

Meijer Development

Traffic Impact Study

E CR 600 N, Town of Brownsburg, Indiana

October 2023



WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL

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SECTION 1 - EXECUTIVE SUMMARY

Overall Summary and Recommendations

A Traffic Impact Study (TIS) was required by the Town of Brownsburg, IN to evaluate the existing roadway network's capacity to handle the proposed Meijer Development.

The proposed Meijer Development consists of a 159,935 square foot Meijer Superstore, 3,453 square foot Super Convenience Market/12 fueling position Gas Station and three (3) outlots. The outlots are conservatively estimated to consist of two (2) 4,000 square foot Fast Food Restaurants with Drive-Thrus, a 25,000 square foot Medical-Dentist Office Building, and 60 Townhomes.

The site area, shown in Figure 1, is located on the northeast corner of E CR 600 N and N CR 900 E in the Town of Brownsburg, Hendricks County, Indiana. The 2021 Annual Average Daily Traffic (AADT) for E CR 600 N was found to be 16,268 vehicles per day (vpd).



Figure 1: Site Area, Source: Google Earth, N.T.S.



The Meijer Development study area includes two (2) existing intersections and four (4) proposed access point along E CR 600 N and N CR 900 E. The intersections are numerically identified throughout this study as:

1. E CR 600 N and N CR 900 E
2. E CR 600 N and Site Drive 1
3. E CR 600 N and Site Drive 2
4. E CR 600 N and Ronald Reagan Parkway
5. N CR 900 E and Site Drive 3
6. N CR 900 E and Site Drive 4

The following improvements are recommended to address the impacts on the surrounding roadway network.

2025 Build (With Meijer Traffic)

Intersection 1 - E CR 600 N and N CR 900 E

1. Recommend re-analyzing as a signal following further design of Ronald Reagan Parkway extension. Current intersection volumes warrant a signal, but with extension of Ronald Reagan Parkway the volumes may drop below the threshold.

Intersection 2 - E CR 600 N and Site Drive 1

2. Construct an access driveway consisting of two (2) lanes: one (1) southbound egress lane and one (1) ingress lane.
3. Construct a 200' westbound right turn lane.

Intersection 3 - E CR 600 N and Site Drive 2

4. Construct an access driveway consisting of three (3) lanes: two (2) southbound egress lanes and one (1) ingress lane.
5. Construct a signal.

Intersection 5 - N CR 900 E and Site Drive 3

6. Construct an access driveway consisting of two (2) lanes: one (1) westbound egress lane and one (1) ingress lane.

Intersection 6 - N CR 900 E and Site Drive 4

7. Construct an access driveway consisting of two (2) lanes: one (1) westbound egress lane and one (1) ingress lane.

SECTION 2 - INTRODUCTION

This Traffic Impact Study (TIS) was prepared for the proposed Meijer Development on the northeast corner of E CR 600 N and N CR 900 E in the Town of Brownsburg, Hendricks County, Indiana. The Meijer Development study area includes two (2) existing intersections and four (4) proposed access points along E CR 600 N and N CR 900 E.

The purpose of this document is to evaluate the current and future traffic conditions along the existing street network based on the anticipated traffic generated from the proposed development. Meijer Stores Limited Partnership has retained Woolpert, Inc. to prepare this TIS to evaluate the efficiency of the existing roadway network with the addition of the proposed development.

Scope of Work

A Memorandum of Understanding (MOU), dated July 10, 2023, was prepared to outline the scope for the traffic impact study. A copy of the MOU is included in **Appendix 7 (Correspondence)** for reference.

The scope of work for this study includes:

1. Utilize previously completed turning movement counts and future traffic forecasts from the EMCS Buckingham Traffic Impact Study on the same site at the following intersections:
 - E CR 600 N and N CR 900 E
 - E CR 600 N and Ronald Reagan Parkway
2. Analyze the following proposed access point locations in addition to the existing intersections listed above:
 - E CR 600 N and Site Drive 1
 - E CR 600 N and Site Drive 2
 - N CR 900 E and Site Drive 3
 - N CR 900 E and Site Drive 4
3. Prepare trip generation for the Proposed Development using the ITE's Trip Generation Manual, 11th edition. The average pass-by trip percentage will be utilized, and internal capture will be based on NCHRP Report 684. Conservative assumptions for land uses will be made for Outlots A-C in addition to the proposed Meijer Store and Convenience Market and Gas Station.
4. The directional distribution will be based on the previously completed turning movement counts.
5. Based on the directional distribution, the generated traffic volumes will be assigned to the adjacent street network.
6. Turn lane warrants will be conducted at unsignalized site driveway intersections to determine if dedicated turn lanes are warranted, including passing blisters. At signalized locations, capacity analysis will determine the need for a turn lane.
7. Perform capacity analysis utilizing Synchro at the two (2) existing intersections and four (4) proposed access points. The studied scenarios shall consist of the Weekday AM and PM peak hour of the Existing Year, Opening Year No-Build (without development traffic), Opening Year Build (with development Traffic), Design Year No-Build (without development traffic), and Design Year Build (with development traffic).
8. Turn lane queuing analysis will be completed using INDOT turn lane length methodology. Queuing analysis will be performed to determine if projected queues will conflict with existing conditions. Synchro 95th percentile queues will also be reported for comparison.
9. Based upon the analysis performed, recommendations will be developed (if needed) to mitigate any traffic impacts that the Proposed Development may have on the adjacent street network. Recommendations will be presented to meet the existing level of service or LOS D for all new intersections or change in traffic control.
10. Prepare a report summarizing the study process, conclusions, and recommendations and submit electronically to the Town of Brownsburg for review.



References

1. Highway Capacity Manual, 7th Edition, Transportation Research Board.
2. Trip Generation Manual, 11th Edition, Institute of Transportation Engineers' (ITE).
3. Synchro Version 11.
4. Traffic Access and Impact Studies for Site Development, Institute of Transportation Engineers' (ITE).
5. Indiana Manual on Uniform Traffic Control Devices (MUTCD), 2011 Edition Revision 1, 2, & 3
6. Indiana Design Manual 2013, January 1, 2013, Updated April 10, 2014 (INDOT)
7. Applicant's Guide to Traffic Impact Studies, May 2015 (INDOT)
8. Most recent concept plan prepared by Woolpert.

SECTION 3 - EXISTING CONDITIONS

Study Area

The Meijer Development site is located on the northeast corner of E CR 600 N and N CR 900 E in the Town of Brownsburg, Hendricks County, Indiana. The Meijer Development study area includes two (2) existing intersections and four (4) proposed access point along Little Chicago Road. The land use in the study area consists primarily of residential development. The existing and proposed intersections are numerically identified throughout this study and shown in Figure 1 as:

1. E CR 600 N and N CR 900 E
2. E CR 600 N and Site Drive 1
3. E CR 600 N and Site Drive 2
4. E CR 600 N and Ronald Reagan Parkway
5. N CR 900 E and Site Drive 3
6. N CR 900 E and Site Drive 4

Roadway Network

E CR 600 N is a five-lane divided east/west Town-maintained roadway that bounds the site to the south. E CR 600 N is a rural principal arterial with a posted speed limit of 45 mph and a 2021 AADT of 16,268 vpd per INDOT.

