Deal Lake

Traffic Impact Analysis

Weddington, North Carolina

Prepared for:

Toll Brothers, Inc.

April 2024

Kimley»Horn

Traffic Impact Analysis for
Deal Lake
Weddington, North Carolina

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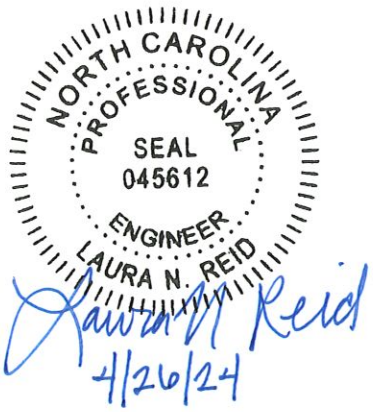

April 2024
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1.0 Executive Summary

The purpose of this Traffic Impact Analysis (TIA) is to evaluate the vehicular traffic impacts on the surrounding transportation infrastructure as a result of the proposed Deal Lake development. The primary objectives of the study are:

- To estimate trip generation and distribution for the proposed development.
- To perform intersection capacity analyses for the identified study area.
- To determine the potential traffic impacts of the proposed development.
- To identify improvements to mitigate the proposed development's traffic impacts.

The proposed Deal Lake development is located along both sides of Weddington Road (NC 84) between Lake Forest Drive and Baron Road in Weddington, North Carolina. Based on the site plan, the proposed development is currently envisioned to consist of 31 single-family detached homes on the north side of Weddington Road and 62 single-family detached homes on the south side of Weddington Road (93 single-family detached homes total).

For the purposes of this TIA, a build-out year of 2029 was considered. Based on the site plan, the proposed development will be accessed via two external access points along Weddington Road (NC 84):

- Access A – an unsignalized, right-in/right-out (RIRO) connection to Weddington Road (NC 84) approximately 940 feet east of Lake Forest Drive; this access serves the south side of the development.
- Access B – an unsignalized, RIRO connection to Weddington Road approximately 560 feet east of Access A; this access serves both sides of the development.

North Carolina Department of Transportation (NCDOT) TIA Scoping Checklist was prepared based on the provided site plan that documented all scoping parameters to be used for the TIA and was reviewed and agreed upon by NCDOT and Town of Weddington staff. The approved TIA Scoping Checklist, along with NCDOT and Town scoping comments, are included in the **Appendix.**

The following AM, Midday (MID), and PM peak-hour scenarios were analyzed to determine the proposed development's transportation impacts on the surrounding network:

- 2024 Existing Conditions
- 2029 Background Conditions
- 2029 Build-out Conditions

Based on coordination with the Town and NCDOT, this TIA evaluated operations under each of the AM, MID, and PM peak-hour scenarios above for the following study area intersections:

1. S Providence Road (NC 16) and Rea Road/U-3467
2. Weddington Road (NC 84) and Cox Road
3. Weddington Road (NC 84) and Twelve Mile Creek Road
4. Weddington Road (NC 84) and U-3467 (Future)
5. Weddington Road (NC 84) and Access A (RIRO)
6. Weddington Road (NC 84) and Access B (RIRO)

Kimley-Horn was retained to determine the potential traffic impacts of this development (in accordance with the traffic study guidelines in the *NCDOT Policy on Street and Driveway Access*

to North Carolina Highways and set forth by the *Town of Weddington Traffic Impact Analysis (TIA) Process and Procedures Manual*, and to identify transportation improvements that may be required to mitigate these impacts.

Based on the capacity analyses performed at each of the identified study intersections, along with review of the auxiliary turn-lane warrants contained herein, the following improvements have been identified to mitigate the impact of the proposed development on the adjacent street network:

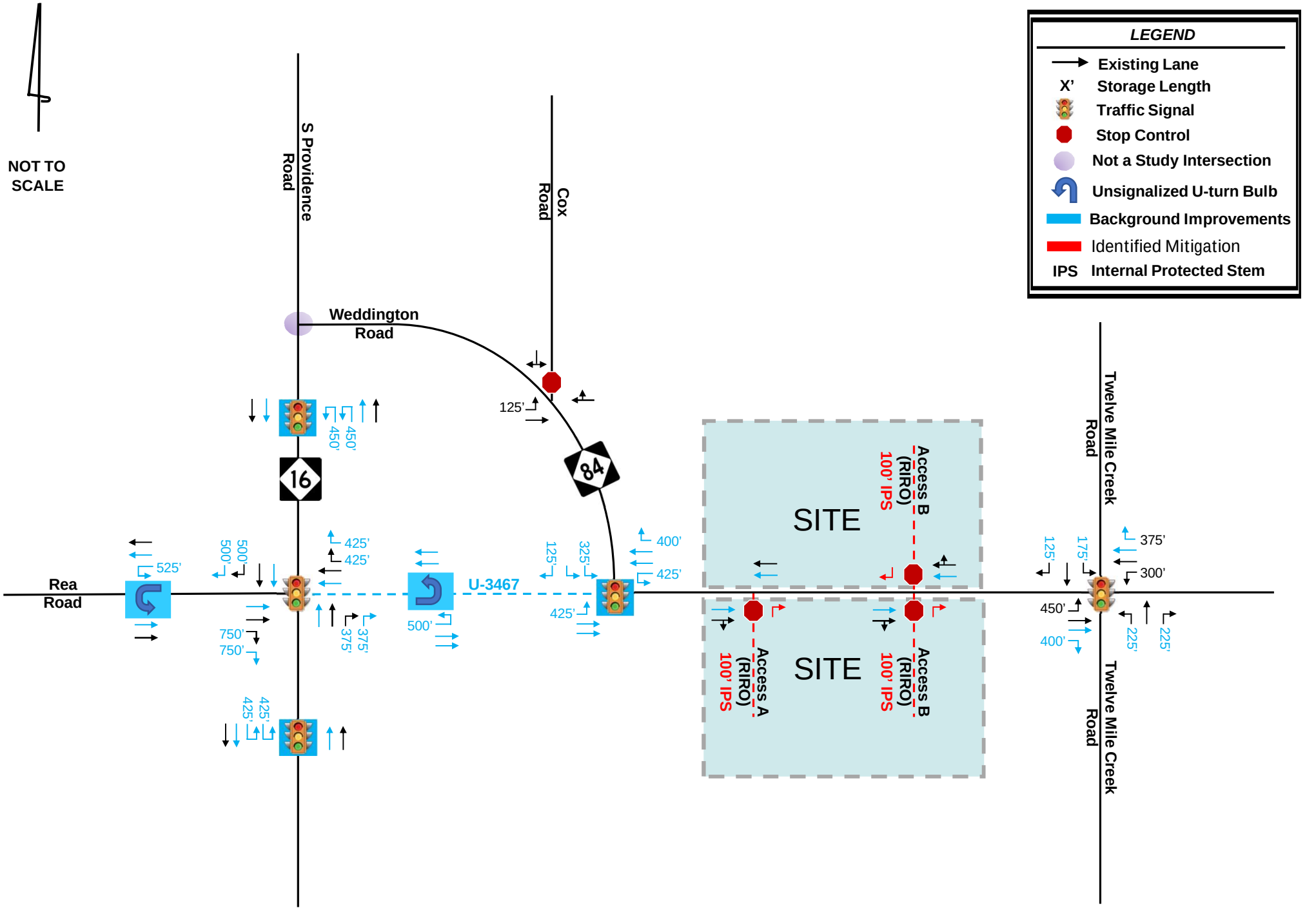
Weddington Road (NC 84) and Access A

- Construction of the northbound approach of Access A under RIRO operations with one ingress lane, one egress lane, stop-control, and an internal protected stem (IPS) of 100 feet.

Weddington Road (NC 84) and Access B

- Construction of the northbound approach of Access B under RIRO operations with one ingress lane, one egress lane, stop-control, and an IPS of 100 feet.
- Construction of the southbound approach of Access B under RIRO operations with one ingress lane, one egress lane, stop-control, and an IPS of 100 feet.

The mitigation improvements identified within the study area are shown in **Figure 1.1**. The improvements shown on this figure are subject to approval by NCDOT and the Town of Weddington. All additions and attachments to the State and Town roadway system shall be properly permitted, designed, and constructed in conformance to standards maintained by the agencies.



Kimley»Horn	Deal Lake Traffic Impact Analysis	Identified Mitigation Improvements	Figure 1.1

2.0 Introduction

The proposed Deal Lake development is located along both sides of Weddington Road (NC 84) between Lake Forest Drive and Baron Road in Weddington, North Carolina. Based on the site plan, the proposed development is currently envisioned to consist of 31 single-family detached homes on the north side of Weddington Road and 62 single-family detached homes on the south side of Weddington Road (93 single-family detached homes total).

For the purposes of this TIA, a build-out year of 2029 was considered. Based on the site plan, the proposed development will be accessed via two external access points along Weddington Road (NC 84):

- Access A – an unsignalized, right-in/right-out (RIRO) connection to Weddington Road (NC 84) approximately 940 feet east of Lake Forest Drive; this access serves the south side of the development.
- Access B – an unsignalized, RIRO connection to Weddington Road approximately 560 feet east of Access A; this access serves both sides of the development.

North Carolina Department of Transportation (NCDOT) TIA Scoping Checklist was prepared based on the provided site plan that documented all scoping parameters to be used for the TIA and was reviewed and agreed upon by NCDOT and Town of Weddington staff. The approved TIA Scoping Checklist, along with NCDOT and Town scoping comments, are included in the **Appendix.**

Kimley-Horn was retained to determine the potential traffic impacts of this development (in accordance with the traffic study guidelines in the *NCDOT Policy on Street and Driveway Access to North Carolina Highways* and set forth by the *Town of Weddington Traffic Impact Analysis (TIA) Process and Procedures Manual*, and to identify transportation improvements that may be required to mitigate these impacts.

3.0 Existing Traffic Conditions

Existing traffic conditions were coordinated with Town of Weddington and NCDOT staff and collected through field observations and turning-movement counts to establish the existing conditions baseline analysis.

3.1 STUDY AREA

Based on coordination with the Town and NCDOT, the study area for this TIA includes the following existing intersections:

1. S Providence Road (NC 16) and Rea Road
2. Weddington Road (NC 84) and Cox Road
3. Weddington Road (NC 84) and Twelve Mile Creek Road

Figure 3.1 shows the study area intersections and the site location, **Figure 3.2** shows the proposed site plan for the development, and **Figure 3.3** shows the existing roadway geometry at the study intersections.

The primary roadways in the vicinity of the site are S Providence Road (NC 16), Weddington Road (NC 84), Rea Road, Cox Road, and Twelve Mile Creek Road.

S Providence Road (NC 16) is currently a four-lane, divided minor arterial with a posted speed limit of 45 miles per hour (mph) in the vicinity of the proposed development that transitions to a two-lane, undivided road just south of Rea Road. S Providence Road (NC 16) carries an annual average daily traffic (AADT) volume of 29,200 vehicles per day (vpd) north of Rea Road and 19,700 vpd south of Rea Road based on 2023 and 2022 NCDOT AADT data, respectively.

Weddington Road (NC 84) is a two-lane, undivided minor arterial with a posted speed limit of 45 mph in the vicinity of the proposed development. Weddington Road (NC 84) carries an AADT volume of 15,700 vpd west of Cox Road and 15,400 vpd east of Twelve Mile Creek Road based on 2023 NCDOT AADT data.

Rea Road is currently a four-lane, divided minor arterial road with a posted speed limit of 45 mph in the vicinity of the proposed development. Rea Road carries an AADT volume of 14,800 west of S Providence Road (NC 16) based on 2022 NCDOT AADT data.

Cox Road is currently a two-lane, undivided local road with a posted speed limit of 45 mph in the vicinity of the proposed development. Cox Road carries an AADT volume of 1,000 vpd north of Weddington Road (NC 84) based on 2022 NCDOT AADT data.

Twelve Mile Creek Road is a two-lane, undivided local road with a posted speed limit of 45 mph in the vicinity of the proposed development. Twelve Mile Creek Road carries an AADT volume of 3,500 vpd north of Weddington Road (NC 84) and 5,800 vpd south of Weddington Road (NC 84) based on 2023 and 2022 NCDOT AADT data, respectively.

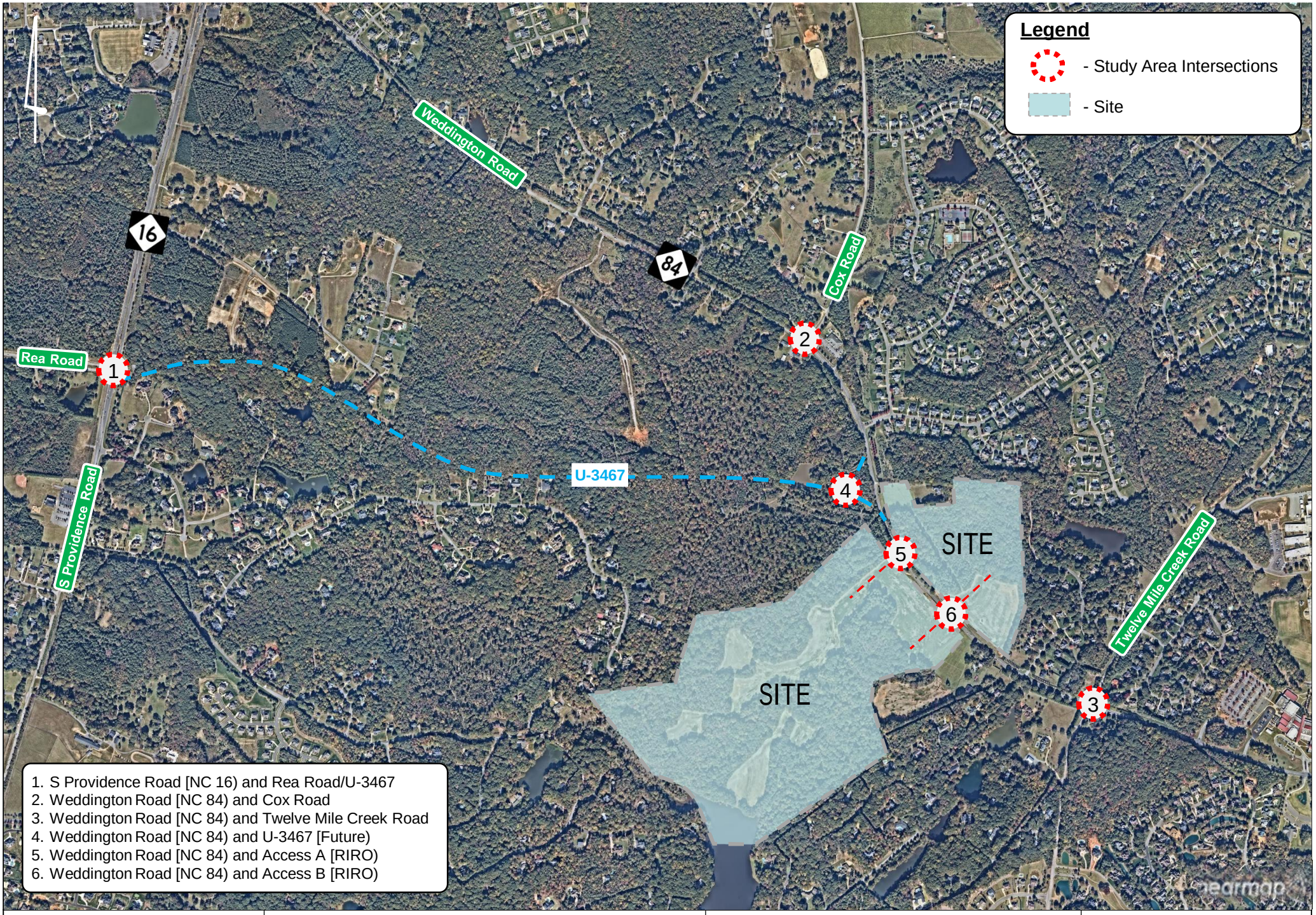
3.2 EXISTING TRAFFIC VOLUME DEVELOPMENT

AM (7:00-9:00 AM), MID (2:00-4:00 PM), and PM (4:00-6:00 PM) intersection turning-movement, heavy-vehicle, pedestrian, and bicycle counts were collected by Quality Counts on Thursday, March 7, 2024, at the following intersections:

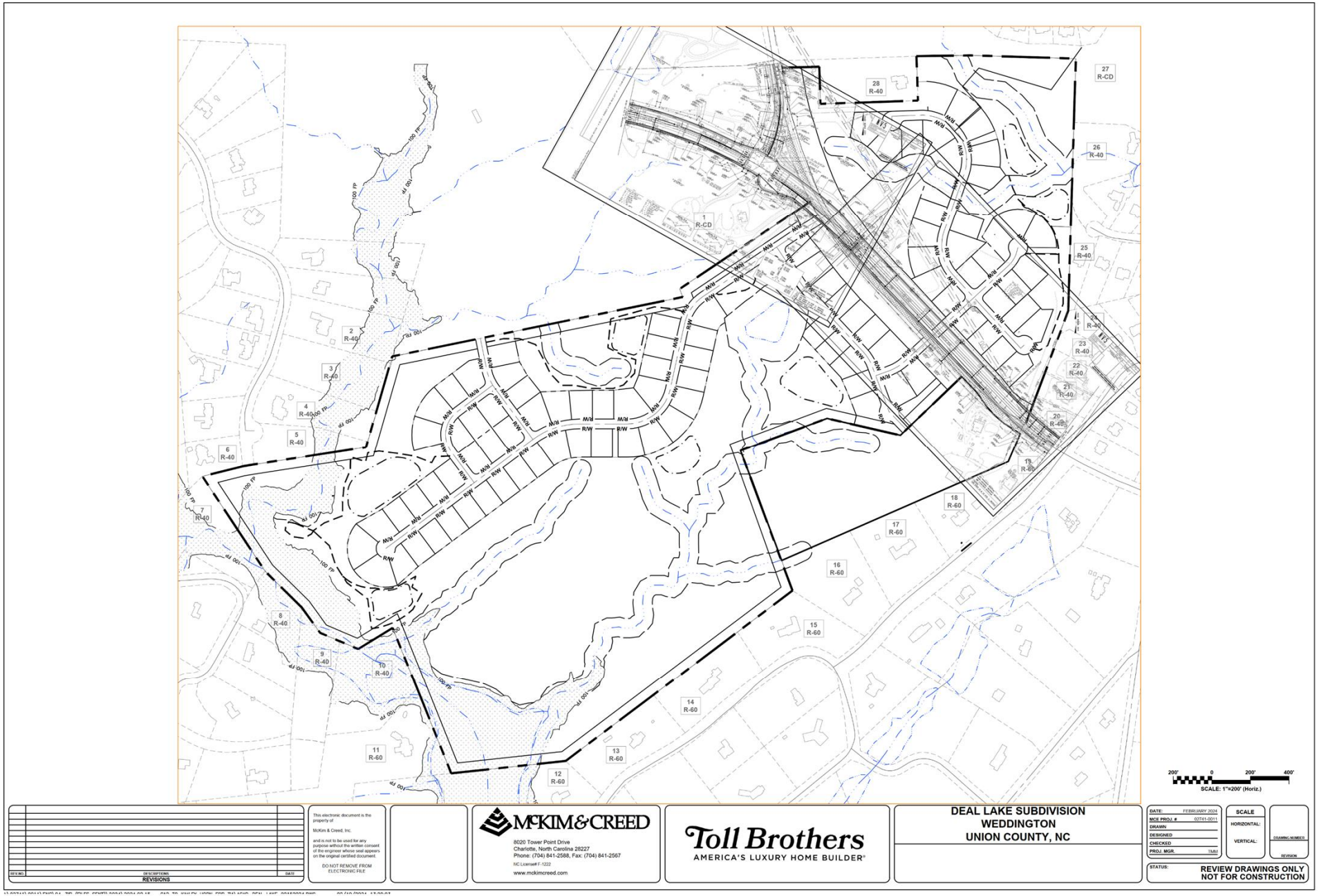
- S Providence Road (NC 16) and Rea Road
- Weddington Road (NC 84) and Cox Road
- Weddington Road (NC 84) and Twelve Mile Creek Road

Volumes were not balanced between the study area intersections due to the presence of public streets and other residential and commercial driveways. Peak-hour intersection turning-movement count data is provided in the **Appendix**.

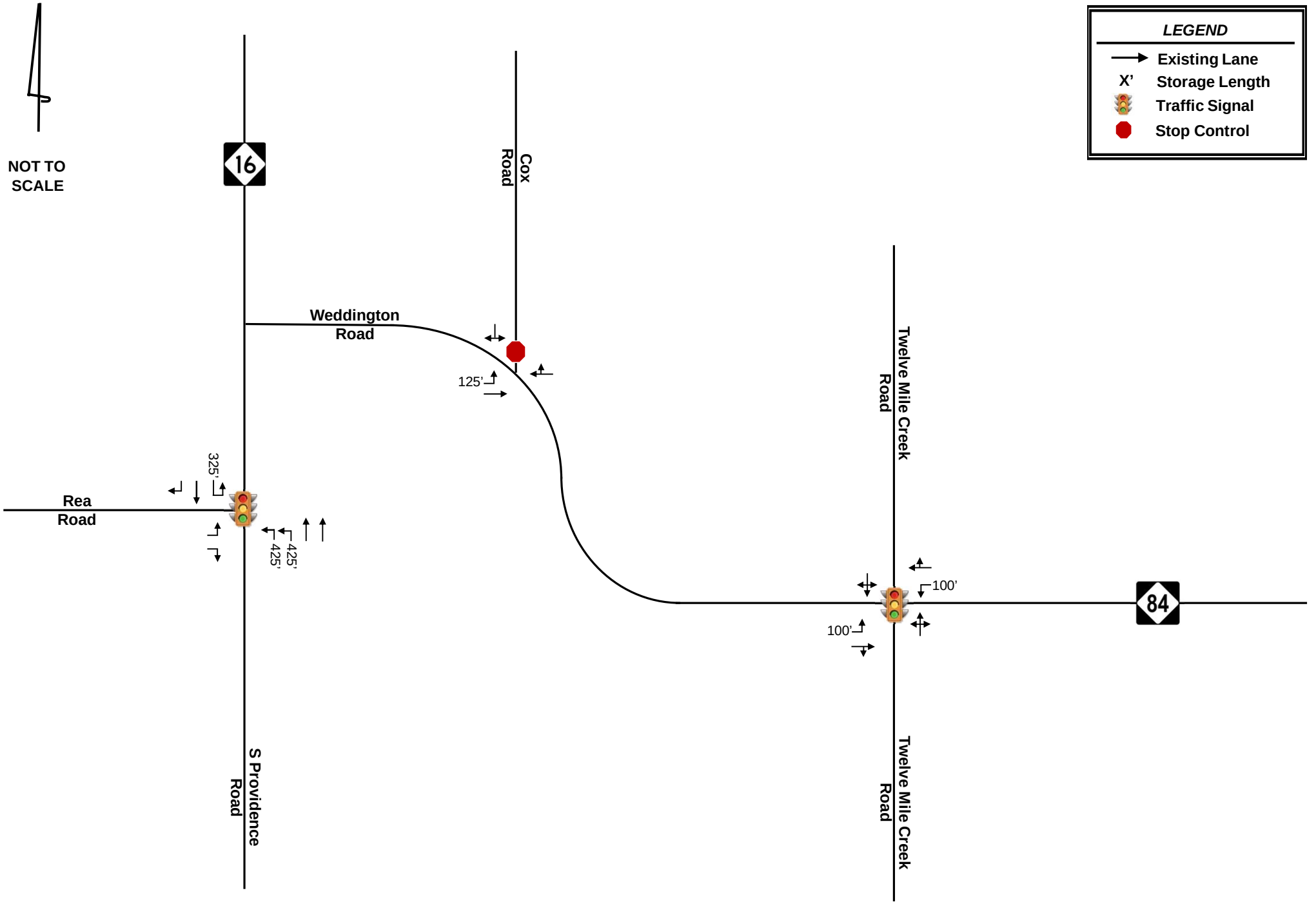
Figure 3.4 illustrates the 2024 existing AM, MID, and PM peak-hour traffic volumes.



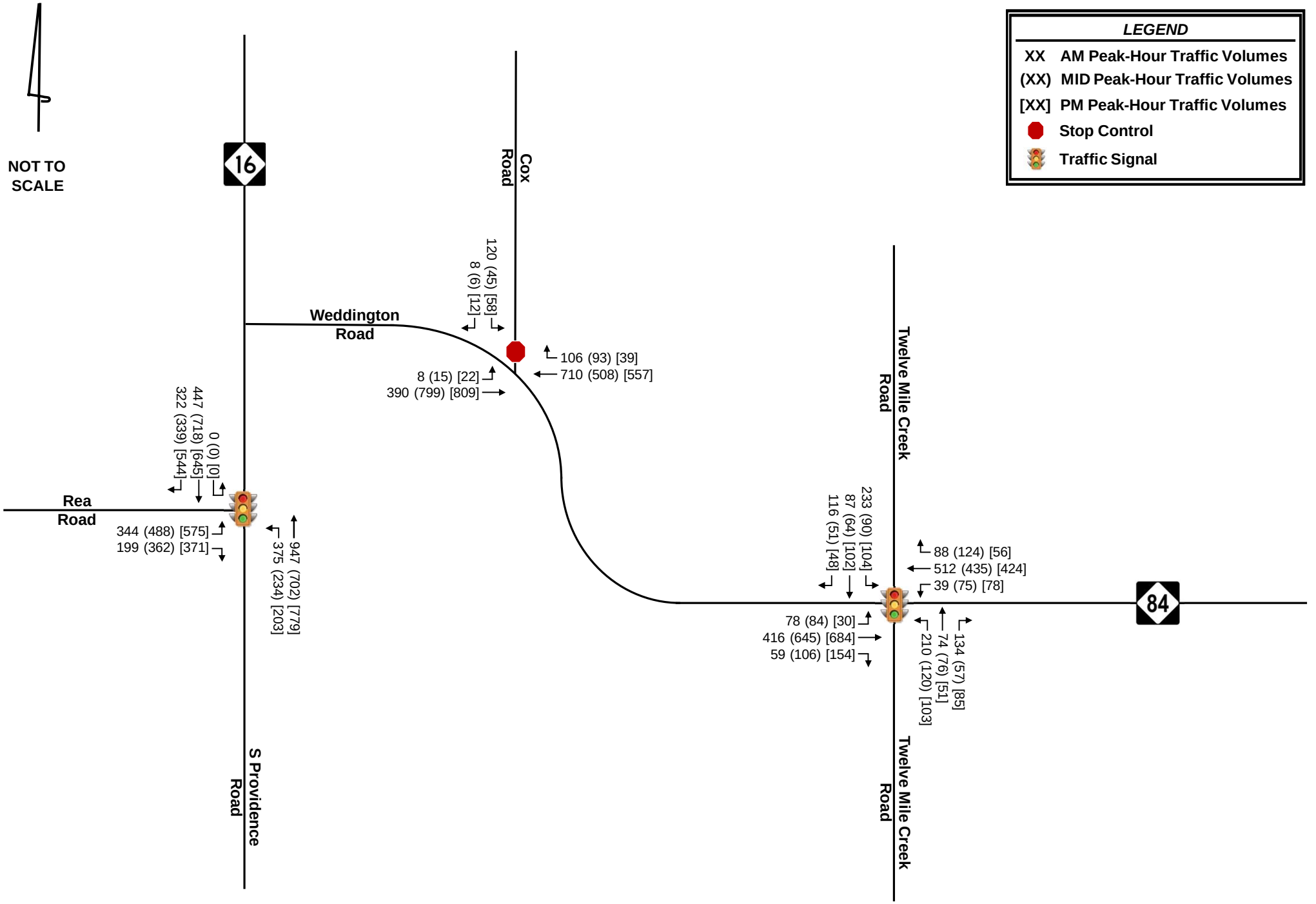
Kimley»Horn	**Deal Lake** **Traffic Impact Analysis**	**Study Area/Site Location**	**Figure 3.1**



Kimley»Horn	**Deal Lake** **Traffic Impact Analysis**	**Proposed Site Plan**	**Figure 3.2**



Kimley»Horn	Deal Lake Traffic Impact Analysis	Existing Roadway Laneage	Figure 3.3



Kimley»Horn	Deal Lake Traffic Impact Analysis	2024 Existing Traffic Volumes	Figure 3.4

4.0 Background Traffic Volume Development

Projected background (non-project) traffic is defined as the expected growth or change in traffic volumes on the surrounding roadway network between the year the existing counts were collected (2024) and the expected build-out year (2029) absent the construction and opening of the proposed project. This includes both non-specific general growth based on historical increase in local traffic volumes (historical background growth), along with specific growth and/or change in traffic volumes caused by either approved, but not yet fully-constructed, off-site developments and/or planned transportation projects specifically identified within the vicinity of the proposed development.

4.1 FORECAST TRAFFIC VOLUMES

The 2029 background volumes used for the future analyses were calculated based on the forecast volumes on the latest roadway plan set provided by NCDOT for Statewide Transportation Improvement Program (STIP) Project U-3467. The NCDOT Intersection Analysis Utility (IAU) spreadsheet was used to convert the AADT volumes from the roadway plans into peak-hour intersection turning-movement volumes. The *FS-1810D Project Level Traffic Forecast Report* (RK&K, September 2018) and U-3467 Environmental Assessment (Mulkey Engineers & Consultants, May 2015) were also utilized in order to determine the directional splits for all study area intersections. This methodology was determined based on coordination with Town of Weddington and NCDOT staff. IAU worksheets and MID peak-hour traffic volume calculations are included in the **Appendix.**

4.2 APPROVED DEVELOPMENTS

At the direction of the Town of Weddington and NCDOT staff, no approved developments were identified for inclusion in this TIA at the time of the Scoping Process.

4.3 PLANNED TRANSPORTATION PROJECTS

Two (2) future transportation projects have been identified within the study area based on review of the following adopted transportation plans for the area:

- NCDOT 2024-2033 State Transportation Improvement Program (STIP)
- Charlotte Regional Transportation Planning Organization (CRTPO) 2050 Metropolitan Transportation Plan (MTP)
- CRTPO Comprehensive Transportation Plan (CTP)

Below is a summary of the two (2) future transportation projects identified:

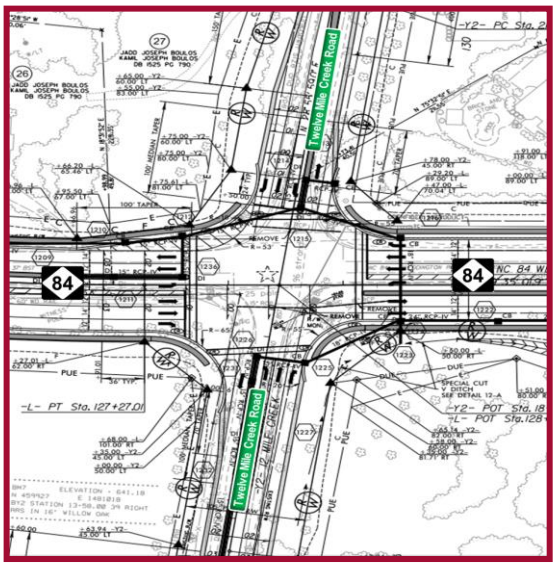
1. **Weddington Road (NC 84) (U-3467)**
   - Construct four-lane road from NC 16 to Waxhaw-Indian Trail Rd (see below for more detail)
   - Funded for Utilities FY 2024-2025
   - Funded for ROW FY 2024-2028
   - Funded for Construction FY 2027-2030
   - Based on input during the TIA Scoping Process and given the current schedule, U-3467 is included in 2029 analyses.
2. **S Providence Road (NC 16) (U-5769A)**
   - NC 16 Widening from Rea Rd to Bonds Grove Church Rd (see below for more detail)
   - Funded for Utilities FY 2025-2026

- Funded for ROW FY 2025-2029
- Funded for Construction FY 2029-2032
- Based on input during the TIA Scoping Process and given the current schedule, U-5769A is included in 2029 analyses.

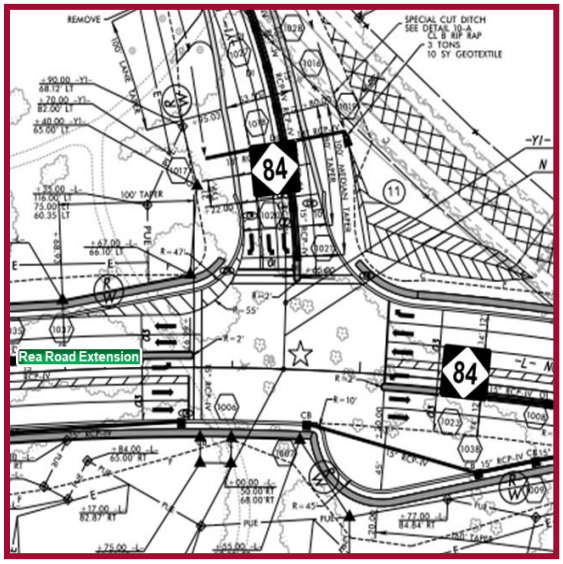
U-3467 will extend Rea Road 1.7 miles east from S Providence Road (NC 16) to Weddington Road (NC 84) near Twelve Mile Creek Road. Proposed work also involves widening 2.7 miles of the existing Weddington Road (NC 84) from two to four lanes from Twelve Mile Creek Road to Waxhaw-Indian Trail Road in Wesley Chapel. Based on the current NCDOT STIP as of April 2024, this project is scheduled to begin construction in FY 2027 and was included in the 2029 background and build-out analysis scenarios. Final intersection configurations for U-3467 may differ from the improvements assumed in this TIA.

Based on the latest roadway plan set provided by NCDOT included in the **Appendix** and confirmed in the latest public hearing map intersection concepts shown below, this project intends to improve the following study area intersections:

3. **Weddington Rd (NC 84) and Twelve Mile Creek Rd** – this signalized intersection is planned to remain full-movement with the following approach laneage:
   - Northbound – One through lane, one left-turn lane, and one right-turn lane along Twelve Mile Creek Road.
   - Southbound – One through lane, one left-turn lane, and one right-turn lane along Twelve Mile Creek Road.
   - Eastbound – Two through lanes, one left-turn lane, and one right-turn lane along Weddington Road (NC 84).
   - Westbound – Two through lanes, one left-turn lane, and one right-turn lane along Weddington Road (NC 84).



4. **Weddington Rd (NC 84) and Rea Rd Extension –** this proposed intersection is planned to be full-movement with the following approach laneage:
   - Southbound – Two left-turn lanes and one right-turn lane along Weddington Road (NC 84).
   - Eastbound – Two through lanes and one left-turn lane along Rea Road Extension.
   - Westbound – Two through lanes, one U-turn lane, and one right-turn lane along Weddington Road (NC 84).

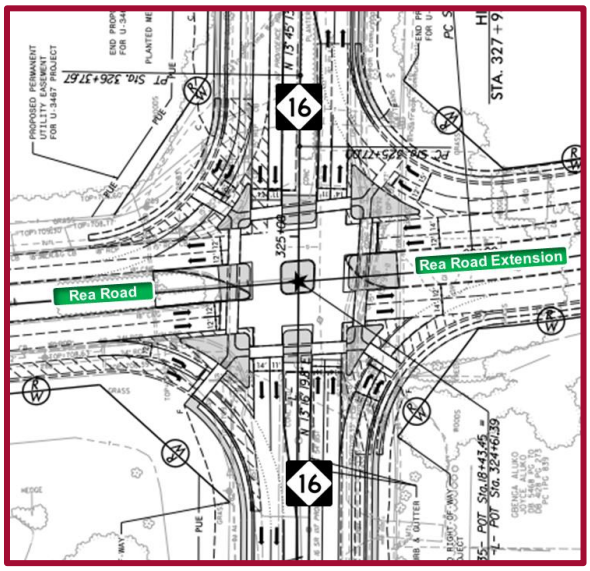


The latest ROW design plans for NCDOT TIP Project No. U-3467, funded to improve Weddington Road (NC 84) between S Providence Road (NC 16) and Waxhaw Indian Tail Road, are also included in the **Appendix**.

U-5769A will widen S Providence Road (NC 16) between Rea Road Extension and Bonds Grove Church Road from a two (2)-lane facility to a median-divided, four (4)-lane facility. This project intends to improve S Providence Road (NC 16) through a combination of conventional and reduced conflict intersections (RCIs). Based on the current NCDOT STIP as of April 2024, this project is scheduled to begin construction in FY 2029 and was included in the 2029 background and build-out analysis scenarios. Final intersection configurations for U-5769A may differ from the improvements assumed in this TIA.

Based on the latest roadway plan set provided by NCDOT included in the **Appendix** and as shown below, this project intends to improve the following study area intersection:

1. **S Providence Rd (NC 16) and Rea Rd/Rea Rd Extension** - this intersection is planned to be converted from the existing standard full-movement configuration to a RCI where left-turns are not allowed at the main intersection. Instead, all left-turn movements will be redirected to U-turn bulbs on each leg of the S Providence Rd (NC 16) and Rea Road/Rea Road Extension intersection. U-turn bulbs on S Providence Rd (NC 16) will be signalized and U-turn bulbs on Rea Rd/Rea Rd Extension will be unsignalized. U-3467 will construct the fourth leg of this intersection and then will be modified to a RCI as part of U-5769A. Based on these plans, the following approach laneage was assumed:

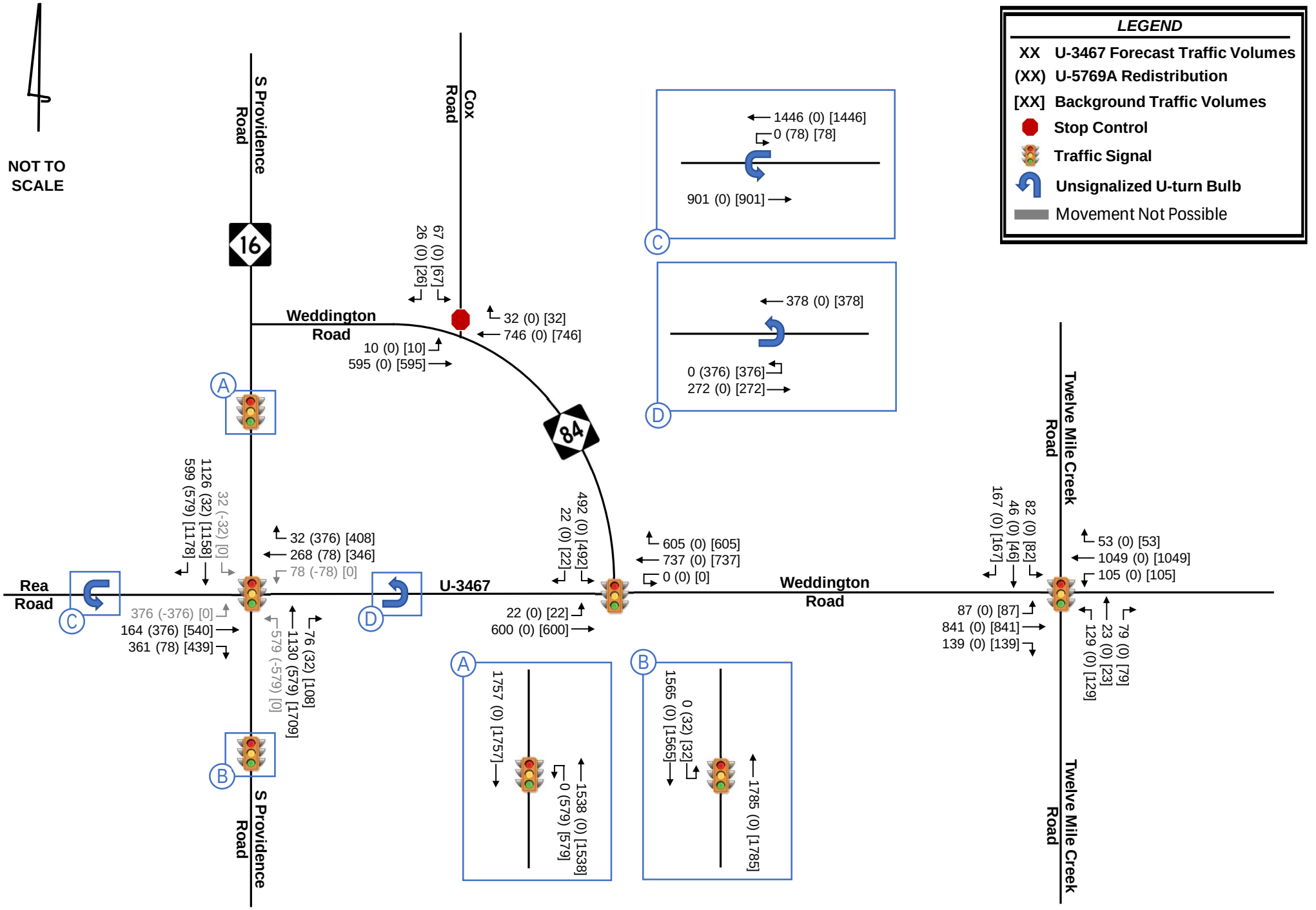


- Northbound – Two through lanes and two right-turn lanes along S Providence Rd (NC 16)
- Southbound – Two through lanes and two right-turn lanes along S Providence Rd (NC 16)
- Eastbound – Two through lanes and two right-turn lanes along Rea Rd
- Westbound – Two through lanes and two right-turn lanes along Rea Rd Extension

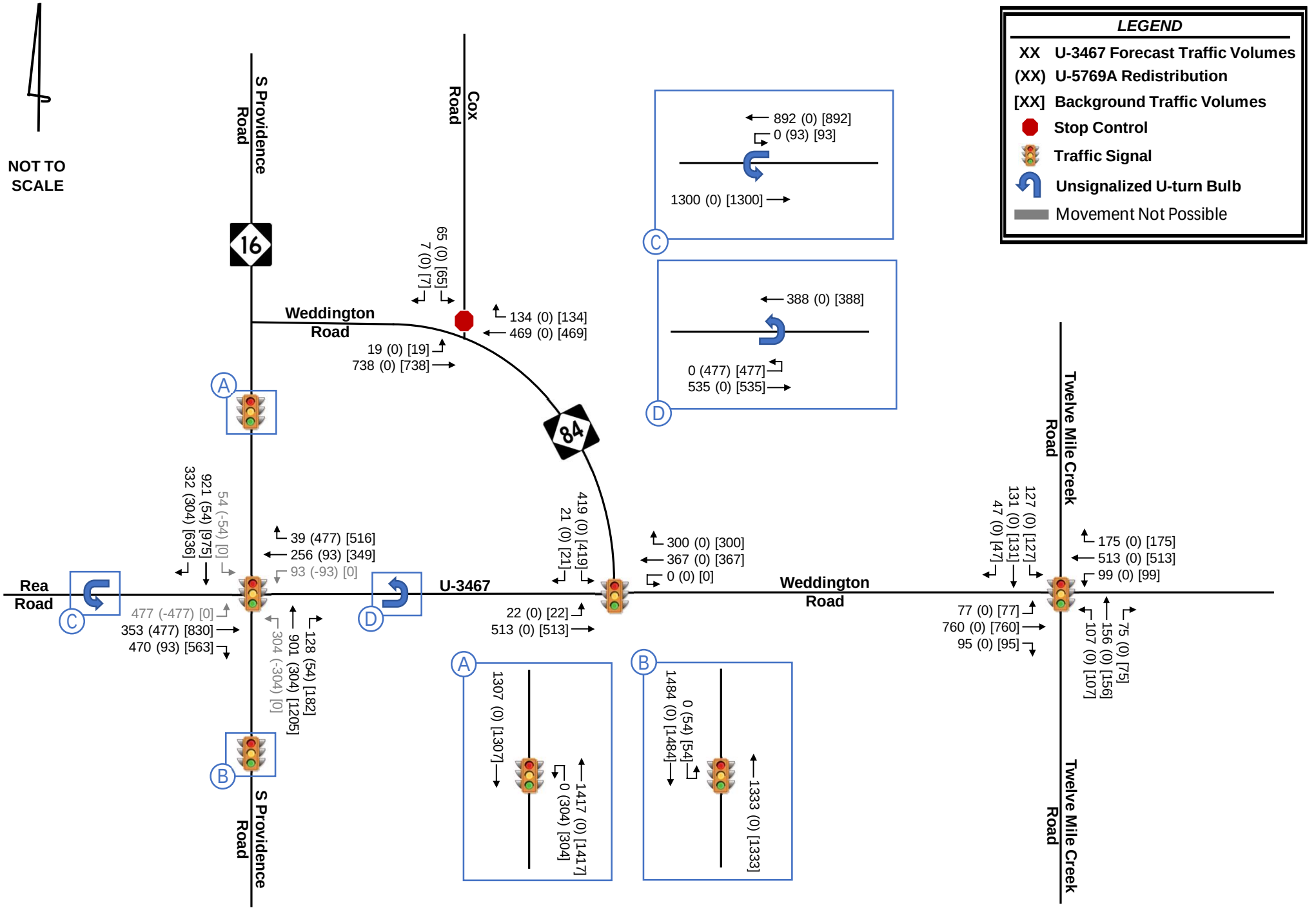
The projected 2029 background peak-hour traffic volumes that include the U-3467 traffic forecast volumes, redistributed traffic, and the total background volumes are shown in the following figures:

- **Figure 4.1** – 2029 Background AM Peak-Hour Traffic Volumes
- **Figure 4.2** – 2029 Background MID Peak-Hour Traffic Volumes
- **Figure 4.3** – 2029 Background PM Peak-Hour Traffic Volumes

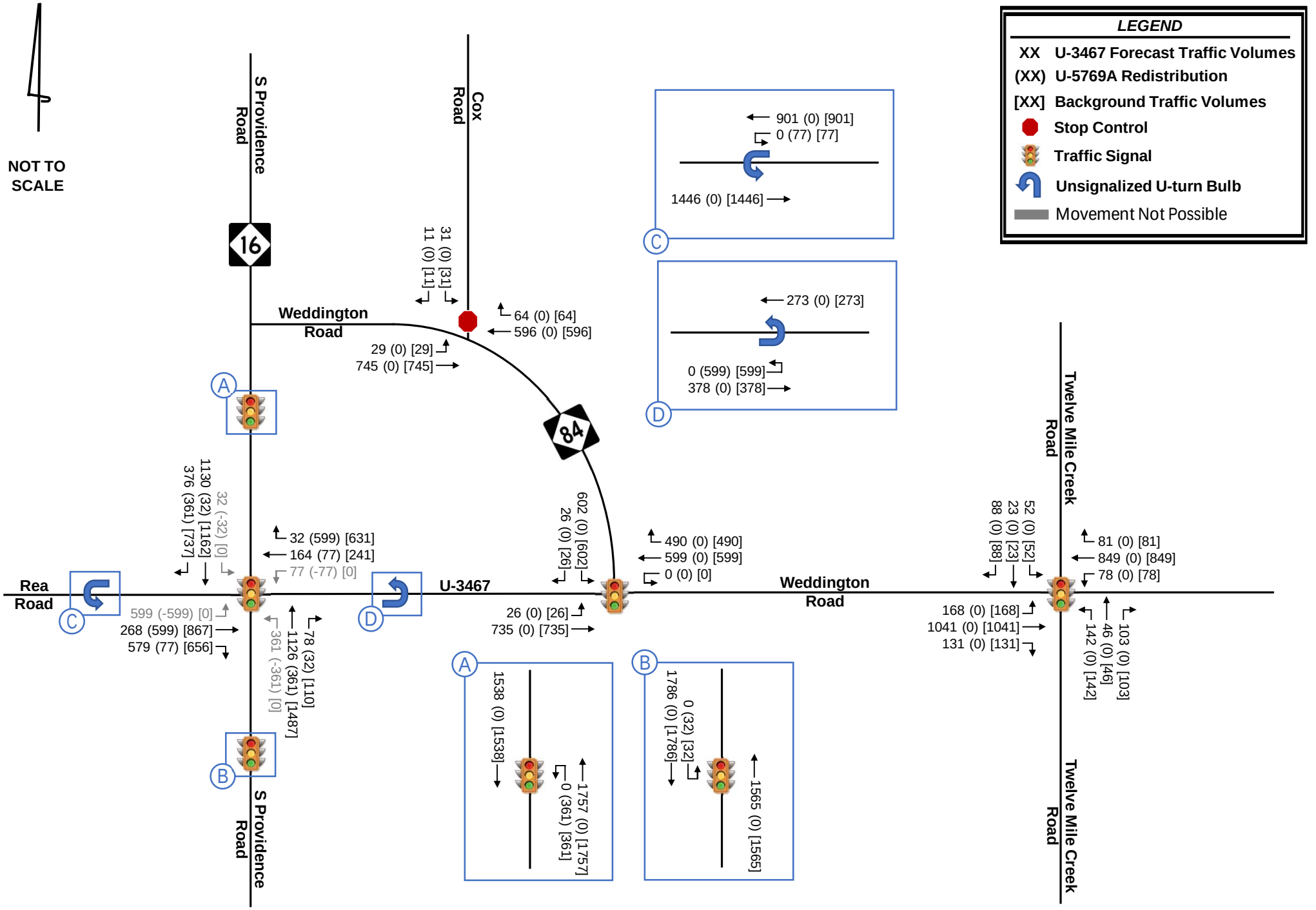
Redistribution calculations are provided in the **Appendix**.



Kimley»Horn	**Deal Lake** **Traffic Impact Analysis**	**2029 Background AM** **Peak-Hour Traffic Volumes**	**Figure 4.1**



Kimley»Horn	Deal Lake Traffic Impact Analysis	2029 Background MID Peak-Hour Traffic Volumes	Figure 4.2



Kimley»Horn	Deal Lake Traffic Impact Analysis	2029 Background PM Peak-Hour Traffic Volumes	Figure 4.3

5.0 Site Traffic Volume Development

Site traffic developed for this TIA is defined as the vehicle trips expected to be generated and added to the study area by construction of the proposed development, and the distribution and assignment of that traffic throughout the surrounding network.

5.1 SITE ACCESS

For the purposes of this TIA, a build-out year of 2029 was considered. Based on the site plan, the proposed development will be accessed via two external access points along Weddington Road (NC 84):

- Access A – an unsignalized, right-in/right-out (RIRO) connection to Weddington Road (NC 84) approximately 940 feet east of Lake Forest Drive; this access serves the south side of the development.
- Access B – an unsignalized, RIRO connection to Weddington Road approximately 560 feet east of Access A; this access serves both sides of the development.

5.2 TRAFFIC GENERATION

The traffic generation potential of the proposed development was determined using the trip generation rates published in *Trip Generation* (Institute of Transportation Engineers, Eleventh Edition, 2021). Based on the site plan, the proposed development is currently envisioned to consist of 31 single-family detached homes on the north side of Weddington Road and 62 single-family detached homes on the south side of Weddington Road (93 single-family detached homes).

Table 5.1 summarizes the projected trip generation for the proposed development. During a typical weekday, it has the potential to generate 74, 82, and 96 net new external trips during the AM, MID, and PM peak hours, respectively.

Table 5.1 - Trip Generation

ITE LUC	Land Use	Intensity		Daily	AM Peak Hour			Midday Peak Hour*			PM Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
210	Single-Family Detached Housing (South Parcel)	62	DU	650	48	12	36	54	34	20	63	40	23
210	Single-Family Detached Housing (North Parcel)	31	DU	344	26	7	19	28	18	10	33	21	12
Net New External Trips				**994**	**74**	**19**	**55**	**82**	**52**	**30**	**96**	**61**	**35**

*ITE does not provide weekday, midday peak-hour traffic generation rates. The hourly breakdowns provided in ITE Trip Generation were applied to the PM peak-hour trip generation to determine midday peak-hour trip generation. It was assumed that midday trips would operate with the same in/out percentages as the PM peak-hour.

5.3 SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT

The proposed development's trips were assigned to the surrounding network based on existing peak-hour turning movements, surrounding land uses, locations of similar land use and population densities in the area. The following site traffic distribution was reviewed and approved as part of the TIA Scoping Checklist by the Town of Weddington and NCDOT:

- 20% to/from the east along Weddington Road (NC 84)
- 20% to/from the west along Rea Road
- 30% to/from the north along S Providence Road (NC 16)
- 10% to/from the south along S Providence Road (NC 16)
- 5% to/from the north along Cox Road
- 5% to/from the north along Twelve Mile Creek Road
- 10% to/from the south along Twelve Mile Creek Road

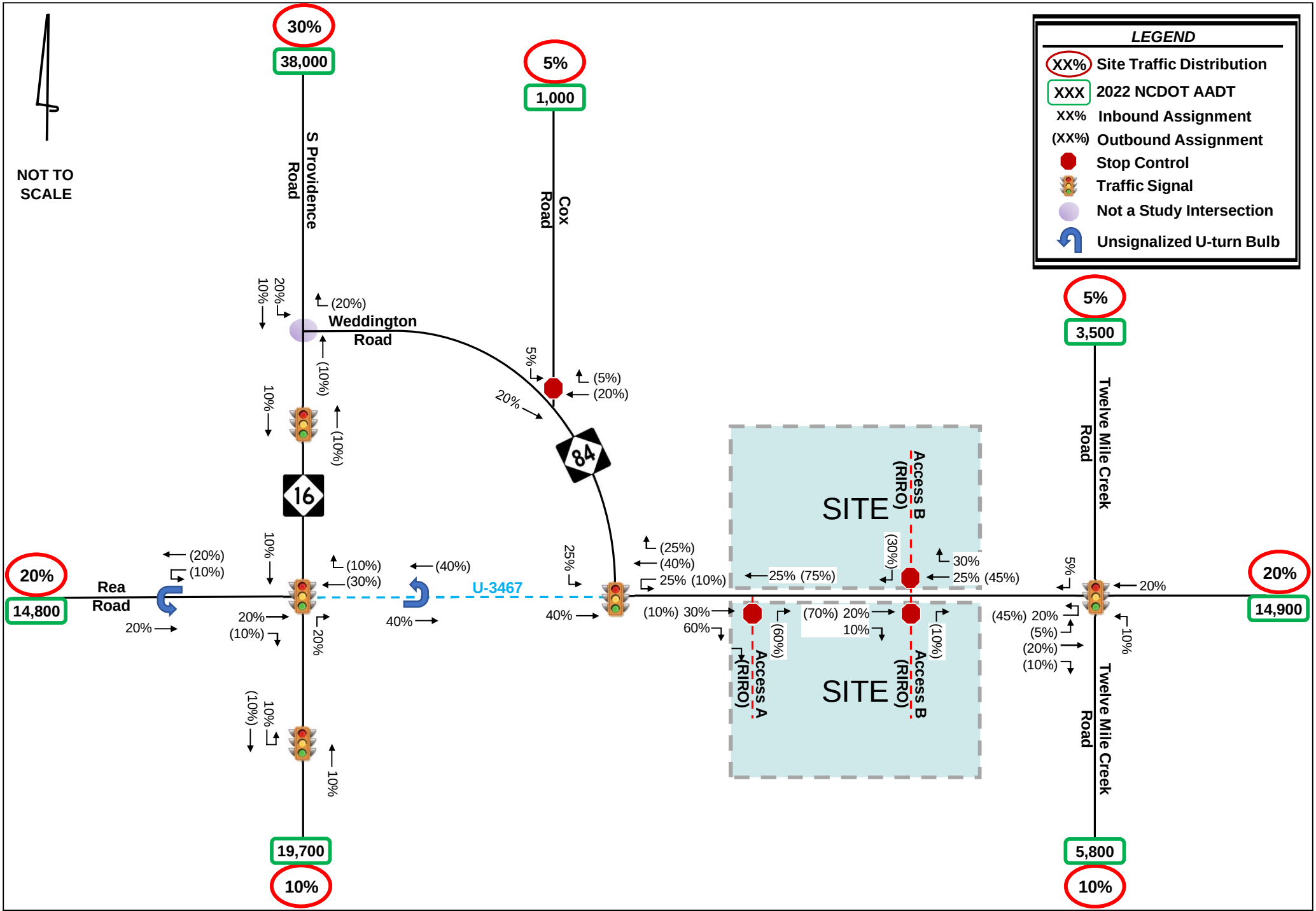
The overall site traffic distribution and assignment is shown in **Figure 5.1.**

5.4 BUILD-OUT TRAFFIC VOLUMES

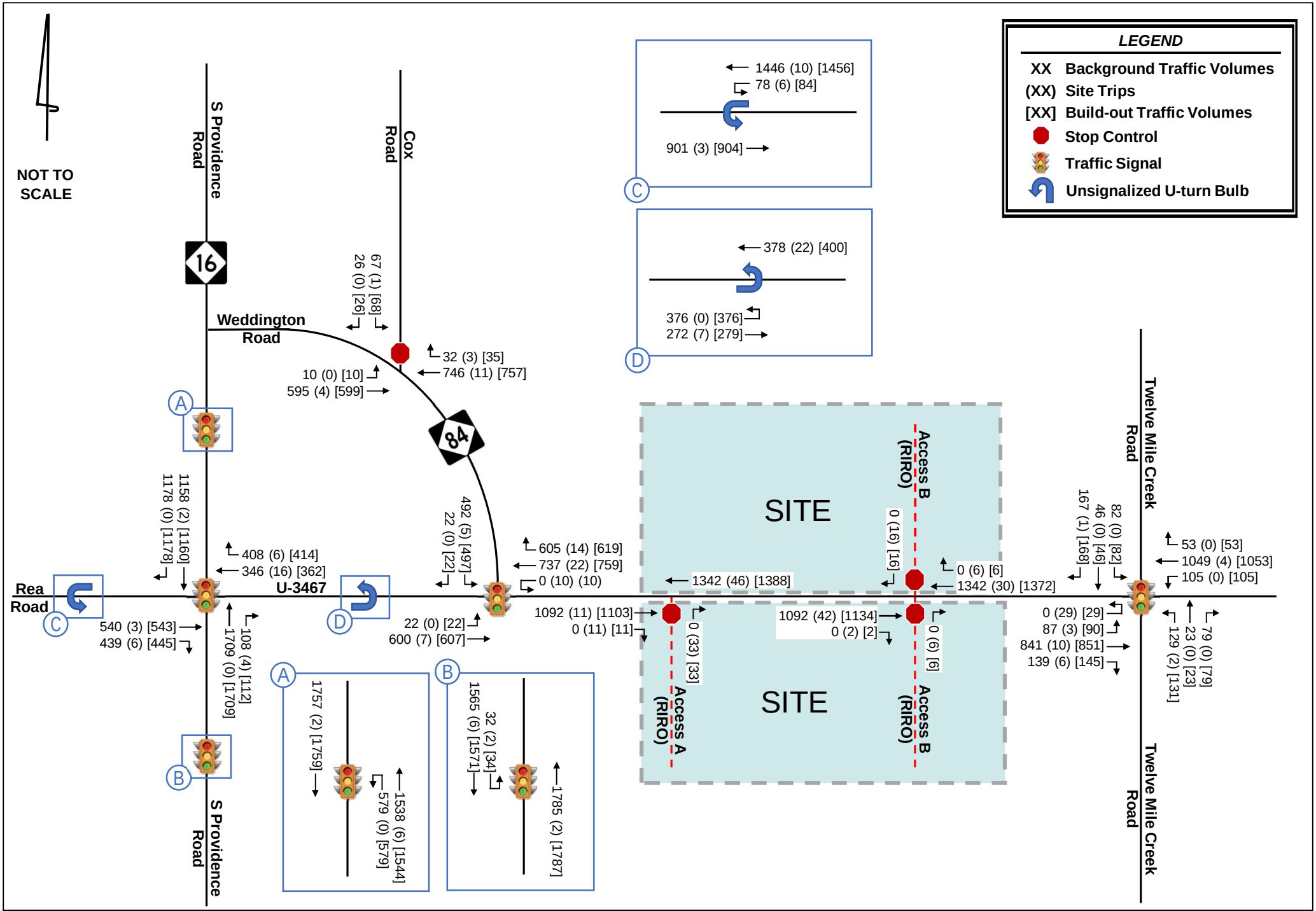
The build-out traffic volumes include the assignment of the projected site traffic generation added to the appropriate background traffic volumes. Build-out traffic volumes are shown in the following figures:

- **Figure 5.2** – 2029 Build-out AM Peak-Hour Traffic Volumes
- **Figure 5.3** – 2029 Build-out MID Peak-Hour Traffic Volumes
- **Figure 5.4** – 2029 Build-out PM Peak-Hour Traffic Volumes

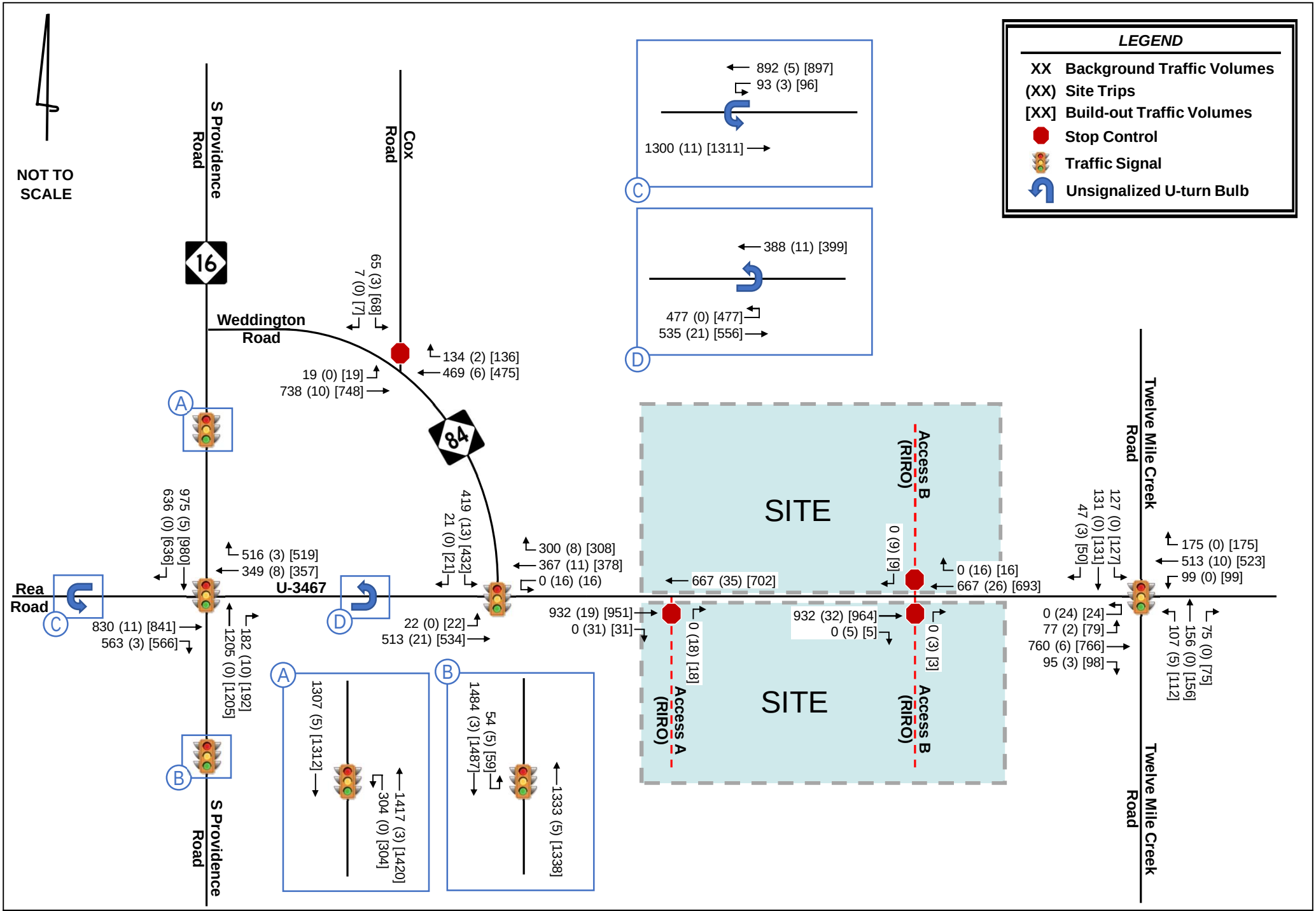
Intersection volume development worksheets for all intersections within the study network are provided in the **Appendix**.



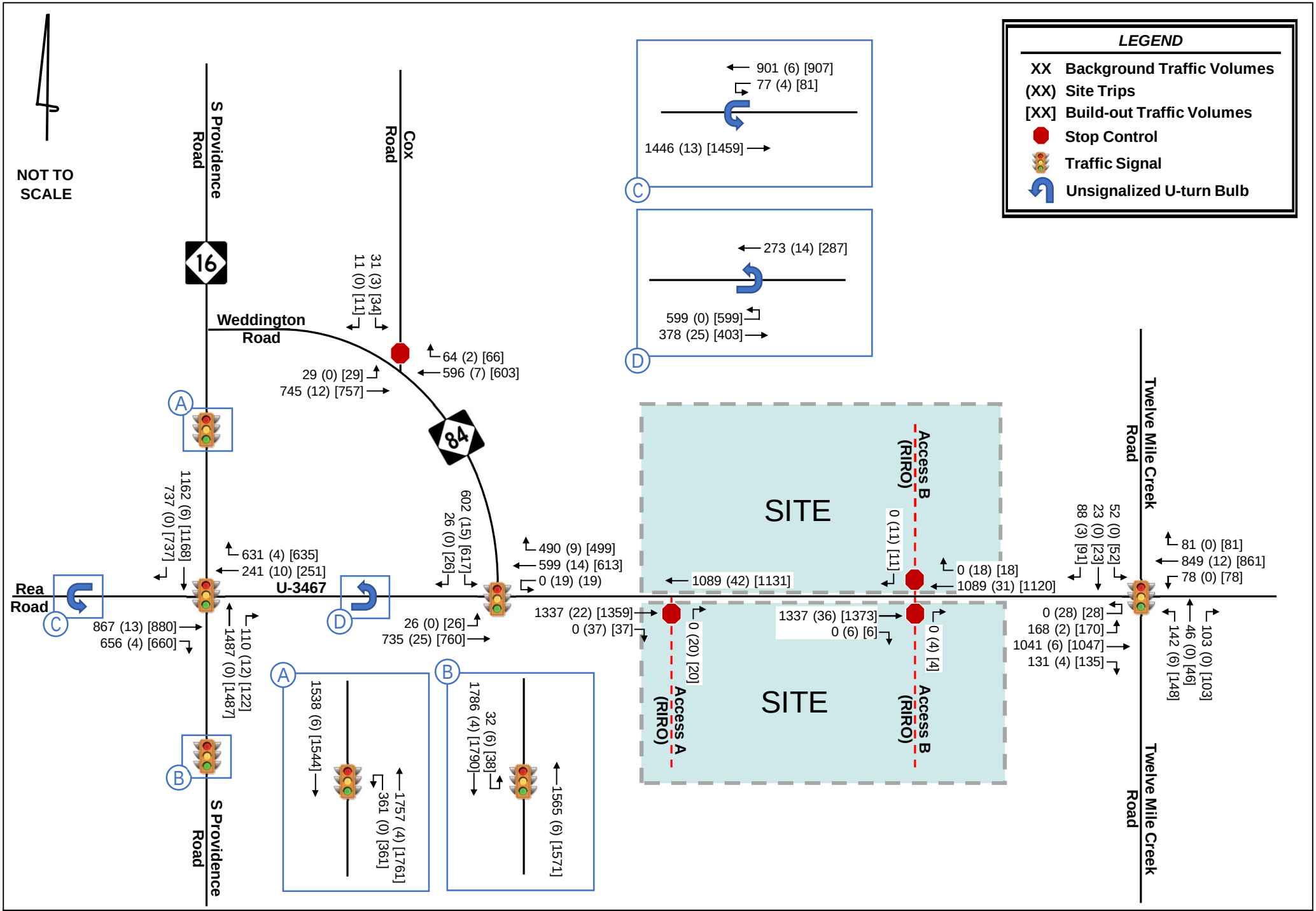
Kimley»Horn	Deal Lake Traffic Impact Analysis	Site Traffic Distribution and Assignment	Figure 5.1



Kimley»Horn	**Deal Lake** **Traffic Impact Analysis**	**2029 Build-out AM** **Peak-Hour Traffic Volumes**	**Figure 5.2**



Kimley»Horn	**Deal Lake** **Traffic Impact Analysis**	**2029 Build-out MID** **Peak-Hour Traffic Volumes**	**Figure 5.3**



Kimley»Horn	**Deal Lake** **Traffic Impact Analysis**	**2029 Build-out PM** **Peak-Hour Traffic Volumes**	**Figure 5.4**

6.0 Capacity Analysis

Based on the requirements set forth by the Town of Weddington Traffic Impact Analysis (TIA) Process and Procedures Manual and in accordance with the traffic study guidelines in the *NCDOT Policy on Street and Driveway Access to North Carolina Highways*, capacity analyses were performed at the study area intersections for each of the following AM, MID, and PM peak-hour scenarios:

- 2024 Existing Conditions
- 2029 Background Conditions
- 2029 Build-out Conditions

Capacity analyses were performed for the AM, MID, and PM peak hours using Synchro Version 11 software to determine the operating characteristics at the study area intersections of the adjacent street network and to evaluate the impacts of the proposed development. Capacity is defined as the maximum number of vehicles that can pass over a particular road segment, or through a particular intersection, within a specified period of time under prevailing operational, geometric and controlling conditions within a set time duration. This software program uses methodologies contained in the *Highway Capacity Manual* (HCM) to determine the operating characteristics of an intersection.

The HCM defines LOS as a "quantitative stratification of a performance measure or measures representing quality of service" and is used to "translate complex numerical performance results into a simple A-F system representative of travelers' perceptions of the quality of service provided by a facility or service". The HCM defines six levels of service, LOS A through LOS F, with A having the best operating conditions from the traveler's perspective and F having the worst. However, it must be understood that "the LOS letter result hides much of the complexity of facility performance", and that "the appropriate LOS for a given system element in the community is a decision for local policy makers". According to the HCM, "for cost, environmental impact, and other reasons, roadways are typically designed not to provide LOS A conditions during peak periods but instead to provide some lower LOS that balances individual travers' desires against society's desires and financial resources. Nevertheless, during low-volume periods of the day, a system element may operate at LOS A."

LOS for a two-way stop-controlled (TWSC) intersection is determined by the control delay at the side-street approaches, typically during the highest volume periods of the day, the AM and PM peak periods. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. With respect to field measurements, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time the vehicle departs from the stop line. It is typical for stop sign-controlled side streets and driveways intersecting major streets to experience long delays during peak hours, particularly for left-turn movements. The majority of the traffic moving through the intersection on the major street experiences little or no delay.

LOS for signalized intersections is reported for the intersection as a whole, and typically during the highest volume periods of the day, the AM and PM peak periods. Once or more movements at an intersection may experience a low level-or-service, while the intersection as a whole may operate acceptably,

Table 6.0-A and **Table 6.0-B** list the LOS control delay thresholds published in the HCM for unsignalized and signalized intersections, respectively, as well as the unsignalized operational descriptions assumed herein.

Table 6.0-A **Vehicular LOS Control Delay Thresholds for Unsignalized Intersections**		
Level-of-Service	**Average Control Delay per Vehicle [sec/veh]**	
A	≤ 10	Short Delays
B	> 10 – 15	
C	> 15 – 25	
D	> 25 – 35	Moderate Delays
E	> 35 – 50	
F	> 50	Long Delays

Table 6.0-B **Vehicular LOS Control Delay Thresholds for Signalized Intersections**	
Level-of-Service	**Average Control Delay per Vehicle [sec/veh]**
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

The signal geometric plans for each of the following signalized intersections were obtained from NCDOT's signal plan database and were used in the development of the existing conditions Synchro network:

1. S Providence Road (NC 16) and Rea Road
3. Weddington Road (NC 84) and Twelve Mile Creek Road

Based on the provided signal plans, the intersection of S Providence Road (NC 16)/Rea Road is part of the NC 16 (Providence Road) Closed Loop System and the intersection of Weddington Road (NC 84)/Twelve Mile Creek Road is isolated and not part of a coordinated signal system. Using the signal timing plans provided by NCDOT, cycle lengths and splits were optimized separately. The signal geometrics plans are included in the **Appendix**.

As discussed in **Section 4.3**, due to the significant reconfiguration of the study area signalized intersections as part of U-3467 and U-5769A, the cycle lengths and splits were optimized under background and build-out conditions. It was assumed that signals along/adjacent to S Providence Road (NC 16) would be part of a coordinated signal system, while signals along NC 84 between Cox Road and Twelve Mile Creek Road would be part of a separate coordinated signal system.

