Rochester, Jacqueline

Subject: FW: 3-14-24 WPCA meeting

Attachments: 15 Old Danbury Road WPCA Cover Letter 2024-03-06.pdf; 15 Old Danbury Road Sewer Analysis

2024-03-06.pdf

From: Craig J. Flaherty < <u>C.Flaherty@rednissmead.com</u>>

Sent: Wednesday, March 6, 2024 3:07 PM

Jacqueline < jacqueline.rochester@WILTONCT.ORG>

Cc: Vincent Hynes <v.hynes@rednissmead.com>; Lisa L. Feinberg <LFeinberg@carmodylaw.com>; Daniel L. Conant

<DConant@carmodylaw.com>

Subject: WPCA - 15 Old Danbury Road - Sewer Capacity Request

CAREFUL-From outside - CHECK before you CLICK.

Ms. Boucher and Mr. Smeriglio,

I have attached to this email a sewer capacity request for 15 Old Danbury Road to be added to the WPCA agenda.

Let me know if you have any questions.

Thank you.

CRAIG J. FLAHERTY, P.E.

PRESIDENT & SENIOR ENGINEER

(203) 327-0500 x15111

We enhance properties and communities through exceptional land use services.





March 6, 2024

Toni Boucher, Chair Water Pollution Control Authority Town Hall 238 Danbury Road Wilton, CT 06897

RE: Request for Additional Capacity

Project Address: 15 Old Danbury Road Applicant: Toll Brothers Apartment Living

Dear Ms. Boucher and members of the Water Pollution Control Authority,

Toll Brothers Apartment Living, the contract purchaser of 15 Old Danbury Road and our client, is proposing to remove an existing 81,700 sf office building and construct a 5-story building with 206 apartments and appurtenant parking, infrastructure, and amenities. The 4.3± acre property is located on the westerly side of Danbury Road, between Danbury Road and Station Road. On behalf of our client, we are requesting additional capacity from the Water Pollution Control Authority.

Included herewith for your consideration is a Sanitary Sewer Allocation Request report prepared by this office. The pipe capacity calculations indicate ample capacity in the receiving 8-inch diameter sewer main in Station Road which is tributary to an 18" diameter sewer main on the west side of the Norwalk River.

Sincerely,

Craig J. Flaherty, P.E.

cc: Frank Smeriglio, Town Engineer

SANITARY SEWER ANALYSIS 15 Old Danbury Road Wilton, CT

Issued: March 6, 2024

The applicant, Toll Brothers Apartment Living, is drafting plans to redevelop the property located at 15 Old Danbury Road in Wilton, CT. The redevelopment plans include demolition of the existing structure and construction of a new multi-family residential structure with garage and surface parking and associated site improvements. The proposal will consist of 206 residential units in the proposed building. Reference is made to the accompanying conceptual site plans and preliminary sanitary sewer calculations prepared by Redniss & Mead, Inc.

Existing Town-owned sanitary sewer infrastructure exists within the streets surrounding the site. Infrastructure consists of sanitary manholes, 8" sewers within Station Road and crossing the Metro North Railroads, and 18" sewers on the west side of the Norwalk River. Under existing conditions, the effluent tributary to the 8" main is 0.082 cfs; reference is made to sanitary sewer flow meter records provided by Flow Assessment Services (peak flow between 10/2/2023 and 11/2/2023 was 0.053 mgd).

Under proposed conditions, the developer is seeking to construct a new five-story building with 206 residential units (81 studio/one-bed units, 97 two-bed units, and 28 three-bed units). It is proposed to connect the new building to the 8" sewer main. Using the CT Health Code guidelines, the proposed structure and usage of the site would result in a total design flow of 53,850 GPD. Using a peak factor of 4, the peak sewage flow is 0.33 cfs. Based upon the above and attached calculations, under proposed conditions the 8" sewer main, crossing the railroad would operate at 48% of the total capacity with 52% reserve capacity available.

Based on the above information, it is our opinion the Town owned sanitary sewer system has sufficient physical capacity to accommodate the proposed development, and with proper implementation of the design drawings, the potential development will not adversely impact the existing sanitary sewer system.

