McDonough & Rea Associates, Inc.

Traffic and Transportation Consulting

Kevin P. McDonough (1953-1994)
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March 19, 2024

Manchester Township Planning Board
1 Colonial Drive
Manchester, New Jersey 08759

Re: Townhouse Plan/Mixed-Use Plan
Lot 8 in Block 69
Manchester Township, Ocean County
MRA File No. 24-107

Dear Board Members:

McDonough & Rea Associates (MRA) has been asked to provide the Planning Board with a *Traffic Impact Analysis* for plans to construct 38 multi-family homes and 9,600 SF of office/retail space on the noted property. The subject property is on the southwest corner of Ridgeway Road (CR 571) and South Hope Chapel Road (CR 547), as shown on *Figure 1, Site location Map* in the *Appendix*.

Access is proposed to both CR 571 and CR 547 which are both under the jurisdiction of Ocean County.

SCOPE OF STUDY

In order to prepare a thorough *Traffic Impact Analysis* for the townhome project, MRA conducted the following tasks:

1. Made field visits to the site to inventory existing roadway and traffic conditions in the area.

2. Conducted peak hour traffic counts at the intersection of CR 571/CR 547 during the critical AM and PM peak hours when traffic flow on the adjacent roadway network and traffic generated by the townhomes will be at maximum levels

3. Prepared trip generation estimates based on the Institute of Transportation Engineers (ITE) data.

Please reply to:
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4. Distributed site generated traffic from the multi-family homes and office/retail space in accordance with anticipated origins and destinations.

5. Prepared estimates of future traffic volume demand for a design year of 2034 in accordance with Ocean County Planning Board protocol including background traffic growth and traffic generated by other adjacent development projects.

6. Conducted level of service capacity analyses for the 2 site driveways to CR 571 and CR 547 as well as the off-site signalized intersection of CR 571/CR 547.

7. Reviewed the *Site Plan* with respect to availability and accessibility of the parking supply and conformance to New Jersey Residential Site Improvement Standards (RSIS).

The following report sets forth the database accumulated and the conclusions reached with respect to the Manchester townhomes.

EXISTING CONDITIONS

The subject property is located on the southwest corner of CR 571/CR 547 and contains approximately 5.24 acres and is located within the PB-1 Zone. South Hope Chapel Road, also known as CR 547, is a north/south Ocean County arterial roadway in the vicinity of the site. Ridgeway Road, also known as CR 571, is an east/west Ocean County arterial roadway in the vicinity of the site.

CR 547 intersects CR 571 at a signalized intersection. All 4 legs to the intersection provide for 3 approach lanes. The intersection has crosswalks across all 4 corners and also has pedestrian pushbuttons and pedestrian signals. All 4 approaches to the intersection have protected/permissive left turn arrows.

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EXISTING TRAFFIC VOLUMES

Traffic volume data was collected at CR 571/CR 547 intersection by conducting manual turning movement counts in April 2022 and, again, in February 2024. The February 2024 counts are appended to this report. MRA has conducted numerous traffic impact analyses for projects in the general vicinity of this site. The latest traffic report prepared by this office, which was revised on November 29, 2023 for a larger mixed-use project on the northeast corner of South Hope Chapel Road/Ridgeway Road, was reviewed with respect to establishing base traffic volumes for the 2034 design year. Specifically, the *build* volumes from that project (MRA Job#22-147) was utilized to establish base design year 2034 traffic volumes for this analysis. The other projects which are included in base 2034 *no-build* volumes are as follows:

- The aforementioned mixed-use project on the northeast corner of CR 547/CR 571 which includes 166 multi-family homes and 31,200 SF of mixed-use retail/office space.
- *Jackson Trails* residential project on CR 547 in Jackson Township, north of the Manchester border (467 units).
- Manchester office/retail project on CR 547 north of the CR 5447/CR 571 intersection.
- Proposed Ocean County park on the southeast corner of CR547/CR 571

In addition, the New Jersey Department of Transportation's (NJDOT) background traffic growth rate data for the area was consulted and existing traffic volumes were expanded by 10 percent in addition to adding traffic from the aforementioned projects. *Figure 2* in the *Appendix* illustrates design year 2034 *no-build* traffic volumes.

TRIP GENERATION/DISTRIBUTION

Estimates of traffic to be generated by the 38 multi-family homes and 9,600 SF office/retail uses were made after consulting the *11th Edition* of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. *Table I* illustrates the anticipated peak hour traffic generation from the project.

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TABLE I
TRIP GENERATION
RIDGEWAY MANCHESTER MIXED-USE

	AM PSH			PM PSH		
USE	IN	OUT	TOTAL	IN	OUT	TOTAL
38 Multi-Family Units (LUC 220)	8	27	35	23	14	37
9,600 SF Retail (LUC 822)	13	10	23	32	31	63
Total	**21**	**37**	**58**	**55**	**45**	**100**

With respect to the distribution of site generated traffic, a review was made of existing traffic patterns in the area, locations of employment centers and access to higher order roadways. Based on this review, traffic was distributed as follows:

- 25 percent to/from the north on CR 547
- 25 percent to/from the south on CR 547
- 25 percent to/from the east on CR 571
- 25 percent to/from the west on CR 571

Site generated and distributed traffic volumes are shown on *Figure 3* in the *Appendix*.

ANALYSIS OF FUTURE TRAFFIC CONDITIONS

A design year of 2034 was assumed in accordance with Ocean County Planning Board protocol. Existing 2024 traffic volumes were expanded by 10 percent to include background traffic growth based on NJDOT historical growth rate data for the area. In addition to the foregoing, traffic from the following projects was included in a projection of future 2034 design year volumes.

- Manchester mixed-use, 166 residential units, 31,200 SF office/retail, on northeast corner of CR 547/CR 571.

- *Jackson Trails* residential project on CR 547 in Jackson Township north of the Manchester Township border (467 units).

- Manchester Township office/retail project on CR 547 north of the subject property.

- Proposed Ocean County park on the southeast corner of CR 571/CR 547 (250 acres; scheduled for a passive/recreational park).

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Figure 4 in the *Appendix*, illustrates design year 2034 *build* traffic volumes, including the aforementioned projects and other background traffic growth as described.

Traffic engineers calculate levels of service of unsignalized and signalized intersections which relate to the quality of traffic flow. Level of service is a measure of average control delay. Average control delay is the time lost due to deceleration and the amount of time from when a vehicle is stopped for a traffic control device (or at the end of the queue) to when the vehicle departs the intersection. Delay is a relative quantity of driver discomfort, frustration, fuel consumption, and loss in travel time.

Levels of service range from "A" to "F," with "A" being the highest, or best attainable level of service. Level of service "E" with average control delays of not more than 50 seconds per vehicle at an unsignalized intersection or 80 seconds per vehicle at a signalized intersection indicates near to at capacity conditions and is generally considered the limit of acceptable level of service and delay.

Full definitions of levels of service for unsignalized and signalized intersections and level of service summaries are included in the *Appendix*. The intersections studied by this report were analyzed according to the procedures set forth in the *Highway Capacity Manual 2022*, using the *McTrans Highway Capacity Software (HCS 2023)*.

CR 571/CR 547

At the signalized CR 571/CR 547 intersection the signalized level of service protocol was followed with a finding that the intersection will operate at an overall level of service "C" for the AM peak street hour for both the *no-build* and *build* condition in the 2033 design year. The intersection will operate at an overall level of service "D" for the PM peak street hour for both the *no-build* and *build* condition. Incremental increases in delay at the intersection are minimal due to the project.

SITE ACCESS TO CR 571

At the site access point to CR 571, findings were that exiting movements from the project to CR 571 will do so at level of service "C" for the AM peak street hour and at level of service "E" for the PM peak street hour. Therefore, this driveway will operate within accepted traffic engineering parameters.

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SITE ACCESS TO CR 547

At the site access point to CR 547, findings were that exiting movements will do so at level of service "C" during the AM peak street hour and level of service "D" during the PM peak street hour.

SITE PLAN AND PARKING

The Site Plan, prepared by Professional Design Services (PDS) shows driveway connections to CR 571 and CR 547. 158 parking spaces are required by Manchester code and 164 spaces are provided and, therefore, the parking requirement is met.

