



## GREEN INTERNATIONAL AFFILIATES, INC.

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September 4, 2018

Ms. Maren Toohill  
Planning Administrator/Permit Coordinator  
Town of Littleton Planning Board  
Shattuck Street Municipal Building  
37 Shattuck Street, Room 303  
Littleton, MA 01460

**Subject: Engineering Review Services of Site  
Plan/Special Permit Application for  
“The Crossings at Foster Street”  
Littleton Planning Department**

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Dear Ms. Toohill:

Pursuant to our agreement with the Town of Littleton, Green International Affiliates, Inc. (Green) is submitting this letter report of the findings from our follow up peer review of the Site Plan and Special Permit Application Package for “The Crossings at Foster Street”. Following our initial peer review letter, dated July 20, 2018, we received the following supplemental/revised documents from the applicant:

- Plans titled “Site Plan Review/Special Permit – 245 Foster Street “The Crossings at Foster Street” prepared by Markey & Rubin, Inc., dated May 24, 2018 and containing eleven (11) sheets;
- Letter titled “Response to Peer review comments “The Crossings at Foster Street” By Green International Affiliates, Inc.” prepared by Markey & Rubin, Inc. dated August 13, 2018.
- Waiver request letter prepared by Markey & Rubin, Inc., dated August 13, 2018.
- Deep Hole Observation Reports prepared by Jonathan Markey, PE., dated December 20, 2017 and August 24, 2018.

Green offers the following comments resulting from our review of the above documents as they pertain to the Chapter 173, Zoning Bylaw, Chapter 38, Article II - Stormwater Management and Erosion Control Bylaw. Please note that this peer review is not a complete review of the project design and does not relieve the Applicant and Engineer of meeting all requirements of local, state and federal regulations. The highlighted items below are items that we have deferred to or made a recommendation to the Planning Board.

Items from the initial comment letter that have been satisfactorily addressed have been omitted from this letter. Please note that the highlighted items below either require action by the Applicant or are items that we have deferred to or made a recommendation to the Planning Board.

**Plans:**

1. Initial 07/20/2018 Comment: No accessible parking spaces are shown on the plans. The Applicant should revise the plans to comply with 521 CMR 23.00: Parking and Passenger Loading Zones.

*8/13/2018 Applicant Response: Accessible spaces have been added to the plan including van accessible spaces, with associated accessible ramps.*

**09/04/2018 Comment:** The amount of accessible spaces added complies with 521 CMR 23.00, however per § 23.4.3, surface slopes should not exceed 1:50 (2%) in all directions. The proposed grading appears to exceed 2% in some if not all of the proposed accessible parking stalls. The applicant may want to provide spot grades at all corners of the parking stall to ensure slopes do not exceed 2% after construction. Additionally, based on the contours shown, there is a curb in front of the parking stalls that are adjacent to the building. Ramps should be added to provide an accessible route for those parking in the accessible parking spaces. If a curb is not proposed at the building sidewalk one should be provided to prevent cars from accidentally driving into the building. Accessible ramps should be added to the walkways at the rear parking area driveway. Finally, the Wheelchair Ramp Detail shown is of the wrong type as it shows a midblock crossing. The Applicant should provide a ramp detail for the actual crossings proposed.

2. Initial 07/20/2018 Comment: A 50' No Disturbance Area is shown on the plans per the Town of Littleton Wetland Protection Regulations. Additionally, there is a 100' Wetland Buffer per the Wetlands Protection Act that is not shown on the plans. An infiltration basin and the MBTA driveway is proposed within the 50' No Disturbance area of the wetland and a portion of the MBTA parking lot and driveway appears to be within the 100' Buffer. This will have to be approved by the Town of Littleton Conservation Commission.

