

June 25, 2021

Mr. Matthew Gilchrist
EG Home, LLC
41 Fieldstone Lane
Beacon Falls, CT 06403

**RE: Traffic Impact Study
Lot 7 Stone Bridge Crossing
Cheshire, Connecticut
SLR #141.15070.00006**

Dear Mr. Gilchrist:

At your request, we have undertaken this study to evaluate the traffic impact of the proposed residential development to be located on Lot 7 of the Stone Bridge Crossing development in Cheshire, Connecticut. The development will comprise 56 townhouse-style multifamily units in 14 separate buildings, and 84 units configured as duplexes for a total of 140 units. Site access will be provided via a new site driveway at Dickerman Road; there will be no internal connection between the Lot 7 development and the remaining Stone Bridge Crossing development. The work comprising the study consisted of several tasks including field reconnaissance, data collection, review of roadway and traffic conditions, estimation of site-development-generated traffic volumes, and assessment of future traffic operations at the site. **Figure 1** shows the site location and surrounding roadway network.

EXISTING CONDITIONS

The site is part of the larger Stone Bridge Crossing development to be located along State Route 10 (Highland Avenue) at 1953, 2037, and 2061 and Assessor's Map Block 3-51 in Cheshire, Connecticut. The proposed residential development will be located in the western portion of the largest site and will have site access via Dickerman Road; the proposed residential development will not connect to the remaining Stone Bridge Crossing development, which will have separate access via Route 10.

Dickerman Road runs approximately north/south near the site with one travel lane in each direction; the posted speed limit is 25 miles per hour (mph). There are no sidewalks present along either side of Dickerman Road near the site. South of the site, Dickerman Road crosses Interstate 691 (I-691) and ends at West Johnson Avenue. North of the site, Dickerman Road becomes Clark Street at Brookview Place. The north site frontage abuts the Southington town line.

Land use in area of Cheshire and Southington is largely a mix of commercial and residential uses.

Crash Data Summary

Data on traffic crashes near the site for the recent 3-year period of June 1, 2018, through May 31, 2021, was obtained via the Connecticut Crash Data Repository. The study area was along the Dickerman Road site frontage, south of the intersection at Brookview Place and north of the bridge over I-691. One crash was reported during the study period, which involved a motorist hitting a tree, resulting in possible injury. The crash appears to have been the result of the motorist using a cell phone while driving.

Existing Traffic Volumes

Traffic volumes were collected along Dickerman Road via Automatic Traffic Recorder (ATR) for 48 hours on Friday, September 18, 2020, and Saturday, September 19, 2020. The peak hours were found to be 8:00 a.m. to 9:00 a.m., 5:00 p.m. to 6:00 p.m., and 11 a.m. to 12 p.m. for the weekday morning, weekday afternoon, and Saturday midday, respectively. **Figure 2** shows the existing peak-hour traffic volumes.

Due to the COVID-19 pandemic and its overall effect on reducing current travel, the traffic volumes shown in **Figure 2** were increased by 20% to better reflect typical traffic levels in the area. These adjusted volumes can also be seen on **Figure 2**.

PROPOSED DEVELOPMENT

The site is currently undeveloped. The proposed residential development will be composed of 140 multifamily residential units, which will be a mix of 14 fourplexes (56 units) and 42 duplexes (84 units).

Site access will be provided via a new site driveway at Dickerman Road in the northwestern portion of the parcel. The site driveway will be stop-controlled, while traffic along Dickerman Road will be free-flowing. An emergency access driveway will be added in the southwestern portion of the parcel; this driveway will not be utilized as a point of ingress or egress by residents of the development.

Sight Lines

Sight lines were reviewed from the main access driveway for a driver egressing to Dickerman Road. Looking right, the intersection sight distance (ISD) exists for at least 445 feet, which meets the Connecticut Department of Transportation (CTDOT) guideline for 40 mph, well over the posted speed limit of 25 mph.

Looking left, the sightline for 5 miles over the posted speed limit (>30 mph) is achievable with regrading along the Dickerman Road site frontage. Any trees, brush, or hanging branches within the Town right-of-way that obstruct sight lines should be trimmed and maintained as such to maximize visibility for motorists egressing the site. **Figure 3** shows the sight line profile at the proposed site driveway.

