



September 9, 2020

Beverly Planning Board  
191 Cabot Street  
Beverly, MA 01915

Via Hand Delivery

**Subject: Definitive Subdivision Plan for  
Livingstone Avenue Improvements  
Map 9, Lot 370, 371, and 372**

Dear Planning Board Members:

This letter provides revised plans for the subject project. Plan revisions are summarized below:

- 1.) The proposed lot line between Lots 2 and 3 was adjusted to remove the "dog-leg" shape as requested.
- 2.) The proposed street light at the cul-de-sac was shifted approximately 50-feet to the west to alleviate an abutter's concerns.
- 3.) A "No Parking" sign was added at the cul-de-sac.
- 4.) The 2-foot wide notch in the curb at the proposed cul-de-sac catchbasin was removed.
- 5.) A proposed landscape wall cross section was added to the plan (see sheet C-4).

The Operation and Maintenance plan was modified to change "should" to "shall" and the like. A revised O & M plan is enclosed.

We look forward to meeting with the Board to describe this plan further and respond to questions or comments.

Very truly yours,  
**Griffin Engineering Group, LLC**

Robert H. Griffin, P.E.

Enclosures: Definitive Plans (C-1 through C-4), revised September 2020;  
Operation and Maintenance Plan, revised September 2020

Cc: 7 Porter Terrace, LLC (1 copy & enclosures)

## Operation & Maintenance Plan.

System Owner: 7 Porter Terrace, LLC (or Successor)

Party Responsible for O&M: Drainage structures will be maintained by individual lot owners. This includes the catchbasins, subsurface infiltrations fields, and piping.

Access / Easements: Post-Construction: Utility easements will be granted as indicated on the Definitive Subdivision Plan.

*Note: The inspector shall note that drainage pipes, treatment tanks and catchbasins often are considered “confined spaces” subject to strict OSHA standards regarding safe entry. Confined spaces present inherent hazards to workers. Only appropriately trained staff with appropriate safety equipment and monitors may enter confined spaces, and then only with a specific entry permit. Also, this work may pose hazards to workers, such as soft ground, flowing or standing water, snakes and rodents. Again, only appropriately trained staff with the necessary safety equipment shall undertake such work.*

The drainage system is to be operated and maintained in accordance with the following:

### **Part I: Construction Phase Controls**

**Roadway Construction Phasing:** Construction shall proceed in the following sequence:

1. Install Erosion Controls downhill of work areas. Inspection and maintenance of these Erosion Controls is required throughout the project as detailed below.
2. Clear & Grub areas only as needed.
3. Bring road alignments to rough subgrade.
4. Install underground utilities and subsurface infiltration fields.
5. Fine grade road and install binder course of bituminous pavement.
6. Install final paving.

Throughout construction, haybales and siltation controls are to be placed around drain inlets and low points in the excavation to prevent silt from entering the drainage system. These controls are to be inspected daily and maintained throughout the duration of the construction phase. Whenever sediment depths accumulate to a depth of six-inches next to the barrier, the sediment is to be removed.

The contractor shall install non-woven geotextile fabric between the frame and grate of catchbasins during construction to capture sediment. The fabric shall be maintained and sediment removed as needed throughout construction.

**Home Construction Phasing:** Construction shall proceed in the following sequence.

1. Install Erosion Controls downhill of work areas. Inspection and maintenance of these Erosion Controls is required throughout the project as detailed below.
2. Clear & Grub lots only as needed.
3. Install construction entrance (rip rap apron) along street line. Install gravel drive for construction vehicles.
4. Excavate foundation hole and install foundation.
5. Backfill around the foundation, install building utilities, and rough grade site. Construct structure.
6. Install driveway and landscaping.

## **Part II: Post-Development Controls**

1). Inspections. Inspection of the drainage system components are to be performed by the System Owner during the first year of operation on a quarterly basis. The inspection frequency can be reduced after the first year to annual inspections provided that the quarterly inspections do not indicate the need for more frequent inspections. If more frequent inspections become appropriate at any time, they shall be implemented. Inspections shall be documented by taking necessary notes, measurements, photographs, and retaining service receipts. The following inspections are required of the system owner.

Roadway - Remove debris from the roadway as it accumulates, as part of normal site clean-up. Weekly patrolling for litter is recommended. Sand from ice control shall be removed monthly via a street sweeper during the winter season. Significant oil leaks shall be swept up and disposed of using oil-absorbent material as they are discovered. Any oil spills or leaks that reach the

catchbasins must be reported to the Massachusetts DEP oil spill hotline.