CONCLUSIONS

It is concluded, based on the analysis set forth in this report that plans to construct a mixed-use residential/commercial project on the southwest corner of CR 571/CR 547 can be approved and operate compatibly with future traffic conditions. Levels of service at the site driveways to CR 571/CR 547 will fall within acceptable levels. Impacts to the signalized offsite intersection of CR 571/CR 547 will be minimal and will not alter design year no-build levels of service.

The *Site Plan* itself has been properly prepared with respect to adequate emergency vehicle access, adequate parking, distribution of parking, etc.

We hope the foregoing information is helpful.

Very truly yours,

John H. Rea

John H. Rea, PE
Principal

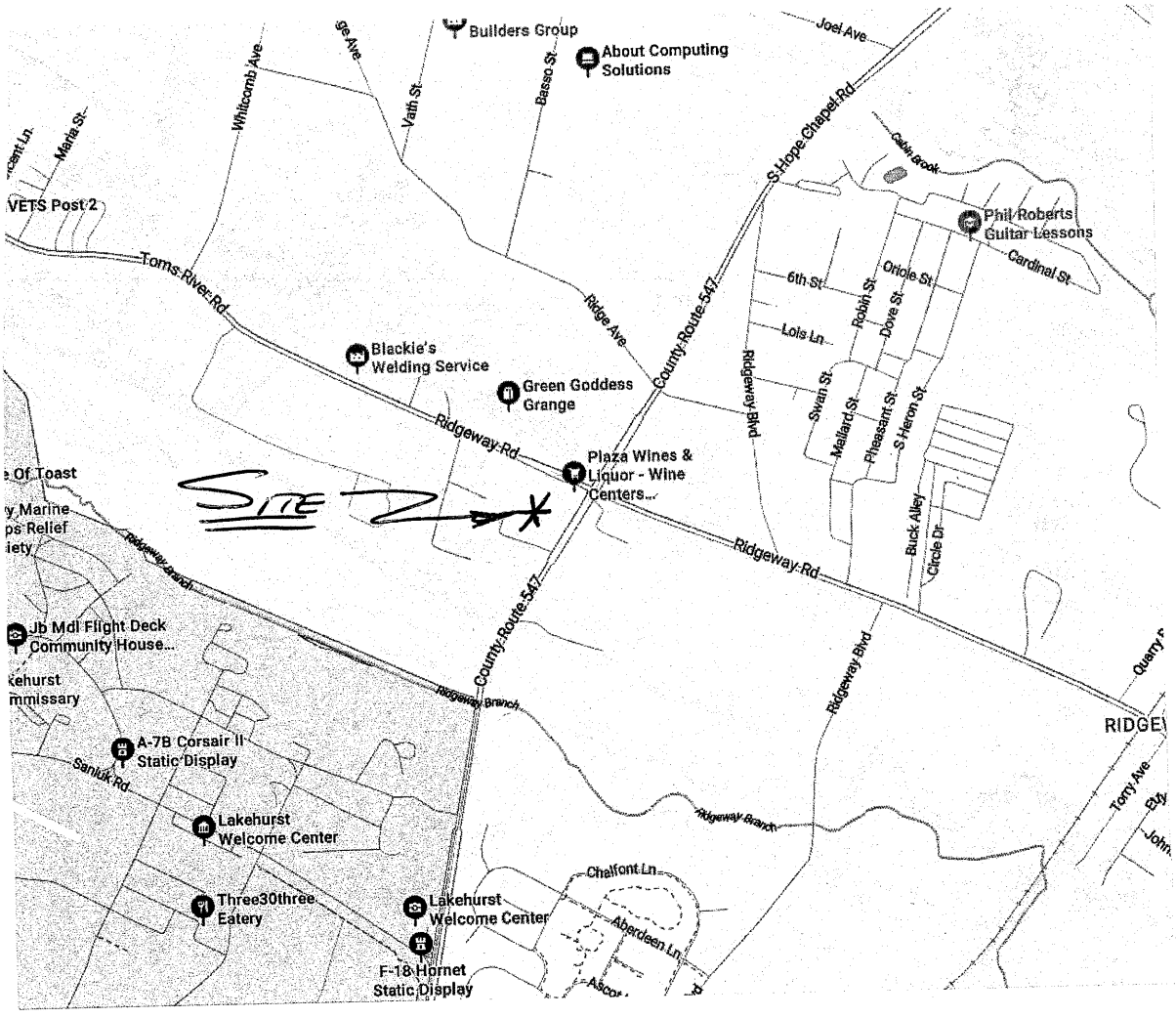
Scott T. Kennel
Sr. Associate

cc: Mordechai Eichorn
Ian Borden, PE

APPENDIX

McDONOUGH & REA ASSOCIATES TRAFFIC AND TRANSPORTATION CONSULTING	FIGURE 1	
	JOB NO. 24-107	DATE: MAR 2024

SUBJECT: RIDGEWAY - MANCHESTER MIXED USE
SITE LOCATION MAP



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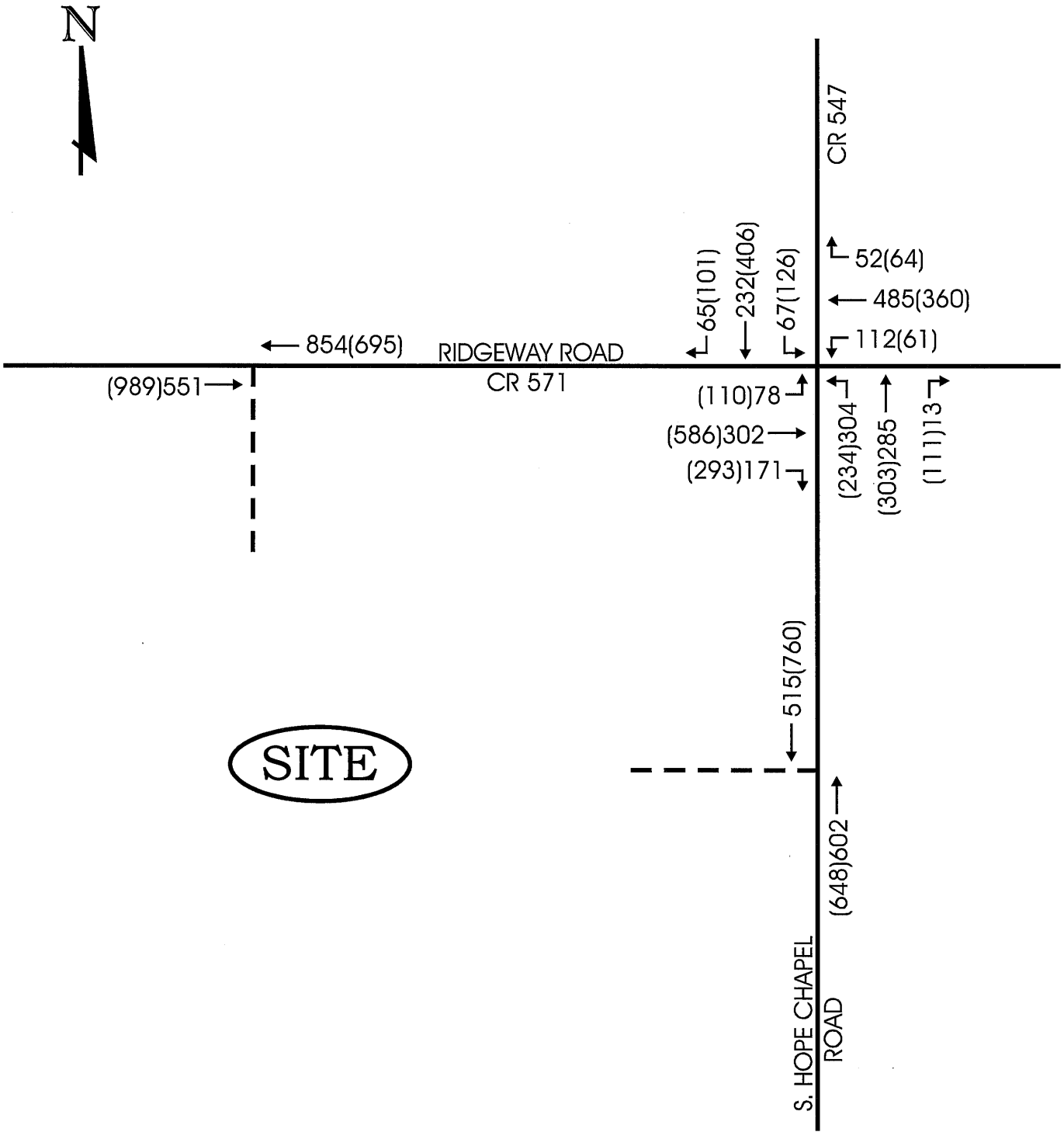
TRAFFIC AND TRANSPORTATION CONSULTING

