
TRAFFIC ENGINEERING EVALUATION

RINGO PROPERTIES, LLC

U.S. ROUTE 206 AT BRIGHTON ROAD (COUNTY ROUTE 603)
TOWNSHIP OF ANDOVER
SUSSEX COUNTY, NEW JERSEY

Prepared for:

RINGO PROPERTIES, LLC
60 Peachtree Avenue
East Hanover, New Jersey 07936

Prepared by:

Bowman

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6 Campus Drive, Suite 302
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June 4, 2024
BCG File No. 081441-01-001

INTRODUCTION

The purpose of this Traffic Engineering Evaluation is to assess any traffic impacts associated with the redevelopment of the subject property known as Block 158, Lot 6 located at the intersection of U.S. Route 206 and Brighton Road (County Route 603) in the Township of Andover, Sussex County. The site contains approximately 10.39 acres with approximately 507 feet of frontage along the southerly side of U.S. Route 206 and approximately 1,373 feet of frontage along the easterly side of Brighton Road. The site is currently vacant though there are some gravel areas along the site frontages. Previously there were various structures on the property but they were demolished at some time in the past. As the adjacent roadways are uncurbed there are no defined access points in the areas of the gravel areas.

The redevelopment proposal is for three (3) buildings, a 10,000 square foot retail building facing Route 206 and two 25,000 square foot flex-space, light industrial buildings with outdoor storage areas to the rear of the buildings. Access to the site will be provided by two (2) full-movement driveways to Brighton Road. Each driveway will be 25 feet in width.

Parking for the various buildings would be located along the north and west sides of the building, with internal driveways providing full circulation within the site. Access to the outdoor storage areas would be gated. The site plan proposes a total of 125 parking spaces with six (6) ADA accessible parking spaces and four (4) Make-Ready EVSE spaces (which provide a 4 space credit). The loading area for the retail building is located on the south (rear) side of the building, providing access to each of the tenant spaces. The flex-space, light industrial buildings are each provided with five (5) 15 foot by 40 foot loading zones, one for each anticipated tenant space. The location of the project site is illustrated in Figure 1.

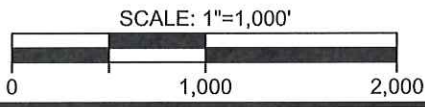
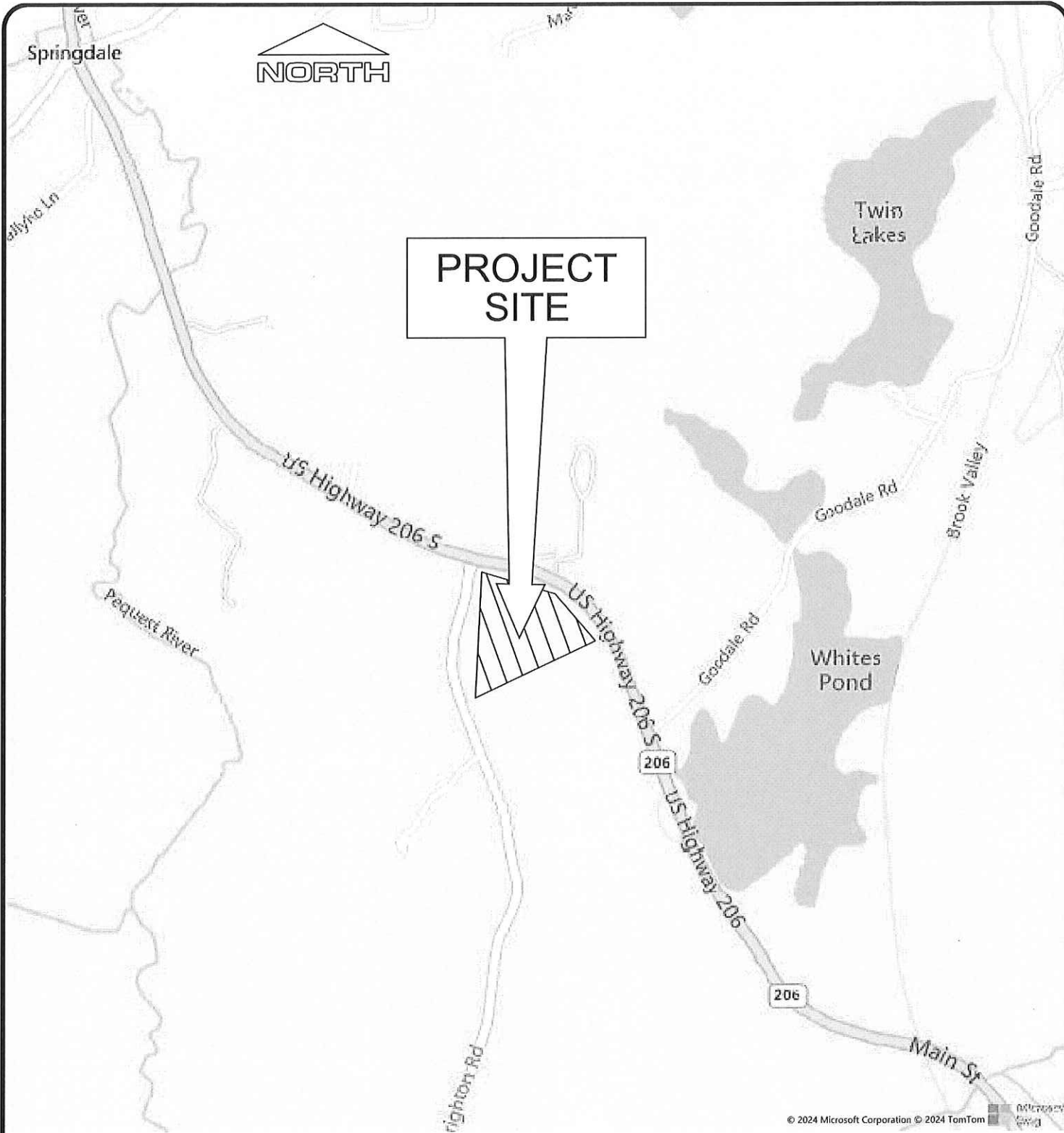
EXISTING CONDITIONS

The site is located on the southeasterly corner of the intersection between U.S. Route 206 and Brighton Road (County Route 603). The surrounding properties include a mix of commercial properties (Simon Peter, Tri-State Dock & Door, Lakeland Bank), a County Public Works facility, some residential and agricultural uses and vacant lands. The subject site is currently vacant with gravel and open areas near the roadways where buildings previously existed, with the balance of the site wooded.