SITE-GENERATED TRAFFIC

The amount of new peak-hour site traffic that is estimated to be generated by the proposed development was estimated using statistical data published by the Institute of Transportation Engineers¹ (ITE). ITE Land Use Code (LUC) #220, Multifamily Housing (Low-Rise) was used to estimate the site traffic volumes, which are shown in Table 1.

TABLE 1
Site Development Traffic Estimates

LAND USE	ITE LAND USE #	NUMBER OF VEHICLE TRIPS								
		WEEKDAY MORNING PEAK HOUR			WEEKDAY AFTERNOON PEAK HOUR			SATURDAY PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Multifamily Housing, Low-Rise (140 units)	220	15	50	65	49	29	78	53	45	98

Trip Generation, 10th Edition. Institute of Transportation Engineers, 2017

The geographic distribution of the net new site-generated traffic was estimated based on review of the roadway traffic patterns in the vicinity of the site and Journey-to-Work census data². It is estimated that approximately 75% of this new site traffic will be oriented to/from the south and 25% to/from the north. **Figure 4** shows the estimated new site-generated traffic based on this route distribution for the study peak hours.

FUTURE TRAFFIC VOLUMES

Future roadway traffic volumes were estimated both with and without the proposed residential development in place, in order to determine possible traffic impacts. This proposed development is anticipated to open in year 2022.

The background traffic scenario is reflective of future conditions before the new development is built and was estimated by expanding the baseline (2020 adjusted) traffic volumes to the estimated opening year of 2022 using an annual growth rate of 0.8%, per input from CTDOT. Correspondence with the Town of Cheshire and CTDOT finds that there are no nearby approved upcoming developments that are expected to add traffic along Dickerman Road past the site. The resultant 2022 estimated traffic volumes reflect conditions just before the proposed residential development would open and can be seen in **Figure 4** as the background traffic volumes. The background volumes were approved by the CTDOT Bureau of Policy and Planning.

¹ *Trip Generation, 10th Edition*, Institute of Transportation Engineers, 2017

² *Commuting Flows (Journey To Work)* – U.S. Census Bureau -
<https://www.census.gov/topics/employment/commuting/guidance/flows.html>

The combined traffic scenario is reflective of future conditions after the proposed development is built and opened, and was estimated by adding the anticipated site traffic generated by the proposed development to the future background traffic. The resultant estimated 2022 future combined traffic volumes are also shown on **Figure 4**.

Intersection Capacity Analysis

The future background and combined traffic scenarios were evaluated by means of capacity analysis techniques. These analyses were used to determine the quality of operations at the study intersections, and a comparison of background versus combined traffic operations allows for a determination of possible traffic impacts from the proposed development. The quality of operations is measured and expressed as a level of service (LOS). LOS is defined as a measure of inconvenience that motorists experience. The levels are expressed with letter designations of A through F. In most communities, LOS D or better during peak hours is considered acceptable. Table 2 summarizes the results of the capacity analysis.

As can be seen, traffic conditions are expected to be excellent at the proposed site driveway. All movements are expected to operate at LOS A during all study peak hours. No additional traffic mitigation is necessary as part of this development.

TABLE 2
Capacity Analysis Summary

MOVEMENTS	WEEKDAY MORNING PEAK HOUR	WEEKDAY AFTERNOON PEAK HOUR	SATURDAY MIDDAY PEAK HOUR
<i>Unsignalized</i>			
Dickerman Road at proposed site driveway			
Westbound Left/Right	A	A	A
Southbound Left	A	A	A

CONCLUSION

This study was conducted to assess the traffic impact of the proposed residential development to be located on Lot 7 of the Stone Bridge Crossing development in Cheshire, Connecticut. To determine a profile of existing conditions, detailed data assembly efforts were undertaken. The new traffic that will be generated by the proposed development was estimated based on industry statistical data, and intersection capacity analyses were performed evaluating future conditions at the proposed site driveway intersection with Dickerman Road. Analysis of the new traffic that is estimated to be added from this proposed development finds that it will be accommodated with little to no perceptible impact. All movements at the study intersection are expected to operate at LOS A during peak hours.

As part of this project, the site frontage south of the proposed site driveway will be regraded to extend sight lines to meet the CTDOT guideline for 5 miles over the posted speed limit on Dickerman Road. Any brush or vegetation within the Town right-of-way should be trimmed and maintained in order to maximize sight lines.

