

WILTON PUBLIC WORKS
DEPARTMENT

(203) 563-0152



TOWN HALL ANNEX
238 Danbury Road
Wilton, Connecticut 06897

MEMORANDUM

TO: Peter Romano, Landtech

FROM: Frank Smeriglio, PE, *F.S.*
Assistant Director of Public Works/Town Engineer

DATE: February 8, 2022

RE: 19 Cannon Rd

This memo is written in regards to the review of Sanitary calculations provided on January 11, 2022 for a potential development on 19 Cannon Rd. Based on the review of the submitted calculations at this time, the items listed below shall be addressed.

Sanitary Sewer Related items

1. The project is subject to obtaining approvals from Wilton's WPCA Commission to extend the sewer main.
2. The project is subject to obtaining approvals from Wilton's WPCA Commission to connect the development into the sanitary sewer system.
3. Project is subject to Norwalk WPCA's review and comment.
4. The project will be subject to Sewer Capital Assessment as required by the WPCA. The Assessment would be levied after the project is completed.
5. Provide site development plans and plans depicting connection from the site to existing sewer line on Route 7 for our review.
6. Design Engineer shall obtain actual slopes of the existing 8" pipes on Route 7 to determine actual pipe capacity.
7. Verify the existing types of 8" pipe from Cannon Rd to existing 18" RCP pipe. Various sections are also ACP and RCP. This may effect Mannings "N".

8. Provide flow data from the flow meter as part of the sanitary report.
9. Design Engineer shall incorporate the flows from the proposed development (Cannondale Village) into the calculations to determine if the existing 8 inch pipe has capacity.
10. Please note, any potential clogs in the lateral, forcemain and/or sewer main connection points shall be the responsibility of the property owner to unclog.
11. Upon review of the development plans, property owner shall be responsible for maintainance of the force main from the property to gravity sewer line. Including all forcemain mark outs for other contractor's working on Cannon Road.
12. All proposed sewer lines shall be air tested prior to sign off of certificate of occupancy.
13. The project will be subject to the final technical review by the WPCA.
14. The above sewer related comments shall be considered preliminary.

Based on the list of items above, additional items may be required depending on responses to the above.

If you have any questions, please do not hesitate to call.

q:\site plan reviews\reviews after 1-30-19\danbury road - 141 - sanitary\cannon rd - 19 - wpc - lantech.doc

MEMORANDUM

To: File
 From: Pete Romano
 Date: January 7, 2022
 Subject: 19 Cannon Road Sanitary Sewer Pipe Capacity

Site Location: 19 Cannon Road; Wilton, CT
Exiting conditions: the site contains 1 single family dwelling. Utilized recently as an office.
Zoning: RA-2 **Site Area:** 2.1 acres

Proposal:

To construct a multi-family development, 38 1- bedroom and 32 2-bedroom dwelling units and connect to the existing sanitary sewer in Danbury Road (route 7). Connection from the site shall be by a duplex pump station, 4" DIP force main approximately 300 l.f. For the preparation of our preliminary calculations, we reviewed the 2011 WPCA approvals for the proposed sewer extension to serve the mixed-use Cannondale Village Development (report attached) that consisted of residential (29 units), retail, storage and restaurant. The combined flow from that development using a residential flow of 100/gpd/bdrm; retail at 787 gpd flow; restaurant at 1,800/gpd and pool house at 840/gpd for a total of 11,827 gpd. If the 1,203.5/gpd flows from 25 and 27 Cannon Road are included the total flow from the Cannondale Village is 13,303.5/gpd. For our development we used a conservative flow of 150/gpd/bdrm that produced a total flow of 15,300 gpd. If we use the 100/gpd/bdrm flow similar to the Cannondale Village our residential development is 10,200/gpd, which is lower than the approval for Cannondale Village.

New Flows: using 150/bedroom

38 1-Bedroom units x 150/gpd /br = 5,700/gpd
 32 2-Bedroom units x 150/gpd/Br = 9,600/gpd
 Sum = 15,300 /gpd

New Flows using 100/gpd

38 1-Bedroom units x 100/gpd /br = 3,800/gpd
 32 2-Bedroom units x 100/gpd/Br = 6,400/gpd
 Sum = 10,200/gpd

For 18hr/day flow period, $Q_p = 15,300 / 18 \times 60 = 14.2$ gpm
 For force main $V = 2$ fps, 4" dia, ; $Q = AV = \pi (1/6)^2 (2) = 0.175$ cfs
 $Q = 0.175$ cfs x 448 = 78.6 gpm
 To be conservative ; use $v = 4$ fps $Q_p = 78.6 \times 2 = 157.2$ gpm

Existing Flow:

Flows were measured 10/28/21 to 12/1/21 at SSMH located approximately 1,250 l.f. south (downstream) from Cannon Road at Allen's Meadows. Maximum measured Q existing SSMH (8" DIP) is 115.3 gpm.