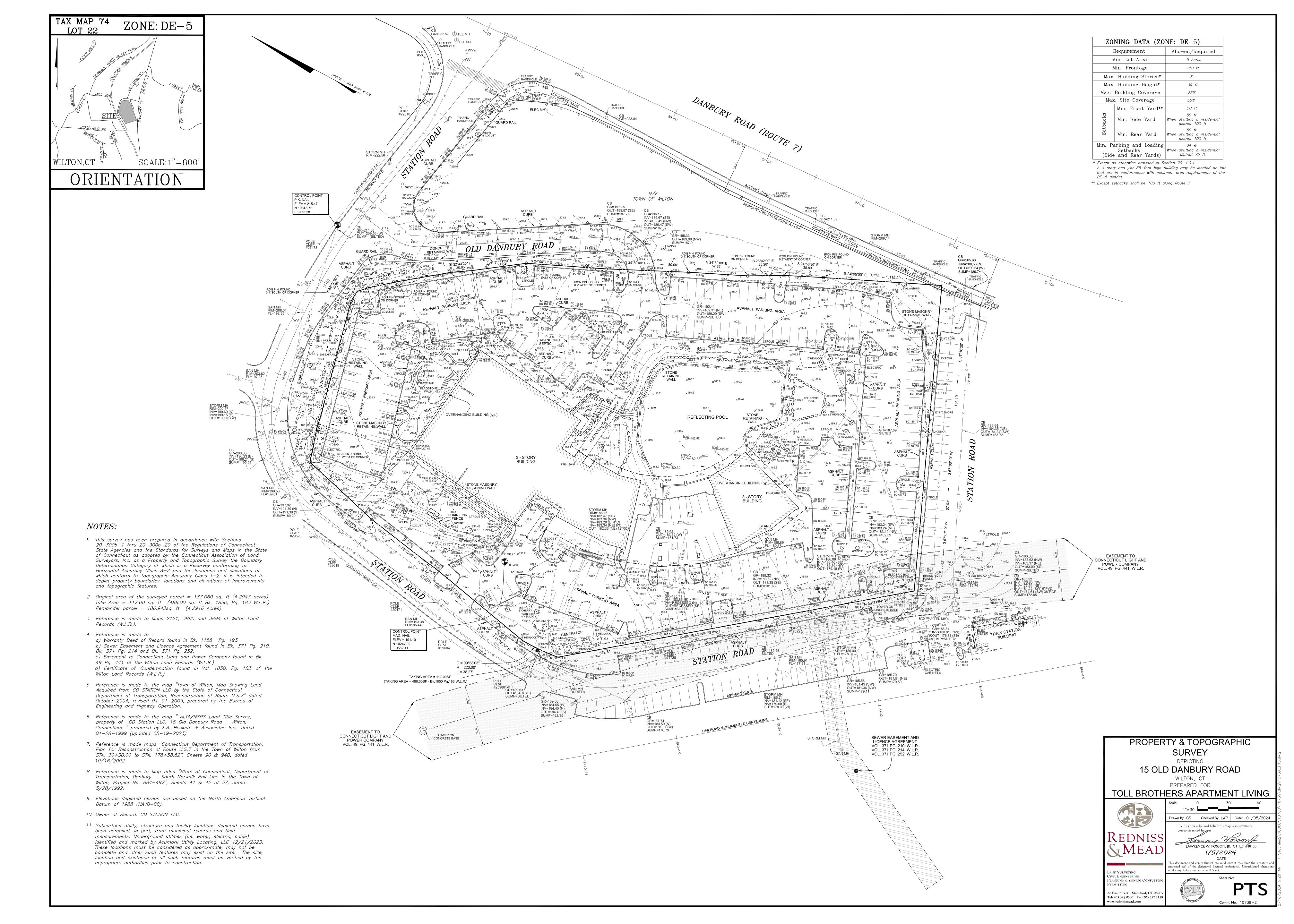






Appendix 1







Appendix 2



Proposed Sanitary Sewer Flow Estimates							
Project:	Toll Brothers Apartment Living @ Wilton	Project #:	10739	Date:	3/6/2024		
Location:	15 Old Danbury Road, Wilton	By:	VJH	Checked:	CJF		

Proposed Post-construction Flow Generated By Site							
Residential Building Use	# Units	Number of Bedrooms	Total Flow (GPD)				
Studio / 1-Bedroom	81	81	150	12,150			
2-Bedroom	97	194	150	29,100			
3-Bedroom	28	84	150	12,600			

Proposed Sanitary Sewer Flow @ Metered Location	
Proposed Average Sanitary Flow from Site (GPD)	53,850
Proposed Average Sanitary Flow Rate from Site (CFS)	0.083
Peaking Factor	4
Total Proposed Peak Sanitary Flow from Site (CFS)	0.3333
Increase in On-site Peak Sanitary Flow Rate (CFS)	0.3333
Total Existing Sanitary Flow Tributary to Metered Sewer (GPD)	53,000
Total Existing Peak Flow Tributary to Metered Sewer (CFS)	0.082
Total Proposed Sanitary Flow Tributary to Metered Sewer (CFS)	0.415

¹ Per CT Health Code

 $^{^{2}}$ Conservatively, the existing flow from the building is assumed as 0 cfs.