The following modifications from the background data collected were applied to the capacity analyses to meet NCDOT *Congestion Management Capacity Analysis Guidelines*:

- Right-turn-on-red (RTOR) operations were not allowed.

- Protected-only left-turn phasing was used for analysis of future operations where protected/permitted left-turn phasing exists in the field.
- Lost time adjust was added to the yellow and all-red times provided in the existing signal and time-of-day plans to maintain a total lost time of 5 seconds for each movement.
- A minimum of 4 vehicles per hour were used for permissible movements, excluding movements into and out of the proposed site.

In the existing condition, the observed peak hour factor (PHF) was used in the analysis, whereas a 0.9 PHF was used for all future conditions with the exception of the Weddington Road (NC 84) and Twelve Mile Creek Road intersection. A weighted PHF was used in the AM and MID peaks hours to account for the impacts of existing school traffic.

In the existing and future conditions, the observed heavy vehicle percentage was used in the analysis, subject to a 2% minimum.

Capacity analysis reports generated by Synchro Version 11 software and queuing and blocking reports generated by the SimTraffic microsimulation model are included in the **Appendix**.

6.1 S PROVIDENCE ROAD (NC 16) AND REA ROAD/U-3467

Table 6.1 summarizes the LOS, control delay and 95th percentile queue lengths at the signalized intersection of S Providence Road (NC 16) and Rea Road/U-3467

Table 6.1 - S Providence Road (NC 16) and Rea Road/U-3467

Condition	Measure	EB			WB		NB			SB			Intersection
		EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBLU	SBT	SBR	LOS (Delay)
AM Peak Hour													
2024 Existing	LOS (Delay)		D (38.7)		-			C (21.2)			C (21.4)		C (25.0)
	Synchro 95th Q	#338'	-	115'	-	-	#184'	202'	-	8'	326'	90'	
2029 Background	LOS (Delay)		C (34.4)		C (32.2)			B (19.4)			B (12.1)		C (20.6)
	Synchro 95th Q	-	211'	194'	133'	180'	-	#798'	m30'	-	308'	438'	
2029 Build-out	LOS (Delay)		C (29.6)		C (27.8)			C (22.5)			B (12.6)		C (20.5)
	Synchro 95th Q	-	183'	171'	121'	159'	-	#778'	m16'	-	325'	#531'	
MD Peak Hour													
2024 Existing	LOS (Delay)		D (48.8)		-			C (25.2)			D (37.2)		D (36.9)
	Synchro 95th Q	#509'	-	241'	-	-	#132'	151'	-	8'	#652'	70'	
2029 Background	LOS (Delay)		C (21.7)		B (18.8)			B (19.6)			B (13.4)		B (18.1)
	Synchro 95th Q	-	242'	181'	94'	163'	-	#247'	47'	-	196'	120'	
2029 Build-out	LOS (Delay)		C (21.6)		B (18.7)			B (19.3)			B (13.6)		B (18.1)
	Synchro 95th Q	-	246'	181'	96'	164'	-	#243'	47'	-	197'	119'	
PM Peak Hour													
2024 Existing	LOS (Delay)		D (46.5)		-			C (22.4)			C (32.1)		C (33.5)
	Synchro 95th Q	#567'	-	230'	-	-	#108'	183'	-	8'	#608'	136'	
2029 Background	LOS (Delay)		C (28.5)		C (25.7)			C (26.4)			B (13.6)		C (22.7)
	Synchro 95th Q	-	312'	265'	81'	252'	-	#618'	34'	-	264'	148'	
2029 Build-out	LOS (Delay)		C (28.7)		C (25.7)			C (26.4)			B (13.7)		C (22.8)
	Synchro 95th Q	-	318'	267'	84'	255'	-	#617'	36'	-	265'	148'	
Background Storage				750'		425'			375'			500'	

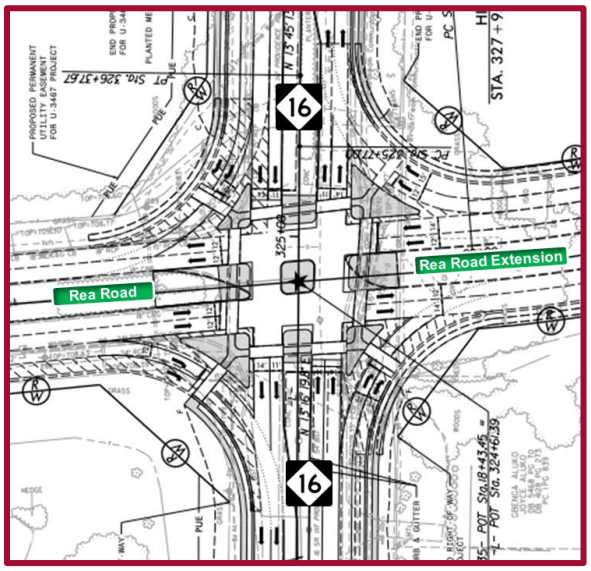
Exceeds storage

95th percentile volume exceeds capacity, queue may be longer

m Volume for 95th percentile queue is metered by upstream signal

As shown in **Table 6.1**, under 2024 existing conditions, the overall intersection is expected to operate at LOS C during the AM and PM peak hours and LOS D during the MID peak hour.

As discussed in **Section 4.3**, U-5769A was included in the 2029 analyses. Based on the roadway plan set provided by NCDOT and shown in the image to the right, this intersection is planned to be converted from the existing standard full-movement configuration to a RCI where left-turns are not allowed at the main intersection. Instead, all left-turn movements will be redirected to U-turn bulbs on each leg of the S Providence Rd (NC 16) and Rea Road/Rea Road Extension intersection. U-3467 will construct the fourth leg of this intersection and then will be modified to a RCI as part of U-5769A. Based on these plans, the following approach laneage was assumed in 2029:



- Northbound – Two through lanes and two right-turn lanes along S Providence Rd (NC 16)
- Southbound – Two through lanes and two right-turn lanes along S Providence Rd (NC 16)
- Eastbound – Two through lanes and two right-turn lanes along Rea Rd
- Westbound – Two through lanes and two right-turn lanes along Rea Rd Extension

Table 6.1 shows that with these planned improvements in place, the overall intersection is expected to operate at LOS C or better for all peak hours under 2029 background conditions. With the addition of the site traffic, the overall intersection is expected to continue to operate at LOS C or better for all peak hours. Therefore, no improvements are identified for capacity purposes.

Based on review of the Synchro 95th percentile queue lengths, the southbound right-turn queue along S Providence Road (NC 16) is expected to exceed the planned storage during the AM peak hour with U-5769A in place under build-out conditions. Since the southbound right-turn queue is projected to exceed the planned storage by less than 100 feet, extension of this turn lane is not recommended as mitigation for the proposed Deal Lake development.

6.2 WEDDINGTON ROAD (NC 84) AND COX ROAD

Table 6.2 summarizes the LOS, control delay and 95th percentile queue lengths at the unsignalized, stop-controlled intersection of Weddington Road (NC 84) and Cox Road.

Table 6.2 - Weddington Road (NC 84) and Cox Road					
Condition	Measure	EB		WB	SB
		*EBL	EBT	WBTR	SBLR
AM Peak Hour					
2024 Existing	LOS (Delay)	B (10.7)	A (0.0)	A (0.0)	E (38.0)
	Synchro 95th Q	3'	0'	0'	95'
2029 Background	LOS (Delay)	A (10.0)	A (0.0)	A (0.0)	D (25.8)
	Synchro 95th Q	0'	0'	0'	43'
2029 Build-out	LOS (Delay)	B (10.1)	A (0.0)	A (0.0)	D (26.4)
	Synchro 95th Q	0'	0'	0'	43'
MD Peak Hour					
2024 Existing	LOS (Delay)	A (9.6)	A (0.0)	A (0.0)	C (24.9)
	Synchro 95th Q	3'	0'	0'	33'
2029 Background	LOS (Delay)	A (9.1)	A (0.0)	A (0.0)	C (22.2)
	Synchro 95th Q	3'	0'	0'	28'
2029 Build-out	LOS (Delay)	A (9.1)	A (0.0)	A (0.0)	C (22.9)
	Synchro 95th Q	3'	0'	0'	30'
PM Peak Hour					
2024 Existing	LOS (Delay)	A (9.1)	A (0.0)	A (0.0)	D (25.6)
	Synchro 95th Q	3'	0'	0'	40'
2029 Background	LOS (Delay)	A (9.3)	A (0.0)	A (0.0)	C (20.4)
	Synchro 95th Q	3'	0'	0'	15'
2029 Build-out	LOS (Delay)	A (9.3)	A (0.0)	A (0.0)	C (21.1)
	Synchro 95th Q	3'	0'	0'	18'
Background Storage		125'			

*Conflicting left-turn movements are broken out per NCDOT guidelines under unsignalized conditions

As shown in **Table 6.2**, under 2024 existing conditions, the stop-controlled southbound approach of Cox Road is expected to operate with moderate delays during the AM and PM peak hours and short delays during the MID peak hour.

Under 2029 background conditions, the stop-controlled southbound approach is expected to operate with moderate delay during the AM peak hour and short delays during the MID and PM peak hours. The decrease in delay shown in **Table 6.2** between existing and background conditions reflects the change in PHFs to meet NCDOT Congestion Management Capacity Analysis Guidelines as discussed in **Section 6.0**. This is due to the existing PHF being less than 0.9 for multiple movements during each peak hour. An increase in PHF to 0.9 causes the traffic volume to be more evenly distributed throughout the peak hour results in reduction in the average delay.

With the addition of site traffic, the stop-controlled southbound approach is expected to continue to operate with moderate delays during the AM peak hour and short delays during the MID and PM peak hours with minimal increases in delay and queueing. Therefore, no improvements are identified for capacity purposes at this intersection.

6.3 WEDDINGTON ROAD (NC 84) AND TWELVE MILE CREEK ROAD

Table 6.3 summarizes the LOS, control delay and 95th percentile queue lengths at the signalized, intersection of Weddington Road (NC 84) and Twelve Mile Creek Road.

Table 6.3 - Weddington Road (NC 84) and Twelve Mile Creek Road

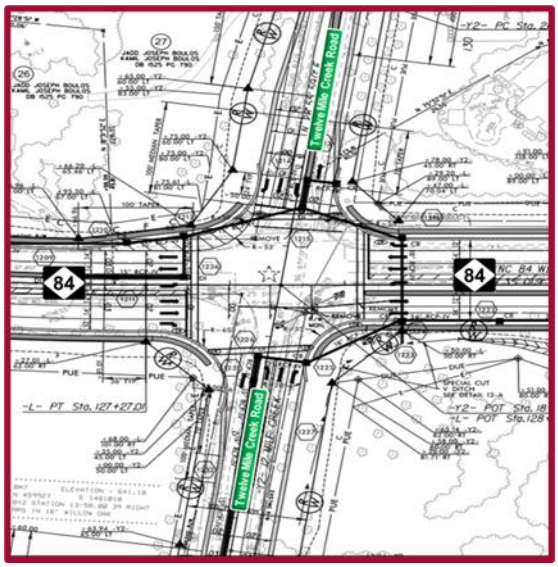
Condition	Measure	EB			WB			NB			SB			Intersection
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	LOS (Delay)
AM Peak Hour														
2024 Existing	LOS (Delay)	F (124.3)			F (265.5)			F (409.8)			F (212.6)			F (246.0)
	Synchro 95th Q	70'	#623'	-	44'	#931'	-	-	#473'	-	-	#611'	-	
2029 Background	LOS (Delay)	D (38.2)			D (48.2)			E (68.8)			E (75.7)			D (50.0)
	Synchro 95th Q	136'	343'	128'	165'	596'	63'	#246'	37'	97'	124'	66'	198'	
2029 Build-out	LOS (Delay)	D (38.7)			D (52.3)			E (76.4)			E (74.8)			D (52.2)
	Synchro 95th Q	162'	348'	133'	165'	614'	64'	#264'	37'	97'	124'	65'	197'	
MD Peak Hour														
2024 Existing	LOS (Delay)	E (69.5)			D (45.8)			F (123.6)			D (47.3)			E (66.3)
	Synchro 95th Q	62'	#1012'	-	#78'	658'	-	-	#354'	-	-	195'	-	
2029 Background	LOS (Delay)	C (29.9)			C (32.9)			E (59.0)			E (57.1)			D (39.8)
	Synchro 95th Q	111'	275'	84'	131'	250'	183'	#168'	169'	90'	#182'	133'	53'	
2029 Build-out	LOS (Delay)	C (31.0)			C (34.1)			E (58.1)			E (58.1)			D (40.4)
	Synchro 95th Q	136'	270'	87'	131'	255'	183'	#168'	169'	90'	#182'	135'	58'	
PM Peak Hour														
2024 Existing	LOS (Delay)	E (77.3)			D (40.2)			F (145.4)			E (74.1)			E (74.8)
	Synchro 95th Q	30'	#1355'	-	#151'	563'	-	-	#570'	-	-	348'	-	
2029 Background	LOS (Delay)	C (25.2)			C (32.1)			E (74.7)			E (58.2)			C (34.8)
	Synchro 95th Q	205'	385'	112'	113'	424'	88'	#253'	69'	135'	89'	44'	122'	
2029 Build-out	LOS (Delay)	C (25.1)			D (35.6)			E (78.7)			E (58.1)			D (36.3)
	Synchro 95th Q	225'	399'	118'	113'	447'	92'	#265'	69'	134'	89'	44'	126'	
Background Storage		450'		400'	300'		375'	225'		225'	175'		125'	

Exceeds storage

95th percentile volume exceeds capacity, queue may be longer

As shown in **Table 6.3**, under 2024 existing conditions, the overall intersection is expected to operate at LOS F during the AM peak hour and LOS E during the MID and PM peak hours.

As discussed in **Section 4.3**, U-3467 was included in the 2029 analyses. Based on the latest roadway plan set provided by NCDOT and shown in the image to the right, this intersection is planned to remain full-movement with the following approach laneage:



- Northbound – One through lane, one left-turn lane, and one right-turn lane along Twelve Mile Creek Road.
- Southbound – One through lane, one left-turn lane, and one right-turn lane along Twelve Mile Creek Road.
- Eastbound – Two through lanes, one left-turn lane, and one right-turn lane along Weddington Road (NC 84).
- Westbound – Two through lanes, one left-turn lane, and one right-turn lane along Weddington Road (NC 84).

Table 6.3 shows that with these planned improvements in place, the overall intersection is expected to operate at LOS D or better for all peak hours under 2029 background conditions.

With the addition of site traffic, the overall intersection is expected to operate at LOS D during all peak hours. The PM LOS degradation from LOS C to LOS D shown for the overall intersection is a result of the LOS C/D demarcation at 35 seconds, in which the site traffic pushes the delay less than two seconds beyond the demarcation. Therefore, no improvements are identified for capacity purposes.

Based on review of the Synchro 95th percentile queues, the following queues are expected to exceed the planned storage under build-out conditions:

- Northbound left-turn queue along Twelve Mile Creek Road during the AM and PM peak hours
- Southbound left-turn queue along Twelve Mile Creek Road during the MID peak hour
- Southbound right-turn queue along Twelve Mile Creek Road during the AM and PM peak hours

Since the storage is exceeded under both background and build-out conditions and the proposed site is not expected to significantly extend the projected queue lengths, extension of these turn lanes is not recommended as mitigation for the proposed Deal Lake development.

6.4 WEDDINGTON ROAD (NC 84) AND U-3467

As discussed in **Section 4.3**, a new signalized, tee-intersection is planned as part of U-3467 in which existing Weddington Road (NC 84) will be realigned to tie into the new Rea Road Extension approximately 1,050 feet south of Lake Forest Drive. **Table 6.4** summarizes the LOS, control delay and 95th percentile queue lengths at the future, signalized tee-intersection of Weddington Road (NC 84) and U-3467. The new eastbound approach (Rea Road Extension) is referred to as U-3467, with the existing realigned Weddington Road (NC 84) as the southbound and westbound approaches for the purposes of this analysis.

Table 6.4 - Weddington Road (NC 84) and U-3467

Condition	Measure	EB		WB			SB		Intersection
		EBL	EBT	WBU	WBT	WBR	SBL	SBR	LOS (Delay)
AM Peak Hour									
2029 Background	LOS (Delay)	B (12.4)		A (5.9)			D (52.9)		B (17.2)
	Synchro 95th Q	52'	215'	m4'	m138'	m63'	280'	33'	
2029 Build-out	LOS (Delay)	B (14.1)		A (5.3)			D (52.7)		B (17.2)
	Synchro 95th Q	52'	223'	m13'	m104'	m11'	281'	33'	
MD Peak Hour									
2029 Background	LOS (Delay)	B (10.3)		A (6.5)			D (47.3)		B (18.7)
	Synchro 95th Q	45'	157'	m8'	109'	m39'	213'	29'	
2029 Build-out	LOS (Delay)	B (12.2)		A (6.3)			D (47.1)		B (19.0)
	Synchro 95th Q	45'	172'	m32'	68'	7'	219'	28'	
PM Peak Hour									
2029 Background	LOS (Delay)	B (14.8)		B (10.7)			D (42.6)		C (20.0)
	Synchro 95th Q	52'	282'	m6'	m205'	m38'	282'	29'	
2029 Build-out	LOS (Delay)	B (17.5)		A (7.7)			D (42.5)		B (19.4)
	Synchro 95th Q	52'	305'	m27'	m107'	m9'	288'	29'	
Background Storage		425'		425'		400'	325'	125'	

m Volume for 95th percentile queue is metered by upstream signal

Based on the latest roadway plan set provided by NCDOT and shown in the image to the right, this new intersection is planned to operate as full-movement with the following approach laneage:

- Southbound – Two left-turn lanes and one right-turn lane along Weddington Road (NC 84).
- Eastbound – Two through lanes and one left-turn lane along Rea Road Extension.
- Westbound – Two through lanes, one U-turn lane, and one right-turn lane along Weddington Road (NC 84).

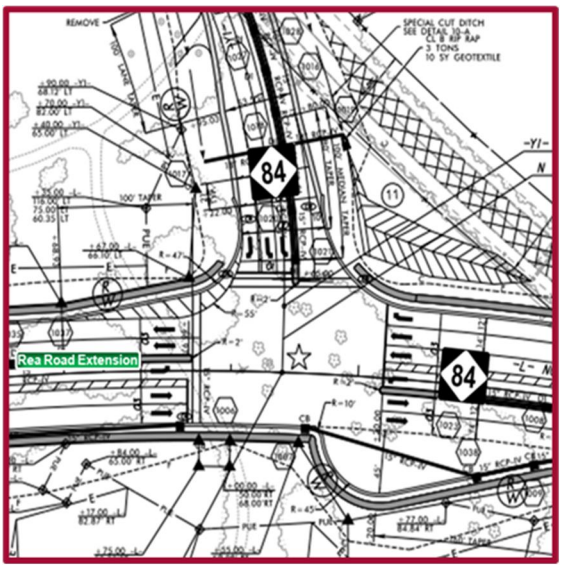


Table 6.4 shows the overall intersection is expected to operate at LOS C or better during all peak hours under 2029 background conditions.

With the addition of the site traffic, the overall intersection is expected to operate at LOS B during all peak hours. The decrease in delay and queue shown in **Table 6.4** between background and build-out conditions is in part due to the optimization of the splits and offsets for the coordinated traffic signals along Weddington Road (NC 84). Therefore, no improvements are identified for capacity purposes.

6.5 WEDDINGTON ROAD (NC 84) AND ACCESS A (RIRO)

Table 6.5 summarizes the LOS, control delay and 95th percentile queue lengths at the proposed unsignalized, stop-controlled intersection of Weddington Road (NC 84) and Access A (RIRO).

Table 6.5 - Weddington Road (NC 84) and Access A				
Condition	Measure	EB	WB	NB
		EBTR	WBT	NBR
AM Peak Hour				
2029 Build-out	LOS (Delay)	A (0.0)	A (0.0)	B (11.0)
	Synchro 95th Q	0'	0'	5'
MD Peak Hour				
2029 Build-out	LOS (Delay)	A (0.0)	A (0.0)	B (10.3)
	Synchro 95th Q	0'	0'	3'
PM Peak Hour				
2029 Build-out	LOS (Delay)	A (0.0)	A (0.0)	B (12.3)
	Synchro 95th Q	0'	0'	3'

As shown in **Table 6.5**, the stop-controlled northbound approach of Access A is expected to operate with short delays during all peak hours under build-out conditions.

Based on the anticipated SimTraffic maximum queues (reports included in the **Appendix**), the northbound approach of Access A should be constructed under RIRO operations with one ingress lane, one egress lane, stop-control, and the NCDOT minimum IPS of 100 feet.

Review of auxiliary turn-lane warrants at this intersection are included in **Section 7.0.**

6.6 WEDDINGTON ROAD (NC 84) AND ACCESS B (RIRO)

Table 6.6 summarizes the LOS, control delay and 95th percentile queue lengths at the proposed unsignalized, stop-controlled intersection of Weddington Road (NC 84) and Access B (RIRO).

Table 6.6 - Weddington Road (NC 84) and Access B					
Condition	Measure	EB	WB	NB	SB
		EBTR	WBTR	NBR	SBR
AM Peak Hour					
2029 Build-out	LOS (Delay)	A (0.0)	A (0.0)	B (10.9)	B (12.0)
	Synchro 95th Q	0'	0'	0'	3'
MD Peak Hour					
2029 Build-out	LOS (Delay)	A (0.0)	A (0.0)	B (10.2)	A (9.6)
	Synchro 95th Q	0'	0'	0'	0'
PM Peak Hour					
2029 Build-out	LOS (Delay)	A (0.0)	A (0.0)	B (12.0)	B (10.9)
	Synchro 95th Q	0'	0'	0'	3'

As shown in **Table 6.6**, the stop-controlled northbound and southbound approaches of Access B are expected to operate with short delays during all peak hours through build-out conditions.

Based on the anticipated SimTraffic maximum queues (reports included in the **Appendix**), the northbound and southbound approaches of Access B should be constructed under RIRO operations with one ingress lane, one egress lane, stop-control, and the NCDOT minimum IPS of 100 feet.

Review of auxiliary turn-lane warrants at this intersection are included in **Section 7.0.**

7.0 Auxiliary Turn Lane Warrants

Warrants for additional turn-lane improvements for unsignalized intersection beyond those necessary for capacity were determined based on a review of the figure titled 'Warrant for Left and Right-Turn Lanes' found on page 80 in the *NCDOT Policy On Street And Driveway Access to North Carolina Highways*. The results of the warrants for left and right-turn lanes under the 2029 build-out conditions indicate that turn lanes are not warranted at the proposed site accesses along Weddington Road (NC 84). The turn-lane warrant figures are included in the **Appendix**.

8.0 Identified Mitigation Improvements

Based on the capacity analyses performed at each of the identified study intersections, the following improvements have been identified to mitigate the impact of the proposed development on the adjacent street network:

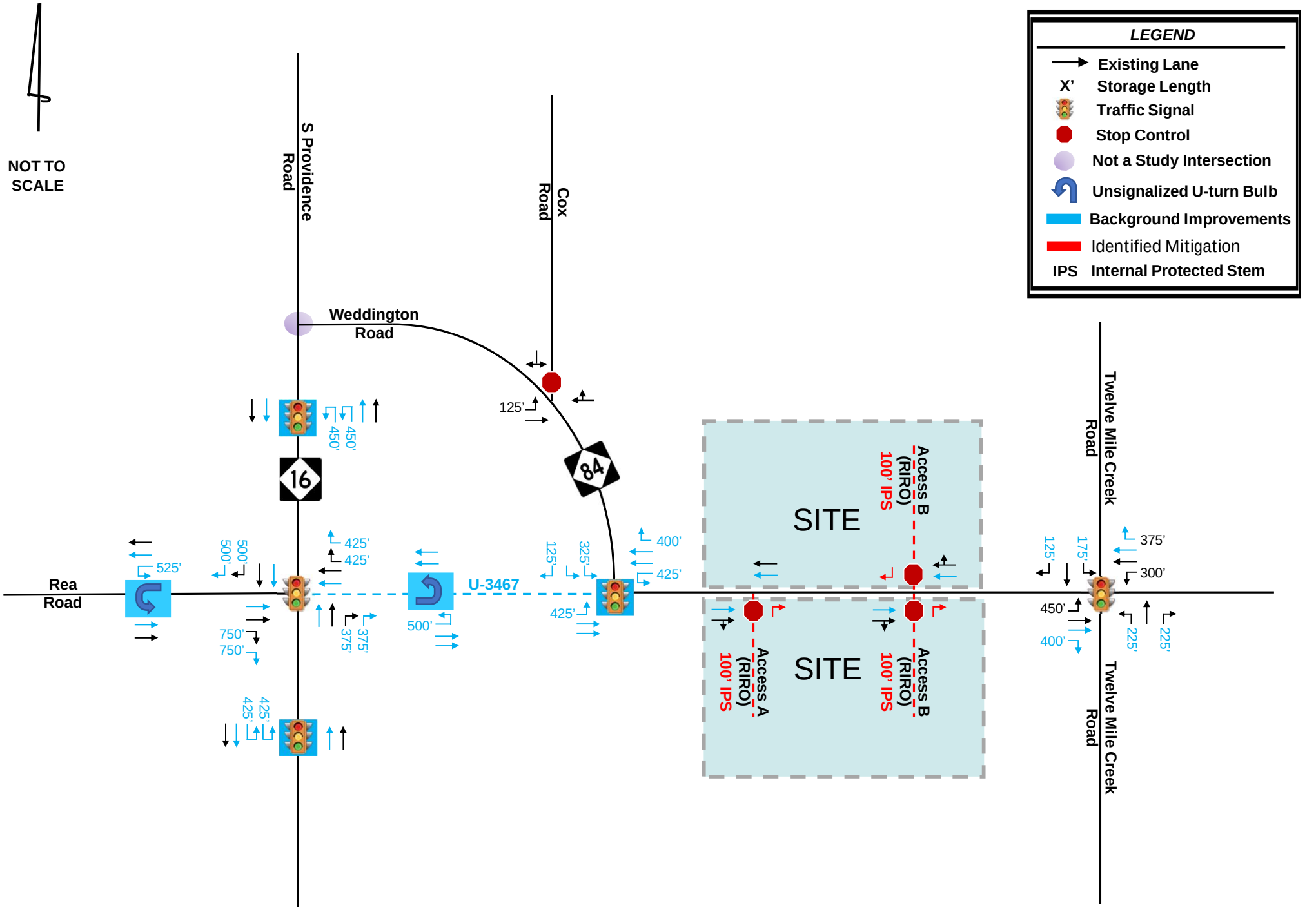
Weddington Road (NC 84) and Access A

- Construction of the northbound approach of Access A under RIRO operations with one ingress lane, one egress lane, stop-control, and an IPS of 100 feet.

Weddington Road (NC 84) and Access B

- Construction of the northbound approach of Access B under RIRO operations with one ingress lane, one egress lane, stop-control, and an IPS of 100 feet.
- Construction of the southbound approach of Access B under RIRO operations with one ingress lane, one egress lane, stop-control, and an IPS of 100 feet.

The mitigation improvements identified within the study area are shown in **Figure 8.1**. The improvements shown on this figure are subject to approval by NCDOT and the Town of Weddington. All additions and attachments to the State and Town roadway system shall be properly permitted, designed, and constructed in conformance to standards maintained by the agencies.



Kimley»Horn	Deal Lake Traffic Impact Analysis	Identified Mitigation Improvements	Figure 8.1

Appendix

NCDOT Scoping Checklist

NCDOT Traffic Impact Analysis Need Screening / Scoping Request

TIA Need Screening → TIA Scoping → TIA Submittal

A Traffic Impact Analysis (TIA) may be required for developments based on the site trip generation estimates, site context, or at the discretion of the NCDOT District Engineer. The Applicant or the TIA Consultant shall submit this form along with the site plan to the District Engineer to determine the TIA need and, if a TIA is required, initiate the TIA scoping process. Without an approved scope, the TIA is incomplete and will be rejected until the study is revised to conform to NCDOT's TIA requirements.

Project Name: Deal Lake **Previous Name:** If Applicable

Location: 610 Weddington Road **County:** Union **Municipality:** Weddington

Project Description: 31 single-family detached homes on the north side of Weddington Road and 62 single-family detached homes on the south side of Weddington Road (93 single-family detached homes total)

Project Contact:	Applicant	TIA Consultant
Company Name	Toll Brothers	Kimley-Horn and Associates
Contact Person	Robert Price	Laura Reid, PE
Phone Number	(704) 849-2625	(704) 319-7696
Email	rprice1@tollbrothers.com	laura.reid@kimley-horn.com
Mailing Address	9130 Kings Parade Boulevard Charlotte, NC 28273	200 South Tryon Street, Suite 200 Charlotte, NC 28202

Site Plan Prepared By: McKim & Creed **Site Plan Date:** February 2024

See site plan/vicinity map requirements on page 2.

Parcel Size: 167.48 Acre(s) **Anticipated Build-Out Year:** 2029

Weekday Site Trip Generation - Do NOT adjust for mode split, pass-by, internal capture, or diverted trips.

ITE LUC	Proposed Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
210	SF Det. (North)	62	DU	650	Adj. Street	12	36	48	40	23	63	ITE Equation
210	SF Det. (South)	31	DU	344	Adj. Street	7	19	26	21	12	33	ITE Equation
Total		93	DU	994		19	55	74	61	35	96	

Refer to the current *NCDOT Congestion Management Capacity Analysis Guidelines* for acceptable trip calculation methods and data sources.

**Explain local or other data sources, if used:

☐ The estimated site trips meet NCDOT's TIA trip threshold of 3,000 daily trips.

☒ The estimated site trips meet the municipal TIA trip threshold of >500 daily and/or > 50 peak hour

☒ This project is located in a known STIP and/ or local CIP project # U-3467, U-5769A

☐ This project includes a rezoning request.

☐ The proposed site access is located within 1,000 feet of an interchange.

☐ The Applicant requests for a new or modified control-of-access break.

☐ The Applicant requests for a new or modified median break.

Applicant's Signature | Print Name | Date

NCDOT Traffic Impact Analysis Need Screening / Scoping Request

TIA Need Screening → TIA Scoping → TIA Submittal

Site Plan/Vicinity Map Requirement for TIA Need Screening: While the site plan may not be finalized during the TIA scoping stage, the graphic representation of the proposed development shall provide adequate details on the development scope and context. More specifically, the site plan/map shall clearly show the location and type of each access point, spacing to adjacent and opposing driveways or intersections, internal street network, proposed buildings/parcels with their anticipated uses and sizes at full build-out and, if applicable, any nearby interstate, US, NC or Secondary Roads (SR).

Project Name: Deal Lake **Project Reference Number:** _____

☒ **A TIA is Required by the Local Government.** In addition, the study area is expected to include NCDOT maintained transportation facilities.

☐ **A TIA is Required by NCDOT,** per the *Policy on Street and Driveway Access to North Carolina Highways*.

If either or both of the boxes above are checked, the Applicant/TIA Consultant is hereby requested to fill out as much as possible of the following TIA scoping checklist, and return it along with the supporting documents to NCDOT prior to the scoping meeting.

☐ **A TIA is NOT required**. This decision is based on the development information presented above. Changes in the development plan will require re-evaluation of the TIA need, and may necessitate a TIA. The Applicant should inform the District Engineer of any significant changes in a timely fashion to avoid delays or rejections of the driveway permit / encroachment agreement applications.

Additional Comments:

The TIA need decision is made by the NCDOT Division ____ District____ on _____.

NCDOT District Representative's Signature
Email concurrence may be used in lieu of the signature.

Print Name

NCDOT TIA Scoping Checklist

TIA Need Screening → TIA Scoping → TIA Submittal

Project Name: Deal Lake **TIA Scoping Date:** _____

☒ **TIA Need Screening Forms are Attached.** Project Reference #: _____ Decision Date: _____

☒ **Site Plan and Access**

☒ Provide a site plan illustrating site access, internal and external roadways, buildings and land uses.
Refer to NCDOT's *Policy on Street and Driveway Access to North Carolina Highways* pages 14 and 15 for site plan requirements.

☒ Identify site access.

New Access	On Road	Access Type		Driveway Spacing		
	Road Name	Permitted Movements	Traffic Control	Distance (ft)	Direction	Nearest Intersection / Access
Access A	Weddington Road	RIRO	2-Way Stop	940	South	Lake Forest Drive
Access B	Weddington Road	RIRO	2-Way Stop	560	South	Access A
Access C						
Access D						
Access E						
Access F						
Access G						
Access H						

Existing Access	Existing Intersection of		Access Modification	**Proposed Interconnectivity** (If Applicable)		
	Road A	Road B		Connector #	Road Connected	Adjacent Development
Access 1				Connector 1		
Access 2				Connector 2		
Access 3				Connector 3		
Access 4				Connector 4		

☒ Additional access clarifications and provisions (e.g., proposed control-of-access or median breaks, modifications of existing access, loading/unloading area access, bike/pedestrian accommodation).

NCDOT STIP No. U-3467 Public Meeting Maps show a median across the site frontage. Per NCDOT, full-movement access will not be allowed.

☒ **Proposed K-12 School Site**

☐ NCDOT MSTA School Traffic Calculator for _____ shall be used.

☐ Peak Hour Factors (PHFs) shall be adjusted/weighted for new school trips (0.5 PHF by default).

☐ Internal school circulation analysis is required, and should be submitted in advance or concurrent with the TIA submittal.

☐ Clarify traffic operation plans (e.g. traffic circulation pattern, pedestrian access, drop-off/pick-up zone location and configuration, queue storage area and, if applicable, staggered start times).

☒ Trip Generation

The TIA Consultant shall prepare trip generation estimates following the current *NCDOT Congestion Management Capacity Analysis Guidelines*, and submit the calculation sheets and supporting information to the District Engineer for approval prior to capacity analysis.

ITE LUC	Proposed Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
210	SF Det. (North)	62	DU	650	Adj. Street	12	36	48	40	23	63	ITE Equation
210	SF Det. (South)	31	DU	344	Adj. Street	7	19	26	21	12	33	ITE Equation
Unadjusted Site Trips				994		19	55	74	61	35	96	
Internal Capture Trips (Attach Calculation Sheets)												
Internal Capture % of Unadjusted Site Trips				%			%			%		
LUC	Proposed Land Use	Any Internal Trips?		Pass-By % of External Trips								
				%			%			%		
				%			%			%		
				%			%			%		
				%			%			%		
				%			%			%		
Pass-By Trips (Attach Calculation Sheets)												
Adjacent Street Volumes												
Non-Pass-By Primary Trips				994		19	55	74	61	35	96	
Diverted Trips, if Applicable and Justifiable												

**Explain local or other data sources, if used:

☐ Existing Site Trip Information for Redevelopment Projects (Attach separate sheets as needed)

ITE LUC	Existing Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
Total Existing Site Trips												

☒ **Trip Distribution**

☒ Trip distribution diagrams are submitted concurrently with this document (attach separate sheets).

☐ Trip distribution diagrams will be submitted separately, along with supporting information, to the District Engineer for review and approval prior to capacity analysis. The trip distribution shall be based on the current and anticipated traffic patterns, as well as instructions noted below.

If required by the District Engineer, the following additional diagrams shall also be submitted:

☐ Mixed-Use Developments (separate diagrams for residential, commercial, and office trips)

☐ Inter-Development Trips (if 'internal" trips cross public streets)

☐ Pass-By Trips

☐ Diverted Trips

☐ Each Analysis Period

☐ **Mode Split**

☐ Provide Data Source and Justification

Mode / Period	Auto		
AM Peak	%	%	%
PM Peak	%	%	%
Daily	%	%	%
	%	%	%

☐ Identify proper infrastructure and accommodation for other modes of travel.

☒ **Analysis Peak Periods:**

☒ Weekday AM Peak 7:00-9:00 AM

☒ Weekday PM Peak 4:00-6:00 PM

☐ Weekday Midday Peak _____

☒ Weekday PM School Peak 2:00-4:00 PM

☐ Weekend _____ Peak _____

☐ Other _____

☒ Study Area Intersections and Data Collection

The study area shall include the site access intersections (both new and existing) identified under "Site Plan and Access" on page 1, as well as the following external and, if applicable, internal intersections.

External Intersection	Intersection of		Traffic Control	Intersection Turning Movement Counts			Notes
	Road A	Road B		New / Existing	Date of Counts	Growth Adjustment	
#1	NC 16	Rea Road	Signal	Require New Counts			
#2	Weddington Road	Cox Road	2-Way Stop	Require New Counts			
#3	Weddington Road	12 Mile Creek Rd	Signal	Require New Counts			
#4	Weddington Road	U-3467	Signal				Future
#5	Weddington Road	Access A	2-Way Stop				Build
#6	Weddington Road	Access B	2-Way Stop				Build
#7							
#8							
#9							
#10							
#11							
#12							

Internal Intersection	Intersection of		Access Type		Intersection Spacing		
	Road A	Road B	Traffic Control	Permitted Movements	Distance (ft)	Direction	Nearest Intersection
#101							
#102							
#103							
#104							
#105							

The following data will be collected:

☒ New traffic turning movement counts in ☒ 15-min intervals ☐ 5-min intervals (near schools)
Unless otherwise noted above, new traffic counts shall be collected at the existing study intersections during the analysis periods. Weekday counts shall avoid Mondays, Fridays, holidays, school breaks, road closures, and major weather events.

☒ To account for the impact of existing and/or proposed school traffic, PHFs will be adjusted for:

intersections numbered: #3 - AM and school peak hours

and access points numbered: _____

☒ Traffic Forecast Data for TIP: U-3467 for intersections along Rea Road

☒ Roadway/Intersection Configuration & Traffic Control

☒ Traffic Signal Phasing & Timing Data

☐ Crash Data: _____ Period: _____

☒ Other:

NCDOT STIP No. U-5769A U-turn bulbs along NC 16 will be included for modeling purposes but not evaluated for mitigation.

☒ Future Year Conditions

☒ Project Build-Out Year: 2029

☒ Future Analysis Year(s): 2029

☒ Identify below any funded/committed future transportation improvements, as well as any approved but incomplete developments near the site.

Funded STIP / Local CIP Project	Project Description	Year Complete
U-3467	Construct four-lane road from NC 16 to Waxhaw Indian Trail	2030
U-5769A	NC 16 widening from Rea Rd to Bonds Grove Church Rd	2031

Nearby Approved Development	Location	Future Land Use (exclude any completed phases)	Committed Improvements
None			

☒ Annual Growth Factor: 2 %

Justification/Data Source: NCDOT AADT data

☒ Local Comprehensive Transportation Plan Compliance

☒ Identify Applicable Local Transportation Planning Documents

CRTPO MTP/CTP

☒ Identify Applicable Roadways inside the Study Area

Road Name	Classification	Speed Limit	Proposed Cross-Section	Proposed Right-of-Way	Compliance Requirements	Affect Study Intersection #
NC 16	Minor Arterial	45				
Weddington Road	Minor Arterial	45				
Rea Road	Minor Arterial	45				
Cox Road	Local	45				
Twelve Mile Creek Road	Local	45				

☒ Study Method

The traffic analysis shall follow the current *NCDOT Congestion Management Capacity Analysis Guidelines*, *Policy on Street and Driveway Access to North Carolina Highways*, and use the current approved version of analysis software (e.g. Synchro/SimTraffic, HCS, Sidra Intersection, TransModeler).

The study shall include the following analysis scenarios for each analysis period.

1. Existing Conditions
2. Future No-Build Conditions (existing + background growth + approved developments + committed or funded improvements)
3. Future Build Conditions (future no-build + site trips)
4. Future Build with Improvements Conditions (future build traffic with improvements to mitigate the proposed development's impacts) and, if applicable:

☐ 5. TIP Design Year Analysis _____

☐ 6. Alternative Access Scenario (without proposed control-of-access or median break / modification)

The following additional analysis/outputs should be provided as warranted:

☐ Signal Warrant Analysis for accesses/intersections _____
☐ Multi-Modal Level of Service Analysis
☐ School Loading Zone Traffic Simulation
☐ Phasing Analysis (scope separately as needed)
☐ Safety/Crash Analysis
☐ Control-of-Access Modification Justification
☐ Median Break / Modification Justification
☐ Other _____

☒ Submittals

In addition to the hardcopies required below, the TIA Consultant shall provide the District Engineer and, if required, the local government an electronic copy of the study documents, including the latest site plan, figures and appendices, in searchable PDF files and the original traffic analysis files (e.g., Synchro, HCS). To expedite review, the NCDOT electronic submittals shall also be delivered concurrently to:

☐ Div. Traffic Engr ☐ Regional Traffic Engr ☐ Congestion Management ☐ Other _____

Submittals	NCDOT		Local Government	
	Electronic	Hardcopy	Electronic	Hardcopy
Trip Generation & Distribution	Required			
Draft TIA Report	Required			
Final Sealed TIA Report	Required			

☐ **Additional Comments (**municipal TIA requirements, approved variations from NCDOT guidelines)

Agreement by All Parties

The undersigned agree to the contents and methodology described above for completing the required traffic impact analysis for the proposed development identified herein. Any changes to the above methodology contemplated by the Applicant or the TIA Consultant must be submitted to the District Engineer in writing. If approved by NCDOT, then such changes may be accepted for the TIA report. Subsequent revisions to the development plan (e.g. land use, density, site access, or schedule) may require additional scoping and analysis, and may modify the TIA requirements.

This agreement shall become effective on the date approved by NCDOT, and shall expire ____ months after the effective date or upon significant changes to the roadway network and/or development assumptions, whichever occurs first. Once expired, renewal or re-scoping will be required for subsequent TIA submittals.

APPLICANT

Signature	Print Name	Date

TIA CONSULTANT

Signature	Laura Reid, PE Print Name	Date

LOCAL GOVERNMENT REPRESENTATIVE (If Applicable)

Signature	Print Name	Date

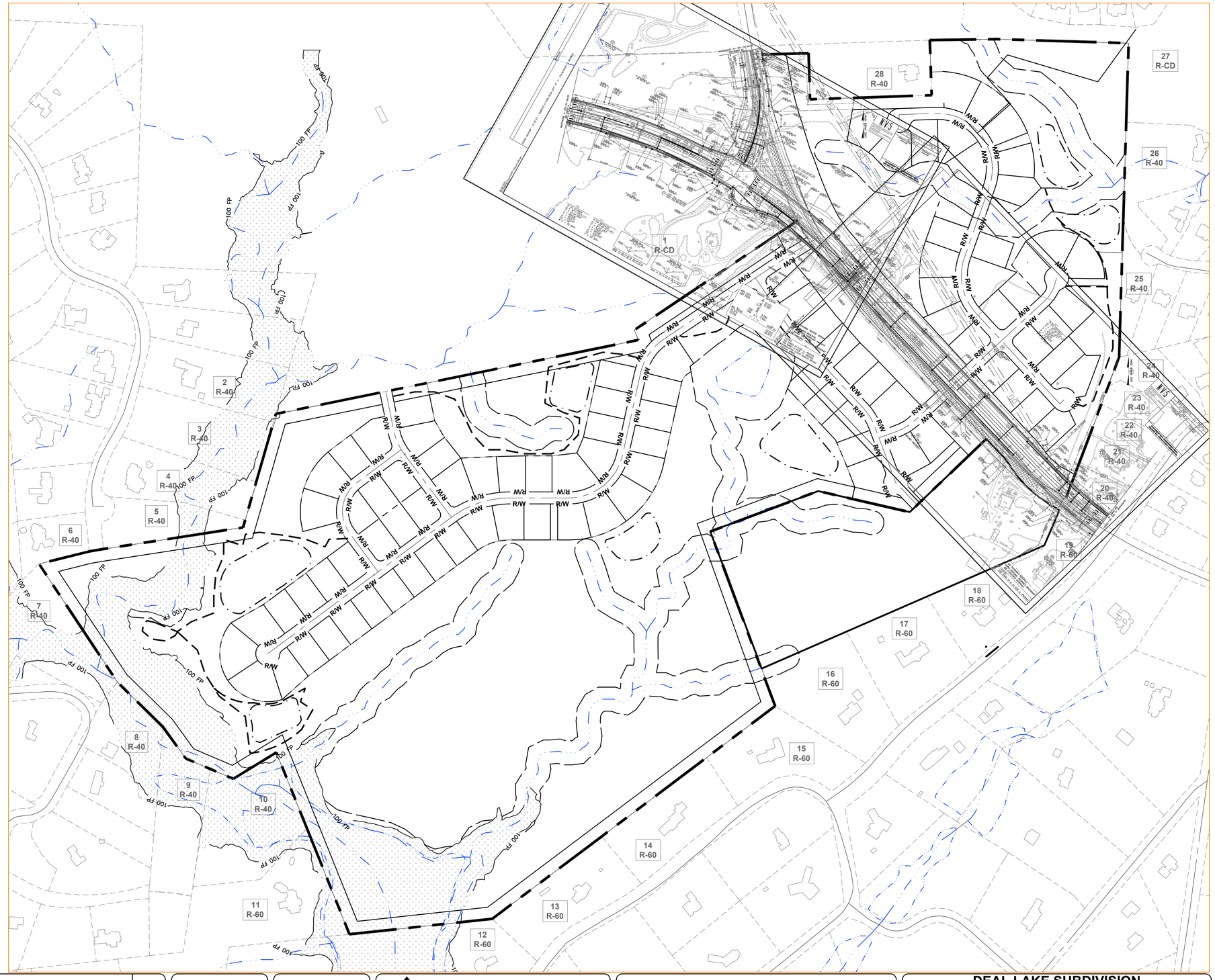
Email concurrence may be used in lieu of the signature.

NCDOT DISTRICT REPRESENTATIVE

Reviewed and approved by the NCDOT Division ____District____ on _____.

Signature	Print Name

Email concurrence may be used in lieu of the signature.



200' 0 200' 400'

SCALE: 1"=200' (Horiz.)

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

McKIM&CREED

8020 Tower Point Drive
Charlotte, North Carolina 28227
Phone: (704) 841-2588, Fax: (704) 841-2567

NC License# F-1222

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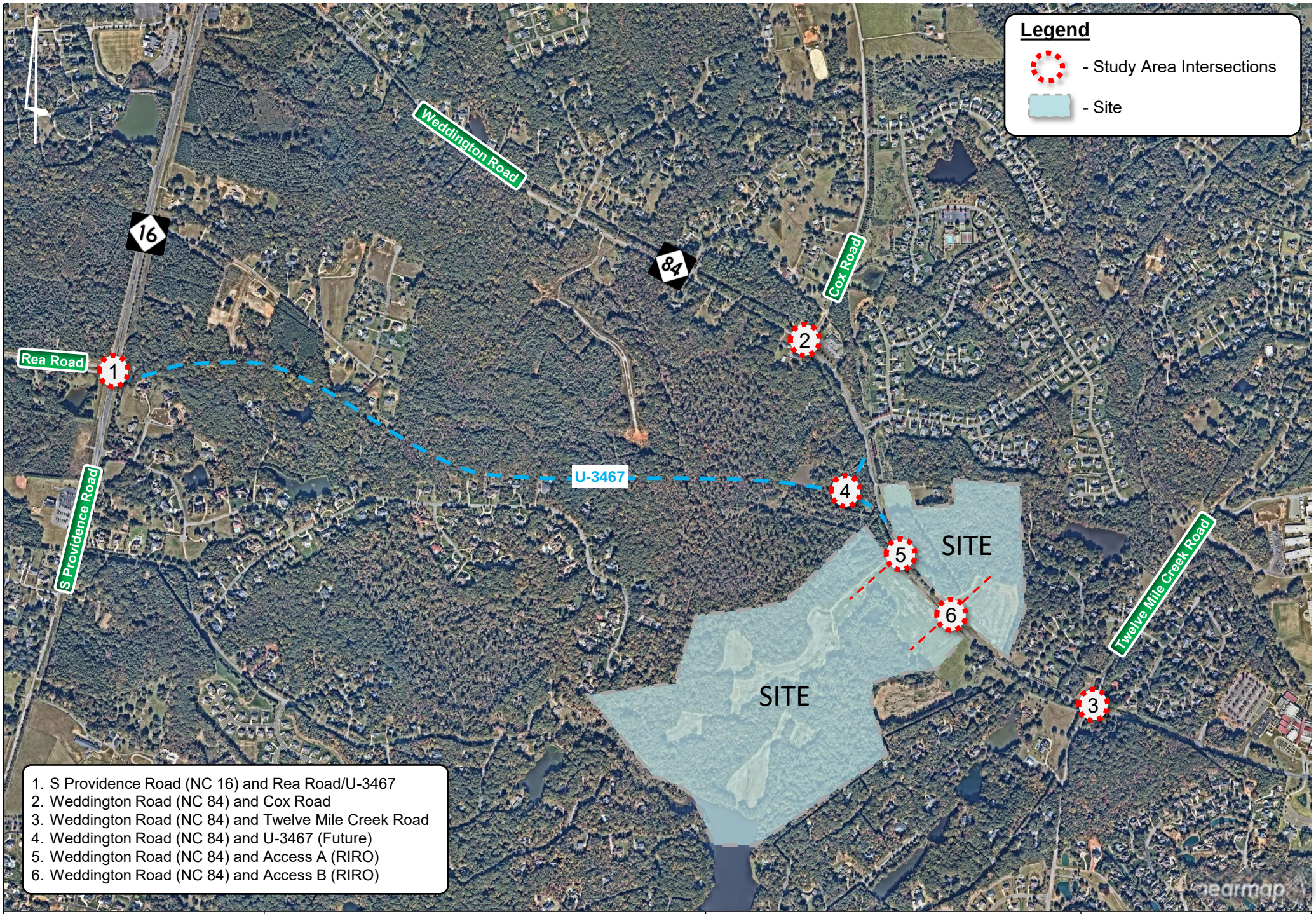
DESIGNED	
CHECKED	
PROJ. MGR.	TMM

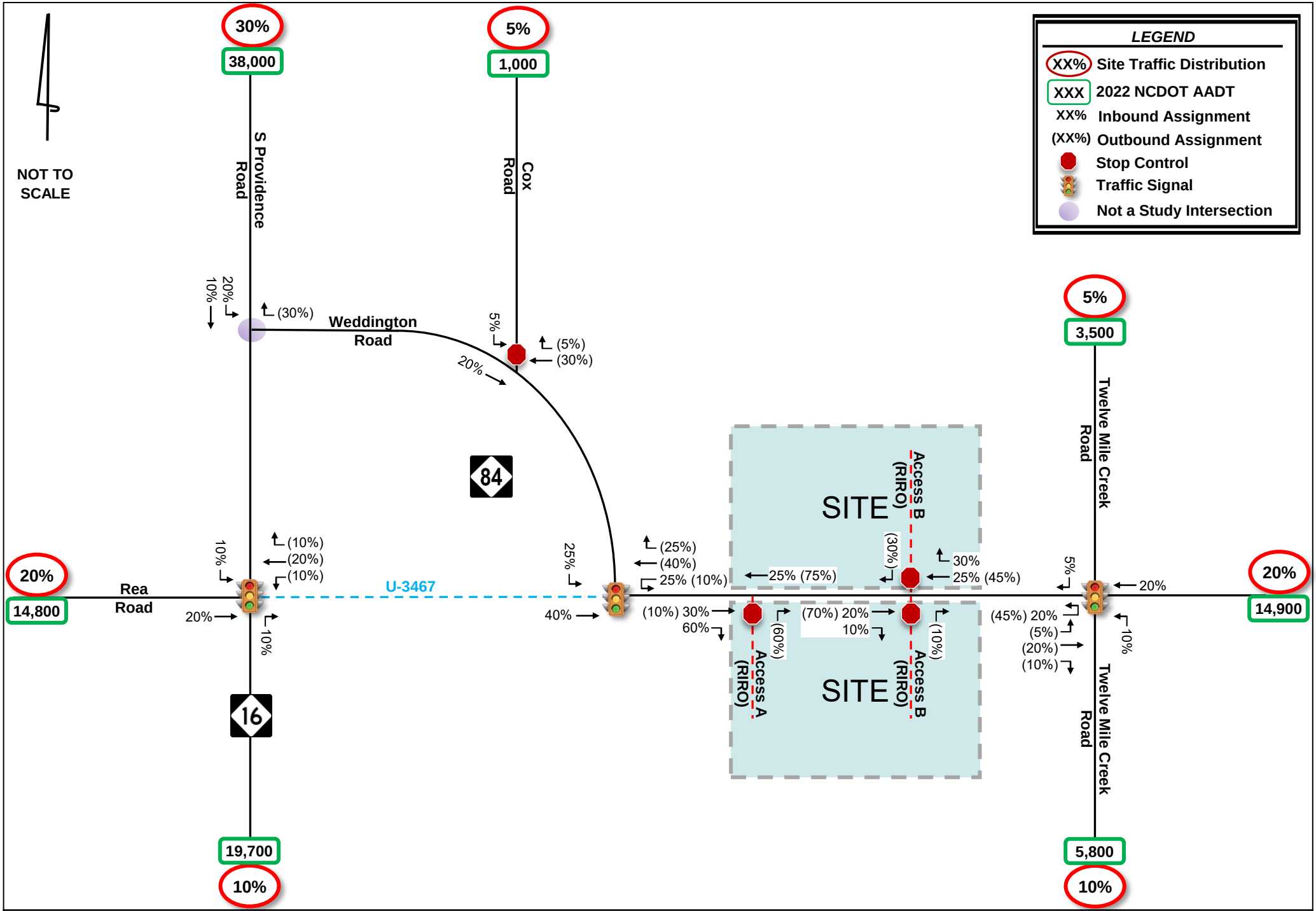
SCALE
HORIZONTAL:
VERTICAL:

DRAWING NUMBER
REVISION

STATUS: REVIEW DRAWINGS ONLY NOT FOR CONSTRUCTION



Kimley»Horn	**Deal Lake** **Traffic Impact Analysis**	**Study Area/Site Location**	**Figure 2**



Kimley»Horn	Deal Lake Traffic Impact Analysis	Site Traffic Distribution and Assignment	Figure 3

NCDOT AADT										
	2022	2021	2019	2018	2017	2016	2015	2014	2013	Growth Rate (2013-2022)
Weddington Road (west of Cox Road)	15,900	14,400	20,000	19,500	18,400	16,900	18,000	15,500	-	0.3%
Cox Road (north of Weddington Road)	1,000	1,200	1,300	1,200	1,100	1,000	1,300	1,300	900	1.2%
Twelve Mile Creek Road (north of Weddington Road)	3,500	3,500	3,700	3,600	3,300	3,500	3,400	3,500	-	0.0%
Twelve Mile Creek Road (South of Weddington Road)	5,800	5,400	5,800	5,600	5,200	4,900	3,900	3,700	3,500	5.8%
NC 16 (south of Weddington Road)	28,300	29,200	33,500	32,600	30,600	27,800	25,300	23,900	-	2.1%
Average										***1.9%***

LaBella
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January 23, 2024

Mr. Robert G. Tefft
Town Planner
Town of Weddington
1924 Weddington Road
Weddington, NC 28104

RE: Review of Scoping for Traffic Impact Analysis (TIA)
Deal Lake
Town of Weddington

Mr. Tefft:

In accordance with your request, the following is our review of the Scoping document prepared for Toll Brothers, by Laura Reid, PE, Kimley Horn & Associates, dated, October 24, 2023.

The Applicant is proposing to develop 93 single-family residential units on two parcels of approximately 168 acres of vacant land located on Weddington Road between Cox Road and Twelve Mile Creek Road. The north Parcel is proposed to contain 31 single-family units and the south parcel is proposed to contain 62 single-family dwelling units. The applicant proposes to study six (6) intersections consisting of: S. Providence Road (NC 16) and Rea Road; Weddington Road and Cox Road; Weddington Road and Twelve Mile Creek Road; Weddington Road and U-3467; Weddington Road and Access A; and, Weddington Road and Access "B."

A. Intersections to be Studied.

From an overall transportation perspective, the intersections to be studied appear to be appropriate to determine the traffic impacts of the proposed development.

B. Trip Generation.

The Scoping document identifies the single-family housing as Land-use 210 which is considered appropriate for this application. However, because the two parcels are on opposite sides of Weddington Road, each with a different arrival/departure pattern, and which generates a few more trips than as a combined Site, and to perform a more conservative analysis, it is suggested that the two Sites be treated separately for analysis purposes.

C. Trip Distribution and Assignment

The Scoping document contains an exhibit showing the distribution and assignment of the new trips. However, the assignments consider the roadway interconnect (U-3467) between Weddington Road and S. Providence Road (NC 16) to be completed. Further, the Scoping Document indicates that this STIP will not be completed until 2026-2030. Accordingly, it is assumed that the Traffic Impact Analysis (TIA) will be based on that time frame and that the Horizon Year of the completion of the STIP will be that time when occupancy of the single-family homes will be allowed. Alternatively, should the proposed development be phased and occupancy be proposed to begin before the roadway interconnect is completed, an interim TIA is to be performed with a shorter time frame for the Horizon Year as well with a different (appropriate) Site distribution.

D. Analysis Peak Periods

The Scoping Document indicates that the time periods when data is to be collected is between 7:00 and 9:00a.m. and between 4:00 and 6:00 p.m. While these time frames generally reflect the Peak Highway Hours and are consistent with ITE Trip Generation characteristics of single-family homes, the Scoping Document also indicates that the "MSTA School Traffic Calculator" is to be used. Further, there appears to be a number of schools in the vicinity. Accordingly, it is suggested that the afternoon timeframe for data collection also include the school dismissal period, typically between 2:00 and 3:00 p.m. Should the data indicate peaks of significant volumes during the school departure period, additional traffic impacts analyses should be performed during that time frame.

E. Conclusion

We trust the information herein is sufficient for your immediate needs. Please do not hesitate to contact me at 914-269-5610 or Ms. Fisher at 704-941-2132 should you have any questions.

Respectfully submitted,

Bernard Adler, P.E.
Senior Transportation Consultant
LaBella Associates
One North Broadway, Suite 803
White Plains, NY 10601

Bonnie A. Fisher, P.E.
Senior Civil Engineer
Project Manager

Ortiz-Hernandez, Julian

From:	Helms, Amelia C <achelms@ncdot.gov>
Sent:	Friday, February 2, 2024 1:46 PM
To:	Reid, Laura; Robert Tefft; Dewey, Karen; Gardner, Zachary L
Cc:	Richard, Elizabeth; Robert Price
Subject:	RE: [External] Deal Lake - TIA Scoping Document
Attachments:	2024-01-03_Deal Lake_SCOPING.pdf
Categories:	External

Laura,

The site plan should clearly show each access point and all NC and SR routes need to be labeled. Also, please provide the STIP project overlaid on the site plan.

U-3467 will be converting NC 84 to a divided facility with reduced conflict intersections, therefore full movement access will not be allowed on NC 84.

Thank you,

Amelia Helms, P.E.
District Engineer
Division 10 - District 3
North Carolina Department of Transportation

704 218 5100 office
704 292 1800 fax
achelms@ncdot.gov

130 South Sutherland Avenue
Monroe, NC 28112

From: Reid, Laura <laura.reid@kimley-horn.com>
Sent: Wednesday, January 3, 2024 5:26 PM
To: Robert Tefft <rtefft@townofweddington.com>; Dewey, Karen <kdewey@townofweddington.com>; Helms, Amelia C <achelms@ncdot.gov>; Gardner, Zachary L <zlgardner@ncdot.gov>
Cc: Richard, Elizabeth <Elizabeth.Richard@kimley-horn.com>; Robert Price <rprice1@tollbrothers.com>
Subject: [External] Deal Lake - TIA Scoping Document

Hi all,

Please see attached for the TIA scoping document for the Deal Lake development in Weddington. We understand we'll need to have a scoping meeting with the Town for this site, so please let us know if there is any additional information you need from us to get that scheduled.

This site is below the NCDOT TIA threshold, but we've included them on this email given the connection to NC 84 and the TIP projects in the vicinity.

Thanks,

Laura Reid, PE (NC & SC)
Kimley-Horn | 200 South Tryon Street, Suite 200, Charlotte, NC 28202
Direct: 704 319 7696 | Mobile: 443 804 7984 | www.kimley-horn.com
Connect with us: Twitter | LinkedIn | Facebook | Instagram

Deal Lake

TIA SCOPING REVIEW

BULLET LIST OF CONGESTION MGMT. COMMENTS AND CONCERNS (SC-2024-036)

March 4, 2024

The Congestion Management Section (CMS) has performed a review of the scoping document for the proposed Deal Lake development prepared by Kimley-Horn and Associates (received February 20, 2024). According to the document, the proposed development is to be located on both sides of NC 84 (Weddington Rd) 1,300' west of SR 1341 (Twelve Mile Creek Rd) in Weddington, NC. The scoping document states that the full build-out of the development is to be constructed by 2029 and is to consist of residential land use consisting of 93 dwelling units of single-family detached housing (LUC 210) generating 994 unadjusted daily trips. Based on our review, we have the following comments at this time:

Trip Generation

- The Trip Generation appears reasonable.

Trip Distribution and Growth Rate

- Trip distribution appears reasonable.
- Growth rate of 2% appears reasonable.

Study Intersections

- Study Intersections appear reasonable.

Site Plan and Proposed Driveways

- Site plan appears reasonable and appears to match with the trip generation.
- TIP Projects U-3467 and U-5769A are in the immediate area of this project. The scoping documents indicate that TIP Design Year Analyses will not be provided and that a rezoning request will be not be made for this project. (Observation)
- Prior to seeking driveway permit, overlay development project plans on TIP project plans to demonstrate compatibility. Final plans are subject to review by the NCDOT District, Division, and Roadway Design Offices.
- Please ensure that the proposed driveway(s) are in accordance with the NCDOT Driveway Manual and Internal Protected Stem lengths are provided with the TIA.

NOTE: This list should not be considered all-inclusive. Further review may identify additional areas of concern.

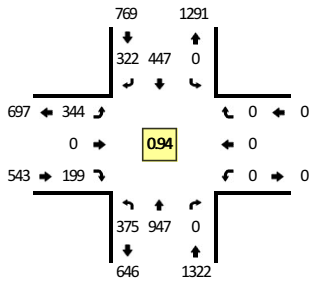
Turning Movement Counts

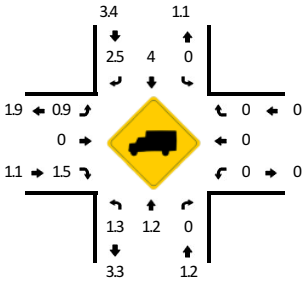
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

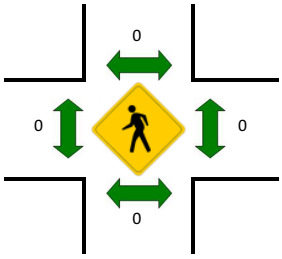
LOCATION: S Providence Rd -- Rea Rd/Marvin School Rd | **QC JOB #:** 16497107
CITY/STATE: Weddington, NC | **DATE:** Thu, Mar 7 2024

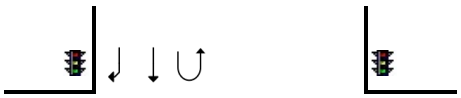
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

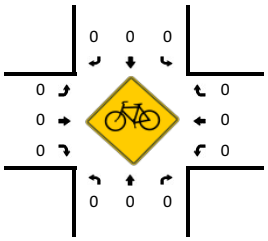
TRUE DATA TO IMPROVE MOBILITY

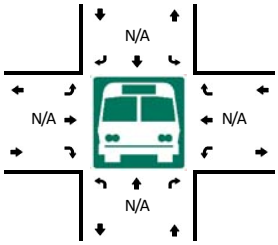


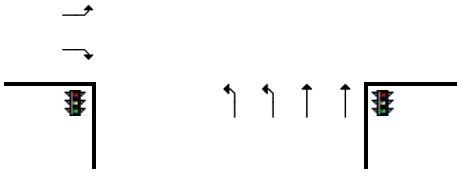


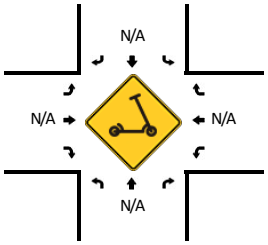












15-Min Count Period Beginning At	S Providence Rd (Northbound)				S Providence Rd (Southbound)				Rea Rd/Marvin School Rd (Eastbound)				Rea Rd/Marvin School Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	102	245	0	0	0	78	71	0	86	0	43	0	0	0	0	0	625	
7:15 AM	80	259	0	0	0	98	94	0	100	0	67	0	0	0	0	0	698	
7:30 AM	100	217	0	0	0	123	78	0	97	0	41	0	0	0	0	0	656	
7:45 AM	93	226	0	0	0	148	79	0	61	0	48	0	0	0	0	0	655	2634
8:00 AM	60	199	0	0	0	149	85	0	75	0	41	0	0	0	0	0	609	2618
8:15 AM	70	213	0	0	0	147	97	0	82	0	23	0	0	0	0	0	632	2552
8:30 AM	64	227	0	0	0	129	83	0	86	0	37	0	0	0	0	0	626	2522
8:45 AM	68	225	0	0	0	153	112	0	106	0	48	0	0	0	0	0	712	2579

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	320	1036	0	0	0	392	376	0	400	0	268	0	0	0	0	0	2792
Heavy Trucks	4	8	0		0	16	12		4	0	4		0	0	0		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

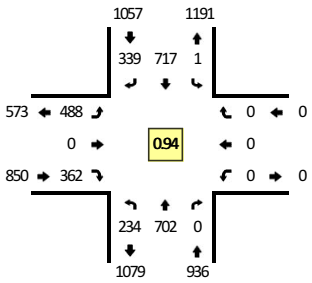
Comments:

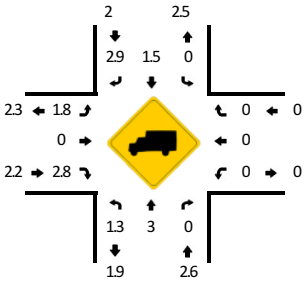
Report generated on 3/11/2024 1:14 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

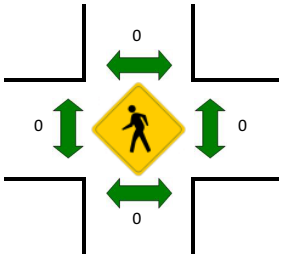
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

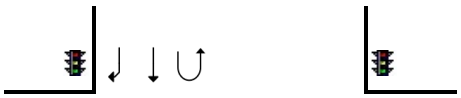
LOCATION: S Providence Rd -- Rea Rd/Marvin School Rd | **QC JOB #:** 16497108
CITY/STATE: Weddington, NC | **DATE:** Thu, Mar 7 2024

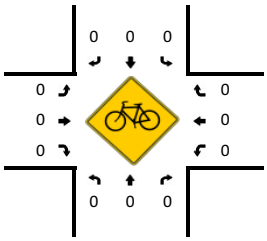
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:45 PM -- 4:00 PM

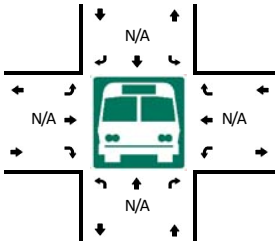


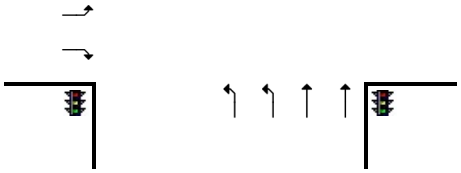


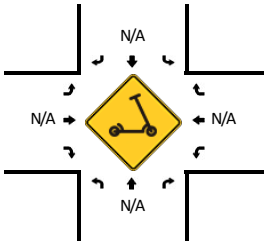












15-Min Count Period Beginning At	S Providence Rd (Northbound)				S Providence Rd (Southbound)				Rea Rd/Marvin School Rd (Eastbound)				Rea Rd/Marvin School Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	51	149	0	0	0	168	89	0	80	0	73	0	0	0	0	0	610	
2:15 PM	45	159	0	0	0	164	71	0	102	0	77	0	0	0	0	0	618	
2:30 PM	40	152	0	0	0	208	86	0	79	0	60	0	0	0	0	0	625	
2:45 PM	50	180	0	0	0	157	95	0	117	0	72	0	0	0	0	0	671	2524
3:00 PM	69	166	0	0	0	176	84	1	122	0	68	0	0	0	0	0	686	2600
3:15 PM	61	185	0	0	0	173	88	0	114	0	96	0	0	0	0	0	717	2699
3:30 PM	57	172	0	0	0	180	74	0	113	0	91	0	0	0	0	0	687	2761
3:45 PM	47	179	0	0	0	188	93	0	139	0	107	0	0	0	0	0	753	2843

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	188	716	0	0	0	752	372	0	556	0	428	0	0	0	0	0	3012
Heavy Trucks	0	24	0		0	4	8		4	0	16		0	0	0		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

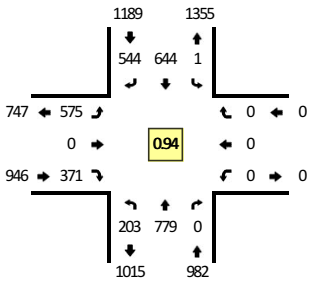
Comments:

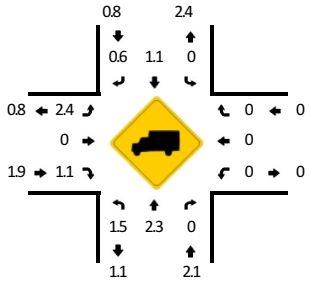
Report generated on 3/11/2024 1:14 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

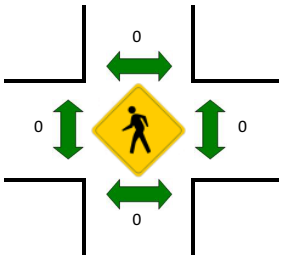
LOCATION: S Providence Rd -- Rea Rd/Marvin School Rd | **QC JOB #:** 16497109
CITY/STATE: Weddington, NC | **DATE:** Thu, Mar 7 2024

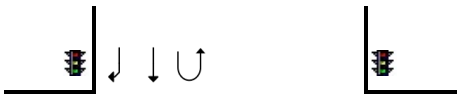
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

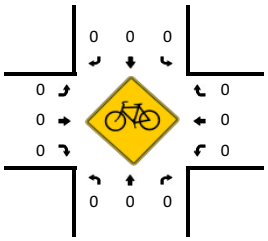


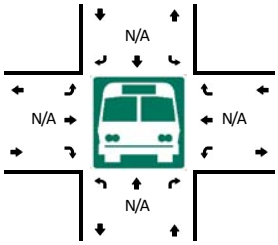


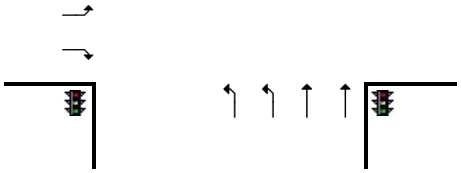
TRUE DATA TO IMPROVE MOBILITY

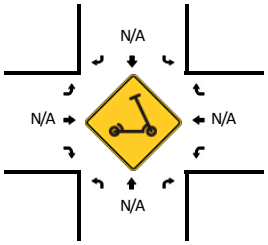












15-Min Count Period Beginning At	S Providence Rd (Northbound)				S Providence Rd (Southbound)				Rea Rd/Marvin School Rd (Eastbound)				Rea Rd/Marvin School Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	40	162	0	0	0	158	100	0	101	0	102	0	0	0	0	0	663	
4:15 PM	37	171	0	0	0	168	118	0	136	0	105	0	0	0	0	0	735	
4:30 PM	49	218	0	0	0	170	111	1	134	0	111	0	0	0	0	0	794	
4:45 PM	47	176	0	0	0	171	139	0	146	0	99	0	0	0	0	0	778	2970
5:00 PM	42	204	0	0	0	153	124	0	130	0	66	0	0	0	0	0	719	3026
5:15 PM	59	196	0	0	0	157	153	0	153	0	107	0	0	0	0	0	825	3116
5:30 PM	55	203	0	0	0	163	128	1	146	0	99	0	0	0	0	0	795	3117
5:45 PM	45	189	0	0	0	152	116	0	133	0	89	0	0	0	0	0	724	3063

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	236	784	0	0	0	628	612	0	612	0	428	0	0	0	0	0	3300
Heavy Trucks	0	36	0		0	0	0		12	0	0		0	0	0		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/11/2024 1:14 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

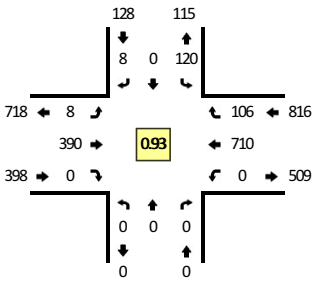
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

