

March 22, 2024

Attention: Michael Wrinn
Director of Planning & Land Use Management
Town of Wilton
Town Annex Building
Wilton, CT 06897

SLR Project No.: 141.21543.00001

**RE: Response to Traffic Peer Review
131 Danbury Road - Multi-family Residential
Wilton, Connecticut**

This letter has been prepared in response to the “Peer Review of Traffic and Pedestrian Operations and Access” Memorandum from NV5 – *Technical Engineering & Consulting Solutions*, dated March 21, 2024. Our responses below in **bold** (and starting with R) are keyed to each review comment (C) as they are listed in NV5’s memorandum-ending Conclusions & Summary.

C-A. Figure 1 Site Location Map should be updated to show correct street names.

R-A. Figure 1 Site Location map is attached.

C-B. The turning movement count volumes conducted for this project should be compared to pre-2020 data that coincides with the two study area locations, to determine the change in magnitude of traffic volumes during the respective peak hours due to the COVID-19 pandemic. The traffic data set comparison will determine the adjustment factor to apply to the existing traffic network to compensate for reduced traffic activity caused by the COVID-19 pandemic.

R-B. This is unnecessary to do according to the Connecticut Department of Transportation (CTDOT) who has jurisdiction of Danbury Road (US Route 7) and the two off-site study intersections, and thus has not been done. Please see attached clarification on this matter from CTDOT’s Bureau of Policy and Planning stating that there has not been a need to adjust traffic counts on account of COVID since the beginning of 2022.

C-C. Table 1 Roadway Characteristics should be revised to include the latest ADT according to CTDOT Traffic Monitoring Station database and revised to update note to state ‘south of Route 33’.

R-C. Minor text error noted and has been corrected in the traffic study which has been revised.

C-D. Update TIS to include the existing LOS analysis results at the existing site driveway and the two (2) signalized study area intersections along Danbury Road.

R-D. The Level of Service (LOS) Table has been revised to include the existing traffic volume LOS findings. See attached revised traffic study.

- C-E. Update Table 3 Trip Generation Summary and traffic analysis accordingly to include trip generation based on the fitted curve equation from ITE *Trip Generation Manual, 11th Edition*.
- R-E. **Table 3 has been updated accordingly. See attached revised traffic study. This only results in a negligible increase in projected residential development peak-hour traffic for the weekday morning peak-hour study period. There is no total change to the projected residential development hour trip generation estimate for the afternoon peak hour.**
- Also note that using the fitted curve equation would estimate that the site in the past generated even more office traffic than previously estimated, meaning that this proposed residential development will be even *less* intense from a traffic standpoint than previously reported.
- C-F. The future Build Conditions (combined) Synchro analysis should be updated to match the proposed site plans, to include one ingress site driveway and one egress site driveway.
- R-F. **The Future Build Conditions (Combined) Synchro analysis, the corresponding traffic study figures, the LOS Table, and the Synchro output reports, have been updated accordingly in the attached revised traffic study. This results in no change in our LOS findings from those previously reported.**
- C-G. It is recommended that Table 4 Capacity Analysis Summary be updated to include queue length, to determine if vehicle queuing will occur along Danbury Road or at the proposed egress site driveway due to the proposed site.
- R-G. **The Capacity Analysis Summary table has been revised to include the queuing findings for the site driveways per the comment, and is attached. Queuing on Danbury Road at the site driveways after this development is opened is expected to be negligible, and peak queuing within the site at the site driveway exit is expected to be minor at around one to two vehicles in the left turn site egress lane, and one vehicle or less in the right turn site egress lane.**
- C-H. It is recommended to add signage on the western access lane within the at-grade parking area to show where the segment changes from one-way to two-way.
- R-H. **“Do Not Enter” signs have been added to the building columns to prevent vehicles from exiting the garage to the north. Revised plan attached.**
- C-I. The project team should confirm where e-commerce deliveries are intended to occur, and a turning path for a delivery vehicle accessing the delivery spaces in front of the building and exiting the site should be provided for review for the Town.
- R-I. **Deliveries will occur in front of the building. Updated turning movement exhibits are attached.**
- C-J. The project team should consider shortening the length of the proposed fieldstone wall with site signage to ensure adequate sight lines for vehicles exiting onto Danbury Road.
- R-J. **The fieldstone wall will be located more than 15 feet setback from the Danbury Road southbound travel lane outside of the CTODT Highway Design Manual Intersection Sight Distance (ISD) sightline triangle and will thus not interfere with sight lines of motorists exiting the site. Moreover, the wall will only be 3 feet height near the driveway exit, while the height of a motorist’s eye per the CTDOT criteria is taller at 3.5 feet (and even taller for truck drivers). Motorists at more than**



- 15 feet back from the nearest Danbury Road travel lane will also be able to look over the fieldstone wall. Lastly, the fieldstone wall has been pulled back 5 feet further away from the road than was shown on the previous site plan.**
- C-K. Update the SU-30 and box truck vehicle turning paths so that there is not obstruction with the move-in truck parking stall curbs and continue the vehicle turning path to exit the site, to ensure the vehicles would not encounter obstructions.
- R-K. Vehicle turning movement exhibits have been updated and are attached. SU-30 vehicles will not be allowed to park in the two striped loading spaces within the garage. Only appropriate, smaller move-in/loading vehicles will be allowed in these spaces. These spaces will also be clearly marked with loading-only signs.**
- C-L. The project team should widen the proposed emergency vehicle driveway (west of the proposed building) to a minimum of 20 feet to ensure the turning path of an emergency vehicle would not encounter obstructions. Additionally, it is recommended to show an emergency vehicle path travelling clockwise around the building complex, to ensure an emergency design vehicle could drive through the site in either direction without encountering obstructions.
- R-L. The fire marshal has reviewed the plans. The rear-access drive has been revised to be 20'-0" wide. Turning movement exhibits attached, which also show a clockwise path scenario.**
- C-M. Based on the Build (combined) conditions traffic analysis results, it is recommended to provide an independent ingress and egress driveway for site traffic as described in the TIS and shown on the site plans. Constructing a shared driveway with an adjacent site such as 141 Danbury Road is not recommended. The neighboring site development at 141 Danbury Road is anticipated to have similar traffic peak hours, therefore vehicles exiting the proposed site would experience increase delay and worse LOS if vehicles were to exit via a shared driveway with the neighboring site.
- R-M. Agreed.**
- C-N. Further evaluation from the Town's Drainage Reviewer is required to determine the need for any stormwater/flood plain resiliency measures to ensure continuous access/use of the emergency fire access route during major storm events.
- R-N. A flood contingency plan has been prepared and submitted. Furthermore, the site plan was revised to raise a portion of the garage and add an additional exit. The clearance height under the pedestrian bridge is sufficient for a fire truck. Also, Cardinal Engineering stated on the record at the March 14, Wetlands meeting they were satisfied after the applicant presented the flood management and parking plan to the Commission.**



We trust that our responses adequately address NV5's review comments and are useful to you and the Town of Wilton.

Best Regards,

SLR International Corporation



Neil C. Olinski, MS, PTP
Principal Transportation Planner
nolinski@slrconsulting.com



Thomas J. Daly, PE
US Manager of Civil & Structural Engineering
tdaly@slrconsulting.com

Attachments

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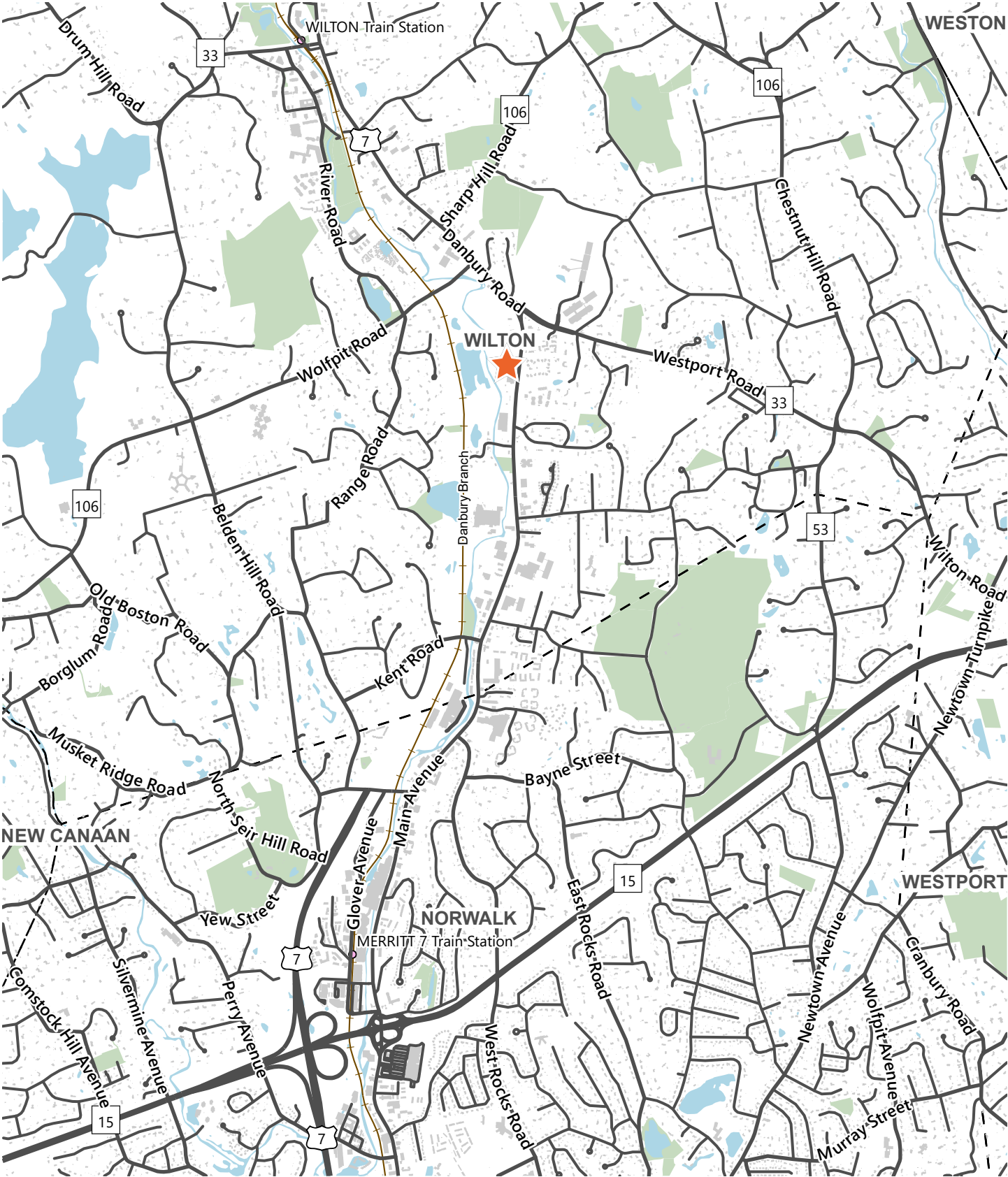


Figure 1
Site Location Map

Neil C. Olinski

From: nolinski@slrconsulting.com
Subject: RE: Traffic Count Adjustment Question

From: Sojka, Gary J <Gary.Sojka@ct.gov>
Sent: March 18, 2024 11:19 AM
To: Neil C. Olinski <nolinski@slrconsulting.com>
Cc: Sai Sarath Chandra Pavuluri <spavuluri-venkata@slrconsulting.com>
Subject: RE: Traffic Count Adjustment Question

Hi Neil,

There is absolutely no need to adjust volumes that were counted in September of 2023 in this area, school was back in session and September is an average or above average month for traffic counts. We have not requested any adjustment for COVID-19 since 1/1/2022. I would be interested to know who the 3rd party is because the statement is not relevant.

Gary J. Sojka
Transportation Supervising Planner
Connecticut Department of Transportation
Bureau of Policy and Planning
2800 Berlin Turnpike
Newington, CT 06111
Email: gary.sojka@ct.gov
telephone: (860) 594-2025

From: Neil C. Olinski <nolinski@slrconsulting.com>
Sent: Monday, March 18, 2024 12:05 PM
To: Sojka, Gary J <Gary.Sojka@ct.gov>
Cc: Sai Sarath Chandra Pavuluri Venkata <spavuluri-venkata@slrconsulting.com>
Subject: Traffic Count Adjustment Question

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hi Gary,

We've been working on a development project in Wilton on Danbury Road (US Route 7), which is currently in the Town P&Z approval process, and received the following 3rd-party review comment (below). What is CTDOT's current policy about the need, or no-need, to adjust/increase current traffic counts to match pre-covid volumes? The counts in our traffic study in question were counted on Wednesday September 13, 2023. I seem to recall that there has been no need to increase traffic counts for the influence of COVID-19 for the past 1.5-2 years or so now. Basically we're in the post-COVID 'new normal' in terms of travel patterns? Please advise.

The turning movement count volumes conducted for this project should be compared to pre-2020 data that coincides with the two study area locations, to determine the change in magnitude of traffic volumes during the respective peak hours due to the COVID-19 pandemic. The traffic data set comparison will determine the adjustment factor to apply to the existing traffic network to compensate for reduced traffic activity caused by the COVID-19 pandemic.