³ Maximum Final Flow from Flow Assessment Services Report (0.053 MGD)

⁴ Ex. Metered Flow + Increase in On-site Peak Flow.

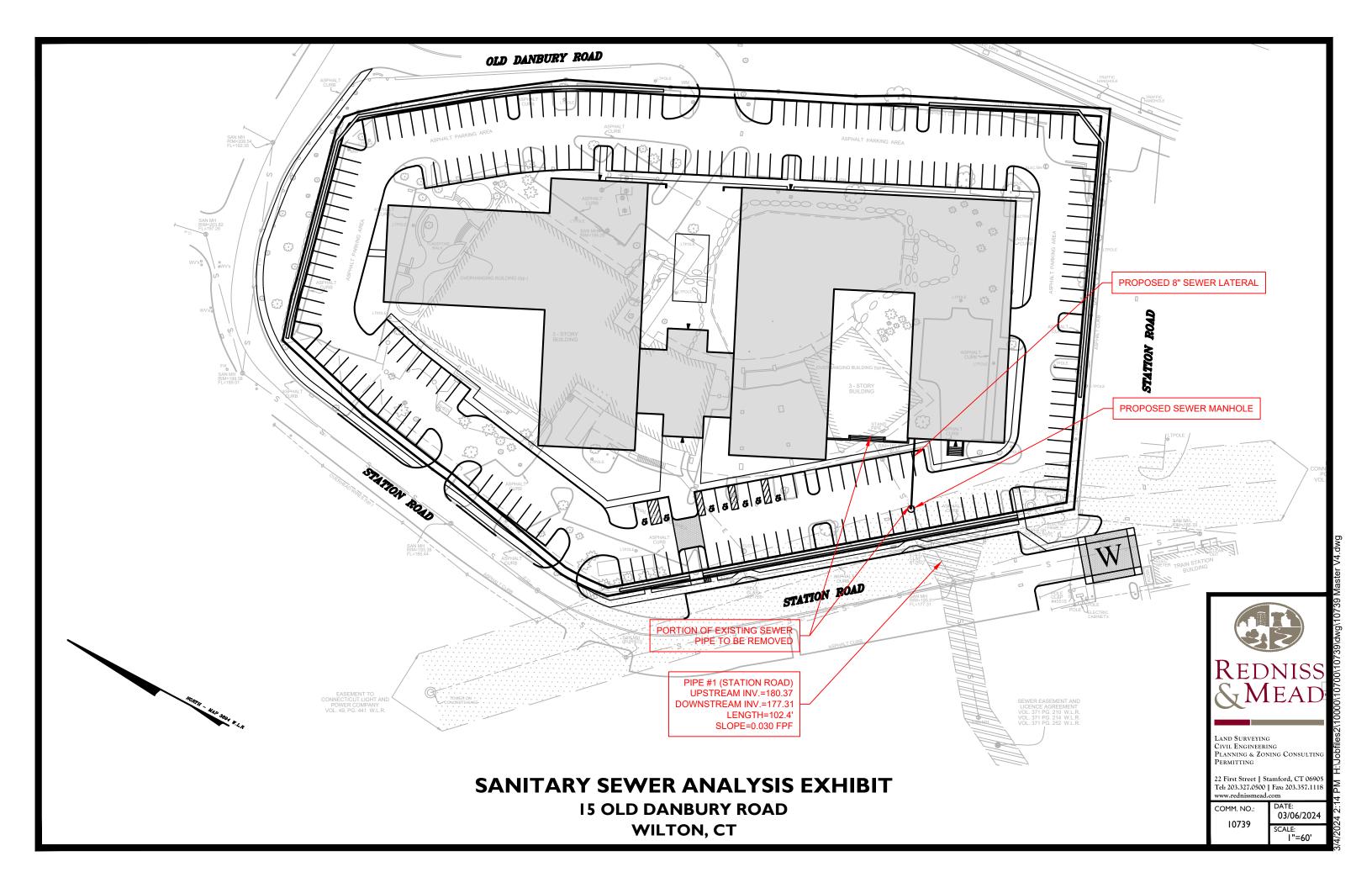
TABLE 2D: AVERAGE ANNUAL FLOW ESTIMATES FOR 15 OLD DANBURY ROAD

version updated March 6, 2024

MULTIPLE SCENARIOS PRESENTED

	METHOD OF CALCULATING AVERAGE ANNUAL FLOW	Total Apartments	Studio / One Bedroom Apartments	Two Bedroom Apartments	Three Bedroom Apartments	Total Bedrooms	Projected Population	Average Annual Flow Estimate (gpd)	Factor of Safety Compared to Metered Data
1	55 gpd per bedroom (Flaherty, 11/3/23) per water meter records	206	81	97	28	359		19,745	1.00
2	Average of people per bedroom (Flaherty, 2/16/24) 65 gpd per person Wright-Pierce		1.47	2.12	2.94		407	26,457	1.34
3	65 gpd per bedroom, 93rd-percentile Factor of Safety per water meter records	206	81	97	28	359		23,335	1.18





Mannings Equation - Circular Pipe							
Project:	Toll Brothers Apartment Living @ Wilton	Project #:	10739	Date:	3/6/2024		
Location:	15 Old Danbury Road, Wilton, CT	By:	НС	Checked:	VJH		

8" Sanitary Pipe - Pipe #1

Calculate the maximum flow capacity using Manning's equation.

Pipe material	Reinforced Concrete Pipe (RCP)
---------------	--------------------------------

Manning's n 0.013

Pipe diameter, D 0.67 ft

Area, A 0.35 ft^2 $A = \frac{\pi}{4}D^2$

Wetted perimeter, P 2.10 ft $P = \pi D$

Hydraulic radius, R_h 0.17 ft $R_h = \frac{A}{P}$

Slope, S 0.030 ft/ft

Flow, Q_{full} 2.12 cfs $Q = \frac{1.486}{n} A R_h^{\frac{7}{3}} S^{\frac{1}{2}}$

Existing Conditions Flow

Flow, Q 0.082 cfs¹

Flow to Flow Full, Q/Q_{fu} 0.039 3.9%

Proposed Conditions Flow

Flow, Q 0.415 cfs^2

Flow to Flow Full, Q/Q_{fu} 0.196 19.6% (80.4% Reserve Capacity)

¹ Flow = Peak Flow generated by tributary off-site properties. Refer to flow monitoring results prepared by Flow Assessment Services. Flow represents the maximum peak flow witnessed during the flow monitoring period (occurring on October 12th, 2023).

