Hildreth's Farm Subdivision

Lot 248-8

Canterbury, New Hampshire

Storm Water Management System

Inspection and Maintenance Manual

October 24, 2025

Introduction:

The operation and maintenance of a storm water management system and its individual components is as critical to system performance as the design. Without proper maintenance, best management practices (BMPs) are likely to become functionally impaired or to fail, providing reduced or no treatment of storm water. Proper operation and maintenance will ensure that the storm water system and individual BMPs will remain effective at removing pollutants as designed and meeting New Hampshire's water quality objectives. Proper maintenance will:

- Maintain the volume of storm water treated over the long term;
- Sustain the pollutant removal efficiency of the BMP;
- Reduce the risk of re-suspending sediment and other pollutants captured by the BMP;
- Prevent structural deterioration of the BMP and minimize the need for expensive repairs;
- Decrease the potential for failure of the BMP.

The NH Department of Environmental Services Alteration of Terrain (AoT) regulations (Env-Wq 1500) require the long term maintenance of storm water practices and stipulate the establishment of a mechanism to provide for ongoing inspections and maintenance.

Facilities Information:

Owner of Record: 114 West Road LLC
709 Keith Avenue
Pembroke, NH 03275

Report Information:

- Every effort has been made to provide a comprehensive operation and maintenance plan for this project. All measures and guidelines presented within this plan are considered to be the minimum efforts required to achieve the intent of the erosion and sedimentation control program and minimize off site impacts.
- Should any omissions or inconsistencies arise in the plan, the owner, and governing officials are expected to use reasonable and experienced judgment in the field relative to evaluation and implementing measures based on the intent of this plan.
- This manual does not preclude any requirements for additional controls identified in the approved plan set or support documents or any other appropriate techniques to limit erosion and sedimentation of the site.
- Any measures deemed necessary by the town planning board, conservation commission, zoning board, or the town's representative shall become part of this inspection and maintenance plan.
- 114 West Road LLC will be responsible for implementing the required reporting, inspection, and maintenance activities identified in the I & M manual.
- 114 West Road LLC shall maintain all record keeping required by the I & M manual. Any transfer of responsibility for I & M activities or transfer in ownership shall be documented to the DES in writing.
- Inspection and maintenance reports shall be completed after each inspection. Copies of the report forms to be completed by the inspector are attached at the end of this manual, including:
    - Inspection checklist to be used during each inspection;
    - Inspection and maintenance logs to document each inspection and maintenance activity;
- A plan showing the locations of all the storm water practices described in the I & M manual is attached at the end of this manual.

Storm water management systems present at Hildreth's Farm Subdivision

Description:

Includes, but may not be limited to pipes, culverts, catch basins, sediment forebays and infiltration basins.

Maintenance:

1. Regular inspection and routine maintenance are necessary to ensure that the storm water management system continues to control and treat runoff.
2. Structural components of the site's drainage system must be inspected and maintained on an annual basis (minimum).
3. The outlets of the storm water management system must be inspected bi-annually.
4. All outfalls shall be cleaned of all siltation and debris at the completion of the construction process when the site has been stabilized with loam, seed, and landscaping.
5. Any evidence of erosion, structural damage to the outlet, or other damage must be reported to the appropriate on-site representative, and repaired as soon as possible.
6. Any sediment and/or trash should be removed from the outlet structures and pipes cleaned of all silt.

Permanent Outlet Protection

Description:

Outlet protection is typically provided at stormwater discharge conduits from structural best management practices to reduce the velocity of concentrated stormwater flows to prevent scour and minimize the potential for downstream erosion. Outlet protection is also provided where conduits discharge runoff into an in-ground stormwater management practice (e.g., pond or swale) to prevent scour where flow enters the BMP.

Standard engineering practices allow for many different types of outlet protection which provide energy dissipation. Common outlet protection measures include:

- Riprap aprons, the design of which is covered within this section;
- Riprap lined scour holes, stilling basins or plunge pools. Design references for stilling basins are provided under 'Design References'.

Maintenance:

1. Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.

