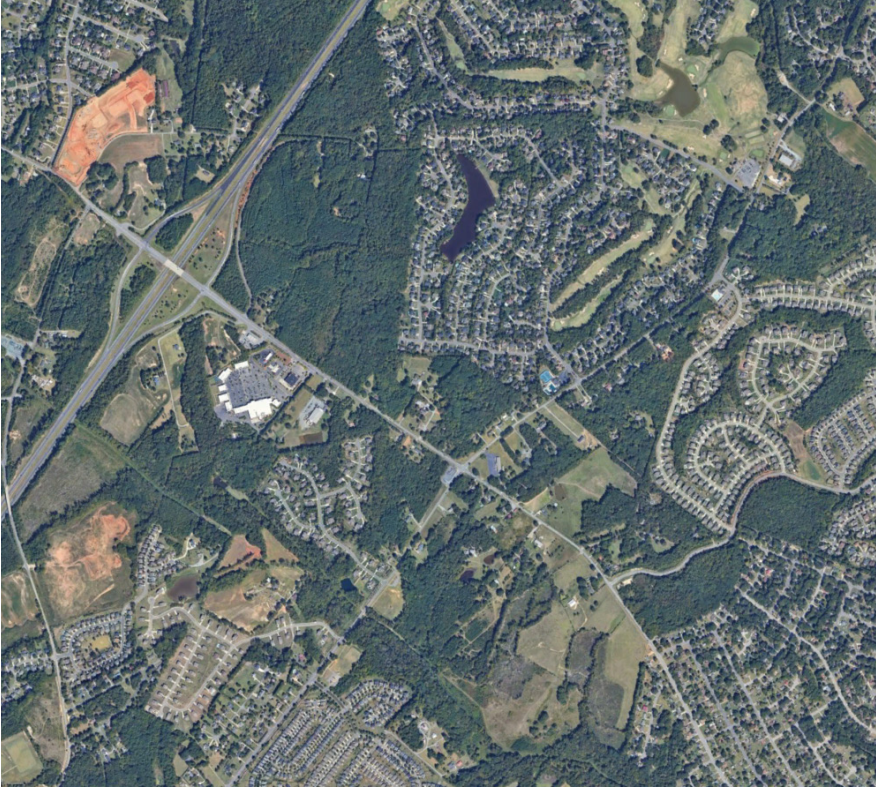


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Idlewild Village
Traffic Impact Analysis
Stallings, North Carolina

**TRAFFIC IMPACT
ANALYSIS**

FOR

IDLEWILD VILLAGE

LOCATED

IN

STALLINGS, NORTH CAROLINA

Prepared For:
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JULY 2023

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TRAFFIC IMPACT ANALYSIS
IDLEWILD VILLAGE
STALLINGS, NORTH CAROLINA

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Idlewild Village development with the Town of Stallings (Town) Unified Development Ordinance (UDO) and North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. The proposed development, anticipated to be completed in 2025, will be located in the northwest quadrant of the intersection of Idlewild Road and Stevens Mill Road in Stallings, North Carolina. The Idlewild Village development is expected to consist of nearly 32,000 SF of retail, a 48,480 SF supermarket, a 4,500 SF fast-food restaurant with drive-through window and 5,000 SF of convenience store/gas station. Site access is proposed via one full-movement driveway connection on Stevens Mill Road, one right-in/right-out (RIRO) driveway connection on Stevens Mill Road, and one right-in/right-out (RIRO) driveway connection on Idlewild Road.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing
- 2025 No-Build
- 2025 Build
- 2025 Build with U-4913A
- 2030 Build (Build + 5)

2. Existing Traffic Conditions

The study area for the TIA was determined through coordination with the Town of Stallings and the North Carolina Department of Transportation (NCDOT) and consists of the following existing intersections:

- Idlewild Road and Stallings Road
- Idlewild Road and I-485 SB inner ramps
- Idlewild Road and I-485 NB outer ramps
- Idlewild Road and Boyd Funderburk Drive/Marshall Hooks road
- Idlewild Road and Rite-Aid Driveway
- Idlewild Road and Stevens Mill Road

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed above, in January of 2022 during typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods, while schools were in session for in-

person learning. Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate.

3. Site Trip Generation

The proposed development is assumed to consist of nearly 32,000 SF of retail, a 48,840 SF supermarket, a 4,500 SF fast-food restaurant with drive-through window and a 5,000 SF convenience store/gas station. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE Trip Generation Manual, 11th Edition. Table E-1, on the following page, provides a summary of the trip generation potential for the site.

Table E-1: Site Trip Generation

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)			Weekday PM Peak Hour Trips (vph)		
			Enter	Exit	Total	Enter	Exit	Total
Strip Retail Plaza (822)	8,950 SF	608	16	11	27	36	36	72
Strip Retail Plaza (822)	6,000 SF	484	12	9	21	27	27	54
Strip Retail Plaza (822)	8,150 SF	574	15	10	25	33	34	67
Strip Retail Plaza (822)	8,875 SF	604	16	11	27	36	36	72
Supermarket (850)	48,840 SF	4,584	82	58	140	218	219	437
Fast-Food Restaurant with Drive-Through Window (934)	4,500 SF	2,104	102	99	201	77	72	149
Convenience Store/Gas Station (945)	5,000 SF	6,418	228	229	457	197	198	395
Total Trips		15,376	471	427	898	624	622	1,246
<i>Internal Capture (13% AM, 8% PM)*</i>			-59	-58	-117	-50	-50	-100
Total External Trips			412	369	781	574	572	1,146
<i>Pass-By Trips (Capped at 10% of projected 2025 adjacent street traffic)</i>			-84	-84	-168	-113	-113	-226
Total Primary Trips			328	285	613	461	459	920

*Utilizing methodology contained in the NCHRP Report 684.

4. Future Traffic Conditions

Through coordination with the NCDOT and the Town, it was determined that a compounded annual growth rate of 1% would be used to generate 2025 and 2030 projected weekday AM and PM peak hour traffic volumes. The following adjacent developments were identified to be considered under future conditions:

- Idlewild Mixed-Use
- Stallings Farms
- Stinson Farms
- Sante

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for 2022 existing, 2025 no-build, and 2025/2030 build conditions. Refer to Section 7 of the TIA for the capacity analysis summary performed at each study intersection.

6. Recommendations

Based on the findings of this study, specific geometric and traffic control improvements have been identified at the study intersections. The improvements are summarized below and are illustrated in Figure E-1.

Recommended Improvements by Developer

Idlewild Road and Stevens Mill Road

- Improvements to the eastbound Idlewild Road approach are expected to be made by the Stinson Village (Stinson Farms) development. Two eastbound Idlewild Road lanes would approach Stevens Mill Road. The inner lane would drop as a left turn lane at Stevens Mill Road. The outer lane would be marked as a shared through/right lane at Stevens Mill Road.
- The Idlewild Village development is recommended to alter the eastbound Idlewild Road approach to provide a left turn lane with 500 feet of storage, a through lane, and a shared through/right lane. In addition to this, Idlewild Village would construct a second eastbound departure lane that would drop east of Stevens Mill Road.
- Construct a westbound Idlewild Road right turn lane with 225 feet of storage.
- Construct a second northbound Stevens Mill Road left turn lane with 250 feet of storage. The existing left turn lane can be reduced to also provide 250 feet of storage.
- The northbound Stevens Mill Road right turn lane can be reduced to provide 300 feet of storage.
- Construct a second southbound Stevens Mill Road left turn lane with 300 feet of storage. Extend the existing left turn lane to provide 300 feet of storage.
- Extend the existing southbound Stevens Mill Road right turn lane to provide 300 feet of storage.
- Modify the traffic signal as necessary.

Idlewild Road and Access A

- Construct Access A as a right-in-right-out intersection.
- Provide 125 feet of internal protected stem length on Access A.
- Construct a westbound Idlewild Road right turn lane with 100 feet of storage.

Stevens Mill Road and Access B

- Construct Access B as a right-in-right-out intersection.
- Provide 100 feet of internal protected stem length on Access B.
- Construct a southbound Stevens Mill Road right turn lane with 100 feet of storage.

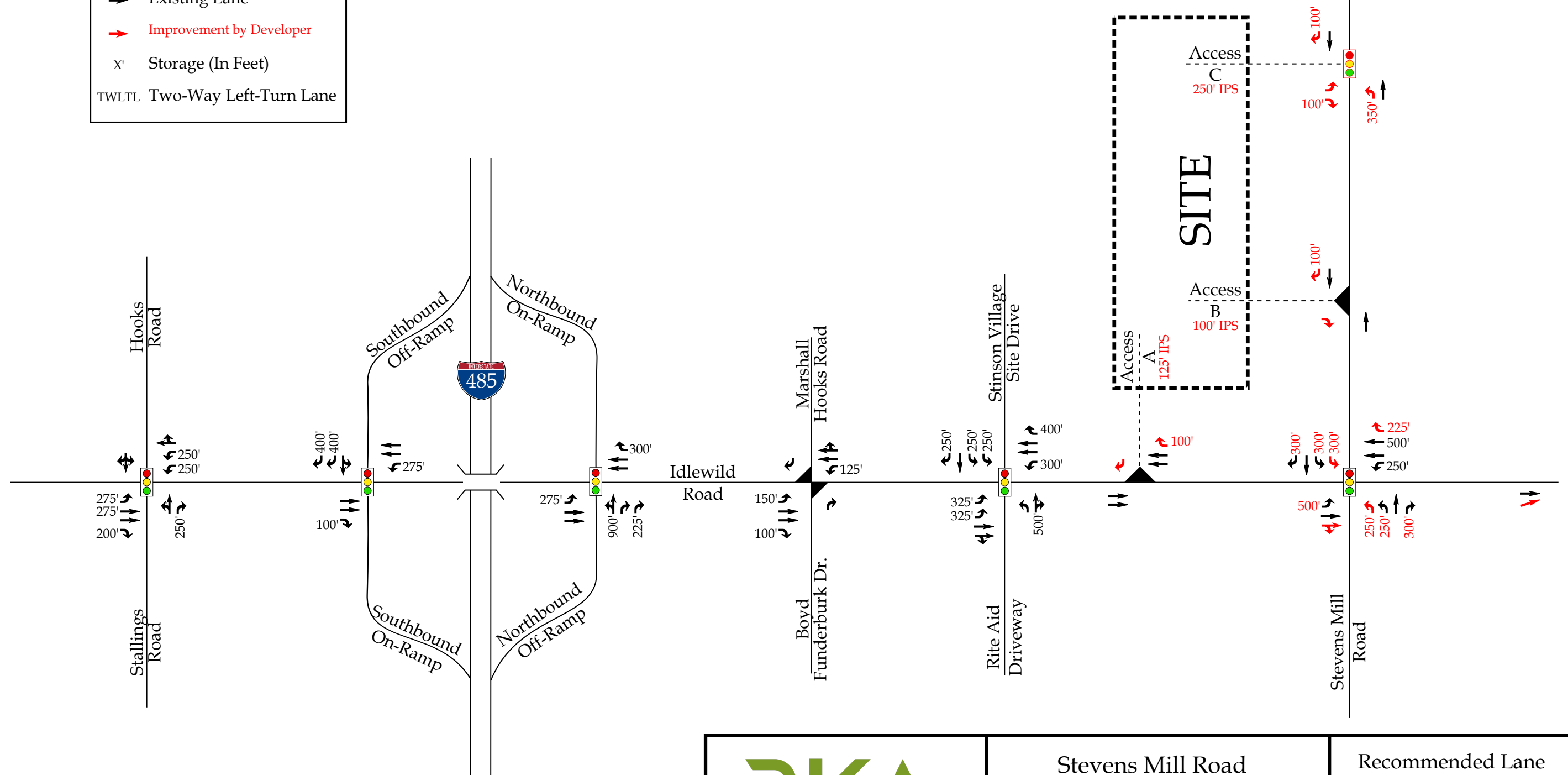
Stevens Mill Road and Access C

- Construct Access C with one ingress lane and two egress lanes. The Access C approach would have one left turn lane, and one right turn lane with 100 feet of storage.
- Provide 250 feet of internal protected stem length on Access C.
- Construct a northbound Stevens Mill Road left turn lane with 350 feet of storage.
- Construct a southbound Stevens Mill Road right turn lane with 100 feet of storage.
- Install a traffic signal.



LEGEND

- Unsignalized Intersection
- ◫ Signalized Intersection
- ➡ Existing Lane
- ➡ Improvement by Developer
- x' Storage (In Feet)
- TWLTL Two-Way Left-Turn Lane



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

Recommended Lane
Configurations

Scale: Not to Scale Figure E-1

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TRAFFIC IMPACT ANALYSIS

IDLEWILD VILLAGE

STALLINGS, NORTH CAROLINA

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) performed for the proposed Idlewild Village development in Stallings, North Carolina. The proposed development, anticipated to be completed in 2025, will be located in the northwest quadrant of the intersection of Idlewild Road and Stevens Mill Road. The purpose of this study is to determine the potential impacts to the surrounding transportation network created by traffic generated by the proposed development. Based on the impacts, improvements will be identified to help mitigate/reduce the impacts to traffic.

The Idlewild Village development is expected to consist of nearly 32,000 SF of retail, a 48,480 SF supermarket, a 4,500 SF fast-food restaurant with drive-through window and 5,000 SF of convenience store/gas station.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing
- 2025 No-Build
- 2025 Build
- 2025 Build with U-4913A
- 2030 Build (Build + 5)

1.1. Site Location and Study Area

The development is proposed to be located in the northwest quadrant of the intersection of Idlewild Road and Stevens Mill Road in Stallings, NC. Refer to Figure 1 for the site location map.

The study area for the TIA was determined through coordination with the Town of Stallings and the North Carolina Department of Transportation (NCDOT) and consists of the following existing intersections:

- Idlewild Road and Stallings Road
- Idlewild Road and I-485 SB inner ramps
- Idlewild Road and I-485 NB outer ramps
- Idlewild Road and Boyd Funderburk Drive/Marshall Hooks Road
- Idlewild Road and Rite-Aid Driveway
- Idlewild Road and Stevens Mill Road

Refer to Appendix A for the approved scoping documentation.

1.2. Proposed Land Use and Site Access

The proposed development, anticipated to be completed in 2025, is assumed to consist of the following uses:

- 8,950 SF – Retail Outparcel 1
- 6,000 SF – Retail Outparcel 2
- 8,150 SF – Retail Shop A
- 8,875 SF – Retail Shop B
- 48,840 SF – Supermarket
- 4,500 SF – Fast-Food w/Drive-Through Window
- 5,000 SF – Convenience Store/Gas Station

Site access is proposed via one full-movement driveway connection on Stevens Mill Road, one right-in/right-out (RIRO) driveway connection on Stevens Mill Road, and one right-in/right-out (RIRO) driveway connection on Idlewild Road. Refer to Figure 2 for a copy of the preliminary site plan.

