

**SPRUHAN ENGINEERING, P.C.**  
**80 JEWET STREET (SUITE 2),**  
**Newton, MA**  
**Phone: 617-816-07-22/617-782-1533**

9/13/23

**From: Edmond Spruhan, P.E.**

**To: Concord Public Works, Engineering Division**

Thank you for the enclosed comments on this project.

**Building Permit Plan–166 Commonwealth Avenue**  
Prepared By: Spruhan Engineering, PC

**Engineering Division Comments:**

1. The Applicant is proposing their driveway in a location that is very close to the busy Commonwealth Ave/Laws Brook Rd intersection. The Engineering Division has on multiple occasions informed Spruhan Engineering that the proximity of the driveway to the intersection at the current proposed location is of major public safety concern.

*Spruhan Engineering has received the town's concerns and is working to arrive at the most viable solution. On this occasion, the design has been changed and two entrances have been proposed for the parking lot, which improves maneuverability and visibility. If additional suggestions are made, we are in the best position to evaluate them.*

2. The Applicant is proposing the taking of Town Right of Way (ROW), which may become available if the Commonwealth Ave approaches are realigned making the intersection closer to a Tee configuration. This opportunity was presented by Engineering to the Applicant as a public-private partnership (P3), which would require Town approvals. The Applicant's participation in the reconfiguration of the intersection benefits them not only from being allowed to utilize the excess ROW area, but also from the safety improvements to pedestrian access and possibly being able to locate the driveway at a greater distance from the intersection. Before the Board moves forward with an application that shows private improvements in the ROW, the Applicant should be required to meet with CPW Engineering and other Town personnel to acknowledge their interest in negotiating a P3 agreement and to make sure they under the public process for ROW discontinuation or for private use of the ROW since that will affect the timing of the project moving forward. Additionally, the Applicant can discuss with Engineering the placement of the driveway in a more acceptable location.

*This engineering firm and the proponents will work together with the town's engineering department and its representatives, ensuring that any intervention carried out will be consensual and ensuring that, before any particular interest, safety is prioritized, as well as the correct functioning of the intersection.*

3. Floodplain calculations should comply with all requirements of Zoning Bylaw Section 7.2 Floodplain Conservancy District.

***Spruhan Engineering agrees and has worked to meet these requirements.***

4. No work shall be done within the FEMA regulated Floodway Zone AE without coordination with FEMA. Work done in the regulated floodway may necessitate the need for 1-D hydraulic modeling. The Applicant's communications with FEMA shall be submitted to the Town for review.

***Spruhan Engineering agrees and the necessary actions have been taken to ensure that there are no increases in upstream flood elevations.***

5. The Site Drainage system shall comply with the Town of Concord Public Works Stormwater Regulations and Design and Construction Standards. As designed the following items need to be corrected or provided:

- Pipe sizing and elevations of system are not accurately represented.

***Spruhan Engineering has verified the information and the sizes of all discharge lines have been marked. The dimensions and elevations of the system have been represented in the civil plan, as well as in the corresponding detail. If you need any additional information, please specify it.***

- Existing and Proposed drainage patterns are not accurately represented.

***Please see sheet C5.0 "BMP MAP".***

- Descriptions and maps of existing and proposed drainage design points, and time of concentration paths need to be shown.

***Spruhan Engineering has shown Watershed Maps, for existing and proposed conditions. Please see sheets C6.0 and C6.1 for more information.***

- Mounding Calculations

***According to the data shown in the different Test Pits carried out, it can be inferred that the flow of groundwater occurs to the adjacent Brook, as expected. The closest building that could be affected is the one we are proposing, and it will not have a basement, so in our opinion, the mounding analysis is not necessary in this specific project.***

6. Soil Testing for stormwater systems needs to be observed by a Town Representative per the Concord Public Works Design and Construction Standards and Details Section 2-Drainage Standards.

***Because the Tests have already been carried out and were not observed by a representative of the town, we propose that they be observed at the time of excavations to confirm the information provided.***

7. The Applicant is proposing a private drainage connection to the Town's public drainage system. This type of connection requires a Drainage Covenant and is required to follow Article IV of the Town of Concord's Stormwater Regulations. However, it is noted that the Town's policy is to prohibit such connections and Drainage Covenants are approved by Public Works Commission only under rare circumstances where an Applicant can demonstrate that the need to connect is dire, and that no reasonable alternate means of disposal exists. Since the Applicant is proposing the complete redevelopment of the site, additional information regarding the dire need for this connection should be provided before the Board moves forward with the application.

*Spruhan Engineering and the proponents agree to the Drainage Covenant and to follow all applicable regulations. The infiltration system has been designed to function correctly in most situations, however, due to the natural slope of the lot, one of the entrances to the building (CALLED "SIDE ENTRY" IN THE PLAN) is at a low point, we want to prevent any flooding in case of exceptional storms. This is the reason for proposing overflow towards the main drain.*

8. The Engineering Divisions reserves the right to comment on future submittals related to any new or previously submitted information provided to the Town for review.

