEMBROKE	MA	02359
B9-2	7 OVERBROOK ROAD	DORES BARRY N.		111 EAST HILL DRIVE	CRANSTON	RI	02920-3709
B9-22	9 OVERBROOK ROAD	DORES BARRY N.		111 EAST HILL DRIVE	CRANSTON	RI	02920-3709
B9-25	2 BEECHWOOD AVENUE	LEWIN JAMES	LEWIN MALLA	1115 KINNEY AVE #1	AUSTIN	TX	78703
B9-262	15 BEECHWOOD AVENUE	SAMPSON ALTON B.	SAMPSON DONNA M.	15 BEECHWOOD AVENUE	PEMBROKE	MA	02359
B9-264	14 COVE LANE	ELI AND BESSIE COHEN CAMPS C		888 WORCESTER ST UNIT 3	WELLESLEY	MA	02482
B9-266	16 FERNDALE AVENUE	SHAW MALCOLM F.	SHAW LAUREL L.	16 FERNDALE AVENUE	PEMBROKE	MA	02359
B9-277	9 BEECHWOOD AVENUE	COREY CHRISTOPHER J.	COREY SHARON	9 BEECHWOOD AVE	PEMBROKE	MA	02359
B9-287	11 COVE LANE	BAUSEMER PAUL	COSTELLO DOREEN	11 COVE LANE	PEMBROKE	MA	02359
B9-290	16 BEECHWOOD AVENUE	SEIFERT KELLY A.		16 BEECHWOOD AVENUE	PEMBROKE	MA	02359
B9-30	10 COVE LANE	BREEN-JOHNSON DEBORAH		P.O. BOX 1314	PEMBROKE	MA	02359
B9-31	3 OVERBROOK ROAD	HERBERT RAYMOND L.	CALDERWOOD ERIC A.	3 OVERBROOK RD	PEMBROKE	MA	02359
B9-331	6 OVERBROOK ROAD	STOKEY LUCY MORTON		PO BOX 2035	HANOVER	MA	02339
B9-333	55 BONNEY STREET	DWYER STEVEN R.		55 BONNEY STREET	PEMBROKE	MA	02359
B9-346	50 BONNEY STREET	BAYLISS ELLEN J.		50 BONNEY STREET	PEMBROKE	MA	02359
B9-349	17 BEECHWOOD AVENUE	PLAUSINAITIS BRIAN J.	PETRUCCI NIKKI A.	17 BEECHWOOD AVENUE	PEMBROKE	MA	02359
B9-35	1 OVERBROOK ROAD	ONE OVERBROOK ROAD REALTY	SELTIER BRIAN K.	1 OVERBROOK ROAD	PEMBROKE	MA	02359
B9-352	0 COVE LANE	TOWN OF PEMBROKE	BOARD OF SELECTMEN	100 CENTER STREET	PEMBROKE	MA	02359
B9-356	0 COVE LANE	CHAHINE FAMILY REALTY TRUST	JOSEPH & RITA CHAHINE	P.O. BOX 612	PEMBROKE	MA	02359
B9-365	58 BONNEY STREET	OATWAY JON M.	OATWAY CHERYL ANN	58 BONNEY STREET	PEMBROKE	MA	02359
B9-376	24 BEECHWOOD AVENUE	SALVAGGI TRUST	c/o JOSEPH SALVAGGI	266 WALNUT STREET	BRAINTREE	MA	02184
B9-38	4 COVE LANE	ELI AND BESSIE COHEN CAMPS C		888 WORCESTER ST UNIT 3	WELLESLEY	MA	02482

**Town of Pembroke
Abutters List**

Subject Parcel ID: B10-15 9/24/19

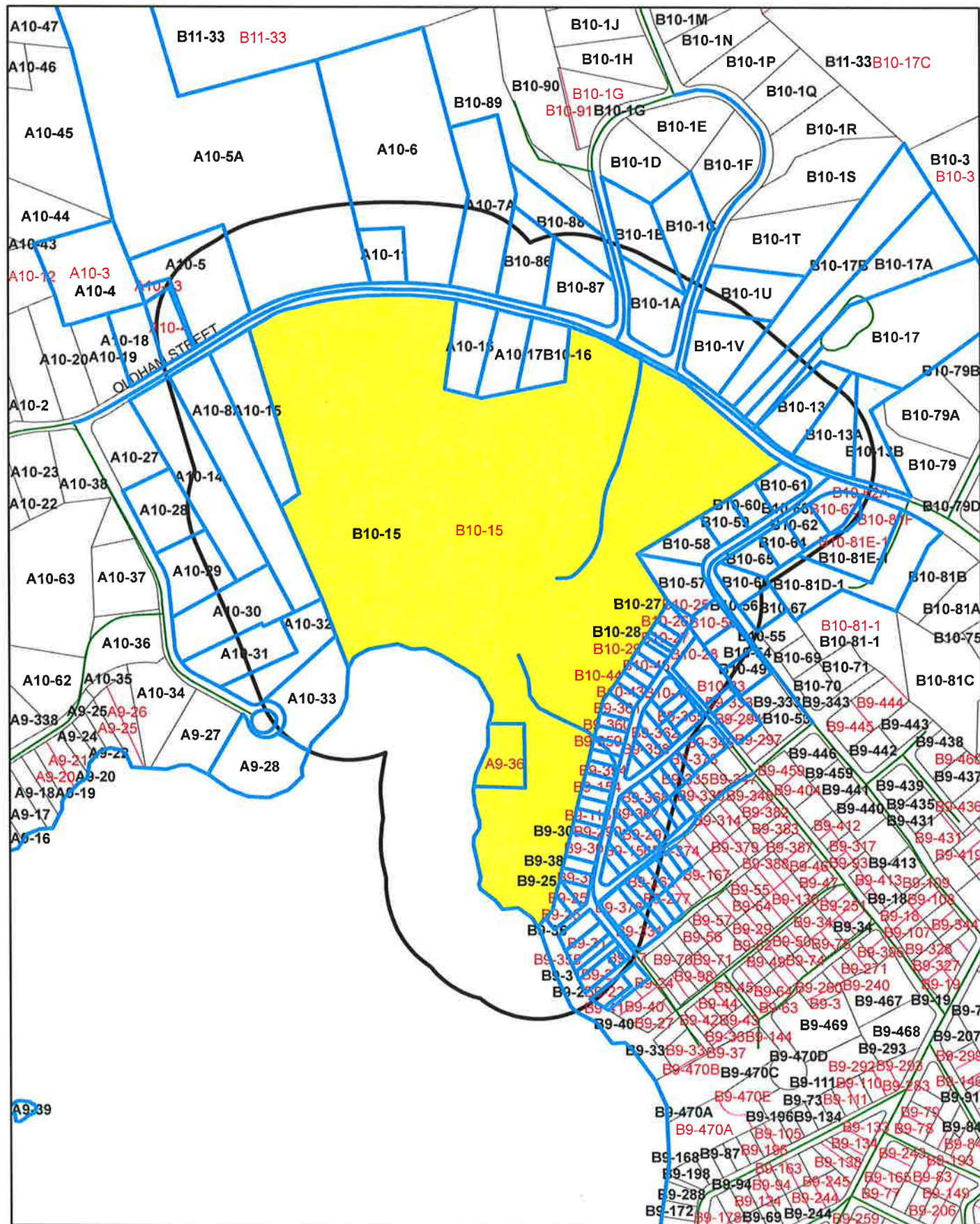
Subject Property Location:

ParcelID	Location	Owner	Co-Owner	Mailing Address	City	State	Zip
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Parcel Count: 78

End of Report

9/24/19 B10-15





Patriot Properties

Town of Pembroke

09/23/2019

4:31:03PM

Abutters List

Filter Used: DataProperty AccountNumber in (2301,2308,2317,2284,2282,2177,2244,2235,2311,2290,2310,2270,2273,2277,2300,2263,2318,2287,2272,2208,2313,676,25,24,23,22,20,19,5,53,6,9,32,43,4,51,52,2314,2316..

327 OLDHAM STREET OSBORNE THOMAS C. OSBORNE LINDA J. 327 OLDHAM STREET PEMBROKE, MA 02359	A10-11 LUC: 101	42 SHORE'S EDGE BORAGINE VINCENT G. BORAGINE JUDITH C. 42 SHORE'S EDGE PEMBROKE, MA 02359	A10-32 LUC: 101	279 OLDHAM STREET LEAHY RAE ANN P O BOX 1505 PEMBROKE, MA 02359-1505	B10-13A LUC: 104
364 OLDHAM STREET BALSIS ASHLEY L. 364 OLDHAM STREET PEMBROKE, MA 02359	A10-14 LUC: 101	50 SHORE'S EDGE SHORE'S EDGE REALTY TRUST GOULD JOHN R. 50 SHORES EDGE PEMBROKE, MA 02359	A10-33 LUC: 101	271 OLDHAM STREET BRENGLE ROXANNE M. 271 OLDHAM STREET PEMBROKE, MA 02359	B10-13B LUC: 101
352 OLDHAM STREET GLAUBEN SCOTT E. GLAUBEN SUSAN M. 352 OLDHAM STREET PEMBROKE, MA 02359	A10-15 LUC: 101	359 OLDHAM STREET NARDUZZO JOSEPH 359 OLDHAM STREET PEMBROKE, MA 02359	A10-4 LUC: 101	290 OLDHAM STREET COHEN ELI COHEN BESSIE 33 SOUTH COMMERCIAL ST. MANCHESTER, NH 03101	B10-15 LUC: 958
318 OLDHAM STREET MOHAN KAREN 318 OLDHAM STREET PEMBROKE, MA 02359	A10-16 LUC: 101	351 OLDHAM STREET PETERSON FAMILY TRUST PETERSON ALAN C. + LINDA A, TRS 351 OLDHAM STREET PEMBROKE, MA 02359	A10-5 LUC: 101	308 OLDHAM STREET LANE PATRICK T LANE MOLLIE M 308 OLDHAM STREET PEMBROKE, MA 02359	B10-16 LUC: 101
314 OLDHAM STREET DRAGO MICHAEL J. MARTELL MARGARET M. 314 OLDHAM STREET PEMBROKE, MA 02359	A10-17 LUC: 101	0 OLDHAM STREET PETERSON FAMILY TRUST PETERSON ALAN C. + LINDA A., TRS 351 OLDHAM STREET PEMBROKE, MA 02359	A10-5A LUC: 803	289 OLDHAM STREET FOTEV YORDAN FOTEV MICHELLE 289 OLDHAM STREET PEMBROKE, MA 02359	B10-17 LUC: 101
363 OLDHAM STREET THE ANNE S. KELLY IRREVOCABLE TRUST KELLY AMY K., TR 363 OLDHAM STREET PEMBROKE, MA 02359	A10-18 LUC: 101	323 OLDHAM STREET THREE HUNDRED AND TWENTY THREE STREET REALTY TRUST HENNIGAN SHAWN P. 323 OLDHAM STREET PEMBROKE, MA 02359	A10-6 LUC: 017	291 OLDHAM STREET OLDHAM STREET NOMINEE TRUST BANKS JERRY S., TRUSTEE 291 OLDHAM STREET PEMBROKE, MA 02359	B10-17A LUC: 101
14 SHORE'S EDGE FRIZZELL RONALD J. FRIZZELL DAWN M. 14 SHORES EDGE PEMBROKE, MA 02359	A10-28 LUC: 101	319 OLDHAM STREET WANDELL ANDREW C. WANDELL VIRGINIA J. 319 OLDHAM STREET PEMBROKE, MA 02359	A10-7A LUC: 101	293 OLDHAM STREET BANKS TIMOTHY BANKS JEAN 293 OLDHAM STREET PEMBROKE, MA 02359	B10-17B LUC: 101
22 SHORE'S EDGE MOLLO BRIAN MOLLO KATARINA 22 SHORE'S EDGE PEMBROKE, MA 02359	A10-29 LUC: 101	358 OLDHAM STREET PHYLLIS D. ADAMS TRUST PHYLLIS D. ADAMS TRUSTEE 358 OLDHAM STREET PEMBROKE, MA 02359	A10-8 LUC: 101	76 COUNTRY CLUB CIRCLE ROBERTS DOUGLAS P. FITZGERALD SUSAN 76 COUNTRY CLUB CIRCLE PEMBROKE, MA 02359	B10-1A LUC: 101
30 SHORE'S EDGE JACOBSON CARL G. JR. JACOBSON PAULA A. 30 SHORE'S EDGE PEMBROKE, MA 02359	A10-30 LUC: 101	47 SHORE'S EDGE DRISCOLL STEPHEN P TOCCI ROBERT A 47 SHORE'S EDGE PEMBROKE, MA 02359	A9-28 LUC: 101	66 COUNTRY CLUB CIRCLE BRIFFETT JOLANTA R. 66 COUNTRY CLUB CIRCLE PEMBROKE, MA 02359	B10-1B LUC: 101
38 SHORE'S EDGE FITZPATRICK JOSEPH R. FITZPATRICK JACLYN S. 38 SHORES EDGE PEMBROKE, MA 02359	A10-31 LUC: 101	285 OLDHAM STREET INGRID BANESSA GONZALEZ MEJIA FAMILY TRUST BANESSA GONZALEZ MEJIA INGRID, TR 285 OLDHAM STREET PEMBROKE, MA 02359	B10-13 LUC: 101	14 COUNTRY CLUB CIRCLE KEEFE JOYCE C. KEEFE JOSEPH E., JR. 14 COUNTRY CLUB CIRCLE PEMBROKE, MA 02359	B10-1C LUC: 101