*8/13/2018 Applicant Response: The pond area in the vicinity of the 50' BVW buffer has been removed and the drainage re-designed to minimize work within the jurisdictional areas of the wetlands.*

**09/04/2018 Comment:** Per the Wetland Protections Act, the Applicant will still need the project approved by the Town of Littleton Conservation Commission as work is proposed within the 100' Buffer. The Applicant should also show the 100' Buffer on the plans.

5. Initial 07/20/2018 Comment: The low point in the driveway behind the building is below elevation 266 and the bottom of the infiltration basin is at elevation 265. The plans show that stormwater in the driveway will be collected in catch basins and piped to the infiltration basin, however, sufficient pipe cover is not provided. The Applicant should review the design to ensure sufficient pipe cover is provided everywhere and include rims and inverts for all structures on the plans.

*8/13/2018 Applicant Response: The drainage system has been re-designed.*

**09/04/2018 Comment:** CBs 5 and 6 shows the difference between rim and invert is 1.25 and 1.55 feet, respectively. This is not enough to fit the 12-inch diameter pipe and 8" frame and grate proposed. Also, many of the catch basins have minimal cover over the pipe and would not be able to accommodate the cone section and hood shown in the detail. The Applicant should provide a detail for a shallow catch basin.

6. Initial 07/20/2018 Comment: The water main is currently shown in conflict with drain structures in some locations.

*8/13/2018 Applicant Response: The water line and drainage structures have been revised to eliminate these conflicts.*

**09/04/2018 Comment:** The Applicant should confirm the water line can be constructed as shown with such a small radius behind the building without the installation of bends. The Applicant

should minimize the use of 90-degree bends to minimize the impacts of thrust forces within the pipe.

7. Initial 07/20/2018 Comment: Cape Cod Berm is indicated along the driveway to the MBTA lot. Will the same type of curb be used in the front parking area? The Detail shown on D2 is labeled "Bituminous Berm". Is this the same as Cape Cod Berm, or something else? Also, a "Sloped Granite Curb" detail is shown on D2. Please indicate where that is to be used on the Site Plan.

*8/13/2018 Applicant Response: The plan and details sheets have been revised to state Bituminous Berm. The detail for the sloped granite curbing is for the intersections and has been labeled on the plan.*

**09/04/2018 Comment: Cape Cod Berm is still indicated on the Site Plan.**

9. Initial 07/20/2018 Comment: The Applicant should indicate sizes of utility pipes on the plans.

*8/13/2018 Applicant Response: All pipe sizes have been added to the plan and profile.*

**09/04/2018 Comment: The water main size is not indicated, nor are drain pipes exiting CBs 3,7,8, 10, 11, 12, 13, 14, 15, 16 or SC2, SC3, or DMH6.**

12. Initial 07/20/2018 Comment: The MBTA parking lot is sloped towards the wall. Is the pavement section designed to contain the 100-year storm? If not, the Applicant should consider the possibility that during a large storm, or if the porous pavement were to become clogged, runoff would pond along the edge of the wall and flood the parking area.

*8/13/2018 Applicant Response: The porous pavement is designed to infiltrate the 100-year storm. In the event of the porous pavement failing, "scupper cuts" have been added to the east side curbing to allow for drainage, and not pond water. This is an unlikely event as the clogging of the porous pavement is proposed to be vacuumed at required intervals to maintain its infiltrative capacity.*

**09/04/2018 Comment: "Scupper cuts" are not indicated on the plans.**

13. Initial 07/20/2018 Comment: The large retaining wall will require fall protection. The Applicant should address this on the plans.

*8/13/2018 Applicant Response: A guardrail and chain link fence have been added to the site plan for fall protection.*

**09/04/2018 Comment: The Applicant should provide a detail for the retaining wall, guard rail, and chain link fence.**

15. Initial 07/20/2018 Comment: The roadway profile appears to be designed to meet a design speed of 20MPH, which is appropriate for this development. The Applicant should consider lengthening the vertical curve located at Sta. 6+90 to eliminate the short vertical tangents.

