



TRAFFIC IMPACT STUDY
KNOXVILLE, KNOX COUNTY, TENNESSEE

PROPOSED TACO BELL 5900 KINGSTON PIKE KNOXVILLE, TN

PREPARED BY GPD GROUP FOR: TACO BELL OF AMERICA, LLC.
REVISED MAY 2025



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TRAFFIC IMPACT STUDY

Taco Bell Knoxville, TN 5900 Kingston Pike

Knoxville, Knox County, Tennessee

Prepared For:

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Revised May 2025

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Executive Summary:

Purpose

This Traffic Impact Study is being prepared at the request of Taco Bell of America LLC in association with the proposed construction of a Taco Bell restaurant to be located on the southwest corner of the Kingston Pike (US 11) / Agnes Road intersection in Knoxville, Knox County, Tennessee. The purpose of this Traffic Impact Study is to analyze the vehicular operating conditions in the vicinity of the proposed fast-food restaurant both before and after its construction to determine what, if any, impact the project will have on the surrounding roadway network.

Site Location

The proposed site location is currently occupied by a Pelican's Snoballs shaved ice stand and Braga Bjj Knoxville martial arts school. Properties surrounding the site location are primarily for commercial uses.

Proposed Development

The proposed development is located on the southwest corner of the Kingston Pike (US 11) / Agnes Road intersection and consists of the construction of a 2,115 SF Taco Bell restaurant with a drive-thru. Access to the site is provided by two driveways; one along Kingston Pike (US 11) and one along Agnes Road.

Principal Findings

'Build Option 1' consists of prohibiting left-turns from Site Drive #1 onto Kingston Pike (US 11) and allowing full movement from Site Drive #2 onto Agnes Road. Most movements and approaches would have acceptable Levels-of-Service (LOS). However, it would result in an unacceptable LOS F for the northbound Agnes Road approach at the Kingston Pike (US 11) / Agnes Road intersection. 'Build Option 2' allows full access at both site driveways. While most movements and approaches operate at acceptable LOS, the northbound Agnes Road approach at the Kingston Pike (US 11) / Agnes Road intersection would operate at LOS F; although the vehicular delay is less than that under 'Build Option 1'. No auxiliary turn lanes are warranted at either site driveway under 'Build Option 1' or 'Build Option 2' traffic conditions. Queues of at least three cars waiting to order could potentially prevent motorists from using Site Drive #2 to exit. Queues longer than 21 cars may spill over onto public roadways. Sufficient ISD is provided at both site driveways. ISD at Kingston Pike (US 11) / Agnes Road is satisfied.

Conclusions / Recommendations

The proposed development should be constructed according to the preliminary site plan with full access at both proposed driveways. Improvements to public roadways are not recommended.



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I. Existing Conditions:

Site Description

The subject property is currently occupied by Pelican's SnoBalls (a shaved ice dessert stand) and Braga Bjj Knoxville (a martial arts school). The land uses in the vicinity of the site and along Kingston Pike (US 11) are primarily commercial uses. However, there are residential properties located north and south of the commercial properties east of the Kingston Pike (US 11) / N. Northshore Drive intersection. Note that the Bearden Elementary and Knoxville Adaptive Education schools are located along the north side of Kingston Pike (US 11) east of the study area. See **Figure 1** for a project location map and **Figure 2** for an aerial photograph of the study area.

Proposed Development

The proposed development consists of the construction of a Taco Bell restaurant with 2,115 square feet (SF) of gross floor area. Additionally, the proposed Taco Bell will provide one drive-through lane. This development will replace the current Pelican's SnoBalls shaved ice stand and Braga Bjj Knoxville martial arts school located on the southwest corner of the Kingston Pike (US 11) / Agnes Road intersection. As shown on the site plan, the proposed Taco Bell contains two access points. One access point consists of the construction of a new driveway along Kingston Pike (US 11) and shall be referred to as Site Drive #1. The other access point consists of modifications to the existing Pelicans Snoballs driveway along Agnes Road, which shall be referred to as Site Drive #2. See **Appendix A** for a preliminary site plan that includes site access locations.

Existing Roadway Characteristics

Kingston Pike (US 11) is a five-lane asphalt roadway with two travel lanes in each direction running northeast-southwest, as well as a center two-way left turn lane. The posted speed limit along Kingston Pike (US 11) is 45 mph. According to TDOT, Kingston Pike (US 11) is classified as an Urban Other Principal Arterial. Agnes Road is a two-lane asphalt roadway with one travel lane in each direction running southeast-northwest. The posted speed limit along Agnes Road is 25 mph. TDOT classifies Agnes Road as an Urban Local road.

Traffic Counts

For this analysis, Quality Counts, LLC performed turning movement traffic counts from 6:00 AM to 7:00 PM on Wednesday, April 9, 2025. Counts were collected at the Kingston Pike (US 11) / Agnes Road intersection.



From the count data, the AM peak hour of the study area was determined to be from 7:30 AM – 8:30 AM while the PM peak hour was found to be from 5:00 PM – 6:00 PM. See **Appendix B** for printouts of the turning movement counts.

HCS Intersection Capacity Analysis – Existing Conditions

Intersection capacity analyses were performed for the Existing Year 2025 'Existing' traffic conditions to determine the operating conditions that are currently experienced at the Kingston Pike (US 11) / Agnes Road intersection. The quality of the operating conditions experienced by an intersection is measured in terms of Level-of-Service (LOS). Levels-of-Service can range from LOS A to LOS F.

Level-of-Service A, B, C, D and E are considered acceptable in an area within a Transportation Planning Organization (TPO) for movements and approaches while the overall intersection must operate at LOS D or better. This intersection is located within the Knoxville TPO area. Level-of-Service F is considered unacceptable with significant levels of delay experienced by vehicles. The thresholds related to average control delay for unsignalized intersections are as follows:

<i>Level-of- Service</i>	<i>Delay Threshold – Unsignalized (Sec)</i>
A	< 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

The quantity of vehicles that a turning movement or approach has sufficient capacity for is measured with the volume to capacity ratio (v/c). A v/c less than 1.0 is considered acceptable with a v/c less than 0.93 preferred. An intersection is considered over capacity when signal timings or other intersection control cannot be adjusted to allow all turning movements to have a v/c less than 1.0.

The analysis is performed utilizing the computer program HCS 2024 which is developed by McTrans Corporation and based on the Highway Capacity Manual, 7th Edition. Based on criteria established by TDOT and the Knoxville-Knox County Planning Commission, Highway Capacity Software (HCS) is used to determine the required number of lanes and the lane assignments at intersections (i.e. the needed intersection capacity). The existing peak hour factors and heavy vehicle percentages were utilized throughout the capacity analysis.



Existing Year 2025 Capacity Analysis

Table 1 summarizes the results of the capacity analysis for the Kingston Pike (US 11) / Agnes Road intersection under the Existing Year 2025 'Existing' traffic conditions. See **Appendix C** for the HCS Intersection Capacity Analysis printouts. See **Figure 3** for the Existing Year 2025 volumes used in this analysis.

Table 1: HCS Intersection Capacity Analysis Summary - Existing Year 2025 'Existing' Conditions: Kingston Pike (US 11) / Agnes Road				
Movement	'Existing' Conditions			
	LOS	Delay (sec)	V/C Ratio	95th % Queue (ft)
AM Peak Hour				
Westbound Left	B	10.8	0.03	3
Westbound Approach	A	0.2	-	-
Northbound Approach	C	18.3	0.17	15
PM Peak Hour				
Westbound Left	B	11.0	0.03	3
Westbound Approach	A	0.2	-	-
Northbound Approach	E	37.5	0.39	43

Note: Yellow highlighted cells indicate a Level-of-Service D
 Orange highlighted cells indicate a Level-of-Service E
 Red highlighted cells indicate a Level-of-Service F

As shown in **Table 1**, all movements and approaches at the Kingston Pike (US 11) / Agnes Road intersection currently operate at acceptable LOS E or better under the Existing Year 2025 'Existing' Conditions during the AM and PM peak hours. No movements and approaches appear to experience significant delays and do not appear to have long queues or insufficient capacity.

II. Background Conditions:

ADT Traffic Count Locations

According to TNTIMES, there are three ADT traffic count locations near the study area; two along Kingston Pike (US 11) and one along N. Northshore Drive. The N. Northshore Drive count station (location I.D. 4700263) was not utilized in this analysis since it is not located along any of the study roadways. One Kingston Pike (US 11) traffic count station (location I.D. 47000299) was located west of the study area; however, its last traffic count was in 2001. Therefore, this traffic count station was not utilized in this analysis. The other



Kingston Pike (US 11) traffic count station (location I.D. 47000159) is located east of the study area and was used in this analysis.

'No-Build' Traffic Volumes

The construction of the proposed Taco Bell is expected to be completed in 2026 which will serve as the 'Opening Year' for the study, while the 'Design Year' will be 2031 (5-year design criteria). Based on historic AADT traffic counts collected at Traffic Count Station 47000159, the study area is not expected to experience any growth within the next six years. However, an annual growth rate of +0.50% was applied to be conservative. This growth factor was used to calculate the future traffic volumes within the study area. Note that AADT traffic counts from 2021 and 2022 were not included in the growth rate calculation due to COVID-19 Pandemic effects for the 2021 volumes, and the 2022 volumes were grown from the 2021 volumes. See **Figure 4** for the Design Year 2031 'No-Build' traffic volumes. See **Appendix D** for the AADT counts and growth rate calculations.

HCS Intersection Capacity Analysis – 'No-Build' Conditions

Table 2 summarizes the results of the capacity analysis for the Kingston Pike (US 11) / Agnes Road intersection under the Design Year 2031 'No-Build' traffic conditions. See **Appendix C** for the HCS Intersection Capacity Analysis printouts.

Table 2: HCS Intersection Capacity Analysis Summary				
Design Year 2031 'No-Build' Conditions: Kingston Pike (US 11) / Agnes Road				
Movement	'No-Build' Condition			
	LOS	Delay (sec)	V/C Ratio	95th % Queue (ft)
AM Peak Hour				
Westbound Left	B	11.0	0.03	3
Westbound Approach	A	0.2	-	-
Northbound Approach	C	18.9	0.18	15
PM Peak Hour				
Westbound Left	B	11.2	0.03	3
Westbound Approach	A	0.2	-	-
Northbound Approach	E	42.2	0.43	50

Note: Yellow highlighted cells indicate a Level-of-Service D

Orange highlighted cells indicate a Level-of-Service E

Red highlighted cells indicate a Level-of-Service F

As shown in **Table 2**, all movements and approaches at the Kingston Pike (US 11) / Agnes Road intersection are anticipated to operate at acceptable LOS E or better under the Design Year 2031 'No-Build' traffic conditions during the AM and PM peak hours. No movements and approaches are anticipated to



experience significant delays or queues, and sufficient capacity is expected. Slight increases in vehicular delays, queues, and v/c ratios are expected when compared to the Existing Year 2025 'Existing' traffic conditions results.

III. Trip Generation:

The trip generation calculations were performed for the Taco Bell restaurant utilizing the ITETripGen Web-based App Version 4.0.0.421, based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. This manual includes data from numerous trip generation studies of different land uses that have been performed by public agencies, developers, consulting firms and associations and submitted to ITE. It serves as a tool for estimating the number of vehicle trips generated by a proposed development. For this study, the trip generation calculations will evaluate the AM and PM peak periods. According to information contained in the ITE Trip Generation Manual, 11th Edition, the expected trip ends generated by the proposed Taco Bell were calculated and are shown in **Table 3**.

Table 3: ITE Trip Generation								
Land Use	Land Use Code	Pass-By Trips			Primary Trips			Total Overall Trips
		Enter	Exit	Total Pass-By Trips	Enter	Exit	Total Primary Trips	
AM Peak Hour								
Fast-Food Restaurant With Drive-Through	934	19	19	38	29	28	57	95
PM Peak Hour								
Fast-Food Restaurant With Drive-Through	934	15	13	28	22	20	42	70

Note that the variable utilized in the trip generation calculations was 'square feet of gross floor area', which in this case is 2,115 SF. Additionally, the expected trip generations were calculated utilizing the "Weighted Average Trip Rate" method. While AM trips were generated, it should be noted that most trips to Taco Bell occur during the lunch and dinner hours. However, only the AM and PM peak hours were analyzed in this study. See **Appendix E** for the detailed trip generation calculations for the proposed Taco Bell.

A certain portion of vehicles that will travel to and from the site will occur as pass-by traffic. Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion.



Since these trips are attracted from the traffic passing the site on the adjacent roadway, pass-by vehicles that are currently traveling along Kingston Pike (US 11) and Agnes Road will now be rerouted into and out of the site. While ITE publishes estimated pass-by trip percentages, an alternative pass-by trip percentage given by the Knoxville-Knox County Planning Commission was utilized in this study. Data obtained and approved by the Knoxville-Knox County Planning Commission states that the maximum pass-by trip percentage allowed for fast-food restaurants is 40%. Therefore, 40% of the total site trips were assumed to be pass-by traffic during the weekday AM and PM peak hours. The remaining trips traveling to and from the site are referred to as primary trips as they consist of new trips on the roadway network traveling directly between the origin and the primary trip destination. While the pass-by capture reduction was applied to the trip generation calculations for the proposed Taco Bell, it should be noted that these pass-by trips are still assigned as new turning movements entering and exiting the site at the proposed access locations.

Site Trip Distribution & Assignment

The new trips for the Taco Bell discussed in the Trip Generation section were distributed and assigned to the roadway network based on existing travel volumes/patterns near the site, the surrounding land uses, roadway network, and engineering judgment. It was estimated that during both AM and PM peak hours 50% of the projected trips will travel to/from the east on Kingston Pike (US 11) and 50% will travel to/from the west on Kingston Pike (US 11) during the AM and PM peak hours.

Pass-by trips, since they occur from traffic already traveling by the site, were developed and distributed based on the existing directional distribution of peak hour traffic volumes along Kingston Pike (US 11) and Agnes Road. It was estimated that during the AM and PM peak hours 50% of the projected pass-by site trips will originate from the west on Kingston Pike (US 11), 45% will originate from the east on Kingston Pike (US 11), and 5% will originate from the south on Agnes Road. Note that the same pass-by trip distributions were used for the 'Build Option 1' and 'Build Option 2' scenarios.

Note that pass-by traffic originating from the west and east on Kingston Pike (US 11) was distributed such that these vehicles utilized both proposed driveways. This accounts for different types of driving behavior that Kingston Pike (US 11) motorists might exhibit entering/exiting the proposed Taco Bell.

In addition to the above access points, there are travel options that motorists can use to connect to the roadway network by travelling south on Agnes Road. Note that zero trips were distributed to these travel options because these intersections are located outside of the study area. Therefore, traffic counts were not conducted at these intersections.



Additionally, a potential worst-case scenario in terms of vehicular delays can be analyzed by distributing the trips such that they are accessing the roadway network at the Kingston Pike (US 11) / Site Drive #1 and Kingston Pike (US 11) / Agnes Road intersections.

The peak hour distribution and assignment of site trips, including both primary and pass-by trips for the fast-food restaurant are included in **Appendix F**. An additional figure that combines all primary and pass-by trips to show the total traffic from the proposed site is also provided in **Appendix F**.

'Build' Traffic Volumes

To create the 'Build' traffic volumes, the site trips discussed in the previous section were added to the Design Year 2031 'No-Build' peak hour traffic volumes. The 'Build' traffic volumes will allow a direct comparison between the projected traffic conditions without the development and those following the completion of the proposed Taco Bell restaurant. **Figure 5** and **Figure 6** shows the Design Year 2031 peak hour traffic volumes for 'Build Option 1' and 'Build Option 2' respectively.

IV. Traffic Analysis:

HCS Intersection Capacity Analysis – 'Build' Conditions

'Build Option 1' Conditions

'Build Option 1' consists of making Site Drive #1 a three-quarter movement driveway. This alternative would prohibit motorists from using Site Drive #1 to turn left onto Kingston Pike (US 11). Instead, motorists would leave the site using Site Drive #2 and would turn left onto Kingston Pike (US 11) at the Agnes Road intersection. Site Drive #2 is expected to be a full movement driveway.

Table 4 summarizes the HCS intersection capacity analysis and details the Levels-of-Service at the study intersections under the Design Year 2031 'No-Build' vs 'Build Option 1' traffic conditions. See **Appendix C** for the HCS Intersection Capacity Analysis printouts.



Table 4: HCS Intersection Capacity Analysis Summary - Design Year 2031 'No-Build' vs. 'Build Option 1' Conditions								
Movement	'No-Build' Condition				'Build' Condition			
	LOS	Delay (sec)	V/C Ratio	95 th % Queue (ft)	LOS	Delay (sec)	V/C Ratio	95 th % Queue (ft)
AM Peak Hour								
Kingston Pike (US 11) / Site Drive #1								
Westbound Left					B	11.0	0.02	3
Westbound Approach					A	0.1	-	-
Northbound Approach					B	13.0	0.05	5
Kingston Pike (US 11) / Agnes Road								
Westbound Left	B	11.0	0.03	3	B	11.3	0.06	5
Westbound Approach	A	0.2	-	-	A	0.4	-	-
Northbound Approach	C	18.9	0.18	15	E	46.6	0.51	63
Agnes Road / Site Drive #2								
Eastbound Approach					A	9.2	0.03	3
Northbound Left					A	7.3	0.00	0
Northbound Approach					A	0.2	-	-
PM Peak Hour								
Kingston Pike (US 11) / Site Drive #1								
Westbound Left					B	11.2	0.01	0
Westbound Approach					A	0.1	-	-
Northbound Approach					B	13.2	0.03	3
Kingston Pike (US 11) / Agnes Road								
Westbound Left	B	11.2	0.03	3	B	11.4	0.04	3
Westbound Approach	A	0.2	-	-	A	0.3	-	-
Northbound Approach	E	42.2	0.43	50	F	79.4	0.69	95
Agnes Road / Site Drive #2								
Eastbound Approach					A	9.2	0.02	3
Northbound Left					A	7.3	0.00	0
Northbound Approach					A	0.1	-	-

Note: Yellow highlighted cells indicate a Level-of-Service D

Orange highlighted cells indicate a Level-of-Service E

Red highlighted cells indicate a Level-of-Service F

As shown in **Table 4**, most movements and approaches are anticipated to operate at acceptable LOS E or better under Design Year 2031 'Build Option 1' traffic conditions during the AM and PM peak hours. However, the northbound approach at the Kingston Pike (US 11) / Agnes Road is expected to operate at unacceptable LOS F during the PM peak hour under Design Year 2031 'Build Option 1' conditions. This is common at unsignalized intersections located along arterials such as Kingston Pike (US 11) as the higher delays are associated with the left-turn movement onto these arterials. When compared to the Design Year 2031 'No-Build' traffic conditions, the northbound approach at Kingston Pike (US 11) / Agnes Road is the only movement that experiences degradation in vehicular delays and LOS.



Additionally, the 95th percentile queue for the northbound approach at the Kingston Pike (US 11) / Agnes Road intersection increases under Design Year 2031 'Build Option 1' traffic conditions. Note that while the 95th percentile queue does increase, it does not block the proposed Taco Bell at Site Drive #2.

Even though the volume-capacity ratio increases during the AM and PM peak hours, the northbound Agnes Road approach at the Kingston Pike (US 11) / Agnes Road intersection is still expected to have sufficient capacity to handle the additional Taco Bell traffic. The Kingston Pike (US 11) approaches at the Kingston Pike (US 11) / Site Drive #1 and Kingston Pike (US 11) / Agnes Road intersections are expected to have sufficient capacity for the proposed Taco Bell traffic.

'Build Option 2' Conditions

'Build Option 2' consists of making Site Drive #1 a full movement driveway. Like 'Build Option 1', Site Drive #2 was assumed to be a full movement driveway.

Table 5 summarizes the HCS intersection capacity analysis and details the Levels-of-Service at the study intersections under the Design Year 2031 'No-Build' vs 'Build Option 1' traffic conditions. See **Appendix C** for the HCS Intersection Capacity Analysis printouts.

Table 5: HCS Intersection Capacity Analysis Summary - Design Year 2031 'No-Build' vs. 'Build Option 2' Conditions								
Movement	'No-Build' Condition				'Build' Condition			
	LOS	Delay (sec)	V/C Ratio	95 th % Queue (ft)	LOS	Delay (sec)	V/C Ratio	95 th % Queue (ft)
AM Peak Hour								
Kingston Pike (US 11) / Site Drive #1								
Westbound Left					B	11.0	0.02	3
Westbound Approach					A	0.1	-	-
Northbound Approach					D	29.1	0.18	18
Kingston Pike (US 11) / Agnes Road								
Westbound Left	B	11.0	0.03	3	B	11.3	0.06	5
Westbound Approach	A	0.2	-	-	A	0.4	-	-
Northbound Approach	C	18.9	0.18	15	D	32.4	0.37	40
Agnes Road / Site Drive #2								
Eastbound Approach					A	9.1	0.02	3
Northbound Left					A	7.3	0.00	0
Northbound Approach					A	0.2	-	-

Note: Yellow highlighted cells indicate a Level-of-Service D
 Orange highlighted cells indicate a Level-of-Service E
 Red highlighted cells indicate a Level-of-Service F



Table 5: HCS Intersection Capacity Analysis Summary - Design Year 2031 'No-Build' vs. 'Build Option 2' Conditions (cont.)								
Movement	'No-Build' Condition				'Build' Condition			
	LOS	Delay (sec)	V/C Ratio	95 th % Queue (ft)	LOS	Delay (sec)	V/C Ratio	95 th % Queue (ft)
PM Peak Hour								
Kingston Pike (US 11) / Site Drive #1								
Westbound Left					B	11.2	0.01	0
Westbound Approach					A	0.1	-	-
Northbound Approach					D	32.4	0.14	13
Kingston Pike (US 11) / Agnes Road								
Westbound Left	B	11.2	0.03	3	B	11.4	0.04	3
Westbound Approach	A	0.2	-	-	A	0.3	-	-
Northbound Approach	E	42.2	0.43	50	F	59.7	0.58	73
Agnes Road / Site Drive #2								
Eastbound Approach					A	9.2	0.01	0
Northbound Left					A	7.3	0.00	0
Northbound Approach					A	0.1	-	-

Note: Yellow highlighted cells indicate a Level-of-SERVICE D
Orange highlighted cells indicate a Level-of-SERVICE E
Red highlighted cells indicate a Level-of-SERVICE F

As shown in **Table 5**, most movements and approaches are anticipated to operate at acceptable LOS E or better under the Design Year 2031 'Build Option 2' traffic conditions during the AM and PM peak hours. Note that the northbound approach at the Kingston Pike (US 11) / Agnes Road intersection is expected to degrade to unacceptable LOS F during the PM peak hour under Design Year 2031 'Build Option 2' traffic conditions. As previously mentioned, high vehicular delays for stop-controlled side streets are common along arterials like Kingston Pike (US 11). Even though the northbound approach at the Kingston Pike (US 11) / Agnes Road intersection is expected to operate at unacceptable LOS F, the delays are less than those under the 'Build Option 1' scenario.

While increases in the volume-capacity ratios are expected at the Kingston Pike (US 11) / Agnes Road intersection are expected, the northbound Agnes Road approach v/c ratio remains less than 1.0. Therefore, the northbound Agnes Road approach is expected to have sufficient capacity for the additional Taco Bell traffic. Like 'Build Option 1', the Kingston Pike (US 11) approaches at the Kingston Pike (US 11) / Site Drive #1 and Kingston Pike (US 11) / Agnes Road intersections are expected to have sufficient capacity for the additional Taco Bell traffic.

Regarding the 95th percentile queue, the queue for the northbound approach at the Kingston Pike (US 11) / Agnes Road intersection is expected to increase during both AM and PM peak hours under Design Year 2031 'Build Option 2' traffic conditions. While the 95th percentile queue increases, it is not expected to block Site Drive #2.



