OPERATION & MAINTENANCE MANUAL
and
LONG-TERM POLLUTION PREVENTION PLAN
for
63 Gratuity Road, Groton, Massachusetts, 01450

August 12, 2024
Revised: January 13, 2025

Prepared For:
Routhier & Roper Gratuity Road, LLC
256 Ayer Road
Littleton, MA, 01460

Prepared By:
LandTech Consultants, Inc.
515 Groton Road
Westford, MA 01886

GENERAL:

The project includes the construction of a 24 unit (12 duplex buildings) residential development with paved driveways, shared septic systems, and a stormwater drainage system for the two subdivision roads. The project will include temporary placement of erosion controls along the perimeter of the site. Stormwater controls are also proposed to attenuate peak rates of runoff.

Proper maintenance of all structural and non-structural practices is essential for efficient operation of the storm water management system. Therefore, the property owners shall follow this Manual to ensure that the stormwater facilities continue to function over time.

This document is also intended as guidance for the owner/developer for implementing a Long-Term Pollution Prevention Plan in accordance with the Massachusetts Stormwater Handbook Standards 4 through 6. Deviation from approved plan is permissible only with the consent of the design engineer.

OWNER:

The stormwater management system is to be owned and maintained by the applicant listed on the Site Plan Approvals. This manual shall be available on the property.

OWNER/OPERATOR[1]
Routhier & Roper Gratuity Road, LLC
256 Ayer Road
Littleton, MA, 01460

EMERGENCY CONTACT:

[1] At the completion of the project, all rights and duties referenced in this Manual will be turned over to the future Home Owner's Association.

No alterations or modifications to the drainage system shall be made without the prior approval of the Planning Board.

REFERENCES:

Plan entitled, "Definitive Subdivision Erosion Control Plan, 63 Gratuity, Groton, MA, 01450", prepared for Routhier & Roper Gratuity Road, LLC, 256 Ayer Road, Littleton, MA, 01460, dated August 12, 2024, revised January 13, 2025.

Stormwater Management Report – 63 Gratuity Road, Groton, MA, 01450, prepared for Routhier & Roper Gratuity Road, LLC, 256 Ayer Road, Littleton, MA, 01460, prepared by LandTech Consultants, 515 Groton Road, Westford, MA, 01886.

Maintenance Agreement, 63 Gratuity Road, Groton, MA, 01450, prepared for Routhier & Roper Gratuity Road, LLC, 256 Ayer Road, Littleton, MA, 01460, prepared by LandTech Consultants, 515 Groton Road, Westford, MA 01886.

ATTACHMENTS:

- **A.** Maintenance Agreement
- **B.** Operation & Maintenance Log Sheets
- **C.** "Healthy Lawns for Healthy Families" Information Guide
- **D.** Caring for your Septic System: A Reference Guide for Homeowners
- **E.** Simplified Stormwater Plan

DESCRIPTION OF STORMWATER MANAGEMENT SYSTEM

The goal of the operation and maintenance plan is not only to protect resources on-site or nearby, but also to protect resources in the region that may be affected by the activities at the site. Water quality treatment measures and the implementation of Best Management Practices (BMP's) for structural controls will result in the treatment of site stormwater and the removal of a minimum of 80 percent of the total suspended solids (TSS) load in runoff prior to discharge from the site, consistent with Massachusetts DEP's TSS removal standard.

The following summarizes the stormwater treatment trains and the individual structural pollutant controls used to separate and capture stormwater pollutants. The stormwater management system is to be owned and maintained by the property owner.

Stormwater Treatment System – Infiltration Basins 1/2/3
The treatment train includes:

- Deep sump catch basins with removable trap on outlet pipes, discharging to
- A Contech CDS hydrodynamic separator, discharging to
- A Sediment Forebay, discharging to
- An Infiltration Basin.

Stormwater Treatment System – #2 – Infiltration Basin 4
The treatment train includes:

- A Contech CDS hydrodynamic separator with grate inlet, discharging to
- A Sediment Forebay, discharging to
- An Infiltration Basin.

DESCRIPTION OF LONG TERM OPERATION AND MAINTENANCE PLAN

The site is proposed to utilize best management practices (BMP's) to manage and treat stormwater runoff as well as control and minimize erosion and sedimentation. These practices include the use of temporary silt fence and straw wattles, permanent stormwater basins, and routine maintenance of lawn and pavement areas. Each of these components and the associated maintenance is described in detail in the following. For additional information specific to the Town of Westford's Stormwater Regulations and Utility Fee, see the stormwater documents available online at www.westfordma.gov and described in Attachment A.