*8/13/2018 Applicant Response: We have made every attempt to lengthen the tangent between these curves, but given the layout of the site and location of the existing bridge, it is not feasible to lengthen this curve without making the radii smaller.*



**09/04/2018 Comment:** It appears the Applicant has revised the roadway profile at this location and now proposes a vertical angle point at Sta. 6+54 of approximately 2.2%. Recognizing the constraints of the existing bridge, the Applicant should investigate reducing this angle point to less than 1.0% difference or incorporate a vertical curve at this location, if feasible.

**Special Permit Submission Requirements Comments:**

20. Initial 07/20/2018 Comment: The following were either not included in the submittal or not shown on the plans, but are required by Page 3 of the Special Permit Application:

- Inventory of natural features
- Environmentally sensitive zones
- Construction limit line
- Setback lines
- Loading spaces and turning radii in parking lots
- Gas and electric utility lines
- Material of proposed retaining wall
- Location of dumpsters and screening details
- A block containing the following:
  - Proposed maximum height of all existing and proposed buildings and other structures in feet and stories
  - Trip generation of proposed uses
- Traffic Impact Assessment

*8/13/2018 Applicant Response: All requested items have been added to the plans. There has recently been a traffic study for this portion of the town. We are requesting the planning board to utilize the existing information on Foster street to suffice for the traffic analysis.*

**09/04/2018 Comment:** Any items added to the plans as requested have been removed from the initial comment. Several items are still missing from the plans and remain. **We respectfully defer to the Planning Board for a determination on the acceptability of the existing Foster Street traffic study.**

**Zoning Bylaw Comments:**

21. Initial 07/20/2018 Comment: § 173-18-B of the Zoning Bylaw indicates that the visibility of parking areas from public ways and residences be minimized. A dense collection of trees exists throughout the entire roadway frontage. Additionally, near the middle of the Foster Street frontage, is an existing rock mound that further restricts visibility into the site. The current plans show that this area will be cleared and flattened to meet the road grades of Foster Street, thereby increasing visibility from the road and the house across the street. **We respectfully defer to the Planning Board for a determination on this item.**

*The Applicant did not respond to this comment.*

22. Initial 07/20/2018 Comment: § 173-18-C of the Zoning Bylaw states that major topographic changes be minimized. The proposed 10 to 23 foot retaining wall shown on the plans near the proposed MBTA parking lot constitutes a major topographic change to that portion of the site. Also, as mentioned in the comment above, an existing 10-foot-high rock mound is proposed to be flattened. **We respectfully defer to the Planning Board for a determination on this item.**



*The Applicant did not respond to this comment.*

23. Initial 07/20/2018 Comment: Per § 173-18-D, the Planning Board shall determine if there is adequate access to each structure for fire and service equipment. We take no exception to the proposed site layout regarding this requirement; however, **the Board may wish to seek input from the fire and police departments.**

*The Applicant did not respond to this comment.*

24. Initial 07/20/2018 Comment: The proposed parking lot shown for the building does not appear to meet the minimum parking requirements indicated in § 173-32.B for any occupancy type. It is unclear what type of occupancy the building will end up having. The Applicant should provide a parking schedule clearly showing how the minimum parking requirements are being met or request a waiver from this requirement.

*08/13/2018 Applicant Response: We have added a parking density calculation table to the plans, and have requested a waiver for the number of spaces for the adult day care facility.*

**09/04/2018 Comment: We respectfully defer to the Planning Board for a determination on the waiver for the number of spaces for the adult day care facility.**

25. Initial 07/20/2018 Comment: Per § 173-33, adequate off-street loading facilities and space must be provided. Please show location(s) of loading facilities that do not block parking spaces in front of the building.