Table 1 Capacity Analysis Summary (Existing, Background and, Combined Conditions)

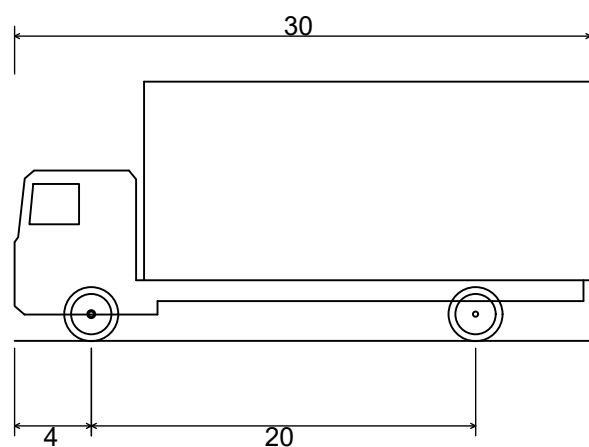
Intersection Lane Group	Level of Service					
	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
	Existing	Background	Combined	Existing	Background	Combined
Danbury Road (US Route 7) at Site Driveways						
Existing Site Driveway Eastbound Left/Right	F	F	-	E	E	-
Proposed Site Egress Driveway Eastbound Left	-	-	F	-	-	F
Proposed Site Egress Driveway Eastbound Right	-	-	D	-	-	C
Danbury Road at Entrance Northbound Left/Through	B	B	A	B	B	A
Danbury Road (US Route 7) at Westport Road (Route 33)						
Overall	F	F	F	F	F	F
Danbury Road (US Route 7) at Grumman Hill Road/ASML Driveway						
Overall	C	C	C	B	B	B

Table 2 95th Percentile Queue Summary (Background and Combined Conditions)

Intersection Lane Group	95 th Percentile Queue Summary (in feet)			
	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
	Background	Combined	Background	Combined
Danbury Road (US Route 7) at Site Egress Driveway				
Existing Site Driveway Eastbound Left/Right	11	-	20	-
Proposed Site Egress Driveway Eastbound Left	-	33	-	16
Proposed Site Egress Driveway Eastbound Right	-	11	-	5
Danbury Road (US Route 7) at Site Entrance Driveway				
Danbury Road Northbound Left/Through	0	1	3	3

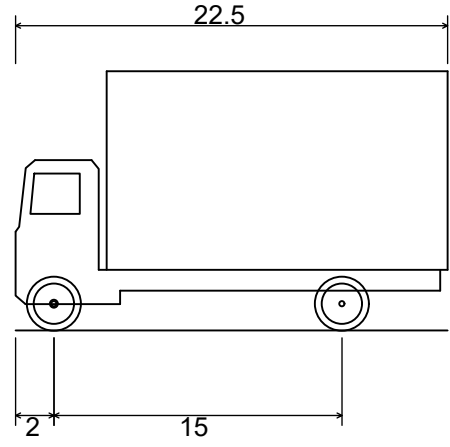
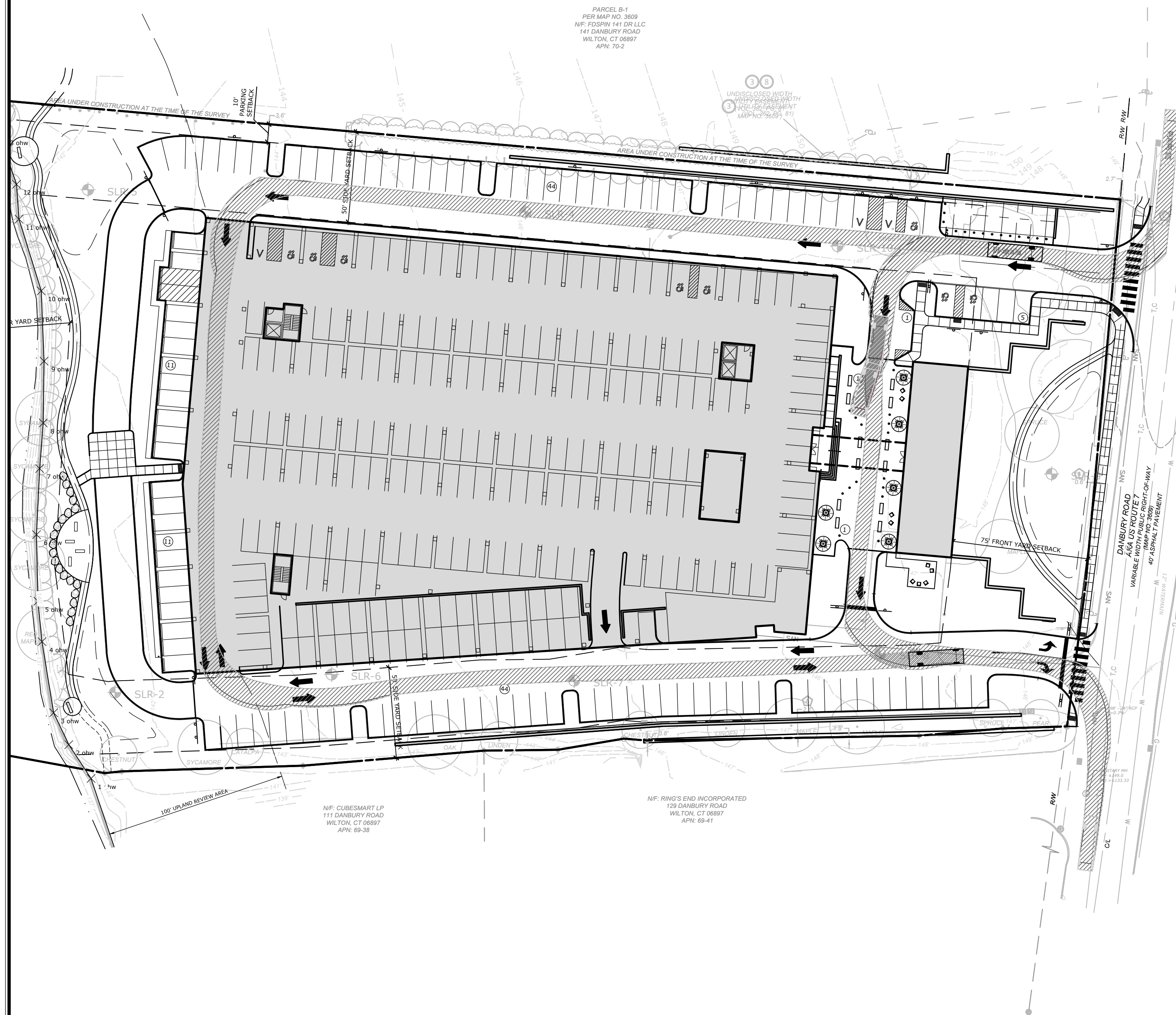
Note: typical queued vehicle is 22 – 23 feet in length

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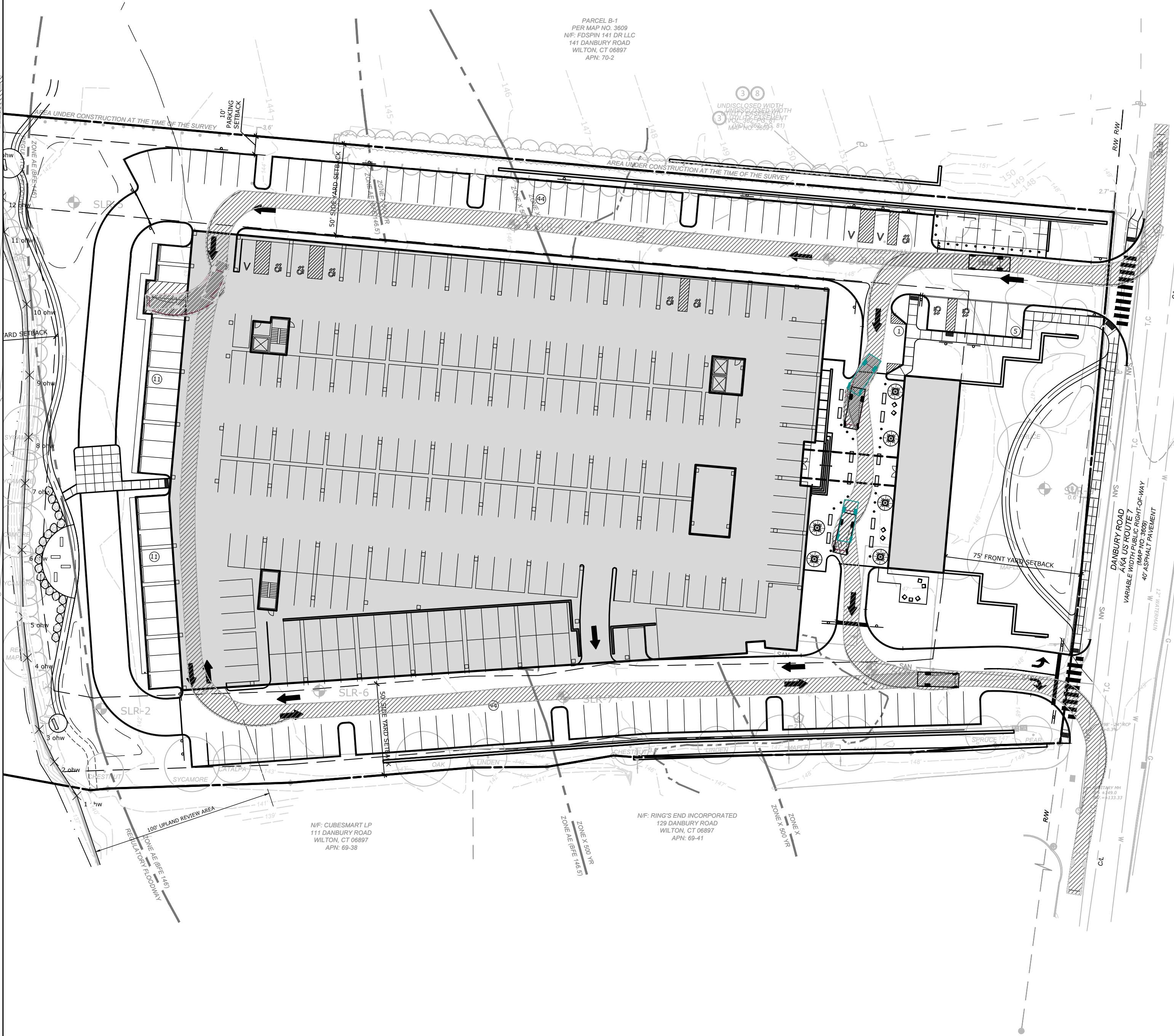
SU-30 - Single Unit Truck
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock-to-lock time
Max Steering Angle (Virtual)

30.000ft
8.000ft
13.500ft
1.367ft
8.000ft
5.00s
31.80°



15' Box Truck
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock-to-lock time
Max Steering Angle (Virtual)

22.500ft
7.670ft
13.500ft
1.367ft
8.000ft
5.00s
31.80°



AWG
DESIGNED

RH
DRAWN

TD
CHECKED

SCALE
1"=40'

DATE
OCTOBER 23, 2023

PROJECT NO.
21543.00001

SHEET NO.
24 OF 25

VH-2

SHEET NAME

VEHICLE TURNING MOVEMENT - SU-30 AND 15' BOX TRUCK

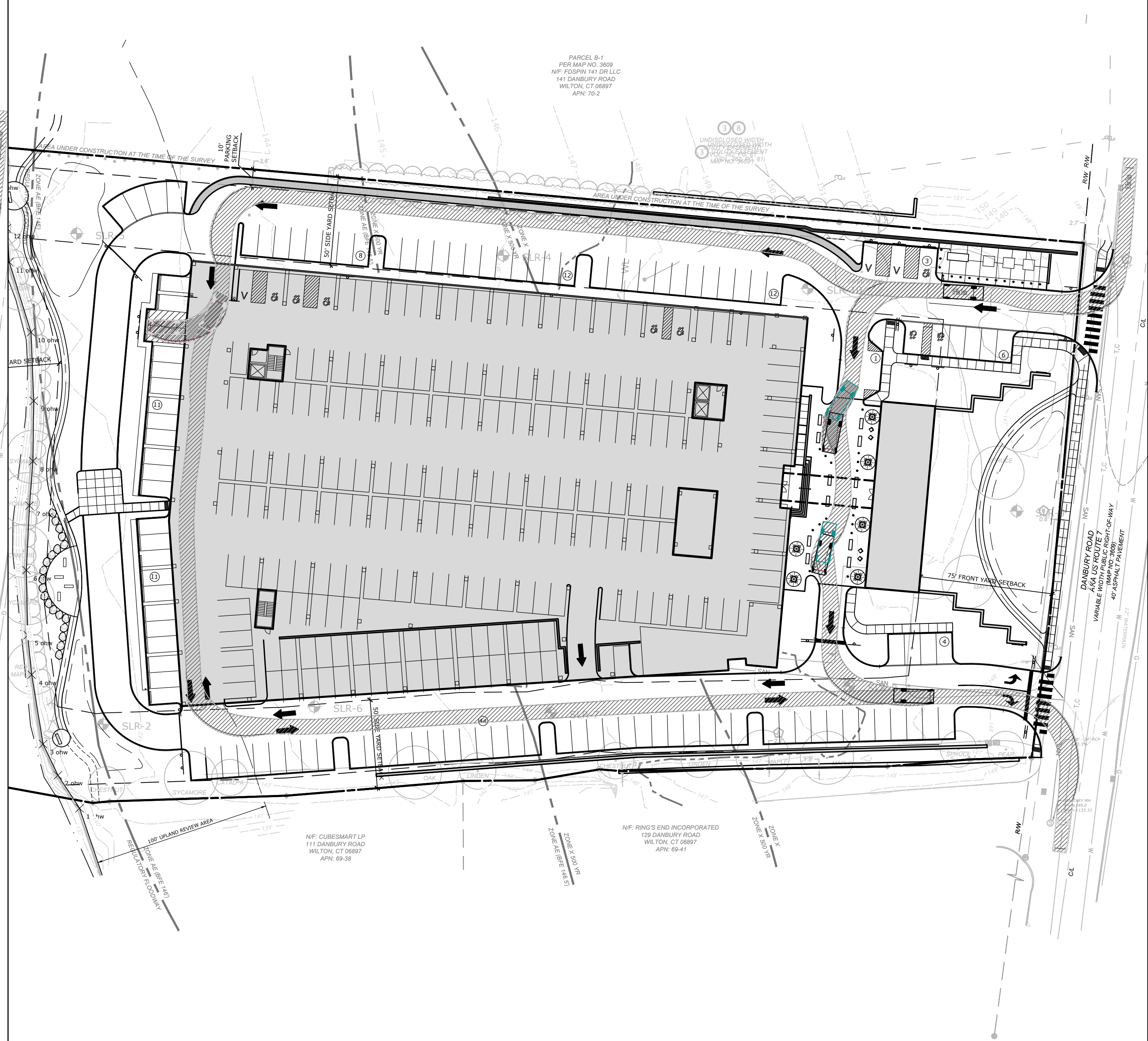
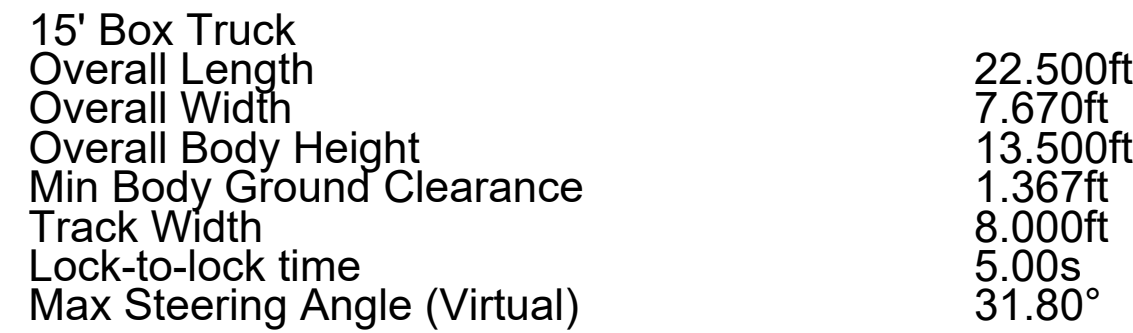
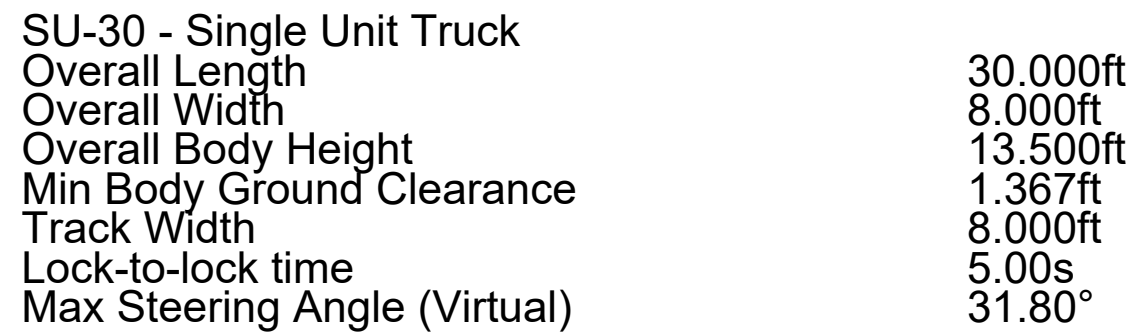
PROPOSED MULTI-FAMILY DEVELOPMENT