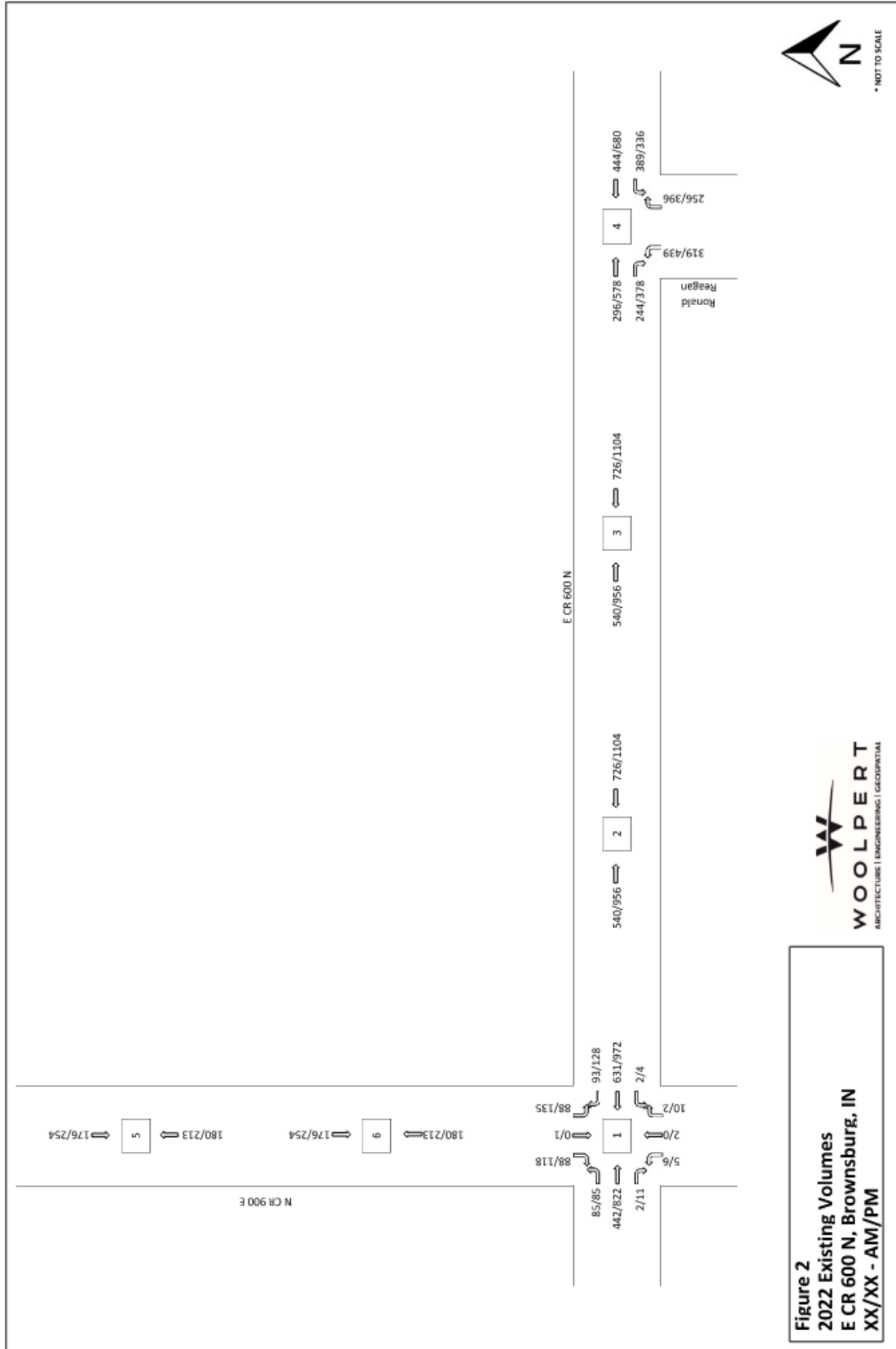
Ronald Reagan Parkway is a four-lane divided north/south Town-maintained roadway that intersects E CR 600 N east of the site. Ronald Reagan Parkway is a rural principal arterial with a posted speed limit of 55 mph that connects the study area with I-74 to the south. In the future, Ronald Reagan Parkway is expected to be continued north past E CR 600 before angling west continuing further north. However, because the extension is still in the preliminary phases, this impact study excluded it from analysis.

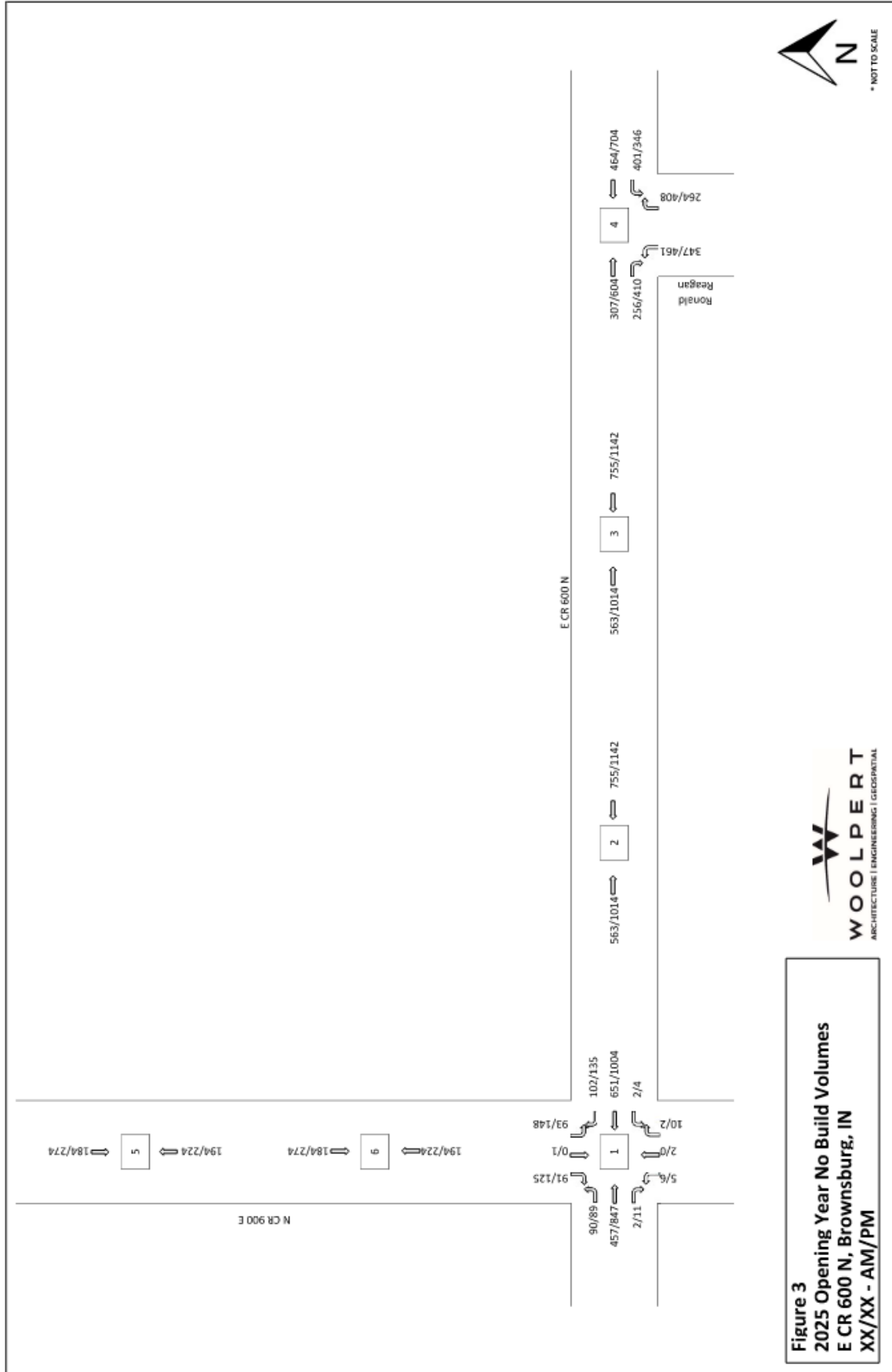
N CR 900 E is a two-lane undivided north/south Town-maintained roadway that bounds the site to the west. N CR 900 E is a rural principal arterial with a posted speed limit of 40 mph. With the proposed Ronald Reagan Parkway extension, N CR 900 E would terminate just north of the site.

