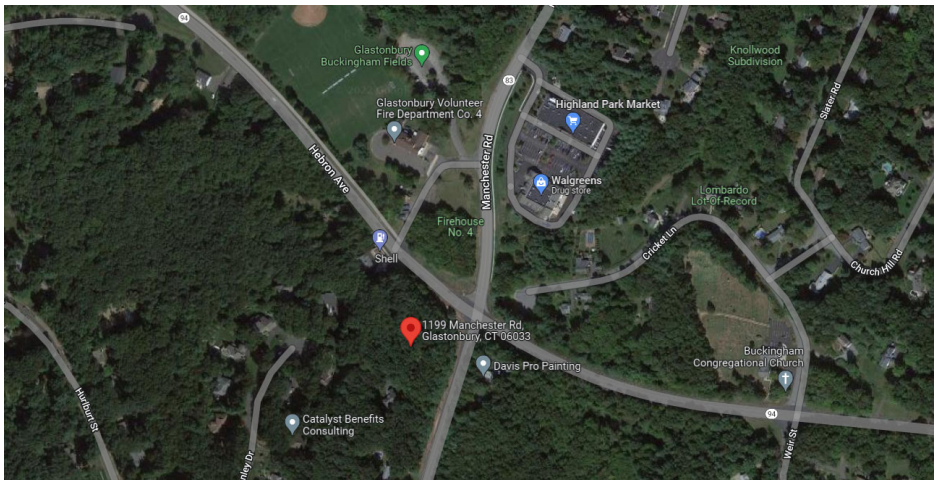
APPLICATION OF MANCHESTER/HEBRON AVENUE, LLC FOR SITE PLAN APPROVAL FOR 74 RENTAL APARTMENTS AT 1199 MANCHESTER ROAD, GLASTONBURY, CT, "BUCKINGHAM PLACE"

Applicant's Final Set of Supplemental Materials

July 12, 2022



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SUBMITTED SEPARATELY

Revised Civil Plan Sheets for "1199 Manchester Road," prepared by Wentworth Civil Engineers, LLC (14 full-size copies of 4 revised sheets)

DropBox link with all materials.

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HINCKLEY ALLEN

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MEMORANDUM

TO: Glastonbury Town Plan and Zoning Commission

CC: Jonathan Mullen, Planner

FROM: Hinckley, Allen & Snyder LLP (Andrea Gomes, Tim Hollister)

DATE: July 12, 2022

Re: Applicant's Final Set of Supplemental Materials – Application for Site Plan Approval for 74 Rental Apartments at 1199 Manchester Road, Glastonbury, CT, "Buckingham Place"

In anticipation of the July 19, 2022 continued public hearing, this package is intended to provide the Commission with additional information pertaining to the above-captioned application. Among other things, this package responds to two peer review reports issued by Tighe & Bond, dated June 30, 2022 and July 1, 2022, regarding alleged concerns with uranium / radionuclides on-site and traffic, respectively. The applicant has not yet received Tighe & Bond's report regarding the proposed construction sequencing. Revised civil plans have been submitted separately.

1. Civil Plan Revisions. The applicant has revised its site plan to include two additional parking spaces for the proposed community, for a total of 87 parking spaces. General Statutes § 8-2(d), as amended by Public Act 21-29, provides, in relevant part:

> Zoning regulations adopted pursuant to subsection (a) of this section shall not: … (9) Require more than one parking space for each studio or one-bedroom dwelling unit or more than two parking spaces for each dwelling unit with two or more bedrooms, unless the municipality opts out in accordance with the provisions of section 8-2p.

Glastonbury has not opted out of the above parking provision.

Type / Number of Units Proposed	Max. Required Parking, per C.G.S. § 8-2	Provided Parking
9 Efficiency	1 p/ unit = 9 spaces	9 spaces
52 One-Bedroom	1 p/ unit = 52 spaces	52 spaces
13 Two-Bedroom	2 p/ unit = 26 spaces	26 spaces
TOTAL	**87 spaces**	**87 spaces**

2. Tighe & Bond Peer Review Regarding Uranium and Radionuclides. In its June 30, 2022 peer review report regarding alleged concerns with uranium / radionuclides on-site, Tighe & Bond concluded with three recommendations.

First, it recommended that the applicant provide a sub-slab depressurization system or other radon control measure below the proposed building. The applicant is willing to provide a radon control measure if testing after the proposed site excavation reveals the presence of radon requiring mitigation, pursuant to state law or the Connecticut State Building Code. The applicant has drafted a proposed condition of approval to that effect (*see* No. 5.d, below).

Second, Tighe & Bond recommended that the applicant include provisions for the proper management of excavated materials and airborne particulates created during site work (*see* page 3). The applicant respectfully submits that Sheet SP-13 of the civil plan set, which refers to the use of Best Management Practices for dust control, among other things, in accordance with the 2002 Connecticut Guidelines for Erosion and Sediment Control, is a sufficient measure for this issue.

Tighe & Bond's final recommendation notes only that any radon that may be released during construction will be lost to the atmosphere "and should not be harmful to Site workers based on short-term exposure rates." The applicant agrees.

3. Revisions To-Date. In response to comments received from town staff, the Commission, the Conservation Commission, and the ASDRC, the applicant has made a number of changes to its proposal to-date, including but not limited to:

a. The retaining walls along Hebron Avenue and on the west side of the Hebron Avenue entrance were removed, and the proposed grading in that area was revised.
b. The south side of the proposed building was regraded to provide a 10-foot space extending out from the proposed building to accommodate surface drainage and access for building maintenance and emergency services.
c. The 2:1 slope on the south and west sides of the proposed building was regraded to include a reverse bench slope.
d. Sidewalks were incorporated along the site frontage on Hebron Avenue and Manchester Road.
e. A designated pull-off area for delivery / moving vehicles was added to the west side of the proposed building.

f. A rain garden was added next to the Hebron Avenue entrance drive for additional stormwater runoff treatment.
g. Two additional parking spaces were incorporated on-site.
h. The building facades were articulated with more detail to reflect the addition of intersecting gables on the roof, thereby reducing the apparent massing of the building.
i. The main roof was redesigned as a hipped roof.
j. Additional stone veneer was added at the first floor of the building and more detailing at the gables was introduced, including decorative brackets at the pediments of the gables, thereby engaging the pediments into the top story of the building.
k. Additional landscaping was added, including twelve groups of paper birch and red cedar trees on the upper portion of the slope, four columnar red maples along the site frontage, and plantings that will block car lights along the parking lot.

While the above revisions were incorporated in an effort to work with the Commission and town staff, it should be noted that none were required for health and safety reasons, or pursuant to state law, the Connecticut State Building Code, Connecticut Fire Safety Code, or Connecticut State Fire Prevention Code.

4. Compliance with Building Zone Regulations. While Connecticut law is clear that a General Statutes § 8-30g proposal may not be denied on the ground that it does not fully comply with the underlying zoning regulations, the applicant here has designed the proposed community to comply with a majority of the applicable Building Zone Regulations. At the Commission's request, the applicant's consulting engineer, Wes Wentworth, P.E., has prepared a memorandum outlining the plan's compliance with these provisions. *See* Tab 3. The proposed community differs from, or requires permission from the Commission to differ from, those Regulations highlighted in red text.

5. Proposed Conditions of Approval. To address the various comments and questions posed to-date on this application, the applicant has drafted the below proposed set of approval conditions. Conditions c and d are new; conditions a and b were proposed to the Commission in a prior submission.

a. The applicant has agreed to construct sidewalks along the site frontage, on Hebron Avenue and Manchester Road, in accordance with town sidewalk design standards. The applicant shall cooperate with the Town of Glastonbury and Connecticut Department of Transportation regarding further improvements to the Town's pedestrian network in the area.

b. The applicant shall comply with the conditions of approval noted in the May 4, 2022 letter from the Glastonbury Water Pollution Control Authority.

c. If requested by the abutting property owners, the applicant shall install a chain link fence along the southerly and westerly property boundaries.

d. The applicant shall conduct radon testing after the proposed site excavation is completed. If radon is detected in quantities requiring a sub-slab depressurization system or other radon control measure pursuant to state law or the Connecticut State Building Code, the applicant shall provide such a radon control measure below the proposed building, in consultation with town staff.