131 DANBURY ROAD
WILTON, CONNECTICUT

SLR

99 REALTY DRIVE
SUITE 100
WILTON, CT 06410
203.271.1773
SLRCONSULTING.COM

DESCRIPTION	DATE	BY
P&Z SUBMISSION	11/27/2023	AWG
PEER REVIEW COMMENTS	3/08/2024	AWG
PEER REVIEW COMMENTS	3/22/2024	AWG

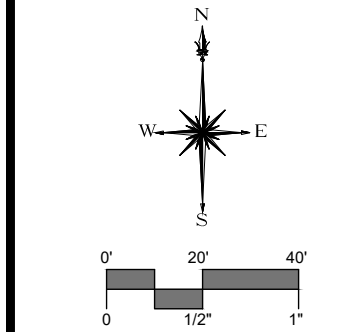


DESCRIPTION	DATE	BY
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PEER REVIEW COMMENTS	3/22/2024	AWG

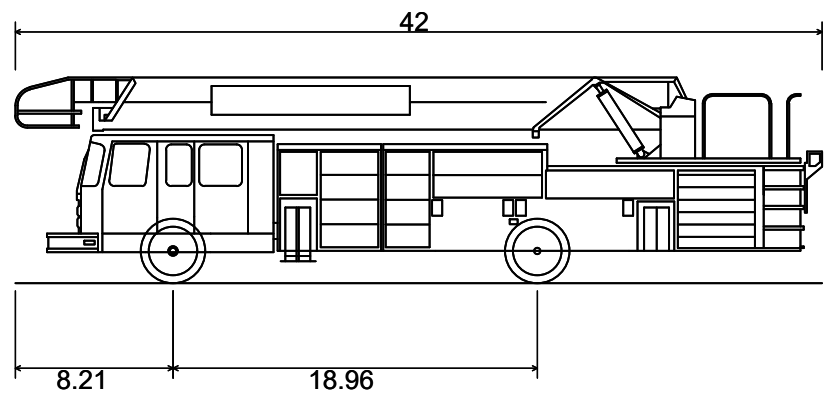
VEHICLE TURNING MOVEMENT - SU-30 AND 15' BOX TRUCK
PROPOSED MUL.TI-FAMILY DEVELOPMENT
ALTERNATE FIRE
MARSHAL PLAN
131 DANBURY ROAD
WILTON, CONNECTICUT

AWG DESIGNED	RH DRAWN	TD CHECKED
1"=40'		
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OCTOBER 23, 2023		
DATE		
21543.00001		
PROJECT NO.		
24 OF 25		
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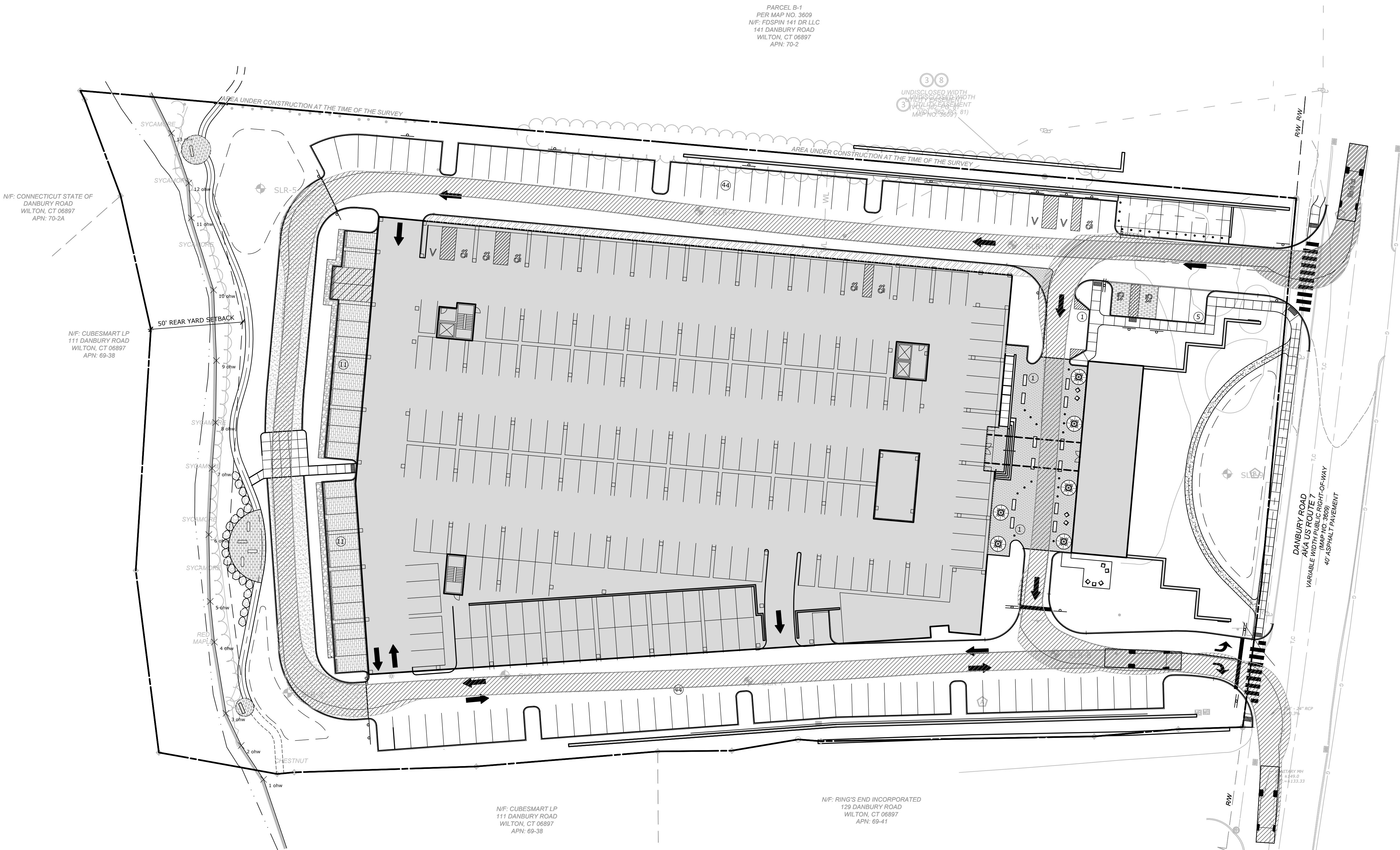
VH-2



WILSON ENGINEERING, INC. 1000 WILSON ROAD, SUITE 100, WILTON, CT 06897
TEL: 203.261.1111 FAX: 203.261.1112
WWW.WILSONENGINEERING.COM
APRIL 2024



Wilton Fire Truck
Overall Length 42.000ft
Overall Width 10.000ft
Overall Body Height 10.715ft
Min Body Ground Clearance 1.146ft
Track Width 9.620ft
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 33.167ft



0 15 30
1/2" = 30'

W
N
E
S

SLR

99 REALTY DRIVE
SUITE 100
WILTON, CT 06897
203.271.1773
SLRCONSULTING.COM

VEHICLE TURNING MOVEMENT - FIRE TRUCK

PROPOSED MULTI-FAMILY DEVELOPMENT

131 DANBURY ROAD
WILTON, CONNECTICUT

AWG	RH	TD
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1"=30'

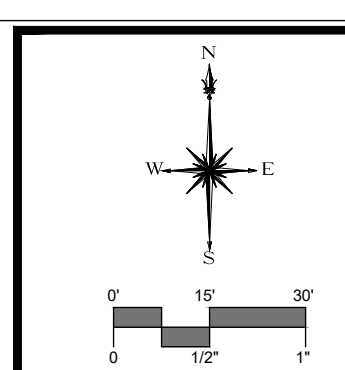
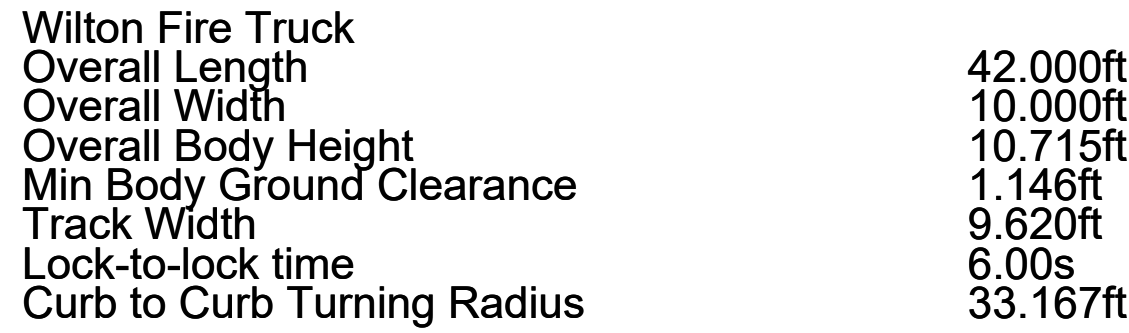
OCTOBER 23, 2023

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23 OF 25

VH-1

DESCRIPTION	DATE	BY
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PEER REVIEW COMMENTS	2/13/2024	AWG
FIRE MARSHAL COMMENTS	3/01/2024	AWG
FIRE MARSHAL COMMENTS	3/08/2024	AWG
PEER REVIEW COMMENTS	3/22/2024	AWG



DESCRIPTION	DATE	BY
PKZ SUBMISSION	11/27/2023	AWG
PEER REVIEW COMMENTS	10/9/2024	AWG
PEER REVIEW COMMENTS	2/13/2024	AWG
FIRE MARSHAL COMMENTS	3/01/2024	AWG
FIRE MARSHAL COMMENTS	3/08/2024	AWG
PEER REVIEW COMMENTS	3/22/2024	AWG

TRUCK
ANT
ALTERNATE FIRE
MARSHAL PLAN

VEHICLE TURNING
PROPOSED MULTI-FAMILY
131 DANBURY ROAD
WILTON CONNECTICUT

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1"=30'

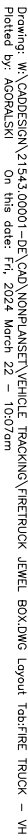
OCTOBER 23, 2023

21543.00001
PROJECT NO.

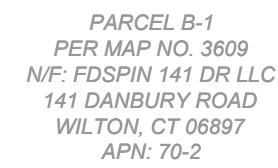
23 OF 25

VH-1

SHEET NAME



42.000ft
10.000ft
10.715ft
1.146ft
9.620ft
6.00s
33.167ft



131 DANBURY ROAD
WILTON, CONNECTICUT

AWG SIGNED	RH DRAWN	TD CHECKED
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1"=30'

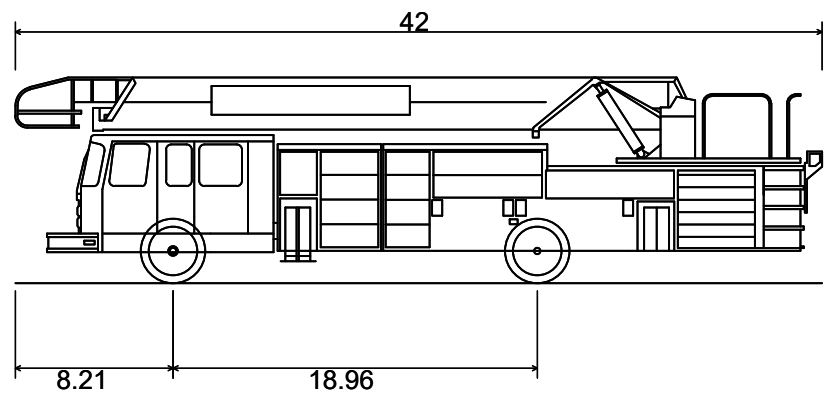
OCTOBER 23, 2023

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23 OF 25

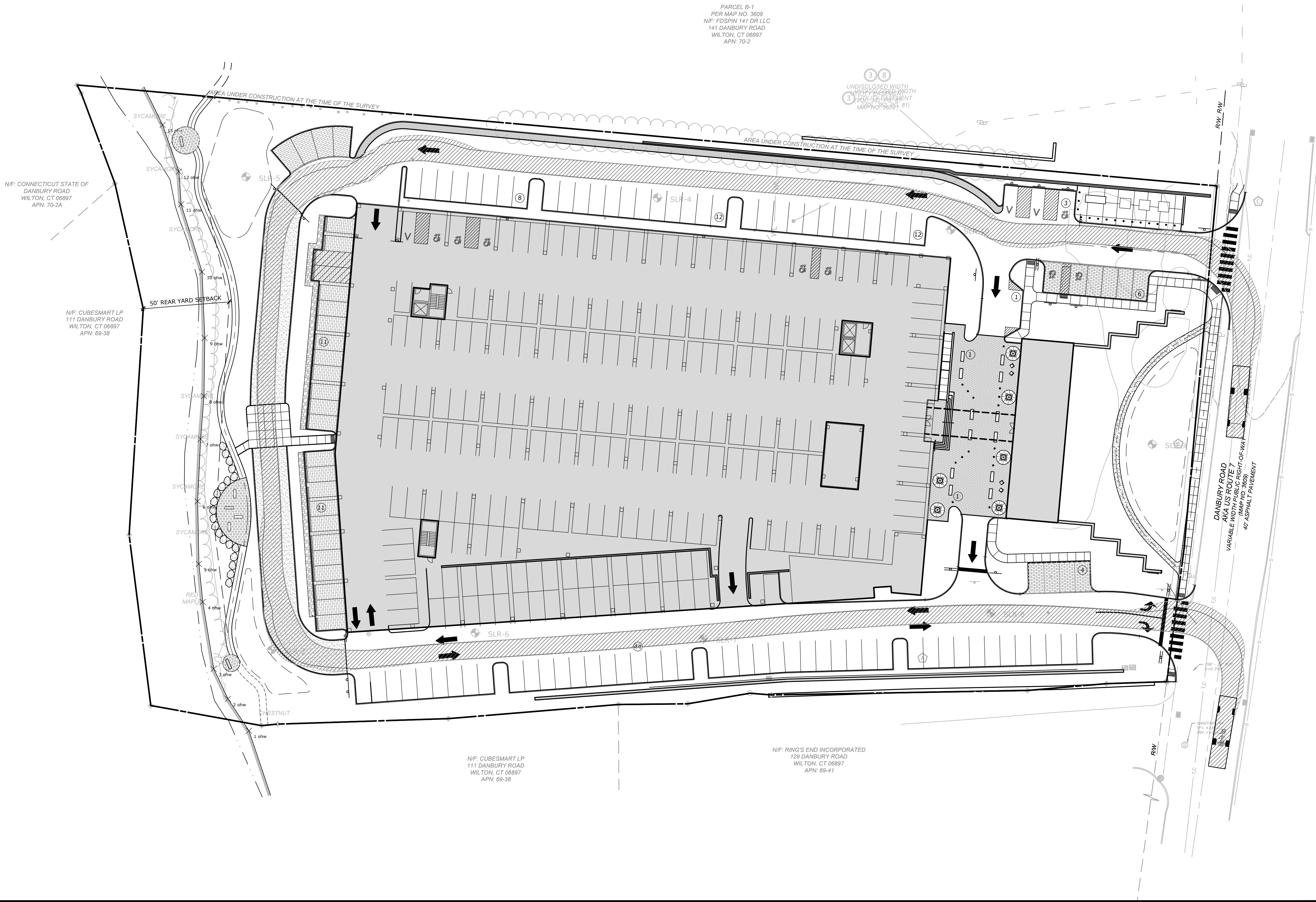
VH-1

WILSON ENGINEERING & ARCHITECTURE, INC. 1000 WEST 10TH AVENUE, SUITE 100, DENVER, CO 80202-1000
TEL: 303.733.1100 FAX: 303.733.1101
WWW.WILSONENGINEERING.COM