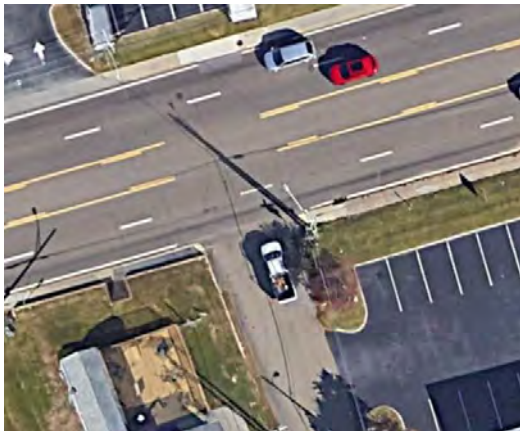
Intersection Geometry

Site Access Locations and Alignment

As shown on the preliminary site plan, access to the proposed Taco Bell restaurant will be provided by two driveways, Site Drive #1 (located on Kingston Pike (US 11)) and Site Drive #2 (located on Agnes Road). Site Drive #1 is located approximately 150' east Bearden Road and intersects Kingston Pike (US 11) at approximately 90 degrees. Site Drive #1 is also approximately 70' east of the exit driveway for the U.S. Bank. There is an existing driveway for a Food City grocery store that is located along the north side of Kingston Pike (US 11). This driveway is approximately 110' east of Site Drive #1 and roughly 60' west of Agnes Road. Site Drive #2 is located approximately 185' south of Kingston Pike (US 11) and intersects Agnes Road at approximately 85 degrees. Note that measurements were taken from centerline to centerline. See **Appendix A** for a preliminary site plan that contains site access locations.

Intersection Layout – Existing Intersections

Kingston Pike (US 11) / Agnes Road



This intersection is currently unsignalized with the northbound Agnes Road approach operating under stop control. The westbound left-turn motorists utilize the two-way left turn lane. No improvements are planned at this intersection.

Agnes Road / Site Drive #2



This intersection is currently unsignalized with the eastbound Site Drive #2 approach operating under stop control. There are no turn lanes for motorists on Agnes Road. The existing driveway currently offers full movement serves the Pelican's SnoBalls shaved ice stand. The proposed Taco Bell driveway will be at approximately the same location.



Intersection Layout – Proposed Intersections ('Build Option 1')

The Kingston Pike (US 11) / Site Drive #1 intersection would be an unsignalized intersection with the northbound Site Drive #1 approach operating under stop control. The intersection consists of three (3) approaches with the following lane configurations: EB Kingston Pike (US 11) – Two lanes (thru, thru-right), WB Kingston Pike – three lanes (left, thru, thru) and NB Site Drive #1 – one lane (right). Note that Kingston Pike (US 11) is striped to include a center two-way left turn lane.

Prohibiting left-turns for motorists exiting at the Kingston Pike (US 11) / Site Drive #1 intersection would potentially allow for safer operations along Kingston Pike (US 11). For eastbound motorists, they can accelerate at a constant rate from the Kingston Pike (US 11) / Bearden Road intersection without conflicts from vehicles conducting left-turns from Site Drive #1. For westbound Kingston Pike (US 11) motorists, this would allow them to have fewer conflict points with motorists exiting the proposed Taco Bell.

The Agnes Road / Site Drive #2 intersection would be an unsignalized intersection with the eastbound Site Drive #2 approach operating under stop control. The intersection consists of three (3) approaches with the following lane configurations: NB Agnes Road – one lane (left-thru), SB Agnes Road – one lane (thru-right), and EB Site Drive #2 – one lane (left-right). See **Appendix A** for a preliminary site plan that contains site access locations.

While the Kingston Pike (US 11) / Bearden Road intersection was not analyzed since it is not part of the study area, the anticipated Taco Bell traffic is not expected to impact delays or queues at this intersection. It is unknown whether the westbound approach queue length at the Kingston Pike (US 11) / Bearden Road intersection extends past Agnes Road. If this is the case, then vehicular delays for the northbound approach at the Kingston Pike (US 11) / Agnes Road intersection may increase. As such, motorists attempting to turn left onto westbound Kingston Pike (US 11) may find alternative routes via the roadway network.

Intersection Layout – Proposed Intersections ('Build Option 2')

Under 'Build Option 2', the Kingston Pike (US 11) / Site Drive #1 intersection consists of the same lane configuration as 'Build Option 1'. However, since left-turns from Site Drive #1 onto Kingston Pike (US 11) are permitted, the NB Site Drive #1 approach lane configuration is now one lane (left-right). See **Appendix A** for a preliminary site plan that contains site access locations.

The proposed layout of the Agnes Road / Site Drive #2 intersection is the same layout provided in 'Build Option 1'.



Sight Distance Analysis

Intersection sight distance (ISD) is the distance in which a motorist must have an unobstructed view of the entire intersection to anticipate and avoid potential collisions. Moreover, drivers in a stopped position should be able to observe traffic at a distance that will allow them to safely make the desired movement. The intersection sight distance required is a direct correlation to the speed a vehicle is traveling. Note that sight distance evaluations were conducted based on the posted speed limit of 45 mph for Kingston Pike (US 11). While Agnes Road has a posted speed limit of 25 mph, sight distance evaluations were conducted based on a design speed of 30 mph. TDOT & AASHTO Green Book sight distance criteria were used for this evaluation.

Quality Counts, LLC visited the Kingston Pike (US 11) / Site Drive #1 and Kingston Pike (US 11) / Agnes Road intersections on April 9, 2025 to photograph sight distance. Intersection sight distance was evaluated on each minor street approach and measurements were taken 15 feet behind the edge of the travel lane. See **Appendix G** for the sight distance exhibits.

Table 6: Intersection Sight Distance Evaluation Summary

Intersection	Required ISD	Provided ISD	ISD Met?	Obstructions To ISD
Kingston Pike (US 11) / Site Drive #1	565'	565'	Yes	N/A.
Kingston Pike (US 11) / Agnes Road	565'	565'	Yes	N/A.
Agnes Road / Site Drive #2	335'	165' Looking North 335' Looking South	Yes	Outer edge of Kingston Pike intersection is 165' north of proposed drive. ISD is irrelevant looking north.

As shown in **Table 6**, ISD is met at the Kingston Pike (US 11) / Site Drive #1 and Kingston Pike (US 11) / Agnes Road intersections. Site Drive #2 is remaining in the same location as the existing Pelican's SnoBalls driveway. Therefore, sight conditions will be the same under the proposed condition. The T-intersection of Kingston Pike (US 11) / Agnes Road limits the speeds that southbound motorists are traveling on Agnes Road since they have just turned from Kingston Pike (US 11). With actual travel speeds lower than 25 mph and a distance of approximately 165' between the radius return and Site Drive #2, ISD looking north cannot be achieved but is not considered deficient. ISD is met for Site Drive #2 motorists looking south along Agnes Road.



Right-of-Way and Lane Width

The existing Right-of-Way widths along Kingston Road (US 11) and Agnes Road are not expected to be impacted by the proposed Taco Bell. Eastbound and westbound travel lanes along Kingston Pike (US 11) are approximately 11' wide, with the two-way left turn lane roughly 12' feet wide. Both Agnes Road travel lanes are currently 11' wide. Existing lane widths along Kingston Pike (US 11) and Agnes Road will not be impacted by either of the proposed build options for the proposed Taco Bell.

The proposed Site Drive #1 modifications will contain two travel lanes (one entry lane and one exit lane) with a width of 13' for both lanes. The proposed Site Drive #2 modifications also contain one entry lane and one exit, however, both lanes will be 12' wide.

Auxiliary Turning Lane Warrants

Turn lane warrant analyses were performed for the Taco Bell proposed unsignalized access points on Kingston Pike (US 11) and Agnes Road in order to determine whether left- or right-turn lanes will be needed based on the projected traffic volumes. TDOT publishes the [Highway System Access Manual \(HSAM\)](#) which includes warrant charts for auxiliary turn lanes. These warrant charts were utilized to determine if auxiliary turn lanes will be required.

The left turn lane warrant charts provided by the HSAM are from the AASHTO Green Book 7th Edition, Section 9.7.3. The results of the auxiliary turn lane analysis for the Design Year 2031 'Build Option 1' and 'Build Option 2' conditions are summarized in **Table 7**. Left-turn auxiliary lanes along Kingston Pike (US 11) were not analyzed since there is an existing two-way left turn lane. See **Appendix H** for the auxiliary turn lane warrant charts. Note that a southbound right-turn auxiliary lane along Agnes Road was not evaluated since TDOT states that for roads with speed limits less than 40 mph, right-turn auxiliary turn lanes are warranted only if the rate of right-turn vehicles is greater than 300 veh/hour.

Table 7: Auxiliary Turn Lane Warrant Analysis Summary – Design Year 2031 'Build' Conditions	
Intersection	Auxiliary Turn Lane Warrants
'Build Option 1'	
Kingston Pike (US 11) / Site Drive #1	
Eastbound Right-Turn Lane	Not Warranted
Agnes Road / Site Drive #2	
Northbound Left-Turn Lane	Not Warranted



**Table 7: Auxiliary Turn Lane Warrant Analysis Summary –
Design Year 2031 'Build' Conditions (cont.)**

Intersection	Auxiliary Turn Lane Warrants
'Build Option 2'	
Kingston Pike (US 11) / Site Drive #1	
Eastbound Right-Turn Lane	Not Warranted
Agnes Road / Site Drive #2	
Northbound Left-Turn Lane	Not Warranted

As shown in **Table 7**, no auxiliary turn lanes are warranted along Kingston Pike (US 11) or Agnes Road to enter the proposed development.

Site Circulation

Turning Movements

AutoTurn was utilized to analyze whether vehicles are able to access the drive-thru lane based on the proposed site drive geometrics along Kingston Pike (US 11) and Agnes Road. See **Appendix I** for the AutoTurn plan sheets. Based on the AutoTurn results, motorists are able to make the necessary turns to access the drive-thru utilizing both site driveways. Specifically, motorists utilizing Site Drive #2 along Agnes Road are anticipated to be able to make the turn into the drive-thru lane.

Queueing and Stacking

Based on data collected from similar Taco Bell sites, the peak hour for all orders determined that the average number of drive-through customers was 27, or a customer arriving every 122 seconds; and a maximum number of 41 drive-through customers in an hour, or one every 87 seconds. The analyzed sites contained one order kiosk.

Based on the preliminary site plan, six vehicles can be stored within the service portion of the site (between the order kiosk and the pick-up window). It is expected that if more than one vehicle is waiting at the order kiosk, then queue blockages could begin to occur. For example, if there are at least three vehicles waiting to order, with the last two entering the site from Site Drive #1, that would prevent vehicles from using Site Drive #2 to leave the Taco Bell. It would also prevent motorists entering at Site Drive #2 from accessing the parking spaces located along the northern portion of the property.

Should queues continue to build, roughly 21 vehicles (including those within the service area) can queue on-site before spilling over onto public roadways.



Multimodal Facilities

There is an existing sidewalk along Kingston Pike (US 11). According to the preliminary site plan, the existing sidewalk along Kingston Pike (US 11) will remain after the construction of the proposed Taco Bell. There is a bus stop in front of the site on Kingston Pike (US 11).

V. Recommendations:

Site Access

According to Table 3-5 in Volume 3 of TDOT's HSAM, the required minimum spacing of driveways along an Urban Principal Arterial with a traversable median is 880'. Additionally, Table 3-7 in the HSAM states that the minimum spacing of offset access points along an Urban Principal Arterial shall be 330'. As previously mentioned, Site Drive #1 is located roughly 70' east of the existing driveway for the U.S. Bank and 110' west of the Food City grocery store driveway. While Site Drive #1 does not satisfy TDOT's spacing requirements, there are several driveways along Kingston Pike (US 11) that do not appear to comply with these requirements, and the driveway is located approximately at the same spacing as the current Brage Bjj driveway. Additionally, HSAM's Table 3-14 states that commercial driveways must have a minimum radius of curvature of 20', which Site Drive #1 satisfies. Table 3-16 in the HSAM says that two-way commercial driveways must be at least 24' wide, which Site Drive #1 achieves by being 26' wide. Regarding the driveway's throat length, Table 3-17 says that the minimum throat length should be 35', which Site Drive #1 satisfies by being approximately 96' long. The required edge clearance of Site Drive #1 is roughly 32', which satisfies the minimum requirement of 20' given in Table 3-18 of the HSAM. Additionally, Site Drive #1 satisfies the minimum driveway angle of 70 degrees, with the driveway angle of Site Drive #1 being 90 degrees. The proposed Taco Bell satisfies the HSAM's Commercial Border Area Clearance since the closest vehicles located on the site are to the Right-of-Way is approximately 12'. Based on the above information, Site Drive #1 satisfies the requirements set forth in Volume 3 of TDOT's HSAM, and can be constructed according to the preliminary site plan.

Since Site Drive #2 is located along Agnes Road, it must satisfy requirements set forth by the Knoxville-Knox County Planning Commission. The proposed Taco Bell satisfies the maximum number of driveways allowed because according to Article 5 Section 7 of the zoning code, the maximum number of driveways allowed is two for lot frontages of 149' – 300'. The frontage of the proposed Taco Bell along Agnes Road is roughly 215', and access to the proposed development is provided by two driveways.



However, only one is located along roads maintained by local municipalities. The zoning code also states that "no driveway shall be constructed within 25' of an adjacent street right-of-way line"; which Site Drive #2 satisfies since its closest edge is approximately 146' away from Kingston Pike (US 11). The zoning code states that driveway width shall be 20' – 30'. Site Drive #2 satisfies this requirement since it has a width of 24'. Since Site Drive #2 satisfies these requirements, it can be constructed according to the preliminary site plan.

Intersection Improvements

No improvements are recommended for the Kingston Pike (US 11) / Site Drive #1 and Kingston Pike (US 11) / Site Drive #2 intersections. Auxiliary turn lanes for these driveways were not warranted. Sufficient ISD is provided at both site driveways. The proposed development can be constructed according to the preliminary site plan.

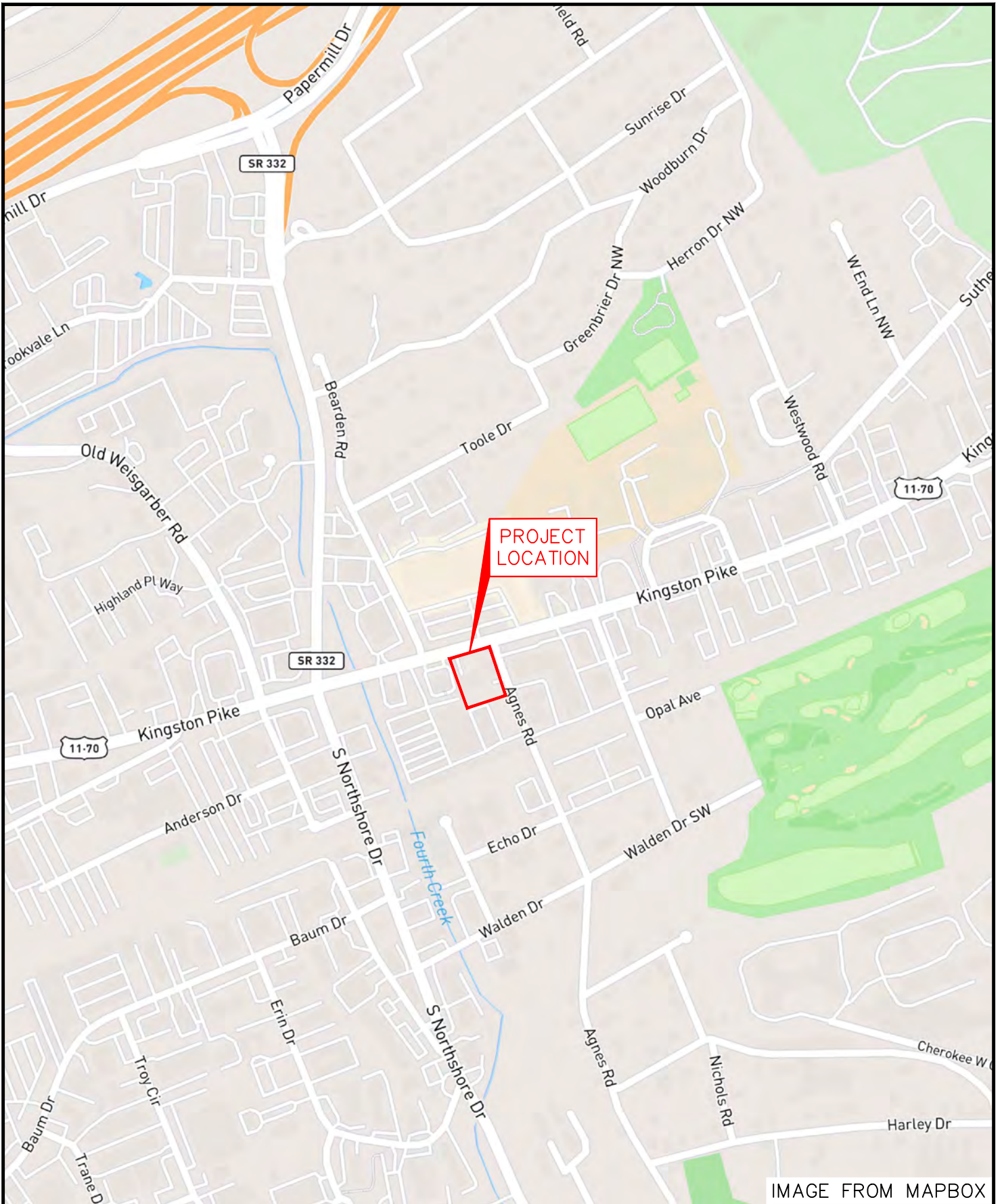
Off-Site Improvements

No improvements to the Kingston Pike (US 11) / Agnes Road intersection are recommended.



FIGURES

CAD FILE: G:\BETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\FIGURE 1_PROJECT LOCATION MAP.DWG
DATE: 5/20/2025 TIME: 9:18:03 AM
TECHNICIAN: BCTONDR



N.T.S.

FIGURE 1

PROJECT LOCATION MAP

REVISED MAY 2025



C:\D:\FILE: C:\BETAM\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5000)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\FIGURE 2_AERIAL PHOTOGRAPH.DWG
DATE: 5/20/2025 TIME: 9:20:20 AM
TECHNICIAN: BCTONDR



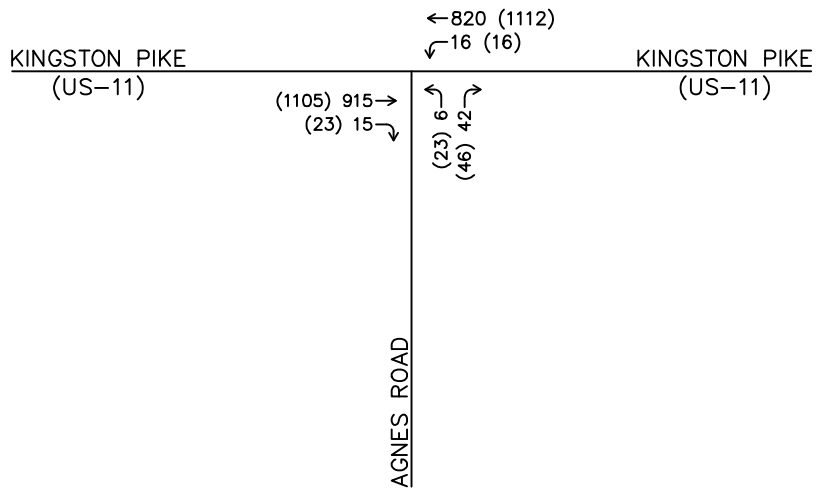
FIGURE 2

AERIAL PHOTOGRAPH

REVISED MAY 2025



CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\FIGURE 3.EY 2025 VOLUMES.DWG
DATE: 5/20/2025 TIME: 9:21:23 AM
TECHNICIAN: BCTONDRA



LEGEND
- AM PEAK HOUR
(##) - PM PEAK HOUR



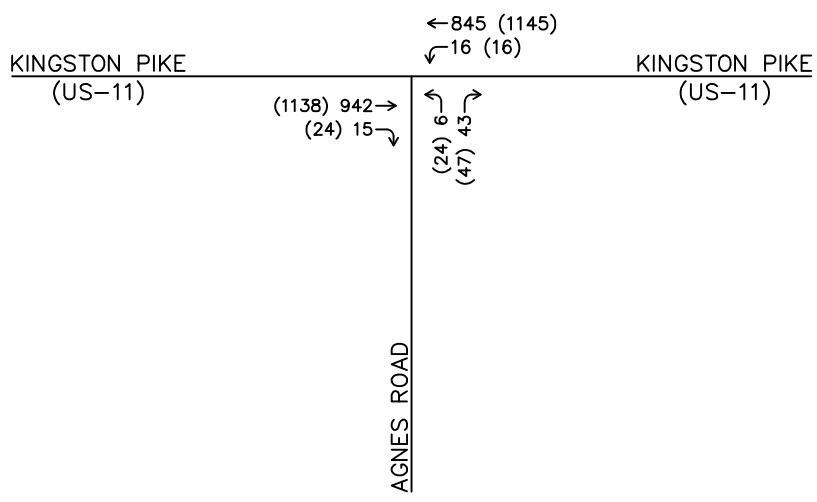
FIGURE 3

EXISTING YEAR 2025
PEAK HOUR TRAFFIC VOLUMES

REVISED MAY 2025



CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\FIGURE 4.DY 2031 'NO-BUILD' VOLUMES.DWG
DATE: 5/20/2025 TIME: 9:22:13 AM
TECHNICIAN: BCTONDRA



LEGEND
- AM PEAK HOUR
(##) - PM PEAK HOUR



N.T.S.

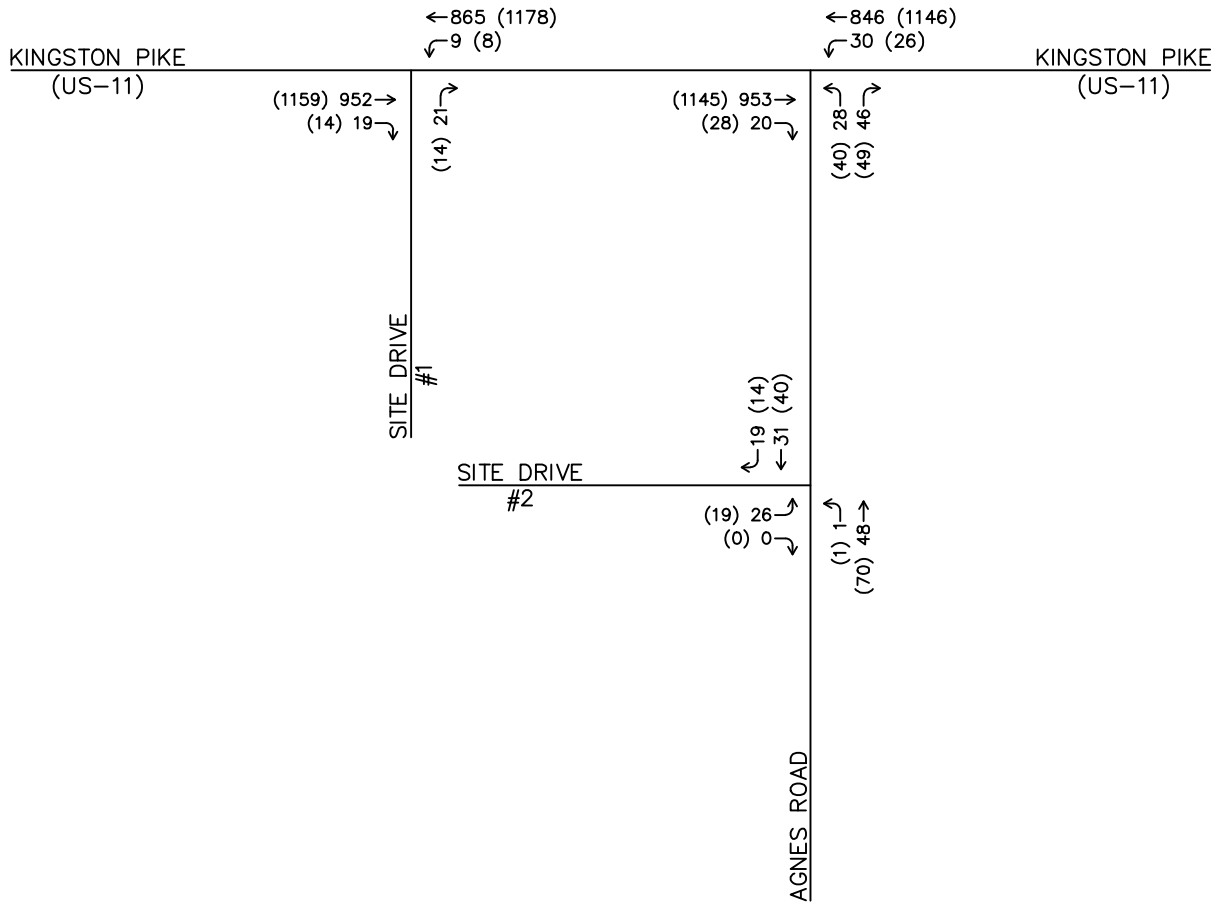
FIGURE 4

DESIGN YEAR 2031
'NO-BUILD'
PEAK HOUR TRAFFIC VOLUMES

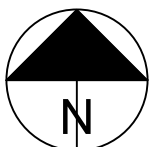
REVISED MAY 2025



CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\FIGURE 5.DY 2031 'BUILD OPTION 1' VOLUMES.DWG
DATE: 5/20/2025 TIME: 9:23:30 AM



LEGEND
- AM PEAK HOUR
(##) - PM PEAK HOUR



N.T.S.