1.3. Adjacent Land Uses

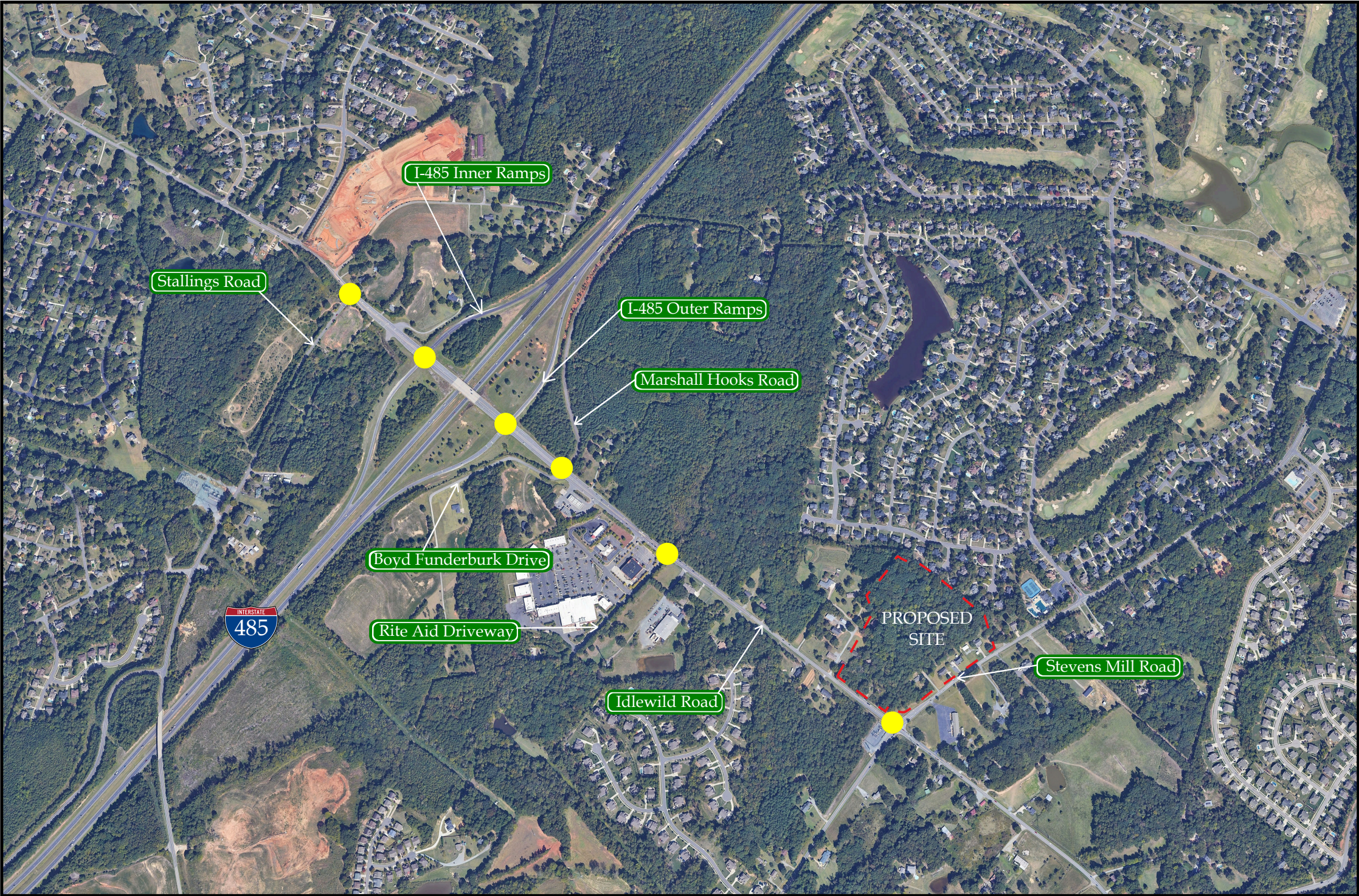
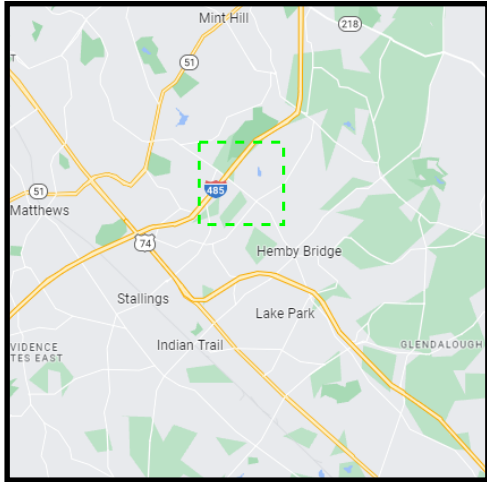
The proposed development is located in an area consisting primarily of undeveloped land and residential development. There is a utility substation in the southwest corner and a church in the northeast corner of the intersection of Idlewild Road and Stevens Mill Road.

1.4. Existing Roadways

Existing lane configurations (number of traffic lanes on each intersection approach), lane widths, storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1 provides a summary of this information, as well.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross-Section	Speed Limit	Maintained By	2021 AADT (vpd)
Idlewild Road	SR 3174 SR 1501	2-lane 5-lane	45 mph	NCDOT	24,500
Stallings Road	SR 3175	2-lane	45 mph	NCDOT	4,200
I-485	I-485	4-lane	70 mph	NCDOT	62,500
Marshall Hooks Road	SR 5231	2-lane	Not Posted	NCDOT	No Data
Boyd Funderburk Road	SR 5230	2-lane	Not Posted	NCDOT	No Data
Stevens Mill Road	SR 1524	2-lane	45 mph	NCDOT	5,000



LEGEND

- Proposed Site Location
- Study Intersection
- Study Area

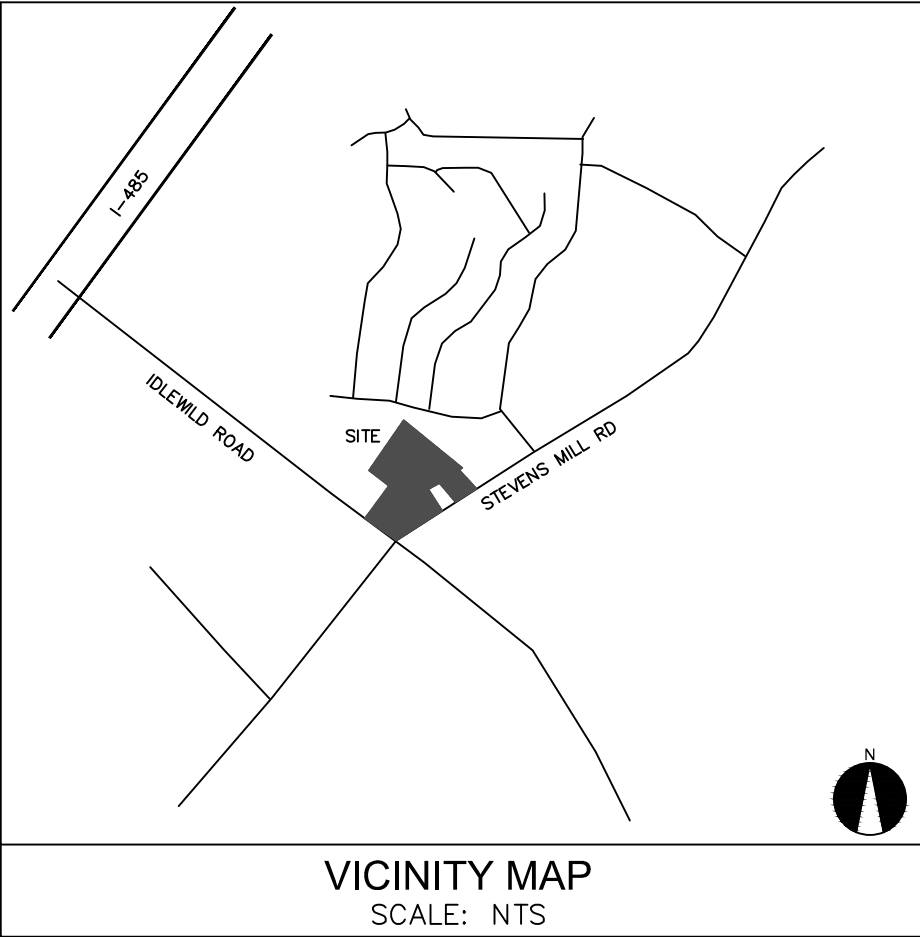
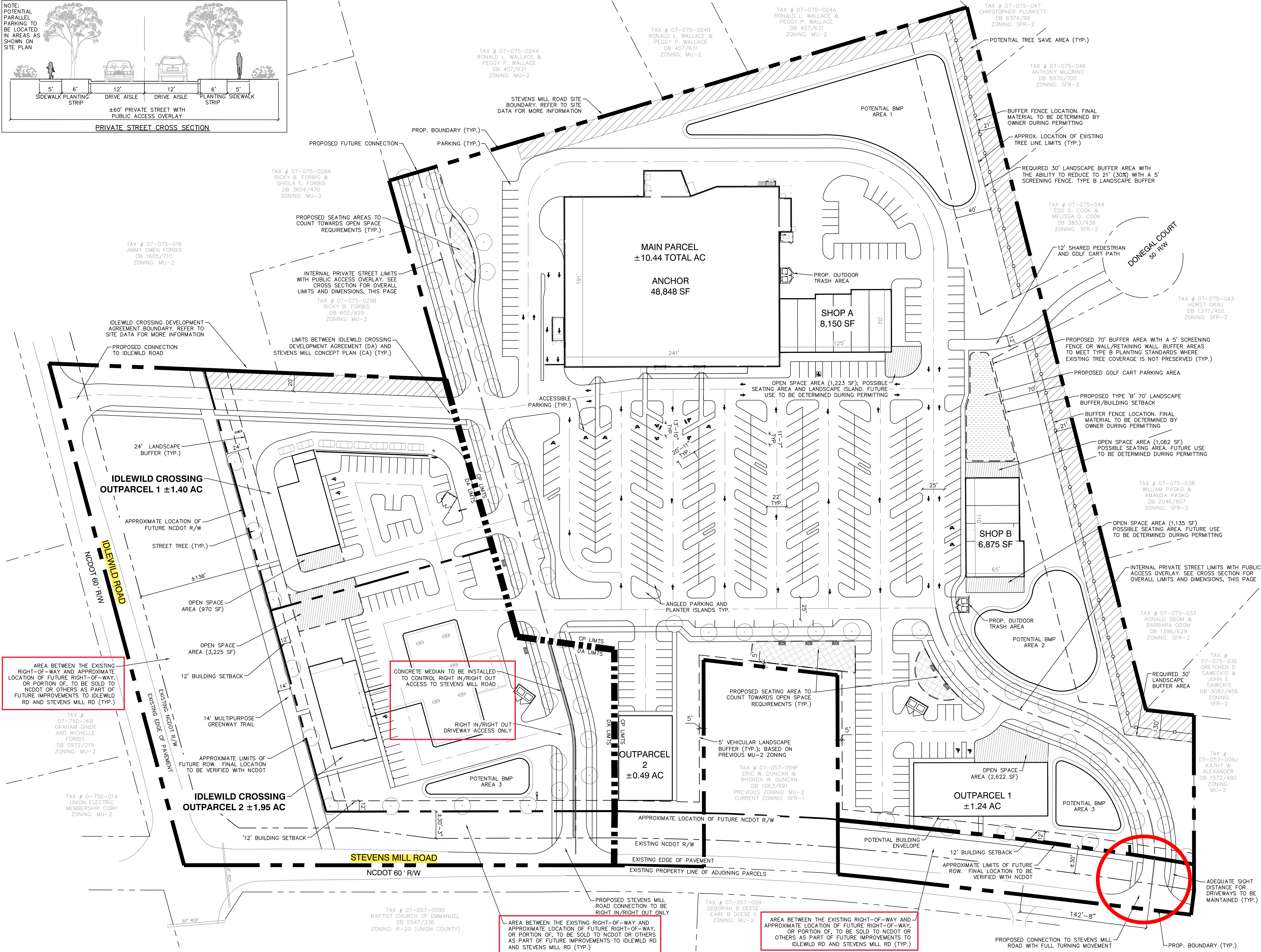
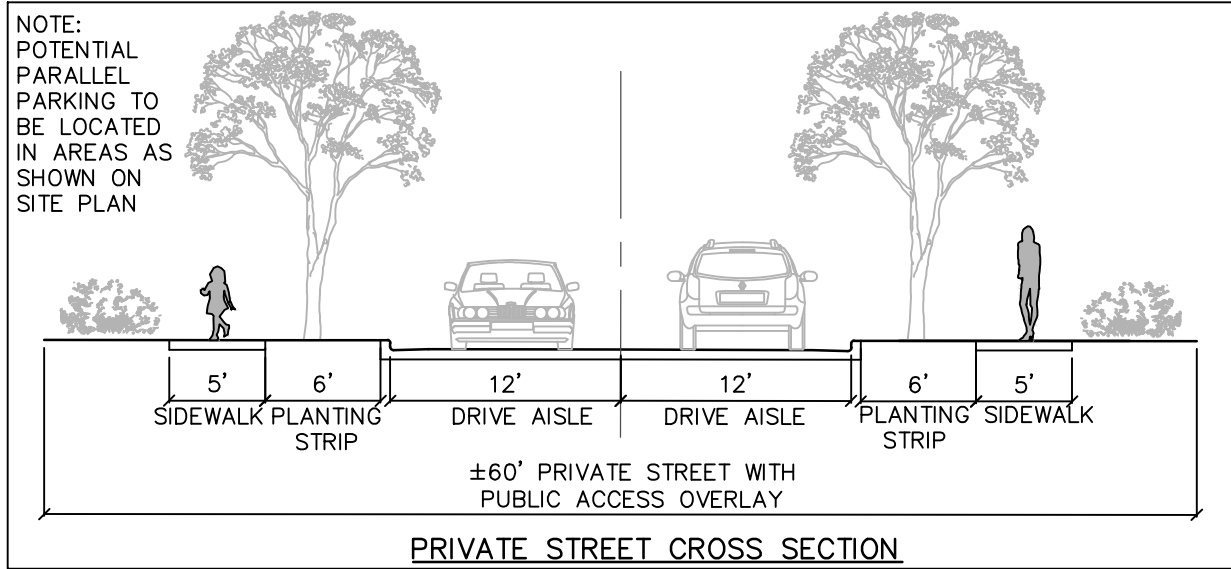


RKA
RAMEY KEMP ASSOCIATES

Stevens Mill Road
and Idlewild Crossing
Stallings, NC

Site Location Map

Scale: Not to Scale Figure 1



STEVENS MILL ROAD SITE DATA PER CONCEPT PLAN:

TAX MAP NO:	07075025, 07057009, 07057009E
ZONING:	MU-2
SITE AREA:	
EXISTING R/W TO FUTURE R/W:	±0.35 AC (15,084 SF)
MAIN PARCEL:	±10.44 AC (454,791 SF)
OUTPARCEL 1:	±1.24 AC (54,122 SF) EXCLUDING FUTURE R/W
OUTPARCEL 2:	±0.49 AC (21,339 SF) EXCLUDING FUTURE R/W
TOTAL:	±12.52 AC (545,336 SF)
EXISTING LAND USE:	
MAIN PARCEL:	VACANT (WOODEN LOT)
OUTPARCEL 1:	EXISTING RESIDENTIAL
OUTPARCEL 2:	EXISTING RESIDENTIAL
SETBACKS:	12' MIN. WHEN NO BUFFER APPLIES (BUILDING TYPE STANDARDS)
BUFFERS:	
REQUIRED ABUTTING MU-2 DISTRICT:	5' VEHICULAR LANDSCAPE BUFFER
REQUIRED ABUTTING SFR-1 DISTRICT:	30' CLASS 'B' LANDSCAPE BUFFER
REQUIRED ABUTTING SFR-2 DISTRICTS:	70' CLASS 'B' LANDSCAPE BUFFER
PARKING REQUIRED FOR MAIN PARCEL:	182 SPACES MINIMUM (1 PER 350 SF)
PARKING PROVIDED FOR MAIN PARCEL:	319 SPACES MAXIMUM (1 PER 200 SF)
PARKING PROVIDED FOR OUTPARCEL 1:	294 SPACES (4.67/1,000 SF RATIO)
PARKING PROVIDED FOR OUTPARCEL 2:	16 SPACES
REQUIRED BUILDING HEIGHT:	50' MAXIMUM
PROPOSED BUILDING HEIGHTS:	
ANCHOR:	±36'
SHOP A:	±36'
SHOP B:	±36'
TREE SAVE REQUIRED:	6.2% MINIMUM = ±0.80 AC
TREE SAVE PROVIDED:	±0.80 AC (35,028 SF) = 6.2%
NOTE:	FINAL TREE SAVE LIMITS AND LOCATIONS TO BE ESTABLISHED DURING PERMITTING BASED ON ENGINEERING DESIGN
OPEN SPACE REQUIRED:	7.5% MINIMUM = ±1.01 AC
OPEN SPACE PROVIDED:	
OPEN SPACE AREAS:	±0.22 AC (9,896 SF)
PEDESTRIAN PATH CONNECTION:	±0.16 AC (6,547 SF)
ENTRY WALKING PATH:	±0.32 AC (13,891 SF)
BMP 2:	±0.31 AC (13,694 SF)
TOTAL:	±1.01 AC (44,028 SF) = 7.5%
NOTE:	- OPEN SPACE AREAS SHALL NOT CONTAIN LESS THAN 500 SF. - BMPs MAY ONLY COUNT TOWARDS 32% OF THE REQUIRED OPEN SPACE
WATERSHEDS:	GOOSE CREEK BASIN AND CROOKED CREEK BASIN
PROPOSED BUA:	
MAIN PARCEL:	±57% (268,466 SF)
OUTPARCEL 1:	±35% (31,286 SF)
OUTPARCEL 2:	±59% (10,493 SF)
NOTE:	OUTPARCEL 1 & 2'S BUA PERCENTAGE CALCULATED BASED ON SITE AREA LEFTOVER FROM RIGHT-OF-WAY DEDICATION
ESTIMATED UTILITY SERVICES CALCULATIONS:	
SEWER SERVICE:	37,386 GAL/DAY TOTAL - SEE ESTIMATED SEWER USAGE TABLE THIS SHEET.
WATER METERS:	SEE DOMESTIC & IRRIGATION METERS TABLE ABOVE.
MAIN PARCEL:	7 WATER METERS
OUTPARCEL 1:	4 WATER METERS
OUTPARCEL 2:	2 WATER METERS
NOTE:	BACKFLOW PREVENTERS MUST BE LOCATED IN EITHER AN APPROVED UNDERGROUND VAULT AT THE FRONT OF THE DEVELOPMENT SITE OR PLACED ON THE SIDE OR REAR OF THE SITE AND ADEQUATELY SCREENED. FINAL LOCATION TO BE DETERMINED DURING PERMITTING.

