

February 3, 2026

Aaron Martin, P.E., Public Works Director  
Town of Essex  
81 Main Street  
Essex Junction, VT 05452

Re: Greystone Industrial Park Development  
Town of Essex, Vermont  
Water System Engineering Assistance  
A+E Project #21044

Dear Aaron:

Per the request of O'Leary-Burke Civil Associates (OBCA), Aldrich + Elliott, PC (A+E) has performed the hydraulic analysis and review for the proposed water main extension for the Greystone Industrial Park Development. Information reviewed was provided by OBCA and consisted of the utility plans dated September 18, 2014 and last revised January 8, 2026. This letter summarizes the findings of our review.

### **Hydraulic Analysis and Review**

Based on information and plans provided by OBCA, the proposed project consists of:

- Construction of 2,570 linear foot extension of an 8-inch PVC water main connecting to the existing 8-inch water main on Old Colchester Road.
  - The extension will serve six (6) new buildings (A – F) for the industrial park along with one (2) new fire hydrants installed.
  - Buildings A-C (Phases 1 and 2) were previously approved by the Town
  - This proposal is for Buildings D-F (Phase 3)
  - Buildings A-F will be served by 2,570 linear feet of new 8-inch C900 PVC water main that will extend off the existing main on Old Colchester Road.
  - 1,400 linear feet of the new 8-inch main will extend to the end of the proposed private road ending in a cul-de-sac, and another 1,170 linear feet of 8-inch main will run behind Buildings C and D to form a loop.

A+E was provided projected water usage by OBCA for the buildings. OBCA calculated the average day demand (ADD) by multiplying the number of proposed buildings (6), by the number of employees per building, and then by the projected water usage by each employee, which is 15 gallons per day (GPD). For modeling purposes, A+E doubled the ADD to calculate an estimated maximum daily demand (MDD) of 3,600 gpd and dispersed demands based on the proposed building locations.

A+E added the proposed water mains, hydrants, and proposed water demands to the Town of Essex WaterCAD model to hydraulically evaluate the proposed project. Our findings are summarized as follows:

- Typical pressures in this area while delivering the MDD are around 65 psi. The Vermont Water Supply Rule requires a minimum pressure of 35 psi. The project will not create



any new hydraulic limitations within the Town's water distribution system.

- The proposed fire hydrants will have available fire flows (AFF) of 1,348 to 1,418 gpm while maintaining the minimum 20 psi residual in the distribution system required by the Vermont Water Supply Rule. The minimum AFF required by the Vermont Water Supply Rule is 500 gpm. 1,500 gpm is a typical fire flow for medium-sized buildings with noncombustible construction, limited-combustible occupancies, and approved fire sprinkler systems.

Based on this evaluation, we believe that the project will not have negative hydraulic impacts on Town of Essex distribution system and the design is sufficient to meet the project's potable water and fire flow needs.

If you have any questions in regard to the information presented, please do not hesitate to call our office.

