

13-0328-028-01
November 17, 2020

Mr. Jeremy Ginsberg, AICP
Land Use Director
Town of Darien
2 Renshaw Road
Darien, Connecticut 06820

Re: **7-Eleven, 306 Boston Post Road
Third Engineering Review**

Dear Mr. Ginsberg:

We are in receipt of responses from the applicant to our comments dated October 19, 2020 on the stormwater and erosion control aspects of the application. The submission from the applicant included written responses to our comments and corresponding revised plans and computations. As of this date, the applicant has fully responded to our concerns, and based on our review, the plans substantially conform to the requirements of the Darien Zoning Regulations with respect to stormwater and sediment and erosion control.

Basis of Review

Our review was based upon the following documents:

1. Town of Darien Planning and Zoning Commission Application Form, 306 Boston Post Road
2. "Drainage Report for 7-Eleven Proposed Gasoline Refueling Station and Convenience Store, 306 Boston Post Road (Route 1), Darien, Connecticut," prepared by Bohler Engineering, dated June 24, 2020, revised October 12, 2020.
3. "Cover Sheet - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-101, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
4. "General Notes Sheet - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-102, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
5. "Demolition Plan - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-201, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
6. "Site Layout Plan - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-301, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.



7. "Grading and Drainage Plan - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-401, prepared by Bohler Engineering, dated August 10, 2020, revised November 4, 2020.
8. "Utility Plan - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-501, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
9. "Soil Erosion and Sediment Control Plan - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-601, prepared by Bohler Engineering, dated August 10, 2020, revised November 13, 2020.
10. "Erosion and Sediment Control Notes and Details - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-602, prepared by Bohler Engineering, dated August 10, 2020, revised November 13, 2020.
11. "Landscape Plan - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-701, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
12. "Landscape Notes and Details - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-702, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
13. "Truck Turn Plan - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-801, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
14. "Detail Sheet - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-901, prepared by Bohler Engineering, dated August 10, 2020.
15. "Detail Sheet - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-902, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
16. "Detail Sheet - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-903, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.
17. "Detail Sheet - Proposed Site Plan Documents for 7-Eleven, Store #41624, Proposed Gas Station with Convenience Store, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", Drawing C-904, prepared by Bohler Engineering, dated August 10, 2020, revised October 9, 2020.



18. "Footcandles Calculated at Grade, Project Name: 7-Eleven, #41624 – 306 Boston Post Road (Route 1) in Darien, CT", prepared by Cree Lighting, dated June 16, 2020.
19. "ALTA/NSPS Land Title Survey, 306 Boston Post Road, Map 32, Lot 9, Town of Darien, Fairfield County, State of Connecticut," prepared by Control Point Associates, Inc., dated March 10, 2020.
20. "Exterior Elevations – 7-Eleven, Inc., 306 Boston Post Road, Darien, CT", Drawing A3.0, prepared by Harrison French & Associates, dated August 11, 2020.
21. "Exterior Elevations – 7-Eleven, Inc., 306 Boston Post Road, Darien, CT", Drawing A3.1, prepared by Harrison French & Associates, dated August 11, 2020.
22. Letter to Jeremy Ginsberg, re: 306 Boston Post Road - Engineering Review, from Bohler Engineering, dated October 12, 2020.
23. "Proposed Drainage Watershed Map, 306 Boston Post Road, Town of Darien, Fairfield County, Connecticut", prepared by Bohler Engineering, dated June 11, 2020, revised November 4, 2020.

Review Comments

We have repeated our September 16, 2020 review comments below, with the disposition of each comment following in bold face type. The applicant's engineer has fully satisfied all of our comments.

A. Stormwater Management

1. Table 1-1 notes that there are slight flow increases to Design Point #2 for the 2, 10, 25 and 50 year events. Design Point #2 discharges toward the Route 1 right-of-way. DZR 881 requires that there shall be no increase in downstream flooding conditions. We suggest the applicant's engineer review the proposed conditions watershed map, an the delineation of the watershed divide between Areas P1 and P2. Area P1 discharges to Design Point #1 (unnamed watercourse), while Area P2 discharges toward Design Point #2 (Route 1 right-of-way). The proposed elevation 87 contour northwest of the proposed store creates a ridgeline that would direct more runoff toward Area P1 and away from Area P2, which could resolve the small increase in peak flow.