Proposed Flow:	Pipe Capacity
Maximum measured flow = 115.3 gpm	$Q = 1.49/n A R^{2/3} \sqrt{S}$
Assumed peak new = 157.2 gpm	Typical $n = 0.012$ for DIP
Design flow = 272.5 gpm	$A = \pi (1/3)^2 = 0.35$ ft ²
$Q = 272.5/448,8 = 0.61$ cfs	$WP = \pi (2/3) = 2.09$ ft
	$R^{2/3} = (0.35/2.09)^{2/3} = 0.303$
	$S = 1\%$ assumed min.
	$Q = 1.49/0.012 (0.350) (0.303) \sqrt{0.01}$
	$Q = 1.3$ cfs > 0.61 cfs
Conclusion the existing pipe capacity for 8" can accommodate the flow from the proposed development	

12-0721-2-02
February 28, 2011

Tom Thurkettle
Director of Public Works
Town of Wilton
238 Danbury Road
Wilton, CT 06897

Re: **Cannondale Village
Application to the WPCA**

Dear Mr. Thurkettle:

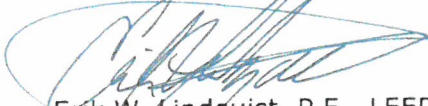
I am pleased to provide you with 3 copies of plans, profiles and calculations for the design of the sanitary sewer pump station and force main at Cannondale Village. The pump station will be centrally located on the project site and will discharge thru a 3-inch force main out to Cannon Road and beneath the railroad tracks prior to discharging to the existing sewer in Route 7 via a gravity line.

In addition, per your conversation with John Block we have provided a 2-inch service lateral for 25 and 27 Cannon Road. The service lateral will be capped at the property line for future use by both properties. We analyzed the current sewer demand for the properties as well as the maximum sewer demand potential for the site based on current zoning requirements. Based on these calculations the proposed 3-inch sanitary sewer force main in Cannon Road will be adequate to accommodate the flows from Cannondale Village and those generated by 25 and 27 Cannon Road.

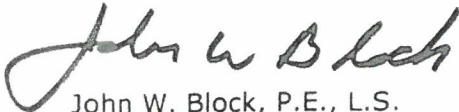
We look forward to a March approval from the WPCA. If you have any questions with the plans or calculations, please feel free to contact me at your convenience.

Very truly yours,

TIGHE & BOND, INC.



Erik W. Lindquist, P.E., LEED AP
Senior Engineer



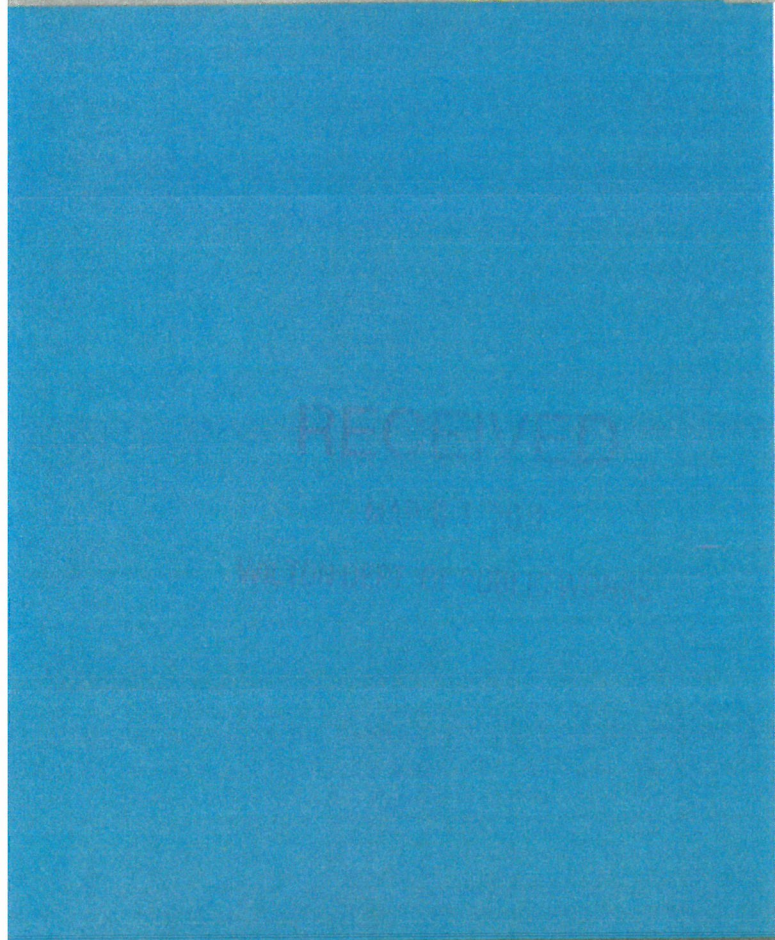
John W. Block, P.E., L.S.
Senior Vice President

Copy: Marc Gueron
J. Casey Healy, Esq.