DEEP SUMP CATCH BASIN

Purpose: The stormwater management system includes the use of deep sump catch basins to enhance total suspended solids removal. The proper function of these items is crucial to providing adequate groundwater recharge and flood control.

Minimum required maintenance: The maintenance of the individual catch basins affects how well the stormwater management system performs and helps with longevity. Inspect or clean deep sump basins at least four times per year and at the end of the foliage and snow removal seasons. Sediments must also be removed four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin.

DRAIN PIPES AND OVERFLOW PIPE

Purpose: The stormwater management system includes the use of drain pipes and an overflow pipe to convey stormwater. It is important that continued maintenance of this infrastructure is performed to ensure that it will continue to function as designed.

Minimum required maintenance: Regular maintenance is essential. Inspect or clean drain pipes/overflow pipe similar to catch basins, at least four times per year. Sediments must be removed whenever the depth of deposits is greater than or equal to one half the depth of the pipe. Clean trash racks, inlet and outlet structures similarly.

SEDIMENT FOREBAY

Purpose: The stormwater management system includes sediment forebays which are excavated pits and/or bermed areas. They are designed to slow incoming stormwater runoff allowing for the settlement of suspended solids. The maintenance of the system is critical as they do not function properly with sediment buildup.

Minimum required maintenance: Visual inspection of the sediment forebay shall occur monthly and cleaned out at least four (4) times per year. Mow grass on a regular/seasonal basis removing clippings and accumulated sediment from the surface.

Check for signs of rilling and gullying and repair as necessary. Replace any damaged vegetation immediately.

INFILTRATION BASIN

Purpose: The stormwater management system includes an infiltration basin to provide water quality treatment and recharge, as well as attenuate peak flows. The proposed infiltration basin has been designed to allow adequate separation to groundwater. The maintenance of the system is critical as they are prone to clogging and failure.

Minimum required maintenance: Visual inspection of the infiltration basin will occur twice per year and after every major storm during the first 3 months of operation. Remove any debris that might clog the system. If water is observed and it is at least 72 hours after a rain event, the system will be cleaned to remove any built-up sediment.

A major storm event is defined as a storm that is equal to or greater than the 2-year, 24-hour storm (generally 3.1 inches in a 24-hour period).

Important items to check during the inspection include:

- Signs of differential settlement,
- Cracking,
- Erosion,
- Leakage in the embankments
- Tree growth on the embankments
- Condition of riprap,
- Sediment accumulation and the health of the turf.

At least twice a year, mow the buffer area, side slopes, and basin bottom. Remove grass clippings and accumulated organic matter to prevent an impervious organic mat from forming. Remove trash and debris at the same time. Use deep tilling to break up clogged surfaces and revegetate immediately.

Remove sediment from the basin as necessary, when the floor of the basin is thoroughly dry. Use light equipment to remove the top layer so as to not compact the underlying soil. Deeply till the remaining soil and revegetate as soon as possible.

RAIN GUARDIAN TURRET PRETREATMENT STRUCTURES

Purpose: The stormwater management system includes the use of proprietary pretreatment structures to enhance total suspended solids removal. It is important that continued maintenance of this infrastructure is performed to ensure that it will continue to function as designed.

Minimum required maintenance: Regular maintenance is essential. Inspect or clean drain separator structures similar to catch basins, at least four times per year. Sediments must be removed whenever the depth of deposits is greater than or equal to one half the depth from bottom of sump to outlet elevation. Sediment to be removed from collection chamber with shovels or with hydro-vac and drop in filters to be cleaned with broom or hose.

CONTECH CDS HYDRODYNAMIC SEPARATOR

Purpose: The stormwater management system includes Contech CDS systems which are hydrodynamic separators used to remove pollutants from stormwater runoff, including suspended solids and free oils. It is important that continued maintenance of this infrastructure is performed to ensure that it will continue to function as designed.

Minimum required maintenance: Inspection should be performed at least twice per year, though the frequency of maintenance may need to be increased or reduced based on local conditions. Maintenance shall be performed when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated.