B10-15

9/24/19

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9 COUNTRY CLUB CIRCLE	B10-1U
MICA REALTY TRUST	LUC: 101
FEMINO AMY J., TR.	
9 COUNTRY CLUB CIRCLE	
PEMBROKE, MA 02359	
3 COUNTRY CLUB CIRCLE	B10-1V
AMIOTT KENNETH J.	LUC: 101
AMIOTT WENDY	
3 COUNTRY CLUB CIRCLE	
PEMBROKE, MA 02359	
70 BONNEY STREET	B10-27
MAY KATHY A.	LUC: 101
70 BONNEY STREET	
PEMBROKE, MA 02359	
66 BONNEY STREET	B10-28
JOHNSON-ROBINSON JACKLYN	LUC: 101
ROBINSON MARK D.	
P.O. BOX 1263	
PEMBROKE, MA 02359	
62 BONNEY STREET	B10-47
GRADY COLIN J.	LUC: 101
62 BONNEY STREET	
PEMBROKE, MA 02359	
59 BONNEY STREET	B10-49
MCLAUGHLIN JAMES M.	LUC: 101
MCLAUGHLIN SHERI J.	
59 BONNEY STREET	
PEMBROKE, MA 02359	
44 PINE TREE LANE	B10-54
BOYCE JOHN S.	LUC: 101
BOYCE JENNIFER L.	
44 PINE TREE LANE	
PEMBROKE, MA 02359	
48 PINE TREE LANE	B10-55
DAHER GABRIEL J. JR.	LUC: 101
48 PINE TREE LANE	
PEMBROKE, MA 02359	
52 PINE TREE LANE	B10-56
STEVENS DUDLEY J.	LUC: 101
SHEPHARD KAREN M.	
52 PINE TREE LANE	
PEMBROKE, MA 02359	
56 PINE TREE LANE	B10-57
CERULLO PATRICIA	LUC: 101
56 PINE TREE LANE	
PEMBROKE, MA 02359	

60 PINE TREE LANE	B10-58
BOSTROM DONALD G.	LUC: 101
BOSTROM PATRICIA	
60 PINE TREE LANE	
PEMBROKE, MA 02359	
64 PINE TREE LANE	B10-59
GALLINARO BARBARA L.	LUC: 101
64 PINE TREE LANE	
PEMBROKE, MA 02359	
68 PINE TREE LANE	B10-60
BYRNE DANIEL G.	LUC: 101
BYRNE ANNA K.	
68 PINE TREE LANE	
PEMBROKE, MA 02359	
270 OLDHAM STREET	B10-61
FLANAGAN AMANDA M.	LUC: 101
FLANAGAN JOHN JR.	
270 OLDHAM STREET	
PEMBROKE, MA 02359	
262 OLDHAM STREET	B10-62
YAHIOUB STANLEY T.	LUC: 101
YAHIOUB PATRICIA A.	
262 OLDHAM STREET	
PEMBROKE, MA 02359	
65 PINE TREE LANE	B10-63
TEWKSBURY TAMMY ANN	LUC: 101
65 PINE TREE LANE	
PEMBROKE, MA 02359	
63 PINE TREE LANE	B10-64
YOUNG CARL H.	LUC: 101
YOUNG BARBARA F.	
63 PINE TREE LANE	
PEMBROKE, MA 02359	
55 PINE TREE LANE	B10-65
THE ANN FAFEL REALTY TRUST	LUC: 104
55 PINE TREE LANE	
PEMBROKE, MA 02359	
49 PINE TREE LANE	B10-66
KEANE FAMILY LIVING TRUST	LUC: 101
KEANE KEANE E., TR	
49 PINE TREE LANE	
PEMBROKE, MA 02359	
45 PINE TREE LANE	B10-67
TAMULYNAS CHARLES J., JR.	LUC: 101
TAMULYNAS JOSEPHINE R.	
45 PINE TREE LANE	
PEMBROKE, MA 02359	

256 OLDHAM STREET	B10-81D-1
HANSON BENJAMIN	LUC: 101
IPPOLITI CORTNEY	
256 OLDHAM STREET	
PEMBROKE, MA 02359	
260 OLDHAM STREET	B10-81E-1
SIDERS ROBERT A.	LUC: 101
SIDERS VICTORIA	
260 OLDHAM STREET	
PEMBROKE, MA 02359	
311 OLDHAM STREET	B10-86
CASSFORD RONALD J.	LUC: 101
CASSFORD DEBRA A.	
311 OLDHAM STREET	
PEMBROKE, MA 02359	
79 COUNTRY CLUB CIRCLE	B10-87
WALLENSTEIN THEODORE	LUC: 101
WALLENSTEIN BLAIR	
79 COUNTRY CLUB CIRCLE	
PEMBROKE, MA 02359	
73 COUNTRY CLUB CIRCLE	B10-88
BORDEN JAMES J.	LUC: 101
BORDEN JAMI-LEIGH	
73 COUNTRY CLUB CIRCLE	
PEMBROKE, MA 02359	
12 BEECHWOOD AVENUE	B9-103
SULLIVAN JASON B.	LUC: 101
12 BEECHWOOD AVE	
PEMBROKE, MA 02359	
16 COVE LANE	B9-154
HOWIE ROBERT MICHAEL	LUC: 101
HOWIE JULIE ANN	
16 COVE LANE	
PEMBROKE, MA 02359	
7 OVERBROOK ROAD	B9-2
DORES BARRY N.	LUC: 101
111 EAST HILL DRIVE	
CRANSTON, RI 02920-3709	
9 OVERBROOK ROAD	B9-22
DORES BARRY N.	LUC: 101
111 EAST HILL DRIVE	
CRANSTON, RI 02920-3709	
2 BEECHWOOD AVENUE	B9-25
LEWIN JAMES	LUC: 101
LEWIN MALIA	
1115 KINNEY AVE #1	
AUSTIN, TX 78703	

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15 BEECHWOOD AVENUE	B9-262
LUC: 101	
SAMPSON ALTON B.	
SAMPSON DONNA M.	
15 BEECHWOOD AVENUE	
PEMBROKE, MA 02359	
14 COVE LANE	B9-264
LUC: 101	
ELI AND BESSIE COHEN CAMPS OF MASSACHUSETTS IN	
888 WORCESTER ST UNIT 350	
WELLESLEY, MA 02482	
16 FERNDALE AVENUE	B9-266
LUC: 101	
SHAW MALCOLM F.	
SHAW LAUREL L.	
16 FERNDALE AVENUE	
PEMBROKE, MA 02359	
9 BEECHWOOD AVENUE	B9-277
LUC: 101	
COREY CHRISTOPHER J.	
COREY SHARON	
9 BEECHWOOD AVE	
PEMBROKE, MA 02359	
11 COVE LANE	B9-287
LUC: 101	
BAUSEMER PAUL	
COSTELLO DOREEN	
11 COVE LANE	
PEMBROKE, MA 02359	
16 BEECHWOOD AVENUE	B9-290
LUC: 101	
SEIFERT KELLY A.	
16 BEECHWOOD AVENUE	
PEMBROKE, MA 02359	
10 COVE LANE	B9-30
LUC: 101	
BREEN-JOHNSON DEBORAH	
P.O. BOX 1314	
PEMBROKE, MA 02359	
3 OVERBROOK ROAD	B9-31
LUC: 101	
HERBERT RAYMOND L.	
CALDERWOOD ERIC A.	
3 OVERBROOK RD	
PEMBROKE, MA 02359	
6 OVERBROOK ROAD	B9-331
LUC: 101	
STOKEY LUCY MORTON	
PO BOX 2035	
HANOVER, MA 02339	
55 BONNEY STREET	B9-333
LUC: 101	
DWYER STEVEN R.	
55 BONNEY STREET	
PEMBROKE, MA 02359	

50 BONNEY STREET	B9-346
LUC: 101	
BAYLISS ELLEN J.	
50 BONNEY STREET	
PEMBROKE, MA 02359	
17 BEECHWOOD AVENUE	B9-349
LUC: 101	
PLAUSINAITIS BRIAN J.	
PETRUCCI NIKKI A.	
17 BEECHWOOD AVENUE	
PEMBROKE, MA 02359	
1 OVERBROOK ROAD	B9-35
LUC: 101	
ONE OVERBROOK ROAD REALTY TRUST	
SELTHER BRIAN K.	
1 OVERBROOK ROAD	
PEMBROKE, MA 02359	
0 COVE LANE	B9-352
LUC: 930	
TOWN OF PEMBROKE	
BOARD OF SELECTMEN	
100 CENTER STREET	
PEMBROKE, MA 02359	
0 COVE LANE	B9-356
LUC: 130	
CHAHINE FAMILY REALTY TRUST	
JOSEPH & RITA CHAHINE	
P.O. BOX 612	
PEMBROKE, MA 02359	
58 BONNEY STREET	B9-365
LUC: 101	
OATWAY JON M.	
OATWAY CHERYL ANN	
58 BONNEY STREET	
PEMBROKE, MA 02359	
24 BEECHWOOD AVENUE	B9-376
LUC: 130	
SALVAGGI, TRUST	
c/o JOSEPH SALVAGGI	
266 WALNUT STREET	
BRAINTREE, MA 02184	
4 COVE LANE	B9-38
LUC: 958	
ELI AND BESSIE COHEN CAMPS OF MASSACHUSETTS IN	
888 WORCESTER ST UNIT 350	
WELLESLEY, MA 02482	

B10-15
9/24/19
1718/394

Section 4.0
Stormwater Management Information
Stormwater Management Report

Stormwater Management Report

CAMP PEMBROKE YURT VILLAGE

**306 Oldham Street
Pembroke, Massachusetts**

Prepared for:

**Eli & Bessie Cohen Camps
888 Worcester Street, Suite 350
Wellesley, MA, 02482**

Prepared by:



BEALS + THOMAS

BEALS AND THOMAS, INC.
32 Court Street
Plymouth, MA 02360-3866

September 16, 2019



Jeffrey R. Murphy 9/16/19

Jeffrey R. Murphy, PE

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LIST OF ATTACHMENTS

ATTACHMENT 1: SOIL DATA

ATTACHMENT 2: STORMWATER RECHARGE CALCULATIONS

ATTACHMENT 3: SITE OWNER’S MANUAL

ATTACHMENT 4: CONSTRUCTION PERIOD SEDIMENT, EROSION & POLLUTION PREVENTION PLAN

1.0 INTRODUCTION

The proposed project includes the construction of a Yurt Village which is comprised of a ±2,615 SF common house building that will contain bathrooms with showers, staff accommodations, and office space to be utilized by the camp. The Yurt Village will also have four (4) yurts (round tents on elevated wooden platforms) which will be installed to the south of the common house as seasonal housing. The project will also include the construction of wood chip pathways, a campfire gathering area and the installation of landscaping comprised of native species. Roof runoff from the proposed common house will be infiltrated via a crushed stone perimeter trench as well as subsurface infiltrators. Similarly, the proposed yurts will have a crushed stone drip edge trench for infiltration of roof runoff.