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July 5, 2022

Mr. Richard P. Hayes, Jr.
Manchester/Hebron Avenue LLC
1471 Pleasant Valley Road
Manchester CT 06042

RE: 1199 Manchester Road Residential Development
Glastonbury CT

Dear Mr. Hayes:

We have prepared this supplemental information to our Traffic Impact Report for the above referenced development. This information has been prepared in response to comments from Tighe & Bond dated July 1, 2022.

Roadway Network

1. Noted.

Background Traffic

1. The first item involves the calculation of Background traffic volumes. This is a complicated set of calculations because current traffic counts are not reflective of normal traffic conditions due to the impact of Covid 19 on travel patterns. It is now necessary to factor traffic counts up to reflect pre-Covid conditions. This was done using the following methodology:

   There are four Connecticut Department of Transportation (CT DOT) count stations in the vicinity of the site. Count station GLAS 034 is located on Hebron Avenue (Route 94) west of the Manchester Road intersection, and station GLAS 038 is located on Route 94 east of the intersection. Station GLAS 035 is located on Manchester Road (Route 83) north of Hebron Avenue, and station GLAS 036 is located south of the intersection.

   Thus, these count stations provide data for all four legs of the subject intersection. These stations provide traffic counts from 2015, 2018, and 2021. The 2018 counts were taken during October of 2018, and these are considered

the pre-Covid target traffic volumes.

Although the 2021 counts all include directional recording, three of the four 2018 counts only provide bi-directional data. Therefore, the bi-directional data was split into directional data using the ratios available from the 2021 counts.

As an example, Count station 035 (the north leg of the intersection) has 2021 data showing 222 vehicles southbound and 238 vehicles northbound during the morning peak hour. The 2018 data provides only a bi-directional count of 571 vehicles. This was divided into northbound and southbound traffic using the 2021 north/south ratio, yielding 276 vehicles southbound and 295 vehicles northbound. This methodology was used for the north, east and west legs of the intersection for each peak hour. The south leg of the intersection (station 036) includes directional data, and it was not necessary to calculate the directional flows separately. The result is the target traffic volumes for each leg of the intersection, provided in Figures S-1 and S-2.

The 2022 turning movement counts were multiplied by a factor to bring them into alignment with the target 2018 counts. For the morning peak hour, all target volumes were greater than the traffic counts, so this effort expanded all of the counted turning movements.

Two alternative methods were examined:

The first brings the approach volumes into alignment with the target volumes. However, this method disregards the departure volumes. The second method factors the approach volumes to bring the departure volumes into alignment. However, this does not provide good closure with the approach targets. From the two balance attempts, a hybrid factor was chosen to best match approach and departure targets. This resulted in increases to the turning movement counts between 15% and 60%.

For the afternoon peak hour, not all target volumes were greater than the turning movement counts, so employing the above method would have actually resulted in a decrease in some counted volumes. As an alternative, the total entering traffic on all legs in 2018 was compared to the total counted traffic, and found to be 14 percent higher. All turning movement counts were increased by 14% in the afternoon peak hour.

A spreadsheet is attached that shows the calculation of factors using the above methods, along with the resultant background traffic volumes used in the report. Highlighted cells show the approach or departure calculations relative to the target volumes. Red indicates the volumes used in the analysis.

Site Generated Traffic

1. Noted.

Analyses

1. Capacity Analyses have been revised to HCM 6th Edition methodology. Detail output sheets are included with this letter.

2. Calculations for the 95th percentile queue have been included in the updated Level of Service Summary table. All queue lengths are reasonable, and the impact of the development traffic is minimal.

3. The Peak hour factors have been revised to reflect the counts, and as a result, a few Levels of Service have gone from A to B. However, the demonstrated impact from the development traffic is still minimal. Please note that the counts did not include truck classification, as there is no evidence that truck traffic is an issue at this location. Standard truck factors have been utilized for this analysis. The requested timing and phase inputs and vehicle queues have been included here. The CT DOT traffic control signal plan has been submitted with this letter.

4. Noted.

5. Noted.

We believe that this information will answer all questions provided by Tighe and Bond.

Very truly yours,

MITCHELL TRAFFIC ENGINEERING LLC

Stephen F. Mitchell, PE

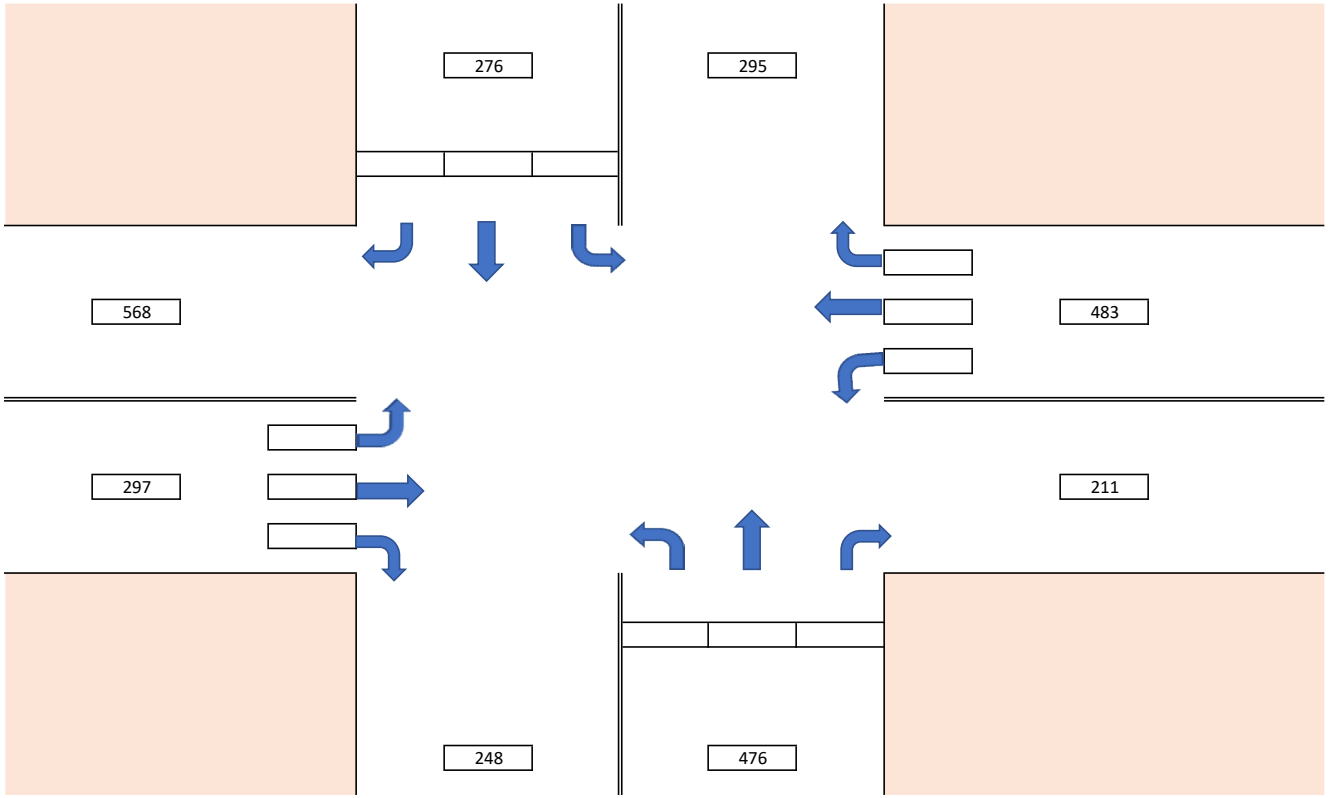
Summary of CT DOT Count Station Data

Count Station

		AM Peak			PM Peak		
		EB	WB	Both	EB	WB	Both
34	2015			840			964
	2018			826			834
	2021	238	456	663	506	338	842
		NB	SB	Both	NB	SB	Both
35	2015			537			837
	2018			571			962
	2021	238	222	460	354	410	764
		NB	SB	Both	NB	SB	Both
36	2015	300	213	498	339	318	590
	2018	476	248	681	351	367	718
	2021	251	224	475	294	306	597
		EB	WB	Both	EB	WB	Both
38	2015			625			674
	2018			665			731
	2021	168	384	529	400	244	620