Inspection Checklist and Maintenance Report
Permanent Outlet Protection

Practice Location: _____

Date: _____

Performed By: _____ Signature _____

Inspection Checklist		
Presence of accumulated sediment	❑ Yes	❒ No
Damage to outlet	❑ Yes	❒ No
Presence of trash or debris	❑ Yes	❒ No

Maintenance Performed

Sediment Forebays

Description:

A sediment forebay is a storage structure designed to dissipate the energy of incoming runoff and allow for initial settling of coarse sediments. Forebays are used for pretreatment of runoff prior to discharge into the primary water quality treatment BMP.

Maintenance:

1. Forebays help reduce the sediment load to downstream BMPs, and will therefore require more frequent cleaning.
2. Inspect at least annually.
3. Conduct periodic mowing of embankments (generally two times per year) to control growth of woody vegetation on embankments.
4. Remove debris from outlet structures at least once annually.
5. Remove and dispose of accumulated sediment based on inspection.
6. Install and maintain a staff gage or other measuring device, to indicate depth of sediment accumulation and level at which clean-out is required.

Inspection Checklist and Maintenance Report
Sediment Forebay

Sediment Forebay: _____

Date: _____

Performed By: _____ Signature _____

Inspection Checklist		
Presence of accumulated sediment	❑ Yes	❒ No
Presence of trash or debris	❑ Yes	❒ No
Vegetation in healthy condition (general)	❑ Yes	❒ No
Presence of dead or diseased plants	❑ Yes	❒ No
Presence of invasive plant species	❑ Yes	❒ No
Basin drains within 72 hours of rainfall	❑ Yes	❒ No

Maintenance Performed

In-ground Infiltration Basin

Description:

Infiltration basins are impoundments designed to temporarily store runoff, allowing all or a portion of the water to infiltrate into the ground. An infiltration basin is designed to completely drain between storm events. An infiltration basin is specifically designed to retain and infiltrate the entire Water Quality Volume. Some infiltration basins may infiltrate additional volumes during larger storm events, but many will be designed to release stormwater exceeding the water quality volume from the larger storms. In a properly sited and designed infiltration basin, water quality treatment is provided by runoff pollutants binding to soil particles beneath the basin as water percolates into the subsurface. Biological and chemical processes occurring in the soil also contribute to the breakdown of pollutants. Infiltrated water is used by plants to support growth or it is recharged to the underlying groundwater.

As with all impoundment BMPs, surface infiltration basins should be designed with an outlet structure to pass peak flows during a range of storm events, as well as with an emergency spillway to pass peak flows around the embankment during extreme storm events that exceed the combined infiltration capacity and outlet structure capacity of the facility.

Maintenance:

1. Removal of debris from inlet and outlet structures
2. Removal of accumulated sediment
3. Inspection and repair of outlet structures and appurtenances
4. Inspection of infiltration components at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
5. Inspection of pretreatment measures at least twice annually, and removal of accumulated sediment as warranted by inspection, but no less than once annually.
6. Periodic mowing of embankments
7. Removal of woody vegetation from embankments
8. Inspection and repair of embankments and spillways
9. If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limited to removal of accumulated sediments or reconstruction of the infiltration trench.

Inspection Checklist and Maintenance Report
In-Ground Infiltration Basin

Practice Location: _____

Date: _____

Performed By: _____ Signature _____

Inspection Checklist		
Presence of woody vegetation on embankments	❑ Yes	❒ No
Presence of trash or debris	❑ Yes	❒ No
Presence of accumulated sediment	❑ Yes	❒ No
Structural damage at inlet or outlet	❑ Yes	❒ No
Drains with 72 hours of rainfall	❑ Yes	❒ No

Maintenance Performed

Invasive Species Information:

Description:

With respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem.

Maintenance:

1. Remove invasive plant species from the storm water management practices by pulling, either by hand for small plants or by hand shovel for shrubs and bushes.
2. Refer to the following fact sheet prepared by the University of New Hampshire Cooperative Extension entitled Methods for Disposing Non-Native Invasive Plants for recommended methods to dispose of invasive plant species.

UNIVERSITY of NEW HAMPSHIRE COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.

Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions.* Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.

Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let it dry for several weeks.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants non-viable before composting. Closely examine the plant before composting and avoid composting seeds.