This type of project is not contemplated by the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook. The Handbook provides exemptions and exceptions for full project compliance with the 10 Stormwater Standards, as noted within Volume 1, Chapter 1 of the Handbook. The proposed project is comparable to, but less impactful than Items (1) and (3) under the list of projects to which the Standards apply to the maximum extent practicable. Item (1) identifies *“Housing development and redevelopment projects comprised of detached single-family dwellings on four or fewer lots that have a stormwater discharge the may potentially affect a critical area”* and Item (3) which identifies *“Housing developments and redevelopment projects comprised of detached single family dwellings on five to nine lots, provided there is no stormwater discharge that may potentially affect a critical area.”* As such, the project has been designed to the extent practicable to comply with the MassDEP 10 Stormwater Standards.

The proposed common house building is no larger than a typical single family home, and the yurts are built on elevated platforms above the ground, thus lessening their overall impact in terms of stormwater. Additionally, the design of the Yurt Village pathways and gathering space is intended to minimize the change in ground cover type and therefore the runoff for the project area. The proposed recharge measures for the common house and yurts will provide infiltration volumes as required by the MassDEP Stormwater Handbook for new impervious areas. There are no other paved or impervious surfaces proposed aside from the common house and yurts. As such, water quality treatment for TSS and pollutants is not necessary. Calculations for the sizing of the perimeter and drip edge trenches, and subsurface chambers are included in Attachment 2.

2.0 EXISTING CONDITIONS

2.1 Site Conditions

Camp Pembroke is located on an approximately 30-acre parcel of land adjacent to Oldham Pond on Oldham Street, in Pembroke, Massachusetts. The property lies within Plymouth County and the South Shore Drainage Area.

Topography on-site generally slopes to the southwest from a high elevation of 95' along the northeast property line to elevation 60' along the shore of Lake Oldham. Surface water flow is consistent with the topography. Existing soils in the vicinity of the Project are mapped by the Natural Resources Conservation Service (NRCS) soil survey for Plymouth County as Hinckley loamy sand with 3 to 8 percent slopes. Hinckley soils are very deep, nearly level, excessively drained soils formed in gravelly fluvial deposits. Hinckley loamy sand is identified as a Hydrologic Soil Group A soil, which is favorable for infiltration of stormwater.

Runoff from the project area drains to the south and west towards Oldham Pond and the wetlands to the west. Existing grades within the project area are gently sloping with grades generally between 2 and 5%. The project will be located in existing wooded areas as well as existing grass lawn.

2.1.1 Critical Areas

Critical Areas as defined by Standard 6 of the 2008 MassDEP Stormwater Management Handbook are areas where high levels of stormwater treatment are required; typically the first inch of runoff is treated using specific best management practices (BMPs) and pre-treatment methods. Specific source control and pollution prevention measures are also required. As noted in the introduction, the proposed project does not include any paved parking lots or impervious areas that would generate pollutants for stormwater.

The site is tributary to Oldham Pond, which is a Class A public water supply tributary to Furnace Pond. As such, it is mapped with a Zone A protection zone and is considered a Critical Area per DEP Stormwater Policy. Only infiltration of clean rooftop runoff is proposed for the common house and yurts. There is no proposed pavement or parking lots that would generate pollutants that would impact the pond. Therefore, the project will not impact a critical area.

2.1.2 Total Maximum Daily Loads (TMDL)

A TMDL is the greatest amount of a pollutant that a waterbody can accept and still meet water quality standards for protecting public health and maintaining the designated beneficial uses of those waters for drinking, swimming, recreation, and fishing. A TMDL is implemented by specifying how much of that pollutant can come from point, nonpoint, and natural sources.

Oldham Pond is part of the South Coastal Watershed. A Final Pathogen TMDL has been issued for the overall watershed. The proposed project will not negatively impact Oldham Pond in terms of pollutants. Sanitary sewer flows from the common house will be addressed by a Title 5 compliant septic system (to be designed and permitted by others).

3.0 PROPOSED CONDITIONS

3.1 Proposed Conditions

The proposed common house will be located at the south end of the existing grass soccer field along the western side of the camp. The front porch of the common house will face towards the center of the yurt village, which will include a fire pit and gathering area. Pathways will connect between the common house, gathering space and yurts. Selective clearing of existing trees and brush will occur within the yurt village area. Where possible, large diameter mature trees will be saved to provide shade and maintain the natural character of the area. Proposed pathways will be surfaced with wood chips to reduce stormwater runoff and puddling within the yurt village common spaces.

The common house and porch roof, stairs and ramps occupy a footprint of approximately 3,250 sf. Since this is new impervious area, a perimeter trench along with two subsurface infiltrators are proposed to infiltrate the required recharge volume per MassDEP Stormwater Policy. Perforated piping in the perimeter trench will collect and convey excess flows in the perimeter trench to the infiltrators. Floor plans and building elevations for the common house have been provided for reference in the Site Plans.

The proposed yurts consist of circular tent structures that sit atop elevated wooden platforms with support posts. The individual support posts will be anchored to the ground with concrete footings. Each yurt will be designed with a crushed stone drip edge that will encircle each platform and provide the required stormwater recharge volume for the footprint of the tent platform and decks. A generic schematic detail of the yurts is provided on the Site Plans for reference. The yurts will also have electric service fed from the common house building.

As previously noted, the project will not include paved driveways or parking areas that would require treatment of stormwater. Accordingly, the requirements of Standard 4 of the Stormwater Handbook pertaining to water quality will be upheld.

3.2 Compliance with DEP Stormwater Management Standards

The project has been designed to the extent practicable, in accordance with the ten (10) MassDEP Stormwater Management Standards to minimize impacts in terms of stormwater and protect adjacent wetland resource areas and Oldham Pond.

STANDARD 1: **No new stormwater conveyance (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.**

The proposed Project will not create any new outfalls of untreated stormwater. Clean roof runoff from the common house and yurts will be infiltrated using crushed stone perimeter trenches, drip edges, and subsurface infiltrators.

STANDARD 2: **Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.**

The proposed design of the yurt village area is designed to minimize alteration of ground surface cover types from existing conditions, although some vegetation clearing will be needed to install the yurts. The proposed pathways and gathering area will be surfaced with wood chips to allow rainfall to infiltrate into the underlying soils and minimize runoff from the project area. Native Plants will be planted in the areas around the pathways to keep the area as natural and vegetated as possible. This will translate to a minimal change in runoff from the yurt village area. The proposed rooftop recharge measures will infiltrate a significant amount of the rooftop runoff from the proposed structures.

STANDARD 3: **Loss of annual recharge to groundwater shall be eliminated or minimized through the use of environmentally sensitive site design, low impact development techniques, stormwater management practices and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil types. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.**

The rooftop runoff recharge measures for the common house and yurts will meet the recharge volumes required by the MassDEP Stormwater Handbook. Based upon test pits and percolation tests performed for a septic system nearby to the proposed project, a Rawls Rate of 8.27 in/hr was used for the drawdown calculations. Calculations are included in Attachment 2.

STANDARD 4: Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS).

The project will not include paved driveways or parking areas that would require treatment of stormwater. Accordingly, the requirements of Standard 4 of the Stormwater Handbook pertaining to water quality will be upheld. A Site Owner's Manual provided in Attachment 3 has been developed that complies with the Long-Term Pollution Prevention Plan (Standard 4) and the Long-Term Operation and Maintenance Plan (Standard 9) requirements of the MassDEP Stormwater Management Standards. The Manual outlines source control and pollution prevention measures and maintenance requirements of the proposed stormwater best management practices (BMPs) for the project.

STANDARD 5: For land uses with higher potential pollutant loads (LUHPPLs), source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable.

The proposed project is not associated with stormwater discharges from land uses with higher potential pollutant loads.

STANDARD 6: Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. Critical areas are Outstanding Resource Waters, shellfish beds, swimming beaches, coldwater fisheries and recharge areas for public water supplies.

The project is tributary to Oldham Pond which is a Class A Public Water Supply with Zone A protection area. However, the project proposes no impervious surfaces that would impact water quality or generate pollutants. Therefore, the interests of Standard 6 will be upheld.

STANDARD 7: **Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. However, if it is not practicable to meet all the Standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.**

This standard does not apply because the proposed project includes an increase in impervious rooftop area.

STANDARD 8: **A plan to control construction-related impacts during erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.**

A Construction Period Erosion, Sedimentation, and Pollution Prevention Plan has been developed for implementation by the Contractor during construction to comply with the requirements of Standard 8. A copy is provided in Attachment 4. The project will disturb less than 1-acre, so a Stormwater Pollution Prevention Plan (SWPPP) under the NPDES Construction General Permit is not required.

STANDARD 9: **A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.**

The Site Owner's Manual provided in Attachment 3 complies with the Long-Term Pollution Prevention Plan (Standard 4) and the Long-Term Operation and Maintenance Plan (Standard 9) requirements of the MassDEP Stormwater Management Standards. The Manual outlines source control and pollution prevention measures and maintenance requirements of the proposed stormwater best management practices (BMPs) for the project.

STANDARD 10: **All illicit discharges to the stormwater management system are prohibited.**

There will be no illicit discharges to the proposed stormwater management system associated with the proposed project. An Illicit Discharge Compliance Statement is provided on the following page.

3.3 Illicit Discharge Compliance Statement

An illicit discharge is any discharge to a stormwater management system that is not comprised entirely of stormwater, discharges from fire-fighting activities, and certain non-designated non-stormwater discharges.

To the best of my knowledge, no detectable illicit discharge exists on site. The Site Plans included with this report detail the storm sewers that convey stormwater on the site and demonstrate that these systems do not include the entry of an illicit discharge. A Site Owner's Manual is also included, which contains the Long Term Pollution Plan that outlines measures to prevent future illicit discharges. As the Site Owner, I will ultimately be responsible for implementing the Long Term Pollution Prevention Plan.