NATIVE MEADOW AREAS

Purpose: While not a structural component of the stormwater management system, proper maintenance of native meadow areas will allow for the proper function of other stormwater BMP's and help prevent erosion to the wetlands.

Minimum required maintenance:

- Maintain original layout of pollinator habitat(s).
- Limit chemical weed control – fertilizers not recommended.
- Mow annually in early spring or late fall, to manage growth of woody plants while avoiding cutting during peak flowering seasons. Mow at low gear and at slow speeds to allow wildlife the chance to react.
- Unless there is significant amount of woody vegetation, mow 7-12" above the ground to allow small species to grow.
- Landscaping equipment should be washed before and after each mowing in the grassland/pollinator meadow to limit spread of invasive, non-native plants.
- Leave cut vegetation to replenish soil nutrients, to create natural mulch, and to provide cover and nesting habitat for wildlife.
- Remove invasive plants or aggressive weeds by hand or manual cutting.
- Re-seed any channelized areas annually in spring and fall, or as needed, to maintain consistent vegetation.
- Inspect after major storms exceeding the 2 year storm rainfall event (2.93 inches); if necessary, remove any trapped sediment and repair any eroding areas.

References

Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook, Volume 2, Chapter 2, Structural BMP Specifications for Massachusetts Stormwater Handbook, revised and updated February 2008.

Massachusetts Leading by Example Program, Sustainable Landscaping Strategies, "Pollinator Habitat Best Management Practices."

LONG-TERM POLLUTION PREVENTION PLAN

I. Good Housekeeping Practices:

Homeowners shall maintain a clean and orderly property to prevent potential pollution sources from coming into contact with stormwater runoff and potentially degrading water quality. This includes establishing protocols to prevent the mishandling of materials or equipment, as well as, proper storing of materials and standard protocols.

- Gather up and remove debris to keep the property clean and orderly.
- Keep property equipment tidy.
- Designate areas for waste materials on collection day with suitable containers.
- Keep hoses, power cords, welding leads, etc. from laying in heavily travelled walkways or areas.

II. Provisions for Storing Materials & Waste Products Inside or Under Cover

Prevent or reduce pollutant runoff from the individual lots and the development with regular street sweeping, maintenance of designated erosion and stormwater controls as well as proper storage of materials.

All materials shall be stored in a neat and orderly fashion in their appropriate containers and under a roof or other secure enclosure. Waste products should be placed in secure receptacles until they are emptied by a licensed solid waste management company in Massachusetts.

All materials shall be stored, contained, and handled in accordance with best management practices for typical household chemicals and hazardous materials.

III. Vehicle Washing Controls

Washing of vehicles shall be done with environmentally friendly washing practices to help prevent contamination of surface and ground water from wash water. Procedures should include using off-site facilities when feasible.

- Storage is allowed of small amounts of soaps and detergents.
- Storage shall include a cover to prevent them from coming into contact with water.
- Small amounts shall be limited to quantities typically associated with “household use”.
- Fleet vehicle washing for businesses is not allowed and shall be done at offsite facilities.

IV. Requirements for Routine Inspections & Maintenance of Stormwater Bmps;

All routine inspections and maintenance of stormwater BMP’s shall be done in accordance with the Operation and Maintenance Manual referenced above.

The Home Owners Association shall provide the Westford Planning Board and Engineering Department, by the end of each calendar year, a report documenting the stormwater management system was inspected and maintained in accordance with the subdivision’s Stormwater Management

Permit and this document. The report shall be prepared and certified by a licensed professional engineer.

V. Spill Prevention & Response Plans

- Homeowner's shall properly use, handle, store and discard hazardous materials in accordance with manufacturer's instructions and as outlined below in accordance with federal and municipal regulations.
- It is recommended that homeowners have residential use spill kits for handling small spills and responses. This includes absorbent materials, small containment socks, wipes, disposal bags, nitrile gloves, goggles and general emergency response guide.
- All spills will be cleaned up immediately upon discovery. The spill area will be kept well ventilated and anyone responding will wear appropriate protective clothing to prevent injury from contact with the hazardous substances. Spent absorbent materials and rags will be hauled off-site immediately after the spill is cleaned up for disposal. Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency regardless of the size of the spill.