FIGURE 2

JOB NO. 24-107

DATE: MAR 2024

SUBJECT: RIDGEWAY - MANCHESTER MIXED USE
2034 NO - BUILD TRAFFIC VOLUMES



LEGEND: ← AM PSH(PM PSH)

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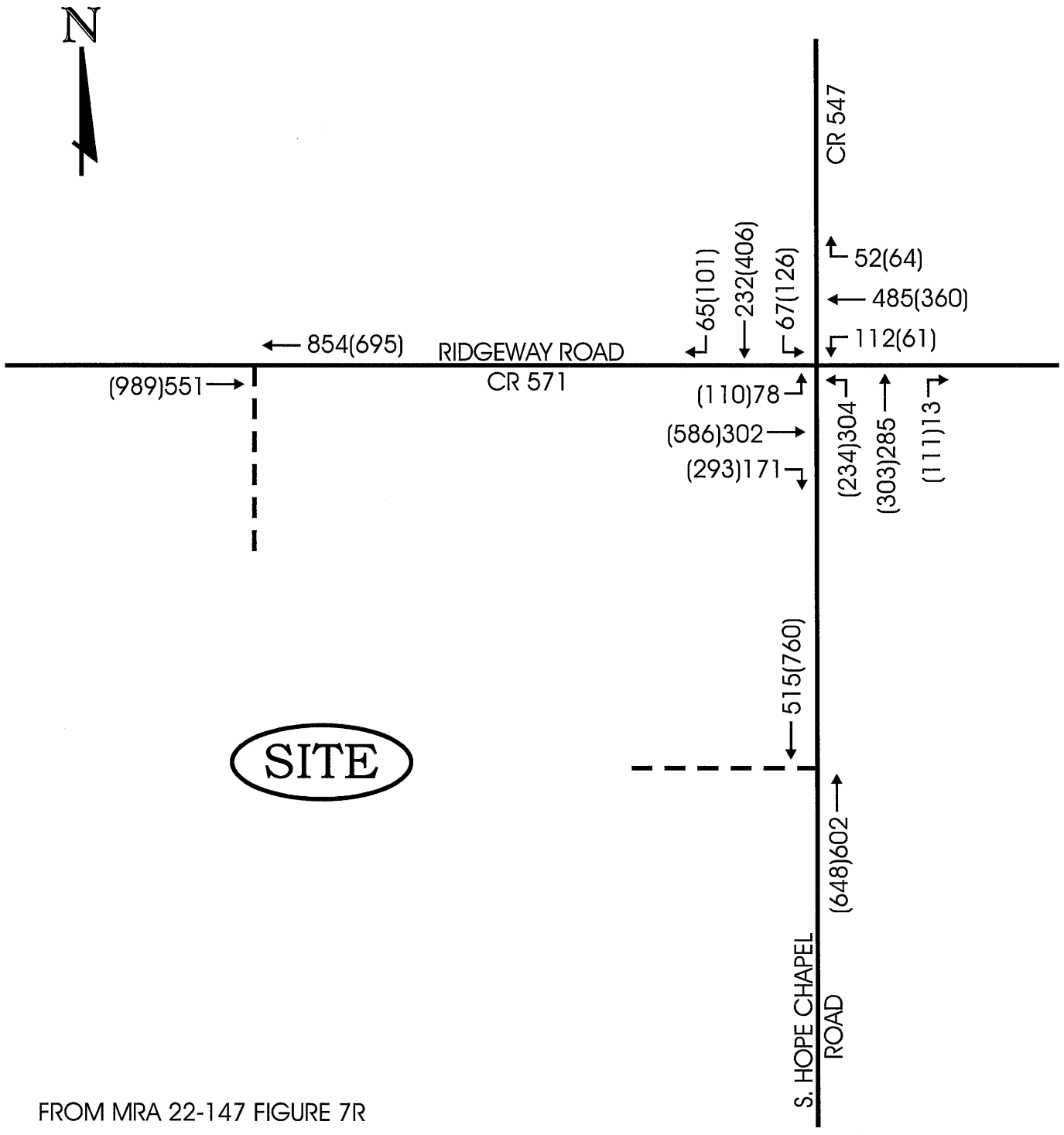
FIGURE 2

JOB NO. 24-107

DATE: MAR 2024

SUBJECT: RIDGEWAY - MANCHESTER MIXED USE
2034 NO - BUILD TRAFFIC VOLUMES



FROM MRA 22-147 FIGURE 7R

LEGEND: ← AM PSH(PM PSH)

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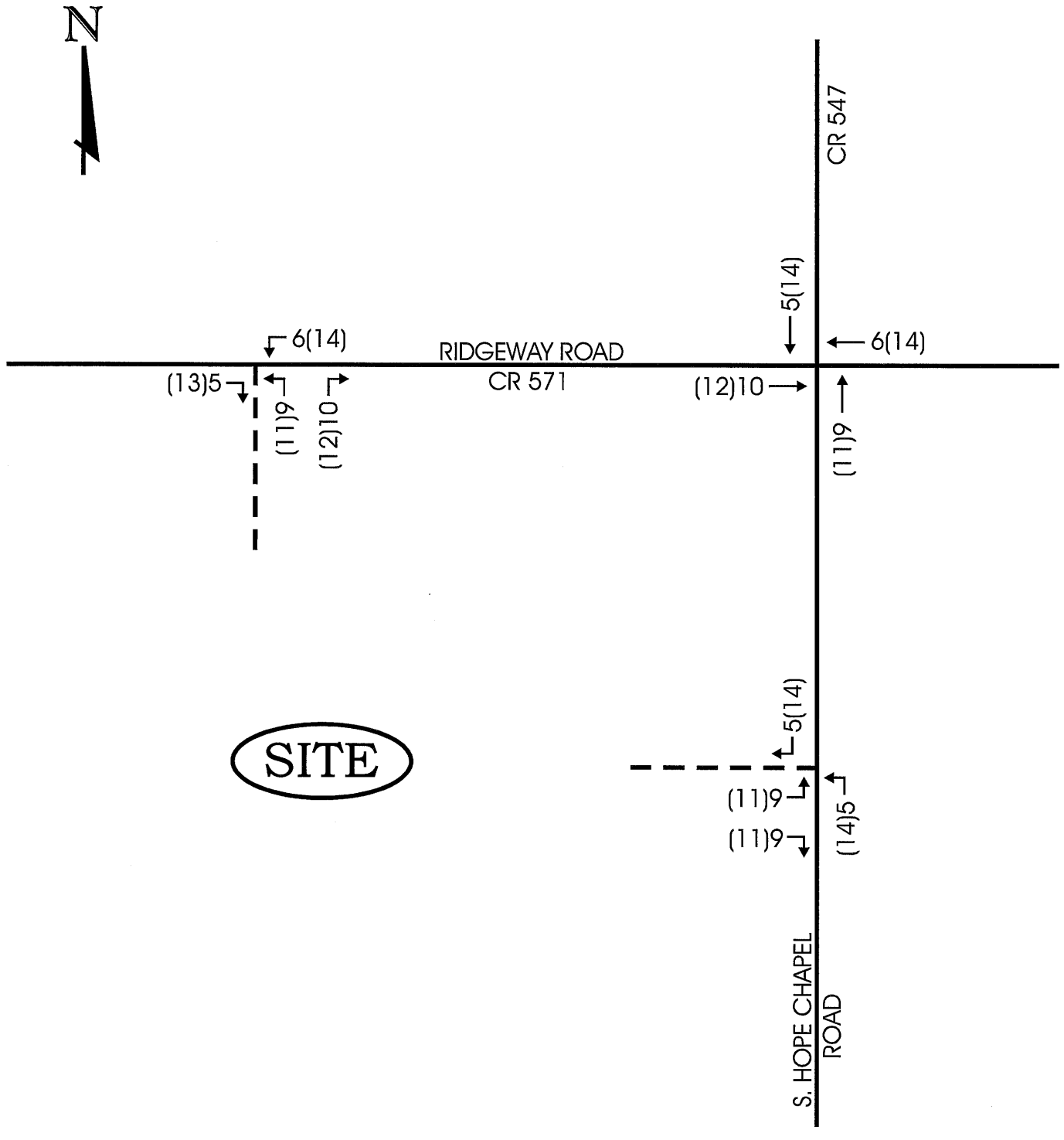
FIGURE 3