Sincerely,  
**Aldrich + Elliott, PC**

*Michael Mainer*

Michael Mainer, PE  
Project Engineer

w/attachments

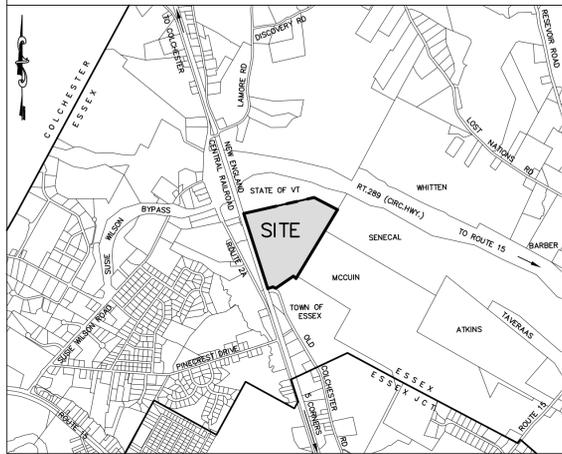






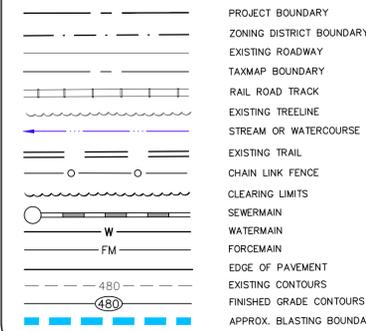
Post Water Improvements									
				<u>Static Conditions</u> ADD = 1,800 gpd	<u>Fire Flow Conditions</u> MDD = 3,600 gpd				
Label	Elevation (ft)	Hydraulic Grade (ft)	Zone	Static Pressure (PSI)	Satisfies Fire Flow Constraints?	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (PSI)	Pressure (Calculated Residual) (PSI)	Pressure (Calculated Residual @ Total Flow Needed) (PSI)
HYD-22 (Colchester Rd, Existing)	340.00	503.78	Zone 2	103.4	TRUE	1,703	20.0	28.6	66.0
HYD-21 (Colchester Rd, Existing)	340.00	503.78	Zone 2	70.9	TRUE	1,706	20.0	29.0	66.0
HYD-87 (Old Colchester Rd, Existing)	351.33	503.78	Zone 2	66.0	TRUE	1,570	20.0	24.6	60.4
GIP-1 (Greystone Development, Proposed)	353.00	503.78	Zone 2	65.2	TRUE	1,418	20.0	23.6	58.7
GIP-2 (Greystone Development, Proposed)	353.00	503.78	Zone 2	65.2	TRUE	1,348	20.0	23.3	58.0

LOCATION PLAN



A & C REALTY  
RECORD DEED: 369:445  
TAX MAP: 6-21

LEGEND



PROJECT STATISTICS

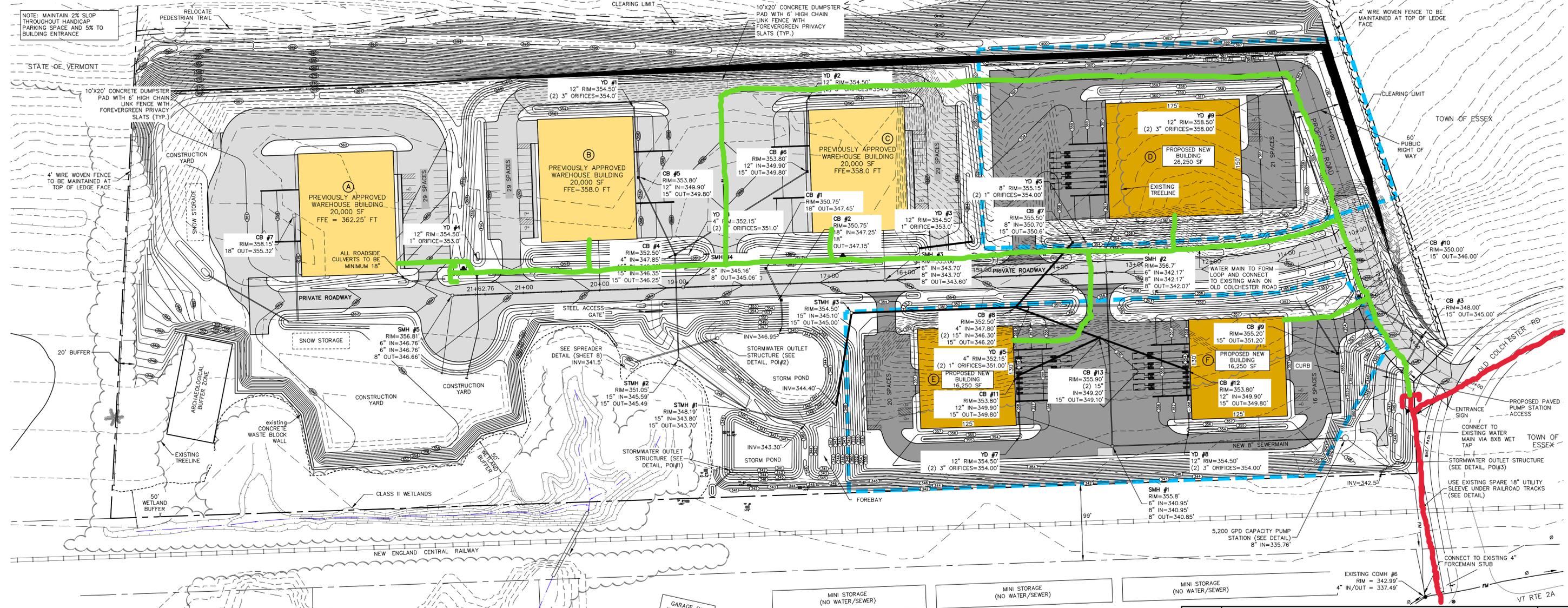
PARCEL AREA	57.8 ACRES (2,517,488 SF)
ZONING DISTRICT	INDUSTRIAL, AGRICULTURE & RESIDENTIAL DISTRICT
MIN. LOT SIZE	3 ACRES (AR) - 40,000 SF (11)