Catchbasins - Remove the grate or cover and visually inspect for corrosion and structural damage. Inspect pipe inlets and bottoms for signs of infiltration or inflow. The grate or cover and hoods on the catchbasins shall be inspected on a quarterly basis during the first and year and semi-annual thereafter. Cleaning of the catchbasins shall be done on a yearly basis and by a vacuum truck or clamshell. While cleaning, if a layer of oil is observed floating on the water surface, place an oil-absorbent pillow on the surface, allow to soak and remove. Repeat this process until the oil layer is removed. Alternatively, have the oil layer pumped out by a licensed disposal contractor and appropriately disposed of. The oil absorbent pillows must be drummed for disposal by a licensed disposal contractor.

Subsurface Infiltration Fields – Initially, inspect the infiltration fields after major storms to ensure proper function and stabilization. Record water levels over several days to check for the infiltration field performance. After the first year, inspect the infiltration field annually for silt buildup or clogging. A log of the sediment depth shall be maintained. Measure the sediment depth through the inspection port within the isolator row or by accessing the upstream drain manhole and measure the depth within the invert to the isolator row. If sediment reaches a four-inch depth, the sediment is to be removed in accordance with the maintenance instructions provided by StormTech.

2). Snow Storage. The new roadway is designed with 24 feet of pavement and shoulder throughout. This should provide ample width to maintain reasonable travel lanes with snow cast along the edge of the roadway and reserve strip. Snow removal has not proven necessary in newly-constructed residential subdivisions in Beverly in recent years, with the possible exception of very limited clearing of snow banks at intersections to provide a path for adjoining sidewalks and to increased visibility. In these instances snow is usually moved less than 100 feet to a more convenient location.

**TABLE 1: Construction Phase Inspection and Maintenance Procedures**

<b>Control</b>	<b>Inspection Frequency (1)</b>	<b>Maintenance Procedure</b>
Construction Entrance	Weekly	a
Silt Fence	Weekly	a
Rip Rap	Weekly	a
Dust Control	Daily	b
Permanent Stabilization	Weekly	c

1. Inspection frequencies are a minimum. Site conditions may warrant more frequent review. All control shall be inspected after each storm event which exceeds 0.5 inches in 24-hours.
2. Maintenance Procedures shall be reviewed and revised as necessary to protect the environment.
  - a. Remove accumulated debris and replace as necessary.
  - b. Water or calcium chloride shall be utilized to prevent the generation of dust.
  - c. Disturbed areas shall either be paved or stabilized by permanent seeding.

Inspection forms are to be completed weekly and retained with project files.

**INSPECTION AND MAINTENANCE REPORT FORM**

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF  
A RAINFALL EVENT OF 0.5 INCHES OR MORE

**INSPECTOR:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

INSPECTOR'S QUALIFICATIONS:

\_\_\_\_\_

DAYS SINCE LAST RAINFALL: \_\_\_\_\_

AMOUNT OF LAST RAINFALL: \_\_\_\_\_ INCHES

**STABILIZATION MEASURES**

Project Area	Date Since Last Disturbed	Date of Next Disturbance	Stabilized? (Yes/No)	Stabilized With	Condition
North					
East					
South					
West					

STABILIZATION REQUIRED:

\_\_\_\_\_

TO BE PERFORMED BY: \_\_\_\_\_ ON OR BEFORE \_\_\_\_\_

**INSPECTION AND MAINTENANCE REPORT FORM**

**STABILIZED CONSTRUCTION ENTRANCE**

Does Sediment Get Tracked onto the Road?	Is the Gravel Clean or is it Filled with Sediment?	Does All Traffic Use the Stabilized Exit to Leave the Site?

MAINTENANCE REQUIRED FOR ENTRANCE:

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TO BE PERFORMED BY: \_\_\_\_\_ ON OR BEFORE \_\_\_\_\_

**INSPECTION AND MAINTENANCE REPORT FORM**

**SILT FENCE or HAYBALES**

Location	Depth of Sediment Build-Up	Sediment Need Removal?	Need Replacement?
Eastern Side			
Southern Side			
Western Side			
Northern Side			

MAINTENANCE REQUIRED:

\_\_\_\_\_

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TO BE PERFORMED BY: \_\_\_\_\_ ON OR BEFORE \_\_\_\_\_