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

Sincerely,

SLR International Corporation



David G. Sullivan, PE
U.S. Manager of Traffic & Transportation Planning



Neil C. Olinski, MS, PTP
Senior Transportation Planner

Enclosures

141.15070.00006.jn2521.ltr

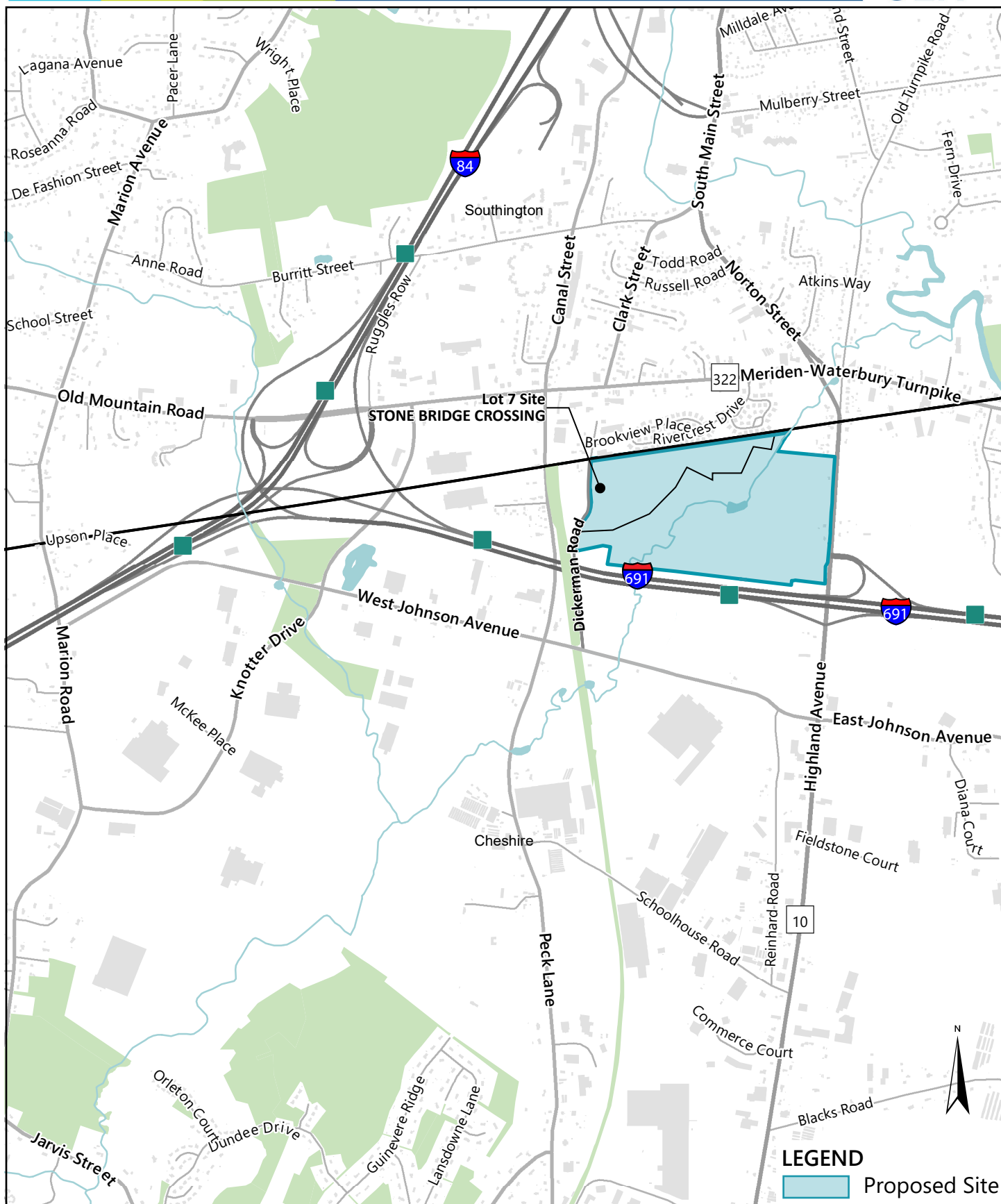


FIGURE 1
