ENGINEERING MEMORANDUM

DATE: December 4, 2025

TO: Ashland Planning Board

FROM: Andrew Platt, Bohler

SUBJECT: Stormwater Runoff Volumes
Proposed YMCA and Early Learning
Memorial Drive
Ashland, MA

The proposed stormwater management system for the YMCA and Early Learning Center project on Memorial Drive will create an increase in runoff volumes, but a decrease in peak flow rates. This memorandum describes the reason for the volume increase and the expected off-site impacts. The project is currently being reviewed by the Ashland Conservation Commission with input from the Town's peer reviewer, GCG Associates. The Conservation Commission review includes review of the project relative to the Town's Stormwater Bylaw as well as impacts to the Town's wetlands. At this time, the Project Team has addressed the peer reviewer's comments and is unaware of any concerns from either the reviewer or Commission that would prohibit approval of the project by the Commission.

The site is currently undeveloped woodland that will be developed with two buildings, paved parking areas, outdoor lawn areas and playing fields, and landscaped areas. The project will result in an increase of approximately four (4) acres of impervious area. This increase will result in more stormwater runoff being generated than under existing conditions. To mitigate the increase in runoff, the proposed stormwater system includes underground infiltration basins consisting of prefabricated plastic chambers arranged in rows to hold and detain stormwater runoff.

Extensive soil testing was conducted at the site, and result of the testing showed that soils consist of silty sand with very slow infiltration rates of 0.33 in/hr to 1.0 in/hr, as determined by soil gradation analyses and one infiltration test performed at the site. The only practical way to reduce stormwater runoff volume is to infiltrate runoff into the soil. Although the site soils will allow some infiltration within the proposed infiltration basins, the slow infiltration rates do not allow for enough infiltration to result in a reduction of runoff volume.

A portion of the site discharges to privately owned undevelopable wetlands to the west, but the entire site ultimately discharges to a large area of wetlands in the undeveloped land owned by the Town of Ashland. According to DEP wetland mapping, the area of the wetlands is approximately 412,100 square feet, and this does not include the wetlands that were flagged at the property's perimeter by the project soil scientist. The attached table demonstrates how