Signature: _____
Owner's Name



Checklist for Stormwater Report

A. Introduction

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

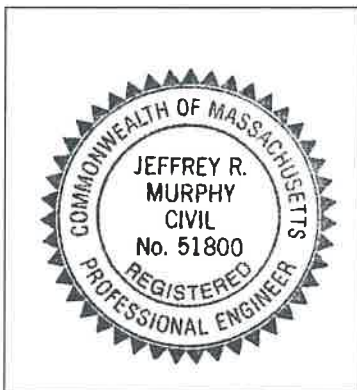
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Jeffrey R. Murphy 9/16/19
Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- ☒ New development
- ☐ Redevelopment
- ☐ Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☒ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
 - ☐ Credit 1
 - ☐ Credit 2
 - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☐ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation (See Narrative)

- ☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- ☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- ☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- ☒ Soil Analysis provided.
- ☒ Required Recharge Volume calculation provided.
- ☐ Required Recharge volume reduced through use of the LID site Design Credits.
- ☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - ☒ Static
 - ☐ Simple Dynamic
 - ☐ Dynamic Field¹
- ☒ Runoff from all impervious areas at the site discharging to the infiltration BMP.
- ☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- ☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- ☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
 - ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
 - ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- ☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- ☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- ☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- ☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality *(No New Impervious Area to be Treated)*

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- ☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - ☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - ☐ is within the Zone II or Interim Wellhead Protection Area
 - ☐ is near or to other critical areas
 - ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - ☐ involves runoff from land uses with higher potential pollutant loads.
 - ☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - ☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- ☐ The BMP is sized (and calculations provided) based on:
 - ☐ The ½" or 1" Water Quality Volume or
 - ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- ☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- ☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs) *(Not Applicable)*

- ☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- ☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- ☐ The NPDES Multi-Sector General Permit does **not** cover the land use.
- ☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- ☐ All exposure has been eliminated.
- ☐ All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- ☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas *(Site Discharges to Zone A, only clean roof runoff to be infiltrated)*

- ☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- ☒ Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable (*Not Applicable*)

- ☐ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
 - ☐ Limited Project
 - ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - ☐ Bike Path and/or Foot Path
 - ☐ Redevelopment Project
 - ☐ Redevelopment portion of mix of new and redevelopment.
- ☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- ☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- ☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- ☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- ☒ The project is **not** covered by a NPDES Construction General Permit. (*Disturbs less than 1 acre*)
- ☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- ☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- ☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - ☒ Name of the stormwater management system owners;
 - ☒ Party responsible for operation and maintenance;
 - ☒ Schedule for implementation of routine and non-routine maintenance tasks;
 - ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
 - ☒ Description and delineation of public safety features;
 - ☒ Estimated operation and maintenance budget; and
 - ☒ Operation and Maintenance Log Form.
- ☐ The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- ☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- ☒ An Illicit Discharge Compliance Statement is attached;
- ☐ NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

Attachment 1
Soil Data

Hydrologic Soil Group—Plymouth County, Massachusetts



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

9/10/2019
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Plymouth County, Massachusetts
 Survey Area Data: Version 11, Sep 7, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 26, 2014—Sep 4, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		4.1	7.4%
37A	Massasoit - Mashpee complex, 0 to 3 percent slopes	D	13.7	25.1%
51A	Swansea muck, 0 to 1 percent slopes	B/D	0.1	0.1%
253B	Hinckley loamy sand, 3 to 8 percent slopes	A	24.6	45.0%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	A	5.5	10.1%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	A	4.6	8.4%
481B	Plymouth - Carver complex, 3 to 8 percent slopes, bouldery	A	2.2	4.0%
Totals for Area of Interest			54.7	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Plymouth County, Massachusetts

253B—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8

Elevation: 0 to 1,430 feet

Mean annual precipitation: 36 to 53 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 250 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Moraines, kame terraces, kames, outwash terraces, outwash deltas, outwash plains, eskers

Landform position (two-dimensional): Summit, backslope, footslope, shoulder

Landform position (three-dimensional): Nose slope, side slope, base slope, crest, tread, riser

Down-slope shape: Linear, convex, concave

Across-slope shape: Convex, linear, concave

Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 8 inches: loamy sand

Bw1 - 8 to 11 inches: gravelly loamy sand

Bw2 - 11 to 16 inches: gravelly loamy sand

BC - 16 to 19 inches: very gravelly loamy sand

C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat):

Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent

Landform: Outwash plains, kames, eskers, moraines, outwash terraces, outwash deltas, kame terraces

Landform position (two-dimensional): Summit, shoulder, backslope, footslope

Landform position (three-dimensional): Nose slope, side slope, base slope, crest, tread, riser

Down-slope shape: Linear, convex, concave

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent

Landform: Kame terraces, outwash plains, moraines, outwash terraces, outwash deltas

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Side slope, base slope, head slope, tread

Down-slope shape: Concave, linear

Across-slope shape: Linear, concave

Hydric soil rating: No

Agawam

Percent of map unit: 2 percent

Landform: Outwash plains, kames, eskers, moraines, outwash terraces, outwash deltas, kame terraces

Landform position (two-dimensional): Summit, shoulder, backslope, footslope

Landform position (three-dimensional): Nose slope, side slope, base slope, crest, tread, riser

Down-slope shape: Linear, convex, concave

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

Data Source Information

Soil Survey Area: Plymouth County, Massachusetts

Survey Area Data: Version 11, Sep 7, 2018

Attachment 2 Stormwater Recharge Calculations

**JOB NO./LOCATION:**1762.11
Pembroke, MA**CLIENT/PROJECT:**Eli & Bessie Cohen Camps
Camp Pembroke Yurt Village**SUBJECT/TITLE:**

Stormwater Recharge Calculations

OBJECTIVE OF CALCULATION:

- To calculate the required recharge volume for the proposed common house building and yurts to satisfy Standard 3 of the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards.
- To design groundwater recharge best management practices (BMPs) that will infiltrate the required volume of stormwater to comply with Standard 3.
- To confirm the proposed stormwater BMPs will comply with the 72-hour dewatering requirement.

CALCULATION METHOD(S):

- AutoCAD 2019 computer program was utilized for quantifying trench lengths for volume calculations.
- Storage volume calculation for subsurface infiltrators was performed using the chamber wizard feature in the HydroCAD version 10.00 program.

ASSUMPTIONS:

- NRCS soils mapping for the project site is Hinckley loamy sand, hydrologic soil group A.
- Void spacing for crushed stone in perimeter trenches and drip edges assumed to be 30%.
- Rawls Rate of 8.27 in/hr used for exfiltration rate for trenches based on test pit and percolation test performed for the septic system for the adjacent cabins by Grady Consulting, Inc. (see attached plans).

SOURCES OF DATA/EQUATIONS:

- Camp Pembroke Yurt Village Grading, Drainage and Utilities Plan, B+T File No. 176211P013A-005.
- NRCS Soil Survey for Plymouth County, hydrologic soil group report and soil map unit description, downloaded from Web Soil Survey on 09/10/2019.
- Massachusetts DEP Stormwater Management Handbook, February 2008.
- Test Pit & Percolation Test data on Septic Repair Plans prepared by Grading Consulting, Inc. dated February 3, 2005, last revised March 8 2005.

CONCLUSIONS:

- The proposed stormwater BMPs will provide the required recharge volume based on the rooftop impervious area, and will dewater within 72-hours as demonstrated by the attached calculations.

REV	CALC. BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
0	<i>J. Murphy</i>	9/11/19	<i>MC</i>	9/16/19	<i>J. Murphy</i>	9/16/19





BEALS + THOMAS

Standard 3: Groundwater Recharge

Groundwater Recharge Volume Required:

$R_v = F \times \text{Impervious Area}$, where:

R_v = Required Recharge Volume [CF]

F = Target Depth Factor associated with each Hydrologic Soil Group (HSG) [in]

Impervious Area = Total Rooftop Area under Post-development Conditions [SF]

(Note: Yurt Areas include front deck)

Soil Mapped as Hinckley Loamy Sand

(HSG "A", use $F = 0.6$ in)

Building			Impervious Area [SF]	Required Recharge Volume [CF]
Yurt -1	0.6	in	740	37
Yurt -2	0.6	in	740	37
Yurt -3	0.6	in	740	37
Yurt -4	0.6	in	740	37
Common House (including deck, stairs & ramp)	0.6	in	3242	162
Total Required Recharge Volume (R_v) =				<u>310</u> CF

Capture Area Adjustment: (Ref: DEP Handbook V.3 Ch.1 P.27-28)

Total Project Impervious Area (Total) = 6202 SF

Impervious Area Draining to Infiltrative BMPs (infil) = 6202 SF

Percent Imp. Area Draining to Infiltrative BMPs = 100.0%

Capture Area Adjustment Factor = (Total)/(Infil) = C_a = 1.00

Adjusted Required Recharge Volume = $C_a \times R_v$ = 310 CF

Groundwater Recharge Volume Provided :

BMP	Provided Recharge Volume [CF]
Drip Edge-1 =	44
Drip Edge-2 =	44
Drip Edge-3 =	44
Drip Edge-4 =	44
Perimeter Trench =	118
Subsurface Infiltrator-1 and -2 =	82
Total Provided Recharge Volume =	<u>376</u> Ac-ft

**PROVIDED GROUNDWATER RECHARGE VOLUME IS GREATER THAN OR EQUAL TO THE REQUIRED RECHARGE VOLUME,
THEREFORE PROPOSED STORMWATER MANAGEMENT DESIGN IS IN COMPLIANCE WITH STANDARD 3.**

JOB NO. 1762.11

JOB: Camp Pembroke: Yurt Village

COMPUTED BY: JRM

DATE: 09/11/19

CHECKED BY: MC

DATE: 9/12/19



BEALS + THOMAS

Standard 3: Drawdown

$$\text{Drawdown Time} = \frac{R_v}{(K) (\text{Bottom Area})}$$

where:

Rv = Storage Volume Below Outlet [CF]

K= Infiltration Rate [in/hr]

Bottom Area= Bottom Area of Recharge System [SF]

Assumption: Based on nearby test pits & percolation tests of < 2 min/in and sand, 8.27 in/hr Rawls Rate selected

Subsurface Infiltrator-1 & 2

Rv = 41 CF

K = 8.27 in/hr

Bottom Area = 50 SF

Drawdown Time = 1.190 Hours

< 72 Hours, Design is in compliance with the standard.

Common House Perimeter Trench

Rv = 118 CF

K = 8.27 in/hr

Bottom Area = 300 SF (200 LFx 1.5 FT = 300 SF)

Drawdown Time = 0.571 Hours

< 72 Hours, Design is in compliance with the standard.

Crushed Stone Drip Edge (for each yurt)

Rv = 44 CF

K = 8.27 in/hr

Bottom Area = 146 SF (97 LF X 1.5 SF = 146 SF)

Drawdown Time = 0.437 Hours

< 72 Hours, Design is in compliance with the standard.

Note:

1. The infiltration BMPs have been designed to fully drain within 72 hours, therefore the proposed stormwater management design is in compliance with Standard 3 .

2. Infiltration Rate based on Volume 3, Chapter 1, Table 2.3.3 *Rawls Rates* from the 2008 MA DEP Stormwater Management Handbook.