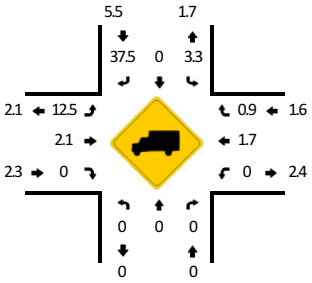
LOCATION: Cox Rd -- Weddington Rd
CITY/STATE: Weddington, NC

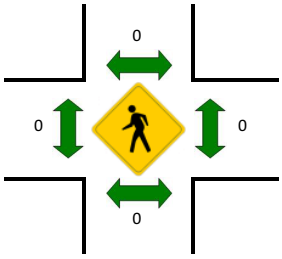
QC JOB #: 16497101
DATE: Thu, Mar 7 2024

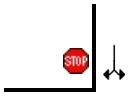
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

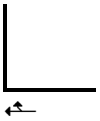


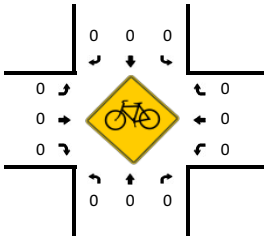
TRUE DATA TO IMPROVE MOBILITY

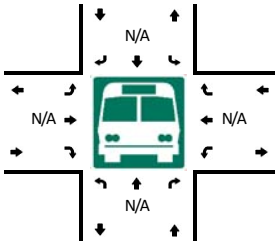


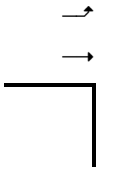


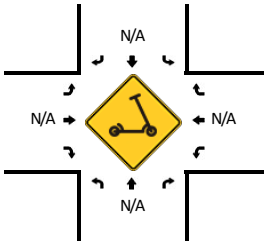












15-Min Count Period Beginning At	Cox Rd (Northbound)				Cox Rd (Southbound)				Weddington Rd (Eastbound)				Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	20	0	1	1	3	66	0	0	0	220	14	0	325	
7:15 AM	0	0	0	0	30	0	4	0	0	111	0	0	0	192	25	0	362	
7:30 AM	0	0	0	0	31	0	3	0	3	116	0	0	0	173	34	0	360	
7:45 AM	0	0	0	0	38	0	0	0	2	97	0	0	0	125	33	0	295	1342
8:00 AM	0	0	0	0	7	0	3	0	2	106	0	0	0	158	22	0	298	1315
8:15 AM	0	0	0	0	13	0	4	0	4	84	0	0	0	183	13	0	301	1254
8:30 AM	0	0	0	0	5	0	0	1	4	87	0	0	0	189	13	0	299	1193
8:45 AM	0	0	0	0	12	0	2	0	1	130	0	0	0	194	10	0	349	1247

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	0	0	0	0	120	0	16	0	0	444	0	0	0	768	100	0	1448
Heavy Trucks	0	0	0		4	0	12		0	8	0		0	8	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

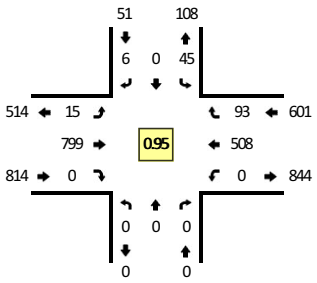
Report generated on 3/11/2024 1:14 PM

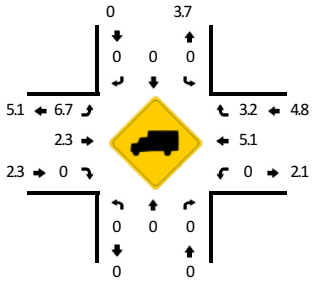
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

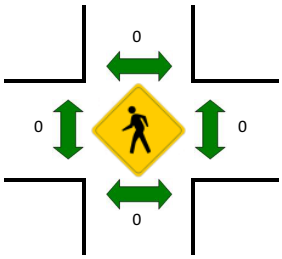
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

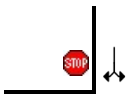
LOCATION: Cox Rd -- Weddington Rd | **QC JOB #:** 16497102
CITY/STATE: Weddington, NC | **DATE:** Thu, Mar 7 2024

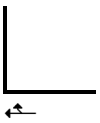
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:15 PM -- 3:30 PM

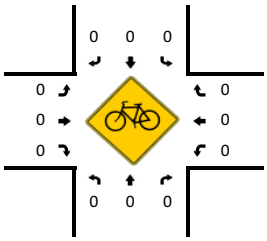


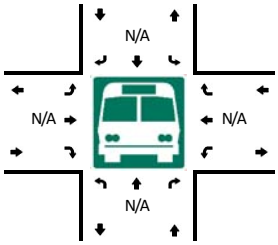


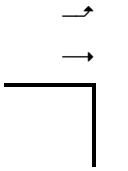


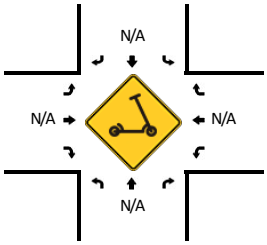












15-Min Count Period Beginning At	Cox Rd (Northbound)				Cox Rd (Southbound)				Weddington Rd (Eastbound)				Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	0	0	0	4	0	0	1	1	133	0	0	0	114	10	0	263	
2:15 PM	0	0	0	0	7	0	5	0	1	137	0	0	0	123	5	0	278	
2:30 PM	0	0	0	0	8	0	4	0	3	171	0	0	0	140	5	0	331	
2:45 PM	0	0	0	0	12	0	0	0	1	173	0	0	0	137	11	0	334	1206
3:00 PM	0	0	0	0	10	0	0	0	4	194	0	0	0	117	27	0	352	1295
3:15 PM	0	0	0	0	7	0	4	0	2	175	0	0	0	156	42	0	386	1403
3:30 PM	0	0	0	0	11	0	0	0	3	219	0	0	0	116	13	0	362	1434
3:45 PM	0	0	0	0	17	0	2	0	6	211	0	0	0	119	11	0	366	1466

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	0	0	0	0	28	0	16	0	8	700	0	0	0	624	168	0	1544
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	24	12		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/11/2024 1:14 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

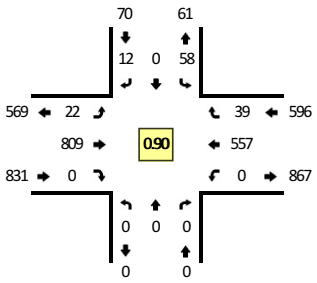
Type of peak hour being reported: Intersection Peak

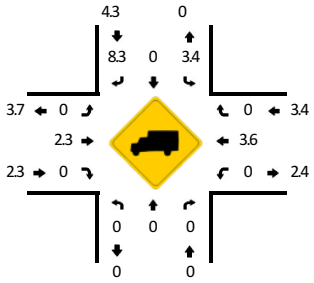
Method for determining peak hour: Total Entering Volume

LOCATION: Cox Rd -- Weddington Rd
CITY/STATE: Weddington, NC

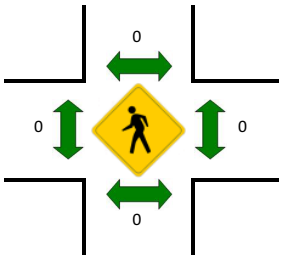
QC JOB #: 16497103
DATE: Thu, Mar 7 2024

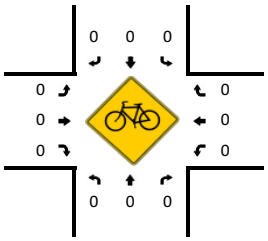
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

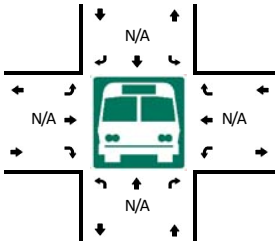


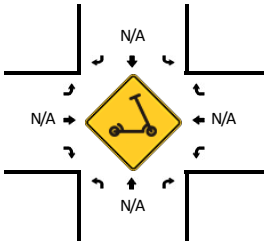


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	Cox Rd (Northbound)				Cox Rd (Southbound)				Weddington Rd (Eastbound)				Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	20	0	3	0	5	204	0	0	0	111	6	0	349	
4:15 PM	0	0	0	0	13	0	5	0	8	215	0	0	0	160	13	0	414	
4:30 PM	0	0	0	0	11	0	2	0	6	191	0	0	0	142	12	0	364	
4:45 PM	0	0	0	0	14	0	2	0	3	199	0	0	0	144	8	0	370	1497
5:00 PM	0	0	0	0	7	0	5	0	7	199	0	0	0	114	12	0	344	1492
5:15 PM	0	0	0	0	18	0	2	0	10	217	0	0	0	126	11	0	384	1462
5:30 PM	0	0	0	0	6	0	3	0	6	200	0	0	0	157	17	0	389	1487
5:45 PM	0	0	0	0	9	0	3	2	3	161	0	0	0	161	16	0	355	1472

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	0	0	0	0	52	0	20	0	32	860	0	0	0	640	52	0	1656
Heavy Trucks	0	0	0		4	0	0		0	8	0		0	28	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/11/2024 1:14 PM

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

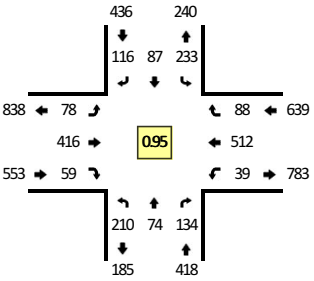
Type of peak hour being reported: Intersection Peak

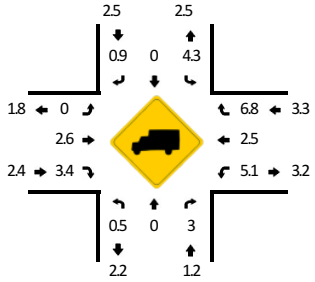
Method for determining peak hour: Total Entering Volume

LOCATION: Twelve Mile Creek Rd -- Weddington Rd
CITY/STATE: Weddington, NC

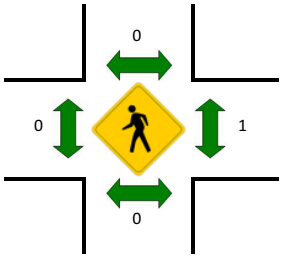
QC JOB #: 16497104
DATE: Thu, Mar 7 2024

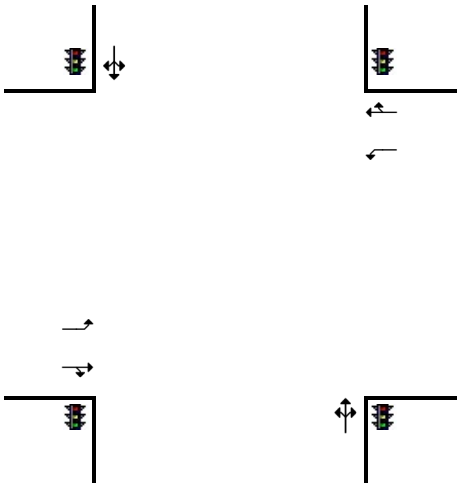
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

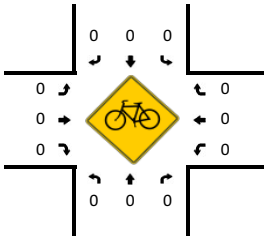


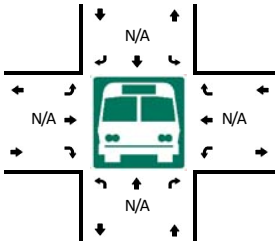


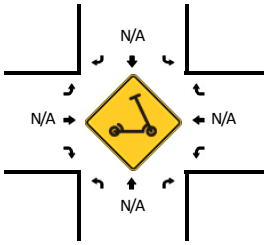
TRUE DATA TO IMPROVE MOBILITY











15-Min Count Period Beginning At	Twelve Mile Creek Rd (Northbound)				Twelve Mile Creek Rd (Southbound)				Weddington Rd (Eastbound)				Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	49	34	8	0	14	32	45	0	35	58	10	0	8	152	12	0	457	
7:15 AM	45	22	27	0	37	27	52	0	34	92	17	0	9	138	20	0	520	
7:30 AM	60	7	33	0	73	15	16	0	4	141	18	0	9	126	29	0	531	
7:45 AM	56	11	66	0	109	13	3	0	5	125	14	0	13	96	27	0	538	2046
8:00 AM	64	7	40	0	58	12	15	0	3	90	20	0	16	101	27	0	453	2042
8:15 AM	53	12	8	0	11	12	17	0	9	76	18	0	14	121	5	0	356	1878
8:30 AM	53	23	13	0	13	16	22	0	19	67	18	0	12	121	9	0	386	1733
8:45 AM	40	30	16	0	28	26	26	0	29	105	19	0	19	141	22	0	501	1696

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	224	44	264	0	436	52	12	0	20	500	56	0	52	384	108	0	2152
Heavy Trucks	4	0	4		12	0	0		0	12	8		0	8	16		64
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/11/2024 1:14 PM

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

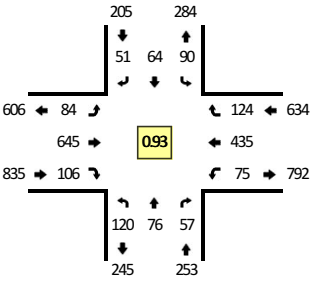
Type of peak hour being reported: Intersection Peak

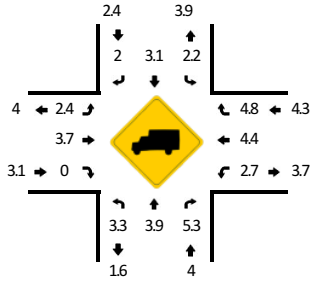
Method for determining peak hour: Total Entering Volume

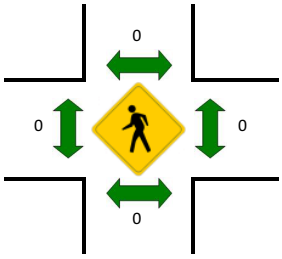
LOCATION: Twelve Mile Creek Rd -- Weddington Rd
CITY/STATE: Weddington, NC

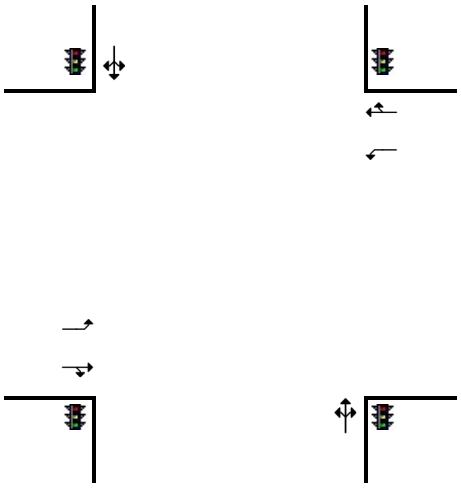
QC JOB #: 16497105
DATE: Thu, Mar 7 2024

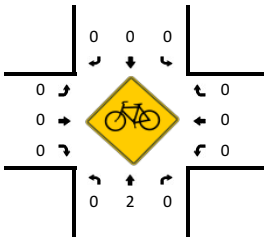
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:15 PM -- 3:30 PM

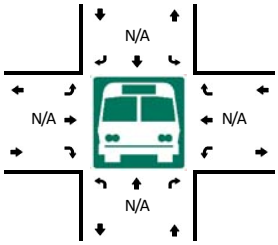


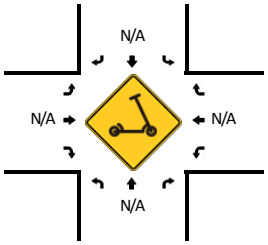












15-Min Count Period Beginning At	Twelve Mile Creek Rd (Northbound)				Twelve Mile Creek Rd (Southbound)				Weddington Rd (Eastbound)				Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	18	11	6	0	25	15	20	0	6	124	20	0	12	89	11	0	357	
2:15 PM	27	2	20	0	14	9	6	0	0	115	28	0	16	99	4	0	340	
2:30 PM	26	4	16	0	12	12	5	0	2	140	32	0	12	116	8	0	385	
2:45 PM	28	10	31	0	16	18	8	0	7	148	20	0	15	98	19	0	418	1500
3:00 PM	30	15	11	0	21	8	9	0	24	159	29	0	25	116	42	0	489	1632
3:15 PM	37	17	11	0	29	28	28	0	29	123	29	0	22	128	36	0	517	1809
3:30 PM	31	27	20	0	19	17	12	0	11	175	23	0	17	87	17	0	456	1880
3:45 PM	22	17	15	0	21	11	2	0	20	188	25	0	11	104	29	0	465	1927

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	148	68	44	0	116	112	112	0	116	492	116	0	88	512	144	0	2068
Heavy Trucks	8	0	4		0	0	0		4	16	0		4	24	12		72
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/11/2024 1:14 PM

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

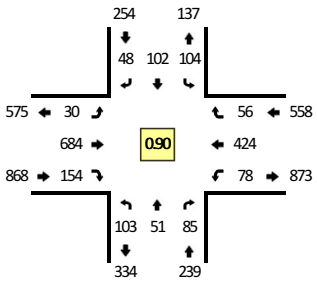
Type of peak hour being reported: Intersection Peak

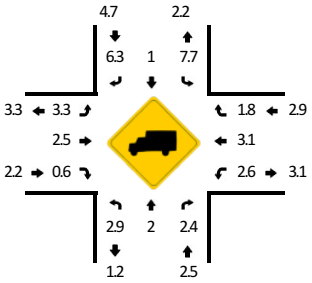
Method for determining peak hour: Total Entering Volume

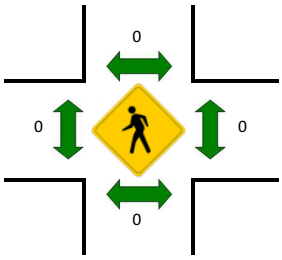
LOCATION: Twelve Mile Creek Rd -- Weddington Rd
CITY/STATE: Weddington, NC

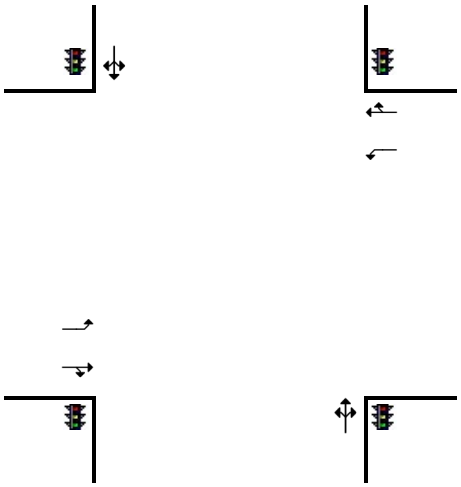
QC JOB #: 16497106
DATE: Thu, Mar 7 2024

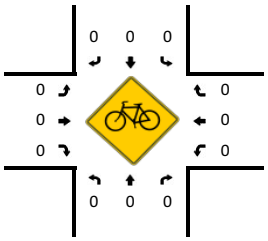
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

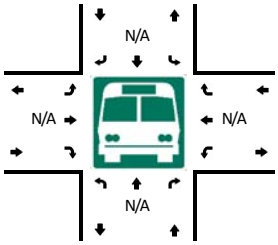


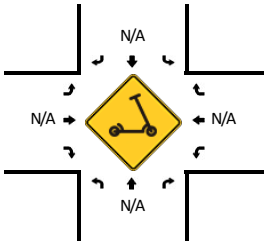












15-Min Count Period Beginning At	Twelve Mile Creek Rd (Northbound)				Twelve Mile Creek Rd (Southbound)				Weddington Rd (Eastbound)				Weddington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	21	13	23	0	35	18	13	0	13	167	34	0	22	72	18	0	449	
4:15 PM	21	14	18	0	45	39	23	0	10	162	45	0	19	124	15	0	535	
4:30 PM	30	12	16	0	15	17	8	0	4	183	44	0	19	106	13	0	467	
4:45 PM	31	12	28	0	9	28	4	0	3	172	31	0	18	122	10	0	468	1919
5:00 PM	31	12	28	0	13	13	4	0	2	161	33	0	26	94	5	0	422	1892
5:15 PM	30	13	33	0	19	17	9	0	7	157	30	0	18	102	7	0	442	1799
5:30 PM	27	26	25	0	19	38	19	0	5	164	24	0	17	124	15	0	503	1835
5:45 PM	23	18	48	0	29	36	15	0	4	150	27	0	20	123	9	0	502	1869

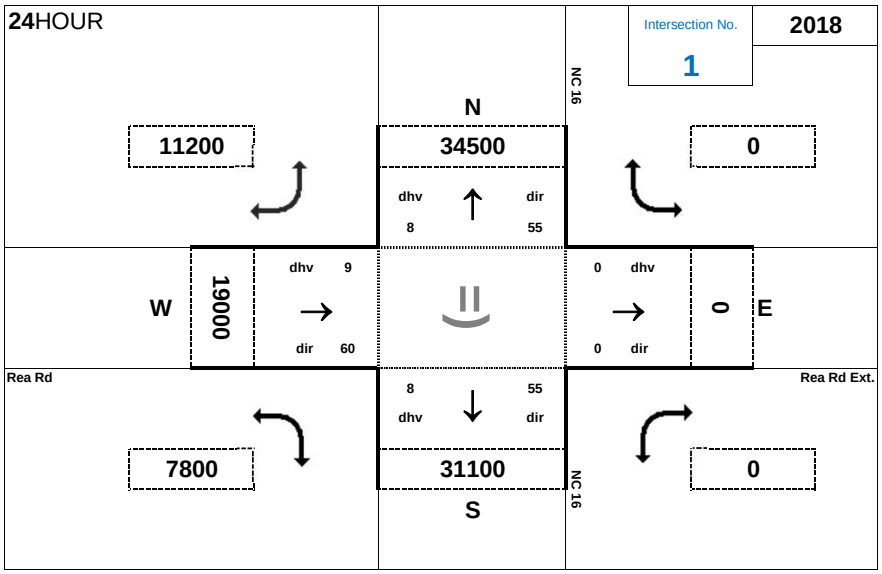
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	56	72	0	180	156	92	0	40	648	180	0	76	496	60	0	2140
Heavy Trucks	4	4	8		4	0	4		4	12	0		0	20	4		64
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

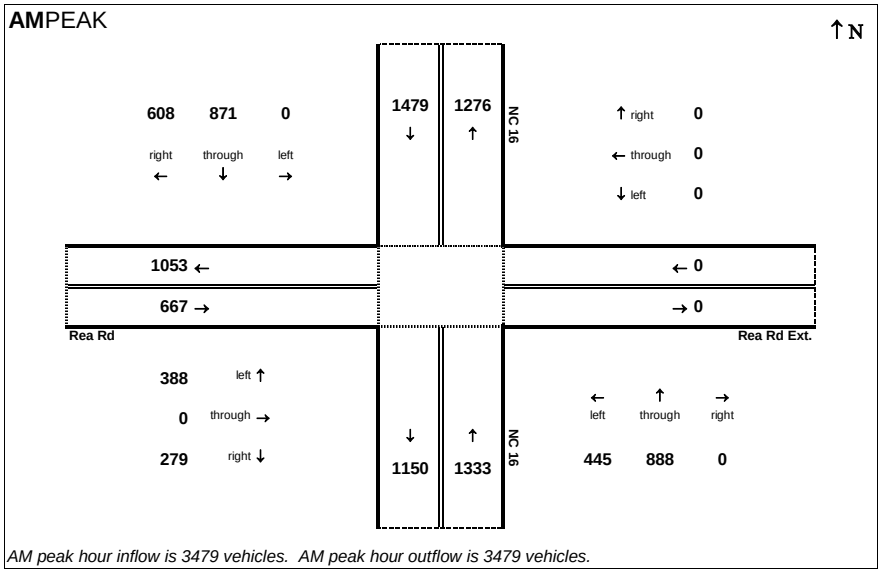
Comments:

Report generated on 3/11/2024 1:14 PM

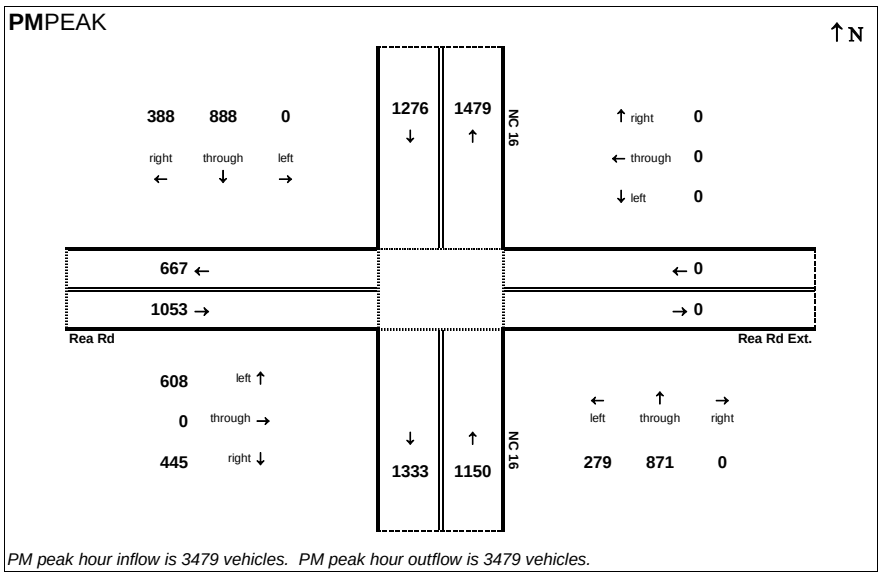
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

IAU Worksheets





AM peak hour inflow is 3479 vehicles. AM peak hour outflow is 3479 vehicles.



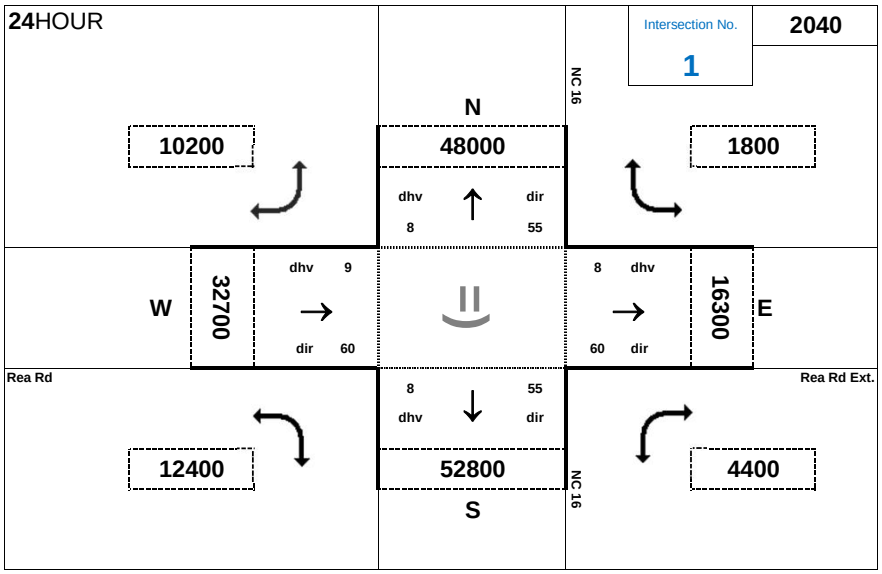
PM peak hour inflow is 3479 vehicles. PM peak hour outflow is 3479 vehicles.

Peak Hour Volume Breakouts Report:
Int #1 Background

Traffic Forecast Release Date:
September-18

Traffic Data Year:
1/1/2018

Project:
Deal Lake TIA

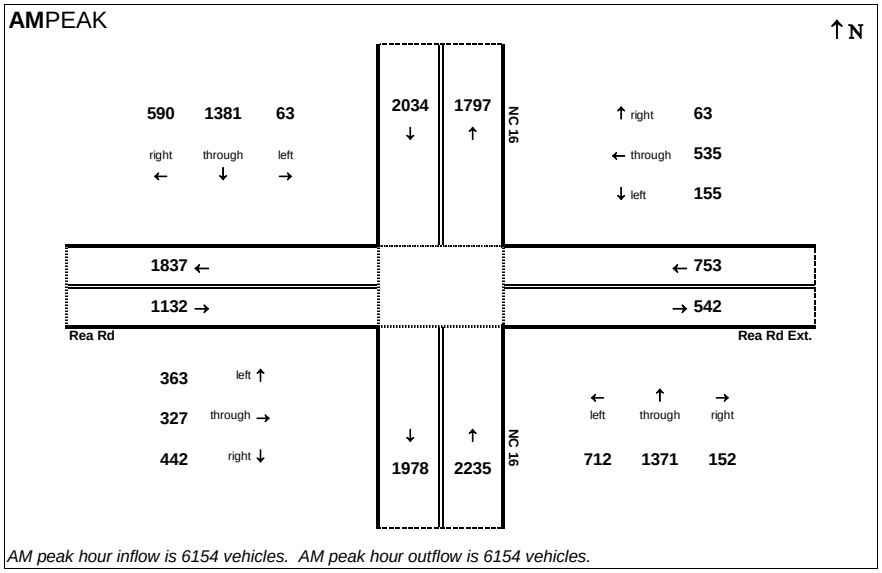


Peak Hour Volume Breakouts Report:
Int #1 Background

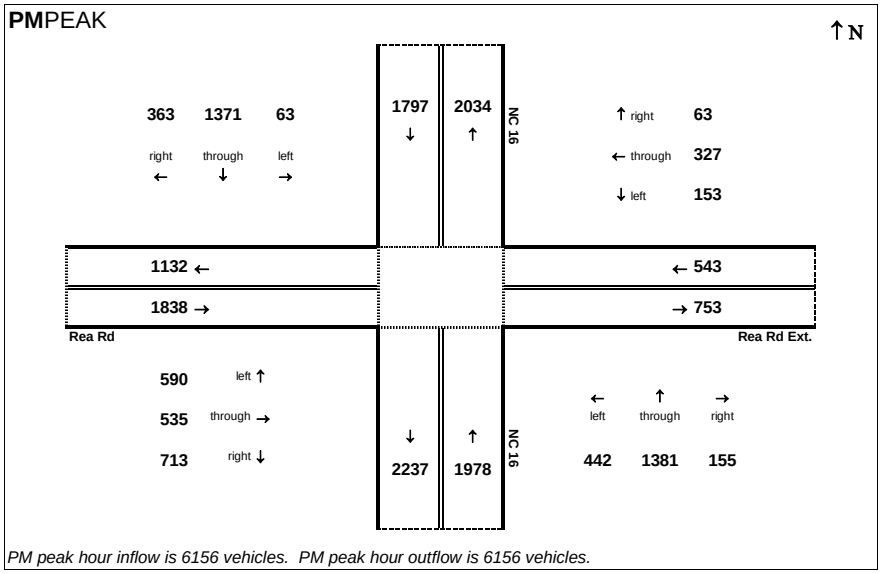
Traffic Forecast Release Date:
September-18

Traffic Data Year:
1/1/2040

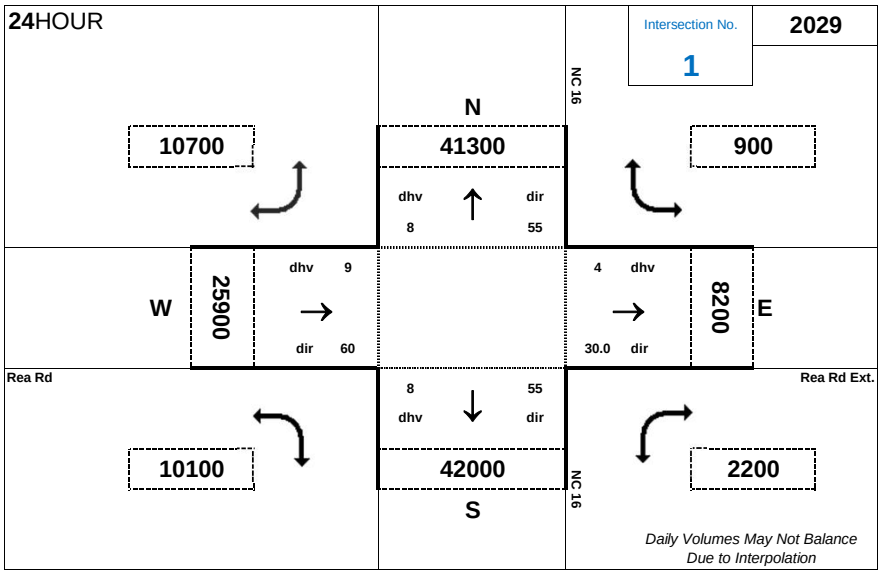
Project:
Deal Lake TIA

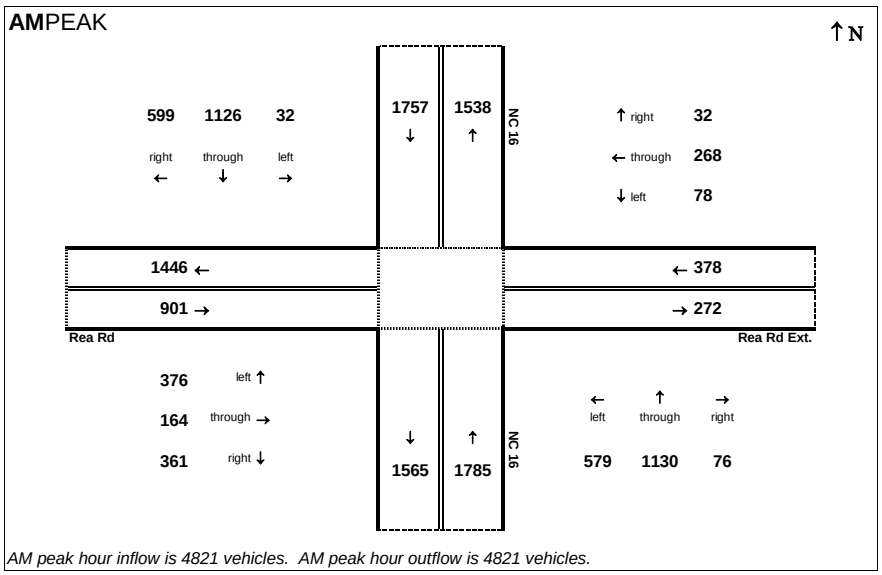


AM peak hour inflow is 6154 vehicles. AM peak hour outflow is 6154 vehicles.

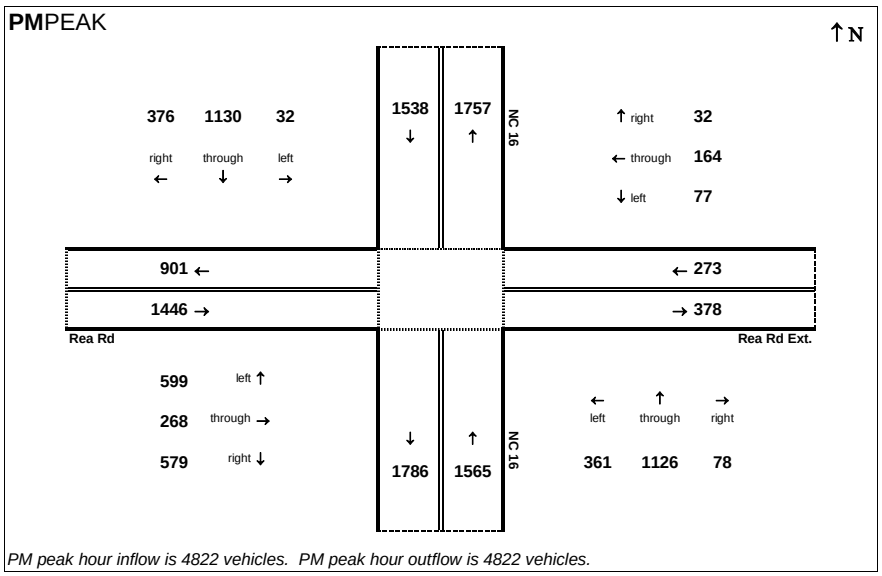


PM peak hour inflow is 6156 vehicles. PM peak hour outflow is 6156 vehicles.





AM peak hour inflow is 4821 vehicles. AM peak hour outflow is 4821 vehicles.



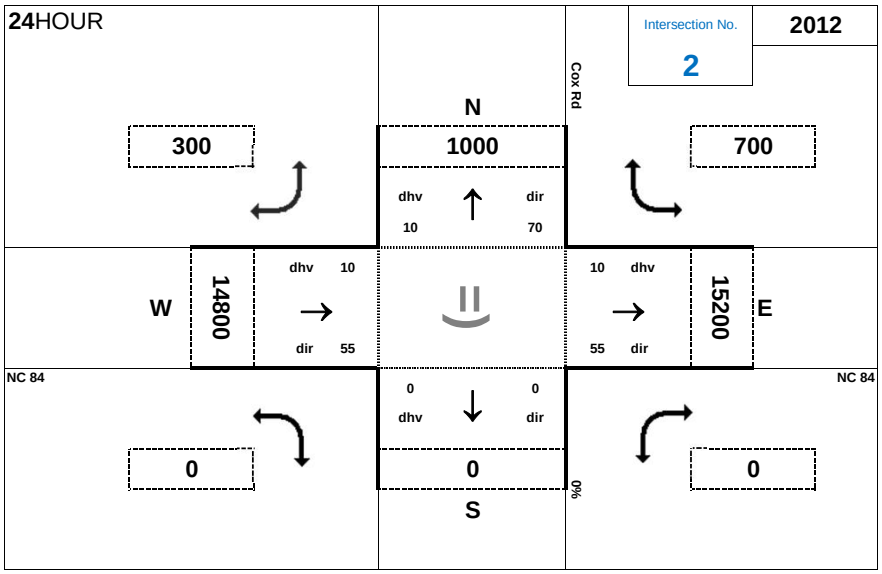
PM peak hour inflow is 4822 vehicles. PM peak hour outflow is 4822 vehicles.

Peak Hour Volume Breakouts Report:
Int #1 Background

Traffic Forecast Release Date:
September-18

Traffic Data Year:
2029 Background

Project:
Deal Lake TIA

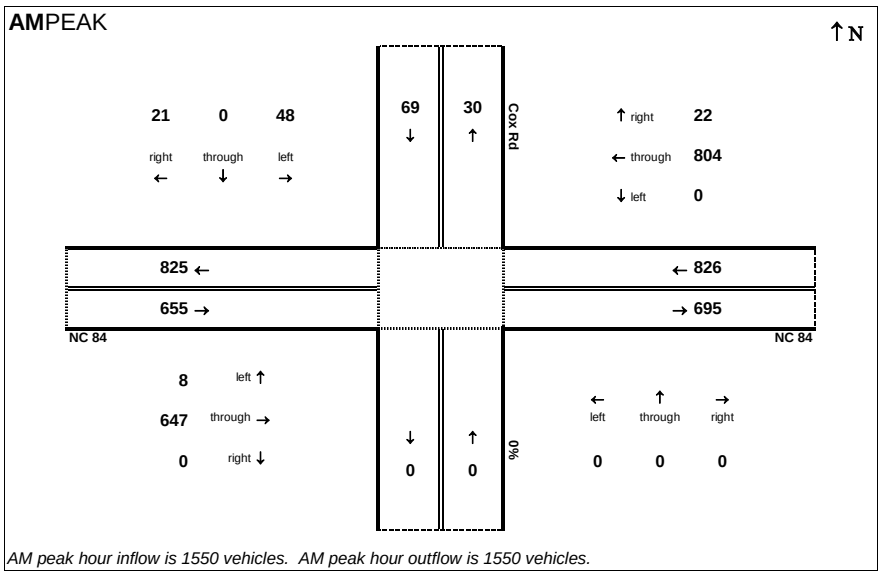


Peak Hour Volume Breakouts Report:
Int #2 Background

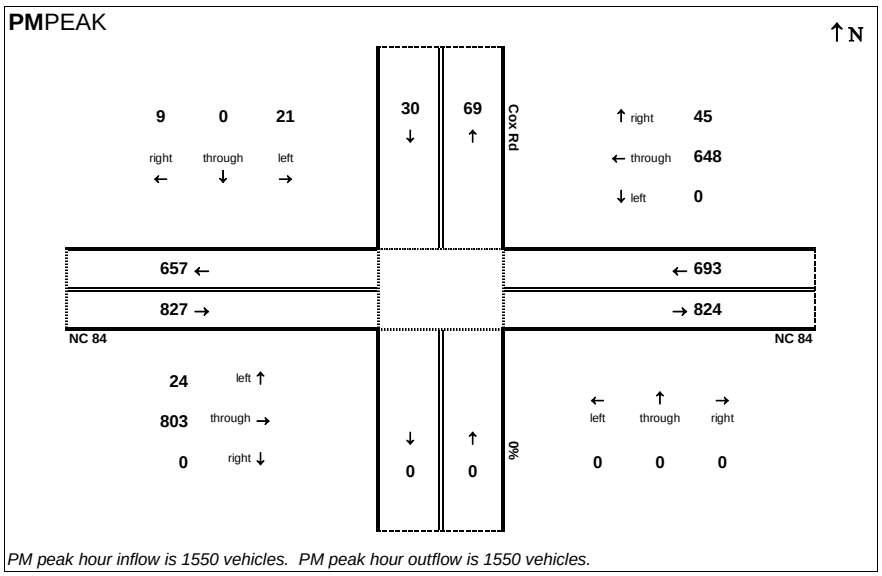
Traffic Forecast Release Date:
May-12

Traffic Data Year:
1/1/2012

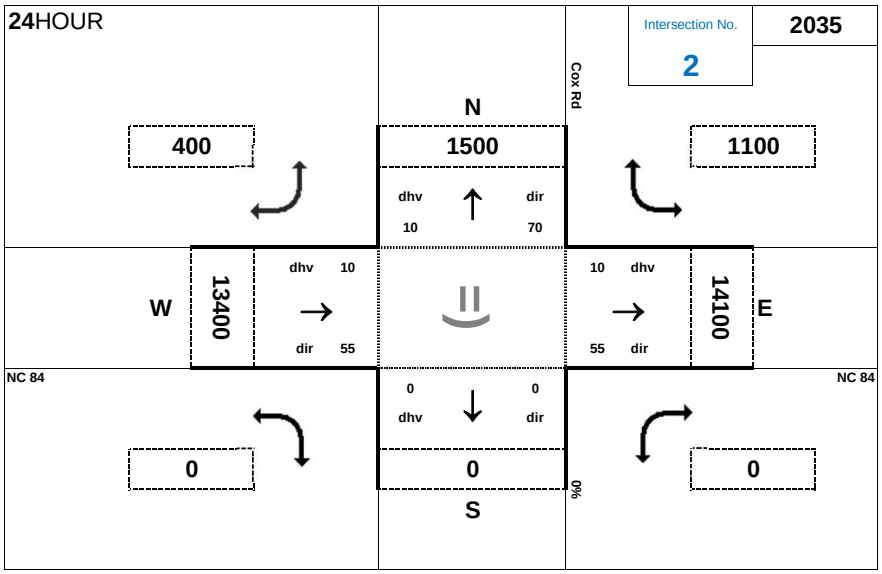
Project:
Deal Lake TIA



AM peak hour inflow is 1550 vehicles. AM peak hour outflow is 1550 vehicles.



PM peak hour inflow is 1550 vehicles. PM peak hour outflow is 1550 vehicles.

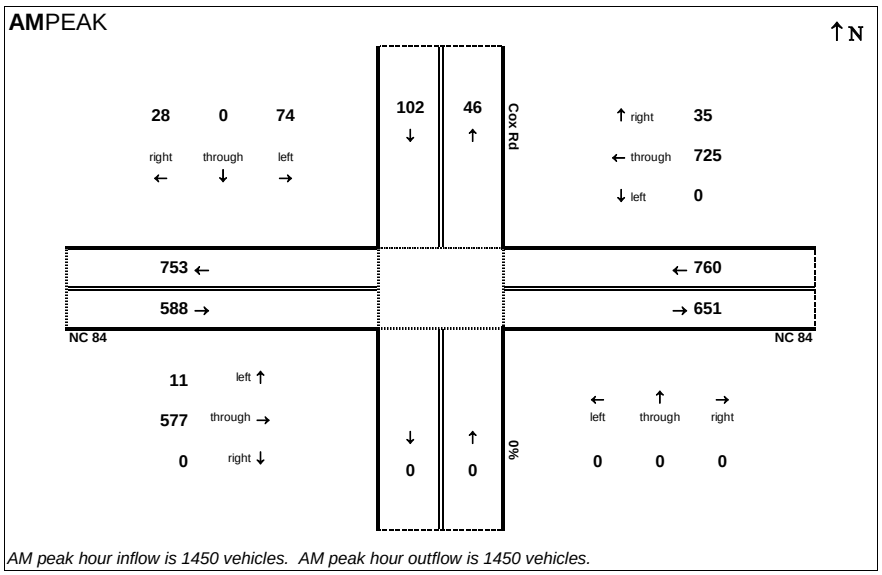


Peak Hour Volume Breakouts Report:
Int #2 Background

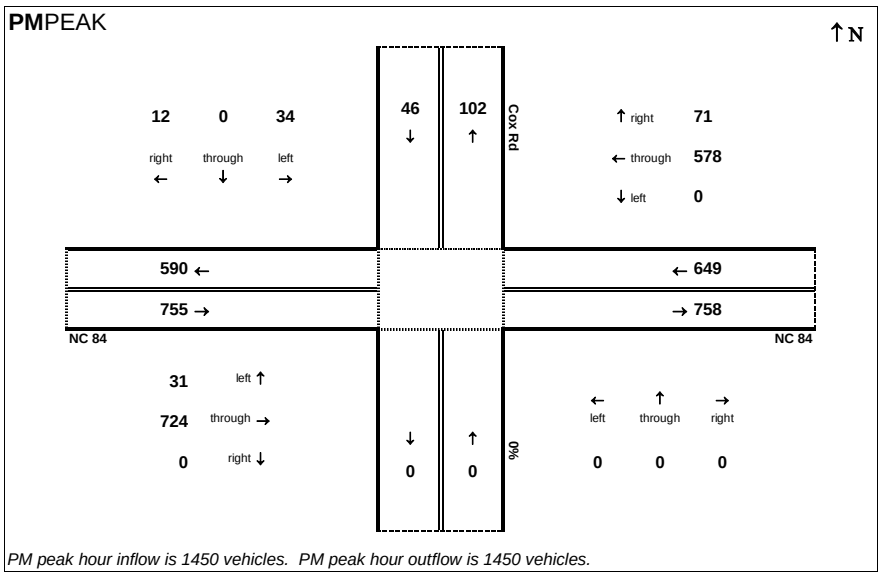
Traffic Forecast Release Date:
May-12

Traffic Data Year:
1/1/2035

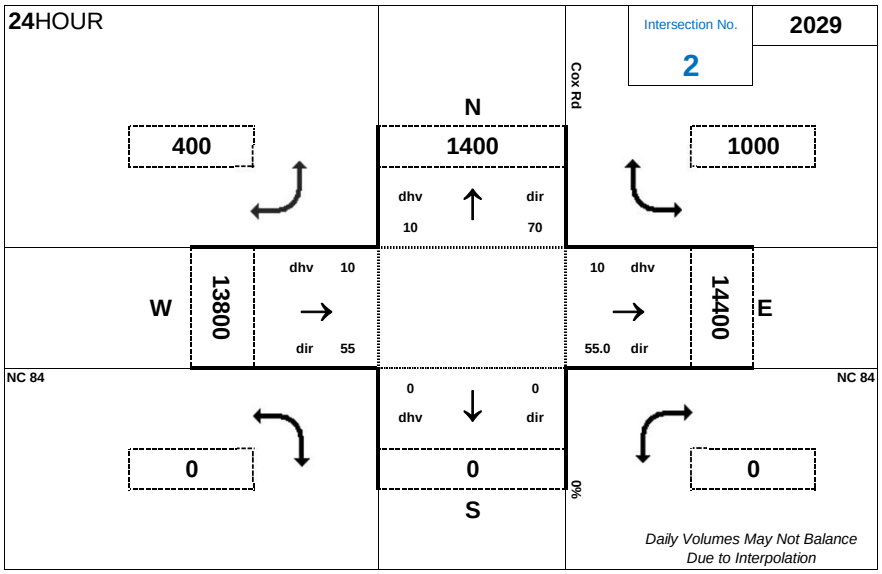
Project:
Deal Lake TIA



AM peak hour inflow is 1450 vehicles. AM peak hour outflow is 1450 vehicles.



PM peak hour inflow is 1450 vehicles. PM peak hour outflow is 1450 vehicles.

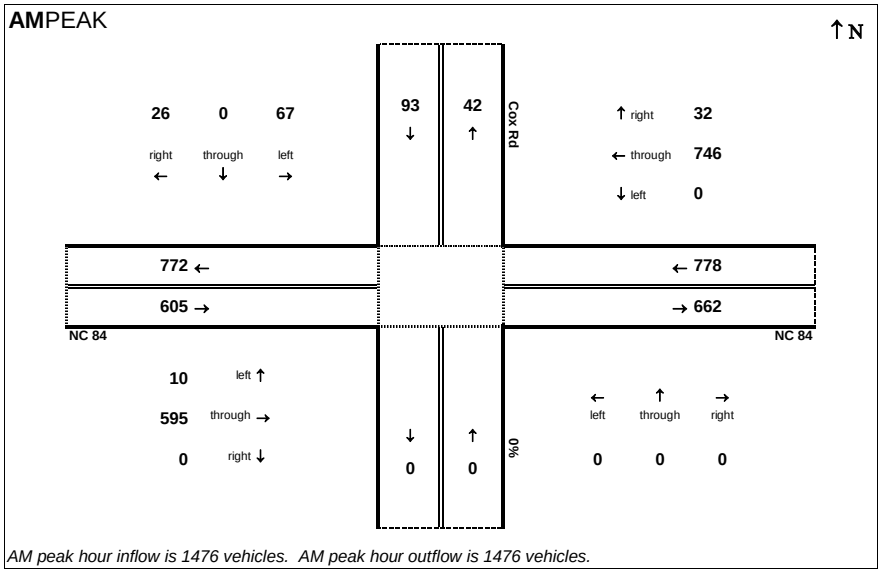


Peak Hour Volume Breakouts Report:
Int #2 Background

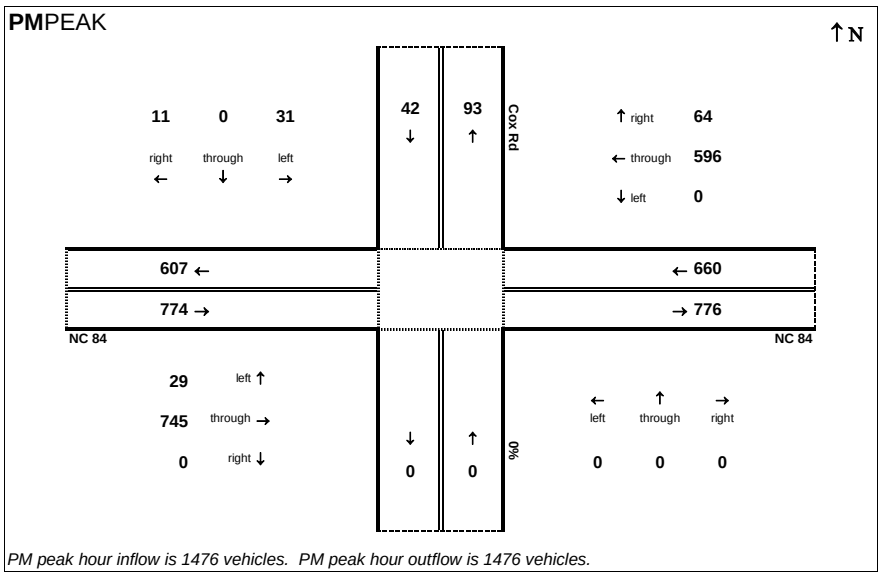
Traffic Forecast Release Date:
May-12

Traffic Data Year:
2029 Background

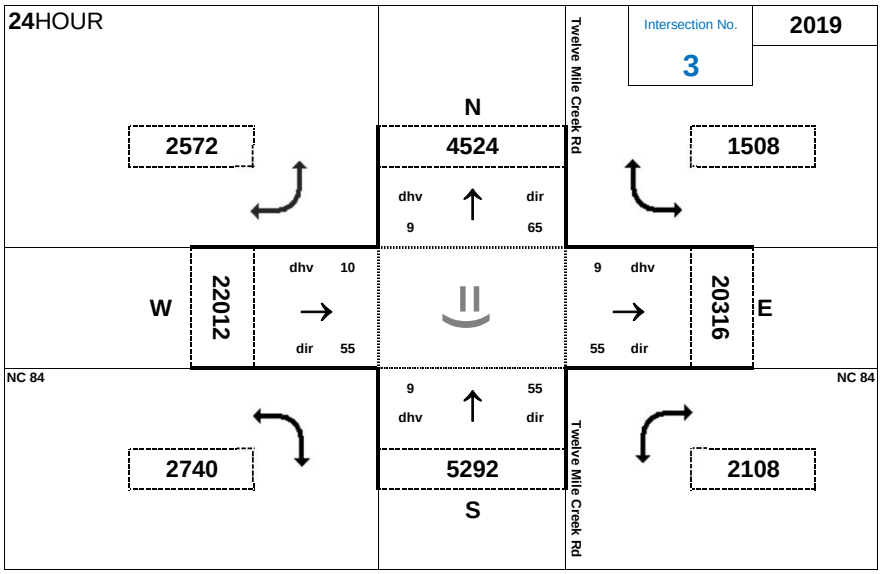
Project:
Deal Lake TIA



AM peak hour inflow is 1476 vehicles. AM peak hour outflow is 1476 vehicles.



PM peak hour inflow is 1476 vehicles. PM peak hour outflow is 1476 vehicles.

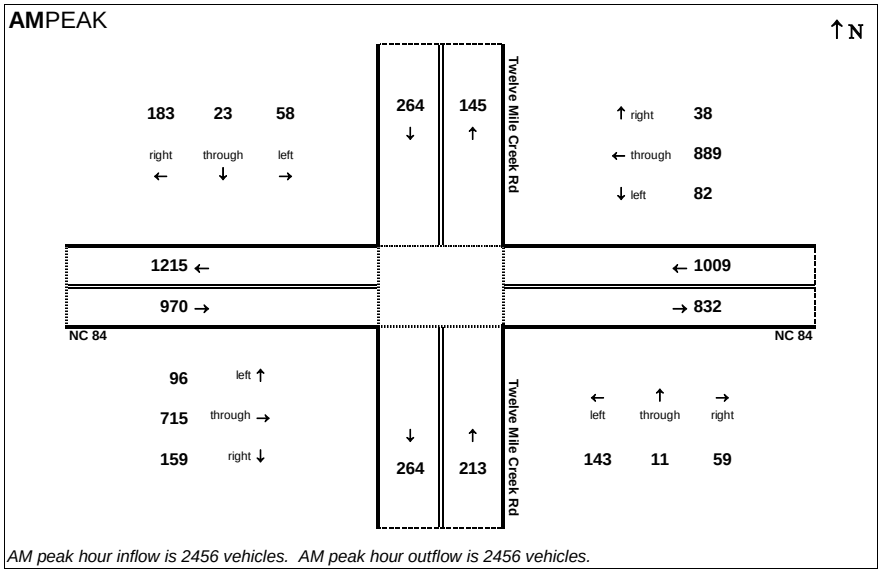


Peak Hour Volume Breakouts Report:
Int #3 Background

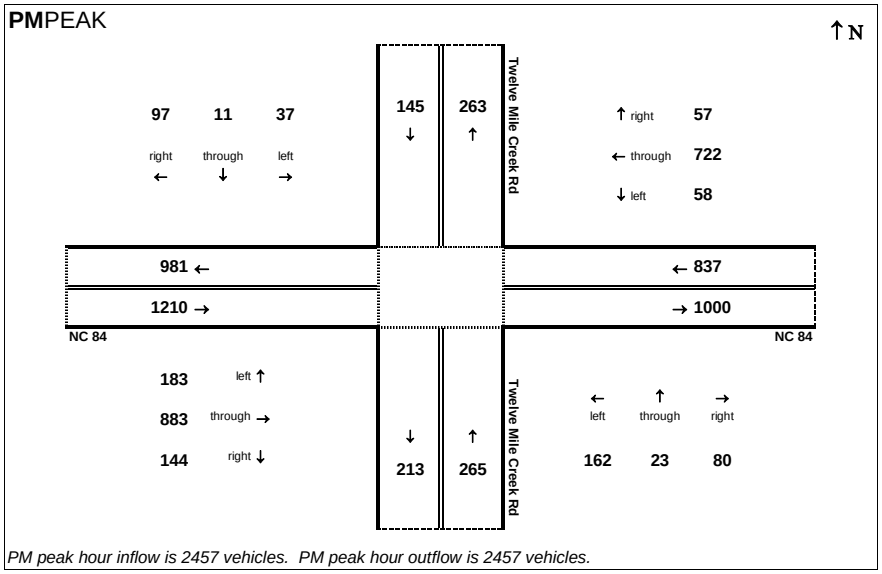
Traffic Forecast Release Date:
October-23

Traffic Data Year:
1/1/2019

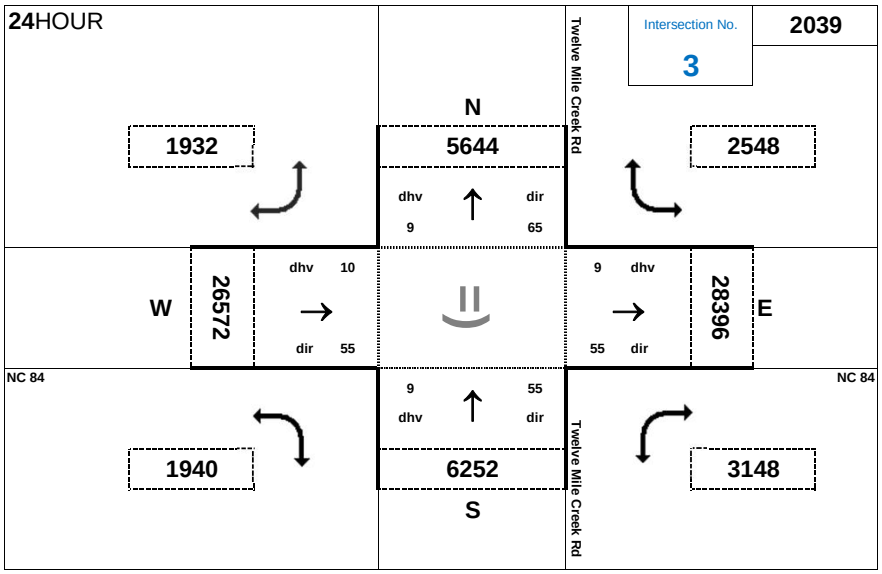
Project:
Deal Lake TIA



AM peak hour inflow is 2456 vehicles. AM peak hour outflow is 2456 vehicles.



PM peak hour inflow is 2457 vehicles. PM peak hour outflow is 2457 vehicles.

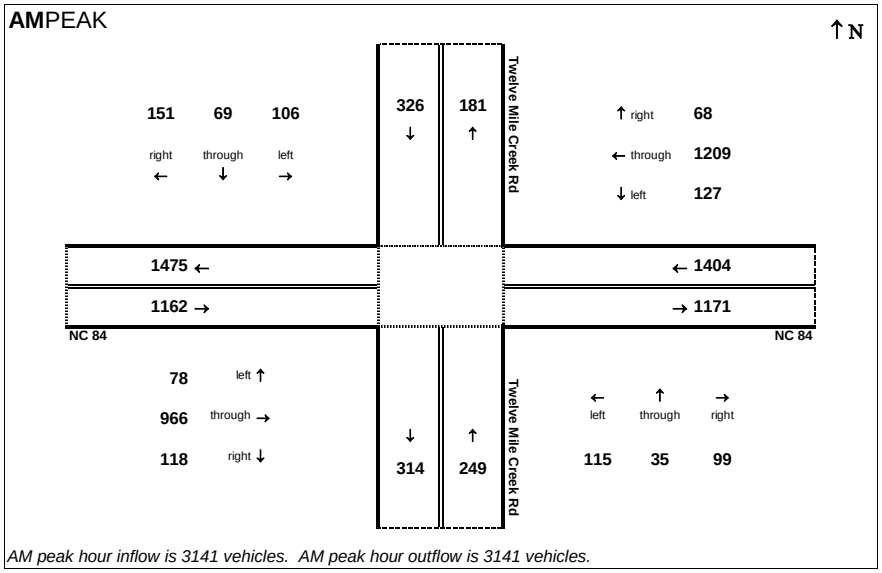


Peak Hour Volume Breakouts Report:
Int #3 Background

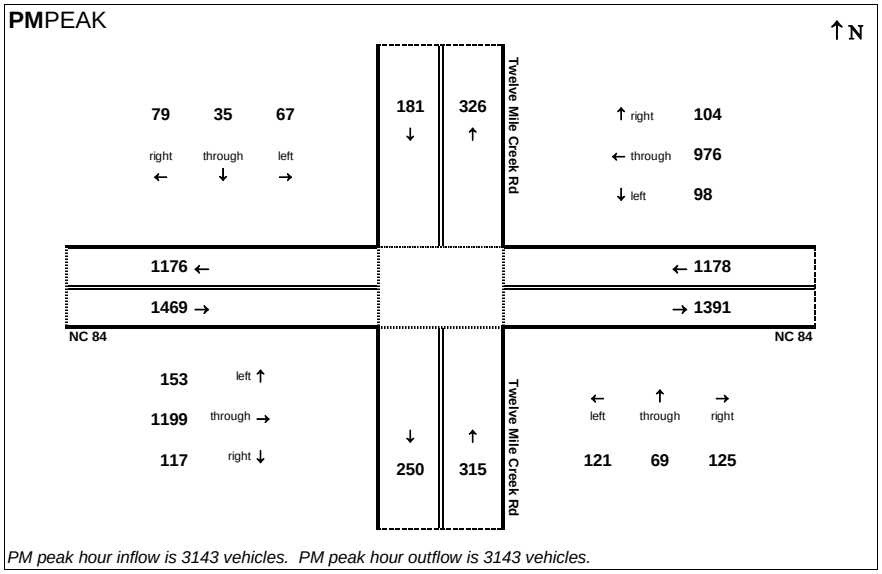
Traffic Forecast Release Date:
October-23

Traffic Data Year:
1/1/2039

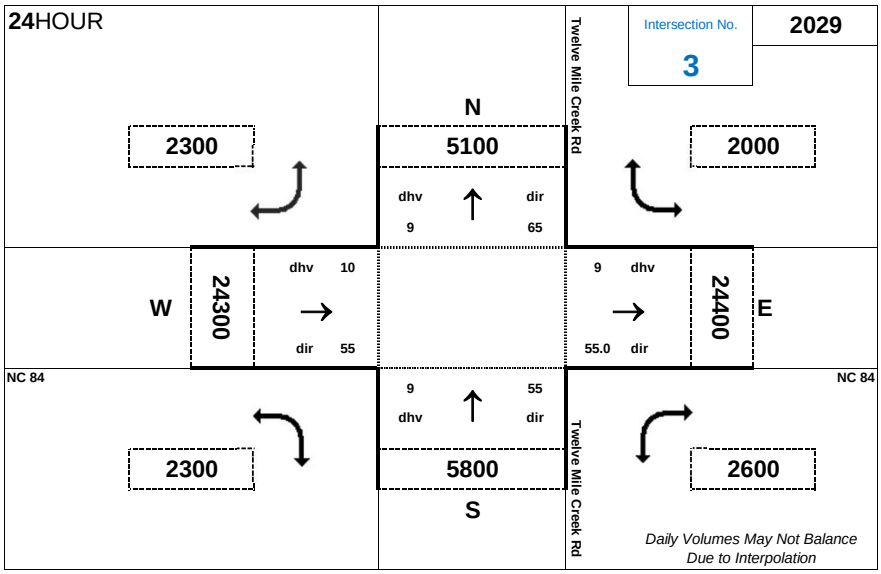
Project:
Deal Lake TIA



AM peak hour inflow is 3141 vehicles. AM peak hour outflow is 3141 vehicles.



PM peak hour inflow is 3143 vehicles. PM peak hour outflow is 3143 vehicles.

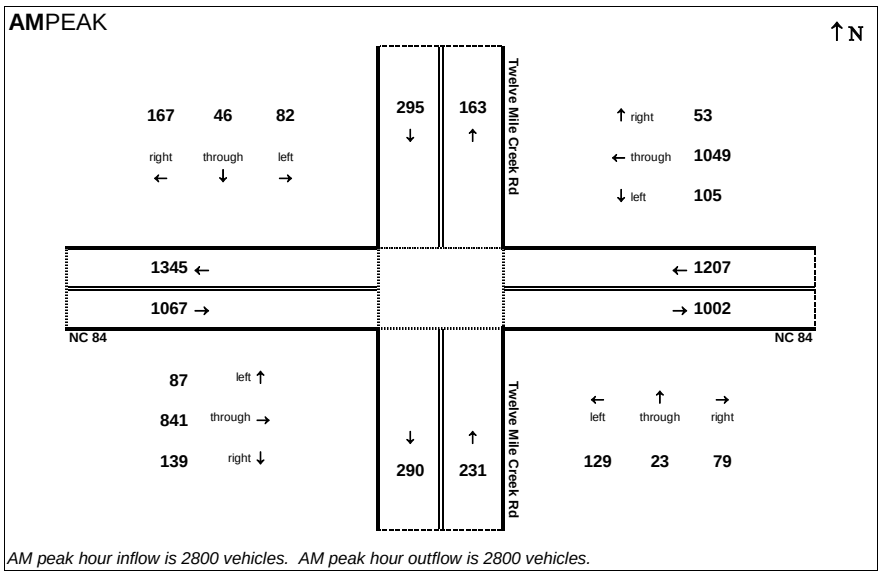


Peak Hour Volume Breakouts Report:
Int #3 Background

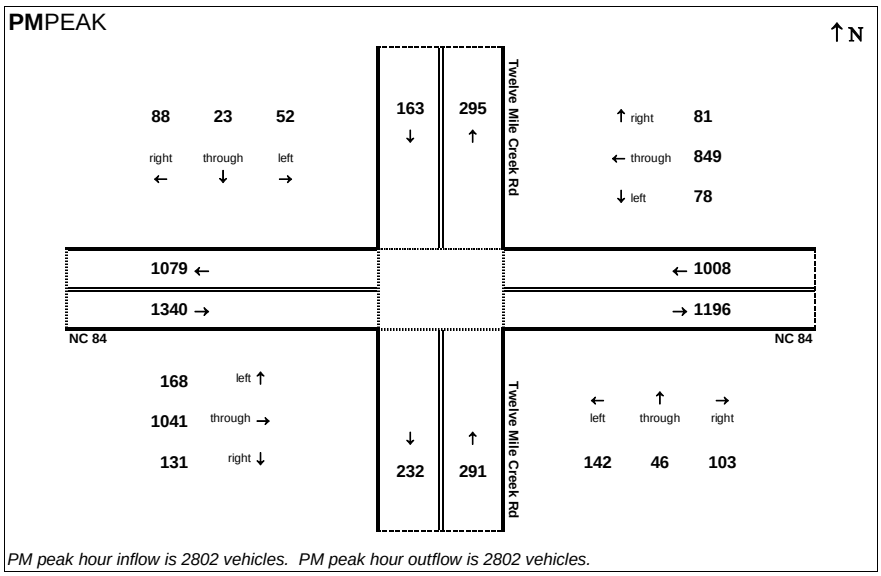
Traffic Forecast Release Date:
October-23

Traffic Data Year:
2029 Background

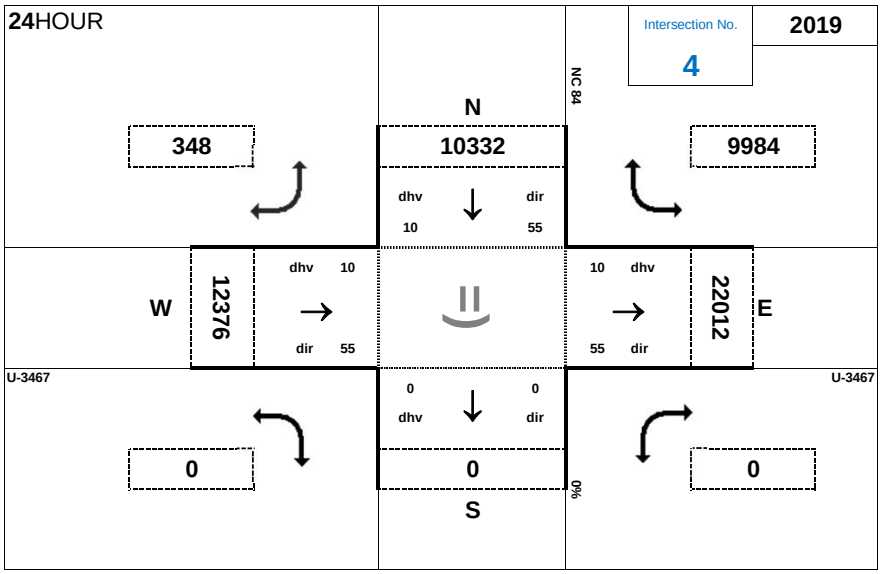
Project:
Deal Lake TIA

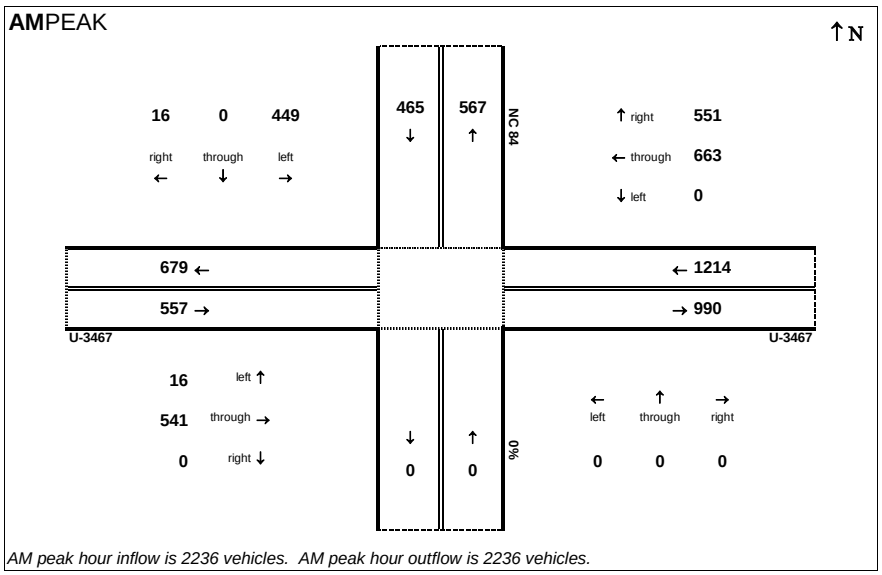


AM peak hour inflow is 2800 vehicles. AM peak hour outflow is 2800 vehicles.

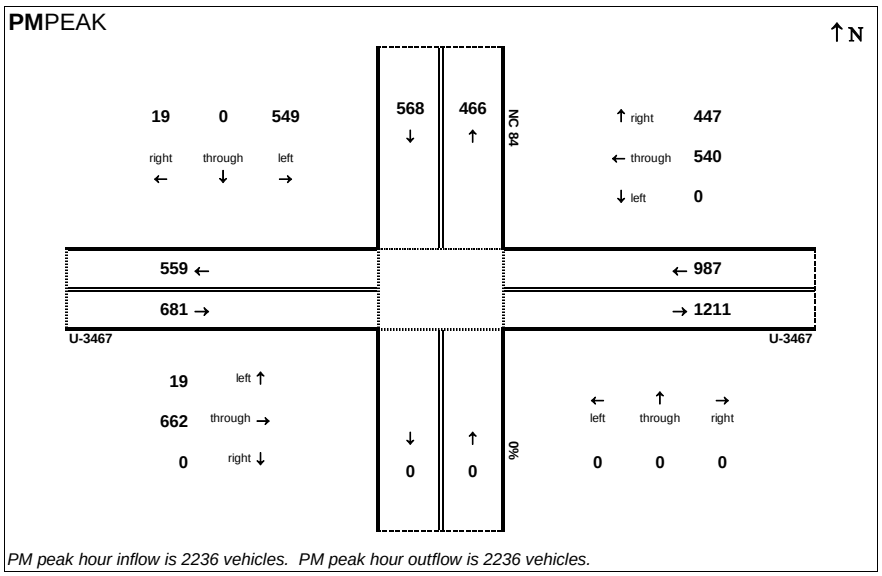


PM peak hour inflow is 2802 vehicles. PM peak hour outflow is 2802 vehicles.