Traffic Volumes

Previously completed turning movement counts and future traffic forecasts from the EMCS Buckingham Traffic Impact Study, completed October 2022, at Intersections 1 and 4 in the study area were carried through the network to generate the existing turning movements. Additional traffic generated by the proposed development adjacent to the study area was included in the previous study's traffic forecasts.

No background growth rate calculations were required because the EMCS Buckingham TIS provided future traffic forecasts. The Existing 2022, projected 2025 Opening Year No-Build, and 2035 Design Year No-Build (without Meijer traffic) volumes are shown in Figures 2-4.





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SECTION 4 - PROPOSED DEVELOPMENT

Development Description

The proposed Meijer Development consists of a 159,935 square foot Meijer Superstore, 3,453 square foot Super Convenience Market/12 fueling position Gas Station and three (3) outlots. The outlots are conservatively estimated to consist of two (2) 4,000 square foot Fast Food Restaurants with Drive-Thrus, a 25,000 square foot Medical-Dentist Office Building, and 60 Townhomes.

The Meijer development is estimated to have an opening year of 2025. The proposed access scheme consists of two (2) access points along E CR 600 N and two (2) access points along N CR 900 E. A site plan/conceptual layout is included in **Appendix 1** and below in **Figure 5**.

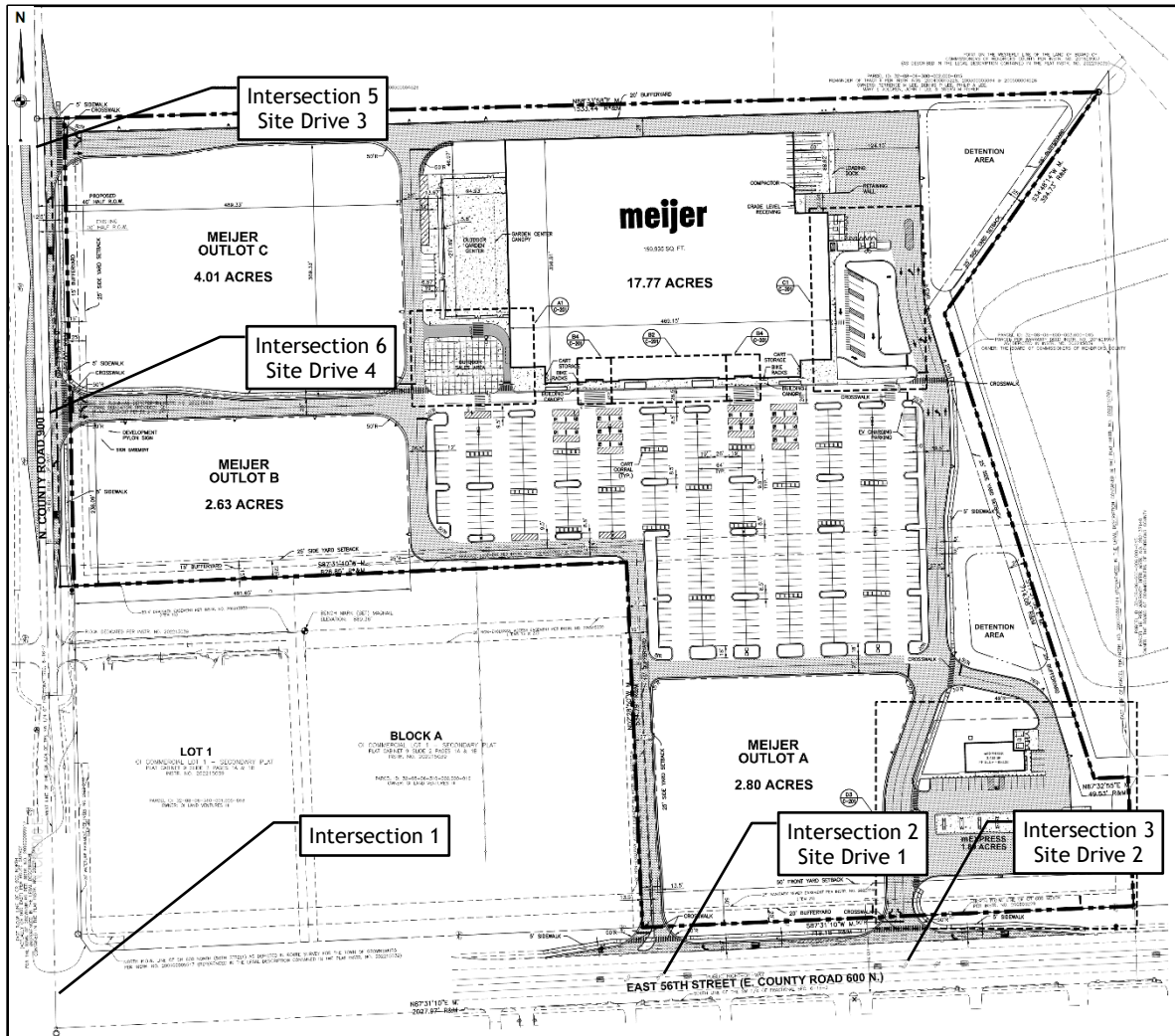


Figure 5. Proposed Preliminary Meijer Development Site Plan. N.T.S.