Wilton Fire Truck
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock-to-lock time
Curb to Curb Turning Radius

42.000ft
10.000ft
10.715ft
1.146ft
9.620ft
6.00s
33.167ft



AWG

DESIGNED

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CHECKED

1"=30'

OCTOBER 23, 2023

21543.00001

23 OF 25

VH-1

VEHICLE TURNING MOVEMENT - FIRE TRUCK REVERSE LOOP

PROPOSED MULTI-FAMILY DEVELOPMENT

ALTERNATE FIRE MARSHAL PLAN

131 DANBURY ROAD
WILTON, CONNECTICUT

DATE

BY

11/27/2023

AWG

10/26/2024

AWG

2/13/2024

AWG

3/01/2024

AWG

3/08/2024

AWG

3/22/2024

AWG

DESCRIPTION

P&Z SUBMISSION

PEER REVIEW COMMENTS

PEER REVIEW COMMENTS

FIRE MARSHAL COMMENTS

FIRE MARSHAL COMMENTS

PEER REVIEW COMMENTS

SLR

99 REALTY DRIVE
SUITE 100
283.271.1773
SLRCONSULTING.COM

VEHICLE TURNING MOVEMENT - FIRE TRUCK REVERSE LOOP

PROPOSED MULTI-FAMILY DEVELOPMENT

ALTERNATE FIRE MARSHAL PLAN

131 DANBURY ROAD
WILTON, CONNECTICUT

November 27, 2023 (**Revised March 22, 2024**)

Attention: Ryan Sutherland, AIA LEED AP BD&C
AMS Acquisitions
One Bridge Plaza North, Suite 840
Fort Lee, NJ 07024

SLR Project No.: 141.21543.00001

RE: Traffic Impact Study
131 Danbury Road, Wilton, Connecticut

SLR International Corporation (SLR) has prepared this memorandum to evaluate the traffic-related implications of your proposal to convert the existing approximately 50,000 square-foot (SF) office building site at 131 Danbury Road (US Route 7) in Wilton, Connecticut, into 208 multifamily apartment units with at-grade and structured parking totalling 321 spaces. **Figure 1** shows the site location.

Existing Conditions

Site Environs

Table 1 summarizes the characteristics of Danbury Road in the vicinity of the site.

Table 1 Roadway Characteristics

	Danbury Road (US Route 7)
CTDOT Roadway Classification	Other Principal Arterial
Directionality	North-South
Number of Travel Lanes	3 (2 Northbound, 1 Southbound)
Shoulders	Narrow (< 4 ft)
Pedestrian Facilities	None
Transit	Norwalk Wheels Bus Route 4 10-20 Westport Road Shuttle
Posted Speed Limit	40 mph
Average Speed ¹	39.9 mph Northbound 39.5 mph Southbound
85 th Percentile Speed ¹	46.2 mph Northbound 44.5 mph Southbound
Average Daily Traffic (ADT) ¹	22,400 vehicles
Adjacent Land Use	Commercial, Residential

1. Source: Connecticut Department of Transportation (CTDOT) Traffic Monitoring Station WILT-179 located along Danbury Road south of Route 33, March 2023.

Crash History

Traffic crash data was evaluated from the Connecticut Crash Data Repository for the most recent five-year period (July 1, 2018, to July 1, 2023) within an approximately 200-foot radius of the site frontage along Danbury Road. Most crashes appear to be associated with the neighboring 129 Danbury Road driveway to the south, and most appear to be rear-ends or sideswipes involving motorists crashing into others slowing down to turn, or motorists crashing into others attempting a passing maneuver. Three-quarters of the crashes appear to have been non-injury/property-damage only. **Table 2** summarizes the crash history findings.

Table 2 Crash History

Location	Type Of Collision						Severity		
	Front To Rear	Sideswipe, Same Direction	Not Applicable	Front To Front	Sideswipe, Opposite Direction	Grand Total	No Apparent Injury	Possible Injury	Grand Total
Danbury Road Near Site	5	4	2	1	1	13	10	3	13

Source: Connecticut Crash Data Repository

Traffic Data Collection

Turning movement counts were conducted at the signalized intersections of Danbury Road (US Route 7) at Westport Road (Route 33), and Danbury Road (US Route 7) at Grumman Hill Road/ASML Driveway, from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on Wednesday, September 13, 2023, to capture peak weekday traffic activity. The hour interval with the highest traffic volumes for each time period was extracted from the count data for each intersection and used to calculate traffic capacity and operations. The peak hours were found to be from 7:45 to 8:45 a.m. during the weekday morning and 5:00 to 6:00 p.m. during the weekday afternoon. The existing peak-hour traffic volumes are shown in **Figure 2**.

Proposed Development

Site Access

The site development proposes two curb-cuts along the Danbury Road frontage: an ingress-only driveway at the northern end of the site, and an egress-only driveway at the southern end containing dedicated left- and right-turn lanes. Along the building frontage, a pick-up/drop-off/turn-around lane will link the two driveway aisles. The driveway aisles will continue to the back of the site circling behind and with under-building parking.



Driveway Sight Lines

Intersection sight distance (ISD) accounts for a driver's ability to identify an appropriate gap in oncoming traffic when exiting a driveway or side street, in accordance with the CTDOT Highway Design Manual. When determining ISD, the length of the gap, which is dependent on the speed of approaching vehicles and number of lanes a motorist needs to cross to make a turn, should ideally allow a motorist to turn safely out of the driveway, or stop-sign controlled side street, without necessitating a significant change in the speed of approaching vehicles already traveling on the roadway.

The proposed driveway egress will be located in approximately the same location as the existing property's driveway; thus, the sight lines will be virtually the same as existing. The sight lines from the site driveway were reviewed based on the 85th percentile speeds of 46.2 miles per hour (mph) northbound, and 44.5 mph southbound along Danbury Road as recorded by CTDOT traffic monitoring. A motorist preparing to exit the driveway should have 495 feet of ISD when looking to the left prior to turning out onto Danbury Road, and 510 feet when looking to the right prior to turning left onto Danbury Road. The sight lines were found to be sufficient for the state requirement, subject to some vegetation pruning that is needed along the northeastern site frontage and within the right-of-way. The sight line looking left (north) can be improved by cutting back some of the overgrown tree branches that extend into the sight line presently. Vegetation along the site frontage and within the Danbury Road right-of-way near the site should be regularly pruned to maintain sufficient ISD.

Trip Generation and Distribution

The proposed site-generated peak-hour trips were estimated using statistical data published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual* under Land Use Code (LUC) 221, "Multifamily Housing (Mid-Rise)". Traffic was also estimated for the existing approximately 50,000-SF office building for comparison purposes using ITE LUC 710, "General Office Building". **Table 3** summarizes the trip generation estimates.

Table 3 Trip Generation Summary

Land Use	Size	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		In	Out	Total	In	Out	Total
Existing Site							
General Office Building	50,000 SF	81	11	92	16	77	93
Proposed Site							
Multifamily Housing (Mid-Rise)	208 Dwelling Units	18	62	80	50	31	81
Net Change in Site Traffic:		-63	+51	-12	+34	-46	-12

Source: *Trip Generation*, 11th Edition. Institute of Transportation Engineers, 2021. ITE Land Uses: 221 & 710

It is estimated that the proposed conversion of the site into multifamily housing is now expected to generate less traffic than the existing office land use. While the existing site use has more traffic entering in the morning and exiting in the afternoon, the proposed site will have more traffic exiting in the morning and entering in the afternoon; essentially a reversal of peak site traffic enter-exit flows by time of day. In comparison to the actual traffic counts taken at the site driveway in September 2023, the ITE traffic generation estimate for General Office Building is



significantly higher during both the morning peak hour (92 total trips estimated by ITE versus 64 total trips counted), and also the afternoon peak hour (93 total trips estimated by ITE versus 16 total trips counted). This may simply mean that current site traffic does not enter or leave all at once during the typical commuter peak, but rather interspersed during other time intervals. The COVID-19 impact on office commuting may also factor into the lower site traffic volumes counted.

The geographic distribution of the site-generated traffic volumes was determined based on a review of previous studies done for the nearby properties of 50 Danbury Road and 141 Danbury Road, and existing traffic volumes and patterns. A 50:50 north-south distribution is estimated for the site-generated traffic for the site access at Danbury Road. The site traffic distribution is illustrated in **Figure 3**. The trip generation was applied to the geographic distribution to determine the site-generated traffic per intersection, shown in **Figure 4**.

Future Traffic Analysis

To evaluate the impact of the proposed site on the surrounding roadway network, an analysis was conducted comparing future traffic volumes *without* versus *with* the proposed site in place.

Future Traffic Volumes

The CTDOT Bureau of Policy and Planning and the Town of Wilton were contacted for traffic information in the site vicinity for use in this memorandum. We received the “Traffic Impact Statement” by the firm Tighe & Bond for the nearby 141 Danbury Road development project, as well as traffic information within the “OSTA Administrative Decision Request” for the 50 Danbury Road project, also by Tighe & Bond.

Traffic growth in a given area is attributed to new development and broader regional transportation trends. Future traffic volumes were estimated for two scenarios: future traffic volumes without the estimated traffic generated by the proposed site (before it is open) and future traffic volumes with the traffic generated by the proposed site (after it open for business). These are labeled the background and combined scenarios, respectively.

The year 2025 was assumed as the projection year for future traffic growth and the year when the proposed site would be open. CTDOT advised applying a general growth rate of 0.7 percent per year to the traffic counts to account for ambient traffic growth. The traffic generation from the 50 Danbury Road and 141 Danbury Road projects were added to the traffic counts as well to result in 2025 background traffic conditions for this analysis, shown in **Figure 5**. The 2025 combined traffic volumes were determined by replacing the existing office site traffic with the proposed residential site traffic previously calculated, shown in **Figure 6**.

Capacity Analysis

Capacity analysis was performed at the site driveways to evaluate the traffic operations impact of the proposed site on the surrounding roadway network. Intersection capacity results are expressed as a level of service (LOS) letter. LOS provides an evaluation of the efficiency of operations of an intersection in terms of delay and inconvenience based on certain quantitative calculations. LOS A describes operations with very low average control delay per vehicle while LOS F describes operations with very long average delays. In many communities, LOS D or even LOS E during peak hours may be considered acceptable and an appropriate trade-off between traffic flow and the amount of land devoted to the movement of motor vehicles.



The study intersections were evaluated using *Synchro 11* (Trafficware) traffic analysis software comparing the background and combined traffic scenarios. Table 4 below summarizes the capacity analysis results for the weekday morning and afternoon peak hours, under the existing conditions scenario.

Table 4 Capacity Analysis Summary (Existing Conditions)

Intersection Lane Group	Level of Service	
	Weekday Morning Peak Hour	Weekday Afternoon Peak Hour
	Existing	Existing
Danbury Road (US Route 7) at 131 Danbury Road Driveway		
Existing Site Driveway Eastbound Left/Right	F	E
Danbury Road Northbound Left/Through	B	B
Danbury Road (US Route 7) at Westport Road (Route 33)		
Overall	F	F
Danbury Road (US Route 7) at Grumman Hill Road/ASML Driveway		
Overall	C	B

Table 5 summarizes the capacity analysis results for the weekday morning and afternoon peak hours, under both background and combined conditions. The *Synchro* analysis output sheets are included in the Appendix. As shown in Table 5, the proposed site driveway is expected to operate at similar levels from current conditions for egressing left-turning motorists, and at improved levels for right-turning motorists. While peak-hour LOS F conditions remain, it is not uncommon for stop-controlled driveways along high-traffic arterial roadways such as Danbury Road to operate at poor LOS. The existing driveway as well as other stop-controlled driveways along Danbury Road operate in such a manner. Additionally, note that while long delays for the motorists turning out of the site during peak hours are expected to remain, motorists traveling on Danbury Road will continue to experience good LOS B or better while passing the site.

Our analysis of off-site intersections nearby finds that there is expected to be no noteworthy traffic impact to the Grumman Hill Road intersection south of the site as a result of this redevelopment project; this intersection is anticipated to continue to operate at good overall LOS B or C during peak hours. At the Danbury Road/Westport Road intersection north of the site, while there is also no notable project impact expected, traffic operations at this location will continue to be challenging during busy peak periods with or without this project in place. Most importantly as it pertains to this project, overall LOS traffic operations at both of these nearby signalized intersections are anticipated to remain virtually unchanged regardless of this proposed site redevelopment.