AM peak hour inflow is 2236 vehicles. AM peak hour outflow is 2236 vehicles.



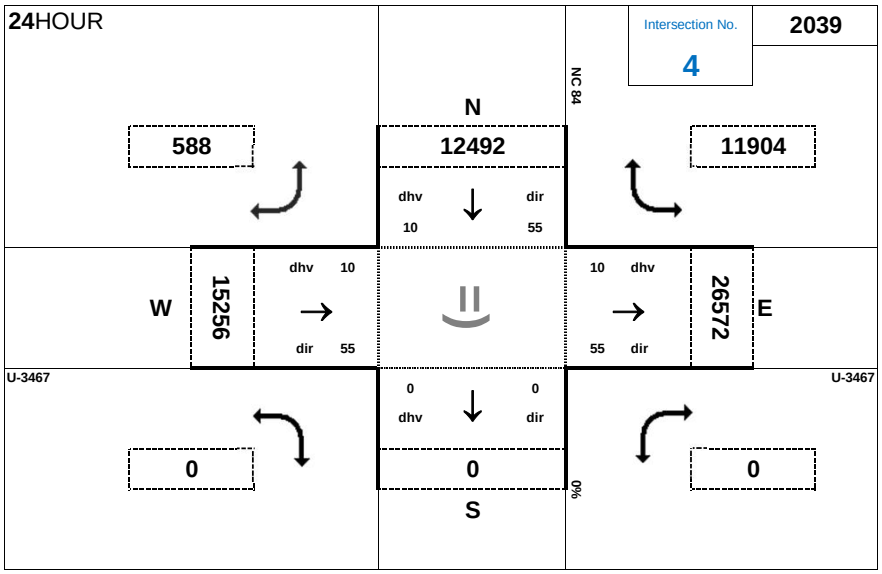
PM peak hour inflow is 2236 vehicles. PM peak hour outflow is 2236 vehicles.

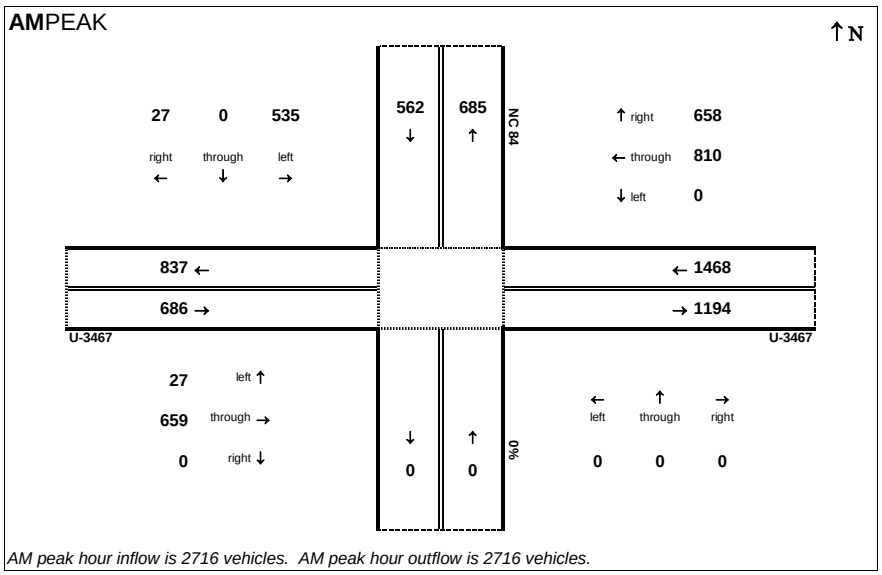
Peak Hour Volume Breakouts Report:
Int #4 2019 FC Volumes

Traffic Forecast Release Date:
October-23

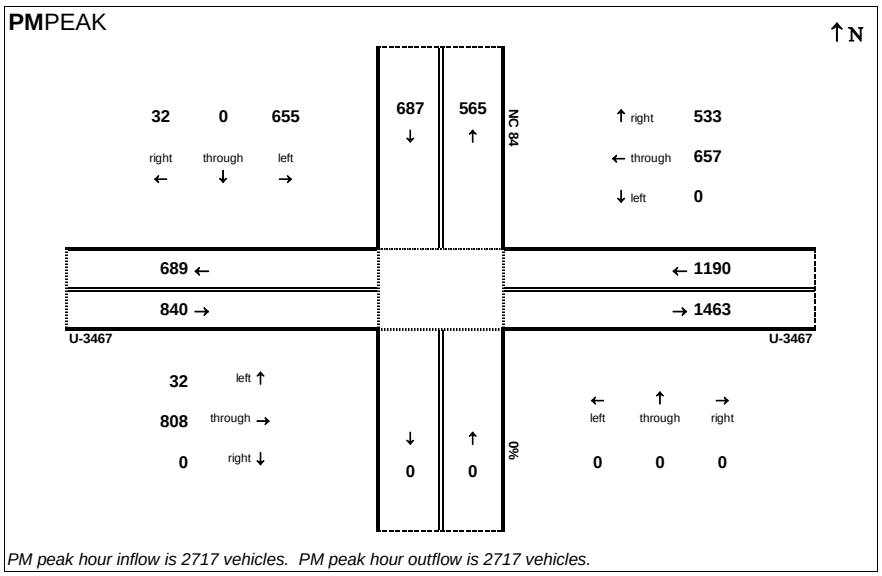
Traffic Data Year:
1/1/2019

Project:
Deal Lake TIA





AM peak hour inflow is 2716 vehicles. AM peak hour outflow is 2716 vehicles.



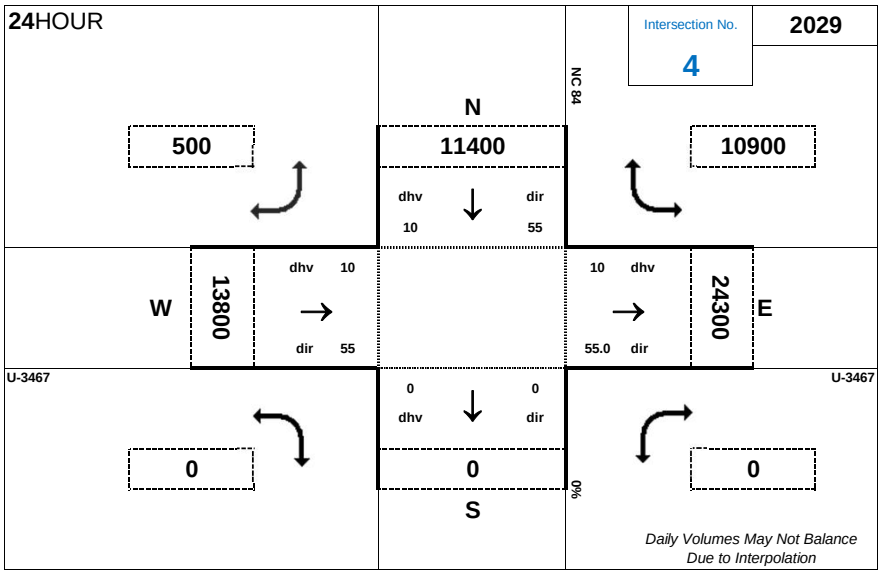
PM peak hour inflow is 2717 vehicles. PM peak hour outflow is 2717 vehicles.

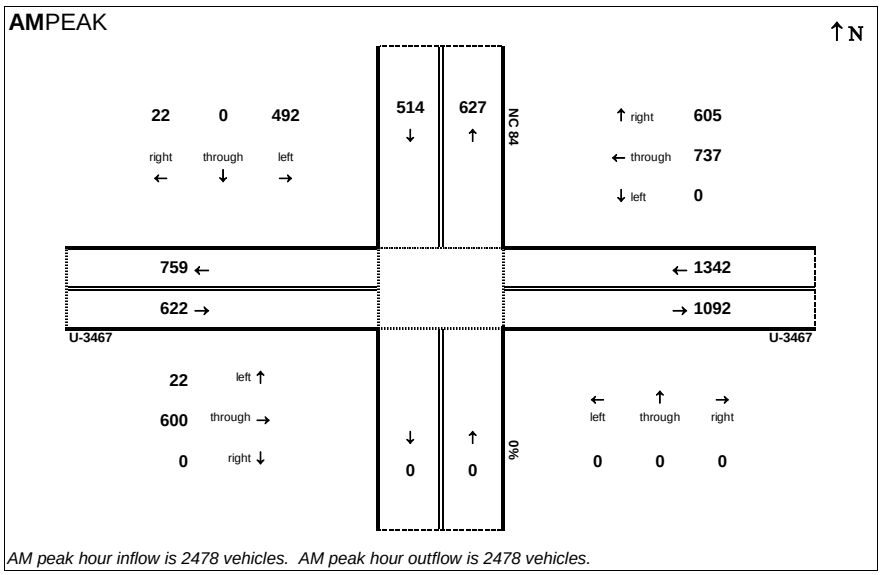
Peak Hour Volume Breakouts Report:
Int #4 2039 FC Volumes

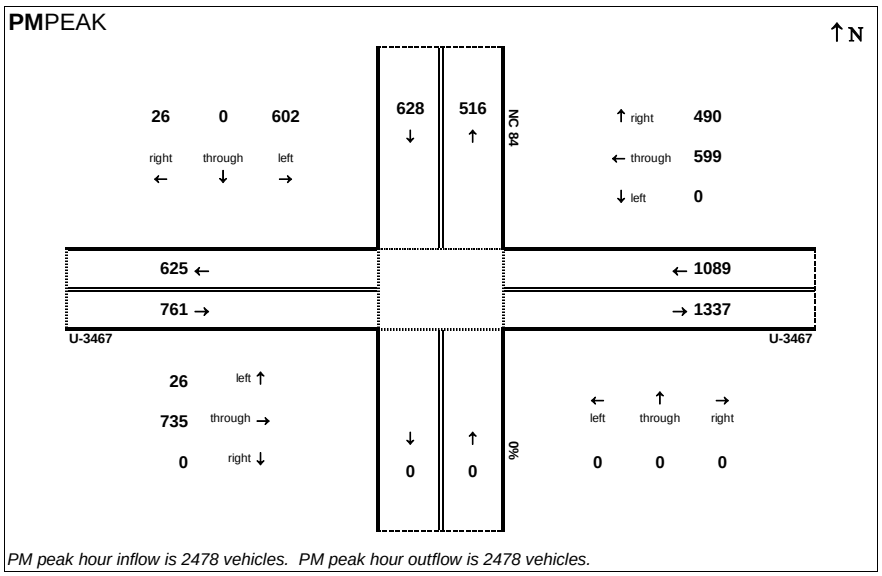
Traffic Forecast Release Date:
October-23

Traffic Data Year:
1/1/2039

Project:
Deal Lake TIA







Peak Hour Volume Breakouts Report:
Int #4 2039 FC Volumes

Traffic Forecast Release Date:
October-23

Traffic Data Year:
2029 Background

Project:
Deal Lake TIA

Traffic Forecast Data

Project Level Traffic Forecast

FS-1810D: NC 16 from SR 1316 (Rea Road) to Mecklenburg County Line

Union County

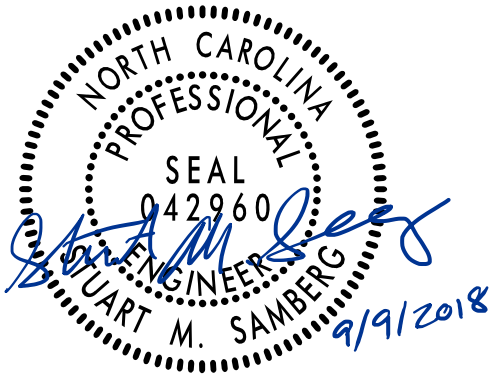
September 2018

Submitted by: RK&K

PROJECT LEVEL TRAFFIC FORECAST TECHNICAL MEMORANDUM

FS-1810D: NC 16 from SR 1316 (Rea Road) to Mecklenburg County Line
Union County
North Carolina

WBS No.: 34263.1.1



Engineers | Construction Managers | Planners | Scientists

Prepared By
Rummel, Klepper & Kahl, LLP
900 Ridgefield Drive – Suite 350
Raleigh, NC 27609
(919) 878-9560
September 2018

900 Ridgefield Drive, Suite 350 | Raleigh, NC 27609 | P 919.878.9560 | T 888.521.4455 | F 919.790.8382 | www.rkk.com

TRAFFIC FORECAST COVER LETTER

September 2018

TO: Shane York, PE
Feasibility Studies Unit
NCDOT

FROM: Stuart M. Samberg, P.E., PTOE, PTP
RK&K, LLP

SUBJECT: Traffic Forecast for NC 16 Widening
FS-1810D: NC 16 from SR 1316 (Rea Road) to the Mecklenburg County Line in Union County

---

Please find attached the 2018 Base Year and 2040 Future Year No-Build and Build traffic forecast for the NC 16 Widening Feasibility Study (FS-1810D) from SR 1316 (Rea Road) to the Mecklenburg County Line in Union County. The total project length is approximately 1.8 miles.

This traffic forecast was approved by NCDOT Transportation Planning Division on September 05,2018

This traffic forecast includes one Build scenario:

- Widen NC 16 to a six-lane divided facility from SR 1316 (Rea Road) to the Mecklenburg County Line

Traffic forecasts for the following scenarios are provided in this memorandum:

- 2018 Base Year No-Build
- 2018 Base Year Build (Widen to six-lane divided)
- 2040 Future Year No-Build
- 2040 Future Year Build (Widen to six-lane divided)

Certain assumptions were made in the development of this forecast:

Fiscal Constraint:
The traffic forecasts for this project assume the construction of projects within the Charlotte Regional Transportation Planning Organization's (CRTPO) Metropolitan Transportation Plan (MTP) and Metrolina Regional Travel Demand Model. Projects in the MTP which directly affect the proposed project area include:

- U-3467: Construct / Widen NC 84 from NC 16 to Waxhaw-Indian Trail Road (SR 1008), part on New Location
- U-5769: Widen NC 16 from Rea Road (SR 1316) to Cuthbertson Road (SR 1321)

The Charlotte Regional Transportation Planning Organization (CRTPO) Comprehensive Transportation Plan (CTP) includes the North Access Road project intersecting NC 16 just north of existing NC 84. However, this project is not included in the CRTPO 2045 MTP, and therefore not included in the forecast.

Development Activity:
Stuart Basham, Division 10 Planning Engineer was contacted to get information on anticipated developments within the study area. Based on the feedback and the information presented in the GIS based application- Virtual Charlotte (http://vc.charmeck.org/), it was observed that there is limited development activity that would be anticipated to alter existing traffic pattern in the Future Year of 2040 within the project study area.

Travel Demand Model:
The Metrolina Regional Model (MRM16) Version 1.0 adopted on October 17, 2017 was used to develop the traffic forecast for the subject project. The model was developed with a Base Year of 2010 using TransCAD Version 5.0 Build 1590.

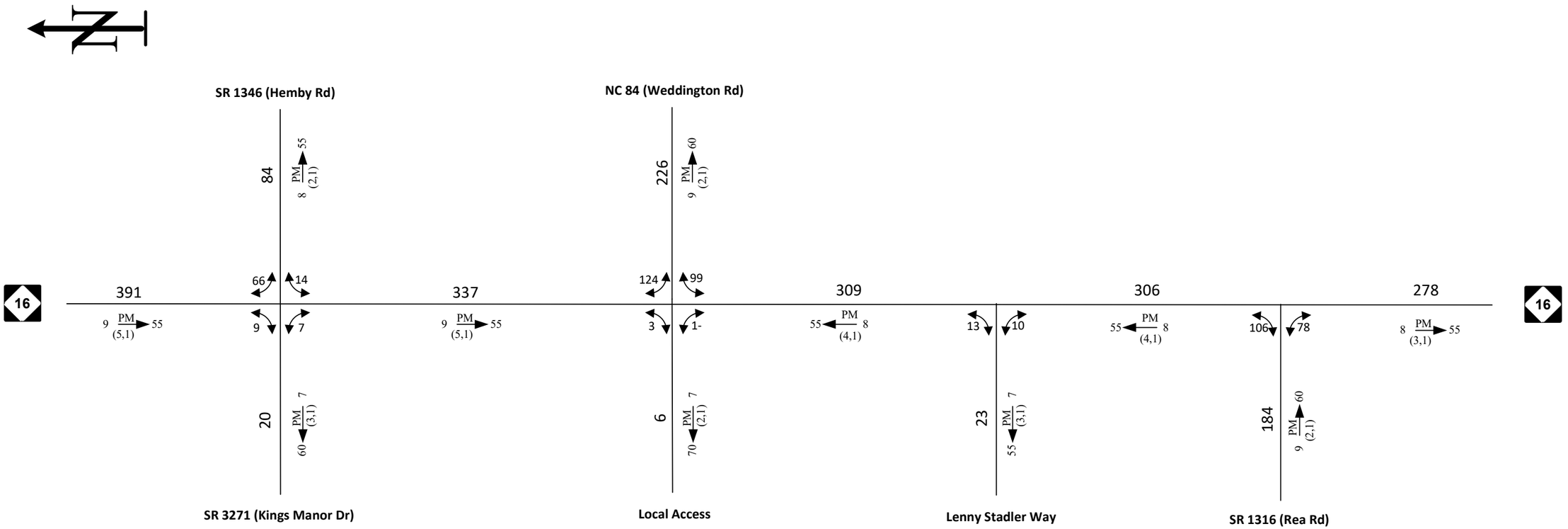
Forecast Methodology:
Traffic volume and design factor estimates for the 2018 Base Year were developed using traffic counts collected on May 8th and 9th of 2018 and historic Annual Average Daily Traffic (AADT) trends projected to 2018. Growth rates derived from the Metrolina Regional Model and historic growth rates extrapolated from AADT trends were used to estimate Future Year 2040 traffic volumes. Engineering judgment was used as necessary to ensure a balanced forecast.

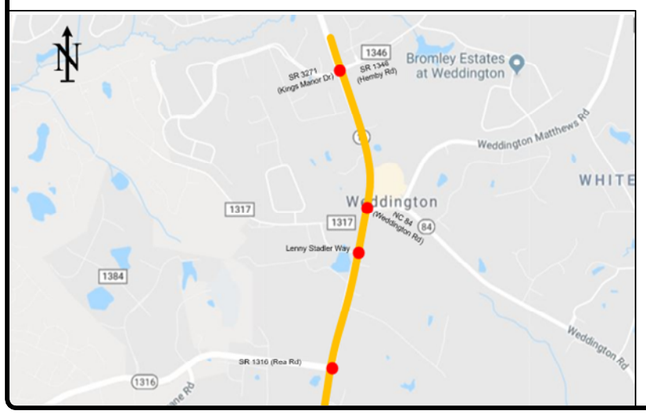
Interpolation:
Straight-line interpolation may be used to estimate AADT for years between 2018 and 2040. Extrapolation may be used to estimate AADT volumes for up to two years following 2040.

CC (with Attachments):

Tim Boland, PE, Highway Division 10 Project Development Engineer
Randy Bowers, Highway Division 10 Roadway Project Engineer
Stuart Basham, Highway Division 10 Planning Engineer
Lee Ainsworth, PE, Anson & Union County District Engineer
Brenda Moore, PE, CPM Roadway Design Unit
Clark Morrison, PhD, PE, State Pavement Design Engineer
Mike Reese, PE, Congestion Management
John A. Baliey, Western Piedmont Group Supervisor
Keith Dixon, State Traffic Forecast Engineer
Traffic Forecasting GIS Support

File Copy: FS-1810D: NC 16 Union County





2018 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

Sheet 1 of 1

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K AM→ D (d, t)	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: N/A

WBS: 34263.1.1

COUNTY: Union

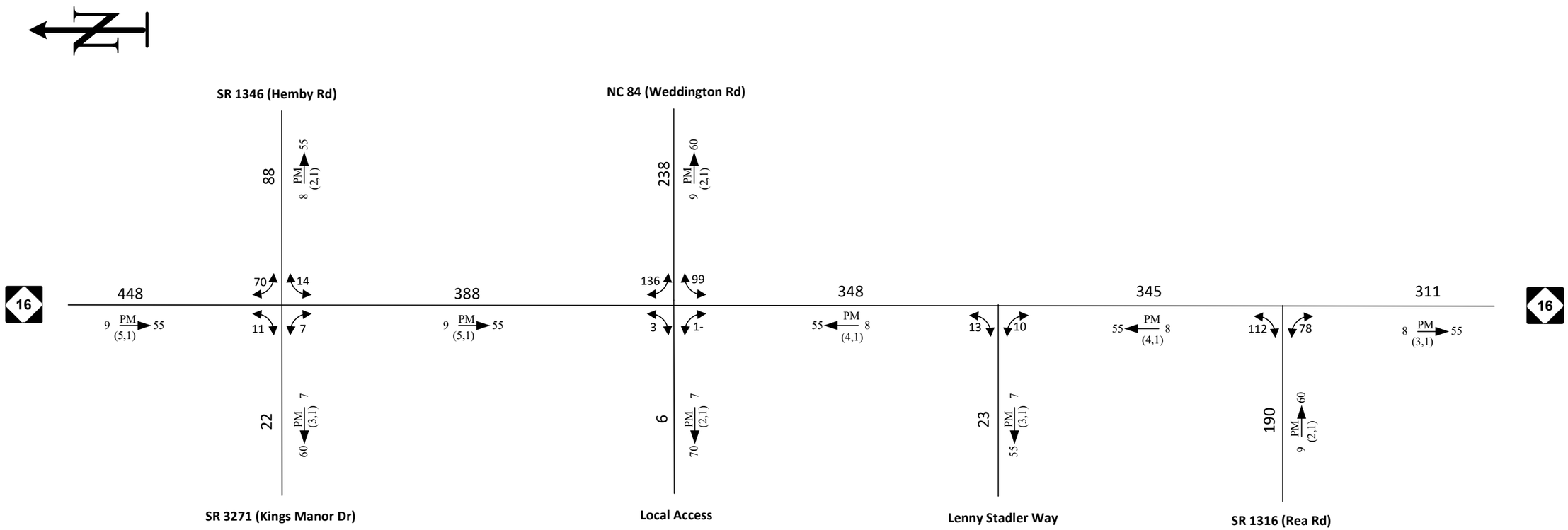
DIVISION: 10

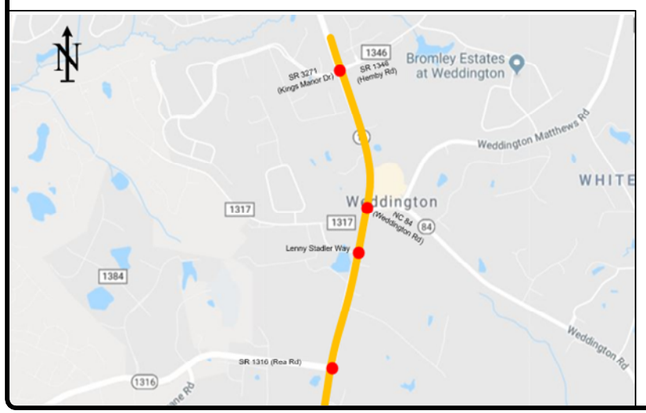
DATE: September 2018

PREPARED BY: RK&K

LOCATION: Weddington, NC

PROJECT: FS-1810D: NC 16 from SR 1316 (Rea Road) to the Mecklenburg County Line





2018 AVERAGE ANNUAL DAILY TRAFFIC

Build

Sheet 1 of 1

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K AM→ D (d, t)	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: N/A

WBS: 34263.1.1

COUNTY: Union

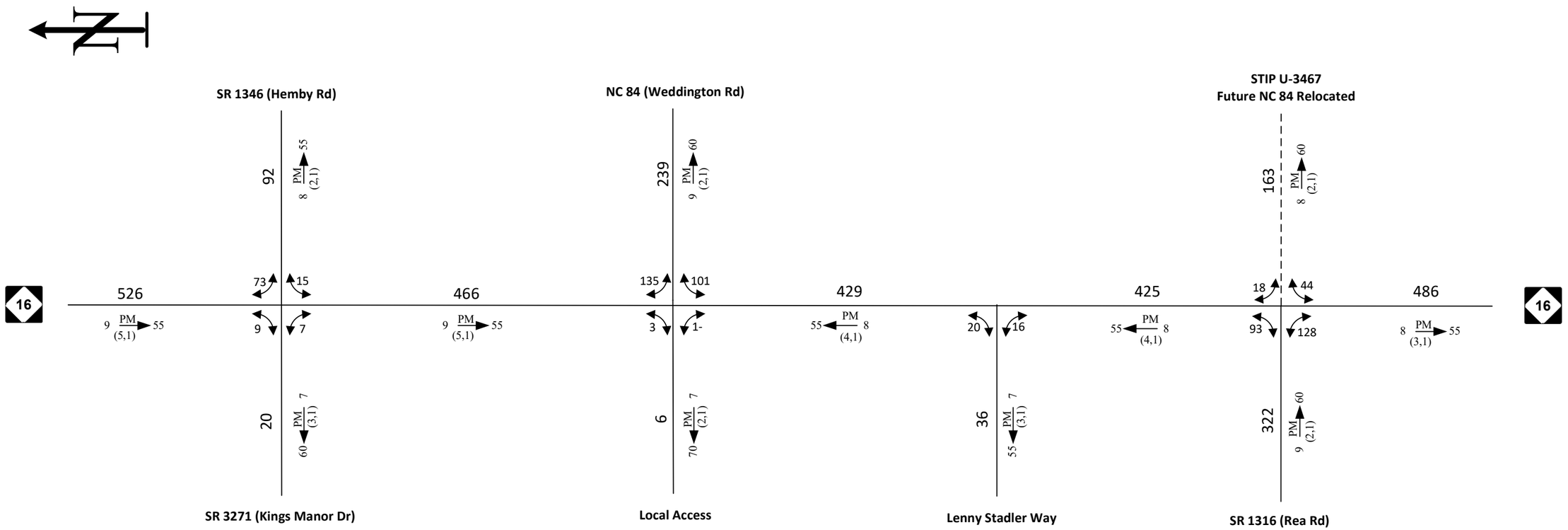
DIVISION: 10

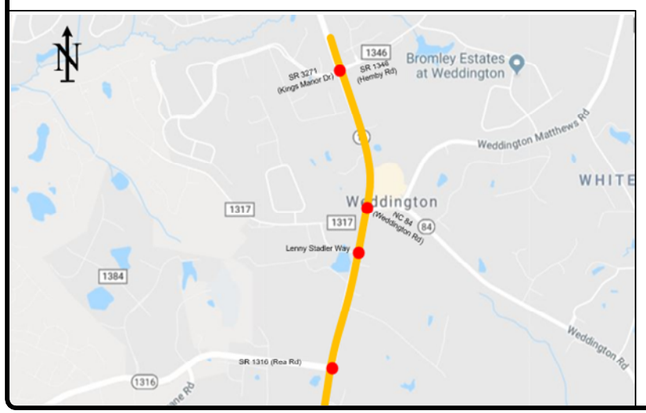
DATE: September 2018

PREPARED BY: RK&K

LOCATION: Weddington, NC

PROJECT: FS-1810D: NC 16 from SR 1316 (Rea Road) to the Mecklenburg County Line





2040 AVERAGE ANNUAL DAILY TRAFFIC

No-Build

Sheet 1 of 1

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K AM→ D (d, t)	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: N/A

WBS: 34263.1.1

COUNTY: Union

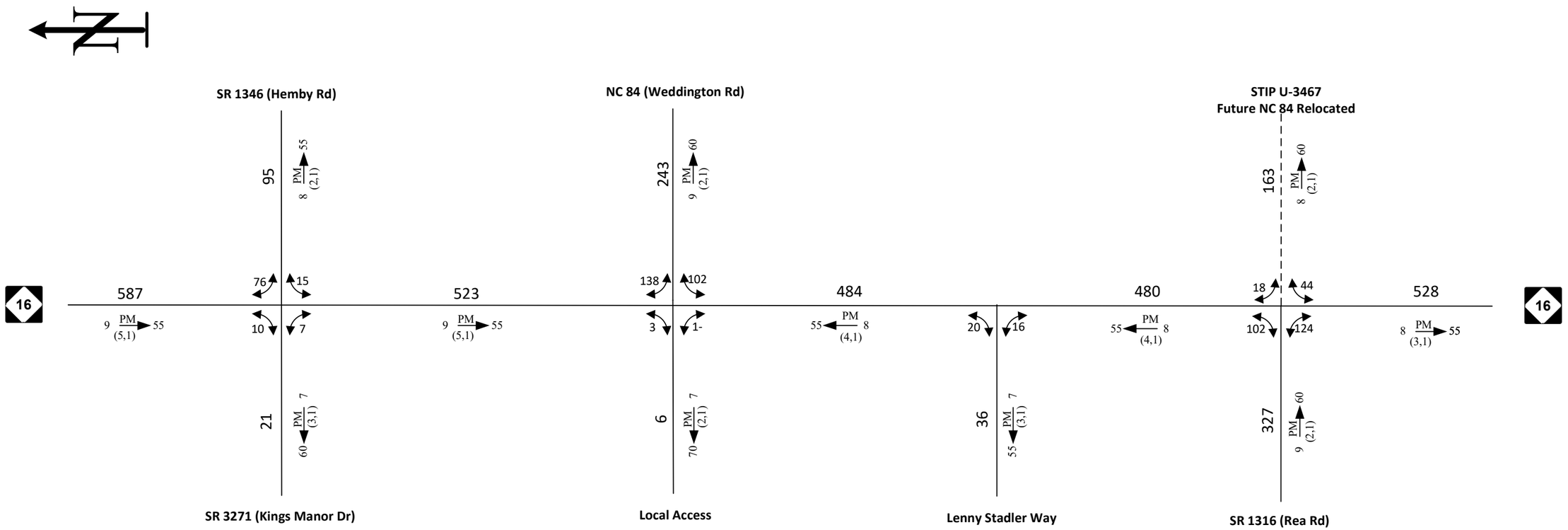
DIVISION: 10

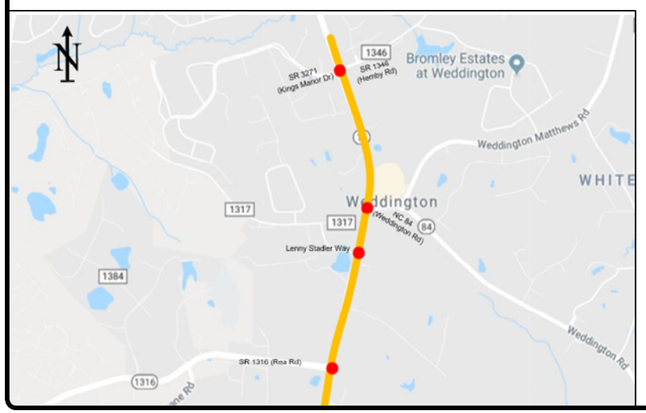
DATE: September 2018

PREPARED BY: RK&K

LOCATION: Weddington, NC

PROJECT: FS-1810D: NC 16 from SR 1316 (Rea Road) to the Mecklenburg County Line





2040 AVERAGE ANNUAL DAILY TRAFFIC

Build

Sheet 1 of 1

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K AM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: N/A

WBS: 34263.1.1

COUNTY: Union

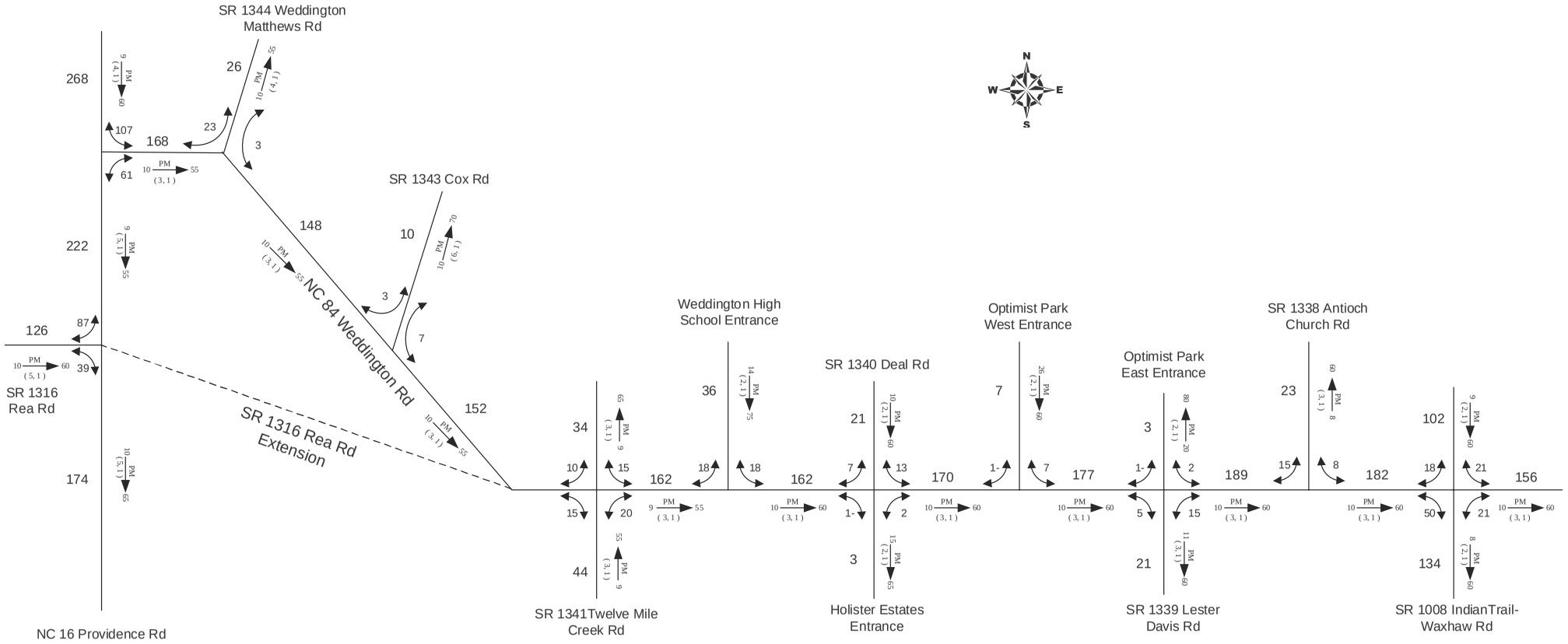
DIVISION: 10

DATE: September 2018

PREPARED BY: RK&K

LOCATION: Weddington, NC

PROJECT: FS-1810D: NC 16 from SR 1316 (Rea Road) to the Mecklenburg County Line



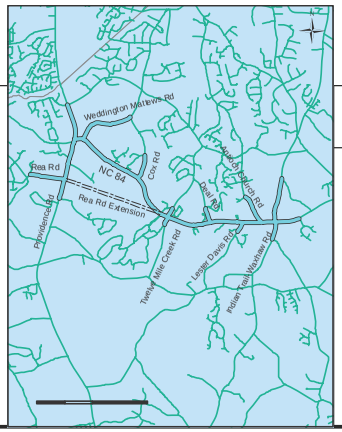


Figure 3

2012

AVERAGE ANNUAL DAILY TRAFFIC

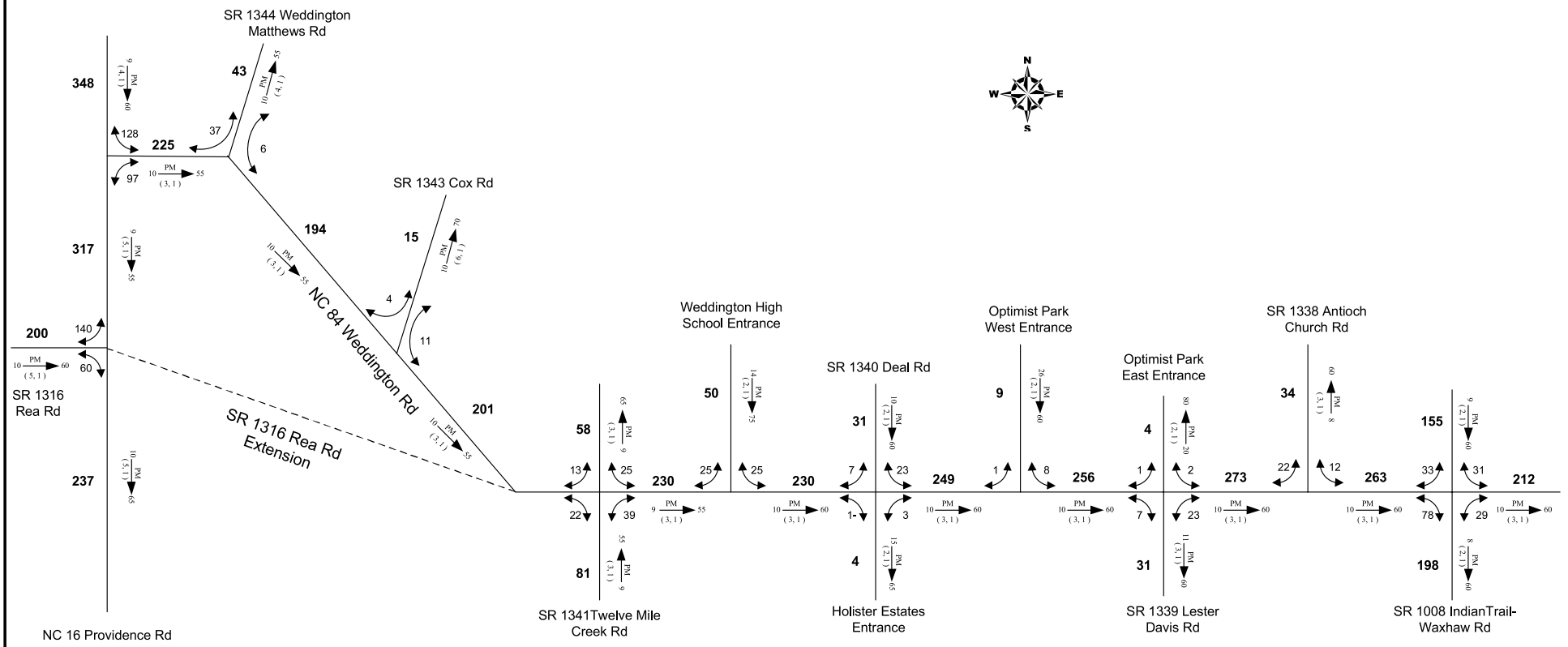
No Build
Sheet 1 - 1

LEGEND

K PM (d, t) D

###	No. of Vehicles Per Day (VPD) in 100s	K	Design Hour Factor (%)
1-	Less than 50 VPD	PM	PM Peak Period
X	Movement Prohibited	D	Peak Hour Directional Split
.....	Proposed Roadway	→	Indicates Direction of D
		(d, t)	Duals, TT-STs (%)

TIP: U-3467	**WBS:** 39019.1.1
COUNTY: Union	**DIVISION:** 10
DATE: May 9, 2012	
PREPARED BY: Paul Schroeder, PhD, PE	
LOCATION: NC 84 Weddington Road southeast of Charlotte	
PROJECT: SR 1316 Rea Road extension from NC 16 to SR 1008 Indian Trail-Waxhaw Road	



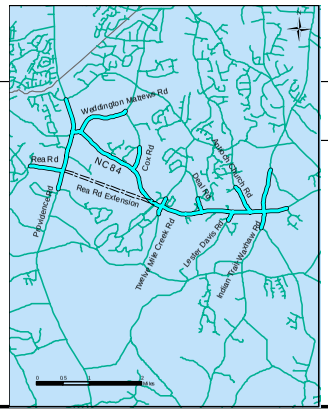


Figure 4

2035

AVERAGE ANNUAL DAILY TRAFFIC

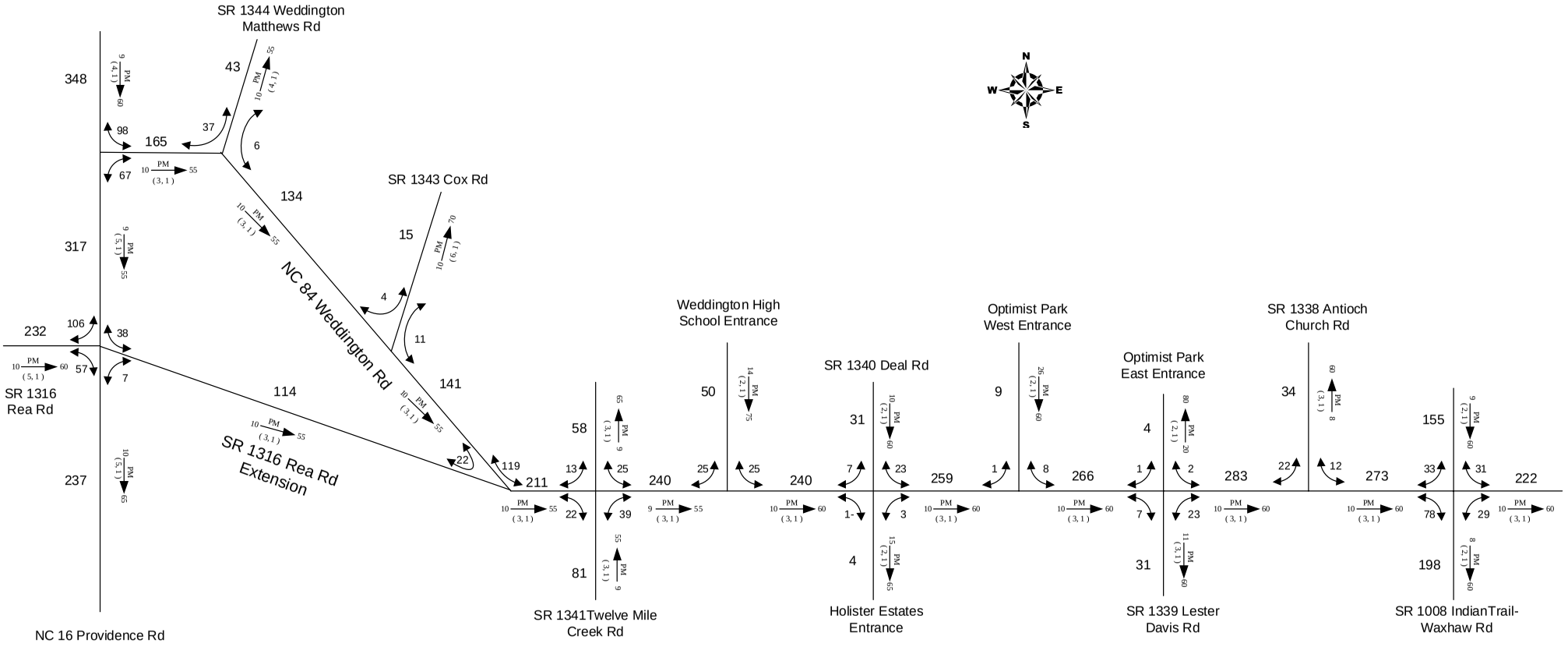
No Build
Sheet 1 - 1

L E G E N D

###	No. of Vehicles Per Day (VPD) in 100s	K	Design Hour Factor (%)
1-	Less than 50 VPD	PM	PM Peak Period
x	Movement Prohibited	D	Peak Hour Directional Split
.....	Proposed Roadway	→	Indicates Direction of D
		(d, t)	Duals, TT-STs (%)

K PM (d, t) D

TIP: U-3467	**WBS:** 39019.1.1
COUNTY: Union	**DIVISION:** 10
DATE: January 23, 2013	
PREPARED BY: Paul Schroeder, PhD, PE	
LOCATION: NC 84 Weddington Road southeast of Charlotte	
PROJECT: SR 1316 Rea Road extension from NC 16 to SR 1008 Indian Trail-Waxhaw Road	



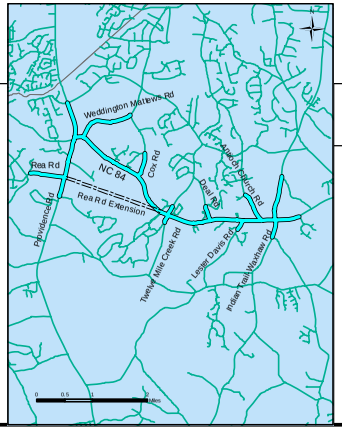


Figure 5

2035

AVERAGE ANNUAL DAILY TRAFFIC

Build
Sheet 1 - 1

L E G E N D

K PM (d, t) D

###	No. of Vehicles Per Day (VPD) in 100s	K	Design Hour Factor (%)
1-	Less than 50 VPD	PM	PM Peak Period
X	Movement Prohibited	D	Peak Hour Directional Split
.....	Proposed Roadway	→	Indicates Direction of D
		(d, t)	Duals, TT-STs (%)

TIP: U-3467	**WBS:** 39019.1.1
COUNTY: Union	**DIVISION:** 10
DATE: May 9, 2012	
PREPARED BY: Paul Schroeder, PhD, PE	
LOCATION: NC 84 Weddington Road southeast of Charlotte	
PROJECT: SR 1316 Rea Road extension from NC 16 to SR 1008 Indian Trail-Waxhaw Road	

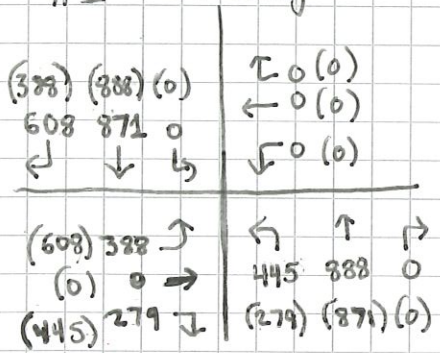
Mid Peak-Hour
Traffic Volume Calculations

Background Forecast volumes / existing forecast volumes × midday traffic Counts

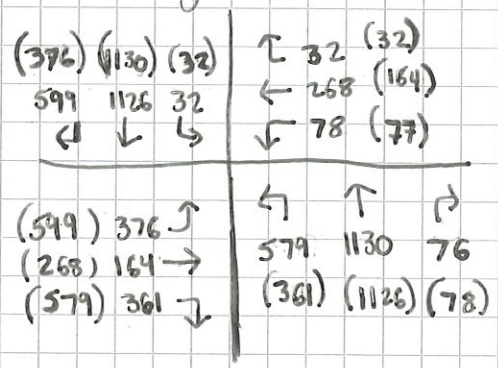
Equation:

= midday forecast Volumes

#1 Existing



#1 Background



NBL: $\frac{579}{445} \times 234 = 305$ $\frac{361}{279} \times 234 = 303 \rightarrow 304$

NBT: $\frac{1130}{888} \times 702 = 893$ $\frac{1126}{871} \times 702 = 908 \rightarrow 901$

NBR: $\frac{76}{0} \times 0 = 0$ $\frac{78}{0} \times 0 = 0 \rightarrow$ solved using different method $\rightarrow 128$

SBL: $\frac{32}{0} \times 0 = 0$ $\frac{32}{0} \times 0 = 0 \rightarrow$ Solved using different method $\rightarrow 54$

SBT: $\frac{1126}{871} \times 718 = 928$ $\frac{1130}{888} \times 718 = 914 \rightarrow 921$

SBR: $\frac{599}{608} \times 339 = 334$ $\frac{376}{388} \times 339 = 329 \rightarrow 332$

EBL: $\frac{376}{388} \times 488 = 473$ $\frac{599}{608} \times 488 = 481 \rightarrow 477$

EBT: $\frac{164}{0} \times 0 = 0$ $\frac{268}{0} \times 0 = 0 \rightarrow$ Solved using different method $\rightarrow 353$

EBR: $\frac{361}{279} \times 362 = 468$ $\frac{579}{445} \times 362 = 471 \rightarrow 470$

* Westbound solved on another sheet WBL: 93 WBT: 256 WBR: 39

•FC = Forecast

Kimley»Horn
Expect More. Experience Better.

Job Deal Lake Subject #2 MD volumes Sheet No. ____ of ____
Designed By ____ Date ____ Checked By ____ Date ____ Job No. ____

EQUATION: $\frac{\text{Background FC}}{\text{Existing FC}} \times$ Midday traffic Counts

#2 Existing FC volumes

(9) (21)
21 48 ← 22 (45)
↓ ↳ ← 804 (648)

(24) 8 ↑
(803) 647 →

#2 Background FC volumes

(11) (31)
26 67 ← 32 (64)
↓ ↳ ← 746 (596)

(29) 10 ↑
(745) 595 →

SBL: $\frac{67}{48} \times 45 = 63$, $\frac{31}{21} \times 45 = 66 \rightarrow 65$

SBR: $\frac{26}{21} \times 6 = 7$, $\frac{11}{9} \times 6 = 7 \rightarrow 7$

EBL: $\frac{10}{8} \times 15 = 19$, $\frac{29}{24} \times 15 = 18 \rightarrow 19$

EBT: $\frac{595}{647} \times 799 = 735$, $\frac{745}{803} \times 799 = 741 \rightarrow 738$

WBT: $\frac{746}{804} \times 508 = 471$, $\frac{596}{648} \times 508 = 467 \rightarrow 469$

WBR: $\frac{32}{22} \times 93 = 135$, $\frac{64}{45} \times 93 = 132 \rightarrow 134$

#3

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Job Deal Lake Subject Midday Volumes Sheet No. ____ of ____
Designed By ____ Date ____ Checked By ____ Date ____ Job No. ____

$\frac{129}{143} \times 120 = 108$, $\frac{142}{162} \times 120 = 105 \rightarrow$ NBL: 107

$\frac{23}{11} \times 76 = 159$, $\frac{46}{23} \times 76 = 152 \rightarrow$ NBT: 156

$\frac{79}{59} \times 57 = 76$, $\frac{103}{80} \times 517 = 73 \rightarrow$ NBT: 75

$\frac{82}{58} \times 90 = 127$, $\frac{52}{37} \times 90 = 126 \rightarrow$ SBL: 127

$\frac{46}{23} \times 64 = 128$, $\frac{23}{11} \times 64 = 134 \rightarrow$ SBT: 131

$\frac{167}{183} \times 51 = 47$, $\frac{88}{97} \times 51 = 46 \rightarrow$ SBR: 47

$\frac{87}{96} \times 84 = 76$, $\frac{168}{183} \times 84 = 77 \rightarrow$ EBL: 77

$\frac{841}{715} \times 645 = 759$, $\frac{1041}{883} \times 645 = 760 \rightarrow$ EBT: 760

$\frac{139}{159} \times 106 = 93$, $\frac{131}{144} \times 106 = 96 \rightarrow$ EBR: 95

$\frac{105}{82} \times 75 = 96$, $\frac{78}{58} \times 75 = 101 \rightarrow$ WBL: 99

$\frac{1049}{889} \times 435 = 513$, $\frac{849}{722} \times 435 = 512 \rightarrow$ WBT: 513

$\frac{53}{38} \times 124 = 173$, $\frac{81}{57} \times 124 = 176 \rightarrow$ WBR: 175

Solving for #4 MD volumes and Int #1 : NBR, SBL, EBT ; WB MD volumes using splits

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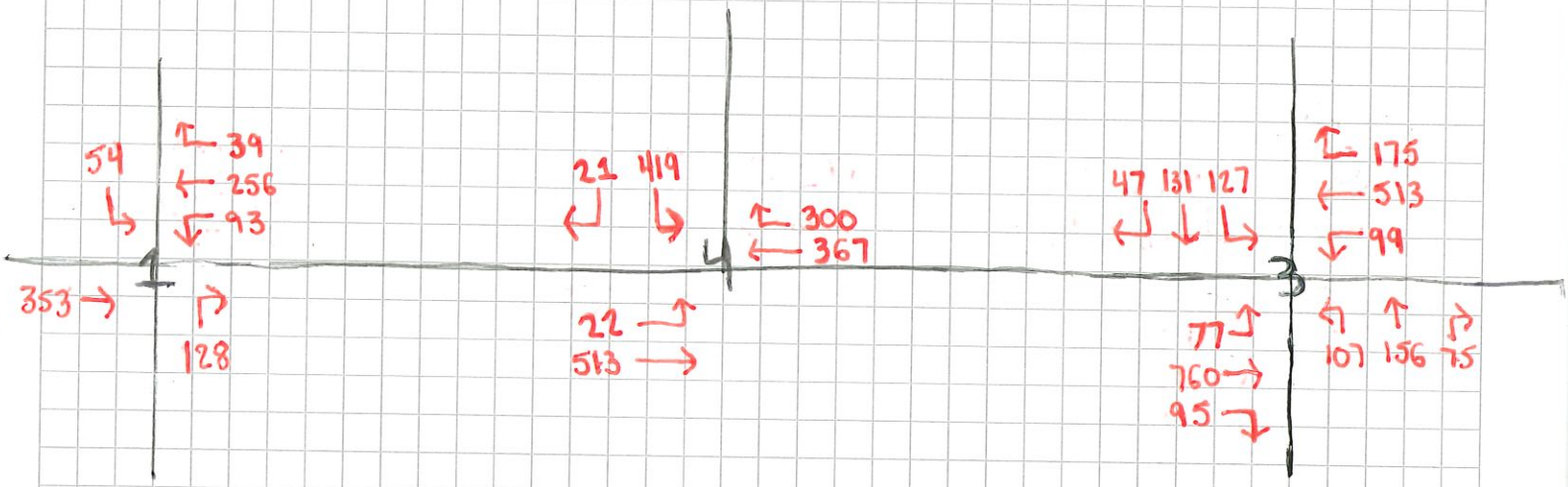
Job Deal Lake Subject MD Volumes Sheet No. ____ of ____
Designed By ____ Date ____ Checked By ____ Date ____ Job No. ____

548 / 1216 = .45 x 667 = 300
668 / 1216 = .55 x 667 = 367

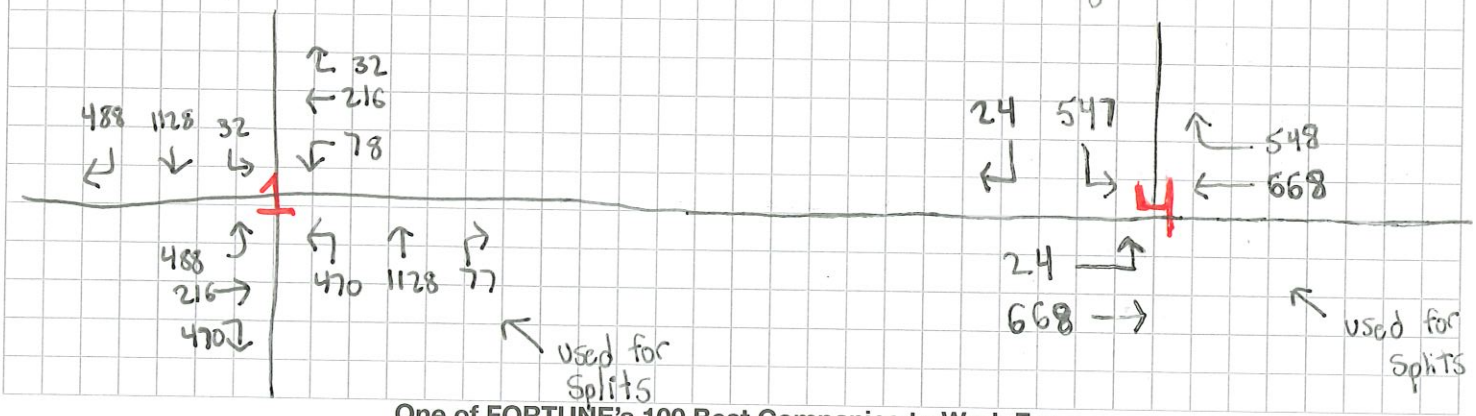
547 / 1215 = .45 x 932 = 419
668 / 1215 = .55 x 932 = 513

32 / 326 = .10 x 388 = 39
216 / 326 = .66 x 388 = 256
78 / 326 = .24 x 388 = 93

32 / 325 = .10 x 535 = 54
216 / 325 = .66 x 535 = 353
77 / 325 = .24 x 535 = 128



Average Forecast Volumes



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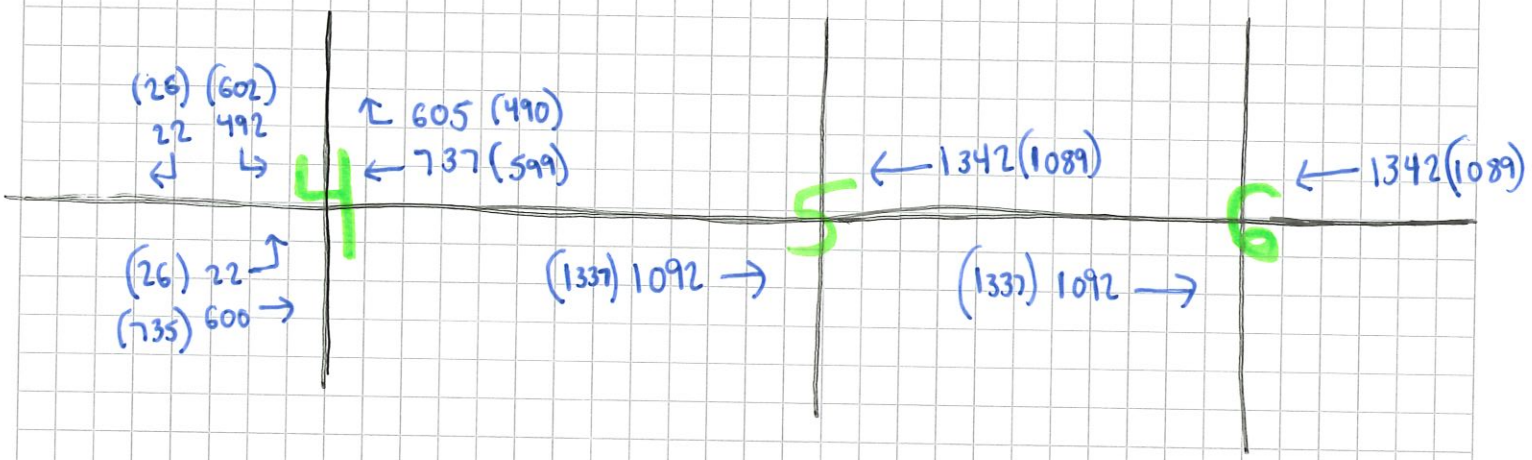
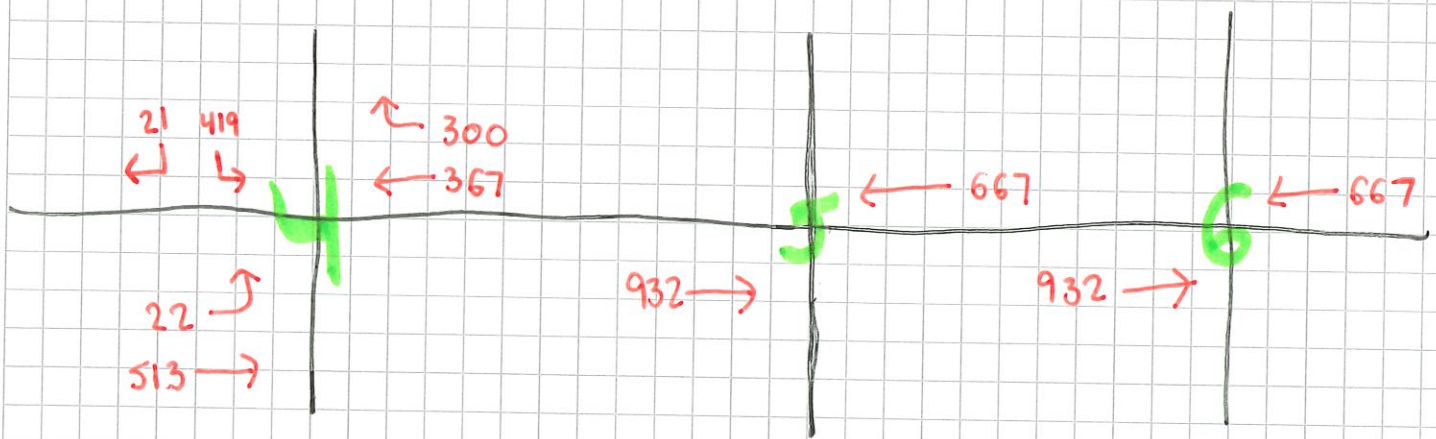
Job Deal Lake Subject Int. #5 & #6 Background volumes Sheet No. ___ of ___
Job No. ___
Designed By ___ Date ___ Checked By ___ Date ___

Am/Pm Volumes



Midday Volumes



U-5769A Concept Plans

PROJECT REFERENCE NO.	SHEET NO.
U-5769	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
440 S Church St, Suite 1000 Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

NAD 83 NA 2011

2017 ADT / 2040 ADT (ADT IN 100's)	(–Y35–) REA RD SR 3116	
NC 16 (–L–)	240/464	261/465
	65/123	86/121
	xx/56	xx/59
	151/289	
	xxx/160	

NC 16 (–L–)

REVISIONS

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FILE: \

DATE: 8/23/2019
TIME: 12:26:11 PM
PENTABLE: NCDOT_pshpFl.tbl

MATCH LINE –L– STA 314+00 SEE SHEET 27

MATCH LINE –L– STA 328+00 SEE SHEET 29

–L–
PI Sta 312+75.85
Δ = 6° 57' 11.7" (LT)
D = 0° 42' 58.3"
L = 970.86'
T = 486.03'
R = 8,000.00'
e = NC
V = 50 MPH

PT Sta. 317+60.68

–Y34– POT Sta.10+00.00 =
–L– POC Sta. 316+30.90

POT Sta. 11+94.61

S 76° 24' 18.7" E

END CONSTRUCTION
–Y34– STA 10+85.00

–Y34–

UNION ELECTRIC MEMBERSHIP COORPORATION
DB 6696 PG 631
PC N PG 184

WILBERT & BETTY LOVE
DB 209 PG 83

JACQUELINE W. DANNER
DB 4785 PG 136
PC G PG 339

BARBARA & PATRICK D. HARRIGAN
DB 3002 PG 190
PC G PG 339

RAJENDRA & RENUKA PATEL
DB 5302 PG 743
PC G PG 194

GBENGA ALUKO
JOYCE ALUKO
DB 5468 PG 70
DB 4128 PG 273
PC 1PG 839

JOINT VENTURE
PROVIDENCE ROAD MARVIN WEDDINGTON
DB 584 PG 83

CHAMBERLEYNE WAY

PROPOSED PERMANENT UTILITY EASEMENT FOR U-3467 PROJECT

BEGIN PROPOSED RIGHT-OF-WAY FOR U-3467 PROJECT

PLANTED MEDIAN

4' CONC ISLAND

2'-6" CURB & GUTTER

5' SIDEWALK

45' R

100' R

40' R

52' R

5' R

50'

315+00

320+00

325+00

N 11° 35' 48.3" E

N 13° 16' 19.8" E

N 13° 45' 13.3" E

S 81° 39' 24.1" E

–Y35– 15+00

REA RD (SR 1316)

PROPOSED IMPROVEMENTS BY REA RD EXTENSION PROJECT (U-3467)

–L–
PI Sta 326+07.34
Δ = 0° 28' 53.5" (RT)
D = 0° 47' 36.9"
L = 60.68'
T = 30.34'
R = 7,220.00'
e = NC
V = 50 MPH

PT Sta. 326+37.67

END PROPOSED RIGHT-OF-WAY FOR U-3467 PROJECT

PC Sta. 319+39.30

PT Sta. 321+50.43

PC Sta. 325+70.00

END PROPOSED RIGHT-OF-WAY FOR U-3467 PROJECT

PC Sta. 19+93.69

HIGH POINT –L–
STA. 327+95.53 EL. 714.04
e = 0.02

–Y35– POT Sta.18+43.45 =
–L– POT Sta. 324+61.39

–L–
PI Sta 320+44.87
Δ = 1° 40' 31.6" (RT)
D = 0° 47' 36.9"
L = 211.13'
T = 105.57'
R = 7,220.00'
e = NC
V = 50 MPH

–Y35–
PI Sta 21+64.93
Δ = 16° 14' 32.2" (LT)
D = 4° 46' 28.7"
L = 340.18'
T = 171.24'
R = 1,200.00'

PT Sta. 23+33.87

SEE SHEET NO. 44 & 45 FOR –L– PROFILE
SEE SHEET NO. 53 FOR –Y34– PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-5769	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
440 S Church St, Suite 1000 Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

NAD 83 NA 2011

MATCH LINE –L– STA 328+00 SEE SHEET 28

PROVIDENCE ROAD MARVIN WEDDINGTON JOINT VENTURE DB 584 PG 83

PROPOSED PERMANENT UTILITY EASEMENT FOR U-3467 PROJECT

BEGIN PROPOSED RIGHT-OF-WAY FOR U-3467 PROJECT

END PROPOSED RIGHT-OF-WAY FOR U-3467 PROJECT

LOW POINT –L–
STA. 333+43.74 EL. 710.55
e = 0.02

2'-6" CURB & GUTTER

5' SIDEWALK

TO CHARLOTTE

PLANTED MEDIAN

4' CONC ISLAND

PLANTED MEDIAN

1'-6" CURB & GUTTER

5' SIDEWALK

2'-6" CURB & GUTTER

END PROJECT
U-5769
–L– STA 339+98.09

KENNETH HOWARD HEMBY ET EL
DB 110 PG 256
PC 1 PG 839

THE COPTIC ORTHODOX CHURCH OF ST. MARK, INC.
DB 5668 PG 200

MARK SHEPHERD
DB 5744 PG 640

SEE SHEET NO. 45 FOR –L– PROFILE

REVISIONS

PLOT DRIVER: PDF.pltcfg
USER: DATAYLOR
FILE: \

DATE: 8/23/2019
PENTABLE: NCDOT_pshpFi.tbl
TIME: 12:26:18 PM

U-3467 Concept Plans

NV5 ENGINEERS & CONSULTANTS, INC.
3300 REGENCY PARKWAY, SUITE 100
CARY, NC 27518
P: 919.851.1912 www.NV5.com
NC License # P-1333
formerly CALYX Engineers & Consultants

PROJECT REFERENCE NO.	SHEET NO.
U-3467	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

8/17/99

REVISIONS

RIGHT OF WAY REVISION - 06/21/2019 - ADDED DRAINAGE UTILITY EASEMENT ON PARCELS 2 AND 113,MODIFIED CONSTRUCTION EASEMENT ON PARCEL 2,
ADDED PERMANENT UTILITY EASEMENT ON PARCELS 2,112 AND 113,REMOVED CONSTRUCTION EASEMENT ON PARCELS 112 & 113.
REMOVED PERMANENT DRAINAGE EASEMENT ON PARCEL 113.

DESIGN REVISION - 3/1/2019 - NC 16 INTERSECTION DESIGN REVISED IN COORDINATION WITH U-5769.

-L-
PI Sta 9+14.66
△ = 0° 33' 07.2" (RT)
D = 0° 34' 22.6"
L = 96.34'
T = 48.17'
R = 10,000.00'
SE = NC
V = 50 MPH

POT Sta. 0+00.00

BARBARA HUDSON COURTNEY
DB 5198 PG 37

JOE RICHARDSON & EDITH S HUDSON
DB 4556 PG 200

JOSEPH R HUDSON
DB 349 PG 664

HIGHCLERE COMMUNITY ASSOCIATION INC
DB 7222 PG 593
PB M PG 939

WILBERT & BETTY LOVE
DB 209 PG 83

BEGIN CONSTRUCTION TIP U-3467
-L- POT Sta. 1+70.00

-L- POT Sta. 10+00.00

S 82°12'31.4" E

S 81°39'24.1" E

MATCHLINE -L- STA. 10+50.00
SEE SHEET 4

CONC. SIDEWALK /MEDIAN
PAVED SHOULDER

NOTES:
SEE SHEET 31 FOR -L- PROFILE

REVISIONS		
RIGHT OF WAY REVISION – 07/06/2018 –	ADJUSTED PERMANENT UTILITY EASEMENT ON PARCELS 2,4 AND 5.	
RIGHT OF WAY REVISION – 01/30/2019 –	ADJUSTED CONSTRUCTION EASEMENT ON PARCELS 2,4 AND 5.	
RIGHT OF WAY REVISION – 01/30/2019 –	ADDED PERMANENT DRAINAGE EASEMENT ON PARCEL 2.	
RIGHT OF WAY REVISION – 01/30/2019 –	ADJUSTED CONSTRUCTION EASEMENT ON PARCEL 2.	
RIGHT OF WAY REVISION – 06/21/2019 –	ADDED ADDITIONAL PERMANENT UTILITY EASEMENT ON PARCELS 1,2,4,5 AND 11,4,ADDED DRAINAGE UTILITY EASEMENT ON PARCELS 2 AND 4,MODIFIED CONSTRUCTION EASEMENT ON PARCELS 2,4,AND 5 ADDED PARCEL 11,4,MODIFIED PERMANENT DRAINAGE EASEMENT ON PARCEL 2,ADDED NOTE 'NO CLAIM' ON PARCEL 3.	
DESIGN REVISION – 3/1/2019 –	NC 16 INTERSECTION DESIGN REVISED IN COORDINATION WITH U-5769.	

8/17/99

10/30/2020
R:\Roadway\Proj\U3467_Rdy_psh_04.dgn
brandonadams

NV5
NV5 ENGINEERS & CONSULTANTS, INC.
3300 REGENCY PARKWAY, SUITE 100
CARY, NC 27518
P: 919.851.1912 www.NV5.com
NC License # P-1333
formerly CALYX Engineers & Consultants

PROJECT REFERENCE NO.	SHEET NO.
U-3467	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

-L-
PI Sta 21+64.93
Δ = 16°14' 32.2" (LT)
D = 4° 46' 28.7"
L = 340.18'
T = 171.24'
R = 1,200.00'
SE = NC
V = 50 MPH

-Y-
PI Sta 24+90.39
Δ = 1° 40' 31.6" (RT)
D = 0° 47' 36.9"
L = 211.13'
T = 105.57'
R = 7,220.00'
SE = NC
V = 50 MPH

-Y-
PI Sta 30+52.85
Δ = 0° 28' 53.5" (RT)
D = 0° 47' 36.9"
L = 60.68'
T = 30.34'
R = 7,220.00'
SE = NC
V = 50 MPH

MATCHLINE -Y- STA. 32+50.00
SEE SHEET 24

MATCHLINE -L- STA. 10+50.00
SEE SHEET 4A

MATCHLINE -L- STA 23+50.00
SEE SHEET 5

MATCHLINE -Y- STA. 23+00.00
SEE SHEET 23

-Y- PROVIDENCE RD
-Y- NC 16
N 13°45'13.3" E
N 13°16'24" E
N 11°35'48.3" E

-L- REA ROAD
S 81°39'24" E

-L- REA ROAD EXTENSION
S 75°54'48" E 320.73'

N 76°29'49" W 312.31'

-Y- PT Sta. 30+83.19
-Y- PC Sta. 30+22.51
-Y- PT Sta. 25+95.94
-Y- PC Sta. 19+93.69
-Y- PC Sta. 23+84.82
-L- PT Sta. 21+33.87
-L- PC Sta. 18+82.06

END CONSTRUCTION
-Y- POT Sta. 31+11.00

BEGIN CONSTRUCTION
-Y- POT Sta. 24+90.00

-Y- POT Sta. 29+06.90
-L- POT Sta. 18+43.45

1 PROVIDENCE ROAD MARVIN WEDDINGTON JOINT VENTURE DB 584 PG 83

2 WILBERT & BETTY LOVE DB 209 PG 83

3 NO CLAIM
UNION ELECTRIC MEMBERSHIP COORPORATION DB 6696 PG 637 PC N PG 184

4 KENNETH HOWARD HEMBY ET EL DB 110 PG 256 PC 1PG 839

5 GBENGA ALUKO JOYCE ALUKO DB 5468 PG 70 PC 1PG 839

6 MATTHEW ALLEN MILFORD DANA JEFFERS MILFORD DB 5478 PG 777 PC 1PG 839

114 GBENGA & JOYCE ALUKO DB 4128 PG 273 PC 1PG 839

RAJENDRA & RENUKA PATEL DB 5302 PG 743 PC G PG 194

TRAFFIC DIAGRAM

	-Y- NC 16	-L- SR 1316	-L-
ADT 2019 / ADT 2039	22,784 / 30,704	7,944 / 8,664	2,780 / 3,180
-L- SR 1316	18,488 / 23,928	5,328 / 9,968	4,380 / 6,780
-L-	21,800 / 35,600	12,376 / 15,256	-Y- NC 16

DETAIL 4-A
LATERAL 2' BASE DITCH W/RIPRAP
(Not to Scale)

Natural Ground, Fill Slope, Filter Fabric, 1½Ft., 2:1, d, D, B, b, W
Min. D=1 Ft.
Max. d=1.5 Ft.
B=2 Ft.
b=5 Ft.
*When B is < 6.0'
Type of Liner= CL-B Rip-Rap

FROM -L- STA. 23+20 TO STA. 24+00 RT
29 TONS CL-B RIP-RAP
W/62 SY GEOTEXTILE

EXISTING TRAFFIC SIGNAL
CONC. SIDEWALK /MEDIAN
PAVED SHOULDER

NOTES:
SEE SHEET 31 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-3467	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NV5 ENGINEERS & CONSULTANTS, INC.
3300 REGENCY PARKWAY, SUITE 100
CARY, NC 27518
P: 919.851.1912 www.NV5.com
NC License # P-1333
formerly CALYX Engineers & Consultants

REVISIONS

RIGHT OF WAY REVISION	-	07/06/2018
RIGHT OF WAY REVISION	-	07/06/2018
RIGHT OF WAY REVISION	-	07/06/2018
RIGHT OF WAY REVISION	-	10/26/2018
RIGHT OF WAY REVISION	-	06/21/2019

ADJUSTED PERMANENT UTILITY EASEMENT ON PARCELS 4,7 AND 8.
ADJUSTED DUAL UTILITY EASEMENT ON PARCEL 8.
ADJUSTED CONSTRUCTION EASEMENT ON PARCELS 6,7 AND 8.
ADJUSTED RIGHT OF WAY ON PARCEL 8.
ADJUSTED PERMANENT EASEMENT ON PARCEL 8, AND 9, MODIFIED CONSTRUCTION EASEMENT ON PARCEL 4,6,7 AND 9.
ADDED PERMANENT DRAINAGE EASEMENT ON PARCEL 8, MODIFIED PERMANENT UTILITY EASEMENT ON PARCEL 4 AND 7.
MODIFIED PERMANENT DRAINAGE EASEMENT ON PARCEL 8, MODIFIED PERMANENT UTILITY EASEMENT ON PARCEL 4 AND 7.