JOB NO. 1762.11

COMPUTED BY: JRM

CHECKED BY: MC

JOB: Camp Pembroke: Yurt Village

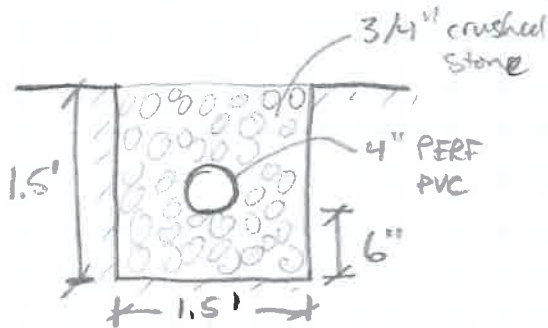
DATE: 09/11/19

DATE: 9/12/19

1762.11 - Yurt Village: Stormwater BMP Storage Volumes

Recharge Volumes For Common House

Perimeter Trench



Typical Section

Storage In Trench: V_1 = Trench Vol w/ Stone
 V_2 = Volume 4" pipe

$$V_1 = 200 \text{ LF} \times (1.5 \text{ ft} \times 1.5 \text{ ft}) \times .30 \text{ voids in stone}$$

$$V_1 = 135 \text{ ft}^3$$

$$V_2 = \frac{\pi (0.33 \text{ ft})^2}{4} \times 200 \text{ LF}$$

$$V_2 = 17 \text{ ft}^3$$

$$V_T = V_1 - V_2 = 135 \text{ ft}^3 - 17 \text{ ft}^3 = \underline{118 \text{ ft}^3}$$

Subsurface Infiltrators (see HydroCAD Printout)

$$\text{Stone Storage} = 26 \text{ ft}^3$$

$$\text{Chamber Storage} = 15 \text{ ft}^3$$

$$\text{Total Storage} = 41 \text{ ft}^3 \text{ per infiltrator}$$

$$\text{Storage for both Infiltrators} = \underline{82 \text{ ft}^3}$$

$$\text{Total Storage (Infiltrators + Perimeter Trench)} = 82 \text{ ft}^3 + 118 \text{ ft}^3 = \underline{200 \text{ ft}^3}$$

$$\text{Recharge Provided} = \underline{200 \text{ ft}^3} > \text{Recharge Req'd} = \underline{162 \text{ ft}^3}$$

JOB NO. 1762.11

CALC BY: JRM

DATE: 9/11/19

TOWN: Pembroke MA

CHECKED BY: 

DATE: 7/16/19

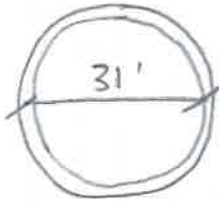
PROJECT: Yurt Village

PAGE 1 OF 2

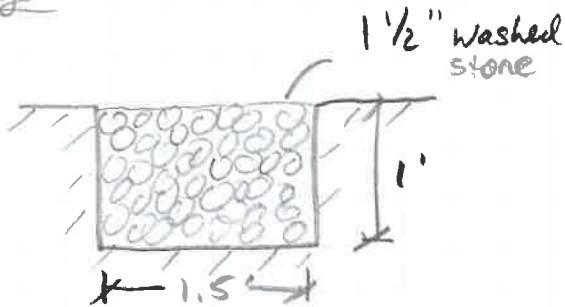


Recharge Volumes for Yurts

Crushed Stone Drip Edge



PLAN VIEW



Storage Volume per Yurt

$$V = (1.5\text{ft} \times 1\text{ft}) \times \pi (31\text{ft}) \times 0.30 \text{ voids} \approx \underline{\underline{44\text{ft}^3}}$$

$$\text{Recharge Provided} = 44\text{ft}^3 \rightarrow \text{Recharge Req'd} = 37\text{ft}^3$$

JOB NO. 1762.11

CALC BY: JRM

DATE: 9/11/19

TOWN: Pembroke MA

CHECKED BY: msc

DATE: 9/16/19

PROJECT: Yurt Village

PAGE 2 OF 2



176211HC001

Prepared by Beals and Thomas, Inc.

HydroCAD® 10.00-20 s/n 04493 © 2017 HydroCAD Software Solutions LLC

Type III 24-hr Plymouth-001yr Rainfall=2.50"

Printed 9/11/2019

Pond 1P: Subsurface Infiltrator - Chamber Wizard Field A

Chamber Model = Cultec C-100HD (Cultec Contactor® 100HD)

Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf

Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap

Row Length Adjustment= +0.50' x 1.86 sf x 1 rows

1 Chambers/Row x 7.50' Long +0.50' Row Adjustment = 8.00' Row Length +12.0" End Stone x 2 = 10.00' Base Length

1 Rows x 36.0" Wide + 12.0" Side Stone x 2 = 5.00' Base Width

6.0" Base + 12.5" Chamber Height + 6.0" Cover = 2.04' Field Height

1 Chambers x 14.0 cf +0.50' Row Adjustment x 1.86 sf x 1 Rows = **14.9 cf** Chamber Storage

102.1 cf Field - 14.9 cf Chambers = 87.2 cf Stone x 30.0% Voids = **26.2 cf** Stone Storage

Chamber Storage + Stone Storage = **41.0 cf** = 0.001 af

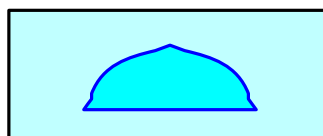
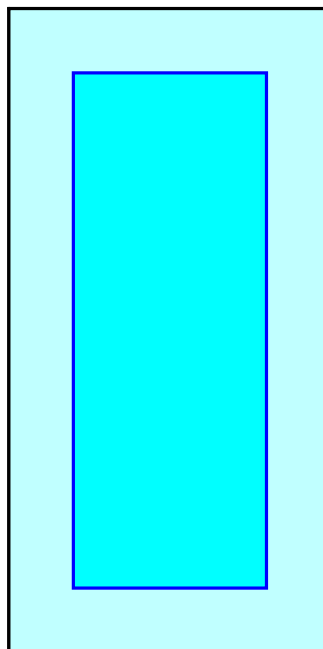
Overall Storage Efficiency = 40.2%

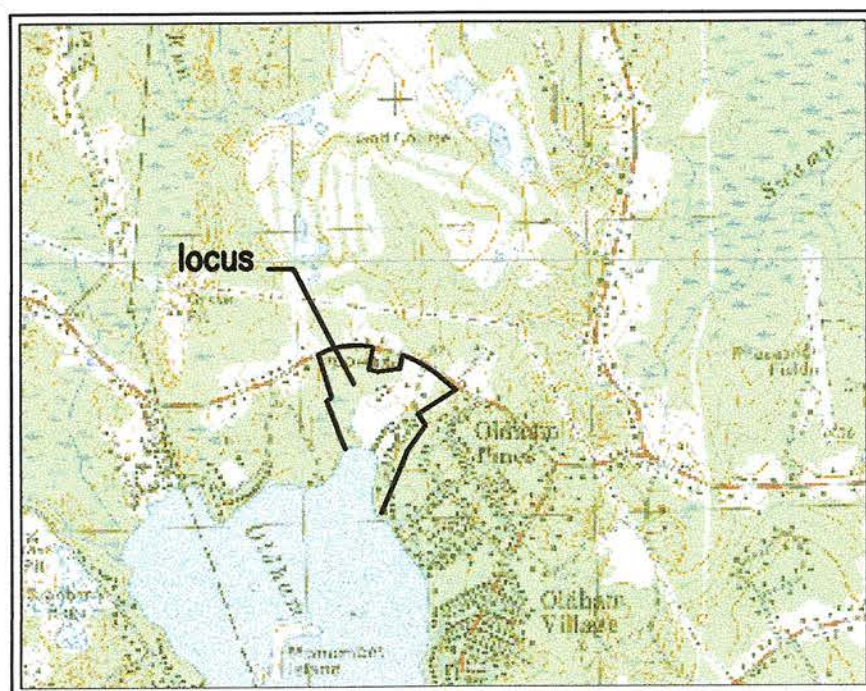
Overall System Size = 10.00' x 5.00' x 2.04'

1 Chambers

3.8 cy Field

3.2 cy Stone





LOCATION MAP (NOT TO SCALE)

THE PROPOSED SYSTEM WILL NOT ALTER ANY DRAINAGE PATTERNS & WILL NOT HAVE ANY ADVERSE IMPACTS UPON ADJUTING PROPERTIES

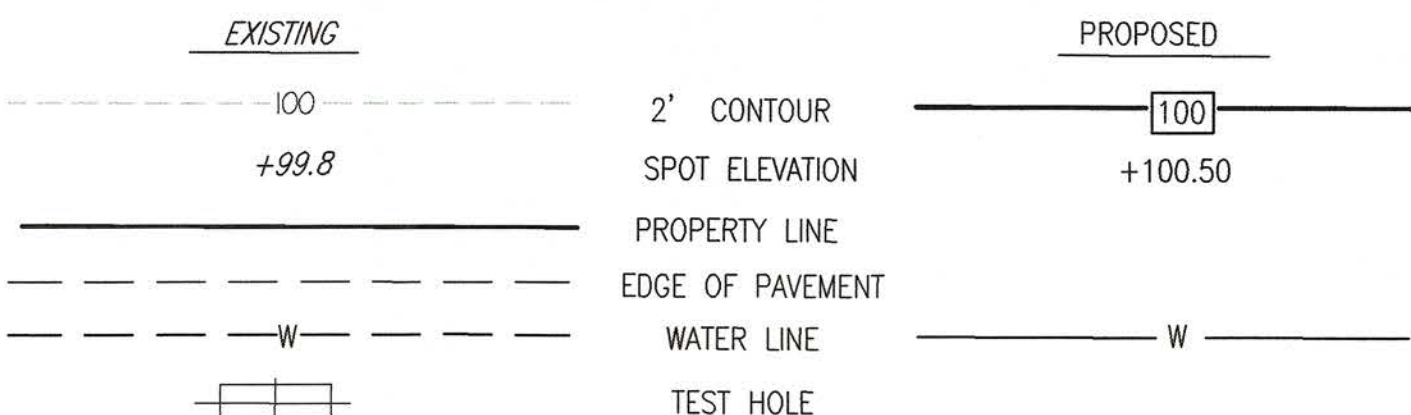
NOTE: NO SOIL ABSORPTION SYSTEMS WERE OBSERVED ON ADJUTING LOTS WITHIN 20 FT OF THE PROPOSED SYSTEM.

REQUIRED INSPECTIONS

1. PRIOR TO BACKFILLING ANY SYSTEM COMPONENTS.
2. AFTER EXCAVATION OF LEACHING AREA PRIOR TO INSTALLING SAND.
3. AFTER SYSTEM CONSTRUCTION PRIOR TO BACKFILLING.
4. AFTER FINAL GRADING IS COMPLETED.

ALL TANKS MUST BE INSPECTED AND CERTIFIED TO BE WATERPROOF. (ADDITIONAL INSPECTIONS MAY BE REQUIRED BY THE BOARD OF HEALTH)

LEGEND



SEPTIC DESIGN (NOT DESIGNED FOR GARBAGE GRINDER)

1. DESIGN DAILY FLOW: CAMP RESIDENT, MESS HALL
420 PERSONS. x 10 GPD/PERSONS = 4200 GPD
USE - *4600 GPD FROM 2004 CHLORINATOR TREATMENT SYSTEM RECORDS

2. SEPTIC TANK: 4000 GPD x 2 = 8000 GAL.
USE: 2-7000 GALLON 2 COMPARTMENT SEPTIC TANKS(SEE DETAIL)

3. LEACHING FIELD: P.R. = 2 MIN/IN CLASS I
USE: 1-104' LONG x 60' WIDE x 6" DEEP LEACHING FIELD

TITLE V

PROPOSED AREA: (104 x 60) = 6240 S.F.
CAPACITY: 6240 S.F. x 0.74 GPD/S.F. = 4617 > 4600 GPD(D.D.F.)