*08/13/2018 Response: Additional parking for employees and loading areas have been added to the rear of the building.*

**09/04/2018 Comment: The length of the loading drive in the back may make it very difficult for a large truck to turn around especially if the parking stalls are full. We respectfully defer to the Planning Board for a determination on the acceptability of the loading area.**

26. Initial 07/20/2018 Comment: Checking conformance with § 173-35, § 173-37, and § 173-39 and building height requirements in the Intensity Use Schedule requires review of architectural plans which were not provided. This review is also excluded from Green's scope of work.

*08/13/2018 Applicant Response: Architectural plans will be submitted at the next hearing.*

**09/04/2018 Comment: The Architectural Plans will not be reviewed by Green.**

29. Initial 07/20/2018 Comment: § 173-32.C.3 states that a parking lot of the proposed size must be shielded from residential use or a public way by a 4-foot-wide row of densely planted shrubs or by a fence that is at least 4 feet tall. These requirements are not met on the site plans.

*08/13/2018 Applicant Response: We have re-graded the front of the site to incorporate some of the existing berm, as well as plantings to meet this requirement.*

**09/04/2018 Comment: We respectfully defer to the Planning Board on whether the use of the existing berm and trees added are acceptable to meet the screening requirements.**



**Aquifer and Water Resource District Special Permit Comments:**

31. Initial 07/20/2018 Comment: Per § 173-62.D.1, a complete list of all chemicals, pesticides, fuels, and other potentially toxic or hazardous materials to be used or stored on the premises, along with a description of protection and prevention measures, shall be provided when applying for a special permit. The Applicant should supply the complete list with the required information.
32. Initial 07/20/2018 Comment: Per § 173-62.D.2, a description of potentially toxic or hazardous wastes to be generated, along with the storage and disposal method, shall be provided when applying for a special permit. The Applicant should supply the description with the required information.
33. Initial 07/20/2018 Comment: Per § 173-62.D.5, an analysis by a qualified engineer experienced in groundwater evaluation and/or geohydrology shall be provided when applying for a special permit. The Applicant should submit the analysis with the required information.
34. Initial 07/20/2018 Comment: Per § 173-63.E, monitoring wells shall be constructed on the site as specified in the special permit, with reports to be submitted to the SPGA, the Board of Health and the Board of Water Commissioners. The Applicant should indicate on the plans where these monitoring wells will be constructed. We recommend that the number and location of these monitoring wells be coordinated with the Town of Littleton Water Department.

*08/13/2018 Applicant Response to comments 31-34: There are no high pollutant uses proposed for this site. The limit of chemicals, pesticides, and other chemicals will depend on the tenants for the building, and will be reviewed on a case by case basis. The location of monitoring wells should be specified by the water department.*

**09/04/2018 Comment: As further coordination on Comments 31-34 is proposed, we recommend the Planning Board include a version of these comments in any approval.**

**Stormwater Report:**

36. Initial 07/20/2018 Comment: Per Massachusetts Stormwater Standard No. 2, the post-development peak discharge rates should not exceed pre-development. The Applicant has indicated compliance with this requirement in a table for the 2-, 10-, and 100-year storm events, however, the HydroCAD outputs only include the 100-year storm pre-developed conditions flow rates and the 2-year post-development. The Applicant should include the HydroCAD outputs for all storm events listed.

*08/13/2018 Applicant Response: All calculations are provided in the revised drainage report.*

**09/04/2018 Comment: A revised drainage report was not received.**

**Stormwater Management and Erosion Control Bylaw Comments:**

42. Initial 07/20/2018 Comment: Per § 38-16.C.5 of the Littleton Stormwater Management and Erosion Control Bylaws, the plans should show a delineation and number of square feet of the land area to be disturbed. The Applicant should revise the plans to indicate this amount.