1199 Manchester Road

Manchester/Hebron Ave LLC



Targeted Volumes

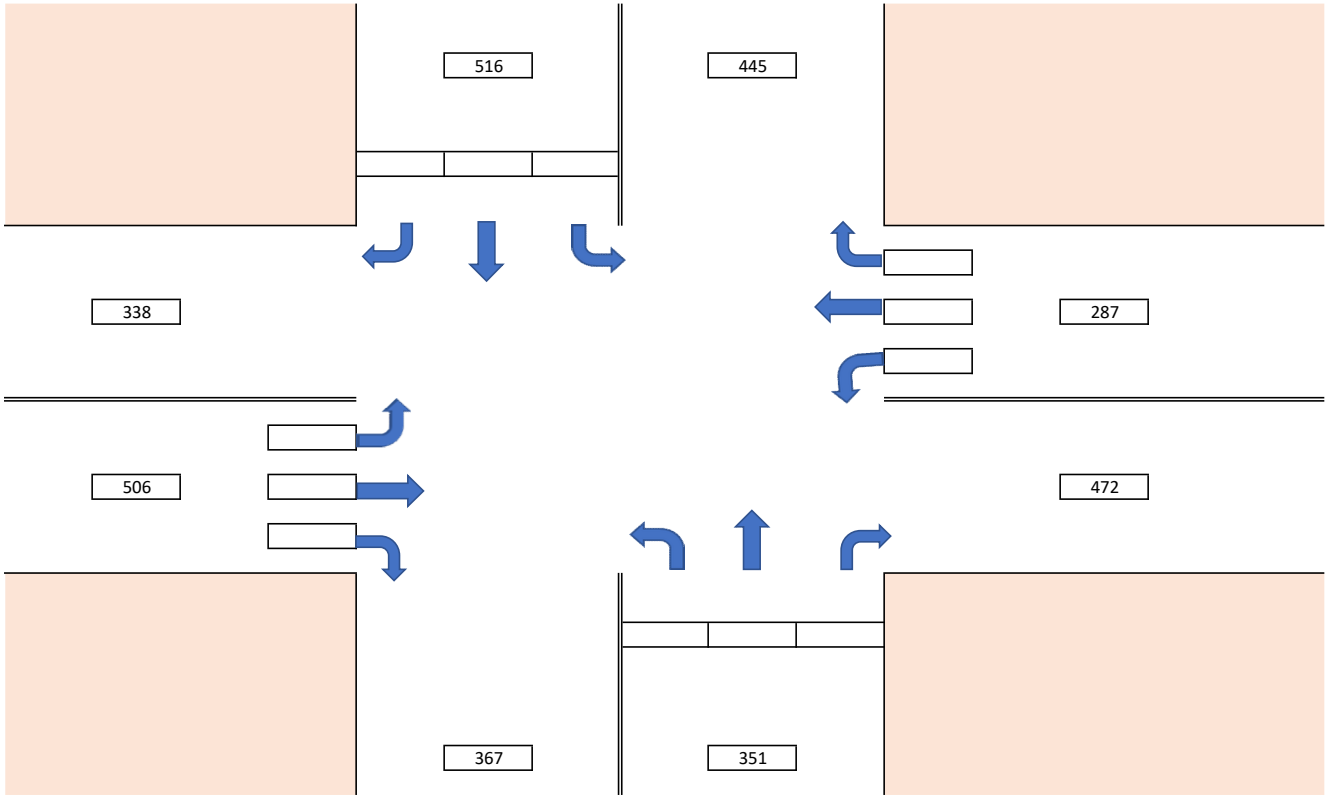
AM Peak Hour

Mitchell Traffic Engineering LLC 7 East Forest Drive Enfield CT 06082 (860) 841-1690

Figure S-1

1199 Manchester Road

Manchester/Hebron Ave LLC



Targeted Volumes

PM Peak Hour

Mitchell Traffic Engineering LLC 7 East Forest Drive Enfield CT 06082 (860) 841-1690

Figure S-2

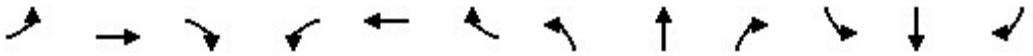
Traffic Volume Computations

Hayes - Glastonbury

	Rt 94 EB				RT 94 WB				RT 83 SB				RT 83 NB				EB RT 94 AWAY	NB RT 83 AWAY	SB Rt 83 Away	WB Rt 94 Away
	L	T	R	TL	L	T	R	TL	L	T	R	TL	L	T	R	TL	TL	TL	T	T
AM PEAK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20	30
COUNTS	65	109	29	203	50	285	43	378	28	108	86	222	48	130	15	193	152	238	187	419
Target				297				483				276				476	211	295	248	568
Calculated Factor				1.463054				1.277778				1.243243				2.466321	1.388158	1.239496	1.326203	1.355609
Adjusted by Arrival	95	159	42	296	64	364	55	483	35	134	107	276	118	321	37	476	231	471	187	589
Adj by departure	81	151	38	270	66	386	53	505	39	143	117	299	65	161	21	247	211	295	247	568
USED IN REPORT	89	149	40	278	71	405	71	547	33	126	101	260	78	211	24	313	206	371	237	584
PM PEAK																				
COUNTS	151	305	73	529	53	197	75	325	106	214	97	417	59	201	53	313	464	427	340	353
Target				506				445				516				351	472	295	367	338
Calculated Factor				0.956522				1.369231				1.23741				1.121406	1.017241	0.690867	1.079412	0.957507
Adjusted by Arrival	144	292	70	506	73	270	103	446	131	265	120	516	66	225	59	350	482	472	408	456
Adj by departure	104	310	79	493	57	189	52	298	108	231	93	432	56	139	54	249	472	295	367	338
USED IN REPORT	172	348	83	603	60	225	86	371	121	244	111	476	67	229	60	356	529	487	387	403

Intersection	Time	Direction	Background					Combined				
			LOS	Delay (sec.)	v/C	95 Percentile Queue		LOS	Delay (sec.)	v/C	95 Percentile Queue	
						Veh.	Feet				Veh.	Feet
Hebron Avenue & Manchester Road	AM Peak	EB	A	8.9	0.30 / 0.25	1.3	32.5	A	9.2	0.33 / 0.24	1.5	37.5
		WB	A	9.6	0.17 / 0.72	5.6	140	B	10.1	0.18 / 0.73	6.3	157.5
		NB	B	12.2	0.6	4.4	110	B	12.9	0.62	4.8	120
		SB	B	11.6	0.53	3.6	90	B	12.3	0.54	4.0	100
		Overall	B	10.4				B	11			
	PM Peak	EB	B	15.0	0.58 / 0.63	7.0	175	B	15.7	0.60 / 0.63	7.4	185
		WB	B	11.9	0.20 / 0.48	4.7	117.5	B	12.3	0.22 / 0.49	4.9	122.5
		NB	B	12.0	0.56	5.9	147.5	B	12.1	0.57	6	150
		SB	B	15.1	0.75	8.8	220	B	15.6	0.76	9.1	227.5
		Overall	B	13.8				B	14.3			
Site Drive 1 & Hebron Avenue	AM Peak	WB						A				
		NB						B / C	14.2		0.1	2.5
	PM Peak	WB						A				
		NB						B / C	23.4		0.1	2.5
Site Drive 2 & Manchester Road	AM Peak	EB						B	12.2		0.1	2.5
		NB						A				
	PM Peak	EB						B	14.5		0.1	2.5
		NB						A				

Table 2 (Revised)
Level of Service Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	149	40	71	405	61	78	211	24	33	126	101
Future Volume (veh/h)	89	149	40	71	405	61	78	211	24	33	126	101
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1945	1945	1870	1945	1945	1870	1945	1945	1870	1945	1945
Adj Flow Rate, veh/h	105	169	49	115	540	107	98	274	39	52	177	126
Peak Hour Factor	0.85	0.88	0.81	0.62	0.75	0.57	0.80	0.77	0.62	0.64	0.71	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	345	685	199	659	746	148	216	411	53	158	314	200
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.32	0.32	0.32	0.32	0.32	0.32
Unsig. Movement Delay												
Ln Grp Delay, s/veh	14.6	0.0	6.1	7.6	0.0	9.9	12.2	0.0	0.0	11.6	0.0	0.0
Ln Grp LOS	B	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		323			762			411			355	
Approach Delay, s/veh		8.9			9.6			12.2			11.6	
Approach LOS		A			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		22.0		16.0		22.0		16.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green (Gmax), s		22.0		30.0		22.0		30.0
Max Allow Headway (MAH), s		5.5		5.5		5.2		5.5
Max Q Clear (g_c+I1), s		17.1		9.3		12.4		8.1
Green Ext Time (g_e), s		0.8		2.7		3.4		2.3
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		1.00		0.02		0.50		0.01