IDLEWILD CROSSING SITE DATA PER DEVELOPMENT AGREEMENT PLAN:

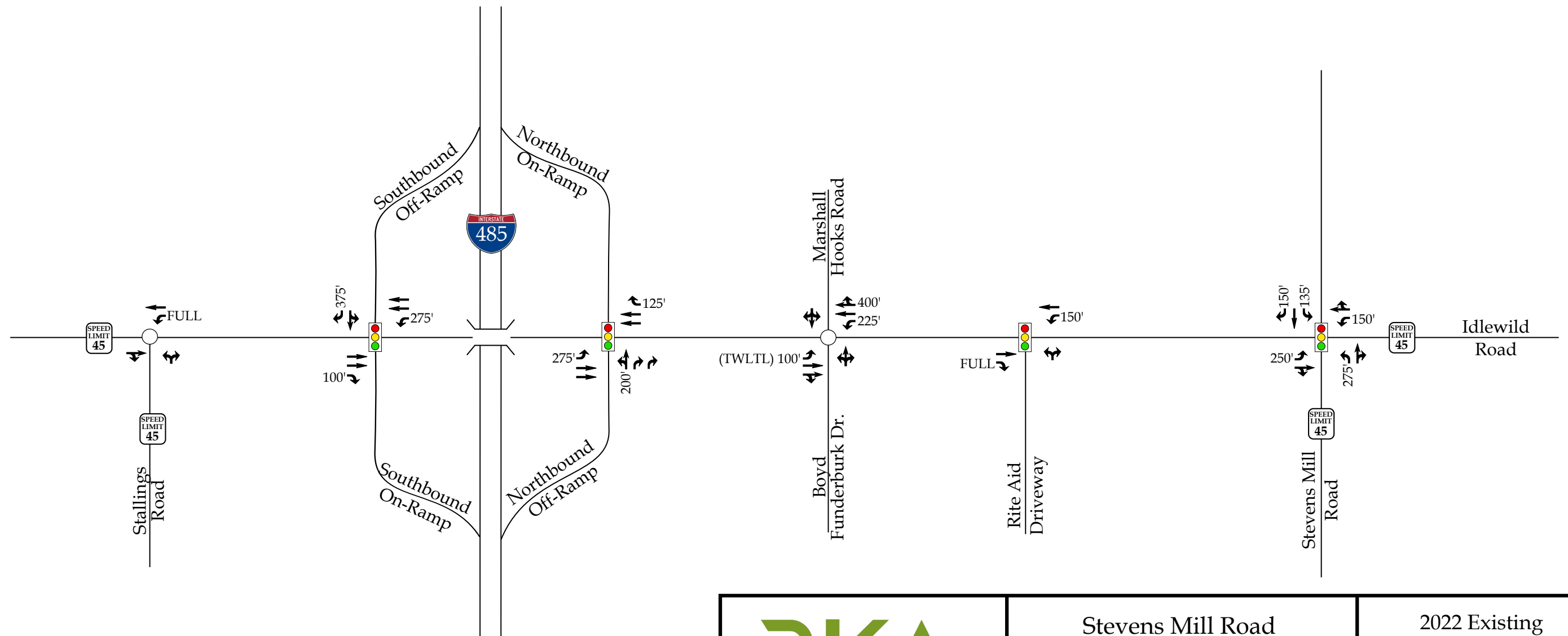
TAX MAP NO:	07057009A, 07075016A, & 07075016I
ZONING:	MU-2
SITE AREA:	
EXISTING R/W TO FUTURE R/W:	±1.85 AC (80,786 SF) DEED RD CENTERLINE TO FUTURE R/W
OUTPARCEL 1:	±1.40 AC (61,224 SF) EXCLUDING FUTURE R/W
OUTPARCEL 2:	±1.95 AC (84,789 SF) EXCLUDING FUTURE R/W
TOTAL:	±5.20 (226,794 SF)
EXISTING LAND USE:	
MAIN PARCEL:	VACANT (WOODEN LOT)
TREE SAVE REQUIRED:	3% OF LOT AREA
SETBACKS:	
FRONT:	12' MIN. WHEN NO BUFFER APPLIES (BUILDING TYPE STANDARDS)
PARKING:	PER ORDINANCE REQUIREMENTS
ROAD WIDENING NEEDED:	YES
ADEQUATE SITE DISTANCE FOR PROPOSED DRIVEWAY:	YES

NOTE: POTENTIAL LAND USES AND CONCEPT DESIGN SHOWN ON IDLEWILD CROSSING PARCELS ARE FOR REFERENCE ONLY. FINAL LAND USES AND PLANS TO BE DETERMINED BY OWNER IN ACCORDANCE WITH DEVELOPER AGREEMENT PLANS.



LEGEND

- Unsignalized Intersection
- 🚦 Signalized Intersection
- ➡ Existing Lane
- x' Storage (In Feet)
- TWLTL Two-Way Left-Turn Lane
-  Posted Speed Limit



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

2022 Existing
Lane Configurations

Scale: Not to Scale Figure 3

2. 2022 EXISTING PEAK HOUR CONDITIONS

2.1. 2022 Existing Peak Hour Traffic Volumes

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections, in January of 2022 during the typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods when schools were in session.

Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate. Refer to Figure 4 for 2022 existing weekday AM and PM peak hour traffic volumes. A copy of the count data is located in Appendix B of this report.

2.2. Analysis of 2022 Existing Peak Hour Traffic Conditions

The 2022 existing weekday AM and PM peak hour traffic volumes were analyzed to determine the current levels of service at the study intersections under existing roadway conditions. Signal plans for the existing conditions can be found in Appendix C. The results of the analysis are presented in Section 7 of this report.



LEGEND

○

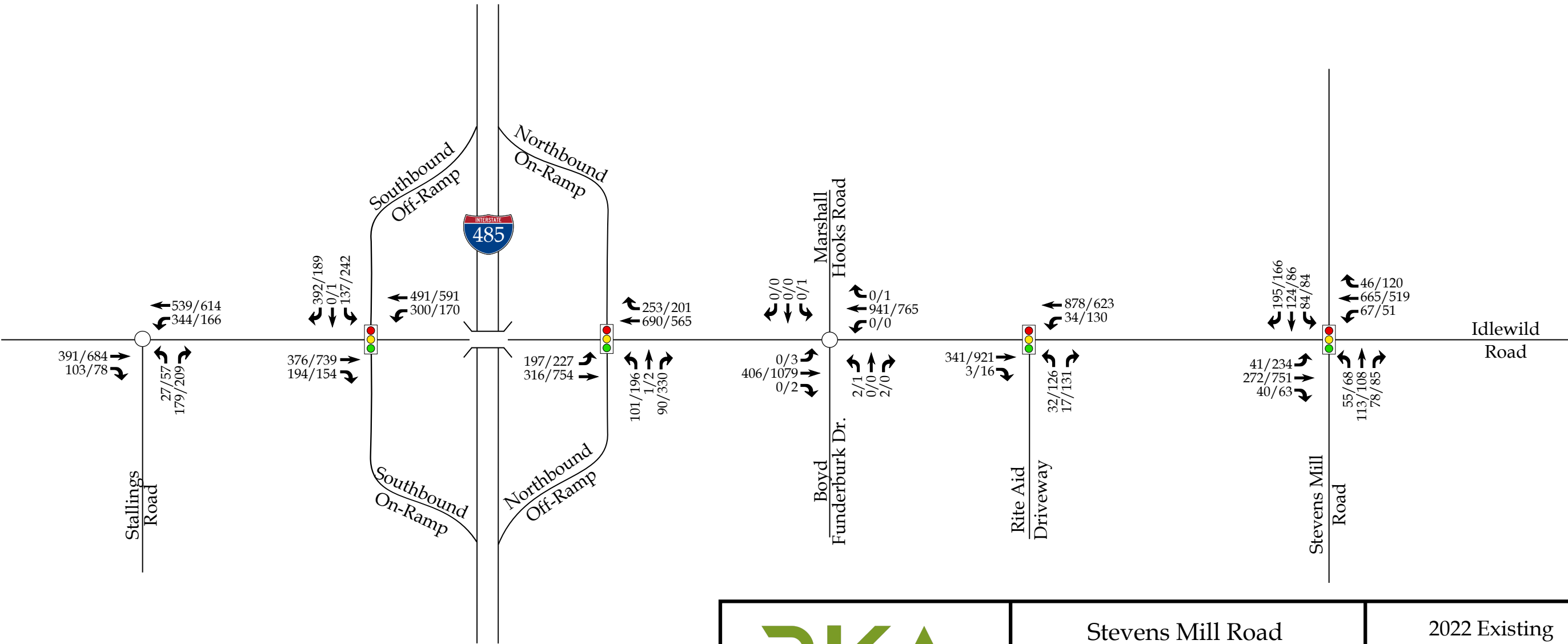
Unsignalized Intersection

Signalized Intersection

X / Y

→

Weekday AM / PM Peak Hour Traffic



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

2022 Existing
Peak Hour Traffic

Scale: Not to Scale

Figure 4

3. 2025 and 2030 NO-BUILD PEAK HOUR CONDITIONS

In order to account for growth of traffic and subsequent traffic conditions at a future year, no-build traffic projections are needed. No-build traffic is the component of traffic due to the growth of the community and surrounding area that is anticipated to occur regardless of whether or not the proposed development is constructed. No-build traffic is comprised of existing traffic growth within the study area and additional traffic created as a result of approved developments.

3.1. Ambient Traffic Growth

Through coordination with the NCDOT and the Town, it was determined that a compounded annual growth rate of 1% would be used to generate 2025 and 2030 projected weekday AM and PM peak hour traffic volumes. Refer to Figure 5a for 2025 projected peak hour traffic and Figure 5b for 2030 projected peak hour traffic.

3.2. Approved Development Traffic

Through coordination with the NCDOT and the Town, the following adjacent developments were identified to be included as an approved development in this study:

- Idlewild Mixed-Use
- Stallings Farms
- Stinson Farms
- Sante

Table 2 provides a summary of the adjacent developments. Full buildout trips from these developments were included in the 2025 No-Build and 2025 Build scenarios except for Sante. Phase 1 of Sante was included in the 2025 No-Build and 2025 Build scenarios. Phases 1 and 2 of Sante were included in the 2030 No-Build and 2030 Build scenarios. Total approved development trips for the year 2025 and 2030 are shown in Figure 6a and 6b. Roadway improvements from these developments were included in the 2025 and 2030 scenarios. Approved development information can be found in Appendix D.

Table 2: Adjacent Development Information

Development Name	Location	Build-Out Year	Land Use / Intensity	TIA Performed
Idlewild Mixed-Use	South of Idlewild Road, East of I-485	Assumed 2025	248 Townhomes 270 Apartments 120 Room Hotel 20,000 SF Medical Office 10,000 SF Shopping Center 6,000 SF Sit-Down Restaurant	April 2019 by RKA
Stallings Farms	Each side of Stallings Road, South of Stevens Mill Road	2027	222 Single-Family Homes	December 2020 by Kimley Horn Associates
Stinson Farms	North of Idlewild Road, East of I-485	2023	203 Townhomes 408 Apartments 4,000 SF Daycare 4,000 SF Drive-In Bank 5,000 SF Sit-Down Restaurant 3,500 SF Fast Food Restaurant 4,500 SF Fast Food Restaurant 3,500 SF Coffee/Donut Shop 4,993 SF Gas Station	February 2021 by RKA
Sante Phase 1	West of Stallings Road, South of Idlewild Road	2025	55 Single-Family Homes 170 Townhomes 30 Multifamily Low-Rise 100 Multifamily Mid-Rise 13,000 SF Fast Casual Restaurant 9,000 SF Sit-Down Restaurant 4,000 SF General Retail 3,000 SF Coffee/Donut Shop 30,000 SF General Office	October 2022 by Kimley Horn Associates
Sante Phase 2	East of Stallings Road, South of Idlewild Road	2026	300 Multifamily Mid-Rise 6,000 SF Fast Casual Restaurant 3,000 SF General Retail 65,000 SF Grocery 2,000 SF Gas Station 3,000 SF Drive-In Bank	October 2022 by Kimley Horn Associates

3.3. Future Roadway Improvements

Based on coordination with NCDOT and the Town, it was determined a roundabout will be constructed at the intersection of Idlewild Road and Stallings Road as part of U-4913A. Analysis of this roundabout was performed for the 2025 Build scenario.