Table 5 Capacity Analysis Summary (Background and Combined Conditions)

Intersection Lane Group	Level of Service			
	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
	Background	Combined	Background	Combined
Danbury Road (US Route 7) at Site Egress Driveway				
Existing Site Driveway Eastbound Left/Right	F	-	E	-
Proposed Site Egress Driveway Eastbound Left	-	F	-	F
Proposed Site Egress Driveway Eastbound Right	-	D	-	C
Danbury Road (US Route 7) at Site Ingress Driveway				
Danbury Road Northbound Left/Through	B	A	B	A
Danbury Road (US Route 7) at Westport Road (Route 33)				
Overall	F	F	F	F
Danbury Road (US Route 7) at Grumman Hill Road/ASML Driveway				
Overall	C	C	B	B

In addition, the 95th percentile queues during both the background and combined conditions at Danbury Road and proposed site driveway are shown in Table 6 below:

Table 6 95th Percentile Queue Summary (Background and Combined Conditions)

Intersection Lane Group	95 th Percentile Queue Summary (in feet)			
	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
	Background	Combined	Background	Combined
Danbury Road (US Route 7) at Site Egress Driveway				
Existing Site Driveway Eastbound Left/Right	11	-	20	-
Proposed Site Egress Driveway Eastbound Left	-	33	-	16
Proposed Site Egress Driveway Eastbound Right	-	11	-	5
Danbury Road (US Route 7) at Site Ingress Driveway				
Danbury Road Northbound Left/Through	0	1	3	3

Conclusion

SLR has prepared this traffic impact study for the proposed conversion of the existing office building site at 131 Danbury Road in Wilton, Connecticut, into 208 multifamily apartment units and 321 parking spaces. The future traffic generated by the residential units is expected to be similar to the amount of traffic that would be generated by the site's existing use per industry data.



The results of the traffic capacity analysis show the proposed redevelopment is expected to be accommodated by the surrounding roadway network with conditions remaining similar to those today. While driveway egress is expected to continue to operate at LOS F during peak hours, the new driveway will have separate right- and left-turn lanes, improving right-turning conditions when exiting the site. It should be noted that poor LOS conditions when exiting from stop-controlled driveways occurs today for most driveways nearby along Danbury Road given that this road is a high-traffic arterial state roadway.

The remaining analysis results for the two signalized intersections nearby both show negligible traffic impact as the result of the redevelopment. Overall LOS F traffic conditions persist during peak hours at the Danbury Road (US Route 7) - Westport Road (Route 33) intersection north of the site, and LOS B/C traffic conditions will continue to occur at the Danbury Road – Grumman Hill Road intersection south of the site.

Sight lines from the site driveway will continue to be sufficient upon recommended trimming of overgrown tree branches along the northeastern site property corner and within the Danbury Road right-of-way. Vegetation should also be regularly pruned along the entire site frontage and within the adjacent Danbury Road right-of-way as necessary to maintain sufficient ISD.

We hope this memorandum is useful to you and the Town of Wilton. If you have any questions or need anything further, please do not hesitate to contact the undersigned.

Regards,

SLR International Corporation



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Attachments



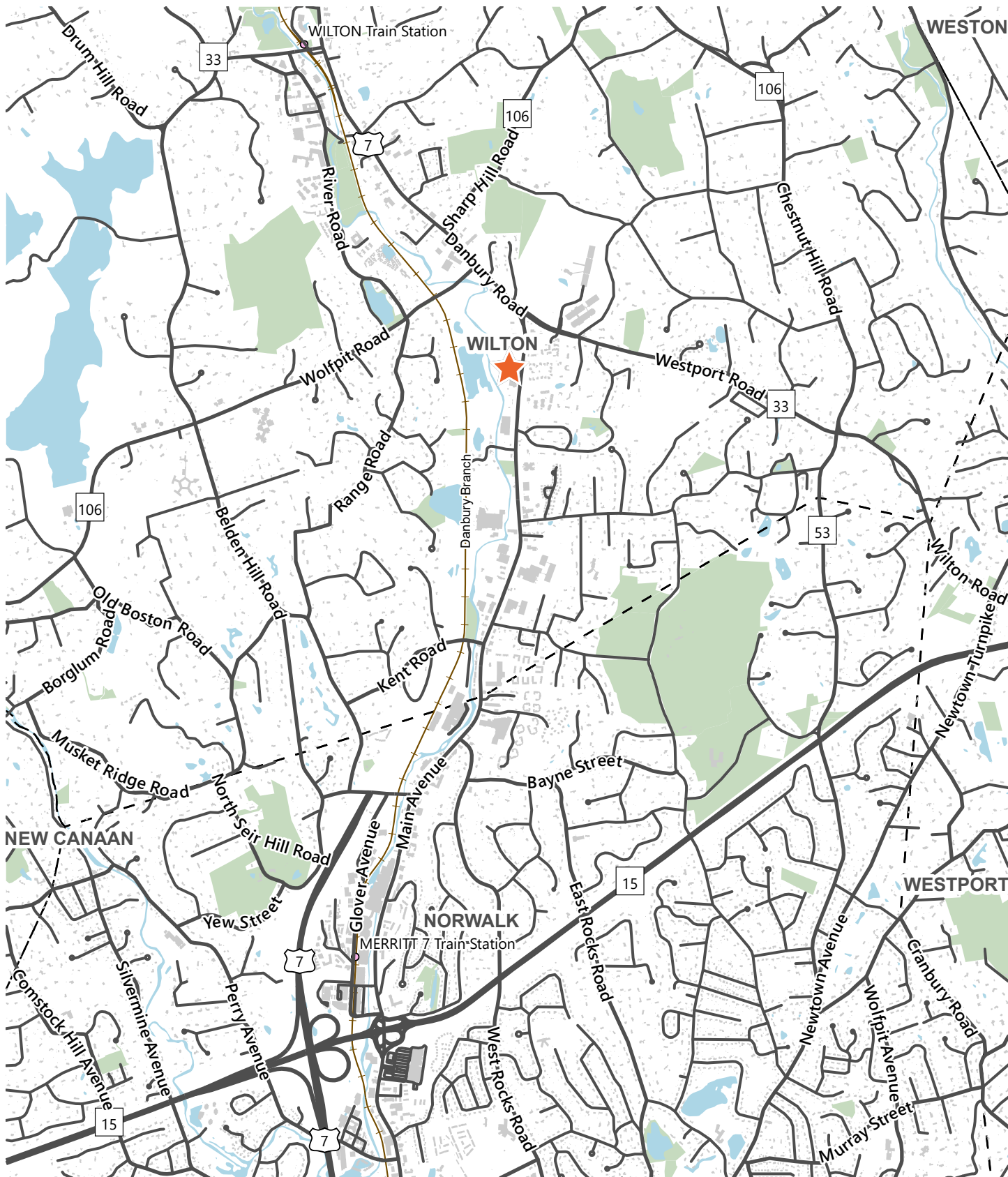


Figure 1
Site Location Map

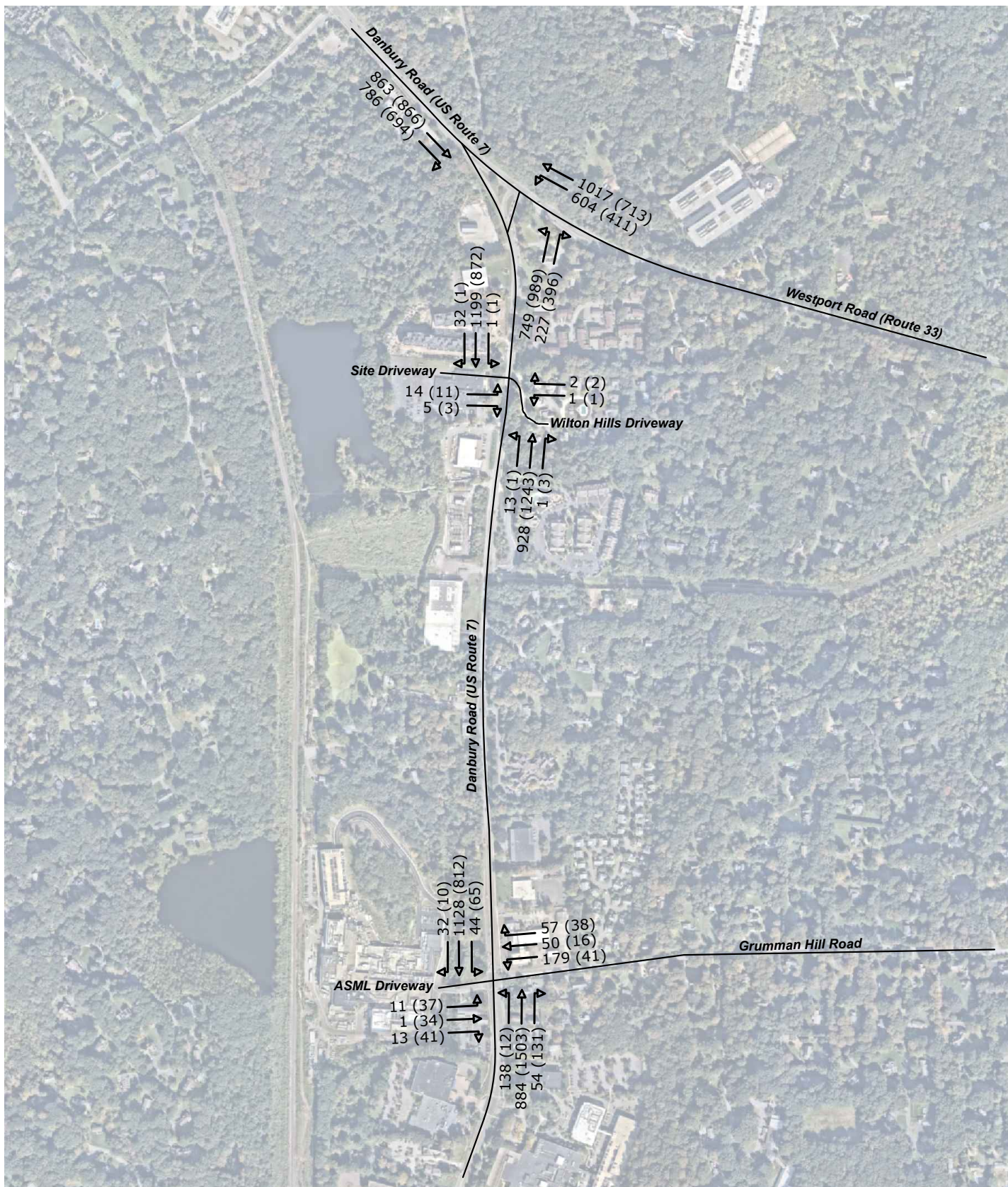


Figure 2
2023 Existing Traffic Volumes

Weekday AM Peak Hour
Weekday PM Peak Hour





Figure 3
Site Traffic Distribution

Entering Trip
Exiting Trip





Figure 4
Site Generated Traffic Volumes

Weekday AM Peak Hour
Weekday PM Peak Hour



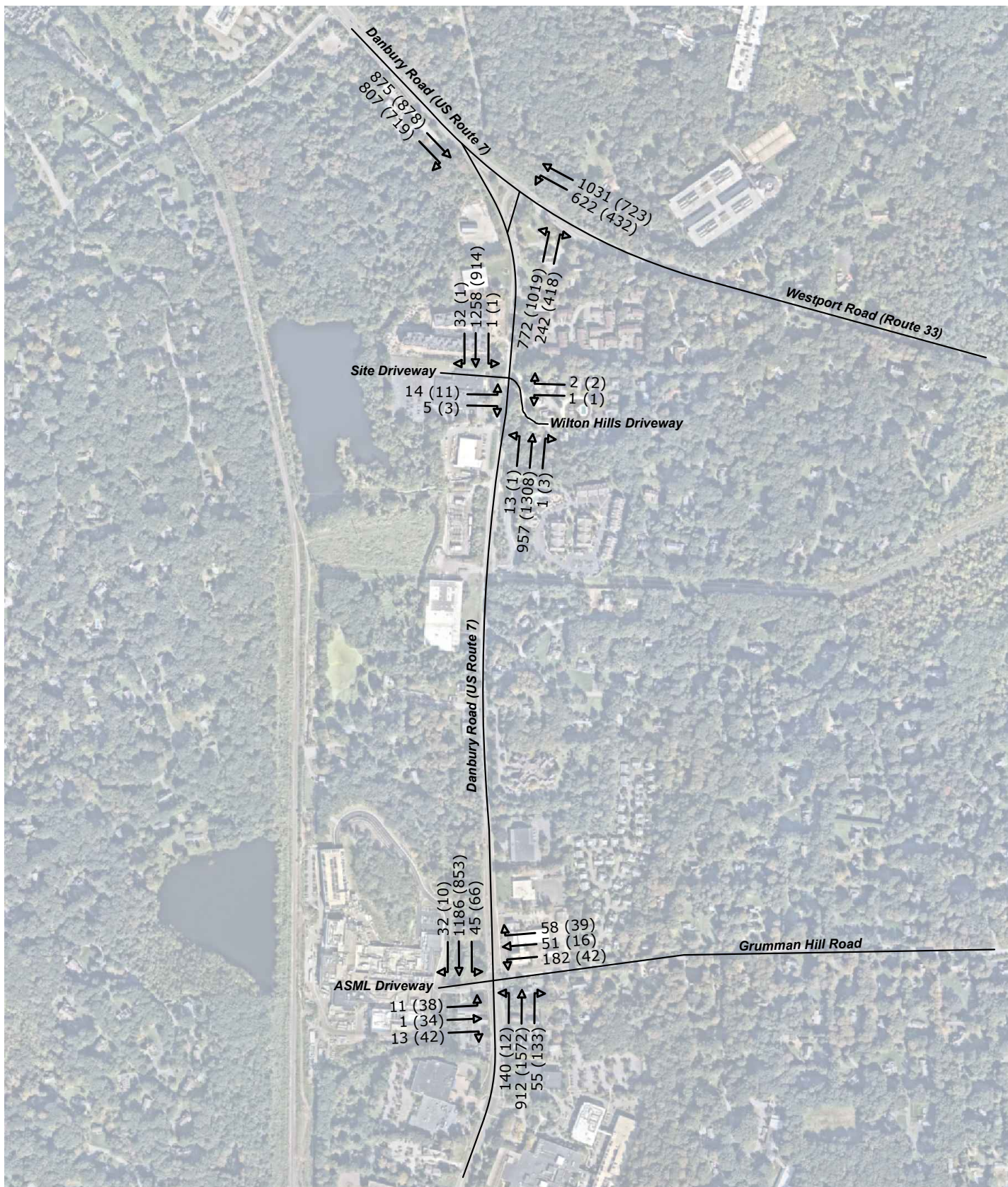


Figure 5
2025 Background Traffic Volumes

Weekday AM Peak Hour
Weekday PM Peak Hour





Figure 6
2025 Combined Traffic Volumes

Weekday AM Peak Hour
 ### Weekday PM Peak Hour



Appendix

Level Of Service for Signalized Intersections (Motorized Vehicle Mode)

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-min analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group. The criteria are given below.