Finally, *be diligent* looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

Plant Name	Method of Reproducing	Time of Year To Dispose	Methods of Disposal
Woody Plants*	**Fruit/Seeds**		
Norway Maple *(Acer platanoides)* European Barberry *(Berberis vulgaris)* Japanese Barberry *(Berberis thunbergii)* Autumn Olive *(Elaeagnus umbellata)* Burning Bush *(Euonymus alatus)*		Prior to fruit/seed ripening	Seedlings and small plants. ▪ Pull or cut and leave on site with roots up. No special care needed. Larger plants ▪ Use as firewood. ▪ Make a brush pile. ▪ Chip. ▪ Burn.
Morrow's Honeysuckle *(Lonicera morrowii)* Tatarian Honeysuckle *(Lonicera tatarica)* Showy Bush Honeysuckle *(Lonicera x bella)* Common Buckthorn *(Rhamnus cathartica)* Glossy Buckthorn *(Frangula alnus)*		After fruit/seed is ripe	Don't remove from site. ▪ Burn. ▪ Make a covered brush pile. ▪ Chip once all fruit has dropped from branches. ▪ Leave resulting chips on site and monitor.
Woody Plants*	**Fruits/Seeds/Plant Fragments**		
Oriental Bittersweet *(Celastrus orbiculatus)* Multiflora Rose *(Rosa multiflora)*		Prior to fruit/seed ripening	Seedlings and small plants. ▪ Pull or cut and leave on site with roots up. No special care needed. Larger plants ▪ Make a brush pile. ▪ Burn.
		After fruit/seed is ripe	Don't remove from site. ▪ Burn. ▪ Make a covered brush pile. ▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.

Plant Name	Method of Reproducing	Time of Year To Dispose	Methods of Disposal
Non-woody plants	**Fruits/Seeds**		
Garlic Mustard *(Alliaria petiolata)* Spotted Knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. Black Swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. Pale swallow-wort *(Cynanchum rossicum)* Giant Hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. Dame's Rocket *(Hesperis matronalis)* Perennial Pepperweed *(Lepidium latifolium)* Purple loosestrife *(Lythrum salicaria)* Japanese Stilt Grass *(Microstegium vimineum)* Mile-a-Minute Weed *(Polygonum perfoliatum)*		Prior to flowering	Depends on scale of infestation Small infestation: ▪ Remove and scatter Large infestation: ▪ Remove and pile. (You can pile on or cover with plastic sheeting) ▪ Monitor. Remove any re-sprouting material
		During and following flowering	Do nothing until the following year; Or Remove flowering heads and bag and let rot. Small infestation: ▪ Remove and scatter remaining material Large infestation: ▪ Remove and pile remaining material. (You can pile on or cover with plastic sheeting) ▪ Monitor. Remove any re-sprouting material
Non-woody plants *	**Fruits/seeds/plant parts**		
Common Reed (*Phragmites australis*) Japanese Knotweed *(Polygonum cuspidatum)* Bohemian Knotweed *(Polygonum x bohemicum)*	Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.		Small infestation: ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn Large infestation: ▪ Remove material to unsuitable habitat (dry, hot sunny or dry shaded location) and scatter or pile. • Monitor and remove any sprouting material. • Pile, let dry, and burn.

October, 2009

Deicing Log

Access Drives & Parking Areas

Do Not Apply Sand To Permeable Pavements

Date: _____

Performed By: _____ Signature _____

Maintenance Performed:

Air Temperature	Pavement Temperature	Relative Humidity	Dew Point	Sky

Reason for applying:

Chemical:

Application Time:

Application Amount:

Observation (first day):

Observation (after event):

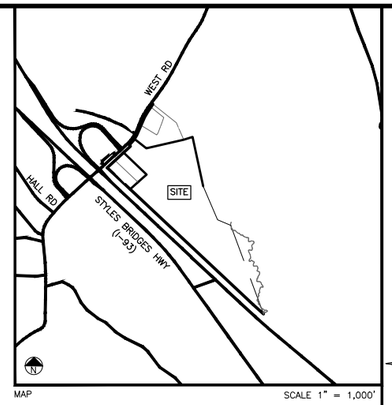
Observation (before next application):