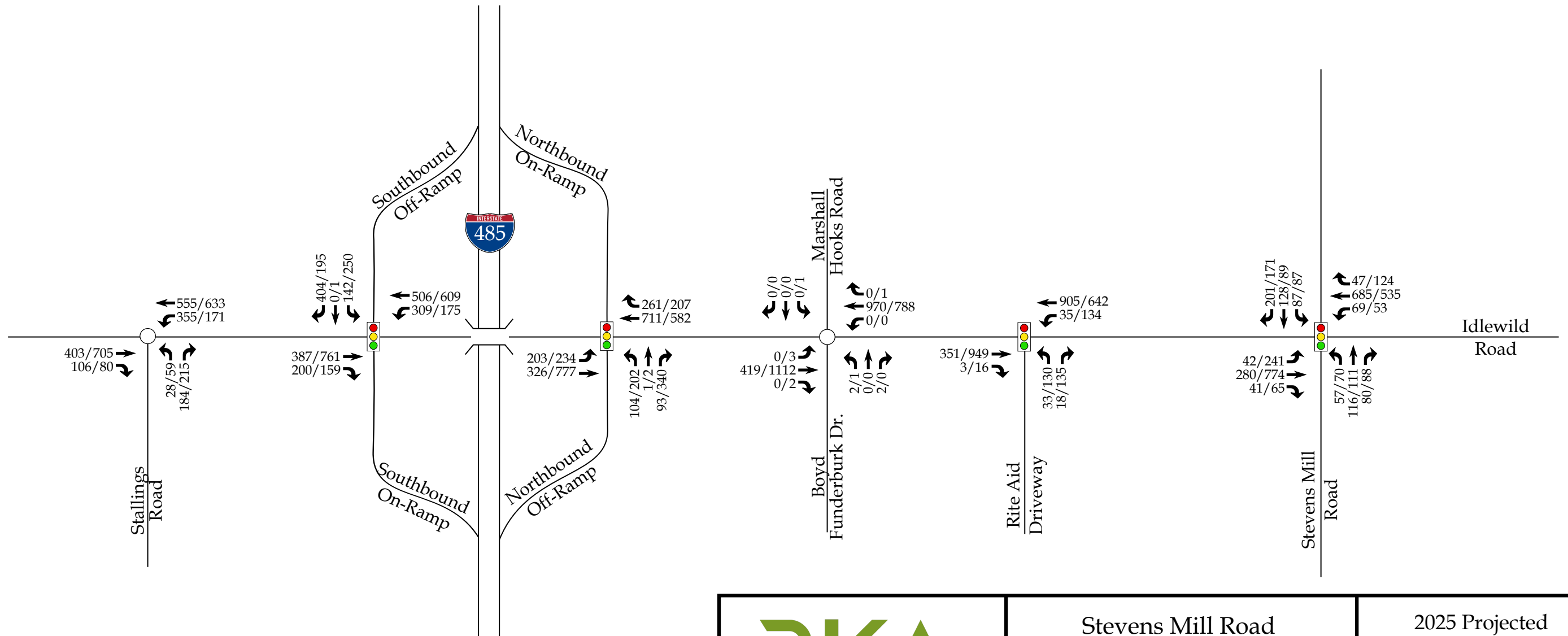


LEGEND

○ Unsignalized Intersection

🚦 Signalized Intersection

X / Y ➡ Weekday AM / PM Peak Hour Traffic



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

2025 Projected
Peak Hour Traffic

Scale: Not to Scale Figure 5a



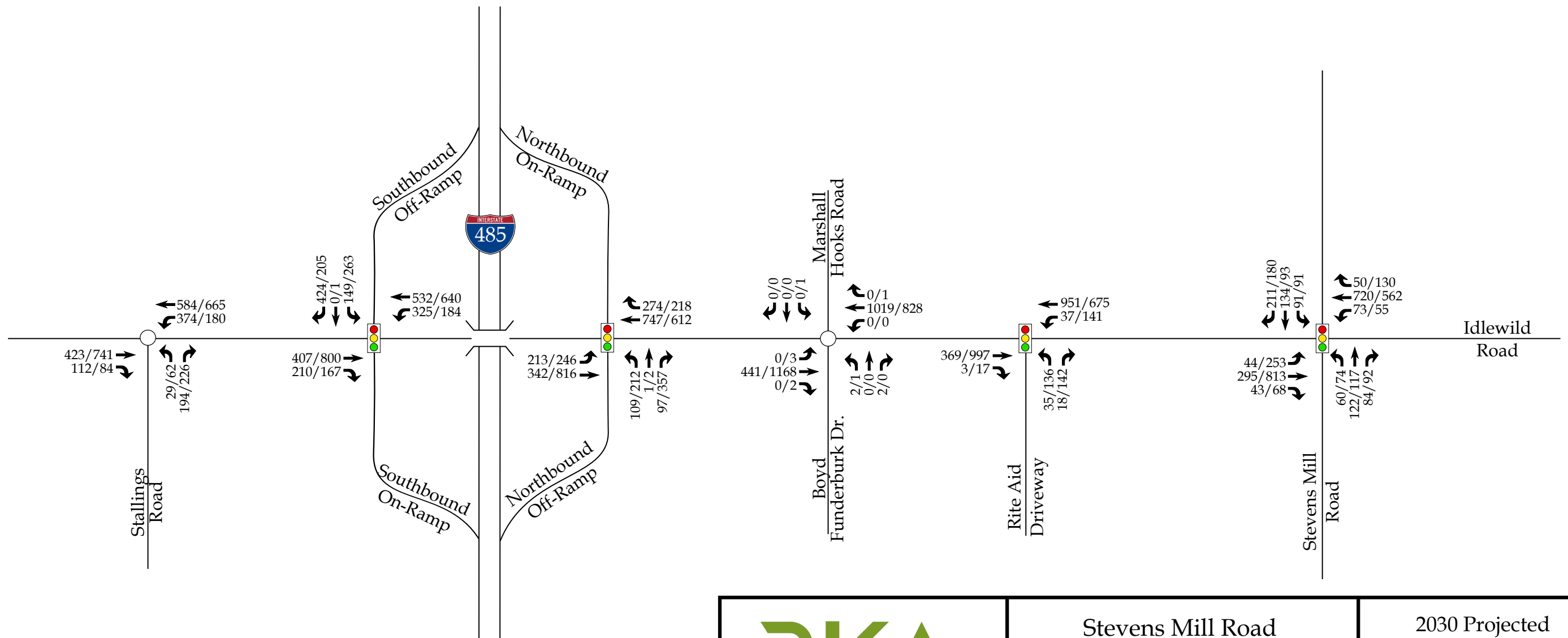
LEGEND

Unsignalized Intersection

Signalized Intersection

X / Y →

Weekday AM / PM Peak Hour Traffic



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

2030 Projected
Peak Hour Traffic

Scale: Not to Scale Figure 5b

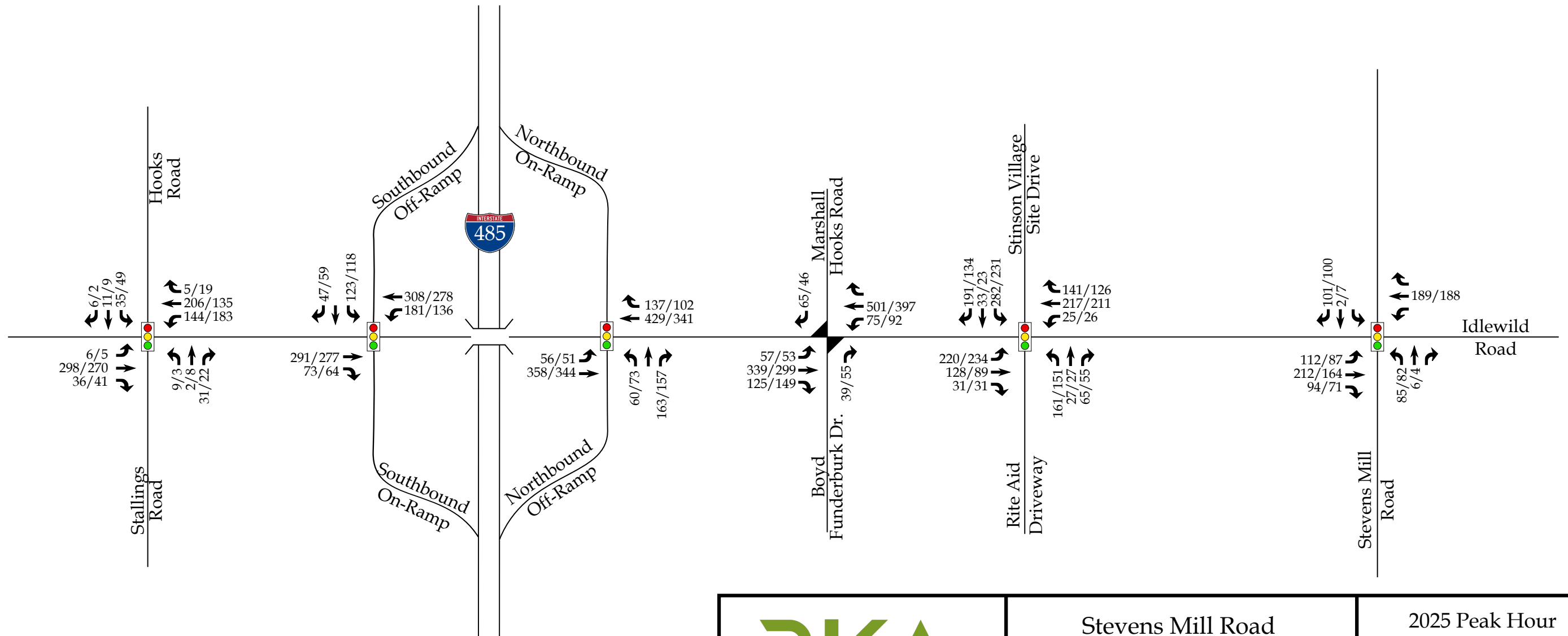


LEGEND

○ Unsignalized Intersection

◫ Signalized Intersection

X / Y → Weekday AM / PM Peak Hour
→ Adjacent Development Trips



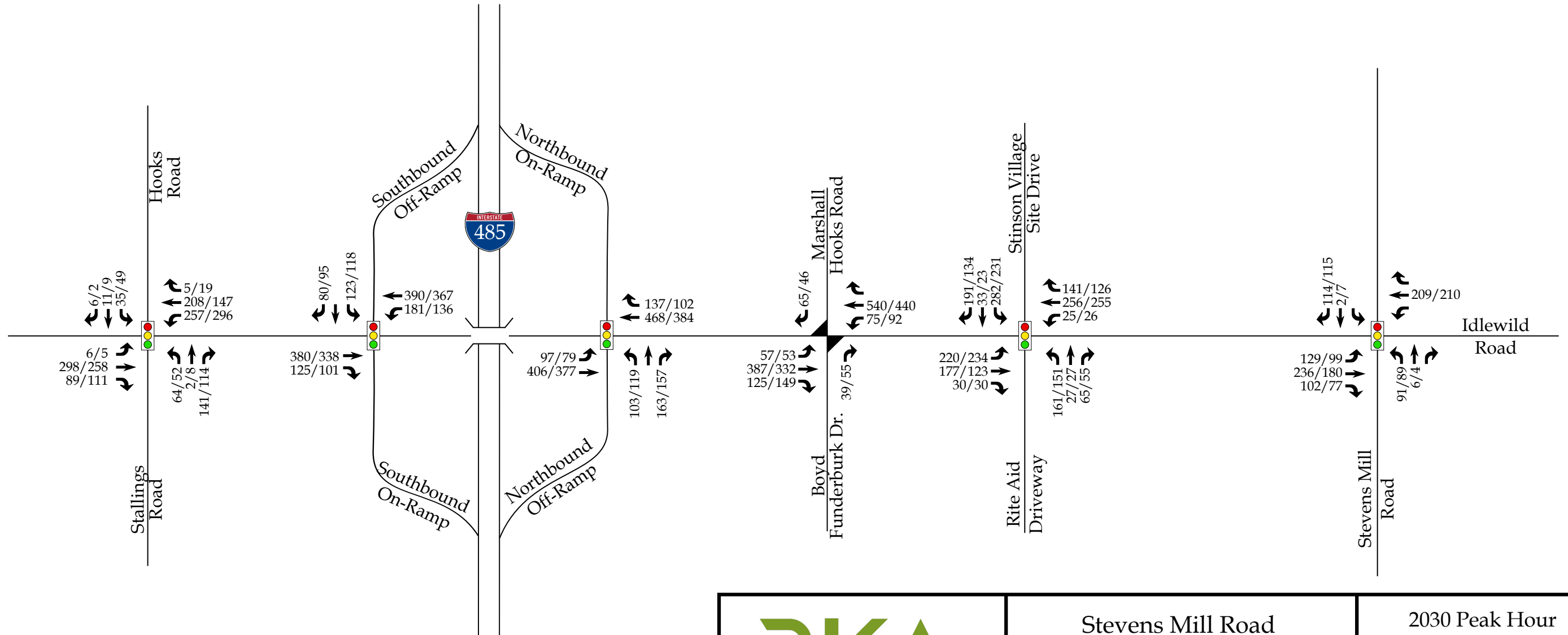


LEGEND

○ Unsignalized Intersection

◫ Signalized Intersection

X / Y → Weekday AM / PM Peak Hour
→ Adjacent Development Trips





LEGEND

○

Unsignalized Intersection

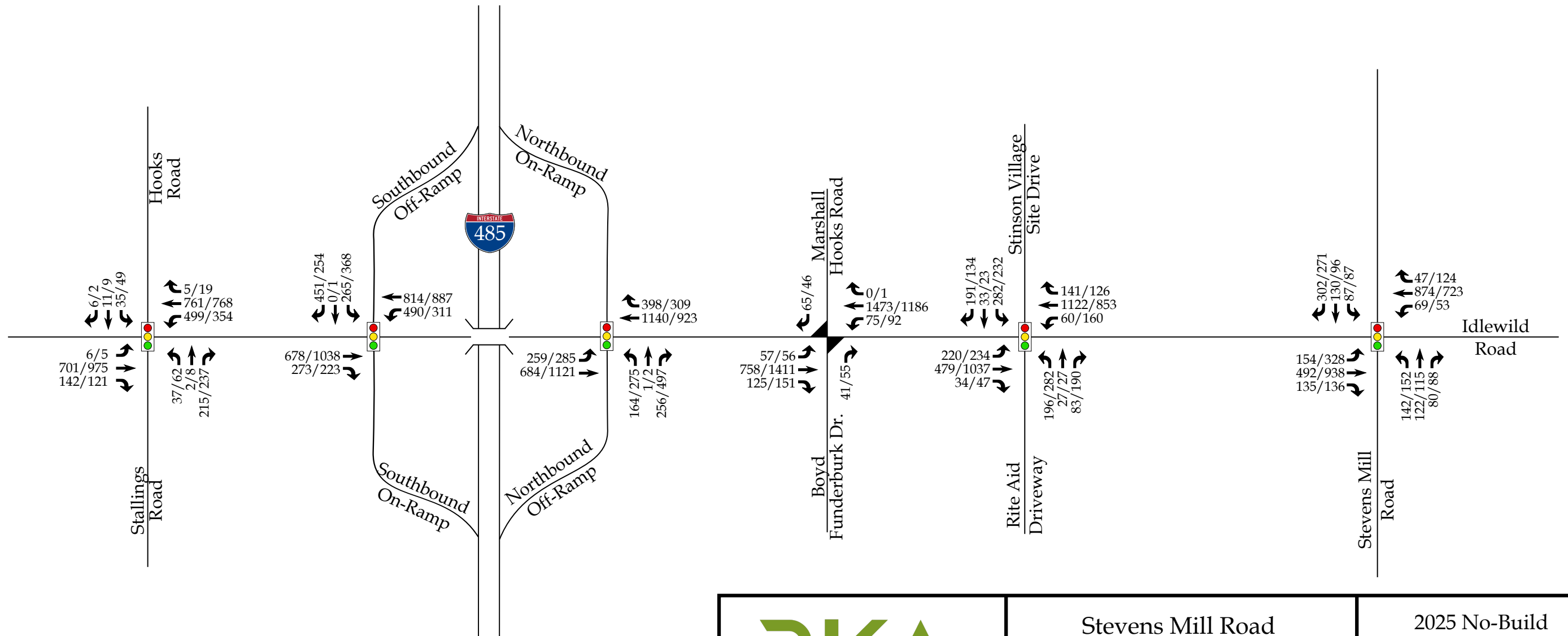
Signalized Intersection

▲

Left-Over Intersection

X / Y →

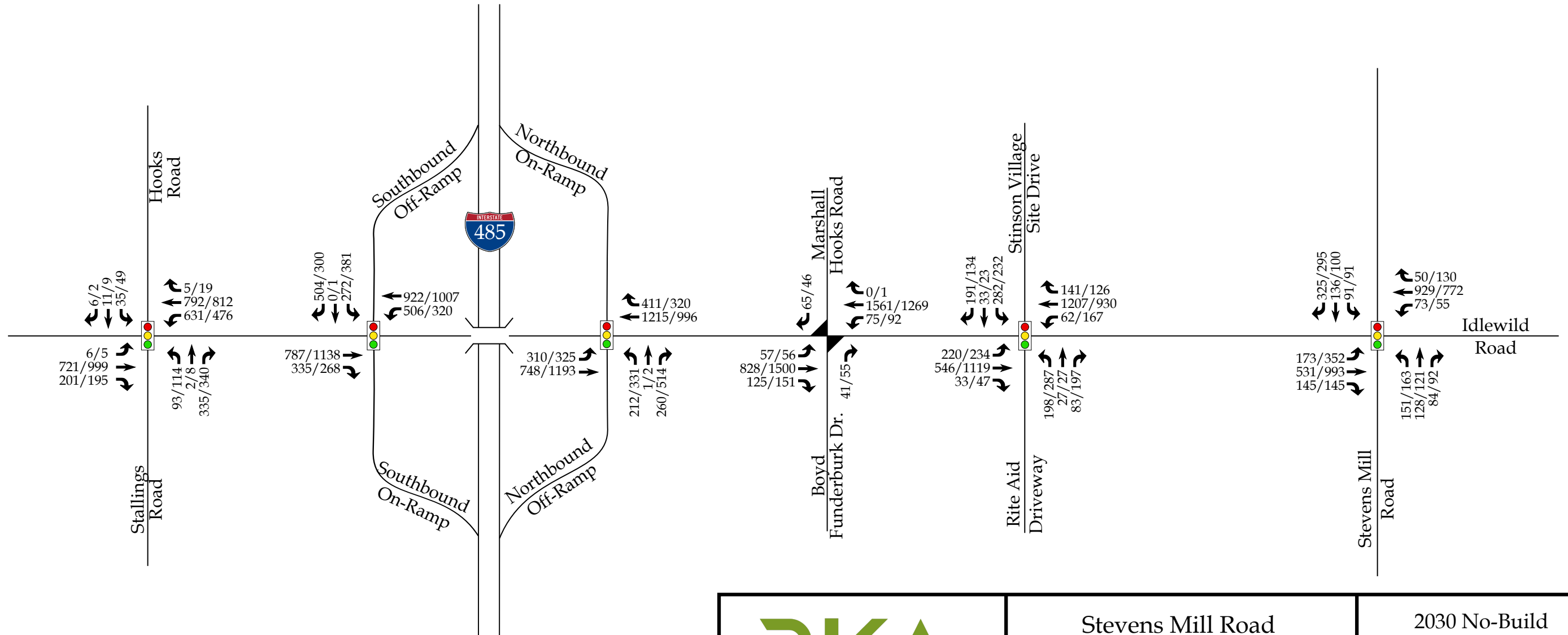
Weekday AM / PM Peak Hour Traffic





LEGEND

- Unsignalized Intersection
- ◫ Signalized Intersection
- ▲ Left-Over Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

2030 No-Build
Peak Hour Traffic

Scale: Not to Scale Figure 7b

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

The proposed development is assumed to consist of nearly 32,000 SF of retail, a 48,840 SF supermarket, a 4,500 SF fast-food restaurant with drive-through window and a 5,000 SF convenience store/gas station. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the *ITE Trip Generation Manual*, 11th Edition. Table 3 provides a summary of the trip generation potential for the site.