DESIGN REVISION - 3/1/2019 - NC 16 INTERSECTION DESIGN REVISED IN COORDINATION WITH U-5769.

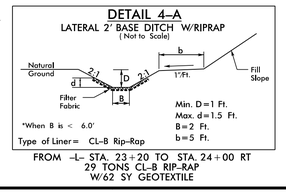
-L-
PI Sta 34+53.08
Δ = 52° 32' 30.4" (RT)
D = 4° 46' 28.7"
L = 1,100.43'
T = 592.32'
R = 1,200.00'
SE = 04
V = 50 MPH

NAD 83 NA 2011

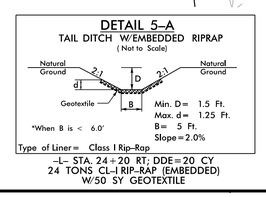
MARK SHEPHERD DB 5744 PG 640
BELLE MAR LLC DB 8226 PG 43
THE COPTIC ORTHODOX CHURCH OF ST. MARK, INC. DB 5668 PG 200
KENNETH HOWARD HEMBY ET EL DB 110 PG 256 PC 1PG 839
MARY N. KRATT ET EL DB 937 PG 388
MATTHEW ALLEN MILFORD DANA JEFFERS MILFORD DB 5478 PG 777 PC 1PG 839
JP MORGAN CHASE ACQUISITION CORP. DB 6525 PG 701 PC 1PG 838-840
BLACK DIAMOND HOMES, LLC. DB 6238 PG 681 PC 1PG 839
EDGE 5 REALTY INC DB 8293 PG 40 PB R PG 194

-L- REA ROAD EXTENSION
MATCHLINE -L- STA. 23+50.00 SEE SHEET 4
MATCHLINE -L- STA. 37+00.00 SEE SHEET 6
-L- PC Sta. 28+60.76

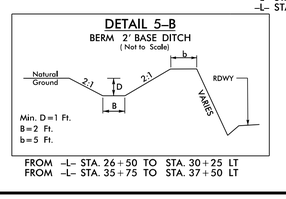
CB – DROP STRUCTURE 6.3' 1'-6" CURB & GUTTER
CB – DROP STRUCTURE 3.0'
CB – DROP STRUCTURE 1.2'
CB – DROP STRUCTURE 0.9'
JB W/MH – DROP STRUCTURE 7.4'
JB W/MH – DROP STRUCTURE 1.0'
2'-6" CURB & GUTTER
1'-6" CURB & GUTTER
5' CONC. SIDEWALK
15" RCP-IV
18" RCP-IV
18" CSP W/ELBOWS
36" TYP.
RETAIN
HEAD DITCH W/RIPRAP SEE DETAIL 5-D
BERM 2' BASE DITCH SEE DETAIL 5-B
TAIL DITCH SEE DETAIL 5-C DDE = 200 CY
LATERAL 2' BASE DITCH W/RIPRAP SEE DETAIL 4-A
TAIL DITCH W/ EMBEDDED RIPRAP SEE DETAIL 5-A
CL I RIP RAP 15 TONS 30 SY GEOTEXTILE
CL I RIP RAP 2 TONS 8 SY GEOTEXTILE
CL I RIP RAP (EMBEDDED) 4 TONS – SEE DETAIL 5-E 10 SY GEOTEXTILE
CL I RIP RAP (EMBEDDED) 33 TONS – SEE DETAIL 5-E 62 SY GEOTEXTILE
CL I RIP RAP (EMBEDDED) 15 TONS – SEE DETAIL 5-E 30 SY GEOTEXTILE
175' LANE SHIFT LT
175' TAPER
185' TAPER
50' TAPER
175' LANE SHIFT LT
175' TAPER
DDE = 200 CY



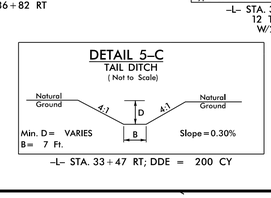
FROM –L– STA. 23+20 TO STA. 24+00 RT
29 TONS CL–B RIP–RAP
W/62 SY GEOTEXTILE



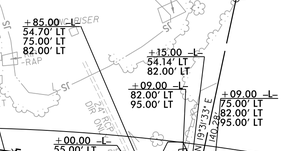
–L– STA. 24+20 RT; DDE=20 CY
24 TONS CL–I RIP–RAP (EMBEDDED)
W/50 SY GEOTEXTILE



FROM –L– STA. 26+50 TO STA. 30+25 LT
FROM –L– STA. 35+75 TO STA. 37+50 LT



–L– STA. 33+47 RT; DDE = 200 CY



–L– STA. 24+00 RT
–L– STA. 36+82 RT

–L– STA. 35+75 LT; DDE =30 CY
12 TONS CL–B RIP–RAP
W/26 SY GEOTEXTILE

CONCRETE SIDEWALK /MEDIAN

NOTES:
SEE SHEET 31 & 32 FOR –L– PROFILE

10/30/2023
R:\Projects\U3467_Rdy_psh_05.dgn
Graham Angsburg

NV5 ENGINEERS & CONSULTANTS, INC.	PROJECT REFERENCE NO.	SHEET NO.
3300 REGENCY PARKWAY, SUITE 100	U-3467	25
CARY, NC 27518	R/W SHEET NO.	
P: 919.851.1912 www.NV5.com	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NC License # P-1333 formerly CALYX Engineers & Consultants		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

REVISIONS

8/17/99

RIGHT OF WAY REVISION - 07/06/2018 - ADJUSTED CONSTRUCTION EASEMENT ON PARCEL 16.

10/30/2023
K:\Roads\Proj\U3467_Rdy_psh_25.dgn
jrgrubaugh

MATCHLINE -Y1- STA. 15+50.00
SEE SHEET 10

95

15
SUGAR MAGNOLIA WEDDINGTON, LLC.
DB 5890 PG 414
PC L PG 458

N 76°59'40" E
773.33'

-Y1- PT Sta. 18+28.99

-Y1- PC Sta. 18+27.08

-Y1- PC Sta. 18+59.80

-Y1- PT Sta. 18+66.89

-Y1- POT Sta. 19+07.28

400' LANE SHIFT LT & RT

25' TAPER LT & RT

+25.00 -Y1- 45.00' LT 29.70' LT

+74.00 -Y1- 45.00' LT

+40.00 -Y1- 53.00' LT

SPECIAL CUT DITCH SEE DETAIL 10-A

(250) REMOVE

N 10° 17' 54.9" W

-Y1- EXIST NC 84

EXIST

EXISTING R/W

21' TYP.

+41.00

SPECIAL CUT DITCH SEE DETAIL 10-B

+52.00 -Y1- 57.00' RT

+48.00 -Y1- 64.00' RT

+81.00 -Y1- 45.00' RT

+25.00 -Y1- 45.00' RT 30.36' RT

END CONSTRUCTION
-Y1- POT STA. 18+25.00
N 10° 24' 29.9" W

N 10° 41' 09.5" W

-Y1- PT Sta. 18+79.83

-Y1- PC Sta. 18+77.59

N 10° 48' 52.6" W

RETAIN

EXIST TRANSF

SIGHT TRIANGLE

60' WD RAIL

FLAG POLE

STONE WALL W/ 36" HT. WALL

Union Power Cooperative Moncure

UNION COUNTY LINK SIZE/MAT.

UNION COUNTY LINK SIZE/MAT.

Piedmont Natural Gas Company Inc. 8PL

Union Power Cooperative Monroe

Communications Company

16
LAKE FOREST PRESERVE
HOMEOWNERS ASSOCIATION, INC.
DB 5261/PG 692
PC M PG 378

S 28°40'27" E 145.35'

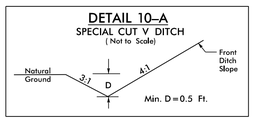
N 74°47'12" E 81.50'

S 84°37'00" E 80.60'

-Y1-

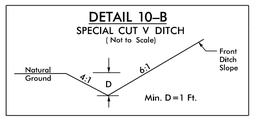
PI Sta 18+28.04	PI Sta 18+63.34	PI Sta 18+78.71
Δ = 0° 06' 35.0" (LT)	Δ = 0° 24' 22.6" (LT)	Δ = 0° 07' 43.1" (RT)
D = 5° 43' 46.5"	D = 5° 43' 46.5"	D = 5° 43' 46.5"
L = 1.92'	L = 7.09'	L = 2.25'
T = 0.96'	T = 3.55'	T = 1.12'
R = 1,000.00'	R = 1,000.00'	R = 1,000.00'
SE = EXIST	SE = EXIST	SE = EXIST
V = EXIST	V = EXIST	V = EXIST

DETAIL 10-A
SPECIAL CUT V DITCH
(Not to Scale)



FROM Y1 STA. 11+60 TO STA. 18+00 LT

DETAIL 10-B
SPECIAL CUT V DITCH
(Not to Scale)



FROM Y1 STA. 15+00 TO STA. 16+50 RT

PAVED SHOULDER

NOTES:
SEE SHEET 41 FOR -Y1- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-3467	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NV5 ENGINEERS & CONSULTANTS, INC.
3300 REGENCY PARKWAY, SUITE 100
CARY, NC 27518
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NC License # P-1333
formerly CALYX Engineers & Consultants

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REVISIONS

8/17/99 DESIGN REVISION - 6-30-23 - REMOVED U-TURN BULB LEFT AT -L- STA.96+05.00 TO 98+98.00.

MATCHLINE -Y1- STA. 15+50.00 SEE SHEET 25

MATCHLINE -L- STA. 92+00.00 SEE SHEET 9

MATCHLINE -L- STA. 106+00.00 SEE SHEET 11

NAD 83/NA 2011

-Y1- PT Sta. 14+31.40

-Y1- PC Sta. 10+47.34
N 30° 59' 10.1" E

-Y1- POT Sta. 10+00.00
-L- POC Sta. 99+40.33

-L- PT Sta. 105+52.96
S 43° 45' 09.1" E

N 10° 17' 54.9" W

S 88°18'03" W 91.36'

S 0°56'23" E 193.47'

S 55°10'15" W 84.64'

S 26°45'55" W 26.82'

S 24°55'55" W 36.75'

-Y1- NC 84 WEDDINGTON ROAD

REA ROAD EXTENSION

EXIST NC 84

EXIST REA ROAD

EXIST ASPHALT DRIVE

EXIST GAZEBO

EXIST POOL AREA

EXIST POOL HOUSE

EXIST ABAND

EXIST W/L

EXIST OHP

EXIST CONCRETE PAD

EXIST COMMUNICATION CONC PADS

EXIST DRIVE

EXIST WOODS

EXIST BAR

RETAIN

HISTORIC PROPERTY

(11) IB DEVELOPMENT, LLC. DB 4358 PG 627

(15) SUGAR MAGNOLIA WEDDINGTON, LLC. DB 5890 PG 414 PC L PG 458

(17) JANICE G. PROPST DB 1484 PG 87 PC K PG 878

(18) ELIZABETH D. & RICHARD G. PROPST FAMILY LIMITED PARTNERSHIP DB 5224 PG 272 PC K PG 878

(19) ELIZABETH D.& RICHARD G. PROPST FAMILY LIMITED PARTNERSHIP DB 5224 PG 270 PC K PG 879

(20) THE DEAL FARM, LLC. DB 5904 PG 721

(21) ELIZABETH D. & RICHARD G. PROPST DB 4631PG 619 PC K PG 879

SPECIAL CUT DITCH SEE DETAIL 10-A
CL B RIP RAP 1 TONS 5 SY GEOTEXTILE
SPECIAL CUT DITCH SEE DETAIL 10-B
CL B RIP RAP 3 TONS 10 SY GEOTEXTILE
STANDARD 'V' DITCH SEE DETAIL 10-C DDE = 180 CY
REMOVE

100' TAPER
150' TAPER
100' MEDIAN TAPER
400' LANE SHIFT LT & RT

5' CONC. SIDEWALK & CURB & GUTTER
2'-6" CURB & GUTTER

-Y1-
PI Sta 12+48.14
Δ = 41° 17' 05.0" (LT)
D = 10° 44' 58.8"
L = 384.06'
T = 200.79'
R = 533.00'
SE = RC
* V = 40 MPH

-L-
PI Sta 98+94.39
Δ = 33° 49' 47.0" (RT)
D = 2° 29' 28.0"
L = 1,358.01'
T = 699.45'
R = 2,300.00'
SE = 03
V = 50 MPH

DETAIL 10-A
SPECIAL CUT V DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1, Front Ditch Slope
Min. D=0.5 Ft.
FROM -Y1- STA. 11+60 TO STA. 18+00 LT
FROM -Y1- STA. 11+00 TO STA. 12+50 RT

DETAIL 10-B
SPECIAL CUT V DITCH
(Not to Scale)
Natural Ground, 4:1, D, 6:1, Front Ditch Slope
Min. D=1 Ft.
FROM -Y1- STA. 15+00 TO STA. 16+50 RT

DETAIL 10-C
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground
Min. D= 1 Ft.
FROM -L- STA. 100+00 TO STA. 101+28 LT

TRAFFIC DIAGRAM

	-L- REA ROAD	-Y1- EXIST NC 84	-L- EXIST 84
ADT 2019	12,376	10,332	22,012
ADT 2039	15,256	12,492	26,572
	348	9,984	
	588	11,904	

PROPOSED TRAFFIC SIGNAL
PAVEMENT REMOVAL
CONCRETE SIDEWALK /MEDIAN
PAVED SHOULDER
-HPB- HISTORIC PROPERTY BOUNDARY

NOTES:
SEE SHEET 34 FOR -L- PROFILE
SEE SHEET 41 FOR -Y1- PROFILE
*HORIZONTAL CURVE RADIUS BELOW DESIGN SPEED

10/30/2023
R:\Roadway\Plans\U3467_Rdy_psh_10.dgn
grandy.asbury

8/17/99

REVISIONS

NV5 ENGINEERS & CONSULTANTS, INC. 3300 REGENCY PARKWAY, SUITE 100 CARY, NC 27518 P: 919.851.1912 www.NV5.com NC License # P-1333 formerly CALYX Engineers & Consultants	PROJECT REFERENCE NO. U-3467	SHEET NO. 11
	R/W SHEET NO.	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

-L-
PI Sta 122+19.72
△ = 25° 49' 52.8" (LT)
D = 2° 30' 07.2"
L = 1,032.43'
T = 525.14'
R = 2,290.00'
SE = 03
V = 50 MPH

MATCHLINE -L- STA. 106+00.00 SEE SHEET 10

MATCHLINE -L- STA. 120+50.00 SEE SHEET 12

-L- PC Sta. 116+94.58

110

115

120

N 38°31'09" W 190.00'

N 49°03'16" E 258.00'

S 43°40'05.09" E

-L- NC 84 WEDDINGTON ROAD

N 63°49'32" W 317.25'

S 23°12'03" W 320.09'

S 23°12'03" W 132.33'

N 63°49'32" W 288.21'

S 63°37'39" E 184.23'

S 22°47'03" E 162.86'

(19) ELIZABETH D. & RICHARD G. PROPST FAMILY LIMITED PARTNERSHIP DB 5224 PG 270 PC K PG 879

(21) ELIZABETH D. & RICHARD G. PROPST DB 4631 PG 619 PC K PG 879

(20) THE DEAL FARM, LLC. DB 5904 PG 721

HISTORIC PROPERTY

(22) MAHMMUD K. & MELANIE KIRDASI DB 3520 PG 465 PC E PG 335

ROBERT SCHMIDT FIORELLA SCHMIDT DB 3520 PG 465 PC E PG 335

(23) STEVE ESPOSITO LESLIE ESPOSITO DB 6217 PG 309 PC G PG 88

+35.00 -L- 95.00' LT 75.00' LT

36' TYP

+85.00 -L- 95.00' LT 75.00' LT

+4.03 26.66'

5' CONC. SIDEWALK 2'-6" CURB & GUTTER

2'-9" CURB & GUTTER

EXISTING R/W

24" RCP-IV

2'-6" CURB & GUTTER

5' CONC. SIDEWALK

1'-6" CURB & GUTTER

1'-6" CURB & GUTTER

15" RCP-IV

24" RCP-IV

1103 1104 1105 1106 1107 1108 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119

1102 15" 24" RCP-III

+50.00 -L- 75.00' LT

+92.00 -L- 63.00' LT

+14.90 -L- 79.00' RT

REMOVE

+74.00 -L- 120.00' RT 97.64' RT

+10.00 -L- 120.00' RT 96.34' RT

+20.00 -L- 110.00' RT 98.57' RT

+40.00 -L- 110.00' RT 98.98' RT

CL B RIP RAP 5 TONS 14 SY GEOTEXTILE

+54.00 -L- 94.00' LT

+36.00 -L- 103.00' LT

+14.87 -L- 63.00' LT

+08.00 -L- 50.00' LT

+44.00 -L- 76.00' LT

+71.24 -L- 62.00' LT

+94.58 -L- 50.00' LT

+55.00 -L- 126.00' RT 101.27' RT

+50.58

+04.00 -L- 126.00' RT 99.04' RT

RETAIN

+14.14 -L- 62.00' LT

+19.00 -L- 50.00' LT

+03.00 -L- 89.00' LT

+23.00 -L- 96.00' LT

+33.00 -L- 70.00' LT

+35.56 26.41'

+31.75 83.80'

+15.00 94.00' RT

+33.55 62.00' RT

+02.00 114.00' RT

+50.00 -L- 120.00' RT 81.00' RT 62.00' RT

+38.00 -L- 96.00' RT 80.82' RT

+70.00 -L- 92.00' RT

+80.00 -L- 122.00' RT

PUE

EIR

ISBKD

2SBKD

2SFD

BRICK

STONE

WINE POST

BRICK WALL

STONE WALL

ARV/ BACKFLOW PREVENTER

SIZE TYP.

UNK

60"WW

ISBW

HPB

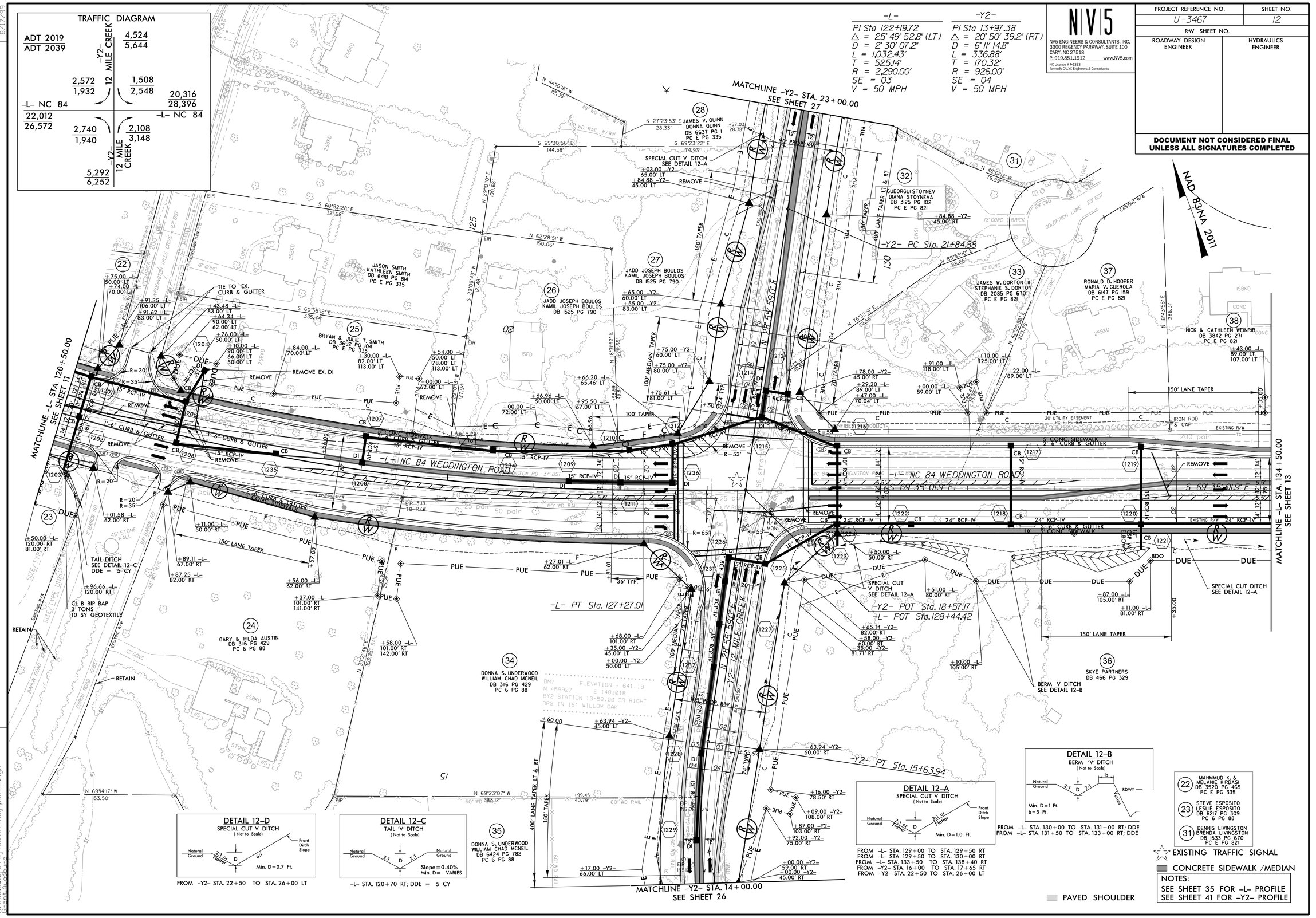
PAVEMENT REMOVAL

-HPB- HISTORIC PROPERTY BOUNDARY

CONCRETE SIDEWALK

NOTES:
SEE SHEET 34 & 35 FOR -L- PROFILE

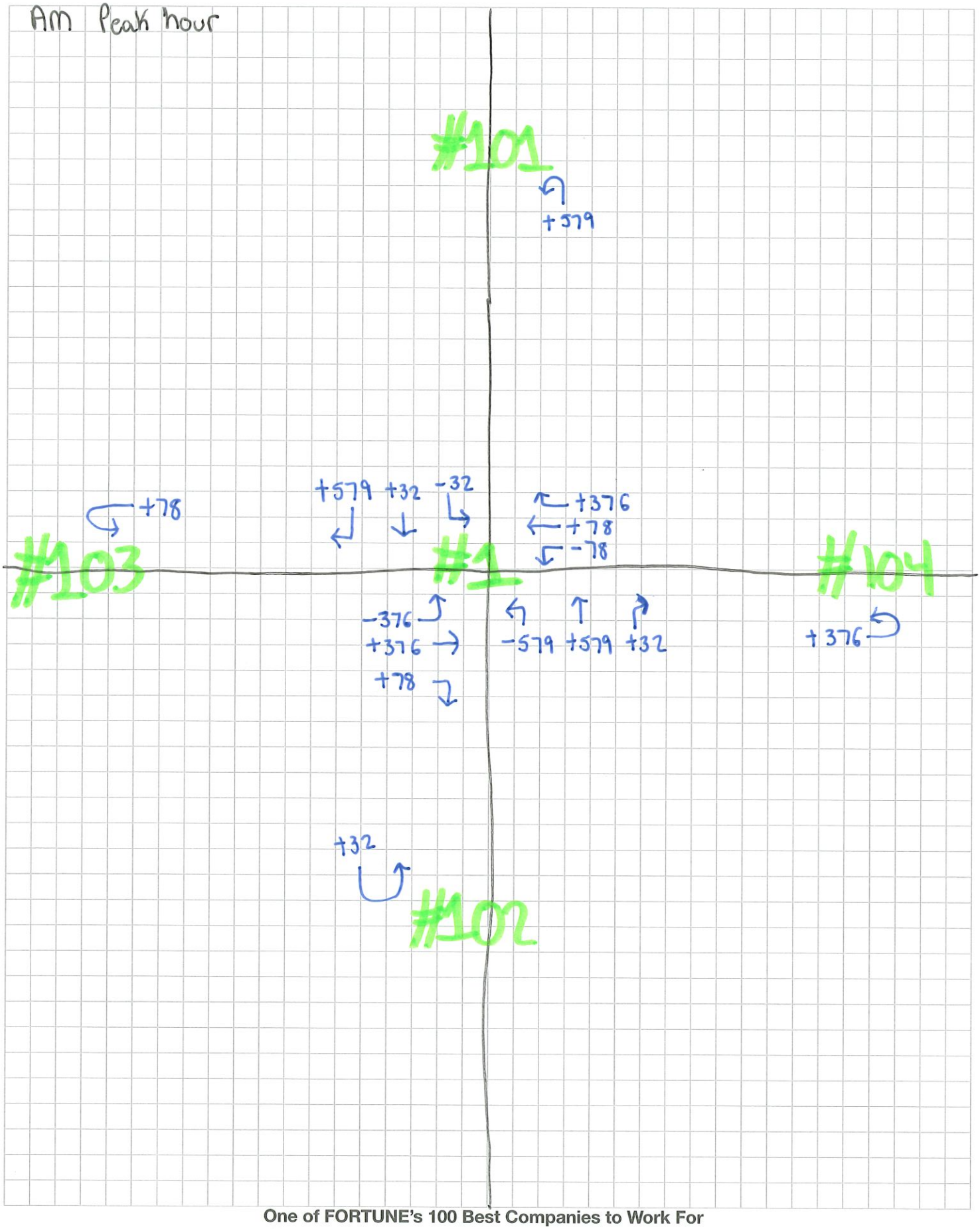
10/10/2023
H:\Roadway\Proj\U3467_Rdy.psh_11.dgn
gpatterson


TRAFFIC DIAGRAM
ADT 2019
ADT 2039
-Y2- 12 MILE CREEK
4,524
5,644
2,572
1,932
1,508
2,548
-L- NC 84
20,316
28,396
-L- NC 84
22,012
26,572
2,740
1,940
2,108
3,148
-Y2- 12 MILE CREEK
5,292
6,252
-L-
PI Sta 122+19.72
Δ = 25° 49' 52.8" (LT)
D = 2° 30' 07.2"
L = 1,032.43'
T = 525.14'
R = 2,290.00'
SE = 03
V = 50 MPH
-Y2-
PI Sta 13+97.38
Δ = 20° 50' 39.2" (RT)
D = 6° 11' 14.8"
L = 336.88'
T = 170.32'
R = 926.00'
SE = 04
V = 50 MPH
NV5
NV5 ENGINEERS & CONSULTANTS, INC.
3300 REGENCY PARKWAY, SUITE 100
CARY, NC 27518
P: 919.851.1912 www.NV5.com
NC License # P-1333
formerly CALYX Engineers & Consultants
PROJECT REFERENCE NO.
U-3467
SHEET NO.
12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 83/NA 2011
REVISIONS
DESIGN REVISION - 6-30-23 - REMOVED U-TURN BULBS LEFT AT -L- STA.125+22.00 TO 128+19.00
8/17/99
MATCHLINE -L- STA. 120+50.00 SEE SHEET 11
MATCHLINE -Y2- STA. 23+00.00 SEE SHEET 27
MATCHLINE -L- STA. 134+50.00 SEE SHEET 13
MATCHLINE -Y2- STA. 14+00.00 SEE SHEET 26
-L- NC 84 WEDDINGTON ROAD
-Y2- 12 MILE CREEK
-L- PT Sta. 127+27.01
-Y2- PC Sta. 21+84.88
-Y2- POT Sta. 18+57.17
-L- POT Sta. 128+44.42
-Y2- PT Sta. 15+63.94
JAMES V. QUINN DONNA QUINN DB 6637 PG 1 PC E PG 335
JASON SMITH KATHLEEN SMITH DB 6418 PG 814 PC E PG 335
JADD JOSEPH BOULOS KAMIL JOSEPH BOULOS DB 1525 PG 790
BRYAN & JULIE T. SMITH DB 3693 PG 104 PC E PG 335
GUEORGUI STOYNEV & DIANA STOYNEVA DB 3125 PG 102 PC E PG 821
JAMES W. DORTON III STEPHANIE S. DORTON DB 2085 PG 670 PC E PG 821
RONALD D. HOOPER MARIA V. GUEROLA DB 6147 PG 159 PC E PG 821
NICK & CATHLEEN WEINRIB DB 3842 PG 271 PC E PG 821
GARY & HILDA AUSTIN DB 3116 PG 429 PC 6 PG 88
DONNA S. UNDERWOOD WILLIAM CHAD MCNEIL DB 3116 PG 429 PC 6 PG 88
DONNA S. UNDERWOOD WILLIAM CHAD MCNEIL DB 6424 PG 782 PC 6 PG 88
SKYE PARTNERS DB 466 PG 329
DETAIL 12-A SPECIAL CUT V DITCH (Not to Scale)
DETAIL 12-B BERM "V" DITCH (Not to Scale)
DETAIL 12-C TAIL "V" DITCH (Not to Scale)
DETAIL 12-D SPECIAL CUT V DITCH (Not to Scale)
FROM -L- STA. 130+00 TO STA. 131+00 RT; DDE
FROM -L- STA. 131+50 TO STA. 133+00 RT; DDE
FROM -L- STA. 129+00 TO STA. 129+50 RT
FROM -L- STA. 129+50 TO STA. 130+00 RT
FROM -L- STA. 133+50 TO STA. 138+40 RT
FROM -Y2- STA. 16+00 TO STA. 17+65 RT
FROM -Y2- STA. 22+50 TO STA. 26+00 LT
-L- STA. 120+70 RT; DDE = 5 CY
FROM -Y2- STA. 22+50 TO STA. 26+00 LT
CL B RIP RAP 3 TONS 10 SY GEOTEXTILE
TAIL DITCH SEE DETAIL 12-C DDE = 5 CY
SPECIAL CUT V DITCH SEE DETAIL 12-A
BERM V DITCH SEE DETAIL 12-B
EXISTING TRAFFIC SIGNAL
CONCRETE SIDEWALK /MEDIAN
PAVED SHOULDER
NOTES:
SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 41 FOR -Y2- PROFILE
10/30/2023
R:\Roadway\Projects\U3467_Rdy_psh_12.dgn
Grant.Alsbury

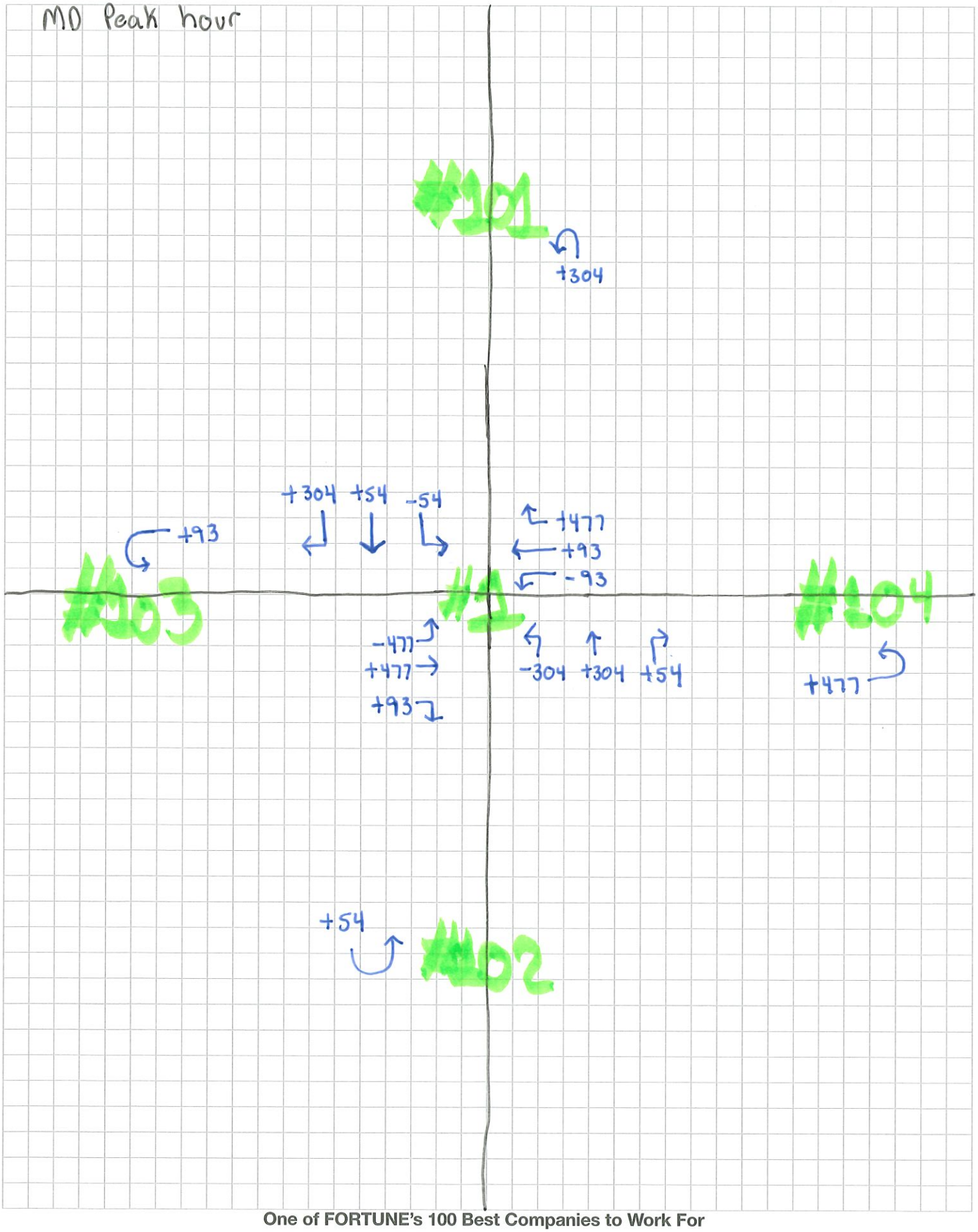
Redistribution Calculations

Kimley»Horn
Expect More. Experience Better.

Job Deal Lake Subject Redistribution Sheet No. ____ of ____
Job No. ____
Designed By ____ Date ____ Checked By ____ Date ____



MD Peak hour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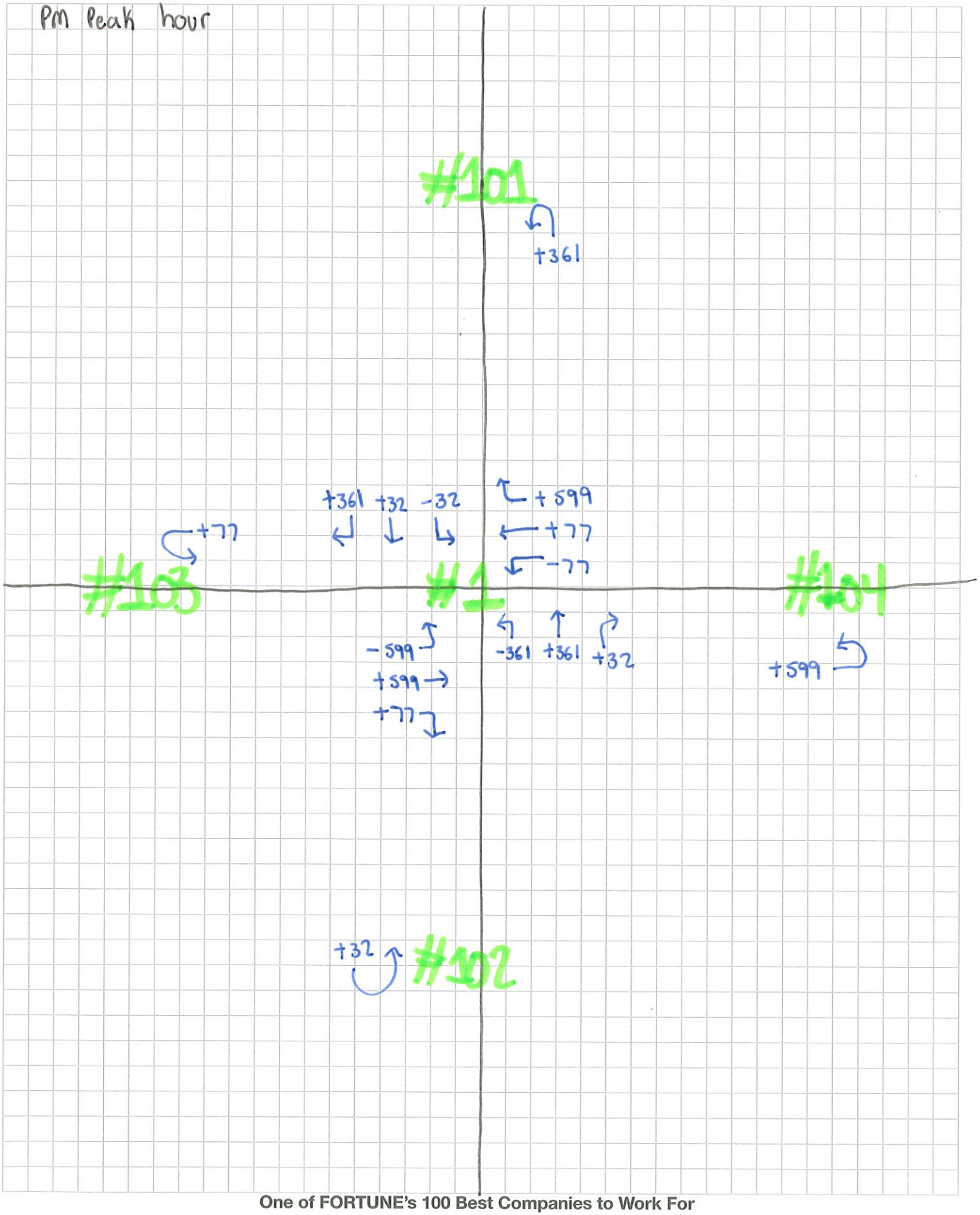
#103
+93
+304 +54 -54
#1
+477
+93
-93
-477
+477
+93
-304 +304 +54
#104
+477
+54
#102

PM Peak hour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+361
#103
+77
+361 +32 -32
+599
+77
-77
#1
#104
-599
+599
+77
-361 +361 +32
+599
+32
#102

Intersection Volume Development

INTERSECTION VOLUME DEVELOPMENT

S Providence Road (NC 16) and Rea Road/U-3467
AM PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				Rea Road Eastbound				U-3467 Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	375	947	0	0	0	447	322	0	344	0	199	0	0	0	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	375	947	0	0	0	447	322	0	344	0	199	0	0	0	0	0
2024 Existng PHF	0.92	0.91	0.90	0.90	0.90	0.76	0.86	0.90	0.86	0.90	0.74	0.90	0.90	0.90	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic (No AD)	579	1,130	76	0	32	1,126	599	0	376	164	361	0	78	268	32	0
Redistribution	-579	579	32	0	-32	32	579	0	-376	376	78	0	-78	78	376	0
2029 Background Traffic w Redistribution	0	1,709	108	0	0	1,158	1,178	0	0	540	439	0	0	346	408	0
Percent Inbound Assignment	0%	0%	20%	0%	0%	10%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	30%	10%	0%
Project Trips	0	0	4	0	0	2	0	0	0	3	6	0	0	16	6	0
2029 Buildout Total	0	1,709	112	0	0	1,160	1,178	0	0	543	445	0	0	362	414	0

MIDDAY PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				Rea Road Eastbound				U-3467 Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	234	702	0	0	0	718	339	0	488	0	362	0	0	0	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	234	702	0	0	0	718	339	0	488	0	362	0	0	0	0	0
2024 Existng PHF	0.85	0.95	0.90	0.90	0.90	0.96	0.91	0.90	0.88	0.90	0.85	0.90	0.90	0.90	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	3%	2%	2%	2%	2%	3%	2%	2%	2%	3%	2%	2%	2%	2%	2%
Future Heavy Vehicle %	2%	3%	2%	2%	2%	2%	3%	2%	2%	2%	3%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic (No AD)	304	901	128	0	54	921	332	0	477	353	470	0	93	256	39	0
Redistribution	-304	304	54	0	-54	54	304	0	-477	477	93	0	-93	93	477	0
2029 Background Traffic w Redistribution	0	1,205	182	0	0	975	636	0	0	830	563	0	0	349	516	0
Percent Inbound Assignment	0%	0%	20%	0%	0%	10%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	30%	10%	0%
Project Trips	0	0	10	0	0	5	0	0	0	11	3	0	0	8	3	0
2029 Buildout Total	0	1,205	192	0	0	980	636	0	0	841	566	0	0	357	519	0

PM PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				Rea Road Eastbound				U-3467 Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	203	779	0	0	0	645	544	0	575	0	371	0	0	0	0	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	203	779	0	0	0	645	544	0	575	0	371	0	0	0	0	0
2024 Existng PHF	0.86	0.96	0.90	0.90	0.90	0.94	0.89	0.90	0.94	0.90	0.87	0.90	0.90	0.90	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic (No AD)	361	1,126	78	0	32	1,130	376	0	599	268	579	0	77	164	32	0
Redistribution	-361	361	32	0	-32	32	361	0	-599	599	77	0	-77	77	599	0
2029 Background Traffic w Redistribution	0	1,487	110	0	0	1,162	737	0	0	867	656	0	0	241	631	0
Percent Inbound Assignment	0%	0%	20%	0%	0%	10%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	30%	10%	0%
Project Trips	0	0	12	0	0	6	0	0	0	13	4	0	0	10	4	0
2029 Buildout Total	0	1,487	122	0	0	1,168	737	0	0	880	660	0	0	251	635	0

INTERSECTION VOLUME DEVELOPMENT

Cox Road and Weddington Road (NC 84)
AM PEAK HOUR

Description	- Northbound				Cox Road Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	120	0	8	0	8	390	0	0	0	710	106	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	0	0	0	0	120	0	8	0	8	390	0	0	0	710	106	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.79	0.90	0.50	0.90	0.67	0.84	0.90	0.90	0.90	0.81	0.78	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	3%	2%	**38%**	2%	**13%**	2%	2%	2%	2%	2%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	3%	2%	**38%**	2%	**13%**	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #2	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	67	0	26	0	10	595	0	0	0	746	32	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	67	0	26	0	10	595	0	0	0	746	32	0
Percent Inbound Assignment	0%	0%	0%	0%	5%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	5%	0%
Project Trips	0	0	0	0	1	0	0	0	0	4	0	0	0	11	3	0
2029 Buildout Total	0	0	0	0	68	0	26	0	10	599	0	0	0	757	35	0

MIDDAY PEAK HOUR

Description	- Northbound				Cox Road Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	45	0	6	0	15	799	0	0	0	508	93	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	0	0	0	0	45	0	6	0	15	799	0	0	0	508	93	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.66	0.90	0.38	0.90	0.63	0.91	0.90	0.90	0.90	0.81	0.55	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%	5%	3%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%	5%	3%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #2	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	65	0	7	0	19	738	0	0	0	469	134	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	65	0	7	0	19	738	0	0	0	469	134	0
Percent Inbound Assignment	0%	0%	0%	0%	5%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	5%	0%
Project Trips	0	0	0	0	3	0	0	0	0	10	0	0	0	6	2	0
2029 Buildout Total	0	0	0	0	68	0	7	0	19	748	0	0	0	475	136	0

PM PEAK HOUR

Description	- Northbound				Cox Road Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	0	0	0	0	58	0	12	0	22	809	0	0	0	557	39	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	0	0	0	0	58	0	12	0	22	809	0	0	0	557	39	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.73	0.90	0.60	0.90	0.69	0.94	0.90	0.90	0.90	0.87	0.75	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	3%	2%	8%	2%	2%	2%	2%	2%	2%	4%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	3%	2%	8%	2%	2%	2%	2%	2%	2%	4%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #2	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	31	0	11	0	29	745	0	0	0	596	64	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	31	0	11	0	29	745	0	0	0	596	64	0
Percent Inbound Assignment	0%	0%	0%	0%	5%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	5%	0%
Project Trips	0	0	0	0	3	0	0	0	0	12	0	0	0	7	2	0
2029 Buildout Total	0	0	0	0	34	0	11	0	29	757	0	0	0	603	66	0

INTERSECTION VOLUME DEVELOPMENT

Twelve Mile Creek Road and Weddington Road (NC 84)
AM PEAK HOUR

Description	Twelve Mile Creek Road Northbound				Twelve Mile Creek Road Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	210	74	134	0	233	87	116	0	78	416	59	0	39	512	88	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	210	74	134	0	233	87	116	0	78	416	59	0	39	512	88	0
2024 Existng PHF	0.88	0.54	0.51	0.90	0.53	0.68	0.56	0.90	0.56	0.74	0.82	0.90	0.75	0.84	0.76	0.90
2029 Background PHF	0.88	0.54	0.51	0.90	0.53	0.68	0.56	0.90	0.56	0.74	0.82	0.90	0.75	0.84	0.76	0.90
2029 Build PHF	0.88	0.54	0.51	0.90	0.53	0.68	0.56	0.90	0.57	0.74	0.82	0.90	0.75	0.84	0.76	0.90
2024 Existng Heavy Vehicle%	2%	2%	3%	2%	4%	2%	2%	2%	2%	3%	3%	2%	5%	3%	7%	2%
Future Heavy Vehicle %	2%	2%	3%	2%	4%	2%	2%	2%	2%	3%	3%	2%	5%	3%	7%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #3	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	129	23	79	0	82	46	167	0	87	841	139	0	105	1,049	53	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	129	23	79	0	82	46	167	0	87	841	139	0	105	1,049	53	0
Percent Inbound Assignment	10%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	20%	0%	20%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	5%	20%	10%	45%	0%	0%	0%	0%
Project Trips	2	0	0	0	0	0	1	0	3	10	6	29	0	4	0	0
2029 Buildout Total	131	23	79	0	82	46	168	0	90	851	145	29	105	1,053	53	0

MIDDAY PEAK HOUR

Description	Twelve Mile Creek Road Northbound				Twelve Mile Creek Road Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	120	76	57	0	90	64	51	0	84	645	106	0	75	435	124	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	120	76	57	0	90	64	51	0	84	645	106	0	75	435	124	0
2024 Existng PHF	0.81	0.70	0.71	0.90	0.78	0.57	0.46	0.90	0.72	0.86	0.91	0.90	0.75	0.85	0.74	0.90
2029 Background PHF	0.81	0.70	0.71	0.90	0.78	0.57	0.46	0.90	0.72	0.86	0.91	0.90	0.75	0.85	0.74	0.90
2029 Build PHF	0.81	0.70	0.71	0.90	0.78	0.57	0.49	0.90	0.72	0.86	0.91	0.90	0.75	0.85	0.74	0.90
2024 Existng Heavy Vehicle%	3%	4%	5%	2%	2%	3%	2%	2%	2%	4%	2%	2%	3%	4%	5%	2%
Future Heavy Vehicle %	3%	4%	5%	2%	2%	3%	2%	2%	2%	4%	2%	2%	3%	4%	5%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #3	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	107	156	75	0	127	131	47	0	77	760	95	0	99	513	175	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	107	156	75	0	127	131	47	0	77	760	95	0	99	513	175	0
Percent Inbound Assignment	10%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	20%	0%	20%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	5%	20%	10%	45%	0%	0%	0%	0%
Project Trips	5	0	0	0	0	0	3	0	2	6	3	24	0	10	0	0
2029 Buildout Total	112	156	75	0	127	131	50	0	79	766	98	24	99	523	175	0

PM PEAK HOUR

Description	Twelve Mile Creek Road Northbound				Twelve Mile Creek Road Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Observed Volumes	103	51	85	0	104	102	48	0	30	684	154	0	78	424	56	0
Balanced Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024 Existing Traffic	103	51	85	0	104	102	48	0	30	684	154	0	78	424	56	0
2024 Existng PHF	0.83	0.91	0.76	0.90	0.58	0.65	0.52	0.90	0.58	0.93	0.86	0.90	0.89	0.86	0.78	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	3%	2%	2%	2%	8%	2%	6%	2%	3%	2%	2%	2%	3%	3%	2%	2%
Future Heavy Vehicle %	3%	2%	2%	2%	8%	2%	6%	2%	3%	2%	2%	2%	3%	3%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #3	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	142	46	103	0	52	23	88	0	168	1,041	131	0	78	849	81	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	142	46	103	0	52	23	88	0	168	1,041	131	0	78	849	81	0
Percent Inbound Assignment	10%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	20%	0%	20%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	5%	20%	10%	45%	0%	0%	0%	0%
Project Trips	6	0	0	0	0	0	3	0	2	6	4	28	0	12	0	0
2029 Buildout Total	148	46	103	0	52	23	91	0	170	1,047	135	28	78	861	81	0

INTERSECTION VOLUME DEVELOPMENT

Weddington Road (NC 84) and U-3467 (Future)
AM PEAK HOUR

Description	- Northbound				Weddington Road (NC 84) Southbound				U-3467 (Future) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	492	0	22	0	22	600	0	0	0	737	605	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	492	0	22	0	22	600	0	0	0	737	605	0
Percent Inbound Assignment	0%	0%	0%	0%	25%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	25%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	25%	10%
Project Trips	0	0	0	0	5	0	0	0	0	7	0	0	0	22	14	10
2029 Buildout Total	0	0	0	0	497	0	22	0	22	607	0	0	0	759	619	10

MIDDAY PEAK HOUR

Description	- Northbound				Weddington Road (NC 84) Southbound				U-3467 (Future) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	419	0	21	0	22	513	0	0	0	367	300	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	419	0	21	0	22	513	0	0	0	367	300	0
Percent Inbound Assignment	0%	0%	0%	0%	25%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	25%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	25%	10%
Project Trips	0	0	0	0	13	0	0	0	0	21	0	0	0	11	8	16
2029 Buildout Total	0	0	0	0	432	0	21	0	22	534	0	0	0	378	308	16

PM PEAK HOUR

Description	- Northbound				Weddington Road (NC 84) Southbound				U-3467 (Future) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	602	0	26	0	26	735	0	0	0	599	490	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	602	0	26	0	26	735	0	0	0	599	490	0
Percent Inbound Assignment	0%	0%	0%	0%	25%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	25%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	25%	10%
Project Trips	0	0	0	0	15	0	0	0	0	25	0	0	0	14	9	19
2029 Buildout Total	0	0	0	0	617	0	26	0	26	760	0	0	0	613	499	19

INTERSECTION VOLUME DEVELOPMENT

Weddington Road (NC 84) and Access A (RIRO)
AM PEAK HOUR

Description	Access A (RIRO) Northbound				- Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
2024 Existing Traffic	0	0	0	0	0	0	0	0	0	553	0	0	0	838	0	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.72	0.90	0.90	0.90	0.81	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	3%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	3%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	1,092	0	0	0	1,342	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	1,092	0	0	0	1,342	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	60%	0%	0%	25%	0%	0%
Percent Outbound Assignment	0%	0%	60%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	75%	0%	0%
Project Trips	0	0	33	0	0	0	0	0	0	11	11	0	0	46	0	0
2029 Buildout Total	0	0	33	0	0	0	0	0	0	1,103	11	0	0	1,388	0	0

MIDDAY PEAK HOUR

Description	Access A (RIRO) Northbound				- Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
2024 Existing Traffic	0	0	0	0	0	0	0	0	0	835	0	0	0	606	0	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.90	0.90	0.90	0.81	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	2%	4%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	2%	4%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	932	0	0	0	667	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	932	0	0	0	667	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	60%	0%	0%	25%	0%	0%
Percent Outbound Assignment	0%	0%	60%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	75%	0%	0%
Project Trips	0	0	18	0	0	0	0	0	0	19	31	0	0	35	0	0
2029 Buildout Total	0	0	18	0	0	0	0	0	0	951	31	0	0	702	0	0

PM PEAK HOUR

Description	Access A (RIRO) Northbound				- Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
2024 Existing Traffic	0	0	0	0	0	0	0	0	0	868	0	0	0	575	0	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.90	0.90	0.90	0.83	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	1,337	0	0	0	1,089	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	1,337	0	0	0	1,089	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	60%	0%	0%	25%	0%	0%
Percent Outbound Assignment	0%	0%	60%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	75%	0%	0%
Project Trips	0	0	20	0	0	0	0	0	0	22	37	0	0	42	0	0
2029 Buildout Total	0	0	20	0	0	0	0	0	0	1,359	37	0	0	1,131	0	0

INTERSECTION VOLUME DEVELOPMENT

Weddington Road (NC 84) and Access B (RIRO)
AM PEAK HOUR

Description	Access B (RIRO) Northbound				Access B (RIRO) Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
2024 Existing Traffic	0	0	0	0	0	0	0	0	0	553	0	0	0	838	0	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.72	0.90	0.90	0.90	0.81	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	3%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	3%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	1,092	0	0	0	1,342	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	1,092	0	0	0	1,342	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	10%	0%	0%	25%	30%	0%
Percent Outbound Assignment	0%	0%	10%	0%	0%	0%	30%	0%	0%	70%	0%	0%	0%	45%	0%	0%
Project Trips	0	0	6	0	0	0	16	0	0	42	2	0	0	30	6	0
2029 Buildout Total	0	0	6	0	0	0	16	0	0	1,134	2	0	0	1,372	6	0

MIDDAY PEAK HOUR

Description	Access B (RIRO) Northbound				Access B (RIRO) Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
2024 Existing Traffic	0	0	0	0	0	0	0	0	0	835	0	0	0	606	0	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.90	0.90	0.90	0.81	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	2%	4%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	2%	4%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	932	0	0	0	667	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	932	0	0	0	667	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	10%	0%	0%	25%	30%	0%
Percent Outbound Assignment	0%	0%	10%	0%	0%	0%	30%	0%	0%	70%	0%	0%	0%	45%	0%	0%
Project Trips	0	0	3	0	0	0	9	0	0	32	5	0	0	26	16	0
2029 Buildout Total	0	0	3	0	0	0	9	0	0	964	5	0	0	693	16	0

PM PEAK HOUR

Description	Access B (RIRO) Northbound				Access B (RIRO) Southbound				Weddington Road (NC 84) Eastbound				Weddington Road (NC 84) Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
2024 Existing Traffic	0	0	0	0	0	0	0	0	0	868	0	0	0	575	0	0
2024 Existng PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.90	0.90	0.90	0.83	0.90	0.90
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
2024 Existng Heavy Vehicle%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	1,337	0	0	0	1,089	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	1,337	0	0	0	1,089	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	10%	0%	0%	25%	30%	0%
Percent Outbound Assignment	0%	0%	10%	0%	0%	0%	30%	0%	0%	70%	0%	0%	0%	45%	0%	0%
Project Trips	0	0	4	0	0	0	11	0	0	36	6	0	0	31	18	0
2029 Buildout Total	0	0	4	0	0	0	11	0	0	1,373	6	0	0	1,120	18	0

INTERSECTION VOLUME DEVELOPMENT

S Providence Road (NC 16) and Northern U-turn bulb
AM PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				- Eastbound				- Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	1,538	0	0	0	1,757	0	0	0	0	0	0	0	0	0	0
Redistribution	0	0	0	579	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	1,538	0	579	0	1,757	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Project Trips	0	6	0	0	0	2	0	0	0	0	0	0	0	0	0	0
2029 Buildout Total	0	1,544	0	579	0	1,759	0	0	0	0	0	0	0	0	0	0

MIDDAY PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				- Eastbound				- Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	1,417	0	0	0	1,307	0	0	0	0	0	0	0	0	0	0
Redistribution	0	0	0	304	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	1,417	0	304	0	1,307	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Project Trips	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0
2029 Buildout Total	0	1,420	0	304	0	1,312	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				- Eastbound				- Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	1,757	0	0	0	1,538	0	0	0	0	0	0	0	0	0	0
Redistribution	0	0	0	361	0	0	0	0	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	1,757	0	361	0	1,538	0	0	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Project Trips	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0	0
2029 Buildout Total	0	1,761	0	361	0	1,544	0	0	0	0	0	0	0	0	0	0

INTERSECTION VOLUME DEVELOPMENT

S Providence Road (NC 16) and Southern U-turn bulb
AM PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				- Eastbound				- Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	1,785	0	0	0	1,565	0	0	0	0	0	0	0	0	0	0
Redistribution	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	1,785	0	0	0	1,565	0	32	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	10%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Project Trips	0	2	0	0	0	6	0	2	0	0	0	0	0	0	0	0
2029 Buildout Total	0	1,787	0	0	0	1,571	0	34	0	0	0	0	0	0	0	0

MIDDAY PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				- Eastbound				- Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	1,333	0	0	0	1,484	0	0	0	0	0	0	0	0	0	0
Redistribution	0	0	0	0	0	0	0	54	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	1,333	0	0	0	1,484	0	54	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	10%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Project Trips	0	5	0	0	0	3	0	5	0	0	0	0	0	0	0	0
2029 Buildout Total	0	1,338	0	0	0	1,487	0	59	0	0	0	0	0	0	0	0

PM PEAK HOUR

Description	S Providence Road (NC 16) Northbound				S Providence Road (NC 16) Southbound				- Eastbound				- Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	1,565	0	0	0	1,786	0	0	0	0	0	0	0	0	0	0
Redistribution	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	0
2029 Background Traffic w Redistribution	0	1,565	0	0	0	1,786	0	32	0	0	0	0	0	0	0	0
Percent Inbound Assignment	0%	10%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Project Trips	0	6	0	0	0	4	0	6	0	0	0	0	0	0	0	0
2029 Buildout Total	0	1,571	0	0	0	1,790	0	38	0	0	0	0	0	0	0	0

INTERSECTION VOLUME DEVELOPMENT

Rea Road and Western U-turn Bulb
AM PEAK HOUR

Description	- Northbound				- Southbound				Rea Road Eastbound				Rea Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	901	0	0	0	1,446	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	901	0	0	0	1,446	0	78
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	10%
Project Trips	0	0	0	0	0	0	0	0	0	3	0	0	0	10	0	6
2029 Buildout Total	0	0	0	0	0	0	0	0	0	904	0	0	0	1,456	0	84

MIDDAY PEAK HOUR

Description	- Northbound				- Southbound				Rea Road Eastbound				Rea Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	1,300	0	0	0	892	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	1,300	0	0	0	892	0	93
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	10%
Project Trips	0	0	0	0	0	0	0	0	0	11	0	0	0	5	0	3
2029 Buildout Total	0	0	0	0	0	0	0	0	0	1,311	0	0	0	897	0	96

PM PEAK HOUR

Description	- Northbound				- Southbound				Rea Road Eastbound				Rea Road Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	1,446	0	0	0	901	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	1,446	0	0	0	901	0	77
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	10%
Project Trips	0	0	0	0	0	0	0	0	0	13	0	0	0	6	0	4
2029 Buildout Total	0	0	0	0	0	0	0	0	0	1,459	0	0	0	907	0	81

INTERSECTION VOLUME DEVELOPMENT

Rea Road Extension and Eastern U-turn Bulb
AM PEAK HOUR

Description	- Northbound				- Southbound				Rea Road Extension Eastbound				Rea Road Extension Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	272	0	0	0	378	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	376	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	272	0	376	0	378	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%
Project Trips	0	0	0	0	0	0	0	0	0	7	0	0	0	22	0	0
2029 Buildout Total	0	0	0	0	0	0	0	0	0	279	0	376	0	400	0	0

MIDDAY PEAK HOUR

Description	- Northbound				- Southbound				Rea Road Extension Eastbound				Rea Road Extension Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	535	0	0	0	388	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	477	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	535	0	477	0	388	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%
Project Trips	0	0	0	0	0	0	0	0	0	21	0	0	0	11	0	0
2029 Buildout Total	0	0	0	0	0	0	0	0	0	556	0	477	0	399	0	0

PM PEAK HOUR

Description	- Northbound				- Southbound				Rea Road Extension Eastbound				Rea Road Extension Westbound			
	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn	Left	Through	Right	U-turn
Future PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Future Heavy Vehicle %	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor #1	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104	1.104
2029 Background Traffic	0	0	0	0	0	0	0	0	0	378	0	0	0	273	0	0
Redistribution	0	0	0	0	0	0	0	0	0	0	0	599	0	0	0	0
2029 Background Traffic w Redistribution	0	0	0	0	0	0	0	0	0	378	0	599	0	273	0	0
Percent Inbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%
Percent Outbound Assignment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%
Project Trips	0	0	0	0	0	0	0	0	0	25	0	0	0	14	0	0
2029 Buildout Total	0	0	0	0	0	0	0	0	0	403	0	599	0	287	0	0

Signal Plans

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	Sig. 8

3 Phase
Fully Actuated
(NC 16 - Providence Rd CLS)

PHASING DIAGRAM

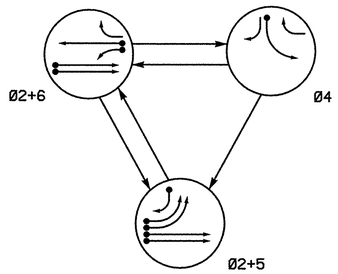
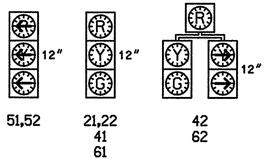


TABLE OF OPERATION				
SIGNAL FACE	PHASE Ø2+5	Ø2+6	Ø4	FLASH
21,22	G	G	R	Y
41	R	R	G	R
42	R/G	R	G	R
51,52	~~—~~	~~R~~	~~R~~	~~R~~
61	R	G	R	Y
62	R	G	R/G	Y

Signal Face I.D.

Denotes L.E.D.



2070L LOOP & DETECTOR INSTALLATION

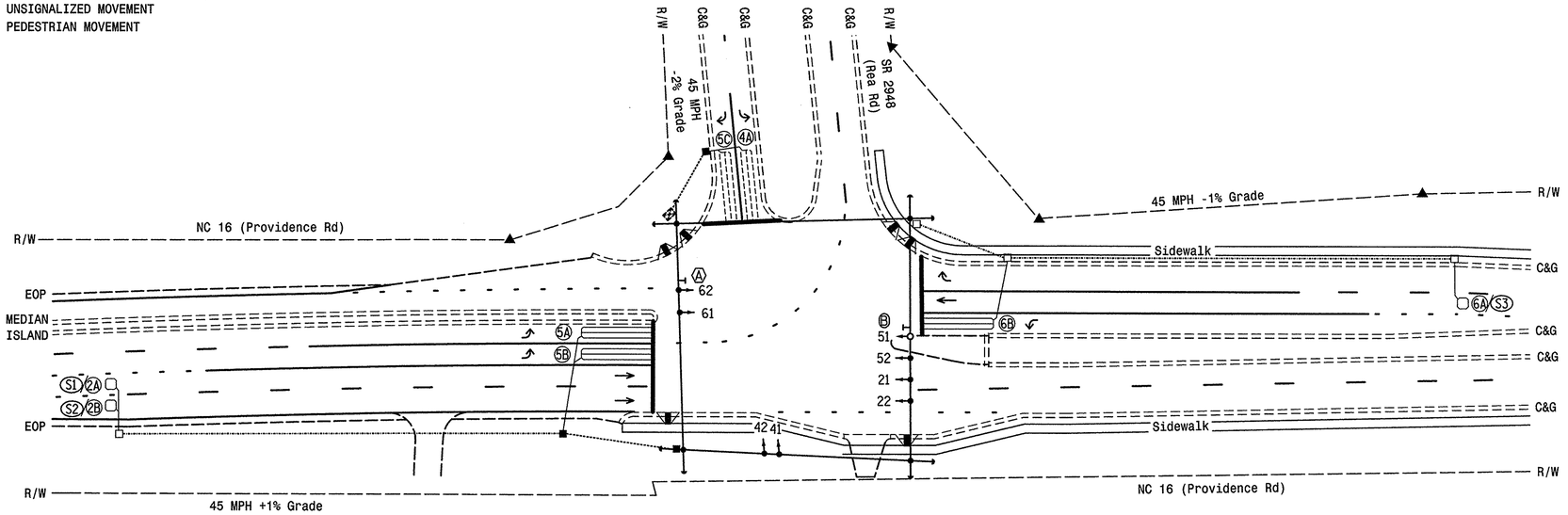
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A/S1	6X6	300	5	Y	2	Y	Y	-	-	-	Y	-
2B/S2	6X6	300	5	Y	2	Y	Y	-	-	-	Y	-
4A	6X40	0	2-4-2	-	4	Y	Y	-	-	-	-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	-	-	-
5B	6X40	0	2-4-2	Y	5	Y	Y	-	-	-	-	-
5C	6X40	0	2-4-2	-	5	Y	Y	-	-	10	-	-
6A/S3	6X6	300	5	Y	6	Y	Y	-	-	-	Y	-
6B	6X40	0	2-4-2	Y	6	Y	Y	Y	-	3	-	Y

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Enable Backup Protect for phase 2 to allow the controller to clear from phase 2+6 to phase 2+5 by progressing through an all red display.
4. Reposition existing signal heads numbered 21, 22, 52, 61 and 62.
5. Set all detector units to presence mode.
6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
7. Closed loop system data: Controller Asset #1694.

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole With Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
N/A	Wheelchair Ramp	
Ⓐ	Right Arrow "ONLY" Sign (R3-5R)	N/A
N/A	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓑ

2070L TIMING CHART

FEATURE	PHASE 2	4	5	6
Min Green 1 *	12	7	7	12
Extension 1 *	6.0	2.0	2.0	6.0
Max Green 1 *	60	20	20	60
Yellow Clearance	4.4	4.7	3.0	4.6
Red Clearance	2.0	1.7	3.6	1.9
Red Revert	5.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	1.5	-	-	2.5
Max Variable Initial *	34	-	-	34
Time Before Reduction *	15	-	-	15
Time To Reduce *	30	-	-	30
Minimum Gap	3.0	-	-	3.0
Recall Mode	MIN RECALL	-	-	MIN RECALL
Vehicle Call Memory	YELLOW	-	-	YELLOW
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

Final Signal

Traffic Engineering and Safety Systems Branch
Signals and Geometrics Section
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Parkway
Garner, NC 27529

NC 16 (Providence Rd)
at
SR 2948 (Rea Rd)

Division 10 Union County Weddington

PLAN DATE:	July 2007	REVIEWED BY:	N.W. Rodevick
PREPARED BY:	T.R. Terrell	REVIEWED BY:	S.T. Franklin

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 028657 ENGINEER SPENCER T. FRANKLIN

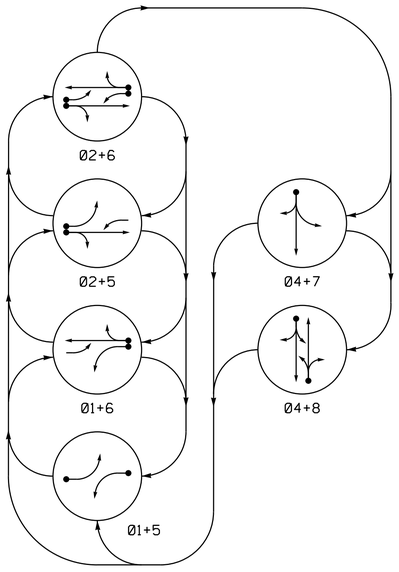
SIGNATURE 7.27.07 DATE

SIG. INVENTORY NO. 10-1694

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609

PROJECT REFERENCE NO.	SHEET NO.
Div.	Sig.1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

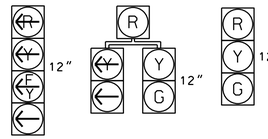
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 01+05	01+06	02+05	02+06	04+07	04+08	FLASH
11	←	←	F Y	F Y	~~R~~	~~R~~	~~Y~~
21, 22	R	R	G	G	R	R	Y
41	R	R	R	R	G ↓	G	R
42	R	R	R	R	G	G	R
51	←	F Y	←	F Y	~~R~~	~~R~~	~~Y~~
61, 62	R	G	R	G	R	R	Y
81, 82	R	R	R	R	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



11
51

41

21, 22
42
61, 62
81, 82

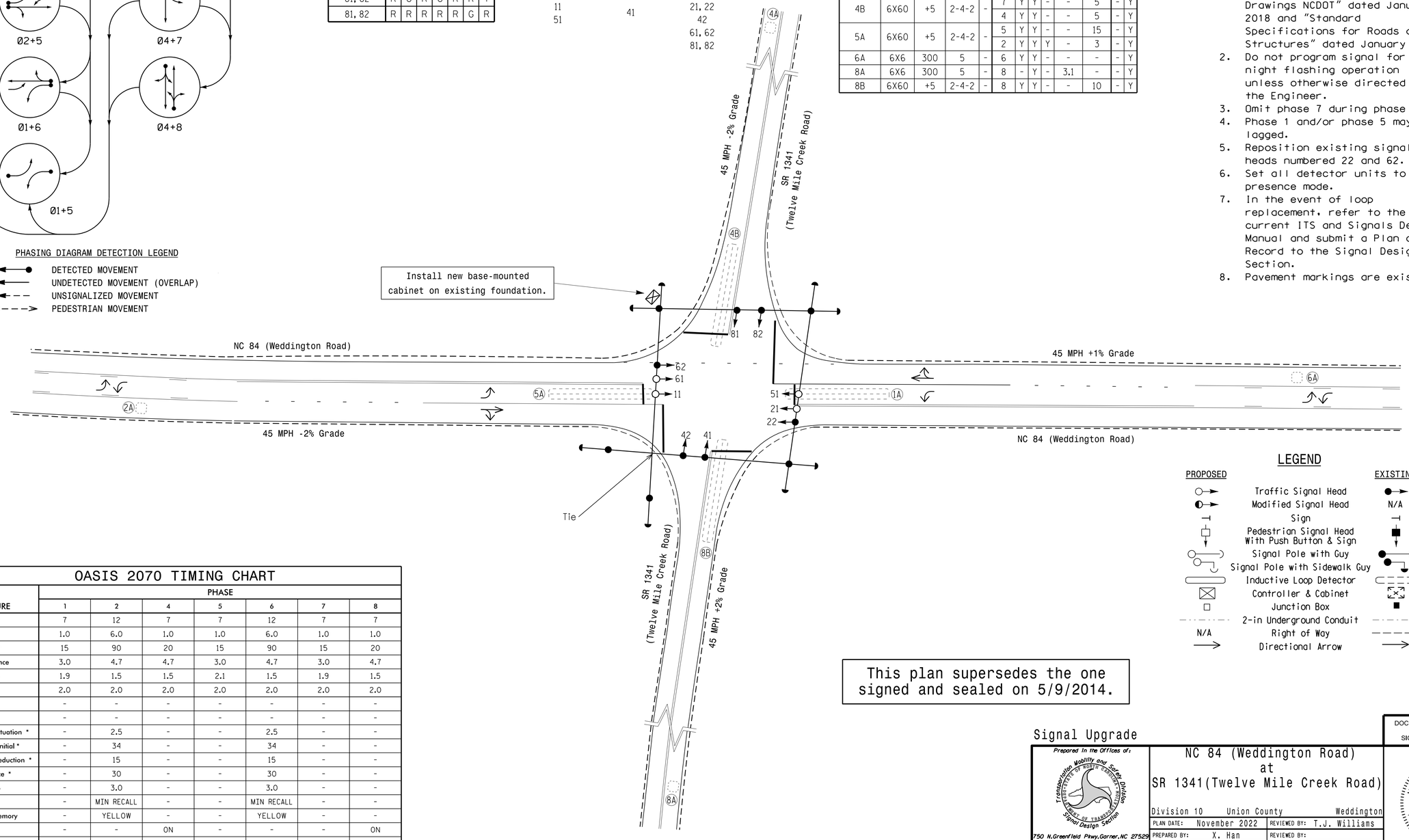
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	+5	2-4-2	-	1	Y	Y	-	-	15	-	Y
					6	Y	Y	Y	-	3	-	Y
2A	6X6	300	5	-	2	Y	Y	-	-	-	-	Y
4A	6X6	300	5	-	4	-	Y	-	3.1	-	-	Y
4B	6X60	+5	2-4-2	-	7	Y	Y	-	-	5	-	Y
					4	Y	Y	-	-	5	-	Y
5A	6X60	+5	2-4-2	-	5	Y	Y	-	-	15	-	Y
					2	Y	Y	Y	-	3	-	Y
6A	6X6	300	5	-	6	Y	Y	-	-	-	-	Y
8A	6X6	300	5	-	8	-	Y	-	3.1	-	-	Y
8B	6X60	+5	2-4-2	-	8	Y	Y	-	-	10	-	Y

6 Phase
Fully Actuated
Isolated

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Omit phase 7 during phase 8 on.
4. Phase 1 and/or phase 5 may be lagged.
5. Reposition existing signal heads numbered 22 and 62.
6. Set all detector units to presence mode.
7. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
8. Pavement markings are existing.



LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
□↓	Pedestrian Signal Head With Push Button & Sign	■↓
○	Signal Pole with Guy	●
○	Signal Pole with Sidewalk Guy	●
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
·-·-·	2-in Underground Conduit	·-·-·
N/A	Right of Way	———
→	Directional Arrow	→

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	4	5	6	7	8
Min Green 1 *	7	12	7	7	12	7	7
Extension 1 *	1.0	6.0	1.0	1.0	6.0	1.0	1.0
Max Green 1 *	15	90	20	15	90	15	20
Yellow Clearance	3.0	4.7	4.7	3.0	4.7	3.0	4.7
Red Clearance	1.9	1.5	1.5	2.1	1.5	1.9	1.5
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-
Seconds Per Actuation *	-	2.5	-	-	2.5	-	-
Max Variable Initial *	-	34	-	-	34	-	-
Time Before Reduction *	-	15	-	-	15	-	-
Time To Reduce *	-	30	-	-	30	-	-
Minimum Gap	-	3.0	-	-	3.0	-	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-	-
Dual Entry	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

This plan supersedes the one signed and sealed on 5/9/2014.

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

NC 84 (Weddington Road) at SR 1341(Twelve Mile Creek Road)

Division 10 Union County Weddington

PLAN DATE:	November 2022	REVIEWED BY:	T.J. Williams
PREPARED BY:	X. Han	REVIEWED BY:	

SCALE 0 30 1"=30'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 024393 ENGINEER TIMOTHY J. WILLIAMS

DocuSigned by: T J Williams 11/02/2022 DATE

SIG. INVENTORY NO. 10-1818

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Intersection Capacity Analysis

2024 Existing Conditions

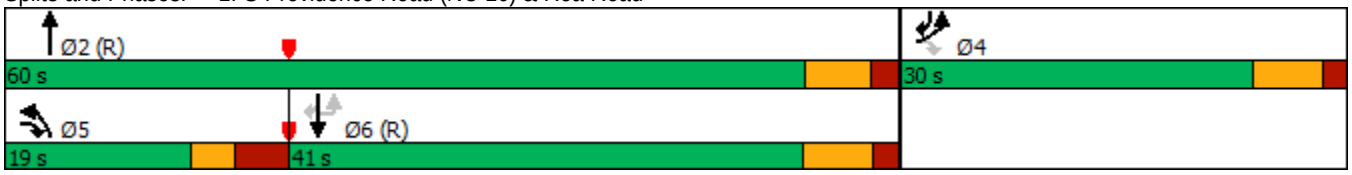
Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	344	199	375	947	4	447	322
Future Volume (vph)	344	199	375	947	4	447	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	11	12	12
Grade (%)	-2%			1%		-1%	
Storage Length (ft)	0	0	425		325		0
Storage Lanes	1	1	2		1		1
Taper Length (ft)	0		100		75		
Lane Util. Factor	1.00	1.00	0.97	0.95	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950		0.950		0.950		
Satd. Flow (prot)	1728	1546	3302	3522	1719	1836	1591
Flt Permitted	0.950		0.950		0.275		
Satd. Flow (perm)	1728	1546	3302	3522	498	1836	1591
Right Turn on Red		No					No
Satd. Flow (RTOR)							
Link Speed (mph)	45			45		45	
Link Distance (ft)	1527			1308		1378	
Travel Time (s)	23.1			19.8		20.9	
Peak Hour Factor	0.86	0.74	0.92	0.91	0.90	0.76	0.86
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%
Adj. Flow (vph)	400	269	408	1041	4	588	374
Shared Lane Traffic (%)							
Lane Group Flow (vph)	400	269	408	1041	4	588	374
Turn Type	Prot	pm+ov	Prot	NA	Perm	NA	pm+ov
Protected Phases	4	5	5	2		6	4
Permitted Phases		4			6		6
Detector Phase	4	5	5	2	6	6	4
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	12.0	12.0	12.0	7.0
Minimum Split (s)	13.4	13.6	13.6	18.4	18.5	18.5	13.4
Total Split (s)	30.0	19.0	19.0	60.0	41.0	41.0	30.0
Total Split (%)	33.3%	21.1%	21.1%	66.7%	45.6%	45.6%	33.3%
Maximum Green (s)	23.6	12.4	12.4	53.6	34.5	34.5	23.6
Yellow Time (s)	4.7	3.0	3.0	4.4	4.6	4.6	4.7
All-Red Time (s)	1.7	3.6	3.6	2.0	1.9	1.9	1.7
Lost Time Adjust (s)	-1.4	-1.6	-1.6	-1.4	-1.5	-1.5	-1.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0	2.0	2.0	6.0	6.0	6.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	3.0	3.0	3.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	15.0	15.0	15.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	30.0	30.0	30.0	0.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	23.7	42.7	14.0	56.3	37.3	37.3	66.0
Actuated g/C Ratio	0.26	0.47	0.16	0.63	0.41	0.41	0.73
v/c Ratio	0.88	0.37	0.80	0.47	0.02	0.77	0.32

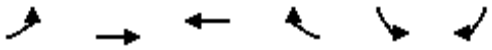
Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Control Delay	53.6	16.5	49.6	10.1	16.8	31.8	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	16.5	49.6	10.1	16.8	31.8	5.1
LOS	D	B	D	B	B	C	A
Approach Delay	38.7			21.2		21.4	
Approach LOS	D			C		C	
Queue Length 50th (ft)	213	90	117	156	1	289	61
Queue Length 95th (ft)	#338	115	#184	202	8	326	90
Internal Link Dist (ft)	1447			1228		1298	
Turn Bay Length (ft)			425		325		
Base Capacity (vph)	480	735	520	2204	206	761	1190
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.37	0.78	0.47	0.02	0.77	0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 29 (32%), Referenced to phase 2:NBT and 6:SBTU, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 25.0		Intersection LOS: C	
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	8	390	710	106	120	8
Future Volume (vph)	8	390	710	106	120	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.982		0.987	
Flt Protected	0.950				0.957	
Satd. Flow (prot)	1491	1801	1707	0	1575	0
Flt Permitted	0.950				0.957	
Satd. Flow (perm)	1491	1801	1707	0	1575	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1025		1160	
Travel Time (s)		18.2	15.5		17.6	
Peak Hour Factor	0.67	0.84	0.81	0.78	0.79	0.50
Heavy Vehicles (%)	13%	2%	2%	2%	3%	38%
Adj. Flow (vph)	12	464	877	136	152	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	464	1013	0	168	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	390	710	106	120	8
Future Vol, veh/h	8	390	710	106	120	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	67	84	81	78	79	50
Heavy Vehicles, %	13	2	2	2	3	38
Mvmt Flow	12	464	877	136	152	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1013	0	-	0	1433	945
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	488	-
Critical Hdwy	4.23	-	-	-	6.43	6.58
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.317	-	-	-	3.527	3.642
Pot Cap-1 Maneuver	643	-	-	-	~ 147	273
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	643	-	-	-	~ 144	273
Mov Cap-2 Maneuver	-	-	-	-	270	-
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	38
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	643	-	-	-	270
HCM Lane V/C Ratio	0.019	-	-	-	0.622
HCM Control Delay (s)	10.7	-	-	-	38
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	3.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	416	59	39	512	88	210	74	134	233	87	116
Future Volume (vph)	78	416	59	39	512	88	210	74	134	233	87	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	10	12	12	10	12
Grade (%)		-2%			1%			2%			-2%	
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.976			0.944			0.964	
Flt Protected	0.950			0.950				0.982			0.972	
Satd. Flow (prot)	1728	1770	0	1653	1721	0	0	1589	0	0	1627	0
Flt Permitted	0.122			0.114				0.589			0.515	
Satd. Flow (perm)	222	1770	0	198	1721	0	0	953	0	0	862	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1035			1019			1122			1136	
Travel Time (s)		15.7			15.4			17.0			17.2	
Peak Hour Factor	0.56	0.74	0.82	0.75	0.84	0.76	0.88	0.54	0.51	0.53	0.68	0.56
Heavy Vehicles (%)	2%	3%	3%	5%	3%	7%	2%	2%	3%	4%	2%	2%
Adj. Flow (vph)	139	562	72	52	610	116	239	137	263	440	128	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	634	0	52	726	0	0	639	0	0	775	0
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	6			2			8			4		
Detector Phase	5	2		1	6		8	8		7	7	
Switch Phase										4	4	
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	18.2		11.9	18.2		13.2	13.2		11.9	13.2	
Total Split (s)	13.0	39.0		12.0	38.0		49.0	49.0		20.0	69.0	
Total Split (%)	10.8%	32.5%		10.0%	31.7%		40.8%	40.8%		16.7%	57.5%	
Maximum Green (s)	7.9	32.8		7.1	31.8		42.8	42.8		15.1	62.8	
Yellow Time (s)	3.0	4.7		3.0	4.7		4.7	4.7		3.0	4.7	
All-Red Time (s)	2.1	1.5		1.9	1.5		1.5	1.5		1.9	1.5	
Lost Time Adjust (s)	-0.1	-1.2		0.1	-1.2			-1.2			-1.2	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	6.0		1.0	6.0		1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	3.0		1.0	3.0		1.0	1.0		1.0	1.0	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	40.8	36.3		41.8	33.0			44.0			64.0	
Actuated g/C Ratio	0.34	0.30		0.35	0.28			0.37			0.53	
v/c Ratio	0.80	1.19		0.34	1.53			1.83			1.39	

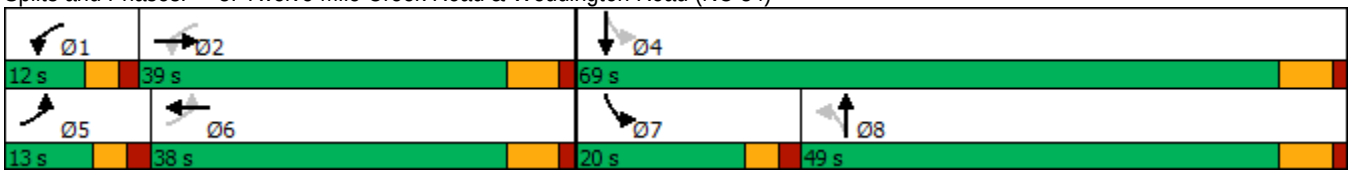
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	58.9	138.7		30.1	282.4			409.8			212.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	58.9	138.7		30.1	282.4			409.8			212.6	
LOS	E	F		C	F			F			F	
Approach Delay		124.3			265.5			409.8			212.6	
Approach LOS		F			F			F			F	
Queue Length 50th (ft)	71	~617		25	~789			~748			~802	
Queue Length 95th (ft)	70	#623		44	#931			#473			#611	
Internal Link Dist (ft)		955			939			1042			1056	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	176	535		154	474			350			556	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.79	1.19		0.34	1.53			1.83			1.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 119.8			
Natural Cycle: 240			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.83			
Intersection Signal Delay: 246.0		Intersection LOS: F	
Intersection Capacity Utilization 82.0%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)



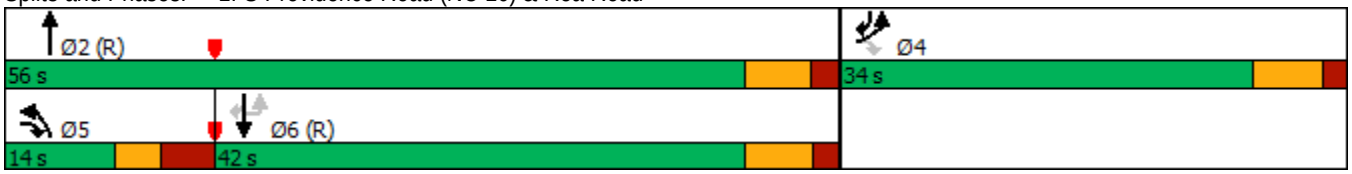
Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	488	362	234	702	4	718	339
Future Volume (vph)	488	362	234	702	4	718	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	11	12	12
Grade (%)	-2%			1%		-1%	
Storage Length (ft)	0	0	425		325		0
Storage Lanes	1	1	2		1		1
Taper Length (ft)	0		100		75		
Lane Util. Factor	1.00	1.00	0.97	0.95	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950		0.950		0.950		
Satd. Flow (prot)	1728	1531	3302	3487	1719	1872	1576
Flt Permitted	0.950		0.950		0.371		
Satd. Flow (perm)	1728	1531	3302	3487	671	1872	1576
Right Turn on Red		No					No
Satd. Flow (RTOR)							
Link Speed (mph)	45			45		45	
Link Distance (ft)	1527			1308		1378	
Travel Time (s)	23.1			19.8		20.9	
Peak Hour Factor	0.88	0.85	0.85	0.95	0.90	0.96	0.91
Heavy Vehicles (%)	2%	3%	2%	3%	2%	2%	3%
Adj. Flow (vph)	555	426	275	739	4	748	373
Shared Lane Traffic (%)							
Lane Group Flow (vph)	555	426	275	739	4	748	373
Turn Type	Prot	pm+ov	Prot	NA	Perm	NA	pm+ov
Protected Phases	4	5	5	2		6	4
Permitted Phases		4			6		6
Detector Phase	4	5	5	2	6	6	4
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	12.0	12.0	12.0	7.0
Minimum Split (s)	13.4	13.6	13.6	18.4	18.5	18.5	13.4
Total Split (s)	34.0	14.0	14.0	56.0	42.0	42.0	34.0
Total Split (%)	37.8%	15.6%	15.6%	62.2%	46.7%	46.7%	37.8%
Maximum Green (s)	27.6	7.4	7.4	49.6	35.5	35.5	27.6
Yellow Time (s)	4.7	3.0	3.0	4.4	4.6	4.6	4.7
All-Red Time (s)	1.7	3.6	3.6	2.0	1.9	1.9	1.7
Lost Time Adjust (s)	-1.4	-1.6	-1.6	-1.4	-1.5	-1.5	-1.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0	2.0	2.0	6.0	6.0	6.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	3.0	3.0	3.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	15.0	15.0	15.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	30.0	30.0	30.0	0.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	29.0	43.0	9.0	51.0	37.0	37.0	71.0
Actuated g/C Ratio	0.32	0.48	0.10	0.57	0.41	0.41	0.79
v/c Ratio	1.00	0.58	0.83	0.37	0.01	0.97	0.30

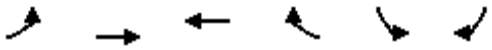
Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Control Delay	70.1	21.0	62.2	11.4	16.0	54.1	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.1	21.0	62.2	11.4	16.0	54.1	3.3
LOS	E	C	E	B	B	D	A
Approach Delay	48.8			25.2		37.2	
Approach LOS	D			C		D	
Queue Length 50th (ft)	312	168	80	113	1	407	44
Queue Length 95th (ft)	#509	241	#132	151	8	#652	70
Internal Link Dist (ft)	1447			1228		1298	
Turn Bay Length (ft)			425		325		
Base Capacity (vph)	556	731	330	1975	275	769	1243
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.58	0.83	0.37	0.01	0.97	0.30

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 29 (32%), Referenced to phase 2:NBT and 6:SBTU, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 36.9 Intersection LOS: D
Intersection Capacity Utilization 84.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	799	508	93	45	6
Future Volume (vph)	15	799	508	93	45	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.971		0.974	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1574	1801	1647	0	1627	0
Flt Permitted	0.950				0.961	
Satd. Flow (perm)	1574	1801	1647	0	1627	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1025		1160	
Travel Time (s)		18.2	15.5		17.6	
Peak Hour Factor	0.63	0.91	0.81	0.55	0.66	0.38
Heavy Vehicles (%)	7%	2%	5%	3%	2%	2%
Adj. Flow (vph)	24	878	627	169	68	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	878	796	0	84	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.1%		ICU Level of Service A	
Analysis Period (min) 15			

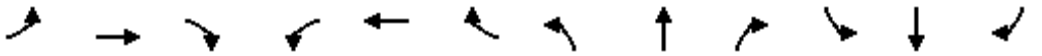
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	799	508	93	45	6
Future Vol, veh/h	15	799	508	93	45	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	91	81	55	66	38
Heavy Vehicles, %	7	2	5	3	2	2
Mvmt Flow	24	878	627	169	68	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	796	0	-	0	1638	712
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	926	-
Critical Hdwy	4.17	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.263	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	804	-	-	-	111	432
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	386	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	804	-	-	-	108	432
Mov Cap-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	386	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	24.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	804	-	-	-	264
HCM Lane V/C Ratio	0.03	-	-	-	0.318
HCM Control Delay (s)	9.6	-	-	-	24.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	645	106	75	435	124	120	76	57	90	64	51
Future Volume (vph)	84	645	106	75	435	124	120	76	57	90	64	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	10	12	12	10	12
Grade (%)		-2%			1%			2%			-2%	
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.963			0.968			0.956	
Flt Protected	0.950			0.950				0.979			0.983	
Satd. Flow (prot)	1728	1753	0	1686	1688	0	0	1603	0	0	1645	0
Flt Permitted	0.159			0.061				0.718			0.725	
Satd. Flow (perm)	289	1753	0	108	1688	0	0	1176	0	0	1213	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1035			1019			1122			1136	
Travel Time (s)		15.7			15.4			17.0			17.2	
Peak Hour Factor	0.72	0.86	0.91	0.75	0.85	0.74	0.81	0.70	0.71	0.78	0.57	0.46
Heavy Vehicles (%)	2%	4%	2%	3%	4%	5%	3%	4%	5%	2%	3%	2%
Adj. Flow (vph)	117	750	116	100	512	168	148	109	80	115	112	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	866	0	100	680	0	0	337	0	0	338	0
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	6			2			8			4		
Detector Phase	5	2		1	6		8	8		7	7	
Switch Phase										4	4	
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	18.2		11.9	18.2		13.2	13.2		11.9	13.2	
Total Split (s)	13.0	72.0		12.0	71.0		42.0	42.0		14.0	56.0	
Total Split (%)	9.3%	51.4%		8.6%	50.7%		30.0%	30.0%		10.0%	40.0%	
Maximum Green (s)	7.9	65.8		7.1	64.8		35.8	35.8		9.1	49.8	
Yellow Time (s)	3.0	4.7		3.0	4.7		4.7	4.7		3.0	4.7	
All-Red Time (s)	2.1	1.5		1.9	1.5		1.5	1.5		1.9	1.5	
Lost Time Adjust (s)	-0.1	-1.2		0.1	-1.2			-1.2			-1.2	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	6.0		1.0	6.0		1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	3.0		1.0	3.0		1.0	1.0		1.0	1.0	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	74.0	67.0		74.0	66.3			37.0			51.0	
Actuated g/C Ratio	0.53	0.48		0.53	0.47			0.26			0.36	
v/c Ratio	0.51	1.03		0.74	0.85			1.09			0.72	

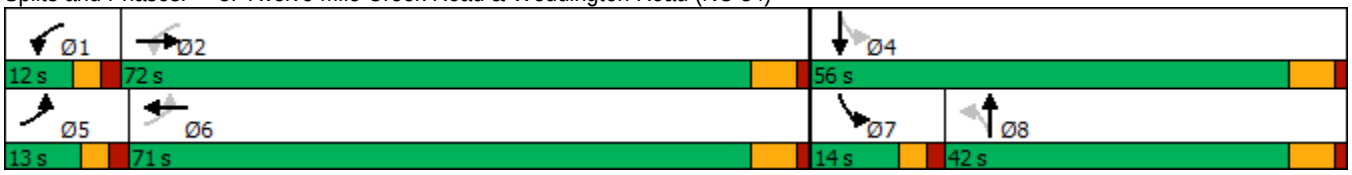
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	22.4	75.8		54.8	44.4			123.6			47.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	22.4	75.8		54.8	44.4			123.6			47.3	
LOS	C	E		D	D			F			D	
Approach Delay		69.5			45.8			123.6			47.3	
Approach LOS		E			D			F			D	
Queue Length 50th (ft)	48	~844		41	538			~343			245	
Queue Length 95th (ft)	62	#1012		#78	658			#354			195	
Internal Link Dist (ft)		955			939			1042			1056	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	235	838		135	799			310			469	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.50	1.03		0.74	0.85			1.09			0.72	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 66.3		Intersection LOS: E	
Intersection Capacity Utilization 77.3%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)



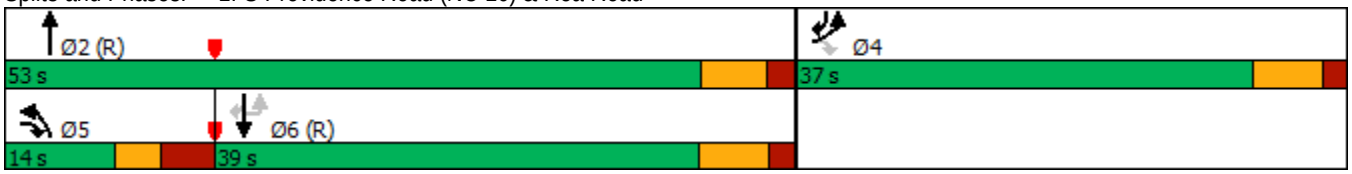
Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	575	371	203	779	4	645	544
Future Volume (vph)	575	371	203	779	4	645	544
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	11	12	12
Grade (%)	-2%			1%		-1%	
Storage Length (ft)	0	0	425		325		0
Storage Lanes	1	1	2		1		1
Taper Length (ft)	0		100		75		
Lane Util. Factor	1.00	1.00	0.97	0.95	1.00	1.00	1.00
Frt		0.850					0.850
Flt Protected	0.950		0.950		0.950		
Satd. Flow (prot)	1728	1546	3302	3522	1719	1872	1591
Flt Permitted	0.950		0.950		0.346		
Satd. Flow (perm)	1728	1546	3302	3522	626	1872	1591
Right Turn on Red		No					No
Satd. Flow (RTOR)							
Link Speed (mph)	45			45		45	
Link Distance (ft)	1527			1308		1378	
Travel Time (s)	23.1			19.8		20.9	
Peak Hour Factor	0.94	0.87	0.86	0.96	0.90	0.94	0.89
Adj. Flow (vph)	612	426	236	811	4	686	611
Shared Lane Traffic (%)							
Lane Group Flow (vph)	612	426	236	811	4	686	611
Turn Type	Prot	pm+ov	Prot	NA	Perm	NA	pm+ov
Protected Phases	4	5	5	2		6	4
Permitted Phases		4			6		6
Detector Phase	4	5	5	2	6	6	4
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	12.0	12.0	12.0	7.0
Minimum Split (s)	13.4	13.6	13.6	18.4	18.5	18.5	13.4
Total Split (s)	37.0	14.0	14.0	53.0	39.0	39.0	37.0
Total Split (%)	41.1%	15.6%	15.6%	58.9%	43.3%	43.3%	41.1%
Maximum Green (s)	30.6	7.4	7.4	46.6	32.5	32.5	30.6
Yellow Time (s)	4.7	3.0	3.0	4.4	4.6	4.6	4.7
All-Red Time (s)	1.7	3.6	3.6	2.0	1.9	1.9	1.7
Lost Time Adjust (s)	-1.4	-1.6	-1.6	-1.4	-1.5	-1.5	-1.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0	2.0	2.0	6.0	6.0	6.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	3.0	3.0	3.0	2.0
Time Before Reduce (s)	0.0	0.0	0.0	15.0	15.0	15.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	30.0	30.0	30.0	0.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	32.0	46.0	9.0	48.0	34.0	34.0	71.0
Actuated g/C Ratio	0.36	0.51	0.10	0.53	0.38	0.38	0.79
v/c Ratio	1.00	0.54	0.72	0.43	0.02	0.97	0.49
Control Delay	66.4	18.0	52.5	13.6	18.0	56.5	4.8

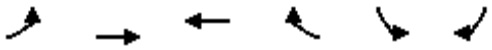
Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.4	18.0	52.5	13.6	18.0	56.5	4.8
LOS	E	B	D	B	B	E	A
Approach Delay	46.5			22.4		32.1	
Approach LOS	D			C		C	
Queue Length 50th (ft)	343	155	68	138	1	376	90
Queue Length 95th (ft)	#567	230	#108	183	8	#608	136
Internal Link Dist (ft)	1447			1228		1298	
Turn Bay Length (ft)			425		325		
Base Capacity (vph)	614	790	330	1878	236	707	1255
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.54	0.72	0.43	0.02	0.97	0.49

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 29 (32%), Referenced to phase 2:NBT and 6:SBTU, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 84.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	809	557	39	58	12
Future Volume (vph)	22	809	557	39	58	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990		0.973	
Flt Protected	0.950				0.962	
Satd. Flow (prot)	1652	1801	1691	0	1596	0
Flt Permitted	0.950				0.962	
Satd. Flow (perm)	1652	1801	1691	0	1596	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1025		1160	
Travel Time (s)		18.2	15.5		17.6	
Peak Hour Factor	0.69	0.94	0.87	0.75	0.73	0.60
Heavy Vehicles (%)	2%	2%	4%	2%	3%	8%
Adj. Flow (vph)	32	861	640	52	79	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	861	692	0	99	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	809	557	39	58	12
Future Vol, veh/h	22	809	557	39	58	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	94	87	75	73	60
Heavy Vehicles, %	2	2	4	2	3	8
Mvmt Flow	32	861	640	52	79	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	692	0	-	0	1591	666
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	925	-
Critical Hdwy	4.12	-	-	-	6.43	6.28
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.218	-	-	-	3.527	3.372
Pot Cap-1 Maneuver	903	-	-	-	118	449
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	385	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	903	-	-	-	114	449
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	385	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	25.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	903	-	-	-	273
HCM Lane V/C Ratio	0.035	-	-	-	0.364
HCM Control Delay (s)	9.1	-	-	-	25.6
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	1.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	684	154	78	424	56	103	51	85	104	102	48
Future Volume (vph)	30	684	154	78	424	56	103	51	85	104	102	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	11	11	12	12	10	12	12	10	12
Grade (%)		-2%			1%			2%			-2%	
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.981			0.948			0.971	
Flt Protected	0.950			0.950				0.979			0.980	
Satd. Flow (prot)	1711	1766	0	1686	1743	0	0	1591	0	0	1617	0
Flt Permitted	0.277			0.047				0.690			0.677	
Satd. Flow (perm)	499	1766	0	83	1743	0	0	1121	0	0	1117	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1035			1019			1122			1136	
Travel Time (s)		15.7			15.4			17.0			17.2	
Peak Hour Factor	0.58	0.93	0.86	0.89	0.86	0.78	0.83	0.91	0.76	0.58	0.65	0.52
Heavy Vehicles (%)	3%	2%	2%	3%	3%	2%	3%	2%	2%	8%	2%	6%
Adj. Flow (vph)	52	735	179	88	493	72	124	56	112	179	157	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	914	0	88	565	0	0	292	0	0	428	0
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	6			2			8			4		
Detector Phase	5	2		1	6		8	8		7	7	
Switch Phase										4	4	
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.1	18.2		11.9	18.2		13.2	13.2		11.9	13.2	
Total Split (s)	13.0	90.0		12.0	89.0		45.0	45.0		23.0	68.0	
Total Split (%)	7.6%	52.9%		7.1%	52.4%		26.5%	26.5%		13.5%	40.0%	
Maximum Green (s)	7.9	83.8		7.1	82.8		38.8	38.8		18.1	61.8	
Yellow Time (s)	3.0	4.7		3.0	4.7		4.7	4.7		3.0	4.7	
All-Red Time (s)	2.1	1.5		1.9	1.5		1.5	1.5		1.9	1.5	
Lost Time Adjust (s)	-0.1	-1.2		0.1	-1.2			-1.2			-1.2	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	1.0	6.0		1.0	6.0		1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	3.0		1.0	3.0		1.0	1.0		1.0	1.0	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0		0.0	0.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	93.0	85.0		92.0	87.2			40.0			63.0	
Actuated g/C Ratio	0.55	0.50		0.54	0.51			0.24			0.37	
v/c Ratio	0.16	1.04		0.80	0.63			1.11			0.92	

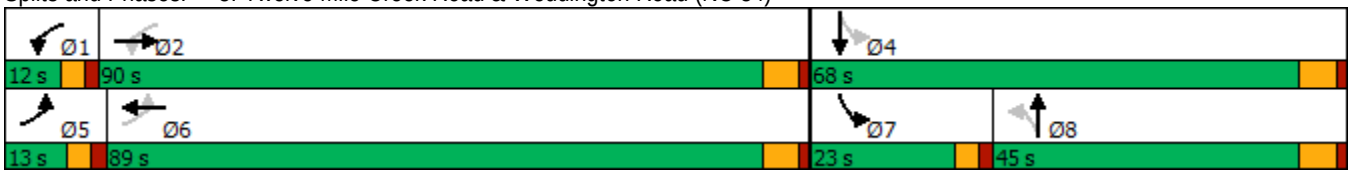
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	17.5	80.7		75.8	34.6			145.4			74.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	17.5	80.7		75.8	34.6			145.4			74.1	
LOS	B	F		E	C			F			E	
Approach Delay		77.3			40.2			145.4			74.1	
Approach LOS		E			D			F			E	
Queue Length 50th (ft)	25	~1090		50	459			~369			409	
Queue Length 95th (ft)	30	#1355		#151	563			#570			348	
Internal Link Dist (ft)		955			939			1042			1056	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	331	883		110	893			263			466	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.16	1.04		0.80	0.63			1.11			0.92	

Intersection Summary			
Area Type:	Other		
Cycle Length: 170			
Actuated Cycle Length: 170			
Natural Cycle: 180			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 74.8		Intersection LOS: E	
Intersection Capacity Utilization 81.5%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)



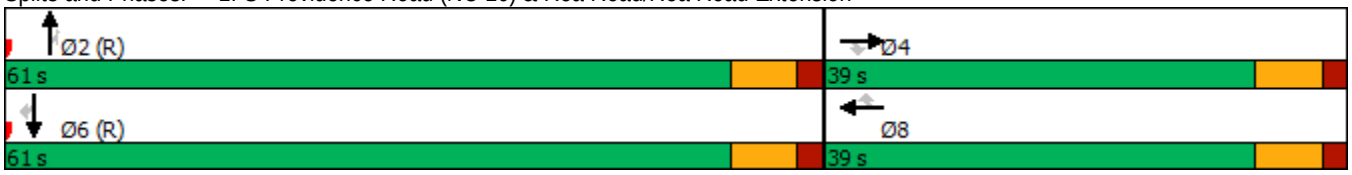
2029 Background Conditions

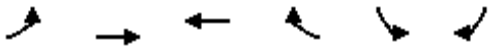
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	540	439	0	346	408	0	1709	108	0	1158	1178
Future Volume (vph)	0	540	439	0	346	408	0	1709	108	0	1158	1178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	11	11	11	12	11	12
Grade (%)		-2%			0%			1%			-1%	
Storage Length (ft)	0		750	0		425	0		375	0		500
Storage Lanes	0		2	0		2	0		2	0		2
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected												
Satd. Flow (prot)	0	3575	2815	0	3539	2787	0	3404	2680	0	3372	2801
Flt Permitted												
Satd. Flow (perm)	0	3575	2815	0	3539	2787	0	3404	2680	0	3372	2801
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		910			646			587			716	
Travel Time (s)		13.8			9.8			8.9			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Adj. Flow (vph)	0	600	488	0	384	453	0	1899	120	0	1287	1309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	600	488	0	384	453	0	1899	120	0	1287	1309
Turn Type		NA	Perm		NA	Perm		NA	Perm		NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases			4			8			2			6
Detector Phase		4	4		8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)		7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0
Minimum Split (s)		38.0	38.0		39.0	39.0		40.0	40.0		40.0	40.0
Total Split (s)		39.0	39.0		39.0	39.0		61.0	61.0		61.0	61.0
Total Split (%)		39.0%	39.0%		39.0%	39.0%		61.0%	61.0%		61.0%	61.0%
Maximum Green (s)		32.0	32.0		32.0	32.0		54.0	54.0		54.0	54.0
Yellow Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
All-Red Time (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode		None	None		None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		24.0	24.0		25.0	25.0		26.0	26.0		26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)		27.5	27.5		27.5	27.5		62.5	62.5		62.5	62.5
Actuated g/C Ratio		0.28	0.28		0.28	0.28		0.62	0.62		0.62	0.62
v/c Ratio		0.61	0.63		0.40	0.59		0.89	0.07		0.61	0.75

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		33.8	35.1		29.9	34.1		20.1	8.4		10.7	13.4
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		33.8	35.1		29.9	34.1		20.1	8.4		10.7	13.4
LOS		C	D		C	C		C	A		B	B
Approach Delay		34.4			32.2			19.4			12.1	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		174	153		104	140		303	15		194	217
Queue Length 95th (ft)		211	194		133	180		#798	m30		308	438
Internal Link Dist (ft)		830			566			507			636	
Turn Bay Length (ft)			750			425			375			500
Base Capacity (vph)		1215	957		1203	947		2128	1676		2108	1751
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.49	0.51		0.32	0.48		0.89	0.07		0.61	0.75

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 8 (8%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	595	746	32	67	26
Future Volume (vph)	10	595	746	32	67	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994		0.962	
Flt Protected	0.950				0.965	
Satd. Flow (prot)	1491	1801	1728	0	1459	0
Flt Permitted	0.950				0.965	
Satd. Flow (perm)	1491	1801	1728	0	1459	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1162		1160	
Travel Time (s)		18.2	17.6		17.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	13%	2%	2%	2%	3%	38%
Adj. Flow (vph)	11	661	829	36	74	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	661	865	0	103	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			

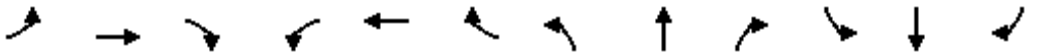
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	595	746	32	67	26
Future Vol, veh/h	10	595	746	32	67	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	2	2	2	3	38
Mvmt Flow	11	661	829	36	74	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	865	0	-	0	1530	847
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	683	-
Critical Hdwy	4.23	-	-	-	6.43	6.58
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.317	-	-	-	3.527	3.642
Pot Cap-1 Maneuver	733	-	-	-	128	313
Stage 1	-	-	-	-	419	-
Stage 2	-	-	-	-	500	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	733	-	-	-	126	313
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	500	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	25.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	733	-	-	-	275
HCM Lane V/C Ratio	0.015	-	-	-	0.376
HCM Control Delay (s)	10	-	-	-	25.8
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	1.7



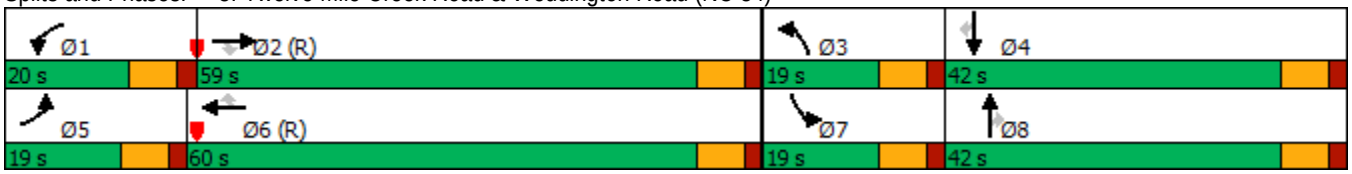
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	841	139	105	1049	53	129	23	79	82	46	167
Future Volume (vph)	87	841	139	105	1049	53	129	23	79	82	46	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			1%			2%			-2%	
Storage Length (ft)	450		400	300		375	225		225	175		125
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			150			150		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3540	1584	1710	3487	1502	1752	1844	1552	1753	1881	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3540	1584	1710	3487	1502	1752	1844	1552	1753	1881	1599
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1035			1019			1122			1136	
Travel Time (s)		15.7			15.4			17.0			17.2	
Peak Hour Factor	0.56	0.74	0.82	0.75	0.84	0.76	0.88	0.54	0.51	0.53	0.68	0.56
Heavy Vehicles (%)	2%	3%	3%	5%	3%	7%	2%	2%	3%	4%	2%	2%
Adj. Flow (vph)	155	1136	170	140	1249	70	147	43	155	155	68	298
Shared Lane Traffic (%)												
Lane Group Flow (vph)	155	1136	170	140	1249	70	147	43	155	155	68	298
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	39.0	39.0	14.0	37.0	37.0	14.0	42.0	42.0	14.0	42.0	42.0
Total Split (s)	19.0	59.0	59.0	20.0	60.0	60.0	19.0	42.0	42.0	19.0	42.0	42.0
Total Split (%)	13.6%	42.1%	42.1%	14.3%	42.9%	42.9%	13.6%	30.0%	30.0%	13.6%	30.0%	30.0%
Maximum Green (s)	12.0	52.0	52.0	13.0	53.0	53.0	12.0	35.0	35.0	12.0	35.0	35.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		23.0	23.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.7	58.1	58.1	15.7	58.0	58.0	14.0	32.2	32.2	14.0	32.2	32.2
Actuated g/C Ratio	0.11	0.42	0.42	0.11	0.41	0.41	0.10	0.23	0.23	0.10	0.23	0.23
v/c Ratio	0.78	0.77	0.26	0.73	0.86	0.11	0.84	0.10	0.43	0.89	0.16	0.81
Control Delay	87.0	33.4	26.0	82.3	45.5	27.2	97.8	40.9	49.1	105.1	42.2	68.1

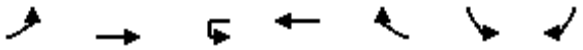
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.0	33.4	26.0	82.3	45.5	27.2	97.8	40.9	49.1	105.1	42.2	68.1
LOS	F	C	C	F	D	C	F	D	D	F	D	E
Approach Delay		38.2			48.2			68.8			75.7	
Approach LOS		D			D			E			E	
Queue Length 50th (ft)	143	343	84	123	562	40	134	31	120	142	49	254
Queue Length 95th (ft)	136	343	128	165	596	63	#246	37	97	124	66	198
Internal Link Dist (ft)		955			939			1042			1056	
Turn Bay Length (ft)	450		400	300		375	225		225	175		125
Base Capacity (vph)	200	1469	657	195	1445	623	175	487	410	175	497	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.77	0.26	0.72	0.86	0.11	0.84	0.09	0.38	0.89	0.14	0.71

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 94 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 50.0 Intersection LOS: D
Intersection Capacity Utilization 61.1% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)





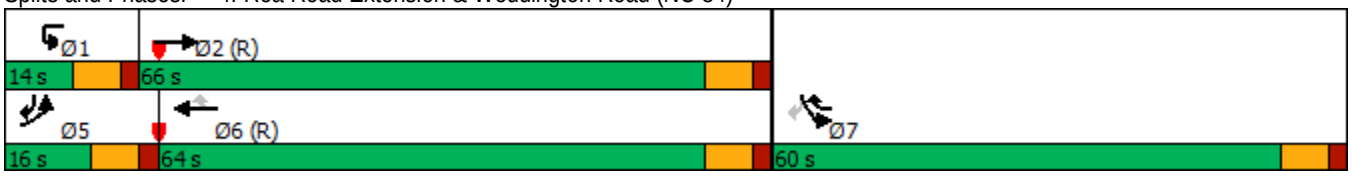
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	22	600	4	737	605	492	22
Future Volume (vph)	22	600	4	737	605	492	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		425		400	325	125
Storage Lanes	1		1		1	1	1
Taper Length (ft)	100		100			100	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.97	1.00
Frt					0.850		0.850
Flt Protected	0.950		0.950			0.950	
Satd. Flow (prot)	1770	3539	1770	3539	1583	3433	1583
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1770	3539	1770	3539	1583	3433	1583
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		45		45		45	
Link Distance (ft)		6405		2171		725	
Travel Time (s)		97.0		32.9		11.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	667	4	819	672	547	24
Shared Lane Traffic (%)							
Lane Group Flow (vph)	24	667	4	819	672	547	24
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	1	6	7	7	5
Permitted Phases					6		7
Detector Phase	5	2	1	6	7	7	5
Switch Phase							
Minimum Initial (s)	7.0	12.0	7.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	41.0	36.0	36.0	14.0
Total Split (s)	16.0	66.0	14.0	64.0	60.0	60.0	16.0
Total Split (%)	11.4%	47.1%	10.0%	45.7%	42.9%	42.9%	11.4%
Maximum Green (s)	9.0	59.0	7.0	57.0	53.0	53.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	C-Max	None	None	None
Walk Time (s)				7.0	7.0	7.0	
Flash Dont Walk (s)				27.0	22.0	22.0	
Pedestrian Calls (#/hr)				0	0	0	
Act Effct Green (s)	9.9	95.1	9.0	85.8	123.9	32.1	47.0
Actuated g/C Ratio	0.07	0.68	0.06	0.61	0.88	0.23	0.34
v/c Ratio	0.19	0.28	0.04	0.38	0.48	0.70	0.05
Control Delay	64.5	10.5	65.2	8.9	1.8	54.0	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	10.5	65.2	8.9	1.8	54.0	28.8

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	E	B	E	A	A	D	C
Approach Delay		12.4		5.9		52.9	
Approach LOS		B		A		D	
Queue Length 50th (ft)	21	107	3	113	62	238	15
Queue Length 95th (ft)	52	215	m4	m138	m63	280	33
Internal Link Dist (ft)		6325		2091		645	
Turn Bay Length (ft)	425		425		400	325	125
Base Capacity (vph)	141	2404	113	2169	1567	1348	545
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.28	0.04	0.38	0.43	0.41	0.04

Intersection Summary

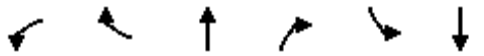
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 136 (97%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 17.2 Intersection LOS: B
Intersection Capacity Utilization 51.6% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Rea Road Extension & Weddington Road (NC 84)



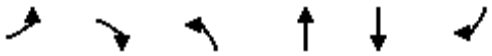
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	2117	0	2336
Future Volume (vph)	0	0	0	2117	0	2336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	233		716			681
Travel Time (s)	4.5		10.8			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	2352	0	2596
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2352	0	2596
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			



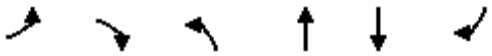
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	579	1538	0	0
Future Volume (vph)	0	0	579	1538	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	2787	0	0
Link Speed (mph)	35		45			45
Link Distance (ft)	1544		233			454
Travel Time (s)	30.1		3.5			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	643	1709	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	643	1709	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.4%		ICU Level of Service D	
Analysis Period (min) 15			



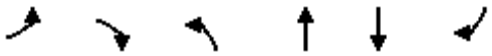
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1538	0	1757
Future Volume (vph)	0	0	0	1538	0	1757
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	1094			1544	1022	
Travel Time (s)	21.3			23.4	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1709	0	1952
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1709	0	1952
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.8%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1817	0	1597
Future Volume (vph)	0	0	0	1817	0	1597
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	153			579	587	
Travel Time (s)	3.0			8.8	8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	2019	0	1774
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2019	0	1774
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			

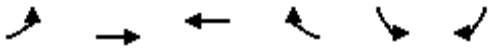


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	32	1565
Future Volume (vph)	0	0	0	0	32	1565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	0	3539	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	0	3539	2787
Link Speed (mph)	45			35	45	
Link Distance (ft)	1018			449	153	
Travel Time (s)	15.4			8.7	2.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	36	1739
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	36	1739
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	1785	0	1565
Future Volume (vph)	0	0	0	1785	0	1565
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	580		1041			1018
Travel Time (s)	11.3		15.8			15.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1983	0	1739
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1983	0	1739
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	979	0	1524	0	0
Future Volume (vph)	0	979	0	1524	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		406	910		187	
Travel Time (s)		6.2	13.8		2.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1088	0	1693	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1088	0	1693	0	0
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.6%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	78	1446	0	0
Future Volume (vph)	0	0	78	1446	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	462			187	223	
Travel Time (s)	7.0			2.8	3.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	87	1607	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	87	1607	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	901	0	1446	0	0
Future Volume (vph)	0	901	0	1446	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	1324			462	242	
Travel Time (s)	20.1			7.0	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1001	0	1607	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1001	0	1607	0	0
Sign Control	Free			Free	Free	

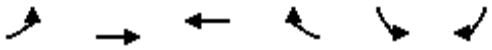
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	648	0	754	0	0
Future Volume (vph)	0	648	0	754	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	646			423	164	
Travel Time (s)	9.8			6.4	2.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	720	0	838	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	720	0	838	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	376	272	0	0	0	0
Future Volume (vph)	376	272	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1863	2787	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	1863	2787	0	0	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	164			264	460	
Travel Time (s)	2.5			4.0	7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	418	302	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	302	0	0	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.9%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	272	0	378	0	0
Future Volume (vph)	0	272	0	378	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		460	6405		203	
Travel Time (s)		7.0	97.0		3.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	302	0	420	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	302	0	420	0	0
Sign Control		Free	Free		Free	

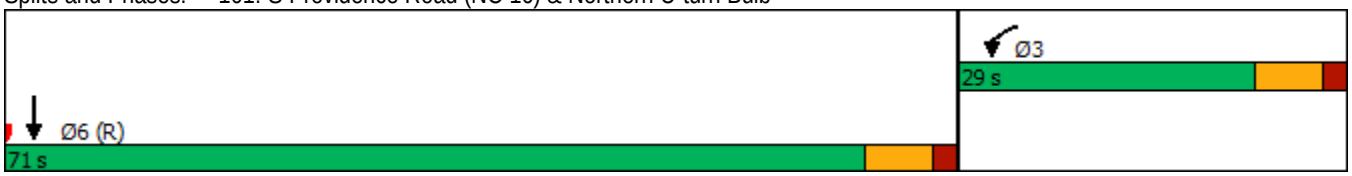
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.6%		ICU Level of Service A	
Analysis Period (min) 15			

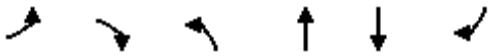
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	579	0	0	0	0	1757
Future Volume (vph)	579	0	0	0	0	1757
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	100				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.95
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	0	0	3539
Right Turn on Red	No	No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	454		681			1094
Travel Time (s)	8.8		10.3			16.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	643	0	0	0	0	1952
Shared Lane Traffic (%)						
Lane Group Flow (vph)	643	0	0	0	0	1952
Turn Type	Prot					NA
Protected Phases	3					6
Permitted Phases						
Detector Phase	3					6
Switch Phase						
Minimum Initial (s)	7.0					12.0
Minimum Split (s)	14.0					19.0
Total Split (s)	29.0					71.0
Total Split (%)	29.0%					71.0%
Maximum Green (s)	22.0					64.0
Yellow Time (s)	5.0					5.0
All-Red Time (s)	2.0					2.0
Lost Time Adjust (s)	-2.0					-2.0
Total Lost Time (s)	5.0					5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0					3.0
Recall Mode	None					C-Max
Act Effct Green (s)	23.2					66.8
Actuated g/C Ratio	0.23					0.67
v/c Ratio	0.81					0.83
Control Delay	39.5					16.4
Queue Delay	0.0					0.0
Total Delay	39.5					16.4
LOS	D					B
Approach Delay	39.5					16.4
Approach LOS	D					B

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	213					446
Queue Length 95th (ft)	m251					560
Internal Link Dist (ft)	374		601			1014
Turn Bay Length (ft)	450					
Base Capacity (vph)	823					2365
Starvation Cap Reductn	0					0
Spillback Cap Reductn	0					0
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.78					0.83

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 22.1		Intersection LOS: C	
Intersection Capacity Utilization 73.4%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: S Providence Road (NC 16) & Northern U-turn Bulb



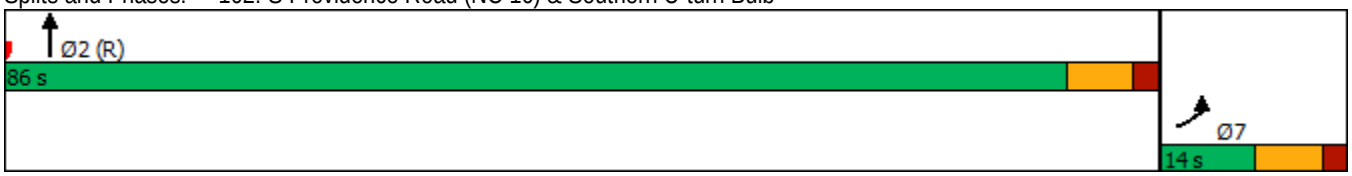


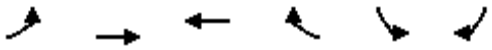
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	0	0	1785	0	0
Future Volume (vph)	32	0	0	1785	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	100		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	3539	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	3539	0	0
Right Turn on Red	No	No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			45	45	
Link Distance (ft)	449			580	579	
Travel Time (s)	8.7			8.8	8.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	0	0	1983	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	0	1983	0	0
Turn Type	Prot			NA		
Protected Phases	7			2		
Permitted Phases						
Detector Phase	7			2		
Switch Phase						
Minimum Initial (s)	7.0			12.0		
Minimum Split (s)	14.0			19.0		
Total Split (s)	14.0			86.0		
Total Split (%)	14.0%			86.0%		
Maximum Green (s)	7.0			79.0		
Yellow Time (s)	5.0			5.0		
All-Red Time (s)	2.0			2.0		
Lost Time Adjust (s)	-2.0			-2.0		
Total Lost Time (s)	5.0			5.0		
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0		
Recall Mode	None			C-Max		
Act Effct Green (s)	9.0			88.6		
Actuated g/C Ratio	0.09			0.89		
v/c Ratio	0.12			0.63		
Control Delay	40.2			4.0		
Queue Delay	0.0			0.0		
Total Delay	40.2			4.0		
LOS	D			A		
Approach Delay	40.2			4.0		
Approach LOS	D			A		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	9			214		
Queue Length 95th (ft)	m18			271		
Internal Link Dist (ft)	369			500	499	
Turn Bay Length (ft)	425					
Base Capacity (vph)	308			3135		
Starvation Cap Reductn	0			0		
Spillback Cap Reductn	0			0		
Storage Cap Reductn	0			0		
Reduced v/c Ratio	0.12			0.63		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 8 (8%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 4.6		Intersection LOS: A	
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 102: S Providence Road (NC 16) & Southern U-turn Bulb





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	901	0	0	78	0
Future Volume (vph)	0	901	0	0	78	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		242	406		223	
Travel Time (s)		3.7	6.2		4.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1001	0	0	87	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1001	0	0	87	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑			↰	
Traffic Vol, veh/h	0	901	0	0	78	0
Future Vol, veh/h	0	901	0	0	78	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1001	0	0	87	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	501	-
Stage 1	-	-	0	-
Stage 2	-	-	501	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	499	0
Stage 1	0	-	-	0
Stage 2	0	-	574	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	499	-
Mov Cap-2 Maneuver	-	-	499	-
Stage 1	-	-	-	-
Stage 2	-	-	574	-

Approach	EB	SB
HCM Control Delay, s	0	13.7
HCM LOS		B

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	499
HCM Lane V/C Ratio	-	0.174
HCM Control Delay (s)	-	13.7
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.6

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	378	376	0
Future Volume (vph)	0	0	0	378	376	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		500	0
Storage Lanes		0	0		0	0
Taper Length (ft)			25		100	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	423			203	264	
Travel Time (s)	6.4			3.1	5.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	420	418	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	420	418	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	378	376	0
Future Vol, veh/h	0	0	0	378	376	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	420	418	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	-	-	210	-
Stage 1	-	-	0	-
Stage 2	-	-	210	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	759	0
Stage 1	0	-	-	0
Stage 2	0	-	805	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	759	-
Mov Cap-2 Maneuver	-	-	759	-
Stage 1	-	-	-	-
Stage 2	-	-	805	-

Approach	WB	NB
HCM Control Delay, s	0	15.4
HCM LOS		C

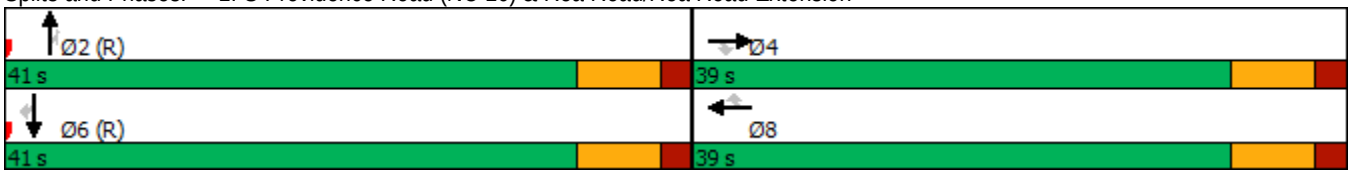
Minor Lane/Major Mvmt	NBLn1	WBT
Capacity (veh/h)	759	-
HCM Lane V/C Ratio	0.55	-
HCM Control Delay (s)	15.4	-
HCM Lane LOS	C	-
HCM 95th %tile Q(veh)	3.4	-

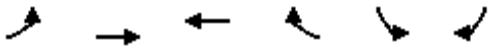
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	830	563	0	349	516	0	1205	182	0	975	636
Future Volume (vph)	0	830	563	0	349	516	0	1205	182	0	975	636
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	11	11	11	12	11	12
Grade (%)		-2%			0%			1%			-1%	
Storage Length (ft)	0		750	0		425	0		375	0		500
Storage Lanes	0		2	0		2	0		2	0		2
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected												
Satd. Flow (prot)	0	3575	2787	0	3539	2787	0	3371	2680	0	3438	2773
Flt Permitted												
Satd. Flow (perm)	0	3575	2787	0	3539	2787	0	3371	2680	0	3438	2773
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		910			646			587			716	
Travel Time (s)		13.8			9.8			8.9			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%	2%	3%	2%	2%	2%	3%
Adj. Flow (vph)	0	922	626	0	388	573	0	1339	202	0	1083	707
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	922	626	0	388	573	0	1339	202	0	1083	707
Turn Type		NA	Perm		NA	Perm		NA	Perm		NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases			4			8			2			6
Detector Phase		4	4		8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)		7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0
Minimum Split (s)		38.0	38.0		39.0	39.0		40.0	40.0		40.0	40.0
Total Split (s)		39.0	39.0		39.0	39.0		41.0	41.0		41.0	41.0
Total Split (%)		48.8%	48.8%		48.8%	48.8%		51.3%	51.3%		51.3%	51.3%
Maximum Green (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Yellow Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
All-Red Time (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode		None	None		None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		24.0	24.0		25.0	25.0		26.0	26.0		26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)		31.3	31.3		31.3	31.3		38.7	38.7		38.7	38.7
Actuated g/C Ratio		0.39	0.39		0.39	0.39		0.48	0.48		0.48	0.48
v/c Ratio		0.66	0.57		0.28	0.53		0.82	0.16		0.65	0.53

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		22.2	21.0		16.7	20.2		20.8	12.0		13.9	12.5
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		22.2	21.0		16.7	20.2		20.8	12.0		13.9	12.5
LOS		C	C		B	C		C	B		B	B
Approach Delay		21.7			18.8			19.6			13.4	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		184	130		64	115		197	29		134	94
Queue Length 95th (ft)		242	181		94	163		#247	47		196	120
Internal Link Dist (ft)		830			566			507			636	
Turn Bay Length (ft)			750			425			375			500
Base Capacity (vph)		1519	1184		1504	1184		1628	1295		1661	1339
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.61	0.53		0.26	0.48		0.82	0.16		0.65	0.53

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 18.1		Intersection LOS: B	
Intersection Capacity Utilization 64.6%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	738	469	134	65	7
Future Volume (vph)	19	738	469	134	65	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970		0.986	
Flt Protected	0.950				0.957	
Satd. Flow (prot)	1574	1801	1645	0	1641	0
Flt Permitted	0.950				0.957	
Satd. Flow (perm)	1574	1801	1645	0	1641	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1162		1160	
Travel Time (s)		18.2	17.6		17.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	2%	5%	3%	2%	2%
Adj. Flow (vph)	21	820	521	149	72	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	820	670	0	80	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	738	469	134	65	7
Future Vol, veh/h	19	738	469	134	65	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	2	5	3	2	2
Mvmt Flow	21	820	521	149	72	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	670	0	-	0	1458	596
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	862	-
Critical Hdwy	4.17	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.263	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	897	-	-	-	143	504
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	414	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	897	-	-	-	140	504
Mov Cap-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	414	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	897	-	-	-	289
HCM Lane V/C Ratio	0.024	-	-	-	0.277
HCM Control Delay (s)	9.1	-	-	-	22.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

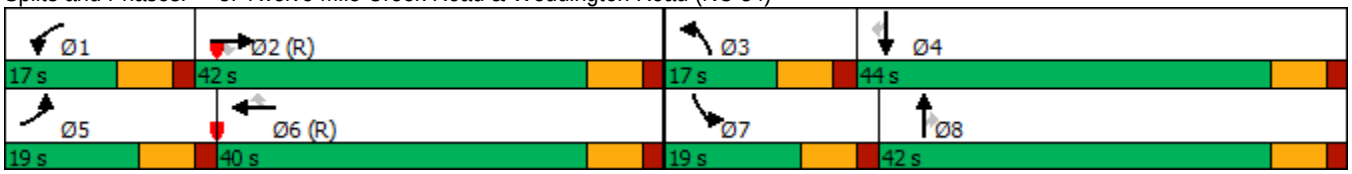
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	760	95	99	513	175	107	156	75	127	131	47
Future Volume (vph)	77	760	95	99	513	175	107	156	75	127	131	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			1%			2%			-2%	
Storage Length (ft)	450		400	300		375	225		225	175		125
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			150			150		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3506	1599	1744	3454	1530	1735	1809	1523	1787	1863	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3506	1599	1744	3454	1530	1735	1809	1523	1787	1863	1599
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1035			1019			1122			1136	
Travel Time (s)		15.7			15.4			17.0			17.2	
Peak Hour Factor	0.72	0.86	0.91	0.75	0.85	0.74	0.81	0.70	0.71	0.78	0.57	0.46
Heavy Vehicles (%)	2%	4%	2%	3%	4%	5%	3%	4%	5%	2%	3%	2%
Adj. Flow (vph)	107	884	104	132	604	236	132	223	106	163	230	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	884	104	132	604	236	132	223	106	163	230	102
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	39.0	39.0	14.0	37.0	37.0	14.0	42.0	42.0	14.0	42.0	42.0
Total Split (s)	19.0	42.0	42.0	17.0	40.0	40.0	17.0	42.0	42.0	19.0	44.0	44.0
Total Split (%)	15.8%	35.0%	35.0%	14.2%	33.3%	33.3%	14.2%	35.0%	35.0%	15.8%	36.7%	36.7%
Maximum Green (s)	12.0	35.0	35.0	10.0	33.0	33.0	10.0	35.0	35.0	12.0	37.0	37.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		23.0	23.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.5	47.1	47.1	16.2	48.8	48.8	11.9	22.9	22.9	13.8	24.8	24.8
Actuated g/C Ratio	0.12	0.39	0.39	0.14	0.41	0.41	0.10	0.19	0.19	0.12	0.21	0.21
v/c Ratio	0.50	0.64	0.17	0.56	0.43	0.38	0.77	0.65	0.37	0.80	0.60	0.31
Control Delay	59.7	27.1	23.1	57.6	28.7	30.0	80.8	53.0	44.3	78.6	48.9	41.2

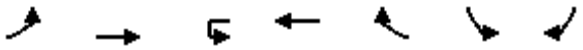
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	27.1	23.1	57.6	28.7	30.0	80.8	53.0	44.3	78.6	48.9	41.2
LOS	E	C	C	E	C	C	F	D	D	E	D	D
Approach Delay		29.9			32.9			59.0			57.1	
Approach LOS		C			C			E			E	
Queue Length 50th (ft)	84	204	41	96	175	127	101	161	72	125	162	67
Queue Length 95th (ft)	111	275	84	131	250	183	#168	169	90	#182	133	53
Internal Link Dist (ft)		955			939			1042			1056	
Turn Bay Length (ft)	450		400	300		375	225		225	175		125
Base Capacity (vph)	233	1375	627	236	1403	621	173	557	469	208	605	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.64	0.17	0.56	0.43	0.38	0.76	0.40	0.23	0.78	0.38	0.20

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 100 (83%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 39.8 Intersection LOS: D
Intersection Capacity Utilization 58.8% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)





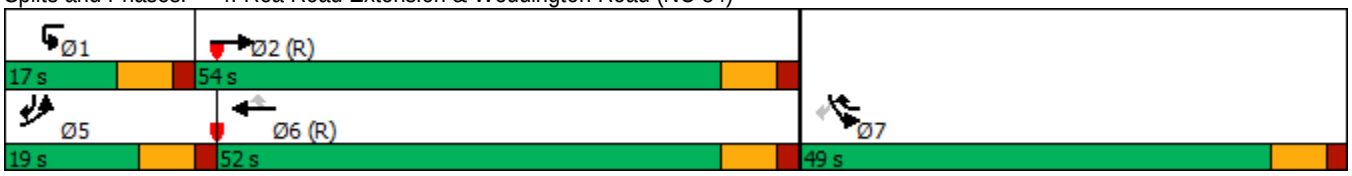
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	22	513	4	367	300	419	21
Future Volume (vph)	22	513	4	367	300	419	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		425		400	325	125
Storage Lanes	1		1		1	1	1
Taper Length (ft)	100		100			100	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.97	1.00
Frt					0.850		0.850
Flt Protected	0.950		0.950			0.950	
Satd. Flow (prot)	1770	3539	1770	3539	1583	3433	1583
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1770	3539	1770	3539	1583	3433	1583
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		45		45		45	
Link Distance (ft)		6405		2171		725	
Travel Time (s)		97.0		32.9		11.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	570	4	408	333	466	23
Shared Lane Traffic (%)							
Lane Group Flow (vph)	24	570	4	408	333	466	23
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	1	6	7	7	5
Permitted Phases					6		7
Detector Phase	5	2	1	6	7	7	5
Switch Phase							
Minimum Initial (s)	7.0	12.0	7.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	41.0	36.0	36.0	14.0
Total Split (s)	19.0	54.0	17.0	52.0	49.0	49.0	19.0
Total Split (%)	15.8%	45.0%	14.2%	43.3%	40.8%	40.8%	15.8%
Maximum Green (s)	12.0	47.0	10.0	45.0	42.0	42.0	12.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	C-Max	None	None	None
Walk Time (s)				7.0	7.0	7.0	
Flash Dont Walk (s)				27.0	22.0	22.0	
Pedestrian Calls (#/hr)				0	0	0	
Act Effct Green (s)	9.7	82.7	9.0	76.5	107.9	24.5	39.1
Actuated g/C Ratio	0.08	0.69	0.08	0.64	0.90	0.20	0.33
v/c Ratio	0.17	0.23	0.03	0.18	0.23	0.67	0.04
Control Delay	53.9	8.4	42.5	10.4	1.4	48.4	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	8.4	42.5	10.4	1.4	48.4	25.4

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	D	A	D	B	A	D	C
Approach Delay		10.3		6.5		47.3	
Approach LOS		B		A		D	
Queue Length 50th (ft)	18	71	3	65	33	172	12
Queue Length 95th (ft)	45	157	m8	109	m39	213	29
Internal Link Dist (ft)		6325		2091		645	
Turn Bay Length (ft)	425		425		400	325	125
Base Capacity (vph)	206	2439	177	2255	1554	1258	573
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.23	0.02	0.18	0.21	0.37	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			

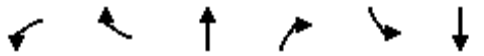
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Rea Road Extension & Weddington Road (NC 84)



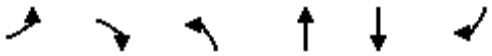
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	1721	0	1611
Future Volume (vph)	0	0	0	1721	0	1611
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	233		716			681
Travel Time (s)	4.5		10.8			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1912	0	1790
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1912	0	1790
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			



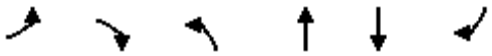
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	304	1417	0	0
Future Volume (vph)	0	0	304	1417	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	2787	0	0
Link Speed (mph)	35		45			45
Link Distance (ft)	1544		233			454
Travel Time (s)	30.1		3.5			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	338	1574	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	338	1574	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			



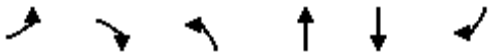
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1417	0	1307
Future Volume (vph)	0	0	0	1417	0	1307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	1094			1544	1022	
Travel Time (s)	21.3			23.4	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1574	0	1452
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1574	0	1452
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1387	0	1538
Future Volume (vph)	0	0	0	1387	0	1538
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	153			579	587	
Travel Time (s)	3.0			8.8	8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1541	0	1709
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1541	0	1709
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			

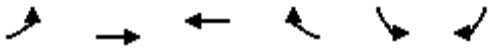


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	54	1484
Future Volume (vph)	0	0	0	0	54	1484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	0	3539	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	0	3539	2787
Link Speed (mph)	45			35	45	
Link Distance (ft)	1018			449	153	
Travel Time (s)	15.4			8.7	2.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	60	1649
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	60	1649
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.2%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	1333	0	1484
Future Volume (vph)	0	0	0	1333	0	1484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	580		1041			1018
Travel Time (s)	11.3		15.8			15.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1481	0	1649
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1481	0	1649
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.0%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1393	0	985	0	0
Future Volume (vph)	0	1393	0	985	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		406	910		187	
Travel Time (s)		6.2	13.8		2.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1548	0	1094	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1548	0	1094	0	0
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	93	892	0	0
Future Volume (vph)	0	0	93	892	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	462			187	223	
Travel Time (s)	7.0			2.8	3.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	103	991	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	103	991	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	1300	0	892	0	0
Future Volume (vph)	0	1300	0	892	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	1324			462	242	
Travel Time (s)	20.1			7.0	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1444	0	991	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1444	0	991	0	0
Sign Control	Free			Free	Free	

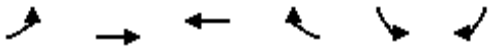
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	1012	0	865	0	0
Future Volume (vph)	0	1012	0	865	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	646			423	164	
Travel Time (s)	9.8			6.4	2.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1124	0	961	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1124	0	961	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	477	535	0	0	0	0
Future Volume (vph)	477	535	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1863	2787	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	1863	2787	0	0	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	164			264	460	
Travel Time (s)	2.5			4.0	7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	530	594	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	530	594	0	0	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	535	0	388	0	0
Future Volume (vph)	0	535	0	388	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		460	6405		203	
Travel Time (s)		7.0	97.0		3.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	594	0	431	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	594	0	431	0	0
Sign Control		Free	Free		Free	

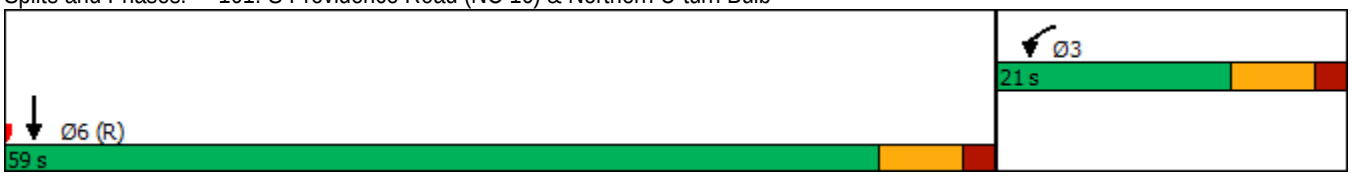
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.1%		ICU Level of Service A	
Analysis Period (min) 15			

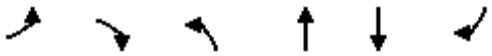
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	304	0	0	0	0	1307
Future Volume (vph)	304	0	0	0	0	1307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	100				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.95
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	0	0	3539
Right Turn on Red	No	No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	454		681			1094
Travel Time (s)	8.8		10.3			16.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	338	0	0	0	0	1452
Shared Lane Traffic (%)						
Lane Group Flow (vph)	338	0	0	0	0	1452
Turn Type	Prot					NA
Protected Phases	3					6
Permitted Phases						
Detector Phase	3					6
Switch Phase						
Minimum Initial (s)	7.0					12.0
Minimum Split (s)	14.0					19.0
Total Split (s)	21.0					59.0
Total Split (%)	26.3%					73.8%
Maximum Green (s)	14.0					52.0
Yellow Time (s)	5.0					5.0
All-Red Time (s)	2.0					2.0
Lost Time Adjust (s)	-2.0					-2.0
Total Lost Time (s)	5.0					5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0					3.0
Recall Mode	None					C-Max
Act Effct Green (s)	14.4					55.6
Actuated g/C Ratio	0.18					0.70
v/c Ratio	0.55					0.59
Control Delay	25.6					7.8
Queue Delay	0.0					0.0
Total Delay	25.6					7.8
LOS	C					A
Approach Delay	25.6					7.8
Approach LOS	C					A

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	73					172
Queue Length 95th (ft)	m88					235
Internal Link Dist (ft)	374		601			1014
Turn Bay Length (ft)	450					
Base Capacity (vph)	686					2457
Starvation Cap Reductn	0					0
Spillback Cap Reductn	0					0
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.49					0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: S Providence Road (NC 16) & Northern U-turn Bulb



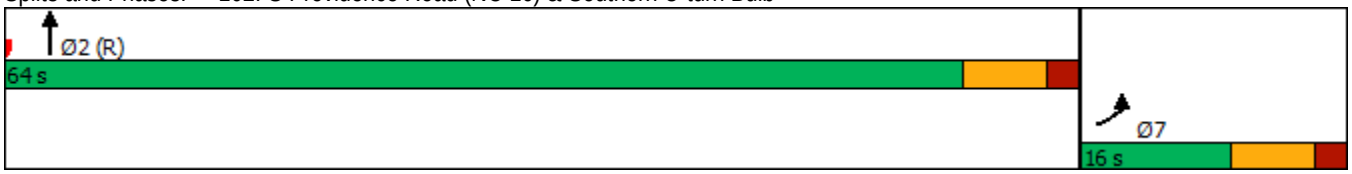


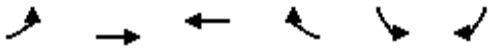
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	54	0	0	1333	0	0
Future Volume (vph)	54	0	0	1333	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	100		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	3539	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	3539	0	0
Right Turn on Red	No	No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			45	45	
Link Distance (ft)	449			580	579	
Travel Time (s)	8.7			8.8	8.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	0	0	1481	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	0	0	1481	0	0
Turn Type	Prot			NA		
Protected Phases	7			2		
Permitted Phases						
Detector Phase	7			2		
Switch Phase						
Minimum Initial (s)	7.0			12.0		
Minimum Split (s)	14.0			19.0		
Total Split (s)	16.0			64.0		
Total Split (%)	20.0%			80.0%		
Maximum Green (s)	9.0			57.0		
Yellow Time (s)	5.0			5.0		
All-Red Time (s)	2.0			2.0		
Lost Time Adjust (s)	-2.0			-2.0		
Total Lost Time (s)	5.0			5.0		
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0		
Recall Mode	None			C-Max		
Act Effct Green (s)	9.3			68.3		
Actuated g/C Ratio	0.12			0.85		
v/c Ratio	0.15			0.49		
Control Delay	30.1			3.6		
Queue Delay	0.0			0.0		
Total Delay	30.1			3.6		
LOS	C			A		
Approach Delay	30.1			3.6		
Approach LOS	C			A		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	13			121		
Queue Length 95th (ft)	m23			174		
Internal Link Dist (ft)	369			500	499	
Turn Bay Length (ft)	425					
Base Capacity (vph)	472			3019		
Starvation Cap Reductn	0			0		
Spillback Cap Reductn	0			0		
Storage Cap Reductn	0			0		
Reduced v/c Ratio	0.13			0.49		