PROPOSED PROJECT

NO SUBDIVISION PROPOSED  
MUNICIPAL WATER AND WASTEWATER  
STORMWATER TREATMENT ON-SITE

PROPOSED SITE PLAN

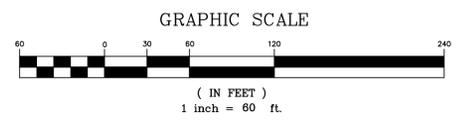
BUILDING USAGE = WAREHOUSE (X6)  
BUILDING COVERAGE (118,750 SF) = 4.72% COVERAGE  
IMPERVIOUS COVERAGE (9.55 ACRES) = 16.52% COVERAGE  
PARKING = 145 PROPOSED SPACES (INCLUDING 12 HANDICAP)  
2 SPACES FOR EVERY 3 EMPLOYEES = 84 REQUIRED SPACES  
OR 1 SPACE FOR EVERY 400 SF = 297 REQUIRED SPACES



NOTES:  
1. THIS PLAN SHOULD NOT BE USED FOR PROPERTY CONVEYANCE.  
2. THE EXISTING CONTOURS SHOWN WITHIN THE CURRENT LIMITS OF DISTURBANCE ARE BASED ON GPS TOPO SHOTS BY OMEGA EXCAVATION ON 05-29-2025 and, DUE TO THE CONTINUED ACTIVITY ON THE SITE, ARE MEANT TO BE AN APPROXIMATE REPRESENTATION OF EXISTING GRADE.

Owner & Applicant: A & C REALTY  
c/o AL SENECA  
31 COMMERCE AVE  
SOUTH BURLINGTON, VT 05403

MCCLURE REAL ESTATE, LLC  
N/F



1/8/26	UPDATED FOR SITE PLAN AMENDMENT APPLICATION	GRT
5/21/25	ADDED PHASE III LAYOUT SKETCH	BWC
9/13/21	UPDATED ACCORDING TO TOWN APPROVAL CONDITIONS	BWC
3/19/21	UPDATED FOR TOWN PUBLIC WORKS AND STAFF COMMENTS	BWC
1/20/21	UPDATED FOR SITE PLAN AMENDMENT APPLICATION	BWC
6/21/16	TOWN FINAL APPROVAL CONDITIONS	BWC
DATE 9/30/15	REVISION ADDED ARCHEOLOGICAL BUFFER	BY BWC
SURVEY	RECORD DRAWING	DATE 9/18/2014
OBCA	PRELIMINARY SKETCH	1009
DESIGN BWC/GRT		FILE S9
DRAWN GRT/BWC		PLAN SHEET #
CHECKED BWC		2
SCALE 1"=60'		

O'LEARY-BURKE  
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EMAIL: OBCA@OLEARYBURKE.COM

GREYSTONE INDUSTRIAL PARK  
123 OLD COLCHESTER ROAD  
ESSEX, VERMONT  
A & C REALTY  
SITE PLAN