Table 3: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)			Weekday PM Peak Hour Trips (vph)		
			Enter	Exit	Total	Enter	Exit	Total
Strip Retail Plaza (822)	8,950 SF	608	16	11	27	36	36	72
Strip Retail Plaza (822)	6,000 SF	484	12	9	21	27	27	54
Strip Retail Plaza (822)	8,150 SF	574	15	10	25	33	34	67
Strip Retail Plaza (822)	8,875 SF	604	16	11	27	36	36	72
Supermarket (850)	48,840 SF	4,584	82	58	140	218	219	437
Fast-Food Restaurant with Drive-Through Window (934)	4,500 SF	2,104	102	99	201	77	72	149
Convenience Store/Gas Station (945)	5,000 SF	6,418	228	229	457	197	198	395
Total Trips		15,376	471	427	898	624	622	1,246
<i>Internal Capture (13% AM, 8% PM)*</i>			-59	-58	-117	-50	-50	-100
Total External Trips			412	369	781	574	572	1,146
<i>Pass-By Trips (Capped at 10% of projected 2025 adjacent street traffic)</i>			-84	-84	-168	-113	-113	-226
Total Primary Trips			328	285	613	461	459	920

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 15,376 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 898 trips (471 entering and 427 exiting) will occur during the weekday AM peak hour and 1,246 trips (624 entering and 622 exiting) will occur during the weekday PM peak hour.

Internal capture of trips between the retail land uses was considered in this study. Internal capture is the consideration for trips that will be made within the site between different land uses, so the vehicle technically never leaves the internal site but can still be considered as a trip to that specific land use. Based on NCHRP Report 684 methodology, weekday AM and PM peak hour internal capture rates of 13% and 8%, respectively, were applied to the trips. The internal capture reductions are expected to account for 117 trips (59 entering and 58 exiting) during the weekday AM peak hour and 100 trips (50 entering and 50 exiting) during the weekday PM peak hour.

Pass-by trips were also taken into consideration in this study. Pass-by trips are made by the traffic already using the adjacent roadway, entering the site as an intermediate stop on their way to another destination. Pass-by percentages are applied to site trips after adjustments for internal capture. Pass-by trips are expected to account for 168 trips (84 entering and 84 exiting) during the weekday AM peak hour and 226 trips (113 entering and 113 exiting) during the weekday PM peak hour. It should be noted that the pass-by trips were balanced, as it is likely that these trips would enter and exit in the same hour.

The total primary site trips are the calculated site trips after the reduction for internal capture and pass-by trips. Primary site trips are expected to generate 613 trips (328 entering and 285 exiting) during the weekday AM peak hour and 920 trips (461 entering and 459 exiting) during the weekday PM peak hour.

4.2. Site Trip Distribution and Assignment

Trip distribution percentages used in assigning site traffic for this development were estimated based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment. It is estimated that the site trips will be regionally distributed as follows:

- 15% to/from the west via Idlewild Road
- 5% to/from the south via Stallings Road
- 5% to/from the north via I-485
- 5% to/from the south via I-485
- 30% to/from the north via Stevens Mill Road
- 20% to/from the east via Idlewild Road
- 20% to/from the south via Stevens Mill Road

The primary site trip distribution is shown in Figure 8. Refer to Figure 9 for the primary site trip assignment.

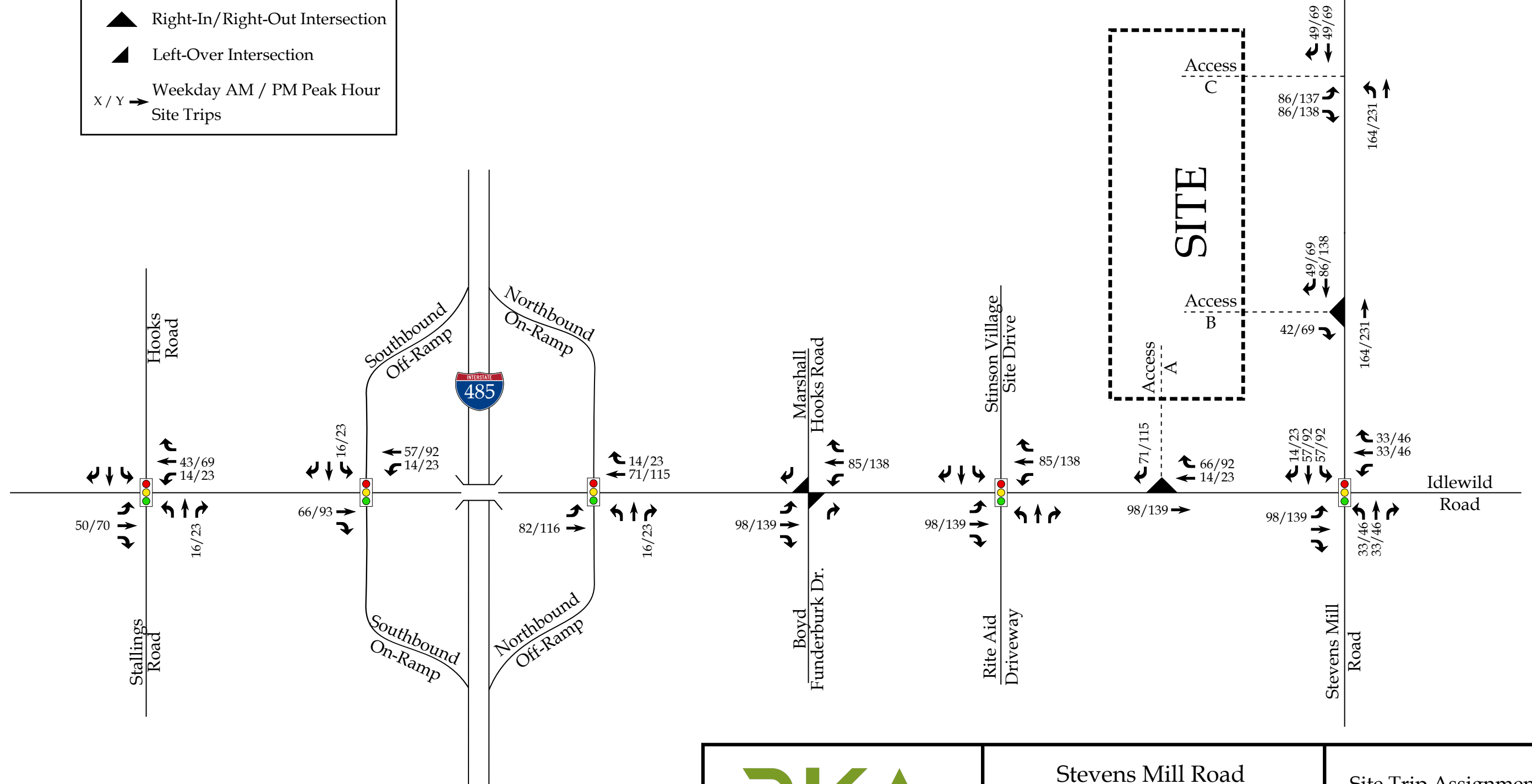
The pass-by site trips were distributed based on existing traffic patterns with consideration given to the proposed driveway access and site layout. Refer to Figure 10 for the pass-by site trip distribution. Pass-by site trips are shown in Figure 11.

The total site trips were determined by adding the primary site trips and the pass-by site trips. Refer to Figure 12 for the total peak hour site trips at the study intersections.



LEGEND

- Unsignalized Intersection
- ◫ Signalized Intersection
- ▲ Right-In/Right-Out Intersection
- ◼ Left-Over Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

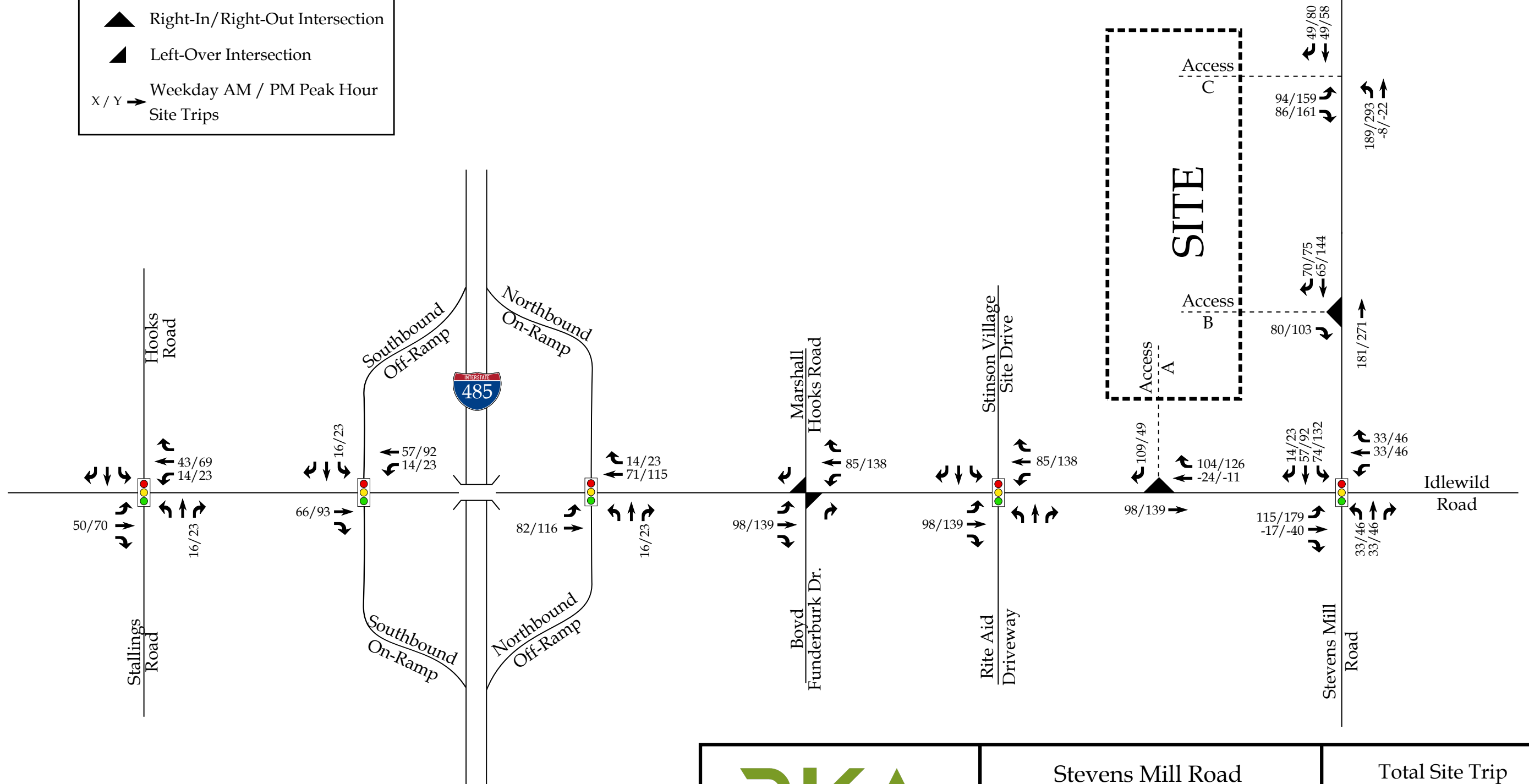
Site Trip Assignment

Scale: Not to Scale Figure 9



LEGEND

- Unsignalized Intersection
- ◫ Signalized Intersection
- ▲ Right-In/Right-Out Intersection
- ◼ Left-Over Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips



5. 2025 and 2030 BUILD TRAFFIC CONDITIONS**5.1. 2025 and 2030 Build Peak Hour Traffic Volumes**

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2025 and 2030 no-build traffic volumes to determine the 2025 and 2030 build traffic volumes. Refer to Figures 13a and 13b for the 2025 and 2030 build peak hour traffic volumes with the proposed site fully developed.

5.2. Analysis of 2025 and 2030 Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 2025 and 2030 build traffic volumes using the same methodology previously discussed for no-build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 7 of this report.