SITE LOCATION AND SURROUNDING ROADWAY NETWORK

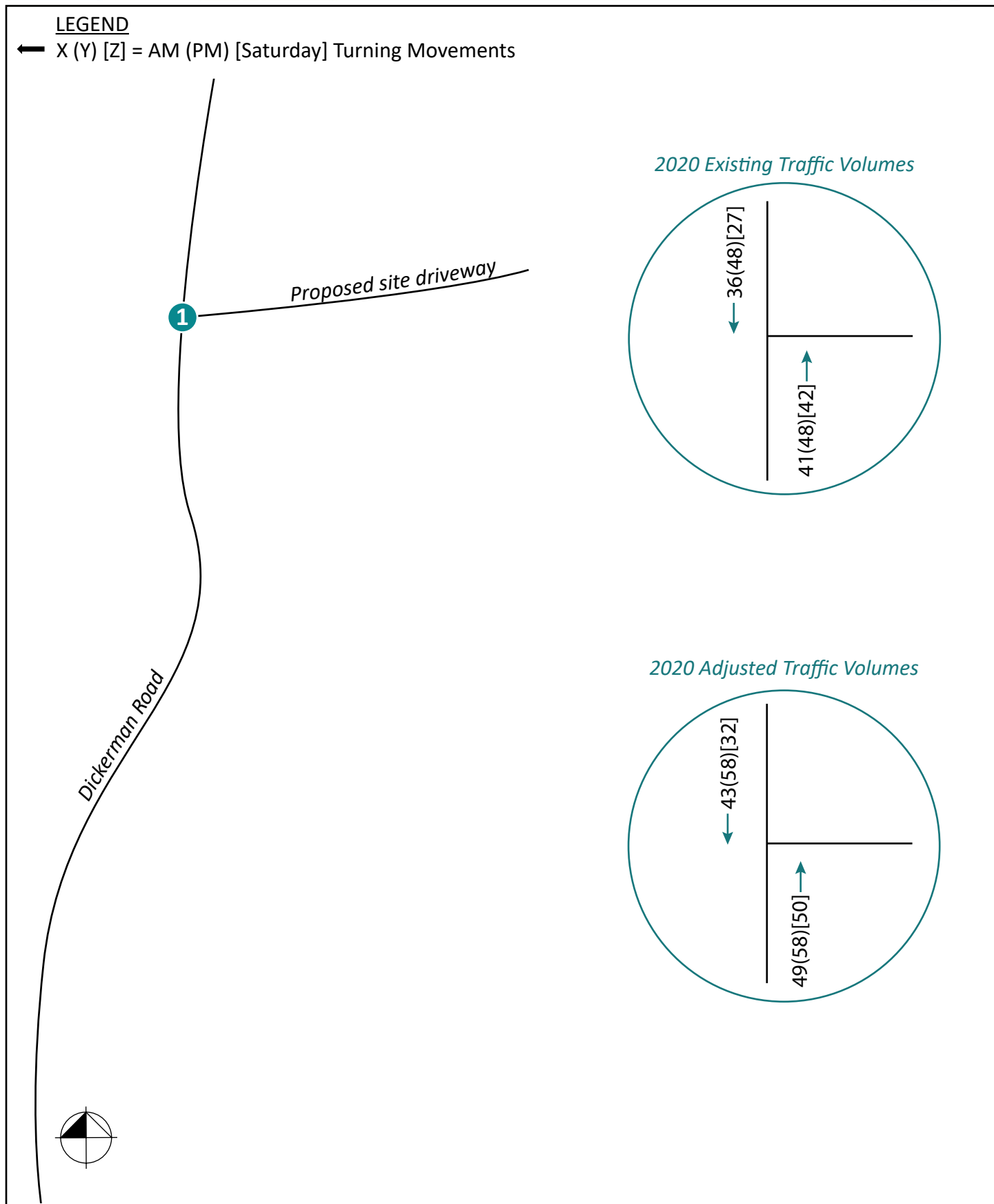
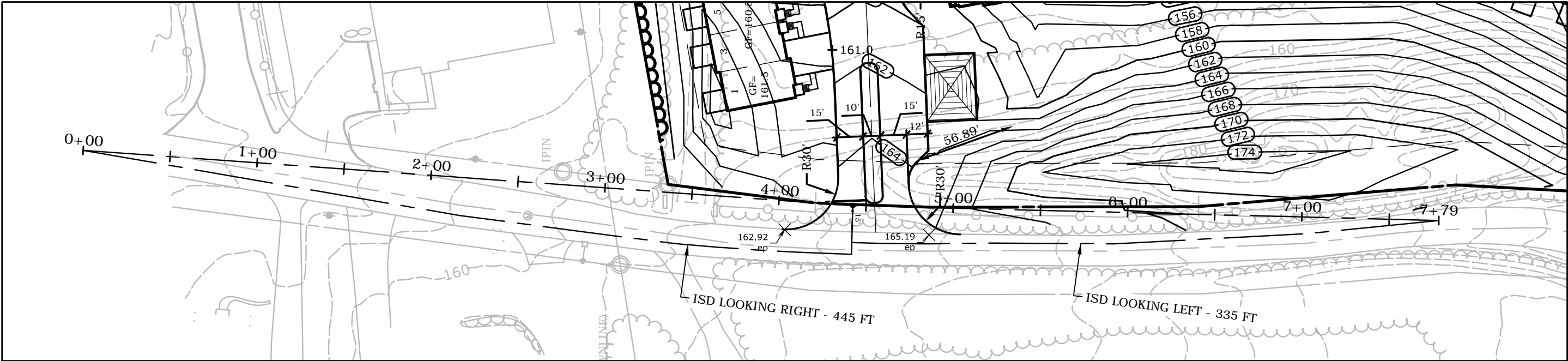
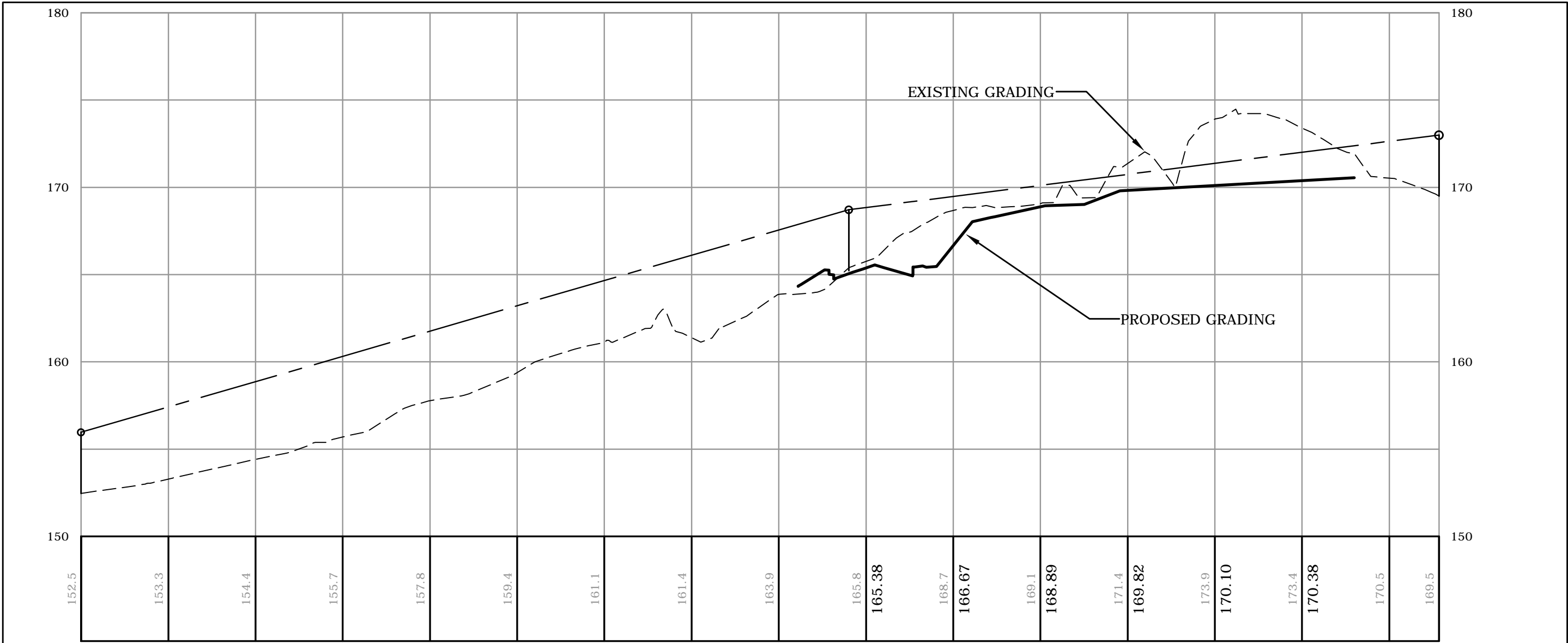