Study Roadways

U.S. Route 206 is categorized as an urban principal arterial and is under the jurisdiction of the New Jersey Department of Transportation. In the vicinity of the subject site, Route 206 is oriented in an east-west direction but overall it provides north-south travel through Sussex County from Stanhope to the south and the Milford-Montague Toll Bridge to the north. It provides connections to various County roadways, Routes 15 and 94 and Interstate 80. In the vicinity of the project, Route 206 provides a two-lane cartway within a pavement width of approximately 44 feet. There are paved shoulders along both sides of the roadway but no sidewalks or curbs. The posted speed limit is 50 miles per hour (MPH).

V:\081441 - Ringo Properties\081441-01-001 (ENG) - Ringo Andover Traffic\Engineering\Plans\01-Traffic Figures\081441-MP-TrafficFigures.dwg 06/04/24 01:06:05PM, kristina.cooper, LAYOUT:ROAD LOCATION MAP



CENTER OF PROJECT SITE:
 x: 516,353 (E)
 y: 663,557 (N)
 N.J. STATE PLANE
 COORDINATE SYSTEM

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DATE: 05/30/24 SCALE: 1"=1000' CHKD.:
 PROJ.: 081441-01-001

FIGURE 1
RINGO PROPERTIES, LLC
LOCATION MAP
BLOCK 158, LOT 6
 TOWNSHIP OF ANDOVER, SUSSEX COUNTY, NJ

Brighton Road (County Route 603) is categorized as a rural major collector and is under the jurisdiction of the County of Sussex. This roadway extends northerly from Route 517 (Airport Road) in the Tranquility section of Green Township to its northern terminus at Route 206 adjacent to the subject site. It provides connections with County Route 606 and various municipal roadways. In the vicinity of the subject site, it provides a two-lane cartway with narrow paved shoulder and a pavement width of approximately 28 feet. There are no sidewalks or curbs along this segment of Brighton Road. The posted speed limit is 45 miles per hour (MPH).

Study Intersections

U.S. Route 206 with Brighton Road (CR 603) is stop-controlled, with a Stop sign on Brighton Road. All approaches provide a single lane for turning movements though we note that the northbound Brighton Road approach has a short channelizing island which permits right turning vehicles to bypass vehicles turning left. The shoulder along northbound Route 206 also is of sufficient width to permit through vehicles to bypass left turning vehicles.

Traffic Volumes

An intersection turning movement count was conducted at the study location on Thursday, May 30, 2024. These counts were conducted during the AM peak period (7:00 AM to 9:00 AM) and during the PM peak period (4:00 PM to 6:00 PM). School was in session and the weather was clear with no precipitation. We have also obtained mainline traffic counts along Route 206 (just south of Goodale Road) from the NJDOT (June 2019) and along Brighton Road (just south of Route 206) from the Sussex County Engineering Department (August 2022).

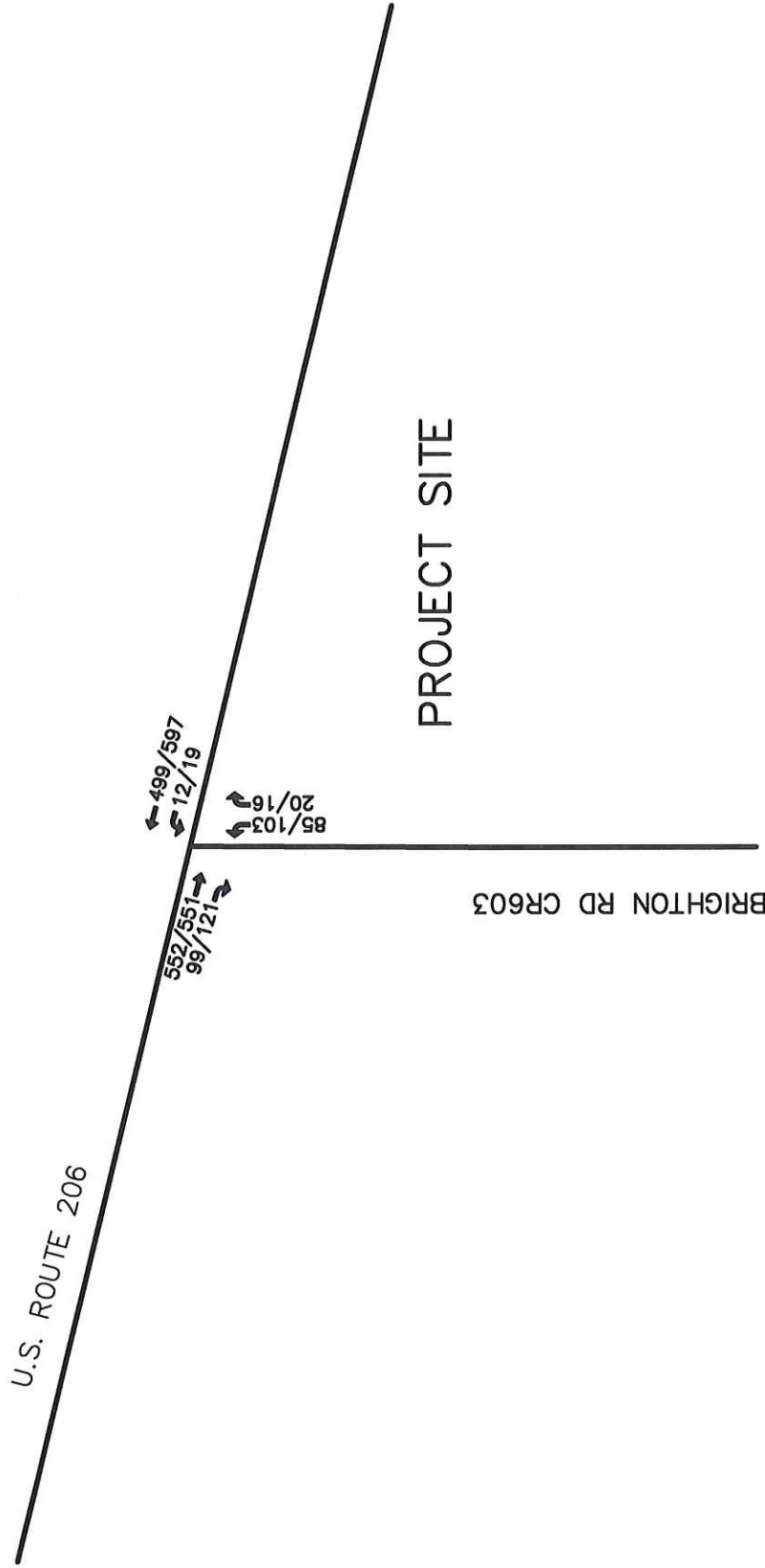
The County count data is lower than our counts for Brighton Road, while the NJDOT counts show higher volumes than our counts. This is not unexpected as the NJDOT counts are pre-pandemic and traffic volumes have not fully returned to those levels. Therefore, it is our opinion that the mainline counts validate the turning movements counts conducted for this project.