LEGEND

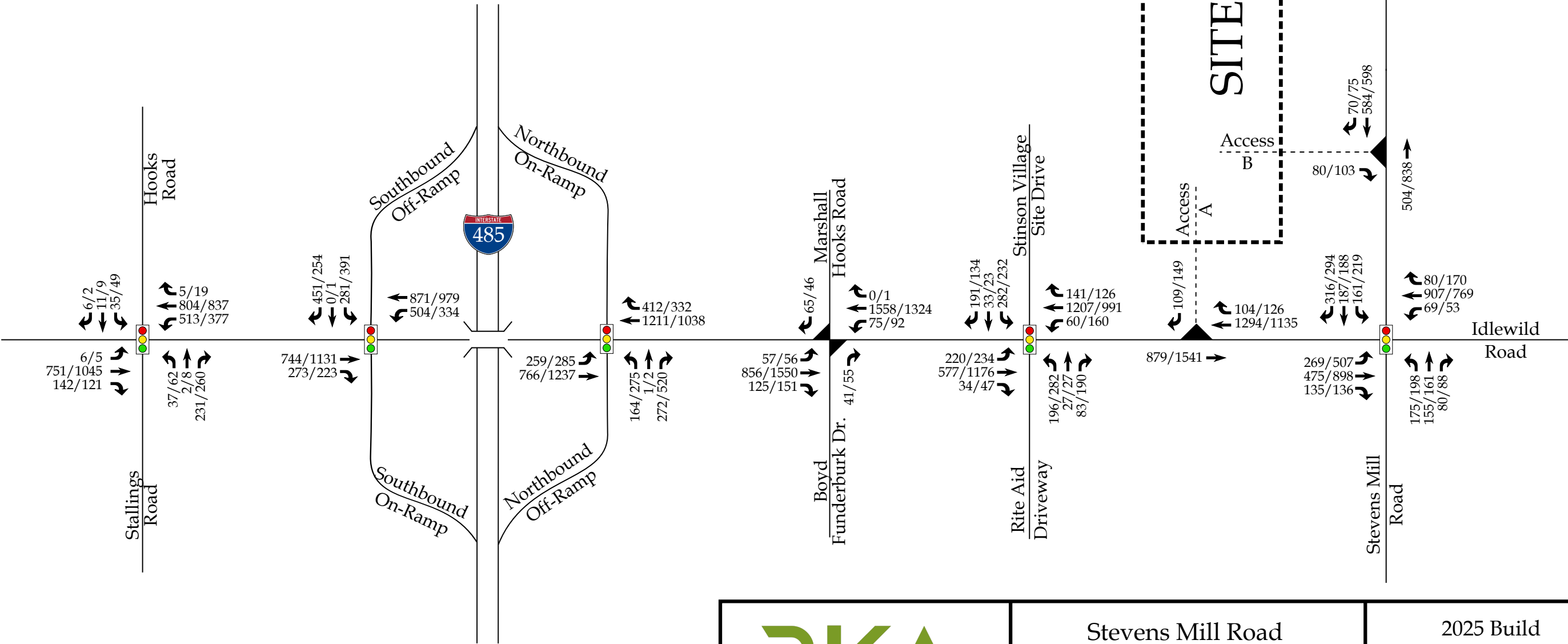
Unsignalized Intersection

Signalized Intersection

Left-Over Intersection

X / Y

Weekday AM / PM Peak Hour Traffic



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

2025 Build
Peak Hour Traffic

Scale: Not to Scale

Figure 13a



LEGEND

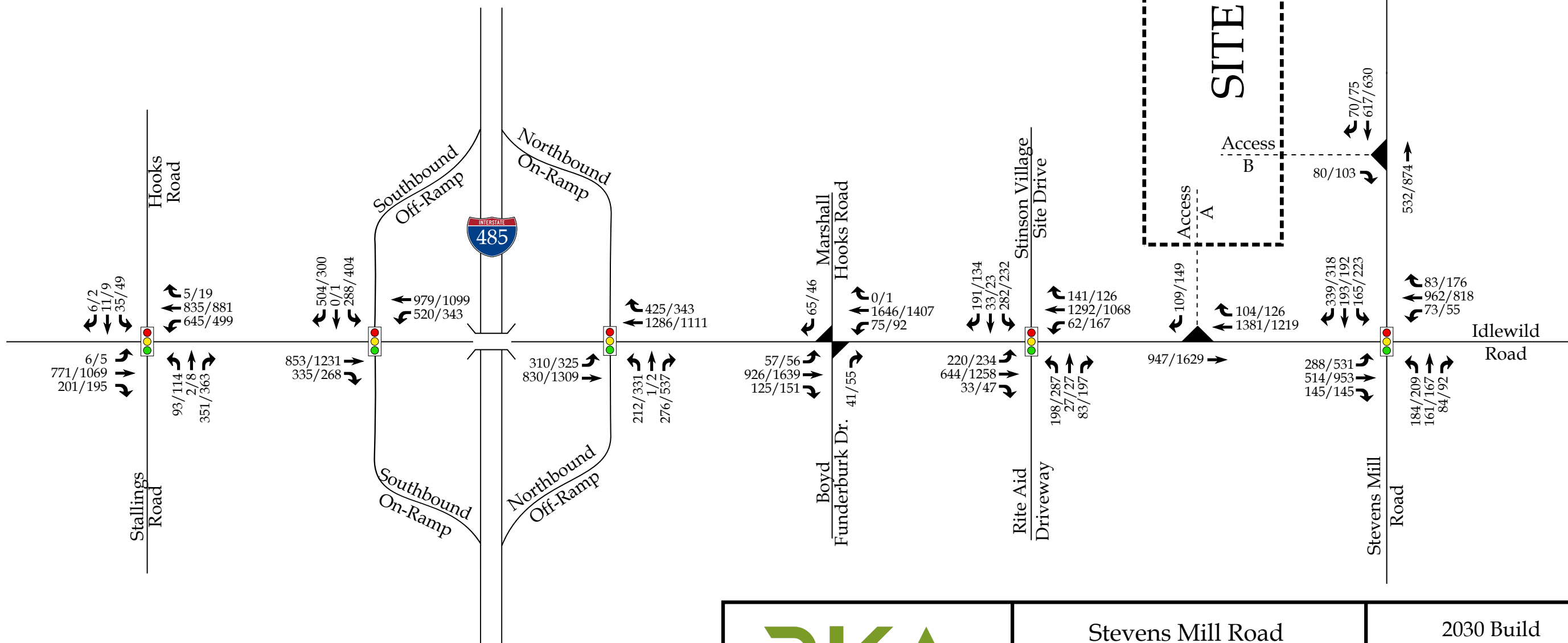
Unsignalized Intersection

Signalized Intersection

Left-Over Intersection

X / Y

Weekday AM / PM Peak Hour Traffic



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

2030 Build
Peak Hour Traffic

Scale: Not to Scale Figure 13b

6. TRAFFIC ANALYSIS PROCEDURE

Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual* (HCM), 6th Edition published by the Transportation Research Board. Capacity and level of service are the design criteria for this traffic study. A computer software package, Synchro (Version 11.1), was used to complete the analyses for the study area intersections except for one roundabout intersection where SIDRA was used to complete the analysis. Please note that the unsignalized capacity analysis does not provide an overall level of service for an intersection; only delay for an approach or movement with a conflicting movement.

The HCM defines capacity as “the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.” Level of service (LOS) is a term used to represent different driving conditions, and is defined as a “qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers.” Level of service varies from Level “A” representing free flow, to Level “F” where greater delays are evident. Refer to Table 4 for HCM levels of service and related average control delay per vehicle for both signalized and unsignalized intersections. Control delay as defined by the HCM includes “initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay”. An average control delay of 50 seconds at a signalized intersection results in LOS “D” operation at the intersection.

Table 4: Highway Capacity Manual – Levels-of-Service and Delay

UNSIGNALIZED INTERSECTION		SIGNALIZED INTERSECTION	
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
A	0-10	A	0-10
B	10-15	B	10-20
C	15-25	C	20-35
D	25-35	D	35-55
E	35-50	E	55-80
F	>50	F	>80

6.1. Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to Town UDO and NCDOT Congestions Management Guidelines.

7. CAPACITY ANALYSIS

7.1. Idlewild Road and Stallings Road

The existing unsignalized intersection of Idlewild Road and Stallings Road was analyzed under 2022 existing, 2025 no-build, and 2025/2030 build traffic conditions with the lane configurations and traffic control shown in Table 5. Additionally, a 2025 build improved condition analyzed the intersection as a roundabout. Refer to Table 5 for a summary of the analysis results. Refer to Appendix E for the Synchro and SIDRA capacity analysis reports and Appendix N for the SimTraffic queue reports.

Under 2025 no-build and 2025/2030 build traffic conditions, the intersection will be realigned to become a four-way intersection with Hooks Road as part of the Sante Phase 1 development. Under the realignment the intersection will be a signalized intersection. Minimal increases in delays and queues are expected to be caused by the proposed development in the 2025 Build scenario. No queue issues were identified. No improvements are recommended by the proposed development.

The 2025 Build scenario was also analyzed with the U-4913A roundabout design. The roundabout is expected to operate at LOS B with no queue issues.

The 2030 Build scenario analyzed the intersection as signalized in case the roundabout project is delayed. The intersection is expected to operate at LOS C during this scenario. The northbound right turn lane could be expected to spillback during the PM peak hour due to the increase in background traffic.

Table 5: Analysis Summary of Idlewild Road and Stallings Road

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2022 Existing	EBTR	--	--	-	--	N/A	N/A	--/31	-	--	N/A	N/A
	WBL ¹	--	45/154	B	11	N/A		23/120	B	11	N/A	
	WBT	--	--	-	--			--	-	--		
	NBLR ²	--	208/322	F	84	F		495/529	F	350	F	
2025 No-Build	EBL	275	12/31	B	16	B	C (22)	9/21	B	14	B	C (23)
	EBT	--	260/251	B	18	(18)		389/394	B	19	(18)	
	EBR	200	113/210	B	16			95/271	B	14		
	WBL	250	213/256	D	38	C		191/219	D	49	B	
	WBTR	--	580/113	B	11	(21)		75/186	A	7	(20)	
	NBLT	--	71/118	D	54	C		122/167	E	63	D	
	NBR	250	185/231	C	28	(32)		260/266	D	40	(45)	
	SBLTR	--	86/100	E	56	E (56)		109/139	E	63	E (63)	
2025 Build	EBL	275	12/31	B	16	B	C (22)	9/26	B	14	B	C (24)
	EBT	--	285/275	B	19	(19)		428/337	B	20	(19)	
	EBR	200	115/168	B	17			95/296	B	15		
	WBL	250	219/252	D	39	C		206/237	D	52	C	
	WBTR	--	599/97	B	11	(22)		737/246	A	7	(21)	
	NBLT	--	71/97	D	54	C		122/188	E	63	D	
	NBR	250	198/231	C	28	(32)		289/285	D	40	(45)	
	SBLTR	--	86/104	E	56	E (56)		109/118	E	63	E (63)	
2025 Build Improved with Roundabout	EBL	--	134/118	B	15	B	B (11)	228/150	C	17	C	B (13)
	EBT	--	134/118	B	15	(15)		228/150	C	17	(17)	
	EBR	--	134/64	B	15			228/88	C	17		
	WBL	--	105/212	A	9	A		94/176	A	8	A	
	WBT	--	105/212	A	9	(9)		94/176	A	8	(8)	
	WBR	--	105/122	A	9			94/151	A	8		
	NBL	--	7/46	A	7	B		15/76	B	11	C	
	NBT	--	7/46	A	7	(10)		15/76	B	11	(18)	
	NBR	--	46/99	B	11			81/146	C	20		
	SBL	--	12/89	B	12	B		13/98	B	11	B	
	SBT	--	12/89	B	12	(12)		13/98	B	11	(11)	
	SBR	--	12/89	B	12			13/98	B	11		
2030 Build	EBL	275	14/31	C	23	C	C (25)	10/21	B	17	C	C (32)
	EBT	--	345/315	C	28	(27)		454/378	C	27	(26)	
	EBR	200	188/288	C	25			156/300	B	20		
	WBL	250	267/267	D	41	C		254/260	E	63	C	
	WBTR	--	326/149	A	6	(22)		201/195	A	9	(28)	
	NBLT	--	136/178	D	53	C		167/288	E	57	D	
	NBR	250	267/272	C	23	(30)		334/307	C	30	(37)	
	SBLTR	--	81/119	D	47	D (47)		93/138	D	49	D (49)	

1. Level of service for major-street left-turn movement.

2. Level of service for minor-street approach.

7.2. Idlewild Road and I-485 Inner Ramps

The existing signalized intersection of Idlewild Road and I-485 Inner Ramps was analyzed under 2022 existing, 2025 no-build, and 2025/2030 build traffic conditions with the lane configurations and traffic control shown in Table 6. Refer to Table 6 for a summary of the analysis results. Refer to Appendix F for the Synchro capacity analysis reports. All SimTraffic queue reports can be found in Appendix N.

The eastbound right and westbound left turn movements are expected to spillback during the 2025 No-Build scenario. The westbound left turn lane cannot be extended without taking storage from the eastbound left turn lane approaching the I-485 Outer Ramps.

The proposed development is expected to degrade the eastbound and overall LOS from C to D during the PM peak hour of 2025. Delay is expected to increase less than 25%. Queues are expected to be similar to the 2025 No-Build conditions. No improvements are recommended by the proposed development.

The 2030 Build scenario resulted in overall LOS D for all scenarios with slightly longer delays than the 2025 Build scenario. Eastbound queues could be expected in excess of 500 feet due to the background traffic growth.

Table 6: Analysis Summary of Idlewild Road and I-485 Inner Ramps

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2022 Existing	EBT	--	146/168	C	30	C	C (30)	230/226	B	15.7	B	B (16)
	EBR	100	172/170	C	34	(32)		104/127	B	14	(16)	
	WBL	275	232/278	D	47	C		35/161	A	8	A	
	WBT	--	164/204	C	23	(32)		15/142	A	2	(4)	
2025 No-Build	SBLT	--	107/178	B	18	C	C (31)	214/289	D	40	D	C (32)
	SBR	375	343/386	C	26	(24)		169/244	D	37	(39)	
	EBT	--	211/366	C	31	C		393/453	C	33	C	
	EBR	100	198/200	C	32	(31)		193/200	C	27	(32)	
2025 Build	WBL	275	474/465	C	33	B	C (32)	444/435	D	55	B	D (35)
	WBT	--	1/378	A	3	(14)		0/370	A	4	(17)	
	SBLT	--	337/331	E	60	E		525/470	E	72	E	
	SBR	400	284/292	E	59	(60)		164/218	D	44	(61)	
2030 Build	EBT	--	262/310	C	33	C	C (35)	705/479	D	41	D	D (36)
	EBR	100	184/200	C	32	(33)		201/200	C	30	(39)	
	WBL	275	568/523	D	36	B		496/351	E	60	B	
	WBT	--	1/573	A	3	(15)		0/321	A	4	(18)	
2030 Build	SBLT	--	368/355	E	65	E	C (35)	576/538	E	76	E	D (36)
	SBR	400	284/299	E	59	(61)		164/271	D	43	(63)	
	EBT	--	467/421	D	38	D		683/533	D	40	D	
	EBR	100	344/200	D	38	(38)		174/200	C	23	(37)	
2030 Build	WBL	275	618/477	D	37	B	C (35)	404/448	E	67	C	D (36)
	WBT	--	45/480	A	3	(15)		196/610	A	6	(21)	
	SBLT	--	394/374	E	66	E		567/527	F	84	E	
	SBR	400	360/352	E	70	(69)		174/373	D	40	(65)	

7.3. Idlewild Road and I-485 Outer Ramps

The existing signalized intersection of Idlewild Road and I-485 Outer Ramps was analyzed under 2022 existing, 2025 no-build, and 2025/2030 build traffic conditions with the lane configurations and traffic control shown in Table 7. Refer to Table 7 for a summary of the analysis results. Refer to Appendix G for the Synchro capacity analysis reports. All SimTraffic queue reports can be found in Appendix N.

The eastbound left turn lane is expected to spillback during the AM peak hour of the 2025 No-Build scenario, but cannot be extended without taking storage from the westbound left turn lane approaching the I-485 Inner Ramps. The northbound right turn lane is expected to spillback during the PM peak hour.

The proposed development is expected to result in very similar levels of service, delays, and queues as the 2025 No-Build scenario. No improvements are recommended by the proposed development.

The 2030 Build scenario resulted in the same overall levels of service as the 2025 Build scenario. The overall delay increases during the PM peak hour were due to the background traffic growth. No additional queue issues were identified.

Table 7: Analysis Summary of Idlewild Road and I-485 Outer Ramps

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2022 Existing	EBL	275	21/172	A	7	A	B (11)	72/192	A	10	A	B (17)
	EBT	--	7/83	A	3	(4)		83/162	A	4	(5)	
	WBT	--	146/123	A	8	A		164/131	B	13	B	
	WBR	125	119/93	A	9	(8)		131/143	B	13	(13)	
	NBLT	200	113/135	D	50	D		184/205	D	47	D	
2025 No-Build	NBR	--	54/117	D	39	(45)	B (20)	155/224	D	45	(46)	C (33)
	EBL	275	175/360	D	40	B		356/415	D	51	C	
	EBT	--	--/202	A	1	(12)		587/382	B	19	(26)	
	WBT	--	296/300	B	14	B		417/264	C	22	C	
	WBR	300	179/253	B	13	(14)		240/272	C	21	(22)	
2025 Build	NBLT	--	215/250	E	66	E	C (20)	360/362	E	62	E	C (33)
	NBR	--	169/186	E	59	(62)		339/322	E	65	(64)	
	EBL	275	150/293	D	38	B		314/397	D	47	C	
	EBT	--	0/241	A	1	(11)		682/440	C	22	(27)	
	WBT	--	357/354	B	15	B		485/273	C	23	C	
2030 Build	WBR	300	173/320	B	14	(15)	C (22)	248/242	C	21	(23)	C (30)
	NBLT	--	215/229	E	64	E		360/318	E	60	E	
	NBR	--	179/223	E	60	(62)		358/433	E	66	(64)	
	EBL	275	227/372	D	42	B		239/417	D	40	B	
	EBT	--	0/268	A	1	(13)		494/363	B	12	(17)	
2030 Build	WBT	--	437/362	B	15	B	C (22)	433/322	C	24	C	C (30)
	WBR	300	201/257	B	13	(15)		206/251	B	19	(23)	
	NBLT	--	313/308	E	77	E		446/337	E	69	E	
2030 Build	NBR	--	182/230	E	57	(66)	C (22)	364/382	E	64	(66)	C (30)

7.4. Idlewild Road and Boyd Funderburk Drive/Marshall Hooks Road

The existing unsignalized intersection of Idlewild Road and Boyd Funderburk Drive/Marshall Hooks Road was analyzed under 2022 existing, 2025 no-build, and 2025/2030 build traffic conditions with the lane configurations and traffic control shown in Table 8. Refer to Table 8 for a summary of the analysis results. Refer to Appendix H for the synchro capacity analysis reports. All SimTraffic queue reports can be found in Appendix N. This intersection falls within the Idlewild Road corridor Small Area Plan. The Town's UDO requires LOS E to be maintained for vehicles.

This intersection is expected to be restricted to a left-over in future scenarios. The side street approaches and left turn movements on Idlewild Road are expected to operate at LOS C or better during all scenarios. No queue issues were identified. No improvements by the proposed development are recommended.