² Existing Flow + Pr. Site Flow (Refer to Proposed Sanitary Sewer Flow Estimates for further information)

Mannings Equation - Circular Pipe							
Project:	Toll Brothers Apartment Living @ Wilton	Project #:	10739	Date:	3/6/2024		
Location:	15 Old Danbury Road, Wilton, CT	By:	НС	Checked:	VJH		

8" Sanitary Pipe - Pipe #2

Calculate the maximum flow capacity using Manning's equation.

Pipe material	Reinforced Concrete Pipe (RCP)
Pipe material	Reinforced Concrete Pipe (RCP

Manning's n 0.013

Pipe diameter, D 0.67 ft

Area, A 0.35 ft^2 $A = \frac{\pi}{4}D^2$

Wetted perimeter, P 2.10 ft $P = \pi D$

Hydraulic radius, R_h 0.17 ft $R_h = \frac{A}{P}$

Slope, S 0.005 ft/ft

Flow, Q_{full} 0.87 cfs $Q = \frac{1.486}{n} A R_h^{\frac{2}{3}} S^{\frac{1}{2}}$

Existing Conditions Flow

Flow, Q 0.082 cfs¹

Flow to Flow Full, Q/Q_{fu} 0.095 9.5%

Proposed Conditions Flow

Flow, Q 0.415 cfs^2

Flow to Flow Full, Q/Q_{fu} 0.479 47.9% (52.1% Reserve Capacity)

² Existing Flow + Pr. Site Flow (Refer to Proposed Sanitary Sewer Flow Estimates for further information)



¹ Flow = Peak Flow generated by tributary off-site properties. Refer to flow monitoring results prepared by Flow Assessment Services. Flow represents the maximum peak flow witnessed during the flow monitoring period (occurring on October 12th, 2023).

Appendix 3





Redniss & Mead 21 1st Street Stamford, CT 06905 Attn: Patrick Shurr, PE November 13, 2023

Re: Wilton, CT

Flow Monitoring

October – November 2023

Dear Mr. Shurr,

This letter is written to present the flow monitoring data collected in Wilton, CT. The meter was installed on 10/02/23. This letter presents the data from 10/02/23 to 11/02/23. The meter was removed 11/03/23.

Site configuration information:

Site Location		Meter		
77	10 Center Street R.O.W.	Level Meter installed with a 6" Palmer- Bowlus		
		Flume in an existing 8" diameter line.		