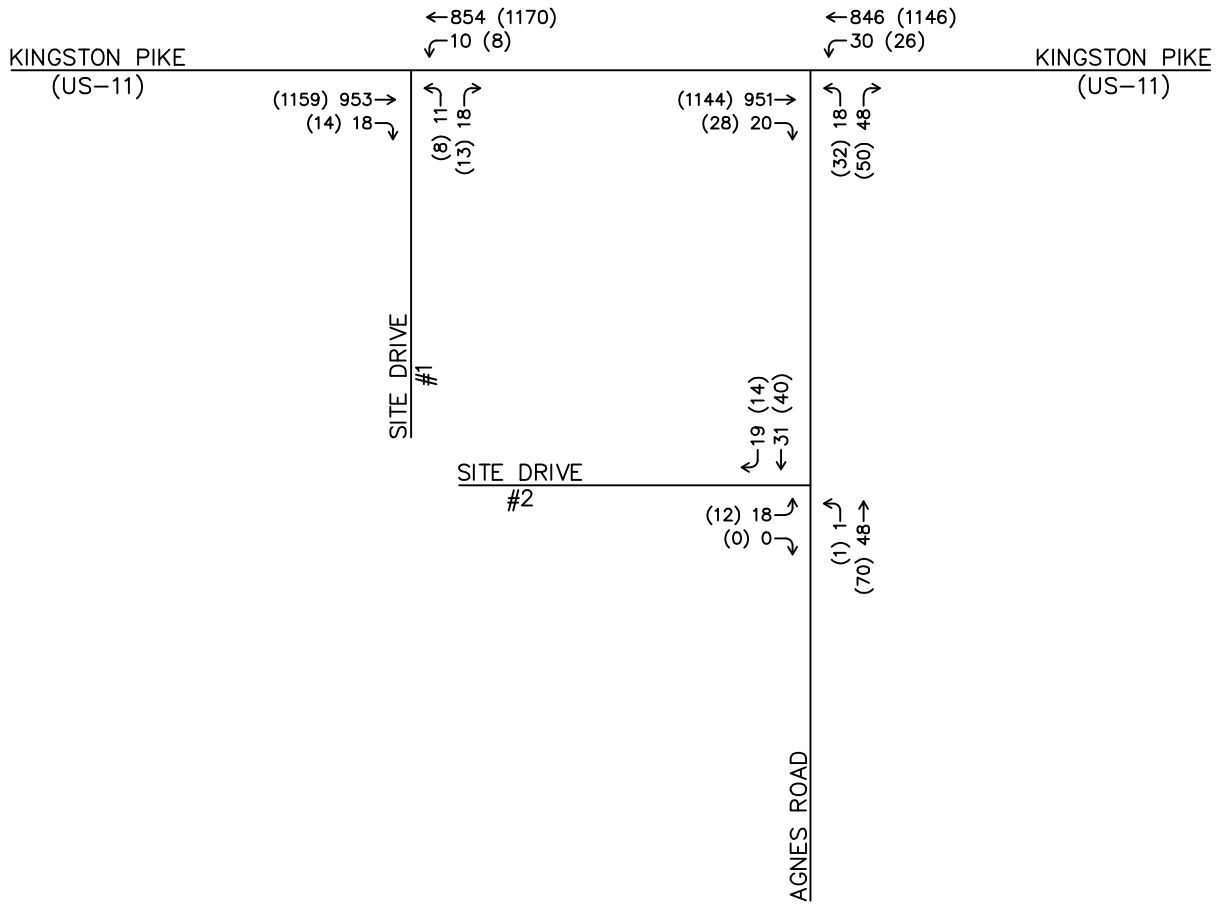
FIGURE 5

DESIGN YEAR 2031
'BUILD OPTION 1'
PEAK HOUR TRAFFIC VOLUMES

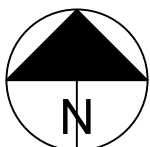
REVISED MAY 2025



CAD FILE: G:\BETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\FIGURE 6.DY 2031 'BUILD OPTION 2' VOLUMES.DWG
 DATE: 5/20/2025 TIME: 9:24:17 AM



LEGEND
 ## - AM PEAK HOUR
 (##) - PM PEAK HOUR



N.T.S.

FIGURE 6

DESIGN YEAR 2031
 'BUILD OPTION 2'
 PEAK HOUR TRAFFIC VOLUMES

REVISED MAY 2025



APPENDIX A
PRELIMINARY SITE PLAN



PRELIMINARY DRAFT
NOT FOR
CONSTRUCTION,
BID, RELIANCE,
RECORDING PURPOSES
OR IMPLEMENTATION

PLAN SET ISSUE / REVISION HISTORY

CONTRACT DATE: 03.11.25
BLDG TYPE: KITCHEN-X V3.0
WM UPLOAD DATE:
BRAND DESIGNER: TS
SITE NUMBER: 317176
STORE NUMBER: 463675
PA/PM: Dowling
DRAWN BY.: EH
JOB NO.: 2024088.07

KITCHEN-X V3.0

5900-5902 Kingston Pike
Knoxville, TN 37919



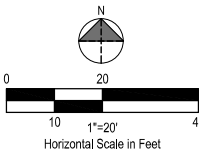
SITE
PLAN

C-111

PLOT DATE:

PLAN KEYNOTES (#)

1. PROPOSED CONCRETE CURB.
2. PROPOSED CONCRETE CURB AT DRIVE THRU.
3. PROPOSED CONCRETE CURBED WALK.
4. PROPOSED CONCRETE WALK.
5. PROPOSED HEAVY DUTY CONCRETE.
6. PROPOSED STANDARD DUTY CONCRETE.
7. PROPOSED DETERRENT BOLLARD.
8. PROPOSED DETERRENT BOLLARD IN CURB.
9. PROPOSED CONCRETE CURB AND GUTTER.
10. PROPOSED HANDICAPPED PARKING SIGN.
11. PROPOSED LANDSCAPING AREA. SOD ALL DISTURBED AREAS EXCEPT WHERE PLANTING BEDS ARE INDICATED.
12. PROPOSED 'DO NOT ENTER' AND 'STOP SIGN' PER TDOT STANDARDS.
13. PROPOSED 'EXIT ONLY' PAVEMENT MARKINGS PER TDOT STANDARDS.
14. PROPOSED PAINTED TRANSVERSE STRIPING.
15. PROPOSED 24" STOP LINE PER TDOT STANDARDS.
16. PROPOSED PAINTED 4" WIDE SOLID STRIPE - WHITE ON ASPHALT, YELLOW ON CONCRETE, BLUE ON ADA.
17. PROPOSED DIRECTIONAL PAVEMENT MARKINGS - WHITE ON ASPHALT, YELLOW ON CONCRETE, BLUE FOR ADA.
18. PROPOSED PAINTED ADA PAVEMENT SYMBOL PER ADA SPECIFICATIONS.
19. PROPOSED ADA ACCESSIBLE RAMP PER ADA SPECIFICATIONS.
20. PROPOSED 165 SF POLE SIGN WITH MAX 20' OAH PER SIGN SUPPLIER SPECIFICATIONS.
21. PROPOSED FROST SLAB AT DOOR.
22. PROPOSED MOBILE ORDER PICK-UP SIGN, IN BOLLARD. CONTRACTOR TO INSTALL SIGN POST AND BOLLARD PER THE HANDICAP SIGN DETAIL.
23. PROPOSED PATIO.
24. PROPOSED CONCRETE COLLAR.
25. PROPOSED CURB TAPER.
26. PROPOSED FLUSH CURB.
27. PROPOSED MENU BOARD, CANOPY, AND SPEAKER POST PER SIGN SUPPLIER SPECIFICATIONS. SIGN SUPPLIER TO PROVIDE A TEMPLATE FOR G.C. TO COORDINATE A MEETING WITH THE CONSTRUCTION/PROJECT MANAGER AND OPERATIONS TO VERIFY LOCATION AND PLACEMENT OF MENU BOARD, CANOPY, AND SPEAKER POST PRIOR TO ANY CONSTRUCTION. SIGN SUPPLIER SHALL PROVIDE G.C. WITH FOUNDATION DETAILS. G.C. RESPONSIBLE FOR SIGN FOUNDATIONS/ELECTRICAL.
28. PROPOSED EVOLUTION PORTAL CLEARANCE BAR.
29. PROPOSED DUMPSTER ENCLOSURE ON P.C.C. PAD OVER CRUSHED AGGREGATE OR GRAVEL BASE. SEE ARCHITECTURAL PLANS. APPLY LIQUID ASPHALT AT ALL JOINTS BETWEEN CONCRETE AND ASPHALT.
30. PROPOSED BIKE RACK.
31. PROPOSED RETAINING WALL. EXTENTS AND LOCATION SHOWN ARE APPROXIMATE.
32. PROPOSED DECORATIVE FENCE AROUND EXISTING CEMETERY.



LEGEND

- PROPOSED STANDARD DUTY ASPHALT
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED CONCRETE
- CONSTRUCTION KEYNOTE
- PROPOSED PARKING SPACE NUMBER
- PROPOSED DRIVE THRU STACK CAR AND NUMBER
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED CLEAN OUT
- PROPOSED EXTERIOR GREASE INTERCEPTOR
- PROPOSED ELECTRIC TRANSFORMER
- PROPOSED LIGHT POLE
- PROPOSED PAINTED ADA SYMBOL
- PROPOSED DIRECTIONAL PAVEMENT MARKINGS
- PROPOSED TRANSVERSE STRIPING

NOTE: ALL SITE BOLLARDS TO BE BLACK UNLESS REQUIRED DIFFERENTLY BY THE CITY OF KNOXVILLE, TN OR ADA SPECIFICATIONS.

BENCHMARKS:

HORIZONTAL REFERENCE FRAME: NORTH AMERICAN DATUM OF 1983 (2011)-STATE PLANE COORDINATE SYSTEM OF TENNESSEE

VERTICAL REFERENCE FRAME: NORTH AMERICAN DATUM OF 1988 (GEOID09).

BENCHMARK #1 - 60D NAIL.
N: 588,404.33, E: 2,560,370.47
ELEVATION=870.90

BENCHMARK #2 - 5/8" RBR CAPPED.
N: 588,475.03, E: 2,560,602.66
ELEVATION=881.77

BUILDING SETBACKS

	REQUIRED	PROVIDED
FRONT: SR 11	0 L.F.	43.6 L.F.
REAR: STORAGE	0 L.F.	100.5 L.F.
SIDE: AGNES RD.	0 L.F.	23.1 L.F.
SIDE: U.S. BANK	0 L.F.	10.5 L.F.

PARKING SETBACKS

	REQUIRED	PROVIDED
FRONT: SR 11	0 L.F.	10 L.F.
REAR: STORAGE	0 L.F.	10 L.F.
SIDE: AGNES RD.	0 L.F.	11.1 L.F.
SIDE: U.S. BANK	0 L.F.	5.5 L.F.

LANDSCAPE SETBACKS

	REQUIRED	PROVIDED
FRONT: SR 11	10 L.F.	10 L.F.
REAR: STORAGE	10 L.F.	10 L.F.
SIDE: AGNES RD.	10 L.F.	11.1 L.F.
SIDE: U.S. BANK	10 L.F.	5.5 L.F.

PARKING SPACES

	PROVIDED
NUMBER OF SPACES	17
PARKING REQUIREMENTS	
MIN: 6 SPACE PER 1,000 GFA = 13 SPACES	
MAX: 12 SPACES PER 1,000 GFA = 26 SPACES	
BUILDING GFA= 2115 SF	

LAND USE DATA

	% OF SITE AREA	AREA PROVIDED
BUILDING	5%	0.05 AC.
PAVEMENT/IMPERVIOUS	48%	0.46 AC.
LANDSCAPING	47%	0.45 AC.
TOTAL	100%	0.96 AC.

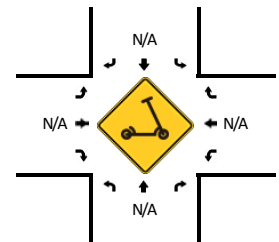
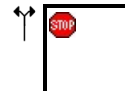
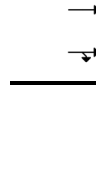
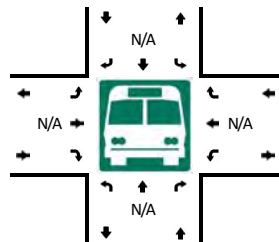
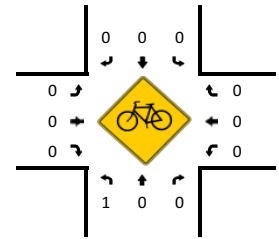
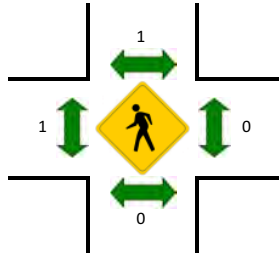
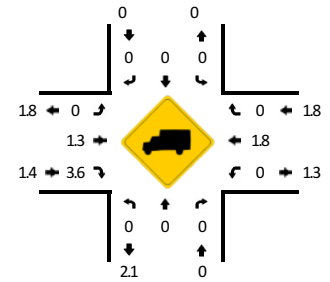
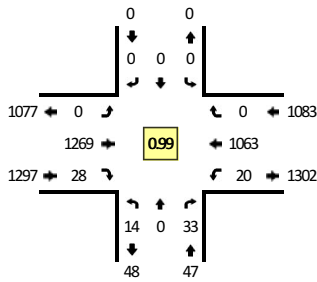
CURRENT ZONING: C-G-1: BEARDEN VILLAGE OPPORTUNITIES PLAN



APPENDIX B
TURNING MOVEMENT COUNTS

LOCATION: Agnes Rd -- Kingston Pike/US-11**QC JOB #:** 16994203**CITY/STATE:** Knoxville, TN**DATE:** Wed, Apr 9 2025

Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:45 PM -- 1:00 PM



15-Min Count Period Beginning At	Agnes Rd (Northbound)				Agnes Rd (Southbound)				Kingston Pike/US-11 (Eastbound)				Kingston Pike/US-11 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	0	0	0	38	0	0	0	27	0	0	65	
6:15 AM	0	0	2	0	0	0	0	0	0	34	0	0	0	44	0	0	80	
6:30 AM	0	0	1	0	0	0	0	0	0	67	1	0	0	36	0	0	108	
6:45 AM	1	0	2	0	0	0	0	0	0	85	4	0	0	67	0	0	159	412
7:00 AM	2	0	3	0	0	0	0	0	0	120	2	0	0	92	0	0	220	567
7:15 AM	0	0	10	0	0	0	0	0	0	192	1	0	0	158	0	0	363	850
7:30 AM	1	0	29	0	0	0	0	0	0	249	5	0	0	239	0	0	530	1272
7:45 AM	0	0	8	0	0	0	0	0	0	231	4	0	0	204	0	0	452	1565
8:00 AM	3	0	3	0	0	0	0	0	0	205	4	0	0	188	0	0	406	1751
8:15 AM	2	0	2	0	0	0	0	0	0	230	2	0	0	189	0	0	426	1814
8:30 AM	0	0	2	0	0	0	0	0	0	215	3	0	0	218	0	0	440	1724
8:45 AM	1	0	6	0	0	0	0	0	0	215	5	0	0	196	0	0	429	1701
9:00 AM	0	0	2	0	0	0	0	0	0	203	3	0	0	191	0	0	402	1697
9:15 AM	3	0	2	0	0	0	0	0	0	210	3	0	0	232	0	0	453	1724
9:30 AM	3	0	4	0	0	0	0	0	0	221	1	0	0	204	0	0	438	1722
9:45 AM	4	0	3	0	0	0	0	0	0	256	1	0	0	211	0	0	478	1771
10:00 AM	1	0	8	0	0	0	0	0	0	212	3	0	0	216	0	0	441	1810
10:15 AM	4	0	7	0	0	0	0	0	0	229	5	0	0	243	0	0	491	1848
10:30 AM	4	0	12	0	0	0	0	0	0	238	6	0	0	232	0	0	495	1905
10:45 AM	2	0	6	0	0	0	0	0	0	223	3	0	0	254	0	0	490	1917
11:00 AM	7	0	1	0	0	0	0	0	0	268	5	0	0	235	0	0	519	1995
11:15 AM	4	0	7	0	0	0	0	0	0	268	6	0	0	241	0	0	530	2034
11:30 AM	4	0	9	0	0	0	0	0	0	289	4	0	0	267	0	0	578	2117
11:45 AM	3	0	11	0	0	0	0	0	0	305	7	0	0	254	0	0	583	2210
12:00 PM	3	0	6	0	0	0	0	0	0	312	10	0	0	265	0	0	600	2291
12:15 PM	6	0	11	0	0	0	0	0	0	326	7	0	0	252	0	0	609	2370
12:30 PM	1	0	9	0	0	0	0	0	0	328	7	0	0	258	0	0	608	2400
12:45 PM	4	0	7	0	0	0	0	0	0	303	4	0	0	288	0	0	610	2427
1:00 PM	3	0	13	0	0	0	0	0	0	296	9	0	0	255	0	0	580	2407
1:15 PM	2	0	6	0	0	0	0	0	0	296	6	0	0	252	0	0	563	2361
1:30 PM	4	0	7	0	0	0	0	0	0	279	6	0	0	252	0	0	552	2305
1:45 PM	5	0	5	0	0	0	0	0	0	284	9	0	0	250	0	0	560	2255
2:00 PM	5	0	6	0	0	0	0	0	0	261	4	0	0	260	0	0	544	2219
2:15 PM	3	0	11	0	0	0	0	0	0	270	9	0	0	297	0	0	597	2253
2:30 PM	5	0	12	0	0	0	0	0	0	277	5	0	0	260	0	0	565	2266
2:45 PM	5	0	13	0	0	0	0	0	0	252	9	0	0	293	0	0	579	2285
3:00 PM	3	0	9	0	0	0	0	0	0	263	5	0	0	292	0	0	577	2318
3:15 PM	6	0	5	0	0	0	0	0	0	292	4	0	0	300	0	0	611	2332

15-Min Count Period Beginning At	Agnes Rd (Northbound)				Agnes Rd (Southbound)				Kingston Pike/US-11 (Eastbound)				Kingston Pike/US-11 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:30 PM	1	0	3	0	0	0	0	0	0	282	5	0	5	296	0	0	592	2359
3:45 PM	2	0	6	0	0	0	0	0	0	294	5	0	7	293	0	0	607	2387
4:00 PM	4	0	7	0	0	0	0	0	0	269	5	0	8	301	0	0	594	2404
4:15 PM	1	0	9	0	0	0	0	0	0	259	5	0	3	296	0	0	573	2366
4:30 PM	4	0	12	0	0	0	0	0	0	257	2	0	7	286	0	0	568	2342
4:45 PM	1	0	9	0	0	0	0	0	0	238	4	0	6	309	0	0	567	2302
5:00 PM	5	0	20	0	0	0	0	0	0	272	5	0	5	277	0	0	584	2292
5:15 PM	8	0	9	0	0	0	0	0	0	267	6	0	6	287	0	0	583	2302
5:30 PM	4	0	6	0	0	0	0	0	0	295	2	0	1	279	0	0	587	2321
5:45 PM	6	0	11	0	0	0	0	0	0	271	10	0	4	269	0	0	571	2325
6:00 PM	3	0	9	0	0	0	0	0	0	262	3	0	3	294	0	0	574	2315
6:15 PM	2	0	2	0	0	0	0	0	0	263	7	0	2	279	0	0	555	2287
6:30 PM	3	0	9	0	0	0	0	0	0	265	5	0	2	237	0	0	521	2221
6:45 PM	0	0	4	0	0	0	0	0	0	212	0	0	1	221	0	0	438	2088
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	0	28	0	0	0	0	0	0	1212	16	0	16	1152	0	0	2440	
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	16	0		36	
Buses																		
Pedestrians		0				4				0				0			4	
Bicycles	4	0	0		0	0	0		0	0	0		0	0	0		4	
Scoters																		
Comments:																		

Report generated on 4/15/2025 11:16 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

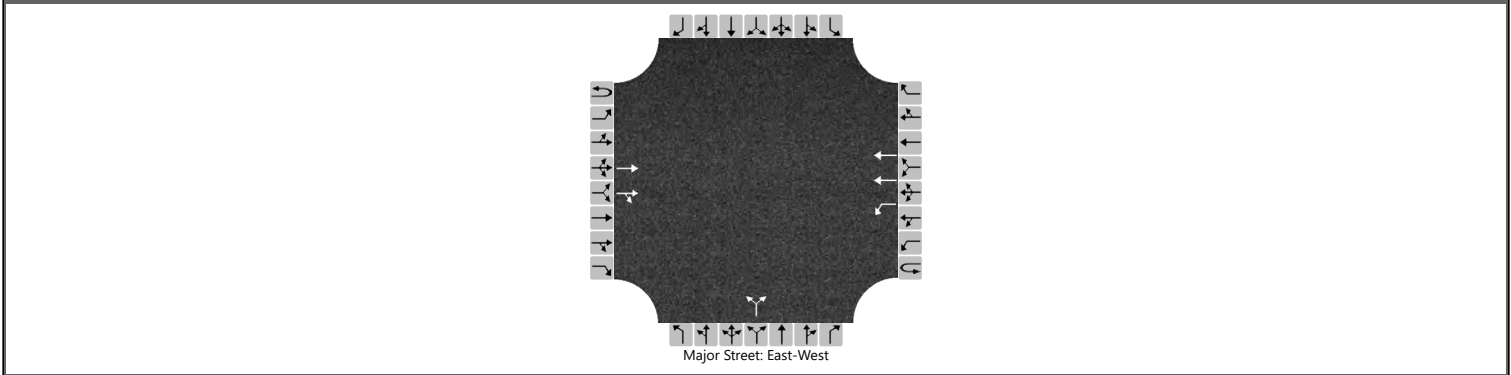
APPENDIX C
HCS INTERSECTION CAPACITY ANALYSIS

EXISTING YEAR 2025 'EXISTING' CONDITIONS

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Agnes Road
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2025	North/South Street	Agnes Road
Time Analyzed	AM Peak Hour 'Existing'	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			915	15	0	16	820			6		42				
Percent Heavy Vehicles (%)					3	3				0		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				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