FIGURE 2
EXISTING AND ADJUSTED TRAFFIC VOLUMES

D:\w\CADESIGN\15070.00006-DE_CAD\NONPLANSSET\TRAFFIC\SIGHTLINES.DWG Layout Table: 3

Plotted by: FLYNN On this date: Fri, 2021 June 25 - 10:04am





99 REALTY DRIVE
CHESHIRE, CT 06410
SLRCONSULTING.COM

REVISIONS		

SIGHT LINES FOR MAIN DRIVEWAY

PROPOSED RESIDENTIAL DEVELOPMENT

STONE BRIDGE CROSSING - PARCEL 7

DICKERMAN ROAD AND ROUTE 10 (HIGHLAND AVENUE)
CHESHIRE, CONNECTICUT

DESIGNED	FMF	DGS
	DRAWN	CHECKED

SCALE: 1"=60'

DATE: JUNE 24, 2021

PROJECT NO.: 15070.00006

FIG 3

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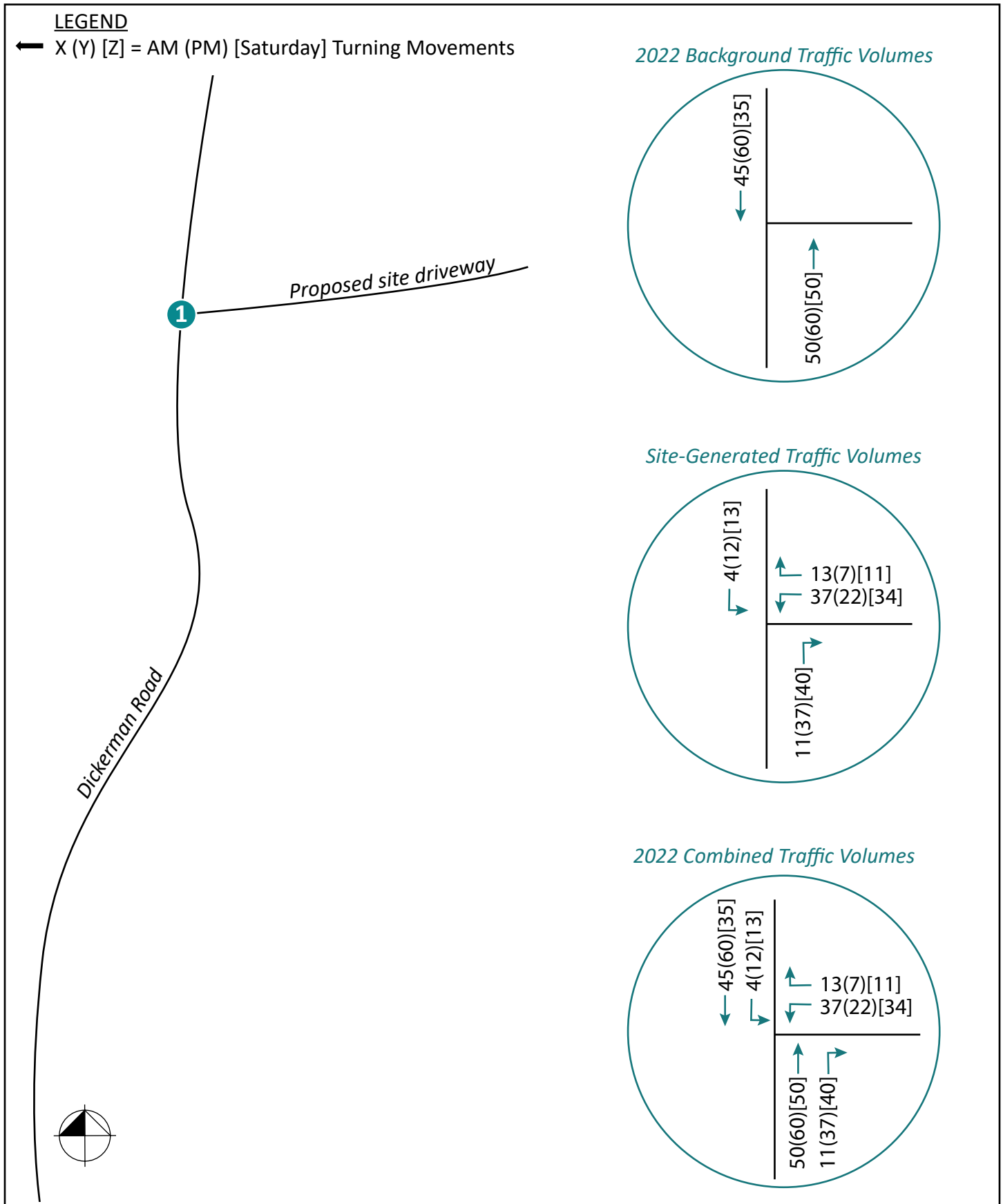