In addition to this spill response plan, the following procedures will be used to prevent and respond to leaks, spills, and other releases:

- Plainly label containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur. These containers shall be stored in structurally sound and sealed shipping containers.
- Implement procedures for material storage and handling, Secondary containment should be utilized with trays for holding and storage of small tanks and containers.
- Spill kits are to be kept on-site, located near areas where spills may occur or where a rapid response can be made.
- Homeowners will immediately notify appropriate personnel when a leak, spill or other release occurs.

VI. Provisions for Maintenance Of Lawns, Gardens & Other Landscaped Areas:

Homeowners shall properly maintain lawn and landscaped areas with regular mowing, fertilizing, liming, watering, pruning, weeding, and pest control.

- Inspect lawn areas after major storms, and if necessary, remove any trapped sediment and repair any eroding areas.
- Re-grade and re-seed any channelized areas observed semi-annually in spring and fall, or as needed, to maintain consistent vegetation.
- Do not mow excessively to prevent unhealthy growth patterns.
- Landscaping on the site shall be Maintained so as to not require the ongoing use of fertilizers and pesticides.
- Homeowners shall institute practices for reduction/elimination of pesticides and fertilizers as recommended by the "Healthy Lawns for Healthy Families" program, information for which may be obtained from the Westford Water Department and attached herewith, see Attachment B. It is recommended that no fertilizers containing phosphorous should be used on the property.
- Lawn clippings and leaf litter shall be removed from site or stockpiled in an area located outside of the 100-foot wetland buffer.

VII. Requirements for Storage & Use of Fertilizers, Herbicides & Pesticides:

Storage and use of fertilizers, herbicides and pesticides shall be done in accordance with all applicable state and local regulations and in accordance with the Hazardous Material Storage consistent with typical household use:

- Fertilizers shall be applied in the minimum amounts recommended by the manufacturer. No fertilizers containing phosphorous should be used on the property.
- Fertilizers shall be worked into the soil to limit exposure to stormwater.
- Storage shall be in a secure enclosure.
- Partially-used bags shall be sealed properly to avoid spills.
- Herbicides and pesticides shall be stored in original containers with secure lids and labeled, in a secure area.
- Avoid storing fertilizers, herbicides and pesticides in damp areas where containers may become moist or rusty.
- Herbicides and pesticides shall not be stored near food.
- Do not put herbicides and pesticides in the trash or down the drain.
- All fertilizers, herbicides and pesticides shall be handled in accordance with manufacturers recommendations (ie. rubber gloves, respiratory protection, eye protection).

VIII. Pet Waste Management Provisions:

All pet waste shall be removed and disposed in an approved off-site facility.

IX. Provisions for Operation & Management of Septic Systems:

Proper operation and maintenance of portable toilets and septic systems provides an effective way of preventing spills and pollution of the groundwater.

- Portable toilets shall be installed during construction on solid level ground, and, properly maintained and pumped on a weekly basis.
- Septic tank shall be pumped as required by state and local regulations.
- Soil absorption system should be inspected as part of any state and local inspection requirements.
- The surface of the ground above the soil absorption system should be kept clear of any vegetation except for grass.
- No permanent structures should be placed over the soil absorption system.
- A log of all inspections performed shall be kept by the owner or its representative.
- See Attachment G - Caring for your Septic System: A Reference Guide for Homeowners

X. Provisions for solid waste management:

Waste products shall be placed in secure receptacles until they are emptied by a licensed solid waste management company.

Regular pickup and disposal of garbage shall be done weekly, or as needed.

Receptacles shall be inspected for leaks and structural integrity on a regular basis.

XI. Snow Disposal & Plowing Plans Relative to Wetland Resource Areas:

Snow disposal shall be in accordance with the approved plans referenced above.

XII. Winter Road Salt and/or Sand Use & Storage Restrictions:

Whenever possible, use of environmentally friendly alternatives, such as calcium chloride and sand should be considered.

Storage of salt for sidewalks and entryways shall be in a secure dry area in accordance with what is considered typical “household use”.

XIII. Street Sweeping Schedules:

Street sweeping reduces the likelihood of any pollutants from entering the stormwater system and shall be done in accordance with the Operation and Maintenance Manual referenced above.

XIV. Provisions for Prevention of Illicit Discharges to the Stormwater Management System;

Illicit discharge is considered any discharge that is not composed entirely of stormwater and that the receiving stormwater system is not designed to accept, process, or handle such wastes.

Illicit discharges prohibited include any connections of sanitary waste to the stormwater system, illegal dumping of hazardous wastes, and floor drain connections to the stormwater system.