Trip Generation

The ITE Trip Generation Manual, 11th edition was used to calculate the anticipated trips generated from the Meijer development. The trips and corresponding reduction rates are shown in Table 1. Internal capture was analyzed for the Meijer development due to the multiple types of users planned for this site. The NCHRP Internal Trip Capture Estimation Tool calculated internal capture rates for the AM and PM period for the site overall, per Table 5-A in the tool. Pass-by trip reduction was considered for the Meijer



development for each applicable land use. Internal capture and pass-by reductions were applied to the raw trips separately. The traffic volume calculations are included in Appendix 2.

Table 1: Trip Generation

Land Use Description	ITE Code	Size	Unit	AM Peak Hour			PM Peak Hour		
				Total	Entering	Exiting	Total	Entering	Exiting
Free-Standing Discount Superstore	813	159.935	1,000 S.F.	297	166	131	693	340	353
<i>Internal Capture Reduction</i>				35	17	18	170	99	71
<i>Pass-By Reduction (29% PM)</i>				76	38	38	152	76	76
Meijer Superstore Total Primary Trips				186	111	75	371	165	206
Outlot C - Medical-Dentist Office Building	720	25	1,000 S.F.	69	55	14	99	30	69
<i>Internal Capture Reduction</i>				23	10	13	33	15	18
<i>Pass-By Reduction N/A</i>									
Outlot B - Townhomes	215	60	Dwelling Units	26	7	19	32	19	13
<i>Internal Capture Reduction</i>				4	0	4	22	13	9
<i>Pass-By Reduction N/A</i>									
Outlot Area 1 - Total Primary Trips				72	61	11	109	34	75
Convenience Store/Gas Station	945	12	Fuel Positions	193	97	96	221	111	110
<i>Internal Capture Reduction</i>				19	10	9	81	33	48
<i>Pass-By Reduction (76% AM, 75% PM)</i>				132	66	66	105	53	52
Outlot A - Fast-Food Restaurant with Drive-Thru	934	4	1,000 S.F.	178	91	87	132	69	63
<i>Internal Capture Reduction</i>				17	9	8	49	21	28
<i>Pass-By Reduction (50% AM, 55% PM)</i>				81	41	40	46	23	23
Outlot A - Fast-Food Restaurant with Drive-Thru	934	4	1,000 S.F.	178	91	87	132	69	63
<i>Internal Capture Reduction</i>				17	9	8	49	21	28
<i>Pass-By Reduction (50% AM, 55% PM)</i>				81	41	40	46	23	23
Outlot Area 2 - Total Primary Trips				202	103	99	109	75	34

Trip Distribution

The directional distribution is based on the volumes from the EMCS Buckingham Traffic Impact Study. Table 2 below shows the distribution of traffic expected to approach and depart from the Meijer site.

Table 2. Directional Distribution

Route	Approach/Departure
	Primary Trip Distribution
From/To the NORTH N CR 900 E	6%
From/To the SOUTH Ronald Reagan Pkwy	60%
From/To the EAST E CR 600 N	20%
From/To the WEST E CR 600 N	14%
Total	100%

Based on the directional distribution shown in Table 2, the proposed development’s trip generation shown



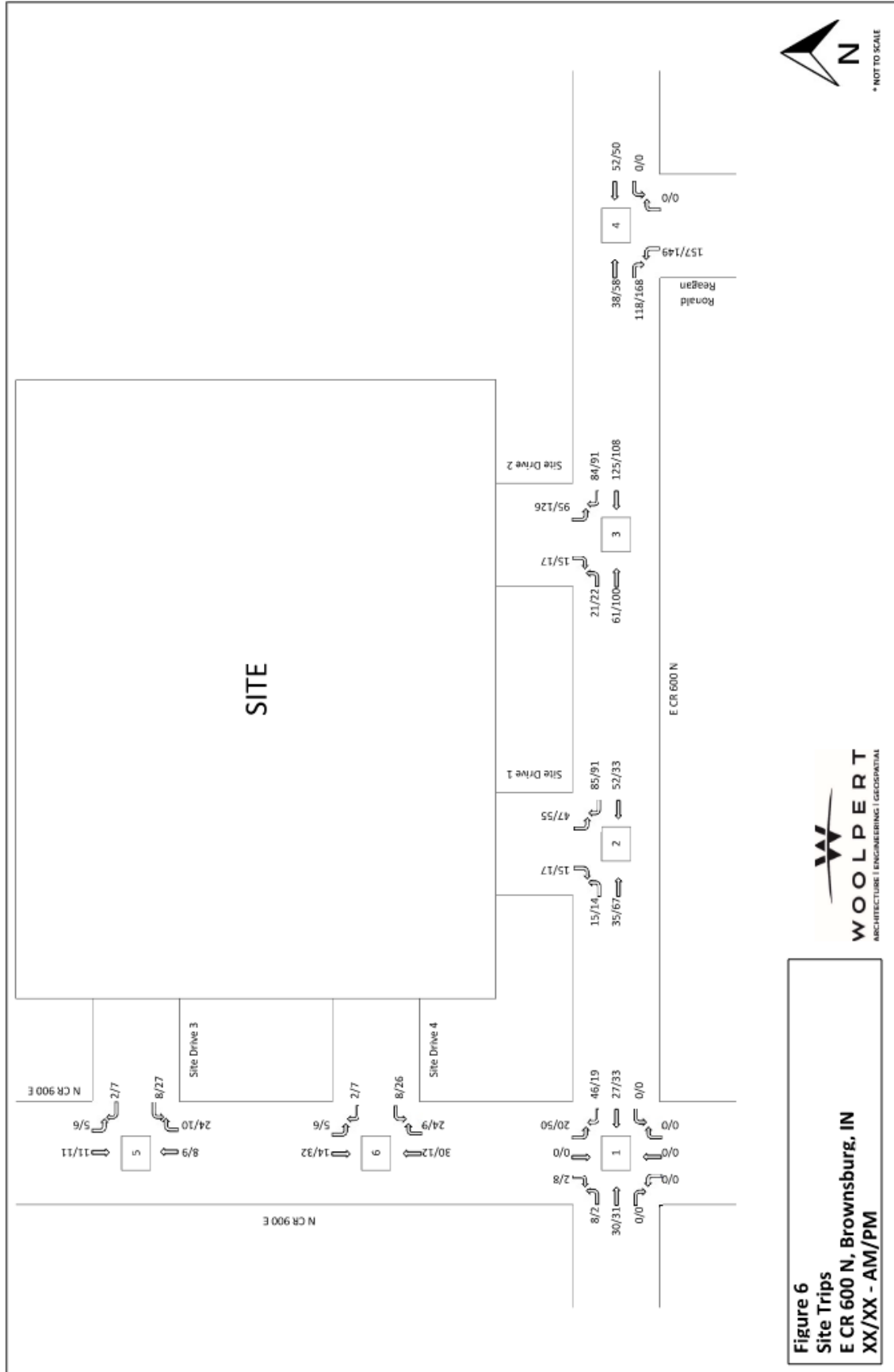
in Table 1 was distributed to the adjacent roadway network. The proposed development's trip distribution and assignment are illustrated in Figures 6 and 7.