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		784		310		1163		157

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1449		1299		1577		993

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		420		169		312		633

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3
Lane Assignment		L		L+T+R		L		L+T+R

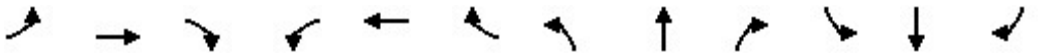
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	105	0	411	0	115	0	355
Grp Sat Flow (s), veh/h/ln	0	784	0	1777	0	1163	0	1783
Q Serve Time (g_s), s	0.0	4.7	0.0	1.1	0.0	2.5	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	15.1	0.0	7.3	0.0	5.1	0.0	6.1
Perm LT Sat Flow (s_l), veh/h/ln	0	784	0	1093	0	1163	0	1083
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1922	0	0	0	1931
Perm LT Eff Green (g_p), s	0.0	18.0	0.0	12.0	0.0	18.0	0.0	12.0
Perm LT Serve Time (g_u), s	0.0	7.5	0.0	5.9	0.0	15.3	0.0	4.7
Perm LT Q Serve Time (g_ps), s	0.0	4.7	0.0	1.1	0.0	2.5	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	3.0	0.0	0.0	0.0	4.7
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	3.0	0.0	0.0	0.0	4.7
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.24	0.00	1.00	0.00	0.15
Lane Grp Cap (c), veh/h	0	345	0	680	0	659	0	673
V/C Ratio (X)	0.00	0.30	0.00	0.60	0.00	0.17	0.00	0.53
Avail Cap (c_a), veh/h	0	429	0	1452	0	783	0	1458
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	14.1	0.0	11.3	0.0	7.5	0.0	11.0
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.9	0.0	0.1	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	14.6	0.0	12.2	0.0	7.6	0.0	11.6
1st-Term Q (Q1), veh/ln	0.0	0.7	0.0	2.3	0.0	0.4	0.0	1.9
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.80	0.00	1.80	0.00	1.80
%ile Back of Q (95%), veh/ln	0.0	1.3	0.0	4.4	0.0	0.8	0.0	3.6
%ile Storage Ratio (RQ%)	0.00	0.22	0.00	0.78	0.00	0.14	0.00	0.22
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	218	0	0	0	647	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1889	0	0
Q Serve Time (g_s), s	0.0	2.6	0.0	0.0	0.0	10.4	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	2.6	0.0	0.0	0.0	10.4	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.22	0.00	0.09	0.00	0.17	0.00	0.35
Lane Grp Cap (c), veh/h	0	884	0	0	0	893	0	0
V/C Ratio (X)	0.00	0.25	0.00	0.00	0.00	0.72	0.00	0.00
Avail Cap (c_a), veh/h	0	1083	0	0	0	1095	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.0	0.0	0.0	0.0	8.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.0	1.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.1	0.0	0.0	0.0	9.9	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.7	0.0	0.0	0.0	2.6	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	1.3	0.0	0.0	0.0	5.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.19	0.00	0.00	0.00	0.25	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	348	83	60	225	86	67	229	60	121	244	111
Future Volume (veh/h)	172	348	83	60	225	86	67	229	60	121	244	111
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1945	1945	1870	1945	1945	1870	1945	1945	1870	1945	1945
Adj Flow Rate, veh/h	242	395	105	68	271	110	82	286	77	151	287	137
Peak Hour Factor	0.71	0.88	0.79	0.88	0.83	0.78	0.82	0.80	0.78	0.80	0.85	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	419	630	168	337	560	227	171	497	122	236	370	161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.42	0.42	0.42	0.42	0.42	0.42
Unsig. Movement Delay												
Ln Grp Delay, s/veh	19.4	0.0	12.9	17.1	0.0	11.0	12.0	0.0	0.0	15.1	0.0	0.0
Ln Grp LOS	B	A	B	B	A	B	B	A	A	B	A	A
Approach Vol, veh/h		742			449			445			575	
Approach Delay, s/veh		15.0			11.9			12.0			15.1	
Approach LOS		B			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		25.6		25.2		25.6		25.2
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green (Gmax), s		22.0		30.0		22.0		30.0
Max Allow Headway (MAH), s		5.2		5.5		5.3		5.6
Max Q Clear (g_c+I1), s		21.3		11.8		15.9		17.8
Green Ext Time (g_e), s		0.4		2.9		1.4		3.4
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		1.00		0.04		0.80		0.29

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1002		210		898		351

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1481		1192		1315		888

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		394		293		534		387

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3
Lane Assignment		L		L+T+R		L		L+T+R

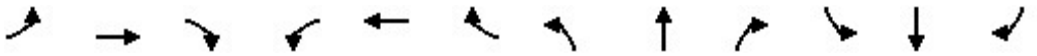
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	242	0	445	0	68	0	575
Grp Sat Flow (s), veh/h/ln	0	1002	0	1695	0	898	0	1626
Q Serve Time (g_s), s	0.0	11.7	0.0	0.0	0.0	3.3	0.0	6.0
Cycle Q Clear Time (g_c), s	0.0	19.3	0.0	9.8	0.0	13.9	0.0	15.8
Perm LT Sat Flow (s_l), veh/h/ln	0	1002	0	978	0	898	0	1035
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1616	0	0	0	1653
Perm LT Eff Green (g_p), s	0.0	21.6	0.0	21.2	0.0	21.6	0.0	21.2
Perm LT Serve Time (g_u), s	0.0	14.1	0.0	5.4	0.0	11.0	0.0	11.3
Perm LT Q Serve Time (g_ps), s	0.0	11.7	0.0	0.0	0.0	3.3	0.0	6.0
Time to First Blk (g_f), s	0.0	0.0	0.0	6.2	0.0	0.0	0.0	3.3
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	6.2	0.0	0.0	0.0	3.3
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.18	0.00	1.00	0.00	0.26
Lane Grp Cap (c), veh/h	0	419	0	790	0	337	0	767
V/C Ratio (X)	0.00	0.58	0.00	0.56	0.00	0.20	0.00	0.75
Avail Cap (c_a), veh/h	0	427	0	1072	0	343	0	1036
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	17.5	0.0	11.4	0.0	16.8	0.0	13.0
Incr Delay (d2), s/veh	0.0	1.9	0.0	0.6	0.0	0.3	0.0	2.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	19.4	0.0	12.0	0.0	17.1	0.0	15.1
1st-Term Q (Q1), veh/ln	0.0	2.3	0.0	3.1	0.0	0.6	0.0	4.6
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.80	0.00	1.80	0.00	1.73
%ile Back of Q (95%), veh/ln	0.0	4.6	0.0	5.9	0.0	1.1	0.0	8.8
%ile Storage Ratio (RQ%)	0.00	0.78	0.00	1.05	0.00	0.19	0.00	0.53
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	500	0	0	0	381	0	0
Grp Sat Flow (s), veh/h/ln	0	1874	0	0	0	1849	0	0
Q Serve Time (g_s), s	0.0	10.6	0.0	0.0	0.0	7.6	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	10.6	0.0	0.0	0.0	7.6	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.21	0.00	0.17	0.00	0.29	0.00	0.24
Lane Grp Cap (c), veh/h	0	798	0	0	0	787	0	0
V/C Ratio (X)	0.00	0.63	0.00	0.00	0.00	0.48	0.00	0.00
Avail Cap (c_a), veh/h	0	812	0	0	0	801	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	11.4	0.0	0.0	0.0	10.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	12.9	0.0	0.0	0.0	11.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.6	0.0	0.0	0.0	2.5	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	7.0	0.0	0.0	0.0	4.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.08	0.00	0.00	0.00	0.21	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	152	40	72	406	72	80	212	25	33	127	103
Future Volume (veh/h)	94	152	40	72	406	72	80	212	25	33	127	103
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1945	1945	1870	1945	1945	1870	1945	1945	1870	1945	1945
Adj Flow Rate, veh/h	111	173	49	116	541	126	100	275	40	52	179	129
Peak Hour Factor	0.85	0.88	0.81	0.62	0.75	0.57	0.80	0.77	0.62	0.64	0.71	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	336	706	200	662	739	172	212	405	54	153	311	201
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.31	0.31	0.31	0.31	0.31	0.31
Unsig. Movement Delay												
Ln Grp Delay, s/veh	15.4	0.0	6.1	7.7	0.0	10.5	12.9	0.0	0.0	12.3	0.0	0.0
Ln Grp LOS	B	A	A	A	A	B	B	A	A	B	A	A
Approach Vol, veh/h		333			783			415			360	
Approach Delay, s/veh		9.2			10.1			12.9			12.3	
Approach LOS		A			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		23.2		16.5		23.2		16.5
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green (Gmax), s		22.0		30.0		22.0		30.0
Max Allow Headway (MAH), s		5.5		5.5		5.2		5.5
Max Q Clear (g_c+I1), s		18.6		9.8		13.3		8.6
Green Ext Time (g_e), s		0.6		2.7		3.4		2.4
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		1.00		0.02		0.59		0.01