JOB NO. 24-107

DATE: MAR 2024

SUBJECT: RIDGEWAY - MANCHESTER MIXED USE
SITE GENERATED TRAFFIC VOLUMES



LEGEND: ⟵ AM PSH(PM PSH)

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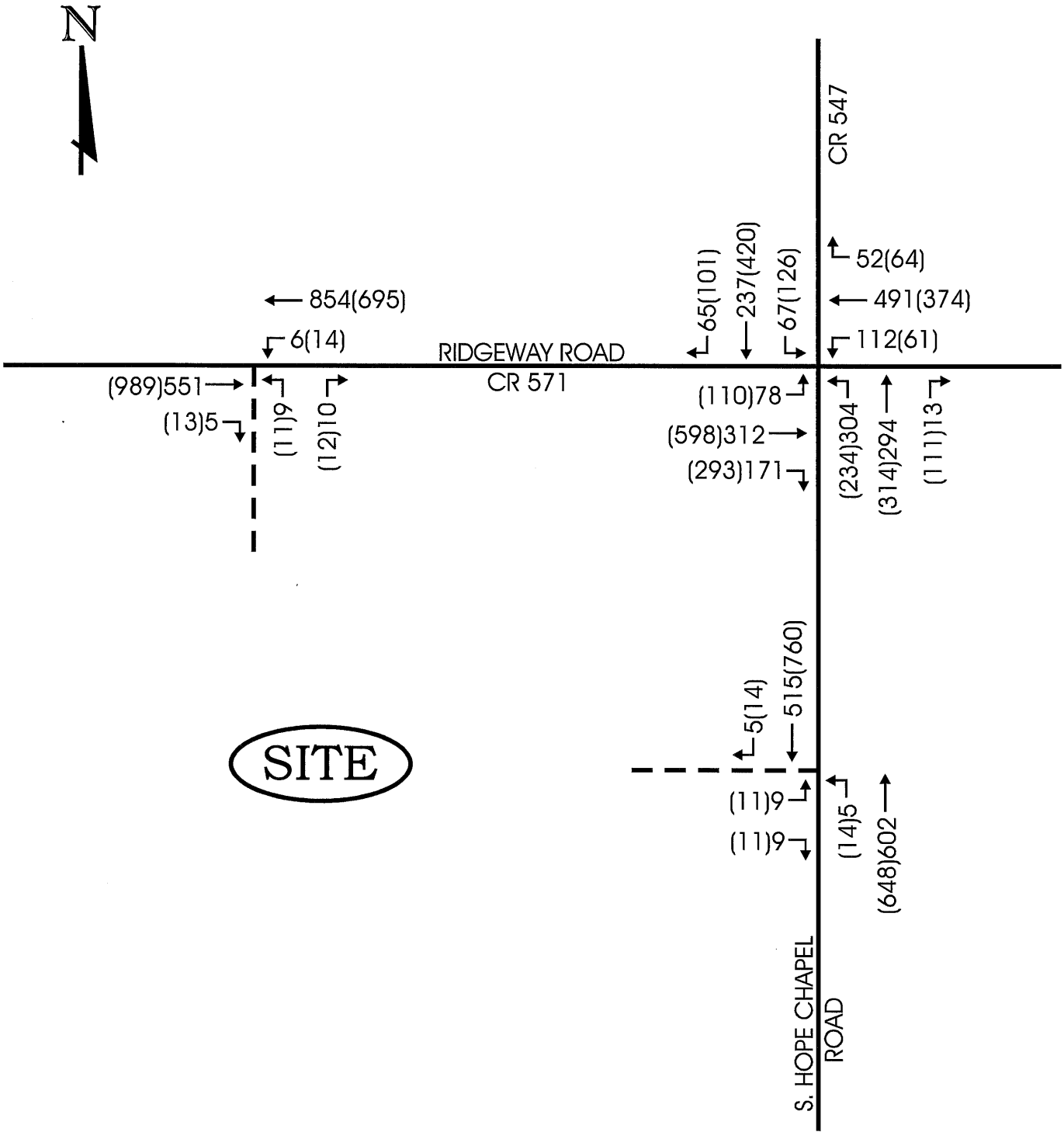
FIGURE 4

JOB NO. 24-107

DATE: MAR 2024

SUBJECT: RIDGEWAY - MANCHESTER MIXED USE
2034 BUILD TRAFFIC VOLUMES



LEGEND: ← AM PSH(PM PSH)

LEVEL OF SERVICE CRITERIA
FOR
TWO-WAY STOP-CONTROLLED INTERSECTIONS[1]

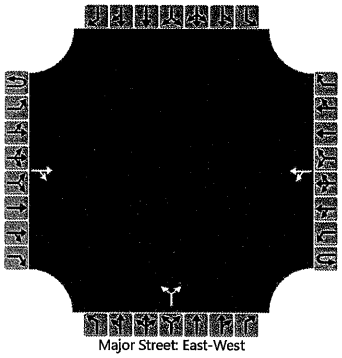
Level of Service	Average Control Delay
A	$\leq$ 10.0 Seconds Per Vehicle
B	> 10.0 and $\leq$ 15.0 Seconds Per Vehicle
C	> 15.0 and $\leq$ 25.0 Seconds Per Vehicle
D	> 25.0 and $\leq$ 35.0 Seconds Per Vehicle
E	> 35.0 and $\leq$ 50.0 Seconds Per Vehicle
F	> 50.0 Seconds Per Vehicle

[1] Transportation Research Board, Highway Capacity Manual 2022, National Research Council, Washington, DC, 2022.

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	STK	Intersection	CR 571 & SITE ACCESS
Agency/Co.	MRA	Jurisdiction	
Date Performed	3/7/2024	East/West Street	CR 571
Analysis Year	2034	North/South Street	SITE ACCESS
Time Analyzed	AM	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	24-107AFB-2 BUILD		

Lanes



Major Street: East-West

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	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			551	5		6	854			9		10				
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)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						6					20					
Capacity, c (veh/h)						985					218					
v/c Ratio						0.01					0.09					
95% Queue Length, Q_{95} (veh)						0.0					0.3					
Control Delay (s/veh)						8.7	0.1				23.2					
Level of Service (LOS)						A	A				C					
Approach Delay (s/veh)					0.2				23.2							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

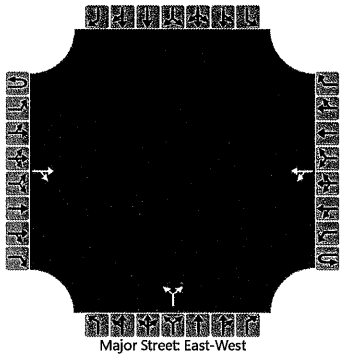
General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	3/7/2024
Analysis Year	2034
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	24-107PFB-2 BUILD

Site Information

Intersection	CR 571 & SITE ACCESS
Jurisdiction	
East/West Street	CR 571
North/South Street	SITE ACCESS
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

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	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			989	13		14	695			11		12				
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)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						15					24					
Capacity, c (veh/h)						656					130					
v/c Ratio						0.02					0.19					
95% Queue Length, Q_{95} (veh)						0.1					0.7					
Control Delay (s/veh)						10.6	0.4				38.8					
Level of Service (LOS)						B	A				E					
Approach Delay (s/veh)					0.6				38.8							
Approach LOS					A				E							