The above referenced Plan Set, which identifies sanitary and stormwater connections, shall be properly followed, and maintained.

Storm drains shall be labeled to discourage improper disposal of hazardous materials.

Owners shall regularly inspect lawn equipment and vehicles for leaks.

MAINTENANCE AGREEMENT

This Maintenance Agreement is per the requirements of Chapter 198 (Stormwater Management) Section 8 (Operation and Maintenance) of the code of the Town of Groton. An Overall Stormwater Management System plan is included with this agreement which shows the location of each component on the property known as 'Gratuity Brook Farm Estates', 63 Gratuity Road, Groton, Massachusetts. The components of the stormwater treatment systems to be maintained include deep sump catch basins, sediment separators, sediment forebays, and infiltration basins.

For a complete description of each of the above stormwater system components and the maintenance, inspection, and reporting requirements, please refer to the Operation & Maintenance Manual and Long-Term Pollution Prevention Plan for 'Gratuity Brook Farm Estates', 63 Gratuity Road, Groton, Massachusetts to be recorded at the Northern Middlesex Registry of Deeds as required by the regulations.

The following easements are provided by the property owner to provide access for inspection and maintenance of the stormwater management system:

- Drainage Easement #1 (Infiltration Basin #1 with sediment forebay)
- Drainage Easement #2 (Infiltration Basin #2 with sediment forebay)
- Drainage Easement #3 (Infiltration Basin #3 with sediment forebay)
- Drainage Easement #4 (Infiltration Basin #4 with sediment forebay)

For a more detailed description of the operation, maintenance, inspection and reporting requirements, please refer to the Planning Boards Site Plan Decision and Stormwater Management Report on file with the Permitting Department of the Town of Groton.

Owner and/or party or parties responsible for operating and maintaining the Stormwater System:

_____

Routhier & Roper Gratuity Road LLC Date
256 Ayer Road
Littleton, MA 01460

Owner and/or party or parties responsible for inspecting the Stormwater System:

