

September 1st, 2021

6092-P

Town of Boxborough Planning Board

29 Middle Road

Boxborough, MA 01719

**RE: Revised Plan Set & Drainage Calculations
 Definitive Subdivision – Priest Lane
 Boxborough, MA 01719**

Dear Members of the Planning Board:

On behalf of the applicant, Boxborough Town Center, LLC., Dillis & Roy Civil Design Group, Inc. has prepared this letter to submit revised plans & additional pertinent materials. By working with the peer review consultant from Places Associates, Inc., we have revised the Definitive Subdivision plans & stormwater documents attached to this letter and have summarized the changes below.

PLAN RELATED REVISIONS

- Plan Sheet C1.0 has been revised to remove the requested waiver from Section IV.C – Adequate Access from a Public Way.
- Plan Sheet C1.1 has been revised to include the existing drainage easement & approximate location of the existing infiltration basin to be utilized.
- Plan Sheet C2.0 has been revised to include the location of the existing 20' wide trail easement.
- Plan Sheet C3.0 has been revised to include a definitive limit of clearing for construction & indicate the locations where vegetation shall be preserved.
 - Additional notes have been added to Plan Sheet C3.0 "Site Preparation & Tree Removal Notes"
- Plan Sheet C5.0 has been revised to show the required limits of ledge removal for the underground stormwater system.
 - Additional notes have been added to Plan Sheet C5.0 "Rock/Ledge Removal Notes" & "Infiltration Basin Remediation Notes".

STORMWATER DESIGN RELATED REVISIONS

- The subject time of concentration on the Post-Developed Drainage Map has been revised as there was a discrepancy on the Post-Developed Watershed Map. This revision resulted in a 1.3-minute increase to the Tc for the tributary sub-catchment. The HydroCAD model

has been updated to reflect the revision. Please refer to the tables below for the resulting hydraulic calculations.

- The revised Post-Developed Watershed Map has been attached to this letter.
- Due to a discrepancy within the hydraulic model regarding the stone infiltration area, the HydroCAD model has been updated to revise the outlet width of the proposed broad crested weir to 50-feet as recommended. As shown on Plan Sheet C7.0 the outlet elevation of the lower end is at 335.0. Please refer to the tables below for the resulting hydraulic calculations.
- As requested, the existing catch basin was inspected & we have updated the stormwater calculations accordingly. We have analyzed the existing catch basin using conservative assumptions within the HydroCAD model. The rim & invert out elevations were field measured to be 327.22 & 322.97, respectively. The outlet pipe was observed to be corrugated metal with a hood installed and was noted to be in good condition. The downgradient outlet pipe was conservatively modeled with a slope of 2% (Google Terrain shows an 8% slope along the existing subject driveway). In all circumstances for each storm, the peak elevations within the existing catch basin were lower when compared to the post-developed condition. Similarly, the revisions mentioned previously resulted in decreased peak flow rates tributary to Design Point-A.
 - For convenience, the following is a summary of the Pre-Developed vs. Post-Developed Peak Flows & Peak Elevations within the existing catch basin on Priest Lane.

| Design Point -A | | | |
|------------------------|--------------------------|--|--|
| Storm | Pre-Developed Flow (CFS) | Post-Developed Flow (CFS) (Revised August 12th, 2021) | Revised Post-Developed Flow (CFS) (Current) |
| 2-YR | 0.78 | 0.78 | 0.77 |
| 10-YR | 2.10 | 2.09 | 2.03 |
| 25-YR | 2.91 | 2.82 | 2.77 |
| 100-YR | 4.67 | 4.47 | 4.29 |

| Existing Catch Basin in Priest Lane Cul-de-sac | | |
|---|--------------------------------------|---------------------------------------|
| Storm | Pre-Developed Peak Elevation (FT) | Post-Developed Peak Elevation (FT) |
| 2-YR | 323.48 | 323.48 |
| 10-YR | 323.90 | 323.88 |
| 25-YR | 324.53 | 324.17 |
| 100-YR | 326.98 | 326.35 |

We have not updated the entire Stormwater Report but have provided updated HydroCAD calculations attached to this letter to document compliance.

- The cover over DP-3 has been reviewed regarding the proposed stone walls at the entrance. The outlet pipe has an invert of approximately 325.3 at the intersection of the

proposed stone wall. The elevation of the stone below the proposed wall will be 329.0. This will allow for approximately 2.7-feet of cover above the top-of-pipe at this location.

OTHER RELATED REVISIONS

- The waiver request letter has been revised to reference the correct Sections from the Rules & Regulations Governing the Subdivision of Land.
- A letter has been prepared that summarizes our inspection of the existing infiltration basin to be utilized. The letter includes photos & recommended operation & maintenance procedures that are also outlined within the attached Definitive Plan Set (included within the newly added notes on Plan Sheet C5.0, as referenced within the subject letter).

We trust this meets your needs at this time. If you have any questions or require any additional information, please contact the undersigned

Regards,

DILLIS & ROY

Civil Design Group, Inc.



Ryan Vickers, E.I.T.
Civil Engineer



Gregory S. Roy, P.E.
Principal