Opening Year Traffic Volumes

The proposed Meijer Development calculated trip generation traffic volumes shown in Figures 6 and 7 were added to the 2025 Opening Year No-build traffic volumes in Figure 3 to develop the 2025 Opening Year Meijer Build traffic volumes shown in Figure 8.

Design Year Traffic Volumes

The proposed Meijer Development calculated trip generation traffic volumes shown in Figures 6 and 7 were added to the 2035 Design Year No-build traffic volumes in Figure 4 to develop the 2035 Design Year Meijer Build traffic volumes shown in Figure 9.



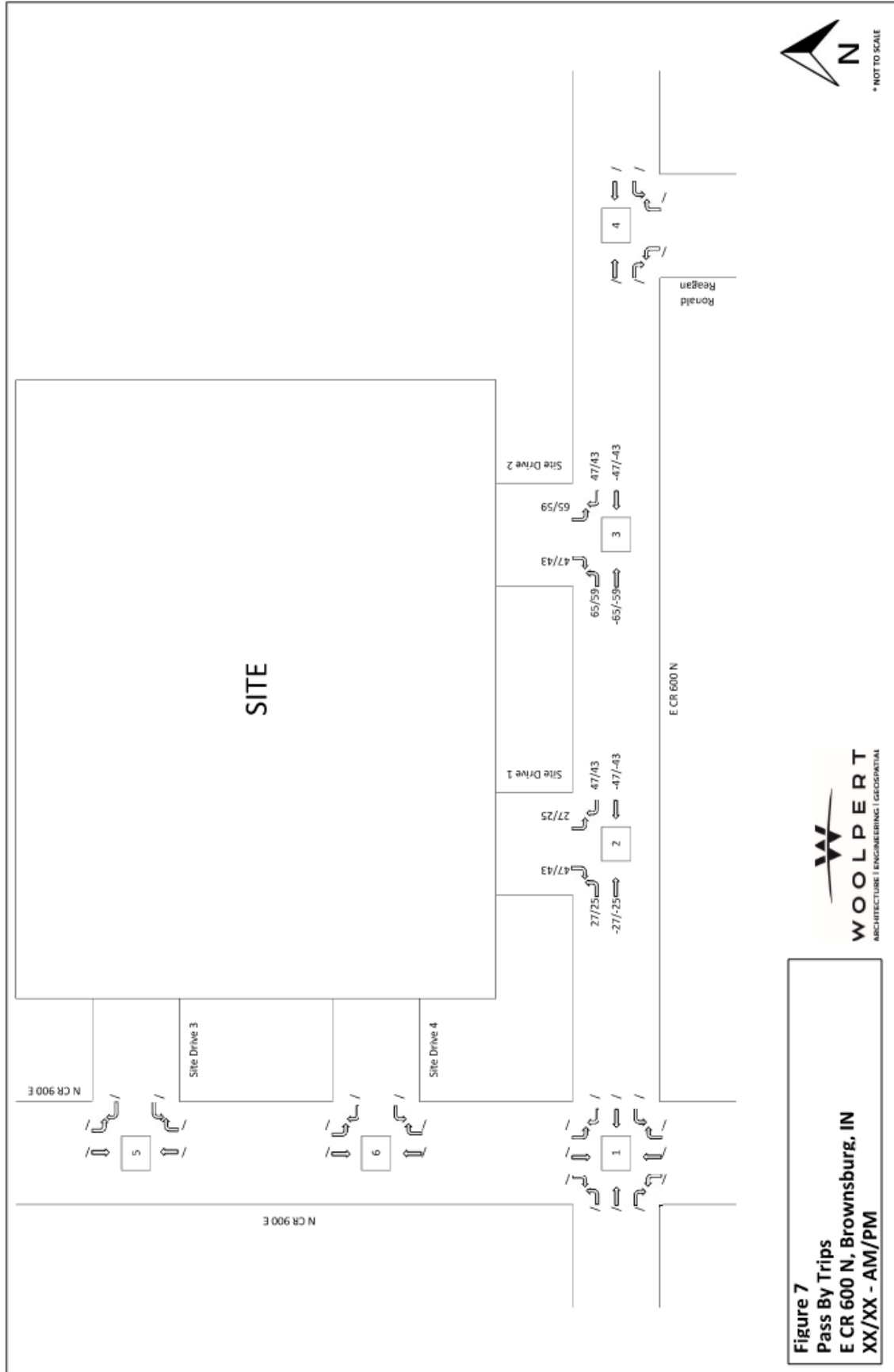
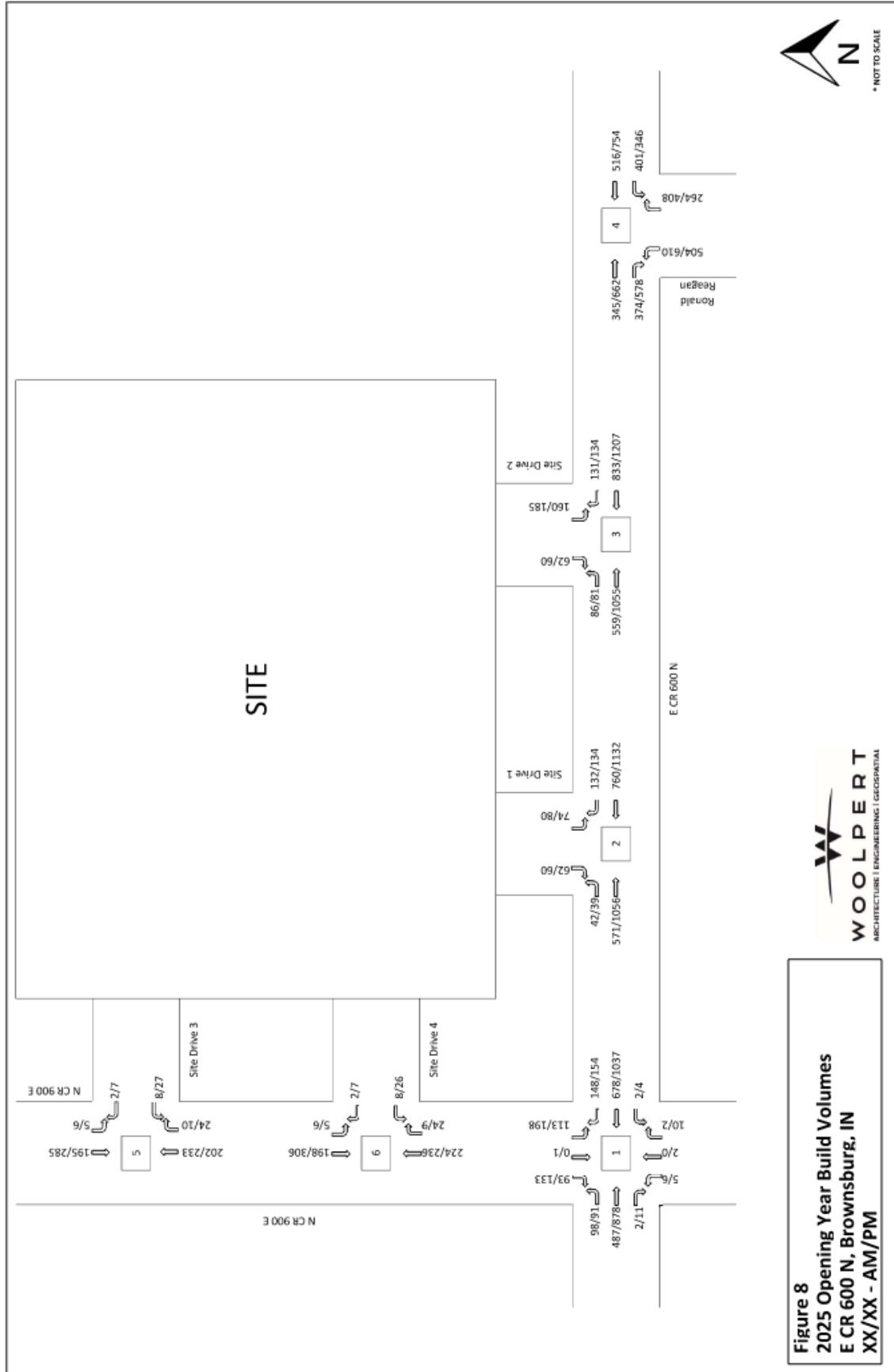
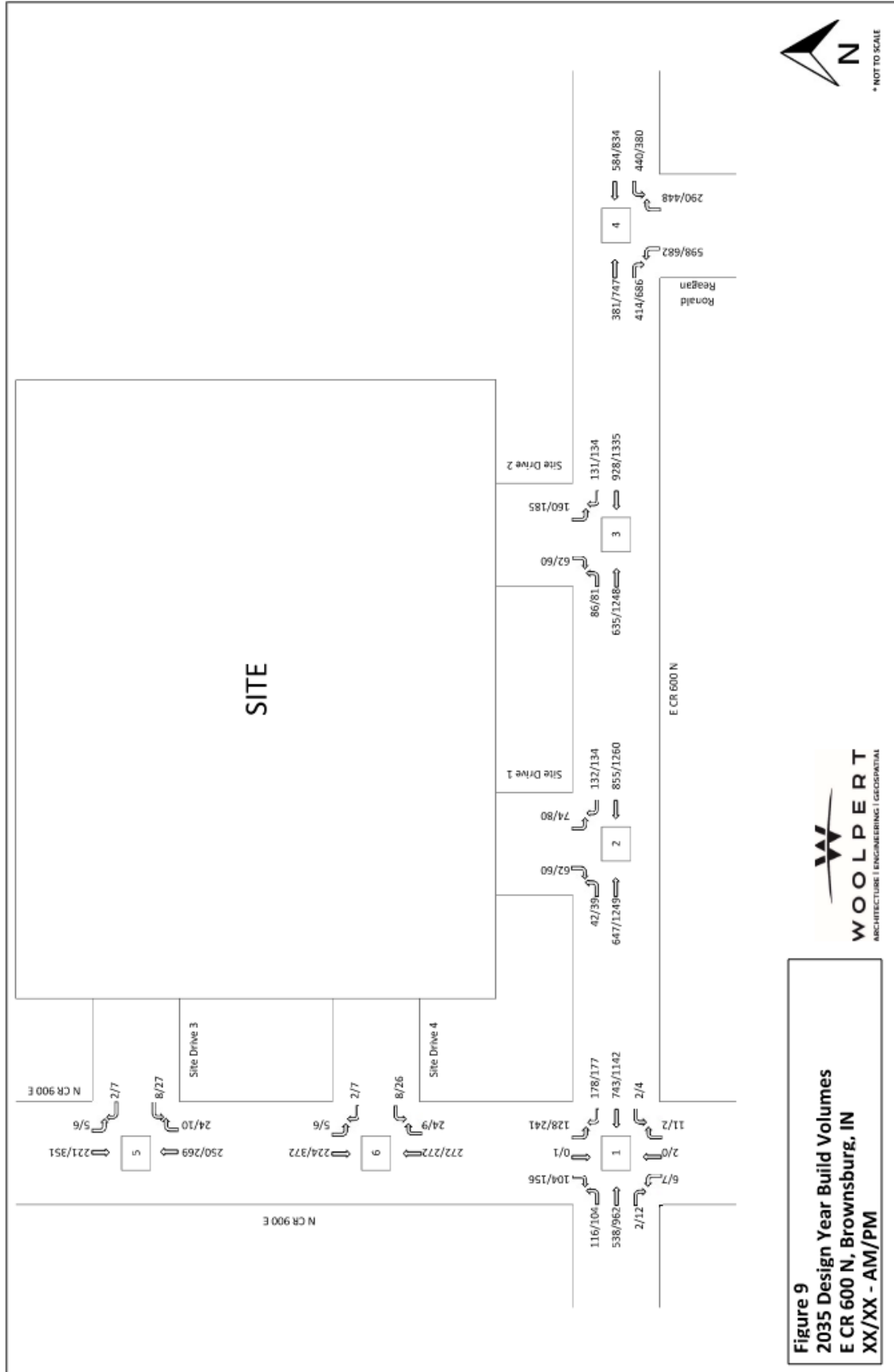