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HCS Two-Way Stop-Control Report

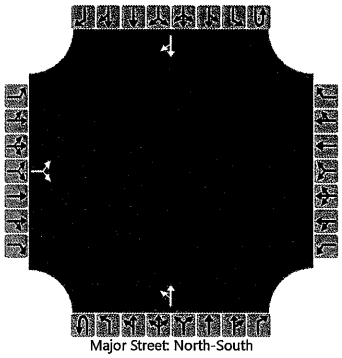
General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	3/7/2024
Analysis Year	2034
Time Analyzed	AM
Intersection Orientation	North-South
Project Description	24-107AFB-3 BUILD

Site Information

Intersection	CR 547 & SITE ACCESS
Jurisdiction	
East/West Street	SITE ACCESS
North/South Street	CR 547
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		9		9						5	602				515	5
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)			19							5						
Capacity, c (veh/h)			297							1017						
v/c Ratio			0.06							0.01						
95% Queue Length, Q_{95} (veh)			0.2							0.0						
Control Delay (s/veh)			18.0							8.6	0.1					
Level of Service (LOS)			C							A	A					
Approach Delay (s/veh)		18.0								0.1						
Approach LOS		C								A						

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HCS Two-Way Stop-Control Report

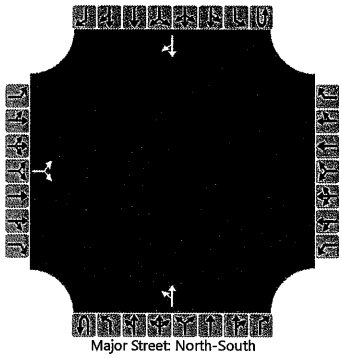
General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	3/7/2024
Analysis Year	2034
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	24-107PFB-3 BUILD

Site Information

Intersection	CR 547 & SITE ACCESS
Jurisdiction	
East/West Street	SITE ACCESS
North/South Street	CR 547
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		11		11						14	648				760	14
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)			23							15						
Capacity, c (veh/h)			190							808						
v/c Ratio			0.12							0.02						
95% Queue Length, Q_{95} (veh)			0.4							0.1						
Control Delay (s/veh)			26.6							9.5	0.3					
Level of Service (LOS)			D							A	A					
Approach Delay (s/veh)		26.6								0.5						
Approach LOS		D								A						

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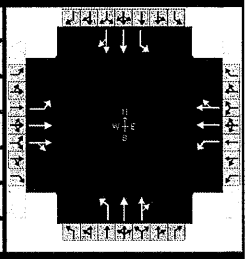
LEVEL OF SERVICE
FOR
SIGNALIZED INTERSECTIONS[1]

Level of Service	Description	Control (Signal) Delay Per Vehicle (Seconds)
A	Very short delay, good progression; most vehicles do not stop at intersection.	≤ 10.0
B	Generally good progression and/or short cycle length; more vehicles stop at intersection than at Level of Service "A."	> 10.0 and ≤ 20.0
C	Fair progression and/or longer cycle length; significant number of vehicles stop at intersection, though many still pass through without stopping.	> 20.0 and ≤ 35.0
D	Congestion becomes noticeable; longer delays from unfavorable progression, long cycle lengths, or high volume/capacity ratios; many vehicles stop at intersection.	> 35.0 and ≤ 55.0
E	Considered to be the limit of acceptable delay; indicative of poor progression, long cycle lengths, or high volume/capacity ratios; frequent individual cycles failures.	> 55.0 and ≤ 80.0
F	Often an indication of over-saturation (i.e., arrival flow exceeds capacity); also caused by poor progression and long cycles lengths; capacity is not necessarily exceeded under this level of service.	> 80.0

[1] Transportation Research Board, Highway Capacity Manual 2022, National Research Council, Washington, DC, 2022.

HCS Signalized Intersection Results Summary

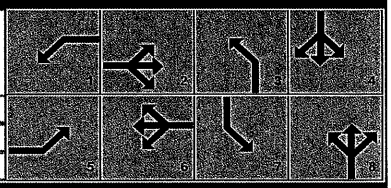
General Information				Intersection Information	
Agency	MRA			Duration, h	0.250
Analyst	STK	Analysis Date		Area Type	Other
Jurisdiction		Time Period	AM	PHF	0.90
Urban Street	CR 571-CR 547	Analysis Year	2034 NO BUILD	Analysis Period	1> 7:00
Intersection		File Name	24-107ANB-1.xus		
Project Description	24-107ANB-1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	78	302	171	112	485	52	304	285	13	67	232	65

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	25.0	10.0	26.0	0.0	0.0	
Yellow	3.0	5.0	5.0	5.0	0.0	0.0	
Red	0.0	2.0	0.0	2.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.0	32.0	10.0	32.0	15.0	33.0	15.0	33.0
Change Period, ($Y+R_c$), s	3.0	7.0	3.0	7.0	5.0	7.0	5.0	7.0
Max Allow Headway (*MAH*), s	2.7	0.0	2.7	0.0	2.7	2.9	2.7	2.9
Queue Clearance Time (g_s), s	5.0		6.4		12.0	8.3	4.4	8.6
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	1.00		1.00		1.00	0.00	0.01	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	87	276	249	124	303	294	338	166	165	74	169	161
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1645	1781	1870	1806	1781	1870	1841	1781	1870	1731
Queue Service Time (g_s), s	3.0	11.3	11.6	4.4	12.6	12.6	10.0	6.2	6.3	2.4	6.3	6.6
Cycle Queue Clearance Time (g_c), s	3.0	11.3	11.6	4.4	12.6	12.6	10.0	6.2	6.3	2.4	6.3	6.6
Green Ratio (*g/C*)	0.36	0.28	0.28	0.36	0.28	0.28	0.40	0.29	0.29	0.40	0.29	0.29
Capacity (*c*), veh/h	313	520	457	330	520	502	481	540	532	484	540	500
Volume-to-Capacity Ratio (*X*)	0.277	0.532	0.546	0.378	0.583	0.586	0.702	0.308	0.310	0.154	0.312	0.323
Back of Queue (*Q*), ft/ln (85 th percentile)	59.9	191.6	176.2	86.3	211.8	204.1	210.1	114.5	112	43.9	115.7	110.9
Back of Queue (*Q*), veh/ln (85 th percentile)	2.4	7.5	7.0	3.4	8.3	8.2	8.3	4.5	4.5	1.7	4.6	4.4
Queue Storage Ratio (*RQ*) (85 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	21.0	27.5	27.7	21.3	28.0	28.0	22.3	25.0	25.0	17.3	25.0	25.1
Incremental Delay (d_2), s/veh	2.2	3.9	4.6	3.3	4.7	4.9	8.3	1.5	1.5	0.7	1.5	1.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	23.2	31.4	32.3	24.6	32.7	33.0	30.6	26.5	26.5	18.0	26.5	26.8
Level of Service (LOS)	C	C	C	C	C	C	C	C	C	B	C	C
Approach Delay, s/veh / LOS	30.6	C		31.4	C		28.6	C		25.1	C	
Intersection Delay, s/veh / LOS	29.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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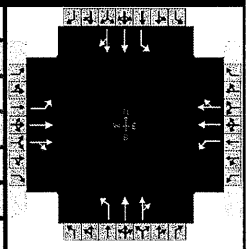
HCS Signalized Intersection Results Summary

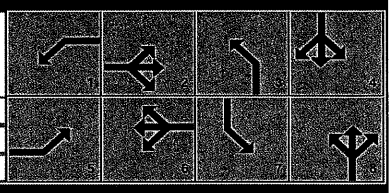
General Information				Intersection Information	
Agency	MRA			Duration, h	0.250
Analyst	STK	Analysis Date		Area Type	Other
Jurisdiction		Time Period	AM	PHF	0.90
Urban Street	CR 571-CR 547	Analysis Year	2034 BUILD	Analysis Period	1> 7:00
Intersection		File Name	24-107AFB-1.xus		
Project Description	24-107AFB-1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	78	312	171	112	491	52	304	294	13	67	237	65