*08/13/2018 Applicant Response: An impervious area table has been added to sheet S1.*

**09/04/2018: The previous request was for the land area to be disturbed, not the impervious area. The Applicant should add this to the plans.**



43. Initial 07/20/2018 Comment: Per the Massachusetts Stormwater Handbook, Standard 8, projects that disturb one or more acres of land are required to obtain coverage under the NPDES Construction General Permit issued by the EPA and prepare a Stormwater Pollution Plan (SWPPP). This document must be submitted prior to construction. **We recommend that the Planning Board include this requirement as a condition to any approval.**

*The Applicant did not respond to this comment.*

44. Initial 07/20/2018 Comment: Per § 38-17.C.8, the Applicant should clearly show all components of the proposed drainage system on the plans. The HydroCAD output provided indicates a weir and an orifice are proposed as the outlet control for the infiltration basins, however, these are not shown on the plans.

*08/13/2018 Applicant Response: Additional detail has been added to the plans to match the structures and BMPs in the drainage calculations.*

**09/04/2018 Comment: A detail was not provided for the weir and orifice as requested. A revised drainage report was not provided so it's unknown if the weir and orifice shown in the report have been removed. The Applicant should also add a detail for the infiltration basins including the proposed soil profile and emergency spillway/overflows.**

45. Initial 07/20/2018 Comment: Per § 38-18.B.2, maintenance specifications should be included for all components of the stormwater system. The infiltration basins and infiltration beds are not addressed in the Operations and Maintenance portion of the Stormwater Drainage Report.

*08/13/2018 Response: We will provide a complete operation and maintenance plan during the preparation of the SWPPP.*

**09/04/2018 Comment: The Operations and Maintenance Plan required here refers to the steps required after construction is complete and is not typically included in the SWPPP as that is for operations during construction. The Applicant should provide an Operations and Maintenance plan with the infiltration basins and beds included per § 38-18.B.2 of the Zoning Bylaw.**

46. If the Applicant intends to use the proposed infiltration basins as temporary sediment basins during construction and the Planning Board and Conservation Commission decide to allow this condition, **we recommend that the following conditions be included in any approval:**

- To minimize impact on the infiltration capacity of the final infiltration basin, temporary sediment basins should be excavated to no deeper than 12" above the final bottom of infiltration basin elevation.

*The Applicant did not respond to this comment.*

**New 09/04/2018 Comments:**

47. The Applicant should show how the roof drains will be connected to the drainage system.

48. The Town of Littleton has expressed concerns regarding the maintenance of subsurface infiltration chambers and treatment structures. As it is assumed the subsurface infiltration chambers (Cultec) and treatment structure (Stormceptor 450) proposed for this project are to be maintained by the property owner, we take no exceptions to their installation.



**Requested Waivers:**

§249-43.C.1 The applicant is proposing a number of parking spaces which does not have a specific number of spaces per its use. The adult day care facility is proposed as development of the site. This use does not have patron parking, as the patrons are dropped off by a shuttle. The applicant has provided 4 employee parking spaces for this use.

Green's Comment: Uses for buildings with multiple tenants are constantly changing and providing 4 spaces for 7,000 s.f. is minimal. For example, if the 7,000 s.f. were to be used as office space, 28 parking spaces would be required. **We respectfully defer to the board for a determination on this waiver.**

**Exclusions:**

As indicated in the Scope of Services, this peer review does not include the following:

- Review of the Special Permit Application Package for compliance with other Local, State or Federal codes, ordinances or laws not mandated by the Code of the Town of Littleton, Massachusetts, Chapter 173, Zoning Bylaw;
- Review of any previously approved plans, reports or applications for compliance with Local, State or Federal codes, ordinances or laws;
- Confirmation of any delineated resource areas;
- Review of landscape planting and site lighting photometrics;
- Review of septic system design;
- Review of the project during construction;
- Review of architectural plans;
- Structural review of retaining walls;

Several of the above comments include recommendations for the provision of additional drawing and document information. The updated information may result in the generation of additional comments once received and reviewed. Should you have any questions regarding this peer review please do not hesitate to contact us.

Sincerely,

*Green International Affiliates, Inc.*

*Courtney Semlow*

Courtney Semlow, P.E.  
Project Manager

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