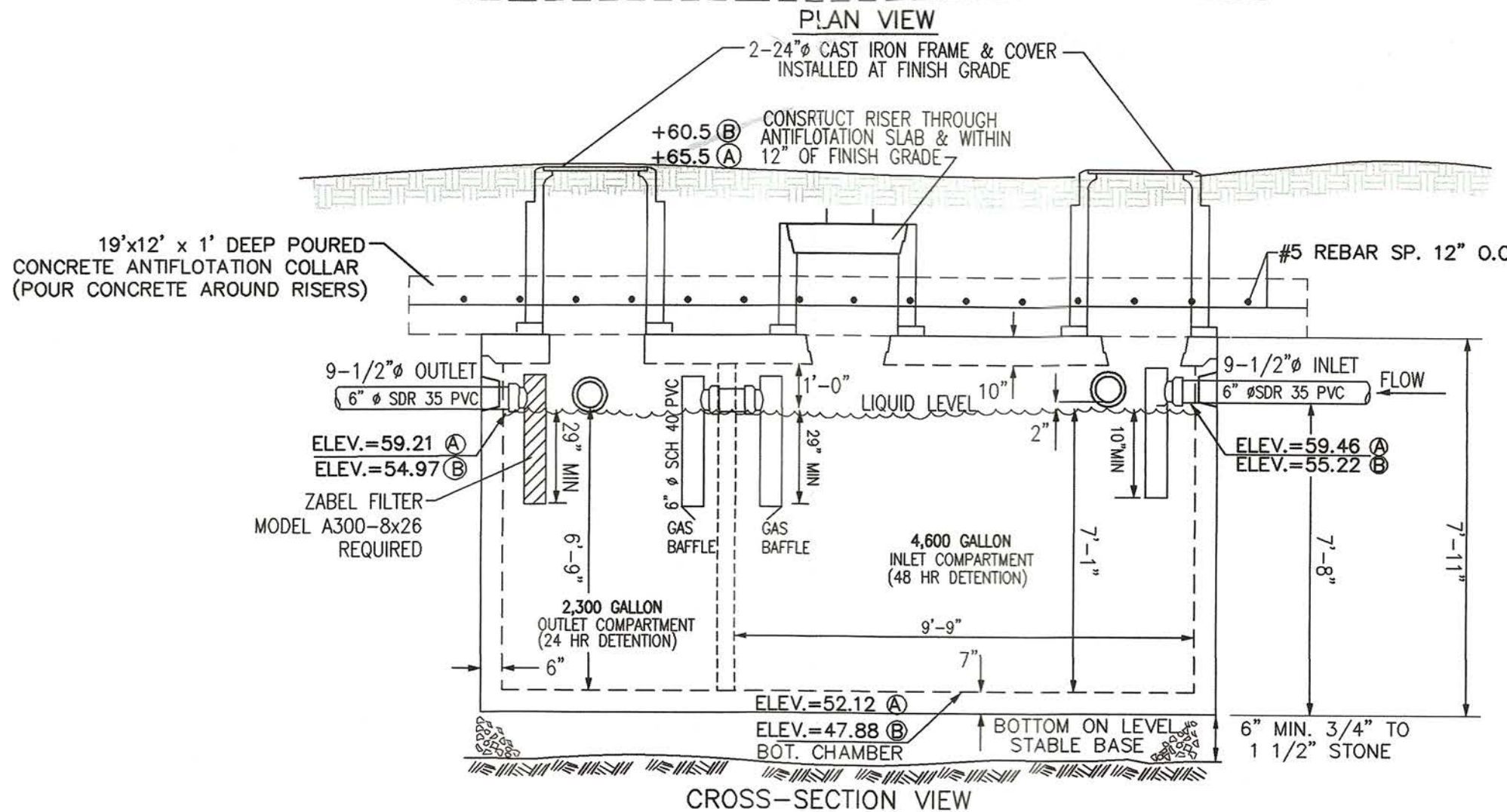
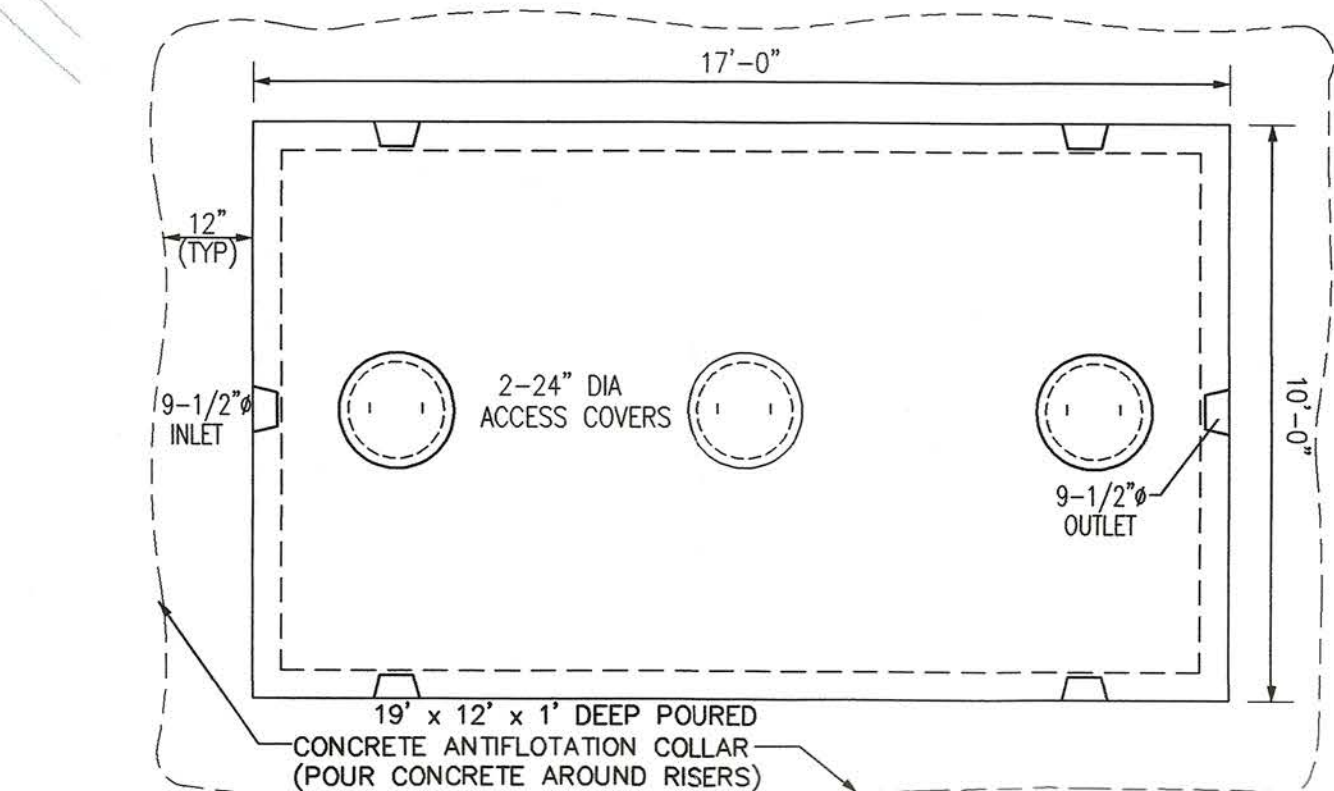
SEPTIC NOTES

1. TOPOGRAPHIC & PROPERTYLINE DATA FROM COMPILED TOPOGRAPHIC PLAN BY BEALS AND THOMAS INC DATED OCTOBER 27, 2003.
2. ADDITIONAL TOPOGRAPHIC SURVEY BY GRADY CONSULTING FEBRUARY 2005.
3. SOILS TESTING BY GRADY CONSULTING (KEVIN GRADY) WITNESSED BY HEALTH AGENT FRED LEARY NOVEMBER 29, 2004.
4. CALL DIG SAFE 1-888-344-7233 AT LEAST 4 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. NOTIFY TOWN AND GRADY CONSULTING PRIOR TO BACKFILLING OF SYSTEM.
6. NO KNOWN WELLS EXIST WITHIN 200' OF THE PROPOSED SYSTEM
7. EXCAVATE ALL MATERIAL (FILL, A, B, LAYERS) TO SAND C/C1 LAYER (20"±), 5' AROUND SYSTEM. REPLACE WITH CLEAN COARSE SAND IN ACCORDANCE WITH 310 CMR 15.255(3). EXCAVATION TO BE INSPECTED BY GRADY CONSULTING L.L.C. AND TOWN PRIOR TO SOIL REPLACEMENT.
APPROXIMATE PERC SAND VOLUME = $114 \times 70 \times [67.9 - (65.5+62.8/2)] / 27 + 20\% = 1400 \pm$ C.Y.
8. THE SITE IS LOCATED IN A ZONE II OF AN AQUIFER.

ASSESSORS LOT B10-15
LOT AREA = 35.7± ACRES

SOIL LOGS

T.H.#1	T.H.#2
EL. 66.51	EL. 64.50
0'-12" FILL LOAM	0'-10" A LOAM
PERC 65.51	63.67
12'-72" C1 GRAVELLY MEDIUM SAND	10'-20" B LOAMY SAND
PERC 60.51	62.83
24'-42" P.R.<2 MIN/IN	PERC 60.51
72'-132" C2 SILT LOAM	10'-120" B FINE-MEDIUM SAND
PERC 55.51	54.50
5'-0" MOTTLING (EL=61.51)	2'-6" MOTTLING (EL=62.00)



SCITUATE RAY PRECAST
SEPTIC TANK 9 x 16-7

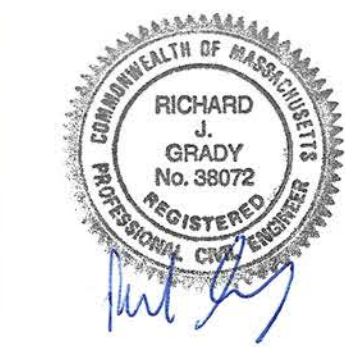
WEIGHT TOP = 24,500
BOTTOM=20,300
SECTION=7,700
TOTAL=52,300 LBS

ALL TANKS MUST BE INSPECTED AND CERTIFIED TO BE WATERPROOF.
7000 GALLON 2-COMPARTMENT SEPTIC TANK
(NOT TO SCALE)