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	25.0	10.0	26.0	0.0	0.0	
Yellow	3.0	5.0	5.0	5.0	0.0	0.0	
Red	0.0	2.0	0.0	2.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.0	32.0	10.0	32.0	15.0	33.0	15.0	33.0
Change Period, ($Y+R_c$), s	3.0	7.0	3.0	7.0	5.0	7.0	5.0	7.0
Max Allow Headway (*MAH*), s	2.7	0.0	2.7	0.0	2.7	2.9	2.7	2.9
Queue Clearance Time (g_s), s	5.0		6.4		12.0	8.5	4.4	8.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	1.00		1.00		1.00	0.00	0.01	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	87	282	255	124	306	297	338	171	170	74	171	164
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1649	1781	1870	1807	1781	1870	1842	1781	1870	1733
Queue Service Time (g_s), s	3.0	11.5	11.9	4.4	12.7	12.8	10.0	6.5	6.5	2.4	6.5	6.7
Cycle Queue Clearance Time (g_c), s	3.0	11.5	11.9	4.4	12.7	12.8	10.0	6.5	6.5	2.4	6.5	6.7
Green Ratio (*g/C*)	0.36	0.28	0.28	0.36	0.28	0.28	0.40	0.29	0.29	0.40	0.29	0.29
Capacity (*c*), veh/h	311	520	458	326	520	502	479	540	532	480	540	501
Volume-to-Capacity Ratio (*X*)	0.279	0.543	0.556	0.382	0.589	0.592	0.705	0.317	0.319	0.155	0.317	0.328
Back of Queue (*Q*), ft/ln (85 th percentile)	59.9	196.1	180	86.4	214.4	206.9	210.6	117.6	115	43.9	117.7	112.6
Back of Queue (*Q*), veh/ln (85 th percentile)	2.4	7.7	7.2	3.4	8.4	8.3	8.3	4.6	4.6	1.7	4.6	4.5
Queue Storage Ratio (*RQ*) (85 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	21.0	27.6	27.8	21.3	28.1	28.1	22.4	25.0	25.1	17.3	25.1	25.1
Incremental Delay (d_2), s/veh	2.2	4.0	4.8	3.4	4.8	5.1	8.5	1.5	1.6	0.7	1.5	1.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	23.2	31.7	32.6	24.7	32.9	33.2	30.9	26.6	26.6	18.0	26.6	26.9
Level of Service (LOS)	C	C	C	C	C	C	C	C	C	B	C	C
Approach Delay, s/veh / LOS	30.9	C		31.6	C		28.7	C		25.2	C	
Intersection Delay, s/veh / LOS	29.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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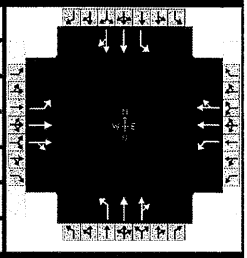
HCS Signalized Intersection Results Summary

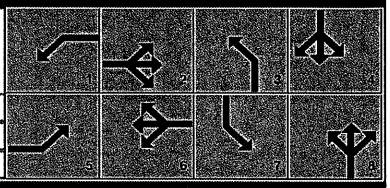
General Information				Intersection Information	
Agency	MRA			Duration, h	0.250
Analyst	STK	Analysis Date		Area Type	Other
Jurisdiction		Time Period	PM	PHF	0.90
Urban Street	CR 571-CR 547	Analysis Year	2034 NO BUILD	Analysis Period	1> 7:00
Intersection		File Name	24-107PNB-1.xus		
Project Description	24-107PNB-1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110	586	293	61	360	64	234	303	111	126	406	101

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	25.0	10.0	26.0	0.0	0.0	
Yellow	3.0	5.0	5.0	5.0	0.0	0.0	
Red	0.0	2.0	0.0	2.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.0	32.0	10.0	32.0	15.0	33.0	15.0	33.0
Change Period, ($Y+R_c$), s	3.0	7.0	3.0	7.0	5.0	7.0	5.0	7.0
Max Allow Headway (*MAH*), s	2.7	0.0	2.7	0.0	2.7	3.0	2.7	3.0
Queue Clearance Time (g_s), s	6.3		4.3		11.2	11.6	6.6	13.9
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.6	0.0	1.6
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	1.00		0.93		1.00	0.01	0.36	0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	122	518	459	68	240	231	260	238	222	140	290	273
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1659	1781	1870	1772	1781	1870	1700	1781	1870	1742
Queue Service Time (g_s), s	4.3	24.9	24.9	2.3	9.6	9.7	9.2	9.3	9.6	4.6	11.7	11.9
Cycle Queue Clearance Time (g_c), s	4.3	24.9	24.9	2.3	9.6	9.7	9.2	9.3	9.6	4.6	11.7	11.9
Green Ratio (*g/C*)	0.36	0.28	0.28	0.36	0.28	0.28	0.40	0.29	0.29	0.40	0.29	0.29
Capacity (*c*), veh/h	354	520	461	219	520	492	392	540	491	427	540	503
Volume-to-Capacity Ratio (*X*)	0.345	0.996	0.996	0.310	0.462	0.469	0.664	0.441	0.452	0.328	0.537	0.543
Back of Queue (*Q*), ft/ln (85 th percentile)	83.7	505.3	455.9	49.8	165.6	158.7	165.1	161	151.1	86.1	197.6	186.5
Back of Queue (*Q*), veh/ln (85 th percentile)	3.3	19.9	18.2	2.0	6.5	6.3	6.5	6.3	6.0	3.4	7.8	7.5
Queue Storage Ratio (*RQ*) (85 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	20.9	32.5	32.5	22.9	26.9	27.0	20.5	26.1	26.2	18.5	26.9	27.0
Incremental Delay (d_2), s/veh	2.6	38.6	41.0	3.7	2.9	3.2	8.6	2.6	3.0	2.0	3.8	4.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	23.6	71.0	73.5	26.6	29.9	30.2	29.1	28.7	29.2	20.5	30.7	31.2
Level of Service (LOS)	C	E	E	C	C	C	C	C	C	C	C	C
Approach Delay, s/veh / LOS	66.8	E		29.6	C		29.0	C		28.9	C	
Intersection Delay, s/veh / LOS	42.6						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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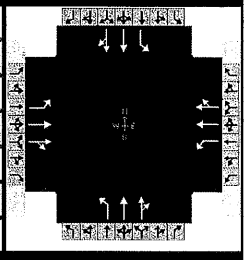
HCS Signalized Intersection Results Summary

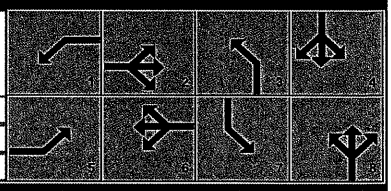
General Information				Intersection Information	
Agency	MRA			Duration, h	0.250
Analyst	STK	Analysis Date		Area Type	Other
Jurisdiction		Time Period	PM	PHF	0.90
Urban Street	CR 571-CR 547	Analysis Year	2034 BUILD	Analysis Period	1> 7:00
Intersection		File Name	24-107PFB-1.xus		
Project Description	24-107PFB-1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110	598	293	61	374	64	234	314	111	126	420	101

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	25.0	10.0	26.0	0.0	0.0	
Yellow	3.0	5.0	5.0	5.0	0.0	0.0	
Red	0.0	2.0	0.0	2.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.0	32.0	10.0	32.0	15.0	33.0	15.0	33.0
Change Period, ($Y+R_c$), s	3.0	7.0	3.0	7.0	5.0	7.0	5.0	7.0
Max Allow Headway (*MAH*), s	2.7	0.0	2.7	0.0	2.7	3.0	2.7	3.0
Queue Clearance Time (g_s), s	6.3		4.3		11.2	11.9	6.6	14.3
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.6
Phase Call Probability	1.00		1.00		1.00	1.00	1.00	1.00
Max Out Probability	1.00		0.93		1.00	0.02	0.36	0.04