The traffic count program indicated that the peak hours of the study intersection occurred between 7:30 AM and 8:30 AM and between 4:15 PM and 5:15 PM. The existing peak hour volumes are represented in Figure 2. A summary of the intersection count information is provided in Appendix I.

CAPACITY ANALYSIS

The observed AM and PM peak hour volumes for existing 2024 conditions were utilized to perform capacity analyses at the studied intersection of Brighton Road with Route 206 under unsignalized conditions.

The existing AM and PM peak hour intersection traffic volumes were analyzed to evaluate the quality of operation at the studied intersection. The methodologies presented in 2010



KEY

← 00/00 - AM PEAK/PM PEAK HOUR VOLUMES

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**FIGURE 2
 RINGO PROPERTIES, LLC
 EXISTING (2024)
 TRAFFIC VOLUMES**

TOWNSHIP OF ANDOVER, SUSSEX COUNTY, NJ

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Highway Capacity Manual, Chapter 19 entitled “Stop-Controlled Intersections” were used for the analysis of the studied intersections. Intersection capacity calculations were completed using the Highway Capacity Software, Version 7.9.5. Definitions of Levels of Service for stop-controlled intersections are provided in the Appendix.

The methodology addresses two measurements of an intersection’s effectiveness in accommodating conflicting traffic movements; capacity and level of service (LOS). Capacity is defined for each approach as a maximum number of vehicles that may pass through the intersection given the prevailing roadway and traffic control conditions. The capacity is evaluated in terms of the ratio of actual traffic flow to capacity (v/c ratio). The second measure of effectiveness is average stopped delay per vehicle (seconds/vehicle), which determines the Level of Service.

Results of the levels of service for the studied weekday AM and PM peak hours are summarized in Table 1. It is readily seen that the existing peak hour traffic conditions, presented in the columns labeled “2024 Existing Conditions”, illustrate more than acceptable operating Levels of Service (LOS) C on the side street approach at the studied unsignalized intersection during the AM and PM peak hours. The capacity analysis worksheets are provided in Appendix III.

DEVELOPMENT PROPOSAL

The redevelopment proposal is for three (3) buildings, a 10,000 square foot retail building facing Route 206 and two 25,000 square foot flex-space, light industrial buildings with outdoor storage areas to the rear of the buildings. Access to the site will be provided by two (2) full-movement driveways to Brighton Road. Each driveway will be 25 feet in width.

Parking for the various buildings would be located along the north and west sides of the building, with internal driveways providing full circulation within the site. Access to the outdoor storage areas would be gated. The site plan proposes a total of 125 parking spaces with six (6) ADA accessible parking spaces and four (4) Make-Ready EVSE spaces(which provide a 4 space credit). The loading area for the retail building is located on the south (rear) side of the building, providing access to each of the tenant spaces. The flex-space, light industrial buildings are each provided with five (5) 15 foot by 40 foot loading zones, one for each anticipated tenant space.

YEAR 2027 NO-BUILD CONDITIONS

The build-out year of the proposed redevelopment has been established as the Year 2027. This future build-out year of 2027 is used to assess future conditions without and with the proposed redevelopment. Background growth rates, taken from the NJDOT Annual Background Growth Rate Table, issued November 2023, were used to determine future traffic volumes that would be expected in 2027. The published NJDOT growth rates for urban principal arterials and rural major collector streets in Sussex County are 1.0 percent per year and 1.25 percent per year, respectively. This background growth rates account for potential growth in the general area within the study period. No specific

**TABLE 1 - LEVEL OF SERVICE / AVERAGE VEHICLE DELAY COMPARISON - EXISTING & NO BUILD CONDITIONS
RINGO PROPERTIES, TOWNSHIP OF ANDOVER, SUSSEX COUNTY**

6/4/2024

Intersection	2024 Existing Condition						2027 No Build Condition						
	AM PEAK			PM PEAK			AM PEAK			PM PEAK			
	V/C Ratio	Delay (sec)	Levels of Service	V/C Ratio	Delay (sec)	Levels of Service	V/C Ratio	Delay (sec)	Levels of Service	V/C Ratio	Delay (sec)	Levels of Service	
U.S. Route 206 & Brighton Road (CR 603) (Unsignalized)	NB-LR	0.27	17.2	C	0.36	21.9	C	0.29	18.1	C	0.40	23.6	C
	WB-L	0.01	9.0	A	0.02	9.0	A	0.01	9.0	A	0.02	9.1	A

development projects that are approved and would be developed in the immediate area were identified. The 2027 No-Build volumes are illustrated in Figure 3.

Capacity analyses were performed at the studied intersections for the AM and PM peak hours of the 2027 No-Build condition based upon the traffic volumes shown in Figure 3. The resulting change in the levels of service for the 2027 No-Build AM and PM peak hours are generally minimal, with generally small increases in average delay of three to four seconds on the side street approach. The increases in average vehicle delay are a result of background traffic growth. Overall, the operations of the studied intersection remain at more than acceptable levels of service given the roadway classification of Route 206 as an urban principal arterial.

SITE TRIP GENERATION AND TRIP DISTRIBUTION

Trip generation for the proposed retail and light industrial uses has been calculated using the current *Trip Generation Manual, (11th Edition)*, published by the Institute of Transportation Engineers (ITE). For the retail use we have utilized Land Use Code (LUC) 822, Strip Retail Plaza (<40k SF); and for the flex-space, light industrial use we have used LUC 110, General Light Industrial. LUC 110 incorporates the office space that would be provided into the trip generation.

Table 2, Trip Generation Summary, tabulates the proposed AM and PM peak hour trip generation for this proposed land uses. As shown in Table 2, the proposed uses will generate 67 AM peak hour trips (50 in/17 out) and 102 trips (42 in/60 out) during the PM peak hour. These are relatively low trip rates, with approximately one (1) vehicle every minute in the peak direction during each peak hour. We also have not taken credit for pass-by traffic that would be drawn to the proposed retail use from the existing traffic along the adjacent roadways.

The peak hour trips from the proposed commercial uses are likely to coincide temporally with the peak hour commuter trips on the surrounding roadway system. The trip assignment for the proposed development is based on observed traffic patterns of the predominant traffic movements at the studied intersection. The existing traffic patterns at the studied intersection have been considered to be representative of the traffic distribution associated with the proposed redevelopment. The trip distribution is graphically presented in Figure 4. Applying the site trip distribution to the trip generation values presented in Table 2 resulted in the trip assignment for the AM and PM peak hours shown in Figure 5.

YEAR 2027 BUILD CONDITIONS

The site generated traffic volumes presented in Figure 5 were then added to Year 2027 No-Build traffic volumes presented in Figure 3 to yield the AM and PM peak hour Year 2027 Build conditions, which are presented in Figure 6. These traffic volumes are used to analyze future operating conditions including the traffic from the proposed development.