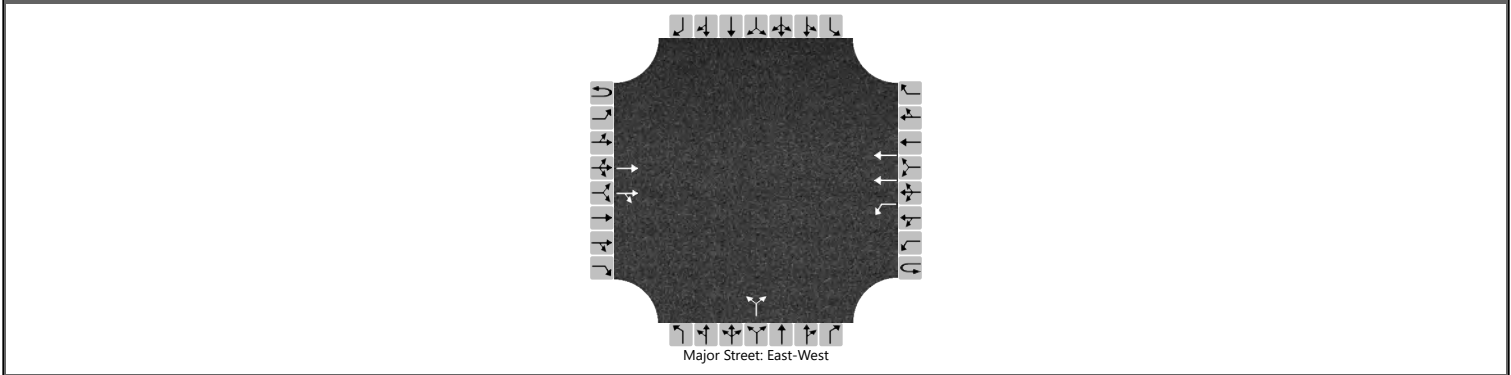
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						19					56					
Capacity, c (veh/h)						635					327					
v/c Ratio						0.03					0.17					
95% Queue Length, Q ₉₅ (veh)						0.1					0.6					
95% Queue Length, Q ₉₅ (ft)						2.6					15.0					
Control Delay (s/veh)						10.8					18.3					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.2				18.3							
Approach LOS					A				C							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Agnes Road
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2025	North/South Street	Agnes Road
Time Analyzed	PM Peak Hour 'Existing'	Peak Hour Factor	0.99
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1105	23	0	16	1112			23		46				
Percent Heavy Vehicles (%)					1	1				0		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				7.5		6.9				
Critical Headway (sec)						4.12				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.50		3.30				

Delay, Queue Length, and Level of Service

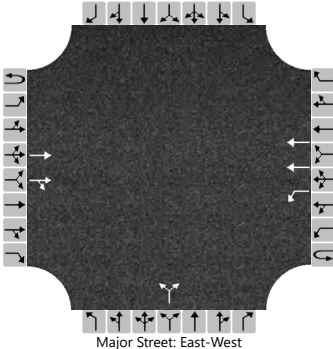
Flow Rate, v (veh/h)						16					70					
Capacity, c (veh/h)						615					179					
v/c Ratio						0.03					0.39					
95% Queue Length, Q ₉₅ (veh)						0.1					1.7					
95% Queue Length, Q ₉₅ (ft)						2.5					42.5					
Control Delay (s/veh)						11.0					37.5					
Level of Service (LOS)						B					E					
Approach Delay (s/veh)					0.2				37.5							
Approach LOS					A				E							

DESIGN YEAR 2031 'NO-BUILD' CONDITIONS

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Agnes Road
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	AM Peak Hour 'No-Build'	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

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	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			942	15	0	16	845			6		43				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

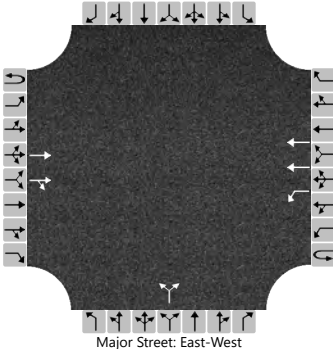
Critical and Follow-up Headways																
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)						19					57					
Capacity, c (veh/h)						618					315					
v/c Ratio						0.03					0.18					
95% Queue Length, Q ₉₅ (veh)						0.1					0.6					
95% Queue Length, Q ₉₅ (ft)						2.6					15.0					
Control Delay (s/veh)						11.0					18.9					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.2				18.9							
Approach LOS					A				C							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Agnes Road
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	PM Peak Hour 'No-Build'	Peak Hour Factor	0.99
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1138	24	0	16	1145			24		47				
Percent Heavy Vehicles (%)					1	1				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

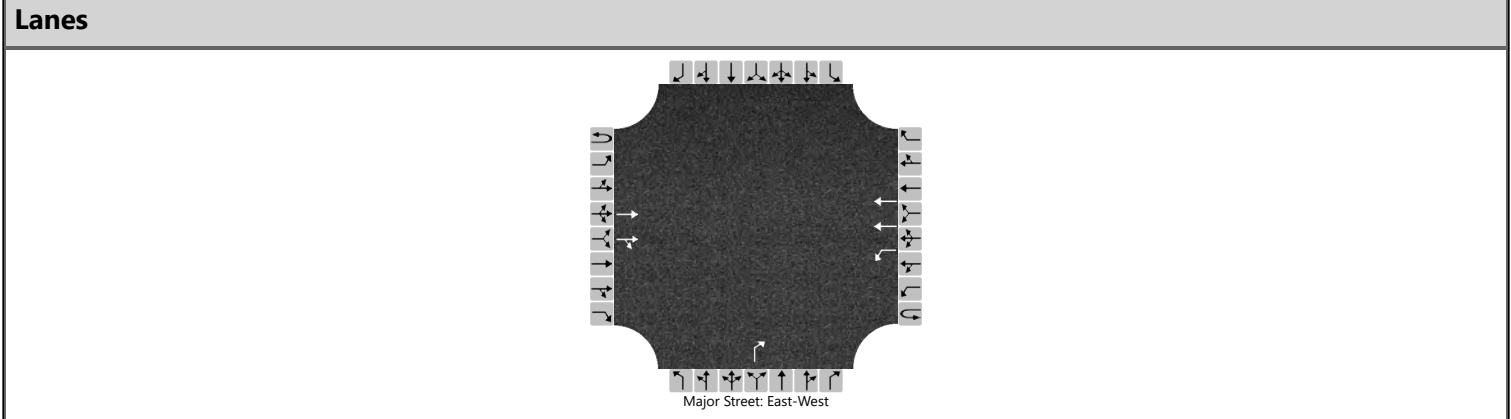
Critical and Follow-up Headways																
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.12				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.50		3.30				

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)						16					72					
Capacity, c (veh/h)						597					166					
v/c Ratio						0.03					0.43					
95% Queue Length, Q ₉₅ (veh)						0.1					2.0					
95% Queue Length, Q ₉₅ (ft)						2.5					50.0					
Control Delay (s/veh)						11.2					42.2					
Level of Service (LOS)						B					E					
Approach Delay (s/veh)					0.2				42.2							
Approach LOS					A				E							

DESIGN YEAR 2031 'BUILD OPTION 1' CONDITIONS

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Site Drive #1
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Site Drive #1
Time Analyzed	AM Peak Hour 'Build 1'	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		



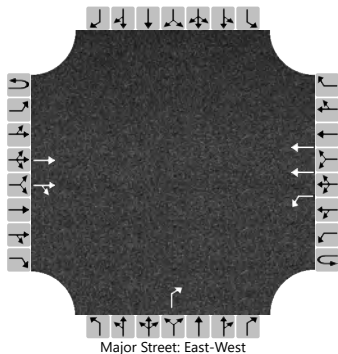
Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	1		0	0	0
Configuration			T	TR		L	T					R				
Volume (veh/h)			952	19	0	9	865					21				
Percent Heavy Vehicles (%)					3	3						0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type Storage	Undivided															

Critical and Follow-up Headways																
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						6.90				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.30				

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)						10						24				
Capacity, c (veh/h)						609						474				
v/c Ratio						0.02						0.05				
95% Queue Length, Q ₉₅ (veh)						0.1						0.2				
95% Queue Length, Q ₉₅ (ft)						2.6						5.0				
Control Delay (s/veh)						11.0						13.0				
Level of Service (LOS)						B						B				
Approach Delay (s/veh)					0.1				13.0							
Approach LOS					A				B							

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Site Drive #1
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Site Drive #1
Time Analyzed	PM Peak Hour 'Build 1'	Peak Hour Factor	0.99
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	0	1		0	0	0
Configuration			T	TR		L	T					R				
Volume (veh/h)			1159	14	0	8	1178					14				
Percent Heavy Vehicles (%)					1	1						0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)					4.1						6.9				
Critical Headway (sec)					4.12						6.90				
Base Follow-Up Headway (sec)					2.2						3.3				
Follow-Up Headway (sec)					2.21						3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					8						14				
Capacity, c (veh/h)					591						454				
v/c Ratio					0.01						0.03				
95% Queue Length, Q_{95} (veh)					0.0						0.1				
95% Queue Length, Q_{95} (ft)					0.0						2.5				
Control Delay (s/veh)					11.2						13.2				
Level of Service (LOS)					B						B				
Approach Delay (s/veh)					0.1				13.2						
Approach LOS					A				B						

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Agnes Road
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	AM Peak Hour 'Build 1'	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes

Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			953	20	0	30	846			28		46				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

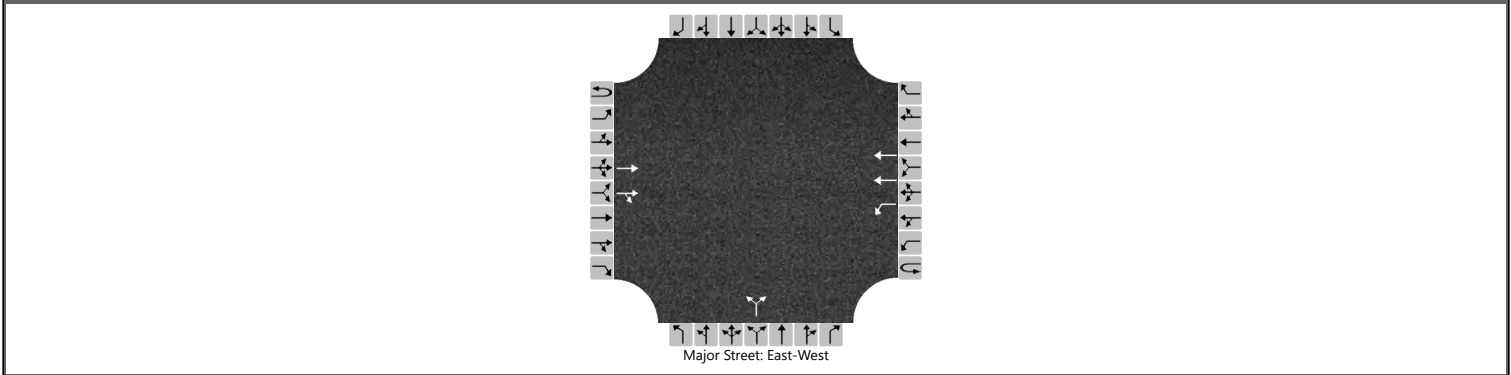
Critical and Follow-up Headways																
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)						35					86					
Capacity, c (veh/h)						607					169					
v/c Ratio						0.06					0.51					
95% Queue Length, Q ₉₅ (veh)						0.2					2.5					
95% Queue Length, Q ₉₅ (ft)						5.1					62.5					
Control Delay (s/veh)						11.3					46.6					
Level of Service (LOS)						B					E					
Approach Delay (s/veh)					0.4				46.6							
Approach LOS					A				E							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Agnes Road
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	PM Peak Hour 'Build 1'	Peak Hour Factor	0.99
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1145	28	0	26	1146			40		49				
Percent Heavy Vehicles (%)					1	1				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

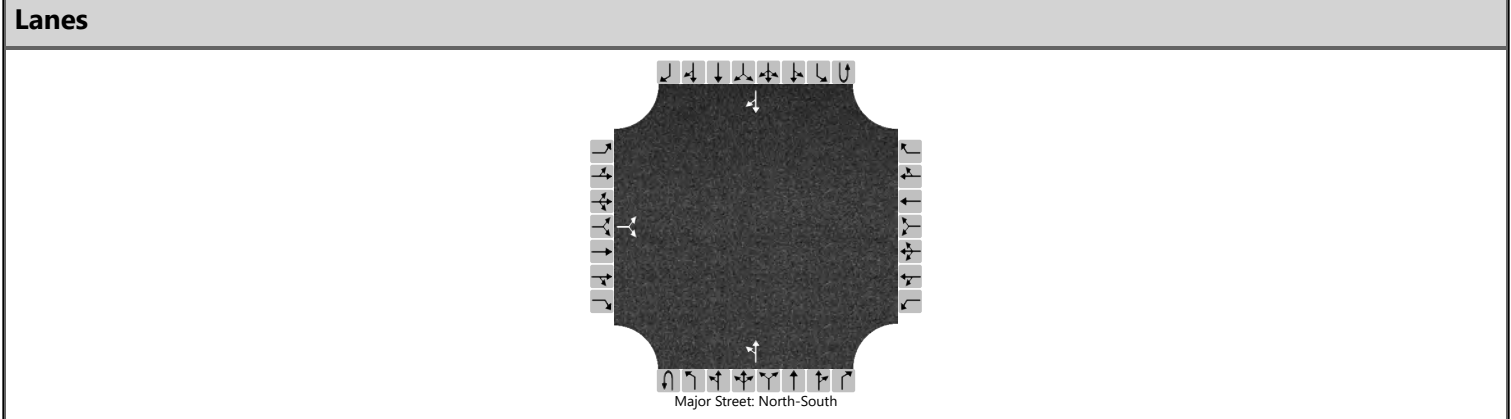
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.12				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						26					90					
Capacity, c (veh/h)						591					130					
v/c Ratio						0.04					0.69					
95% Queue Length, Q ₉₅ (veh)						0.1					3.8					
95% Queue Length, Q ₉₅ (ft)						2.5					95.0					
Control Delay (s/veh)						11.4					79.4					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					0.3				79.4							
Approach LOS					A				F							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Agnes Road / Site Drive #2
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Site Drive #2
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	AM Peak Hour 'Build 1'	Peak Hour Factor	0.86
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		



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)		26		0						1	48				31	19
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

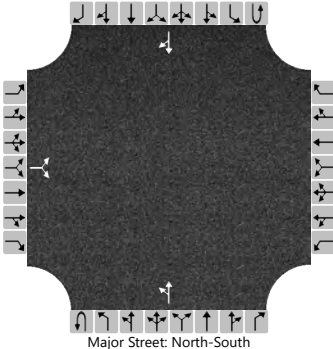
Critical and Follow-up Headways																
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)			30							1						
Capacity, c (veh/h)			897							1559						
v/c Ratio			0.03							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
95% Queue Length, Q ₉₅ (ft)			2.5							0.0						
Control Delay (s/veh)			9.2							7.3	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.2								0.2							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Agnes Road / Site Drive #2
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Site Drive #2
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	PM Peak Hour 'Build 1'	Peak Hour Factor	0.99
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		19		0						1	70				40	14
Percent Heavy Vehicles (%)		0		0						0						
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)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

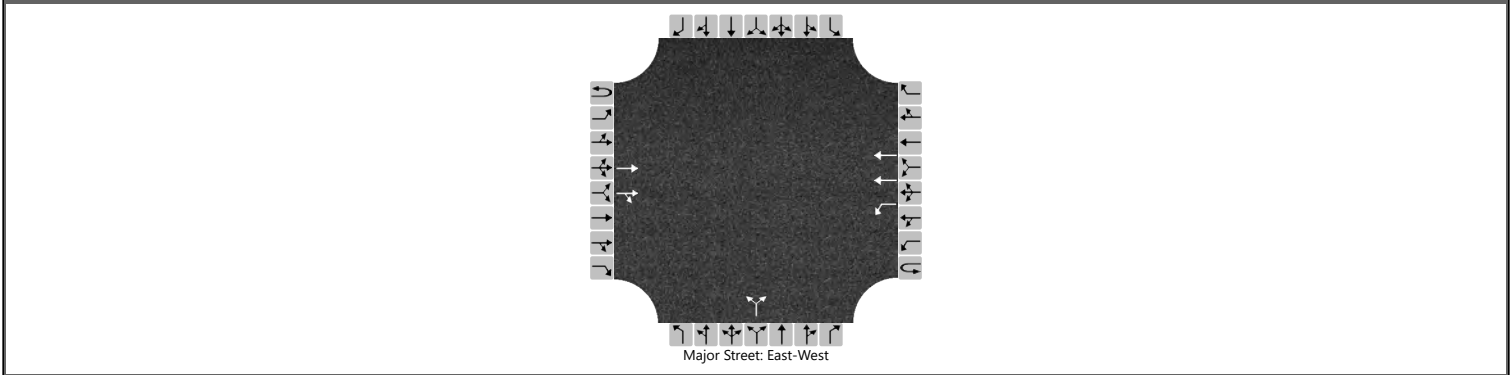
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)			19							1						
Capacity, c (veh/h)			880							1564						
v/c Ratio			0.02							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
95% Queue Length, Q ₉₅ (ft)			2.5							0.0						
Control Delay (s/veh)			9.2							7.3	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.2								0.1							
Approach LOS	A								A							

DESIGN YEAR 2031 'BUILD OPTION 2' CONDITIONS

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Site Drive #1
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Site Drive #1
Time Analyzed	AM Peak Hour 'Build 2'	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			953	18	0	10	854			11		18				
Percent Heavy Vehicles (%)					3	3				0		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				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

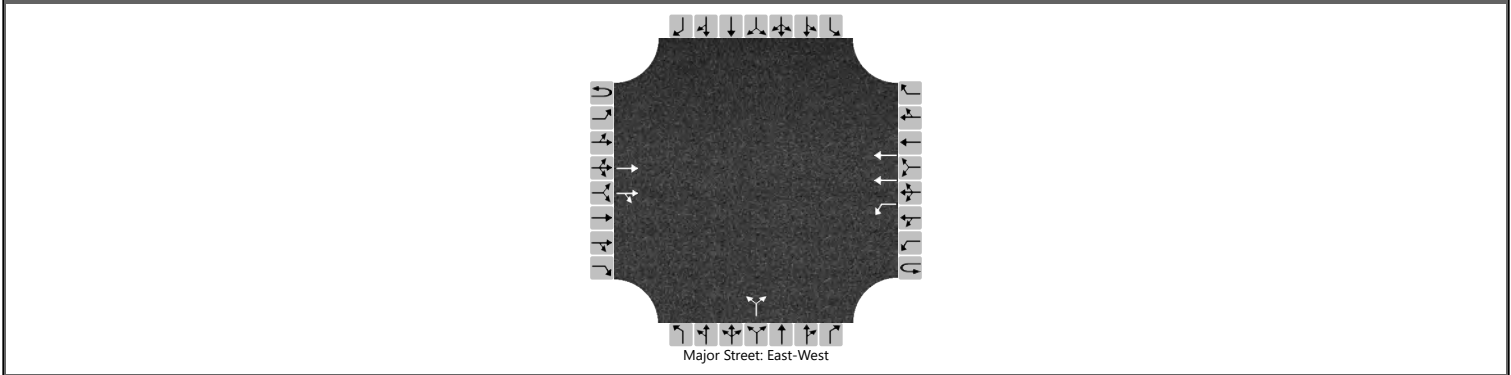
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						12					34					
Capacity, c (veh/h)						609					183					
v/c Ratio						0.02					0.18					
95% Queue Length, Q ₉₅ (veh)						0.1					0.7					
95% Queue Length, Q ₉₅ (ft)						2.6					17.5					
Control Delay (s/veh)						11.0					29.1					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.1				29.1							
Approach LOS					A				D							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Site Drive #1
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Site Drive #1
Time Analyzed	PM Peak Hour 'Build 2'	Peak Hour Factor	0.99
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1159	14	0	8	1170			8		13				
Percent Heavy Vehicles (%)					1	1				0		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				7.5		6.9				
Critical Headway (sec)						4.12				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						8					21					
Capacity, c (veh/h)						591					153					
v/c Ratio						0.01					0.14					
95% Queue Length, Q ₉₅ (veh)						0.0					0.5					
95% Queue Length, Q ₉₅ (ft)						0.0					12.5					
Control Delay (s/veh)						11.2					32.4					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.1				32.4							
Approach LOS					A				D							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Agnes Road
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	AM Peak Hour 'Build 2'	Peak Hour Factor	0.86
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes

Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			951	20	0	30	846			18		48				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

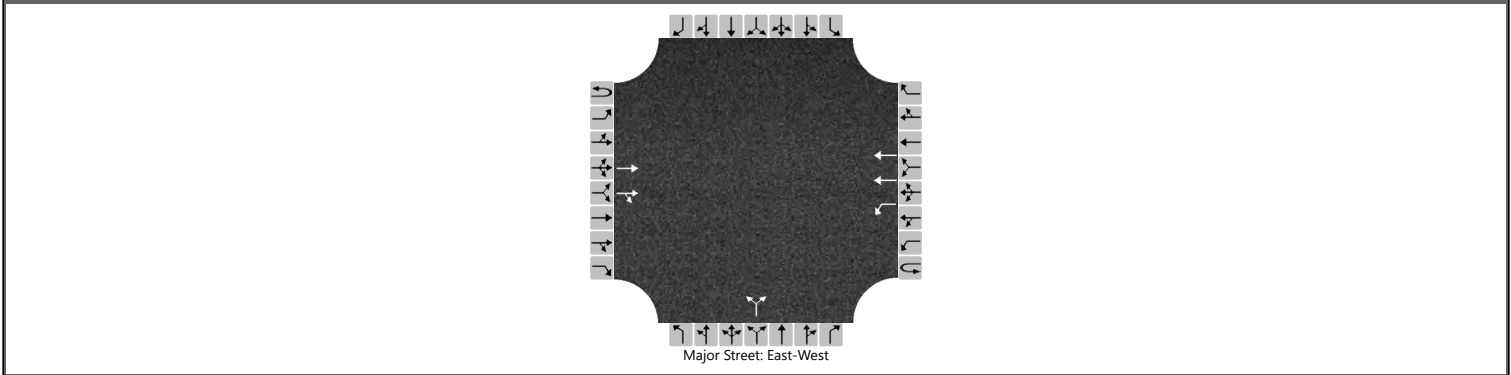
Critical and Follow-up Headways																
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)						35					77					
Capacity, c (veh/h)						609					207					
v/c Ratio						0.06					0.37					
95% Queue Length, Q ₉₅ (veh)						0.2					1.6					
95% Queue Length, Q ₉₅ (ft)						5.1					40.0					
Control Delay (s/veh)						11.3					32.4					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.4				32.4							
Approach LOS					A				D							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Kingston Pike (US 11) / Agnes Road
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Kingston Pike (US 11)
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	PM Peak Hour 'Build 2'	Peak Hour Factor	0.99
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1144	28	0	26	1146			32		50				
Percent Heavy Vehicles (%)					1	1				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

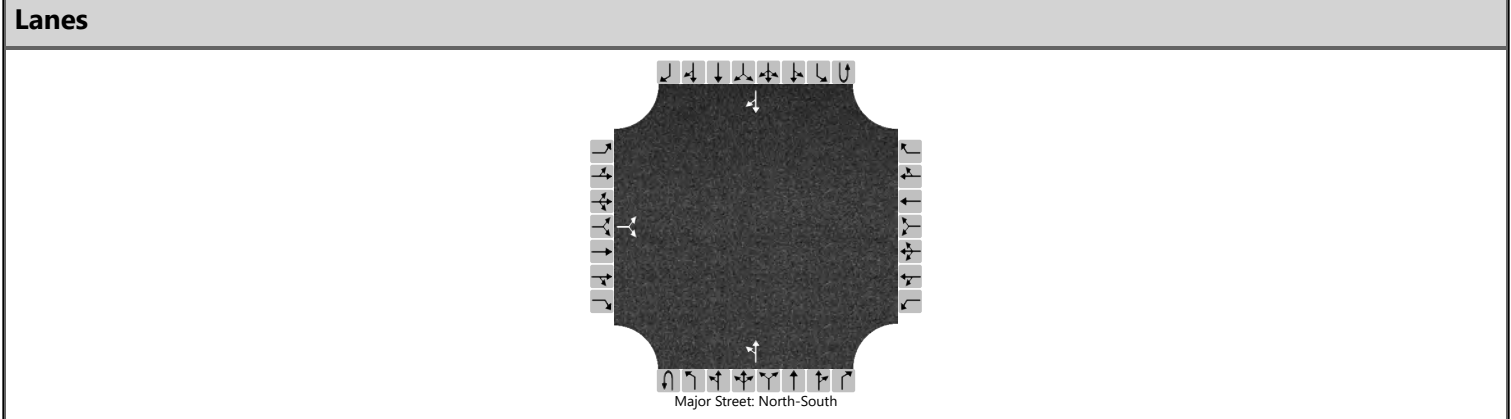
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.12				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						26					83					
Capacity, c (veh/h)						591					144					
v/c Ratio						0.04					0.58					
95% Queue Length, Q ₉₅ (veh)						0.1					2.9					
95% Queue Length, Q ₉₅ (ft)						2.5					72.5					
Control Delay (s/veh)						11.4					59.7					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					0.3				59.7							
Approach LOS					A				F							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Agnes Road / Site Drive #2
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Site Drive #2
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	AM Peak Hour 'Build 2'	Peak Hour Factor	0.86
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		



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)		18		0						1	48				31	19
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

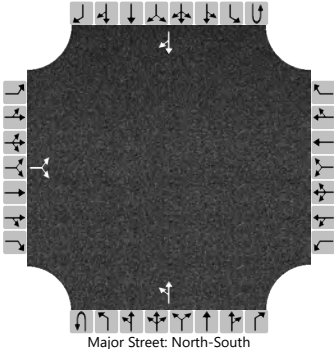
Critical and Follow-up Headways																
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)			21							1						
Capacity, c (veh/h)			897							1559						
v/c Ratio			0.02							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
95% Queue Length, Q ₉₅ (ft)			2.5							0.0						
Control Delay (s/veh)			9.1							7.3	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.1								0.2							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	Brandon Tondra	Intersection	Agnes Road / Site Drive #2
Agency/Co.	GPD Group	Jurisdiction	City of Knoxville
Date Performed	4/17/2025	East/West Street	Site Drive #2
Analysis Year	2031	North/South Street	Agnes Road
Time Analyzed	PM Peak Hour 'Build 2'	Peak Hour Factor	0.99
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Taco Bell Knoxville, TN 5900 Kingston Pike TIS		

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)		12		0						1	70				40	14
Percent Heavy Vehicles (%)		0		0						0						
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)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)			12							1						
Capacity, c (veh/h)			880							1564						
v/c Ratio			0.01							0.00						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
95% Queue Length, Q ₉₅ (ft)			0.0							0.0						
Control Delay (s/veh)			9.2							7.3	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.2								0.1							
Approach LOS	A								A							

APPENDIX D

GROWTH RATE INFORMATION

Record
1
of 1
Goto Record
go

Location ID	47000159	MPO ID	
Type	SPOT	HPMS ID	
On NHS	Yes	On HPMS	
LRS ID	47S000101N00000	LRS Loc Pt.	15.061
SF Group	Urban Principal Arterial (2025)	Route Type	
AF Group	Region 1 Urban Other Principal Arterial (2025)	Route	
GF Group	Knox (2025)	Active	Yes
Class Dist Grp	Region 1 Urban Other Principal Arterial (2025)	Category	CC
Seas Class Grp			
WIM Group			
QC Group	Default		
Funct'l Class	Other Principal Arterial	Milepost	
Located On	SR001		
Loc On Alias	KINGSTON PK.		
	KINGSTON PIKE		

More Detail ▶

STATION DATA

Directions:
2-WAY
EB
WB
?