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	122	524	466	68	248	239	260	244	228	140	298	281
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1661	1781	1870	1775	1781	1870	1704	1781	1870	1745
Queue Service Time (g_s), s	4.3	25.0	25.0	2.3	9.9	10.1	9.2	9.6	9.9	4.6	12.1	12.3
Cycle Queue Clearance Time (g_c), s	4.3	25.0	25.0	2.3	9.9	10.1	9.2	9.6	9.9	4.6	12.1	12.3
Green Ratio (*g/C*)	0.36	0.28	0.28	0.36	0.28	0.28	0.40	0.29	0.29	0.40	0.29	0.29
Capacity (*c*), veh/h	349	520	461	219	520	493	387	540	492	422	540	504
Volume-to-Capacity Ratio (*X*)	0.350	1.009	1.009	0.310	0.478	0.484	0.673	0.452	0.463	0.331	0.551	0.557
Back of Queue (*Q*), ft/ln (85 th percentile)	84	522.9	472.1	49.8	171.1	164.3	166.2	165.2	155.1	86.3	203.5	192.3
Back of Queue (*Q*), veh/ln (85 th percentile)	3.3	20.6	18.9	2.0	6.7	6.6	6.5	6.5	6.2	3.4	8.0	7.7
Queue Storage Ratio (*RQ*) (85 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	21.0	32.5	32.5	22.9	27.1	27.1	20.6	26.2	26.3	18.5	27.1	27.1
Incremental Delay (d_2), s/veh	2.8	41.8	44.2	3.7	3.1	3.4	9.0	2.7	3.1	2.1	4.0	4.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	23.8	74.3	76.7	26.6	30.2	30.5	29.6	28.9	29.4	20.6	31.1	31.5
Level of Service (LOS)	C	F	F	C	C	C	C	C	C	C	C	C
Approach Delay, s/veh / LOS	69.7	E		29.9	C		29.3	C		29.2	C	
Intersection Delay, s/veh / LOS	43.8						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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MANCHESTER MIXED - USE
RIDGEWAY ROAD & S. HOPE CHAPEL ROAD
JACKSON TOWNSHIP, OCEAN COUNTY
MRA JOB 24-107 THURSDAY AM COUNT

File Name : 24107 hope chapel & ridgeway am1
Site Code : 00024107
Start Date : 2/1/2024
Page No : 1

Groups Printed- CARS - TRUCKS - SCHOOL BUS

	S. Hope Chapel Road (CR 547) Southbound					Ridgeway Road (CR 571) Westbound					S. Hope Chapel Road (CR 547) Northbound					Ridgeway Road (CR 571) Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
07:00 AM	11	39	1	0	51	30	82	3	1	116	58	71	0	2	131	9	65	32	4	110	408
07:15 AM	16	49	1	4	70	37	94	10	1	142	66	67	1	1	135	8	64	34	9	115	462
07:30 AM	10	55	5	4	74	46	133	3	1	183	73	74	2	1	150	10	82	50	8	150	557
07:45 AM	12	47	5	5	69	28	117	2	1	148	62	79	6	0	147	14	80	31	10	135	499
Total	49	190	12	13	264	141	426	18	4	589	259	291	9	4	563	41	291	147	31	510	1926
08:00 AM	10	41	3	2	56	26	109	2	0	137	52	68	1	4	125	8	63	17	5	93	411
08:15 AM	7	40	4	4	55	20	90	3	2	115	78	81	1	0	160	9	78	9	19	115	445
08:30 AM	8	39	6	4	57	19	100	11	2	132	46	64	2	3	115	11	82	31	6	130	434
08:45 AM	6	59	6	2	73	15	68	9	3	95	31	53	3	1	88	10	92	47	12	161	417
Total	31	179	19	12	241	80	367	25	7	479	207	266	7	8	488	38	315	104	42	499	1707
09:00 AM	5	32	4	2	43	12	66	4	2	84	49	47	3	5	104	12	70	31	2	115	346
09:15 AM	6	30	4	5	45	8	63	2	0	73	24	43	3	1	71	14	61	29	7	111	300
Grand Total	91	431	39	32	593	241	922	49	13	1225	539	647	22	18	1226	105	737	311	82	1235	4279
Apprch %	15.3	72.7	6.6	5.4		19.7	75.3	4.0	1.1		44.0	52.8	1.8	1.5		8.5	59.7	25.2	6.6		
Total %	2.1	10.1	0.9	0.7	13.9	5.6	21.5	1.1	0.3	28.6	12.6	15.1	0.5	0.4	28.7	2.5	17.2	7.3	1.9	28.9	

	S. Hope Chapel Road (CR 547) Southbound					Ridgeway Road (CR 571) Westbound					S. Hope Chapel Road (CR 547) Northbound					Ridgeway Road (CR 571) Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 07:00 AM to 09:15 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	48	192	14	15	269	137	453	17	3	610	253	288	10	6	557	40	289	132	32	493	1929
Percent	17.8	71.4	5.2	5.6		22.5	74.3	2.8	0.5		45.4	51.7	1.8	1.1		8.1	58.6	26.8	6.5		
07:30 Volume	10	55	5	4	74	46	133	3	1	183	73	74	2	1	150	10	82	50	8	150	557
Peak Factor																					0.866
High Int.	07:30 AM					07:30 AM					07:30 AM					07:30 AM					
Volume	10	55	5	4	74	46	133	3	1	183	73	74	2	1	150	10	82	50	8	150	
Peak Factor					0.909					0.833					0.928					0.822	

McDonough & Rea Associates
1431 Lakewood Road Suite C
Manasquan NJ 08736
(732) 528-7076

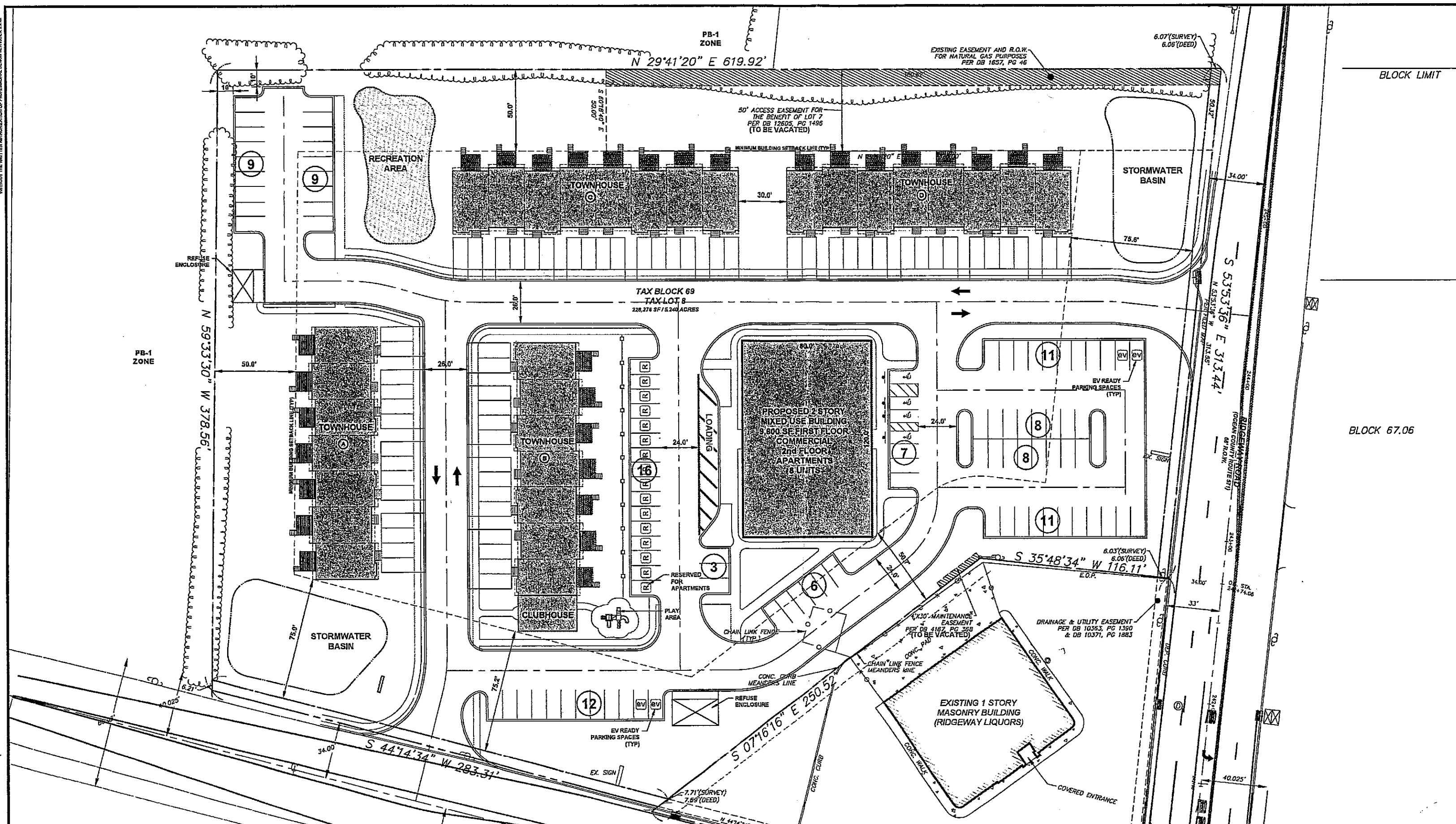
MANCHESTER MIXED - USE
RIDGEWAY ROAD & S. HOPE CHAPEL ROAD
JACKSON TOWNSHIP, OCEAN COUNTY
MRA JOB 24-107 TUESDAY PM COUNT