U.S. ROUTE 206

← 514/615
 ← 13/20
 ← 569/568
 ← 103/126
 88/107
 21/17

PROJECT SITE

BRIGHTON RD CR603

KEY

← 00/00 - AM PEAK/PM PEAK HOUR VOLUMES

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FIGURE 3
RINGO PROPERTIES, LLC
PROPOSED 2027 FUTURE
NO BUILD TRAFFIC VOLUMES

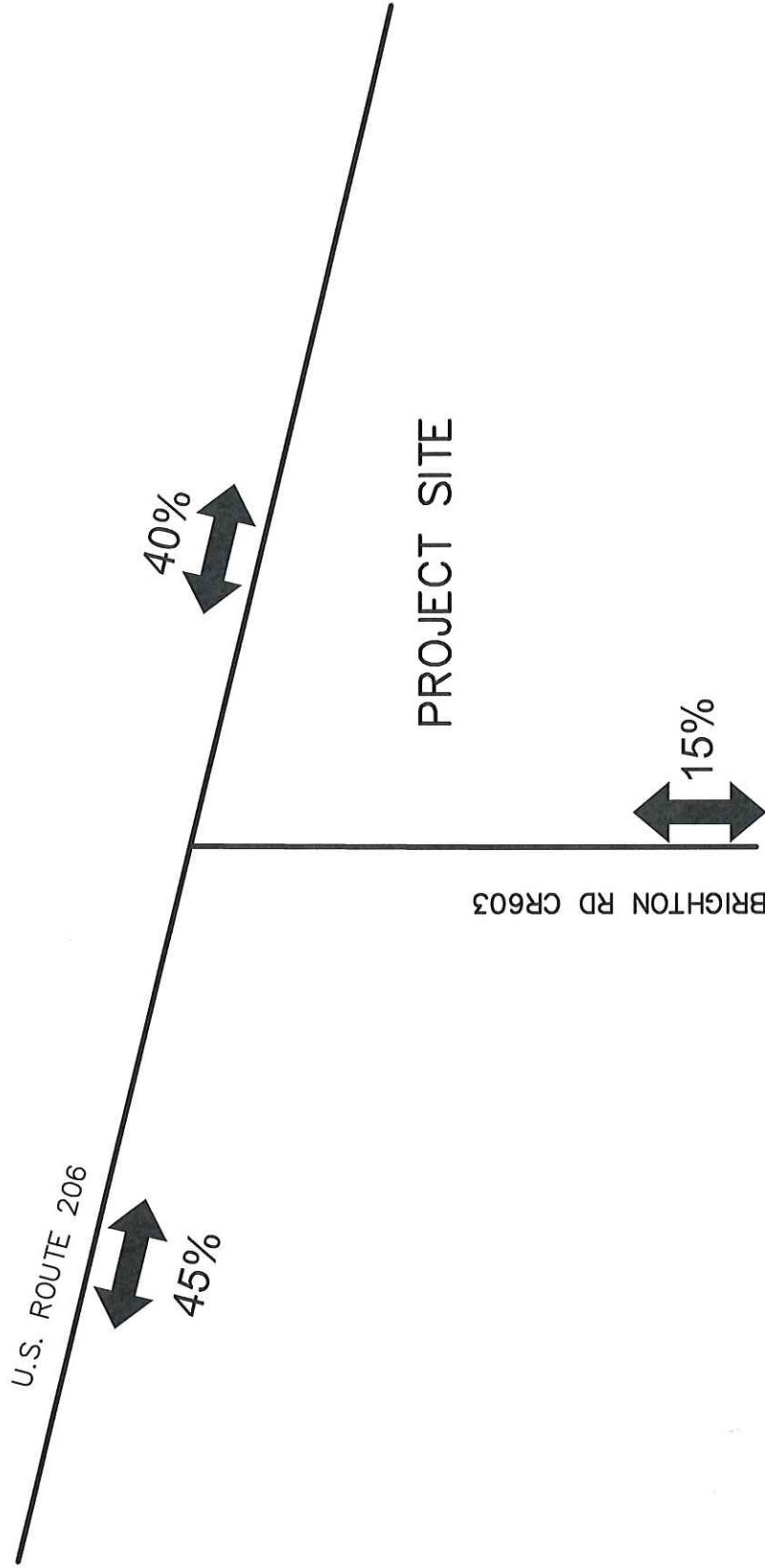
TOWNSHIP OF ANDOVER, SUSSEX COUNTY, NEW JERSEY

RINGO PROPERTIES, LLC
 TOWNSHIP OF ANDOVER, SUSSEX COUNTY
 BLOCK 158, LOT 6
 BCG File #081441-01-001

5/31/2024

TABLE 2 - TRIP GENERATION SUMMARY

CODE	LAND USE	AMOUNT	WEEKDAY								
			AM PEAK HOUR		TOTAL		PM PEAK HOUR		TOTAL		
			IN	OUT	IN	OUT	IN	OUT	IN	OUT	TOTAL
822	Shopping Center <40k SF (Formulas)	10,000 SF	17	12	29	39	39	39	78		
110	General Light Industrial (Formula)	50,000 SF	33	5	38	3	21	3	24		
	TOTAL TRIPS		50	17	67	42	60	42	102		