FIGURE 4
BACKGROUND, SITE-GENERATED, AND COMBINED TRAFFIC VOLUMES

APPENDIX

LEVEL OF SERVICE

FOR TWO-WAY

STOP SIGN CONTROLLED INTERSECTIONS

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. LOS criteria are given below:

LEVEL-OF SERVICE CRITERIA FOR AWSC INTERSECTIONS	
LOS¹	CONTROL DELAY (s/veh)
A	≤ 10
B	$> 10 \text{ AND } \leq 15$
C	$> 15 \text{ AND } \leq 25$
D	$> 25 \text{ AND } \leq 35$
E	$> 35 \text{ AND } \leq 50$
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

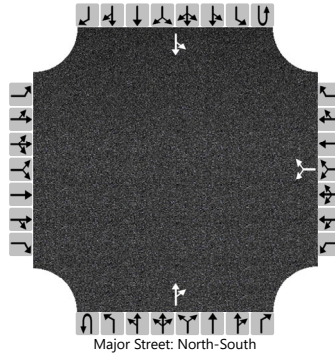
Reference: Highway Capacity Manual Version 6.0, Transportation Research Board, 2016.

HCS7 Two-Way Stop-Control Report

General Information

Analyst	FMF	Intersection	Dickerman Rd at site dwy
Agency/Co.	SLR	Jurisdiction	Cheshire
Date Performed	6/22/2021	East/West Street	Residential site dwy
Analysis Year	2022	North/South Street	Dickerman Road
Time Analyzed	AM	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Combined, AM Peak Hour		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						37		13			50	11		4	45	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						54								4		
Capacity, c (veh/h)						903								1529		
v/c Ratio						0.06								0.00		
95% Queue Length, Q ₉₅ (veh)						0.2								0.0		
Control Delay (s/veh)						9.2								7.4		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					9.2								0.6			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

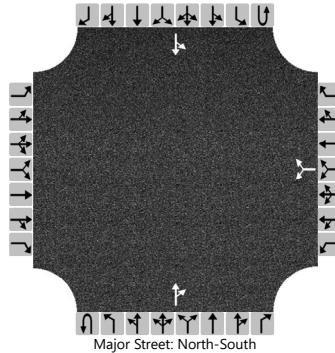
General Information

Analyst	FMF
Agency/Co.	SLR
Date Performed	6/22/2021
Analysis Year	2022
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	Combined, PM Peak Hour

Site Information

Intersection	Dickerman Rd at site dwy
Jurisdiction	Cheshire
East/West Street	Residential site dwy
North/South Street	Dickerman Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						22		7			60	37		12	60	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32								13		
Capacity, c (veh/h)						838								1480		
v/c Ratio						0.04								0.01		
95% Queue Length, Q ₉₅ (veh)						0.1								0.0		
Control Delay (s/veh)						9.5								7.5		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					9.5								1.3			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

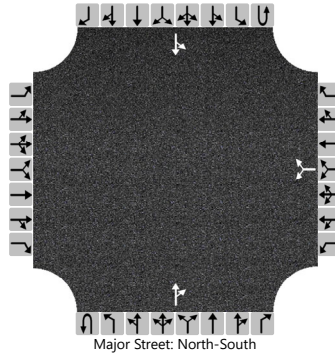
General Information

Analyst	FMF
Agency/Co.	SLR
Date Performed	6/22/2021
Analysis Year	2022
Time Analyzed	Saturday
Intersection Orientation	North-South
Project Description	Combined, Saturday Peak Hour

Site Information

Intersection	Dickerman Rd at site dwy
Jurisdiction	Cheshire
East/West Street	Residential site dwy
North/South Street	Dickerman Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						34		11			50	40		13	35	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						49								14		
Capacity, c (veh/h)						871								1489		
v/c Ratio						0.06								0.01		
95% Queue Length, Q ₉₅ (veh)						0.2								0.0		
Control Delay (s/veh)						9.4								7.4		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					9.4								2.1			
Approach LOS					A											