Level of Service Criteria for Signalized Intersections

LOS By Volume-to-Capacity Ratio ¹		Control Delay (s/veh)
v/c ≤ 1.0	v/c > 1.0	
A	F	≤ 10
B	F	> 10 and ≤ 20
C	F	> 20 and ≤ 35
D	F	> 35 and ≤ 55
E	F	> 55 and ≤ 80
F	F	> 80

¹ For approach-based and intersection-wide assessments, LOS is defined solely by control delay.



Specific descriptions of each LOS for signalized intersections are provided below:

Level of Service A describes operations with a control delay of 10 s/veh and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If LOS A is the result of favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

Level of Service B describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

Level of Service C describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

Level of Service D describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

Level of Service E describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

Level of Service F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Reference: Highway Capacity Manual 6, Transportation Research Board, 2016.



Level Of Service For Unsignalized Intersections: Two-Way Stop-Control (TWSC)

The level of service for a TWSC (two-way stop controlled) intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS criteria are given in the table below:

Level of Service Criteria for TWSC Intersections

LOS	Control Delay (s/veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Note: LOS criteria apply to each lane on a given approach and to each approach on the minor street.
LOS is not calculated for major-street approaches or for the intersection as a whole.
LOS F is assigned to a movement if the volume-to-capacity ratio exceeds 1.0, regardless of the control delay

Reference: [Highway Capacity Manual Version 6.0](#), Transportation Research Board, 2016.



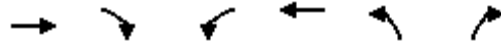
Lanes, Volumes, Timings
1: Danbury Road & Westport Road

Existing AM
03/22/2024

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↓	↑↑	↓↓↓	
Traffic Volume (vph)	863	0	604	1017	749	227
Future Volume (vph)	863	0	604	1017	749	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	300		0	0
Storage Lanes		0	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	0.95
Frt					0.965	
Flt Protected			0.950		0.963	
Satd. Flow (prot)	1863	0	1770	3539	3358	0
Flt Permitted			0.104		0.963	
Satd. Flow (perm)	1863	0	194	3539	3358	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					50	
Link Speed (mph)	40			40	40	
Link Distance (ft)	656			391	447	
Travel Time (s)	11.2			6.7	7.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	881	0	616	1038	764	232
Shared Lane Traffic (%)						
Lane Group Flow (vph)	881	0	616	1038	996	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	20.0		5.0		10.0	
Minimum Split (s)	26.4		9.0		14.2	
Total Split (s)	45.0		10.0		35.0	
Total Split (%)	50.0%		11.1%		38.9%	
Yellow Time (s)	4.2		3.0		3.0	
All-Red Time (s)	2.2		1.0		1.2	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.4		4.0		4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min		None		None	
Act Effect Green (s)	38.6		47.8	51.8	30.0	
Actuated g/C Ratio	0.43		0.53	0.58	0.33	
v/c Ratio	1.10		2.77	0.51	0.86	
Control Delay	90.6		828.3	12.8	35.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	90.6		828.3	12.8	35.7	
LOS	F		F	B	D	
Approach Delay	90.6			316.5	35.7	
Approach LOS	F			F	D	
Stops (vph)	716		372	579	829	
Fuel Used(gal)	27		107	11	21	

Lanes, Volumes, Timings
1: Danbury Road & Westport Road

Existing AM
03/22/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
CO Emissions (g/hr)	1873		7486	771	1495	
NOx Emissions (g/hr)	364		1457	150	291	
VOC Emissions (g/hr)	434		1735	179	346	
Dilemma Vehicles (#)	41		0	57	0	
Queue Length 50th (ft)	~575		~569	177	254	
Queue Length 95th (ft)	#803		#778	229	#341	
Internal Link Dist (ft)	576			311	367	
Turn Bay Length (ft)			300			
Base Capacity (vph)	799		222	2036	1182	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.10		2.77	0.51	0.84	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 29 (32%), Referenced to phase 2:EBWB and 6:, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.77

Intersection Signal Delay: 180.9

Intersection LOS: F

Intersection Capacity Utilization 119.6%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Danbury Road & Westport Road



Lanes, Volumes, Timings
2: Danbury Road & Site Drive

Existing AM
03/22/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑	
Traffic Volume (vph)	14	5	13	928	1199	32
Future Volume (vph)	14	5	13	928	1199	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	12	12
Storage Length (ft)	50	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.966				0.996	
Flt Protected	0.964			0.999		
Satd. Flow (prot)	1735	0	0	3300	1855	0
Flt Permitted	0.964			0.999		
Satd. Flow (perm)	1735	0	0	3300	1855	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	213			2513	757	
Travel Time (s)	4.8			42.8	12.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	5	14	977	1262	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	991	1296	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 75.0% ICU Level of Service D

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	5	13	928	1199	32
Future Vol, veh/h	14	5	13	928	1199	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	5	14	977	1262	34
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1796	1279	1296	0	-	0
Stage 1	1279	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	79	202	533	-	-	-
Stage 1	260	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	74	202	533	-	-	-
Mov Cap-2 Maneuver	74	-	-	-	-	-
Stage 1	245	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	56.8	0.5		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	533	-	89	-	-	
HCM Lane V/C Ratio	0.026	-	0.225	-	-	
HCM Control Delay (s)	11.9	0.3	56.8	-	-	
HCM Lane LOS	B	A	F	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-	

3: Danbury Road & ASML Driveway/Grumman Hill Road

03/22/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1	13	179	50	57	138	884	54	44	1128	32
Future Volume (vph)	11	1	13	179	50	57	138	884	54	44	1128	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	125		0	225		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.973			0.991			0.996	
Flt Protected		0.956			0.970		0.950			0.950		
Satd. Flow (prot)	0	1781	1583	0	1758	0	1770	3507	0	1770	3525	0
Flt Permitted		0.789			0.802		0.086			0.197		
Satd. Flow (perm)	0	1470	1583	0	1454	0	160	3507	0	367	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		10			6			3	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		338			721			491			436	
Travel Time (s)		7.7			16.4			8.4			9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	1	14	199	56	63	153	982	60	49	1253	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	14	0	318	0	153	1042	0	49	1289	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4			6			2		
Detector Phase	4	4	4	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.6	13.6	13.6	13.6	13.6		9.0	21.1		9.0	21.1	
Total Split (s)	33.0	33.0	33.0	33.0	33.0		10.0	47.0		10.0	47.0	
Total Split (%)	28.0%	28.0%	28.0%	28.0%	28.0%		8.5%	39.8%		8.5%	39.8%	
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.6	4.6		4.6		4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Act Effect Green (s)		23.6	23.6		23.6		52.1	46.6		49.2	41.7	
Actuated g/C Ratio		0.26	0.26		0.26		0.57	0.51		0.54	0.46	
v/c Ratio		0.03	0.03		0.83		0.77	0.58		0.17	0.80	
Control Delay		28.5	0.1		50.5		42.8	20.9		13.2	27.8	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		28.5	0.1		50.5		42.8	20.9		13.2	27.8	
LOS		C	A		D		D	C		B	C	
Approach Delay		13.8			50.5			23.7			27.3	
Approach LOS		B			D			C			C	
Stops (vph)		10	0		231		60	627		21	861	
Fuel Used(gal)		0	0		6		2	13		1	38	

Lanes, Volumes, Timings
3: Danbury Road & ASML Driveway/Grumman Hill Road

Existing AM
03/22/2024

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	24%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	

Lanes, Volumes, Timings
3: Danbury Road & ASML Driveway/Grumman Hill Road

Existing AM
03/22/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
CO Emissions (g/hr)		11	2		407		157	928		87	2656	
NOx Emissions (g/hr)		2	0		79		31	181		17	517	
VOC Emissions (g/hr)		3	1		94		36	215		20	616	
Dilemma Vehicles (#)		0	0		0		0	48		0	0	
Queue Length 50th (ft)		5	0		152		33	207		10	292	
Queue Length 95th (ft)		24	0		#397		#216	473		44	#704	
Internal Link Dist (ft)		258			641			411			356	
Turn Bay Length (ft)			100				125			225		
Base Capacity (vph)		469	575		470		200	1801		296	1621	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.03	0.02		0.68		0.77	0.58		0.17	0.80	

Intersection Summary

Area Type: Other

Cycle Length: 118

Actuated Cycle Length: 90.8

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 28.2

Intersection LOS: C

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Danbury Road & ASML Driveway/Grumman Hill Road

								
10 s	47 s		28 s	33 s				
								
10 s	47 s							

Lane Group	Ø3
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

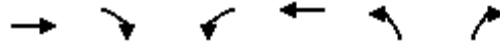
Lanes, Volumes, Timings
1: Danbury Road & Westport Road

Existing PM
03/22/2024

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↘	↑↑	↘↘	
Traffic Volume (vph)	866	0	411	713	989	396
Future Volume (vph)	866	0	411	713	989	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	300		0	0
Storage Lanes		0	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	0.95
Frt					0.957	
Flt Protected			0.950		0.966	
Satd. Flow (prot)	1863	0	1770	3539	3341	0
Flt Permitted			0.156		0.966	
Satd. Flow (perm)	1863	0	291	3539	3341	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					95	
Link Speed (mph)	40			40	40	
Link Distance (ft)	656			391	447	
Travel Time (s)	11.2			6.7	7.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	931	0	442	767	1063	426
Shared Lane Traffic (%)						
Lane Group Flow (vph)	931	0	442	767	1489	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	20.0		5.0		10.0	
Minimum Split (s)	26.4		9.0		14.2	
Total Split (s)	32.0		11.0		47.0	
Total Split (%)	35.6%		12.2%		52.2%	
Yellow Time (s)	4.2		3.0		3.0	
All-Red Time (s)	2.2		1.0		1.2	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.4		4.0		4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min		None		None	
Act Effct Green (s)	25.6		35.5	39.5	42.3	
Actuated g/C Ratio	0.28		0.39	0.44	0.47	
v/c Ratio	1.76		1.86	0.49	0.92	
Control Delay	374.8		425.1	19.6	31.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	374.8		425.1	19.6	31.3	
LOS	F		F	B	C	
Approach Delay	374.8			167.9	31.3	
Approach LOS	F			F	C	
Stops (vph)	625		229	490	1135	

Lanes, Volumes, Timings
1: Danbury Road & Westport Road

Existing PM
03/22/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Fuel Used(gal)	76		39	10	29	
CO Emissions (g/hr)	5317		2720	668	2014	
NOx Emissions (g/hr)	1035		529	130	392	
VOC Emissions (g/hr)	1232		630	155	467	
Dilemma Vehicles (#)	27		0	40	0	
Queue Length 50th (ft)	~796		~341	161	367	
Queue Length 95th (ft)	#1026		#528	213	#527	
Internal Link Dist (ft)	576			311	367	
Turn Bay Length (ft)			300			
Base Capacity (vph)	529		237	1551	1638	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.76		1.86	0.49	0.91	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 86 (96%), Referenced to phase 2:EBWB and 6:, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.86

Intersection Signal Delay: 164.9

Intersection LOS: F

Intersection Capacity Utilization 121.2%

ICU Level of Service H

Analysis Period (min) 15

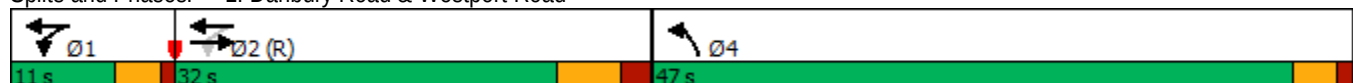
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Danbury Road & Westport Road



Lanes, Volumes, Timings
2: Danbury Road & Site Drive

Existing PM
03/22/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	3	1	1243	872	1
Future Volume (vph)	11	3	1	1243	872	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	12	12
Storage Length (ft)	50	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.973					
Flt Protected	0.962					
Satd. Flow (prot)	1744	0	0	3303	1863	0
Flt Permitted	0.962					
Satd. Flow (perm)	1744	0	0	3303	1863	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	213			2513	757	
Travel Time (s)	4.8			42.8	12.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	12	3	1	1322	928	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	1323	929	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 56.0%	ICU Level of Service B
Analysis Period (min) 15	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	1	1243	872	1
Future Vol, veh/h	11	3	1	1243	872	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	3	1	1322	928	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1592	929	929	0	-	0
Stage 1	929	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	108	324	734	-	-	-
Stage 1	383	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	107	324	734	-	-	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	381	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	37.7	0		0		
HCM LOS	E					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	734	-	125	-	-	
HCM Lane V/C Ratio	0.001	-	0.119	-	-	
HCM Control Delay (s)	9.9	0	37.7	-	-	
HCM Lane LOS	A	A	E	-	-	
HCM 95th %tile Q(veh)	0	-	0.4	-	-	

Lanes, Volumes, Timings

Existing PM

3: Danbury Road & ASML Driveway/Grumman Hill Road

03/22/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	34	41	41	16	38	12	1503	131	65	812	10
Future Volume (vph)	37	34	41	41	16	38	12	1503	131	65	812	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	125		0	225		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.946			0.988			0.998	
Flt Protected		0.975			0.979		0.950			0.950		
Satd. Flow (prot)	0	1816	1583	0	1725	0	1770	3497	0	1770	3532	0
Flt Permitted		0.777			0.826		0.328			0.068		
Satd. Flow (perm)	0	1447	1583	0	1456	0	611	3497	0	127	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		25			9			1	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		338			721			491			436	
Travel Time (s)		7.7			16.4			8.4			9.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	38	35	42	42	16	39	12	1549	135	67	837	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	42	0	97	0	12	1684	0	67	847	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4			6			2		
Detector Phase	4	4	4	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.6	13.6	13.6	13.6	13.6		9.0	21.1		9.0	21.1	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		10.0	54.0		10.0	54.0	
Total Split (%)	22.0%	22.0%	22.0%	22.0%	22.0%		8.5%	45.8%		8.5%	45.8%	
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.6	4.6		4.6		4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Act Effect Green (s)		10.1	10.1		10.1		58.1	51.9		61.6	58.6	
Actuated g/C Ratio		0.12	0.12		0.12		0.68	0.61		0.72	0.69	
v/c Ratio		0.43	0.15		0.50		0.02	0.79		0.33	0.35	
Control Delay		45.2	1.1		37.8		7.3	19.3		11.6	9.1	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		45.2	1.1		37.8		7.3	19.3		11.6	9.1	
LOS		D	A		D		A	B		B	A	
Approach Delay		29.1			37.8			19.2			9.3	
Approach LOS		C			D			B			A	
Stops (vph)		62	0		64		5	1019		20	326	
Fuel Used(gal)		1	0		2		0	22		2	22	