AADT ?

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2024	19,557	1,841	9	51	18,500 (95%)	1,057 (5%)	
	2023	15,015	1,282	9	71	14,250 (95%)	765 (5%)	
	2022	16,586 ³		9	65	15,771 (95%)	815 (5%)	Grown from 2021
	2021	16,770	1,585	9	65	15,311 (91%)	1,459 (9%)	
	2020	17,432	1,815	10	65	15,898 (91%)	1,534 (9%)	

1-5 of 40

VOLUME COUNT

	Date	Int	Total
🔊	Tue 10/1/2024	15	21,659
🔊	Wed 7/12/2023	15	16,498
🔊	Tue 3/9/2021	15	19,471
🔊	Thu 2/27/2020	15	21,413
🔊	Thu 2/7/2019	15	21,332
🔊	Thu 2/15/2018	15	20,315
🔊	Mon 2/13/2017	15	21,252
🔊	Thu 2/18/2016	15	21,698
🔊	Thu 2/5/2015	15	20,888
🔊	Tue 2/18/2014	15	20,910

VOLUME TREND ?

Year	Annual Growth
2024	30%
2023	-9%
2022	-1%
2021	-4%
2020	-8%
2019	5%
2018	-11%
2017	6%
2016	4%
2015	20%

List View All DIRs

	Record			1			of 1	Goto Record	<input type="text"/>	go	
Location ID	47000159					MPO ID					
Type	SPOT					HPMS ID					
On NHS	Yes					On HPMS					
LRS ID	47S000101N00000					LRS Loc Pt.	15.061				
SF Group	Urban Principal Arterial (2025)					Route Type					
AF Group	Region 1 Urban Other Principal Arterial (2025)					Route					
GF Group	Knox (2025)					Active	Yes				
Class Dist Grp	Region 1 Urban Other Principal Arterial (2025)					Category	CC				
Seas Class Grp											
WIM Group											
QC Group	Default										
Funct'l Class	Other Principal Arterial					Milepost					
Located On	SR001										
Loc On Alias	KINGSTON PK.										
	KINGSTON PIKE										
More Detail											

STATION DATA

Directions: **2-WAY** **EB** **WB**

AADT								
	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2019	19,049		11	65			
	2018	18,141		9	65			
	2017	20,391		9	65			
	2016	19,170		9	65			
	2015	18,455		8	65			
<div> </div> 6-10 of 40								

VOLUME COUNT			
	Date	Int	Total
	Tue 10/1/2024	15	21,659
	Wed 7/12/2023	15	16,498
	Tue 3/9/2021	15	19,471
	Thu 2/27/2020	15	21,413
	Thu 2/7/2019	15	21,332
	Thu 2/15/2018	15	20,315
	Mon 2/13/2017	15	21,252
	Thu 2/18/2016	15	21,698
	Thu 2/5/2015	15	20,888
	Tue 2/18/2014	15	20,910

VOLUME TREND	
Year	Annual Growth
2024	30%
2023	-9%
2022	-1%
2021	-4%
2020	-8%
2019	5%
2018	-11%
2017	6%
2016	4%
2015	-6%

List ViewAll DIRs

Record

1 of 1

Goto Record

go

GF Group	Knox (2025)	Active	Yes
Class Dist Grp	Region 1 Urban Other Principal Arterial (2025)	Category	CC
Seas Class Grp			
WIM Group			
QC Group	Default		
Funct'l Class	Other Principal Arterial	Milepost	
Located On	SR001		
Loc On Alias	KINGSTON PK.		
	KINGSTON PIKE		

More Detail

STATION DATA

Directions: 2-WAYEBWB

AADT

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2014	19,666		9	65			
	2013	16,568		9	65			
	2012	17,922		9	51			
	2011	20,918 ²						
	2010	20,910 ²						

<<<>>>11-15 of 40

VOLUME COUNT

	Date	Int	Total
	Tue 10/1/2024	15	21,659
	Wed 7/12/2023	15	16,498
	Tue 3/9/2021	15	19,471
	Thu 2/27/2020	15	21,413
	Thu 2/7/2019	15	21,332
	Thu 2/15/2018	15	20,315
	Mon 2/13/2017	15	21,252
	Thu 2/18/2016	15	21,698
	Thu 2/5/2015	15	20,888
	Tue 2/18/2014	15	20,910

<<<>>>1-10 of 19

mm/dd/yyyyTo Date

VOLUME TREND

Year	Annual Growth
2024	30%
2023	-9%
2022	-1%
2021	-4%
2020	-8%
2019	5%
2018	-11%
2017	6%
2016	4%
2015	-6%

<<<>>>1-10 of 39

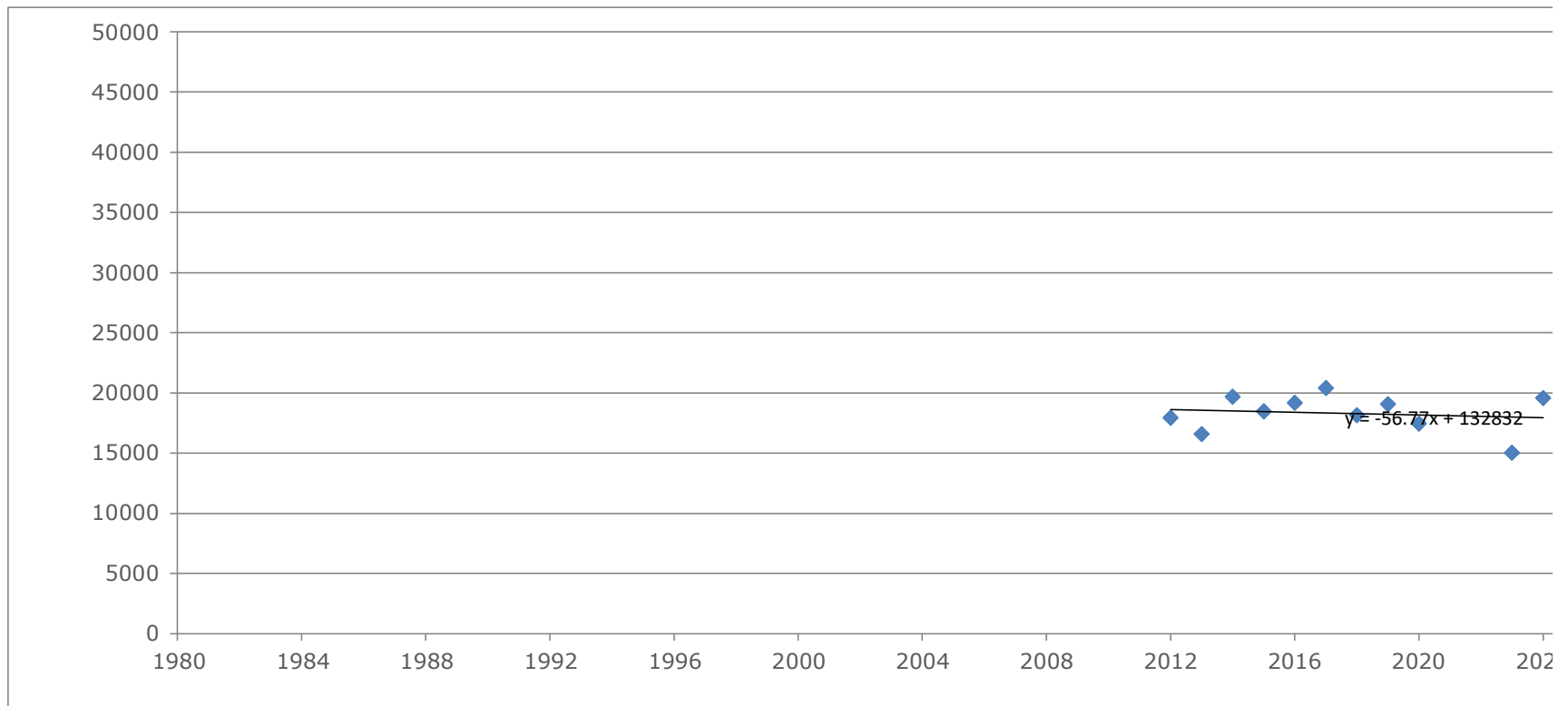
SPEED

Date	Int	Pace	85th	Total
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CLASSIFICATION

Date	Int	Total
------	-----	-------

Roadway Section	"Kingston Pike (US 11)" - Historical Traffic Volumes											Growth Rate
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2023	2024	
Kingston Pike (US 11)	17922	16568	19666	18455	19170	20391	18141	19049	17432	15015	19557	
Trendline	18610	18554	18497	18440	18383	18327	18270	18213	18156	17986	17929	-0.32%



APPENDIX E
ITE TRIP GENERATION CALCULATIONS

Fast-Food Restaurant with Drive-Through Window

(934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 96

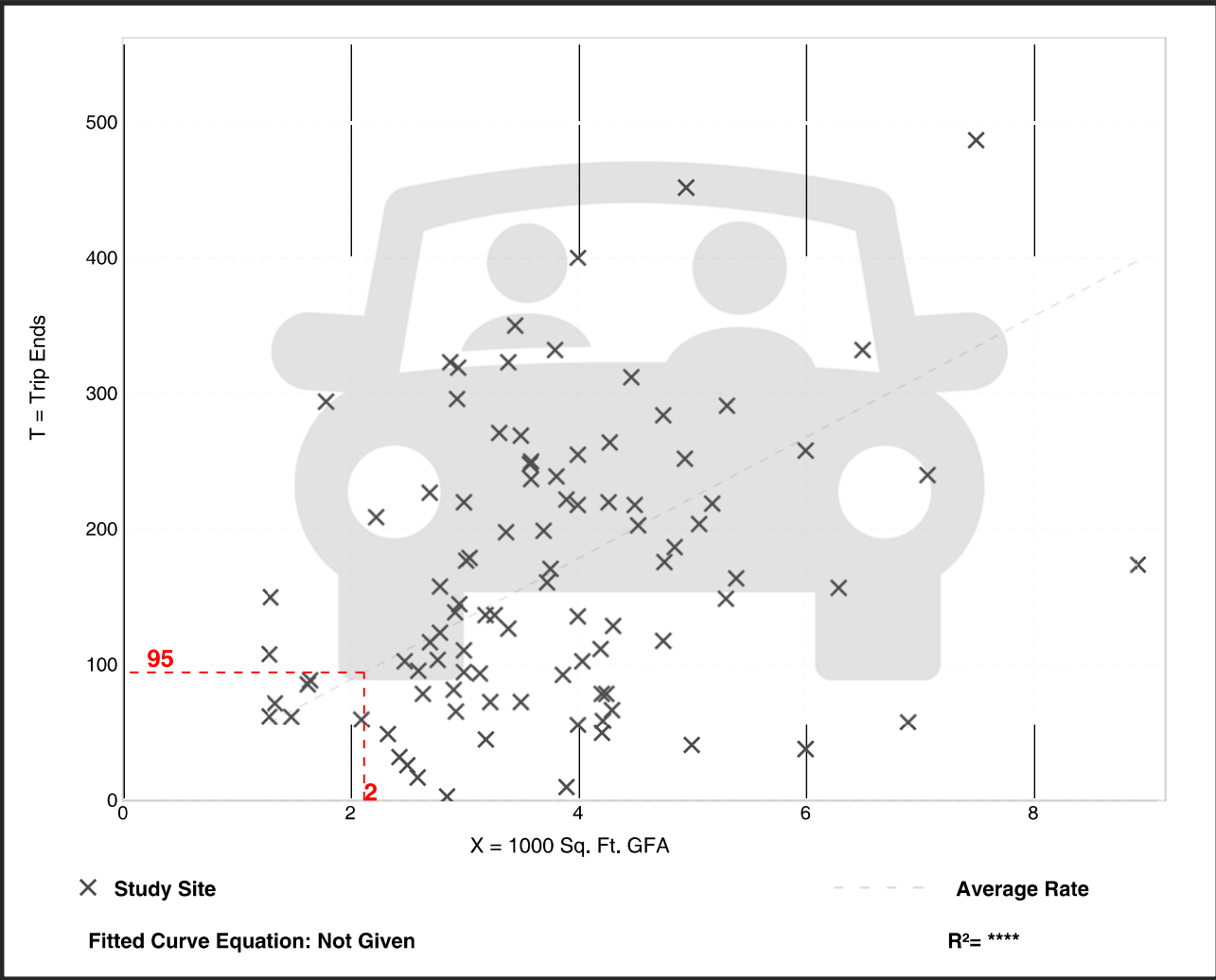
Avg. 1000 Sq. Ft. GFA: 4

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
44.61	1.05 - 164.25	27.14

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window

(934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 190

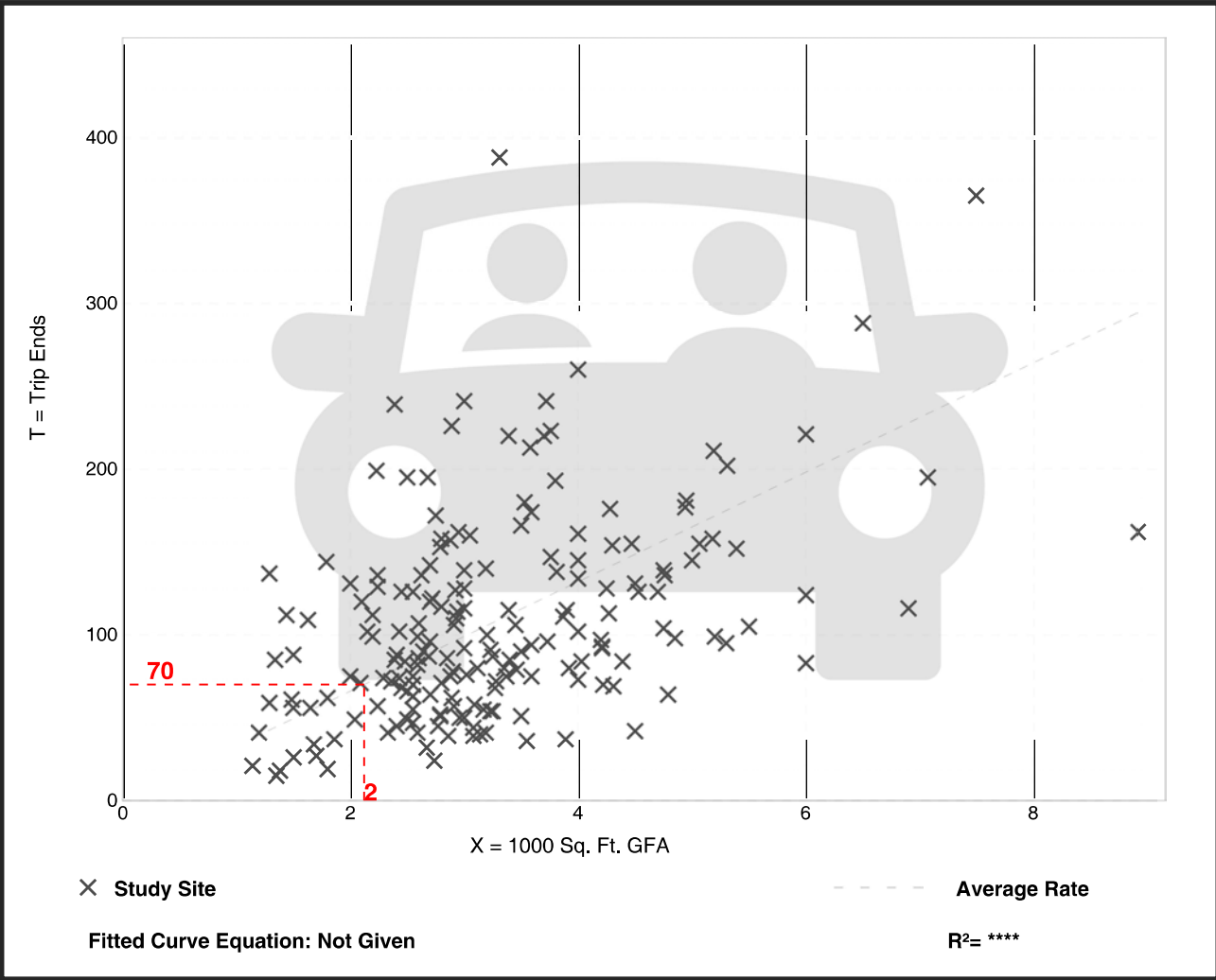
Avg. 1000 Sq. Ft. GFA: 3

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
33.03	8.77 - 117.22	17.59

Data Plot and Equation



APPENDIX F
SITE TRIP DISTRIBUTION AND ASSIGNMENT

'BUILD OPTION 1'

CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\APPENDIX F_BUILD_OPTION 1'.DWG
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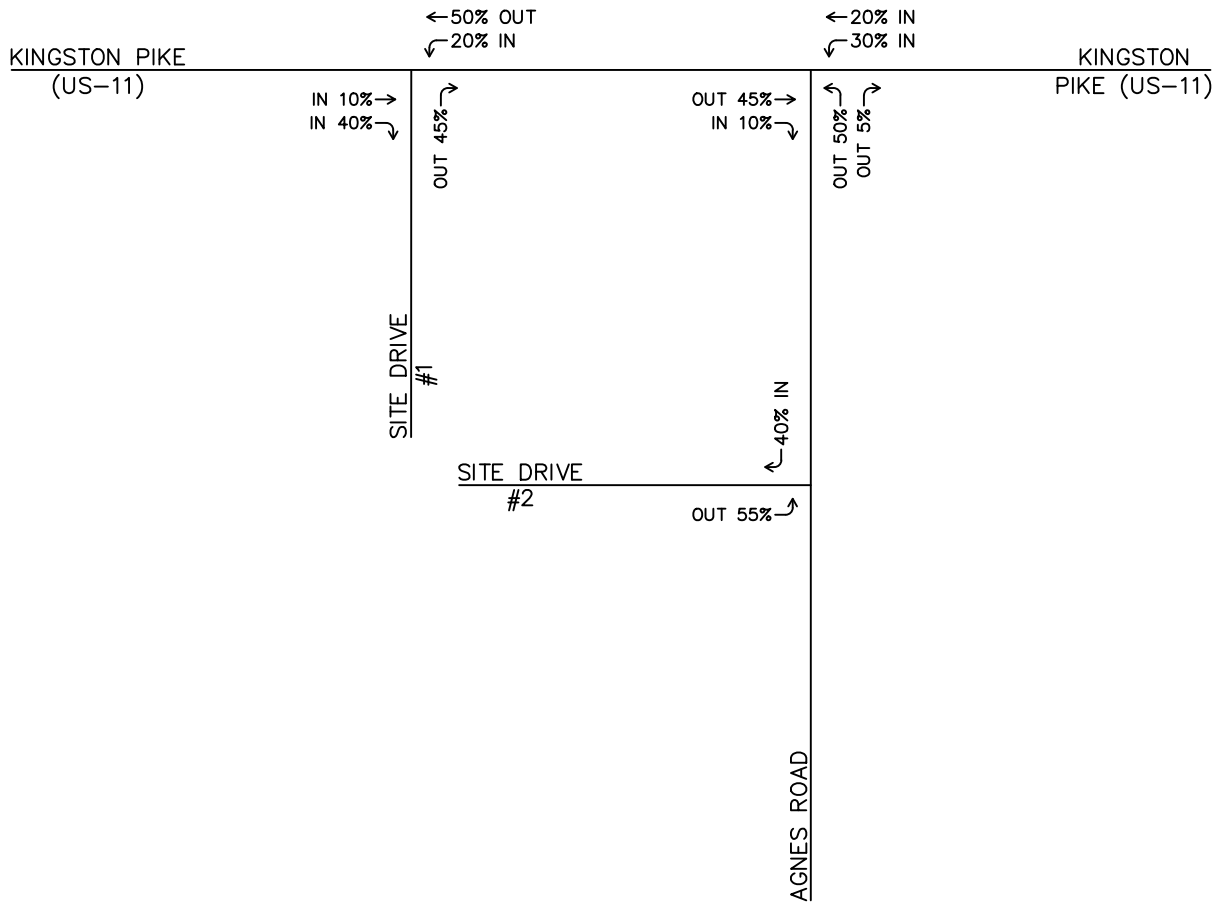


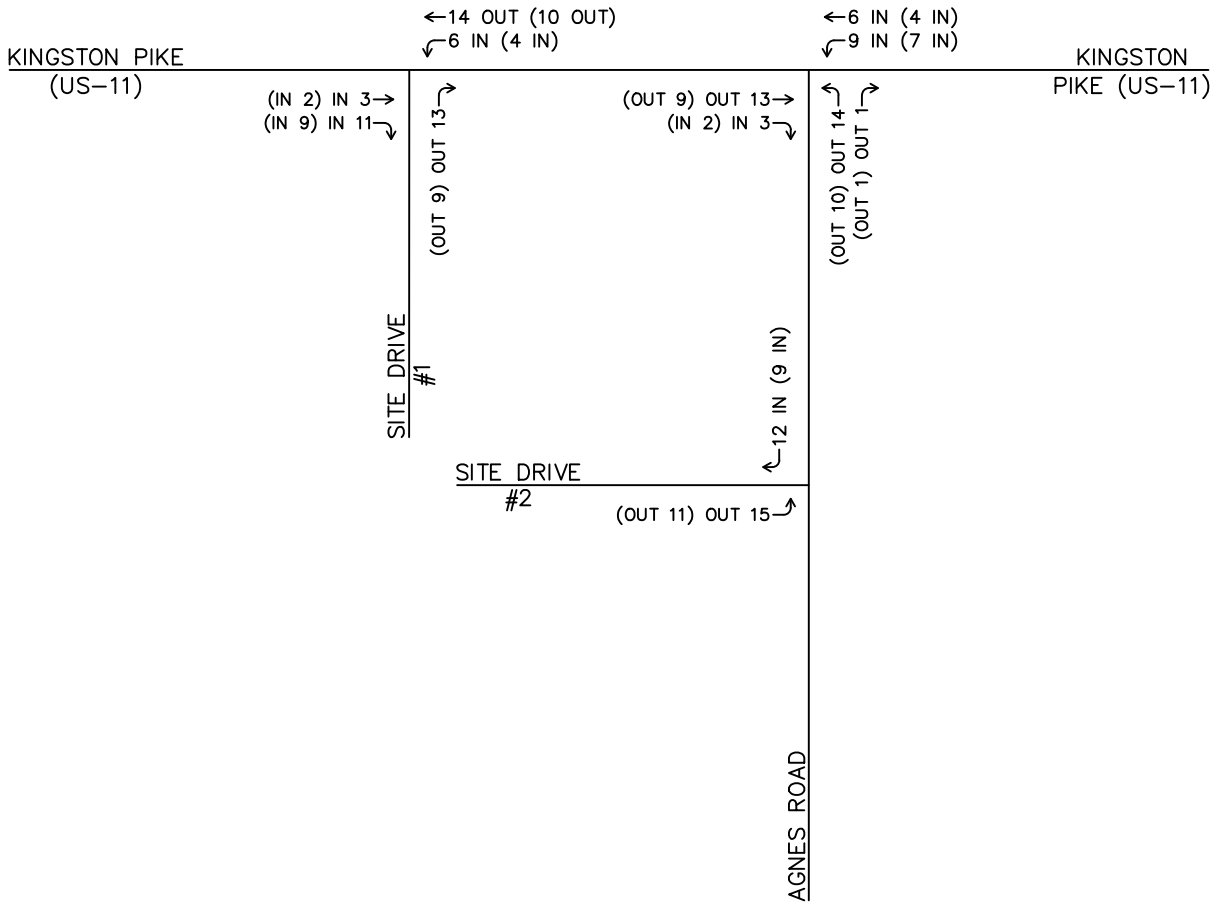
N.T.S.