Inspection and Maintenance Log					
	BMP	**Inspection Date**	**Inspected By**	**Maintenance Required?**	**Maintenance Performed**
1				❑Yes ❑No	
2				❑Yes ❑No	
3				❑Yes ❑No	
4				❑Yes ❑No	
5				❑Yes ❑No	
6				❑Yes ❑No	
7				❑Yes ❑No	
8				❑Yes ❑No	
9				❑Yes ❑No	

LEGEND:

- EX. LOT LINE
- EX. RIGHT-OF-WAY LINE
- ABUTTING LOT LINE
- BUILDING SETBACK
- 10-FOOT CONTOUR
- 2-FOOT CONTOUR
- PROPOSED RIGHT-OF-WAY
- PROPOSED CONDOMINIUM LINE
- FORMER LOT LINE
- PROPOSED PAVEMENT
- PROPOSED BUILDING
- PROPOSED BASIN

SEE SHEET SP-1 FOR DETAILED VIEW



MAP SCALE 1" = 1,000'

248-7
RICHARD JR. LAKIN,
PO BOX 43
CANTERBURY, NH 03224
BK 2036 PG 117

248-9-01
HAROLD F. FRENCH
118 WEST ROAD
CANTERBURY, NH 03224
BK 3675 PG 1273

251-3
RUTH E. MANN
REVOCABLE TRUST 5/13/1993
35 FIRE ROAD
CANTERBURY, NH 03224
BK 3844 PG 608

AGRICULTURAL CONSERVATION EASEMENT

Infiltration Basin B

Infiltration Basin A

Infiltration Basin C

PHASE 2A

LAND COVERAGE ASSUMPTION: 70% IMPERVIOUS

LAND COVERAGE ASSUMPTION: 75% IMPERVIOUS

248-11
DALE & JUDITH PATTERSON
130 WEST ROAD
CANTERBURY, NH 03224
BK.3305 PG.785

248-12
DENNIS KEIFER
BARBARA LUNDBERG
134 WEST ROAD
CANTERBURY, NH 03224
BK.1521 PG.933

248-8
34.37±
1,497,131±

251-6
WHITE OAKS
DAIRY FARM, LLC
142 WEST ROAD
CANTERBURY, NH 03224

COLD BROOK

APPROX ZONE LINE

20' SETBACK

CONDOMINIUM LOT LINE (TYP.)

CONDOMINIUM BUILDING SETBACK (TYP.)

WETLAND

INTERSTATE 93

SENATOR STYLES BRIDGES HIGHWAY (NORTHBOUND LANES)

GRAPHIC SCALE
100' 50' 0 100' 200' 300'

MERIDIAN
LAND SERVICES, INC.
ENGINEERING | SURVEYING | PERMITTING
SOIL & WETLAND MAPPING | SEPTIC DESIGN
31 OLD NASHUA ROAD, AMHERST, NH 03031 TEL 603-673-1441
MERIDIANLANDSERVICES.COM | FAX 603-673-1534

ISSUED FOR STATE AND/OR MUNICIPAL REVIEW AND/OR APPROVAL ONLY

REV.	DATE	DESCRIPTION	BY	CK
A	8/25/25	VALUE ENGINEERING EDITS	JJA	DR
B	9/18/25	PB COMMENT RESPONSES	JJA	SRF
C	10/23/25	3RD PARTY COMMENTS	JJA	SRF
D	--/--/--	---	---	---
E	--/--/--	---	---	---
F	--/--/--	---	---	---
G	--/--/--	---	---	---
H	--/--/--	---	---	---
I	--/--/--	---	---	---

HILDRETH'S FARM
OVERVIEW AND PHASING PLAN

JUNE 3, 2025

114 WEST ROAD, LLC
114 WEST ROAD
MAP 248 LOT 8
CANTERBURY, NEW HAMPSHIRE

SCALE: 1" = 100'

O-1
SHEET

FILE: 12609l00C.dwg
PROJECT 12609.00
SHEET NO. 8 OF 24

Plotted: 10/24/2025 2:00 PM By: JJA
H:\MLS\12609\12609.00\0_Drawings\ENG\12609l00C.dwg