

January 28, 2021

Arlington Zoning Board of Appeals
51 Grove Street
Arlington, MA 02476

**Re: Ryder Brook Impact Analysis
1165R Massachusetts Ave. 40B Project**

1. Introduction

Goddard Consulting, LLC is pleased to submit this analysis on behalf of “1165R Mass Ave MA Property LLC” for the project located at 1165R Mass. Ave. in Arlington. The proposed 40B Project design requires the relocation of a drainage ditch known as “Ryder Brook.” The ditch is located in the center of the subject property, and its relocation is essential to the construction of the project. The ditch was determined by the Arlington Conservation Commission to be non-jurisdictional under the MA Wetlands Protection Act Regulations (310 CMR 10.00) in a Determination of Applicability (DOA) issued on 10/27/2020.

Although not considered a resource area subject to State wetland regulations, the ditch is considered a jurisdictional “stream” under the Arlington Wetlands Protection Bylaw, due to a more-restrictive stream definition under the Arlington Regulations for Wetland Protection. The project proponent has requested a waiver to the Arlington Zoning Board of Appeals (ZBA) from this local stream definition, which would render Ryder Brook non-jurisdictional under both the State and Local wetlands regulations.

The purpose of this analysis is to demonstrate to the ZBA that by granting a requested waiver of this local stream definition, the resultant ditch relocation will not cause any adverse environmental effects to the subject property, neighboring properties or the nearby Mill Brook, and will in fact create a significant improvement over existing conditions by increasing the potential flood control and storm damage prevention of the drainage system.

2. Existing Conditions

The onsite portion of Ryder Brook is approximately 120 linear feet of open man-made drainage ditch conveying stormwater runoff southward from a pipe under the Minuteman Bike Path through the site to a headwall (Figure 1).



Figure 1 - Orthophoto view of existing drainage ditch.

From the headwall, the water flows southward through approximately 80 feet of 24-inch diameter reinforced concrete pipe (RCP) that discharges through an opening in the side of the Mill Brook conduit. Mill Brook has a concrete and stone channel floor in this area that prevents scouring of the channel bed.

Using existing and historical imagery and on-the-ground inspections, I determined that the source of the water flowing through the ditch (when it is flowing) is likely entirely from catch basins and that there are no freshwater wetlands upgradient of the discharge point from under the Minuteman Bikeway.

The ditch contains steep, well-defined and undercut banks and is bordered by upland plant species, the majority of which are non-native invasive species (Photo 1). No Bordering Vegetated Wetlands are present alongside the ditch and the narrow strip of vegetation bordering the ditch contains little wildlife habitat value. In its existing condition the ditch is important for two wetland values protected by the Arlington Wetlands Protection Bylaw: it is significant to flood control and storm damage prevention.



Photo 1 - View of where the ditch enters the property, facing north, taken on 5/5/20.

3. Proposed Conditions

The proposed 40B project requires the relocation of the onsite portion of the drainage ditch and culvert to a location north and west of proposed Building #4 (Figure 2). As a replacement, approximately 100 feet of new daylighted drainage ditch will be constructed leading to a headwall. From the headwall, approximately 315 feet of new 30-inch diameter plastic pipe will convey the stormwater to the same opening in the Mill Brook conduit as where it currently discharges.