APPENDIX F

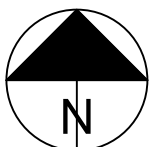
'BUILD OPTION 1'
PRIMARY TRIP DISTRIBUTION

REVISED MAY 2025





LEGEND
 ## - AM PEAK HOUR
 (##) - PM PEAK HOUR



N.T.S.

APPENDIX F

'BUILD OPTION 1'
 PRIMARY TRIP ASSIGNMENT

REVISED MAY 2025



CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\APPENDIX F_BUILD_OPTION 1'.DWG
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N.T.S.

APPENDIX F

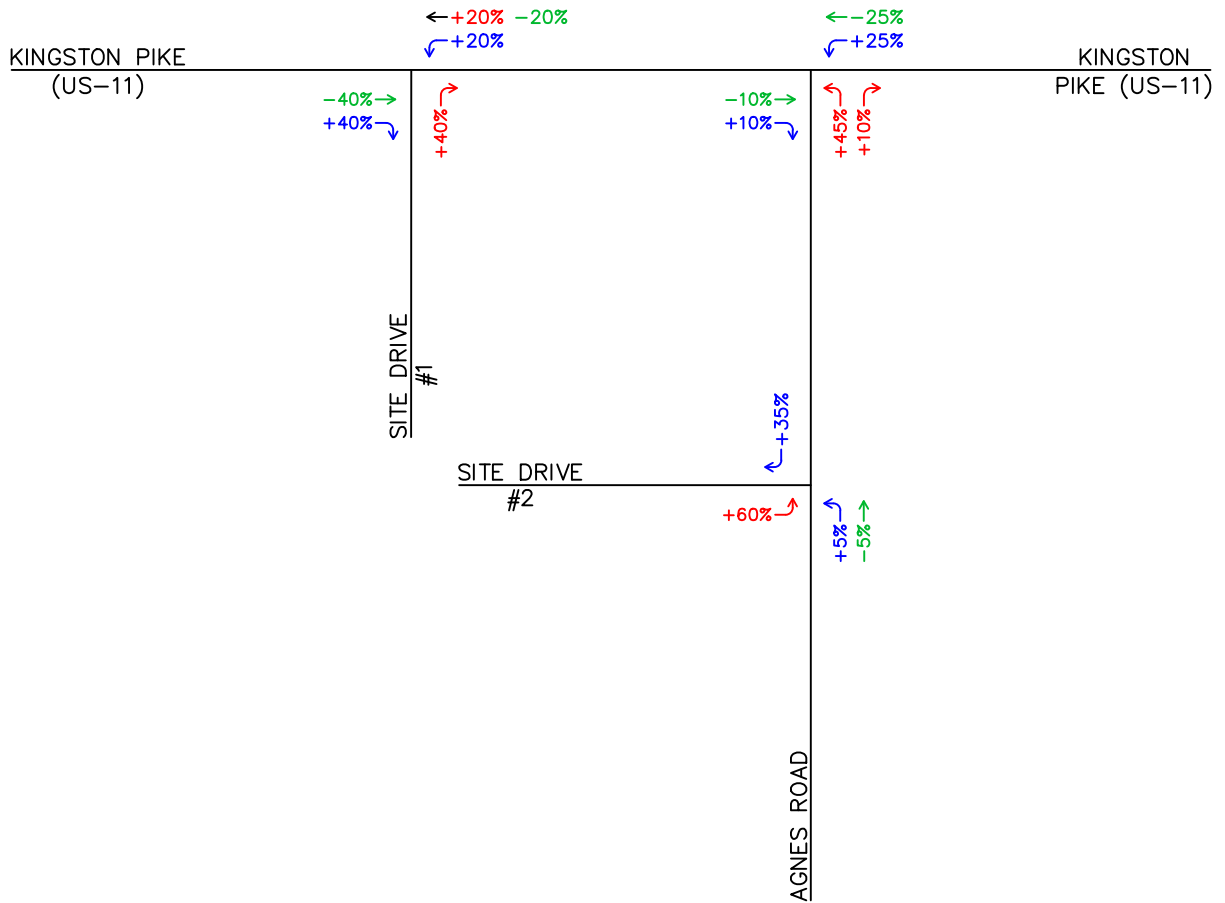
'BUILD OPTION 1'
PASS-BY TRIP DISTRIBUTION

REVISED MAY 2025



LEGEND

- ## - AM / PM PEAK HOUR
- ## - PASS-BY REDUCTION
- ## - INBOUND PASS-BY
- ## - OUTBOUND PASS-BY



CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\APPENDIX F_BUILD_OPTION 1'.DWG
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N.T.S.

APPENDIX F

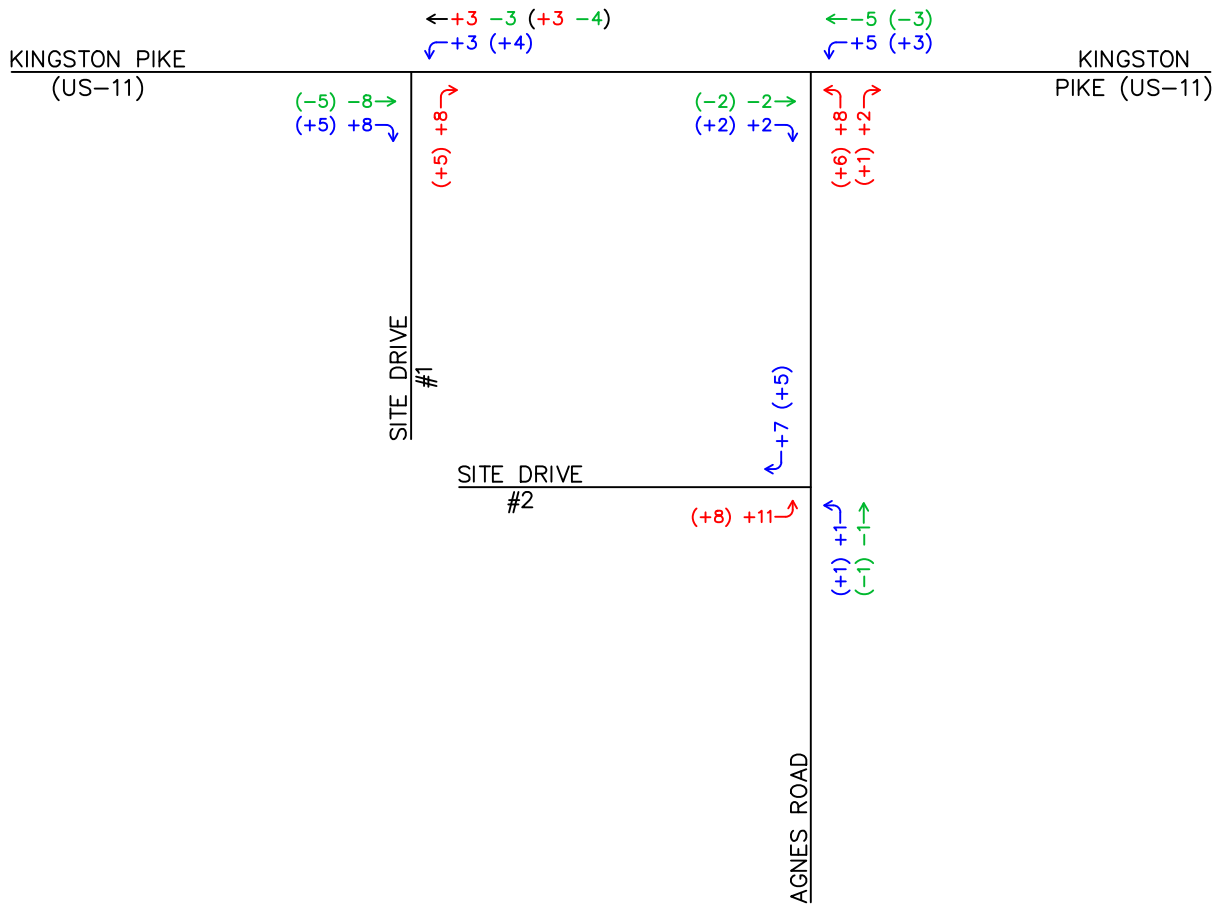
'BUILD OPTION 1'
PASS-BY TRIP ASSIGNMENT

REVISED MAY 2025

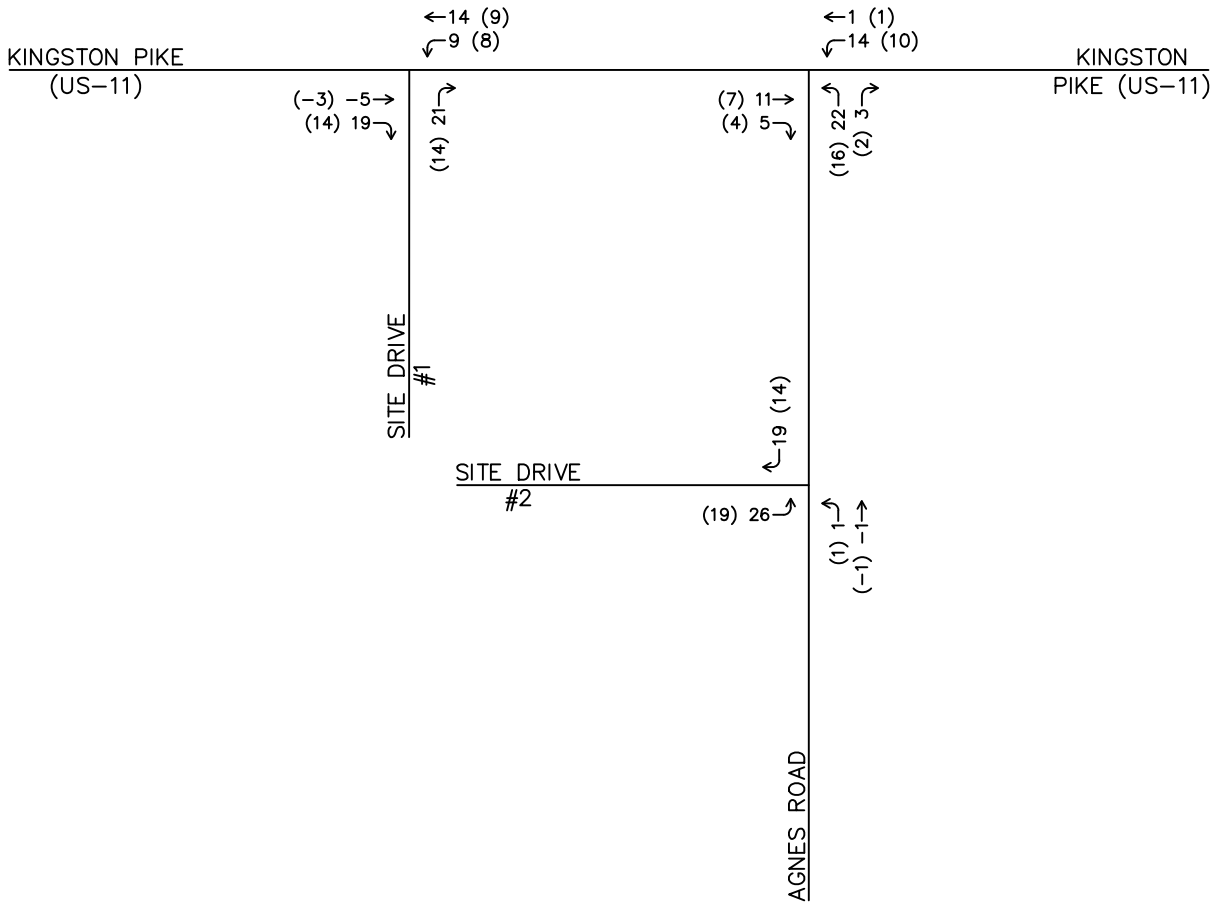


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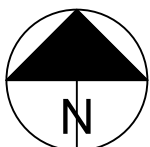
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- (##) - PM PEAK HOUR
- ## - PASS-BY REDUCTION
- ## - INBOUND PASS-BY
- ## - OUTBOUND PASS-BY



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 TECHNICIAN: BCTONDR



LEGEND
 ## - AM PEAK HOUR
 (##) - PM PEAK HOUR



N.T.S.

APPENDIX F

'BUILD OPTION 1'
 COMBINED TRIP ASSIGNMENT

REVISED MAY 2025



'BUILD OPTION 2'

CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\APPENDIX F_BUILD_OPTION 2.DWG
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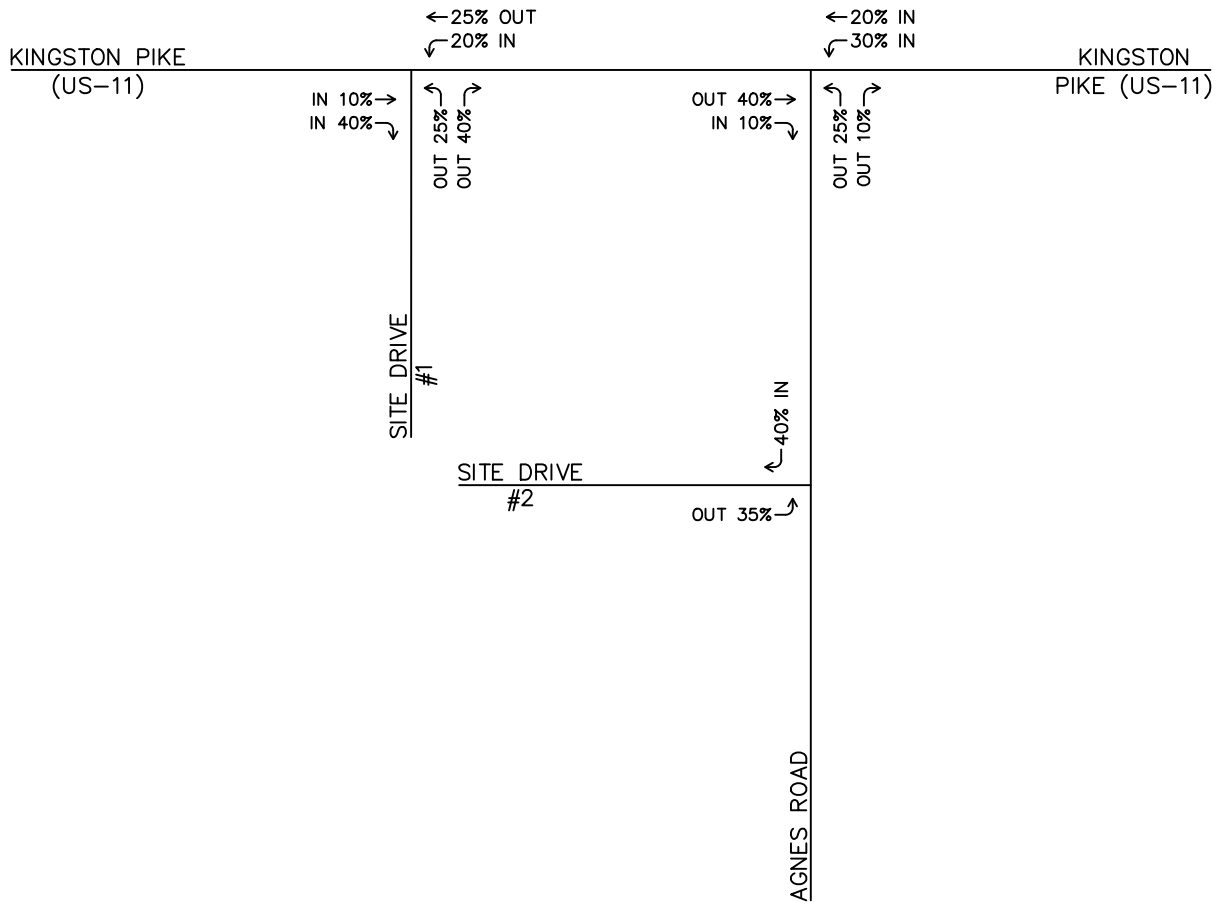


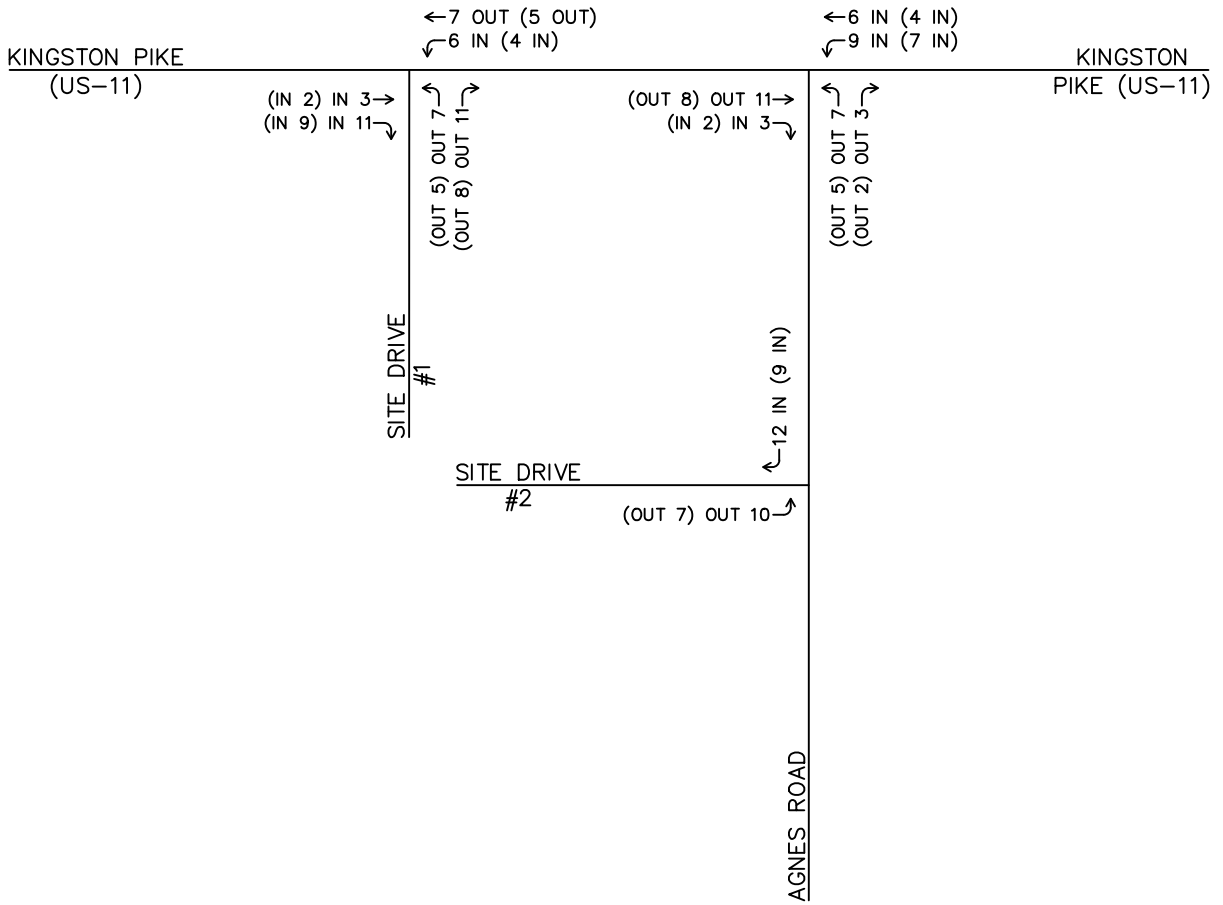
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APPENDIX F

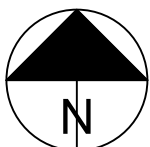
'BUILD OPTION 2'
PRIMARY TRIP DISTRIBUTION

REVISED MAY 2025





LEGEND
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 (##) – PM PEAK HOUR



N.T.S.

APPENDIX F

'BUILD OPTION 2'
 PRIMARY TRIP ASSIGNMENT

REVISED MAY 2025



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N.T.S.

APPENDIX F

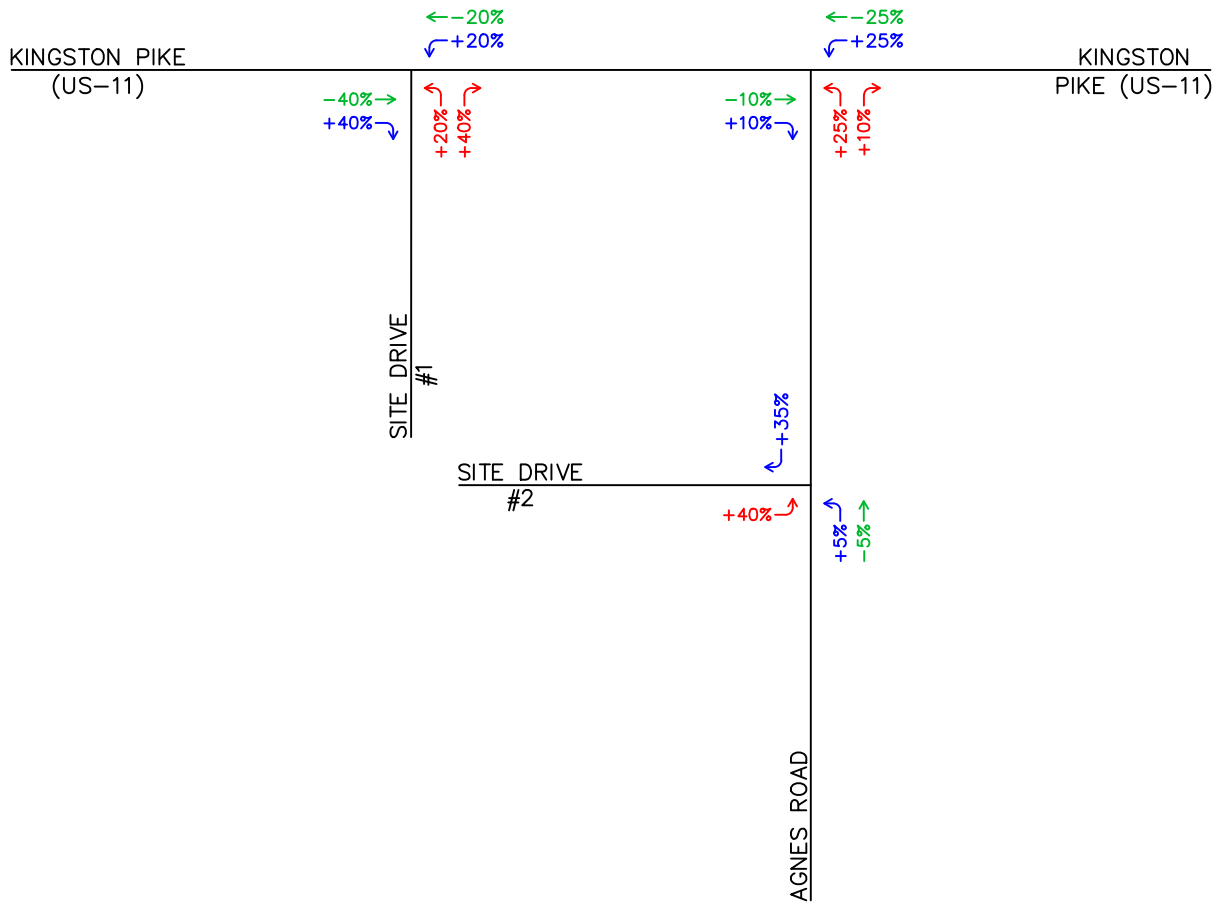
'BUILD OPTION 2'
PASS-BY TRIP DISTRIBUTION

REVISED MAY 2025



LEGEND

- ## - AM / PM PEAK HOUR
- ## - PASS-BY REDUCTION
- ## - INBOUND PASS-BY
- ## - OUTBOUND PASS-BY



CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\APPENDIX F_BUILD_OPTION 2\DWG
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N.T.S.

