STORMWATER MANAGEMENT / SPILL PREVENTION OPERATION AND MAINTENANCE MANUAL

Tax Map 238 Lot 4
Calef Highway
Barrington, NH

Prepared for:

The Three Socios
321D Lafayette Road
Hampton, NH 03842

Prepared by:
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JBE Project No. 10144

LAND USE OFFICE
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Inspection and Maintenance of Facilities and Property

A. Maintenance Property

1. The Owner is responsible for all maintenance and spill prevention associated with this development. In the event of a change of user, responsibility shall remain with the property owner.

B. General Inspection and Maintenance Requirements

1. Inspections and Maintenance shall be completed by qualified staff or by an Engineering firm retained by the Owner. Landscaping maintenance to be completed by qualified staff or by landscaping contractor retained by the Owner.

2. Permanent stormwater and sediment and erosion control facilities to be maintained on the site include, but are not limited to, the following:

    a. Catch basins and drain manholes
    b. Culverts
    c. Swales
    d. Detention Basin
    e. Vegetation and landscaping
    f. Riprap inlet and outlet protection aprons
    g. Level Spreader

3. Permanent landscaping features to be inspected and maintained on the site include, but are not limited to, the following:

    a. Plantings (trees, shrubs, flowering plants)
    b. Grassed Areas

4. Maintenance of permanent stormwater measures shall follow the following schedule:

   a. **Culverts: Inspection** of culvert inlets and outlets at least **once per month** during the rainy season (March to November). Any debris is to be removed and disposed of properly.

   b. **Erosion: Annual inspection** of the site for erosion, destabilization, settling, and sloughing. Any needed repairs are to be conducted immediately.

   c. **Vegetation and Landscaping: Annual inspection** of site's vegetation and landscaping. Any areas that are bare shall be reseeded and mulched with hay or, if the case is extreme, loamed and seeded or sodded to ensure adequate vegetative cover. Landscape specimens shall be replaced in kind, if they are found to be dead or dying.

   d. **Catch basins and Drain Manholes (including detention basin outlet):**

      1.) **Quarterly inspection** of catch basins and drain manholes to determine if oil/fuel is present in the catch basin sump. Inspector shall shine light into sump to check for oil/fuel sheen within sump. If inspector finds evidence of oil/fuel sheen, sump shall be pumped and oil/fuel water mixture shall be disposed of in accordance with all federal, state, and local ordinances.

      2.) **Annual inspection** of catch basins and drain manholes to determine if they need to be cleaned. Catch basins are to be cleaned if the depth of deposits is greater than one-third the depth from the basin bottom to the invert of the lowest pipe or opening into or out of the basin. If a catch basin significantly exceeds the one-third depth standard during the inspection, then it should be cleaned more frequently. If woody debris or trash accumulates in a catch basin, then it should be cleaned on a weekly basis. Manholes should be cleaned of any material upon inspection. Catch basins and manholes can be cleaned either manually or by specially designed equipment including, but not limited to, bucket loaders and vacuum pumps. Before any materials can be disposed, it is necessary to perform a detailed chemical analysis to determine if the materials meet the EPA criteria for hazardous waste. This will help determine how the materials should be stored, treated, and disposed.

   e. **Riprap**: Rock riprap should be **inspected annually** and after every major storm event in order to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock should be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state.

Woody vegetation should not be allowed to become established in riprap areas, and/or any debris removed from the void spaces between the rocks. If the riprap is adjacent to a stream or other waterbody, the water should be kept clear of obstructions, debris, and sediment deposits.

f. **Detention Basin**:

First Year Post-Construction: inspection frequency should be after every major storm in the first year following construction.

- Inspect to be certain system drains within 24-72 hrs (within the design period, but also not so quickly as to minimize stormwater treatment).
- Watering plants as necessary during the first growing season.
- Re-vegetating poorly established areas as necessary.
- Treating diseased vegetation as necessary.
- Quarterly inspection of soil and repairing eroded areas, especially on slopes.
- Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion.