SEPTIC REPAIR PLAN
CAMP PEMBROKE
290 OLDHAM STREET
PEMBROKE, MASSACHUSETTS

Applicant Owner

ELI & BESSIE COHEN FOUNDATION OF MASS., INC
30 MAIN STREET
ASHLAND, MA 01721



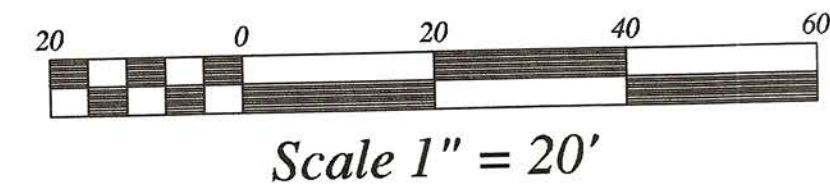
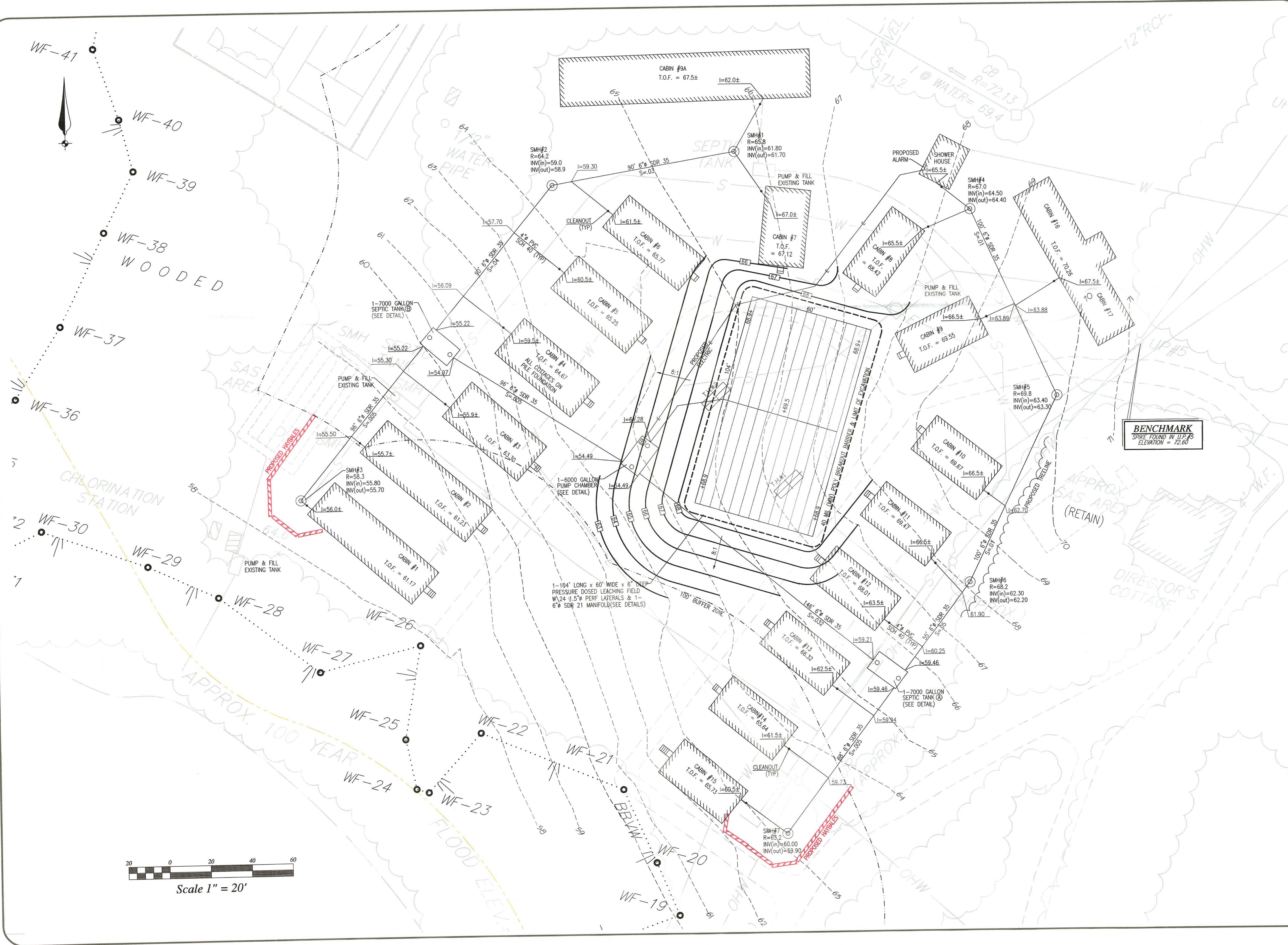
FEBRUARY 3, 2005

SCALE: 1" = 100'

JOB NO. 04-238

LATEST REVISION:

MARCH 3, 2005
REVIEW ENGINEER COMMENTS
MARCH 8, 2005
4600 GPD



GRADY CONSULTING, L.L.C.
 Registered Professional Civil Engineers ♦
 6 GRAYS BEACH ROAD
 KINGSTON, MA 02364
 Tel. (781) 585-2300 Fax. (781) 585-2378

SEPTIC REPAIR PLAN
CAMP PEMBROKE
 290 OLDHAM STREET
 PEMBROKE, MASSACHUSETTS

Applicant\Owner
 ELI & BESSIE COHEN FOUNDATION OF MASS., INC.
 30 MAIN STREET
 ASHLAND, MA 01721

FEBRUARY 3, 2005

SCALE: 1" = 20'

JOB NO. 04-238

LATEST REVISION:
 MARCH 3, 2005
 REVIEW ENGINEER COMMENTS
 MARCH 8, 2005
 4600 GPD

SHEET 2 OF 3

Attachment 3
Site Owner's Manual

Site Owner's Manual

CAMP PEMBROKE YURT VILLAGE

**306 Oldham Street
Pembroke, Massachusetts**

Prepared for:

**Eli & Bessie Cohen Camps
888 Worcester Street, Suite 350
Wellesley, MA, 02482**

Prepared by:



BEALS + THOMAS

BEALS AND THOMAS, INC.
32 Court Street
Plymouth, MA 02360-3866

September 16, 2019

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FIGURES

FIGURE 1: SITE PLANS

APPENDICES

APPENDIX A: OPERATION AND MAINTENANCE LOG

APPENDIX B: LIST OF EMERGENCY CONTACTS

1.0 INTRODUCTION

The Site Owner's Manual complies with the Long-Term Pollution Prevention Plan (Standard 4) and the Long-Term Operation and Maintenance Plan (Standard 9) requirements of the 2008 Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook. The Manual outlines source control and pollution prevention measures and maintenance requirements of stormwater best management practices (BMPs) associated with the proposed project.

2.0 SITE OWNER'S AGREEMENT

2.1 Operation and Maintenance Compliance Statement

Site Owner: Eli & Bessie Cohen Camps
888 Worcester Street, Suite 350
Wellesley, MA, 02482

Responsible Party: Eli & Bessie Cohen Camps

Eli & Bessie Cohen Camps or their successors shall maintain ownership of the on-site stormwater management BMPs as well as the responsibility for operation and maintenance during the post-development stages of the project. The site has been inspected for erosion and appropriate measures have been taken to permanently stabilize any eroded areas. All aspects of stormwater best management practices (BMPs) have been inspected for damage, wear and malfunction, and appropriate steps have been taken to repair or replace the system or portions of the system so that the stormwater at the site may be managed in accordance with the Stormwater Management Standards. Future responsible parties shall be notified of their continuing legal responsibility to operate and maintain the BMPs. The operation and maintenance plan for the stormwater BMPs is being implemented.

Responsible Party Signature

Date

2.2 Stormwater Maintenance Easements

The Site Owner has obtained access to all off-site areas utilized for stormwater control.

2.3 Record Keeping

The Site Owner shall maintain a rolling log in which all inspections and maintenance activities for the past three years shall be recorded. The Operation and Maintenance Log includes information pertaining to inspections, repairs, and disposal relevant to the project's stormwater management system. The Log is located in Appendix A.

The Operation and Maintenance Log shall be made available to the Conservation Commission and MassDEP upon request. The Conservation Commission and MassDEP shall be allowed to enter and inspect the premises to evaluate and ensure that the responsible party complies with the maintenance requirements for each BMP.

2.4 Training

Employees involved in grounds maintenance and emergency response will be educated on the general concepts of stormwater management and groundwater protection. The Site Owner's Manual will be reviewed with the maintenance staff. The staff will be trained on the proper course of action for specific events expected to be incurred during routine maintenance or emergency situations.

3.0 LONG-TERM POLLUTION PREVENTION PLAN

In compliance with Standard 4 of the 2008 MassDEP Stormwater Management Handbook, this section outlines source control and pollution prevention measures to be employed on-site after construction.

3.1 Storage of Materials and Waste

The site shall be kept clear of trash and debris at all times. Certain materials and waste products shall be stored inside or outside upon an impervious surface and covered, as required by local and state regulations.

3.2 Vehicle Washing

No commercial vehicle washing shall take place on site.

3.3 Routine Inspections and Maintenance of Stormwater BMPs

See Section 4.0 Long-Term Operation and Maintenance Plan, for routine inspection and maintenance requirements for all proposed stormwater BMPs.

3.4 Spill Prevention and Response

A contingency plan shall be implemented to address the spill or release of petroleum products and hazardous materials and will include the following measures:

1. Equipment necessary to quickly attend to inadvertent spills or leaks shall be stored on-site in a secure but accessible location. Such equipment shall include but not be limited to the following: safety goggles, chemically resistant gloves and overshoe boots, water and chemical fire extinguishers, sand and shovels, suitable absorbent materials, storage containers and first aid equipment (i.e. Indian Valley Industries, Inc. 55-gallon Spill Containment kit or approved equivalent).
2. Spills or leaks shall be treated properly according to material type, volume of spillage and location of spill. Mitigation shall include preventing further spillage, containing the spilled material in the smallest practical area, removing spilled material in a safe and environmentally-friendly manner, and remediation of any damage to the environment.
3. For large spills, Massachusetts DEP Hazardous Waste Incident Response Group shall be notified immediately at 888-304-1133 and an emergency response contractor shall be consulted.

3.5 Maintenance of Lawns and other Landscaped Areas

Lawns and other landscaped areas shall be maintained regularly by the site owner. Stormwater BMPs will be maintained as outlined in Section 4.0.

3.6 Storage and Use of Fertilizers, Herbicides, and Pesticides

All fertilizers, herbicides, and pesticides shall be stored in accordance with local, state, and federal regulations. The application rate and use of fertilizers, herbicides, and pesticides on the site shall at no time exceed local, state, or federal specifications. Fertilizers containing phosphorus shall not be used.

3.7 Operation and Management of Septic Systems

The proposed project will include a septic system to treat wastewater (to be designed and permitted by others). The septic system shall be operated and maintained in accordance with local and state regulations.

4.0 LONG-TERM OPERATION AND MAINTENANCE PLAN

This section outlines the stormwater best management practices (BMPs) associated with the proposed stormwater management system and identifies the long-term inspection and maintenance requirements for each BMP.

4.1 Stormwater Management System Components

The following table outlines the type and quantity of the BMPs and their general location. Please reference the Site Plan(s) provided in the Figures section for exact location. All BMPs are accessible for maintenance from the internal site driveways.

BMP Type	Quantity	Location
Perimeter Drain & Drip Edges	5	Around the perimeter of the common house and yurt platforms
Subsurface Infiltrators	2	On either side of the common house

4.2 Inspection and Maintenance Schedules

4.2.1 Perimeter Trench & Drip Edges

Inspections and preventative maintenance shall be performed at all perimeter trenches and drip edges after major storm events (rainfall totals greater than 2.5 inches in 24 hours) during the first three months of operation and twice a year thereafter. Inspections and maintenance activities shall include the following measures:

- Accumulated sediment, trash, debris, and leaves, shall be removed every 6 months and after major storm events.
- The trenches shall be inspected 24 hours or several days after a rain event to look for ponded water. If there is ponded water at the surface of the trench, the following measures shall be employed to address surficial clogging:
 - Remove and replace first layer of stone aggregate and the filter fabric.
- If there is ponded water inside the trench, the following measures shall be employed to address trench failure:
 - All accumulated sediments must be stripped from the bottom of the trench.
 - The bottom of the trench must be scarified and tilled to induce infiltration, and all of the stone aggregate and filter fabric or media shall be removed and replaced.

4.2.2 Subsurface Infiltrators

Subsurface Infiltrators shall be inspected twice per year. The system shall be inspected visually using the observation port and inlets shall be inspected, and all debris that may clog the system shall be removed.

4.3 Estimated Operation and Maintenance Budget

An operations and maintenance budget was prepared to approximate the annual cost of the inspections required in compliance with the MassDEP Stormwater Management Policy. The table below estimates the annual cost to inspect and maintain each proposed BMP, based on the requirements in Section 4.2.