Table 8: Analysis Summary of Idlewild Road and Boyd Funderburk Drive/Marshall Hooks Road

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th /Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th /Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2022 Existing	EBL ¹	350	--/25	B	11	N/A	N/A	--/21	A	10	N/A	N/A
	EBTR	--	--	-	--	N/A		--/15	-	--	N/A	
	WBL ¹	100	--	A	8	N/A		--/21	B	11	N/A	
	WBTR	--	--/20	-	--	N/A		--	-	--	N/A	
	NBLTR ²	--	5/31	C	24	N/A		15/44	F	60	N/A	
	SBLTR ²	--	8/39	D	30	N/A		13/47	F	52	N/A	
2025 No-Build	EBL ¹	150	15/78	C	16	N/A	N/A	10/70	B	13	N/A	N/A
	EBT	--	--	-	--	N/A		--/4	-	--	N/A	
	EBR	100	--/17	-	--	N/A		--/24	-	--	N/A	
	WBL ¹	125	10/69	B	11	N/A		30/117	C	19	N/A	
	WBT	--	--	-	--	N/A		--/53	-	--	N/A	
	WBTR	--	--/4	-	--	N/A		--	-	--	N/A	
	NBR ²	--	8/67	B	12	N/A		18/77	C	18	N/A	
	SBR ²	--	23/79	C	20	N/A		10/79	C	15	N/A	
2025 Build	EBL ¹	150	15/86	C	17	N/A	N/A	13/100	B	14	N/A	N/A
	EBT	--	--	-	--	N/A		--/110	-	--	N/A	
	EBR	100	--/19	-	--	N/A		--/64	-	--	N/A	
	WBL ¹	125	10/75	B	12	N/A		35/107	C	22	N/A	
	WBT	--	--	-	--	N/A		--/89	-	--	N/A	
	WBTR	--	--	-	--	N/A		--/4	-	--	N/A	
	NBR ²	--	8/68	B	12	N/A		20/148	C	20	N/A	
	SBR ²	--	23/110	C	21	N/A		13/76	C	17	N/A	
2030 Build	EBL ¹	150	18/78	C	19	N/A	N/A	13/80	C	15	N/A	N/A
	EBT	--	--/--	--	--	N/A		--/--	--	--	N/A	
	EBR	100	--/16	--	--	N/A		--/41	--	--	N/A	
	WBL ¹	125	13/64	B	12	N/A		40/126	C	24	N/A	
	WBT	--	--/--	--	--	N/A		--/120	--	--	N/A	
	WBTR	--	--/--	--	--	N/A		--/--	--	--	N/A	
	NBR ²	--	8/47	B	13	N/A		20/73	C	22	N/A	
	SBR ²	--	25/103	C	23	N/A		13/66	C	18	N/A	

1. Level of service for major-street left-turn movement.

2. Level of service for minor-street approach.

7.5. Idlewild Road and Rite Aid Driveway

The existing signalized intersection of Idlewild Road and Rite Aid Driveway was analyzed under 2022 existing, 2025 no-build, and 2025/2030 build traffic conditions with the lane configurations and traffic control shown in Table 9. Refer to Table 9 for a summary of the analysis results. Refer to Appendix I for the synchro capacity analysis reports. All SimTraffic queue reports can be found in Appendix N. The Town's UDO requires LOS E to be maintained for vehicles.

The proposed development is expected to result in very similar levels of service, delays, and queues as the 2025 No-Build scenario. The southbound right turn lane could experience occasional spillback during the AM peak hour of the 2025 No-Build and Build scenarios. No improvements are recommended by the proposed development.

The 2030 Build scenario resulted in the same overall levels of service as the 2025 Build scenario. The overall delay increases during the PM peak hour were due to the background traffic growth. No additional queue issues were identified.

Table 9: Analysis Summary of Idlewild Road and Rite Aid Driveway

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2022 Existing	EBT	--	226/88	A	7	A	A (7)	829/860	D	49	D	D (37)
	EBR	--	5/5	A	7	(7)		17/440	B	13	(48)	
	WBL	150	9/52	A	2	A		76/202	C	30	B	
	WBT	--	297/146	A	6	(6)		103/314	A	9	(12)	
	NBLR	--	66/77	D	47	D (47)		327/343	E	66	E (66)	
2025 No-Build	EBL	325	123/160	E	63	C	C (32)	163/172	E	76	C	D (40)
	EBTR	--	120/105	A	8	(25)		484/330	B	19	(29)	
	WBL	300	82/169	E	66	C (22)		214/282	E	70	C (33)	
	WBT	--	331/350	C	22			435/338	C	29		
	WBR	400	51/86	A	7			92/118	B	12		
	NBL	--	243/264	D	49	D		398/398	E	57	E	
	NBTR	500	155/172	E	63	(54)		320/352	E	75	(65)	
	SBL	250	170/197	E	59	E (57)		176/218	E	76	E (69)	
SBT	--	63/85	E	57	55/64		E	65				
	SBR	250	227/296	D	54		189/204	E	58			
2025 Build	EBL	325	126/150	E	64	C	C (33)	162/253	E	75	C	D (40)
	EBTR	--	137/131	A	9	(23)		663/620	C	23	(31)	
	WBL	300	72/162	E	63	C (26)		201/222	E	78	C (32)	
	WBT	--	428/375	C	27			477/276	C	27		
	WBR	400	47/103	A	8			72/97	A	9		
	NBL	--	243/250	D	49	D		398/472	E	57	E	
	NBTR	500	155/208	E	63	(54)		320/375	E	75	(65)	
	SBL	250	170/200	E	59	E (57)		176/258	E	76	E (69)	
SBT	--	63/90	E	57	55/147		E	65				
	SBR	250	227/250	D	54		189/220	E	58			
2030 Build	EBL	325	132/172	E	70	C	C (34)	136/214	E	67	C	D (39)
	EBTR	--	124/103	A	8	(23)		622/348	C	25	(32)	
	WBL	300	82/108	F	82	C (27)		211/325	F	107	C (29)	
	WBT	--	605/316	C	27			473/394	B	19		
	WBR	400	34/94	A	4			22/175	A	5		
	NBL	--	274/259	D	53	E		408/348	E	56	E	
	NBTR	500	165/204	E	69	(58)		315/337	E	70	(62)	
	SBL	250	172/210	E	62	E (61)		182/310	F	88	E (73)	
SBT	--	63/148	E	58	49/64		E	56				
	SBR	250	232/301	E	61		165/206	D	51			

7.6. Idlewild Road and Stevens Mill Road

The existing signalized intersection of Idlewild Road and Stevens Mill Road was analyzed under 2022 existing, 2025 no-build, 2025 build, and 2025/2030 build improved traffic conditions with the lane configurations and traffic control shown in Table 10. Refer to Table 10 for a summary of the analysis results. Refer to Appendix J for the synchro capacity analysis reports. All SimTraffic queue reports can be found in Appendix N. The Town's UDO requires LOS E to be maintained for vehicles.

The proposed development is expected to impact delay on several approaches and the overall intersection during both peak hours. To improve the LOS at the intersection, improvements were analyzed that would add additional turn lanes to the intersection. Additional left turn lanes would be added to the northbound and southbound approaches of the intersection creating dual left turns. A through lane would be added to the eastbound approach and an exclusive right turn lane would be added to the westbound approach. Capacity analysis indicates that under 2025/2030 build improved traffic conditions the intersection operates at an overall LOS D or better during the weekday AM and PM peak hours. All intersection approaches operate at LOS D or better except for the northbound approach in all scenarios and southbound approach in the PM peak hour scenarios. However, even though there are LOS that are E or worse, the approaches operate better than during the No-Build scenario.

Stinson Village (Stinson Farms) is expected to construct improvements at this intersection. Two eastbound Idlewild Road lanes would approach Stevens Mill Road. The inner lane would drop as a left turn lane at Stevens Mill Road. The outer lane would be marked as a shared through/right lane at Stevens Mill Road.

It is recommended the developer construct the following improvements:

- The Idlewild Village development is recommended to alter the eastbound Idlewild Road approach to provide a left turn lane with 500 feet of storage, a through lane, and a shared through/right lane. In addition to this, Idlewild Village would construct a second eastbound departure lane that would drop east of Stevens Mill Road.
- Construct a westbound Idlewild Road right turn lane with 225 feet of storage.
- Construct a second northbound Stevens Mill Road left turn lane with 250 feet of storage. The existing left turn lane can be reduced to also provide 250 feet of storage.
- The northbound Stevens Mill Road right turn lane can be reduced to provide 300 feet of storage.
- Construct a second southbound Stevens Mill Road left turn lane with 300 feet of storage. Extend the existing left turn lane to provide 300 feet of storage.
- Extend the existing southbound Stevens Mill Road right turn lane to provide 300 feet of storage.
- Modify the traffic signal as necessary.

Table 10: Analysis Summary of Idlewild Road and Stevens Mill Road

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2022 Existing	EBL	250	34/136	B	14	D	D (43)	114/350	C	33	C	D (42)
	EBTR	--	389/268	D	40	(37)		913/1129	C	31	(31)	
	WBL	150	49/250	B	11	C		29/250	B	12	C	
	WBTR	--	825/832	D	36	(34)		607/828	C	30	(28)	
	NBL	275	81/375	D	44	E		131/374	E	60	E	
	NBTR	--	274/698	E	69	(63)		474/584	F	82	(76)	
2025 No-Build	SBL	135	114/176	E	55	D	D (40)	156/190	E	73	E	D (54)
	SBT	--	189/295	E	63	(54)		176/290	F	86	(74)	
	SBR	150	259/246	D	47			284/210	E	69		
	EBL	--	143/229	D	51	C		347/1632	D	54	D	
	EBTR	--	550/480	C	31	(35)		1428/1817	D	48	(49)	
	WBL	250	119/155	E	72	C		103/128	F	80.3	C	
2025 Build	WBTR	500	428/348	C	29	(32)	D (51)	440/358	C	31.0	(34)	F (112)
	NBL	500	204/232	E	72	E		316/458	F	141	F	
	NBT	--	166/203	D	55	(58)		215/478	F	87	(101)	
	NBR	500	100/129	D	36			135/253	D	52		
	SBL	250	129/184	E	66	D		197/273	F	117	E	
	SBT	--	191/273	E	64	(53)		216/522	F	123	(73)	
2025 Build Improved	SBR	275	320/315	D	45		D (51)	295/349	D	41		D (46)
	EBL	--	390/424	E	72	D		760/493	F	91	D	
	EBTR	--	534/464	C	32	(44)		1346/490	D	36	(54)	
	WBL	250	119/174	E	72	D		103/258	F	80	D	
	WBTR	500	473/351	D	36	(38)		506/419	D	39	(42)	
	NBL	500	273/298	F	84	E		431/600	F	238	F	
2025 Build	NBT	--	205/221	E	62	(66)	D (51)	333/1419	F	140	(166)	F (112)
	NBR	500	100/122	D	37			135/599	D	52		
	SBL	250	281/272	F	104	E		527/350	F	575	F	
	SBT	--	315/310	F	96	(71)		448/423	F	408	(304)	
	SBR	275	337/301	D	40			324/356	D	36		
	EBL	500	369/377	E	71	C	D (39)	756/460	E	65	C	D (46)
2025 Build Improved	EBTR	--	212/189	B	19	(35)		377/495	B	12	(30)	
	WBL	250	109/349	E	65	C		102/134	E	77	D	
	WBT	--	432/386	C	34	(35)		431/392	D	44	(42)	
	WBR	500	64/74	B	16			161/180	C	25		
	NBL	250	117/224	E	67	E		171/227	F	87	E	
	NBT	--	200/250	E	57	(57)		282/268	F	85	(78)	
2025 Build	NBR	300	96/176	C	34		D (39)	129/118	D	47		D (46)
	SBL	300	102/126	E	58	D		194/209	F	88	E	
	SBT	--	255/303	D	52	(41)		354/376	F	95	(65)	
	SBR	300	317/282	C	26			331/291	C	30		

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour					
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	
2030 Build Improved	EBL	500	366/370	E	59	C	D (39)	556/466	D	4411	C	D (43)	
	EBTR	--	235/218	B	15	(29)		374/518	B		(22)		
	WBL	250	113/132	E	64	D (36)		92/303	E		65		D (49)
	WBT	--	474/338	D	36			476/416	D		53		
	WBR	500	68/97	B	16			163/202	C		26		
	NBL	250	142/205	E	77	E (62)		169/252	F		92		E (76)
	NBT	--	211/227	E	60			261/259	E		77		
	NBR	300	99/149	C	34			116/146	D		39		
	SBL	300	120/200	E	65	D (43)		182/262	F		95		E (60)
	SBT	--	276/323	E	56			308/328	F		82		
SBR	300	339/312	C	25	311/262		C	22					

7.7. Idlewild Road and Access A

The proposed unsignalized intersection of Idlewild Road and Access A was analyzed under 2025/2030 build traffic conditions with the lane configurations and traffic control shown in Table 11. Refer to Table 11 for a summary of the analysis results. Refer to Appendix K for the synchro capacity analysis reports. All SimTraffic queue reports can be found in Appendix N.

Table 11: Analysis Summary of Idlewild Road and Access A

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2025 Build	EBT	--	--	-	--	N/A	N/A	--	-	--	N/A	N/A
	EBT	--	--	-	--	N/A		--	-	--	N/A	
	WBR	100	--	-	--	N/A		--	-	--	N/A	
	WBT	--	--	-	--	N/A		--	-	--	N/A	
	SBR¹	--	35/106	C	19	N/A		45/115	C	19	N/A	
2030 Build	EBT	--	--	-	--	N/A	N/A	--	-	--	N/A	N/A
	EBT	--	--	-	--	N/A		--	-	--	N/A	
	WBR	100	--	-	--	N/A		--	-	--	N/A	
	WBT	--	--	-	--	N/A		--	-	--	N/A	
	SBR¹	--	38/99	C	21	N/A		50/117	C	21	N/A	

Improvements to lane configurations by the developer are shown in bold.

1. Level of service for minor-street approach.

This intersection would be restricted to right-in/right-out access. Capacity analysis of 2025/2030 build traffic conditions indicates that the minor-street approach is expected to operate at LOS C during the weekday AM and PM peak hours. Access A is recommended to have 125 feet of internal protected stem. It is recommended the developer construct a westbound Idlewild Road right turn lane with 100 feet of storage.

7.8. Stevens Mill Road and Access B

The proposed unsignalized intersection of Stevens Mill Road and Access B was analyzed under 2025/2030 build traffic conditions with the lane configurations and traffic control shown in Table 12. Refer to Table 12 for a summary of the analysis results. Refer to Appendix L for the synchro capacity analysis reports. All SimTraffic queue reports can be found in Appendix N.

Table 12: Analysis Summary of Stevens Mill Road and Access B

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2025 Build	EBR ¹	--	18/116	B	14	N/A	N/A	25/1056	C	15	N/A	N/A
	SBR	100	--	-	--	N/A		--	-	--	N/A	
	SBT	--	--	-	--	N/A		--	-	--	N/A	
	NBT	--	--	-	--	N/A		--	-	--	N/A	
2030 Build	EBR ¹	--	18/78	C	15	N/A	N/A	25/90	C	16	N/A	N/A
	SBR	100	--	-	--	N/A		--	-	--	N/A	
	SBT	--	--	-	--	N/A		--	-	--	N/A	
	NBT	--	--	-	--	N/A		--	-	--	N/A	

Improvements to lane configurations by the developer are shown in bold.

1. Level of service for minor-street approach.

This intersection would be restricted to right-in/right-out access. Capacity analysis of 2025/2030 build traffic conditions indicates that the minor-street approach is expected to operate at LOS C or better during the weekday AM and PM peak hours. Access B is recommended to have 100 feet of internal protected stem. It is recommended the developer construct a southbound Stevens Mill Road right turn lane with 100 feet of storage.

7.9. Stevens Mill Road and Access C

The proposed intersection of Stevens Mill Road and Access C was analyzed under 2025 build and 2025/2030 build improved traffic conditions with the lane configurations and traffic control shown in Table 13. Refer to Table 13 for a summary of the analysis results. Refer to Appendix M for the synchro capacity analysis reports. All SimTraffic queue reports can be found in Appendix N.

Capacity analysis of 2025 build traffic conditions indicates that the minor-street approach is expected to operate at LOS F during the weekday AM and PM peak hours.

To reduce delays and improve LOS, a signalized intersection was considered. Weekday AM and PM peak hour traffic volumes were utilized in evaluating the potential need for signalization based on the guidelines contained within the *Manual on Uniform Traffic Control Devices* (MUTCD). Northbound and southbound hourly traffic volumes on Stevens Mill Road were recorded on May 18, 2023. Hourly volumes turning left from Access C were estimated using the trip distribution percentages and vehicle time of day distributions of each proposed land use.

Based on a review of signal warrants at this intersection, the 8-hour (warrant 1), 4-hour (warrant 2), and peak hour (warrant 3) thresholds are expected to be met. This indicates installation of a traffic signal is warranted at this intersection. See Appendix M for the signal warrant analysis.

Under 2025/2030 build improved traffic conditions the intersection was analyzed as a signalized intersection. Capacity analysis indicates that the intersection will operate at LOS C or better during both the AM and PM peak hours. All approaches will operate at LOS D or better during both the AM and PM peak hours.