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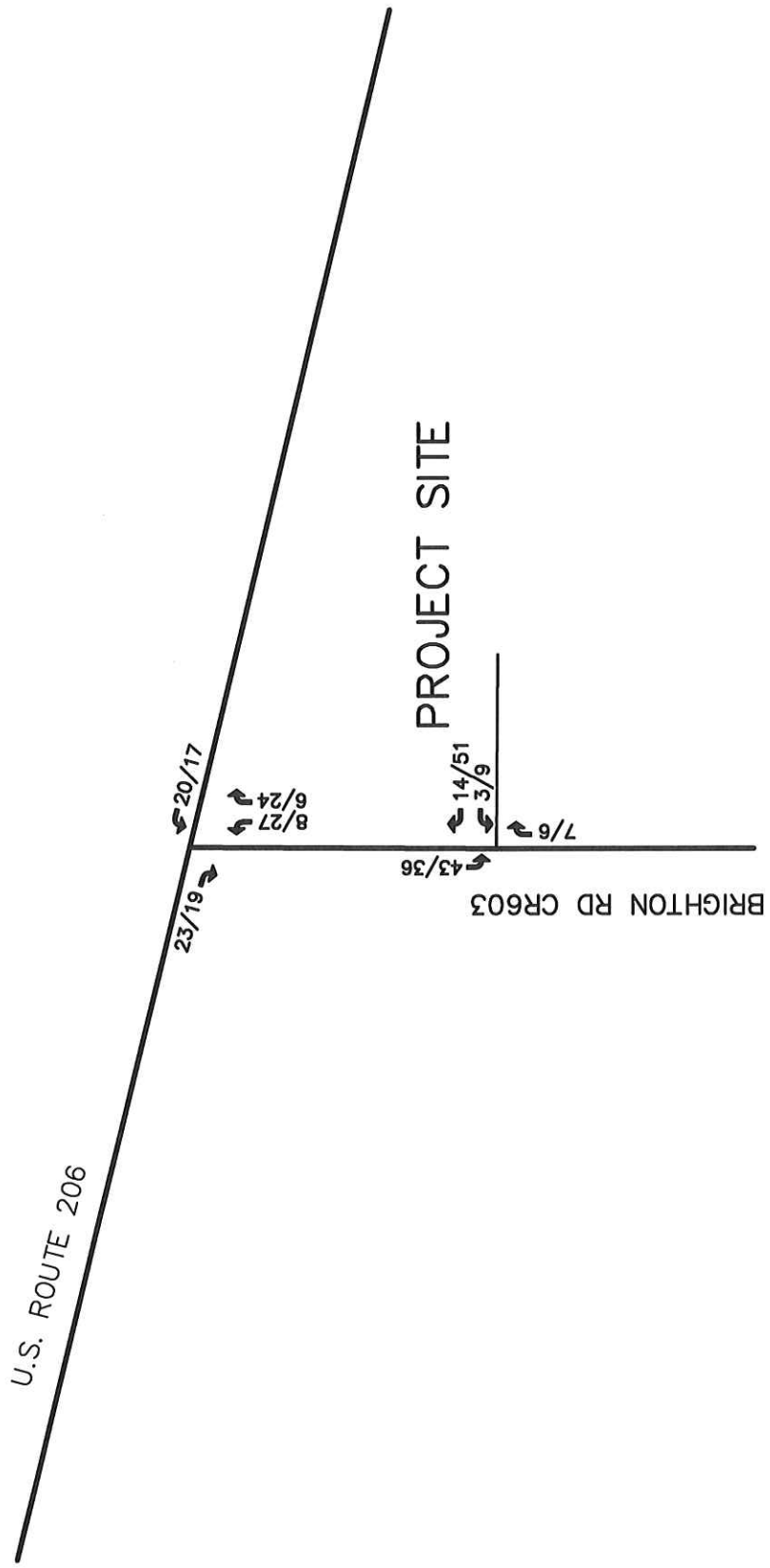
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FIGURE 4
RINGO PROPERTIES, LLC
SITE TRIP DISTRIBUTION
 TOWNSHIP OF ANDOVER, SUSSEX COUNTY, NEW JERSEY

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KEY

← 00/00

- AM PEAK/PM PEAK HOUR VOLUMES

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FIGURE 5
RINGO PROPERTIES, LLC
SITE GENERATED
TRAFFIC VOLUMES
 TOWNSHIP OF ANDOVER, SUSSEX COUNTY, NEW JERSEY



U.S. ROUTE 206

← 514/615
 ↘ 33/37
 ↙ 96/134
 ↗ 27/41

BRIGHTON RD CR603
 ↖ 116/146
 ↗ 43/36

↖ 14/51
 ↗ 3/9
 ↘ 109/142
 ↙ 7/6

PROJECT SITE

KEY

← 00/00 - AM PEAK/PM PEAK HOUR VOLUMES

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DATE: 05/30/24

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FIGURE 6
RINGO PROPERTIES, LLC
2027 FUTURE BUILD
TRAFFIC VOLUMES

TOWNSHIP OF ANDOVER, SUSSEX COUNTY, NEW JERSEY

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As shown in Table 3 – Level of Service and Delay - No-Build versus Build, the levels of service for the Year 2027 Build conditions show generally small increases in average delay, maintaining LOS C during the AM peak hour, and a change to LOS D during the PM peak hour on the side street approach. The PM peak hour level of service remains at an acceptable level of operations. We note that the proposed redevelopment project would generate less than one (1) additional vehicle per minute on the Brighton Road approach to Route 206 during either peak hour. The unsignalized capacity analyses also do not take into consideration the platooning of vehicles along Route 206 that are created by the nearby traffic signals at Limecrest Road and at Stickles Pond Road.

We have analyzed the site access as a single location which is a more conservative approach as the site traffic will distribute to the two driveways based upon their destinations within the site. The proposed site driveway will operate at a more than acceptable Level of Service A during both peak hours.

SITE PLAN REVIEW

The proposed parking is located proximate to the three buildings located on site with 49 parking spaces (including two EVSE spaces) provided at the retail building and 37 parking spaces provided at each of the flex-space, light industrial buildings plus two (2) EVSE spaces at the northern flex-space building. The proposed parking spaces are 10 feet wide by 20 feet long with a 25 foot wide access aisle, which exceeds industry standards. Typical parking space sizes are 9 feet by 18 feet in dimension.

The parking requirement per the Township Redevelopment Plan for this site as published on the site plan drawings is 178 parking spaces with a 20 percent shared parking factor permitted, reducing the overall parking requirement to 149 spaces. The site plan proposes 125 parking spaces, thereby requiring a deviation of 24 parking spaces from the Redevelopment Plan requirement. The ITE Parking Generation Manual, 6th Edition indicates that 62 parking spaces would be needed for the proposed uses based upon the empirical data contained within their Manual. Therefore, it is our professional opinion that sufficient parking is provided for this proposed redevelopment.

The proposed site driveways will accommodate turning maneuvers for the expected vehicle types, including emergency service vehicles. There is more than adequate maneuvering space on site for circulation and access to the outdoor storage areas. Adequate sight distances are provided from each driveway in either direction along Brighton Road. The design speed of Brighton Road is 50 miles per hour (45 + 5 MPH) thus resulting in a recommended stopping sight distance of 425 feet, in accordance with A Policy on Geometric Design of Highways and Streets (AASHTO), which are exceeded.

Sidewalks are provided along the building side of each parking area, connecting the parking lots with the building. The ADA parking spaces are designed with a compliant accessible ramp system.