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 14 (18%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 4.6		Intersection LOS: A	
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 102: S Providence Road (NC 16) & Southern U-turn Bulb





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1300	0	0	93	0
Future Volume (vph)	0	1300	0	0	93	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		242	406		223	
Travel Time (s)		3.7	6.2		4.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1444	0	0	103	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1444	0	0	103	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1300	0	0	93	0
Future Vol, veh/h	0	1300	0	0	93	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1444	0	0	103	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	722	-
Stage 1	-	-	0	-
Stage 2	-	-	722	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	362	0
Stage 1	0	-	-	0
Stage 2	0	-	442	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	362	-
Mov Cap-2 Maneuver	-	-	362	-
Stage 1	-	-	-	-
Stage 2	-	-	442	-

Approach	EB	SB
HCM Control Delay, s	0	18.9
HCM LOS		C

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	362
HCM Lane V/C Ratio	-	0.285
HCM Control Delay (s)	-	18.9
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	1.2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	388	477	0
Future Volume (vph)	0	0	0	388	477	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		500	0
Storage Lanes		0	0		0	0
Taper Length (ft)			25		100	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	423			203	264	
Travel Time (s)	6.4			3.1	5.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	431	530	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	431	530	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	11.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	388	477	0
Future Vol, veh/h	0	0	0	388	477	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	431	530	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	-	-	216	-
Stage 1	-	-	0	-
Stage 2	-	-	216	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	753	0
Stage 1	0	-	-	0
Stage 2	0	-	799	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	753	-
Mov Cap-2 Maneuver	-	-	753	-
Stage 1	-	-	-	-
Stage 2	-	-	799	-

Approach	WB	NB
HCM Control Delay, s	0	20.3
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	WBT
Capacity (veh/h)	753	-
HCM Lane V/C Ratio	0.704	-
HCM Control Delay (s)	20.3	-
HCM Lane LOS	C	-
HCM 95th %tile Q(veh)	5.9	-

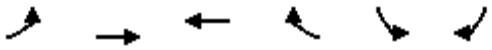
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	867	656	0	241	631	0	1487	110	0	1162	737
Future Volume (vph)	0	867	656	0	241	631	0	1487	110	0	1162	737
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	11	11	11	12	11	12
Grade (%)		-2%			0%			1%			-1%	
Storage Length (ft)	0		750	0		425	0		375	0		500
Storage Lanes	0		2	0		2	0		2	0		2
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected												
Satd. Flow (prot)	0	3575	2815	0	3539	2787	0	3404	2680	0	3438	2801
Flt Permitted												
Satd. Flow (perm)	0	3575	2815	0	3539	2787	0	3404	2680	0	3438	2801
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		910			646			587			716	
Travel Time (s)		13.8			9.8			8.9			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	963	729	0	268	701	0	1652	122	0	1291	819
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	963	729	0	268	701	0	1652	122	0	1291	819
Turn Type		NA	Perm		NA	Perm		NA	Perm		NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases			4			8			2			6
Detector Phase		4	4		8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)		7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0
Minimum Split (s)		38.0	38.0		39.0	39.0		40.0	40.0		40.0	40.0
Total Split (s)		39.0	39.0		39.0	39.0		51.0	51.0		51.0	51.0
Total Split (%)		43.3%	43.3%		43.3%	43.3%		56.7%	56.7%		56.7%	56.7%
Maximum Green (s)		32.0	32.0		32.0	32.0		44.0	44.0		44.0	44.0
Yellow Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
All-Red Time (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode		None	None		None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		24.0	24.0		25.0	25.0		26.0	26.0		26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)		33.0	33.0		33.0	33.0		47.0	47.0		47.0	47.0
Actuated g/C Ratio		0.37	0.37		0.37	0.37		0.52	0.52		0.52	0.52
v/c Ratio		0.73	0.71		0.21	0.69		0.93	0.09		0.72	0.56
Control Delay		28.5	28.6		19.7	28.0		27.5	11.1		14.6	12.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		28.5	28.6		19.7	28.0		27.5	11.1		14.6	12.1
LOS		C	C		B	C		C	B		B	B
Approach Delay		28.5			25.7			26.4			13.6	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		241	194		53	184		263	18		208	110
Queue Length 95th (ft)		312	265		81	252		#618	34		264	148
Internal Link Dist (ft)		830			566			507			636	
Turn Bay Length (ft)			750			425			375			500
Base Capacity (vph)		1350	1063		1336	1052		1776	1398		1794	1462
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.71	0.69		0.20	0.67		0.93	0.09		0.72	0.56

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 22.7 Intersection LOS: C
Intersection Capacity Utilization 73.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	745	596	64	31	11
Future Volume (vph)	29	745	596	64	31	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.987		0.965	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1652	1801	1686	0	1582	0
Flt Permitted	0.950				0.964	
Satd. Flow (perm)	1652	1801	1686	0	1582	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1162		1160	
Travel Time (s)		18.2	17.6		17.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	4%	2%	3%	8%
Adj. Flow (vph)	32	828	662	71	34	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	828	733	0	46	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	745	596	64	31	11
Future Vol, veh/h	29	745	596	64	31	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	2	3	8
Mvmt Flow	32	828	662	71	34	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	733	0	-	0	1590	698
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	892	-
Critical Hdwy	4.12	-	-	-	6.43	6.28
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.218	-	-	-	3.527	3.372
Pot Cap-1 Maneuver	872	-	-	-	118	430
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	399	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	872	-	-	-	114	430
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	399	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	872	-	-	-	280
HCM Lane V/C Ratio	0.037	-	-	-	0.167
HCM Control Delay (s)	9.3	-	-	-	20.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

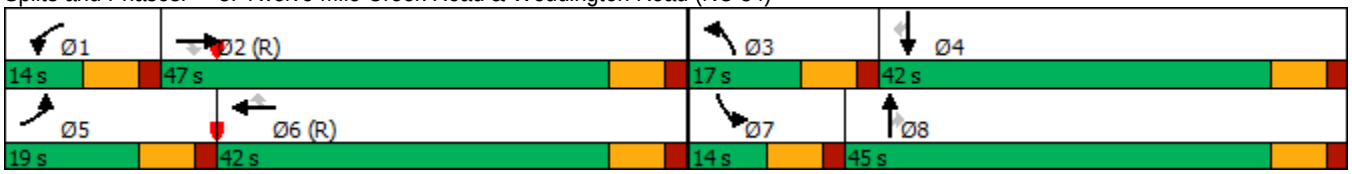
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	1041	131	78	849	81	142	46	103	52	23	88
Future Volume (vph)	168	1041	131	78	849	81	142	46	103	52	23	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			1%			2%			-2%	
Storage Length (ft)	450		400	300		375	225		225	175		125
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			150			150		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3575	1599	1744	3487	1575	1735	1844	1567	1688	1881	1539
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3575	1599	1744	3487	1575	1735	1844	1567	1688	1881	1539
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1035			1019			1122			1136	
Travel Time (s)		15.7			15.4			17.0			17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	2%	3%	3%	2%	3%	2%	2%	8%	2%	6%
Adj. Flow (vph)	187	1157	146	87	943	90	158	51	114	58	26	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	1157	146	87	943	90	158	51	114	58	26	98
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	39.0	39.0	14.0	37.0	37.0	14.0	42.0	42.0	14.0	42.0	42.0
Total Split (s)	19.0	47.0	47.0	14.0	42.0	42.0	17.0	45.0	45.0	14.0	42.0	42.0
Total Split (%)	15.8%	39.2%	39.2%	11.7%	35.0%	35.0%	14.2%	37.5%	37.5%	11.7%	35.0%	35.0%
Maximum Green (s)	12.0	40.0	40.0	7.0	35.0	35.0	10.0	38.0	38.0	7.0	35.0	35.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0	25.0		23.0	23.0		28.0	28.0		28.0	28.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	21.5	59.2	59.2	13.7	51.4	51.4	12.0	20.9	20.9	9.0	15.1	15.1
Actuated g/C Ratio	0.18	0.49	0.49	0.11	0.43	0.43	0.10	0.17	0.17	0.08	0.13	0.13
v/c Ratio	0.59	0.66	0.19	0.44	0.63	0.13	0.91	0.16	0.42	0.46	0.11	0.51
Control Delay	51.1	22.0	17.4	55.8	30.7	24.0	102.7	43.9	49.7	65.5	45.3	57.2

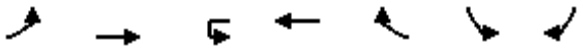
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	22.0	17.4	55.8	30.7	24.0	102.7	43.9	49.7	65.5	45.3	57.2
LOS	D	C	B	E	C	C	F	D	D	E	D	E
Approach Delay		25.2			32.1			74.7			58.2	
Approach LOS		C			C			E			E	
Queue Length 50th (ft)	145	256	53	64	298	42	123	35	82	44	18	72
Queue Length 95th (ft)	205	385	112	113	424	88	#253	69	135	89	44	122
Internal Link Dist (ft)		955			939			1042			1056	
Turn Bay Length (ft)	450		400	300		375	225		225	175		125
Base Capacity (vph)	317	1764	789	198	1493	674	173	614	522	126	579	474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.66	0.19	0.44	0.63	0.13	0.91	0.08	0.22	0.46	0.04	0.21

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 34.8 Intersection LOS: C
Intersection Capacity Utilization 61.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)





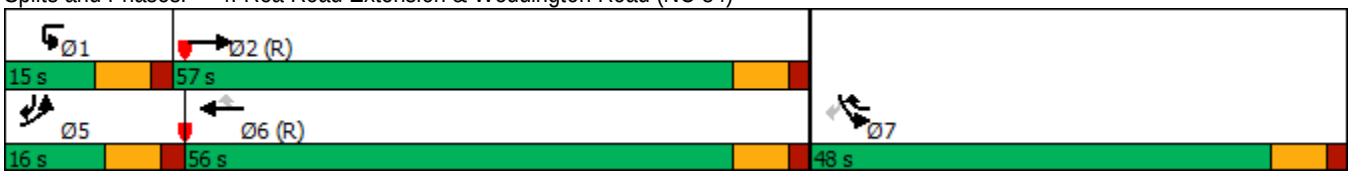
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	26	735	4	599	490	602	26
Future Volume (vph)	26	735	4	599	490	602	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		425		0	325	125
Storage Lanes	1		1		1	1	1
Taper Length (ft)	100		100			100	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.97	1.00
Frt					0.850		0.850
Flt Protected	0.950		0.950			0.950	
Satd. Flow (prot)	1770	3539	1770	3539	1583	3433	1583
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1770	3539	1770	3539	1583	3433	1583
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		45		45		45	
Link Distance (ft)		6405		2171		725	
Travel Time (s)		97.0		32.9		11.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	817	4	666	544	669	29
Shared Lane Traffic (%)							
Lane Group Flow (vph)	29	817	4	666	544	669	29
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	1	6	7	7	5
Permitted Phases					6		7
Detector Phase	5	2	1	6	7	7	5
Switch Phase							
Minimum Initial (s)	7.0	12.0	7.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	41.0	36.0	36.0	14.0
Total Split (s)	16.0	57.0	15.0	56.0	48.0	48.0	16.0
Total Split (%)	13.3%	47.5%	12.5%	46.7%	40.0%	40.0%	13.3%
Maximum Green (s)	9.0	50.0	8.0	49.0	41.0	41.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	C-Max	None	None	None
Walk Time (s)				7.0	7.0	7.0	
Flash Dont Walk (s)				27.0	22.0	22.0	
Pedestrian Calls (#/hr)				0	0	0	
Act Effct Green (s)	9.9	74.5	9.0	65.2	103.9	32.7	47.6
Actuated g/C Ratio	0.08	0.62	0.08	0.54	0.87	0.27	0.40
v/c Ratio	0.20	0.37	0.03	0.35	0.40	0.72	0.05
Control Delay	54.2	13.4	46.8	17.6	1.9	43.6	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	13.4	46.8	17.6	1.9	43.6	20.0

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	D	B	D	B	A	D	B
Approach Delay		14.8		10.7		42.6	
Approach LOS		B		B		D	
Queue Length 50th (ft)	21	141	3	102	37	242	14
Queue Length 95th (ft)	52	282	m6	m205	m38	282	29
Internal Link Dist (ft)		6325		2091		645	
Turn Bay Length (ft)	425		425			325	125
Base Capacity (vph)	165	2197	147	1921	1459	1230	644
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.37	0.03	0.35	0.37	0.54	0.05

Intersection Summary

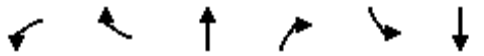
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 20.0 Intersection LOS: C
Intersection Capacity Utilization 47.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Rea Road Extension & Weddington Road (NC 84)



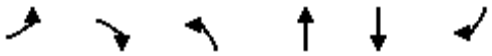
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	2118	0	1899
Future Volume (vph)	0	0	0	2118	0	1899
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	233		716			681
Travel Time (s)	4.5		10.8			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	2353	0	2110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2353	0	2110
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			



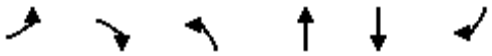
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	361	1757	0	0
Future Volume (vph)	0	0	361	1757	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	2787	0	0
Link Speed (mph)	35		45			45
Link Distance (ft)	1544		233			454
Travel Time (s)	30.1		3.5			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	401	1952	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	401	1952	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.8%		ICU Level of Service C	
Analysis Period (min) 15			



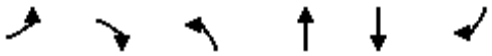
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1757	0	1538
Future Volume (vph)	0	0	0	1757	0	1538
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	1094			1544	1022	
Travel Time (s)	21.3			23.4	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1952	0	1709
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1952	0	1709
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1597	0	1818
Future Volume (vph)	0	0	0	1597	0	1818
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	153			579	587	
Travel Time (s)	3.0			8.8	8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1774	0	2020
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1774	0	2020
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			

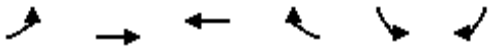


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	32	1786
Future Volume (vph)	0	0	0	0	32	1786
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	0	3539	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	0	3539	2787
Link Speed (mph)	45			35	45	
Link Distance (ft)	1018			449	153	
Travel Time (s)	15.4			8.7	2.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	36	1984
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	36	1984
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	1565	0	1786
Future Volume (vph)	0	0	0	1565	0	1786
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	580		1041			1018
Travel Time (s)	11.3		15.8			15.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1739	0	1984
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1739	0	1984
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.1%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1523	0	978	0	0
Future Volume (vph)	0	1523	0	978	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		406	910		187	
Travel Time (s)		6.2	13.8		2.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1692	0	1087	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1692	0	1087	0	0
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	77	901	0	0
Future Volume (vph)	0	0	77	901	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	462			187	223	
Travel Time (s)	7.0			2.8	3.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	86	1001	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	86	1001	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	1446	0	901	0	0
Future Volume (vph)	0	1446	0	901	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	1324			462	242	
Travel Time (s)	20.1			7.0	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1607	0	1001	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1607	0	1001	0	0
Sign Control	Free			Free	Free	

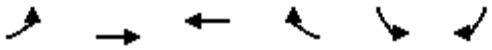
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	977	0	872	0	0
Future Volume (vph)	0	977	0	872	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	646			423	164	
Travel Time (s)	9.8			6.4	2.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1086	0	969	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1086	0	969	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	599	378	0	0	0	0
Future Volume (vph)	599	378	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1863	2787	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	1863	2787	0	0	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	164			264	460	
Travel Time (s)	2.5			4.0	7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	666	420	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	666	420	0	0	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.7%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	378	0	273	0	0
Future Volume (vph)	0	378	0	273	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		460	6405		203	
Travel Time (s)		7.0	97.0		3.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	420	0	303	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	420	0	303	0	0
Sign Control		Free	Free		Free	

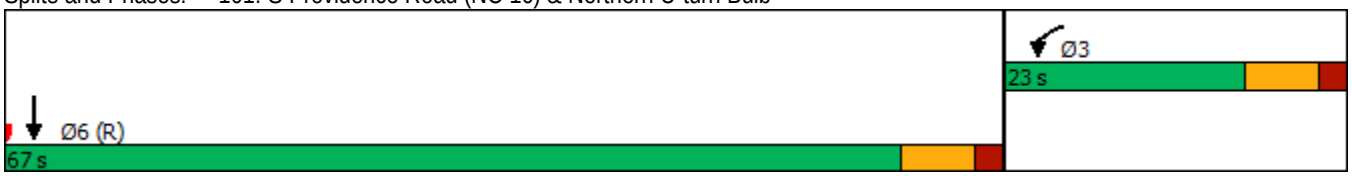
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.8%		ICU Level of Service A	
Analysis Period (min) 15			

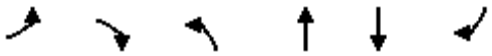
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	361	0	0	0	0	1538
Future Volume (vph)	361	0	0	0	0	1538
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	100				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.95
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	0	0	3539
Right Turn on Red	No	No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	454		681			1094
Travel Time (s)	8.8		10.3			16.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	401	0	0	0	0	1709
Shared Lane Traffic (%)						
Lane Group Flow (vph)	401	0	0	0	0	1709
Turn Type	Prot					NA
Protected Phases	3					6
Permitted Phases						
Detector Phase	3					6
Switch Phase						
Minimum Initial (s)	7.0					12.0
Minimum Split (s)	14.0					19.0
Total Split (s)	23.0					67.0
Total Split (%)	25.6%					74.4%
Maximum Green (s)	16.0					60.0
Yellow Time (s)	5.0					5.0
All-Red Time (s)	2.0					2.0
Lost Time Adjust (s)	-2.0					-2.0
Total Lost Time (s)	5.0					5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0					3.0
Recall Mode	None					C-Max
Act Effct Green (s)	16.6					63.4
Actuated g/C Ratio	0.18					0.70
v/c Ratio	0.63					0.69
Control Delay	29.8					9.7
Queue Delay	0.0					0.0
Total Delay	29.8					9.7
LOS	C					A
Approach Delay	29.8					9.7
Approach LOS	C					A

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	102					261
Queue Length 95th (ft)	m117					339
Internal Link Dist (ft)	374		601			1014
Turn Bay Length (ft)	450					
Base Capacity (vph)	686					2491
Starvation Cap Reductn	0					0
Spillback Cap Reductn	0					0
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.58					0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 64.8%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: S Providence Road (NC 16) & Northern U-turn Bulb



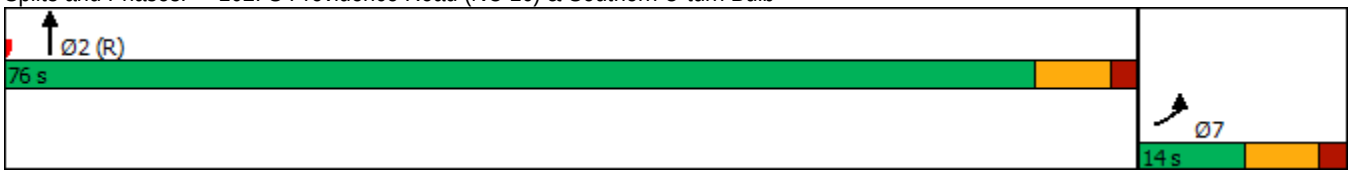


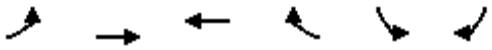
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	0	0	1565	0	0
Future Volume (vph)	32	0	0	1565	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	100		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	3539	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	3539	0	0
Right Turn on Red	No	No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			45	45	
Link Distance (ft)	449			580	579	
Travel Time (s)	8.7			8.8	8.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	0	0	1739	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	0	1739	0	0
Turn Type	Prot			NA		
Protected Phases	7			2		
Permitted Phases						
Detector Phase	7			2		
Switch Phase						
Minimum Initial (s)	7.0			12.0		
Minimum Split (s)	14.0			19.0		
Total Split (s)	14.0			76.0		
Total Split (%)	15.6%			84.4%		
Maximum Green (s)	7.0			69.0		
Yellow Time (s)	5.0			5.0		
All-Red Time (s)	2.0			2.0		
Lost Time Adjust (s)	-2.0			-2.0		
Total Lost Time (s)	5.0			5.0		
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0		
Recall Mode	None			C-Max		
Act Effct Green (s)	9.0			78.6		
Actuated g/C Ratio	0.10			0.87		
v/c Ratio	0.10			0.56		
Control Delay	37.3			3.6		
Queue Delay	0.0			0.0		
Total Delay	37.3			3.6		
LOS	D			A		
Approach Delay	37.3			3.6		
Approach LOS	D			A		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	9			162		
Queue Length 95th (ft)	m13			208		
Internal Link Dist (ft)	369			500	499	
Turn Bay Length (ft)	425					
Base Capacity (vph)	343			3090		
Starvation Cap Reductn	0			0		
Spillback Cap Reductn	0			0		
Storage Cap Reductn	0			0		
Reduced v/c Ratio	0.10			0.56		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 16 (18%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 4.3		Intersection LOS: A	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 102: S Providence Road (NC 16) & Southern U-turn Bulb





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1446	0	0	77	0
Future Volume (vph)	0	1446	0	0	77	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		242	406		223	
Travel Time (s)		3.7	6.2		4.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1607	0	0	86	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1607	0	0	86	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1446	0	0	77	0
Future Vol, veh/h	0	1446	0	0	77	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1607	0	0	86	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	804	-
Stage 1	-	-	0	-
Stage 2	-	-	804	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	321	0
Stage 1	0	-	-	0
Stage 2	0	-	401	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	321	-
Mov Cap-2 Maneuver	-	-	321	-
Stage 1	-	-	-	-
Stage 2	-	-	401	-

Approach	EB	SB
HCM Control Delay, s	0	20.2
HCM LOS		C

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	321
HCM Lane V/C Ratio	-	0.267
HCM Control Delay (s)	-	20.2
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	1.1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	273	599	0
Future Volume (vph)	0	0	0	273	599	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		500	0
Storage Lanes		0	0		0	0
Taper Length (ft)			25		100	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	423			203	264	
Travel Time (s)	6.4			3.1	5.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	303	666	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	303	666	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	17

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	273	599	0
Future Vol, veh/h	0	0	0	273	599	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	303	666	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	-	-	152	-
Stage 1	-	-	0	-
Stage 2	-	-	152	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	825	0
Stage 1	0	-	-	0
Stage 2	0	-	860	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	825	-
Mov Cap-2 Maneuver	-	-	825	-
Stage 1	-	-	-	-
Stage 2	-	-	860	-

Approach	WB	NB
HCM Control Delay, s	0	24.8
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	WBT
Capacity (veh/h)	825	-
HCM Lane V/C Ratio	0.807	-
HCM Control Delay (s)	24.8	-
HCM Lane LOS	C	-
HCM 95th %tile Q(veh)	8.7	-

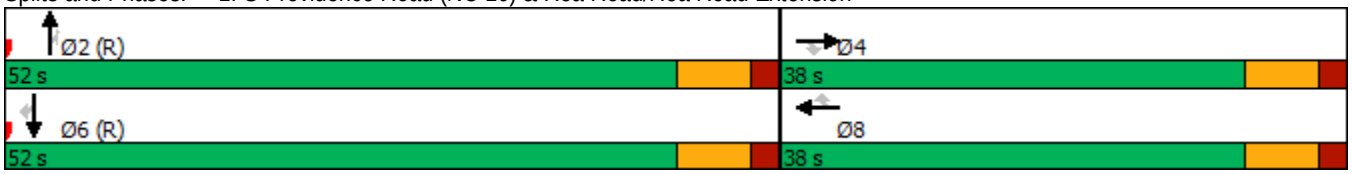
2029 Build-out Conditions

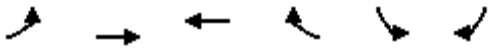
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	543	445	0	362	414	0	1709	112	0	1160	1178
Future Volume (vph)	0	543	445	0	362	414	0	1709	112	0	1160	1178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	11	11	11	12	11	12
Grade (%)		-2%			0%			1%			-1%	
Storage Length (ft)	0		750	0		425	0		375	0		500
Storage Lanes	0		2	0		2	0		2	0		2
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected												
Satd. Flow (prot)	0	3575	2815	0	3539	2787	0	3404	2680	0	3372	2801
Flt Permitted												
Satd. Flow (perm)	0	3575	2815	0	3539	2787	0	3404	2680	0	3372	2801
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		910			646			587			716	
Travel Time (s)		13.8			9.8			8.9			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%
Adj. Flow (vph)	0	603	494	0	402	460	0	1899	124	0	1289	1309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	603	494	0	402	460	0	1899	124	0	1289	1309
Turn Type		NA	Perm		NA	Perm		NA	Perm		NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases			4			8			2			6
Detector Phase		4	4		8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)		7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0
Minimum Split (s)		38.0	38.0		39.0	39.0		40.0	40.0		40.0	40.0
Total Split (s)		38.0	38.0		38.0	38.0		52.0	52.0		52.0	52.0
Total Split (%)		42.2%	42.2%		42.2%	42.2%		57.8%	57.8%		57.8%	57.8%
Maximum Green (s)		31.0	31.0		31.0	31.0		45.0	45.0		45.0	45.0
Yellow Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
All-Red Time (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode		None	None		None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		24.0	24.0		25.0	25.0		26.0	26.0		26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)		26.1	26.1		26.1	26.1		53.9	53.9		53.9	53.9
Actuated g/C Ratio		0.29	0.29		0.29	0.29		0.60	0.60		0.60	0.60
v/c Ratio		0.58	0.61		0.39	0.57		0.93	0.08		0.64	0.78

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		29.0	30.2		25.9	29.4		23.5	6.7		10.9	14.3
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		29.0	30.2		25.9	29.4		23.5	6.7		10.9	14.3
LOS		C	C		C	C		C	A		B	B
Approach Delay		29.6			27.8			22.5			12.6	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		153	136		95	125		482	9		158	173
Queue Length 95th (ft)		183	171		121	159		#778	m16		325	#531
Internal Link Dist (ft)		830			566			507			636	
Turn Bay Length (ft)			750			425			375			500
Base Capacity (vph)		1310	1032		1297	1021		2040	1606		2020	1678
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.46	0.48		0.31	0.45		0.93	0.08		0.64	0.78

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 20.5		Intersection LOS: C	
Intersection Capacity Utilization 70.6%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	599	757	35	68	26
Future Volume (vph)	10	599	757	35	68	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994		0.963	
Flt Protected	0.950				0.965	
Satd. Flow (prot)	1491	1801	1728	0	1463	0
Flt Permitted	0.950				0.965	
Satd. Flow (perm)	1491	1801	1728	0	1463	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1162		1160	
Travel Time (s)		18.2	17.6		17.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	13%	2%	2%	2%	3%	38%
Adj. Flow (vph)	11	666	841	39	76	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	666	880	0	105	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	599	757	35	68	26
Future Vol, veh/h	10	599	757	35	68	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	2	2	2	3	38
Mvmt Flow	11	666	841	39	76	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	880	0	-	0	1549	861
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	688	-
Critical Hdwy	4.23	-	-	-	6.43	6.58
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.317	-	-	-	3.527	3.642
Pot Cap-1 Maneuver	724	-	-	-	125	307
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	497	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	724	-	-	-	123	307
Mov Cap-2 Maneuver	-	-	-	-	259	-
Stage 1	-	-	-	-	406	-
Stage 2	-	-	-	-	497	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	26.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	724	-	-	-	271
HCM Lane V/C Ratio	0.015	-	-	-	0.385
HCM Control Delay (s)	10.1	-	-	-	26.4
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	1.7

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	29	90	851	145	105	1053	53	131	23	79	82	46
Future Volume (vph)	29	90	851	145	105	1053	53	131	23	79	82	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-2%			1%			2%			-2%
Storage Length (ft)		450		400	300		375	225		225	175	
Storage Lanes		1		1	1		1	1		1	1	
Taper Length (ft)		100			100			150			150	
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.850			0.850		
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1787	3540	1584	1710	3487	1502	1752	1844	1552	1753	1881
Flt Permitted		0.950			0.950			0.950			0.950	
Satd. Flow (perm)	0	1787	3540	1584	1710	3487	1502	1752	1844	1552	1753	1881
Right Turn on Red				No			No			No		
Satd. Flow (RTOR)												
Link Speed (mph)			45			45			45			45
Link Distance (ft)			1279			1019			1122			1136
Travel Time (s)			19.4			15.4			17.0			17.2
Peak Hour Factor	0.90	0.57	0.74	0.82	0.75	0.84	0.76	0.88	0.54	0.51	0.53	0.68
Heavy Vehicles (%)	2%	2%	3%	3%	5%	3%	7%	2%	2%	3%	4%	2%
Adj. Flow (vph)	32	158	1150	177	140	1254	70	149	43	155	155	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	190	1150	177	140	1254	70	149	43	155	155	68
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases				2			6			8		
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	14.0	39.0	39.0	14.0	37.0	37.0	14.0	42.0	42.0	14.0	42.0
Total Split (s)	21.0	21.0	59.0	59.0	20.0	58.0	58.0	18.0	42.0	42.0	19.0	43.0
Total Split (%)	15.0%	15.0%	42.1%	42.1%	14.3%	41.4%	41.4%	12.9%	30.0%	30.0%	13.6%	30.7%
Maximum Green (s)	14.0	14.0	52.0	52.0	13.0	51.0	51.0	11.0	35.0	35.0	12.0	36.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Walk Time (s)			7.0	7.0		7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)			25.0	25.0		23.0	23.0		28.0	28.0		28.0
Pedestrian Calls (#/hr)			0	0		0	0		0	0		0
Act Effct Green (s)		18.5	58.5	58.5	15.8	55.7	55.7	13.0	31.7	31.7	14.0	32.7
Actuated g/C Ratio		0.13	0.42	0.42	0.11	0.40	0.40	0.09	0.23	0.23	0.10	0.23
v/c Ratio		0.81	0.78	0.27	0.73	0.90	0.12	0.92	0.10	0.44	0.89	0.15
Control Delay		85.3	33.1	25.3	81.4	50.3	28.7	114.5	41.0	49.5	105.1	41.6

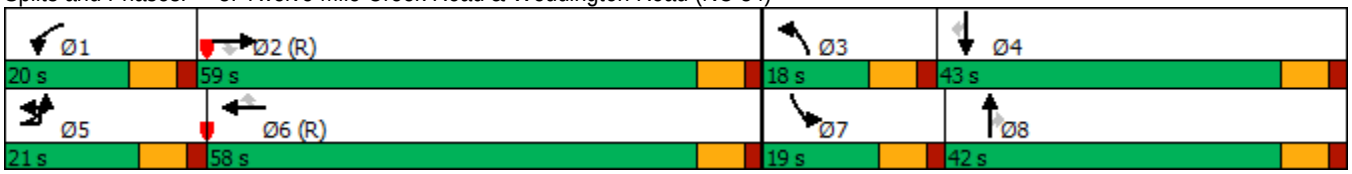
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	168
Future Volume (vph)	168
Ideal Flow (vphpl)	1900
Grade (%)	
Storage Length (ft)	125
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1599
Flt Permitted	
Satd. Flow (perm)	1599
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.56
Heavy Vehicles (%)	2%
Adj. Flow (vph)	300
Shared Lane Traffic (%)	
Lane Group Flow (vph)	300
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	42.0
Total Split (s)	43.0
Total Split (%)	30.7%
Maximum Green (s)	36.0
Yellow Time (s)	5.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	-2.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	28.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	32.7
Actuated g/C Ratio	0.23
v/c Ratio	0.80
Control Delay	66.7

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		85.3	33.1	25.3	81.4	50.3	28.7	114.5	41.0	49.5	105.1	41.6
LOS		F	C	C	F	D	C	F	D	D	F	D
Approach Delay			38.7			52.3			76.4			74.8
Approach LOS			D			D			E			E
Queue Length 50th (ft)		175	355	89	122	580	41	137	31	120	142	49
Queue Length 95th (ft)		162	348	133	165	614	64	#264	37	97	124	65
Internal Link Dist (ft)			1199			939			1042			1056
Turn Bay Length (ft)		450		400	300		375	225		225	175	
Base Capacity (vph)		236	1478	661	197	1388	597	162	487	410	175	510
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.81	0.78	0.27	0.71	0.90	0.12	0.92	0.09	0.38	0.89	0.13

Intersection Summary

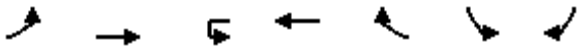
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 82 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 52.2 Intersection LOS: D
Intersection Capacity Utilization 70.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)



Lane Group	SBR
Queue Delay	0.0
Total Delay	66.7
LOS	E
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	256
Queue Length 95th (ft)	197
Internal Link Dist (ft)	
Turn Bay Length (ft)	125
Base Capacity (vph)	434
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.69

Intersection Summary



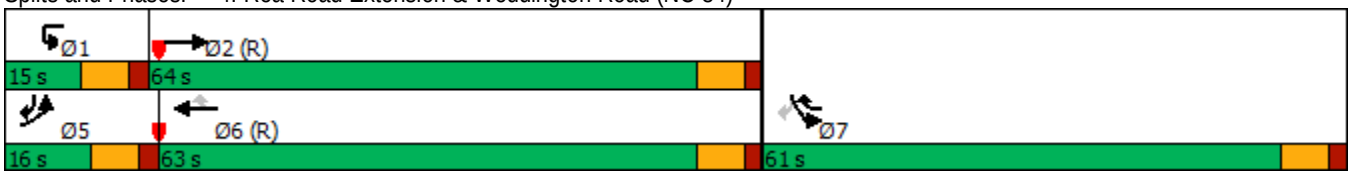
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	22	607	10	759	619	497	22
Future Volume (vph)	22	607	10	759	619	497	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		425		400	325	125
Storage Lanes	1		1		1	1	1
Taper Length (ft)	100		100			100	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.97	1.00
Frt					0.850		0.850
Flt Protected	0.950		0.950			0.950	
Satd. Flow (prot)	1770	3539	1770	3539	1583	3433	1583
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1770	3539	1770	3539	1583	3433	1583
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		45		45		45	
Link Distance (ft)		6405		877		725	
Travel Time (s)		97.0		13.3		11.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	674	11	843	688	552	24
Shared Lane Traffic (%)							
Lane Group Flow (vph)	24	674	11	843	688	552	24
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	1	6	7	7	5
Permitted Phases					6		7
Detector Phase	5	2	1	6	7	7	5
Switch Phase							
Minimum Initial (s)	7.0	12.0	7.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	41.0	36.0	36.0	14.0
Total Split (s)	16.0	64.0	15.0	63.0	61.0	61.0	16.0
Total Split (%)	11.4%	45.7%	10.7%	45.0%	43.6%	43.6%	11.4%
Maximum Green (s)	9.0	57.0	8.0	56.0	54.0	54.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	C-Max	None	None	None
Walk Time (s)				7.0	7.0	7.0	
Flash Dont Walk (s)				27.0	22.0	22.0	
Pedestrian Calls (#/hr)				0	0	0	
Act Effct Green (s)	9.9	91.9	9.2	85.6	123.9	32.3	47.2
Actuated g/C Ratio	0.07	0.66	0.07	0.61	0.88	0.23	0.34
v/c Ratio	0.19	0.29	0.09	0.39	0.49	0.70	0.05
Control Delay	64.5	12.3	78.8	7.9	0.9	53.8	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	12.3	78.8	7.9	0.9	53.8	28.6

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	E	B	E	A	A	D	C
Approach Delay		14.1		5.3		52.7	
Approach LOS		B		A		D	
Queue Length 50th (ft)	21	110	10	88	8	240	15
Queue Length 95th (ft)	52	223	m13	m104	m11	281	33
Internal Link Dist (ft)		6325		797		645	
Turn Bay Length (ft)	425		425		400	325	125
Base Capacity (vph)	141	2322	126	2163	1570	1373	548
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.29	0.09	0.39	0.44	0.40	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 17.2		Intersection LOS: B	
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Rea Road Extension & Weddington Road (NC 84)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1103	11	0	1388	0	33
Future Volume (vph)	1103	11	0	1388	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.865
Flt Protected						
Satd. Flow (prot)	3502	0	0	3505	0	1611
Flt Permitted						
Satd. Flow (perm)	3502	0	0	3505	0	1611
Link Speed (mph)	45			45	25	
Link Distance (ft)	877			1036	1095	
Travel Time (s)	13.3			15.7	29.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	2%	3%	2%	2%
Adj. Flow (vph)	1226	12	0	1542	0	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1238	0	0	1542	0	37
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

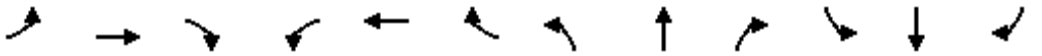
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1103	11	0	1388	0	33
Future Vol, veh/h	1103	11	0	1388	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	2	2	3	2	2
Mvmt Flow	1226	12	0	1542	0	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	619
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	*641
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*641
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	641	-	-	-
HCM Lane V/C Ratio	0.057	-	-	-
HCM Control Delay (s)	11	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1134	2	0	1372	6	0	0	6	0	0	16
Future Volume (vph)	0	1134	2	0	1372	6	0	0	6	0	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	3505	0	0	3502	0	0	0	1611	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	3505	0	0	3502	0	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1036			1279			1046			1028	
Travel Time (s)		15.7			19.4			28.5			28.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	1260	2	0	1524	7	0	0	7	0	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1262	0	0	1531	0	0	0	7	0	0	18
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1134	2	0	1372	6	0	0	6	0	0	16
Future Vol, veh/h	0	1134	2	0	1372	6	0	0	6	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	3	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	0	1260	2	0	1524	7	0	0	7	0	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	631	-	-	766
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*619	0	0	*532
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*619	-	-	*532
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

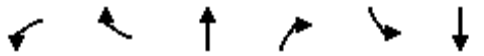
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.9	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	619	-	-	-	-	532
HCM Lane V/C Ratio	0.011	-	-	-	-	0.033
HCM Control Delay (s)	10.9	-	-	-	-	12
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

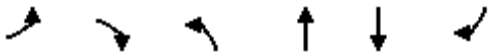
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	2123	0	2338
Future Volume (vph)	0	0	0	2123	0	2338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	233		716			681
Travel Time (s)	4.5		10.8			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	2359	0	2598
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2359	0	2598
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.6%		ICU Level of Service D	
Analysis Period (min) 15			



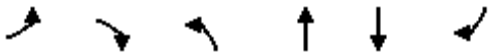
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	579	1544	0	0
Future Volume (vph)	0	0	579	1544	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	2787	0	0
Link Speed (mph)	35		45			45
Link Distance (ft)	1544		233			454
Travel Time (s)	30.1		3.5			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	643	1716	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	643	1716	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.5%		ICU Level of Service D	
Analysis Period (min) 15			



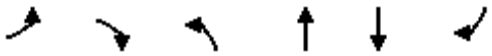
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1544	0	1759
Future Volume (vph)	0	0	0	1544	0	1759
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	1094			1544	1022	
Travel Time (s)	21.3			23.4	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1716	0	1954
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1716	0	1954
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1821	0	1605
Future Volume (vph)	0	0	0	1821	0	1605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	153			579	587	
Travel Time (s)	3.0			8.8	8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	2023	0	1783
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2023	0	1783
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

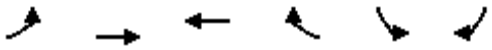


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	34	1571
Future Volume (vph)	0	0	0	0	34	1571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	0	3539	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	0	3539	2787
Link Speed (mph)	45			35	45	
Link Distance (ft)	1018			449	153	
Travel Time (s)	15.4			8.7	2.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	38	1746
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	38	1746
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	1787	0	1571
Future Volume (vph)	0	0	0	1787	0	1571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	580		1041			1018
Travel Time (s)	11.3		15.8			15.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1986	0	1746
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1986	0	1746
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	988	0	1540	0	0
Future Volume (vph)	0	988	0	1540	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		406	910		187	
Travel Time (s)		6.2	13.8		2.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1098	0	1711	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1098	0	1711	0	0
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	84	1456	0	0
Future Volume (vph)	0	0	84	1456	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	462			187	223	
Travel Time (s)	7.0			2.8	3.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	93	1618	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	93	1618	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	904	0	1456	0	0
Future Volume (vph)	0	904	0	1456	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	1324			462	242	
Travel Time (s)	20.1			7.0	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1004	0	1618	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1004	0	1618	0	0
Sign Control	Free			Free	Free	

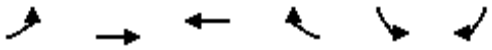
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	655	0	776	0	0
Future Volume (vph)	0	655	0	776	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	646			423	164	
Travel Time (s)	9.8			6.4	2.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	728	0	862	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	728	0	862	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	376	279	0	0	0	0
Future Volume (vph)	376	279	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1863	2787	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	1863	2787	0	0	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	164			264	460	
Travel Time (s)	2.5			4.0	7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	418	310	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	310	0	0	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	279	0	400	0	0
Future Volume (vph)	0	279	0	400	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		460	6405		203	
Travel Time (s)		7.0	97.0		3.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	310	0	444	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	310	0	444	0	0
Sign Control		Free	Free		Free	

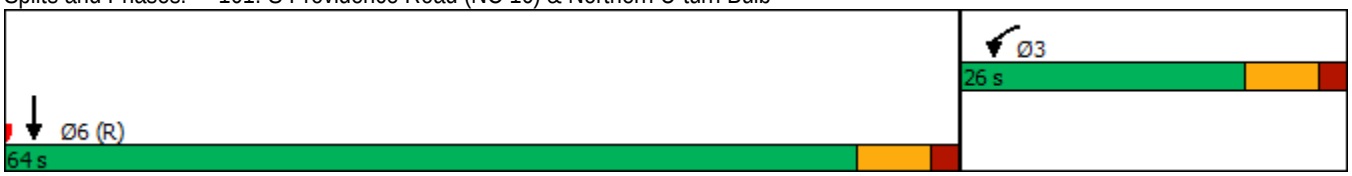
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.3%		ICU Level of Service A	
Analysis Period (min) 15			

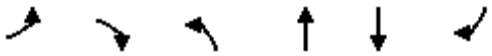
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	579	0	0	0	0	1759
Future Volume (vph)	579	0	0	0	0	1759
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	100				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.95
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	0	0	3539
Right Turn on Red	No	No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	454		681			1094
Travel Time (s)	8.8		10.3			16.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	643	0	0	0	0	1954
Shared Lane Traffic (%)						
Lane Group Flow (vph)	643	0	0	0	0	1954
Turn Type	Prot					NA
Protected Phases	3					6
Permitted Phases						
Detector Phase	3					6
Switch Phase						
Minimum Initial (s)	7.0					12.0
Minimum Split (s)	14.0					19.0
Total Split (s)	26.0					64.0
Total Split (%)	28.9%					71.1%
Maximum Green (s)	19.0					57.0
Yellow Time (s)	5.0					5.0
All-Red Time (s)	2.0					2.0
Lost Time Adjust (s)	-2.0					-2.0
Total Lost Time (s)	5.0					5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0					3.0
Recall Mode	None					C-Max
Act Effct Green (s)	20.6					59.4
Actuated g/C Ratio	0.23					0.66
v/c Ratio	0.82					0.84
Control Delay	31.6					16.0
Queue Delay	0.0					0.0
Total Delay	31.6					16.0
LOS	C					B
Approach Delay	31.6					16.0
Approach LOS	C					B

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	170					399
Queue Length 95th (ft)	m182					515
Internal Link Dist (ft)	374		601			1014
Turn Bay Length (ft)	450					
Base Capacity (vph)	801					2336
Starvation Cap Reductn	0					0
Spillback Cap Reductn	0					0
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.80					0.84

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 88 (98%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 73.5%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: S Providence Road (NC 16) & Northern U-turn Bulb



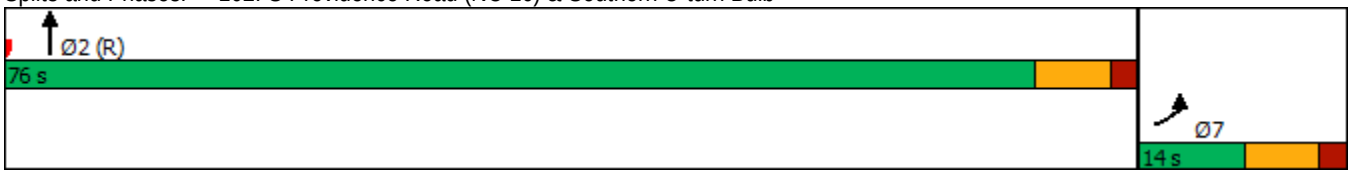


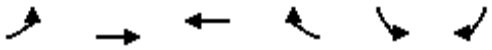
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	0	0	1787	0	0
Future Volume (vph)	34	0	0	1787	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	100		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	3539	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	3539	0	0
Right Turn on Red	No	No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			45	45	
Link Distance (ft)	449			580	579	
Travel Time (s)	8.7			8.8	8.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	0	0	1986	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	1986	0	0
Turn Type	Prot			NA		
Protected Phases	7			2		
Permitted Phases						
Detector Phase	7			2		
Switch Phase						
Minimum Initial (s)	7.0			12.0		
Minimum Split (s)	14.0			19.0		
Total Split (s)	14.0			76.0		
Total Split (%)	15.6%			84.4%		
Maximum Green (s)	7.0			69.0		
Yellow Time (s)	5.0			5.0		
All-Red Time (s)	2.0			2.0		
Lost Time Adjust (s)	-2.0			-2.0		
Total Lost Time (s)	5.0			5.0		
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0		
Recall Mode	None			C-Max		
Act Effct Green (s)	9.0			78.6		
Actuated g/C Ratio	0.10			0.87		
v/c Ratio	0.11			0.64		
Control Delay	33.2			4.4		
Queue Delay	0.0			0.0		
Total Delay	33.2			4.4		
LOS	C			A		
Approach Delay	33.2			4.4		
Approach LOS	C			A		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	10			215		
Queue Length 95th (ft)	m17			279		
Internal Link Dist (ft)	369			500	499	
Turn Bay Length (ft)	425					
Base Capacity (vph)	343			3090		
Starvation Cap Reductn	0			0		
Spillback Cap Reductn	0			0		
Storage Cap Reductn	0			0		
Reduced v/c Ratio	0.11			0.64		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 82 (91%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 5.0		Intersection LOS: A	
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 102: S Providence Road (NC 16) & Southern U-turn Bulb





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	904	0	0	84	0
Future Volume (vph)	0	904	0	0	84	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		242	406		223	
Travel Time (s)		3.7	6.2		4.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1004	0	0	93	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1004	0	0	93	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.9%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	904	0	0	84	0
Future Vol, veh/h	0	904	0	0	84	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1004	0	0	93	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	502	-
Stage 1	-	-	0	-
Stage 2	-	-	502	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	499	0
Stage 1	0	-	-	0
Stage 2	0	-	573	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	499	-
Mov Cap-2 Maneuver	-	-	499	-
Stage 1	-	-	-	-
Stage 2	-	-	573	-

Approach	EB	SB
HCM Control Delay, s	0	13.9
HCM LOS		B

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	499
HCM Lane V/C Ratio	-	0.187
HCM Control Delay (s)	-	13.9
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.7

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	400	376	0
Future Volume (vph)	0	0	0	400	376	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		500	0
Storage Lanes		0	0		0	0
Taper Length (ft)			25		100	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	423			203	264	
Travel Time (s)	6.4			3.1	5.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	444	418	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	444	418	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	400	376	0
Future Vol, veh/h	0	0	0	400	376	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	444	418	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	-	-	222	-
Stage 1	-	-	0	-
Stage 2	-	-	222	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	746	0
Stage 1	0	-	-	0
Stage 2	0	-	794	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	746	-
Mov Cap-2 Maneuver	-	-	746	-
Stage 1	-	-	-	-
Stage 2	-	-	794	-

Approach	WB	NB
HCM Control Delay, s	0	15.8
HCM LOS		C

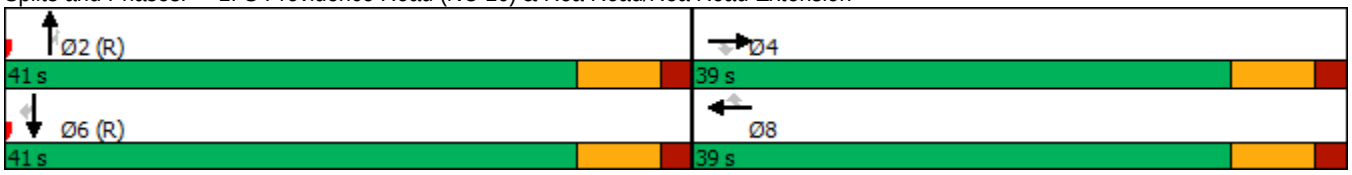
Minor Lane/Major Mvmt	NBLn1	WBT
Capacity (veh/h)	746	-
HCM Lane V/C Ratio	0.56	-
HCM Control Delay (s)	15.8	-
HCM Lane LOS	C	-
HCM 95th %tile Q(veh)	3.5	-

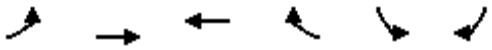
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	841	566	0	357	519	0	1205	192	0	980	636
Future Volume (vph)	0	841	566	0	357	519	0	1205	192	0	980	636
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	11	11	11	12	11	12
Grade (%)		-2%			0%			1%			-1%	
Storage Length (ft)	0		750	0		425	0		375	0		500
Storage Lanes	0		2	0		2	0		2	0		2
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected												
Satd. Flow (prot)	0	3575	2787	0	3539	2787	0	3371	2680	0	3438	2773
Flt Permitted												
Satd. Flow (perm)	0	3575	2787	0	3539	2787	0	3371	2680	0	3438	2773
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		910			646			587			716	
Travel Time (s)		13.8			9.8			8.9			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	3%	2%	2%	2%	2%	3%	2%	2%	2%	3%
Adj. Flow (vph)	0	934	629	0	397	577	0	1339	213	0	1089	707
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	934	629	0	397	577	0	1339	213	0	1089	707
Turn Type		NA	Perm		NA	Perm		NA	Perm		NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases			4			8			2			6
Detector Phase		4	4		8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)		7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0
Minimum Split (s)		38.0	38.0		39.0	39.0		40.0	40.0		40.0	40.0
Total Split (s)		39.0	39.0		39.0	39.0		41.0	41.0		41.0	41.0
Total Split (%)		48.8%	48.8%		48.8%	48.8%		51.3%	51.3%		51.3%	51.3%
Maximum Green (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Yellow Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
All-Red Time (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode		None	None		None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		24.0	24.0		25.0	25.0		26.0	26.0		26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)		31.6	31.6		31.6	31.6		38.4	38.4		38.4	38.4
Actuated g/C Ratio		0.40	0.40		0.40	0.40		0.48	0.48		0.48	0.48
v/c Ratio		0.66	0.57		0.28	0.53		0.83	0.17		0.66	0.53

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		22.1	20.9		16.6	20.0		20.5	11.8		14.2	12.6
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		22.1	20.9		16.6	20.0		20.5	11.8		14.2	12.6
LOS		C	C		B	C		C	B		B	B
Approach Delay		21.6			18.7			19.3			13.6	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		184	128		65	115		188	29		146	94
Queue Length 95th (ft)		246	181		96	164		#243	47		197	119
Internal Link Dist (ft)		830			566			507			636	
Turn Bay Length (ft)			750			425			375			500
Base Capacity (vph)		1519	1184		1504	1184		1619	1288		1652	1332
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.61	0.53		0.26	0.49		0.83	0.17		0.66	0.53

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 18.1		Intersection LOS: B	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	748	475	136	68	7
Future Volume (vph)	19	748	475	136	68	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970		0.987	
Flt Protected	0.950				0.957	
Satd. Flow (prot)	1574	1801	1645	0	1642	0
Flt Permitted	0.950				0.957	
Satd. Flow (perm)	1574	1801	1645	0	1642	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1162		1160	
Travel Time (s)		18.2	17.6		17.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	2%	5%	3%	2%	2%
Adj. Flow (vph)	21	831	528	151	76	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	831	679	0	84	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	748	475	136	68	7
Future Vol, veh/h	19	748	475	136	68	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	2	5	3	2	2
Mvmt Flow	21	831	528	151	76	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	679	0	-	0	1477	604
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	873	-
Critical Hdwy	4.17	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.263	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	890	-	-	-	139	498
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	409	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	890	-	-	-	136	498
Mov Cap-2 Maneuver	-	-	-	-	272	-
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	409	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	890	-	-	-	284
HCM Lane V/C Ratio	0.024	-	-	-	0.293
HCM Control Delay (s)	9.1	-	-	-	22.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	79	766	98	99	523	175	112	156	75	127	131
Future Volume (vph)	24	79	766	98	99	523	175	112	156	75	127	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-2%			1%			2%			-2%
Storage Length (ft)		450		400	300		375	225		225	175	
Storage Lanes		1		1	1		1	1		1	1	
Taper Length (ft)		100			100			150			150	
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.850			0.850		
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1787	3506	1599	1744	3454	1530	1735	1809	1523	1787	1863
Flt Permitted		0.950			0.950			0.950			0.950	
Satd. Flow (perm)	0	1787	3506	1599	1744	3454	1530	1735	1809	1523	1787	1863
Right Turn on Red				No			No			No		
Satd. Flow (RTOR)												
Link Speed (mph)			45			45			45			45
Link Distance (ft)			1279			1019			1122			1136
Travel Time (s)			19.4			15.4			17.0			17.2
Peak Hour Factor	0.90	0.72	0.86	0.91	0.75	0.85	0.74	0.81	0.70	0.71	0.78	0.57
Heavy Vehicles (%)	2%	2%	4%	2%	3%	4%	5%	3%	4%	5%	2%	3%
Adj. Flow (vph)	27	110	891	108	132	615	236	138	223	106	163	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	137	891	108	132	615	236	138	223	106	163	230
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases				2			6			8		
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	14.0	39.0	39.0	14.0	37.0	37.0	14.0	42.0	42.0	14.0	42.0
Total Split (s)	18.0	18.0	42.0	42.0	17.0	41.0	41.0	18.0	42.0	42.0	19.0	43.0
Total Split (%)	15.0%	15.0%	35.0%	35.0%	14.2%	34.2%	34.2%	15.0%	35.0%	35.0%	15.8%	35.8%
Maximum Green (s)	11.0	11.0	35.0	35.0	10.0	34.0	34.0	11.0	35.0	35.0	12.0	36.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Walk Time (s)			7.0	7.0		7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)			25.0	25.0		23.0	23.0		28.0	28.0		28.0
Pedestrian Calls (#/hr)			0	0		0	0		0	0		0
Act Effct Green (s)		16.3	47.1	47.1	16.2	47.0	47.0	12.8	22.9	22.9	13.8	23.9
Actuated g/C Ratio		0.14	0.39	0.39	0.14	0.39	0.39	0.11	0.19	0.19	0.12	0.20
v/c Ratio		0.57	0.65	0.17	0.56	0.45	0.39	0.75	0.65	0.37	0.80	0.62
Control Delay		60.7	27.4	22.7	57.6	30.2	31.3	77.0	53.0	44.3	78.6	50.5

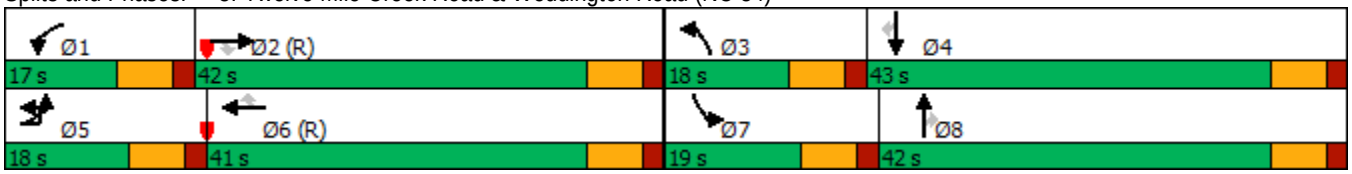
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Grade (%)	
Storage Length (ft)	125
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1599
Flt Permitted	
Satd. Flow (perm)	1599
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.49
Heavy Vehicles (%)	2%
Adj. Flow (vph)	102
Shared Lane Traffic (%)	
Lane Group Flow (vph)	102
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	42.0
Total Split (s)	43.0
Total Split (%)	35.8%
Maximum Green (s)	36.0
Yellow Time (s)	5.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	-2.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	28.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	23.9
Actuated g/C Ratio	0.20
v/c Ratio	0.32
Control Delay	42.2

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		60.7	27.4	22.7	57.6	30.2	31.3	77.0	53.0	44.3	78.6	50.5
LOS		E	C	C	E	C	C	E	D	D	E	D
Approach Delay			31.0			34.1			58.1			58.1
Approach LOS			C			C			E			E
Queue Length 50th (ft)		106	214	44	96	185	132	105	161	72	125	164
Queue Length 95th (ft)		136	270	87	131	255	183	#168	169	90	#182	135
Internal Link Dist (ft)			1199			939			1042			1056
Turn Bay Length (ft)		450		400	300		375	225		225	175	
Base Capacity (vph)		247	1375	627	236	1352	599	187	557	469	208	589
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.55	0.65	0.17	0.56	0.45	0.39	0.74	0.40	0.23	0.78	0.39

Intersection Summary

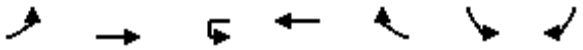
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 84 (70%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 40.4 Intersection LOS: D
Intersection Capacity Utilization 58.9% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)



Lane Group	SBR
Queue Delay	0.0
Total Delay	42.2
LOS	D
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	68
Queue Length 95th (ft)	58
Internal Link Dist (ft)	
Turn Bay Length (ft)	125
Base Capacity (vph)	506
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.20

Intersection Summary



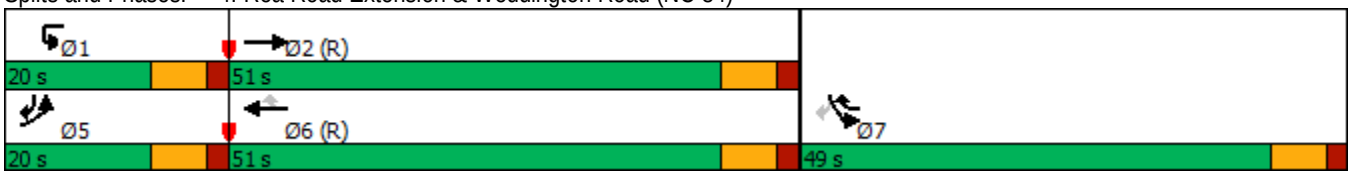
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	22	534	16	378	308	432	21
Future Volume (vph)	22	534	16	378	308	432	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		425		400	325	125
Storage Lanes	1		1		1	1	1
Taper Length (ft)	100		100			100	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.97	1.00
Frt					0.850		0.850
Flt Protected	0.950		0.950			0.950	
Satd. Flow (prot)	1770	3539	1770	3539	1583	3433	1583
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1770	3539	1770	3539	1583	3433	1583
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		45		45		45	
Link Distance (ft)		6405		877		725	
Travel Time (s)		97.0		13.3		11.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	593	18	420	342	480	23
Shared Lane Traffic (%)							
Lane Group Flow (vph)	24	593	18	420	342	480	23
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	1	6	7	7	5
Permitted Phases					6		7
Detector Phase	5	2	1	6	7	7	5
Switch Phase							
Minimum Initial (s)	7.0	12.0	7.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	41.0	36.0	36.0	14.0
Total Split (s)	20.0	51.0	20.0	51.0	49.0	49.0	20.0
Total Split (%)	16.7%	42.5%	16.7%	42.5%	40.8%	40.8%	16.7%
Maximum Green (s)	13.0	44.0	13.0	44.0	42.0	42.0	13.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	C-Max	None	None	None
Walk Time (s)				7.0	7.0	7.0	
Flash Dont Walk (s)				27.0	22.0	22.0	
Pedestrian Calls (#/hr)				0	0	0	
Act Effct Green (s)	9.7	79.0	9.4	76.0	107.9	25.0	39.6
Actuated g/C Ratio	0.08	0.66	0.08	0.63	0.90	0.21	0.33
v/c Ratio	0.17	0.25	0.13	0.19	0.24	0.67	0.04
Control Delay	53.9	10.5	56.1	8.7	0.7	48.2	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	10.5	56.1	8.7	0.7	48.2	25.0

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	D	B	E	A	A	D	C
Approach Delay		12.2		6.3		47.1	
Approach LOS		B		A		D	
Queue Length 50th (ft)	18	75	14	52	11	177	12
Queue Length 95th (ft)	45	172	m32	68	7	219	28
Internal Link Dist (ft)		6325		797		645	
Turn Bay Length (ft)	425		425		400	325	125
Base Capacity (vph)	221	2330	221	2240	1550	1258	593
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.25	0.08	0.19	0.22	0.38	0.04

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 19.0 Intersection LOS: B
Intersection Capacity Utilization 38.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Rea Road Extension & Weddington Road (NC 84)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	951	31	0	702	0	18
Future Volume (vph)	951	31	0	702	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.995					0.865
Flt Protected						
Satd. Flow (prot)	3456	0	0	3471	0	1611
Flt Permitted						
Satd. Flow (perm)	3456	0	0	3471	0	1611
Link Speed (mph)	45			45	25	
Link Distance (ft)	877			1036	1095	
Travel Time (s)	13.3			15.7	29.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	2%	2%	4%	2%	2%
Adj. Flow (vph)	1057	34	0	780	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1091	0	0	780	0	20
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

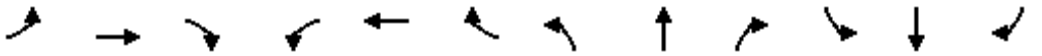
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	951	31	0	702	0	18
Future Vol, veh/h	951	31	0	702	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	2	2	4	2	2
Mvmt Flow	1057	34	0	780	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	546
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	*695
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*695
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	695	-	-	-
HCM Lane V/C Ratio	0.029	-	-	-
HCM Control Delay (s)	10.3	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	964	5	0	693	16	0	0	3	0	0	9
Future Volume (vph)	0	964	5	0	693	16	0	0	3	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.997				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	3468	0	0	3462	0	0	0	1611	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	3468	0	0	3462	0	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1036			1279			1046			1028	
Travel Time (s)		15.7			19.4			28.5			28.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	1071	6	0	770	18	0	0	3	0	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1077	0	0	788	0	0	0	3	0	0	10
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	964	5	0	693	16	0	0	3	0	0	9
Future Vol, veh/h	0	964	5	0	693	16	0	0	3	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	4	2	2	4	2	2	2	2	2	2	2
Mvmt Flow	0	1071	6	0	770	18	0	0	3	0	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	539	-	-	394
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*695	0	0	*797
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*695	-	-	*797
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

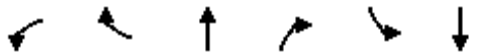
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.2	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	695	-	-	-	-	797
HCM Lane V/C Ratio	0.005	-	-	-	-	0.013
HCM Control Delay (s)	10.2	-	-	-	-	9.6
HCM Lane LOS	B	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

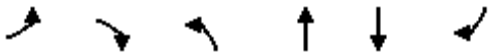
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	1724	0	1616
Future Volume (vph)	0	0	0	1724	0	1616
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	233		716			681
Travel Time (s)	4.5		10.8			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1916	0	1796
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1916	0	1796
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			



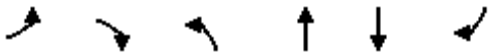
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	304	1420	0	0
Future Volume (vph)	0	0	304	1420	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	2787	0	0
Link Speed (mph)	35		45			45
Link Distance (ft)	1544		233			454
Travel Time (s)	30.1		3.5			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	338	1578	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	338	1578	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			



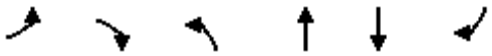
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1420	0	1312
Future Volume (vph)	0	0	0	1420	0	1312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	1094			1544	1022	
Travel Time (s)	21.3			23.4	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1578	0	1458
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1578	0	1458
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1397	0	1546
Future Volume (vph)	0	0	0	1397	0	1546
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	153			579	587	
Travel Time (s)	3.0			8.8	8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1552	0	1718
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1552	0	1718
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			

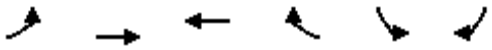


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	59	1487
Future Volume (vph)	0	0	0	0	59	1487
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	0	3539	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	0	3539	2787
Link Speed (mph)	45			35	45	
Link Distance (ft)	1018			449	153	
Travel Time (s)	15.4			8.7	2.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	66	1652
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	66	1652
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	1338	0	1487
Future Volume (vph)	0	0	0	1338	0	1487
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	580		1041			1018
Travel Time (s)	11.3		15.8			15.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1487	0	1652
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1487	0	1652
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1407	0	993	0	0
Future Volume (vph)	0	1407	0	993	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		406	910		187	
Travel Time (s)		6.2	13.8		2.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1563	0	1103	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1563	0	1103	0	0
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	96	897	0	0
Future Volume (vph)	0	0	96	897	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	462			187	223	
Travel Time (s)	7.0			2.8	3.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	107	997	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	107	997	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	1311	0	897	0	0
Future Volume (vph)	0	1311	0	897	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	1324			462	242	
Travel Time (s)	20.1			7.0	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1457	0	997	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1457	0	997	0	0
Sign Control	Free			Free	Free	

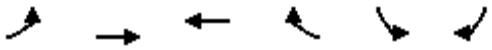
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	1033	0	876	0	0
Future Volume (vph)	0	1033	0	876	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	646			423	164	
Travel Time (s)	9.8			6.4	2.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1148	0	973	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1148	0	973	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	477	556	0	0	0	0
Future Volume (vph)	477	556	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1863	2787	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	1863	2787	0	0	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	164			264	460	
Travel Time (s)	2.5			4.0	7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	530	618	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	530	618	0	0	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.8%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	556	0	399	0	0
Future Volume (vph)	0	556	0	399	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		460	6405		203	
Travel Time (s)		7.0	97.0		3.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	618	0	443	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	618	0	443	0	0
Sign Control		Free	Free		Free	

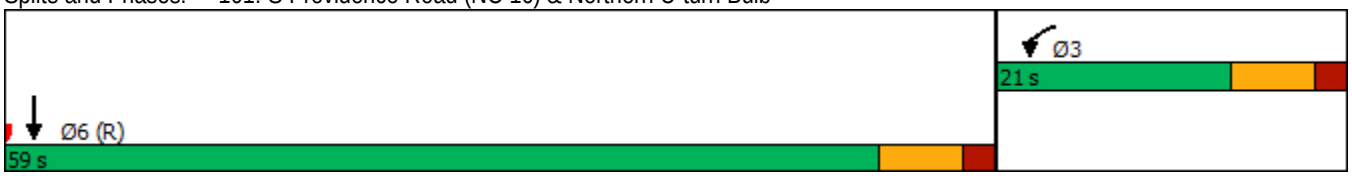
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.7%		ICU Level of Service A	
Analysis Period (min) 15			

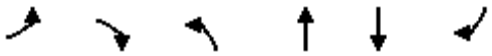
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	304	0	0	0	0	1312
Future Volume (vph)	304	0	0	0	0	1312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	100				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.95
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	0	0	3539
Right Turn on Red	No	No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	454		681			1094
Travel Time (s)	8.8		10.3			16.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	338	0	0	0	0	1458
Shared Lane Traffic (%)						
Lane Group Flow (vph)	338	0	0	0	0	1458
Turn Type	Prot					NA
Protected Phases	3					6
Permitted Phases						
Detector Phase	3					6
Switch Phase						
Minimum Initial (s)	7.0					12.0
Minimum Split (s)	14.0					19.0
Total Split (s)	21.0					59.0
Total Split (%)	26.3%					73.8%
Maximum Green (s)	14.0					52.0
Yellow Time (s)	5.0					5.0
All-Red Time (s)	2.0					2.0
Lost Time Adjust (s)	-2.0					-2.0
Total Lost Time (s)	5.0					5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0					3.0
Recall Mode	None					C-Max
Act Effct Green (s)	14.4					55.6
Actuated g/C Ratio	0.18					0.70
v/c Ratio	0.55					0.59
Control Delay	25.4					7.8
Queue Delay	0.0					0.0
Total Delay	25.4					7.8
LOS	C					A
Approach Delay	25.4					7.8
Approach LOS	C					A

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	72					173
Queue Length 95th (ft)	m88					236
Internal Link Dist (ft)	374		601			1014
Turn Bay Length (ft)	450					
Base Capacity (vph)	686					2457
Starvation Cap Reductn	0					0
Spillback Cap Reductn	0					0
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.49					0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: S Providence Road (NC 16) & Northern U-turn Bulb



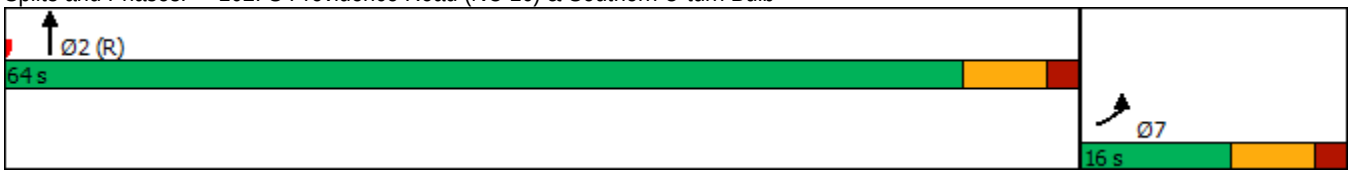


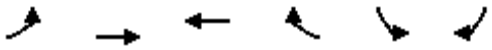
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	0	0	1338	0	0
Future Volume (vph)	59	0	0	1338	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	100		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	3539	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	3539	0	0
Right Turn on Red	No	No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			45	45	
Link Distance (ft)	449			580	579	
Travel Time (s)	8.7			8.8	8.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	0	0	1487	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	0	1487	0	0
Turn Type	Prot			NA		
Protected Phases	7			2		
Permitted Phases						
Detector Phase	7			2		
Switch Phase						
Minimum Initial (s)	7.0			12.0		
Minimum Split (s)	14.0			19.0		
Total Split (s)	16.0			64.0		
Total Split (%)	20.0%			80.0%		
Maximum Green (s)	9.0			57.0		
Yellow Time (s)	5.0			5.0		
All-Red Time (s)	2.0			2.0		
Lost Time Adjust (s)	-2.0			-2.0		
Total Lost Time (s)	5.0			5.0		
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0		
Recall Mode	None			C-Max		
Act Effct Green (s)	9.4			64.4		
Actuated g/C Ratio	0.12			0.80		
v/c Ratio	0.16			0.52		
Control Delay	30.9			4.4		
Queue Delay	0.0			0.0		
Total Delay	30.9			4.4		
LOS	C			A		
Approach Delay	30.9			4.4		
Approach LOS	C			A		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	15			122		
Queue Length 95th (ft)	m26			178		
Internal Link Dist (ft)	369			500	499	
Turn Bay Length (ft)	425					
Base Capacity (vph)	472			2848		
Starvation Cap Reductn	0			0		
Spillback Cap Reductn	0			0		
Storage Cap Reductn	0			0		
Reduced v/c Ratio	0.14			0.52		

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 12 (15%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 5.5		Intersection LOS: A	
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 102: S Providence Road (NC 16) & Southern U-turn Bulb





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1311	0	0	96	0
Future Volume (vph)	0	1311	0	0	96	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		242	406		223	
Travel Time (s)		3.7	6.2		4.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1457	0	0	107	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1457	0	0	107	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑			↰	
Traffic Vol, veh/h	0	1311	0	0	96	0
Future Vol, veh/h	0	1311	0	0	96	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1457	0	0	107	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	729	-
Stage 1	-	-	0	-
Stage 2	-	-	729	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	358	0
Stage 1	0	-	-	0
Stage 2	0	-	438	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	358	-
Mov Cap-2 Maneuver	-	-	358	-
Stage 1	-	-	-	-
Stage 2	-	-	438	-

Approach	EB	SB
HCM Control Delay, s	0	19.3
HCM LOS		C

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	358
HCM Lane V/C Ratio	-	0.298
HCM Control Delay (s)	-	19.3
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	1.2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	399	477	0
Future Volume (vph)	0	0	0	399	477	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		500	0
Storage Lanes		0	0		0	0
Taper Length (ft)			25		100	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	423			203	264	
Travel Time (s)	6.4			3.1	5.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	443	530	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	443	530	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			

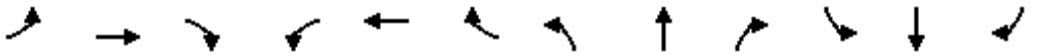
Intersection	
Int Delay, s/veh	11.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	399	477	0
Future Vol, veh/h	0	0	0	399	477	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	443	530	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	-	-	222	-
Stage 1	-	-	0	-
Stage 2	-	-	222	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	746	0
Stage 1	0	-	-	0
Stage 2	0	-	794	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	746	-
Mov Cap-2 Maneuver	-	-	746	-
Stage 1	-	-	-	-
Stage 2	-	-	794	-