Post-Construction: inspection frequency should be at least every 6 months thereafter, as per USEPA good house-keeping requirements. Inspection frequency can be reduced to annual following 2 years of monitoring that indicates the rate of sediment accumulation is less than the cleaning criteria listed below. Inspections should focus on:

- Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion.
- Removal of decaying vegetation, litter, and debris.
- Mow grass areas periodically so that grass does not exceed 4" in height.

g. **Treatment Swales**:

Inspect annually for erosion, sediment accumulation, vegetation loss, and presence of invasive species. Perform periodic mowing; frequency depends on location and type of grass. Do not cut shorter than Water Quality Flow depth (maximum 4-inches). Remove debris and accumulated sediment, based on inspection. Repair eroded areas, remove invasive species and dead vegetation, and reseed with applicable grass mix as warranted by inspection.

5. Maintenance of landscape features:

a. **Plantings: Inspect** all plantings monthly or more frequently as required. Plantings shall be watered and maintained as required. Dead plantings shall be removed and replaced in kind.

b. **Turfed Areas: Inspect** all turfed areas monthly or more frequently as required. Grass shall be mowed to limit grass height to less than 4". Replace all areas of worn or eroded turf. Areas of erosion shall be repaired and cause of erosion shall be evaluated and corrected.

Spill / Pollution Prevention Plan

A. Responsibility

1. The Owner is responsible for all maintenance and spill prevention associated with this development. In the event of a change of user, responsibility shall remain with the property owner.

B. Spill Prevention

1. Existing spill prevention features shall be kept in good working order at all times. Spill prevention features include, but are not limited to:
    a. Fuel spill grooves at gas dispensers – all fuel spill grooves shall be kept free of dirt/rocks and snow. Brush contaminants out of grooves as required.
    b. Fuel dispensers and underground storage tanks shall be inspected monthly per NH RSA 146-C.
    c. Spill clean-up kit shall be kept on-site and of sufficient size to clean-up a spill of 10 gallons or greater.

2. Spill Response: In the event of a fuel spill the operator/owner shall follow the following procedures:
    a. Stop the cause of the spill.
    b. Prevent fuel from traveling. Place absorbent material over area of spill to prevent the dispersion of fuel.
    c. Contact local fire department: 603-664-0211
    d. All fuel laden absorbent material shall be collected and placed into air-tight containers provided with the spill kit.
    e. All fuel laden absorbent material shall be disposed of per all applicable federal, state, and local laws.

See attached sample forms as a guideline.

Any inquiries in regards to the design, function, and/or maintenance of any one of the above mentioned facilities or tasks shall be directed to the project engineer:

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85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885

T#: (603) 772-4746
F#: (603) 772-0227

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION PERIOD AND CRITERIA
Tax Map 238 Lot 4
Calef Highway (Route 125)
Barrington, NH

Stormwater Component	Inspection Period	Inspection Criteria/Methods
Culverts	Once per month	Inspect inlet/outlet. Remove debris.
Erosion	Annually	Repair site erosion.
Vegetation	Annually	Repair bare unvegetated areas.
Catch Basins and Drain Manholes	Quarterly (or more as required)	Remove trash and debris. Inspect for oil/fuel. Sump shall be pum of accordingly if oil/fuel is present in sump.
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Riprap	Annually	Relocate displaced rocks, remove woody vegetation and debris
Detention Basin	Bi-annually	Inspect for vegetation, standing water, sediment/debris collection,
Treatment Swale	Annually (as needed)	Inspect for erosion, sediment, vegetation loss, and invasive specie mowing as needed)

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Catch Basins and Drain Manholes	Annually (or more as required)	Remove trash and debris. Inspect for sediment. Remove if sediment greater than 1/3 sump depth.
Riprap	Annually	Relocate displaced rocks, remove woody vegetation and debris
Detention Basin	Bi-annually	Inspect for vegetation, standing water, sediment/debris collection, see item f.
Treatment Swale	Annually (as needed)	Inspect for erosion, sediment, vegetation loss, and invasive species. (Periodic mowing as needed)

STORM WATER OPERATIONS AND MAINTENANCE PLAN
INSPECTION REPORT

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Yearly Inspection Form			
Inspected Component	**Date of Inspection**	**Inspector**	**Issue Detected / Action Taken**
Culverts			
Erosion			
Vegetation			
Catch Basins and Drain Manholes			
Riprap			
Detention Basin			
Treatment Swale			