BMP Type	# of BMPS	Annual O&M Cost (per BMP) ¹	Total Cost
Perimeter Trench & Drip Edges	5	\$200-\$400	\$1000-\$2000
Subsurface Infiltration Chambers	2	\$200-\$400	\$400-\$800
Total			\$1400-\$2800

4.4 Public Safety Features

The stormwater BMPs include the following safety measures to protect the public and prevent pollutant contamination of the stormwater management system and other water resources. The infiltration BMPs proposed will only receive clean roof runoff, as there is no proposed vehicle parking as part of project, which will minimize the potential of pollutants to contaminate stormwater management system. The subsurface systems will also be buried below finished grade which will provide protection of the systems from surface foot traffic and activities.

¹ Annual maintenance cost is based on estimate of the cost to complete all inspection and maintenance measures outlined in Section 4.2. For BMPs that require sediment removal at regular intervals (i.e. every 5 or 10 years), the annual cost includes the annual percentage of that cost.

Figures

Figure 1: Site Plans
(Grading, Drainage & Utility Plan and Detail Sheets)

Appendices

Appendix A

Operation and Maintenance Log

Name/Company of Inspector:
Date/Time of Inspection:
Weather Conditions: (Note current weather and any recent precipitation events)

[illegible]

Appendix B

List of Emergency Contacts

Emergency Contacts:

Massachusetts DEP Hazardous Waste Incident Response Group
(888) 304-1133

Pembroke Fire Department
Emergencies: Dial 911
12 Center Street
Pembroke, MA 02359
Tel: (781) 293-2300

Pembroke Police Department
Emergencies: Dial 911
80 Center Street
Pembroke, MA 02359
Tel: (781) 293-6363

Attachment 4
Construction Period Erosion, Sedimentation &
Pollution Prevention Plan

Construction Period Sediment, Erosion & Pollution Prevention Plan

Camp Pembroke Yurt Village

**306 Oldham Street
Pembroke, Massachusetts**

Prepared for:

**Eli & Bessie Cohen Camps
888 Worcester Street, Suite 350
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Presented by:



BEALS + THOMAS

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September 16, 2019

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APPENDIX B: INSPECTION AND MAINTENANCE LOG

1.0 SITE EVALUATION, ASSESSMENT, AND PLANNING

The Construction Period Erosion, Sediment & Pollution Prevention Plan complies with the requirements of Standard 8 of the 2008 Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook. The Plan outlines source control and pollution prevention measures, and maintenance requirements for the erosion and sediment control measures associated with the construction of the proposed project.

1.1 Responsible Party

Name of persons or entity responsible for Plan compliance, to be determined prior to construction.

Company:					
Name:					
Address:					
City:		State:		ZIP Code:	
Telephone:		Fax:			

1.2 Construction Sequencing Plan

Before any site grading activities begin:

1. Stake Limit of Construction. Workers shall be informed that no construction activity is to occur beyond this limit at any time.
2. Clear vegetation as necessary to complete construction of the yurt village and common house.
3. The existing ground surface shall be disturbed as little as possible prior to the start of construction.
4. Install erosion and sediment control barriers as shown on the plans. An adequate stockpile of erosion control materials shall be on site at all times for emergency or routine replacement and shall include materials to repair erosion controls, or any other devices planned for use during construction.
5. Construct a staging and materials storage area within the existing soccer field, and as far from resource areas as practicable.
6. Install temporary sanitary facilities and dumpsters.

Site grading:

1. Establish small material stockpiles as necessary and implement perimeter controls to ensure sediment does not leave the limit of work
2. Complete grading, seed and stabilize disturbed soils as soon as practicable upon completion of building, yurts, and pathways

Infrastructure:

1. Install footings and foundations for building and yurts
2. Install underground plumbing for common house and electrical service to building and yurts
3. Install stormwater BMPs and associated piping
4. Backfill and clean up grades after installing utilities

Final stabilization:

1. Finalize subgrades for pathways installation and landscaping
2. Prepare areas and complete final landscaping and seeding of disturbed soils
3. Monitor stabilized areas until final stabilization is reached

2.0 EROSION AND SEDIMENT CONTROL BMPS

This plan contains a listing of the erosion and sediment control best management practices (BMPs) that will be implemented to control pollutants in stormwater discharges. The BMPs are categorized under one of the areas of BMP activity as described below:

- 2.1 Minimize disturbed area and protect natural features and soil.
- 2.2 Phased construction activity.
- 2.3 Control stormwater flowing onto and through the project.
- 2.4 Stabilize soils.
- 2.5 Establish perimeter controls and sediment barriers.

2.1 Minimize Disturbed Area and Protect Natural Features and Soil

2.1.1 Preserve Existing Vegetation

Description:	Remove trees/brush as needed within the limit of work to construct the proposed yurts and common house.
Installation Schedule:	Identify specific trees to be removed prior to construction.
Maintenance and Inspection:	The area shall be inspected weekly to ensure adjacent sediment control measures are intact and functioning as intended.

2.2 Phased Construction Activity

The proposed work is too small for phased grading to be practical. To minimize erosion during grading activities, grading and site work shall be conducted during periods of predicted dry weather. The areas of the site that will remain vegetated after construction shall be graded first and stabilized with hydromulch or seeding immediately after grading activities are completed. All other areas of the construction site shall be stabilized if site work is not planned for more than 14 days. To minimize potential erosion from the site, only areas necessary to construct the proposed improvements shall be disturbed. These areas shall be stabilized immediately after construction but no later than 14 days after construction ceases. Areas graded during this time period shall be stabilized with hydromulch immediately after construction but no later than 14 days after construction ceases.

2.3 Control Stormwater Flowing onto and through the Project

The Contractor shall be responsible for controlling the flow of stormwater through the work area throughout the construction period. This may be accomplished through the implementation of temporary berms or other measures. These stormwater control measures shall be monitored after significant rainfall events and corrective actions taken if needed to ensure that sediment is being appropriately contained within the limits of work without detrimental impacts to adjacent resource areas or properties.

2.4 Stabilize Soil

2.4.1 Temporary Stabilization

Description:	Temporary vegetative cover shall be established using hydroseeding for areas of exposed soil (including stockpiles) where construction will cease for more than 14 days and seeded surfaces.
Installation Schedule:	Temporary stabilization measures shall be applied to portions of the site where construction activities will temporarily cease for more than 14 days.
Maintenance and Inspection:	Stabilized areas shall be inspected weekly and after storm events until a dense cover of vegetation has become established. If failure is noticed at the seeded area, the area shall be reseeded, fertilized, and mulched immediately.

2.4.2 Permanent Stabilization

Description:	Permanent stabilization shall be done immediately after the final design grades are achieved but no later than 14 days after construction ceases. Native species of plants shall be used to establish vegetative cover on exposed soils. Permanent stabilization shall be completed in accordance with the final stabilization procedures in Section 7.
Installation Schedule:	Portions of the site where construction activities have permanently ceased shall be stabilized, as soon as possible but no later than 14 days after construction ceases.
Maintenance and Inspection:	All seeded areas shall be inspected weekly during construction activities and after storm events until a dense cover of vegetation has been established. If failure is noticed at the seeded area, the area shall be reseeded, fertilized, and mulched immediately. After construction is completed at the site, permanently stabilized areas shall be monitored until final stabilization is reached.

2.5 Establish Perimeter Controls and Sediment Barriers

2.5.1 Erosion Control Barrier

☐ Permanent ☒ Temporary

Description:	An erosion control barrier, consisting of a biodegradable filter sock shall be installed along the down gradient side of the proposed project to decrease the velocity of sheet flows and intercept and detain small amounts of sediment from disturbed areas.
Installation Schedule:	Erosion Control Barrier shall be installed prior to clearing and grubbing.
Maintenance and Inspection:	Erosion Control Barrier shall be inspected weekly, following storms, and daily during rainy periods. Damaged ECB shall be replaced. Concentrated flows shall be intercepted and rerouted. Sediment accumulations shall be removed when reaching a depth of 6-inches. Deteriorated fencing material shall be replaced. Used socks shall be properly disposed of.

3.0 INSPECTION SCHEDULE AND PROCEDURES

Inspections of the site will be performed once every 7 days and within 24 hours of the end of a storm event of one-half inch or greater unless otherwise specified. The inspections will verify that all BMPs are implemented, maintained and effectively minimizing erosion and preventing stormwater contamination from construction materials.

Inspections shall include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Inspectors shall look for evidence of, or the potential for, pollutants entering the storm water conveyance system. Sedimentation and erosion control measures identified in the plan shall be observed to ensure proper operation. Discharge locations shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to resource areas, where accessible. Where discharge locations are inaccessible, nearby downstream locations shall be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

If corrective actions are identified during the inspection, the inspector shall notify and submit a copy of the inspection report to the project managers. For corrective actions identified, the project managers shall be responsible for initiating the corrective action within 24 hours of the report and completing maintenance as soon as possible or before the next storm event.

4.0 **FINAL STABILIZATION**

Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. The following sections detail the management practices proposed to achieve final stabilization of the site.

4.1 **Permanent Seeding**

Description:	Permanent seeding shall be applied immediately after the final design grades are achieved on portions of the site but no later than 14 days after construction activities have permanently ceased. After the entire site is stabilized, any sediment that has accumulated shall be removed and hauled off-site for disposal at an approved landfill. Construction debris, trash and temporary BMPs (including silt fences, material storage areas, sanitary toilets, and inlet protection) shall also be removed and any areas disturbed during removal shall be seeded immediately.
Installation Schedule:	Seeding shall occur at portions of the site where construction activities have permanently ceased shall be stabilized, as soon as possible but no later than 14 days after construction ceases.
Maintenance and Inspection:	All seeded areas shall be inspected weekly during construction activities for failure and after storm events until a dense cover of vegetation has been established. If failure is noticed at the seeded area, the area shall be reseeded, fertilized, and mulched immediately. After construction is completed at the site, permanently stabilized areas shall be monitored until final stabilization is reached.

Appendix A

Site Plans Showing Erosion and Sediment Control Measures
(Site Plans Attached Separately)

Appendix B

Inspection and Maintenance Log

Inspections under this Plan shall be conducted in accordance with each installed BMP's recommended maintenance requirements. This inspection frequency may be reduced to at least once every month if: a) the entire site is temporarily stabilized, b) runoff is unlikely due to winter conditions (e.g. site is covered with snow, ice, or the ground is frozen), or c) construction is occurring during seasonal arid periods in arid areas and semi-arid areas. If an inspection report is filed according to this modified schedule it shall be noted at the end of the report under the "NOTES" section.

The following four pages should be copied and completed for each inspection. All inspection forms should be compiled in a binder to prove compliance with this Pla

Construction Erosion, Sediment and Pollution Prevention Plan: Inspection Checklist

General Information			
Project Name			
Location			
Date of Inspection		Start/End Time	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			
Type of Inspection: <input type="checkbox"/> Regular <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide: Storm Start Date & Time: _____ Storm Duration (hrs): _____ Approx. Amount of Precipitation (in): _____			
Weather at time of this inspection? <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: _____ Temperature: _____			
Have any discharges occurred since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____			
Are there any discharges at the time of inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____			

Site-specific BMPs

- *Number the structural and non-structural BMPs identified on your site plan and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*

BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
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	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
Are all slopes and disturbed areas not actively being worked properly stabilized?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are discharge points and receiving waters free of any sediment deposits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are storm drain inlets properly protected?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the construction exit preventing sediment from being tracked into the street?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is trash/litter from work areas collected and placed in covered dumpsters?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
(Other)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Print name and title:

Signature: _____

Date: _____

Section 5.0
Plans

Entitled Camp Pembroke Yurt Village

Prepared by Beals and Thomas, Inc.

In 10 Sheets

Dated September 18, 2019