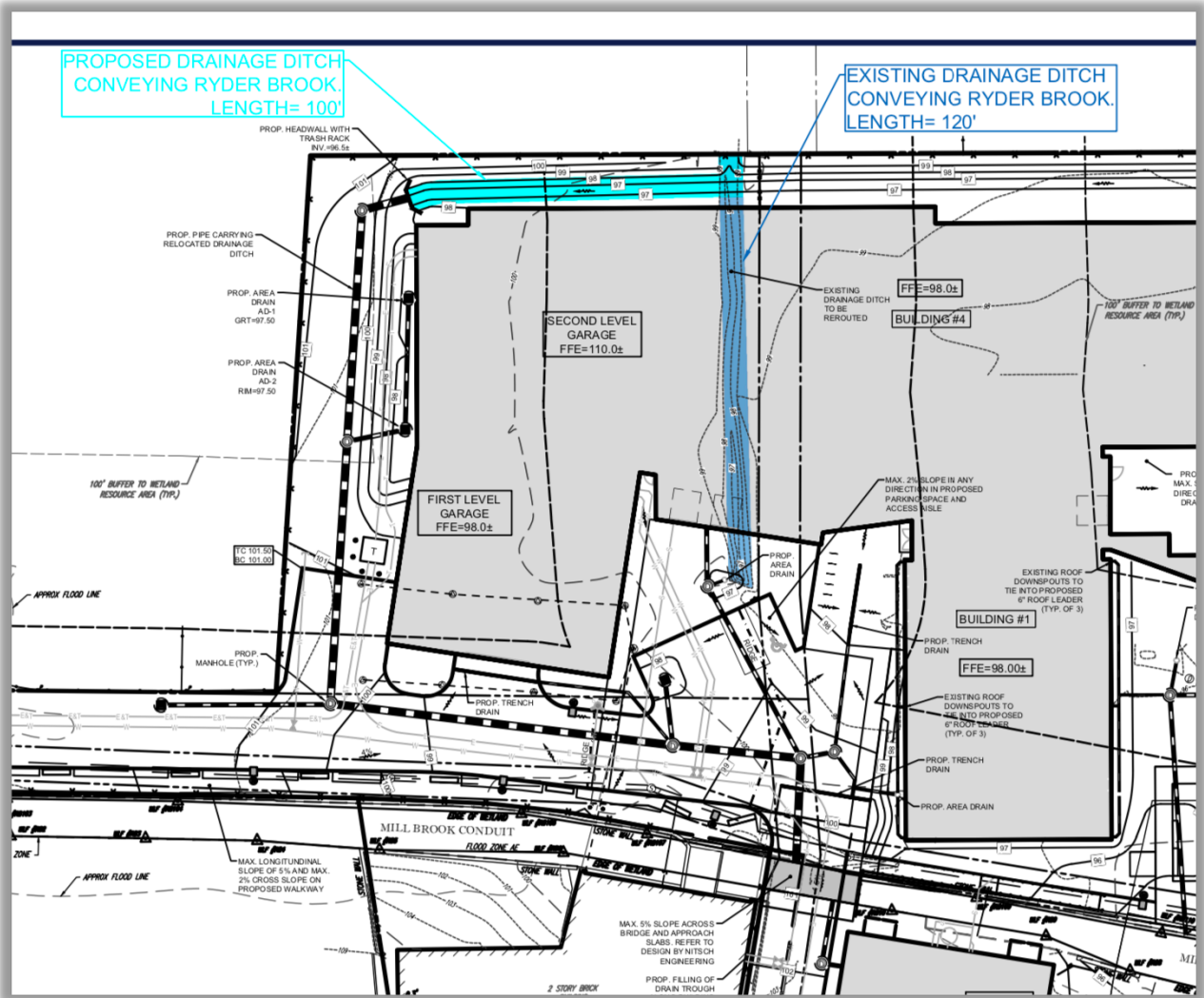


Figure 2 - View of proposed Ryder Brook relocation details.

The net result of the proposed project will be a reduction by 20 linear feet of daylighted man-made ditch and an increase in culvert length by 235 linear feet – with a much greater pipe diameter. In effect, the proposed condition will continue to provide the same flood control and storm damage prevention functions as the existing condition except that the

larger new pipe will almost double the water carrying capacity of the existing pipe, thereby reducing the potential for upstream flooding and providing an improvement over the existing condition.

4. Conclusions

The existing drainage ditch known as Ryder Brook is proposed to be relocated in order to accommodate the construction of a new residential building with affordable housing units. The daylighted portion of the relocated ditch will be slightly reduced in length, but the new piped system will be significantly longer and wider, thus will provide significantly greater capacity to transport water during storm events. The new system will thereby significantly reduce the potential for storm damage and onsite flooding compared to the current onsite ditch and pipe system and will be an improvement over existing conditions.

If there are any questions concerning this submission, please do not hesitate to contact me.

Sincerely,

Goddard Consulting, LLC

by 

Dan Wells, M.S.
Senior Wildlife Biologist & Wetland Scientist