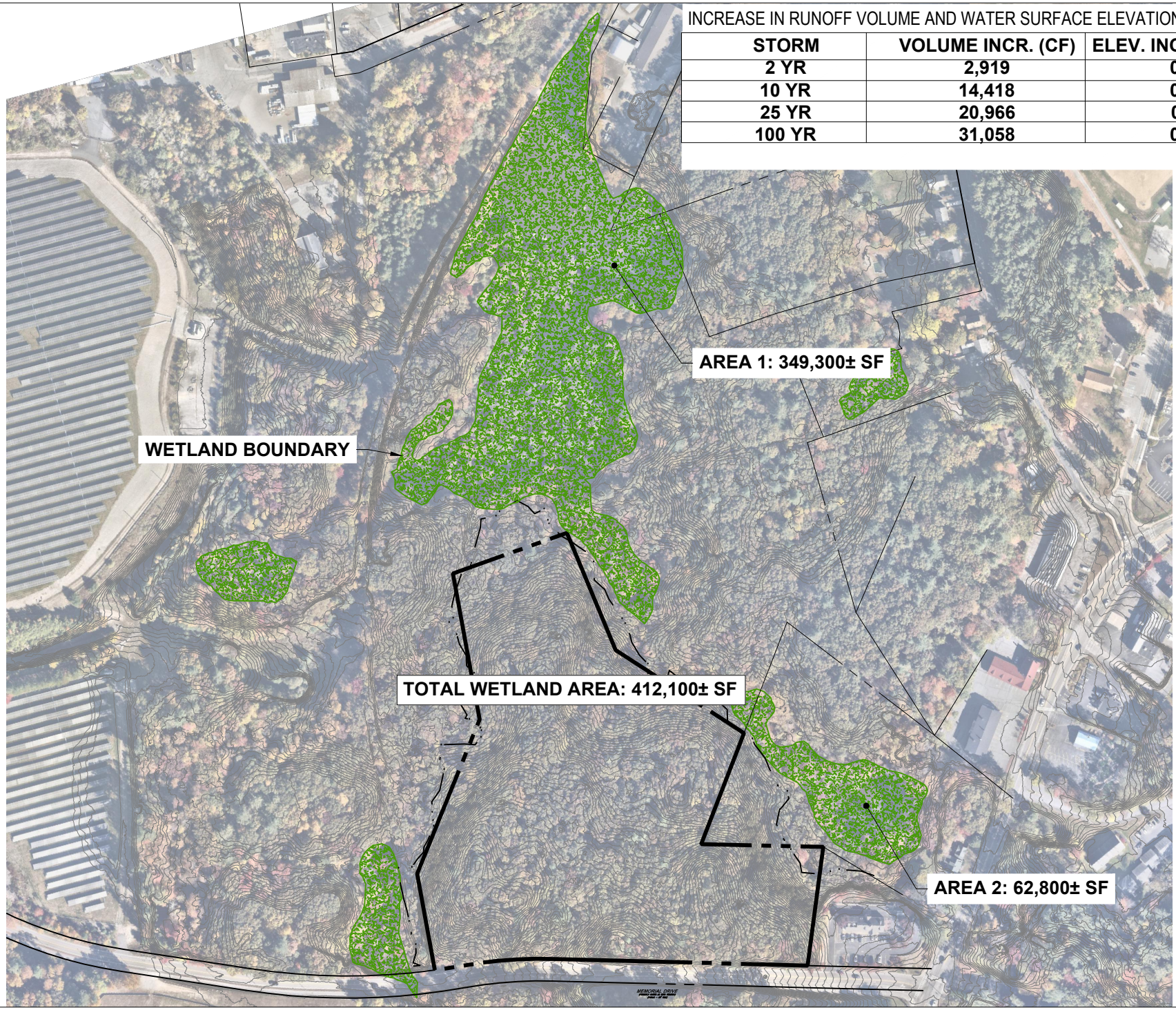
STORMWATER RUNOFF VOLUME SUMMARY
PROPOSED YMCA AND EARLY LEARNING CENTER
MEMORIAL DRIVE
ASHLAND, MA

	Design Volume Summary in acre-feet											
	2-year			10-year			25-year			100-year		
	Exist	Prop.	Delta	Exist	Prop.	Delta	Exist	Prop.	Delta	Exist	Prop.	Delta
Design Point 1 (DP1)	0.293	0.360	0.067	1.077	1.408	0.331	1.724	2.206	0.482	2.875	3.588	0.713
Increase in cubic feet (CF)			2,919			14,418			20,996			31,058
Elevation Increase (ft)			0.007			0.035			0.051			0.075
Elevation Increase (inches)			**0.08**			**0.42**			**0.61**			**0.90**

Elevations calculated by dividing volume increase by 412,100 SF, which is the area of downstream wetlands shown on the accompanying map.

INCREASE IN RUNOFF VOLUME AND WATER SURFACE ELEVATION IN WETLANDS

STORM	VOLUME INCR. (CF)	ELEV. INCR (INCHES)
2 YR	2,919	0.08
10 YR	14,418	0.42
25 YR	20,966	0.61
100 YR	31,058	0.90



WETLAND AREA MAP - 30 MEMORIAL DRIVE, ASHLAND, MA

0 150 300

1"=300'

WETLANDS FROM MASSMAPPER AND DO NOT INCLUDE SITE SPECIFIC FLAGGED WETLANDS

there is a negligible impact on water surface elevations within the off-site wetlands if the projected increase in volume is distributed over the entire wetland area as mapped by DEP. For example, the calculated increase in water surface elevation within the downstream wetlands for the two-year storm is approximately one sixteenth (1/16) of an inch. This calculation does not account for further infiltration in off-site soils, attenuation within the wetland, and as noted above, the wetland area used in the calculation is conservative and does not include all of the wetland area in the project vicinity. The off-site land is undevelopable due to the wetlands, contains no known structures, and therefore the minimal increases don't appear to create any adverse impacts to downstream areas.