**TABLE 3 - LEVEL OF SERVICE / AVERAGE VEHICLE DELAY COMPARISON - NO BUILD & BUILD CONDITIONS
RINGO PROPERTIES, TOWNSHIP OF ANDOVER, SUSSEX COUNTY**

6/4/2024

Intersection	2027 No Build Condition						2027 Build Condition							
	AM PEAK			PM PEAK			AM PEAK			PM PEAK				
	LANE GROUP	V/C Ratio	Delay (sec)	Levels of Service	V/C Ratio	Delay (sec)	Levels of Service	LANE GROUP	V/C Ratio	Delay (sec)	Levels of Service	V/C Ratio	Delay (sec)	Levels of Service
U.S. Route 206 & Brighton Road (CR 603) (Unsignalized)	NB-LR	0.29	18.1	C	0.40	23.6	C	NB-LR	0.36	20.3	C	0.54	28.1	D
	WB-L	0.01	9.0	A	0.02	9.1	A	WB-L	0.04	9.2	A	0.04	9.3	A
Brighton Road (CR 603) & Site Access Road (Unsignalized)	WB-LR	---	---	---	---	---	---	WB-LR	0.02	9.1	A	0.07	9.6	A
	SB-L	---	---	---	---	---	---	SB-L	0.03	7.5	A	0.03	7.6	A

CONCLUSIONS

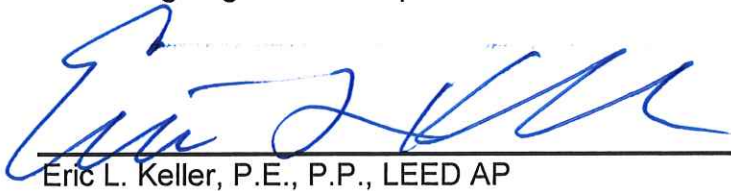
Based upon our data collection efforts, analyses and evaluations, it is our professional opinion that the proposed redevelopment of this property for retail and light industrial uses will have a negligible impact on traffic conditions during the peak commuter traffic hours and other hours of the day. The traffic generated by this proposed redevelopment is relatively low in intensity and can be accommodated by the existing roadway network. Adequate gaps in the flow of traffic along Route 206 are provided and are enhanced by platoons created in the traffic flow by the adjacent traffic signals in both directions from Brighton Road.

The proposed parking supply of 125 parking spaces requires a deviation from the parking requirements as set forth in the Township's Redevelopment Plan even when accounting for the allowable shared parking factor (149 spaces required). However, based upon parking demand data published by the Institute of Transportation Engineers in the Parking Generation Manual, 6th Edition, the calculated parking demand is significantly less than that proposed and therefore it is our professional opinion that more than sufficient parking is provided for these uses.

The design of the development will more than adequately serve the needs of the project and provide adequate accommodations for trucks, delivery vehicles, emergency and other service vehicles. There is more than sufficient maneuvering space and accessibility within the site.

In conclusion, the redevelopment of this project will have a minimal impact on the traffic operations of the studied intersection. The design of the development will adequately serve the needs of this site's employees, visitors and delivery vehicles.

The foregoing is a true representation of our findings.



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Professional Engineer License No. 32054

APPENDIX I
TRAFFIC COUNTS

TURNING MOVEMENT COUNT SURVEY

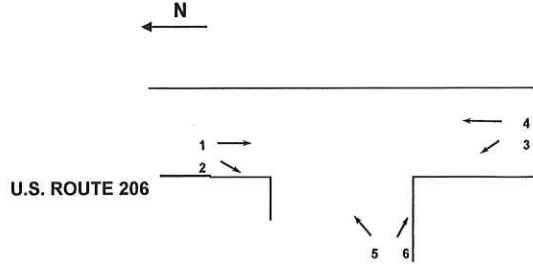
BOWMAN CONSULTING GROUP, LTD.

LOCATION: **1 - U.S. ROUTE 206**
 @
BRIGHTON RD (COUNTY ROUTE 603)

DATE: **MAY 30, 2024, THURSDAY**

Weather:

Notes:



U.S. ROUTE 206										BRIGHTON RD (COUNTY ROUTE 603)						
AM	S/B			N/B			E/B									
START	1	2		3	4		5		6							
TIME	THRU	RIGHT	TOTAL	LEFT	THRU	TOTAL	LEFT	RIGHT	TOTAL							
	125	26	151	2	78	80	14	1	15				0			
	136	24	160	1	103	104	30	2	32				0			
329	138	28	166	6	127	133	26	4	30				0			
314	127	29	156	3	132	135	19	4	23				0			
326	145	24	169	1	133	134	18	5	23				0			
298	142	18	160	2	107	109	22	7	29				0			
	127	23	150	2	77	79	17	4	21				0			
	116	21	137	1	112	113	20	2	22				0			
TOTAL	AM HOURLY VOLUME															
1185	0	526	107	633	12	440	0	452	89	0	11	100	0	0	0	0
1265	0	546	105	651	11	495	0	506	93	0	15	108	0	0	0	0
1267	0	552	99	651	12	499	0	511	85	0	20	105	0	0	0	0
1188	0	541	94	635	8	449	0	457	76	0	20	96	0	0	0	0
1146	0	530	86	616	6	429	0	435	77	0	18	95	0	0	0	0

U.S. ROUTE 206										BRIGHTON RD (COUNTY ROUTE 603)						
PM	S/B			N/B			E/B									
START	1	2		3	4		5		6							
TIME	THRU	RIGHT	TOTAL	LEFT	THRU	TOTAL	LEFT	RIGHT	TOTAL							
	119	40	159	5	131	136	44	4	48				0			
331	142	32	174	0	128	128	25	4	29				0			
359	144	30	174	5	150	155	28	2	30				0			
358	130	33	163	2	162	164	24	7	31				0			
350	135	26	161	3	157	160	26	3	29				0			
	116	29	145	2	144	146	32	3	35				0			
	106	22	128	1	149	150	29	1	30				0			
	94	19	113	1	178	179	23	1	24				0			
TOTAL	PM HOURLY VOLUME															
1391	0	535	135	670	12	571	0	583	121	0	17	138	0	0	0	0
1398	0	551	121	672	10	597	0	607	103	0	16	119	0	0	0	0
1393	0	525	118	643	12	613	0	625	110	0	15	125	0	0	0	0
1342	0	487	110	597	8	612	0	620	111	0	14	125	0	0	0	0
1300	0	451	96	547	7	628	0	635	110	0	8	118	0	0	0	0

APPENDIX II

LEVEL OF SERVICE DEFINITIONS







TRAFFIC OPERATIONS

Capacity analysis, a procedure used to estimate the traffic-carrying ability of roadway facilities over a range of defined operating conditions, was performed using the 2010 Highway Capacity Manual (HCM) and 2010 Highway Capacity Software.

For a signalized intersection, Level of Service (LOS) A indicates operations with delay less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 80 seconds per vehicle.

For an unsignalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle.