APPENDIX F

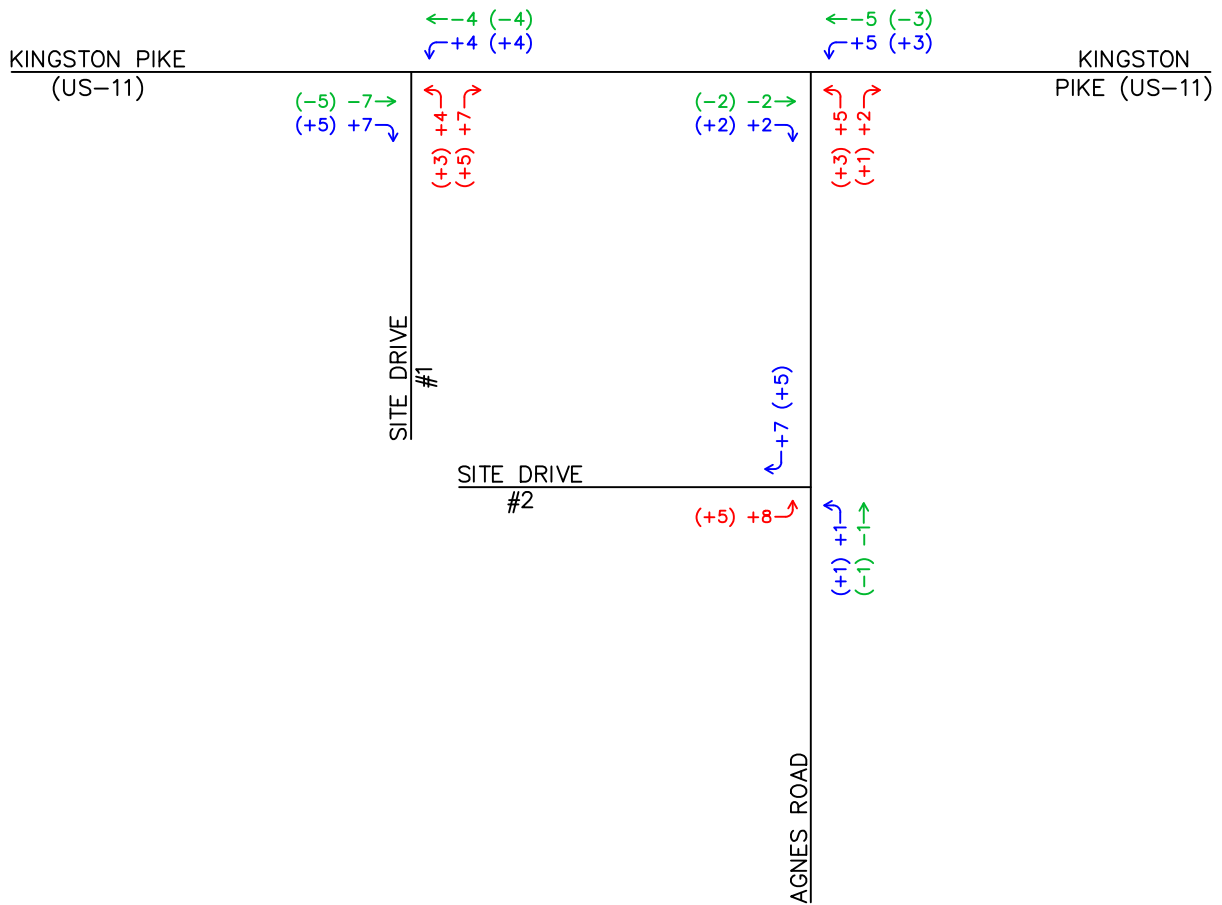
'BUILD OPTION 2'
PASS-BY TRIP ASSIGNMENT

REVISED MAY 2025

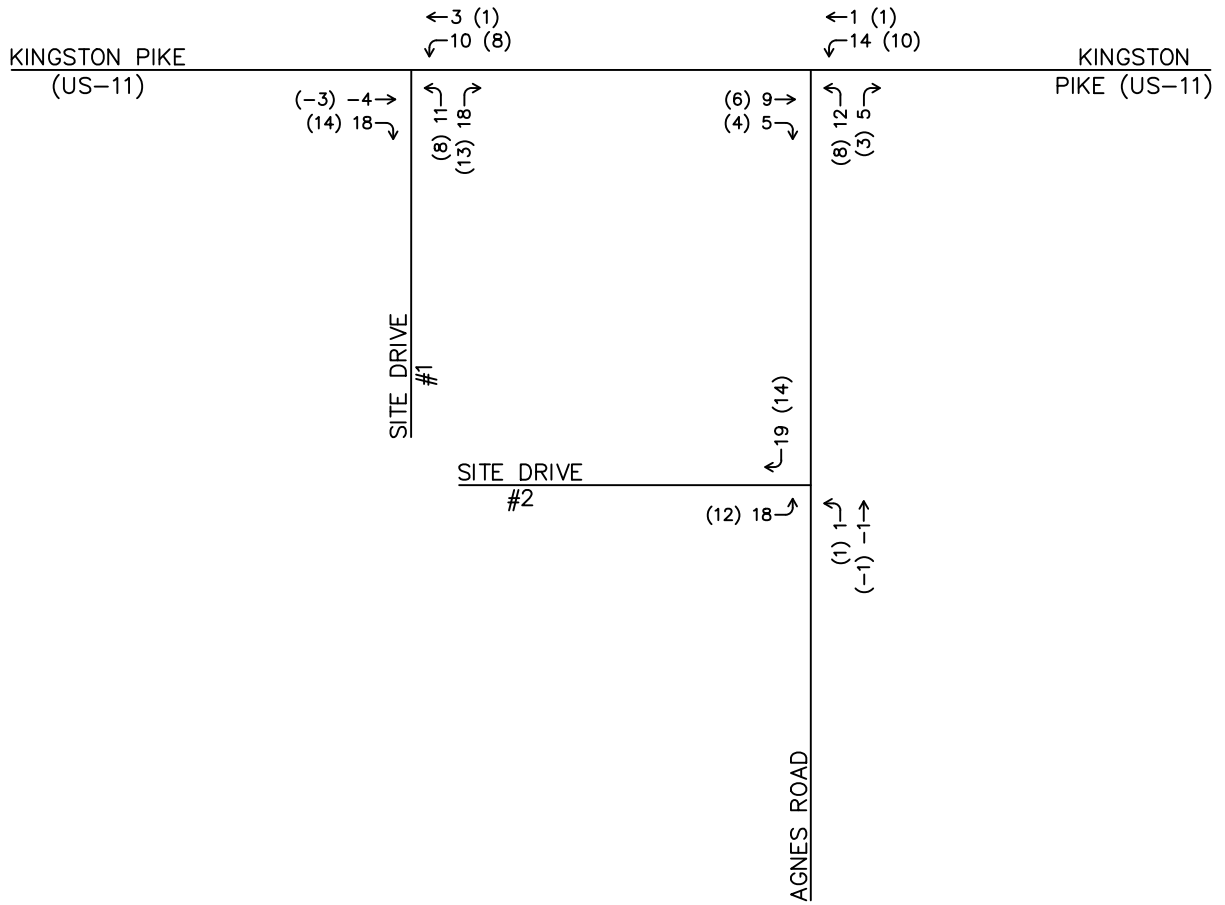


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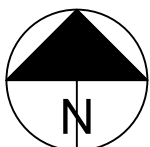
- ## - AM PEAK HOUR
- (##) - PM PEAK HOUR
- ## - PASS-BY REDUCTION
- ## - INBOUND PASS-BY
- ## - OUTBOUND PASS-BY



CAD FILE: G:\RETAIL\TACO BELL\2024\CORPORATE\2024088.07 KNOXVILLE, TN (5900)\3_FIELD SERVICES\04_TRAFFIC\FIGURES\APPENDIX F_BUILD_OPTION 2.DWG
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LEGEND
 ## - AM PEAK HOUR
 (##) - PM PEAK HOUR



N.T.S.

APPENDIX F

'BUILD OPTION 2'
 COMBINED TRIP ASSIGNMENT

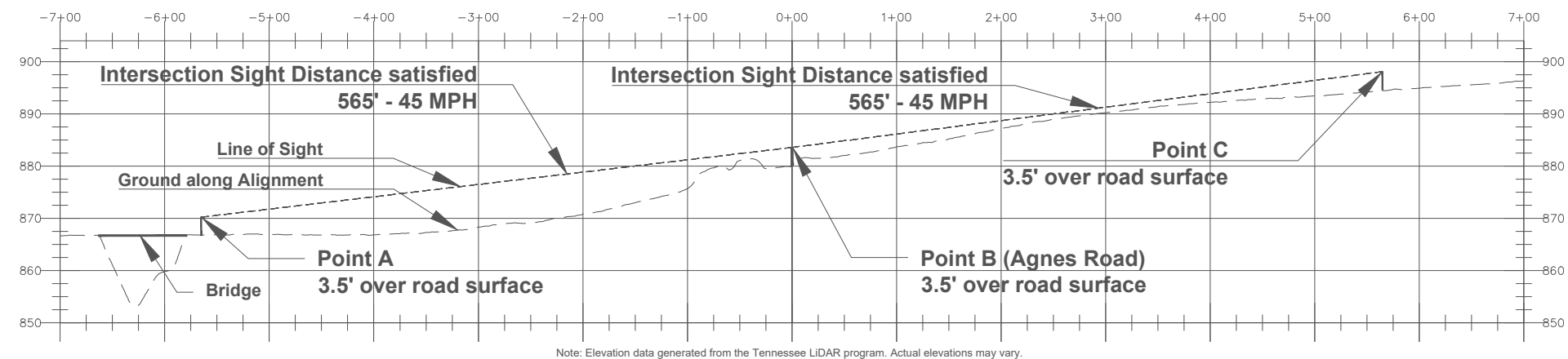
REVISED MAY 2025



APPENDIX G
SIGHT DISTANCE EXHIBITS



Line of Sight vs. Pavement Elevation



Note: Elevation data generated from the Tennessee LIDAR program. Actual elevations may vary.

Exhibit 1

Sight Distance Exhibit

Agnes Road approach to Kingston Pike (US-11)

Proposed Taco Bell, 5200 Kingston Pike (US-11), Knoxville, TN



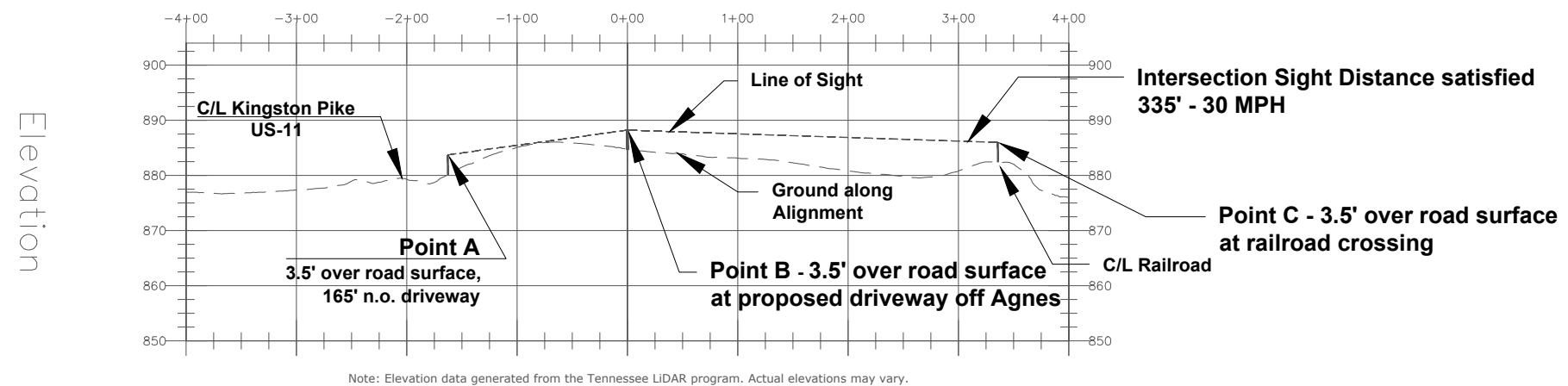


View of proposed driveway (approximate location) looking south.
Source: Streetview



View of proposed driveway (approximate location) looking north.
Source: Streetview

Line of Sight vs. Pavement Elevation



Note: Elevation data generated from the Tennessee LiDAR program. Actual elevations may vary.

Exhibit 1

Sight Distance Exhibit

Driveway approach to Agnes Road

Proposed Taco Bell, 5200 Kingston Pike (US-11), Knoxville, TN

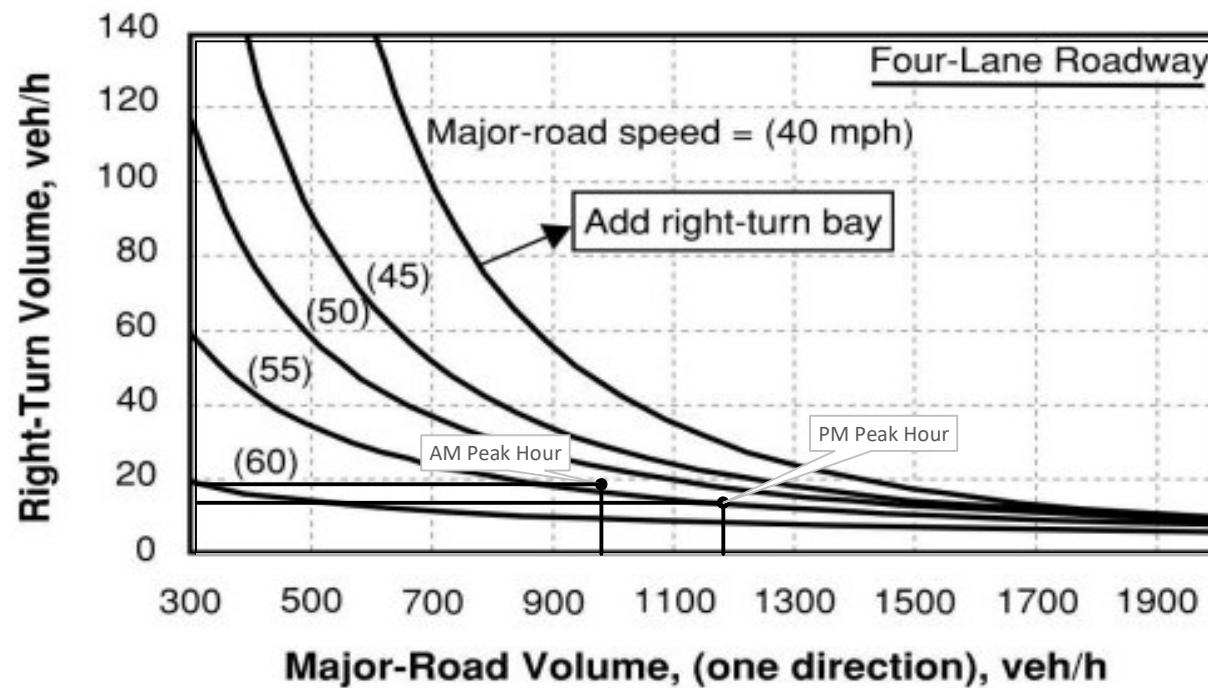


APPENDIX H
AUXILIARY TURN LANE WARRANT ANALYSIS

'BUILD OPTION 1'

Kingston Pike (US 11) / Site Drive #1 Intersection
Eastbound Right Turn Lane

Design Year 2031 'Build Option 1' Conditions



AM Peak Hour:
Major-Road Volume = 971 Veh
Right Turn Traffic = 19 Veh

PM Peak Hour:
Major-Road Volume = 1173 Veh
Right Turn Traffic = 14 Veh

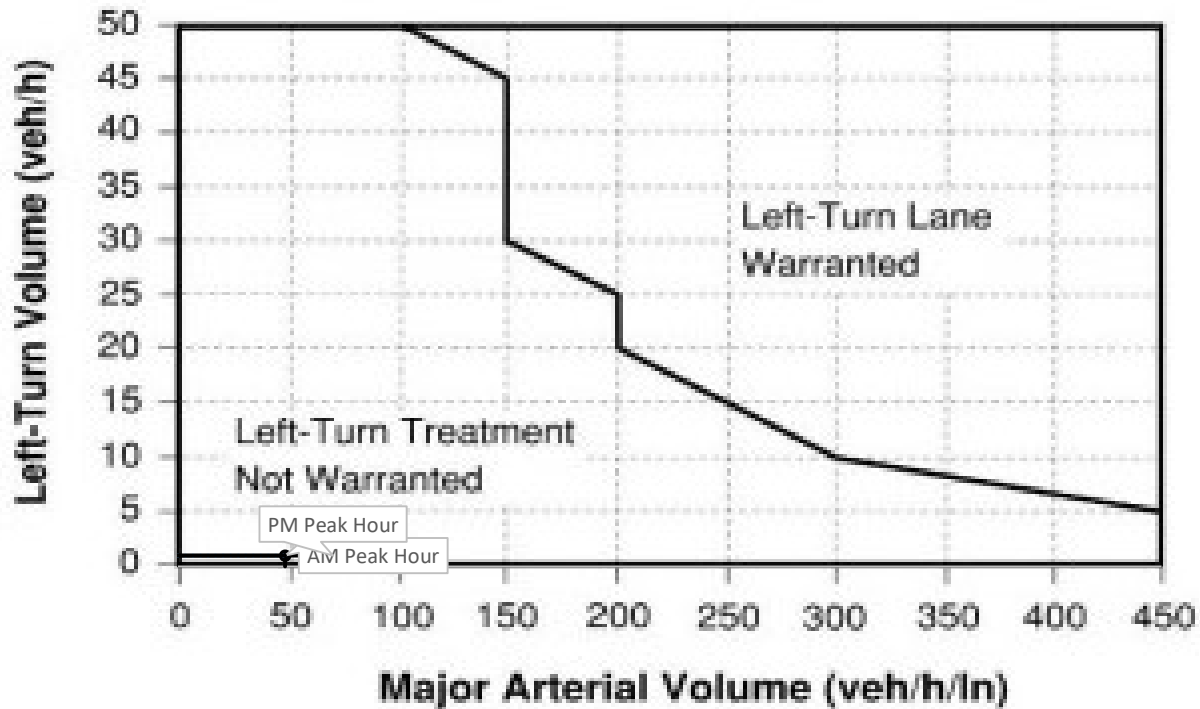
Major Road Speed = 45 mph

Turn Lane NOT Warranted



Agnes Road / Site Drive #2 Intersection
Northbound Left Turn Lane

Design Year 2031 'Build Option 1' Conditions



AM Peak Hour:
Major Arterial Traffic = 49 Veh
Left Turn Traffic = 1 Veh

PM Peak Hour:
Major Arterial Volume = 71 Veh
Left Turn Volume = 1 Veh

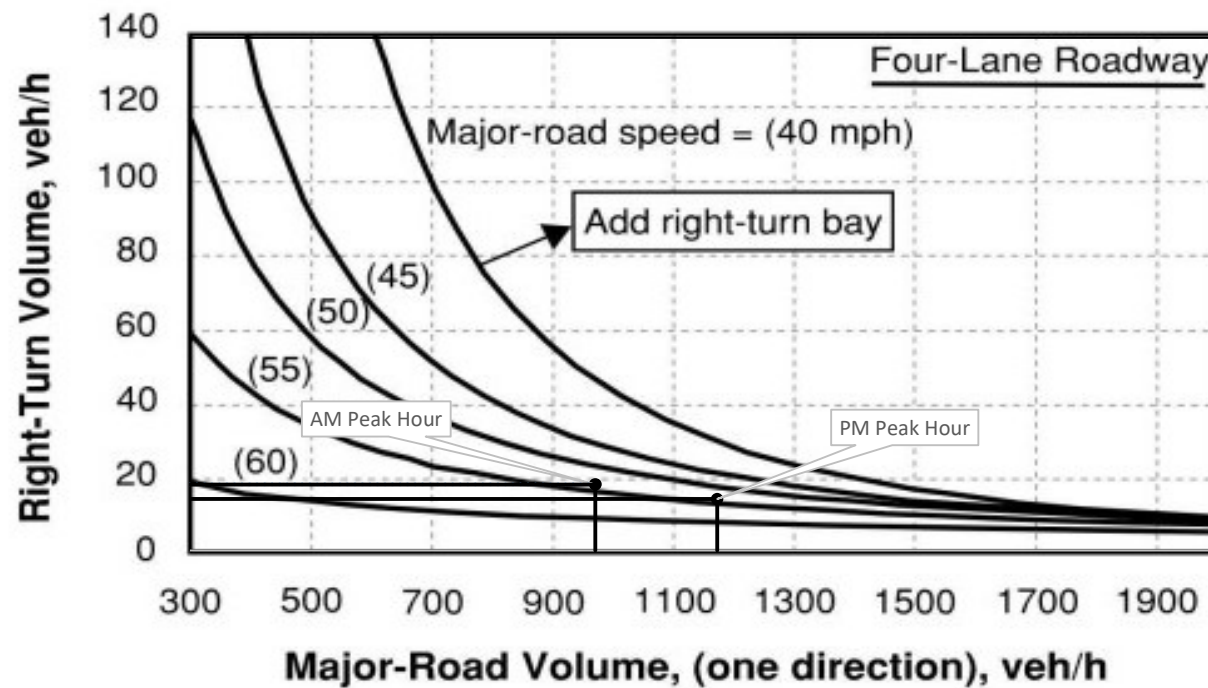
Turn Lane NOT Warranted



'BUILD OPTION 2'