Figure 7
Pass By Trips
E CR 600 N, Brownsburg, IN
XX/XX - AM/PM





SECTION 5 - TRAFFIC ANALYSES

Analysis Parameters

Capacity and turn lane analyses were conducted for two scenarios for the Existing Year, Opening Year, and Design Year in the AM and PM peak hours - no-build (without Meijer traffic) and build with improvements (with Meijer traffic). The no-build scenario consisted of the existing geometric conditions and optimized signal timings without the Meijer development. The build scenario consisted of recommended improvements required to mitigate the intersection levels of service back to the existing condition with the Meijer development.

Signal Warrant Analysis

Intersection 1 at E CR 600 N and N CR 900 E was evaluated against Warrant 1, Eight-Hour Vehicular Volume per the INDOT MUTCD. Using the previously completed turning movement counts, the PM Peak Hour volumes in the existing year were extrapolated for 24 hours of volumes based on the hourly vehicular breakdown on E CR 600 N in the 2021 AADT count. For 14 of the 24 hours, the intersection exceeded the volume thresholds for warranting a signal; therefore, a signal is warranted at Intersection 1 in the existing conditions prior to the addition of Meijer traffic. With the anticipated extension of Ronald Reagan Parkway, however, the intersection volumes may drop below the threshold. It is recommended to reanalyze the intersection following advanced development of the Ronald Reagan Parkway extension.

Intersection 3 at E CR 600 N and Site Drive 2 was also evaluated against Warrant 1 using the same 24-hour volumes on E CR 600 N as Intersection 1 and the hourly distribution of traffic for ITE Land Use Code 813. For 12 of the 24 hours, the intersection exceeded the volume thresholds for warranting a signal. Therefore, a signal is warranted and recommended at Intersection 3.