10/19/2020: Comment addressed. The applicant's engineer adjusted the watershed areas to align with proposed topography. The report documents a reduction in peak flow to both design points in accordance with Town requirements.

2. The watershed maps clearly distinguish the watershed boundaries and land coverages:

- a. Show the time of concentration paths for all watersheds per DZR 882.f.4.

11/17/2020: Comment addressed. The applicant's engineer has provided time of concentration travel paths.

- b. Show the subwatershed for each catch basin used in the storm sewer hydraulic analysis per DZR 882.f.6.

11/17/2020: Comment addressed. The applicant's engineer has provided the requested subwatershed map in support of the on-site hydraulic analysis.

3. The proposed pipes have been designed for the 10-year storm:
 - a. The Darien Drainage Manual requires that storm drains convey a 25-year storm at minimum.
10/19/2020: Comment addressed. The applicant's engineer has provided a storm sewer analysis showing that the proposed system has a 25-year storm capacity.
 - b. The Rational Pipe Sizing Calculations should include the hydraulic grade line for comparison with grate/rim elevations per DZR 881.f.7.
10/19/2020: Comment addressed. The requested pipe sizing calculations have been provided.
4. The proposed drainage system from the fueling area will tie into the onsite system at a blind connection into the side of a storm drain. Change the connection to a manhole to better facilitate access.
11/17/2020: Comment addressed: The requested manhole has been provided.
5. The grading west of the dumpster area will direct sheet flow across the dumpster pad, and could mobilize debris and drippings that would collect there. Revise the grading to route runoff around the dumpster area.
10/19/2020: Comment addressed. The grading west of the dumpster area has been revised to avoid having runoff sheet flow across the area.
6. The southeasterly roof leader connects via a blind connection to the storm drain. The connection should be at a manhole for maintenance purposes.
11/17/2020: Comment addressed: The requested manhole has been provided.
7. Show inspection and access ports above the proposed underground chamber system.
10/19/2020: Comment addressed. The requested inspection ports are shown in plan view.
8. The proposed riprap slope at the southeast corner of the site will extend toward the property line, resulting in narrow strips of lawn that will be only 1 to 2 feet wide, and too narrow for a lawn mower. Should the riprap extend to the property line to avoid these strips?
10/19/2020: Comment addressed. The riprap is shown extending to the property line to avoid the narrow strips of lawn.
9. The Outlet Control Structure detail on Drawing C902, shows that the outlet structure will be controlled by a weir wall with two orifices, a low-level orifice consisting of a 6" pipe with an endcap containing a 3" hole drilled into it, and a high-level orifice with an 8 inch opening. The 3" hole will be located at the bottom of the cap, and the bottom of the structure.
 - a. Increase the depth of the structure to facilitate the removal of the cap. If the invert of the cap is at the invert of the floor, it may be difficult to remove.

10/19/2020: Comment addressed. The structure has been made deeper to better facilitate the removal of the cap.

- b. How will the cap attach to the pipe?

10/19/2020: Comment addressed. The applicant's engineer has clarified how the cap will attach to the pipe.

- c. Will the cap be able to remain in place with the pressure of the ponded water behind it?

10/19/2020: Comment addressed. The applicant's engineer has reversed the orientation of the cap, addressing the question regarding the pressure of ponded water.

- d. Correct the typo of the 6" pipe invert in the section view, where the invert is shown as elevation 384.93.

10/19/2020: Comment addressed. The typo in the invert elevation has been corrected.

10. Will the catch basins adjacent to the curb line have curb inlets to improve interception capacity?

10/19/2020: Comment addressed. The applicant's engineer has clarified that the proposed catch basins will not have curb inlets.

11. Appendix G of the Engineering Report has a detailed Operations and Maintenance Plan that covers all the major stormwater features on the site. We noted the following:

- a. DZR 881g requires the Operations and Maintenance Plan be signed and sealed by a Connecticut licensed professional engineer. Although the Engineering Report was signed and sealed, the Operations and Maintenance Plan will be filed on the Land Records, and therefore should be signed and sealed separately.

10/19/2020: Comment addressed. The Operations and Maintenance Plan has been signed and sealed by a Connecticut licensed Professional Engineer.

