

May 4, 2020

IWWC
Westbrook Ct.
Attn: Heidi Wallace, Inland Wetland Officer

RE: Application: Kirkland Street, 26&32 Kirkland St., 1572 and 1594A Boston Post Road,
Assessor ID Map/Lots 177/122, 181/001, 181/022, 181/003 181/006, 182/033

This memo is written in response to Preliminary Review comments dated March 10, 2020 from Thomas Fenton, P.E., Nathan L. Jacobson & Assoc., Inc.

Site Plan revisions per comments are attached as Attachment A.
L.A. plans are currently being revised and will forward upon completion

Responses follow:

Site Plans (Drawing Sheets C1-C7)

1. Parking Surfaces to remain gravel
2. Plan note added to C-2 for fitness trail surface, details to be provided on L.A. plans. Rain leaders discharging over fitness trail areas were redirected to adjacent CB.
Also, fitness trail was , piping added, to provide stormwater flow path under fitness trail at flow path locations
A “grid” anti-erosion surface system was added to one area where a surface sheet flow was preferred
3. Identifiers were added to system components on C-3
4. Additional clarifying information was added to C-2
5. Storm sewer pipe sizing and inv data was added to C-4. Storm piping systems were sized for 100-yr event flows, provided within Attachment I
6. A drainage swale and storm sewer system were added along the southerly property line to maintain on-site flows as shown on C-4. Sizing criteria is provided within Attachment I
7. Impervious surface flow, including roof leaders are directed to discharge onto grassed areas. Treatment is provided thru grass surface area filtration, infiltration thru sub-surfaces
8. RB-2 has been re-located to conform to separation criteria
9. Depth of rain garden is being evaluated and revised and as shown on L.A. plans
10. Ct DEEP Stormwater Discharge permit will be applied for prior to Construction Phase. Basins and drainage swale will be incorporated into this process.
11. Note added to provide material flexibility for site contractor. Measures to be reviewed at Pre-Construction Mtg.
12. This discussion is a general guide for the site construction phase. It is unknown at this time if project is to be undertaken by one contractor or several. Specific project scheduling will be reviewed at the Pre-Construction Mtg. Temporary stabilization note has been added.

Stormwater Management and Design Memorandum

1. Calculations for GRV and WQV are provided as Attachment B
2. The basin stormwater collection system of rain gardens and retention structures has the capacity to retain stormwater run-off from a 100-yr return storm event. Complete retention of this storm event demonstrates that this system of basins are off-line from the stormwater run-off that flows thru the site.
3. All criteria have been met to the maximum extent possible
4. Hydrographs for 2, 10, 25, 50 and 100-yr return storm events are provided in Attachment D. Pond sections are also provided in Attachment D. Hydrographs, pond sections for 1” event are provided in Attachment E

The percentage of surface area to tributary drainage area for each rain garden is as follows:

R.G. No.	Surf Area	Drng. Area	% S. A.
R.G. 1	2469 sf	4916 sf	~ 70.7%
R.G. 2	2979 sf	4246 sf	~ 70.2%
R.G. 3	2917 sf	10493 sf	~ 39.4%
R.G. 4	2614 sf	7921 sf	~ 33.4%
R.G. 5	5468 sf	20469 sf	~ 26.9%

The individual tributary areas are relatively small in area. The surface areas of the individual rain gardens occupy a significant portion of their individual tributary areas.

The impact of a 1”-24-hr rain event is generally summarized as:

The core area of the rain garden will receive the majority of rain impact direct rainfall. This rain event will, most likely, infiltrate thru the rain garden will little retention time on the surface. This is enhanced by the high permeability of the soils to be placed within the rain gardens (min k=15 ft/day) which will easily absorb a 1” rain event.

A portion of the run-off from surrounding tributary area generated by the 1”-24-hr rain event will flow into the periphery of the rain garden. A significant portion of this run-off will infiltrate into the surrounding grass and gravel/stone parking areas prior to reaching rain gardens

5. Groundwater monitoring data as available for building site development area is provided in Attachment F. One measuring event conducted this spring. Ground water monitoring results are below mottling results
6. Tc worksheet printouts are provided within the hydrograph as provided in Attachment D
7. Drainage calculations have been revised with Tc flow lengths within 100ft – 300 ft range. Surface consistency, surface vegetation changes, ground slopes, grade breaks and other physical surface features were used to determine Tc lengths
8. The adjoining Drainage Area boundary between B & C has been revised. Pre and Post-Development Mapping are provided within Attachment G

A-L Consulting, LLC
Alvin G. Wolfgram, PE, Member

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9. Basins have been revised to reflect 1 ft freeboard between the 50-yr event and top of embankment as included in Attachment C
10. Installation of drainage basins will require excavation of sub-soils to the depth of the mottling depths as provided. This sub-surface soils material will be re-used as a part of the basin side slopes to minimize horizontal movement and maximize vertical movement of the captured stormwater. The typical section view of the stormwater basins has been revised to demonstrate this procedure
See C-8

Wetland Scientist Comments

1. See memo from Bob Russo, CLA, dated May 1, 2020 within Attachment H
2. See memo from Bob Russo, CLA, dated May 1, 2020 within Attachment H

Alvin G. Wolfgram, PE