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RECEIVED
MAR 01 2011
WILTON DEPT. OF PUBLIC WORKS





Sanitary Sewer Calculations

Rehabilitation and Redevelopment of Cannondale Village

WPCA Submission

Wilton, Connecticut

RECEIVED

MAR 01 2011

Prepared for: WILTON DEPT. OF PUBLIC WORKS

Cannondale Properties, LLC

March 1, 2011

Rehabilitation and Redevelopment of Cannondale Village

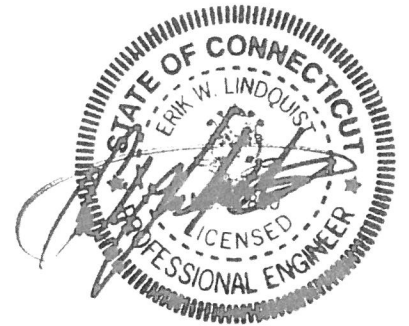
Wilton, Connecticut

Sanitary Sewer Calculations

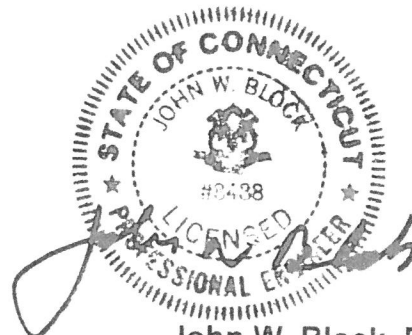
Prepared For:

Cannondale Development, LLC

March 1, 2011



Erik W. Lindquist, P.E., LEED AP
Senior Engineer



John W. Block, P.E., L.S.
Senior Vice President

**Sanitary Sewer Sizing
And Pump Chamber
Calculations**

ESTIMATE OF PROPOSED SANITARY SEWER LOAD:

USE - RESIDENTIAL

TOWN HOMES (25)

↳ 3BDR/TOWN HOME = 75 Bedrooms

BUILDING # 2

↳ 1BDR (GENERAL STORE ANNEX) = 1 Bedroom

BUILDING # 5

↳ 1BDR (YELLOW BARN) = 1 Bedroom

BUILDING # 6

↳ 2BDR (RED BARN) = 2 Bedrooms

BUILDING # 7 (MILL HOUSE)

↳ 3BDR (Possible Expansion to 5) = 5 Bedrooms

TOTAL = 84 BEDROOMS

USE - RETAIL

BUILDING # 1 (GENERAL STORE) = 3,684 S.F.

BUILDING # 2 (GENERAL STORE ANNEX) = 556 S.F.

BUILDING # 3 (ICE HOUSE) = 145 S.F.

BUILDING # 5 (YELLOW BARN) = 1,193 S.F.

BUILDING # 6 (RED BARN) = 2,308 S.F.

TOTAL = 7,886 S.F.

USE - OTHER

STORAGE:

$$\begin{aligned} \rightarrow \text{BUILDING \# 1 (GENERAL STORE)} &= 876 \text{ S.F.} \\ \rightarrow \text{BUILDING \# 5 (YELLOW BARN)} &= 339 \text{ S.F.} \\ &= \underline{1,215 \text{ S.F.}} \end{aligned}$$

RESTAURANT:

$$\begin{aligned} \rightarrow \text{BUILDING \# 4 (SCHOOL HOUSE)} &= 995 \text{ S.F.} \\ &60 \text{ SEATS} \\ &(\text{30 inside / 30 outside}) \end{aligned}$$

POOL HOUSE:

$$\rightarrow (\text{BASED PER BATHER}) = 920 \text{ S.F.}$$

ASSUME:

$$\text{RESIDENTIAL: } 100 \text{ gal/day / BDR} = 100 \frac{\text{GAL}}{\text{DAY}} \times 84 \text{ BDR}$$

$$\text{RESIDENTIAL} = \boxed{8,400 \text{ GAL/DAY}}$$

$$\text{RETAIL: } 0.1 \text{ gal/day / SF} = 0.1 \frac{\text{GAL}}{\text{DAY}} \times 7,886 \text{ S.F.}$$

$$\text{RETAIL} = \boxed{787 \text{ GAL/DAY}}$$

STORAGE: NO GENERATION

RESTAURANT: 10 gal/meal (assume 60 seats w/ 3 lunches)

$$10 \text{ gal/meal} \times 180 \text{ meals} = \boxed{1,800 \text{ GAL/DAY}}$$

POOL HOUSE: 10 gal/BATHER (assume 84 BATHERS (BDR))

$$10 \text{ gal/BATHER/DAY} \times 84 \text{ BATHERS} = \boxed{840 \frac{\text{GAL}}{\text{DAY}}}$$

$$\text{TOTAL FLOW} = 8,400 \text{ gpd} + 787 \text{ gpd} + 1,800 \text{ gpd} + 840 \text{ gpd}$$

$$\text{TOTAL FLOW} = 11,827 \text{ gpd}$$

$$\therefore \text{PEAK HOURLY FLOW} = \frac{11,827 \text{ gpd}}{\left(24 \frac{\text{hrs}}{\text{d}}\right) \left(60 \frac{\text{min}}{\text{hr}}\right)} \times 5 = \boxed{41.1 \text{ gpm}}$$

(ASSUME PEAK FACTOR OF 5)