Kingston Pike (US 11) / Site Drive #1 Intersection
Eastbound Right Turn Lane

Design Year 2031 'Build Option 2' Conditions



AM Peak Hour:
Major-Road Volume = 971 Veh
Right Turn Traffic = 18 Veh

PM Peak Hour:
Major-Road Volume = 1173 Veh
Right Turn Traffic = 14 Veh

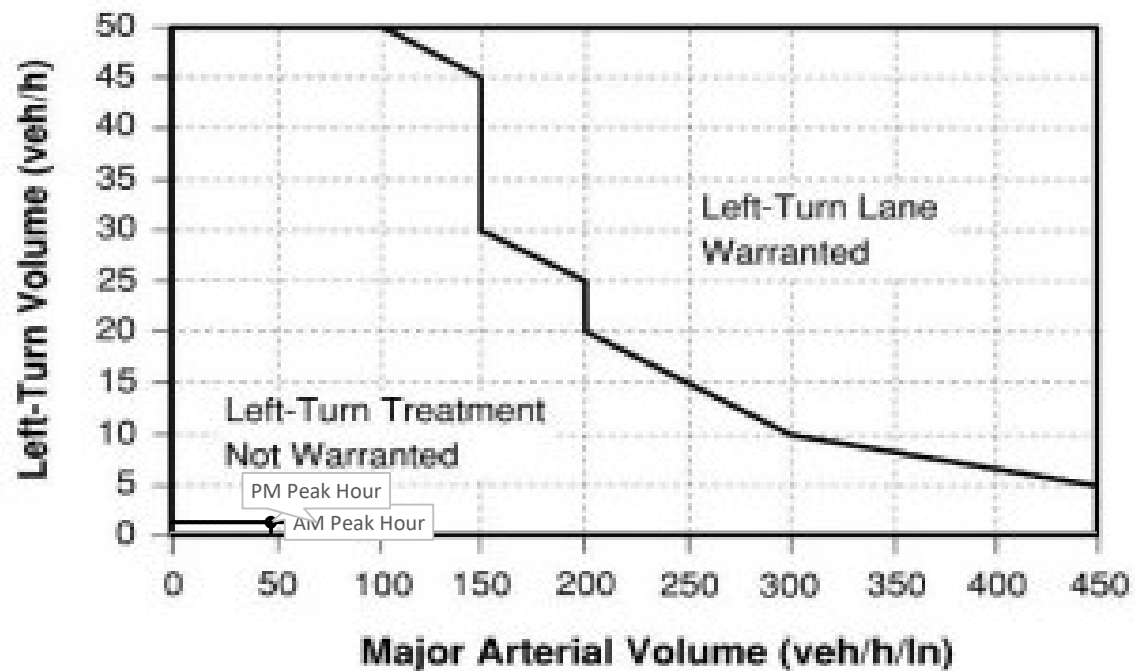
Major Road Speed = 45 mph

Turn Lane NOT Warranted



Agnes Road / Site Drive #2 Intersection
Northbound Left Turn Lane

Design Year 2031 'Build Option 2' Conditions



AM Peak Hour:
Major Arterial Volume = 49 Veh
Left Turn Traffic = 1 Veh

PM Peak Hour:
Major Arterial Volume = 71 Veh
Left Turn Volume = 1 Veh

Turn Lane NOT Warranted



APPENDIX I
AUTOTURN ANALYSIS



PRELIMINARY DRAFT
NOT FOR
CONSTRUCTION,
BID, RELIANCE,
RECORDING PURPOSES
OR IMPLEMENTATION

PLAN SET ISSUE / REVISION HISTORY

CONTRACT DATE: 03.11.25
BLDG TYPE: KITCHEN-X V3.0
WM UPLOAD DATE:
BRAND DESIGNER: TS
SITE NUMBER: 317176
STORE NUMBER: 463675
PA/PM: Dowling
DRAWN BY.: EH
JOB NO.: 2024088,07

KITCHEN-X V3.0

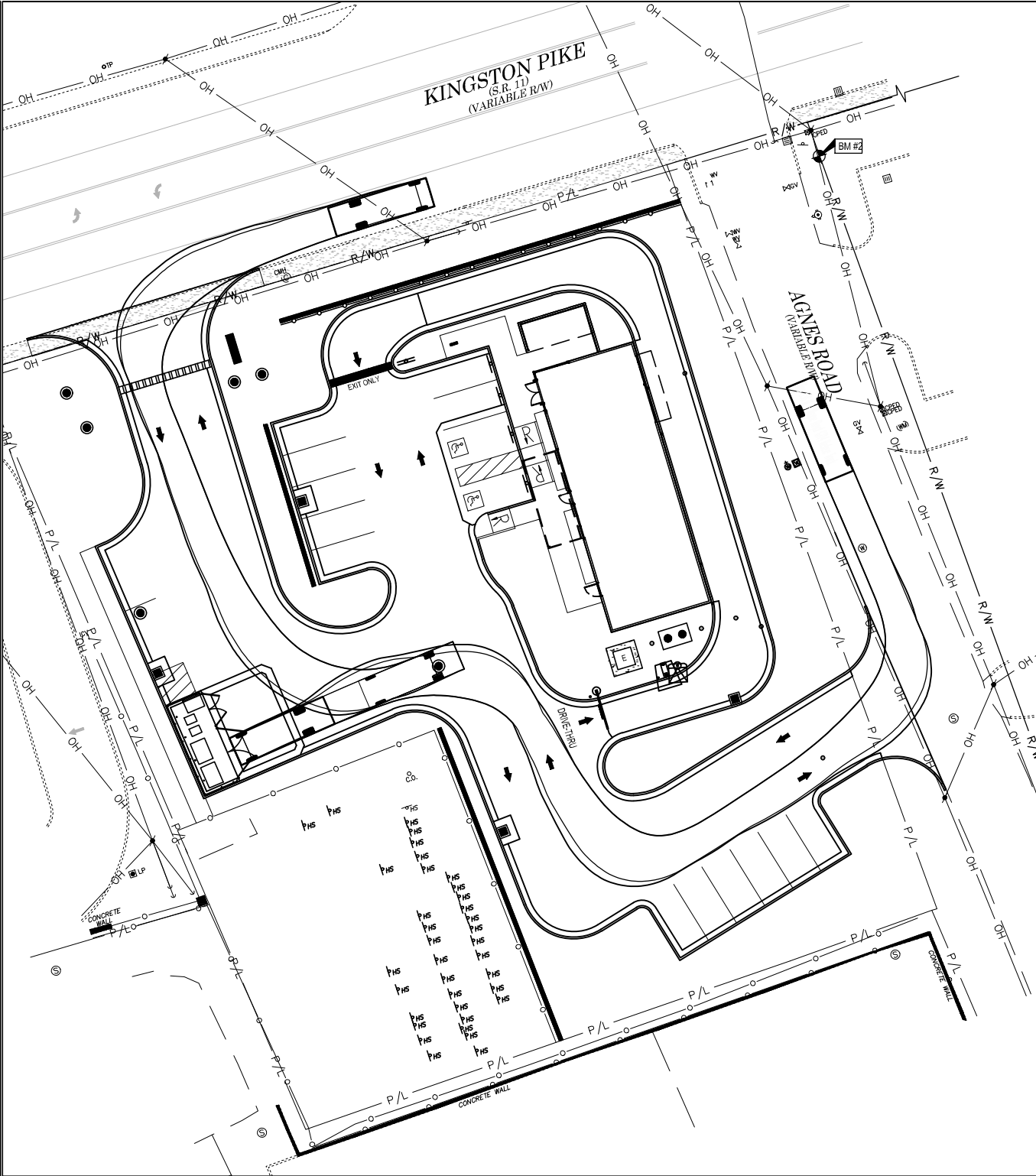
5900-5902 Kingston Pike
Knoxville, TN 37919



AUTOTURN
PLAN

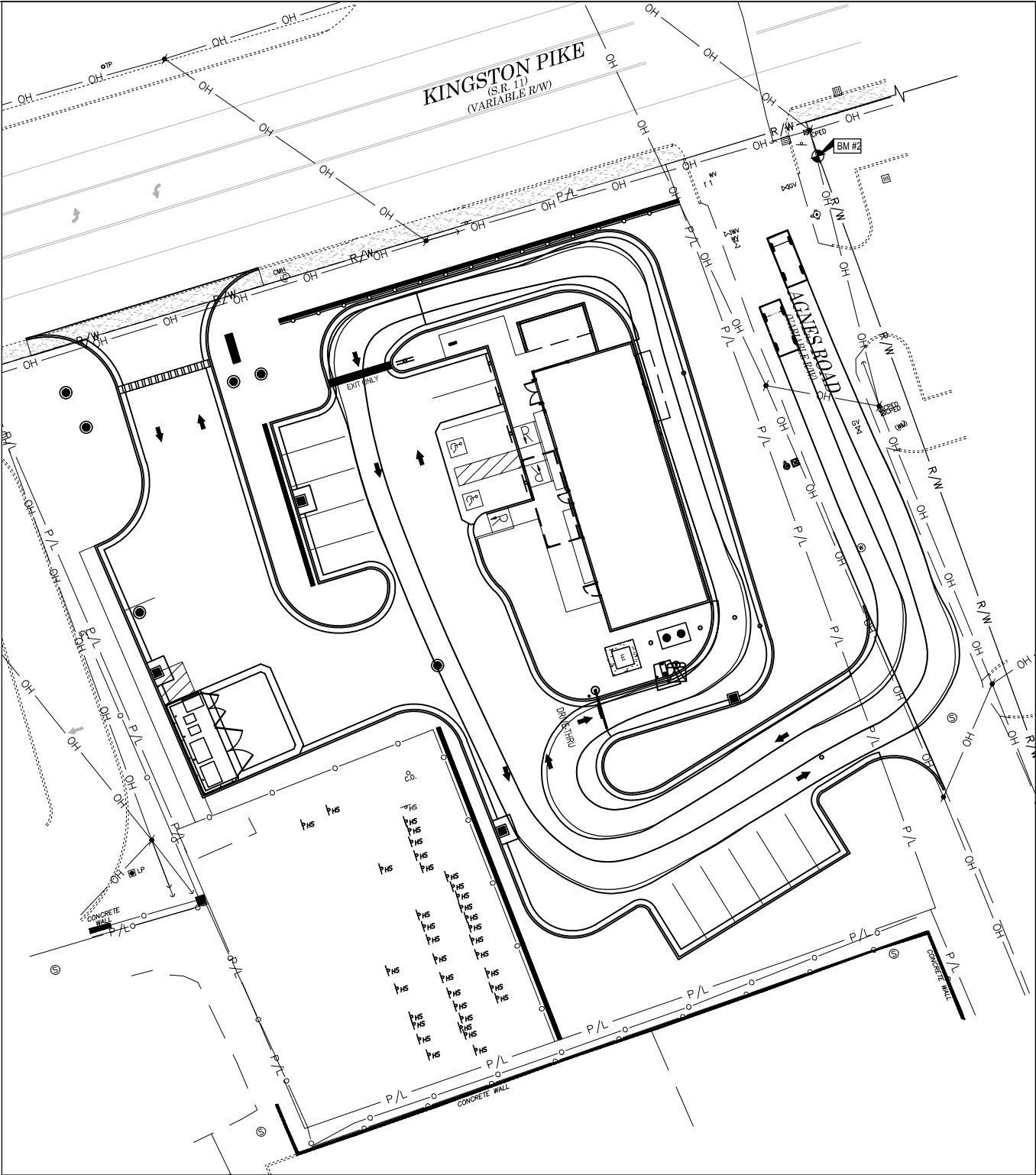
C-111A

PLOT DATE:

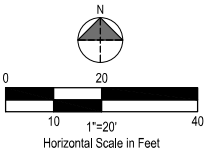


REFUSE TRUCK AGNES
ROAD INGRESS
KINGSTON PIKE EGRESS

BENCHMARKS:
HORIZONTAL REFERENCE FRAME: NORTH AMERICAN
DATUM OF 1983 (2011)-STATE PLANE COORDINATE SYSTEM
OF TENNESSEE
VERTICAL REFERENCE FRAME: NORTH AMERICAN DATUM
OF 1988 (GEOID09).
BENCHMARK #1 - 60D NAIL,
N: 588,404.33, E: 2,560,370.47
ELEVATION=870.90
BENCHMARK #2 - 5/8" RBR CAPPED,
N: 588,475.05, E: 2,560,602.66
ELEVATION=881.77



PASSENGER CAR
AGNES ROAD
INGRESS/EGRESS





PRELIMINARY DRAFT
NOT FOR
CONSTRUCTION,
BID, RELIANCE,
RECORDING PURPOSES
OR IMPLEMENTATION

PLAN SET ISSUE / REVISION HISTORY

CONTRACT DATE: 03.11.25
BLDG TYPE: KITCHEN-X V3.0
WM UPLOAD DATE:
BRAND DESIGNER: TS
SITE NUMBER: 317176
STORE NUMBER: 463675
PA/PM: Dowling
DRAWN BY.: EH
JOB NO.: 2024088,07

KITCHEN-X V3.0

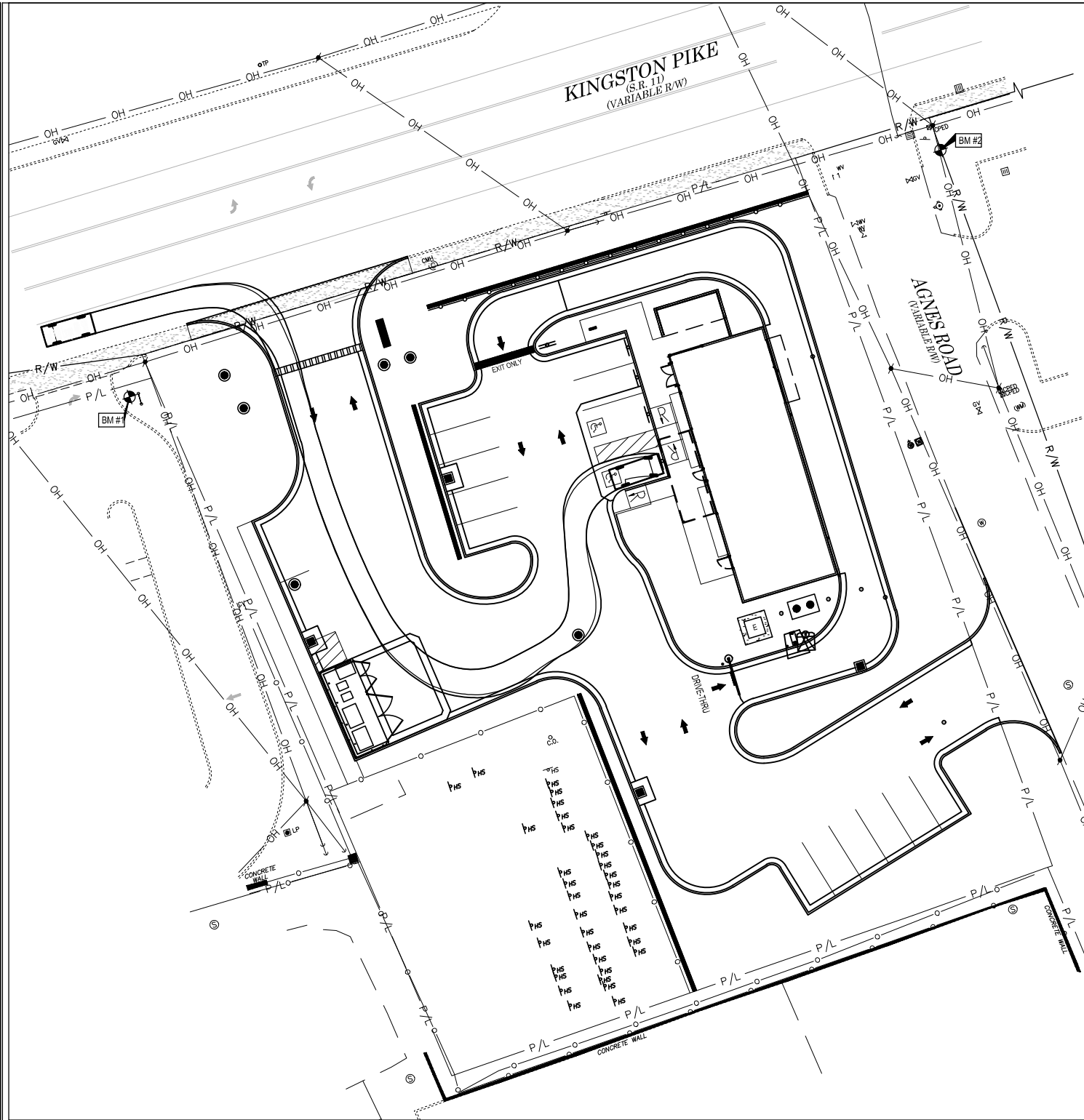
5900-5902 Kingston Pike
Knoxville, TN 37919



AUTOTURN
PLAN

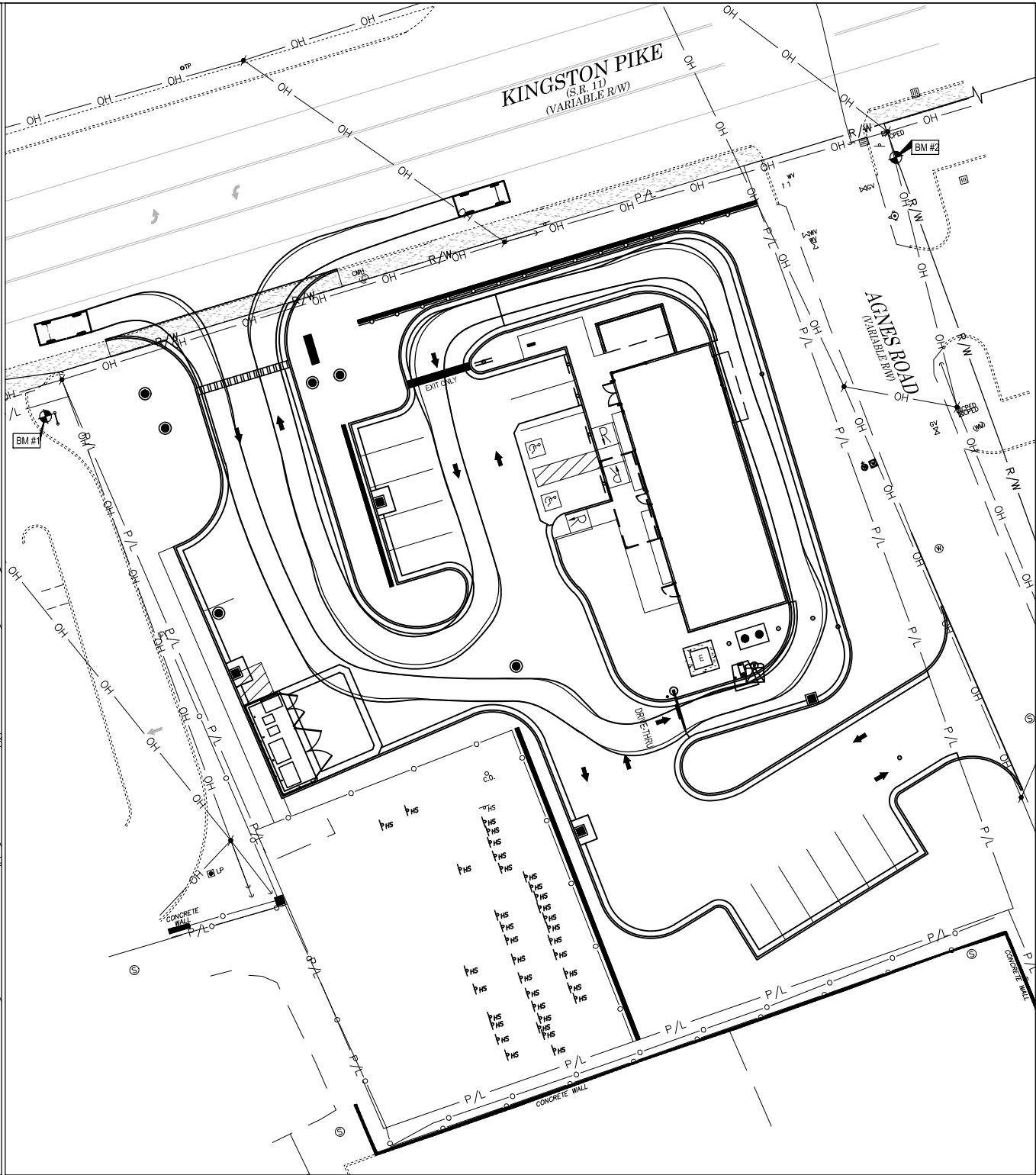
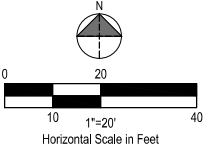
C-111B

PLOT DATE:



PASSENGER CAR
KINGSTON PIKE INGRESS
AND INTO PARKING AREA

BENCHMARKS:
HORIZONTAL REFERENCE FRAME: NORTH AMERICAN
DATUM OF 1983 (2011)-STATE PLANE COORDINATE SYSTEM
OF TENNESSEE
VERTICAL REFERENCE FRAME: NORTH AMERICAN DATUM
OF 1988 (GEOID09).
BENCHMARK #1 - 60D NAIL.
N: 588,404.33, E: 2,560,370.47
ELEVATION=870.90
BENCHMARK #2 - 5/8" RBR CAPPED.
N: 588,475.05, E: 2,560,602.66
ELEVATION=881.77



PASSENGER CAR
KINGSTON PIKE
INGRESS/EGRESS

Mike Conger, PE
Senior Transportation Engineer
Knoxville-Knox County Planning

Response to TIS Comments

Proposed Taco Bell Knoxville, TN 5900 Kingston Pike

GPD Group has reviewed the comments provided by Knoxville-Knox County Planning, City of Knoxville Department of Engineering, and Tennessee Department of Transportation (TDOT) Region 1 Traffic Office regarding the Traffic Impact Study (TIS) submission for the proposed Taco Bell to be located on the southwest corner of the Kingston Pike (US 11) / Agnes Road intersection in Knoxville, Knox County, Tennessee. Based on a review of the provided comments, our responses are as follows:

Comment 1: Please report the required and available intersection sight distance amounts (in feet) in the main section of the TIS such as in the table on page 13. It is required that intersection sight distance (ISD) be met rather than just stopping sight distance but it appears that the TIS is using a higher speed than is required. Please report the minimum ISD based on a speed of 45 mph which is the posted speed limit on Kingston Pike.

GPD Response: *The required and available intersection sight distances have been added to the table. Additionally, the sight distance analyses were updated to reflect the posted speed limit along Kingston Pike (US 11). See Section IV Page 13 of the revised TIS.*

Comment 2: Provide a sight distance analysis for the proposed driveway to Agnes Road. The required amount should be determined based on AASHTO Green Book procedures but does not need to be a detailed survey grade analysis at this stage and rather a general assessment of available sight distance. A more detailed sight distance analysis may potentially be required at the design plan stages for engineering review.

GPD Response: *A sight distance analysis for the proposed driveway to Agnes Road has been completed. Note that southbound Agnes Road motorists are likely traveling at speeds less than 25 mph due to the location of Kingston Pike (US 11) / Agnes Road intersection. See Section IV, Page 13 and Appendix G of the revised TIS.*

Comment 3: The study should note that there are travel options and network connectivity to the south on Agnes Rd and state why zero trips were assumed to be distributed in that direction which may help to alleviate the poor LOS that was projected for some movements.

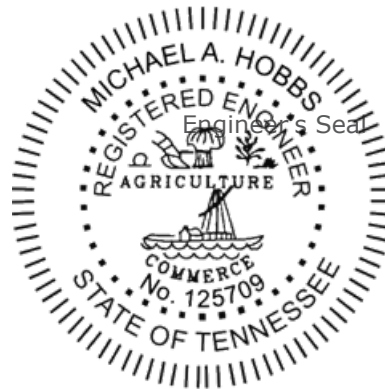
GPD Response:

The study has been updated to note that there are travel options and network connectivity to the south on Agnes Road, as well as why zero trips were distributed in that direction. Zero trips were distributed south along Agnes Road because those intersections are located outside of the study area. Additionally, a potential worst-case scenario in terms of vehicular delays can be analyzed by distributing the trips such that they are accessing the roadway network at the Kingston Pike (US 11) / Site Drive #1 and the Kingston Pike (US 11) / Agnes Road intersections. See Section III, Pages 6-7 of the revised TIS.

We are available to answer any questions you may have. Please do not hesitate to contact me via email at mhobbs@gpdgroup.com.

Sincerely,

GPD Group



Prepared
Under The Responsible
Charge of:

A handwritten signature in blue ink that reads "Michael A. Hobbs".

Michael A. Hobbs, P.E., PTOE
Registration No. 125709
Certification No. 1346

May 20, 2025

Date

Cc: Sarah Dowling (GPD Group)
Judith Bennett, PE (GPD Group)
File