Lanes, Volumes, Timings
3: Danbury Road & ASML Driveway/Grumman Hill Road

Existing PM
03/22/2024

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	24%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	

Lanes, Volumes, Timings
3: Danbury Road & ASML Driveway/Grumman Hill Road

Existing PM
03/22/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
CO Emissions (g/hr)		83	8		112		7	1528		123	1553	
NOx Emissions (g/hr)		16	2		22		1	297		24	302	
VOC Emissions (g/hr)		19	2		26		2	354		28	360	
Dilemma Vehicles (#)		0	0		0		0	93		0	0	
Queue Length 50th (ft)		33	0		33		1	280		6	55	
Queue Length 95th (ft)		96	0		102		13	#867		48	289	
Internal Link Dist (ft)		258			641			411			356	
Turn Bay Length (ft)			100				125			225		
Base Capacity (vph)		370	482		391		506	2135		209	2427	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.20	0.09		0.25		0.02	0.79		0.32	0.35	

Intersection Summary

Area Type: Other

Cycle Length: 118

Actuated Cycle Length: 85.2

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 17.0

Intersection LOS: B

Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Danbury Road & ASML Driveway/Grumman Hill Road

											
10 s	54 s		28 s	26 s							
											
10 s	54 s										

Lane Group	Ø3
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

131 Danbury Road, Wilton, CT
1: Danbury Road & Westport Road

Background Conditions (2025)

Timing Plan: AM Peak

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↵	↑↑	↵↵	
Traffic Volume (vph)	875	0	622	1031	772	242
Future Volume (vph)	875	0	622	1031	772	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	300		0	0
Storage Lanes		0	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	0.95
Frt					0.964	
Flt Protected			0.950		0.963	
Satd. Flow (prot)	1863	0	1770	3539	3355	0
Flt Permitted			0.104		0.963	
Satd. Flow (perm)	1863	0	194	3539	3355	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					52	
Link Speed (mph)	40			40	40	
Link Distance (ft)	656			391	447	
Travel Time (s)	11.2			6.7	7.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	893	0	635	1052	788	247
Shared Lane Traffic (%)						
Lane Group Flow (vph)	893	0	635	1052	1035	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	20.0		5.0		10.0	
Minimum Split (s)	26.4		9.0		14.2	
Total Split (s)	45.0		10.0		35.0	
Total Split (%)	50.0%		11.1%		38.9%	
Yellow Time (s)	4.2		3.0		3.0	
All-Red Time (s)	2.2		1.0		1.2	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.4		4.0		4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min		None		None	
Act Effect Green (s)	38.6		47.6	51.6	30.2	
Actuated g/C Ratio	0.43		0.53	0.57	0.34	
v/c Ratio	1.12		2.93	0.52	0.89	
Control Delay	96.1		892.2	12.9	38.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	96.1		892.2	12.9	38.0	
LOS	F		F	B	D	
Approach Delay	96.1			343.9	38.0	
Approach LOS	F			F	D	
Stops (vph)	726		395	593	862	
Fuel Used(gal)	28		119	11	23	

131 Danbury Road, Wilton, CT
1: Danbury Road & Westport Road

Background Conditions (2025)
Timing Plan: AM Peak



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
CO Emissions (g/hr)	1968		8284	788	1585	
NOx Emissions (g/hr)	383		1612	153	308	
VOC Emissions (g/hr)	456		1920	183	367	
Dilemma Vehicles (#)	42		0	57	0	
Queue Length 50th (ft)	~590		~592	180	269	
Queue Length 95th (ft)	#818		#802	233	#385	
Internal Link Dist (ft)	576			311	367	
Turn Bay Length (ft)			300			
Base Capacity (vph)	799		217	2028	1182	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.12		2.93	0.52	0.88	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 29 (32%), Referenced to phase 2:EBWB and 6:, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.93

Intersection Signal Delay: 195.1

Intersection LOS: F

Intersection Capacity Utilization 122.3%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Danbury Road & Westport Road



						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	5	13	958	1259	32
Future Volume (vph)	14	5	13	958	1259	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	12	12
Storage Length (ft)	50	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.973					
Flt Protected	0.962					
Satd. Flow (prot)	1735	0	0	3300	1857	0
Flt Permitted	0.962					
Satd. Flow (perm)	1735	0	0	3300	1857	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	213			2513	757	
Travel Time (s)	4.8			42.8	12.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	5	14	1008	1325	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	1022	1359	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 78.2%				ICU Level of Service D		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	5	13	958	1259	32
Future Vol, veh/h	14	5	13	958	1259	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	5	14	1008	1325	34
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1874	1342	1359	0	-	0
Stage 1	1342	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	71	185	504	-	-	-
Stage 1	243	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	67	185	504	-	-	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	228	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	63.4	0.6		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	504	-	81	-	-	
HCM Lane V/C Ratio	0.027	-	0.247	-	-	
HCM Control Delay (s)	12.3	0.4	63.4	-	-	
HCM Lane LOS	B	A	F	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1	13	182	51	58	140	912	55	45	1186	32
Future Volume (vph)	11	1	13	182	51	58	140	912	55	45	1186	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	125		0	225		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.945			0.991			0.996	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1781	1583	0	1758	0	1770	3507	0	1770	3525	0
Flt Permitted		0.771			0.825		0.311			0.068		
Satd. Flow (perm)	0	1473	1583	0	1454	0	168	3507	0	319	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		25			9			1	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		338			721			491			436	
Travel Time (s)		7.7			16.4			8.4			9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	1	14	202	57	64	156	1013	61	50	1318	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	14	0	323	0	156	1074	0	50	1354	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4			6			2		
Detector Phase	4	4	4	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.6	13.6	13.6	13.6	13.6		9.0	21.1		9.0	21.1	
Total Split (s)	33.0	33.0	33.0	33.0	33.0		10.0	47.0		10.0	47.0	
Total Split (%)	28.0%	28.0%	28.0%	28.0%	28.0%		8.5%	39.8%		8.5%	39.8%	
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.6	4.6		4.6		4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Act Effect Green (s)		24.5	24.5		24.5		51.4	44.3		49.2	41.7	
Actuated g/C Ratio		0.29	0.29		0.29		0.60	0.52		0.58	0.49	
v/c Ratio		0.03	0.03		0.74		0.36	0.59		0.28	0.79	
Control Delay		24.3	0.1		38.0		11.9	18.5		13.3	24.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		24.3	0.1		38.0		11.9	18.5		13.3	24.2	
LOS		C	A		D		B	B		B	C	
Approach Delay		11.8			38.0			17.6			23.8	
Approach LOS		B			D			B			C	
Stops (vph)		10	0		219		60	641		19	871	
Fuel Used(gal)		0	0		5		1	13		1	39	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	24%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
CO Emissions (g/hr)		10	2		356		98	919		88	2715	
NOx Emissions (g/hr)		2	0		69		19	179		17	528	
VOC Emissions (g/hr)		2	1		83		23	213		20	629	
Dilemma Vehicles (#)		0	0		0		0	53		0	0	
Queue Length 50th (ft)		4	0		121		22	166		7	246	
Queue Length 95th (ft)		23	0		#356		104	450		40	#693	
Internal Link Dist (ft)		258			641			411			356	
Turn Bay Length (ft)			100				125			225		
Base Capacity (vph)		487	605		509		434	1826		192	1724	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.03	0.02		0.63		0.36	0.59		0.26	0.79	

Intersection Summary

Area Type: Other

Cycle Length: 118

Actuated Cycle Length: 85.3

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 22.7

Intersection LOS: C

Intersection Capacity Utilization 76.8%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Danbury Road & ASML Driveway/Grumman Hill Road

								
10 s	47 s		28 s	33 s				
								
10 s	47 s							

Lane Group	Ø3
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

131 Danbury Road, Wilton, CT
1: Danbury Road & Westport Road

Background Conditions (2025)

Timing Plan: PM Peak

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↱	↑↑	↱↱	
Traffic Volume (vph)	878	0	432	723	1019	418
Future Volume (vph)	878	0	432	723	1019	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	300		0	0
Storage Lanes		0	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	0.95
Frt					0.956	
Flt Protected			0.950		0.966	
Satd. Flow (prot)	1863	0	1770	3539	3337	0
Flt Permitted			0.156		0.966	
Satd. Flow (perm)	1863	0	291	3539	3337	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					99	
Link Speed (mph)	40			40	40	
Link Distance (ft)	656			391	447	
Travel Time (s)	11.2			6.7	7.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	944	0	465	777	1096	449
Shared Lane Traffic (%)						
Lane Group Flow (vph)	944	0	465	777	1545	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	20.0		5.0		10.0	
Minimum Split (s)	26.4		9.0		14.2	
Total Split (s)	32.0		11.0		47.0	
Total Split (%)	35.6%		12.2%		52.2%	
Yellow Time (s)	4.2		3.0		3.0	
All-Red Time (s)	2.2		1.0		1.2	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.4		4.0		4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min		None		None	
Act Effct Green (s)	25.6		35.0	39.0	42.8	
Actuated g/C Ratio	0.28		0.39	0.43	0.48	
v/c Ratio	1.78		2.04	0.51	0.94	
Control Delay	385.5		502.1	20.0	34.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	385.5		502.1	20.0	34.3	
LOS	F		F	B	C	
Approach Delay	385.5			200.5	34.3	
Approach LOS	F			F	C	
Stops (vph)	632		244	502	1176	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Fuel Used(gal)	79		48	10	31	
CO Emissions (g/hr)	5524		3334	684	2149	
NOx Emissions (g/hr)	1075		649	133	418	
VOC Emissions (g/hr)	1280		773	159	498	
Dilemma Vehicles (#)	27		0	40	0	
Queue Length 50th (ft)	~812		~369	163	393	
Queue Length 95th (ft)	#1043		#559	216	#563	
Internal Link Dist (ft)	576			311	367	
Turn Bay Length (ft)			300			
Base Capacity (vph)	529		228	1533	1638	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.78		2.04	0.51	0.94	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 86 (96%), Referenced to phase 2:EBWB and 6:, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.04

Intersection Signal Delay: 178.5

Intersection LOS: F

Intersection Capacity Utilization 124.5%

ICU Level of Service H

Analysis Period (min) 15

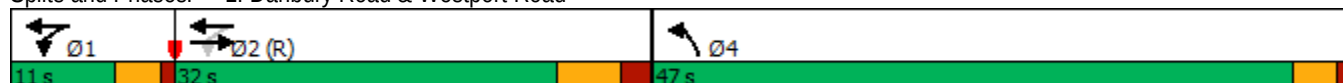
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Danbury Road & Westport Road



						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	3	1	1311	915	1
Future Volume (vph)	11	3	1	1311	915	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	12	12
Storage Length (ft)	50	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.973					
Flt Protected	0.962					
Satd. Flow (prot)	1744	0	0	3303	1863	0
Flt Permitted	0.962					
Satd. Flow (perm)	1744	0	0	3303	1863	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	213			2513	757	
Travel Time (s)	4.8			42.8	12.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	12	3	1	1395	973	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	0	0	1396	974	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 58.2%				ICU Level of Service B		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	1	1311	915	1
Future Vol, veh/h	11	3	1	1311	915	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	3	1	1395	973	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1674	974	974	0	-	0
Stage 1	974	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	95	305	706	-	-	-
Stage 1	365	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	94	305	706	-	-	-
Mov Cap-2 Maneuver	94	-	-	-	-	-
Stage 1	363	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	42.8	0		0		
HCM LOS	E					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	706	-	110	-	-	
HCM Lane V/C Ratio	0.002	-	0.135	-	-	
HCM Control Delay (s)	10.1	0	42.8	-	-	
HCM Lane LOS	B	A	E	-	-	
HCM 95th %tile Q(veh)	0	-	0.5	-	-	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	34	42	42	16	39	12	1572	133	66	853	10
Future Volume (vph)	38	34	42	42	16	39	12	1572	133	66	853	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	125		0	225		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.945			0.988			0.998	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1814	1583	0	1723	0	1770	3497	0	1770	3532	0
Flt Permitted		0.771			0.825		0.311			0.068		
Satd. Flow (perm)	0	1436	1583	0	1452	0	579	3497	0	127	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		25			9			1	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		338			721			491			436	
Travel Time (s)		7.7			16.4			8.4			9.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	39	35	43	43	16	40	12	1621	137	68	879	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	43	0	99	0	12	1758	0	68	889	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4			6			2		
Detector Phase	4	4	4	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.6	13.6	13.6	13.6	13.6		9.0	21.1		9.0	21.1	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		10.0	54.0		10.0	54.0	
Total Split (%)	22.0%	22.0%	22.0%	22.0%	22.0%		8.5%	45.8%		8.5%	45.8%	
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.6	4.6		4.6		4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Act Effect Green (s)		10.1	10.1		10.1		58.2	52.0		61.7	58.6	
Actuated g/C Ratio		0.12	0.12		0.12		0.68	0.61		0.72	0.69	
v/c Ratio		0.44	0.15		0.51		0.03	0.82		0.33	0.37	
Control Delay		45.4	1.2		38.2		7.3	20.5		11.8	9.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		45.4	1.2		38.2		7.3	20.5		11.8	9.3	
LOS		D	A		D		A	C		B	A	
Approach Delay		29.2			38.2			20.4			9.5	
Approach LOS		C			D			C			A	
Stops (vph)		62	0		66		5	1089		20	349	
Fuel Used(gal)		1	0		2		0	24		2	23	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	24%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
CO Emissions (g/hr)		84	8		115		7	1643		125	1634	
NOx Emissions (g/hr)		16	2		22		1	320		24	318	
VOC Emissions (g/hr)		19	2		27		2	381		29	379	
Dilemma Vehicles (#)		0	0		0		0	96		0	0	
Queue Length 50th (ft)		34	0		34		1	304		6	59	
Queue Length 95th (ft)		97	0		105		13	#930		49	308	
Internal Link Dist (ft)		258			641			411			356	
Turn Bay Length (ft)			100				125			225		
Base Capacity (vph)		367	481		390		485	2133		209	2426	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.20	0.09		0.25		0.02	0.82		0.33	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 118

Actuated Cycle Length: 85.3

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 17.8

Intersection LOS: B

Intersection Capacity Utilization 76.0%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Danbury Road & ASML Driveway/Grumman Hill Road

											
Ø1	Ø2					Ø3			Ø4		
10 s	54 s					28 s			26 s		
											
Ø5	Ø6										
10 s	54 s										

Lane Group	Ø3
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
1: Danbury Road & Westport Road