File Name : 24107 hope chapel & ridgeway pm1
Site Code : 00024107
Start Date : 1/30/2024
Page No : 1

Groups Printed- CARS - TRUCKS - SCHOOL BUS

	S. Hope Chapel Road (CR 547) Southbound					Ridgeway Road (CR 571) Westbound					S. Hope Chapel Road (CR 547) Northbound					Ridgeway Road (CR 571) Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
03:30 PM	26	75	7	5	113	8	66	7	6	87	67	62	32	11	172	10	121	41	8	180	552
03:45 PM	24	83	8	7	122	9	64	5	0	78	54	55	38	11	158	5	125	48	4	182	540
Total	50	158	15	12	235	17	130	12	6	165	121	117	70	22	330	15	246	89	12	362	1092
04:00 PM	33	79	7	5	124	12	69	8	1	90	58	68	48	11	185	11	137	48	9	205	604
04:15 PM	20	95	8	3	126	5	76	8	2	91	69	77	34	9	189	8	152	48	9	217	623
04:30 PM	22	77	3	4	106	9	69	6	0	84	52	77	43	15	187	14	133	62	18	227	604
04:45 PM	25	92	10	4	131	7	60	9	3	79	63	59	31	13	166	11	140	54	12	217	593
Total	100	343	28	16	487	33	274	31	6	344	242	281	156	48	727	44	562	212	48	866	2424
05:00 PM	19	78	3	3	103	5	85	9	1	100	58	71	20	8	157	5	134	43	8	190	550
05:15 PM	19	94	4	1	118	10	82	4	4	100	47	51	23	9	130	8	152	51	16	227	575
05:30 PM	16	94	4	3	117	9	86	4	4	103	42	53	25	10	130	7	140	50	13	210	560
05:45 PM	13	95	3	4	115	11	76	3	6	96	38	44	21	14	117	11	130	55	12	208	536
Total	67	361	14	11	453	35	329	20	15	399	185	219	89	41	534	31	556	199	49	835	2221
Grand Total	217	862	57	39	1175	85	733	63	27	908	548	617	315	111	1591	90	1364	500	109	2063	5737
Apprch %	18.5	73.4	4.9	3.3		9.4	80.7	6.9	3.0		34.4	38.8	19.8	7.0		4.4	66.1	24.2	5.3		
Total %	3.8	15.0	1.0	0.7	20.5	1.5	12.8	1.1	0.5	15.8	9.6	10.8	5.5	1.9	27.7	1.6	23.8	8.7	1.9	36.0	

	S. Hope Chapel Road (CR 547) Southbound					Ridgeway Road (CR 571) Westbound					S. Hope Chapel Road (CR 547) Northbound					Ridgeway Road (CR 571) Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 03:30 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:00 PM																				
Volume	100	343	28	16	487	33	274	31	6	344	242	281	156	48	727	44	562	212	48	866	2424
Percent	20.5	70.4	5.7	3.3		9.6	79.7	9.0	1.7		33.3	38.7	21.5	6.6		5.1	64.9	24.5	5.5		
04:15 Volume	20	95	8	3	126	5	76	8	2	91	69	77	34	9	189	8	152	48	9	217	623
Peak Factor																					0.973
High Int.	04:45 PM					04:15 PM					04:15 PM					04:30 PM					
Volume	25	92	10	4	131	5	76	8	2	91	69	77	34	9	189	14	133	62	18	227	
Peak Factor					0.929					0.945					0.962					0.954	



GENERAL NOTES:

1. BEING KNOWN AS LOT 8 IN BLOCK 69 AS SHOWN ON SHEET 4 OF THE MANCHESTER TOWNSHIP TAX MAPS.
2. THE PROPERTY IS LOCATED WITHIN THE PB-1 AND CONTAINS 5.24± ACRES.
3. IT IS PROPOSED TO CONSTRUCT A MIXED USE DEVELOPMENT IN ACCORDANCE WITH THE TOWNSHIP OF MANCHESTER ORDINANCE #23-41.
   - 32 MARKET RESIDENTIAL UNITS (30 TOWNHOUSE & 2 APARTMENT)
   - 6 AFFORDABLE RESIDENTIAL UNITS (6 APARTMENT)
   - 9,600 SF COMMERCIAL
4. THERE ARE NO FRESHWATER WETLANDS LOCATED ON OR WITHIN 300 FEET OF THE SITE.
5. THE PROPOSED DEVELOPMENT WILL BE SERVICED BY PUBLIC WATER AND SEWER.

Parking Calculations

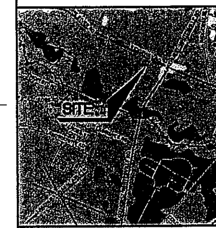
Land Use	Units	Parking Required	Required	Provided: Driveway	Provided: Off-Street
Commercial	9,600	1/200 SF	48		50
Townhouse					
Four Bedroom	30	2.5/Unit	75	60	15
Apartments					
One Bedroom	0	1.8 /Unit	0		0
Two Bedroom	4	2.0 / Unit	8		8
Three Bedroom	4	2.1 / Unit	8		8
Residential Guest	38	0.5/Unit	19		19
EV Ready Space Credit	8				4
		Total	158	164	

Affordable Housing Completion Schedule

Market Units Completed: Number	Market Units Completed: Percentage	Affordable Units Completed: Required	Affordable Units Completed: Provided
8	25%	0%	0%
9		1 - 10%	6 - 100%
16	50%	3 - 50%	6 - 100%
24	75%	6 - 100%	6 - 100%
28	90%	6 - 100%	6 - 100%

Affordable Unit Bedroom Mix

	Total Affordable Units	Min 3 bedroom (15%)	Min 2 bedroom (35%)	Max Efficiency (20%)
Required	6	2	2	2
Provided	6	2	2	2



KEY MAP
SCALE: 1" = 2000'

30 0 30 60
SCALE IN FEET

No.	DATE	DESCRIPTION	BY

PDS
PROFESSIONAL DESIGN SERVICES, L.L.C.
CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS, ENVIRONMENTAL SCIENTISTS, CONSTRUCTION SERVICES
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NEW JERSEY STATE BOARD OF P.E. & L.S.
CERTIFICATE OF AUTHORIZATION NO. 24GA28125400

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CONCEPT PLAN

FOR

TAX BLOCK 69
TAX LOT 8

TOWNSHIP OF MANCHESTER
OCEAN COUNTY NEW JERSEY

SCALE:	1" = 30'	JOB NUMBER:	322319
DRAWN BY:	KNL	DATE:	DECEMBER 18, 2023
DESIGN/CALC'D BY:	IMB	SHEET:	1 / 2
CHECKED BY:	WAS		

KRISTIN 12/18/23
H:\PROJECTS\322319\CONCEPT < 322319 CONCEPT H >