The Level Meter senses depth. This depth information is stored in the meter's memory. The recorded data is uploaded from the flow meters with a laptop computer. During the installation, maintenance visits and removal, the depth and velocity information is confirmed, and calibration measurements are noted.

This report contains a summary flow report and flow analysis graph for the meter site. The summary flow report presents minimum, peak and total daily flow based on the recorded 5-minute interval readings. The flow analysis graph data is presented averaged hourly to make it easier to visualize the overall flow pattern during the monitoring period.

Additionally, this report contains a meter site investigation sketch for the meter site.

The final data is also included in Excel format in its recorded 5-minute intervals. All data is recorded and presented in Eastern Standard Time.

The rainfall data presented in the summary flow reports and flow analysis graphs was collected by a tipping bucket type rain gauge installed at the pump station near School Road and Kristine Lilly Way in Wilton, CT on 10/04/23.

Page 2 November 13, 2023 Wilton, CT

If you have any questions or require anything additional, please feel free to contact me via email or phone.

Sincerely,

Margaret Fryer Data Analyst

Margaret Fryer

Summary Flow Report

Site: Site 77

10 Center Street R.O.W.

Wilton, CT



6" Palmer-Bowlus Flume in 8" Line

	Minimum	Peak Flow	Total Daily	Total Rain	Peak Hourly	Peak Interval
Date	Flow (mgd)	(mgd)	Flow (mg)	(in)	Rain (in)	Rain (in)
10/2/2023 (Mon)	0.007	0.030	0.016			
10/3/2023 (Tue)	0.005	0.039	0.015			
10/4/2023 (Wed)	0.005	0.041	0.015	0.00	0.00	0.00
10/5/2023 (Thu)	0.005	0.030	0.013	0.00	0.00	0.00
10/6/2023 (Fri)	0.005	0.039	0.016	0.00	0.00	0.00
10/7/2023 (Sat)	0.006	0.043	0.018	0.60	0.20	0.06
10/8/2023 (Sun)	0.005	0.035	0.014	0.00	0.00	0.00
10/9/2023 (Mon)	0.005	0.042	0.014	0.00	0.00	0.00
10/10/2023 (Tue)	0.005	0.040	0.016	0.00	0.00	0.00
10/11/2023 (Wed)	0.005	0.042	0.017	0.00	0.00	0.00
10/12/2023 (Thu)	0.005	0.053	0.017	0.00	0.00	0.00
10/13/2023 (Fri)	0.005	0.036	0.016	0.00	0.00	0.00
10/14/2023 (Sat)	0.006	0.039	0.014	0.03	0.02	0.01
10/15/2023 (Sun)	0.006	0.036	0.015	0.00	0.00	0.00
10/16/2023 (Mon)	0.006	0.032	0.015	0.00	0.00	0.00
10/17/2023 (Tue)	0.006	0.047	0.017	0.00	0.00	0.00
10/18/2023 (Wed)	0.005	0.043	0.016	0.00	0.00	0.00
10/19/2023 (Thu)	0.006	0.046	0.017	0.00	0.00	0.00
10/20/2023 (Fri)	0.005	0.041	0.017	0.32	0.13	0.07
10/21/2023 (Sat)	0.005	0.046	0.016	0.01	0.01	0.01
10/22/2023 (Sun)	0.006	0.039	0.016	0.00	0.00	0.00
10/23/2023 (Mon)	0.005	0.047	0.015	0.00	0.00	0.00
10/24/2023 (Tue)	0.006	0.044	0.017	0.00	0.00	0.00
10/25/2023 (Wed)	0.006	0.040	0.017	0.00	0.00	0.00
10/26/2023 (Thu)	0.006	0.042	0.017	0.00	0.00	0.00
10/27/2023 (Fri)	0.005	0.046	0.016	0.00	0.00	0.00
10/28/2023 (Sat)	0.005	0.042	0.015	0.00	0.00	0.00
10/29/2023 (Sun)	0.005	0.047	0.017	0.02	0.02	0.01
10/30/2023 (Mon)	0.006	0.037	0.016	0.13	0.09	0.03
10/31/2023 (Tue)	0.005	0.046	0.015	0.00	0.00	0.00
11/1/2023 (Wed)	0.005	0.031	0.014	0.00	0.00	0.00
11/2/2023 (Thu)	0.005	0.029	0.006	0.00	0.00	0.00
. ,			0.405			

Total for period 0.495 1.11

Min:0.005Avg:0.015Max:0.053

Printed on: 11/13/2023 Page: 1