Turn Lane Analysis

Turn lane warrant analysis was completed at the unsignalized site drives according to the Indiana Design Manual where turn lanes are not currently present. The results indicate that a right turn lane is warranted for the westbound right movements at Site Drive 1.

Storage turn lane lengths were determined by comparing the Synchro 95th Percentile Queue Length and the Indiana Design Manual calculated turn lane length methods. The 95th percentile queue is the queue length that has only a 5-percent probability of being exceeded during the analysis time period. The findings are shown in Tables 3 and 4 below. The turn lane lengths include a 100-foot taper and are based on design speed.

The westbound right turn lane at Site Drive 1 is recommended to be 200' based on available spacing. At Site Drives 1 and 2, the two-way left-turn line is recommended to be restriped as a 200' eastbound left turn lane.

Table 3: AM Peak Hour Turn Lane and Queueing Analysis											
Movement	Existing Turn Lane Length (Ft.)	Existing Synchro 95th %tile Queue Length (Ft.)	Opening Year (2025)				Horizon Year (2035)				Recommended Length (Ft.) NC = No Change
			No Build		Build		No Build		Build		
			Minimum INDOT Length (Ft.)	Synchro 95th %tile Queue Length (Ft.)	Minimum INDOT Length (Ft.)	Synchro 95th %tile Queue Length (Ft.)	Minimum INDOT Length (Ft.)	Synchro 95th %tile Queue Length (Ft.)	Minimum INDOT Length (Ft.)	Synchro 95th %tile Queue Length (Ft.)	
1. E CR 600 N and N CR 900 E											
EBL	100	10	200	10	200	13	200	15	200	18	NC
EBTR	-	0	-	0	-	0	-	0	-	0	-
WBL	100	0	150	0	150	0	150	0	150	0	NC
WBTR	-	0	-	0	-	0	-	0	-	0	-
NBL	50	3	150	3	150	3	150	5	150	5	NC
NBTR	-	3	-	3	-	3	-	3	-	5	-
SBL	225	103	200	128	200	208	200	215	250	308	NC
SBTR	-	15	-	15	-	18	-	20	-	20	-
2. E CR 600 N and Site Drive 1											
EBL	-				150	5			150	5	200
EBT	-				-	0			-	0	-
WBT	-				-	0			-	0	-
WBR	-				250	0			250	0	150
SBL	-				200	48			200	58	200
SBR	-				200	10			200	10	200
3. E CR 600 N and Site Drive 2											
EBL	-				200	18			200	20	200
EBT	-				-	15			-	20	-
WBTR	-				-	40			-	48	-
SBL	-				250	45			250	50	200
SBR	-				200	15			200	18	200
4. E CR 600 N and Ronald Reagan Parkway											
EBTR	-	170	-	183	-	285	-	228	-	453	-
WBL	500	88	352	95	364	130	385	128	385	218	NC
WBT	-	23	-	25	-	40	-	38	-	58	-
NBL	300	95	331	103	364	165	385	138	385	208	NC
NBR	-	78	-	83	-	85	-	90	-	90	-
5. N CR 900 E and Site Drive 3											
WBL	-				150	0			150	3	100
WBR	-				150	0			150	0	100
NBTR	-				-	0			-	0	-
SBLT	-				-	0			-	0	-
6. N CR 900 E and Site Drive 4											
WBL	-				150	0			150	3	100
WBR	-				150	0			150	0	100
NBTR	-				-	0			-	0	-
SBLT	-				-	0			-	0	-

Table 4: PM Peak Hour Turn Lane and Queueing Analysis											
Movement	Existing Turn Lane Length (Ft.)	Existing Synchro 95th %tile Queue Length (Ft.)	Opening Year (2025)				Horizon Year (2035)				Recommended Length (Ft.) NC = No Change
			No Build		Build		No Build		Build		
			Minimum INDOT Length (Ft.)	Synchro 95th %tile Queue Length (Ft.)	Minimum INDOT Length (Ft.)	Synchro 95th %tile Queue Length (Ft.)	Minimum INDOT Length (Ft.)	Synchro 95th %tile Queue Length (Ft.)	Minimum INDOT Length (Ft.)	Synchro 95th %tile Queue Length (Ft.)	
			1. E CR 600 N and N CR 900 E								
EBL	100	15	200	15	200	18	200	23	200	23	NC
EBTR	-	0	-	0	-	0	-	0	-	0	-
WBL	100	0	150	0	150	0	150	0	150	0	NC
WBTR	-	0	-	0	-	0	-	0	-	0	-
NBL	50	13	150	15	150	18	150	30	150	30	NC
NBTR	-	0	-	0	-	0	-	0	-	0	-
SBL	225	400	250	458	300	635	300	653	300	818	NC
SBTR	-	35	-	38	-	45	-	68	-	70	-
2. E CR 600 N and Site Drive 1											
EBL	-				150	5			150	8	200
EBT	-				-	0			-	0	-
WBT	-				-	0			-	0	-
WBR	-				250	0			300	0	150
SBL					200	113			200	148	
SBR	-				150	8			150	8	200
3. E CR 600 N and Site Drive 2											
EBL	-				200	38			200	50	200
EBT	-				-	78			-	133	-
WBTR	-				-	130			-	195	-
SBL	-				300	103			300	138	200
SBR	-				150	28			150	38	200
4. E CR 600 N and Ronald Reagan Parkway											
EBTR	-	498	-	475	-	610	-	658	-	890	-
WBL	500	135	375	180	655	200	676	335	700	510	NC
WBT	-	70	-	85	-	105	-	100	-	143	-
NBL	300	135	400	163	544	305	676	218	700	405	NC
NBR	-	5	-	195	-	273	-	255	-	358	-
5. N CR 900 E and Site Drive 3											
WBL	-				150	5			150	5	100
WBR	-				150	0			150	0	100
NBTR	-				-	0			-	0	-
SBLT	-				-	0			-	0	-
6. N CR 900 E and Site Drive 4											
WBL	-				150	5			150	5	100
WBR	-				150	0			150	0	100
NBTR	-				-	0			-	0	-
SBLT	-				-	0			-	0	-

Capacity Analysis

Capacity of an intersection is quantified by the Level of Service (LOS), which is based upon the amount of delay a vehicle experiences while at a particular intersection. The criterion for both signalized and unsignalized intersections is shown in Tables 5 and 6, respectively, and described within the Highway Capacity Manual (HCM 7).

Table 5. Signalized Intersection LOS Criteria

Level of Service	Control Delay (seconds/vehicle)
A	0-10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

Table 6. Unsignalized Intersection LOS Criteria

Level of Service	Control Delay (seconds/vehicle)
A	<10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Capacity analyses were performed for six (6) studied intersections within the study area during the AM and PM peak hours for all studied traffic scenarios utilizing the corresponding traffic volumes. The peak hour capacity analyses findings are shown in Tables 7 and 8. The capacity analysis summary sheets are contained in the following appendices: 2025 No-build Capacity Analysis Sheets (**Appendix 3**) and 2025 Build Capacity Analysis Sheets (**Appendix 4**), 2035 No-build Capacity Analysis Sheets (**Appendix 5**), and 2035 Build Capacity Analysis Sheets (**Appendix 6**).