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		769		318		1159		157

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1458		1289		1526		990

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		413		171		355		640

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3
Lane Assignment		L		L+T+R		L		L+T+R

Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	111	0	415	0	116	0	360
Grp Sat Flow (s), veh/h/ln	0	769	0	1779	0	1159	0	1787
Q Serve Time (g_s), s	0.0	5.4	0.0	1.2	0.0	2.6	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	16.6	0.0	7.8	0.0	5.3	0.0	6.6
Perm LT Sat Flow (s_l), veh/h/ln	0	769	0	1088	0	1159	0	1081
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1922	0	0	0	1931
Perm LT Eff Green (g_p), s	0.0	19.2	0.0	12.5	0.0	19.2	0.0	12.5
Perm LT Serve Time (g_u), s	0.0	8.0	0.0	5.9	0.0	16.5	0.0	4.7
Perm LT Q Serve Time (g_ps), s	0.0	5.4	0.0	1.2	0.0	2.6	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	3.0	0.0	0.0	0.0	4.8
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	3.0	0.0	0.0	0.0	4.8
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.24	0.00	1.00	0.00	0.14
Lane Grp Cap (c), veh/h	0	336	0	671	0	662	0	665
V/C Ratio (X)	0.00	0.33	0.00	0.62	0.00	0.18	0.00	0.54
Avail Cap (c_a), veh/h	0	389	0	1388	0	742	0	1396
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	14.8	0.0	11.9	0.0	7.6	0.0	11.6
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.9	0.0	0.1	0.0	0.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	15.4	0.0	12.9	0.0	7.7	0.0	12.3
1st-Term Q (Q1), veh/ln	0.0	0.8	0.0	2.5	0.0	0.5	0.0	2.1
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.80	0.00	1.80	0.00	1.80
%ile Back of Q (95%), veh/ln	0.0	1.5	0.0	4.8	0.0	0.9	0.0	4.0
%ile Storage Ratio (RQ%)	0.00	0.25	0.00	0.85	0.00	0.15	0.00	0.24
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	222	0	0	0	667	0	0
Grp Sat Flow (s), veh/h/ln	0	1871	0	0	0	1881	0	0
Q Serve Time (g_s), s	0.0	2.8	0.0	0.0	0.0	11.3	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	2.8	0.0	0.0	0.0	11.3	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.22	0.00	0.10	0.00	0.19	0.00	0.36
Lane Grp Cap (c), veh/h	0	906	0	0	0	911	0	0
V/C Ratio (X)	0.00	0.24	0.00	0.00	0.00	0.73	0.00	0.00
Avail Cap (c_a), veh/h	0	1036	0	0	0	1042	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.0	0.0	0.0	0.0	8.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.0	2.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.1	0.0	0.0	0.0	10.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.7	0.0	0.0	0.0	2.9	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	1.3	0.0	0.0	0.0	6.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.21	0.00	0.00	0.00	0.28	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	278	3	3	586	6	8
Future Vol, veh/h	278	3	3	586	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	82	82	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	320	3	4	715	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	323	0	1045	322
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	723	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1237	-	253	719
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1237	-	252	719
Mov Cap-2 Maneuver	-	-	-	-	252	-
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	479	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	SET	SER
Capacity (veh/h)	252	719	1237	-	-	-
HCM Lane V/C Ratio	0.026	0.012	0.003	-	-	-
HCM Control Delay (s)	19.7	10.1	7.9	0	-	-
HCM Lane LOS	C	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	0	-	-	-

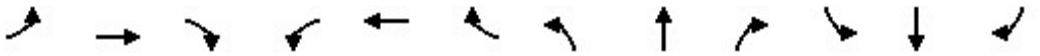
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	5	2	313	237	2
Future Vol, veh/h	4	5	2	313	237	2
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	79	79	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	5	3	396	339	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	743	341	342	0	-	0
Stage 1	341	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	383	701	1217	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	382	701	1217	-	-	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1217	-	511	-	-
HCM Lane V/C Ratio	0.002	-	0.019	-	-
HCM Control Delay (s)	8	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	351	83	63	228	86	69	230	61	121	247	115
Future Volume (veh/h)	175	351	83	63	228	86	69	230	61	121	247	115
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1945	1945	1870	1945	1945	1870	1945	1945	1870	1945	1945
Adj Flow Rate, veh/h	246	399	105	72	275	110	84	288	78	151	291	142
Peak Hour Factor	0.71	0.88	0.79	0.88	0.83	0.78	0.82	0.80	0.78	0.80	0.85	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	412	630	166	329	561	224	172	495	122	233	371	166
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Unsig. Movement Delay												
Ln Grp Delay, s/veh	20.5	0.0	13.4	17.8	0.0	11.3	12.1	0.0	0.0	15.6	0.0	0.0
Ln Grp LOS	C	A	B	B	A	B	B	A	A	B	A	A
Approach Vol, veh/h		750			457			450			584	
Approach Delay, s/veh		15.7			12.3			12.1			15.6	
Approach LOS		B			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		26.0		25.8		26.0		25.8
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green (Gmax), s		22.0		30.0		22.0		30.0
Max Allow Headway (MAH), s		5.2		5.5		5.3		5.6
Max Q Clear (g_c+I1), s		22.2		12.2		16.5		18.5
Green Ext Time (g_e), s		0.0		2.9		1.3		3.3
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		1.00		0.05		0.96		0.34

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		998		212		895		344

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1484		1175		1321		882

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		391		291		529		394

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3
Lane Assignment		L		L+T+R		L		L+T+R

Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	246	0	450	0	72	0	584
Grp Sat Flow (s), veh/h/ln	0	998	0	1678	0	895	0	1620
Q Serve Time (g_s), s	0.0	12.3	0.0	0.0	0.0	3.6	0.0	6.3
Cycle Q Clear Time (g_c), s	0.0	20.2	0.0	10.2	0.0	14.5	0.0	16.5
Perm LT Sat Flow (s_l), veh/h/ln	0	998	0	970	0	895	0	1032
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1586	0	0	0	1632
Perm LT Eff Green (g_p), s	0.0	22.0	0.0	21.8	0.0	22.0	0.0	21.8
Perm LT Serve Time (g_u), s	0.0	14.2	0.0	5.3	0.0	11.0	0.0	11.6
Perm LT Q Serve Time (g_ps), s	0.0	12.3	0.0	0.0	0.0	3.6	0.0	6.3
Time to First Blk (g_f), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	3.4
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	3.4
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.19	0.00	1.00	0.00	0.26
Lane Grp Cap (c), veh/h	0	412	0	789	0	329	0	770
V/C Ratio (X)	0.00	0.60	0.00	0.57	0.00	0.22	0.00	0.76
Avail Cap (c_a), veh/h	0	412	0	1042	0	329	0	1013
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	18.2	0.0	11.5	0.0	17.5	0.0	13.2
Incr Delay (d2), s/veh	0.0	2.4	0.0	0.7	0.0	0.3	0.0	2.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	20.5	0.0	12.1	0.0	17.8	0.0	15.6
1st-Term Q (Q1), veh/ln	0.0	2.5	0.0	3.2	0.0	0.7	0.0	4.8
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.5
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.80	0.00	1.80	0.00	1.71
%ile Back of Q (95%), veh/ln	0.0	4.9	0.0	6.0	0.0	1.2	0.0	9.1
%ile Storage Ratio (RQ%)	0.00	0.84	0.00	1.08	0.00	0.21	0.00	0.55
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	504	0	0	0	385	0	0
Grp Sat Flow (s), veh/h/ln	0	1875	0	0	0	1850	0	0
Q Serve Time (g_s), s	0.0	11.0	0.0	0.0	0.0	7.8	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	11.0	0.0	0.0	0.0	7.8	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.21	0.00	0.17	0.00	0.29	0.00	0.24
Lane Grp Cap (c), veh/h	0	796	0	0	0	785	0	0
V/C Ratio (X)	0.00	0.63	0.00	0.00	0.00	0.49	0.00	0.00
Avail Cap (c_a), veh/h	0	796	0	0	0	785	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	11.7	0.0	0.0	0.0	10.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.6	0.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	13.4	0.0	0.0	0.0	11.3	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.7	0.0	0.0	0.0	2.6	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	1.00
%ile Back of Q (95%), veh/ln	0.0	7.4	0.0	0.0	0.0	4.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.14	0.00	0.00	0.00	0.22	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	603	9	6	405	4	6
Future Vol, veh/h	603	9	6	405	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	76	76	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	655	10	8	533	4	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	665	0	1209	660
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	549	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	924	-	202	463
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	579	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	924	-	200	463
Mov Cap-2 Maneuver	-	-	-	-	200	-
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	572	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.1	17.1
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	SET	SER
Capacity (veh/h)	200	463	924	-	-	-
HCM Lane V/C Ratio	0.022	0.014	0.009	-	-	-
HCM Control Delay (s)	23.4	12.9	8.9	0	-	-
HCM Lane LOS	C	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	0	-	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	3	5	357	388	5
Future Vol, veh/h	4	3	5	357	388	5
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	83	83	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	3	6	430	462	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	907	465	468	0	-	0
Stage 1	465	-	-	-	-	-
Stage 2	442	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	306	597	1094	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	304	597	1094	-	-	-
Mov Cap-2 Maneuver	304	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	648	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1094	-	385	-	-
HCM Lane V/C Ratio	0.006	-	0.02	-	-
HCM Control Delay (s)	8.3	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

MOVEMENT DIAGRAM

NTOR	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8 PRE-EMPT 1	
NONE		1 2 2 1		3 4				3	

		FLASH	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL
FACE #	1	Y				G	Y	R				R	R	R										R	R	R			
	2	Y				G	Y	R				R	R	R										R	R	R			
	3	R				R	R	R				G	Y (1)	R (1)										G	Y	R			
	4	R				R	R	R				G	Y	R										R	R	R			

INTERVALS																										
	MIN GRN					15						11									40					
	WALK											22														
	PED CLR											1														
	VEH EXT					5						3														
	MAX 1					35						30														
	MAX 2					35						30														
	YELLOW						4.6						4.4									4.0				
	RED							2.8						2.8									2.8			
	ADD INIT					1																				
	MAX INIT					29																				
	TBR																									
	TTR																									
	MIN GAP																									
MODE		OFF			MIN RECALL			OFF			NON-LOCK			OFF			OFF			OFF			ON/OMIT			
INT START					THIS PHASE																					

DETECTORS

IDENT	SIZE (WXL)	TURNS	MODE
D2	16' X 6'	3	PRESENCE
D2A	16' X 6'	3	PRESENCE
D4	14' X 6'	3	8" DELAY
D4A	20' X 6'	3	8" DELAY
D4B	17' X 6'	3	8" DELAY
D4C	25' X 6'	3	8" DELAY
D4D	19' X 6'	3	8" DELAY

SYSTEM LOC MASTER

COORDINATION TYPE: NONE

PROGRAM FUNCTION	TIME	DAYS
FLASH	NONE	
MAX 1	ALL TIMES	
MAX 2	FUTURE	

CYCLE	OFFSET SEC	OFFSET %

SIGN LEGEND

(A) INSTALL 31-0282 ( )

NOTE:

PRE-EMPTION EQUIPMENT OWNED & MAINTAINED BY THE TOWN OF GLASTONBURY.

SPAN POLE INFORMATION

32', 22" B.C., 10,000 lbs. LOAD AT YIELD

TECHNICAL NOTES

STANDARD OVERLAP SKIP FEATURES APPLY

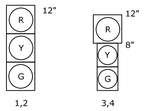
(1) TO BE G IF PRE-EMPTION IS NEXT.

OFFICE RECORD

REV # 10 TIR # N/A SM # 101190 SIGNAL REVISED: 1/18/2018

REVISED TIMINGS UNDER STATE PROJECT NO. 171-398.

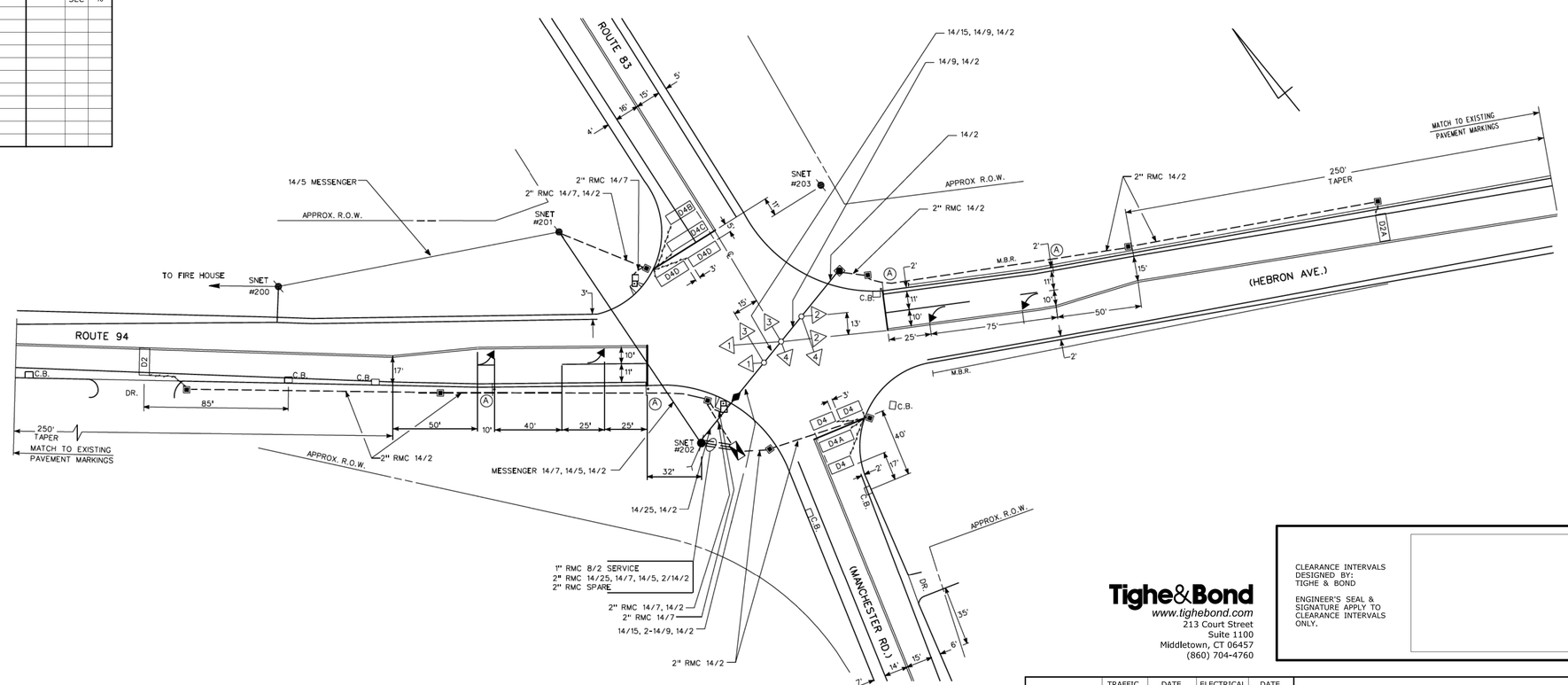
SIGNAL FACES



ALL INDICATIONS HAVE LED LAMPS.