_____

Routhier & Roper Gratuity Road LLC Date
256 Ayer Road
Littleton, MA 01460

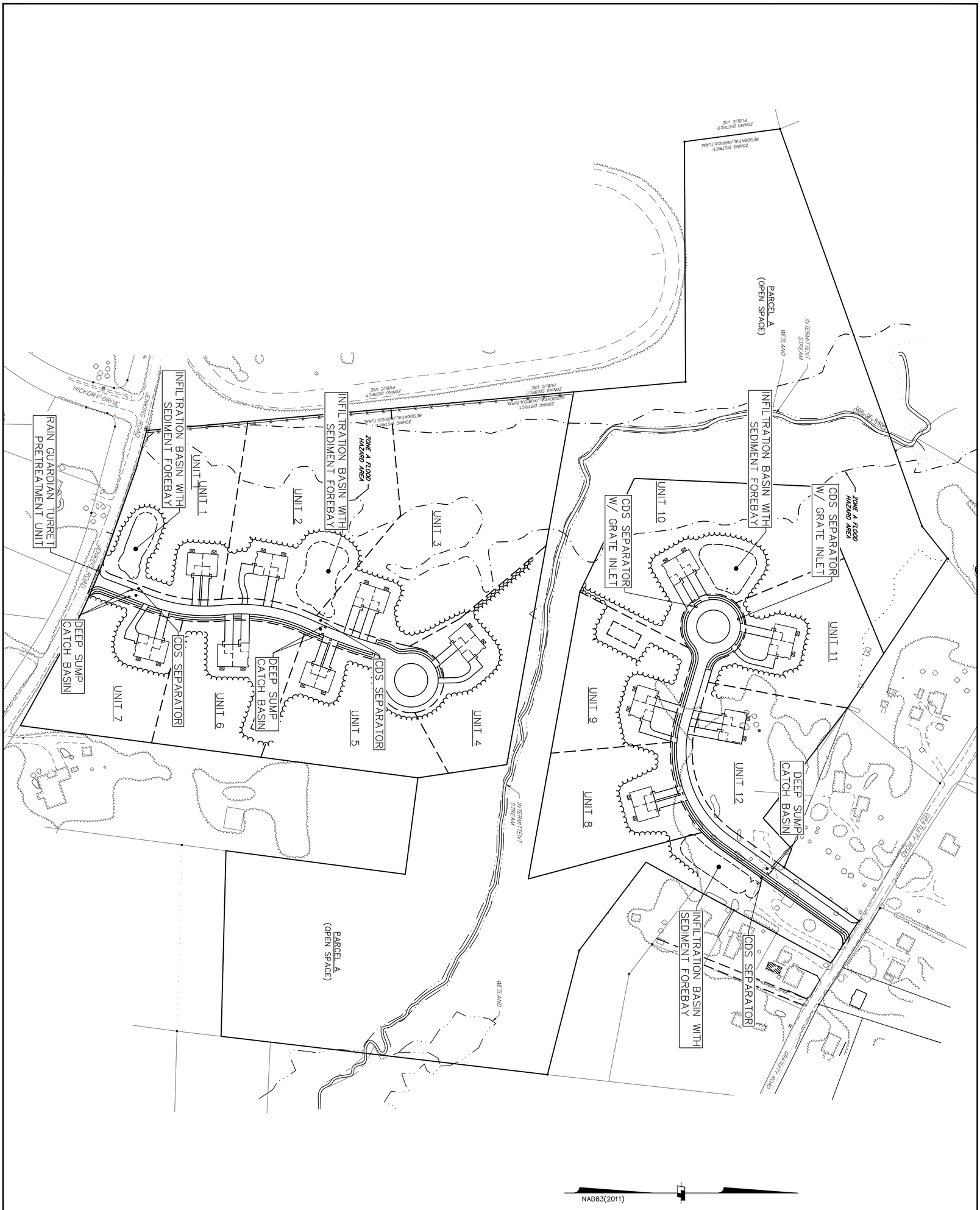
Inspections for Year: _____

NOTE: See Standard 9 Operations and Maintenance of the Stormwater Management Report for additional details.

Best Management Practice	Action	Date Completed	Comments	Completed By	Action	Date Completed	Comments	Completed By
Deep Sump Catch Basins - Inspect or clean deep sump basins at least four times per year and at the end of the foliage and snow removal seasons. Sediments must also be removed four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin.	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Clean				Clean			
	Clean				Clean			
Sediment Forebay Visually inspect monthly during first year of operation, after which visually inspect every 3 months at a minimum. Clean when average depth of sediment exceeds three inches. Mow grasses when exceeding 6 inches and replace vegetation damaged during cleaning.	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Clean				Clean			
	Clean				Clean			

Best Management Practice	Action	Date Completed	Comments	Completed By	Action	Date Completed	Comments	Completed By
Pretreatment Structures (Turret) – Inspect or clean drain separator structures similar to catch basins, at least four times per year. Sediments must be removed whenever the depth of deposits is greater than or equal to one half the depth from bottom of sump to outlet elevation. Sediment to be removed from collection chamber with shovels or with hydro-vac, and drop in filters to be cleaned with broom or hose.	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Clean				Clean			
	Clean				Clean			
Infiltration Basin – Visual inspection for proper functioning will occur after every major storm during the first three months of operation and twice a year thereafter. Visual inspection and preventative maintenance will occur at least twice per year, and after every time drainage discharges through emergency spillways. Mow the buffer area, side slopes, and basin bottom; remove trash and debris; remove grass clippings and accumulated organic matter twice per year.	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Clean				Clean			
	Clean				Clean			

Best Management Practice	Action	Date Completed	Comments	Completed By	Action	Date Completed	Comments	Completed By
Contech CDS separator – Inspection should be performed at least twice per year, though the frequency of maintenance may need to be increased or reduced based on local conditions. Maintenance shall be performed when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated.	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Inspect				Inspect			
	Clean				Clean			
	Clean				Clean			



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SHEET O&M

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GRATUITY BROOK FARM ESTATES
O+M STORMWATER SITE PLAN
63 GRATUITY ROAD
GROTON, MA

SCALE: 1"= 100'
DEMEMBER 10, 2024

PREPARED FOR:
ROUTHIER & ROPER
GRATUITY ROAD, LLC
256 AYER ROAD
LITTLETON, MA 01460

DESIGN	DRAFT	CHECK
MJS	MJS	MAW

COMMONWEALTH OF MASSACHUSETTS
MATTHEW A. WATERMAN
CIVIL
No. 45666
REGISTERED PROFESSIONAL ENGINEER

DATE	REVISION	BY