LEVEL OF SERVICE /AVERAGE DELAY CRITERIA*

	Level Of Service (LOS)	Signalized Delay Range (average delay, sec/veh)	Unsignalized Delay Range (average delay in sec/veh)
	A	<=10	<=10
	B	>10 and <=20	>10 and <=15
	C	>20 and <=35	>15 and <=25
	D	>35 and <=55	>25 and <=35
	E	>55 and <=80	>35 and <=50
	F	>80	>50

* Sources: Highway Capacity Manual (2010 Edition) & SimTraffic Version 5.0

APPENDIX III

CAPACITY ANALYSES

IIIA – 2024 EXISTING CONDITIONS

IIIB - 2027 NO-BUILD CONDITIONS

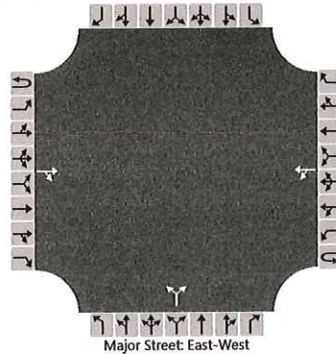
IIIC - 2027 BUILD CONDITIONS

APPENDIX IIIA
2024 EXISTING CONDITIONS

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EJB	Intersection	Route 206/Brighton Rd
Agency/Co.	Bowman Consulting	Jurisdiction	NJDOT
Date Performed	6/3/2024	East/West Street	Route 206
Analysis Year	2024	North/South Street	Brighton Road
Time Analyzed	Existing - AM Peak	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Ringo Properties BCG #081441-01-001		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			552	99		12	499			85		20				
Percent Heavy Vehicles (%)						0				1		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

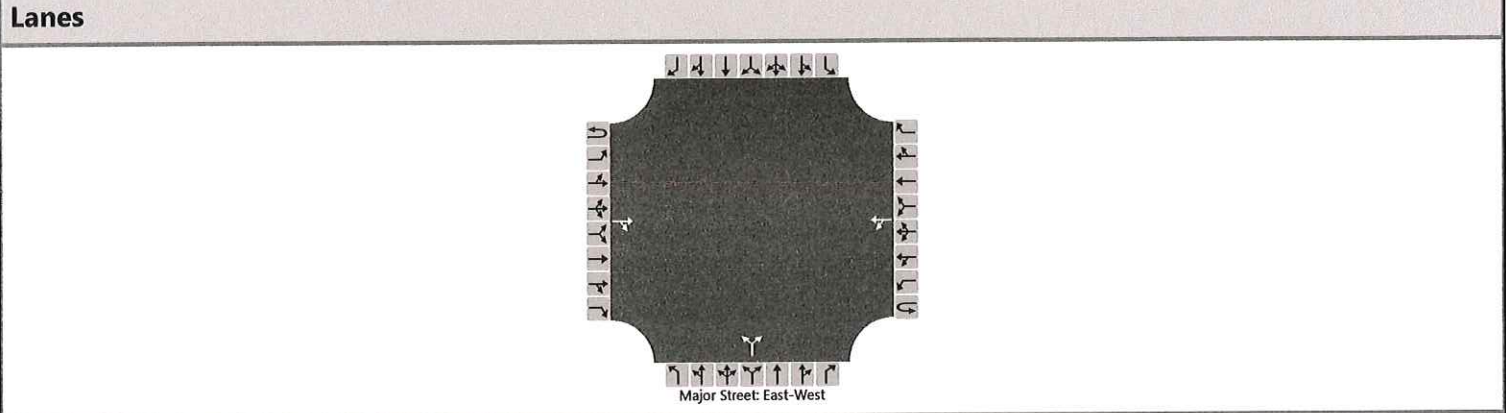
Base Critical Headway (sec)						4.1				6.0		6.0				
Critical Headway (sec)						4.10				5.31		6.00				
Base Follow-Up Headway (sec)						2.2				3.0		3.0				
Follow-Up Headway (sec)						2.20				3.01		3.00				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13					109					
Capacity, c (veh/h)						923					404					
v/c Ratio						0.01					0.27					
95% Queue Length, Q ₉₅ (veh)						0.0					1.1					
Control Delay (s/veh)						9.0					17.2					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.4				17.2							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	EJB	Intersection	Route 206/Brighton Rd				
Agency/Co.	Bowman Consulting	Jurisdiction	NJDOT				
Date Performed	6/3/2024	East/West Street	Route 206				
Analysis Year	2024	North/South Street	Brighton Road				
Time Analyzed	Existing - PM Peak	Peak Hour Factor	0.98				
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25				
Project Description	Ringo Properties BCG #081441-01-001						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
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	121		19	597			103		16				
Percent Heavy Vehicles (%)						0				1		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				6.0		6.0				
Critical Headway (sec)						4.10				5.31		6.00				
Base Follow-Up Headway (sec)						2.2				3.0		3.0				
Follow-Up Headway (sec)						2.20				3.01		3.00				

Delay, Queue Length, and Level of Service

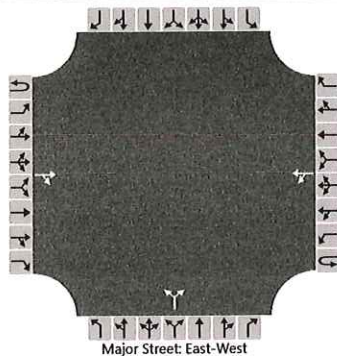
Flow Rate, v (veh/h)						19						121				
Capacity, c (veh/h)						917						333				
v/c Ratio						0.02						0.36				
95% Queue Length, Q ₉₅ (veh)						0.1						1.6				
Control Delay (s/veh)						9.0						21.9				
Level of Service (LOS)						A						C				
Approach Delay (s/veh)						0.6				21.9						
Approach LOS						C				C						

APPENDIX IIIB
2027 NO-BUILD CONDITIONS

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	EJB	Intersection	Route 206/Brighton Rd				
Agency/Co.	Bowman Consulting	Jurisdiction	NJDOT				
Date Performed	6/3/2024	East/West Street	Route 206				
Analysis Year	2027	North/South Street	Brighton Road				
Time Analyzed	2027 No Build - AM Peak	Peak Hour Factor	0.96				
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25				
Project Description	Ringo Properties BCG #081441-01-001						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			569	103		13	514			88		21				
Percent Heavy Vehicles (%)						0				1		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				6.0		6.0				
Critical Headway (sec)						4.10				5.31		6.00				
Base Follow-Up Headway (sec)						2.2				3.0		3.0				
Follow-Up Headway (sec)						2.20				3.01		3.00				

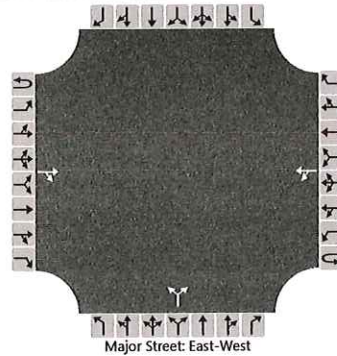
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						14						114				
Capacity, c (veh/h)						906						387				
v/c Ratio						0.01						0.29				
95% Queue Length, Q ₉₅ (veh)						0.0						1.2				
Control Delay (s/veh)						9.0						18.1				
Level of Service (LOS)						A						C				
Approach Delay (s/veh)								0.4				18.1				
Approach LOS												C				