PRE-EMPTION SETTINGS

	PRE-EMPT 1
PRIORITY	NO
DET. LOCK	YES
DELAY	15
ALT. MIN. GRN	5
ALT. YELLOW	PARENT
ALT. RED	PARENT
ALT. PED. CLR.	NO
HOLD GREEN	40
HOLD YELLOW	4.0
HOLD RED	2.8
HOLD PHASE	8
EXIT PHASE	2
EXIT CALL	NONE



Tighe&Bond

www.tighebond.com
213 Court Street
Suite 1100
Middletown, CT 06457
(860) 704-4760

CLEARANCE INTERVALS DESIGNED BY: TIGHE & BOND

ENGINEER'S SEAL & SIGNATURE APPLY TO CLEARANCE INTERVALS ONLY.

	TRAFFIC	DATE	ELECTRICAL	DATE
ENGINEER				
DRAWN BY				
CHECKED BY				
SUBMITTED BY				
APPROVED BY				
APPROVED DATE				

REV #10 INTERSECTION #053-205

ENERGY BY - STATE	ADDRESS #
MAINT LEVEL 2	SERVICE POLE - SNET 202
	UNMETERED SERVICE

NO.	DATE	REVISION DESCRIPTION

LEGEND:

R RED	PROPOSED WOOD SPAN POLE	TRAFFIC SIGNAL FACE	PROPOSED CONTROLLER	SIDEWALK RAMP
Y YELLOW	EXISTING WOOD SPAN POLE	PEDESTRIAN SIGNAL FACE	EXISTING CONTROLLER	CABLE CLOSURE
G GREEN	PROPOSED STEEL SPAN POLE	DET. LEADS IN SAW CUT	LOOP DETECTOR	WIRELESS SENSOR
◀R RED ARROW	EXISTING STEEL SPAN POLE	PROPOSED RMC (RIGID METAL CONDUIT)	SD SYSTEM DETECTOR	WIRELESS RECEIVER
◀Y YELLOW ARROW	PROPOSED UTILITY POLE	EXISTING RMC (RIGID METAL CONDUIT)	MAGNETIC DETECTOR	WIRELESS TRANSMITTER
◀— GREEN ARROW	EXISTING UTILITY POLE	AUXILIARY TERMINATION CABINET	OPTICAL DETECTOR	GUY WIRE
WØ WALK/ PED. CLR	PEDESTAL MOUNTING	AUXILIARY EQUIPMENT CABINET	VIDEO DETECTOR	PROPOSED HANDHOLE
D.W. DON'T WALK	PEDESTRIAN PUSH BUTTON & SIGN	VIDEO DETECTION ZONE	AUDIO DETECTOR	EXISTING HANDHOLE
FL. FLASHING	DIRECTIONAL ARW. FOR PUSH BUTTON			

DATE PLOTTED : 2/14/2019 \\DOT-SDCENG07V\CTDOT_Projects$\0171-0398\Traffic\3 - FINAL DESIGN\Glastonbury - 53\53-205\TR_MSH_TCS_053_205_010.dgn

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ROUTE 94 (HEBRON AVE)
AT ROUTE 83 (MANCHESTER RD)

SCALE 1" = 40'

TOWN: GLASTONBURY

PROJECT NO. 171-398

DRAWING NO.

SHEET NO.

DRAWING TITLE: TRAFFIC CONTROL SIGNAL PLAN

3

WENTWORTH CIVIL
ENGINEERS LLC
177 West Town Street
Lebanon, Connecticut 06249
Tel. (860) 642-7255
Fax. (860) 642-4794
Email: Wes@WentworthCivil.com

July 12, 2022

MEMO

To: Atty. Andrea Gomes & Atty. Timothy Hollister
Hinckley Allen

Re: Plan Conformance w/ Town Zoning Regulations
1199 Manchester Rd.
Glastonbury, CT

I offer the following list demonstrating that the current site plans comply / do not comply with Town of Glastonbury Building Zone Regulations:

Section 4.6 – PBD Zone

4.6.4 Lot area – 60,000 sf reqd. / 104554 sf provided

4.6.5 Frontage – 200 ft reqd. / 238.75 ft (Hebron Ave.) & 359.21 ft (Manchester Rd.) provided

4.6.6 Lot Coverage – 20% max. reqd. / 13.74% provided

4.6.7 Front Yard Setback – 75 ft reqd. / 76 ft provided

4.6.8 Side Yard Setback – 25 ft reqd. / 25.5 ft provided

4.6.9 Rear Yard Setback – 25 ft reqd. / 99 ft provided

4.6.10 Building Height – 35 ft max. reqd. / 60 ft. provided

4.6.10 Building Stories – 2.5 stories max. reqd. / 5 stories provided

4.6.11 Open Space - 2 x coverage reqd. (24.48% min.) / 51.17% provided

Section 9 - Off-Street Parking and Off – Street Loading

9.1 General provisions for off-street parking & loading

a. 9'x 18' spaces reqd. / provided

b. 24 ft aisles reqd. / provided

c. adequate ingress and egress by clearly limited and defined drives reqd. / provided

d. Separate pedestrians walkways ***may*** be reqd. / provided

e. Appropriate landscaping reqd. / provided

f. Parking shall not be located in Front Yard Setback unless otherwise specifically permitted by TP&Z / parking located in Front Yard Setback

g. Off-street loading space shall not be construed as a parking space / provided

h. Compact spaces – n/a

9.2 Location of off-street parking spaces be on the same lot - provided

9.3 Development and maintenance of off-street parking areas or facilities

a. Screening & Landscaping be provided and maintained / provided

b. Surfacing and Drainage of Off-Street Parking – surfaced with bituminous / cement and shall be graded and drained to dispose of surface water accumulation. Site development shall insure no surface water from parking shall adversely impact adjoining properties / provided

c. Lighting of Off-Street Parking or Loading Areas – any lighting proposed be designed to reflect light away from any adjoining premises and be compatible with the rest of the development and landscaping / provided

9.11 Off-street parking standards (applicable to all zoning districts)

b. Dwellings …: One (1) parking space for each dwelling unit / 1.17 spaces per unit provided

9.12 Off-street loading requirements – 10’ x 50’ x 15’ height clearance reqd. / 12’ x 35’ x 15’ height clearance paved area provided – additional 15’ of grassed area beyond loading area is accessible – **compliance unclear.**

(1) loading space per 10,000 sf of gross building floor area or as determined by the TP&Z reqd. / (1) space provided

Please note that we are in full compliance with the Town of Glastonbury Engineering Department Checklist, attached here as Exhibit A.

EXHIBIT A

Town of Glastonbury Engineering Division
Development Plan Review Checklist

PROJECT INFORMATION	
Approval Type:	Special Permit Other:
Design Engineer Firm:	Wentworth Civil Engineers, LLC
Project Name:	1199 Manchester Road
Project Address:	1199 Manchester Road
Submittal Date:	
Review Date:	
Reviewed By:	

	GENERAL PLAN CHECKLIST
X	Maps prepared in accordance with the “Minimum Standards for Surveys and Maps in the State of Connecticut” as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996, as amended.
X	Coordinate System Identified (NAD 83, NAVD 88 required)
X	Label NAD83 coordinates and identify control points and bench marks
X	Location Plan (1” = 1000’, including outline of property or site area)
X	North Arrow, Plan Scale, Date
X	Sealed by a CT Licensed Land Surveyor or Professional Engineer as Applicable
X	Note indicating Contractor requirement to “Call-Before-You-Dig” prior to any construction
X	Complete legend identifying existing and proposed features
X	Town Approval block included on all sheets to be filed
X	Separate sheet included in plan set for Town approval motions and Department review memos (will add after approval received)
	Parcel boundary closure check performed by Engineering
n/a	Addresses assigned to any newly created or combined parcels
n/a	Street Names identified for private roads or private drives to be named for addressing purposes
X	Standard Inspection Note on all applicable sheets stating: NOTE: THE CONTRACTOR SHALL NOTIFY THE TOWN OF GLASTONBURY ENGINEERING DIVISION 24 HOURS PRIOR TO BEGINNING ANY STORM DRAINAGE, SANITARY SEWER INSTALLATION, ROADWAY PREPARATION, PAVING, SIDEWALK, CURBING, OR ANY EXCAVATION IN THE TOWN RIGHT-OF-WAY TO SCHEDULE INSPECTIONS. THE DIVISION CAN BE REACHED BETWEEN 8:00 AM-4:30 PM MONDAY THRU FRIDAY AT (860) 652-7735.