Combined AM
03/22/2024

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↓	↑↑	↓↓↓	
Traffic Volume (vph)	875	0	610	1031	780	251
Future Volume (vph)	875	0	610	1031	780	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	300		0	0
Storage Lanes		0	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	0.95
Frt					0.963	
Flt Protected			0.950		0.964	
Satd. Flow (prot)	1863	0	1770	3539	3355	0
Flt Permitted			0.104		0.964	
Satd. Flow (perm)	1863	0	194	3539	3355	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					54	
Link Speed (mph)	40			40	40	
Link Distance (ft)	656			391	1204	
Travel Time (s)	11.2			6.7	20.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	893	0	622	1052	796	256
Shared Lane Traffic (%)						
Lane Group Flow (vph)	893	0	622	1052	1052	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	20.0		5.0		10.0	
Minimum Split (s)	26.4		9.0		14.2	
Total Split (s)	45.0		10.0		35.0	
Total Split (%)	50.0%		11.1%		38.9%	
Yellow Time (s)	4.2		3.0		3.0	
All-Red Time (s)	2.2		1.0		1.2	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.4		4.0		4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min		None		None	
Act Effect Green (s)	38.6		47.5	51.5	30.3	
Actuated g/C Ratio	0.43		0.53	0.57	0.34	
v/c Ratio	1.12		2.89	0.52	0.90	
Control Delay	96.1		877.6	13.0	39.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	96.1		877.6	13.0	39.0	
LOS	F		F	B	D	
Approach Delay	96.1			334.2	39.0	
Approach LOS	F			F	D	
Stops (vph)	726		383	594	877	
Fuel Used(gal)	28		114	11	25	

Lanes, Volumes, Timings
1: Danbury Road & Westport Road

Combined AM
03/22/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
CO Emissions (g/hr)	1968		7994	790	1763	
NOx Emissions (g/hr)	383		1555	154	343	
VOC Emissions (g/hr)	456		1853	183	409	
Dilemma Vehicles (#)	42		0	57	0	
Queue Length 50th (ft)	~590		~576	180	275	
Queue Length 95th (ft)	#818		#785	233	#394	
Internal Link Dist (ft)	576			311	1124	
Turn Bay Length (ft)			300			
Base Capacity (vph)	799		215	2024	1183	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.12		2.89	0.52	0.89	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 29 (32%), Referenced to phase 2:EBWB and 6:, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.89

Intersection Signal Delay: 189.6

Intersection LOS: F

Intersection Capacity Utilization 122.2%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Danbury Road & Westport Road



Lanes, Volumes, Timings
2: Danbury Road & Site ingress Driveway

Combined AM

03/22/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕↕	↕	
Traffic Volume (vph)	0	0	9	988	1258	9
Future Volume (vph)	0	0	9	988	1258	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	12	12
Storage Length (ft)	50	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt					0.999	
Flt Protected						
Satd. Flow (prot)	0	0	0	3303	1861	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3303	1861	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	213			300	1204	
Travel Time (s)	4.8			5.1	20.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	9	1040	1324	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1049	1333	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Lanes, Volumes, Timings
3: Danbury Road & ASML Driveway/Grumman Hill Road

Combined AM

03/22/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↶	↷		↶		↷	↶	↷	↷	↶	↷
Traffic Volume (vph)	11	1	13	182	51	58	140	908	55	45	1212	32
Future Volume (vph)	11	1	13	182	51	58	140	908	55	45	1212	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	125		0	225		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.973			0.991			0.996	
Flt Protected		0.956			0.970		0.950			0.950		
Satd. Flow (prot)	0	1781	1583	0	1758	0	1770	3507	0	1770	3525	0
Flt Permitted		0.791			0.802		0.090			0.173		
Satd. Flow (perm)	0	1473	1583	0	1454	0	168	3507	0	322	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		10			6			2	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		338			721			491			436	
Travel Time (s)		7.7			16.4			8.4			9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	12	1	14	202	57	64	156	1009	61	50	1347	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	13	14	0	323	0	156	1070	0	50	1383	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4			6			2		
Detector Phase	4	4	4	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.6	13.6	13.6	13.6	13.6		9.0	21.1		9.0	21.1	
Total Split (s)	33.0	33.0	33.0	33.0	33.0		10.0	47.0		10.0	47.0	
Total Split (%)	28.0%	28.0%	28.0%	28.0%	28.0%		8.5%	39.8%		8.5%	39.8%	
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.6	4.6		4.6		4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Act Effect Green (s)		24.2	24.2		24.2		51.4	44.6		49.2	41.7	
Actuated g/C Ratio		0.26	0.26		0.26		0.56	0.49		0.54	0.46	
v/c Ratio		0.03	0.03		0.82		0.78	0.62		0.19	0.86	
Control Delay		28.4	0.1		50.1		43.4	22.7		13.7	31.0	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		28.4	0.1		50.1		43.4	22.7		13.7	31.0	
LOS		C	A		D		D	C		B	C	
Approach Delay		13.7			50.1			25.3			30.4	
Approach LOS		B			D			C			C	
Stops (vph)		10	0		234		59	672		21	949	
Fuel Used(gal)		0	0		6		2	14		1	39	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	24%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	

Lanes, Volumes, Timings
3: Danbury Road & ASML Driveway/Grumman Hill Road

Combined AM

03/22/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
CO Emissions (g/hr)		11	2		412		160	997		82	2713	
NOx Emissions (g/hr)		2	0		80		31	194		16	528	
VOC Emissions (g/hr)		3	1		95		37	231		19	629	
Dilemma Vehicles (#)		0	0		0		0	49		0	0	
Queue Length 50th (ft)		5	0		155		33	219		10	333	
Queue Length 95th (ft)		24	0		#405		#216	#497		45	#785	
Internal Link Dist (ft)		258			641			411			356	
Turn Bay Length (ft)			100				125			225		
Base Capacity (vph)		466	572		467		201	1713		273	1609	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.03	0.02		0.69		0.78	0.62		0.18	0.86	

Intersection Summary

Area Type: Other

Cycle Length: 118

Actuated Cycle Length: 91.4

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 30.3

Intersection LOS: C

Intersection Capacity Utilization 77.5%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Danbury Road & ASML Driveway/Grumman Hill Road

											
10 s	47 s		28 s	33 s							
											
10 s	47 s										

Lane Group	Ø3
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
17: Danbury Road & Site egress driveway

Combined AM
03/22/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	31	0	966	1258	0
Future Volume (vph)	31	31	0	966	1258	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1770	1583	0	3539	1863	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1583	0	3539	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	186			2212	300	
Travel Time (s)	4.2			50.3	6.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	32	32	0	986	1284	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	32	0	986	1284	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 76.2%				ICU Level of Service D		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	31	0	966	1258	0
Future Vol, veh/h	31	31	0	966	1258	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	32	0	986	1284	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1777	1284	-	0	-	0
Stage 1	1284	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	82	201	0	-	-	0
Stage 1	259	-	0	-	-	0
Stage 2	580	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	82	201	-	-	-	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	259	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	50.2	0	0			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	82	201	-		
HCM Lane V/C Ratio	-	0.386	0.157	-		
HCM Control Delay (s)	-	74.2	26.2	-		
HCM Lane LOS	-	F	D	-		
HCM 95th %tile Q(veh)	-	1.5	0.5	-		

Lanes, Volumes, Timings
1: Danbury Road & Westport Road

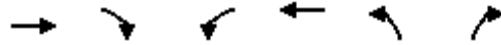
Combined PM

03/22/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↘	↑↑	↖↖	
Traffic Volume (vph)	878	0	445	723	1021	422
Future Volume (vph)	878	0	445	723	1021	422
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	300		0	0
Storage Lanes		0	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	0.95
Frt					0.956	
Flt Protected			0.950		0.966	
Satd. Flow (prot)	1863	0	1770	3539	3337	0
Flt Permitted			0.156		0.966	
Satd. Flow (perm)	1863	0	291	3539	3337	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					100	
Link Speed (mph)	40			40	40	
Link Distance (ft)	656			391	1204	
Travel Time (s)	11.2			6.7	20.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	944	0	478	777	1098	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	944	0	478	777	1552	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	20.0		5.0		10.0	
Minimum Split (s)	26.4		9.0		14.2	
Total Split (s)	32.0		11.0		47.0	
Total Split (%)	35.6%		12.2%		52.2%	
Yellow Time (s)	4.2		3.0		3.0	
All-Red Time (s)	2.2		1.0		1.2	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.4		4.0		4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min		None		None	
Act Effct Green (s)	25.6		35.0	39.0	42.8	
Actuated g/C Ratio	0.28		0.39	0.43	0.48	
v/c Ratio	1.78		2.10	0.51	0.95	
Control Delay	385.5		527.1	20.0	34.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	385.5		527.1	20.0	34.8	
LOS	F		F	B	C	
Approach Delay	385.5			213.1	34.8	
Approach LOS	F			F	C	
Stops (vph)	632		253	502	1181	

Lanes, Volumes, Timings
1: Danbury Road & Westport Road

Combined PM
03/22/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Fuel Used(gal)	79		51	10	34	
CO Emissions (g/hr)	5524		3594	684	2349	
NOx Emissions (g/hr)	1075		699	133	457	
VOC Emissions (g/hr)	1280		833	159	544	
Dilemma Vehicles (#)	27		0	40	0	
Queue Length 50th (ft)	~812		~385	163	396	
Queue Length 95th (ft)	#1043		#577	216	#568	
Internal Link Dist (ft)	576			311	1124	
Turn Bay Length (ft)			300			
Base Capacity (vph)	529		228	1533	1639	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.78		2.10	0.51	0.95	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 86 (96%), Referenced to phase 2:EBWB and 6:, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.10

Intersection Signal Delay: 182.7

Intersection LOS: F

Intersection Capacity Utilization 125.4%

ICU Level of Service H

Analysis Period (min) 15

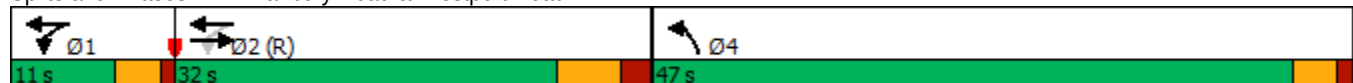
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Danbury Road & Westport Road



Lanes, Volumes, Timings
2: Danbury Road & Site ingress Driveway

Combined PM

03/22/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕↕	↕	
Traffic Volume (vph)	0	0	25	1324	914	25
Future Volume (vph)	0	0	25	1324	914	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	12	12
Storage Length (ft)	50	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt					0.996	
Flt Protected				0.999		
Satd. Flow (prot)	0	0	0	3300	1855	0
Flt Permitted				0.999		
Satd. Flow (perm)	0	0	0	3300	1855	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	213			300	1204	
Travel Time (s)	4.8			5.1	20.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	27	1409	972	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1436	999	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 57.7% ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings
3: Danbury Road & ASML Driveway/Grumman Hill Road

Combined PM

03/22/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	34	42	42	16	39	12	1596	133	66	865	10
Future Volume (vph)	38	34	42	42	16	39	12	1596	133	66	865	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	125		0	225		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.945			0.988			0.998	
Flt Protected		0.974			0.979		0.950			0.950		
Satd. Flow (prot)	0	1814	1583	0	1723	0	1770	3497	0	1770	3532	0
Flt Permitted		0.771			0.825		0.305			0.068		
Satd. Flow (perm)	0	1436	1583	0	1452	0	568	3497	0	127	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		25			9			1	
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		338			721			491			436	
Travel Time (s)		7.7			16.4			8.4			9.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	39	35	43	43	16	40	12	1645	137	68	892	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	43	0	99	0	12	1782	0	68	902	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4		4	4			6			2		
Detector Phase	4	4	4	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	13.6	13.6	13.6	13.6	13.6		9.0	21.1		9.0	21.1	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		10.0	54.0		10.0	54.0	
Total Split (%)	22.0%	22.0%	22.0%	22.0%	22.0%		8.5%	45.8%		8.5%	45.8%	
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.0	4.3		3.0	4.3	
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.0	1.8		1.0	1.8	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.6	4.6		4.6		4.0	6.1		4.0	6.1	
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Act Effect Green (s)		10.1	10.1		10.1		58.2	52.0		61.7	58.6	
Actuated g/C Ratio		0.12	0.12		0.12		0.68	0.61		0.72	0.69	
v/c Ratio		0.44	0.15		0.51		0.03	0.84		0.33	0.37	
Control Delay		45.4	1.2		38.2		7.3	21.0		11.8	9.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		45.4	1.2		38.2		7.3	21.0		11.8	9.3	
LOS		D	A		D		A	C		B	A	
Approach Delay		29.2			38.2			20.9			9.5	
Approach LOS		C			D			C			A	
Stops (vph)		62	0		66		5	1111		20	355	
Fuel Used(gal)		1	0		2		0	24		2	22	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	28.0
Total Split (s)	28.0
Total Split (%)	24%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	

Lanes, Volumes, Timings
3: Danbury Road & ASML Driveway/Grumman Hill Road

Combined PM

03/22/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
CO Emissions (g/hr)		84	8		115		7	1682		114	1516	
NOx Emissions (g/hr)		16	2		22		1	327		22	295	
VOC Emissions (g/hr)		19	2		27		2	390		26	351	
Dilemma Vehicles (#)		0	0		0		0	97		0	0	
Queue Length 50th (ft)		34	0		34		1	313		6	61	
Queue Length 95th (ft)		97	0		105		13	#948		49	314	
Internal Link Dist (ft)		258			641			411			356	
Turn Bay Length (ft)			100				125			225		
Base Capacity (vph)		367	481		390		478	2133		209	2426	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.20	0.09		0.25		0.03	0.84		0.33	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 118

Actuated Cycle Length: 85.3

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 18.1

Intersection LOS: B

Intersection Capacity Utilization 76.0%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Danbury Road & ASML Driveway/Grumman Hill Road

											
10 s	54 s		28 s	26 s							
											
10 s	54 s										

Lane Group	Ø3
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
17: Danbury Road & Site egress driveway

Combined PM

03/22/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 		
Traffic Volume (vph)	16	15	0	1333	914	0
Future Volume (vph)	16	15	0	1333	914	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected	0.950					
Satd. Flow (prot)	1770	1583	0	3539	1863	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1583	0	3539	1863	0
Link Speed (mph)	30			40	30	
Link Distance (ft)	186			2212	300	
Travel Time (s)	4.2			37.7	6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	16	0	1449	993	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	16	0	1449	993	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 58.1%			ICU Level of Service B			
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	15	0	1333	914	0
Future Vol, veh/h	16	15	0	1333	914	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	16	0	1449	993	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1718	993	-	0	-	0
Stage 1	993	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	89	297	0	-	-	0
Stage 1	357	-	0	-	-	0
Stage 2	441	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	89	297	-	-	-	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	357	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	37	0	0			
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT		
Capacity (veh/h)	-	89	297	-		
HCM Lane V/C Ratio	-	0.195	0.055	-		
HCM Control Delay (s)	-	55	17.8	-		
HCM Lane LOS	-	F	C	-		
HCM 95th %tile Q(veh)	-	0.7	0.2	-		