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	EJB	Intersection	Route 206/Brighton Rd				
Agency/Co.	Bowman Consulting	Jurisdiction	NJDOT				
Date Performed	6/3/2024	East/West Street	Route 206				
Analysis Year	2027	North/South Street	Brighton Road				
Time Analyzed	2027 No Build - PM Peak	Peak Hour Factor	0.98				
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25				
Project Description	Ringo Properties BCG #081441-01-001						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			568	126		20	615			107		17				
Percent Heavy Vehicles (%)						0				1		0				
Proportion Time Blocked						0.000				0.000		0.000				
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				6.0		6.0				
Critical Headway (sec)						4.10				5.31		6.00				
Base Follow-Up Headway (sec)						2.2				3.0		3.0				
Follow-Up Headway (sec)						2.20				3.01		3.00				

Delay, Queue Length, and Level of Service

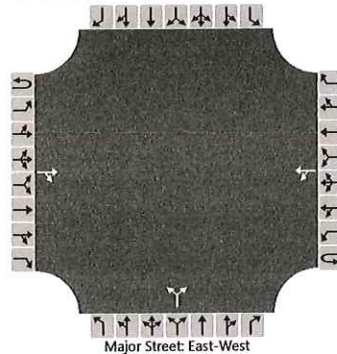
Flow Rate, v (veh/h)						20						127				
Capacity, c (veh/h)						900						318				
v/c Ratio						0.02						0.40				
95% Queue Length, Q ₉₅ (veh)						0.1						1.8				
Control Delay (s/veh)						9.1						23.6				
Level of Service (LOS)						A						C				
Approach Delay (s/veh)					0.6				23.6							
Approach LOS									C							

APPENDIX IIIC
2027 BUILD CONDITIONS

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EJB	Intersection	Route 206/Brighton Rd
Agency/Co.	Bowman Consulting	Jurisdiction	NJDOT
Date Performed	6/3/2024	East/West Street	Route 206
Analysis Year	2027	North/South Street	Brighton Road
Time Analyzed	2027 Build - AM Peak	Peak Hour Factor	0.96
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Ringo Properties BCG #081441-01-001		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			569	128		33	514			97		27				
Percent Heavy Vehicles (%)						0				1		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				6.0		6.0				
Critical Headway (sec)						4.10				5.31		6.00				
Base Follow-Up Headway (sec)						2.2				3.0		3.0				
Follow-Up Headway (sec)						2.20				3.01		3.00				

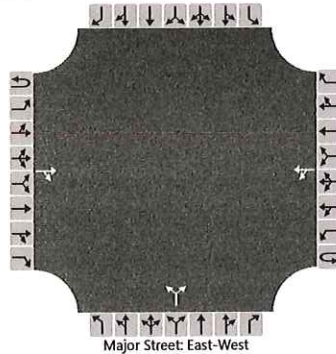
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						34					129					
Capacity, c (veh/h)						886					363					
v/c Ratio						0.04					0.36					
95% Queue Length, Q ₉₅ (veh)						0.1					1.6					
Control Delay (s/veh)						9.2					20.3					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						1.0				20.3						
Approach LOS						A				C						

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	EJB	Intersection	Route 206/Brighton Rd				
Agency/Co.	Bowman Consulting	Jurisdiction	NJDOT				
Date Performed	6/3/2024	East/West Street	Route 206				
Analysis Year	2027	North/South Street	Brighton Road				
Time Analyzed	2027 Build - PM Peak	Peak Hour Factor	0.98				
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25				
Project Description	Ringo Properties BCG #081441-01-001						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			568	147		37	615			134		41				
Percent Heavy Vehicles (%)						0				1		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				6.0		6.0				
Critical Headway (sec)						4.10				5.31		6.00				
Base Follow-Up Headway (sec)						2.2				3.0		3.0				
Follow-Up Headway (sec)						2.20				3.01		3.00				

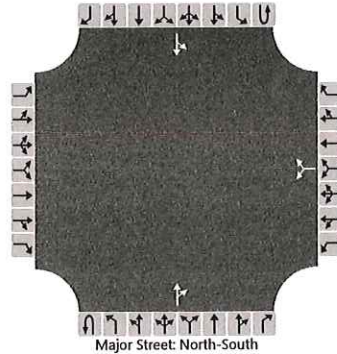
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						38					179					
Capacity, c (veh/h)						884					330					
v/c Ratio						0.04					0.54					
95% Queue Length, Q ₉₅ (veh)						0.1					3.1					
Control Delay (s/veh)						9.3					28.1					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)					1.1				28.1							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EJB	Intersection	Brighton Road/Site Dwy
Agency/Co.	Bowman Consulting	Jurisdiction	County
Date Performed	6/4/2024	East/West Street	Site Dwy
Analysis Year	2027	North/South Street	Brighton Road
Time Analyzed	2027 Build - AM Peak	Peak Hour Factor	0.96
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Ringo Properties BCG #081441-01-001		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
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	1	0		0	1	0
Configuration							LR					TR			LT	
Volume (veh/h)						3		14			109	7			43	116
Percent Heavy Vehicles (%)						2		2							2	
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)						6.42		6.22							4.12	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.52		3.32							2.22	

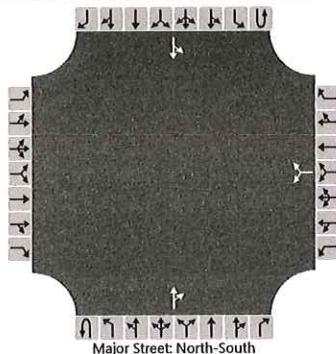
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						18									45	
Capacity, c (veh/h)						866									1467	
v/c Ratio						0.02									0.03	
95% Queue Length, Q ₉₅ (veh)						0.1									0.1	
Control Delay (s/veh)						9.2									7.5	
Level of Service (LOS)						A									A	
Approach Delay (s/veh)					9.2								2.2			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	EJB	Intersection	Brighton Road/Site Dwy				
Agency/Co.	Bowman Consulting	Jurisdiction	County				
Date Performed	6/4/2024	East/West Street	Site Dwy				
Analysis Year	2027	North/South Street	Brighton Road				
Time Analyzed	2027 Build - PM Peak	Peak Hour Factor	0.97				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Ringo Properties BCG #081441-01-001						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
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	1	0		0	1	0
Configuration							LR					TR			LT	
Volume (veh/h)						9		51			142	6		36	146	
Percent Heavy Vehicles (%)						2		2						2		
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)						6.42		6.22						4.12		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						62								37		
Capacity, c (veh/h)						838								1428		
v/c Ratio						0.07								0.03		
95% Queue Length, Q ₉₅ (veh)						0.2								0.1		
Control Delay (s/veh)						9.6								7.6		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)						9.6								1.7		
Approach LOS						A										