SITE DEVELOPMENT PLAN CHECKLIST	
X	Plans certified by CT Licensed Land Surveyor and Professional Engineer
X	Existing structures with indication of protection or removal.
n/a	Existing curb cuts to be closed and restored.
n/a	Wetlands and watercourses with 100' upland review area with Soil Scientist Certification
n/a	FEMA Flood boundary derived from Flood Profile Data from the most current FIS (as applicable)
X	Proposed building lines, building footprint, finished floor elevations
X	Existing ground contours at 2 foot intervals (or 1 foot intervals in Flood Zone areas) with spot elevations at highpoints and depressions, based on NAVD 1988. Include a minimum of two (2) benchmarks per sheet. Note source of topographic information and limits of field survey.
X	Proposed finished ground contours at 2 foot intervals (or 1 foot intervals in Flood Zone areas) with spot elevations at highpoints and depressions, based on NAVD 1988. Depict grading for the entire site.
X	Proposed limits of clearing, with specimen trees noted for protection
X	Existing and proposed storm drainage facilities, including structure types, pipe size, slopes, materials, invert elevations, and connections to existing drainage systems, wetlands or watercourses, water quality treatment measures per 2004 DEEP Stormwater Quality Manual. **SEE SEPARATE SHEETS FOR ADDITIONAL DRAINAGE REQUIREMENTS**
X	Proposed foundation drains showing invert levels of the drain at the building connection and the outlet (piped discharges into the public right-of-way are prohibited by ordinance)
X	Existing and proposed water and sanitary sewer facilities, including all bends, valves, manholes, hydrants, and appurtenances with pipe sizes, slopes, materials and invert elevations within structures **SEE SEPARATE SHEET FOR ADDITIONAL SEWER REQUIREMENTS**
X	Proposed location of all other utilities (if known) including, but not limited to, natural gas, telephone and electrical (include equipment installation)
X	Retaining walls with top and bottom of walls elevations noted. Confirm no grading or impacts on to abutting private property.
X	Parking areas, including parking requirements table, appropriate aisle and space dimensions, # ADA spaces
X	Sight line adequate (200' minimum) at proposed driveway locations.
X	Traffic control devices, pavement markings and signs.
X	Sidewalks and sidewalk ramps **Sidewalks continuous through driveways, 8" reinforced sidewalk at new commercial drives. Check for current Town details.**
X	Plantings minimum 10 feet away from sidewalks to avoid root intrusion, minimize plant obstruction complaints
X	Guide rail and protective fencing as required for grading
X	Erosion and Sediment controls per 2002 E&S Control Guidelines (including narrative, area of disturbance in acres, phasing as required, construction entrance, silt fence, sediment basins, etc.).
n/a	Obtain CT DEEP Construction General Permit for projects that disturb 5 acres or more.

STORMWATER MANAGEMENT REPORT CHECKLIST	
x	Report signed by CT Licensed Professional Engineer
x	Narrative summarizing the proposed project, design methods used, and table of pre- and post–development flows at appropriate downstream locations showing zero net increase in runoff from the site for the 2, 10, 25, 50 and 100-year storm events. Summarize WQV required for the project area and the WQV retained by the proposed improvements.
x	Hydrographs and calculations identifying peak runoff, velocities and timing of peak flows from the site at critical locations in the watershed as outlined in the CTDOT Drainage Manual, latest revision. Supporting information for the drainage analysis including, but not limited to, runoff coefficients, time of concentration flow paths, drywell design, etc.
x	Confirm use of SCS hydrology methods for proposed detention, including latest NOAA Rainfall rates and Type III rainfall distribution.
x	Inventory and evaluation of hydraulic structures both on-site and in the downstream zone of influence (as defined in the Public Improvement Standards) to identify flow capacity, pipe velocities, hydraulic grade line elevations and physical condition
n/a	Identification of drainage structures and watercourses that are inadequate for existing or future conditions
x	Hydraulic grade line computations for enclosed drainage systems indicating a minimum headwater clearance of one (1) below top of frame for existing and proposed structures.
x	Detention basin design information that includes stage-storage-discharge curves or tables, outlet control data, flood routing calculations, subsurface conditions and maximum water surface elevations
n/a	Outlet protection, riprap sizing, channel sizing, and channel lining calculations
n/a	Gutter flow analysis and ponding calculations for low points (when requested by the Town Engineer)
x	Plans with scale not to exceed 1” = 100’ identifying topography, watershed boundaries (for overall site and storm drainage structures), soil types, land use characteristics and time of concentration flow paths with design points and labels corresponding to the drainage calculations for pre- and post-development conditions
n/a	Plans with 100-year flood limits derived from Flood Profile data provided in the latest version of the FEMA Flood Insurance Study (if applicable), inland wetland boundaries, and groundwater protection zones within the project limits
x	Computations of the <u>required</u> Water Quality Volume (WQV) to be retained on site for the project area and for the area draining to each proposed treatment system, include pre and post development impervious area and directly connected impervious area (DCIA). For redevelopment of sites that are currently developed with DCIA of 40% or more, **one-half of the WQV** from the site must be retained, **for all other sites the full WQV must be retained**.)
x	Computations of the WQV <u>actually retained</u> by the proposed treatment system(s). NOTE: Only storage below the low-flow orifice of an outlet control structure can be considered retained for computation of the WQV. Slow release of the WQV over a 24 to 48 hour period via infiltration or a small diameter orifice will also be considered as retained for the purposes of these computations.
x	WQV surface elevations clearly labeled and depicted on appropriate cross sections and details within the plan set. WQV retained by each proposed treatment system labeled on the plans.
x	Town of Glastonbury MS4 DCIA tracking table accurately filled out and affixed to the site plan and/or drainage plan sheets within the plan set.

STORM DRAINAGE PLAN CHECKLIST	
x	Plans certified by CT Licensed Professional Engineer
x	Existing and proposed storm drainage facilities, including structure types, pipe size, slopes, materials, invert elevations, and connections to existing drainage systems, wetlands or watercourses
n/a	Outlet protection properly detailed, labeled with length, width, depth, type of riprap, geotextile, etc.
x	Water Quality Volume treatment measures provided in compliance with Town Standards and the Town MS4 Permit.
x	Maintenance plan and schedule for all public and private stormwater management facilities **including party responsible for maintenance** shown on the site plan or utility plan as applicable
n/a	Deep sump catch basins for water quality where applicable. 2 foot sump for detention basin outlet structures.
n/a	Channels and swales properly sized, lining specified and computed
x	Appropriate details for non-standard structures
x	No concentrated stormwater discharges to neighboring properties or public roadway
x	Infiltration or subsurface detention facilities properly sized per drainage computations. Include overflow to town system where possible, inspection ports for maintenance, above groundwater elevation per test pits.
x	Test pit data shown on plan for infiltration and subsurface detention systems

STORM DRAINAGE STORAGE / TREATMENT PLAN CHECKLIST	
n/a	Basin - Forebay sized for WQV
n/a	Basin - Bottom sloped at 1% toward outlet, Side slopes 4:1 or flatter for ease of maintenance
n/a	Basin - Underdrain to ensure complete emptying of basin in 48 hours
n/a	Basin - Emergency spillway sized properly with stable discharge point
x	Underground Storage - detailed layout of proposed system (plan and section views)
x	Underground Storage - relevant manufacturer details with storage computations
x	Cross sections through basin or chamber depicting WQV and storm event water surface elevations
x	2 foot sump for outlet structures, outlet structure details / elevations consistent with drainage computations

SANITARY SEWER CHECKLIST	
x	Plans certified by CT Licensed Land Surveyor and Professional Engineer
x	Existing and proposed sanitary sewer facilities, including all bends, manholes, appurtenances with pipe sizes, slopes, materials and invert elevations within structures
x	Existing sewer laterals identified properly per record drawings
x	Minimum cover 4 feet for public sewer (DIP pipe specified for areas < 4')
n/a	Sewer laterals properly designed and specified per Town Standards (6-inch PVC minimum, cleanouts as required)
n/a	Sampling manhole provided for all commercial and industrial buildings at street line (unless lateral connects directly to an existing manhole)
n/a	Grease Trap or AGRU for Class III or IV Food Service Establishments (FOG Requirements)
n/a	75 foot separation of pump chamber, septic tanks, or grease trap from wells
n/a	Appropriate sewer easement for Town facilities (25 foot wide). Must provide access to all structures with load bearing surface, grade of 15% or less. Consider need for construction easements.
x	Bolted covers noted for off-road public sewer manholes
n/a	Appropriate details for non-standard structures.