The results of the capacity analysis show a few areas of concern. Intersection 1 operates below acceptable levels of service in all PM peak hour scenarios, including existing. The SB and NB approaches operate below acceptable levels because of insufficient gaps in mainline traffic for turning movements. As discussed, the intersection meets signal warrant conditions in the Existing Year. Additional analysis in the worst case 2035 Design Year PM Peak Build shows conversion to a signalized intersection would allow acceptable operation in all scenarios.

The Site Drive 1 approach at Intersection 2 operates at a LOS F in the PM peak hour scenarios due to insufficient gaps in mainline traffic for exiting left turning vehicles. It can be assumed frequent users of the site would adjust their traffic patterns and exit at the Site Drive 3 signal where delays are lesser. Table 9 shows the results of this scenario with a signal at Intersection 1.

		Table 7: AM Peak Hour Capacity Analysis				
Street	Approach	Existing	Opening Year (2025)		Horizon Year (2035)	
			No Build	Build	No Build	Build
1. E CR 600 N and N CR 900 E						
E CR 600 N	EB	1.6-A	1.7-A	1.8-A	1.9-A	2.0-A
	WB	0.0-A	0.0-A	0.0-A	0.0-A	0.0-A
N CR 900 E	NB	19.1-C	20.3-C	22.7-C	25.1-D	28.9-D
	SB	47.7-E	62.6-F	135.9-F	154.4-F	294.8-F
Intersection Total		6.6-A	8.5-A	18.0-B	20.1-C	38.4-D
2. E CR 600 N and Site Drive 1						
E CR 600 N	EB			0.7-A		0.7-A
	WB			0.0-A		0.0-A
Site Drive 1	SB			21.4-C		25.0-D
Intersection Total				2.0-A		2.1-A
3. E CR 600 N and Site Drive 2						
E CR 600 N	EB			4.6-A		4.6-A
	WB			5.2-A		5.2-A
Site Drive 1	SB			13.1-B		14.4-B
Intersection Total				5.9-A		6.0-A
4. E CR 600 N and Ronald Reagan Parkway						
E CR 600 N	EB	22.9-C	23.8-C	32.5-C	28.7-C	57.6-E
	WB	6.4-A	6.8-A	9.1-A	8.2-A	12.6-B
Ronald Reagan Parkway	NB	18.6-B	18.9-B	21.5-C	19.8-B	23.2-C
Intersection Total		14.6-B	15.1-B	20.1-C	17.4-B	29.3-C
5. N CR 900 E and Site Drive 3						
Site Drive 3	WB			11.4-B		12.0-B
N CR 900 E	NB			0.0-A		0.0-A
	SB			0.2-A		0.2-A
Intersection Total				0.3-A		0.3-A
6. N CR 900 E and Site Drive 4						
Site Drive 3	WB			11.1-B		11.8-B
N CR 900 E	NB			0.0-A		0.0-A
	SB			0.2-A		0.2-A
Intersection Total				0.3-A		0.3-A

Street	Approach	Table 8: PM Peak Hour Capacity Analysis				
		Existing	Opening Year (2025)		Horizon Year (2035)	
			No Build	Build	No Build	Build
1. E CR 600 N and N CR 900 E						
E CR 600 N	EB	1.1-A	1.2-A	1.2-A	1.5-A	1.5-A
	WB	0.0-A	0.0-A	0.0-A	0.0-A	0.0-A
N CR 900 E	NB	84.4-F	97.4-F	115.3-F	243.3-F	243.4-F
	SB	631.3-F	828.3-F	1428.6-F	2226.3-F	2902.8-F
Intersection Total		70.9-F	96.5-F	189.4-F	277.0-F	412.8-F
2. E CR 600 N and Site Drive 1						
E CR 600 N	EB			0.5-A		0.4-A
	WB			0.0-A		0.0-A
Site Drive 1	SB			52.6-F		81.7-F
Intersection Total				3.2-A		4.2-A
3. E CR 600 N and Site Drive 2						
E CR 600 N	EB			4.9-A		5.1-A
	WB			5.4-A		5.4-A
Site Drive 1	SB			22.2-C		28.8-C
Intersection Total				6.7-A		7.1-A
4. E CR 600 N and Ronald Reagan Parkway						
E CR 600 N	EB	67.2-E	51.6-D	51.1-D	70.6-E	70.8-E
	WB	9.5-A	11.4-B	15.6-B	15.6-B	27.4-C
Ronald Reagan Parkway	NB	18.4-B	21.3-C	36.7-D	26.5-C	48.7-D
Intersection Total		31.8-C	28.3-C	35.1-D	38.6-D	50.2-D
5. N CR 900 E and Site Drive 3						
Site Drive 3	WB			12.6-B		13.8-B
N CR 900 E	NB			0.0-A		0.0-A
	SB			0.1-A		0.1-A
Intersection Total				0.8-A		0.7-A
6. N CR 900 E and Site Drive 4						
Site Drive 3	WB			12.4-B		13.4-B
N CR 900 E	NB			0.0-A		0.0-A
	SB			0.2-A		0.1-A
Intersection Total				0.8-A		0.8-A

Street	Approach	Table 9: PM Peak Hour Capacity Analysis
		Design Year (2035)
		Build
1. E CR 600 N and N CR 900 E - Signalized		
E CR 600 N	EB	8.0-A
	WB	8.6-A
N CR 900 E	NB	24.2-C
	SB	25.5-C
Intersection Total		10.9-B



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SECTION 6 - CONCLUSIONS

Recommendations

Based on the results of the traffic analyses, included in Section 5, the following roadway improvements are recommended to address the impacts expected on the surrounding roadway network.

2025 Build (With Meijer Traffic)

Intersection 1 - E CR 600 N and N CR 900 E

1. Recommend re-analyzing as a signal following further design of Ronald Reagan Parkway extension. Current intersection volumes warrant a signal, but with extension of Ronald Reagan Parkway the volumes may drop below the threshold.

Intersection 2 - E CR 600 N and Site Drive 1

2. Construct an access driveway consisting of two (2) lanes: one (1) southbound egress lane and one (1) ingress lane.
3. Construct a 200' westbound right turn lane.

Intersection 3 - E CR 600 N and Site Drive 2

4. Construct an access driveway consisting of three (3) lanes: two (2) southbound egress lanes and one (1) ingress lane.
5. Construct a signal.

Intersection 5 -N CR 900 E and Site Drive 3

6. Construct an access driveway consisting of two (2) lanes: one (1) westbound egress lane and one (1) ingress lane.

Intersection 6 -N CR 900 E and Site Drive 4

7. Construct an access driveway consisting of two (2) lanes: one (1) westbound egress lane and one (1) ingress lane.

SECTION 7 - STATEMENT OF CERTIFICATION

I certify that this TRAFFIC IMPACT STUDY has been prepared by myself or under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.

X 

Keegan Anderson
Indiana PE #
Woolpert, Inc.