The following improvements are recommended to be done by the developer:

- Construct Access C with one ingress lane and two egress lanes. The Access C approach would have one left turn lane, and one right turn lane with 100 feet of storage.
- Provide 250 feet of internal protected stem length on Access C.
- Construct a northbound Stevens Mill Road left turn lane with 350 feet of storage.
- Construct a southbound Stevens Mill Road right turn lane with 100 feet of storage.
- Install a traffic signal.

Table 13: Analysis Summary of Stevens Mill Road and Access C

ANALYSIS SCENARIO	LANE GROUP	Storage (ft)	Weekday AM Peak Hour					Weekday PM Peak Hour				
			Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)	Queue 95 th / Max (ft)	Lane LOS	Delay (sec)	Approach LOS (sec)	Overall LOS (sec)
2025 Build	EBLR²	--	240/236	F	142	N/A	N/A	893/982	F	1239	N/A	N/A
	SBR	100	--/40	-	--	N/A		--/	-	--	N/A	
	SBT	--	--/65	-	--	N/A		--/	-	--	N/A	
	NBL	350	23/130	B	10	N/A		40/222	B	11	N/A	
	NBT	--	--	-	--	N/A		--/	-	--	N/A	
2025 Build Improved	EBL	--	134/134	E	60	D	C (21)	234/234	E	72	D	C (28)
	EBR	100	89/126	C	28	(45)		146/253	C	27	(49)	
	NBL	350	167/228	C	32	B		223/359	D	48	C	
	NBT	--	208/200	A	8	(17)		227/354	A	6	(21)	
	SBT	--	448/367	B	19	B		542/398	C	28	C	
2030 Build	SBR	100	23/55	A	5	(18)	C (21)	50/200	A	8	(26)	C (25)
	EBL	--	136/140	E	62	D		208/222	E	63	D	
	EBR	100	90/138	C	29	(46)		131/154	C	23	(43)	
	NBL	350	176/228	C	33	B		224/303	D	45	B	
	NBT	--	241/138	A	7	(16)		176/104	A	5	(19)	
	SBT	--	479/343	B	19	B	C (21)	515/448	C	28	C	C (25)
	SBR	100	23/137	A	5	(18)		44/200	A	7	(25)	

Improvements to lane configurations by the developer are shown in bold.

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

8. CRASH ANALYSIS

Crash data was requested from the NCDOT for a three-year period of April 1, 2020 through April 1, 2023 at the study intersections to determine existing safety issues at the study intersections. A summary of the crash results is provided for the intersections in Table 14 and Table 15. Refer to Appendix O for the crash analysis reports.

Table 14: Crash Analysis Summary for Intersections

Intersection	Total Crashes				
	2020 ¹	2021	2022	2023 ²	Total
Idlewild Road and Stevens Mill	3	6	6	1	16
In Between Intersections	2	4	5	1	12
Idlewild Road and Rite Aid Driveway	3	4	4	1	12
Idlewild Road and Boyd Funderburk Drive / Marshall Hooks Road	1	7	12	2	22
I-485 Intersections	9	8	12	2	31
In Between Intersections	0	0	2	1	3
Idlewild Road and Stallings Road	2	4	4	1	11
Total	20	33	45	9	107

¹ – April 1, 2020 through December 31, 2020 (9 months of data)

² – January 1, 2023 through April 1, 2023 (3 months of data)

A decrease in the number of crashes in 2020 and 2021 is assumed to be due to the effects of the COVID-19 pandemic and the associated reduction in traffic on the roadways. Of the 107 crashes reported at the study intersections for the 3 years analyzed, none were fatal. The signalized intersections Idlewild Road and I-485 ramps experience a larger quantity of crashes than the other study intersections. Higher volumes at that intersection are expected to be the primary reason for the high crash rates. Idlewild Road and Boyd Funderburk Drive / Marshall Hooks Road also experiences a higher quantity of crashes. This intersection is unsignalized and is in close proximity to access for the Exxon gas station which could be a primary reason for the high crash rates.

Table 15: Crash Type Summary for Intersections

Intersection	Type of Crash							Total Crashes
	Angle	Left-turn	Right-turn	Sideswipe	Rear End	Run Off Road & Fixed Object	Other	
Idlewild Road and Stevens Mill	4	3	0	2	6	0	1	16
In Between Intersections	1	0	0	2	7	2	0	12
Idlewild Road and Rite Aid Driveway	3	0	0	1	7	1	0	12
Idlewild Road and Boyd Funderburk Drive / Marshall Hooks Road	4	4	1	1	12	0	0	22
I-485 Intersections	9	6	1	1	12	1	1	31
In Between Intersections	0	1	0	0	1	0	1	3
Idlewild Road and Stallings Road	7	2	0	0	2	0	0	11
Total Crashes	28	16	2	7	47	4	3	107
Percent of Total Crashes	26%	15%	2%	6%	44%	4%	3%	--

Table 15 outlines the type of crashes experienced at the study intersections. Approximately 70% of the crashes at the study intersections are the result of an angle or rear-end collisions. Angle and rear-end crashes are typical for intersections with heavy volumes, such as the intersections along Idlewild Road. The higher number of angle crashes at the intersection of Idlewild Road and Stallings Road can likely be attributed to the absence of a signal at that intersection at the time of collection. It should be noted that a signal installation or roundabout installation is planned at the intersection of Idlewild Road and Stallings Road which would be expected to assist in decreasing the number of crashes at the intersection.

9. PEDESTRIAN ANALYSIS

A pedestrian analysis was conducted on every intersection in the project area. The future intersection of Stevens Mill Road and Access C was included because it is proposed to be signalized in the future. Table 16 details the pedestrian analysis in the existing and future scenarios. Refer to Appendix P for the pedestrian level of service worksheets. The Town's UDO requires LOS C to be maintained for pedestrians.

All intersections have a pedestrian Level of Service of C or worse. None of the intersections in the study area have marked crosswalks or pedestrian signal phases. Additionally, there are very few sidewalks in the study area. The lack of pedestrian facilities contributes to the low LOS. The proposed development would only impact pedestrian levels of service at the intersection of Idlewild Road and Stevens Mill Road. This is due to the RCI configuration recommended to be done by the developer. It is important the RCI design take into consideration pedestrian features.

Table 16: Existing Pedestrian Level of Service

Intersection	A P P R O A C H	Existing		Future	
		Pedestrian Approach Level of Service	Pedestrian Intersection LOS	Pedestrian Approach Level of Service	Pedestrian Intersection LOS
Idlewild Road & Stallings Rd/Hooks Rd	EB WB NB SB	N/A N/A N/A N/A	Unsignalized No LOS	D D D B	D
Idlewild Road & I-485 Inner Ramp	EB WB NB SB	D D C A	C	D D C B	C
Idlewild Road & I-485 Outer Ramp	EB WB NB SB	C D E C	D	C D D C	D
Idlewild Road & Marshall Hooks Rd/Boyd Funderburk Drive	EB WB NB SB	N/A N/A N/A N/A	Unsignalized No LOS	N/A N/A N/A N/A	Unsignalized No LOS
Idlewild Road & Rite Aid Driveway	EB WB NB SB	D B D N/A	C	E E C F	E
Idlewild Road and Stevens Mill Road	EB WB NB SB	D D D E	D	D D D D	D
Stevens Mill Road & Access C	EB NB SB	N/A (Future Intersection)	N/A (Future Intersection)	C C C	C

10. BICYCLE ANALYSIS

A bicycle analysis was conducted on every intersection in the project area. The future intersection of Stevens Mill Road and Access C was included because it is proposed to be signalized in the future. The I-485 ramps are not considered in this analysis as it is not recommended that bicycles travel on the freeway. Table 17 details the bicycle levels of service in the existing and future scenarios. Refer to Appendix P for the bicycle level of service worksheets.

All intersections have a bicycle level of service of E or worse. The study area does not contain any bicycle facilities. The addition of bicycle facilities could help improve the bicycle level of service at these intersections. The proposed development would only impact pedestrian levels of service at the intersection of Idlewild Road and Stevens Mill Road. This is due to the RCI configuration recommended to be done by the developer. It is important the RCI design take into consideration cyclist features.

Table 17: Existing Bicycle Level of Service

Intersection	A P P R O A C H	Existing		Future	
		Pedestrian Approach Level of Service	Pedestrian Intersection LOS	Pedestrian Approach Level of Service	Pedestrian Intersection LOS
Idlewild Road & Stallings Rd/Hooks Rd	EB WB NB SB	N/A N/A N/A N/A	Unsignalized No LOS	F F F E	F
Idlewild Road & I-485 Inner Ramp	EB WB NB SB	F F N/A N/A	F	F F N/A N/A	F
Idlewild Road & I-485 Outer Ramp	EB WB NB SB	F F N/A N/A	F	F F N/A N/A	F
Idlewild Road & Marshall Hooks Rd/Boyd Funderburk Drive	EB WB NB SB	N/A N/A N/A N/A	Unsignalized No LOS	N/A N/A N/A N/A	Unsignalized No LOS
Idlewild Road & Rite Aid Driveway	EB WB NB SB	F E E N/A	E	F F D E	E
Idlewild Road and Stevens Mill Road	EB WB NB SB	F F F F	F	F F F F	F
Stevens Mill Road & Access C	EB NB SB	N/A (Future Intersection)	N/A (Future Intersection)	D E F	E

11. CONCLUSIONS

The proposed development, anticipated to be completed in 2025, will be located in the northwest quadrant of the intersection of Idlewild Road and Stevens Mill Road. The purpose of this study is to determine the potential impacts to the surrounding transportation network created by traffic generated by the proposed development. Based on the impacts, improvements will be identified to help mitigate/reduce the impacts to traffic.

The Idlewild Village development is expected to consist of nearly 32,000 SF of retail, a 48,480 SF supermarket, a 4,500 SF fast-food restaurant with drive-through window and 5,000 SF of convenience store/gas station.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing
- 2025 No-Build
- 2025 Build
- 2025 Build with U-4913A
- 2030 Build (Build + 5)

It is estimated that the proposed development will generate approximately 15,376 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 898 trips (471 entering and 427 exiting) will occur during the weekday AM peak hour and 1,246 trips (624 entering and 622 exiting) will occur during the weekday PM peak hour.

12. RECOMMENDATIONS

Based on the findings of this study, specific geometric improvements have been identified and are recommended to accommodate future traffic conditions. See a more detailed description of the recommended improvements below. Refer to Figure 14 for an illustration of the recommended lane configurations for the proposed development.

Recommended Improvements by Developer

Idlewild Road and Stevens Mill Road

- Improvements to the eastbound Idlewild Road approach are expected to be made by the Stinson Village (Stinson Farms) development. Two eastbound Idlewild Road lanes would approach Stevens Mill Road. The inner lane would drop as a left turn lane at Stevens Mill Road. The outer lane would be marked as a shared through/right lane at Stevens Mill Road.
- The Idlewild Village development is recommended to alter the eastbound Idlewild Road approach to provide a left turn lane with 500 feet of storage, a through lane, and a shared through/right lane. In addition to this, Idlewild Village would construct a second eastbound departure lane that would drop east of Stevens Mill Road.
- Construct a westbound Idlewild Road right turn lane with 225 feet of storage.
- Construct a second northbound Stevens Mill Road left turn lane with 250 feet of storage. The existing left turn lane can be reduced to also provide 250 feet of storage.

- The northbound Stevens Mill Road right turn lane can be reduced to provide 300 feet of storage.
- Construct a second southbound Steves Mill Road left turn lane with 300 feet of storage. Extend the existing left turn lane to provide 300 feet of storage.
- Extend the existing southbound Stevens Mill Road right turn lane to provide 300 feet of storage.
- Modify the traffic signal as necessary.

Idlewild Road and Access A

- Construct Access A as a right-in-right-out intersection.
- Provide 125 feet of internal protected stem length on Access A.
- Construct a westbound Idlewild Road right turn lane with 100 feet of storage.

Stevens Mill Road and Access B

- Construct Access B as a right-in-right-out intersection.
- Provide 100 feet of internal protected stem length on Access B.
- Construct a southbound Stevens Mill Road right turn lane with 100 feet of storage.

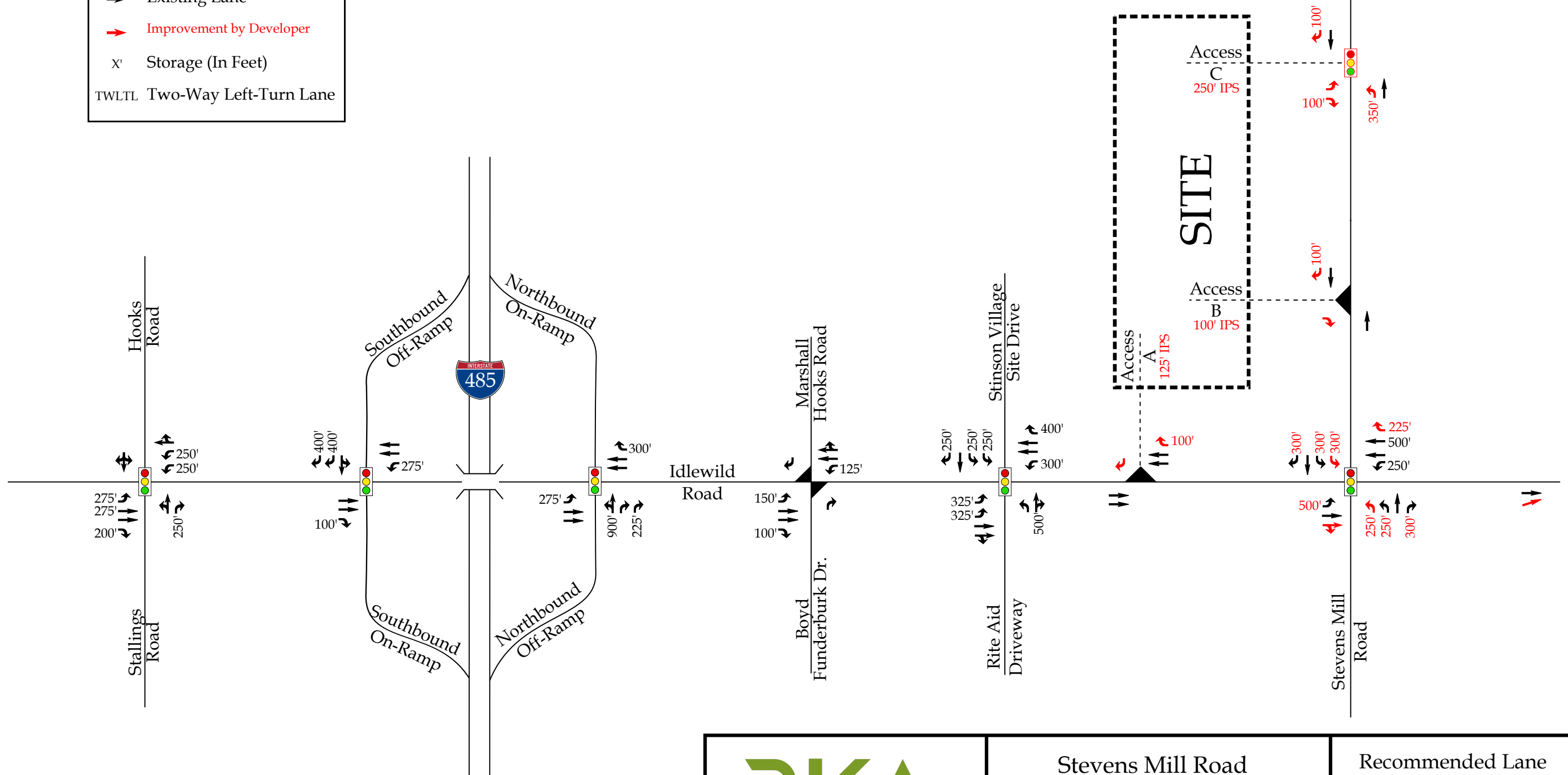
Stevens Mill Road and Access C

- Construct Access C with one ingress lane and two egress lanes. The Access C approach would have one left turn lane, and one right turn lane with 100 feet of storage.
- Provide 250 feet of internal protected stem length on Access C.
- Construct a northbound Stevens Mill Road left turn lane with 350 feet of storage.
- Construct a southbound Stevens Mill Road right turn lane with 100 feet of storage.
- Install a traffic signal.



LEGEND

- Unsignalized Intersection
- ◫ Signalized Intersection
- ➡ Existing Lane
- ➡ Improvement by Developer
- x' Storage (In Feet)
- TWLTL Two-Way Left-Turn Lane



Stevens Mill Road
and Idlewild Crossing
Stallings, NC

Recommended Lane
Configurations

Scale: Not to Scale Figure 14