Approach	WB	NB
HCM Control Delay, s	0	20.8
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	WBT
Capacity (veh/h)	746	-
HCM Lane V/C Ratio	0.71	-
HCM Control Delay (s)	20.8	-
HCM Lane LOS	C	-
HCM 95th %tile Q(veh)	6	-



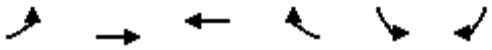
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	880	660	0	251	635	0	1487	122	0	1168	737
Future Volume (vph)	0	880	660	0	251	635	0	1487	122	0	1168	737
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	11	11	11	12	11	12
Grade (%)		-2%			0%			1%			-1%	
Storage Length (ft)	0		750	0		425	0		375	0		500
Storage Lanes	0		2	0		2	0		2	0		2
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88	1.00	0.95	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected												
Satd. Flow (prot)	0	3575	2815	0	3539	2787	0	3404	2680	0	3438	2801
Flt Permitted												
Satd. Flow (perm)	0	3575	2815	0	3539	2787	0	3404	2680	0	3438	2801
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		910			646			587			716	
Travel Time (s)		13.8			9.8			8.9			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	978	733	0	279	706	0	1652	136	0	1298	819
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	978	733	0	279	706	0	1652	136	0	1298	819
Turn Type		NA	Perm		NA	Perm		NA	Perm		NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases			4			8			2			6
Detector Phase		4	4		8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)		7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0
Minimum Split (s)		38.0	38.0		39.0	39.0		40.0	40.0		40.0	40.0
Total Split (s)		39.0	39.0		39.0	39.0		51.0	51.0		51.0	51.0
Total Split (%)		43.3%	43.3%		43.3%	43.3%		56.7%	56.7%		56.7%	56.7%
Maximum Green (s)		32.0	32.0		32.0	32.0		44.0	44.0		44.0	44.0
Yellow Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
All-Red Time (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode		None	None		None	None		C-Max	C-Max		C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		24.0	24.0		25.0	25.0		26.0	26.0		26.0	26.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)		33.1	33.1		33.1	33.1		46.9	46.9		46.9	46.9
Actuated g/C Ratio		0.37	0.37		0.37	0.37		0.52	0.52		0.52	0.52
v/c Ratio		0.74	0.71		0.21	0.69		0.93	0.10		0.72	0.56
Control Delay		28.8	28.6		19.8	28.1		27.6	11.1		14.7	12.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		28.8	28.6		19.8	28.1		27.6	11.1		14.7	12.1
LOS		C	C		B	C		C	B		B	B
Approach Delay		28.7			25.7			26.4			13.7	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		246	195		55	186		264	21		210	110
Queue Length 95th (ft)		318	267		84	255		#617	36		265	148
Internal Link Dist (ft)		830			566			507			636	
Turn Bay Length (ft)			750			425			375			500
Base Capacity (vph)		1350	1063		1336	1052		1774	1396		1792	1460
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.72	0.69		0.21	0.67		0.93	0.10		0.72	0.56

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 22.8 Intersection LOS: C
Intersection Capacity Utilization 73.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	757	603	66	34	11
Future Volume (vph)	29	757	603	66	34	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	10	12
Storage Length (ft)	125			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	75				0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.987		0.968	
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1652	1801	1686	0	1586	0
Flt Permitted	0.950				0.963	
Satd. Flow (perm)	1652	1801	1686	0	1586	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		1199	1162		1160	
Travel Time (s)		18.2	17.6		17.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	4%	2%	3%	8%
Adj. Flow (vph)	32	841	670	73	38	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	841	743	0	50	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	757	603	66	34	11
Future Vol, veh/h	29	757	603	66	34	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	2	3	8
Mvmt Flow	32	841	670	73	38	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	743	0	-	0	1612	707
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	905	-
Critical Hdwy	4.12	-	-	-	6.43	6.28
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.218	-	-	-	3.527	3.372
Pot Cap-1 Maneuver	864	-	-	-	114	425
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	864	-	-	-	110	425
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	393	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	21.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	864	-	-	-	273
HCM Lane V/C Ratio	0.037	-	-	-	0.183
HCM Control Delay (s)	9.3	-	-	-	21.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	28	170	1047	135	78	861	81	148	46	103	52	23
Future Volume (vph)	28	170	1047	135	78	861	81	148	46	103	52	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-2%			1%			2%			-2%
Storage Length (ft)		450		400	300		375	225		225	175	
Storage Lanes		1		1	1		1	1		1	1	
Taper Length (ft)		100			100			150			150	
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.850			0.850		
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1772	3575	1599	1744	3487	1575	1735	1844	1567	1688	1881
Flt Permitted		0.950			0.950			0.950			0.950	
Satd. Flow (perm)	0	1772	3575	1599	1744	3487	1575	1735	1844	1567	1688	1881
Right Turn on Red				No			No			No		
Satd. Flow (RTOR)												
Link Speed (mph)			45			45			45			45
Link Distance (ft)			1279			1019			1122			1136
Travel Time (s)			19.4			15.4			17.0			17.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	2%	3%	3%	2%	3%	2%	2%	8%	2%
Adj. Flow (vph)	31	189	1163	150	87	957	90	164	51	114	58	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	220	1163	150	87	957	90	164	51	114	58	26
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases				2			6			8		
Detector Phase	5	5	2	2	1	6	6	3	8	8	7	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	12.0	12.0	7.0	12.0	12.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	14.0	39.0	39.0	14.0	37.0	37.0	14.0	42.0	42.0	14.0	42.0
Total Split (s)	20.0	20.0	47.0	47.0	14.0	41.0	41.0	17.0	45.0	45.0	14.0	42.0
Total Split (%)	16.7%	16.7%	39.2%	39.2%	11.7%	34.2%	34.2%	14.2%	37.5%	37.5%	11.7%	35.0%
Maximum Green (s)	13.0	13.0	40.0	40.0	7.0	34.0	34.0	10.0	38.0	38.0	7.0	35.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Walk Time (s)			7.0	7.0		7.0	7.0		7.0	7.0		7.0
Flash Dont Walk (s)			25.0	25.0		23.0	23.0		28.0	28.0		28.0
Pedestrian Calls (#/hr)			0	0		0	0		0	0		0
Act Effct Green (s)		25.1	59.0	59.0	13.7	47.6	47.6	12.0	21.1	21.1	9.0	15.3
Actuated g/C Ratio		0.21	0.49	0.49	0.11	0.40	0.40	0.10	0.18	0.18	0.08	0.13
v/c Ratio		0.59	0.66	0.19	0.44	0.69	0.14	0.95	0.16	0.41	0.46	0.11
Control Delay		47.6	21.9	16.8	55.8	34.6	26.2	110.1	43.6	49.3	65.5	45.1

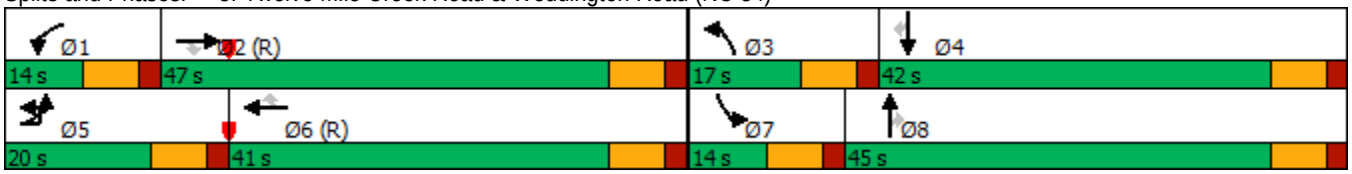
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	91
Future Volume (vph)	91
Ideal Flow (vphpl)	1900
Grade (%)	
Storage Length (ft)	125
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1539
Flt Permitted	
Satd. Flow (perm)	1539
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	6%
Adj. Flow (vph)	101
Shared Lane Traffic (%)	
Lane Group Flow (vph)	101
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	42.0
Total Split (s)	42.0
Total Split (%)	35.0%
Maximum Green (s)	35.0
Yellow Time (s)	5.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	-2.0
Total Lost Time (s)	5.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	28.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	15.3
Actuated g/C Ratio	0.13
v/c Ratio	0.52
Control Delay	57.2

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		47.6	21.9	16.8	55.8	34.6	26.2	110.1	43.6	49.3	65.5	45.1
LOS		D	C	B	E	C	C	F	D	D	E	D
Approach Delay			25.1			35.6			78.7			58.1
Approach LOS			C			D			E			E
Queue Length 50th (ft)		169	266	57	64	320	44	128	35	82	44	18
Queue Length 95th (ft)		225	399	118	113	447	92	#265	69	134	89	44
Internal Link Dist (ft)			1199			939			1042			1056
Turn Bay Length (ft)		450		400	300		375	225		225	175	
Base Capacity (vph)		370	1757	786	198	1382	624	173	614	522	126	579
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.59	0.66	0.19	0.44	0.69	0.14	0.95	0.08	0.22	0.46	0.04

Intersection Summary

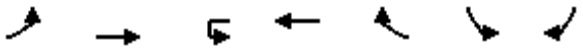
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 90 (75%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 36.3 Intersection LOS: D
Intersection Capacity Utilization 65.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Twelve Mile Creek Road & Weddington Road (NC 84)



Lane Group	SBR
Queue Delay	0.0
Total Delay	57.2
LOS	E
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	74
Queue Length 95th (ft)	126
Internal Link Dist (ft)	
Turn Bay Length (ft)	125
Base Capacity (vph)	474
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.21

Intersection Summary



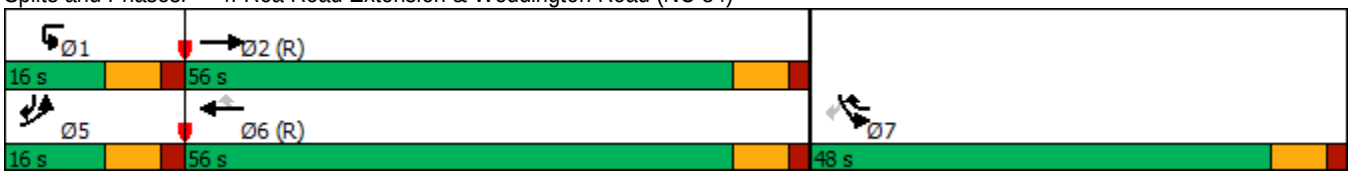
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	26	760	19	613	499	617	26
Future Volume (vph)	26	760	19	613	499	617	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		425		400	325	125
Storage Lanes	1		1		1	1	1
Taper Length (ft)	100		100			100	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.97	1.00
Frt					0.850		0.850
Flt Protected	0.950		0.950			0.950	
Satd. Flow (prot)	1770	3539	1770	3539	1583	3433	1583
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1770	3539	1770	3539	1583	3433	1583
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		45		45		45	
Link Distance (ft)		6405		877		725	
Travel Time (s)		97.0		13.3		11.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	844	21	681	554	686	29
Shared Lane Traffic (%)							
Lane Group Flow (vph)	29	844	21	681	554	686	29
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	1	6	7	7	5
Permitted Phases					6		7
Detector Phase	5	2	1	6	7	7	5
Switch Phase							
Minimum Initial (s)	7.0	12.0	7.0	12.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	41.0	36.0	36.0	14.0
Total Split (s)	16.0	56.0	16.0	56.0	48.0	48.0	16.0
Total Split (%)	13.3%	46.7%	13.3%	46.7%	40.0%	40.0%	13.3%
Maximum Green (s)	9.0	49.0	9.0	49.0	41.0	41.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	C-Max	None	None	None
Walk Time (s)				7.0	7.0	7.0	
Flash Dont Walk (s)				27.0	22.0	22.0	
Pedestrian Calls (#/hr)				0	0	0	
Act Effct Green (s)	9.9	70.6	9.5	64.6	103.9	33.2	48.2
Actuated g/C Ratio	0.08	0.59	0.08	0.54	0.87	0.28	0.40
v/c Ratio	0.20	0.41	0.15	0.36	0.40	0.72	0.05
Control Delay	54.2	16.3	62.7	11.3	1.1	43.4	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	16.3	62.7	11.3	1.1	43.4	19.7

Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	D	B	E	B	A	D	B
Approach Delay		17.5		7.7		42.5	
Approach LOS		B		A		D	
Queue Length 50th (ft)	21	150	17	76	7	248	14
Queue Length 95th (ft)	52	305	m27	m107	m9	288	29
Internal Link Dist (ft)		6325		797		645	
Turn Bay Length (ft)	425		425		400	325	125
Base Capacity (vph)	165	2082	162	1905	1453	1230	651
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.41	0.13	0.36	0.38	0.56	0.04

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 47.5% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Rea Road Extension & Weddington Road (NC 84)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1359	37	0	1131	0	20
Future Volume (vph)	1359	37	0	1131	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3525	0	0	3505	0	1611
Flt Permitted						
Satd. Flow (perm)	3525	0	0	3505	0	1611
Link Speed (mph)	45			45	25	
Link Distance (ft)	877			1036	1095	
Travel Time (s)	13.3			15.7	29.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%
Adj. Flow (vph)	1510	41	0	1257	0	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1551	0	0	1257	0	22
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

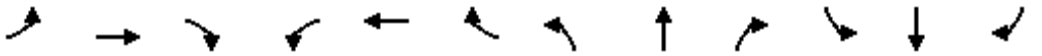
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1359	37	0	1131	0	20
Future Vol, veh/h	1359	37	0	1131	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	3	2	2
Mvmt Flow	1510	41	0	1257	0	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	776
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	*516
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*516
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	516	-	-	-
HCM Lane V/C Ratio	0.043	-	-	-
HCM Control Delay (s)	12.3	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1373	6	0	1120	18	0	0	4	0	0	11
Future Volume (vph)	0	1373	6	0	1120	18	0	0	4	0	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.998				0.865			0.865
Flt Protected												
Satd. Flow (prot)	0	3536	0	0	3498	0	0	0	1611	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	3536	0	0	3498	0	0	0	1611	0	0	1611
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1036			1279			1046			1028	
Travel Time (s)		15.7			19.4			28.5			28.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	1526	7	0	1244	20	0	0	4	0	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1533	0	0	1264	0	0	0	4	0	0	12
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1373	6	0	1120	18	0	0	4	0	0	11
Future Vol, veh/h	0	1373	6	0	1120	18	0	0	4	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	0	1526	7	0	1244	20	0	0	4	0	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	767	-	-	632
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*516	0	0	*618
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*516	-	-	*618
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

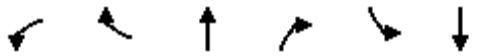
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	516	-	-	-	-	618
HCM Lane V/C Ratio	0.009	-	-	-	-	0.02
HCM Control Delay (s)	12	-	-	-	-	10.9
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

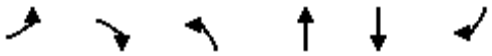
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	2122	0	1905
Future Volume (vph)	0	0	0	2122	0	1905
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	233		716			681
Travel Time (s)	4.5		10.8			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	2358	0	2117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	2358	0	2117
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.6%		ICU Level of Service D	
Analysis Period (min) 15			



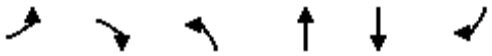
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	361	1761	0	0
Future Volume (vph)	0	0	361	1761	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	2787	0	0
Link Speed (mph)	35		45			45
Link Distance (ft)	1544		233			454
Travel Time (s)	30.1		3.5			6.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	401	1957	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	401	1957	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			



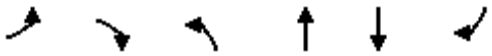
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1761	0	1544
Future Volume (vph)	0	0	0	1761	0	1544
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	1094			1544	1022	
Travel Time (s)	21.3			23.4	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1957	0	1716
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1957	0	1716
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.3%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1609	0	1828
Future Volume (vph)	0	0	0	1609	0	1828
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	0	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	0	2787
Link Speed (mph)	35			45	45	
Link Distance (ft)	153			579	587	
Travel Time (s)	3.0			8.8	8.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1788	0	2031
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1788	0	2031
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			

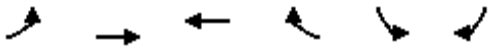


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	38	1790
Future Volume (vph)	0	0	0	0	38	1790
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.88
Frt						0.850
Flt Protected						
Satd. Flow (prot)	0	0	0	0	3539	2787
Flt Permitted						
Satd. Flow (perm)	0	0	0	0	3539	2787
Link Speed (mph)	45			35	45	
Link Distance (ft)	1018			449	153	
Travel Time (s)	15.4			8.7	2.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	42	1989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	42	1989
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	1571	0	1790
Future Volume (vph)	0	0	0	1571	0	1790
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.88	1.00	0.95
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	0	2787	0	3539
Flt Permitted						
Satd. Flow (perm)	0	0	0	2787	0	3539
Link Speed (mph)	35		45			45
Link Distance (ft)	580		1041			1018
Travel Time (s)	11.3		15.8			15.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	1746	0	1989
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1746	0	1989
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1540	0	988	0	0
Future Volume (vph)	0	1540	0	988	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		406	910		187	
Travel Time (s)		6.2	13.8		2.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1711	0	1098	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1711	0	1098	0	0
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.5%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	81	907	0	0
Future Volume (vph)	0	0	81	907	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	462			187	223	
Travel Time (s)	7.0			2.8	3.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	90	1008	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	90	1008	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	1459	0	907	0	0
Future Volume (vph)	0	1459	0	907	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	1324			462	242	
Travel Time (s)	20.1			7.0	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1621	0	1008	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1621	0	1008	0	0
Sign Control	Free			Free	Free	

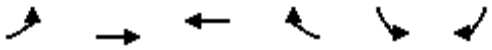
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	1002	0	886	0	0
Future Volume (vph)	0	1002	0	886	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	0	2787	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	0	2787	0	3539	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	646			423	164	
Travel Time (s)	9.8			6.4	2.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1113	0	984	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1113	0	984	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	599	403	0	0	0	0
Future Volume (vph)	599	403	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.88	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	1863	2787	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	1863	2787	0	0	0	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	164			264	460	
Travel Time (s)	2.5			4.0	7.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	666	448	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	666	448	0	0	0	0
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.1%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	403	0	287	0	0
Future Volume (vph)	0	403	0	287	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	0.88	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3539	0	2787	0	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	2787	0	0
Link Speed (mph)		45	45		45	
Link Distance (ft)		460	6405		203	
Travel Time (s)		7.0	97.0		3.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	448	0	319	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	448	0	319	0	0
Sign Control		Free	Free		Free	

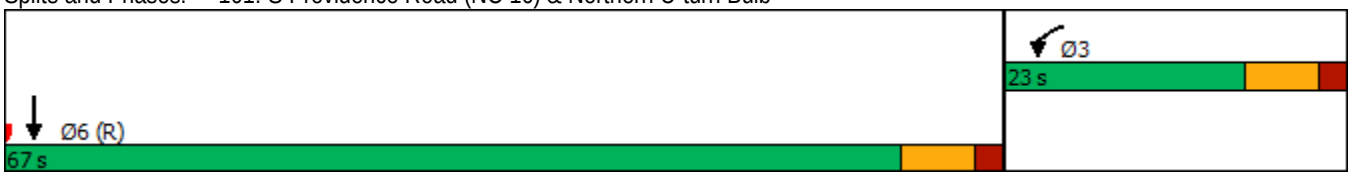
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.5%		ICU Level of Service A	
Analysis Period (min) 15			

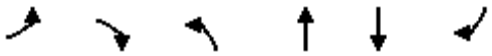
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	361	0	0	0	0	1544
Future Volume (vph)	361	0	0	0	0	1544
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	100				25	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.95
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	0	0	3539
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	0	0	3539
Right Turn on Red	No	No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	454		681			1094
Travel Time (s)	8.8		10.3			16.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	401	0	0	0	0	1716
Shared Lane Traffic (%)						
Lane Group Flow (vph)	401	0	0	0	0	1716
Turn Type	Prot					NA
Protected Phases	3					6
Permitted Phases						
Detector Phase	3					6
Switch Phase						
Minimum Initial (s)	7.0					12.0
Minimum Split (s)	14.0					19.0
Total Split (s)	23.0					67.0
Total Split (%)	25.6%					74.4%
Maximum Green (s)	16.0					60.0
Yellow Time (s)	5.0					5.0
All-Red Time (s)	2.0					2.0
Lost Time Adjust (s)	-2.0					-2.0
Total Lost Time (s)	5.0					5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0					3.0
Recall Mode	None					C-Max
Act Effct Green (s)	16.6					63.4
Actuated g/C Ratio	0.18					0.70
v/c Ratio	0.63					0.69
Control Delay	29.8					9.7
Queue Delay	0.0					0.0
Total Delay	29.8					9.7
LOS	C					A
Approach Delay	29.8					9.7
Approach LOS	C					A

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	102					263
Queue Length 95th (ft)	m117					342
Internal Link Dist (ft)	374		601			1014
Turn Bay Length (ft)	450					
Base Capacity (vph)	686					2491
Starvation Cap Reductn	0					0
Spillback Cap Reductn	0					0
Storage Cap Reductn	0					0
Reduced v/c Ratio	0.58					0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 101: S Providence Road (NC 16) & Northern U-turn Bulb



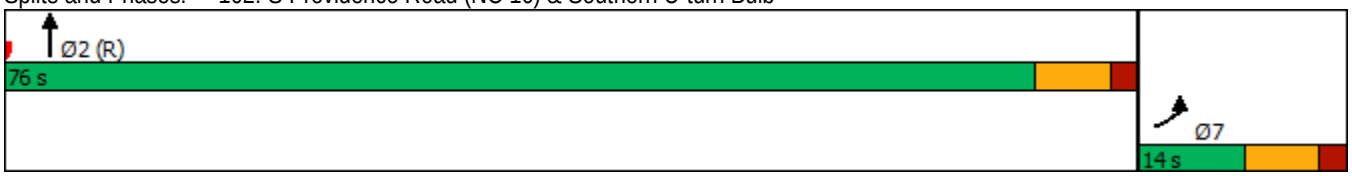


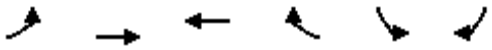
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	0	0	1571	0	0
Future Volume (vph)	38	0	0	1571	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425	0	0			0
Storage Lanes	0	0	0			0
Taper Length (ft)	100		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	3433	0	0	3539	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	3433	0	0	3539	0	0
Right Turn on Red	No	No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			45	45	
Link Distance (ft)	449			580	579	
Travel Time (s)	8.7			8.8	8.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	0	0	1746	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	0	0	1746	0	0
Turn Type	Prot			NA		
Protected Phases	7			2		
Permitted Phases						
Detector Phase	7			2		
Switch Phase						
Minimum Initial (s)	7.0			12.0		
Minimum Split (s)	14.0			19.0		
Total Split (s)	14.0			76.0		
Total Split (%)	15.6%			84.4%		
Maximum Green (s)	7.0			69.0		
Yellow Time (s)	5.0			5.0		
All-Red Time (s)	2.0			2.0		
Lost Time Adjust (s)	-2.0			-2.0		
Total Lost Time (s)	5.0			5.0		
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0		
Recall Mode	None			C-Max		
Act Effct Green (s)	9.0			78.6		
Actuated g/C Ratio	0.10			0.87		
v/c Ratio	0.12			0.57		
Control Delay	37.7			3.6		
Queue Delay	0.0			0.0		
Total Delay	37.7			3.6		
LOS	D			A		
Approach Delay	37.7			3.6		
Approach LOS	D			A		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	10			164		
Queue Length 95th (ft)	m15			208		
Internal Link Dist (ft)	369			500	499	
Turn Bay Length (ft)	425					
Base Capacity (vph)	343			3090		
Starvation Cap Reductn	0			0		
Spillback Cap Reductn	0			0		
Storage Cap Reductn	0			0		
Reduced v/c Ratio	0.12			0.57		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 16 (18%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 4.4		Intersection LOS: A	
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 102: S Providence Road (NC 16) & Southern U-turn Bulb





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1459	0	0	81	0
Future Volume (vph)	0	1459	0	0	81	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		45	45		35	
Link Distance (ft)		242	406		223	
Travel Time (s)		3.7	6.2		4.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1621	0	0	90	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1621	0	0	90	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑			↰	
Traffic Vol, veh/h	0	1459	0	0	81	0
Future Vol, veh/h	0	1459	0	0	81	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1621	0	0	90	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	811	-
Stage 1	-	-	0	-
Stage 2	-	-	811	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	317	0
Stage 1	0	-	-	0
Stage 2	0	-	397	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	317	-
Mov Cap-2 Maneuver	-	-	317	-
Stage 1	-	-	-	-
Stage 2	-	-	397	-

Approach	EB	SB
HCM Control Delay, s	0	20.8
HCM LOS		C

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	317
HCM Lane V/C Ratio	-	0.284
HCM Control Delay (s)	-	20.8
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	1.1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	287	599	0
Future Volume (vph)	0	0	0	287	599	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		500	0
Storage Lanes		0	0		0	0
Taper Length (ft)			25		100	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	45			45	35	
Link Distance (ft)	423			203	264	
Travel Time (s)	6.4			3.1	5.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	319	666	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	319	666	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	17.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	287	599	0
Future Vol, veh/h	0	0	0	287	599	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	319	666	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	-	-	160	-
Stage 1	-	-	0	-
Stage 2	-	-	160	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	815	0
Stage 1	0	-	-	0
Stage 2	0	-	852	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	815	-
Mov Cap-2 Maneuver	-	-	815	-
Stage 1	-	-	-	-
Stage 2	-	-	852	-

Approach	WB	NB
HCM Control Delay, s	0	25.8
HCM LOS		D

Minor Lane/Major Mvmt	NBLn1	WBT
Capacity (veh/h)	815	-
HCM Lane V/C Ratio	0.817	-
HCM Control Delay (s)	25.8	-
HCM Lane LOS	D	-
HCM 95th %tile Q(veh)	9	-

Queuing and Blocking Reports

2024 Existing Conditions

Intersection: 1: S Providence Road (NC 16) & Rea Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	L	T	T	U	T	R
Maximum Queue (ft)	396	158	210	239	217	186	28	373	155
Average Queue (ft)	205	65	114	156	131	79	4	184	73
95th Queue (ft)	347	130	201	222	203	172	19	315	132
Link Distance (ft)	1480	1480			1262			1326	1326
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			425	425		450	325		
Storage Blk Time (%)								1	
Queuing Penalty (veh)								0	

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	29	152
Average Queue (ft)	3	55
95th Queue (ft)	17	117
Link Distance (ft)		1127
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	125	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	B13	WB	WB	NB	SB
Directions Served	L	TR	T	L	TR	LTR	LTR
Maximum Queue (ft)	200	924	60	200	1037	1106	1142
Average Queue (ft)	92	454	9	68	839	551	517
95th Queue (ft)	214	944	95	198	1257	1243	1256
Link Distance (ft)		976	2797		985	1088	1098
Upstream Blk Time (%)		3			55	25	23
Queuing Penalty (veh)		15			0	0	0
Storage Bay Dist (ft)	100			100			
Storage Blk Time (%)	4	50		0	69		
Queuing Penalty (veh)	21	42		1	27		

Network Summary

Network wide Queuing Penalty: 106

Intersection: 1: S Providence Road (NC 16) & Rea Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	L	T	T	U	T	R
Maximum Queue (ft)	636	315	182	212	225	204	325	1084	680
Average Queue (ft)	343	137	75	123	130	77	14	616	187
95th Queue (ft)	619	261	171	198	206	176	123	1173	775
Link Distance (ft)	1480	1480			1262			1326	1326
Upstream Blk Time (%)								5	3
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)			425	425		450	325		
Storage Blk Time (%)								39	
Queuing Penalty (veh)								2	

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	40	107
Average Queue (ft)	6	33
95th Queue (ft)	26	80
Link Distance (ft)		1127
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	125	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	B13	WB	WB	NB	SB
Directions Served	L	TR	T	L	TR	LTR	LTR
Maximum Queue (ft)	200	1043	450	199	597	512	352
Average Queue (ft)	83	578	78	76	275	193	122
95th Queue (ft)	204	1090	411	180	541	420	280
Link Distance (ft)		976	2797		985	1088	1098
Upstream Blk Time (%)		10			0		
Queuing Penalty (veh)		87			0		
Storage Bay Dist (ft)	100			100			
Storage Blk Time (%)	2	47		4	32		
Queuing Penalty (veh)	12	39		27	25		

Network Summary

Network wide Queuing Penalty: 192

Intersection: 1: S Providence Road (NC 16) & Rea Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	L	T	T	U	T	R
Maximum Queue (ft)	809	460	160	186	236	218	177	869	379
Average Queue (ft)	475	158	62	110	151	101	10	455	125
95th Queue (ft)	868	361	143	176	225	199	98	861	403
Link Distance (ft)	1480	1480			1262			1326	1326
Upstream Blk Time (%)								1	0
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)			425	425		450	325		
Storage Blk Time (%)								31	
Queuing Penalty (veh)								1	

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	44	128
Average Queue (ft)	9	41
95th Queue (ft)	31	89
Link Distance (ft)		1127
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	125	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	B13	WB	WB	NB	SB
Directions Served	L	TR	T	L	TR	LTR	LTR
Maximum Queue (ft)	199	1071	764	192	447	592	547
Average Queue (ft)	31	765	164	70	209	252	204
95th Queue (ft)	125	1178	633	156	386	544	455
Link Distance (ft)		976	2797		985	1088	1098
Upstream Blk Time (%)		19					
Queuing Penalty (veh)		167					
Storage Bay Dist (ft)	100			100			
Storage Blk Time (%)	0	50		3	22		
Queuing Penalty (veh)	0	15		16	18		

Network Summary

Network wide Queuing Penalty: 217

2029 Background Conditions

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	R	T	T	R	R	T	T	R	R
Maximum Queue (ft)	273	178	173	194	154	167	170	171	503	514	348	13
Average Queue (ft)	153	92	84	106	76	88	77	84	323	324	39	0
95th Queue (ft)	238	153	158	181	130	144	163	163	499	504	240	8
Link Distance (ft)	839	839			576	576			485	485		
Upstream Blk Time (%)									2	3	0	
Queuing Penalty (veh)									23	26	0	
Storage Bay Dist (ft)			750	750			425	425			375	375
Storage Blk Time (%)										8		
Queuing Penalty (veh)										9		

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	SB	SB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	263	391	447	432
Average Queue (ft)	145	187	250	261
95th Queue (ft)	230	378	443	431
Link Distance (ft)	631	631		
Upstream Blk Time (%)		1		
Queuing Penalty (veh)		6		
Storage Bay Dist (ft)			500	500
Storage Blk Time (%)			2	2
Queuing Penalty (veh)			11	9

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	32	7	117
Average Queue (ft)	5	0	49
95th Queue (ft)	23	4	95
Link Distance (ft)		1102	1127
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	242	430	434	253	366	545	556	249	226	114	178	291
Average Queue (ft)	88	215	225	87	120	248	264	34	116	17	51	99
95th Queue (ft)	197	368	372	185	265	447	469	133	199	60	131	242
Link Distance (ft)		964	964			975	975			1061		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	450			400	300			375	225		225	175
Storage Blk Time (%)		0	1		0	7	4		1		0	9
Queuing Penalty (veh)		0	2		0	8	3		1		0	31

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	390	225
Average Queue (ft)	100	111
95th Queue (ft)	288	213
Link Distance (ft)	1072	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)	5	10
Queuing Penalty (veh)	16	17

Intersection: 4: Rea Road Extension & Weddington Road (NC 84)

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	69	192	222	31	205	221	131	301	318	166
Average Queue (ft)	21	90	97	6	87	101	56	156	171	15
95th Queue (ft)	54	163	179	23	169	192	109	242	259	86
Link Distance (ft)		6341	6341		2100	2100			636	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	425			425			400	325		125
Storage Blk Time (%)								0	25	
Queuing Penalty (veh)								0	67	

Intersection: 7: S Providence Road (NC 16)

Movement	NB	NB	SB
Directions Served	R	R	T
Maximum Queue (ft)	108	108	82
Average Queue (ft)	6	5	9
95th Queue (ft)	50	41	83
Link Distance (ft)	631	631	542
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Northern U-turn Bulb

Movement	NB	NB	NB	NB
Directions Served	T	T	R	R
Maximum Queue (ft)	38	86	74	50
Average Queue (ft)	1	7	3	6
95th Queue (ft)	22	53	31	31
Link Distance (ft)	189	189	189	189
Upstream Blk Time (%)	0	0	0	
Queuing Penalty (veh)	0	1	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: S Providence Road (NC 16)

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	33	88
Average Queue (ft)	1	6
95th Queue (ft)	21	42
Link Distance (ft)	994	994
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: S Providence Road (NC 16)

Movement	NB	NB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	183	172	116	148
Average Queue (ft)	18	18	18	30
95th Queue (ft)	112	111	69	98
Link Distance (ft)	450	450	485	485
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Southern U-turn Bulb

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	104	127
Average Queue (ft)	35	49
95th Queue (ft)	81	99
Link Distance (ft)	86	86
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	1	2
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: S Providence Road (NC 16)

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	40	10
Average Queue (ft)	2	0
95th Queue (ft)	21	8
Link Distance (ft)	1013	1013
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Rea Road

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	11	5
Average Queue (ft)	0	0
95th Queue (ft)	9	4
Link Distance (ft)	839	839
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Western U-turn Bulb & Rea Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Rea Road

Movement	EB	EB
Directions Served	R	R
Maximum Queue (ft)	10	36
Average Queue (ft)	0	2
95th Queue (ft)	5	16
Link Distance (ft)	1296	1296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Rea Road Extension

Movement	EB	EB
Directions Served	R	R
Maximum Queue (ft)	57	9
Average Queue (ft)	3	0
95th Queue (ft)	25	9
Link Distance (ft)	576	576
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Eastern U-turn Bulb

Movement	EB
Directions Served	T
Maximum Queue (ft)	135
Average Queue (ft)	37
95th Queue (ft)	107
Link Distance (ft)	120
Upstream Blk Time (%)	1
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 21: Rea Road Extension

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	5	6
Average Queue (ft)	0	0
95th Queue (ft)	5	6
Link Distance (ft)	6341	6341
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 101: S Providence Road (NC 16) & Northern U-turn Bulb

Movement	WB	WB	SB	SB
Directions Served	L	L	T	T
Maximum Queue (ft)	270	292	593	675
Average Queue (ft)	139	197	233	306
95th Queue (ft)	233	283	519	589
Link Distance (ft)	287	287	1050	1050
Upstream Blk Time (%)	0	3	0	0
Queuing Penalty (veh)	1	7	0	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 102: S Providence Road (NC 16) & Southern U-turn Bulb

Movement	EB	EB	NB	NB
Directions Served	L	L	T	T
Maximum Queue (ft)	53	53	161	150
Average Queue (ft)	12	20	64	59
95th Queue (ft)	38	50	152	142
Link Distance (ft)	285	285	536	536
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 103: Rea Road & Western U-turn Bulb

Movement	SB
Directions Served	L
Maximum Queue (ft)	76
Average Queue (ft)	38
95th Queue (ft)	66
Link Distance (ft)	107
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 104: Eastern U-turn Bulb & Rea Road Extension

Movement	NB
Directions Served	L
Maximum Queue (ft)	124
Average Queue (ft)	92
95th Queue (ft)	134
Link Distance (ft)	118
Upstream Blk Time (%)	2
Queuing Penalty (veh)	9
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 254

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	R	T	T	R	R	T	T	R	R
Maximum Queue (ft)	251	180	153	200	103	111	166	175	355	357	89	59
Average Queue (ft)	151	116	84	113	51	60	61	75	200	205	18	7
95th Queue (ft)	226	173	145	184	89	101	144	153	313	318	65	35
Link Distance (ft)	839	839			576	576			485	485		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			750	750			425	425			375	375
Storage Blk Time (%)										0		
Queuing Penalty (veh)										1		

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	SB	SB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	214	216	193	208
Average Queue (ft)	120	132	106	120
95th Queue (ft)	184	190	179	194
Link Distance (ft)	631	631		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			500	500
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	37	6	86
Average Queue (ft)	8	0	37
95th Queue (ft)	30	4	72
Link Distance (ft)		1102	1127
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	155	354	362	140	186	232	248	212	186	221	119	219
Average Queue (ft)	67	187	194	57	81	113	120	90	91	96	33	100
95th Queue (ft)	129	307	311	112	150	199	211	168	174	185	83	190
Link Distance (ft)		964	964			975	975			1061		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	450			400	300			375	225		225	175
Storage Blk Time (%)		0	0		0	0			1	0		4
Queuing Penalty (veh)		0	0		0	0			2	0		12

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	236	133
Average Queue (ft)	82	28
95th Queue (ft)	180	86
Link Distance (ft)	1072	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)	4	0
Queuing Penalty (veh)	10	1

Intersection: 4: Rea Road Extension & Weddington Road (NC 84)

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	65	148	147	23	136	153	103	227	236	64
Average Queue (ft)	18	57	61	3	48	51	36	118	132	8
95th Queue (ft)	51	123	123	16	103	119	83	192	207	37
Link Distance (ft)		6341	6341		2100	2100			636	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	425			425			400	325		125
Storage Blk Time (%)									13	
Queuing Penalty (veh)									30	

Intersection: 7: S Providence Road (NC 16)

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	11	22
Average Queue (ft)	0	1
95th Queue (ft)	7	12
Link Distance (ft)	631	631
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Northern U-turn Bulb

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	35	51
Average Queue (ft)	2	4
95th Queue (ft)	14	25
Link Distance (ft)	189	189
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: S Providence Road (NC 16)

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	8	37
Average Queue (ft)	0	1
95th Queue (ft)	8	17
Link Distance (ft)	994	994
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: S Providence Road (NC 16)

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	88	88
Average Queue (ft)	8	13
95th Queue (ft)	42	51
Link Distance (ft)	485	485
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Southern U-turn Bulb

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	106	100
Average Queue (ft)	29	39
95th Queue (ft)	74	84
Link Distance (ft)	86	86
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: S Providence Road (NC 16)

Movement	NB
Directions Served	R
Maximum Queue (ft)	6
Average Queue (ft)	0
95th Queue (ft)	6
Link Distance (ft)	1013
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Rea Road

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	16	20
Average Queue (ft)	1	1
95th Queue (ft)	19	19
Link Distance (ft)	839	839
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Western U-turn Bulb & Rea Road

Movement	WB	WB	WB
Directions Served	L	T	T
Maximum Queue (ft)	52	19	17
Average Queue (ft)	5	2	2
95th Queue (ft)	43	31	29
Link Distance (ft)	143	143	143
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	1	1	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Rea Road

Movement	EB	EB
Directions Served	R	R
Maximum Queue (ft)	6	11
Average Queue (ft)	0	1
95th Queue (ft)	6	11
Link Distance (ft)	1296	1296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Rea Road Extension

Movement	EB
Directions Served	R
Maximum Queue (ft)	97
Average Queue (ft)	8
95th Queue (ft)	47
Link Distance (ft)	576
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Eastern U-turn Bulb

Movement	EB	EB	EB
Directions Served	T	R	R
Maximum Queue (ft)	138	24	26
Average Queue (ft)	47	1	1
95th Queue (ft)	124	9	9
Link Distance (ft)	120	120	120
Upstream Blk Time (%)	1	0	0
Queuing Penalty (veh)	4	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: Rea Road Extension

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	15	30
Average Queue (ft)	1	1
95th Queue (ft)	10	14
Link Distance (ft)	6341	6341
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 101: S Providence Road (NC 16) & Northern U-turn Bulb

Movement	WB	WB	SB	SB
Directions Served	L	L	T	T
Maximum Queue (ft)	129	160	165	195
Average Queue (ft)	67	96	81	109
95th Queue (ft)	114	145	137	172
Link Distance (ft)	287	287	1050	1050
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 102: S Providence Road (NC 16) & Southern U-turn Bulb

Movement	EB	EB	NB	NB
Directions Served	L	L	T	T
Maximum Queue (ft)	51	67	126	134
Average Queue (ft)	15	28	56	53
95th Queue (ft)	44	57	120	122
Link Distance (ft)	285	285	536	536
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 103: Rea Road & Western U-turn Bulb

Movement	EB	SB
Directions Served	T	L
Maximum Queue (ft)	4	111
Average Queue (ft)	0	51
95th Queue (ft)	3	95
Link Distance (ft)	198	107
Upstream Blk Time (%)		3
Queuing Penalty (veh)		3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 104: Eastern U-turn Bulb & Rea Road Extension

Movement	NB
Directions Served	L
Maximum Queue (ft)	125
Average Queue (ft)	97
95th Queue (ft)	136
Link Distance (ft)	118
Upstream Blk Time (%)	3
Queuing Penalty (veh)	15
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 83

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	R	T	T	R	R	T	T	R	R
Maximum Queue (ft)	414	238	212	256	90	104	194	196	475	481	267	27
Average Queue (ft)	245	121	123	154	42	49	105	120	279	288	30	1
95th Queue (ft)	375	203	198	229	80	88	191	200	449	454	200	13
Link Distance (ft)	839	839			576	576			485	485		
Upstream Blk Time (%)									1	1	0	
Queuing Penalty (veh)									6	8	0	
Storage Bay Dist (ft)			750	750			425	425			375	375
Storage Blk Time (%)										5		
Queuing Penalty (veh)										6		

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	SB	SB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	236	245	208	226
Average Queue (ft)	144	155	115	135
95th Queue (ft)	216	225	187	208
Link Distance (ft)	631	631		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			500	500
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	37	5	62
Average Queue (ft)	12	0	23
95th Queue (ft)	36	3	51
Link Distance (ft)		1102	1127
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	249	392	402	154	161	342	363	137	270	200	154	127
Average Queue (ft)	130	228	238	64	67	185	200	39	135	37	56	47
95th Queue (ft)	217	351	360	129	125	293	311	102	251	119	122	101
Link Distance (ft)		964	964			975	975			1061		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	450			400	300			375	225		225	175
Storage Blk Time (%)		0	0			1	0		6	0		0
Queuing Penalty (veh)		0	0			0	0		8	0		0

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	132	132
Average Queue (ft)	20	54
95th Queue (ft)	70	108
Link Distance (ft)	1072	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)	0	1
Queuing Penalty (veh)	1	0

Intersection: 4: Rea Road Extension & Weddington Road (NC 84)

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	81	220	239	28	240	249	146	264	266	123
Average Queue (ft)	25	110	113	4	111	121	61	165	171	12
95th Queue (ft)	63	195	202	18	206	223	117	240	245	59
Link Distance (ft)		6341	6341		2100	2100			636	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	425			425			400	325		125
Storage Blk Time (%)								0	22	
Queuing Penalty (veh)								0	73	

Intersection: 7: S Providence Road (NC 16)

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	92	81
Average Queue (ft)	6	6
95th Queue (ft)	48	43
Link Distance (ft)	631	631
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Northern U-turn Bulb

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	42	56
Average Queue (ft)	5	9
95th Queue (ft)	29	37
Link Distance (ft)	189	189
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: S Providence Road (NC 16)

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	4	133
Average Queue (ft)	0	5
95th Queue (ft)	4	105
Link Distance (ft)	994	994
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: S Providence Road (NC 16)

Movement	NB	NB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	71	74	148	158
Average Queue (ft)	5	5	30	40
95th Queue (ft)	40	44	95	111
Link Distance (ft)	450	450	485	485
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Southern U-turn Bulb

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	112	123
Average Queue (ft)	50	61
95th Queue (ft)	98	103
Link Distance (ft)	86	86
Upstream Blk Time (%)	0	1
Queuing Penalty (veh)	2	3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: S Providence Road (NC 16)

Movement	NB
Directions Served	R
Maximum Queue (ft)	14
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	1013
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Rea Road

Movement	WB
Directions Served	R
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	3
Link Distance (ft)	839
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Western U-turn Bulb & Rea Road

Movement	WB
Directions Served	L
Maximum Queue (ft)	51
Average Queue (ft)	4
95th Queue (ft)	27
Link Distance (ft)	143
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Rea Road

Movement	EB	EB
Directions Served	R	R
Maximum Queue (ft)	9	11
Average Queue (ft)	0	1
95th Queue (ft)	7	8
Link Distance (ft)	1296	1296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Rea Road Extension

Movement	EB
Directions Served	R
Maximum Queue (ft)	241
Average Queue (ft)	50
95th Queue (ft)	178
Link Distance (ft)	576
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Eastern U-turn Bulb

Movement	EB	EB
Directions Served	T	R
Maximum Queue (ft)	150	74
Average Queue (ft)	91	5
95th Queue (ft)	160	44
Link Distance (ft)	120	120
Upstream Blk Time (%)	5	0
Queuing Penalty (veh)	18	1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: Rea Road Extension

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	4	5
Average Queue (ft)	0	0
95th Queue (ft)	4	6
Link Distance (ft)	6341	6341
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 101: S Providence Road (NC 16) & Northern U-turn Bulb

Movement	WB	WB	SB	SB
Directions Served	L	L	T	T
Maximum Queue (ft)	176	200	212	255
Average Queue (ft)	91	122	112	151
95th Queue (ft)	147	179	182	224
Link Distance (ft)	287	287	1050	1050
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 102: S Providence Road (NC 16) & Southern U-turn Bulb

Movement	EB	EB	NB	NB
Directions Served	L	L	T	T
Maximum Queue (ft)	46	59	139	150
Average Queue (ft)	12	22	55	53
95th Queue (ft)	37	49	133	133
Link Distance (ft)	285	285	536	536
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 103: Rea Road & Western U-turn Bulb

Movement	SB
Directions Served	L
Maximum Queue (ft)	112
Average Queue (ft)	54
95th Queue (ft)	105
Link Distance (ft)	107
Upstream Blk Time (%)	4
Queuing Penalty (veh)	4
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 104: Eastern U-turn Bulb & Rea Road Extension

Movement	NB
Directions Served	L
Maximum Queue (ft)	127
Average Queue (ft)	107
95th Queue (ft)	135
Link Distance (ft)	118
Upstream Blk Time (%)	4
Queuing Penalty (veh)	26
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 157

2029 Build-out Conditions

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	R	T	T	R	R	T	T	R	R
Maximum Queue (ft)	250	157	148	183	138	150	157	158	524	527	474	18
Average Queue (ft)	137	78	72	96	67	83	59	66	377	380	123	1
95th Queue (ft)	211	136	133	169	113	130	145	144	599	605	457	13
Link Distance (ft)	839	839			576	576			485	485		
Upstream Blk Time (%)									12	12	0	
Queuing Penalty (veh)									111	115	0	
Storage Bay Dist (ft)			750	750			425	425			375	375
Storage Blk Time (%)										24		
Queuing Penalty (veh)										27		

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	SB	SB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	292	572	569	535
Average Queue (ft)	152	252	354	355
95th Queue (ft)	236	572	616	578
Link Distance (ft)	631	631		
Upstream Blk Time (%)		4		
Queuing Penalty (veh)		44		
Storage Bay Dist (ft)			500	500
Storage Blk Time (%)			11	10
Queuing Penalty (veh)			62	60

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	38	2	137
Average Queue (ft)	5	0	55
95th Queue (ft)	23	2	109
Link Distance (ft)		1102	1127
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	UL	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	267	417	412	183	399	614	647	362	267	251	194	296
Average Queue (ft)	120	207	216	75	116	281	300	61	143	36	51	101
95th Queue (ft)	246	364	363	153	278	517	551	256	262	169	128	240
Link Distance (ft)		1206	1206			975	975			1062		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	450			400	300			375	225		225	175
Storage Blk Time (%)		0	1			9	7		7	0		10
Queuing Penalty (veh)		0	1			12	5		8	0		30

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	461	223
Average Queue (ft)	99	105
95th Queue (ft)	319	202
Link Distance (ft)	1072	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)	4	9
Queuing Penalty (veh)	13	17

Intersection: 4: Rea Road Extension & Weddington Road (NC 84)

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	67	178	198	45	180	190	114	266	287	140
Average Queue (ft)	19	82	89	9	69	87	43	162	177	16
95th Queue (ft)	52	157	168	30	139	155	94	241	258	79
Link Distance (ft)		6340	6340		814	814			643	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	425			425			400	325		125
Storage Blk Time (%)								0	26	
Queuing Penalty (veh)								0	70	

Intersection: 5: Access A & Weddington Road (NC 84)

Movement	EB	NB
Directions Served	TR	R
Maximum Queue (ft)	3	47
Average Queue (ft)	0	20
95th Queue (ft)	3	46
Link Distance (ft)	814	1046
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Access B & Weddington Road (NC 84)

Movement	WB	NB	SB
Directions Served	TR	R	R
Maximum Queue (ft)	3	29	47
Average Queue (ft)	0	6	13
95th Queue (ft)	3	25	41
Link Distance (ft)	1206	998	982
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: S Providence Road (NC 16)

Movement	NB	NB	SB	SB
Directions Served	R	R	T	T
Maximum Queue (ft)	64	58	18	288
Average Queue (ft)	3	4	1	57
95th Queue (ft)	33	30	19	292
Link Distance (ft)	631	631	542	542
Upstream Blk Time (%)				0
Queuing Penalty (veh)				1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Northern U-turn Bulb

Movement	NB	NB	NB
Directions Served	T	R	R
Maximum Queue (ft)	24	24	44
Average Queue (ft)	1	1	6
95th Queue (ft)	14	12	29
Link Distance (ft)	189	189	189
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: S Providence Road (NC 16)

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	16	62
Average Queue (ft)	0	4
95th Queue (ft)	5	33
Link Distance (ft)	994	994
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: S Providence Road (NC 16)

Movement	NB	NB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	404	400	146	149
Average Queue (ft)	133	134	24	34
95th Queue (ft)	430	432	89	106
Link Distance (ft)	450	450	485	485
Upstream Blk Time (%)	1	1		
Queuing Penalty (veh)	8	8		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Southern U-turn Bulb

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	110	122
Average Queue (ft)	38	51
95th Queue (ft)	89	101
Link Distance (ft)	86	86
Upstream Blk Time (%)	0	1
Queuing Penalty (veh)	1	3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: S Providence Road (NC 16)

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	213	192
Average Queue (ft)	49	44
95th Queue (ft)	335	314
Link Distance (ft)	1013	1013
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Rea Road

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	5	6
Average Queue (ft)	0	0
95th Queue (ft)	3	4
Link Distance (ft)	839	839
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Western U-turn Bulb & Rea Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Rea Road

Movement	EB	EB
Directions Served	R	R
Maximum Queue (ft)	5	4
Average Queue (ft)	0	0
95th Queue (ft)	8	5
Link Distance (ft)	1296	1296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Rea Road Extension

Movement	EB	EB
Directions Served	R	R
Maximum Queue (ft)	55	3
Average Queue (ft)	3	0
95th Queue (ft)	30	3
Link Distance (ft)	576	576
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Eastern U-turn Bulb

Movement	EB	EB
Directions Served	T	R
Maximum Queue (ft)	127	3
Average Queue (ft)	29	0
95th Queue (ft)	96	3
Link Distance (ft)	120	120
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	2	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 21: Rea Road Extension

Movement	WB
Directions Served	R
Maximum Queue (ft)	4
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	6340
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 101: S Providence Road (NC 16) & Northern U-turn Bulb

Movement	WB	WB	SB	SB
Directions Served	L	L	T	T
Maximum Queue (ft)	234	279	647	675
Average Queue (ft)	136	192	246	314
95th Queue (ft)	209	268	560	619
Link Distance (ft)	287	287	1050	1050
Upstream Blk Time (%)	0	0	0	0
Queuing Penalty (veh)	0	1	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 102: S Providence Road (NC 16) & Southern U-turn Bulb

Movement	EB	EB	NB	NB
Directions Served	L	L	T	T
Maximum Queue (ft)	57	59	376	367
Average Queue (ft)	15	20	125	120
95th Queue (ft)	45	49	386	380
Link Distance (ft)	285	285	536	536
Upstream Blk Time (%)			2	1
Queuing Penalty (veh)			15	11
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 103: Rea Road & Western U-turn Bulb

Movement	EB	SB
Directions Served	T	L
Maximum Queue (ft)	2	78
Average Queue (ft)	0	38
95th Queue (ft)	2	66
Link Distance (ft)	198	107
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 104: Eastern U-turn Bulb & Rea Road Extension

Movement	NB
Directions Served	L
Maximum Queue (ft)	124
Average Queue (ft)	89
95th Queue (ft)	132
Link Distance (ft)	118
Upstream Blk Time (%)	2
Queuing Penalty (veh)	9
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 634

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	R	T	T	R	R	T	T	R	R
Maximum Queue (ft)	252	210	178	198	107	117	159	162	321	333	93	67
Average Queue (ft)	153	127	84	112	51	63	59	80	186	189	21	8
95th Queue (ft)	229	193	152	187	90	106	137	152	286	292	68	40
Link Distance (ft)	839	839			576	576			485	485		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			750	750			425	425			375	375
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	SB	SB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	222	226	216	225
Average Queue (ft)	122	133	107	121
95th Queue (ft)	193	199	186	196
Link Distance (ft)	631	631		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			500	500
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	35	7	120
Average Queue (ft)	7	0	42
95th Queue (ft)	28	6	84
Link Distance (ft)		1102	1127
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	UL	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	191	328	330	147	188	250	229	222	185	216	121	215
Average Queue (ft)	85	186	194	53	82	117	120	91	95	94	44	104
95th Queue (ft)	158	289	296	111	155	201	199	171	169	180	96	199
Link Distance (ft)		1206	1206			975	975			1062		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	450			400	300			375	225		225	175
Storage Blk Time (%)			0		0	0			0	0		5
Queuing Penalty (veh)			0		0	0			1	0		15

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	268	159
Average Queue (ft)	87	34
95th Queue (ft)	197	99
Link Distance (ft)	1072	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)	3	0
Queuing Penalty (veh)	8	1

Intersection: 4: Rea Road Extension & Weddington Road (NC 84)

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	61	168	164	44	89	106	90	213	225	90
Average Queue (ft)	18	64	68	12	36	43	28	126	139	12
95th Queue (ft)	47	138	141	34	73	92	72	197	205	56
Link Distance (ft)		6340	6340		814	814			643	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	425			425			400	325		125
Storage Blk Time (%)									15	
Queuing Penalty (veh)									36	

Intersection: 5: Access A & Weddington Road (NC 84)

Movement	NB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	14
95th Queue (ft)	38
Link Distance (ft)	1046
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Access B & Weddington Road (NC 84)

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	29	33
Average Queue (ft)	3	8
95th Queue (ft)	18	30
Link Distance (ft)	998	982
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: S Providence Road (NC 16)

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	16	33
Average Queue (ft)	1	1
95th Queue (ft)	11	16
Link Distance (ft)	631	631
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Northern U-turn Bulb

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	30	35
Average Queue (ft)	2	3
95th Queue (ft)	16	19
Link Distance (ft)	189	189
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: S Providence Road (NC 16)

Movement	SB
Directions Served	R
Maximum Queue (ft)	38
Average Queue (ft)	2
95th Queue (ft)	19
Link Distance (ft)	994
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: S Providence Road (NC 16)

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	89	103
Average Queue (ft)	9	16
95th Queue (ft)	45	62
Link Distance (ft)	485	485
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Southern U-turn Bulb

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	90	112
Average Queue (ft)	29	40
95th Queue (ft)	72	91
Link Distance (ft)	86	86
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: S Providence Road (NC 16)

Movement	NB
Directions Served	R
Maximum Queue (ft)	2
Average Queue (ft)	0
95th Queue (ft)	2
Link Distance (ft)	1013
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Rea Road

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	18	17
Average Queue (ft)	1	1
95th Queue (ft)	21	17
Link Distance (ft)	839	839
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Western U-turn Bulb & Rea Road

Movement	WB	WB	WB
Directions Served	L	T	T
Maximum Queue (ft)	42	20	13
Average Queue (ft)	3	1	0
95th Queue (ft)	31	26	13
Link Distance (ft)	143	143	143
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	1	1	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Rea Road

Movement	EB	EB
Directions Served	R	R
Maximum Queue (ft)	22	16
Average Queue (ft)	1	1
95th Queue (ft)	12	10
Link Distance (ft)	1296	1296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Rea Road Extension

Movement	EB
Directions Served	R
Maximum Queue (ft)	157
Average Queue (ft)	15
95th Queue (ft)	80
Link Distance (ft)	576
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Eastern U-turn Bulb

Movement	EB	EB	EB
Directions Served	T	R	R
Maximum Queue (ft)	141	51	16
Average Queue (ft)	46	2	1
95th Queue (ft)	126	24	11
Link Distance (ft)	120	120	120
Upstream Blk Time (%)	2	0	
Queuing Penalty (veh)	7	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: Rea Road Extension

Movement	WB
Directions Served	R
Maximum Queue (ft)	17
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	6340
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 101: S Providence Road (NC 16) & Northern U-turn Bulb

Movement	WB	WB	SB	SB
Directions Served	L	L	T	T
Maximum Queue (ft)	121	168	160	198
Average Queue (ft)	66	98	79	112
95th Queue (ft)	110	150	134	176
Link Distance (ft)	287	287	1050	1050
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 102: S Providence Road (NC 16) & Southern U-turn Bulb

Movement	EB	EB	NB	NB
Directions Served	L	L	T	T
Maximum Queue (ft)	58	74	131	146
Average Queue (ft)	17	32	59	60
95th Queue (ft)	45	63	121	129
Link Distance (ft)	285	285	536	536
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 103: Rea Road & Western U-turn Bulb

Movement	SB
Directions Served	L
Maximum Queue (ft)	115
Average Queue (ft)	52
95th Queue (ft)	98
Link Distance (ft)	107
Upstream Blk Time (%)	3
Queuing Penalty (veh)	3
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 104: Eastern U-turn Bulb & Rea Road Extension

Movement	NB
Directions Served	L
Maximum Queue (ft)	128
Average Queue (ft)	98
95th Queue (ft)	136
Link Distance (ft)	118
Upstream Blk Time (%)	3
Queuing Penalty (veh)	17
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 92

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	R	T	T	R	R	T	T	R	R
Maximum Queue (ft)	453	222	216	245	96	110	192	186	462	469	312	47
Average Queue (ft)	231	122	126	154	44	51	103	115	278	285	42	2
95th Queue (ft)	371	196	203	226	81	89	187	185	458	463	232	21
Link Distance (ft)	839	839			576	576			485	485		
Upstream Blk Time (%)									3	3	0	
Queuing Penalty (veh)									21	23	0	
Storage Bay Dist (ft)			750	750			425	425			375	375
Storage Blk Time (%)										7		
Queuing Penalty (veh)										9		

Intersection: 1: S Providence Road (NC 16) & Rea Road/Rea Road Extension

Movement	SB	SB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	253	280	204	215
Average Queue (ft)	150	166	111	128
95th Queue (ft)	228	243	190	204
Link Distance (ft)	631	631		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			500	500
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Weddington Road (NC 84) & Cox Road

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	44	68
Average Queue (ft)	12	26
95th Queue (ft)	37	58
Link Distance (ft)		1127
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	125	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	UL	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	276	391	407	156	176	349	370	124	310	271	183	124
Average Queue (ft)	137	225	238	68	67	203	211	44	157	52	59	45
95th Queue (ft)	234	344	350	132	134	300	317	98	299	196	126	96
Link Distance (ft)		1206	1206			975	975			1062		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	450			400	300			375	225		225	175
Storage Blk Time (%)		0	0			1	0		14	0	0	
Queuing Penalty (veh)		0	1			1	0		21	0	0	

Intersection: 3: Twelve Mile Creek Road & Weddington Road (NC 84)

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	157	163
Average Queue (ft)	24	60
95th Queue (ft)	84	120
Link Distance (ft)	1072	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)	1	2
Queuing Penalty (veh)	1	1

Intersection: 4: Rea Road Extension & Weddington Road (NC 84)

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	74	249	258	50	163	171	116	270	294	205
Average Queue (ft)	22	120	124	13	71	88	48	175	188	22
95th Queue (ft)	57	214	222	39	138	152	95	252	270	101
Link Distance (ft)		6340	6340		814	814			643	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	425			425			400	325		125
Storage Blk Time (%)								0	26	
Queuing Penalty (veh)								0	87	

Intersection: 5: Access A & Weddington Road (NC 84)

Movement	NB
Directions Served	R
Maximum Queue (ft)	44
Average Queue (ft)	14
95th Queue (ft)	40
Link Distance (ft)	1046
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Access B & Weddington Road (NC 84)

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	29	35
Average Queue (ft)	4	9
95th Queue (ft)	20	31
Link Distance (ft)	998	982
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: S Providence Road (NC 16)

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	51	74
Average Queue (ft)	3	5
95th Queue (ft)	21	34
Link Distance (ft)	631	631
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Northern U-turn Bulb

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	54	53
Average Queue (ft)	6	9
95th Queue (ft)	31	37
Link Distance (ft)	189	189
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: S Providence Road (NC 16)

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	15	56
Average Queue (ft)	1	3
95th Queue (ft)	10	27
Link Distance (ft)	994	994
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: S Providence Road (NC 16)

Movement	NB	NB	SB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	124	128	177	198
Average Queue (ft)	21	23	41	51
95th Queue (ft)	154	162	123	136
Link Distance (ft)	450	450	485	485
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	1	1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Southern U-turn Bulb

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	118	129
Average Queue (ft)	50	63
95th Queue (ft)	96	110
Link Distance (ft)	86	86
Upstream Blk Time (%)	0	1
Queuing Penalty (veh)	1	4
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: S Providence Road (NC 16)

Movement	NB	NB
Directions Served	R	R
Maximum Queue (ft)	27	12
Average Queue (ft)	1	1
95th Queue (ft)	13	10
Link Distance (ft)	1013	1013
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Rea Road

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	29	29
Average Queue (ft)	2	2
95th Queue (ft)	31	30
Link Distance (ft)	839	839
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Western U-turn Bulb & Rea Road

Movement	WB	WB
Directions Served	L	T
Maximum Queue (ft)	73	15
Average Queue (ft)	8	1
95th Queue (ft)	52	21
Link Distance (ft)	143	143
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	3	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 17: Rea Road

Movement	EB	EB
Directions Served	R	R
Maximum Queue (ft)	22	28
Average Queue (ft)	1	1
95th Queue (ft)	15	13
Link Distance (ft)	1296	1296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: Rea Road Extension

Movement	EB
Directions Served	R
Maximum Queue (ft)	191
Average Queue (ft)	33
95th Queue (ft)	123
Link Distance (ft)	576
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Eastern U-turn Bulb

Movement	EB	EB	EB
Directions Served	T	R	R
Maximum Queue (ft)	153	68	3
Average Queue (ft)	82	3	0
95th Queue (ft)	156	33	3
Link Distance (ft)	120	120	120
Upstream Blk Time (%)	4	0	
Queuing Penalty (veh)	13	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: Rea Road Extension

Movement	WB	WB
Directions Served	R	R
Maximum Queue (ft)	3	22
Average Queue (ft)	0	1
95th Queue (ft)	3	12
Link Distance (ft)	6340	6340
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 101: S Providence Road (NC 16) & Northern U-turn Bulb

Movement	WB	WB	SB	SB
Directions Served	L	L	T	T
Maximum Queue (ft)	161	198	193	243
Average Queue (ft)	89	122	110	144
95th Queue (ft)	144	181	171	219
Link Distance (ft)	287	287	1050	1050
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 102: S Providence Road (NC 16) & Southern U-turn Bulb

Movement	EB	EB	NB	NB
Directions Served	L	L	T	T
Maximum Queue (ft)	46	61	151	162
Average Queue (ft)	13	26	66	63
95th Queue (ft)	40	53	148	148
Link Distance (ft)	285	285	536	536
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 103: Rea Road & Western U-turn Bulb

Movement	SB
Directions Served	L
Maximum Queue (ft)	114
Average Queue (ft)	57
95th Queue (ft)	112
Link Distance (ft)	107
Upstream Blk Time (%)	7
Queuing Penalty (veh)	6
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 104: Eastern U-turn Bulb & Rea Road Extension

Movement	NB
Directions Served	L
Maximum Queue (ft)	124
Average Queue (ft)	104
95th Queue (ft)	133
Link Distance (ft)	118
Upstream Blk Time (%)	4
Queuing Penalty (veh)	22
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

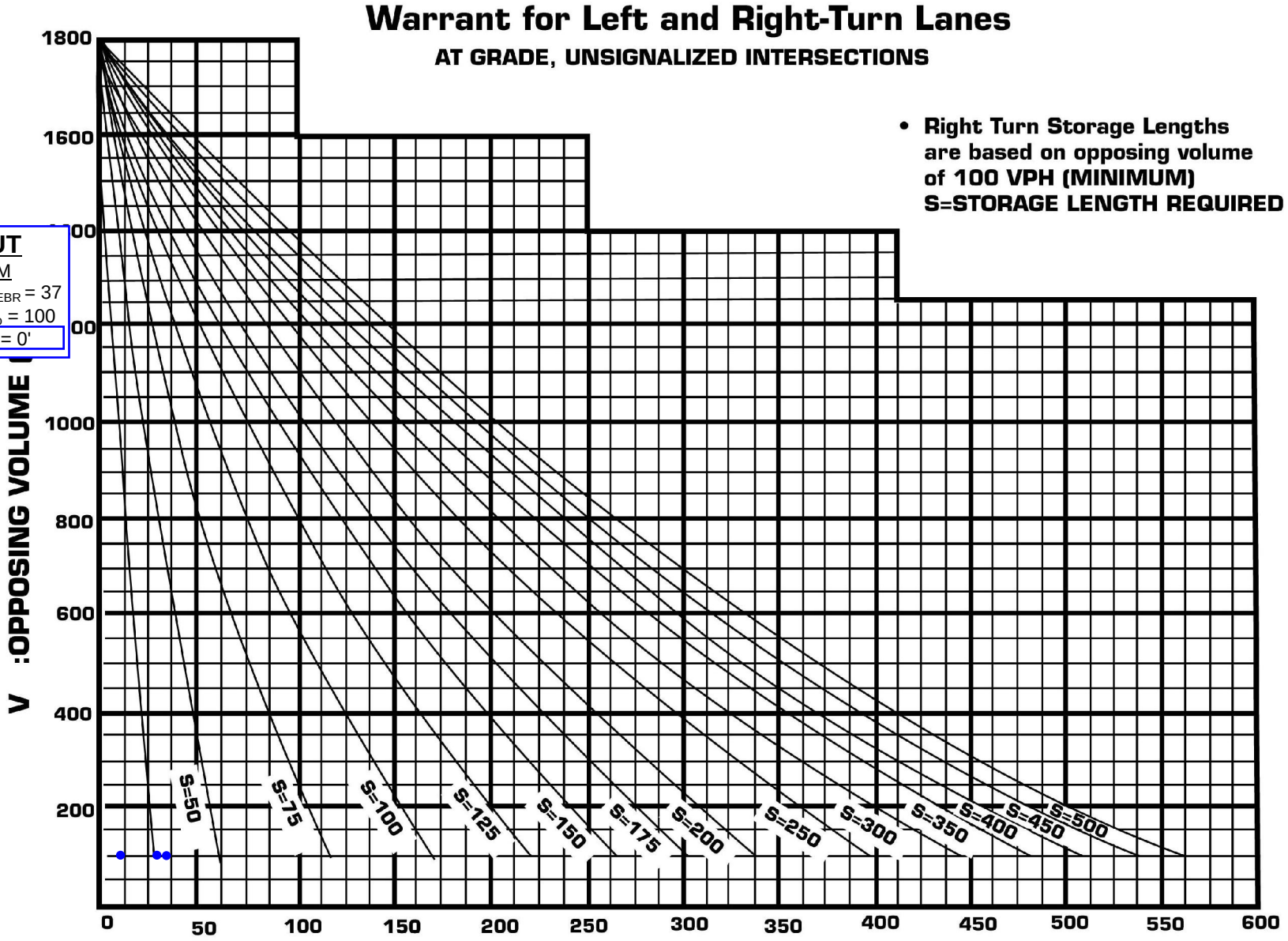
Network Summary

Network wide Queuing Penalty: 217

Auxiliary Turn-Lane Warrants

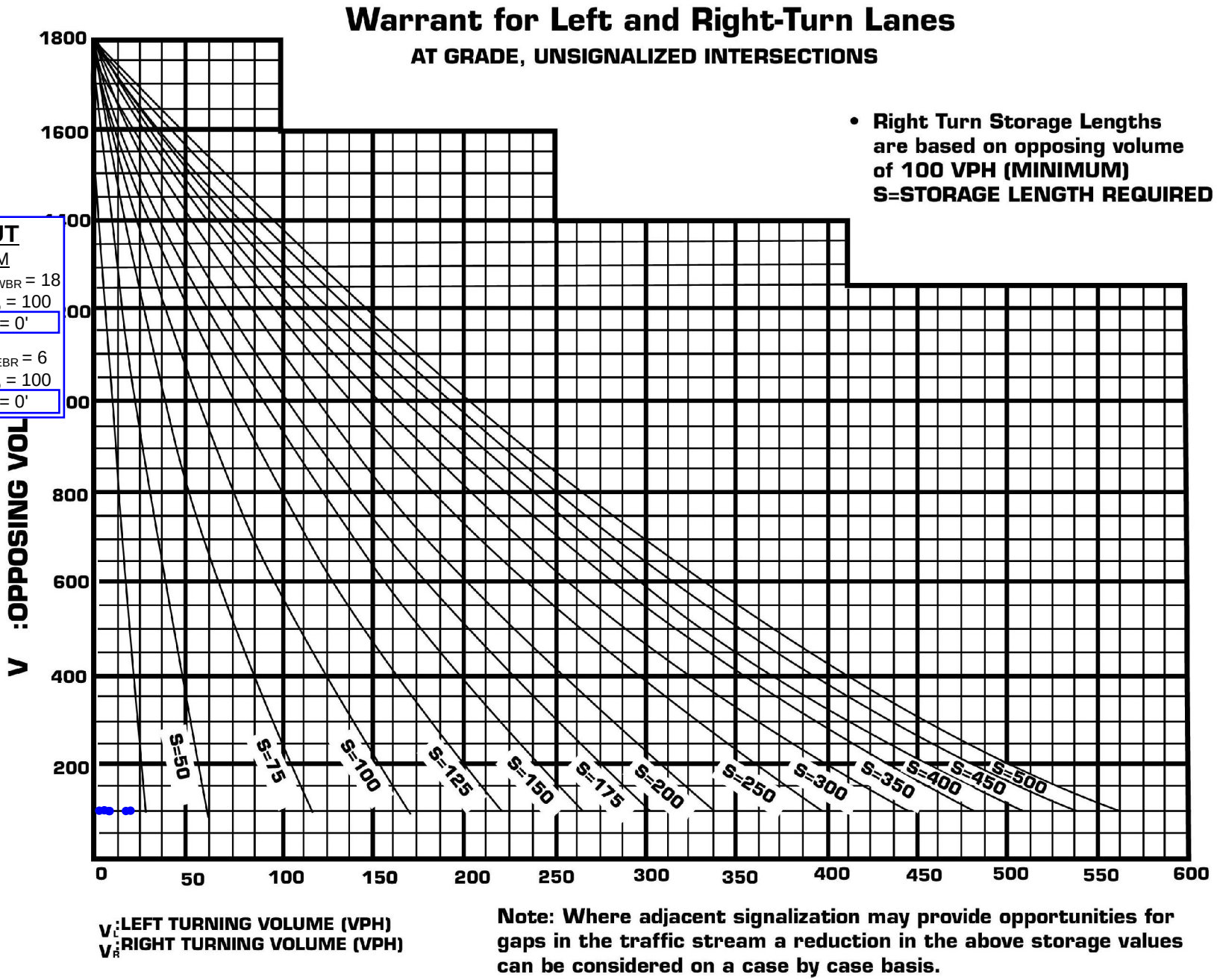
Int. # 5: Weddington Road (NC 84) and Access A (RIRO)

2029 BUILD-OUT		
AM	MD	PM
V_{EBR} = 11	V_{EBR} = 31	V_{EBR} = 37
V_o = 100	V_o = 100	V_o = 100
S = 0'	S = 0'	S = 0'



Int. # 6: Weddington Road (NC 84) and Access B (RIRO)

2029 BUILD-OUT		
AM	MD	PM
V_{WBR} = 6	V_{WBR} = 16	V_{WBR} = 18
V_o = 100	V_o = 100	V_o = 100
S = 0'	S = 0'	S = 0'
V_{EBR} = 2	V_{EBR} = 5	V_{EBR} = 6
V_o = 100	V_o = 100	V_o = 100
S = 0'	S = 0'	S = 0'



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.