- b. We identified a few Massachusetts references to be updated to their Connecticut equivalents:

- i. On the cover sheet, under Construction Phase, the term "EPA Construction General Permit", should be replaced by the "Connecticut DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities".

- ii. MADEP references should be replaced by CTDEEP:

- (1) Post Development Controls, Item 1, Parking Lots
- (2) Post Development Controls, Item 2, Catch Basins, Manholes, and Piping
- (3) Post Development Controls, Item 4, Underground Detention

(4) Spill Prevention and Response Procedures (Post Construction)

10/19/2020: Comment addressed. The Massachusetts DEP references have been replaced.

- c. The Long Term Pollution Prevention Plan, third bullet point, indicates sweeping of driveways should be done twice a year, while the Post Development Controls, Item 1 indicated that sweeping shall be done four times a year. Please review for consistency.

10/19/2020: Comment addressed. The Long Term Pollution Prevention Plan has been revised to be consistent with the Post Development Controls. Now both indicate sweeping four times per year.

- d. Under the Spill Prevention and Response Procedures, please be advised that the Connecticut Department of Energy and Environmental Protection is in the process of updating its spill response procedures with public comment closing on August 20, 2020. At the time of implementation, the plan may need to change to incorporate the new procedures.

10/19/2020: No response required, this comment was for informational purposes only.

12. 10/19/2020: New Comment. We note that the applicant's engineer is showing a riprap channel extending from the storm drainage outfall. We do not object to the improvements from a hydraulics standpoint, but note the following:

- a. The proposed work appears to be within an area subject to the Environmental Protection Commission's upland review area. Since this is a change, the applicant should consult with the requirements of their permit for changes.

11/17/2020: Comment addressed. The applicant's engineer had reached out to the EPC as requested.

- b. The proposed grading and riprap extends over the property boundary onto State of Connecticut property. The proposed grading extends beyond the Highway Non-Access Line, and based upon our experience, encroachments into the Highway Non-Access Line are not allowed. We discussed this with the applicant's engineer, who indicated that DOT requested the outlet be moved onto the subject property, and the downstream channel stabilized.

11/17/2020: Comment addressed. The applicant's engineer explained that the modification was recommended by DOT as part of their initial project review.

B. Sediment and Erosion Control

1. The slopes on the southeast portion of the site, adjacent to the I-95 entrance ramp are steeper than 3:1, and need to have an erosion control blanket.

10/19/2020: Comment addressed. The erosion control blanket requested is shown on Drawing C601.

2. Review of the size of the soil stockpile area. It appears to be too small. For example, the stockpile area shown has a radius of 14', therefore, using the volume of a right cone and assuming a 1:1 soil slope, the volume of the cone is approximately 2,870 cubic feet. Meanwhile, the excavation for the proposed stormwater detention system is on the order of 14,000 cubic feet. Resize the stockpile area, or provide additional detail in the construction narrative that indicates material will be hauled off site as it is excavated.

10/19/2020: Comment addressed. The soil stockpile area has been increased slightly, and notes on limitation of use have also been added.

3. Will the existing pavement be removed for the installation of the construction entrance? The Stabilized Construction Exit Detail on Drawing C-602 shows the entrance without the existing pavement in place.

10/19/2020: Comment addressed. The existing pavement will be removed, and a note has been added to Drawing C602.

4. How will the existing paved leakoff north of the existing dumpster enclosure be addressed? The flow may be too concentrated for treatment with silt fence alone. Would a check dam be appropriate here to slow the flow to a more manageable rate for sediment and erosion control purposes?

11/17/2020: Comment addressed. The applicant's engineer has provided a temporary sediment trap to capture and treat runoff along with appropriate sizing criteria.

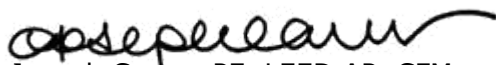
5. Drawing C602 contains a tree protection detail, but tree protection locations could not be found on the plan view in Drawing C601. Please confirm if there are specific site trees to be protected, and show on Drawing C601.

10/19/2020: Comment addressed. No tree protection is proposed. Based on the Erosion and Sediment Guidelines, no tree protection is required.

We will be present before the Commission at its October 27, 2020 hearing to answer questions regarding our review.

Very truly yours,

TIGHE & BOND, INC.



Joseph Canas, PE, LEED AP, CFM
Principal Engineer

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