**Water & Sewer Division Comments:**

9. Design Issues:
  - a. The proposed change of use relating to wastewater demand will require the Applicant to submit a "**Form S**" Application to the Concord Health Division. Based on the information provided in the ZBA Application, the proposed sewer discharge increase will likely require that it be administratively denied by the Water & Sewer Superintendent in accordance with an established Public Works Commission adopted Policy which requires Commission approval for any requests for sewer capacity increases that will be greater than 999 gallons per day.  
*Form "S" has been attached. The applicant will follow all the corresponding steps, as explained in these comments.*

Such hearing, review and determination by the Public Works Commission will take into consideration the property's pre-determined wastewater capacity allowances as characterized in the Town's Comprehensive Wastewater Management Plan, with further consideration given to any and all review comments (whether in support, or in opposition) on the project, including any written comments received from Planning Board, Natural Resources Commission, Health Division, Building & Inspections, West Concord Advisory Committee, etc.

- b. The Applicant should be aware of existing private water and sewer service lines crossing the subject property that were previously used to serve 152 Commonwealth Avenue. These service lines are still connected to Town's infrastructure and will need to be properly disconnected prior to site excavation activities for the proposed project. This work should be shown on the proposed utility plan. The Division strongly recommends Applicant coordinates this utility work with the property owners of 152 Commonwealth Avenue.  
*Spruhan Engineering and the applicant are aware of the existing connections that cross through the lot. The removal of any utility that affects third parties is and will always be coordinated with the owners. In any case, we have incorporated the note into the plan, so that this is clear.*
  - c. The Applicant shall submit a full engineered design for the proposed water and sewer services utility work according to the Division's design policies and practices for review and approval prior to any site work or commencement of the proposed project.  
*Spruhan Engineering agrees and such designs will be made by a consultant in that area and provided by the applicant.*

In addition, the Division offers the following standard conditions of approval for the proposed project:

**10. Prior to commencement of any site work:**

- a. The Applicant shall meet with Division to review the proposed scope of water and sewer utility work and sufficiently demonstrate that:

i. Water service infrastructure can be designed and constructed in accordance with the Division's current design and construction standards.

*Spruhan Engineering agrees and the applicant will act accordingly.*

- b. The Applicant shall provide to the Division clarification, and if necessary, appropriate easement language clarifying ownership and associated inspection, maintenance and replacement responsibilities for the existing common water and sewer service presently shown within this property. Any required easement shall be recorded at the Middlesex South Registry of Deeds.

*Spruhan Engineering agrees and the applicant will act accordingly.*

**11. Prior to issuance of a Building Permit:**

- a. The Applicant shall submit to the Division for review and approval, an Application for the proposed water and sewer service/main installation. The Application shall include the following:

i. Identification of a Division-licensed "drain layer" who will be responsible for water service installation activities.

*Spruhan Engineering agrees and the applicant will act accordingly.*

ii. Two full size copies of the approved water utility plan. (Note: separate applications must be provided for the common water service (or water main) as well as each individual dwelling unit proposed to be served by Town water).

*Spruhan Engineering agrees and the applicant will act accordingly.*

iii. An approved "**Water Use Impact Report**" ("conservation plan") and "**Water Customer Data Sheet**" which will determine sizing of the water meter and water system connection fee.

*Spruhan Engineering agrees and the applicant will act accordingly.*

iv. If change-in-use results in water demand increase of greater than 30 gallons per minute, the applicant shall provide a water use impact report and conservation plan, with attention placed on the integration of demand management and conservation options.

*Spruhan Engineering agrees and the applicant will act accordingly.*

- v. If new water services are proposed, the existing services shall be cut, capped, and properly abandoned, as per the Division's standards.  
***Spruhan Engineering agrees, existing services will be cut and capped, and properly abandoned.***
  
- vii. The existing water/sewer service is older than 50 years and shall be replaced up to the property line. The Water & Sewer Division will review condition of the existing water/sewer service in the Town right of way. If deemed necessary by the Water & Sewer Division, the Applicant shall be required to replace the water/sewer service to the water/sewer main.  
***Spruhan Engineering agrees and the applicant will act accordingly.***

**12. Prior to issuance of any Certificate of Occupancy:**

- a. The Applicant shall submit to the Division a full-size record drawing (Arch D), created in accordance with Division standards, for review prior to finalizing the drawing. Once the draft is approved, the Applicant shall submit to the Division a full-size (Arch D formatted) electronic drawing copies in the form of CAD and \*.PDF files.  
***Spruhan Engineering agrees and the applicant will act accordingly.***
  
- b. The Applicant shall furnish to the Division "**Water Demand Minimization Affidavit(s)**" to demonstrate work was performed in accordance with the approved demand mitigation measures.  
***Spruhan Engineering agrees and the applicant will act accordingly.***

I hope that this information is helpful to you. Please do not hesitate to call with any questions.

Respectfully submitted,

*Edmond Spruhan*

Edmond T Spruhan